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(NASA-CR-167680) RESULTS OF SSV INTERFERENCE HEATING TESTS ON A 0.04 SCALE THIN-SKIN THERMOCOUPLE MODEL (58-OT) UTILIZING A SIMULATED EXTERNAL TANK AND ORBITER FOREBODY IN THE NASA/ARC 3.5 FOOT

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SPACE SHUTTLE AEROTHERMODYNAMIC DATA REPORT

Data Management SERVICES

HUNTSVILLE ELECTRONICS DIVISION CHRYSLER CORPORATION

December 1983

DMS-DR-2393
NASA-CR-167,680
Volume 2 of 4

RESULTS OF SSV INTERFERENCE HEATING TESTS ON A 0.04 SCALE THIN-SKIN THERMOCOUPLE MODEL (58-OT) UTILIZING A SIMULATED EXTERNAL TANK & ORBITER FOREBODY IN THE NASA/ARC 3.5 FOOT HYPERSONIC WIND TUNNEL (IH51A)

by

J. Marroquin

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Prepared under NASA Contract Number NAS9-16283

by

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National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	ARC 3.5 HWT 228-1
NASA Series Number:	IH51A
Model Number:	58-OT
Test Dates:	7-13-77 thru 7-27-77
Occupany Hours:	118

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ABSTRACT

An experimental investigation was performed in the NASA/Ames Research Center 3.5-Foot Hypersonic Wind Tunnel (Test IH51A) to obtain aerodynamic interference heating effects on the upper portion of the Space Shuttle External Tank (ET) in the presence of the Orbiter Forebody and Forward attach hardware. A SSV Orbiter Forebody model was sting-mounted above a flat plate, representing a rolled-out section of the upper section of the external tank.

Ten test configurations were tested in order to get the heat transfer contribution effects of each part during the model buildup configuration. Thin skin thermocouple measurements of the flat plate were obtained. Data were obtained at a nominal Mach number of 5.3 and Reynolds numbers of 5.0×10^{-6} per foot and 1.0×10^{-6} per foot using a total temperature of 1300°R. This test consisted of 62 good runs and approximately 118 tunnel hours were used. All the test objectives were successfully completed on July 27, 1977.

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TABLE OF CONTENTS

	Page
ABSTRACT	iii
INDEX OF MODEL FIGURES	2
INDEX OF DATA FIGURES	3
INTRODUCTION	6
NOMENCLATURE	7
CONFIGURATIONS INVESTIGATED	10
INSTRUMENTATION	12
TEST FACILITY DESCRIPTION	14
TEST PROCEDURES	15
DATA REDUCTION	18
RESULTS AND DISCUSSION	23
REFERENCES	25
TABLES	
I. TEST CONDITIONS	26
II. DATA SET RUN NUMBER COLLATION SUMMARY	27
III. INSERT IX THERMOCOUPLE LOCATIONS	28
IV. INSERT XI THERMOCOUPLE LOCATIONS	29
V. ET PROTUBERANCE THERMOCOUPLE LOCATIONS	36
VI. CONSTANT SETS AND PLUG NO.	38
VII. THERMOCOUPLE PLUG HOOK-UP SCHEDULE AND SKIN THICKNESS.	44
FIGURES	
MODEL	62
DATA - Volumes 1 - 4 (See Data Figures Index for Complete Description)	69
APPENDIX	
TABULATED SOURCE DATA (Volume 4)	

INDEX OF MODEL FIGURES

Figures	Title	Page
1.	Model Sketches	
	a. Installation and Test Configurations	62
	b. Insert IX Instrumentation Locations	63
	c. Insert XI Thermocouple Locations	64
	d. ET Strut Medtherm Heat Flux Transducer Locations	65
	e. T/C Locations for ET Protuberances	66
2.	Model Photographs	
	a. Schlieren Photograph of the Orbiter Forebody with External Tank Protuberances Mounted on a Flat Plate	67
	b. Schlieren Photograph of the External Tank Protuberances Mounted on a Flat Plate	68

INDEX OF DATA FIGURES

Figure	Title (Indicating portion of model for which heating Parameter is displayed. See next page for additional details).
4	Heating Distribution on LO_2 Antigeyser Line Fairing
5	Heating Distribution on LO_2 Feedline Fairing
6	Heating Distribution on LH_2 Line Fairing
7	Heating Distribution on Top Centerline of Cable Tray
8	Heating Distribution on Bottom Centerline of Cable Tray
9	Heating Distribution on Top Centerline of LO_2 Feedline
10	Heating Distribution on Bottom Centerline of LO_2 Feedline
11	Heating Distribution on Right Side of LO_2 Feedline
12	Heating Distribution on Left Side of LO_2 Feedline
13	Heating Distribution on Top Centerline of LO_2 Antigeyser Line
14	Heating Distribution on Bottom Centerline of LO_2 Antigeyser Line
15	Heating Distribution on Longitudinal Upstream of LO_2 Feedline
16	Heating Distribution on Diagonals Upstream of LO_2 Feedline
17	Heating Distribution on Transverse at Nose of LO_2 Feedline
18	Heating Distribution on Longitudinal Upstream of LO_2 Antigeyser Line
19	Heating Distribution on Diagonal Upstream of LO_2 Antigeyser Line
20	Heating Distribution on Longitudinal Upstream of LH_2 Line
21	Heating Distribution on Diagonal Upstream of LH_2 Line
22	Heating Distribution on Transverse at Nose of LH_2 Line
23	Heating Distribution on Transverse at Forward Attach Struts
24	Heating Distribution on Longitudinal at LH Forward Attach Strut
25	Heating Distribution on Longitudinal at RH Forward Attach Strut
26	Heating Distribution on Diagonals Upstream of LH Forward Attach Strut
27	Heating Distribution on Diagonals Upstream of RH Forward Attach Strut
28	Heating Distribution on Top Centerline of Tank
29	Heating Distribution on Longitudinal Between LO_2 Feedline and Press Line
30	Heating Distribution on Transverse Across LO_2 Lines and Cable Tray
31	Heating Distribution on Transverse Across LO_2 Lines and Cable Tray
32	Heating Distribution on Transverse Across LO_2 Lines and Cable Tray
33	Heating Distribution on Longitudinal Forward of Cable Tray
34	Heating Distribution on Transverse Across LO_2 Lines and Cable Tray
35	Heating Distribution on Transverse Across LO_2 Lines and Cable Tray
36	Heating Distribution on Transverse Across LO_2 Lines and Cable Tray
37	Heating Distribution on Transverse Across LO_2 Lines and Cable Tray
38	Heating Distribution on Transverse Across LO_2 Lines
39	Heating Distribution on Transverse Across LO_2 Lines
40	Heating Distribution on Transverse Across LH_2 Line
41	Heating Distribution on Transverse Across LH_2 Line
42	Heating Distribution on Transverse Across LH_2 Line
43	Heating Distribution on Transverse Across LH_2 Line

INDEX OF DATA FIGURES (Continued)

Figures	Volume/ Page No.	Symbolic Description of Heating Parameter Both A = 24" and B = 42" configurations are displayed for each figure	Word description of Heating Parameter Plotted (See Reference 5)
	Volume 1		
4-43	1- 948	$\frac{1A}{5A}$	$\frac{\text{Total INTF Heating}}{\text{ET Clean Heating}}$
		$\frac{2A}{5A}$	$\frac{\text{Protuberance } (LH_2, LO_2 \text{ Lines, Cable Tray}) \text{Heating}}{\text{ET Clean Heating}}$
		$\frac{3A^*}{5A}$	$\frac{\text{Protuberance (FWD Attach Strut) Heating}}{\text{ET Clean Heating}}$
		$\frac{4A^*}{5A}$	$\frac{\text{Orbiter Proximity INTF Heating}}{\text{ET Clean Heating}}$
	Volume 2		
15-43	1- 192	$\frac{(2A-5A)+(3A-5A)+(4A-5A)+5A}{5A}$	$\frac{\Sigma\Delta\text{Protub}+\Delta \text{ Proximity HTG + ET Clean HTG}}{\text{ET Clean Heating}}$
15-43	193- 384	$[2A+3A+4A-2(5A)]/5A$ (Reduced Form) $\frac{1A}{(2A-5A)+(3A-5A)+(4A-5A)+5A}$	$\frac{\text{Total INTF Heating}}{\Sigma\Delta\text{Protub}+\Delta \text{ Proximity HTG + ET Clean HTG}}$
15-43	385- 576	$1A/[2A+3A+4A-2(5A)]$ (Reduced Form) $\left(\frac{2A}{5A}\right)\left(\frac{3A}{5A}\right)\left(\frac{4A}{5A}\right)$	Protub & Proximity INTF HTG $\frac{hi}{hu}$ Product
15-43	577- 768	$(1A/5A)/(2A/5A)(3A/5A)(4A/5A)$	$\frac{\text{Total INTF Heating hi/hu}}{\text{Product of Protub \& Proximity INTF HTG hi/hu's}}$

*(Fig.15-43 only)

INDEX OF DATA FIGURES (Concluded)

	Volume 3		
15-43	769- 960	$\frac{(2A-5A)+(3A-5A)+5A}{5A}$ $\frac{2A+3A-5A}{5A}$ (Reduced Form)	$\frac{\Sigma\Delta\text{Protuberance INTF HTG + ET Clean HTG}}{\text{ET Clean Heating}}$
15-43	961-1152	$\frac{1A}{(2A-5A)+(3A-5A)+5A}$ $\frac{1A}{2A+3A-5A}$ (Reduced Form)	$\frac{\text{Total INTF Heating}}{\Sigma\Delta\text{Protuberance INTF HTG + ET Clean HTG}}$
15-43	1153-1344	$\left(\frac{2A}{5A}\right)\left(\frac{3A}{5A}\right)$	Protuberance INTF HTG $\frac{hi}{hu}$ Product
	Volume 4		
15-43	1-192	(1A/5A)/(2A/5A)(3A/5A)	$\frac{\text{Total INTF Heating hi/hu}}{\text{Product of Protuberance INTF HTG hi/hu's}}$
15-43	193-384	$\frac{1A}{4A}$	$\frac{\text{Total INTF Heating}}{\text{Proximity INTF Heating}}$

INTRODUCTION

An experimental investigation was performed to determine the interference heating on the upper portion of the external tank in the proximity of the external hardware on a 0.040-scale model 58-OT. The test was conducted in the NASA/Ames Research Center 3.5-Foot Hypersonic Wind Tunnel to simulate ascent flight conditions. The nominal test conditions were as follows:

Mach No.	P_t(PSI)	T_T(^oR)	Re/ft
5.3	405	1300	5.0×10^{-6}
5.3	110	1300	1.0×10^{-6}

The purpose of this test was to determine the interference heating effects on the upper portion of the ET in the presence of the Orbiter Forebody and Forward attach hardware at Mach 5.3. The investigation included two longitudinal positions to get a variation in Mach number.

Testing was conducted using ten (10) model configurations as shown in Figure 1a. A combined total of sixty seven (67) runs were made of which sixty two (62) were considered good runs and approximately 118 occupancy hours were used. This test was made during the period of July 13, 1977 through July 27, 1977. A summary of test conditions and model buildup configurations tested is given in Tables I and II.

The general arrangement of the orbiter, external tank protuberances and the carrier plate installation is shown in Figure 1a.

Tabulated aerodynamic heating data are presented in this report, as well as computed heating parameters in plotted form.

NOMENCLATURE

SYMBOL	MNEMONIC	DESCRIPTION
a		Intercept of straight line curve fit (generalized)
AFFDL		Air Force Flight Dynamics Lab
b		Thickness of model skin
C,c		Specific heat of model skin material
℄		Centerline
	CONSTANT SET	See Table VI and VII
c_p		Specific heat of air stream (perfect gas value)
C_0, C_1, C_2		Curve fit constants
$\delta Tw/\delta t$	DTW/DT	Rate of change of wall temperature, ^oR/sec.
hi/hu		Ratio of heating coefficients of interfered flow with undisturbed flow
h	H	Heat transfer coefficient at model wall for given thermocouple location, BTU/ft^2-sec-^oR
h_s, h_{ref}	HREF HS SPHERE	Stagnation point heat transfer coefficient for reference sphere, BTU/ft^2-sec-^oR
H_{aw}	HAW	Adiabatic wall enthalpy
H_t	HT	Freestream total enthalpy, BTU/LBM
H_{wi}	HW	Enthalpy based on model wall temperature for a given thermocouple location at initial time.
h/h_s, h/h_{ref}	H/HREF	Ratio of model heat transfer coefficient to heat transfer coefficient of reference sphere (usually followed by appropriate recovery factor, R = 1.0, R = 0.9 or R = 0.85
M, M_∞ Mach No.	MACH	Freestream Mach number
m		Generalized straight line slope
P_o	PINF	Freestream static pressure, psia
P_T, P_t	PT	Freestream total pressure, psia

NOMENCLATURE (Continued)

SYMBOL	MENMONIC	DESCRIPTION
q	Q	Freestream dynamic pressure, psi
$\dot{q}_i$	QDOT	Heat transfer rate at model wall for given T/C location at initial time; BTU/ft^2-sec
$\dot{q}_s$	QREF, QS	Heat transfer rate at stagnation point of reference sphere at initial time, BTU/ft^2-sec
R_e,Re/ft	RN/L RN/FT	Freestream Reynolds number per foot x 10^{-6}
R	R	Recovery factor
R_s	R	Reference sphere radius, ft.
	R/L	Radial distance of thermocouple/reference length at $\gamma = \pm 45^o$.
	RUN NUMBER	Tunnel run number
S_t	STN NO	Stanton Number
T/C, T/C No.	T/C NO	Thermocouple Number
	TINF	Freestream temperature, ^oR
	TPS	Thermal Protection System
T_t, T_T	TT	Tunnel freestream total temperature, ^oR
T_{w_i}	TW	Model wall temperature for given thermocouple location at initial time, ^oR
t		Time, sec
T_{aw}		Adiabatic wall temperature, ^oR
V_∞, U	VINF	Freestream velocity, ft/sec
w, W		Density of model skin material, lbm/ft^3
X/L_{SRB}	X/L	Longitudinal distance from SRB nose (full scale)/reference length
L_{SRB}	L	Reference length of ET = 1845.8 inches
X	X	Distance of forward ET - orbiter attach strut from plate leading edge, inches
X_T		Distance from SRB nose (full scale)

NOMENCLATURE (Concluded)

SYMBOL	MNEMONIC	DESCRIPTION
α	ALPHA	Model angle of attack, degrees
β	BETA	Model sideslip angle, degrees
γ	GAMMA	Angular measurement from longitudinal axis to ray, ± 45 degrees (see Figure 1c)
μ	MU	Freestream viscosity, lb-sec/ft^2
ρ	RHO	Freestream density, slugs/ft^3
ϕ	PHI	Model roll angle

Subscripts

aw	adiabatic wall
i	initial time
PG	perfect gas
S	reference sphere
t	total condition
w	wall
∞	freestream
1	condition upstream of shock
2	condition downstream of shock

CONFIGURATIONS INVESTIGATED

The wind tunnel model used for Test IH51A was designated model 58-OT. The stainless steel carrier was mounted on the Ames sting assembly A13684-D15 and is 2.16 inches thick, 27 inches wide and 72 inches long with a wedge leading edge. A boundary layer transition trip was applied across the plate 4 inches from the leading edge. The basic carrier had two separate instrumentation inserts.

The vehicle 102 lines orbiter forebody was made of solid aluminum casting, with a steel inserted nose section and mounted over the carrier plate. The sting mounting block was attached to the plate and was positioned in two longitudinal locations to place the forward orbiter - ET attach strut at either 24 or 42 inches from the plate leading edge as shown in Figure 1a and in Table II.

The No. IX Flat Plate Insert was run only in the most forward position in the carrier and contained one centerline row of 15 thermocouples mounted on thin skin areas as shown in Figures 1a and 1b.

The No. XI insert has attached (0.040-scale) instrumented ET hardware, representing five major protuberances including; the forward orbiter - ET attach strut, the LO_2 antigeyser line, the LO_2 pressure line, LO_2 feed line, LH_2 pressure line and the instrumentation cable tray with fairings and attach brackets. This insert has the capability to slide and to remain under the forebody for both basic longitudinal locations of the orbiter and contained 250 thermocouples on thin skin areas in the proximity of the protuberances as shown in Figures 1a, 1c and 1e.

The nominal skin thickness was 0.03 inches at the instrumented areas.

A boundary layer transition trip was applied around the orbiter nose at X/L = 0.017 on specific runs as shown in Table II. Transition trips consisted of 0.020-inch stainless steel balls spot welded to a 0.25-inch wide by 0.005-inch thick strip of stainless steel with a spacing of 0.080 inches between centers.

A more complete description of the model, including model drawings, can be found in Reference 1.

Photographs of the model in the tunnel are given in Figure 2.

INSTRUMENTATION

The thin skin model 58-OT is instrumented with 325 thirty-gage thermocouples (T/Cs) on the flat plate inserts and protuberances. Eleven (11) medtherm heat flux transducers mounted in the forward orbiter - ET attach (bipod) strut are shown in Figure 1d. However, no medtherm data will be displayed in this report. All thermocouples were spot welded to the model and inserts inner surface at the locations given in Figures 1b thru 1e.

325 thermocouples, of which 15 were located on the flat plate Insert IX, 250 T/Cs located on the flat plate Insert XI and 60 T/Cs around the ET protuberances as described below, were connected to 23 plugs with approximately 15 thermocouples per plug as shown in Table VII. These plugs were stowed inside and aft of the tunnel. A T/C junction box was installed on the T/C terminal board. Thus, all T/C changes were made by plug changes inside the tunnel at the terminal board between runs.

Constant sets 100, 110, 200, 210, 300, 310, 400, 500 and 600 were plugged to the T/C juntion box as per Table VI. These nine (9) constant sets were divided into two groups. Constant sets 100, 110 and 500 T/Cs are chromel-alumel and the remaining six (6) constant sets are chromel-constantan.

The 58-OT model employed during this test program was instrumented as follows:

External Tank Protuberances

Sixty (60) thirty-gage thermocouples were installed around the ET protuberances with a combination of chromel-constantan and chromel-alumel thermocouples as shown in Figure 1e and in Table V.

Flat Plate Insert IX

Insert No. IX acts as a sliding block plate placed in the rear for testing the 24" location and in the forward position for 42" location. However, for this test Insert IX was installed in the forward position for all runs in configuration "B" as shown in Figure 1a. This insert is 24" wide by 18" long and contains 15 thirty-gage chromel-constantan thermocouples on a centerline row as shown in Figure 1b. Thermocouple locations are shown in Table III.

Flat Plate Insert XI

Insert No. XI consisted of an instrumented insert simulating the External Tank (ET) protuberances with a 0.04-scale 50% orbiter forebody model 58-OT suspended over the insert. The entire assembly (insert plus orbiter) slid such that the orbiter/ET forward attach bracket was at 24" and 42". Insert XI is 24" wide by 24" long and instrumented with 250 thermocouples of which 190 T/C s were installed on the insert and the remaining 60 T/C s on the ET protuberances. These 190 thirty-gage chromel-constantan T/C s locations are presented in Figure 1c and Table IV.

Thermocouple numbers, skin thickness and plug numbers are listed in Table VII.

TEST FACILITY DESCRIPTION

The NASA/Ames 3.5-Foot Hypersonic Wind Tunnel is a closed-circuit, blowdown-type tunnel capable of operating at nominal Mach numbers of 5, 7, and 10 at pressures to 1800 psia and temperatures to 3400°R for run times to four minutes. The major components of the facility include a gas storage system where the test gas is stored at 3000 psi, a storage heater filled with aluminum-oxide pebbles capable of heating the test gas to 3400°R, axisymmetric contoured nozzles with exit diameters of 42 inches for generating the desired Mach number, and a 900,000 ft^3 vacuum storage system which operates to pressures of 0.3 psia. The test section itself is an open-jet type enclosed with a chamber approximately 12-feet in diameter and 40-feet in length, arranged transversally to the flow direction.

A model support system is provided that can pitch models through an angle-of-attack range of -20 to +20 degrees, in a vertical plane, about a fixed point of rotation on the tunnel centerline. This rotation point is adjustable from 1 to 5 feet from the nozzle exit plane. The model normally is out of the test stream (strut centerline 37-inches from tunnel centerline) until the tunnel test conditions are established after which it is inserted. Insertion time is adjustable to as little as 1/2 second and models may be inserted at any strut angle.

A high-speed, analog-to-digital data acquisition system is used to record test data on magnetic tape. The present system is equipped to measure and record the output from 80 transducers in addition to 20 channels of tunnel parameters.

TEST PROCEDURES

Installation

The SS-N00152H flat plate basic insert carrier was installed on the NASA/ARC A13684-D15 sting assembly which was attached to the 3.5-foot hypersonic wind tunnel sting support injection system. When injected, the sting positioned the axial centerline of the carrier on tunnel centerline at zero degrees pitch, yaw, and roll.

Thermocouple leads were routed internally in the carrier to the aft end and routed through the sting to a 150° reference junction terminal box at one end of the test chamber. The wire harness consisted of 325 30-gage chromel-constantan and chromel-alumel thermocouple cables, each 50 feet long. At the end of the wire harness were 23 Cannon DCC-37F connectors with 15 thermocouple cables per connector.

Figure 1a depicts the installation of Model 58-OT in the NASA-ARC 3.5-foot HWT. The facility designated test No. 3.5-228-1 to the IH51A test program.

Nominal tunnel operating conditions required to complete test IH51A run schedule are presented in Table I. The actual test run schedule is presented in Table II.

With 75 thermocouples recorded on each run, the model thermocouple connector plugs listed in Table VI had to be arranged into groups of five for hookup to the permanent wire harness at the rear of the tunnel. Not all connector plugs contained the maximum of 15 thermocouples, as shown in Table VII, therefore, for some model configurations, less than 75 thermocouples were recorded. Each group of five connector plugs to be recorded was labeled

a constant set and given a specific number. The correlation between constant set number and connector plug is given in Table VI.

The Space Shuttle ascent flight conditions were simulated by a hypersonic flow environment at Mach 5.3 and a simulated Reynolds number of 5.0×10^{-6} per foot using a total temperature of $1300^{\circ}R$. For this test, the tunnel test conditions were established within 10% of the specified Reynolds numbers.

Prior to commencing the test, the model was set for the correct model configuration followed by checkout of the thermocouple instrumentation. The thermocouple connector plug patching usually required a thermocouple continuity check where heat was applied at the thermocouple location to monitor response on the correct data acquisition channel. Any thermocouple repair was scheduled after the daytime running shift.

Pre-run activity consisted of final adjustment of the Schlieren mirror before closing the tunnel doors and print-out of the thermocouple voltage levels to have the data acquisition system ready.

After the model configuration was set, the runs depended on the tunnel reservoir reaching the desired pressure and temperature level. Once the test preparations were completed, the tunnel was started and the tunnel quick-insert support mechanism injected the model into the air stream when steady-state test conditions were established. The model was retracted at the completion of the data acquisition. The model injection time, time on centerline, and retraction time were each set at about one second to give a total test duration of about three seconds.

The model wall temperature along with the tunnel conditions were recorded on magnetic tape and the model injection sequence was monitored on oscillograph during the run.

One hour minimum was required between runs, usually to replenish the pressure reservoir, cool the model to isothermo ambient temperature conditions; the interim run was usually longer due to model configuration changes. Without problems, the approximate run rate was 5 runs per day.

Thermocouple data from the model were recorded on magnetic tape by a Beckman high-speed analog-to-digital data acquisition system. A maximum of 75 thermocouples can be recorded at one time at a rate of 0.07 second per data point from the start of insertion until the end of retraction.

DATA REDUCTION*

Test Conditions

Test Conditions are tabulated in Table I.

Tunnel stagnation pressure and stagnation temperature measurements were converted to engineering units of lb/in^2 and ^oR using the latest pressure transducer calibration and the appropriate millivolt-temperature thermocouple curve. The remaining test conditions were derived from these measurements. In particular, the tunnel freestream unit Reynolds number was calculated by Equation 1.

$$Re_\infty = \frac{\rho_\infty V_\infty}{\mu_\infty} \quad 1/ft \tag{1}$$

where ρ_∞ = freestream density

V_∞ = freestream velocity

μ_∞ = freestream viscosity calculated by Equation 2, which is Keyes equation for viscosity (Reference 2)

$$\mu_\infty = \frac{0.0232X10^{-6}X\ T_\infty^{1/2}}{1 + \frac{220}{T_\infty}\ X\ 10^{-9}/T_\infty} \quad \frac{lb\text{-}sec}{ft^2} \tag{2}$$

where T_∞ = freestream static temperature

Tunnel freestream conditions used in Equations (1) and (2) and tabulated in the final data were corrected for calorically imperfect, thermally perfect air. The corrections to the perfect gas relations were taken from NACA Report 1135 (Reference 3).

---

*The data reduction equations in this section were supplied by W. K. Lockman of ARC.

Heat Transfer Data

Heat transfer data were reduced using techniques outlined in Reference 6. Ten frames of data, or 0.70 seconds, were reduced beginning at the time when the model reached tunnel centerline.

Thermocouple data were reduced using the one-dimensional, thin-wall equation:

$$\dot{q} = WCb \frac{dT_w}{dt} = h\ (H_{aw} - H_w) \equiv hT_t \left(\frac{H_{aw}}{H_t} - \frac{H_w}{H_t}\right) \tag{3}$$

which neglects heat-conduction losses.

Assuming that W and h are constant and

$$C = C_o + C_1\ T_w + \ C_2\ T_w^2 \text{ for all } T_w \text{ ranges,} \tag{4}$$

the integration of equation (3) for $t = t_i$ to t and $T_w = T_{w_i}$ to T_w yields the linear equation:

$$f(T_w) = -\ \ell n \left(\frac{T'_{aw} - T_w}{T'_{aw} - T_{w_i}}\right) - \left[\frac{C_1}{C'_{aw}} + \frac{C_2}{C'_{aw}} \left(T'_{aw} + \frac{T_w + T_{w_i}}{2}\right)\right] (T_w - T_{w_i})$$

$$= \frac{hc_p}{WC'_{aw}b}\ (t - t_i) \tag{5}$$

where it is defined that:

$$T'_{aw} \equiv \frac{H_{aw}}{c_p} \equiv \frac{H_{aw}}{H_t} \frac{H_t}{c_p} \geq (T_{aw})_{PG} \tag{6}$$

$$C'_{aw} \equiv C_o + C_1 T'_{aw} + C_2 T'^2_{aw} \tag{7}$$

$\neq$ specific heat at adiabatic wall temperature.

The form of equation (5) is $f(T_w) = mt + b$ where m is the slope and b is the intercept for a straight line if heat-conduction errors are negligible. Thus, deviations from a straight line will indicate heat-conduction effects.

The slope, m, of $f(T_w)$ vs t from equation (5) was computed by a least-squares, straight-line fit over a finite time interval (0.70) beginning when the model reached uniform tunnel flow (tunnel centerline). The value of the heat-transfer coefficient, h, was then determined from:

$$h = \frac{WC'_{aw}b}{c_p} m' \tag{8}$$

Using this value of h, the heat-transfer rate was evaluated at the initial time, t_i, when the model was isothermal at the initial wall enthalpy, H_{wi}.

$$\dot{q} = \dot{q}_i = h\ (H_{aw} - H_{wi}) \equiv hH_t\ (\frac{H_{aw}}{H_t} - \frac{H_{wi}}{H_t}) \tag{9}$$

where H_{aw}/H_t is the same value used to evaluate h. The resultant value of $\dot{q}$ is independent of the value of H_{aw}/H_t used for both the h and $\dot{q}$ evaluations.

The reference sphere heating was also evaluated at the initial wall enthalpy by the method of Fay and Riddell (Reference 4).

$$\dot{q}_s = h_s\ (H_t - H_{wi}) \equiv h_s\ H_t\ (1.0 - \frac{H_{wi}}{H_t}) \tag{10}$$

The model-to-sphere ratio of heat-transfer coefficients was then determined from equations (9) and (10) as

$$\frac{h}{h_s} = \frac{\dot{q}_i}{\dot{q}_s} \left[\frac{1.0 - H_{w_i}/H_t}{H_{aw}/H_t - H_{w_i}/H_t} \right] \tag{11}$$

where $\dot{q}_i$ was constant for all values of H_{aw}/H_t.

To determine h/h_s for various values of H_{aw}/H_t, the particular value of H_{aw}/H_t was substituted into equation (11). h/h_s was evaluated for three different values of H_{aw}/H_t: 0.850, 0.900, and 1.00.

The Stanton number was determined by:

$$St \equiv \frac{h}{\rho u} = \frac{\dot{q}_i}{\rho u(H_{aw} - H_{w_i})} \tag{12}$$

where for free-stream conditions, $\rho u = \rho_\infty V_\infty$.

The Stanton number was evaluated at two different values of H_{aw}/H_t: 0.850 and 0.900.

The derivations of the model heating and reference sphere heating included the corrections of NACA Report 1135 (Reference 3) for calorically imperfect, thermally perfect air.

Material Properties

The instrumented areas of the model were constructed of 17-4 PH stainless steel. The material thermal properties necessary for thin wall thermocouple data reductions were:

Material density: $W = 490\ lb/ft^3$

Material specific heat: $C = 0.0797 + 5.556X10^{-5}\ Tw_i, \frac{Btu}{lbm-^oR}$

Model material skin thicknesses at the specific thermocouple locations can be found in Table VII.

RESULTS AND DISCUSSION

Test IH51A results consisted of reduced thin skin thermocouple data in tabulated form. The end result was heat transfer coefficient ratios, H/HS, for various values of adiabatic recovery factor, H_{aw}/H_t. The adiabatic recovery factors used for this test were 0.85, 0.90, and 1.00.

Two types of tabulated reduced data were received at the test site. The first type received, usually two or three days after the run, was a detailed data listing containing tunnel parameters as a function of time, heat transfer parameters, and least-squares curve-fit plots to assess linearity of the thermocouple data. The second type received, either weekly or at some other convenient point in the test program, was summary data containing only tunnel header data and heat transfer parameters. In addition to heat transfer coefficient ratios, the heat transfer parameter data for each thermocouple consisted of heating rate ratio, Q/QS, enthalpy ratio, HW/HT, model wall temperature, TW, heating rate, Q, reference sphere heating rate, QS, and Stanton number, STN NO.

The least-squares, straight-line curve fit of the thermocouple data was a good indicator of the quality of the data. As stated in the data reduction section, deviations from a straight line implied that heat conduction was affecting the thermocouple measurement. Scatter in the data due to a noisy or bad amplifier or due to a thermocouple problem was also very evident from the least-squares plot. Generally, the thermocouples exhibited good or acceptable linearity. Heat conduction effects and data scatter were significant in only a few instances. Likewise, thermocouple problems were kept at a minimum by daily repair, although there were a few thermocouples that were

difficult to repair and were neglected.

Tabulated results of the reduced thin skin thermocouple data are presented in the Appendix of Volume 4.

REFERENCES

1. SD77-SH-0156, "Pretest Information for 0.04-Scale SSV Interference Heating Tests on a Thin-Skin Thermocouple Model (58-OT) Utilizing a Simulated External Tank & Orbiter Forebody in the NASA/ARC 3.5-Foot Hypersonic Wind Tunnel Test IH-51A."

2. Mitchell H. Bertram, Comment on "Viscosity of Air," Journal of Spacecraft and Rockets," Vol. 4, No.2, February 1967, pp 287-288.

3. Ames Research Staff, "Equations, Tables, and Charts for Compressible Flow," NACA Report 1135, 1953.

4. Fay, J.A. and Riddell, F.A.: Theory of Stagnation Point Heat Transfer in Dissociated Air. J. Aeron Sci., Vol. 25, No. 2, February 1958, pp 73-85, 121

5. IL No. SA5-AA&T-77-177, "Approach to Analysis of IH51A Heating Data," November 1977.

6. W. K. Lockman, "NASA-Ames 3.5 Ft. HWT Heat Transfer Data Reduction for Thin-Wall Models," NASA-Ames Research Center, No Date.

TABLE I

TEST : IH-51 A

DATE : 7-7-77

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	P_T (pounds/sq. inch)	T_T °R
5.3	5.0	405	1300
5.3	1.0	110	1300

BALANCE UTILIZED: NONE

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF			
SF			
AF			
PM			
RM			
YM			

COMMENTS:

TABLE II

TEST: IH-51A

DATA SET RUN NUMBER COLLATION SUMMARY

DATE: 7-7-77

#	DATA SET R2Φ-	CONFIGURATION	NO. XI PLATE AND ORB. LOCATION	α	β	Re x 10^-6	MACH NO.	HEAT FLUX (TWO)	T/C CONSTANT SETS 100	110	200	210	300	310	400	500	600
1B	001	ORB. ET & ALL	42"	0°	0°	5.0	5.3	1,2,3 & 4	5		7		8		9	6	
1A	002	PROTUBERANCES	24"					10	12		14			15	16	13	
1A	003	SAME WITHOUT B.L. TRIPS ON PLATE & ORB.	24"			1.0		17	18		20			21	22	19	
2A	004	ET & PROTUBERANCES	24"			5.0			26		25			24	23	27	
2B	005	(EXCEPT BIPOD STRUT)	42"						29		30		31		32	28	
3B	006	ET & ATTACH STRUT	42"					33		38		36	35		34	37	
3A	007	(BIPOD)	24"					39		40		42		43	44	41	
4A	008	ORB. & CLEAN ET.	24"							51		52 53		54	55 56	50	
4B	009		42"							60		59	58		57	61	
5B	010	CLEAN ET. WITH TRIPS	42"							63		64	65		66	62	
5B	012	" " WITHOUT B.L. TRIPS	42"			1.0											67
5A	011	" " (WITH TRIP)	24"			5.0				48		47		46	45	49	

B.L. TRIPS ON PLATE & ORB. EXCEPT WHERE NOTED

ORB. LOCATION - DISTANCE FROM PLATE L.E TO ORB. FORWARD SUPPORT STRUT (BIPOD)

E.T. ~ IS REPRESENTED BY FLAT PLATE

RUNS 50 - 56, NO TRANSITION TRIP ON ORB.

* NOTE: REFERENCE FIGURE 1a

TABLE III

INSERT IX THERMOCOUPLE LOCATIONS

T/C NO.	X_T F.S (IN.)	X/L	ϕ
61	404.90	.045	0
62	454.90	.072	
63	504.90	.099	
64	529.90	.112	
65	554.90	.126	
66	579.90	.139	
67	604.90	.153	
68	629.90	.166	
69	654.90	.180	
70	679.90	.193	
71	704.90	.207	
72	729.90	.220	
73	754.70	.234	
74	779.90	.247	
75	804.90	.261	

TABLE IV

INSERT XI THERMOCOUPLE LOCATIONS

T/C NO.	X_T F.S (IN.)	X/L	ϕ	R F.S (IN.)	R/L	Y
100	854.90	.288	0			
101	904.90	.315				
102	954.90	.342				
103	1004.90	.369				
104	1054.90	.396				
105	1084.90	.412		63.64	.034	±45°
106	1104.90	.423				
107	1154.90	.450				
108	1179.90	.464				
109	1204.90	.477				
110	1229.90	.491	8.0			
111	1254.90	.504	0			
112	1304.90	.531				
113	1354.90	.558				
114	1404.90	.585				
115	1057.40	.397	9.46	102.53	.055	+45°
116	1074.90	.407	3.27	77.43	.042	+45°
117	1059.90	.399	350.88	100.06	.054	−45°
118	1074.90	.407	356.56	77.78	.042	
119	1101.40	.421	5.51	40.66	.022	
120	1109.90	.426	8.60	28.28	.015	
121	1118.90	.431	11.61	15.74	.009	−45°
122	1129.90	.437	9.98			
123	1129.90		5.51			
124	1101.40	.421	354.49	40.66	.022	+45°
125	1109.90	.426	351.22	27.93	.015	
126	1118.65	.431	348.39	15.91	.009	+45°
127	1129.90	.437	350.02			
128	1129.90		354.24			
129	1077.40	.408	344.51			
130	1089.90	.415				
131	1102.40	.422				
132	1112.40	.427				
133	1117.40	.430				
134	1122.40	.433				
135	1144.90	.445				

INSERT XI THERMOCOUPLE LOCATIONS

TC NO.	F.S. X_T (IN.)	X/L	ϕ	F.S. R (IN.)	R/L	γ
136	1169.90	.458	344.51			
137	1194.90	.472				
138	1244.90	.499				
139	1294.90	.526				
140	1344.90	.553				
141	1394.90	.580				
142	1009.90	.372	329.29			
143	1022.40	.378				
144	1034.90	.385				
145	1044.90	.391				
146	1049.90	.393				
147	1054.90	.396				
148	1016.15	.375	344.51	62.23	.034	+45°
149	1024.90	.380	341.50	49.85	.027	
150	1033.65	.385	338.99	37.48	.020	
151	1042.40	.389	335.40	24.92	.014	
152	1049.90	.393	332.99	14.68	.008	
153	1053.15	.395	331.78	9.91	.005	
154	1056.65	.397	330.58	4.97	.003	+45°
155	1059.90	.399	342.28			
156	1059.90	.399	337.89			
157			334.45			
158			332.73			
159	1072.40	.406				
160	1066.15	.402	332.21			
161	1059.90	.399	331.01			
162			327.57			
163			324.99			
164			322.58			
165			319.65			
166	1072.40	.406	325.85			
167	1082.40	.411	332.04			
168	1092.40	.416	331.44	53.39	.029	−45°
169	1101.15	.421	334.45	41.01	.022	
170	1109.90	.426	337.46	31.62	.017	
171	1118.90	.431	340.47	16.09	.009	−45°

TABLE IV (Continued)

INSERT XI THERMOCOUPLE LOCATIONS

TC NO.	F.S. XT (IN.)	X/L	φ
172	1129.90	.437	338.75
173			334.45
174			330.15
175			325.85
176			321.54
177	1197.15	.473	332.90
178			331.01
179			327.14
180			325.42
181	1205.90	.478	332.90
182			325.42
183	1214.65	.482	332.90
184			331.18
185			327.05
186			325.42
187	1229.90	.491	339.09
188			334.79
189			331.35
190			327.05
191			323.61
192			319.31
193	1379.90	.571	339.09
194			334.79
195			331.35
196			327.57
197			324.13
198			319.82
199	1391.15	.578	29.51
200			20.04
201			16.60
202	1064.90	.401	15.49
203	1077.40	.408	
204	1089.90	.415	
205	1101.90	.421	
206	1112.40	.427	
207	1117.40	.430	
208	1122.40	.433	
209	1144.90	.445	
210	1169.90	.458	

INSERT XI THERMOCOUPLE LOCATIONS

TC NO.	X_T F.S (IN.)	X/L	Φ	R F.S. (IN.)	R/L	Y
211	1194.90	.472	15.49			
212	1244.90	.499				
213	1294.90	.526				
214	1344.90	.553				
215	1391.15	.578	12.30			
216			8.00			
217	982.40	.357	5.16			
218			9.46			
219			13.76			
220			17.21			
221			18.93			
222			20.65			
223	921.90	.324	6.37	80.6	.044	−45°
224	947.90	.338	12.39	50.3	.027	
225	956.15	.343	15.49	37.48	.020	
226	964.90	.347	18.58	24.92	.014	
227	972.40	.351	20.91	14.87	.008	
228	975.40	.353	22.11	10.26	.006	
229	978.90	.355	23.40	5.13	.003	−45°
230	907.40	.316	24.69			
231	932.40	.330				
232	944.90	.337				
233	957.40	.343				
234	967.40	.349				
235	972.40	.351				
236	977.40	.354				
237	921.90	.324	42.84	80.27	.043	+45°
238	942.40	.335	36.73	53.15	.029	
239	956.15	.343	33.64	36.95	.020	
240	964.90	.347	30.63	24.57	.013	
241	973.65	.352	27.62	12.20	.007	+45°
242	988.65	.360	19.10			
243	1007.40	.370	18.07			
244	1025.65	.380				
245	988.65	.360	29.77			

TABLE IV (Continued)

INSERT XI THERMOCOUPLE LOCATIONS

TC NO	X_T F.S. (IN.)	X/L	Ø	R F.S. (IN.)	R/L	r
246	1007.40	.370	30.11			
247	1025.40	.380	|			
248	1039.15	.388	|			
249	966.40	.348	34.58			
250	976.15	.353	|			
251	981.15	.356	|			
252	964.90	.347	41.98	29.74	.016	+45°
253	972.40	.351	39.57	21.87	.012	
254	979.90	.355	36.99	8.93	.005	
255	982.90	.357	35.86	4.74	.003	+45°
256	992.40	.362	38.71			
257	1009.90	.372	39.57			
258	1036.15	.386	|			
259	1047.40	.392	38.54			
260	1052.40	.395	|			
261	1057.40	.397	|			
262	1062.40	.400	|			
263	1067.40	.403	28.82			
264	1072.40	.406	|			
265	1082.40	.411	28.82			
266	1067.40	.403	30.11			
267	1072.40	.406	|			
268	1091.90	.416	|			
269	1067.40	.403	32.86			
270	1072.40	.406	|			
271	|	|	34.58			
272	1067.40	.403	36.13			
273	1072.90	.406	|			
274	|	|	41.64			
275	1118.65	.431	19.36	15.91	.009	+45°
276	1109.90	.426	22.37	28.28	.015	
277	1101.65	.421	25.38	40.31	.022	
278	1092.40	.416	28.39	53.03	.029	+45°
279	1137.40	.441	28.82			
280	1142.40	.443				
281	1151.90	.448				

TABLE IV (Continued)

INSERT XI THERMOCOUPLE LOCATIONS

T/C NO.	X_F F.S. (IN.)	X/L	ϕ	R F.S. (IN.)	R/L	Y
282	1137.40	.441	30.11			
283	1142.40	.443				
284	1161.15	.453				
285	1137.40	.441	32.95			
286	1142.40	.443				
287	1161.15	.453				
288	1137.40	.441	35.96			
289	1142.40	.443				
290	1120.40	.431	21.68			
291			24.78			
292			27.53			
293	1124.90	.434	19.18			
294	1129.90	.437				
295	1134.90	.439				
296	1139.90	.442		-14.68	.008	-45°
297	1124.90	.434	20.91			
298	1129.90	.437				
299	1134.90	.439				
300	1139.90	.442				
301	1129.90	.434	22.63			
302	1129.90	.437				
303	1134.90	.439				
304	1139.90	.442				
305	1229.90	.491	18.24			
306			19.96			
307			21.68			
308			24.69			
309			27.53			
310			29.25			
311			41.29			
312			45.60			
313	1320.40	.540	28.82			
314			30.11			
315			32.86			
316			35.96			
317			38.54			
318			40.95			
319	1325.40	.542				

TABLE IV (Concluded)

INSERT XI THERMOCOUPLE LOCATIONS

T/C NO.	XT E.S (IN.)	X/L	Ø
320	1325.40	.542	28.82
321			30.11
322			32.86
323			34.58
324			35.96
325			38.54
326	1334.40	.547	28.82
327	1343.65	.552	30.11
328			32.86
329	1394.90	.580	34.58
330			35.96
331			38.54
332	1390.90	.578	41.47
333	1394.90	.580	
334	1390.90	.578	45.60
335	1372.40	.568	19.27
336	1377.40	.570	
337	1382.40	.573	
338	1387.40	.576	
339	1372.40	.568	20.91
340	1377.40	.570	
341	1382.40	.573	
342	1387.40	.576	
343	1372.40	.568	22.63
344	1377.40	.570	
345	1382.40	.573	
346	1387.40	.576	
347	1367.90	.565	21.68
348			24.69
349			27.53

ET PROTUBERANCE THERMOCOUPLE LOCATION

T/C NO.	X_T(F.S) IN.	X/L	ϕ
1	986.43	.359	24.90
2	990.13	.361	
3	997.75	.364	
4	1007.00	.370	
5	1016.75	.375	
6	1027.00	.381	
7	989.50	.360	21.64
8	994.25	.363	21.12
9	1003.63	.368	20.77
10	1013.63	.373	20.86
11	1023.63	.379	20.95
12	989.50	.360	28.22
13	994.25	.363	28.73
14	1003.63	.368	29.08
15	1013.63	.373	28.91
16	1023.63	.379	28.82
17	1120.53	.431	27.84
18			24.90
19			21.96
20			24.90
21	1127.90	.435	27.84
22	1229.90	.490	
23			24.90
24			21.96
25			24.90
26	1368.15	.565	27.84
27			24.90
28			21.96
29			24.90
30	1375.00	.569	27.84
31	990.25	.361	34.91
32	994.25	.363	
33	1003.00	.368	
34	1013.33	.373	
35	1023.25	.379	
36	1033.38	.384	

TABLE V (Concluded)

ET PROTUBERANCE THERMOCOUPLE LOCATIONS

TC NO.	E.S. X_T (in.)	X/L	Ø
37	994.5	.363	33.75
38	1000.5	.368	33.58
39	1010.5	.372	33.15
40	1020.5	.377	|
41	1030.5	.383	|
42	994.5	.363	36.35
43	1000.5	.366	36.61
44	1010.5	.372	37.04
45	1020.5	.377	|
46	1072.9	.406	34.91
47	|	|	|
48	1326.15	.542	|
49	|	|	|
50	1395.40	.580	|
51	|	|	|
52	1074.00	.406	38.80
53	1321.15	.540	|
54	|	|	|
55	1326.15	.542	|
56	|	|	|
57	1395.40	.580	|
58	|	|	|
59	1070.23	.404	329.09
60	1066.35	.402	|

TABLE VI

CONSTANT SETS AND PLUG NO.

CONSTANT SET	PLUG NO.
100	2, 3, 4, 18, 24
110	18, 24
200	1, 7, 8, 9, 10
210	7, 8, 9, 10
300	6, 11, 12, 13, 14
310	11, 12, 13, 14
400	15, 16, 17
500	19, 20, 21, 22, 23
600	6, 7, 9, 14, 16

TABLE VI (Continued)

CONSTANT SET 100

CHROMEL – ALUMEL

2	3	4	18	24
T/C	T/C	T/C	T/C	T/C
	31	46	260	254
17	32	47	261	255
18	33	48	262	257
19	34	49	263	258
20	35	50	264	259
21	36	51	265	
22	37	52	266	
23	38	53	267	
24	39	54	268	
25	40	55	269	
26	41	56	270	
27	42	57	271	
28	43	58	272	
29	44		273	
30	45		274	

CONSTANT SET 110

CHROMEL - ALUMEL

18	24
T/C	T/C
260	254
261	255
262	257
263	258
264	259
265	
266	
267	
268	
269	
270	
271	
272	
273	
274	

TABLE VI (Continued)

CONSTANT SET 200

CHROMEL - CONSTANTAN

1	7	8	9	10
T/C	T/C	T/C	T/C	T/C
1	100	115	129	142
2	101	116	130	143
3	102	117	131	144
4	103	118	132	145
5	104	119	133	146
6	105	120	134	147
7	106	121	135	148
8	107	122	136	149
9	108	123	137	150
10	109	124	138	151
11	110	125	139	152
12	111	126	140	153
13	112	127	141	154
14	113	128	-59	155
15	114	-46	-60	156

CONSTANT SET 210

CHROMEL - CONSTANTAN

7	8	9	10
T/C	T/C	T/C	T/C
100	115	129	142
101	116	130	143
102	117	131	144
103	118	132	145
104	119	133	146
105	120	134	147
106	121	135	148
107	122	136	149
108	123	137	150
109	124	138	151
110	125	139	152
111	126	140	153
112	127	141	154
113	128	-59	155
114	-46	-60	156

TABLE VI (Continued)

CONSTANT SET 300

CHROMEL - CONSTANTAN

6	11	12	13	14
T/C	T/C	T/C	T/C	T/C
61	157	172	187	202
62	158	173	188	203
63	159	174	189	204
64	160	175	190	205
65	161	176	191	206
66	162	177	192	207
67	163	178	193	208
68	164	179	194	209
69	165	180	195	210
70	166	181	196	211
71	167	182	197	212
72	168	183	198	213
73	169	184	199	214
74	170	185	200	215
75	171	186	201	216

CONSTANT SET 310

CHROMEL - CONSTANTAN

11	12	13	14
T/C	T/C	T/C	T/C
157	172	187	202
158	173	188	203
159	174	189	204
160	175	190	205
161	176	191	206
162	177	192	207
163	178	193	208
164	179	194	209
165	180	195	210
166	181	196	211
167	182	197	212
168	183	198	213
169	184	199	214
170	185	200	215
171	186	201	216

TABLE VI (Continued)

CONSTANT SET 400

CHROMEL - CONSTANTAN

15	16	17
T/C	T/C	T/C
217	230	245
218	231	246
219	232	247
220	233	248
221	234	249
222	235	250
223	236	251
224	237	252
225	238	253
226	239	256
227	240	
228	241	
229	242	
---	243	
---	244	

CONSTANT SET 500

CHROMEL - ALUMEL

19	20	21	22	23
T/C	T/C	T/C	T/C	T/C
275	290	305	320	335
276	291	306	321	336
277	292	307	322	337
278	293	308	323	338
279	294	309	324	339
280	295	310	325	340
281	296	311	326	341
282	297	312	327	342
283	298	313	328	343
284	299	314	329	344
285	300	315	330	345
286	301	316	331	346
287	302	317	332	347
288	303	318	333	348
289	304	319	334	349

TABLE VI (Concluded)

CONSTANT SET 600

CHROMEL - CONSTANTAN

6	7	9	14	16
T/C	T/C	T/C	T/C	T/C
61	100	129	202	230
62	101	130	203	231
63	102	131	204	232
64	103	132	205	233
65	104	133	206	234
66	105	134	207	235
67	106	135	208	236
68	107	136	209	237
69	108	137	210	238
70	109	138	211	239
71	110	139	212	240
72	111	140	213	241
73	112	141	214	242
74	113	---	215	243
75	114	---	216	244

TABLE VII

THERMOCOUPLE PLUG HOOKUP SCHEDULE AND SKIN THICKNESS

SHEET NO 1 OF 2 RUN NO. _____

DATE 7-5-77 Chromel-Alumel

CONSTANT SET 100 MODEL MAT'L 17-4 T/C SCHEDULE _____

* REVISED *

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31			BLANK	CHAN 1	*	10.0	28	41	1
32			17	2	.0270		29	42	2
33			18	3	.0270		30	43	3
34			19	4	.0290		31	44	4
35			20	CHAN 5	.0265		32	45	5
36			21	6	.0340		33	46	6
37	PLUG #2		22	7	.0250		34	47	7
38			23	8	.0290		35	48	8
39			24	9	.0290		36	49	9
40			25	CHAN 10	.0300		37	50	10
41			26	11	.0290		38	51	11
42			27	12	.0290		39	52	12
43			28	13	.0270		40	53	13
44			29	14	.0280		41	54	14
45			30	CHAN 15	.0319		42	55	15
46			31	16	.0262		43	56	16
47			32	17	.0300		44	57	17
48			33	18	.0314		45	58	18
49			34	19	.0333		46	59	19
50			35	CHAN 20	.0334		47	60	20
51			36	21	.0325		48	61	21
52	PLUG #3		37	22	.0305		49	62	22
53			38	23	.0295		50	63	23
54			39	24	.0305		51	64	24
55			40	CHAN 25	.0314		52	65	25
56			41	26	.0315		53	66	26
57			42	27	.0316		54	67	27
58			43	28	.0342		55	68	28
59			44	29	.0346		56	69	29
60			45	CHAN 30	.0344		57	70	30
61			46	31	.0273		58	71	31
62			47	32	.0278		59	72	32
63			48	33	.0254		60	73	33
64			49	34	.0283		61	74	34
65	PLUG 4		50	CHAN 35	.0289		62	75	35
66			51	36	.0288		63	76	36
67			52	37	.0281		64	77	37
68			53	38	.0304		65	78	38
69			54	39	.0313		66	79	39
70			55	CHAN 40	.0305		67	80	40

TABLE VII (Continued)

SHEET NO 2 OF 2 RUN NO. _____

DATE _____ Chromel - Alumel

MODEL MAT'L _____ T/C SCHEDULE CS.100

1	2	3	4	5	6	7	8	9	10
	TRANSDUCER					CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
71			56	CHAN 41	.0316	18.0	68	81	41
72			57	42	.0299		69	82	42
73	PLUG #4		58	43	.0298		70	83	43
74			BLANK	44	BLANK		71	84	44
75			BLANK	CHAN 45	BLANK		72	85	45
76			260	46	.0320		73	86	46
77			261	47	.0321		74	87	47
78			262	48	.0321		75	88	48
79			263	49	.0263		76	89	49
80			264	CHAN 50	.0258		77	90	50
81			265	51	.0258		78	16	51
82	PLUG #18		266	52	.0261		79	17	52
83			267	53	.0255		80	18	53
84			268	54	.0251		81	19	54
85			269	CHAN 55	.0265		82	20	55
86			270	56	.0260		83	21	56
87			271	57	.0262		84	22	57
88			272	58	.0328		85	23	58
89			273	59	.0324		86	24	59
90			274	CHAN 60	.0324		87	25	60
91			254	61	.0325		88	26	61
92			255	62	.0327		89	27	62
93	PLUG #24		257	63	.0308		90	28	63
94			258	64	.0328		91	29	64
95			259	CHAN 65	.0321		92	30	65
96	BLANK		BLANK	66	BLANK	BLANK	93	31	66
97				67			94	32	67
98				68			95	33	68
99				69			96	34	69
100				CHAN 70			97	35	70
101				71			98	36	71
102				72			99	37	72
103				73			100	38	73
104				74			101	39	74
105				CHAN 75			102	40	75

TABLE VII (Continued)

SHEET NO ___ OF ___ RUN NO. _____

CONSTRUCT SET 110 DATE 7-8-77 Chromel - Alumel

MODEL MAT'L 17-4 T/C SCHEDULE 110

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31	BLANK		BLANK	CHAN 1	BLANK	BLANK	28	41	1
32				2			29	42	2
33				3			30	43	3
34				4			31	44	4
35				CHAN 5			32	45	5
36				6			33	46	6
37				7			34	47	7
38				8			35	48	8
39				9			36	49	9
40				CHAN 10			37	50	10
41				11			38	51	11
42				12			39	52	12
43				13			40	53	13
44				14			41	54	14
45	BLANK		BLANK	CHAN 15	BLANK	BLANK	42	55	15
46				16			43	56	16
47				17			44	57	17
48				18			45	58	18
49				19			46	59	19
50				CHAN 20			47	60	20
51				21			48	61	21
52				22			49	62	22
53				23			50	63	23
54				24			51	64	24
55				CHAN 25			52	65	25
56				26			53	66	26
57				27			54	67	27
58				28			55	68	28
59				29			56	69	29
60	BLANK		BLANK	CHAN 30	BLANK	BLANK	57	70	30
61				31			58	71	31
62				32			59	72	32
63				33			60	73	33
64				34			61	74	34
65				CHAN 35			62	75	35
66				36			63	76	36
67				37			64	77	37
68				38			65	78	38
69				39			66	79	39
70				CHAN 40			67	80	40

TABLE VII (Continued)

SHEET NO 2 OF 2 RUN NO. _____

DATE _____ Chromel - Alumel

MODEL MAT'L _____ T/C SCHEDULE 110

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SERVICE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
71	BLANK		BLANK	41	BLANK	BLANK	68	81	41
72				42			69	82	42
73				43			70	83	43
74				44			71	84	44
75				CHAN 45			72	85	45
76			260	46	.0320	10.0	73	86	46
77			261	47	.0321		74	87	47
78			262	48	.0321		75	88	48
79			263	49	.0263		76	89	49
80			264	CHAN 50	.0252		77	90	50
81			265	51	.0258		78	16	51
82			266	52	.0261		79	17	52
83			267	53	.0255		80	18	53
84			268	54	.0251		81	19	54
85	PLAQ #18		269	CHAN 55	.0265		82	20	55
86			270	56	.0260		83	21	56
87			271	57	.0262		84	22	57
88			272	58	.0328		85	23	58
89			273	59	.0324		86	24	59
90			274	CHAN 60	.0324		87	25	60
91			254	61	.0325		88	26	61
92			255	62	.0327		89	27	62
93	PLAQ #24		257	63	.0308		90	28	63
94			258	64	.0328		91	29	64
95			259	CHAN 65	.0321		92	30	65
96	BLANK		BLANK	66	BLANK	BLANK	93	31	66
97				67			94	32	67
98				68			95	33	68
99				69			96	34	69
100				CHAN 70			97	35	70
101				71			98	36	71
102				72			99	37	72
103				73			100	38	73
104				74			101	39	74
105				CHAN 75			102	40	75

SHEET NO 1 OF 2 RUN NO. _____

DATE 7-577 C-C

CONSTANT SET 200 MODEL MAT'L 17-4 T/C SCHEDULE _____

* REVISED *

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31			1	CHAN 1	.0185	10.0	28	41	1
32			2	2	.0214		29	42	2
33			3	3	.0200		30	43	3
34			4	4	.0186		31	44	4
35			5	CHAN 5	.0183		32	45	5
36			6	6	.0186		33	46	6
37			7	7	.0275		34	47	7
38	Plug #1		8	8	.0255		35	48	8
39			9	9	.0251		36	49	9
40			10	CHAN 10	.0215		37	50	10
41			11	11	.0256		38	51	11
42			12	12	.0286		39	52	12
43			13	13	.0276		40	53	13
44			14	14	.0280		41	54	14
45			15	CHAN 15	.0289		42	55	15
46			100	16	.0289		43	56	16
47			101	17	.0261		44	57	17
48			102	18	.0248		45	58	18
49			103	19	.0232		46	59	19
50			104	CHAN 20	.0268		47	60	20
51	Plug #7		105	21	.0273		48	61	21
52			106	22	.0245		49	62	22
53			107	23	.0240		50	63	23
54			108	24	.0244		51	64	24
55			109	CHAN 25	.0290		52	65	25
56			110	26	.0271		53	66	26
57			111	27	.0253		54	67	27
58			112	28	.0282		55	68	28
59			113	29	.0271		56	69	29
60			114	CHAN 30	.0308		57	70	30
61	Plug #8		115	31	.0263		58	71	31
62			116	32	.0260		59	72	32
63			117	33	.0270		60	73	33
64			118	34	.0283		61	74	34
65			119	CHAN 35	.0276		62	75	35
66			120	36	.0299		63	76	36
67			121	37	.0317		64	77	37
68			122	38	.0301		65	78	38
69			123	39	.0306		66	79	39
70			124	CHAN 40	.0286		67	80	40

SHEET No. 2 OF 2 — C-C — C.S. 200

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
71			125	CHAN 41	.0270	10.0	68	81	41
72			126	42	.0275		69	82	42
73	Plug #8		127	43	.0306		70	83	43
74			128	44	.0290		71	84	44
75			16	CHAN 45	.0304		72	85	45
76			129	46	.0278		73	86	46
77			130	47	.0287		74	87	47
78			131	48	.0274		75	88	48
79			132	49	.0280		76	89	49
80			133	CHAN 50	.0302		77	90	50
81			134	51	.0320		78	16	51
82	Plug #9		135	52	.0307		79	17	52
83			136	53	.0299		80	18	53
84			137	54	.0293		81	19	54
85			138	CHAN 55	.0288		82	20	55
86			139	56	.0300		83	21	56
87			140	57	.0288		84	22	57
88			141	58	.0306		85	23	58
89			59	59	.0315		86	24	59
90			60	CHAN 60	.0318		87	25	60
91			142	61	.0360		88	26	61
92			143	62	.0358		89	27	62
93			144	63	.0353		90	28	63
94			145	64	.0303		91	29	64
95			146	CHAN 65	.0301		92	30	65
96			147	66	.0308		93	31	66
97	Plug 10		148	67	.0335		94	32	67
98			149	68	.0332		95	33	68
99			150	69	.0339		96	34	69
100			151	CHAN 70	.0294		97	35	70
101			152	71	.0298		98	36	71
102			153	72	.0301		99	37	72
103			154	73	.0300		100	38	73
104			155	74	.0283		101	39	74
105			156	CHAN 75	.0290		102	40	75
							103	SPEND	

SHEET NO 1 OF 2 RUN NO. _____

CONSTANT SET 210 DATE 7-6-77 C-C

Revision MODEL MAT'L 17-4 T/C SCHEDULE _____

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SERVICE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31	BLANK		[redacted]	CHAN 1	+	10.0	28	41	1
32			[redacted]	2	+		29	42	2
33			[redacted]	3	+		30	43	3
34			[redacted]	4	+		31	44	4
35			[redacted]	CHAN 5	+		32	45	5
36			—	6	+		33	46	6
37			—	7	+		34	47	7
38			—	8	+		35	48	8
39			—	9	+		36	49	9
40			—	CHAN 10	+		37	50	10
41			—	11	+		38	51	11
42			—	12	+		39	52	12
43			—	13	+		40	53	13
44			—	14	+		41	54	14
45			—	CHAN 15	+		42	55	15
46			100	16			43	56	16
47			101	17			44	57	17
48			102	18			45	58	18
49			103	19			46	59	19
50			104	CHAN 20			47	60	20
51			105	21			48	61	21
52	Plug #7		106	22			49	62	22
53			107	23			50	63	23
54			108	24			51	64	24
55			109	CHAN 25			52	65	25
56			110	26			53	66	26
57			111	27			54	67	27
58			112	28			55	68	28
59			113	29			56	69	29
60			114	CHAN 30			57	70	30
61			115	31			58	71	31
62			116	32			59	72	32
63			117	33			60	73	33
64			118	34			61	74	34
65			119	CHAN 35			62	75	35
66			120	36			63	76	36
67	Plug #8		121	37			64	77	37
68			122	38			65	78	38
69			123	39			66	79	39
70			124	CHAN 40			67	80	40

TABLE VII (Continued)

SHEET No. 2 OF 2

C-C C.S. 210

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO.	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO.
71			125	CHAN 41		10.0	68	81	41
72	Plug #8		126	42			69	82	42
73			127	43			70	83	43
74			128	44			71	84	44
75			16	CHAN 45			72	85	45
76			129	46			73	86	46
77			130	47			74	87	47
78			131	48			75	88	48
79			132	49			76	89	49
80			133	CHAN 50			77	90	50
81			134	51			78	16	51
82			135	52			79	17	52
83	Plug #9		136	53			80	18	53
84			137	54			81	19	54
85			138	CHAN 55			82	20	55
86			139	56			83	21	56
87			140	57			84	22	57
88			141	58			85	23	58
89			59	59			86	24	59
90			60	CHAN 60			87	25	60
91			142	61			88	26	61
92			143	62			89	27	62
93			144	63			90	28	63
94			145	64			91	29	64
95			146	CHAN 65			92	30	65
96			147	66			93	31	66
97			148	67			94	32	67
98			149	68			95	33	68
99	Plug #10		150	69			96	34	69
100			151	CHAN 70			97	35	70
101			152	71			98	36	71
102			153	72			99	37	72
103			154	73			100	38	73
104			155	74			101	39	74
105			156	CHAN 75			102	40	75
							103	SPEND	

TABLE VII (Continued)

SHEET NO 1 OF 2

RUN NO. _____

DATE 7-5-77

C-C

CONSTANT SET 300

* REVISED *

MODEL MAT'L 17-4

T/C SCHEDULE _____

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31			61	CHAN 1	.0292	10.0	28	41	1
32			62	2	.0275		29	42	2
33			63	3	.0260		30	43	3
34			64	4	.0240		31	44	4
35			65	CHAN 5	.0245		32	45	5
36			66	6	.0240		33	46	6
37	Plug #6		67	7	.0245		34	47	7
38			68	8	.0280		35	48	8
39			69	9	.0230		36	49	9
40			70	CHAN10	.0235		37	50	10
41			71	11	.0250		38	51	11
42			72	12	.0250		39	52	12
43			73	13	.0250		40	53	13
44			74	14	.0260		41	54	14
45			75	CHAN15	.0280		42	55	15
46			157	16	.0295		43	56	16
47			158	17	.0305		44	57	17
48			159	18	.0303		45	58	18
49			160	19	.0310		46	59	19
50			161	CHAN20	.0309		47	60	20
51			162	21	.0363		48	61	21
52	Plug #11		163	22	.0362		49	62	22
53			164	23	.0355		50	63	23
54			165	24	.0350		51	64	24
55			166	CHAN25	.0352		52	65	25
56			167	26	.0361		53	66	26
57			168	27	.0302		54	67	27
58			169	28	.0298		55	68	28
59			170	29	.0289		56	69	29
60			171	CHAN30	.0284		57	70	30
61			172	31	.0290		58	71	31
62			173	32	.0296		59	72	32
63			174	33	.0297		60	73	33
64			175	34	.0339		61	74	34
65			176	CHAN35	.0348		62	75	35
66	Plug #12		177	36	.0264		63	76	36
67			178	37	.0270		64	77	37
68			179	38	.0273		65	78	38
69			180	39	.0313		66	79	39
70			181	CHAN40	.0272		67	80	40

TABLE VII (Continued)

SHEET No. 2 OF 2

C-C C.S. 300

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO.	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO.
71			182	CHAN 41	.0316	10.0	68	81	41
72			183	42	.0265		69	82	42
73	Plug #12		184	43	.0280		70	83	43
74			185	44	.0319		71	84	44
75			186	CHAN 45	.0320		72	85	45
76			187	46	.0298		73	86	46
77			188	47	.0292		74	87	47
78			189	48	.0299		75	88	48
79			190	49	.0306		76	89	49
80			191	CHAN 50	.0301		77	90	50
81			192	51	.0303		78	16	51
82	Plug #13		193	52	.0312		79	17	52
83			194	53	.0314		80	18	53
84			195	54	.0319		81	19	54
85			196	CHAN 55	.0320		82	20	55
86			197	56	.0323		83	21	56
87			198	57	.0322		84	22	57
88			199	58	.0339		85	23	58
89			200	59	.0330		86	24	59
90			201	CHAN 60	.0323		87	25	60
91			202	61	.0250		88	26	61
92			203	62	.0250		89	27	62
93			204	63	.0260		90	28	63
94			205	64	.0264		91	29	64
95			206	CHAN 65	.0290		92	30	65
96			207	66	.0297		93	31	66
97			208	67	.0314		94	32	67
98			209	68	.0280		95	33	68
99	Plug #14		210	69	.0276		96	34	69
100			211	CHAN 70	.0270		97	35	70
101			212	71	.0285		98	36	71
102			213	72	.0282		99	37	72
103			214	73	.0285		100	38	73
104			215	74	.0305		101	39	74
105			216	CHAN 75	.0308		102	40	75
							103	SPEND	

TABLE VII (Continued)

SHEET NO 1 OF 2

RUN NO. _____

DATE 7-6-77

CONSTANT SET 310

Revisions

MODEL MAT'L 17-4

C-C

T/C SCHEDULE _____

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. EITCO	BECKMAN INPUT NO
31	Blank		Blank	CHAN 1	Blank	10.8	28	41	1
32				2	✓		29	42	2
33				3	✓		30	43	3
34				4	✓		31	44	4
35				CHAN 5	✓		32	45	5
36				6	✓		33	46	6
37				7	✓		34	47	7
38				8	✓		35	48	8
39				9	✓		36	49	9
40				CHAN 10	✓		37	50	10
41				11	✓		38	51	11
42				12	✓		39	52	12
43				13	✓		40	53	13
44				14	✓		41	54	14
45				CHAN 15	✓		42	55	15
46			157	16	.0295		43	56	16
47			158	17	.0305		44	57	17
48			159	18	.0303		45	58	18
49			160	19	.0310		46	59	19
50			161	CHAN 20	.0309		47	60	20
51			162	21	.0353		48	61	21
52			163	22	.0352		49	62	22
53			164	23	.0355		50	63	23
54	Plug #11		165	24	.0350		51	64	24
55			166	CHAN 25	.0352		52	65	25
56			167	26	.0351		53	66	26
57			168	27	.0302		54	67	27
58			169	28	.0298		55	68	28
59			170	29	.0289		56	69	29
60			171	CHAN 30	.0284		57	70	30
61			172	31	.0290		58	71	31
62			173	32	.0296		59	72	32
63			174	33	.0297		60	73	33
64			175	34	.0339		61	74	34
65	Plug #12		176	CHAN 35	.0348		62	75	35
66			177	36	.0264		63	76	36
67			178	37	.0270		64	77	37
68			179	38	.0273		65	78	38
69			180	39	.0313		66	79	39
70			181	CHAN 40	.0272		67	80	40

TABLE VII (Continued)

SHEET No. 2 OF 2

C-C C.S. 310

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO.	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO.
71			182	CHAN 41	.0316	10.0	68	81	41
72	Plug #12		183	42	.0265		69	82	42
73			184	43	.0280		70	83	43
74			185	44	.039		71	84	44
75			186	CHAN 45	.0320		72	85	45
76			187	46	.0298		73	86	46
77			188	47	.0282		74	87	47
78			189	48	.0299		75	88	48
79			190	49	.0306		76	89	49
80			191	CHAN 50	.0301		77	90	50
81			192	51	.0303		78	16	51
82	Plug #13		193	52	.0312		79	17	52
83			194	53	.0314		80	18	53
84			195	54	.0319		81	19	54
85			196	CHAN 55	.0320		82	20	55
86			197	56	.0323		83	21	56
87			198	57	.0322		84	22	57
88			199	58	.0339		85	23	58
89			200	59	.0330		86	24	59
90			201	CHAN 60	.0323		87	25	60
91			202	61	.0250		88	26	61
92			203	62	.0250		89	27	62
93			204	63	.0260		90	28	63
94			205	64	.0264		91	29	64
95			206	CHAN 65	.0290		92	30	65
96			207	66	.0297		93	31	66
97			208	67	.0314		94	32	67
98	Plug #14		209	68	.0280		95	33	68
99			210	69	.0276		96	34	69
100			211	CHAN 70	.0270		97	35	70
101			212	71	.0285		98	36	71
102			213	72	.0282		99	37	72
103			214	73	.0285		100	38	73
104			215	74	.0305		101	39	74
105			216	CHAN 75	.0308		102	40	75
							103	SPEND	

TABLE VII (Continued)

SHEET NO 1 OF 2 RUN NO. _____ _____

DATE 7-5-77 C-C

CONSTANT SET 400 MODEL MAT'L 17-4 T/C SCHEDULE _____

* REVISED *

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SERVICE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31			217	CHAN 1	.0294	10.0	28	41	1
32			218	2	.0295		29	42	2
33			219	3	.0288		30	43	3
34			220	4	.0282		31	44	4
35			221	CHAN 5	.0292		32	45	5
36			222	6	.0301		33	46	6
37	Plug #15		223	7	.0299		34	47	7
38			224	8	.0293		35	48	8
39			225	9	.0283		36	49	9
40			226	CHAN 10	.0287		37	50	10
41			227	11	.0298		38	51	11
42			228	12	.0311		39	52	12
43			229	13	?		40	53	13
44			BLANK	14	BLANK		41	54	14
45			BLANK	CHAN 15	BLANK		42	55	15
46			230	16	.0322		43	56	16
47			231	17	.0321		44	57	17
48			232	18	.0310		45	58	18
49			233	19	.0312		46	59	19
50			234	CHAN 20	.0318		47	60	20
51			235	21	.0321		48	61	21
52	Plug #16		236	22	.0321		49	62	22
53			237	23	.0323		50	63	23
54			238	24	.0323		51	64	24
55			239	CHAN 25	.0323		52	65	25
56			240	26	.0318		53	66	26
57			241	27	.0329		54	67	27
58			242	28	.0292		55	68	28
59			243	29	.0294		56	69	29
60			244	CHAN 30	.0291		57	70	30
61			245	31	.0312		58	71	31
62			246	32	.0288		59	72	32
63			247	33	.0281		60	73	33
64			248	34	.0271		61	74	34
65			249	CHAN 35	.0250		62	75	35
66	Plug #17		250	36	.0248		63	76	36
67			251	37	.0250		64	77	37
68			252	38	.0319		65	78	38
69			253	39	.0312		66	79	39
70			254	CHAN 40	.0291		67	80	40

TABLE VII (Continued)

AT No. 2 OF 2 C-C C.S 400

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN EMV1	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
71	BLANK		BLANK	CHAN 41		10.0	68	81	41
72				42			69	82	42
73				43			70	83	43
74				44			71	84	44
75				CHAN 45			72	85	45
76				46			73	86	46
77				47			74	87	47
78				48			75	88	48
79				49			76	89	49
80				CHAN 50			77	90	50
81				51			78	16	51
82				52			79	17	52
83				53			80	18	53
84				54			81	19	54
85				CHAN 55			82	20	55
86				56			83	21	56
87				57			84	22	57
88				58			85	23	58
89				59			86	24	59
90				CHAN 60			87	25	60
91				61			88	26	61
92				62			89	27	62
93				63			90	28	63
94				64			91	29	64
95				CHAN 65			92	30	65
96				66			93	31	66
97				67			94	32	67
98				68			95	33	68
99				69			96	34	69
100				CHAN 70			97	35	70
101				71			98	36	71
102				72			99	37	72
103				73			100	38	73
104				74			101	39	74
105				CHAN 75			102	40	75
							103	SPEND	

SHEET NO 1 OF 2

RUN NO. _____

DATE 7-5-77

Chromel-Alumel

CONSTANT SET 500

MODEL MAT'L 17-4

T/C SCHEDULE _____

* REVISED *

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (in)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31			275	CHAN 1	.0272	10.0	28	41	1
32			276	2	.0248		29	42	2
33			277	3	.0240		30	43	3
34			278	4	.0253		31	44	4
35			279	CHAN 5	.0230		32	45	5
36			280	6	.0228		33	46	6
37			281	7	.0230		34	47	7
38	Plug #19		282	8	.0290		35	48	8
39			283	9	.0290		36	49	9
40			284	CHAN 10	.0240		37	50	10
41			285	11	.0232		38	51	11
42			286	12	.0234		39	52	12
43			287	13	.0291		40	53	13
44			288	14	.0288		41	54	14
45			289	CHAN 15	.0299		42	55	15
46			290	16	.0270		43	56	16
47			291	17	.0255		44	57	17
48			292	18	.0267		45	58	18
49			293	19	.0276		46	59	19
50			294	CHAN 20	.0268		47	60	20
51			295	21	.0270		48	61	21
52	Plug #20		296	22	.0263		49	62	22
53			297	23	.0270		50	63	23
54			298	24	.0263		51	64	24
55			299	CHAN 25	.0257		52	65	25
56			300	26	.0255		53	66	26
57			301	27	.0266		54	67	27
58			302	28	.0260		55	68	28
59			303	29	.0253		56	69	29
60			304	CHAN 30	.0250		57	70	30
61			305	31	.0288		58	71	31
62			306	32	.0289		59	72	32
63			307	33	.0282		60	73	33
64			308	34	.0278		61	74	34
65			309	CHAN 35	.0283		62	75	35
66	Plug 21		310	36	.0286		63	76	36
67			311	37	.0304		64	77	37
68			312	38	.0303		65	78	38
69			313	39	.0294		66	79	39
70			314	CHAN 40	.0299		67	80	40

TABLE VII (Continued)

SHEET No. 2 OF 2 C-C C.S. 500

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
71			315	CHAN 41	.0302	10.0	68	81	41
72			316	42	.0308		69	82	42
73	PLUG #21		317	43	.0307		70	83	43
74			318	44	.0304		71	84	44
75			319	CHAN 45	.0311		72	85	45
76			320	46	.0303		73	86	46
77			321	47	.0298		74	87	47
78			322	48	.0298		75	88	48
79			323	49	.0300		76	89	49
80			324	CHAN 50	.0300		77	90	50
81			325	51	.0302		78	16	51
82	PLUG #22		326	52	.0298		79	17	52
83			327	53	.0297		80	18	53
84			328	54	.0299		81	19	54
85			329	CHAN 55	.0304		82	20	55
86			330	56	.0311		83	21	56
87			331	57	.0307		84	22	57
88			332	58	.0311		85	23	58
[illegible]			333	59	.0313		86	24	59
90			334	CHAN 60	.0309		87	25	60
91			335	61	.0309		88	26	61
92			336	62	.0319		89	27	62
93			337	63	.0322		90	28	63
94			338	64	.0325		91	29	64
95			339	CHAN 65	.0313		92	30	65
96			340	66	.0322		93	31	66
97			341	67	.0316		94	32	67
98	PLUG #23		342	68	.0312		95	33	68
99			343	69	.0303		96	34	69
100			344	CHAN 70	.0311		97	35	70
101			345	71	.0312		98	36	71
102			346	72	.0317		99	37	72
103			347	73	.0303		100	38	73
104			348	74	.0301		101	39	74
105			349	CHAN 75	.0298		102	40	75
							103	SPEND	

TABLE VII (continued)

SHEET NO 1 OF 2 RUN NO. _____

DATE 7-6-77

CONSTANT SET 600

MODEL MAT'L M-4

C-C

T/C SCHEDULE _____

1	2	3	4	5	6	7	8	9	10
TRANSDUCER						CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. FITCO	BECKMAN INPUT NO
31			61	CHAN 1	.0292	10.0	28	41	1
32			62	2	.0275		29	42	2
33			63	3	.0260		30	43	3
34			64	4	.0240		31	44	4
35			65	CHAN 5	.0245		32	45	5
36			66	6	.0240		33	46	6
37			67	7	.0245		34	47	7
38	Plug #6		68	8	.0230		35	48	8
39			69	9	.0230		36	49	9
40			70	CHAN 10	.0235		37	50	10
41			71	11	.0250		38	51	11
42			72	12	.0250		39	52	12
43			73	13	.0250		40	53	13
44			74	14	.0260		41	54	14
45			75	CHAN 15	.0280		42	55	15
46			100	16	.0289		43	56	16
47			101	17	.0261		44	57	17
48			102	18	.0248		45	58	18
49			103	19	.0232		46	59	19
50			104	CHAN 20	.0268		47	60	20
51	Plug #7		105	21	.0273		48	61	21
52			106	22	.0245		49	62	22
53			107	23	.0240		50	63	23
54			108	24	.0244		51	64	24
55			109	CHAN 25	.0290		52	65	25
56			110	26	.0271		53	66	26
57			111	27	.0253		54	67	27
58			112	28	.0282		55	68	28
59			113	29	.0271		56	69	29
60			114	CHAN 30	.0308		57	70	30
61			129	31	.0278		58	71	31
62			130	32	.0287		59	72	32
63			131	33	.0274		60	73	33
64			132	34	.0280		61	74	34
65			133	CHAN 35	.0302		62	75	35
66	Plug #9		134	36	.0320		63	76	36
67			135	37	.0307		64	77	37
68			136	38	.0299		65	78	38
69			137	39	.0293		66	79	39
70			138	CHAN 40	.0288		67	80	40

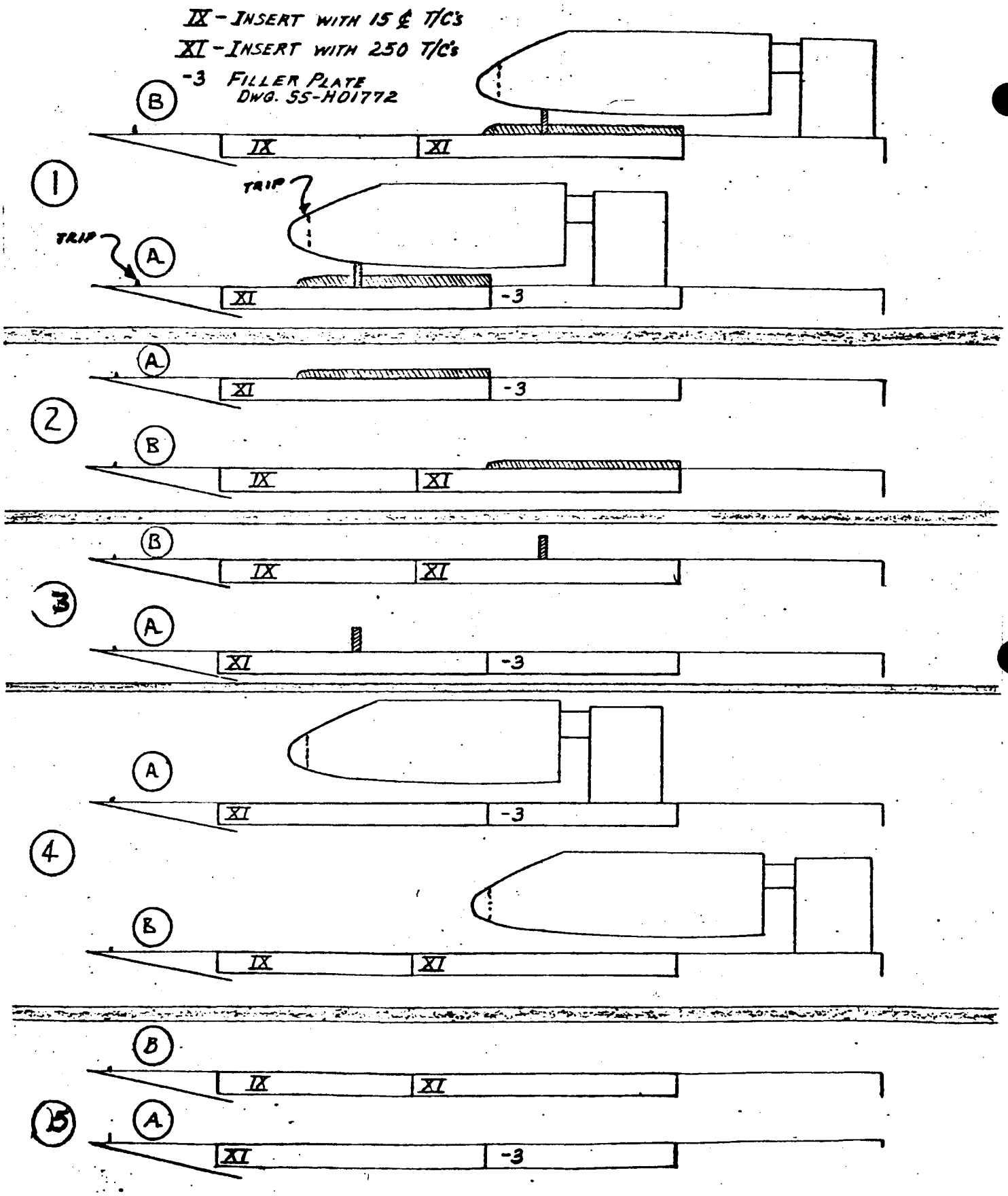
TABLE VII (Concluded)

SET No. 2 OF 2

C.S. 600

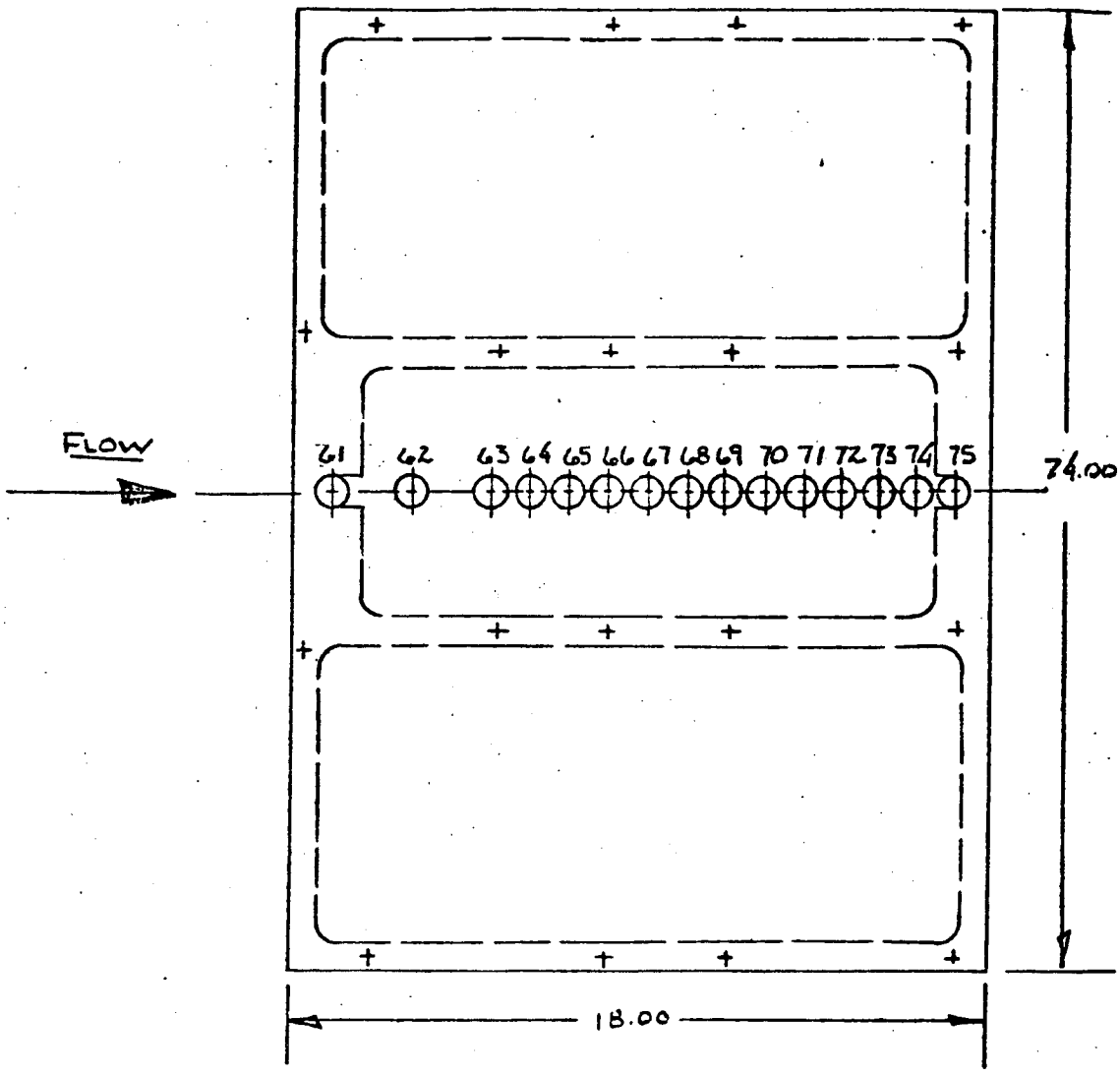
C-C

1	2	3	4	5	6	7	8	9	10
	TRANSDUCER					CONNECTION SCHEDULE GROUP I LOCATION B			
GROUP I TAPE WORD	LOCATION		MODEL T/C NO	COMPUTER SYMBOL	SKIN THICKNESS (IN)	AMPLIFIER GAIN (MV)	SEQUENCE POSITION	CHANNEL NO. EITCO	BECKMAN INPUT NO
71			139	CHAN 41	.0300	10.0	68	81	41
72	Plug #9		140	42	.0288		69	82	42
73			141	43	.0306		70	83	43
74			BLANK	44	—		71	84	44
75			BLANK	CHAN 45	—		72	85	45
76			202	46	.0250		73	86	46
77			203	47	.0250		74	87	47
78			204	48	.0260		75	88	48
79			205	49	.0264		76	89	49
80			206	CHAN 50	.0290		77	90	50
81			207	51	.0297		78	16	51
82	Plug #16		208	52	.0314		79	17	52
83			209	53	.0280		80	18	53
84			210	54	.0276		81	19	54
85			211	CHAN 55	.0270		82	20	55
86			212	56	.0285		83	21	56
87			213	57	.0282		84	22	57
88			214	58	.0285		85	23	58
89			215	59	.0305		86	24	59
90			216	CHAN 60	.0308		87	25	60
91			280	61	.0322		88	26	61
92			281	62	.0321		89	27	62
93			282	63	.0310		90	28	63
94			283	64	.0312		91	29	64
95			284	CHAN 65	.0318		92	30	65
96			285	66	.0321		93	31	66
97			286	67	.0321		94	32	67
98	Plug #16		287	68	.0328		95	33	68
99			288	69	.0322		96	34	69
100			289	CHAN 70	.0329		97	35	70
101			240	71	.0318		98	36	71
102			241	72	.0329		99	37	72
103			242	73	.0292		100	38	73
104			243	74	.0294		101	39	74
105			244	CHAN 75	.0291		102	40	75
							103	SPEND	



a. Installation and Test Configurations

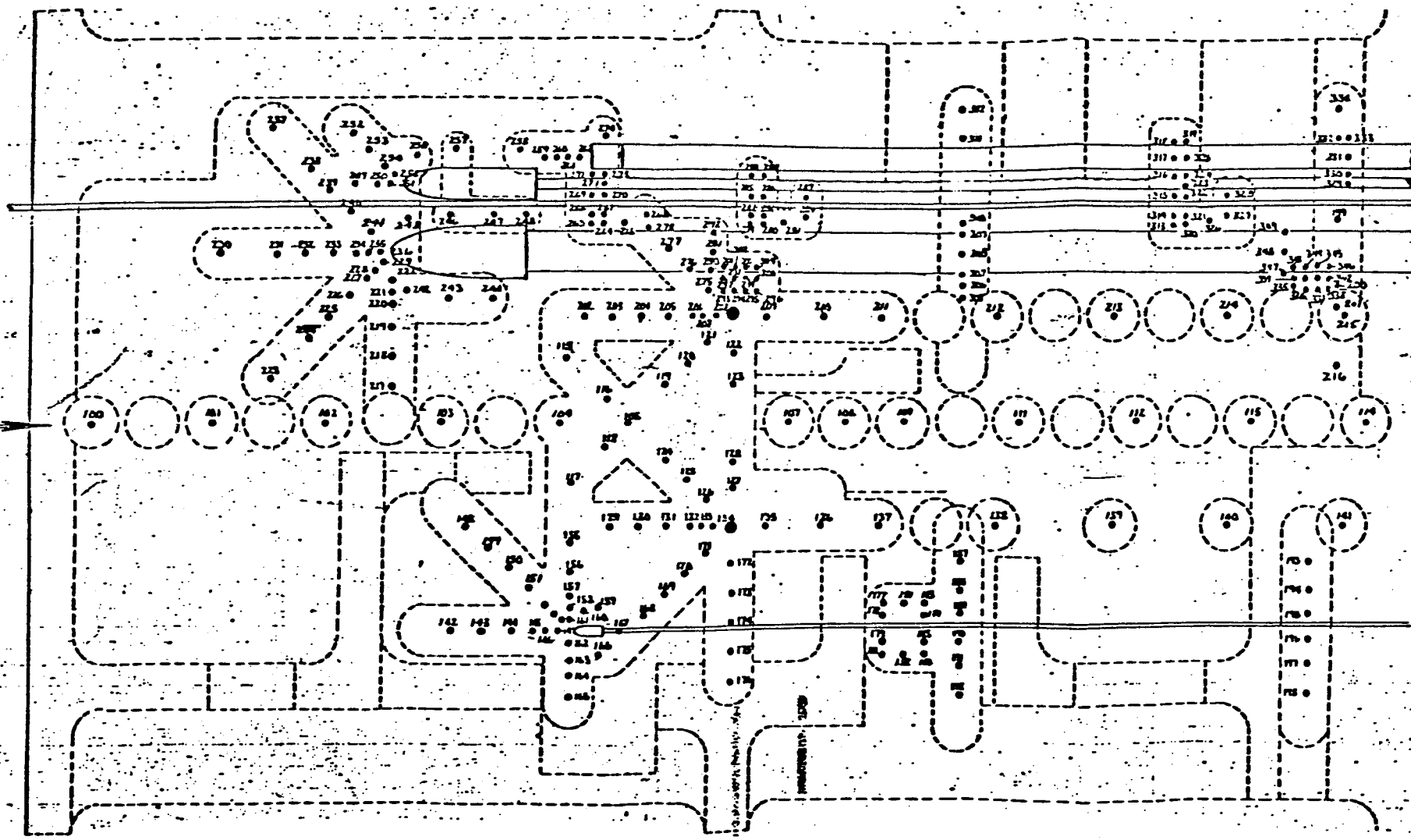
Figure 1. Model Sketches



INSERT IX
(TOP VIEW)

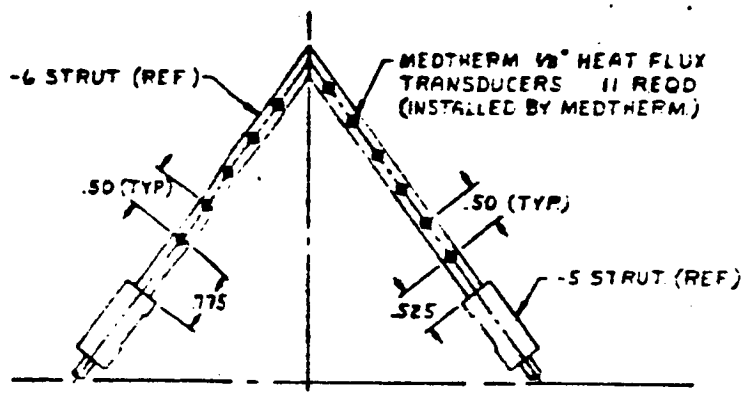
b. Insert IX Instrumentation Locations

Figure 1 (Continued)



c. Insert XI Thermocouple Locations

Figure 1 (Continued)



VIEW LOOKING FWD

NOTE: THE ACTUAL HARDWARE WAS BUILT WITH THE LEFT STRUT CONTAINING 5 GAGES.

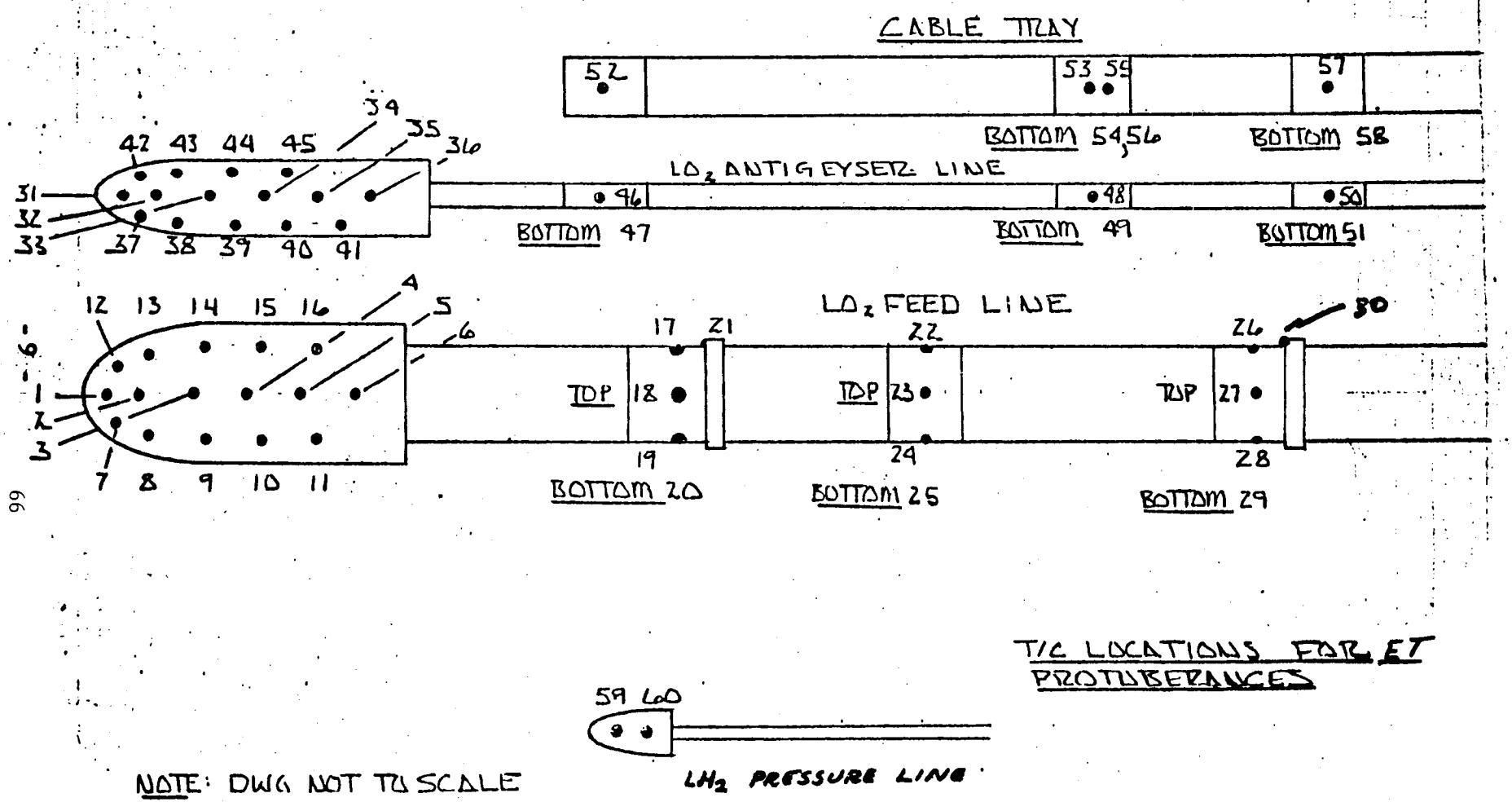
THE -6 STRUT IS L.H.
-5 STRUT IS R.H.

INSTRUMENTATION IS ON WINDWARD SIDE

ET STRUT MEDTHERM HEAT FLUX
TRANSDUCER LOCATIONS

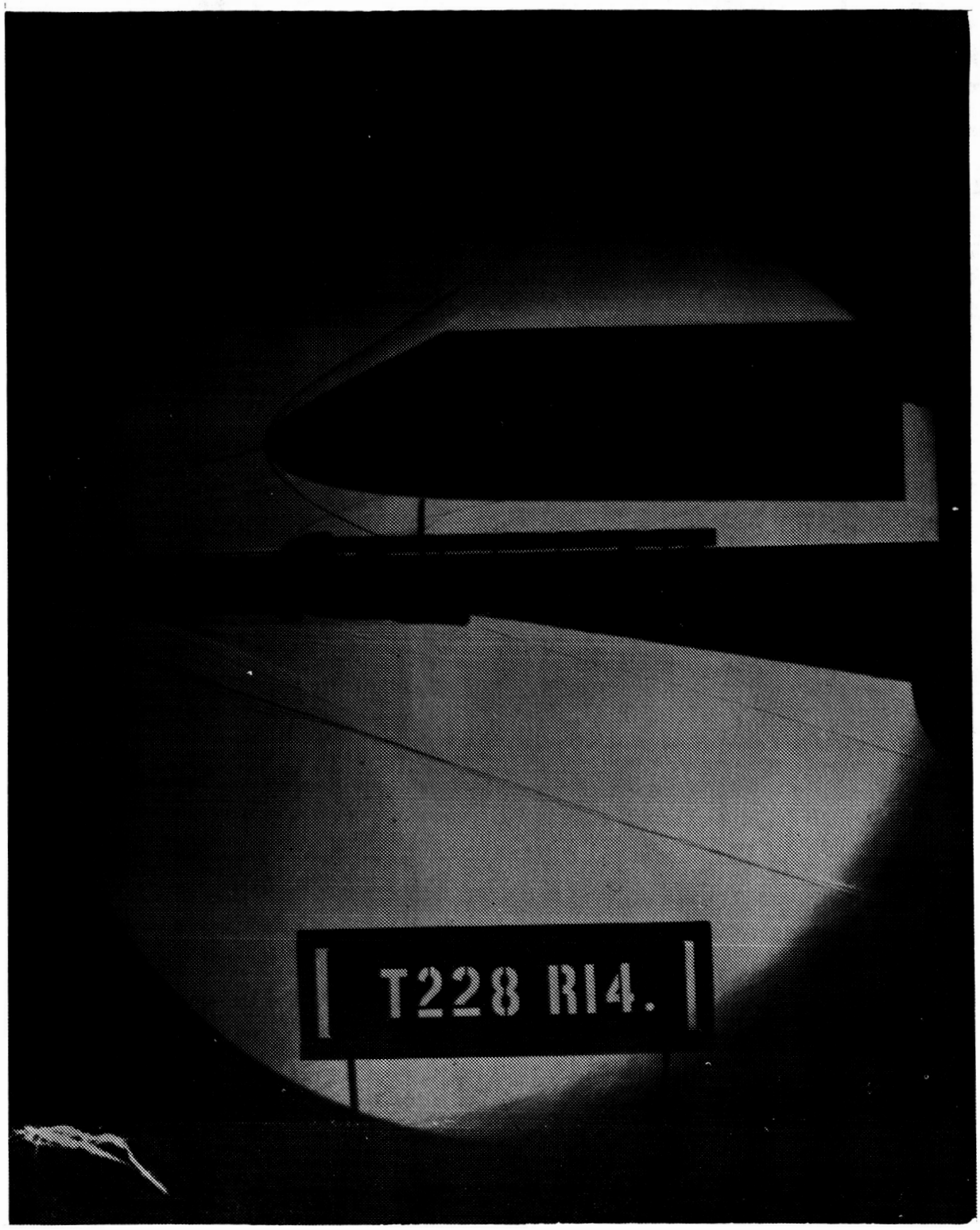
d. ET Strut Medtherm Heat Flux Transducer Locations

Figure 1 (Continued)



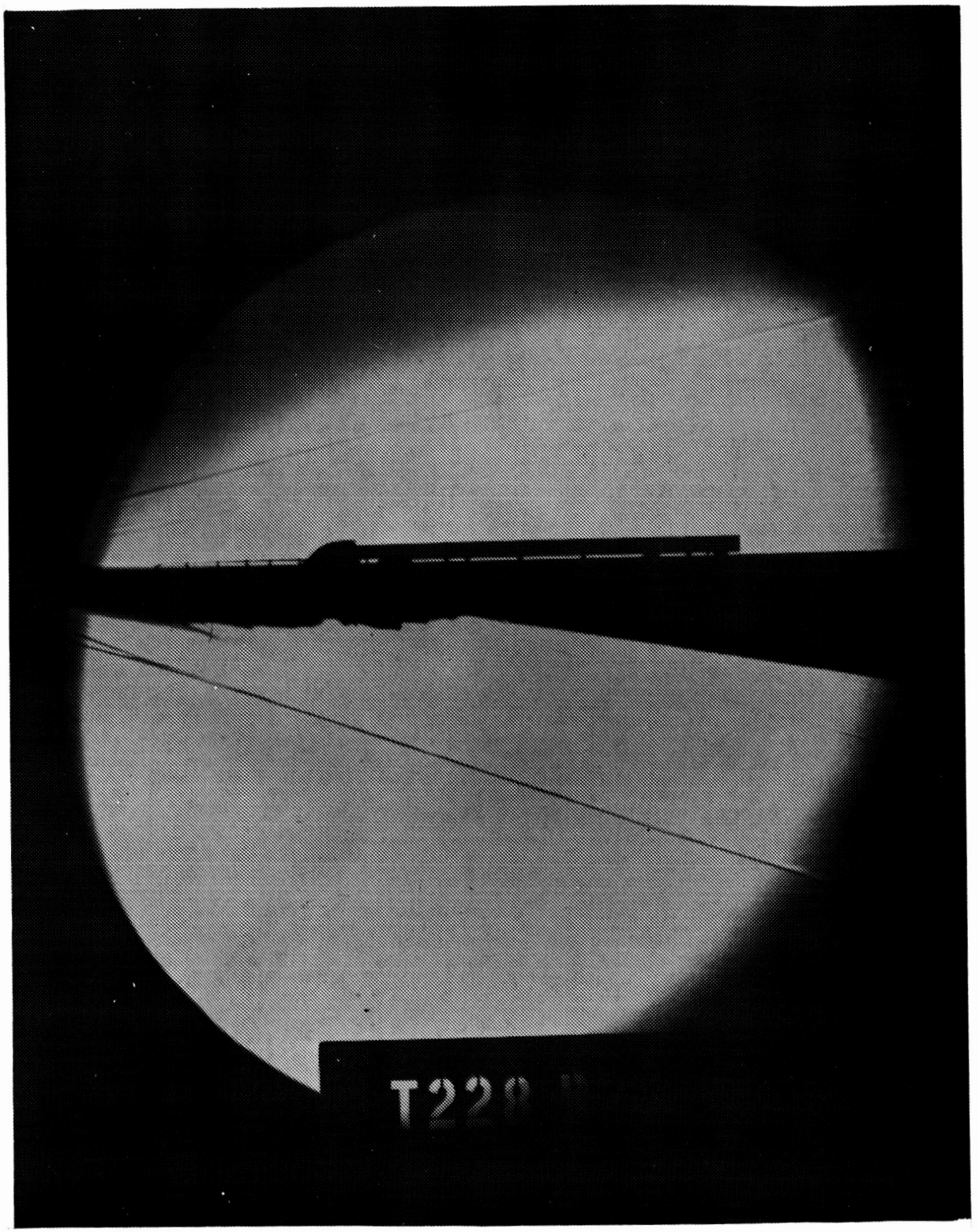
e. T/C Locations for ET Protuberances

Figure 1 (Concluded)



a. Schlieren Photograph of the Orbiter Forebody with External Tank Protuberances Mounted on a Flat Plate

Figure 2. Model Photographs



b. Schlieren Photograph of the External Tank Protuberances Mounted on a Flat Plate

Figure 2 (Concluded)

DATA FIGURES

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DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

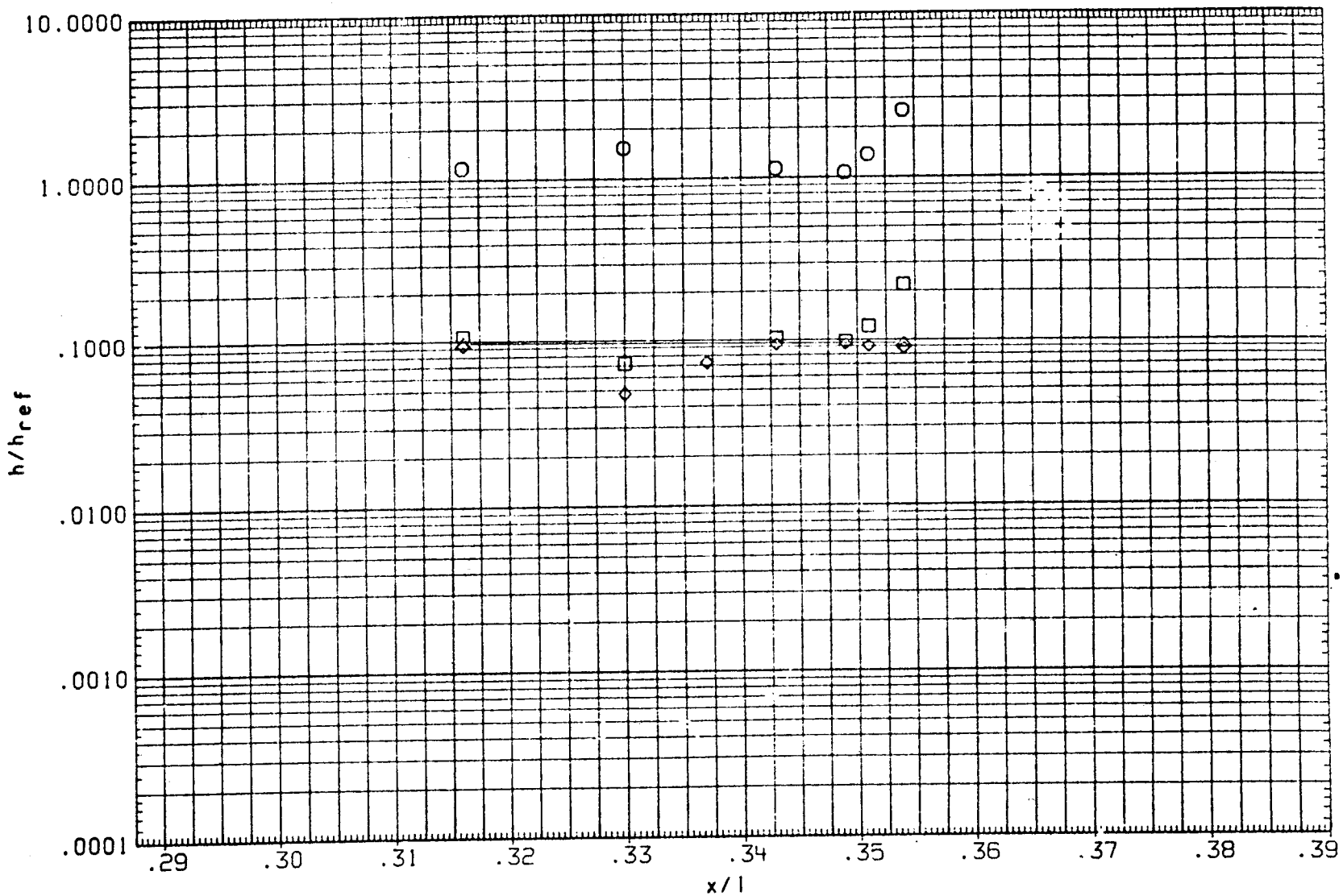

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78 PAGE 1

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

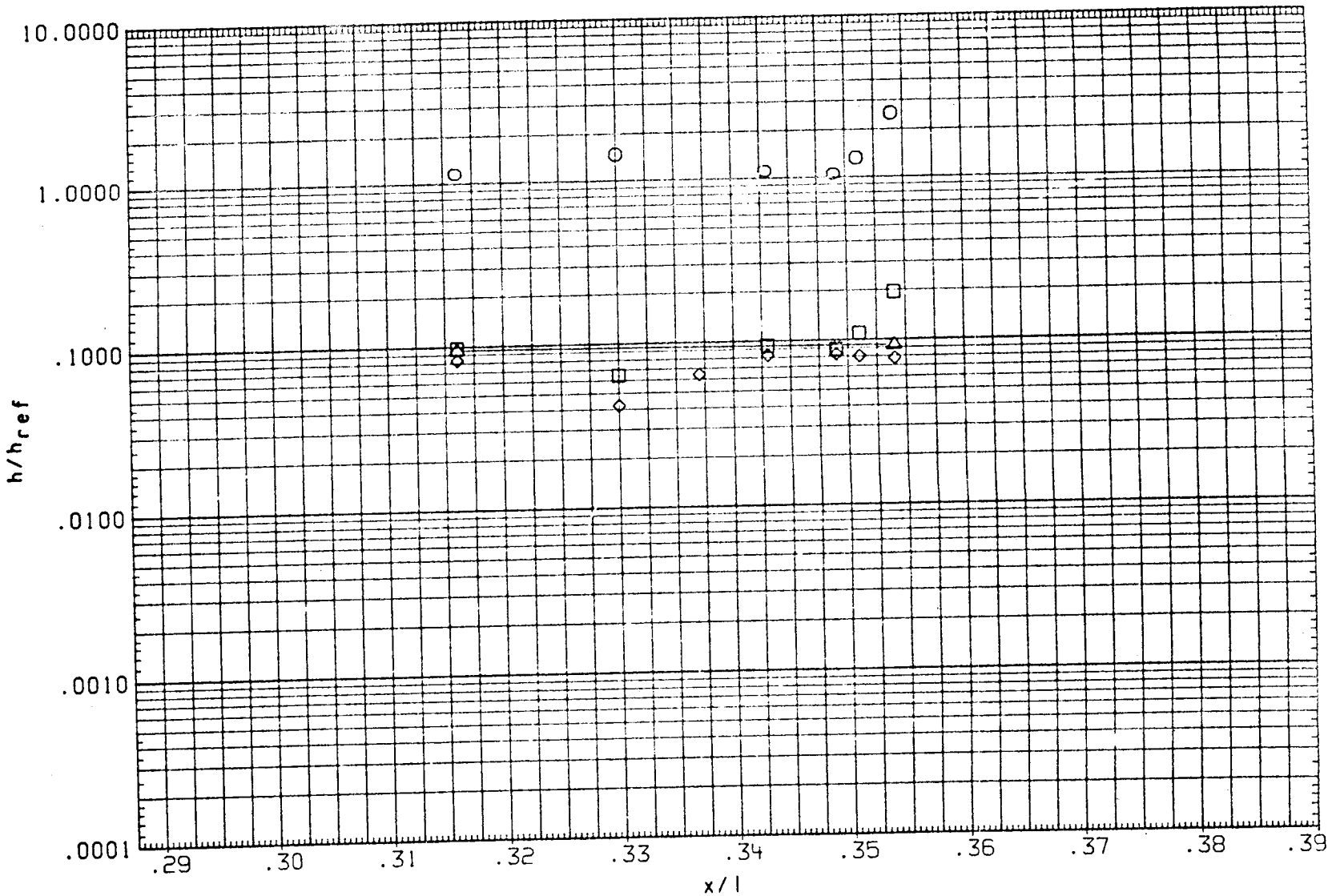

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 PHI = 24.690 DATE 22 APR 78 PAGE 2

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

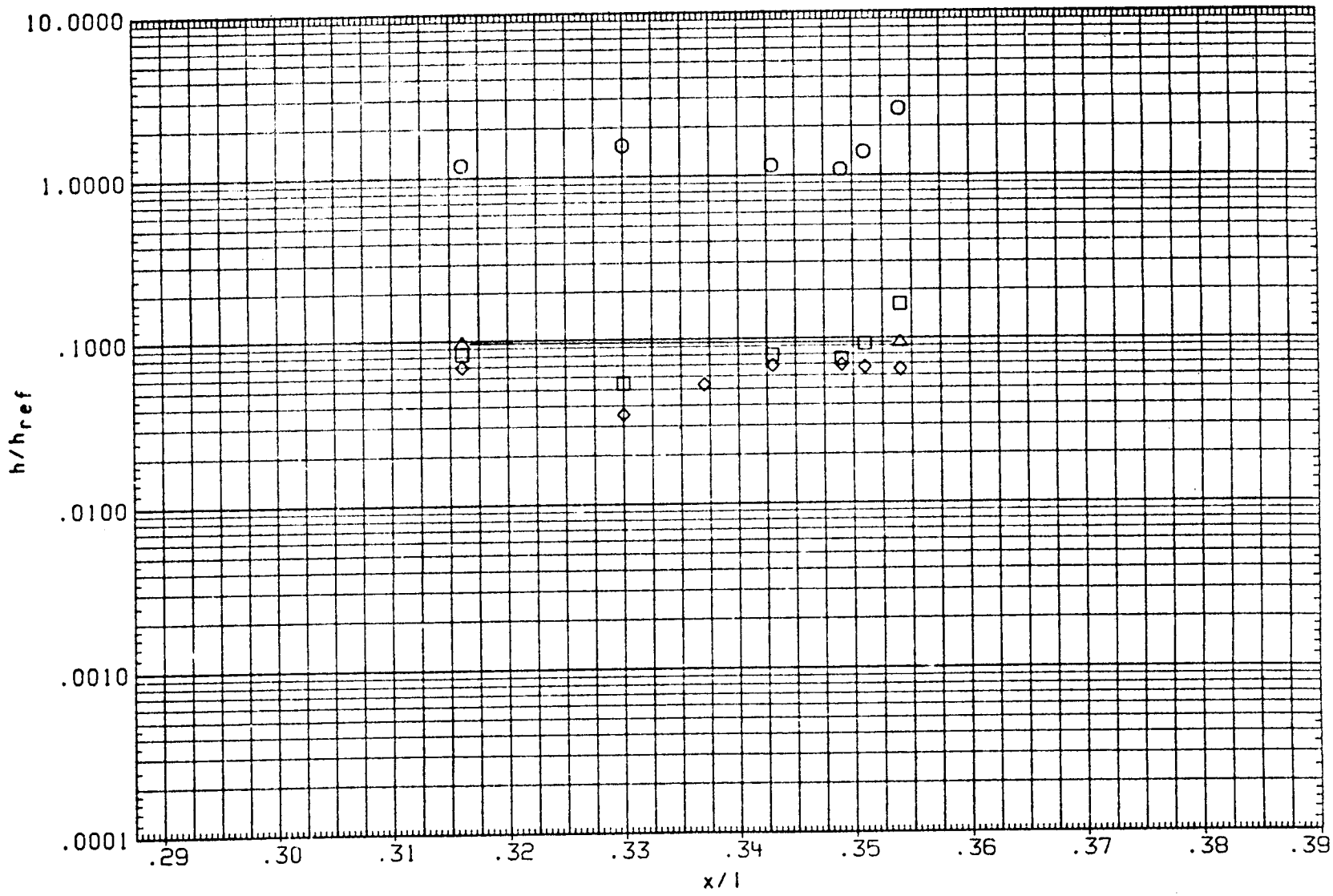

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78 PAGE 3

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L11)	◇	IH51A CONF 5A LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

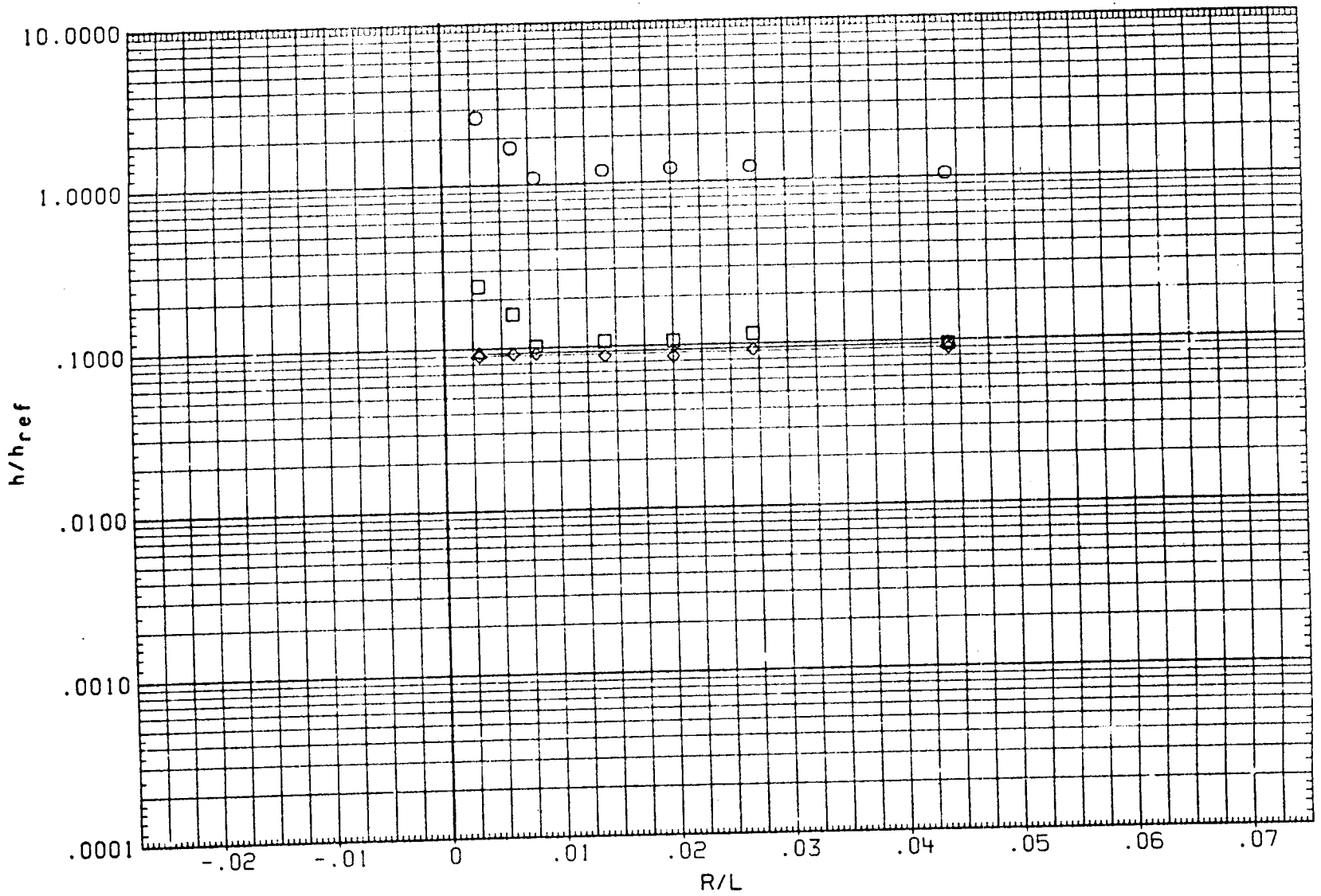

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 4

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L11)	◇	IH51A CONF 5A LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

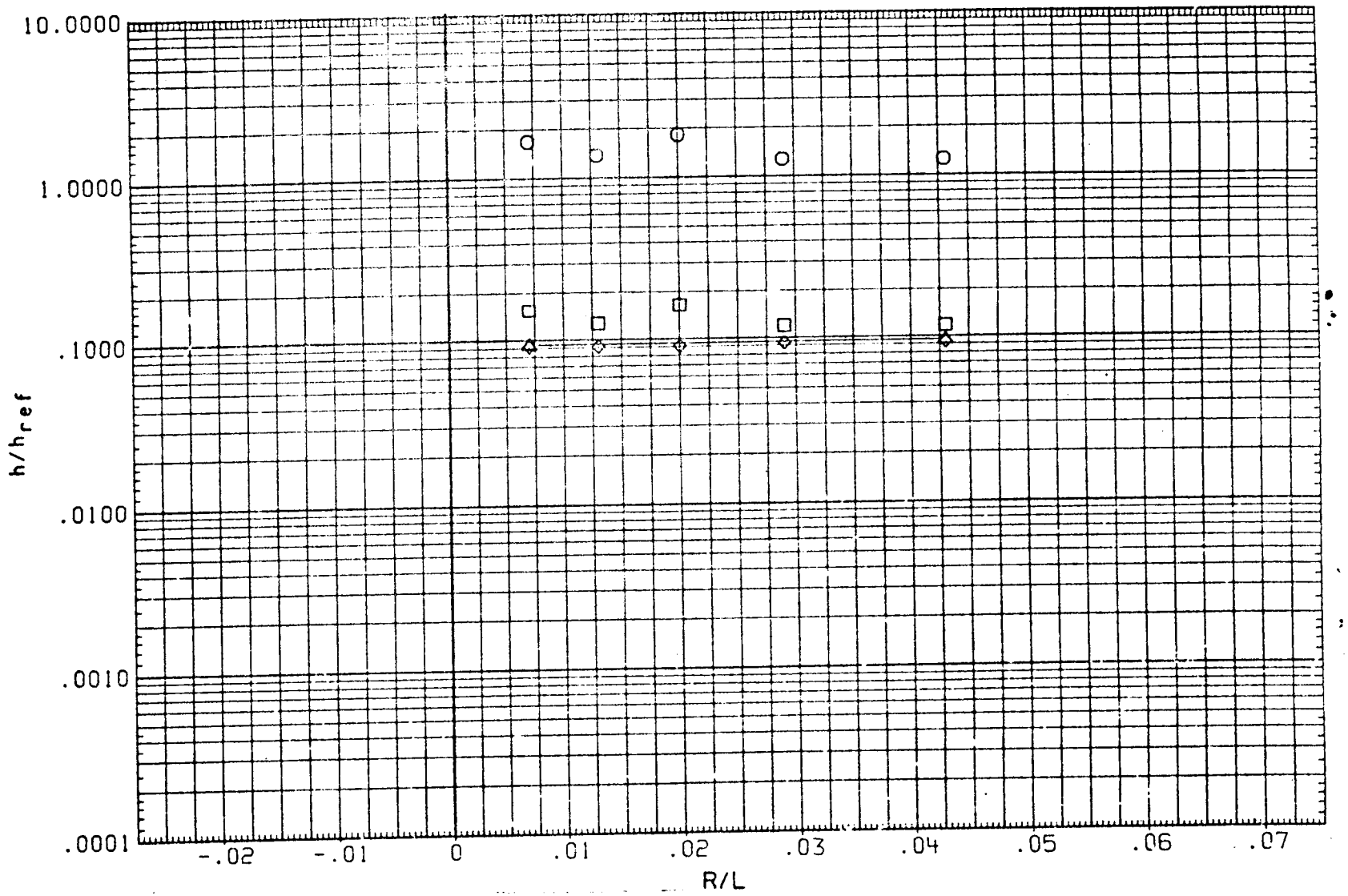

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 5

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L11)	◇	IH51A CONF 5A LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

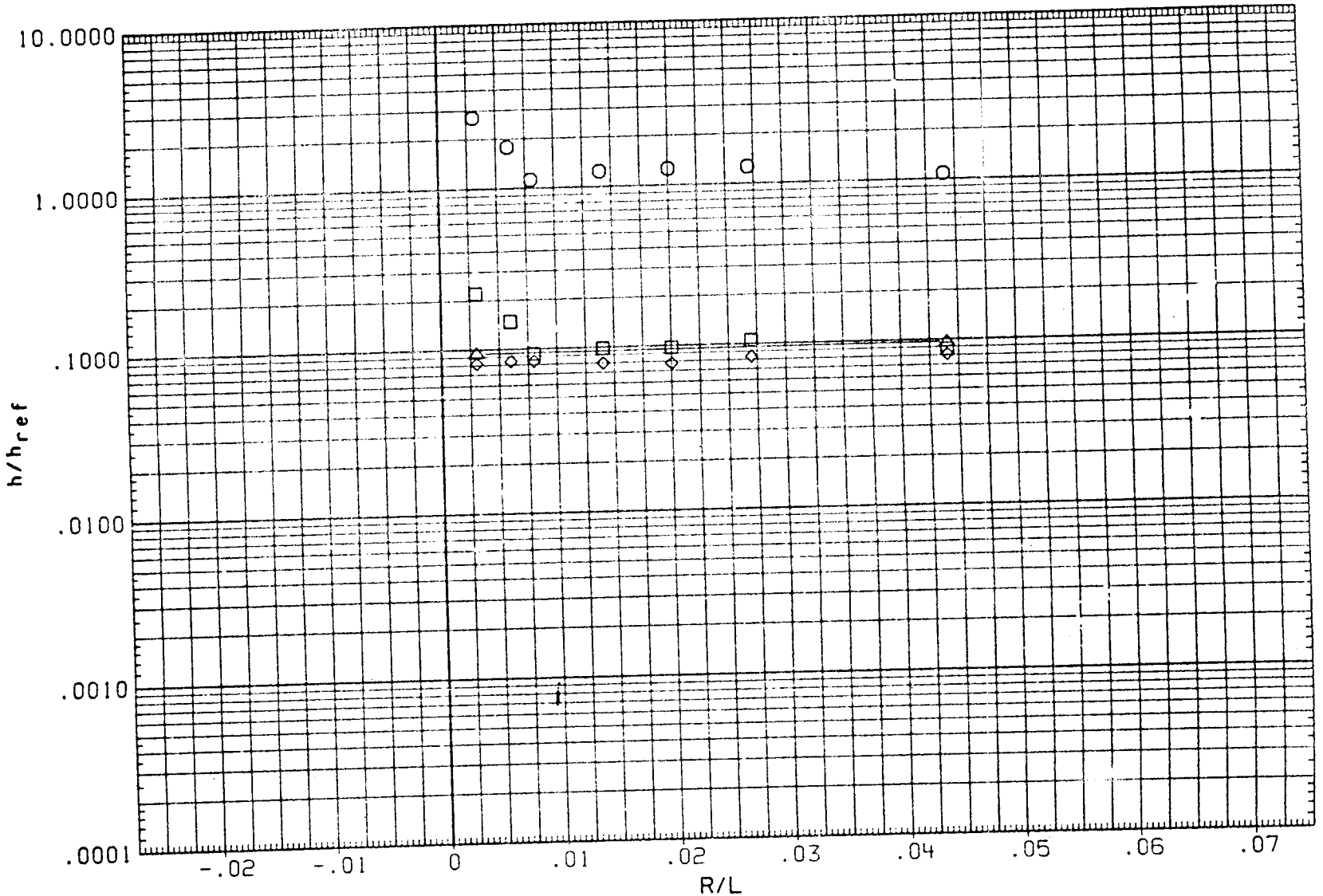

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 6

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L11)	◇	IH51A CONF 5A LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

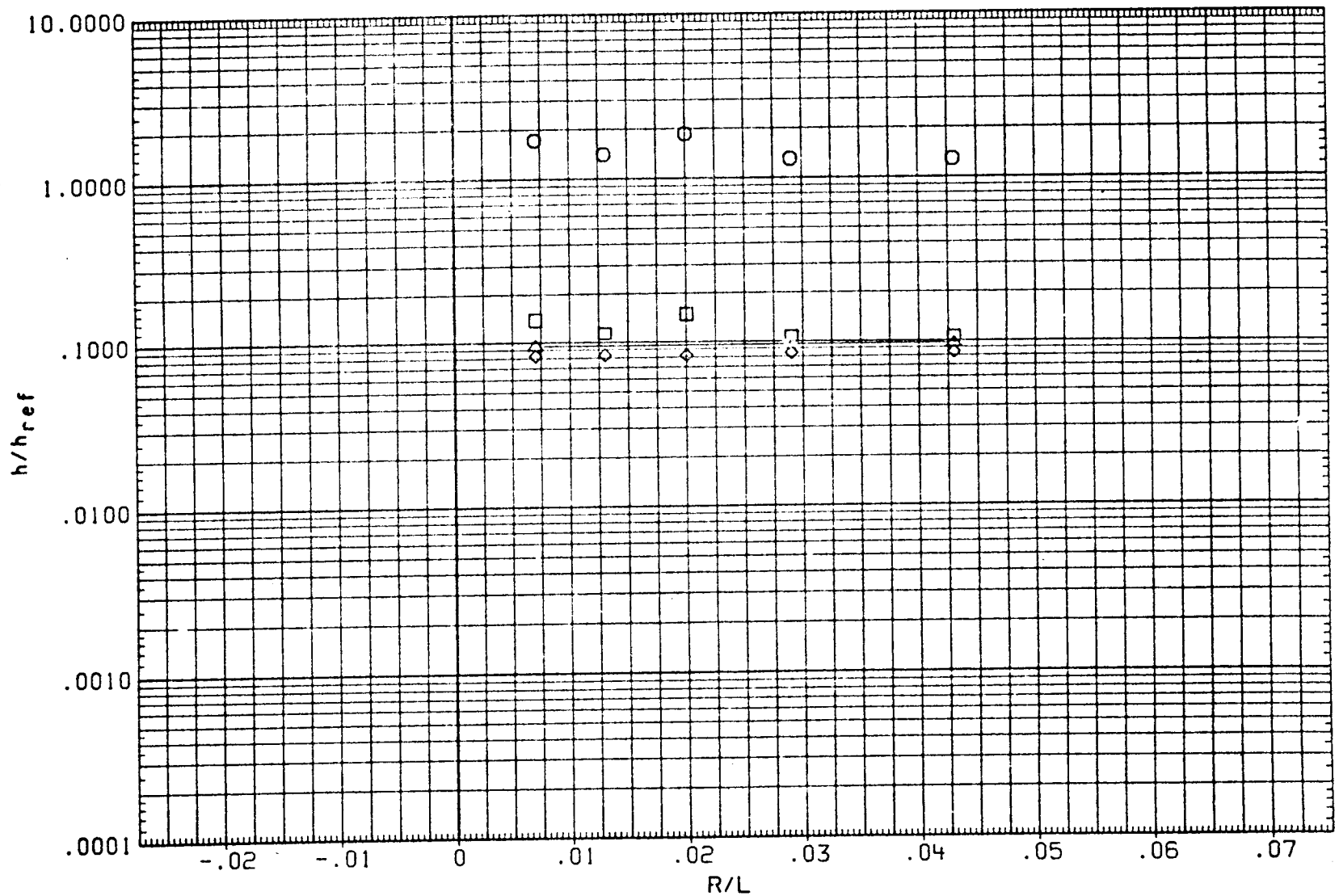

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 7

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L11)	◇	IH51A CONF 5A LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

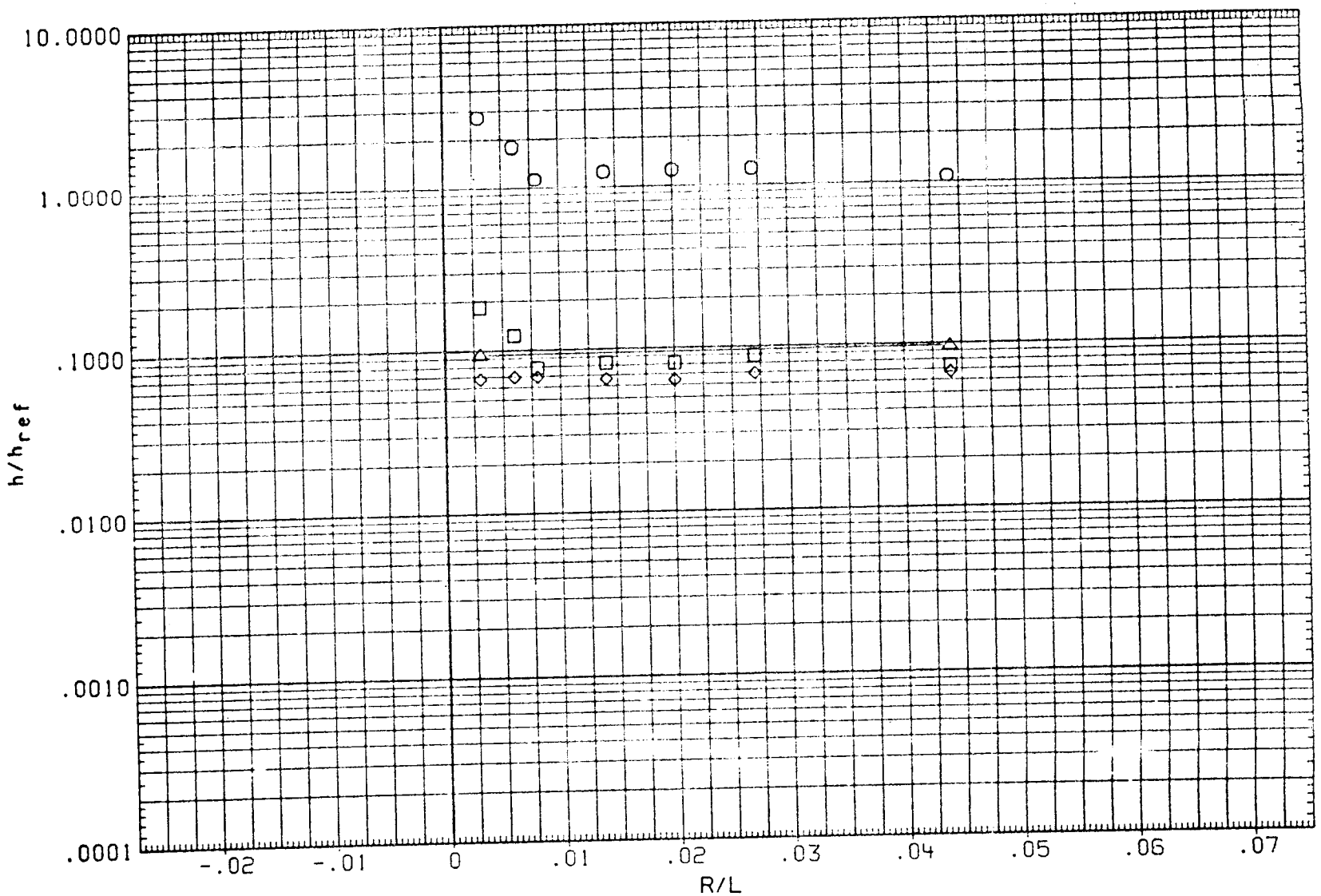

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L11)	◇	IH51A CONF 5A LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

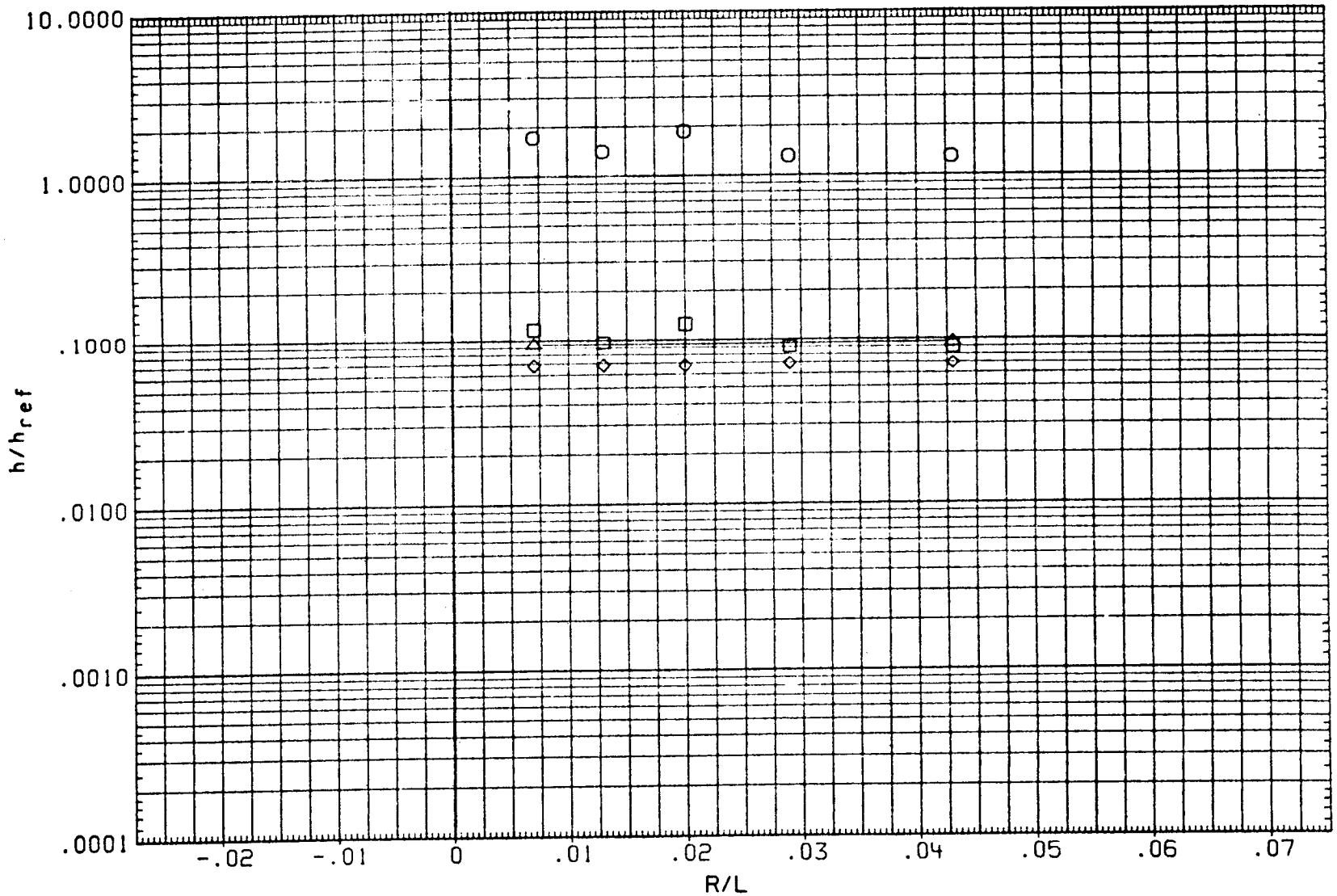

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 9

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

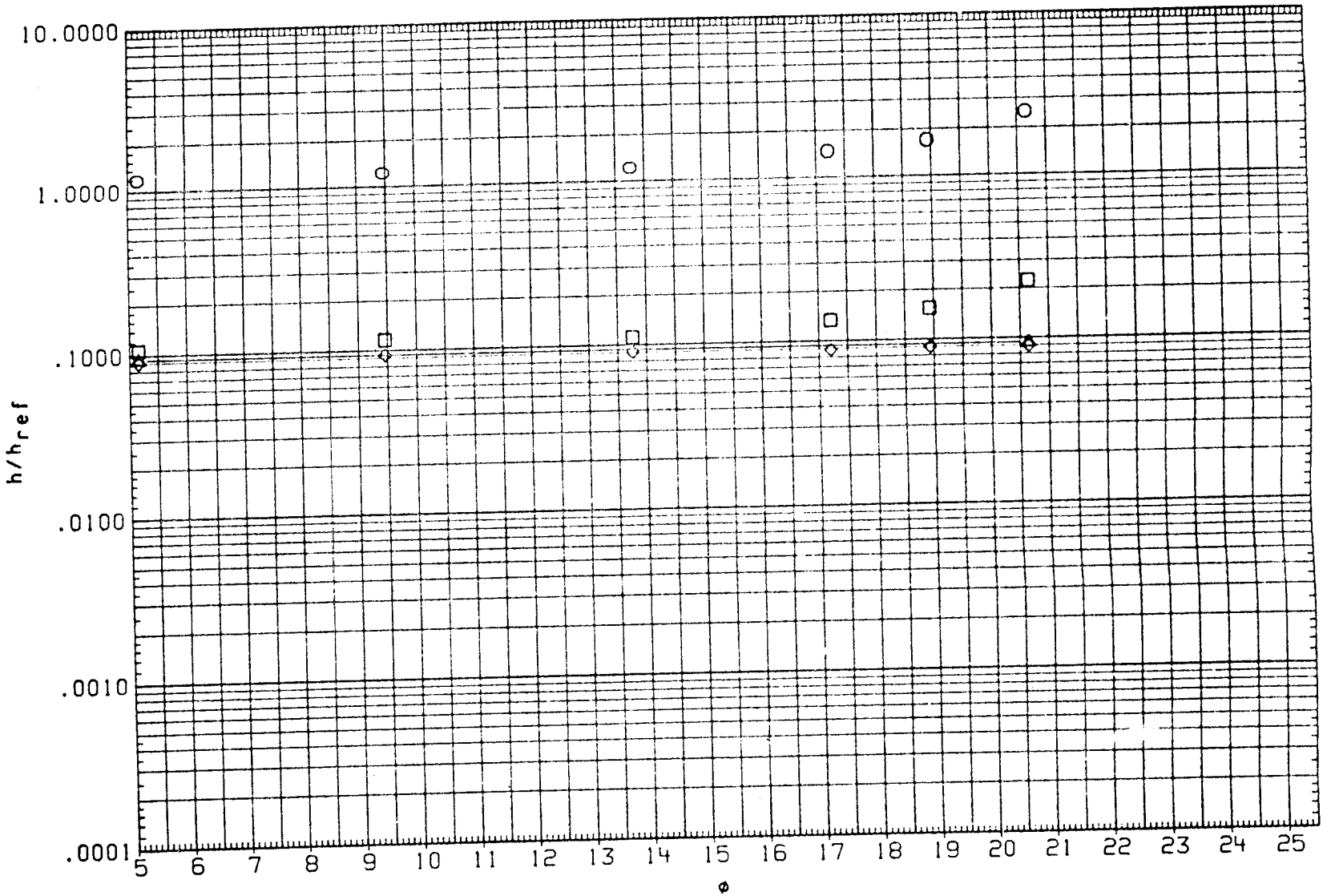

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

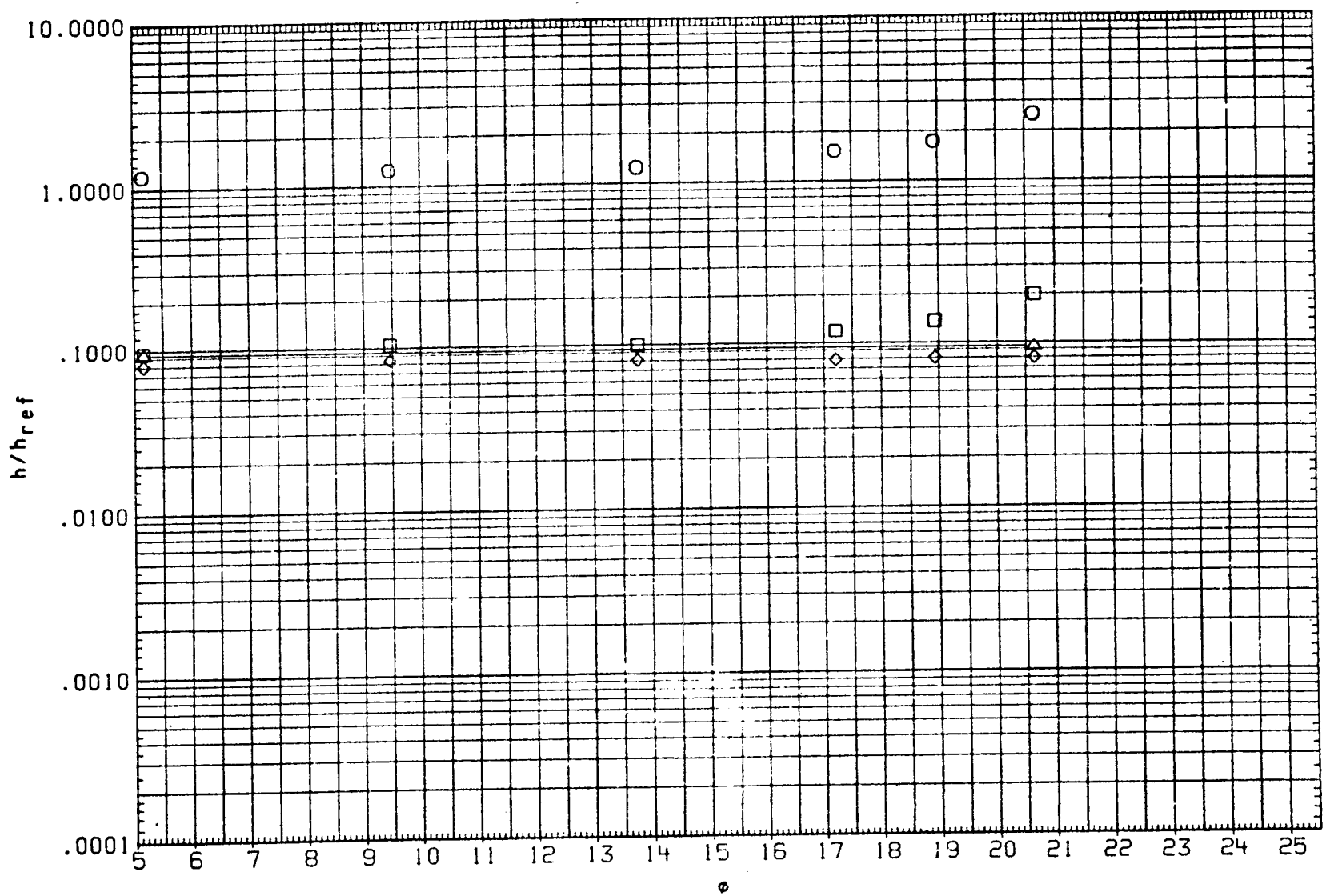

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 X/L = .357 DATE 22 APR 78 PAGE 11

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

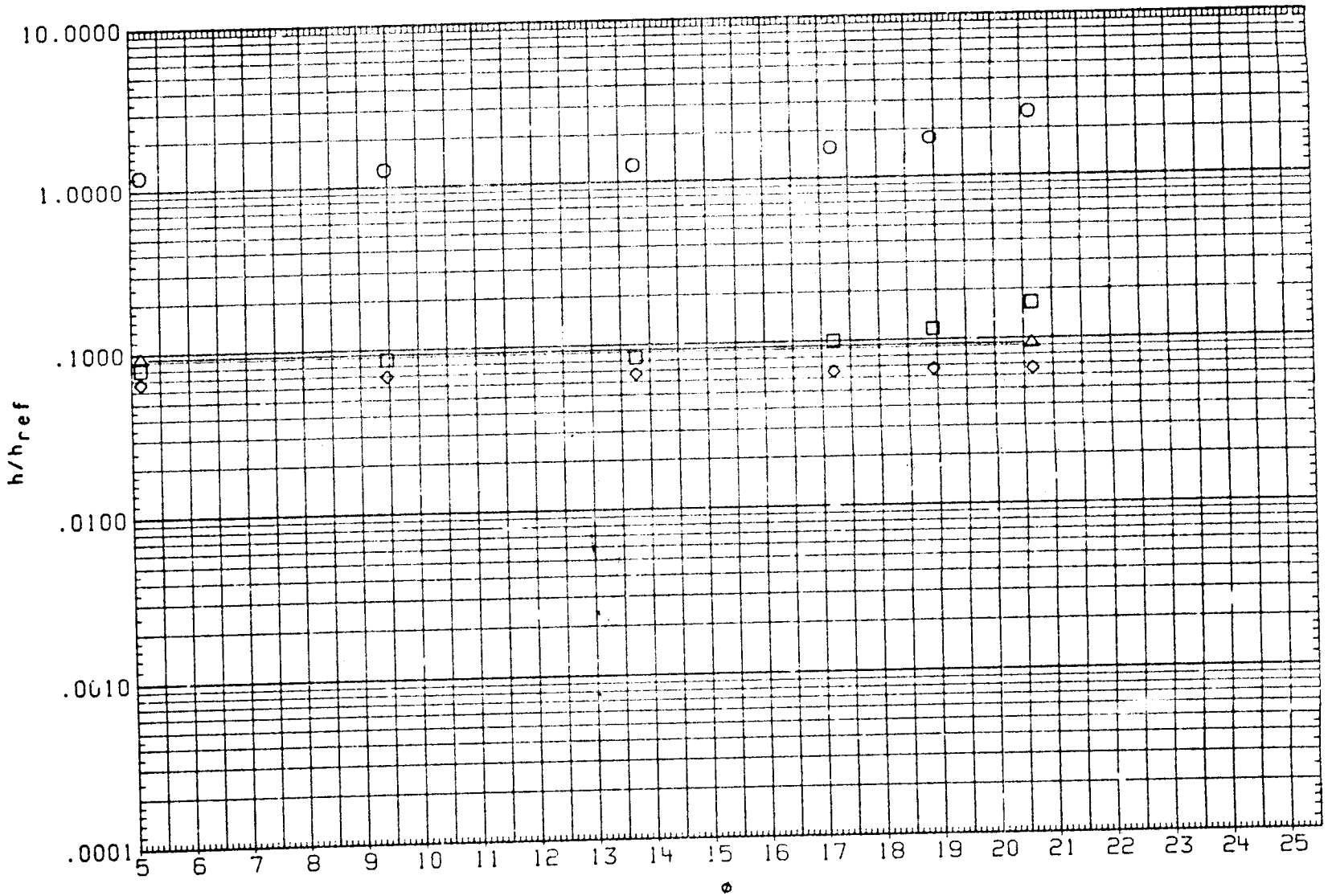

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78 PAGE 12

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001')	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

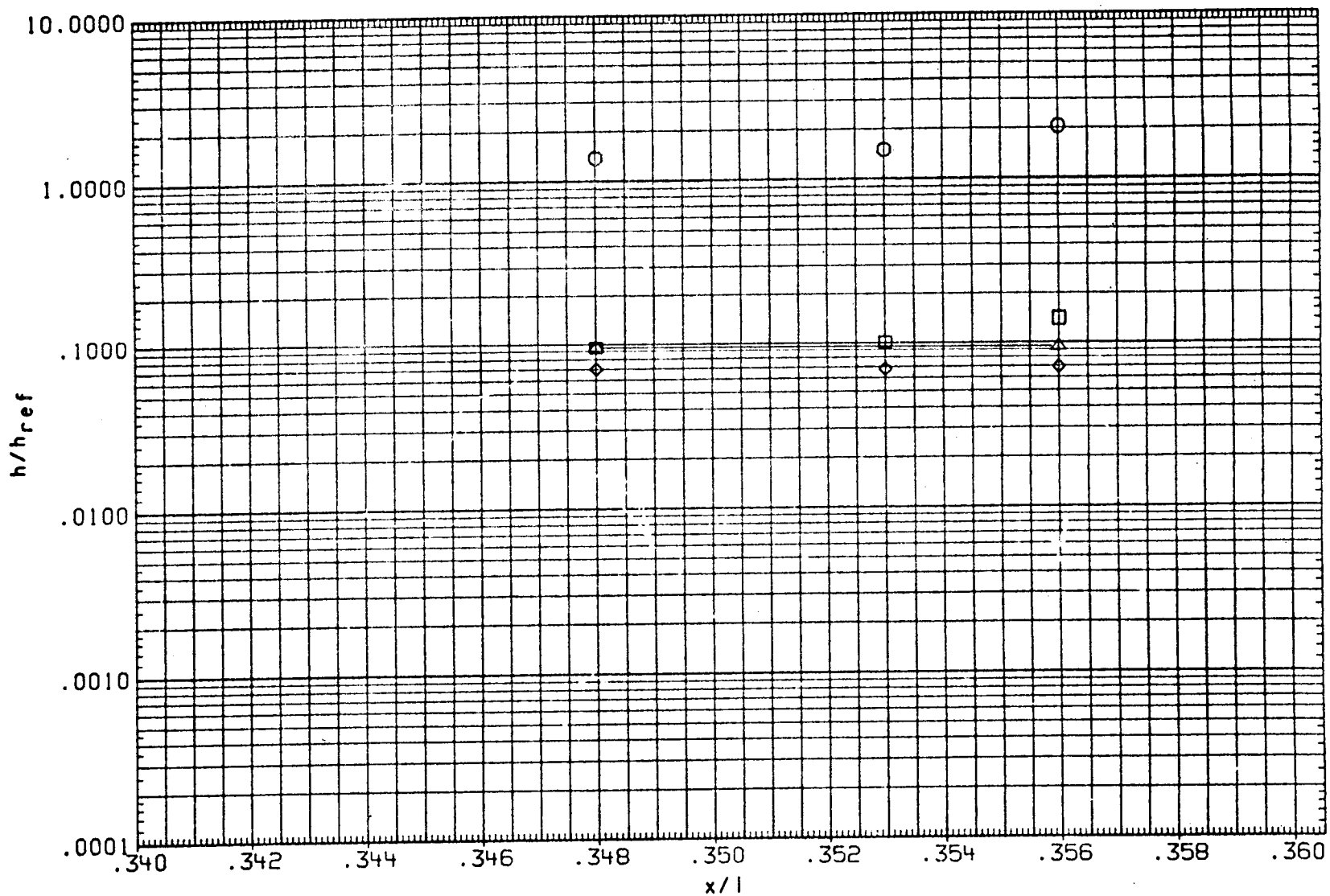

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 13

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

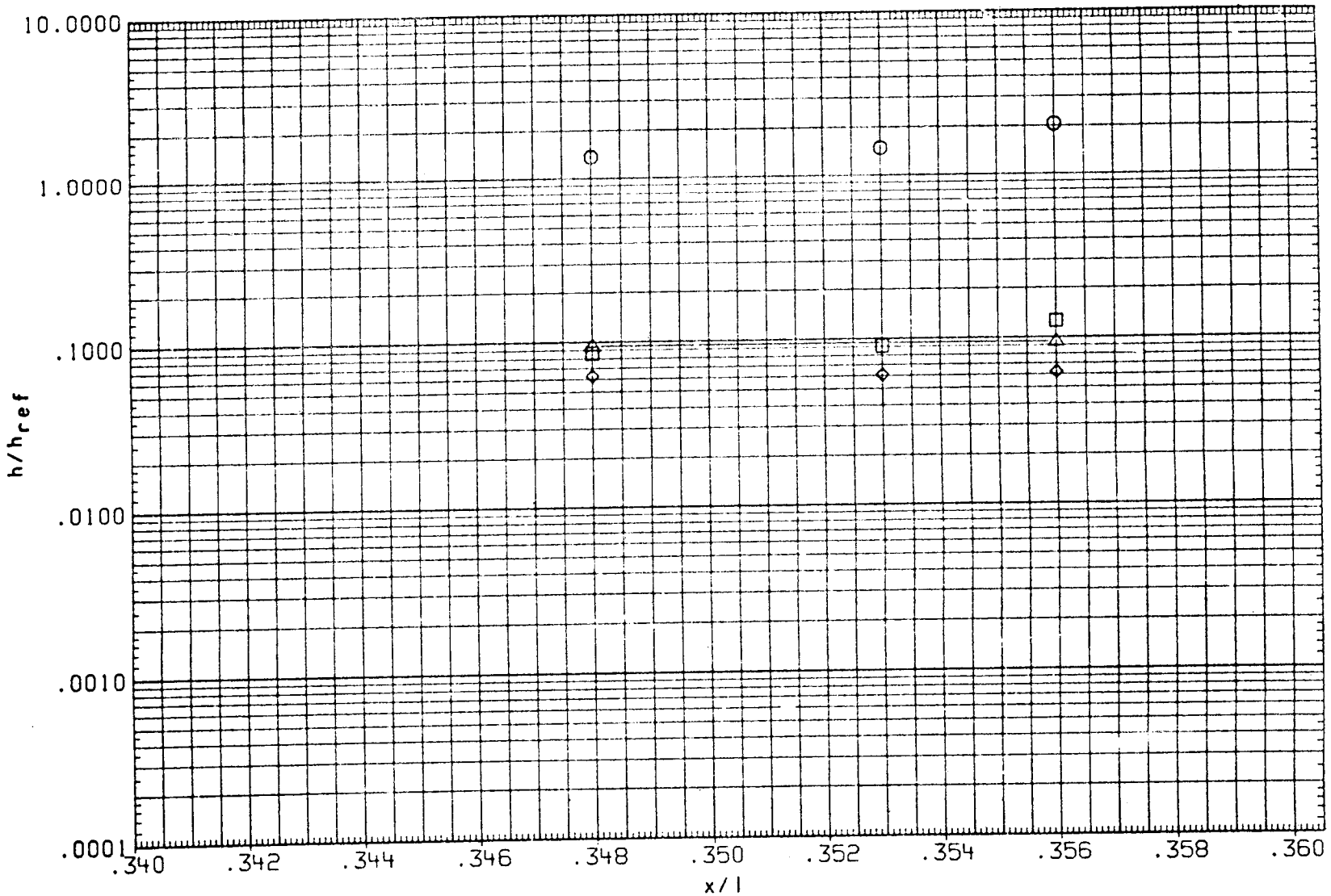

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 14

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

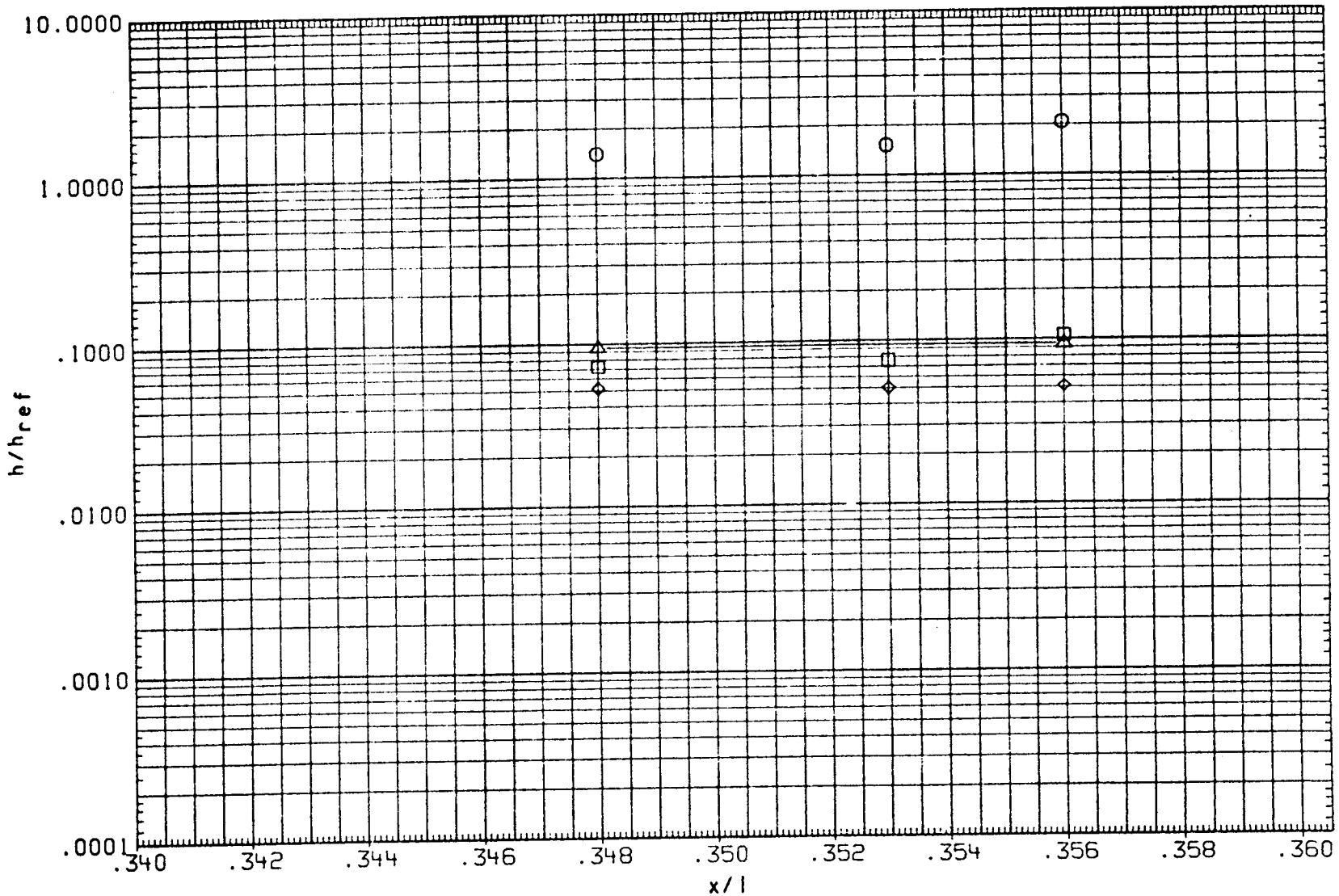

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 15

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20M0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 A.L. DIA	.000	.000	5.000	5.300
(M20M0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 A.L. DIA	.000	.000	5.000	5.300
(B20M11)	◇	IH51A CONF 5A LO2 ANTIGEYSER LINE DIAGONAL		.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

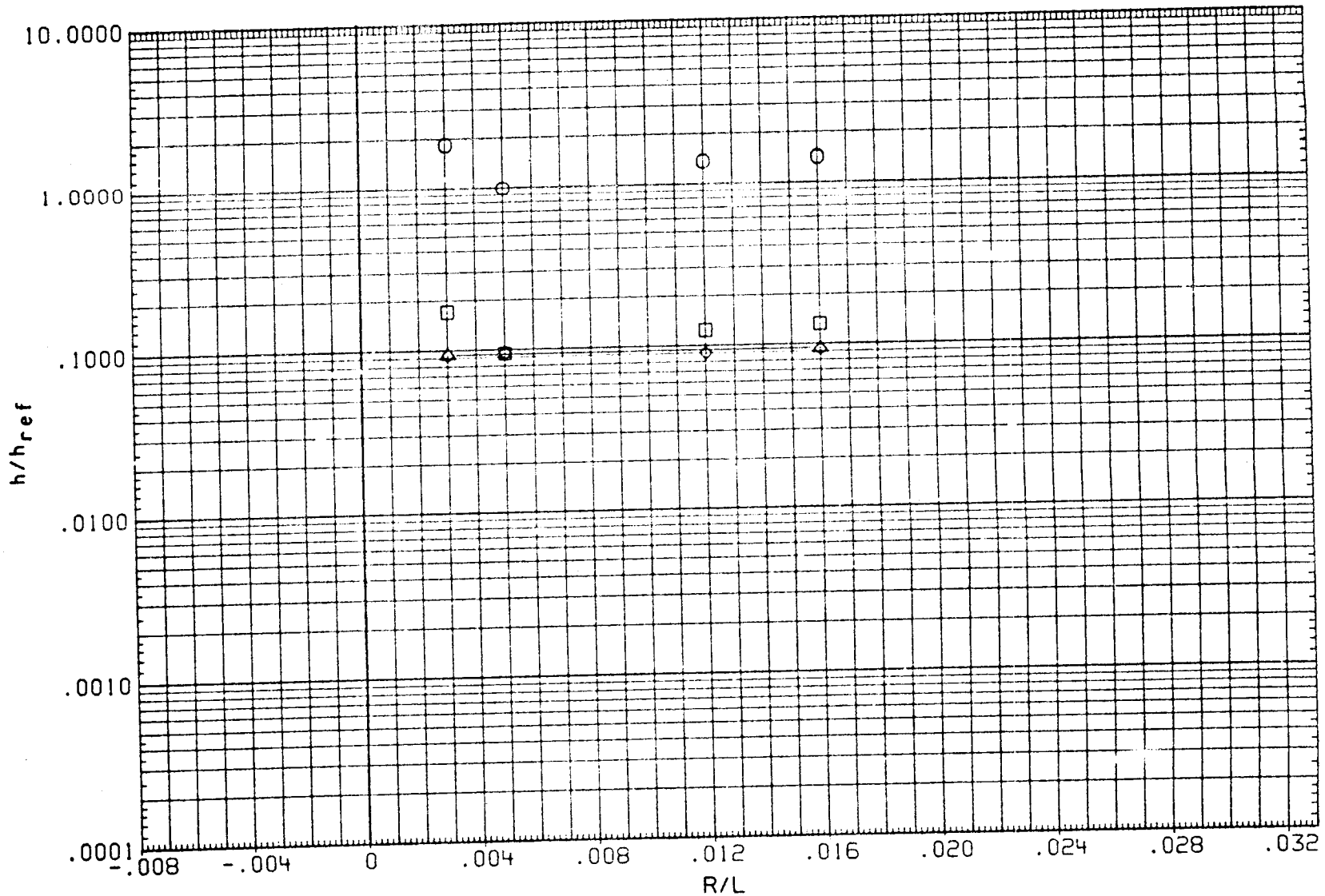

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 16

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20M0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 A.L. DIA	.000	.000	5.000	5.300
(M20M0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 A.L. DIA	.000	.000	5.000	5.300
(B20M11)	◇	IH51A CONF 5A LO2 ANTIGEYSER LINE DIAGONAL		.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

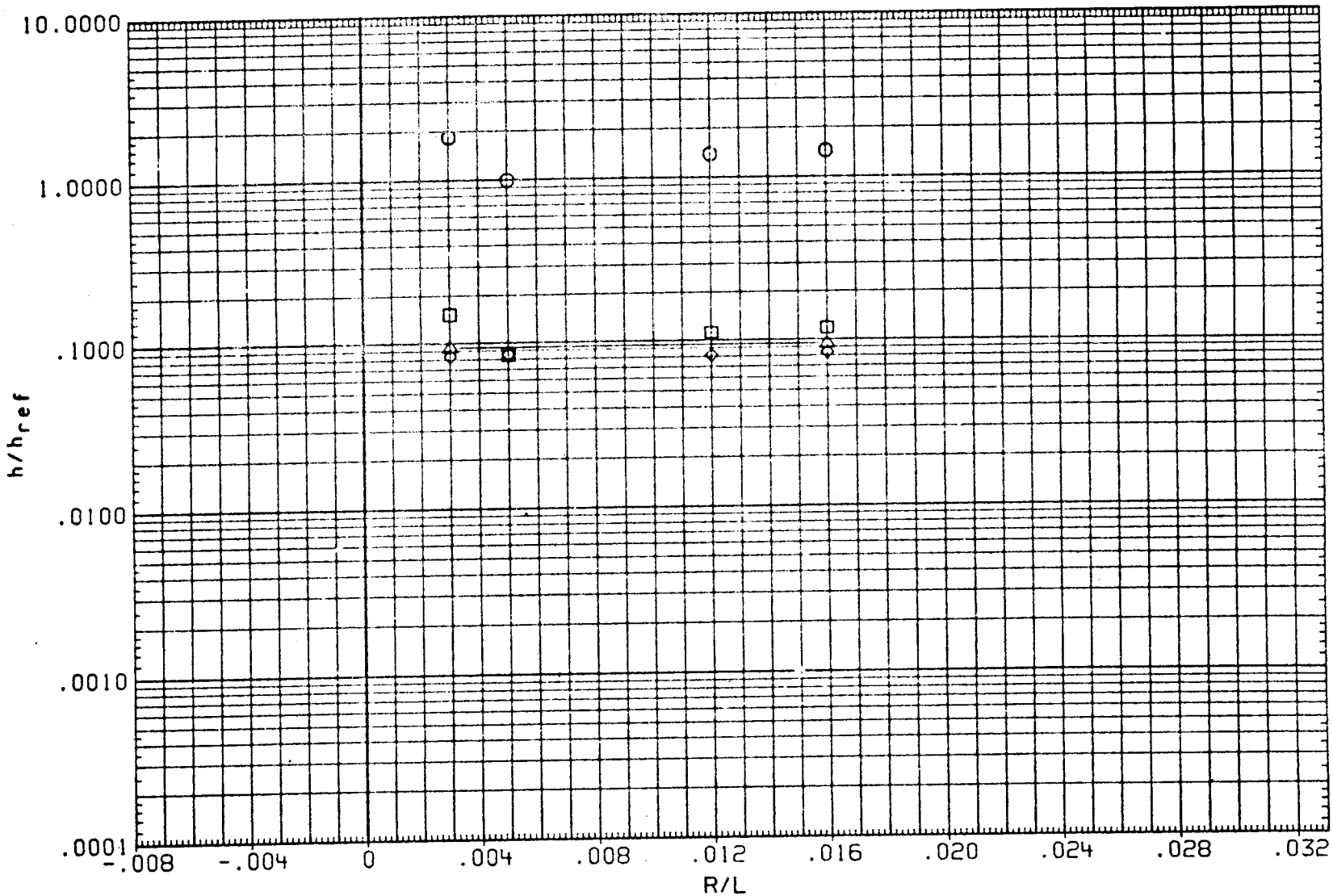

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20M0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LO2 A.L. DIA	.000	.000	5.000	5.300
(M20M0A)	□	IH51A 2A+3A+4A-5A-5A	LO2 A.L. DIA	.000	.000	5.000	5.300
(B20M11)	◇	IH51A CONF 5A LO2 ANTIGEYSER LINE DIAGONAL		.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

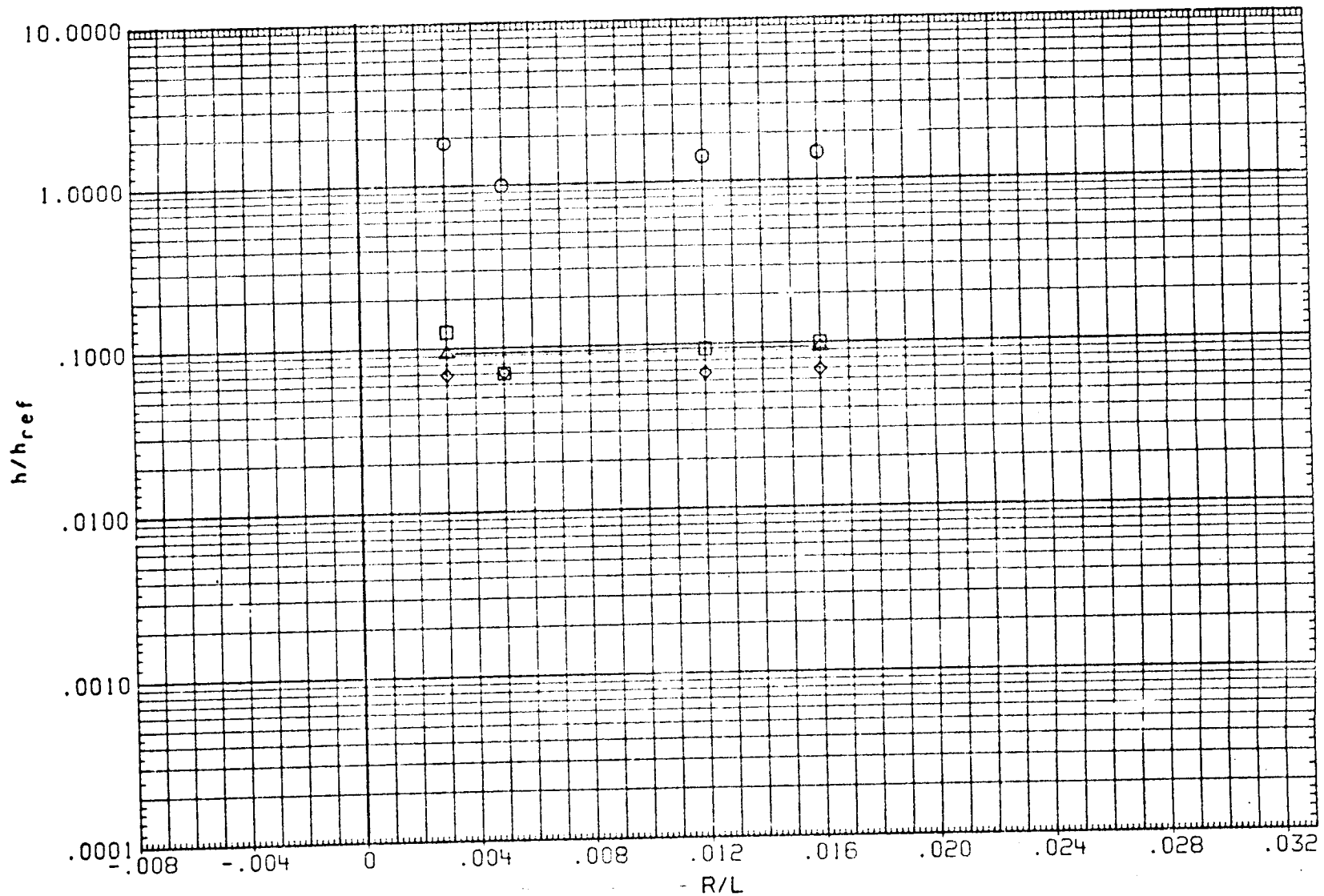

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 18

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

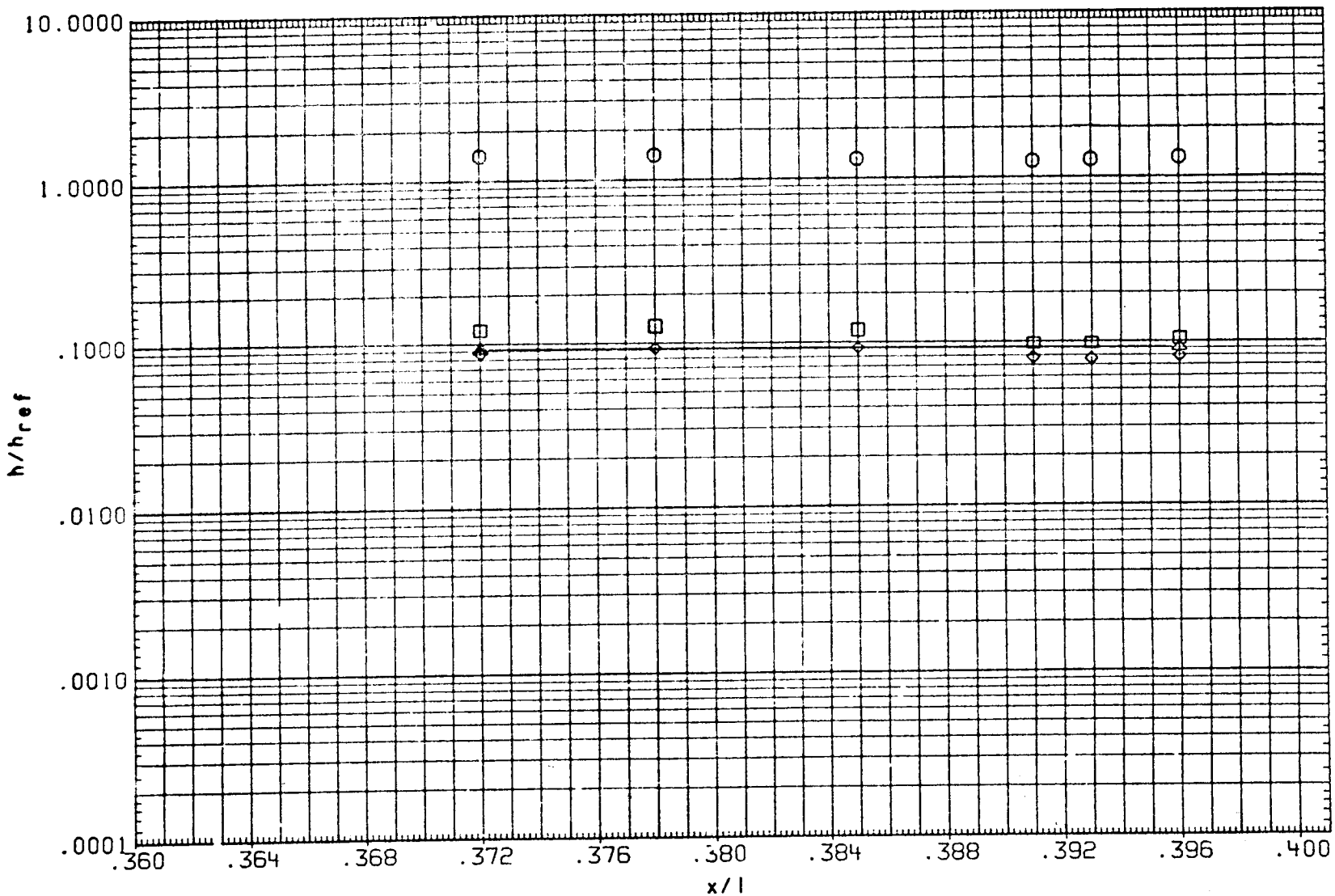

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

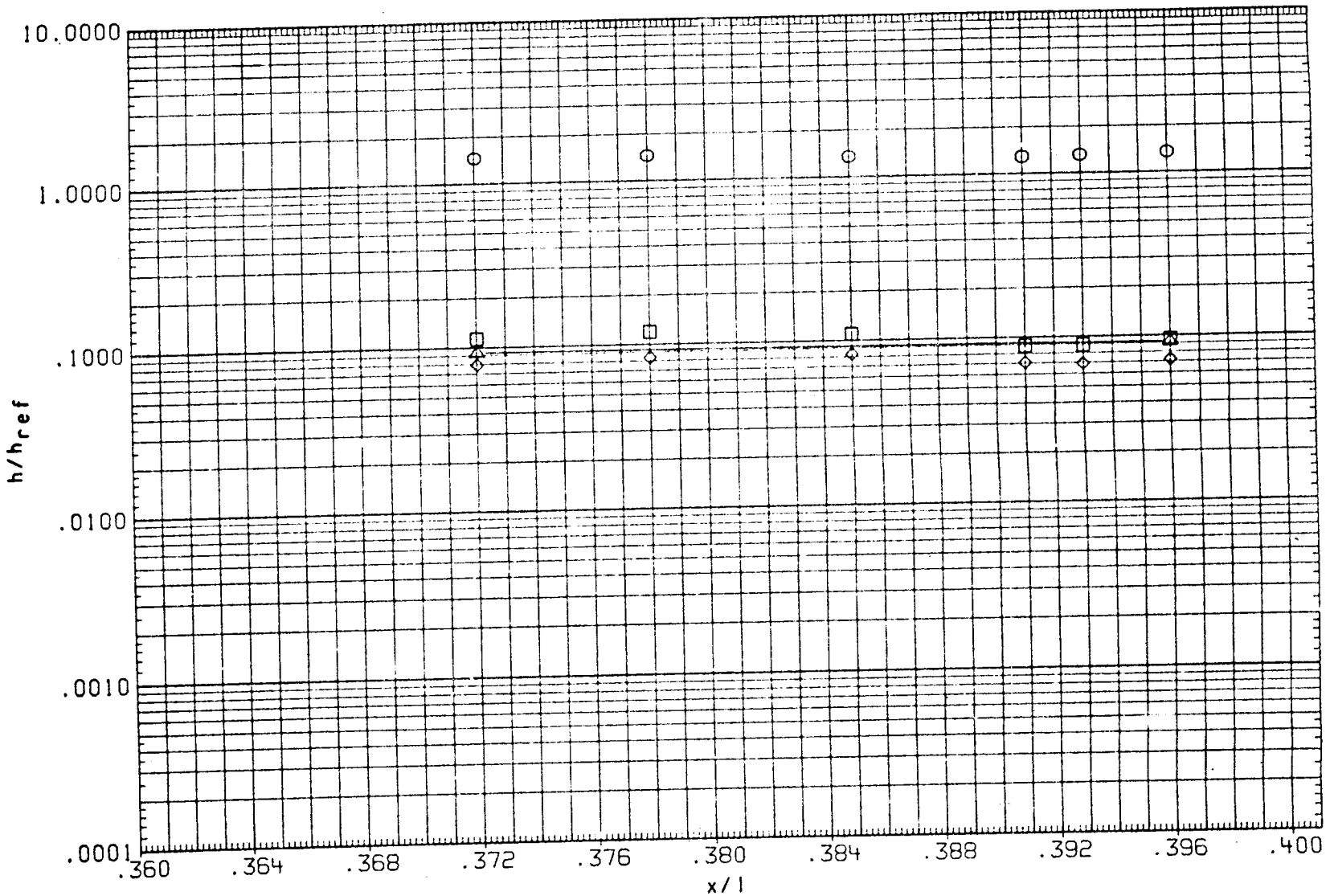

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

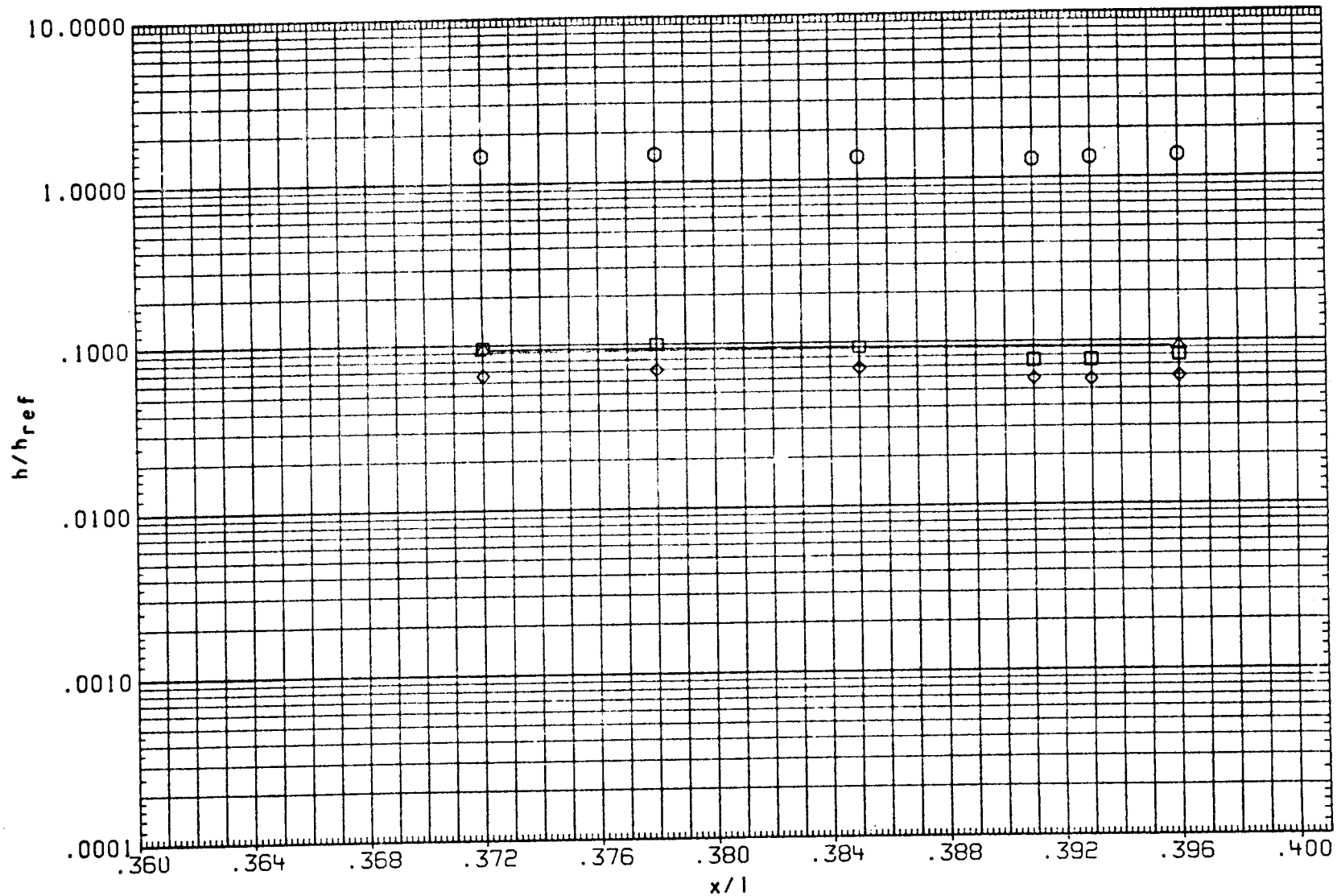

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20N0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH2 LINE DIA	.000	.000	5.000	5.300
(M20N0A)	□	IH51A 2A+3A+4A-5A-5A	LH2 LINE DIA	.000	.000	5.000	5.300
(B20N11)	◇	IH51A CONF 5A LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

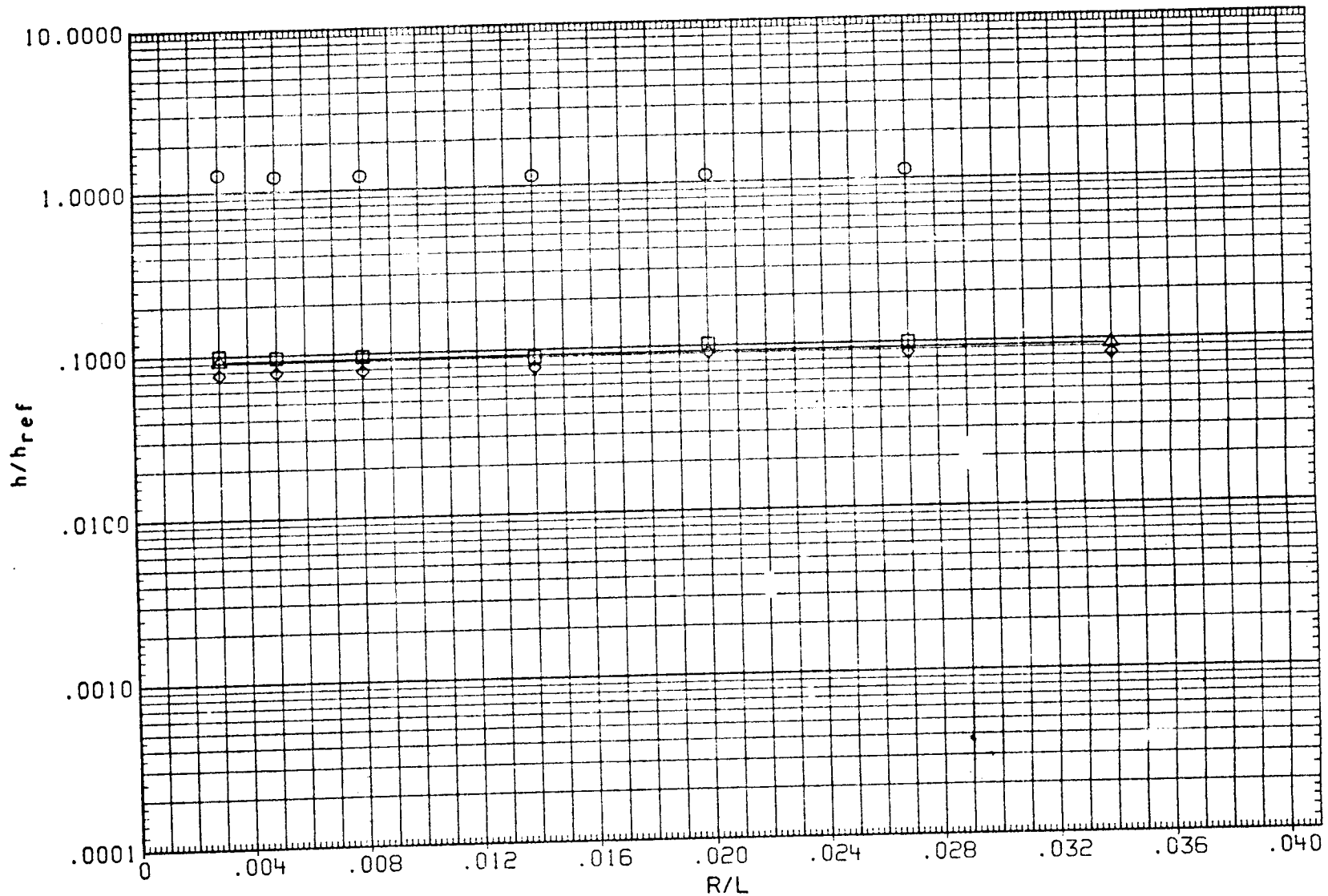

FIG. 2i HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2ON0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH2 LINE DIA	.000	.000	5.000	5.300
(M2ON0A)	□	IH51A 2A+3A+4A-5A-5A	LH2 LINE DIA	.000	.000	5.000	5.300
(B2ON11)	◇	IH51A CONF 5A LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(U2ON5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

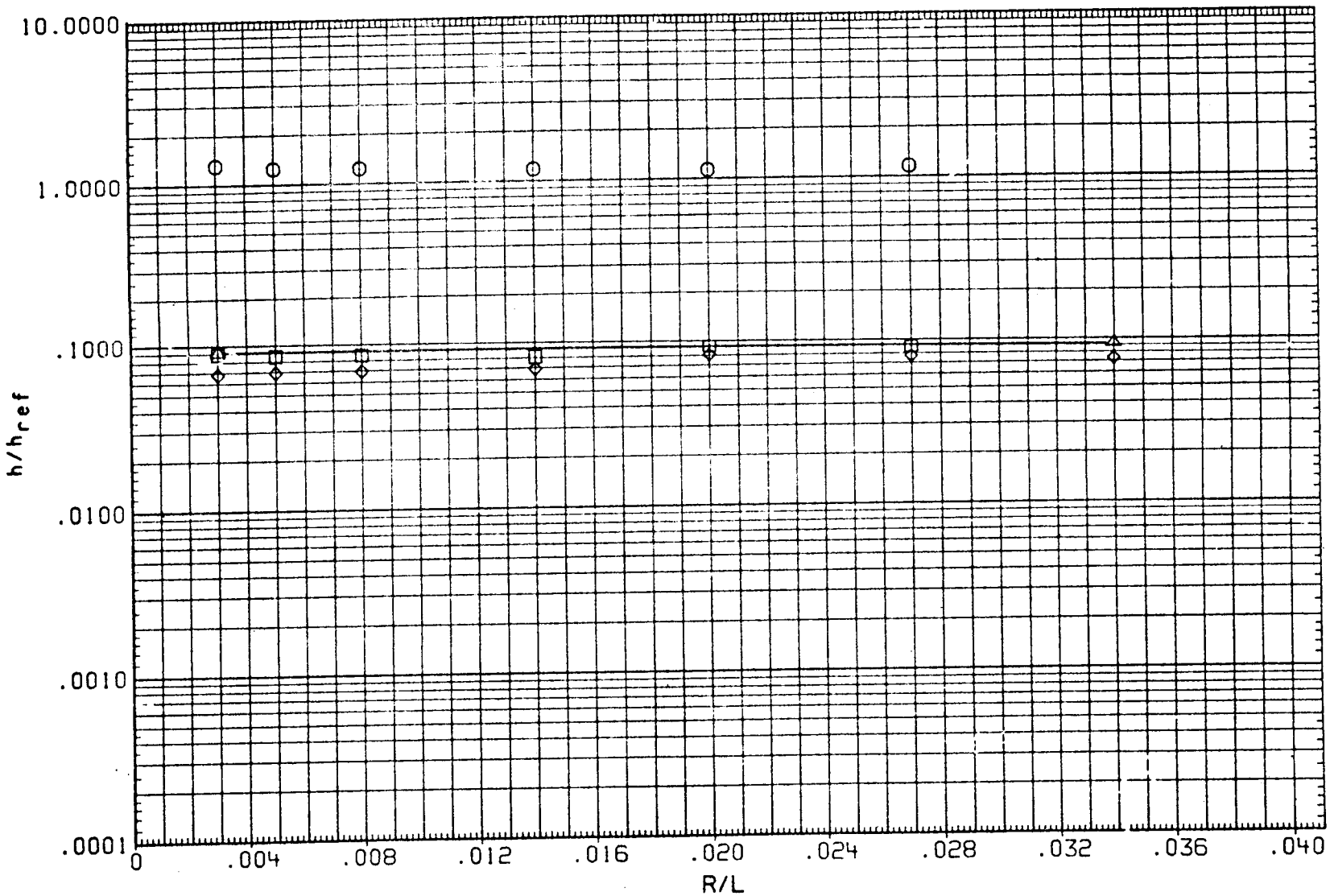

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 23

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20N0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH2 LINE DIA	.000	.000	5.000	5.300
(M20N0A)	□	IH51A 2A+3A+4A-5A-5A	LH2 LINE DIA	.000	.000	5.000	5.300
(B20N11)	◇	IH51A CONF 5A LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

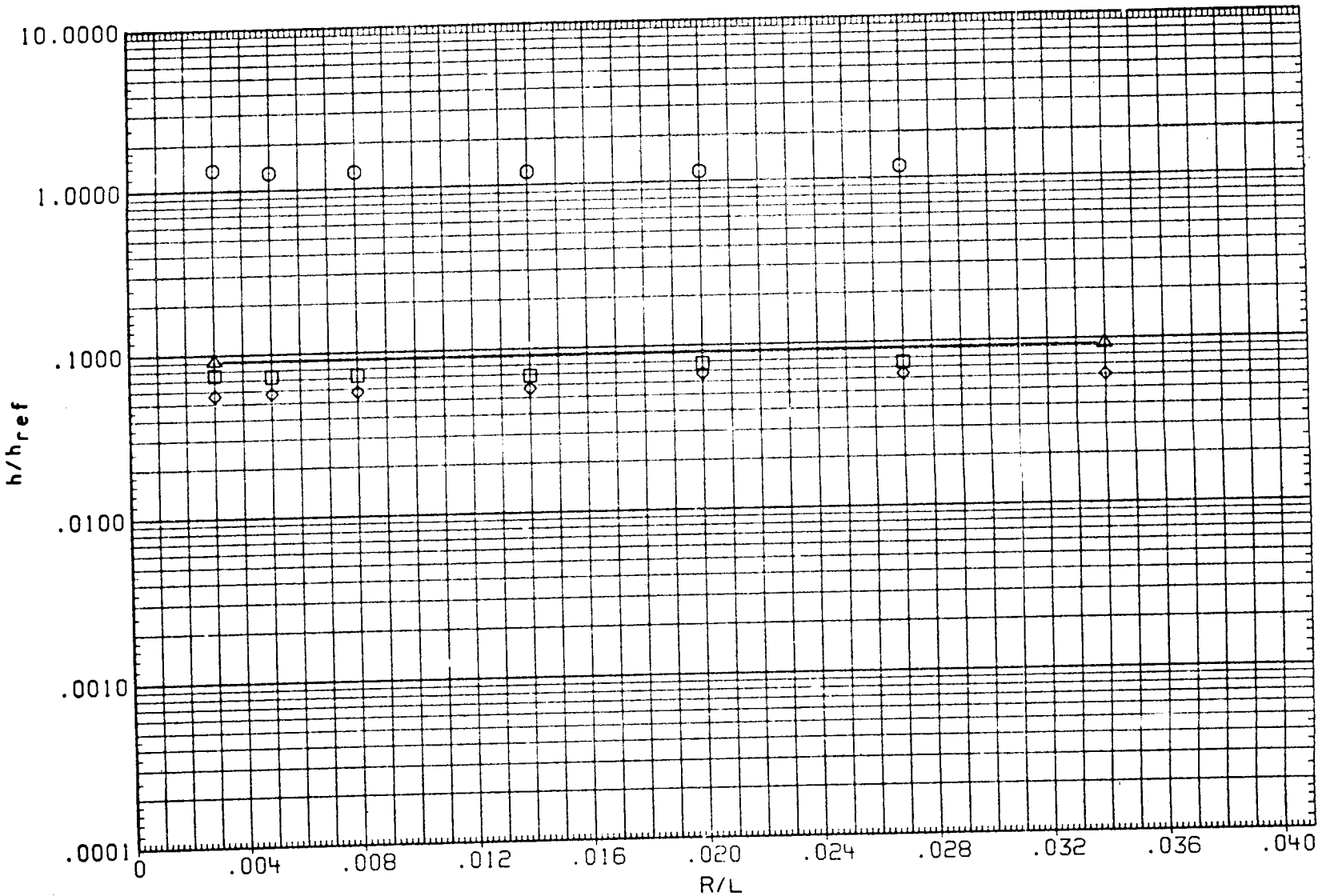

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

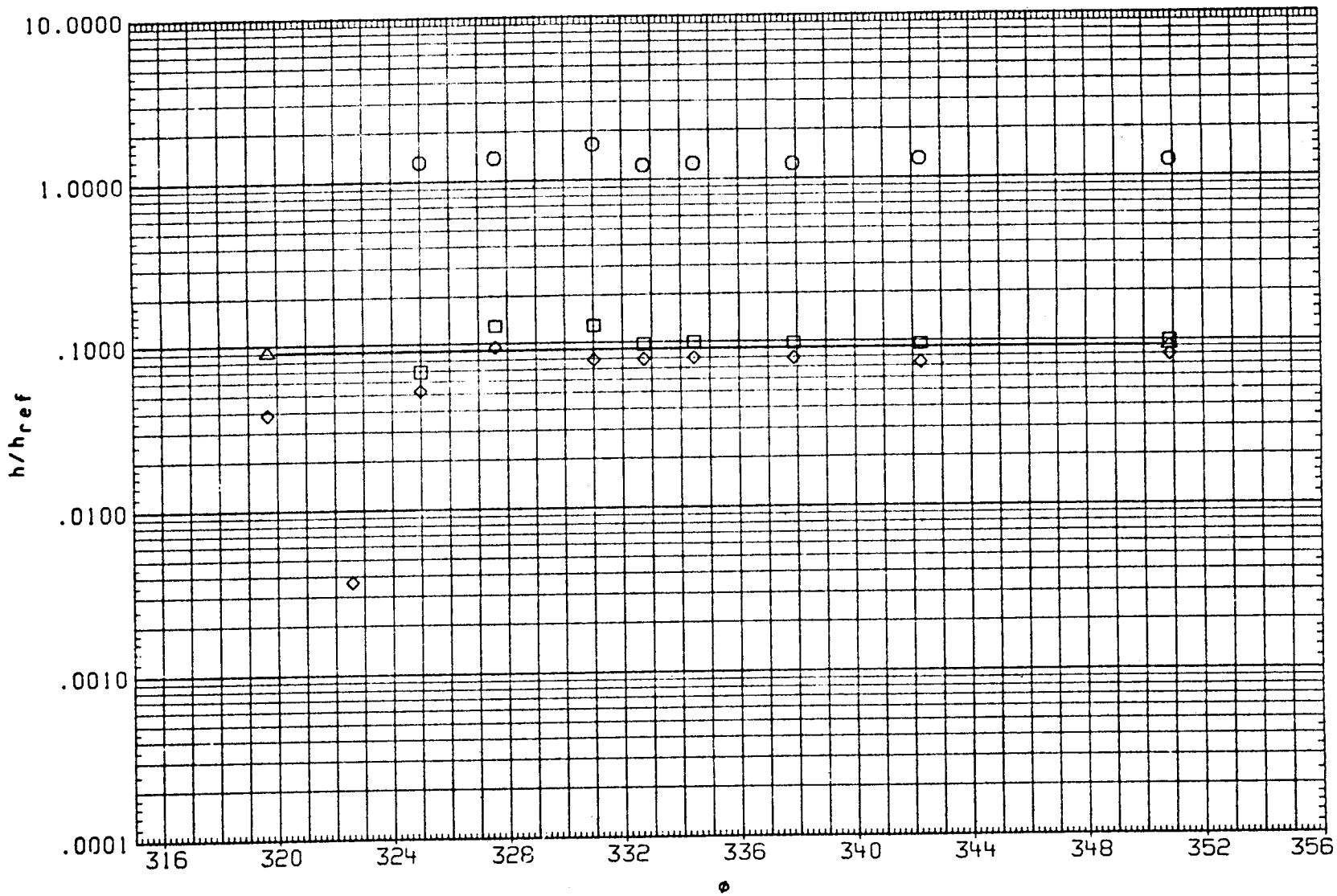

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .399 DATE 22 APR 78 PAGE 25

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(R2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

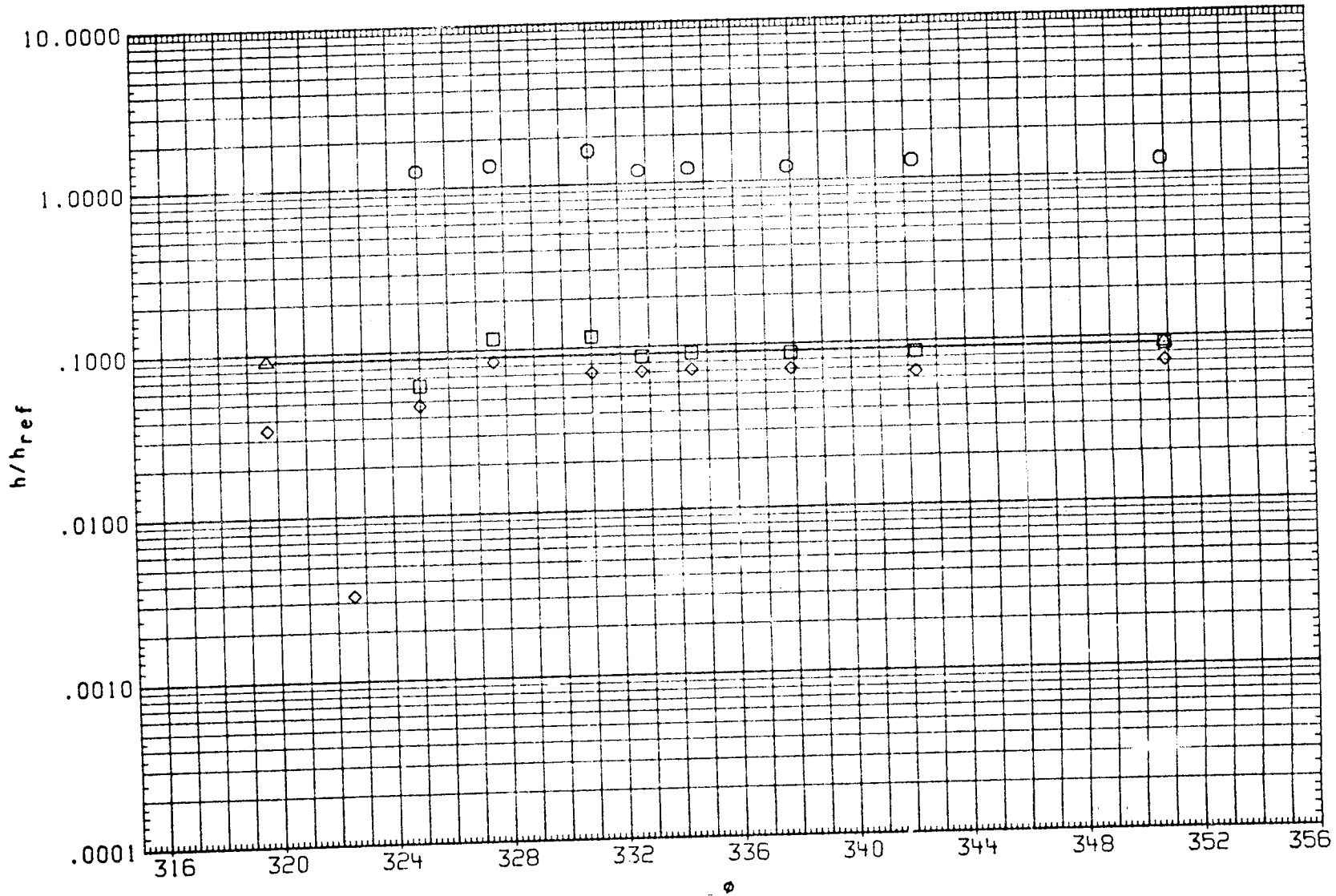

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .399 DATE 22 APR 78 PAGE 26

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

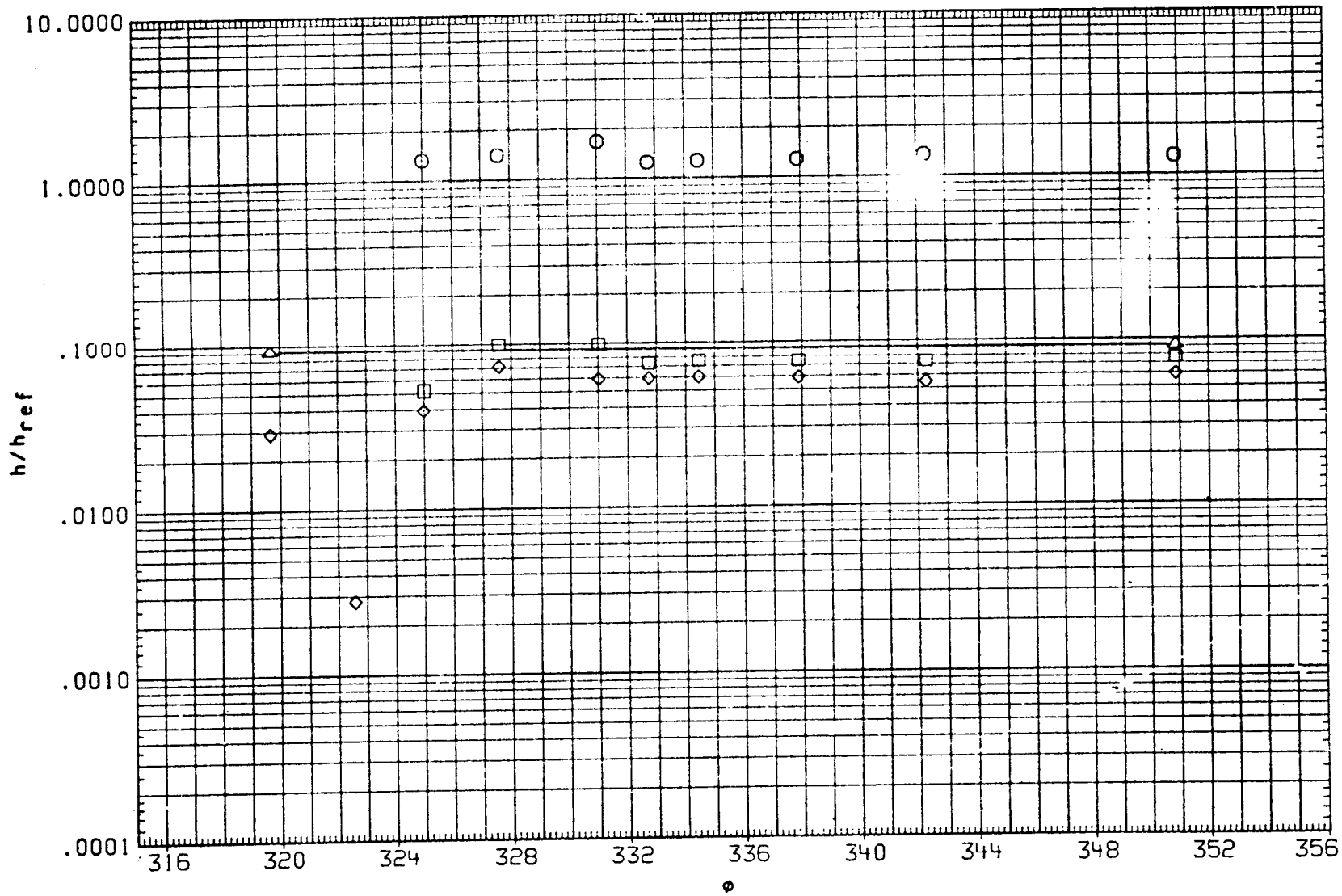

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .399 DATE 22 APR 78 PAGE 27

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-:A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

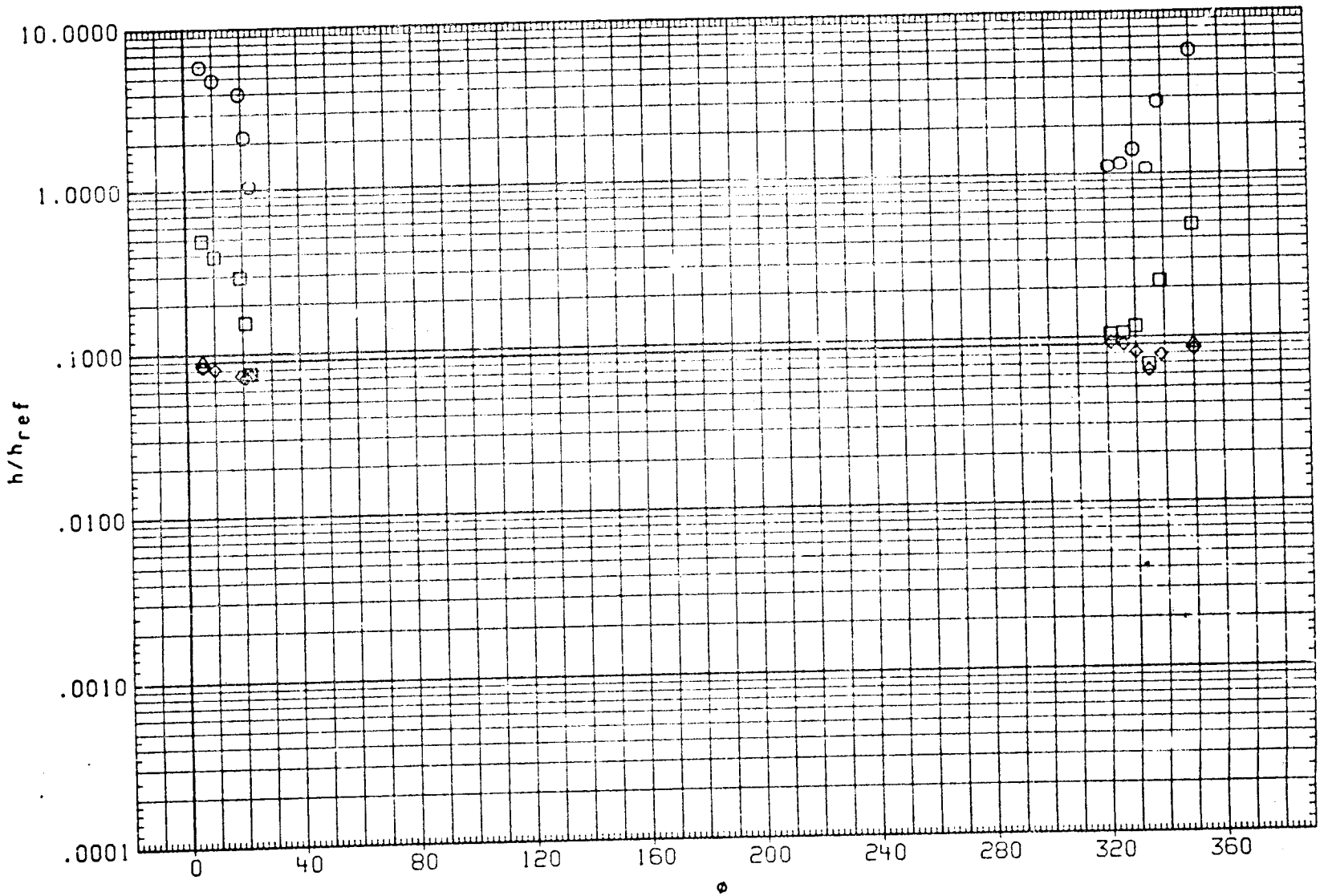

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .850 X/L = .437 DATE 22 APR 78 PAGE 28

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

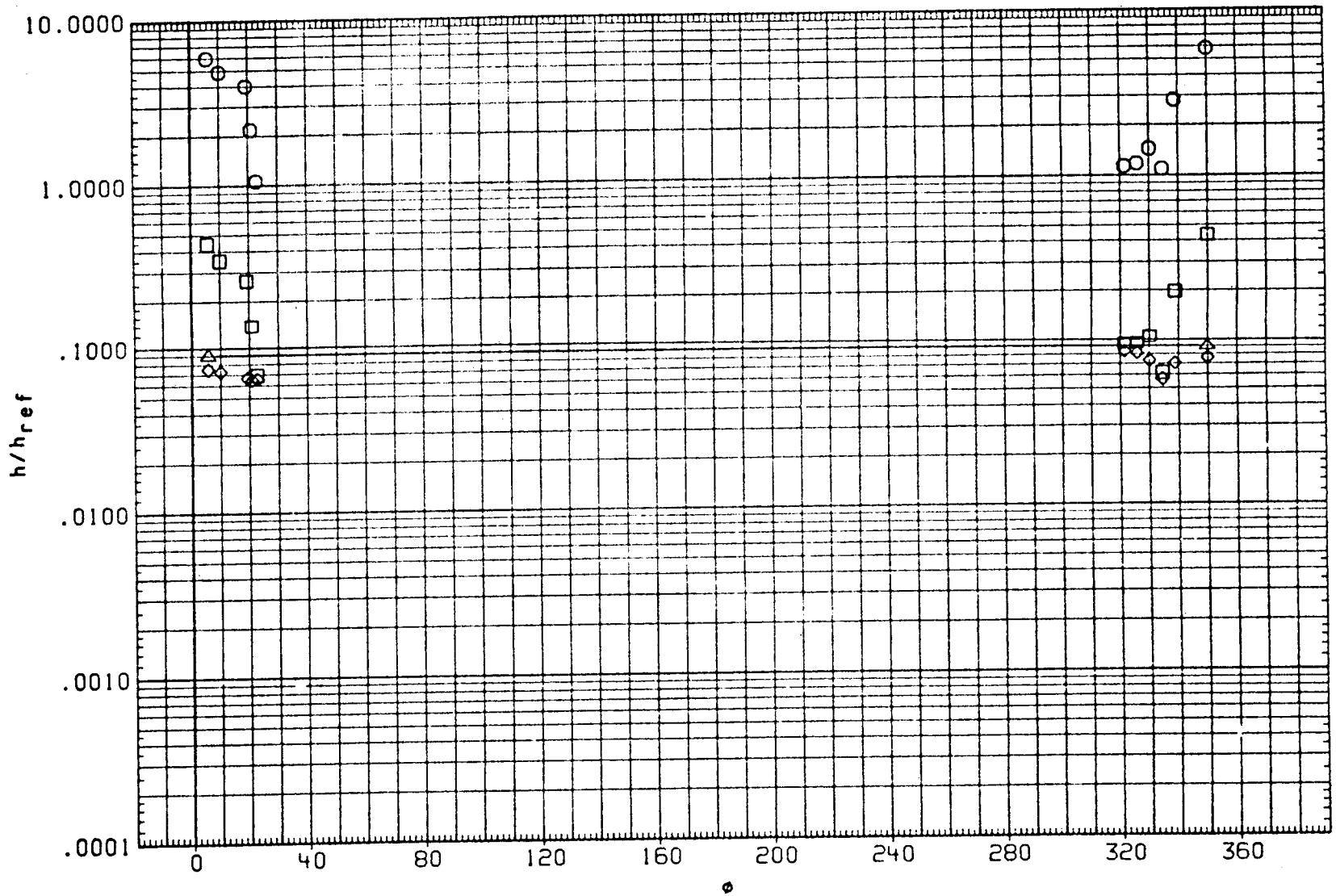

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .900 X/L = .437 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

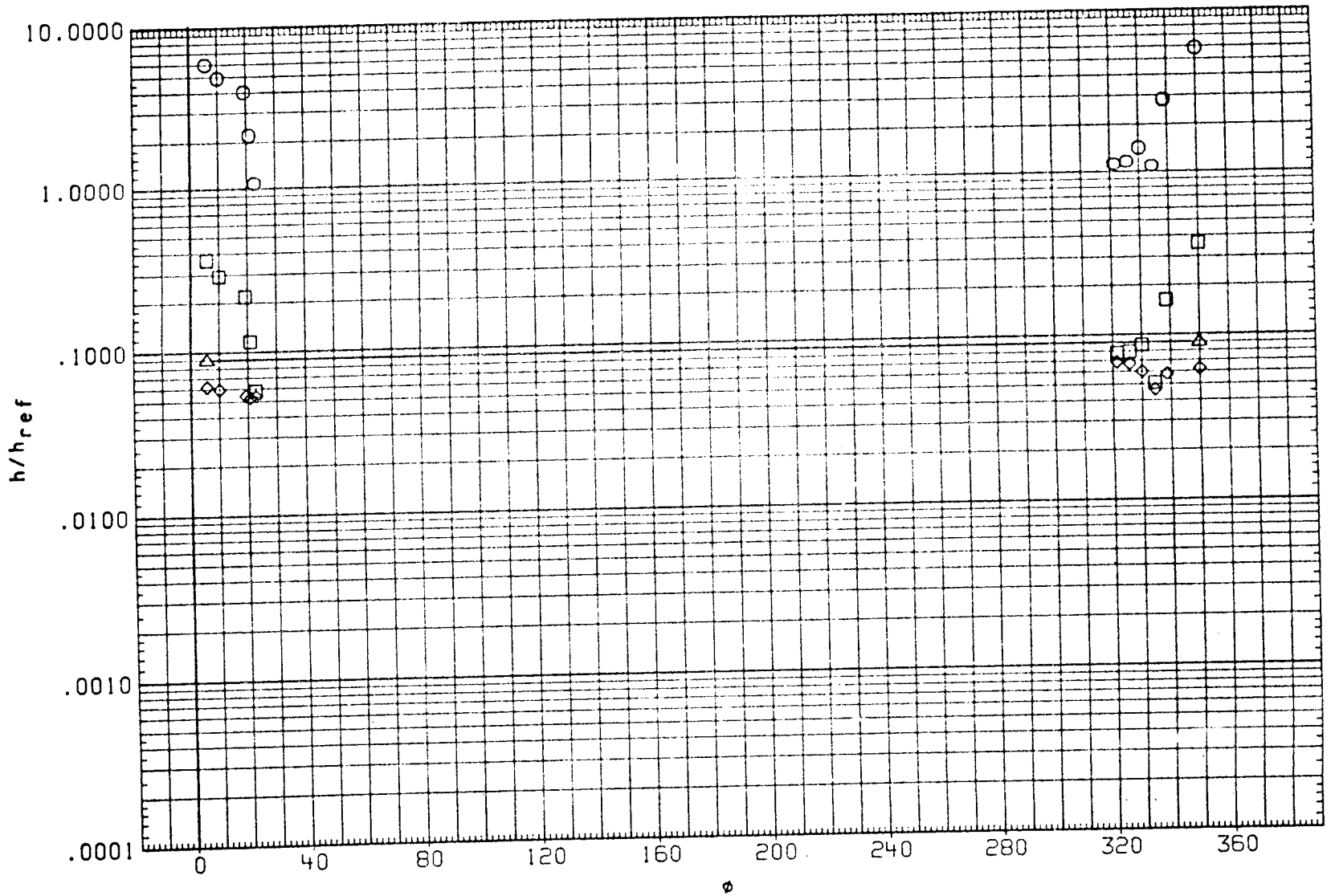

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78 PAGE 30

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

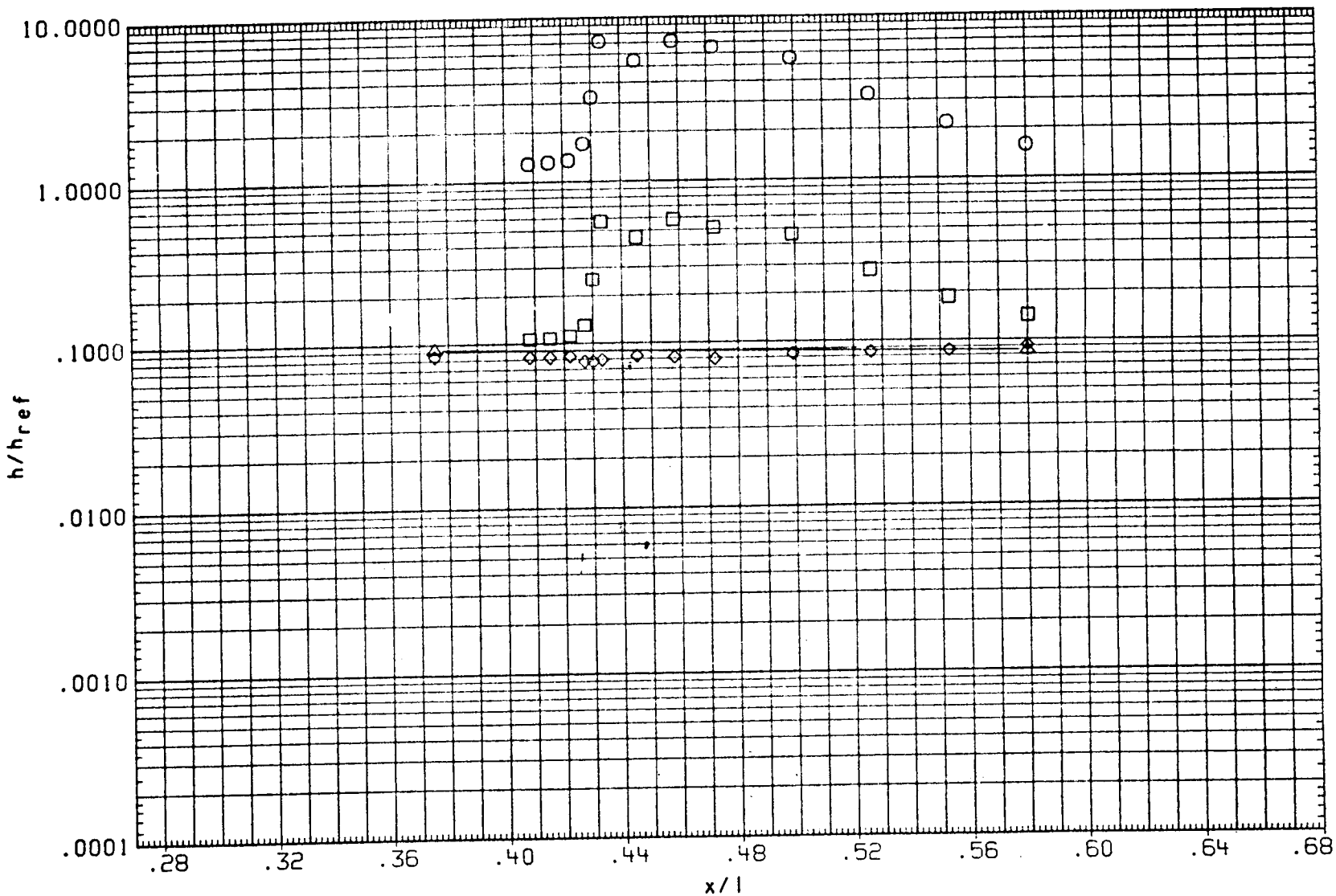

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 31

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

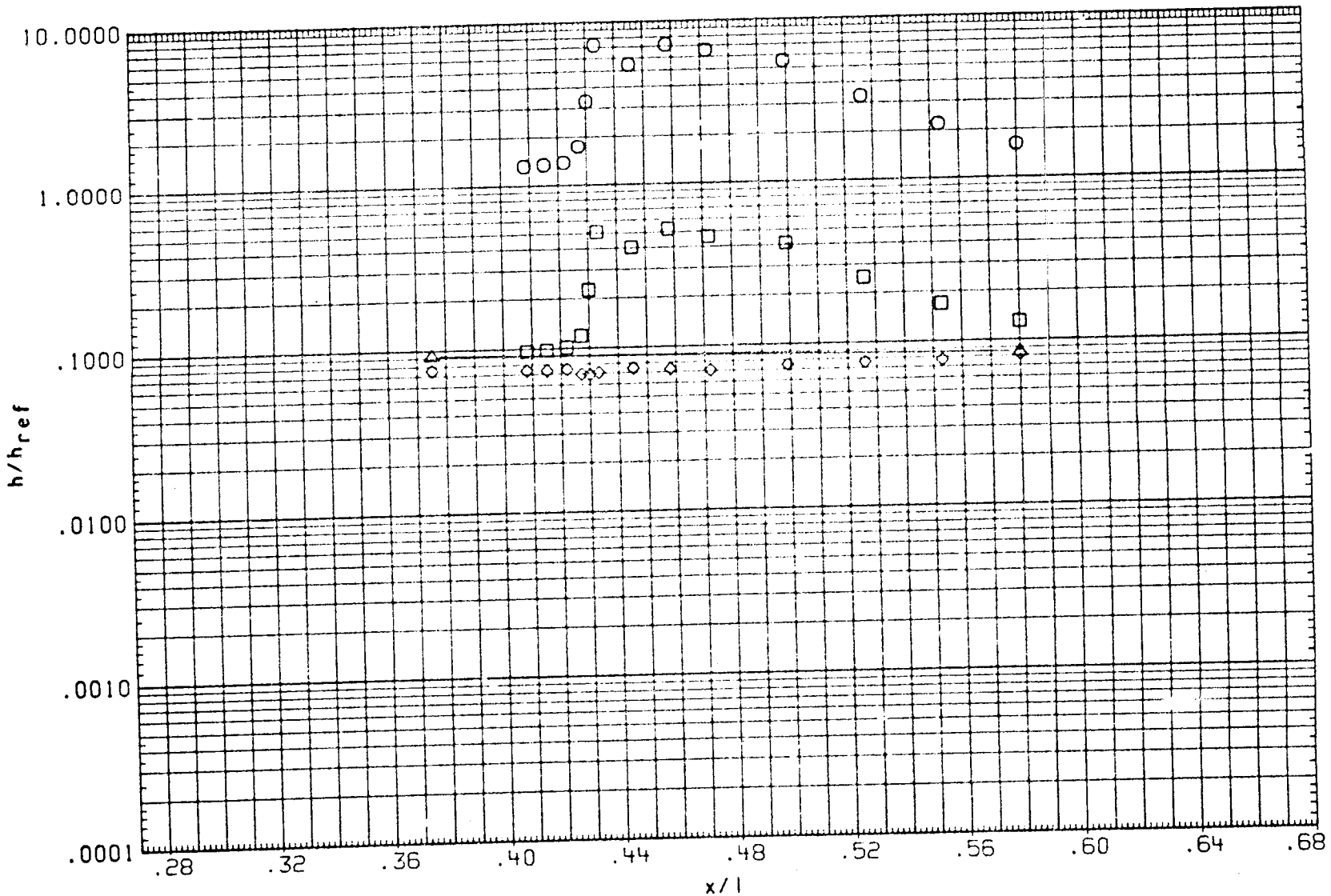

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 32

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

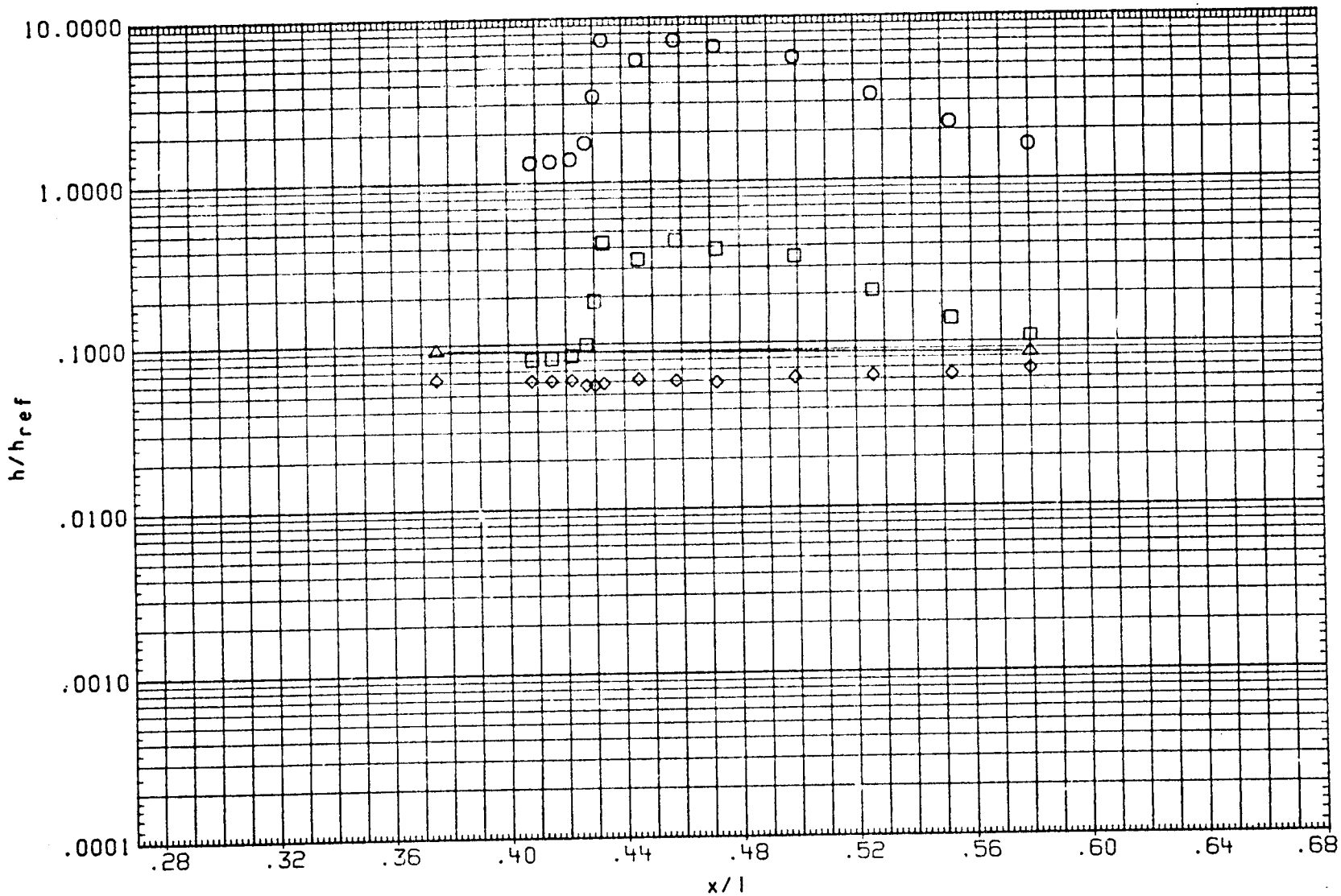

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

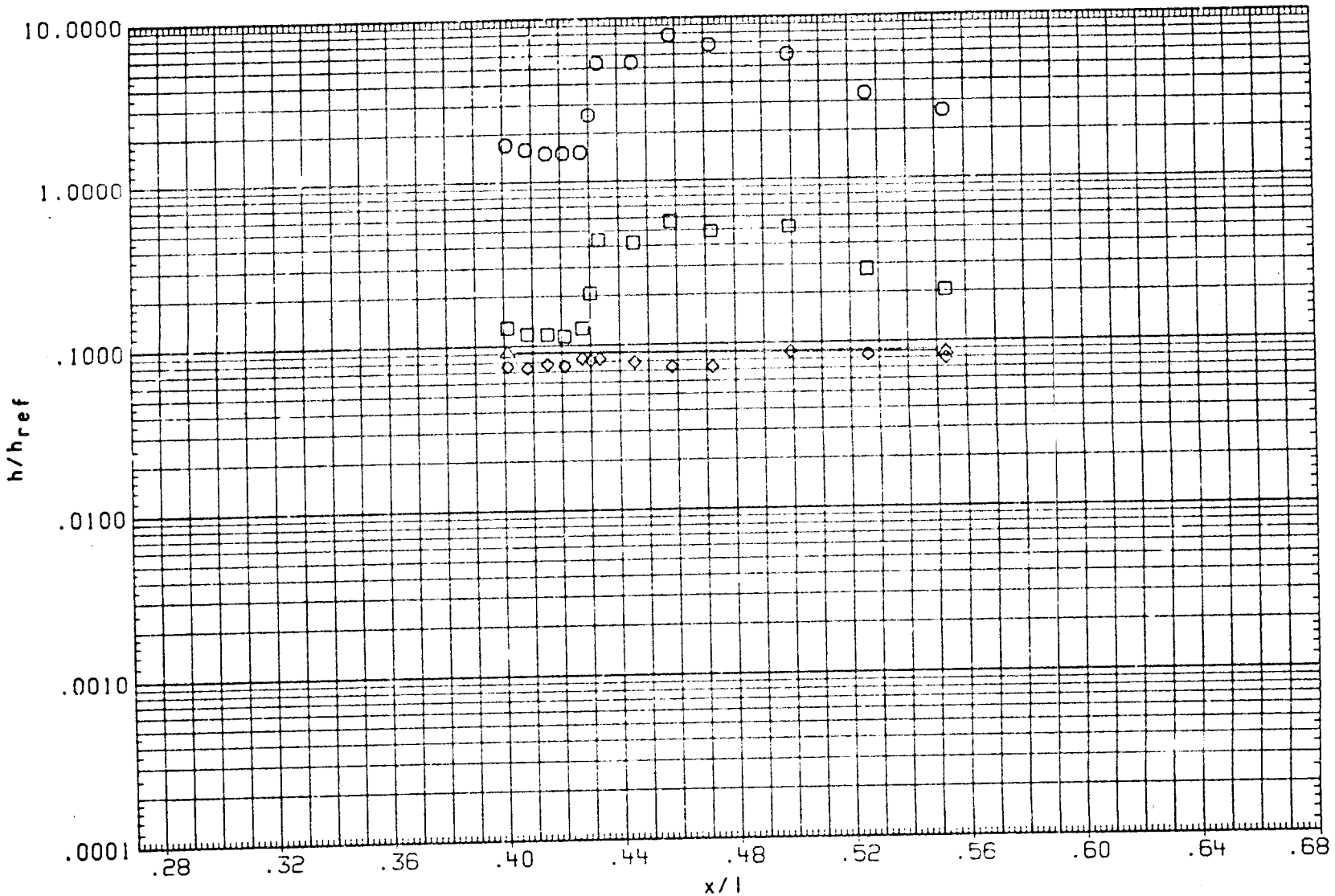

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 34

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

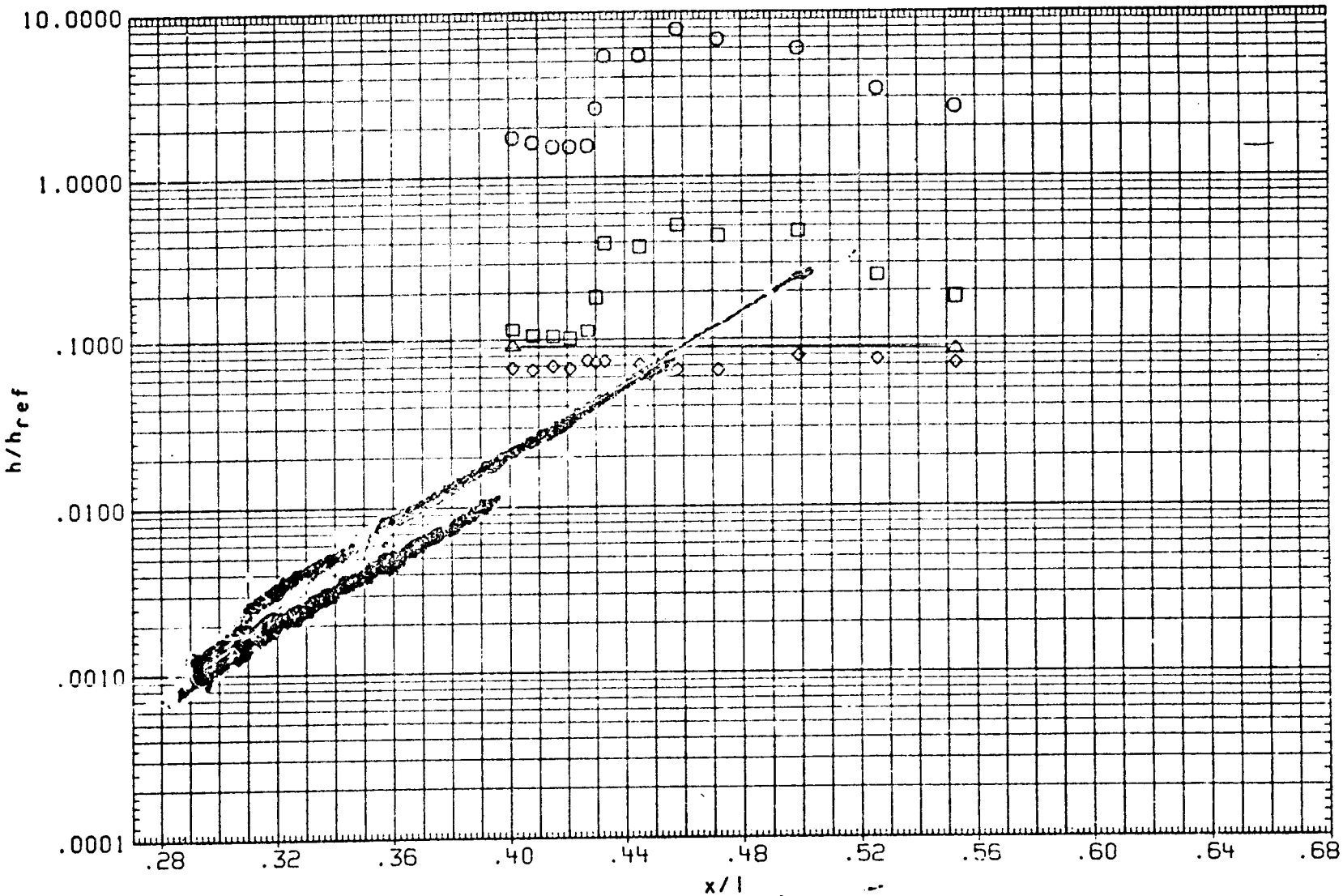

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78 PAGE 35

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

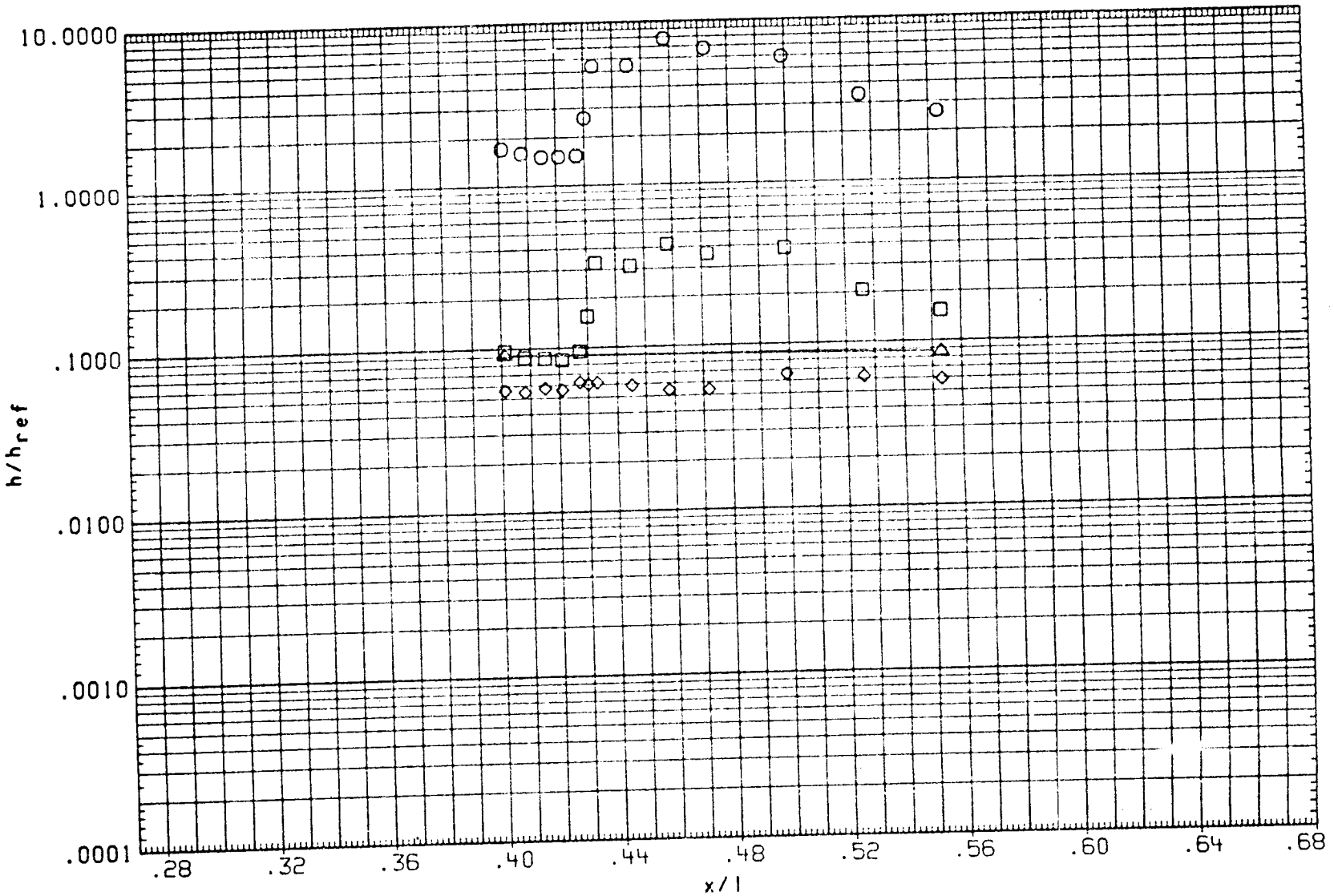

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78 PAGE 36

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH STRUT DIA	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

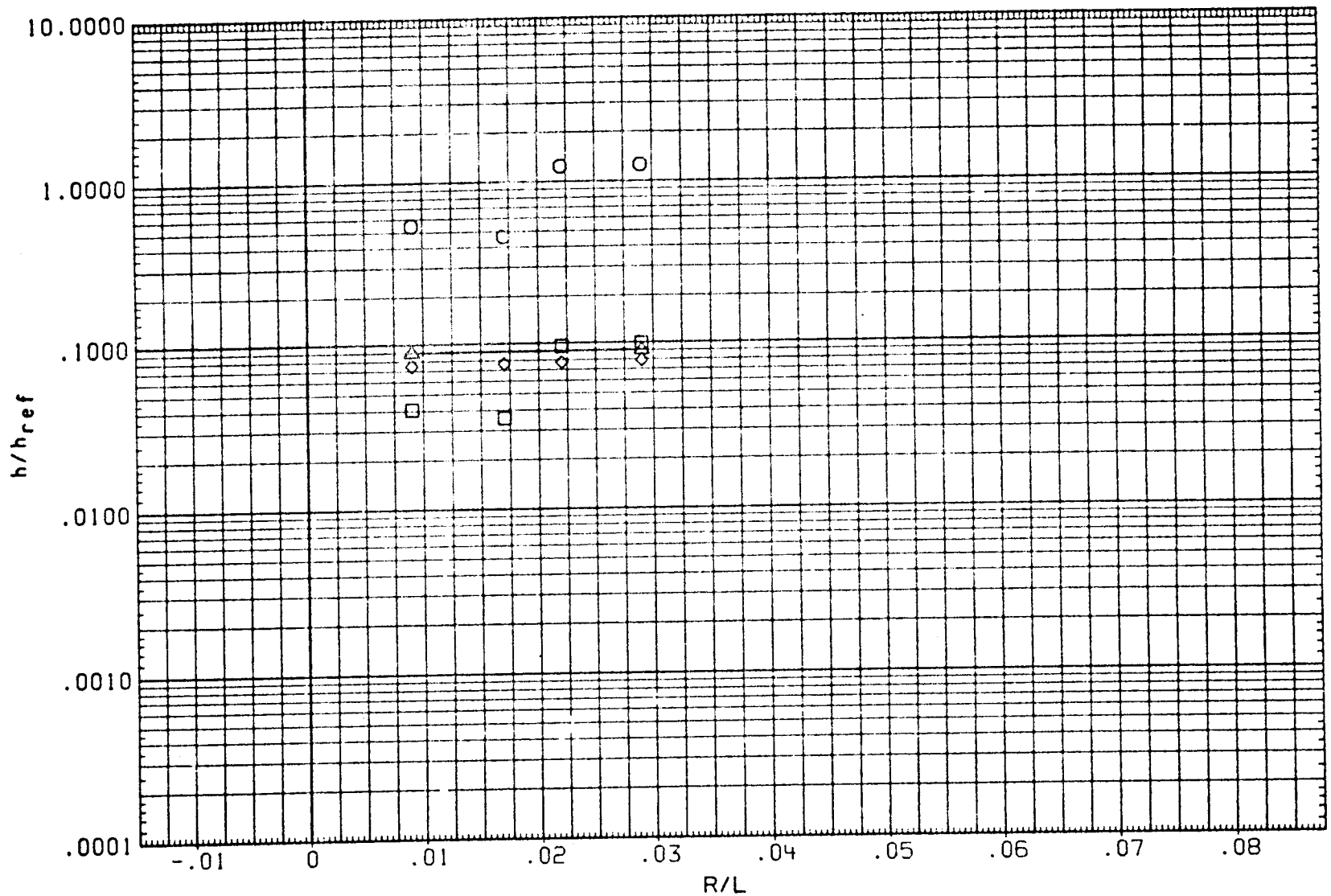

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH STRUT DIA	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

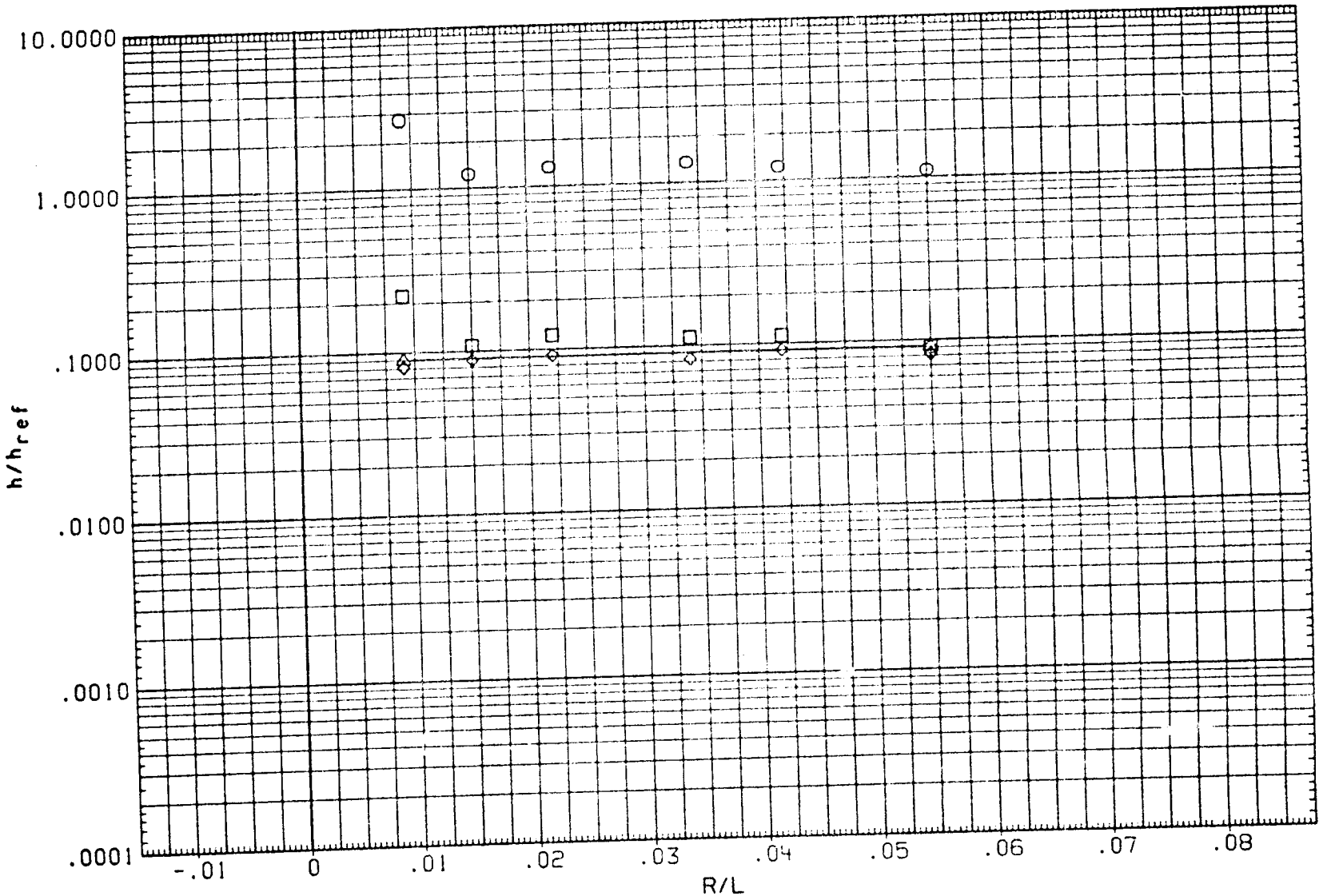

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 38

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH STRUT DIA	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

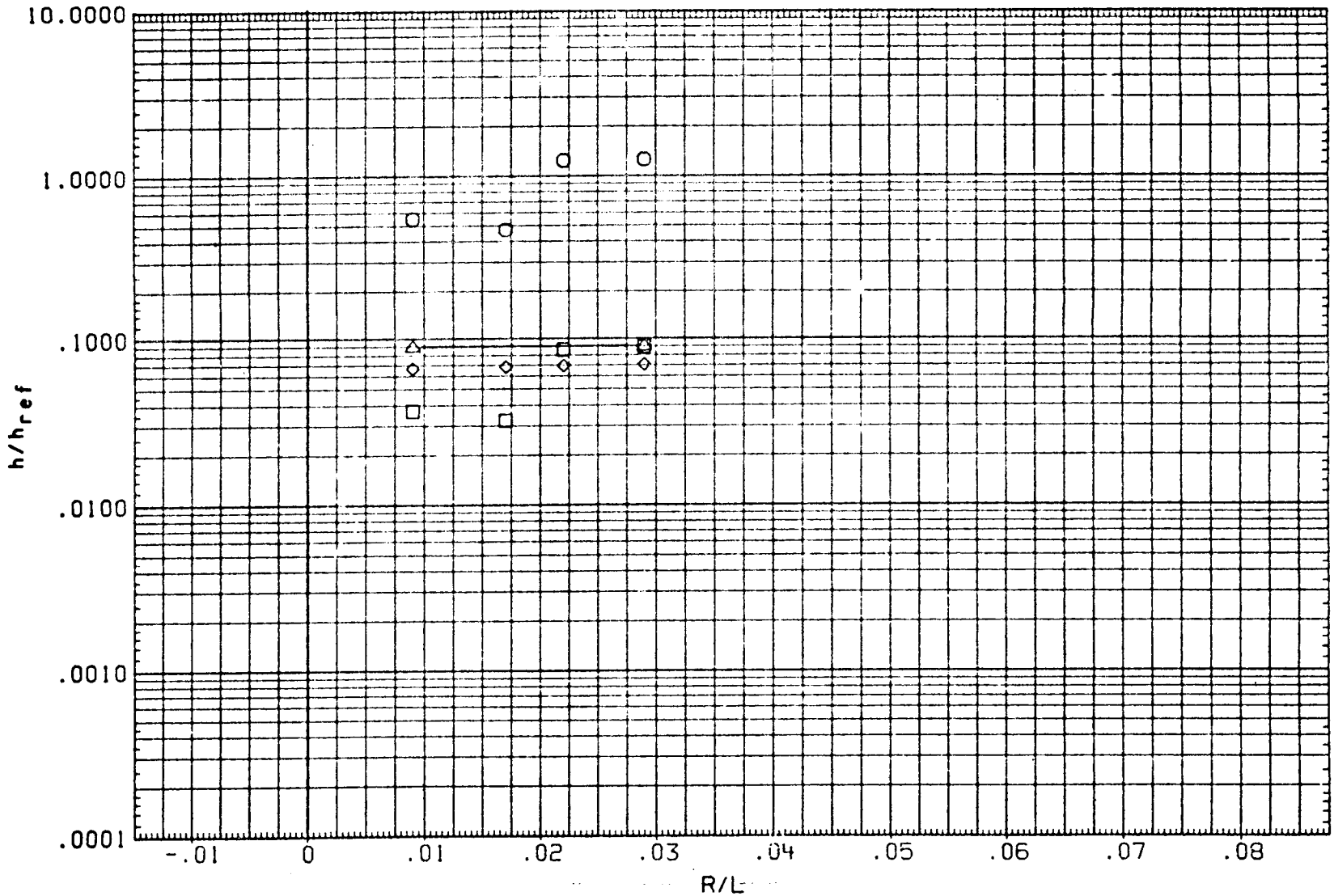

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 39

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH STRUT DIA	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(920011)	◇	IH51A CONF 5A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

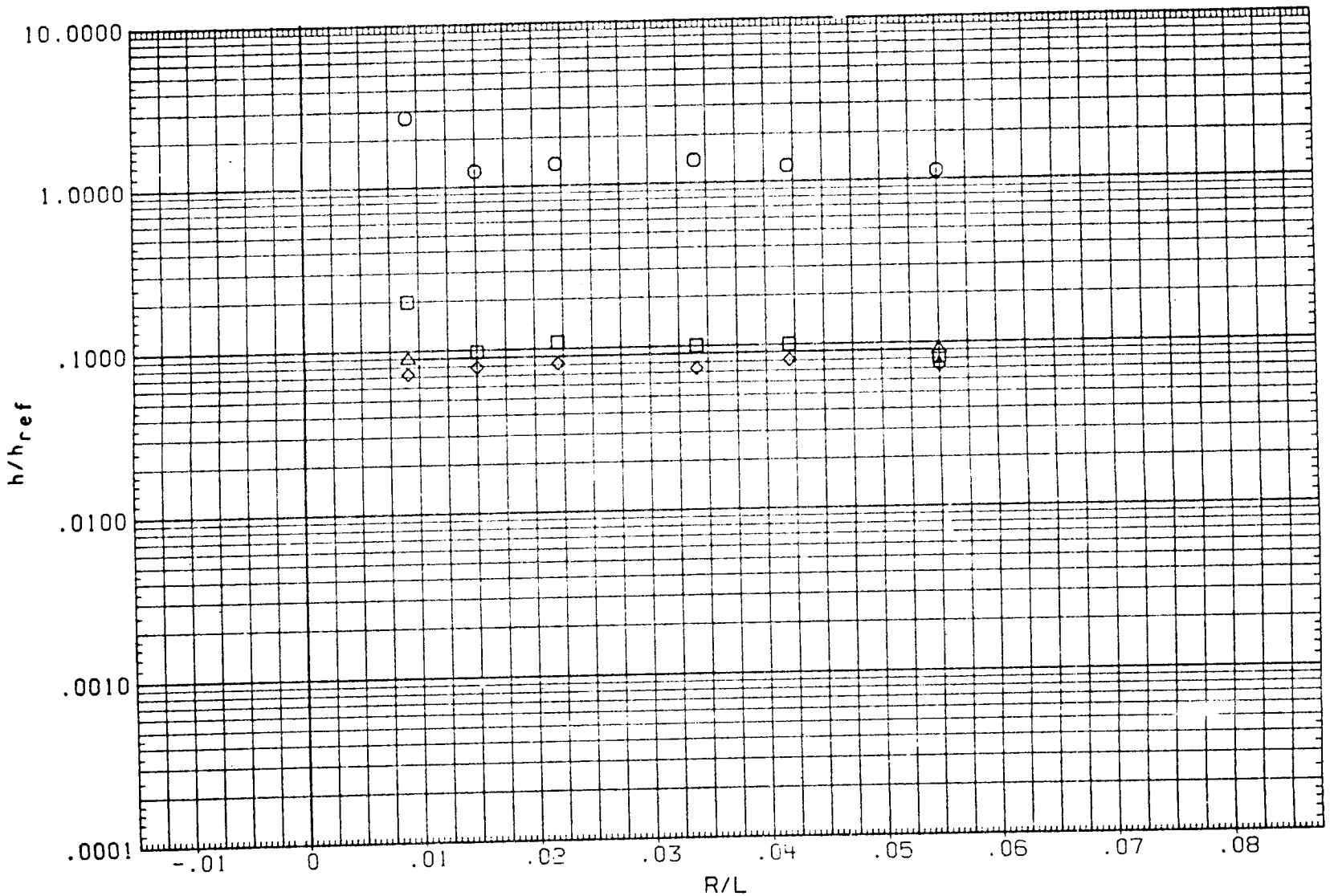

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH STRUT DIA	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

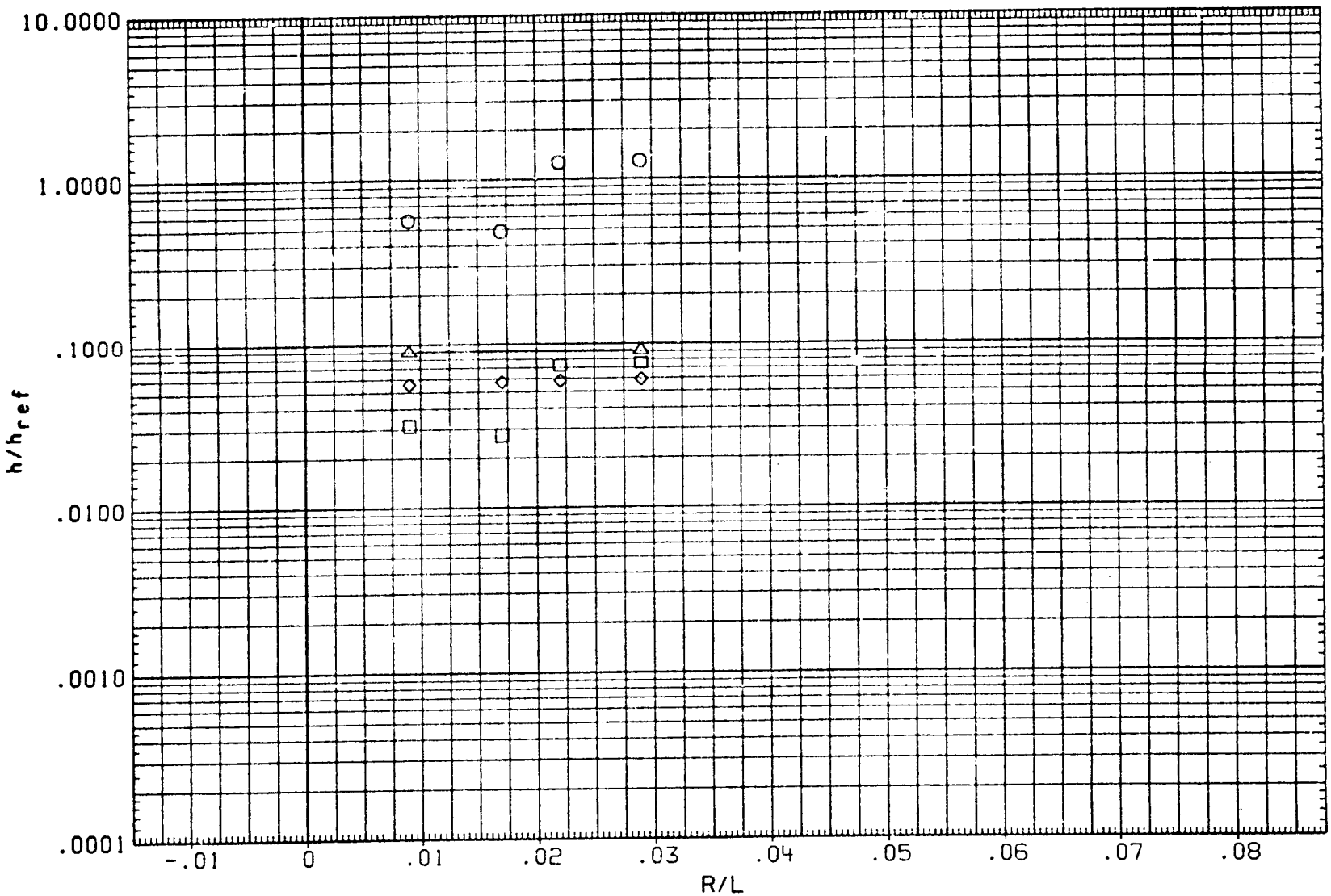

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 41

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	LH STRUT DIA	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

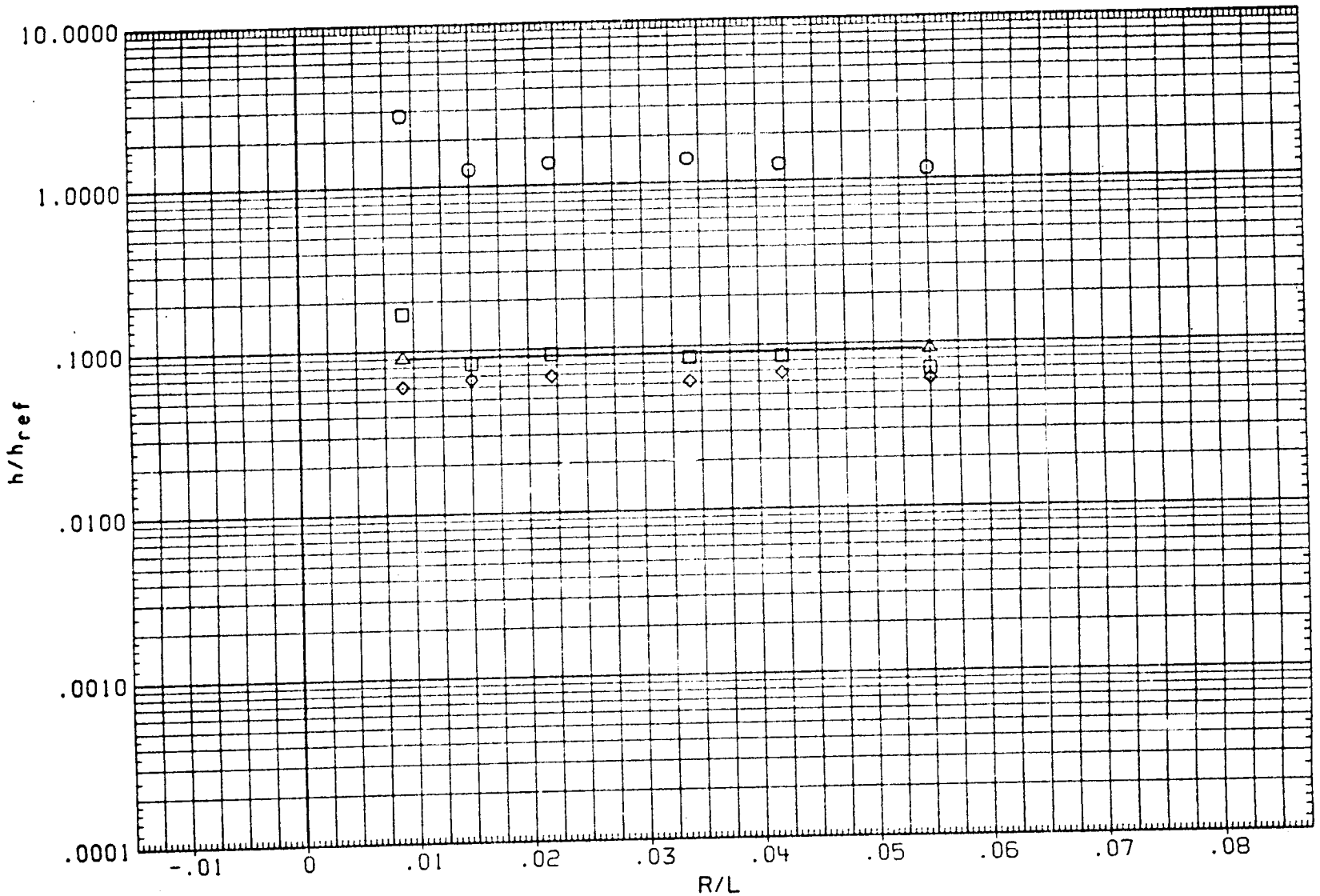

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 42

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0A)	□	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(B20P11)	◇	IH51A CONF 5A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

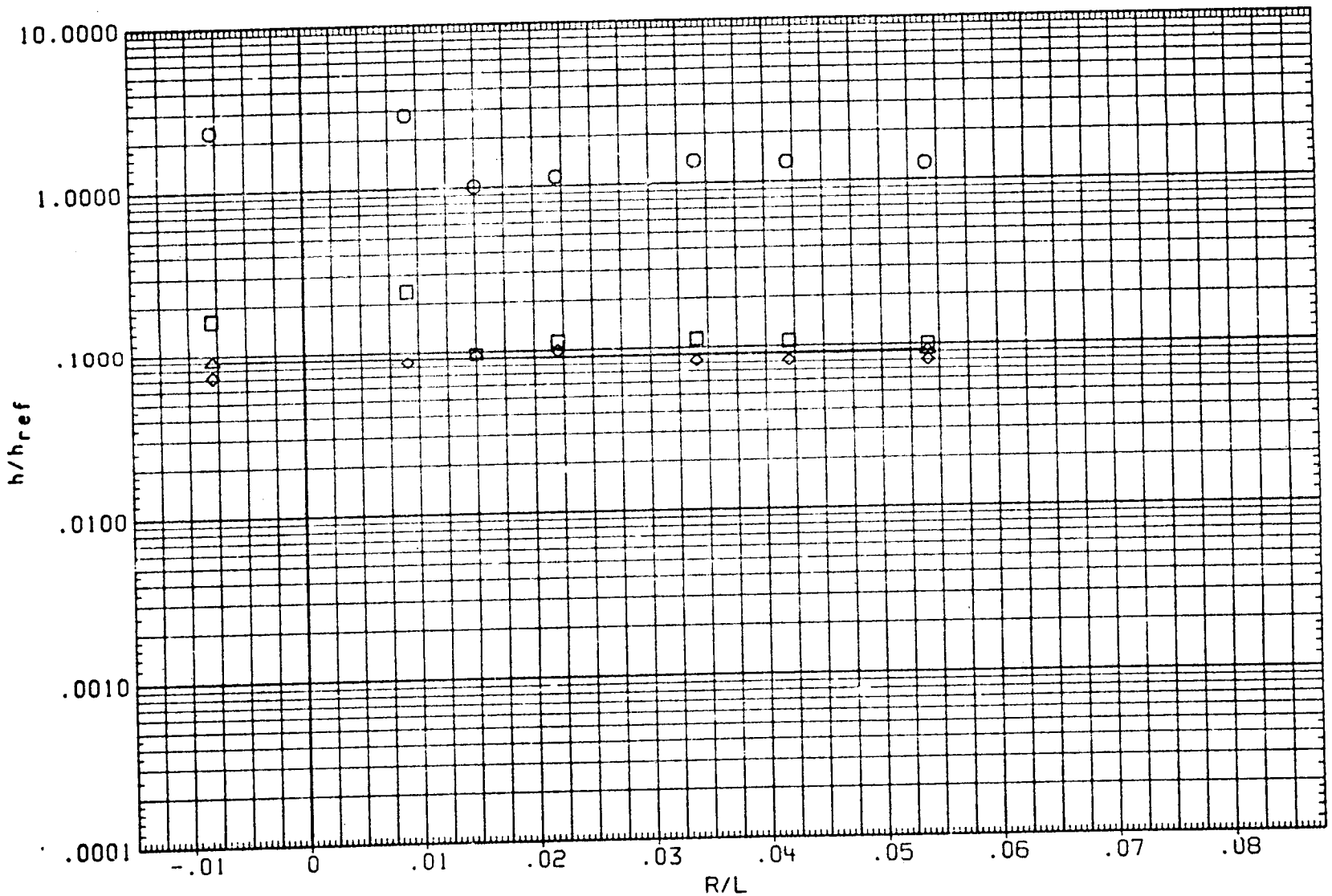

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 43

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0A)	□	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(B20P11)	◇	IH51A CONF 5A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

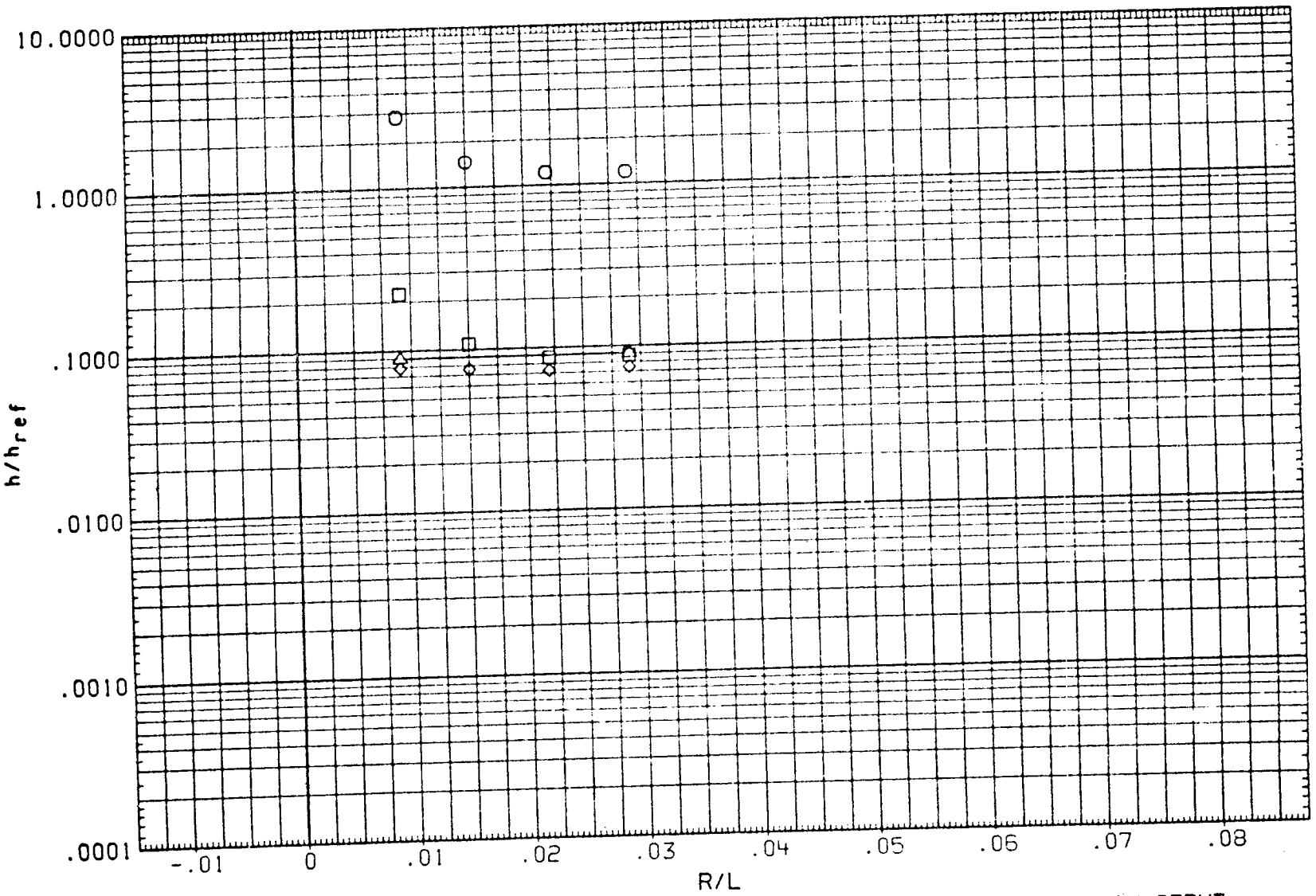

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0A)	□	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(B20P11)	◇	IH51A CONF 5A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

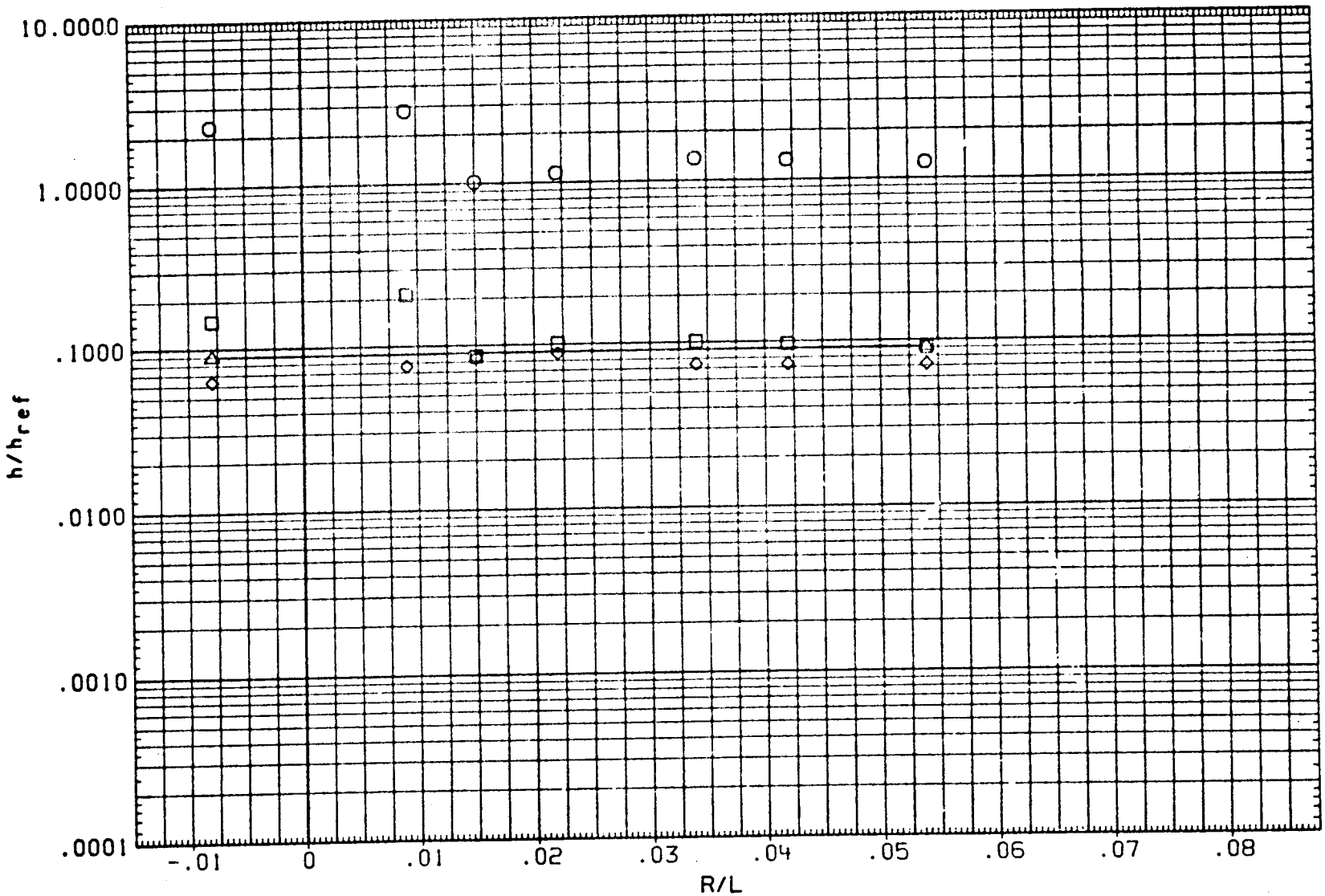

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0A)	□	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(B20P11)	◇	IH51A CONF 5A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

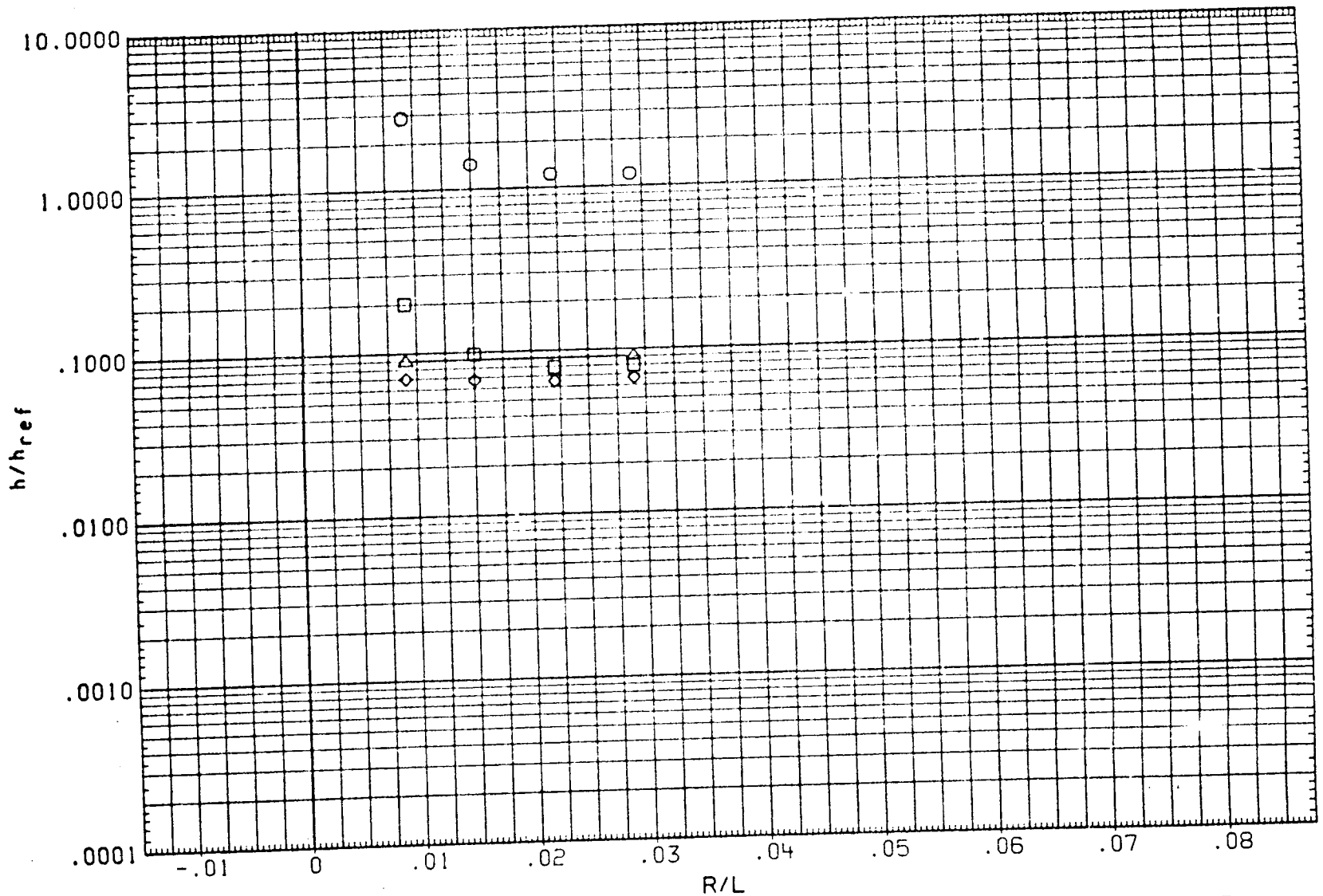

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0A)	□	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(B20P11)	◇	IH51A CONF 5A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

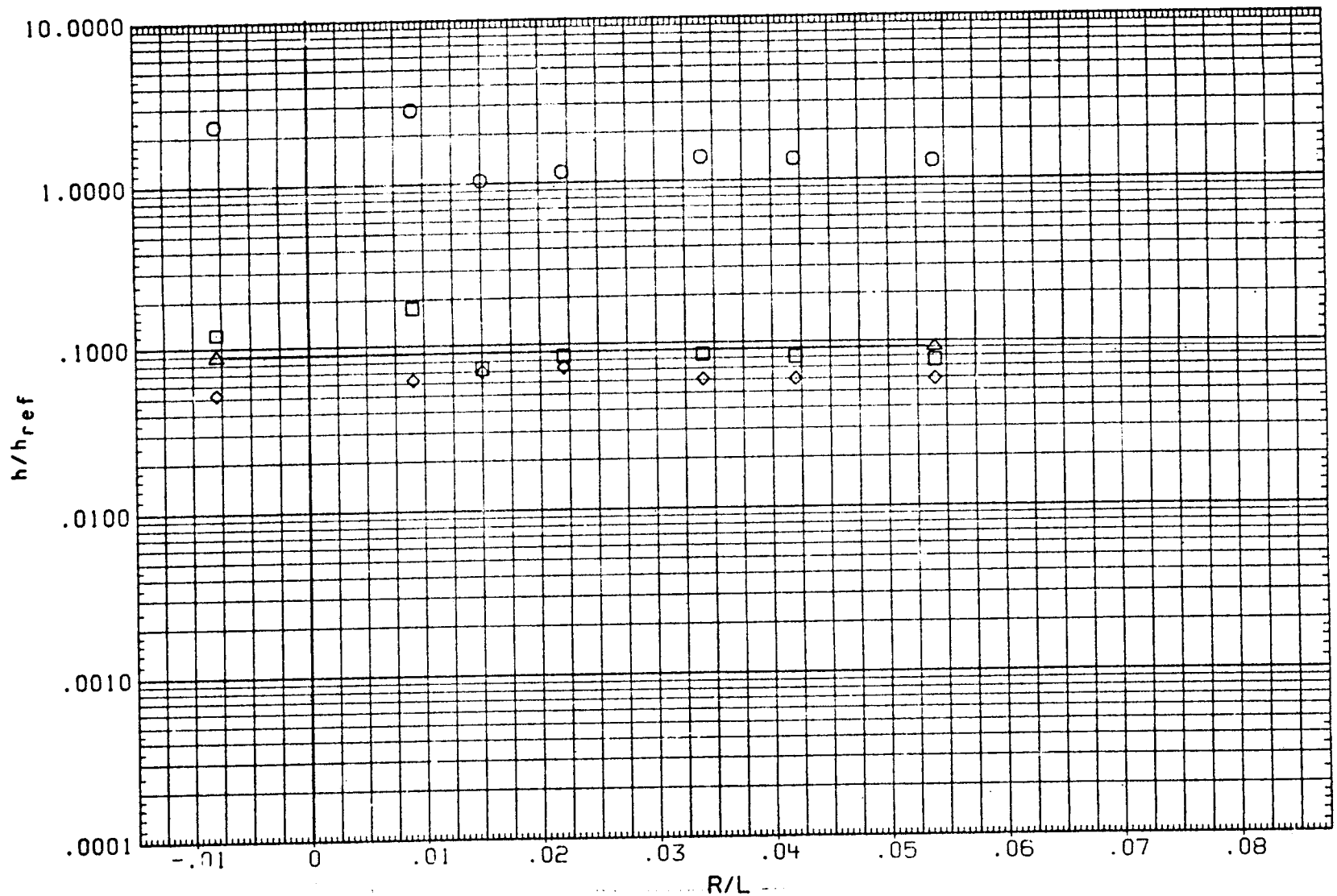

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 47

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0A)	□	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(B20P11)	◇	IH51A CONF 5A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

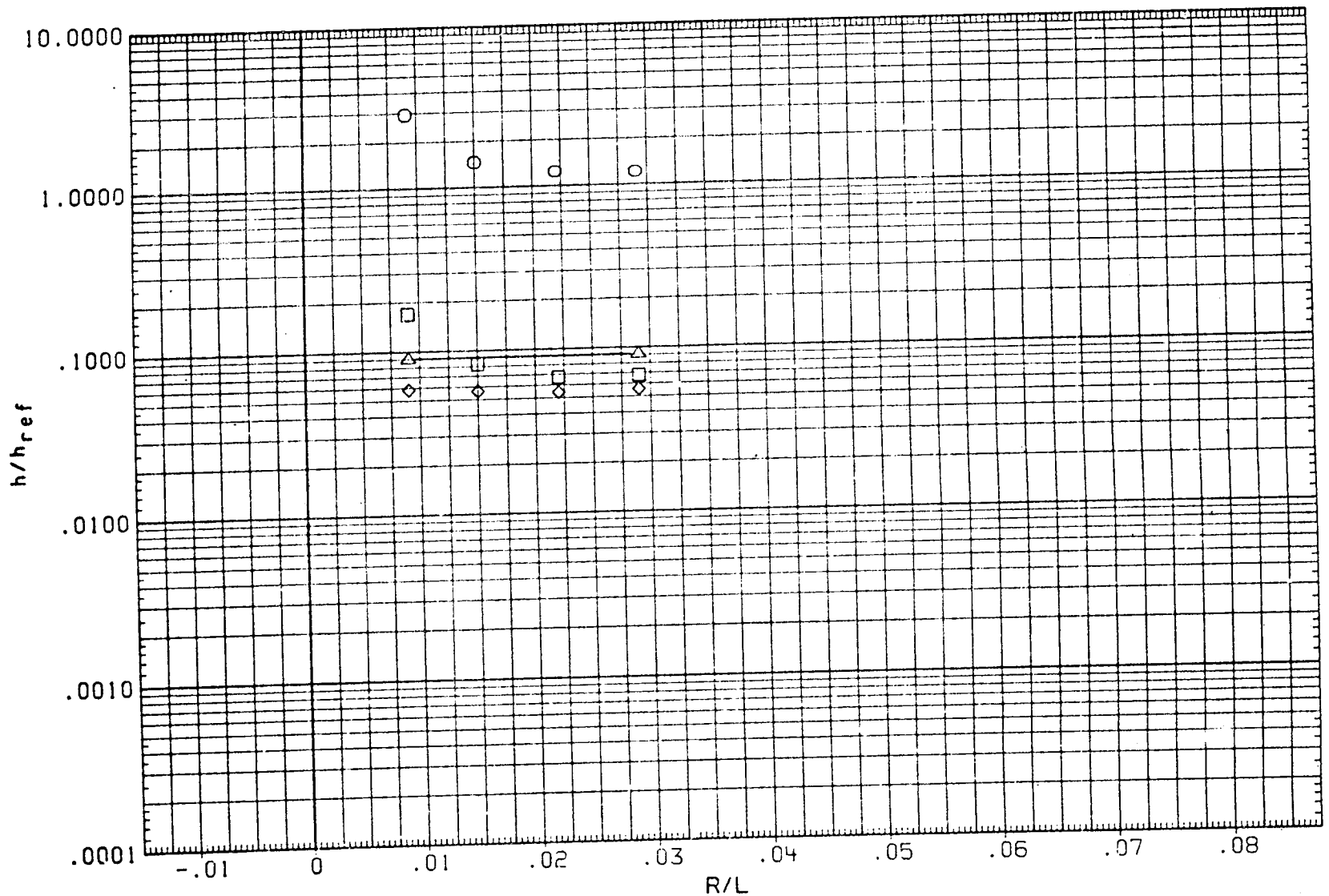

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

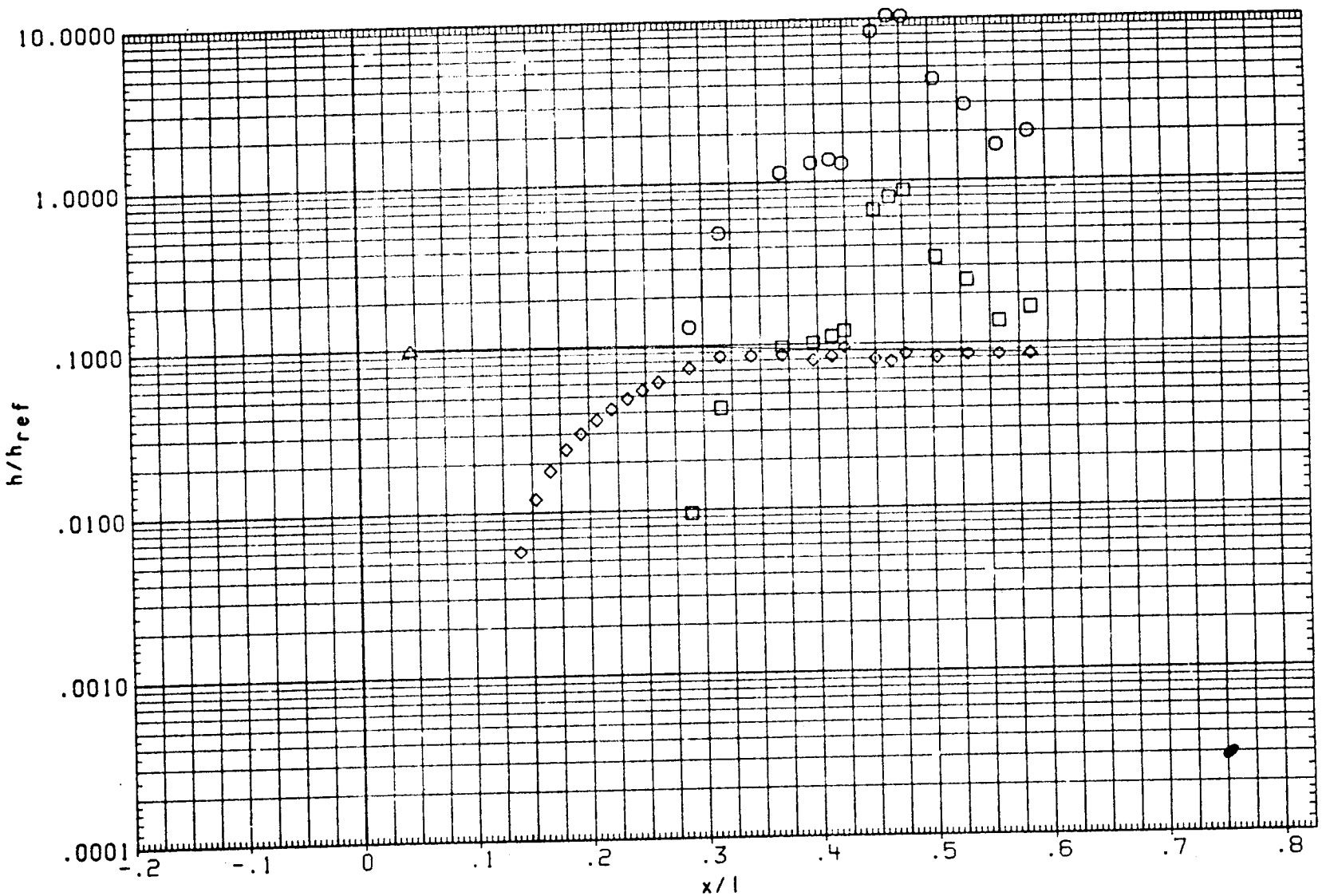

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = ◇ ◇ ◇◇◇ .850 PHI = .000 DATE 22 APR 78 PAGE 49

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

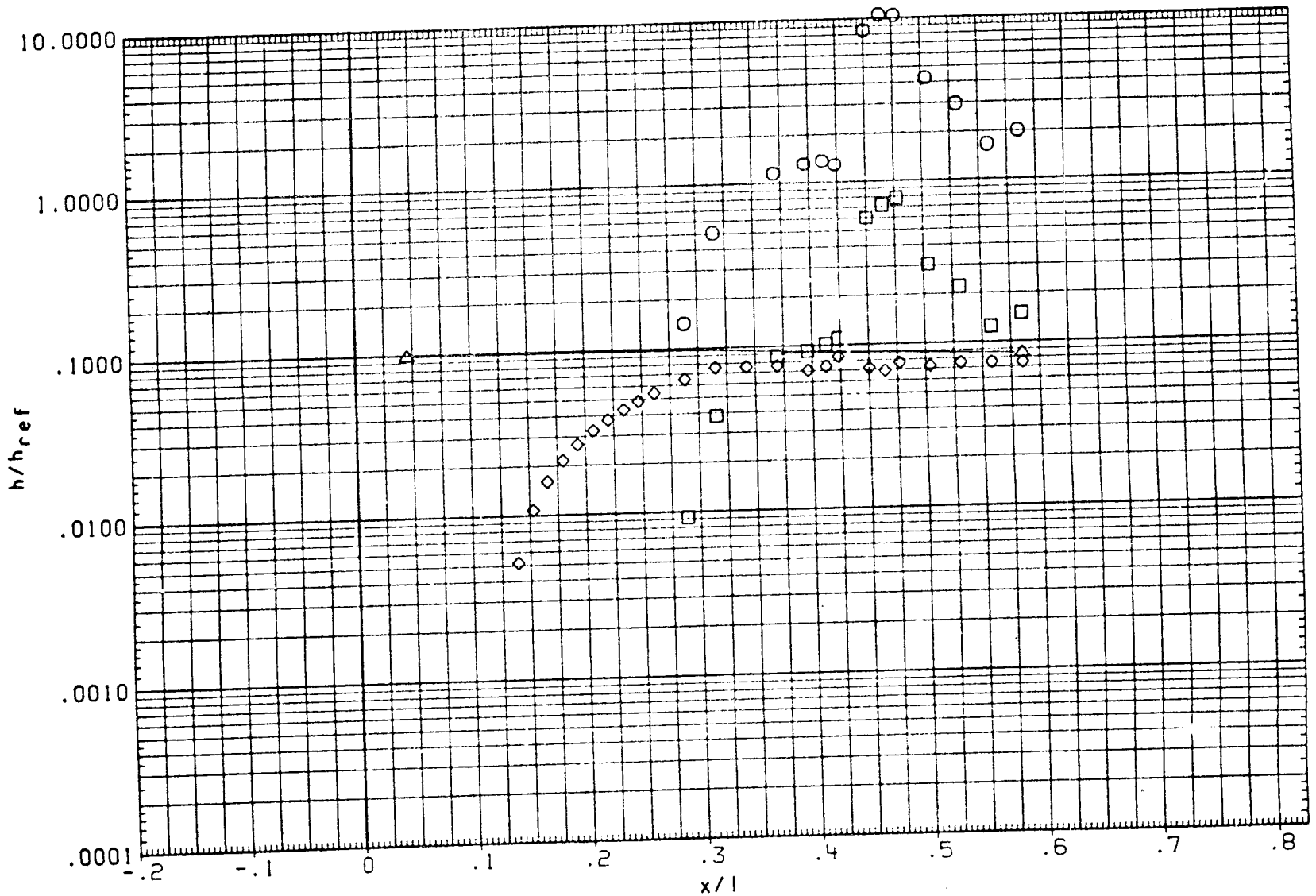

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = .900 PHI = .000 DATE 22 APR 78 PAGE 50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

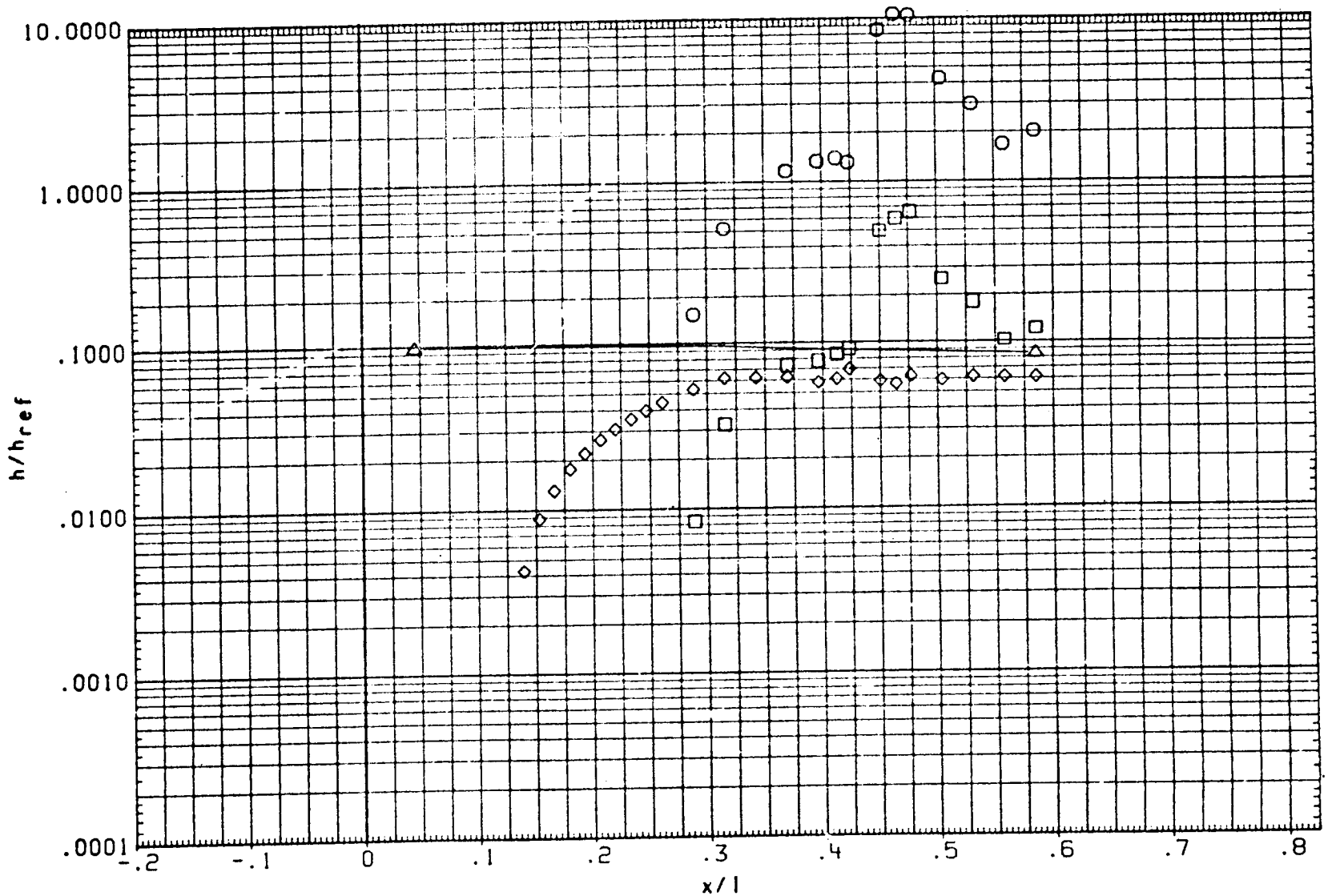

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 51

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

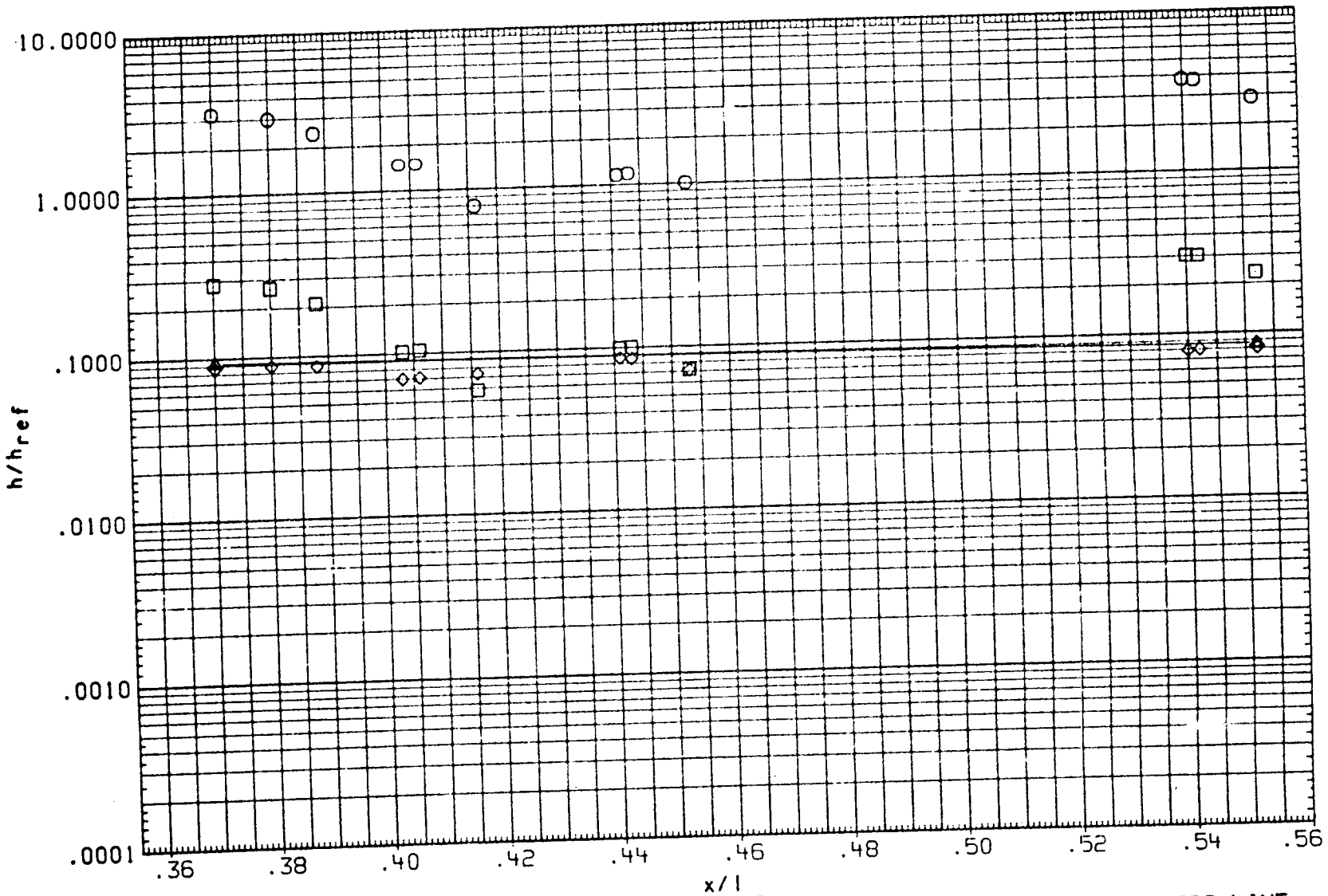

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 52

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

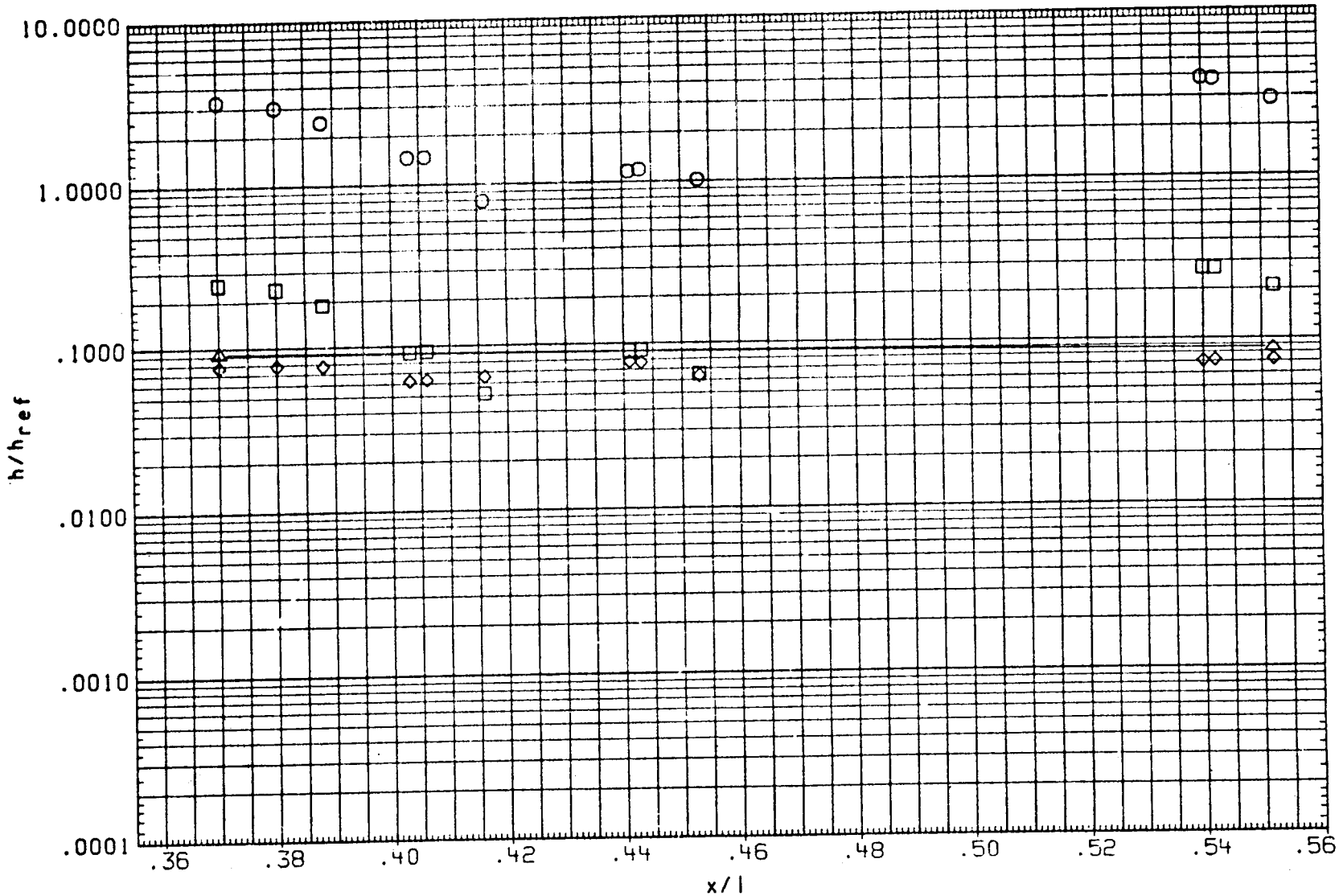

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 53

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

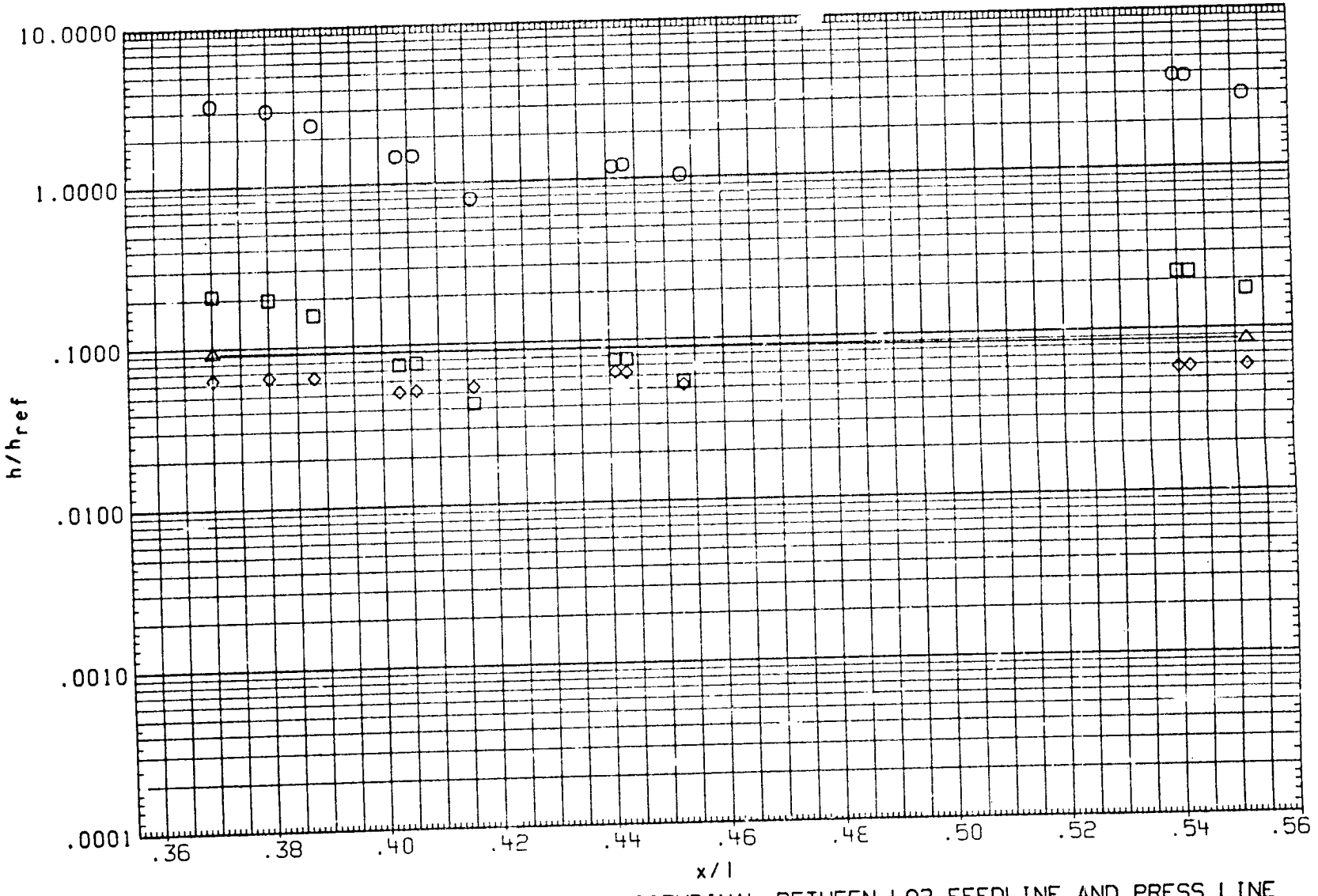

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 54

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

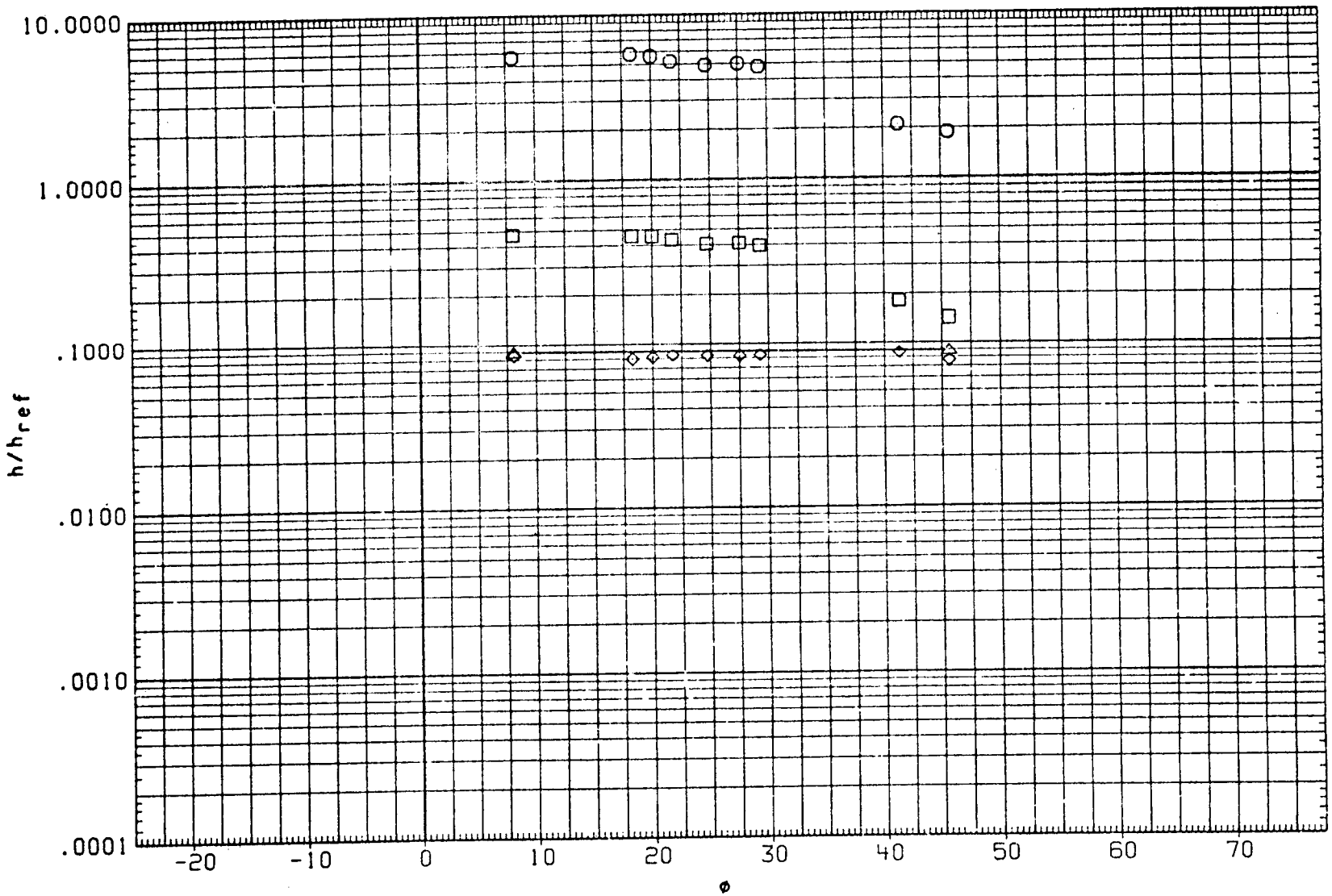

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 55

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

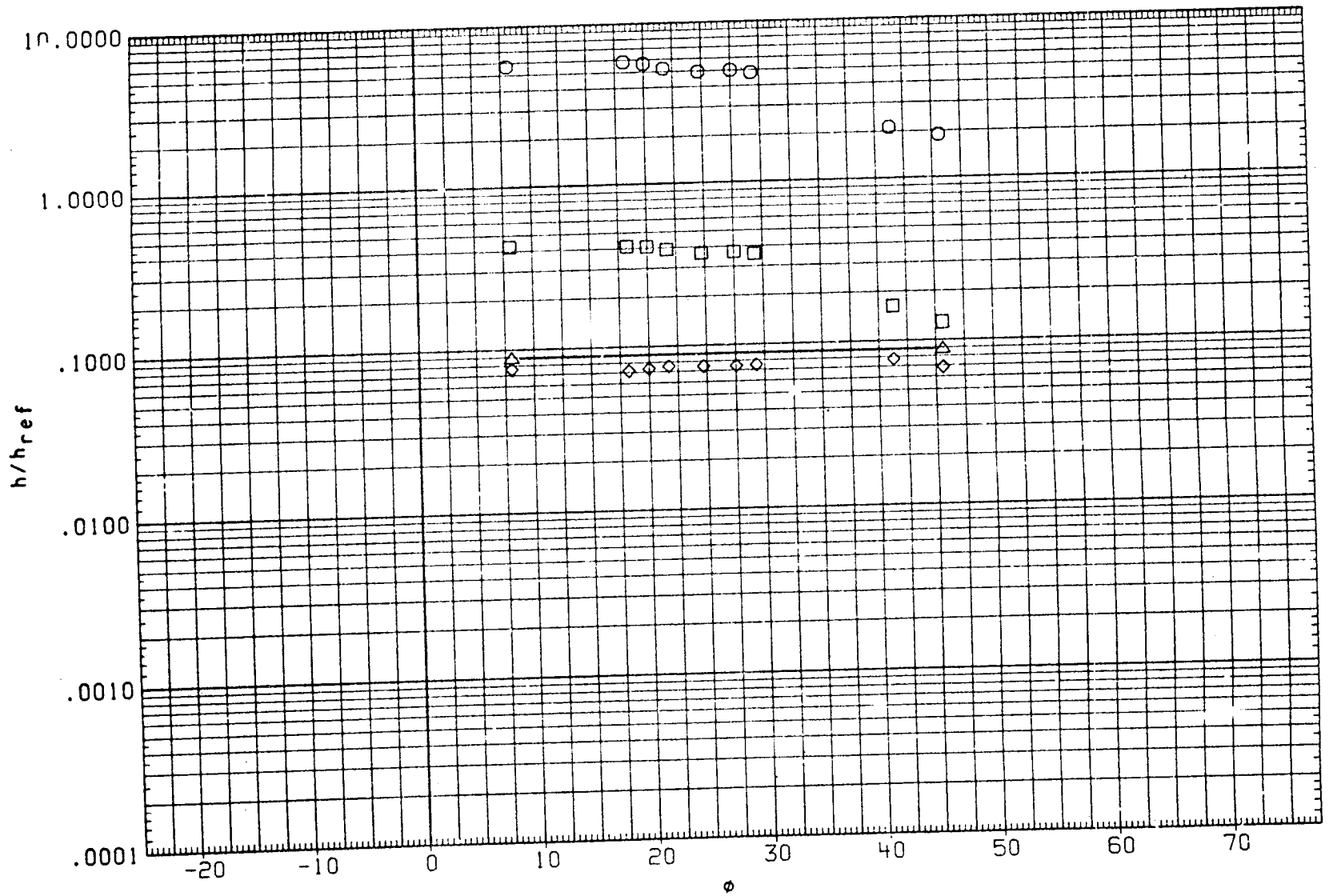

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 56

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

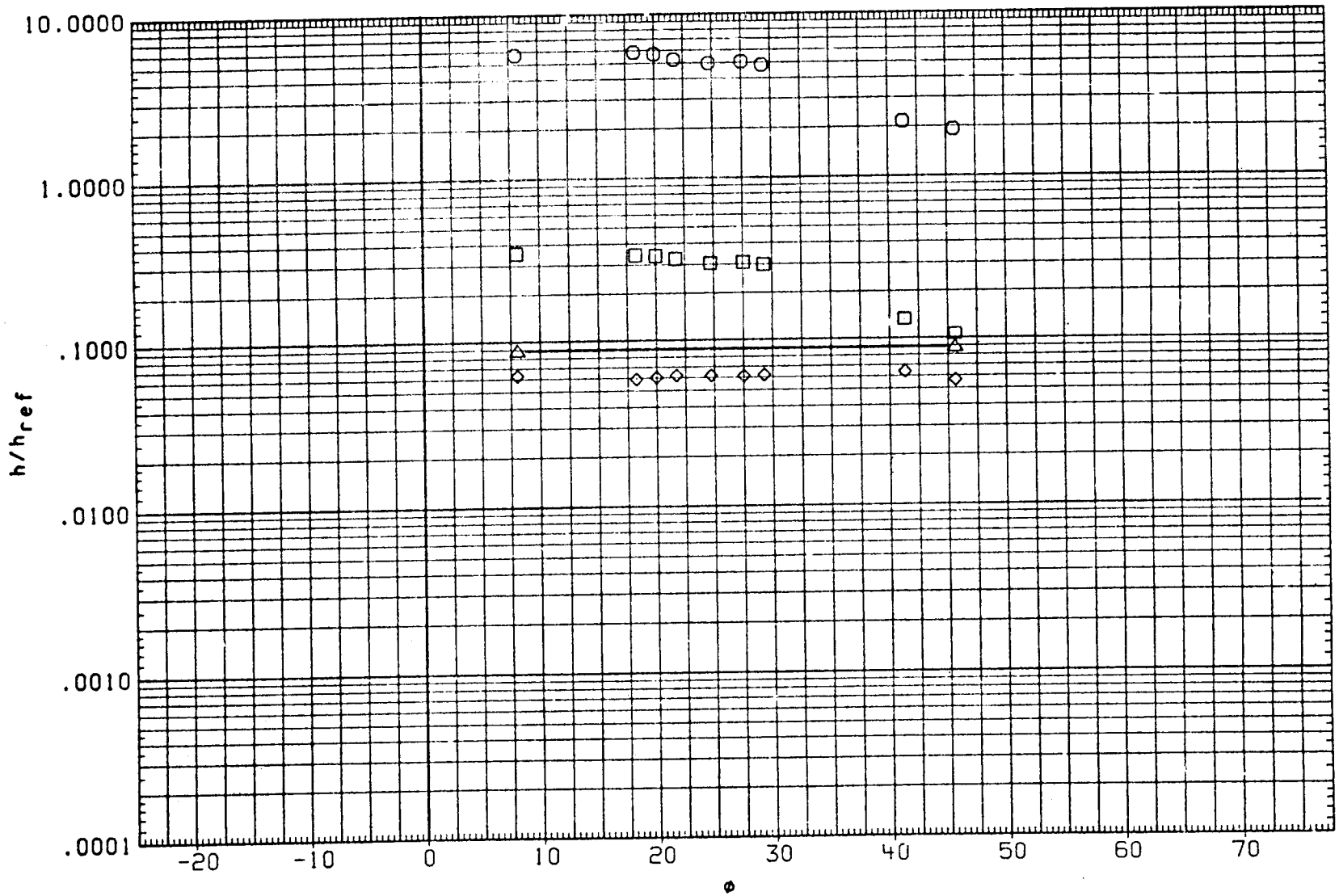

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 57

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

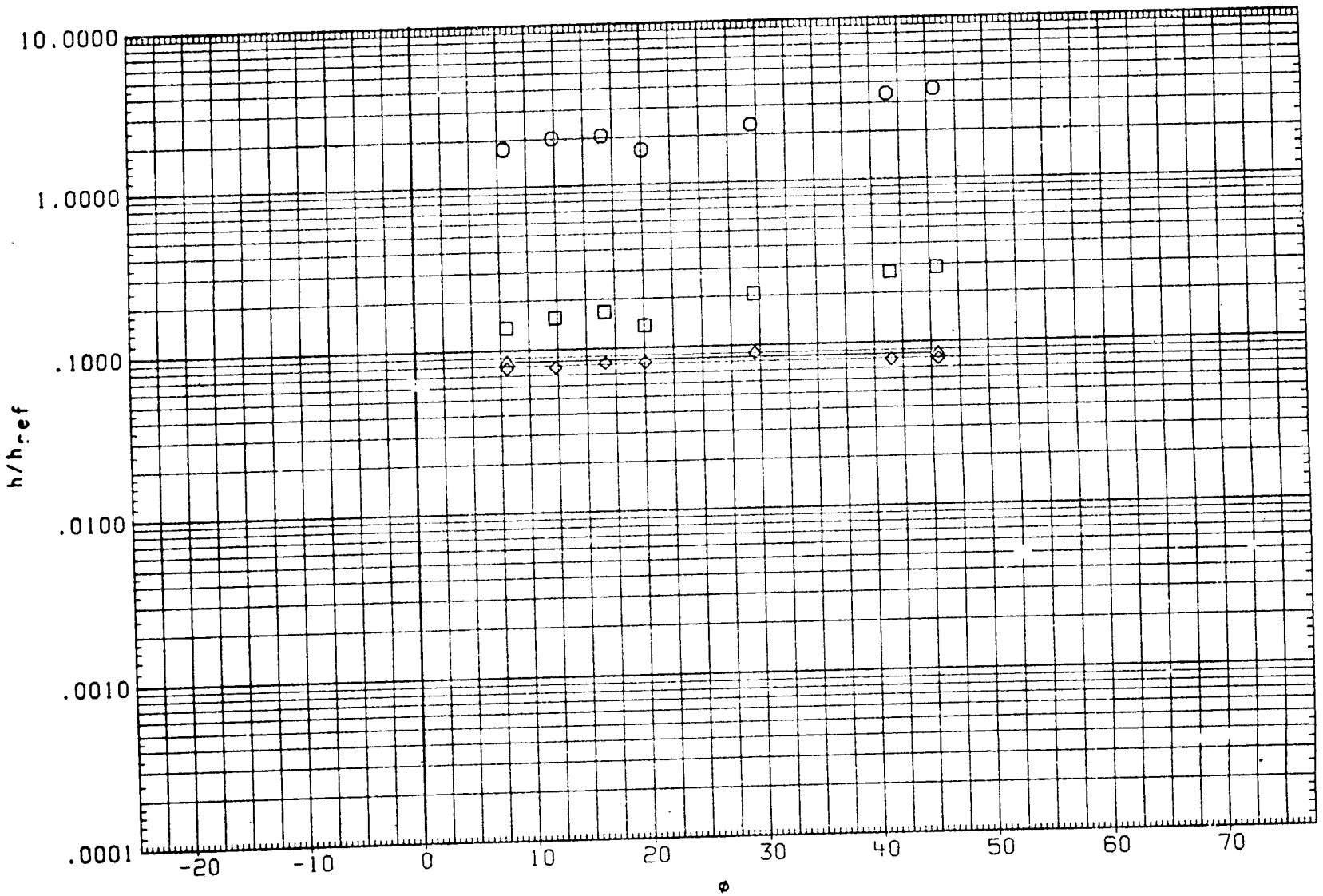

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 58

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

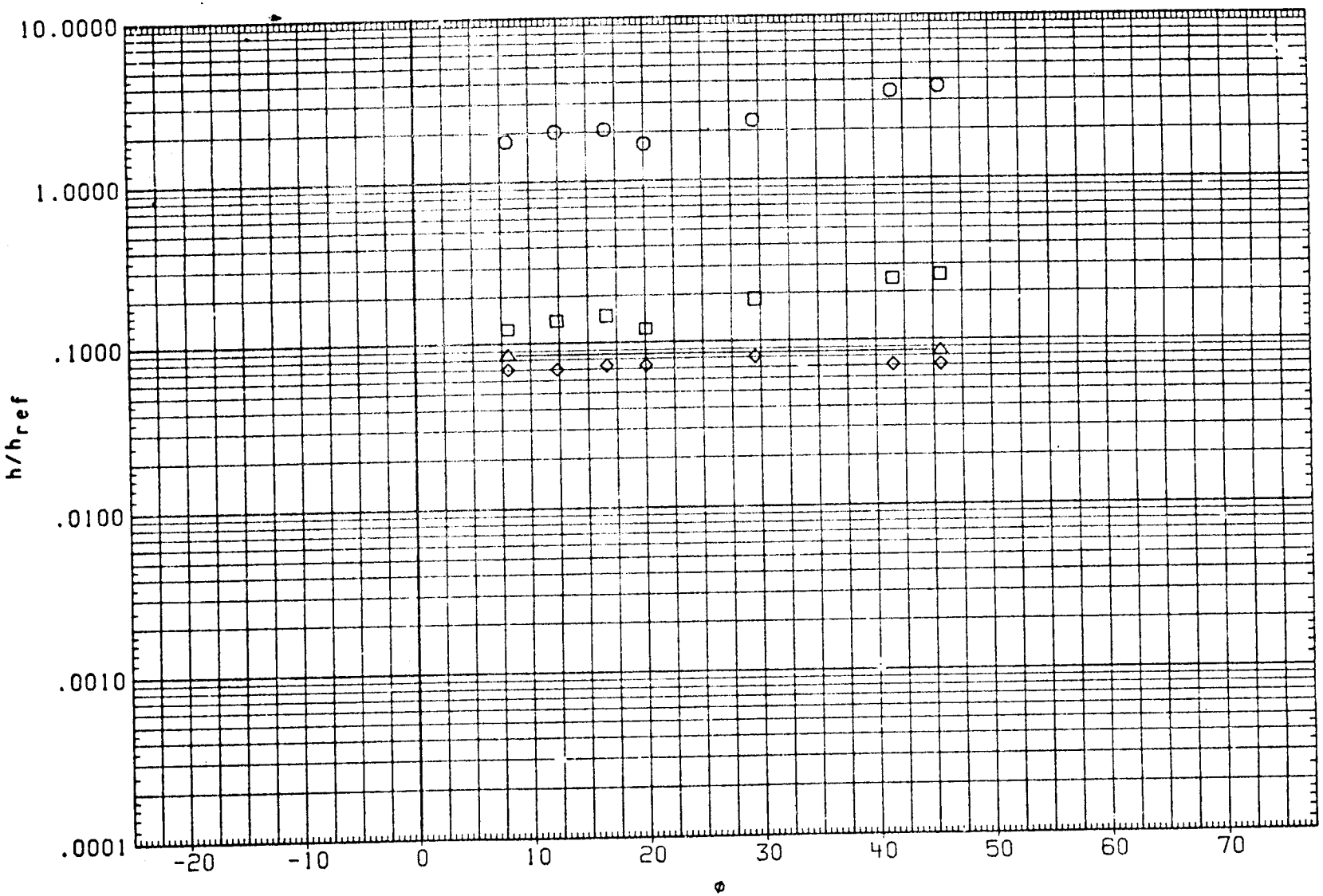

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .578 DATE 22 APR 78 PAGE 59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

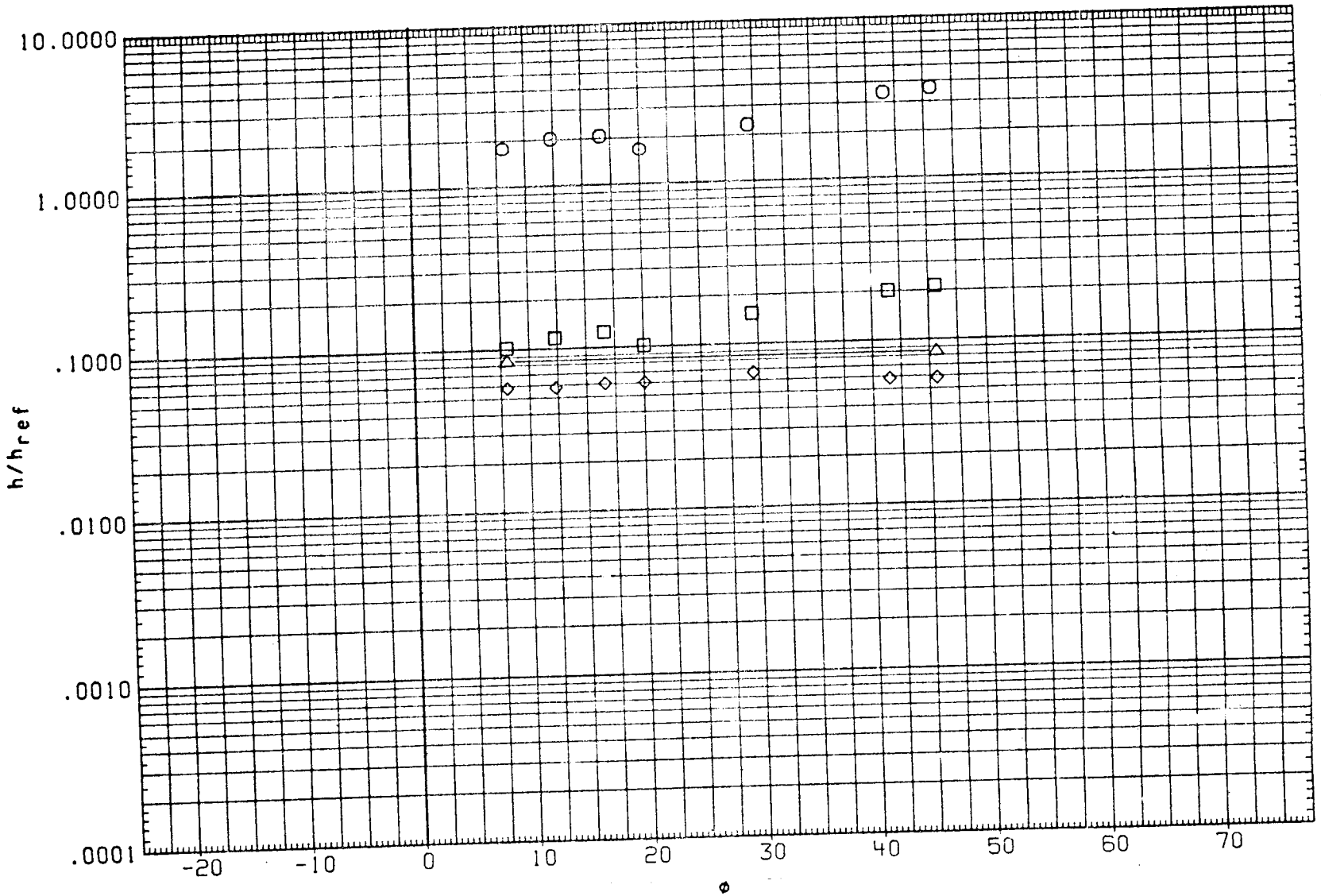

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

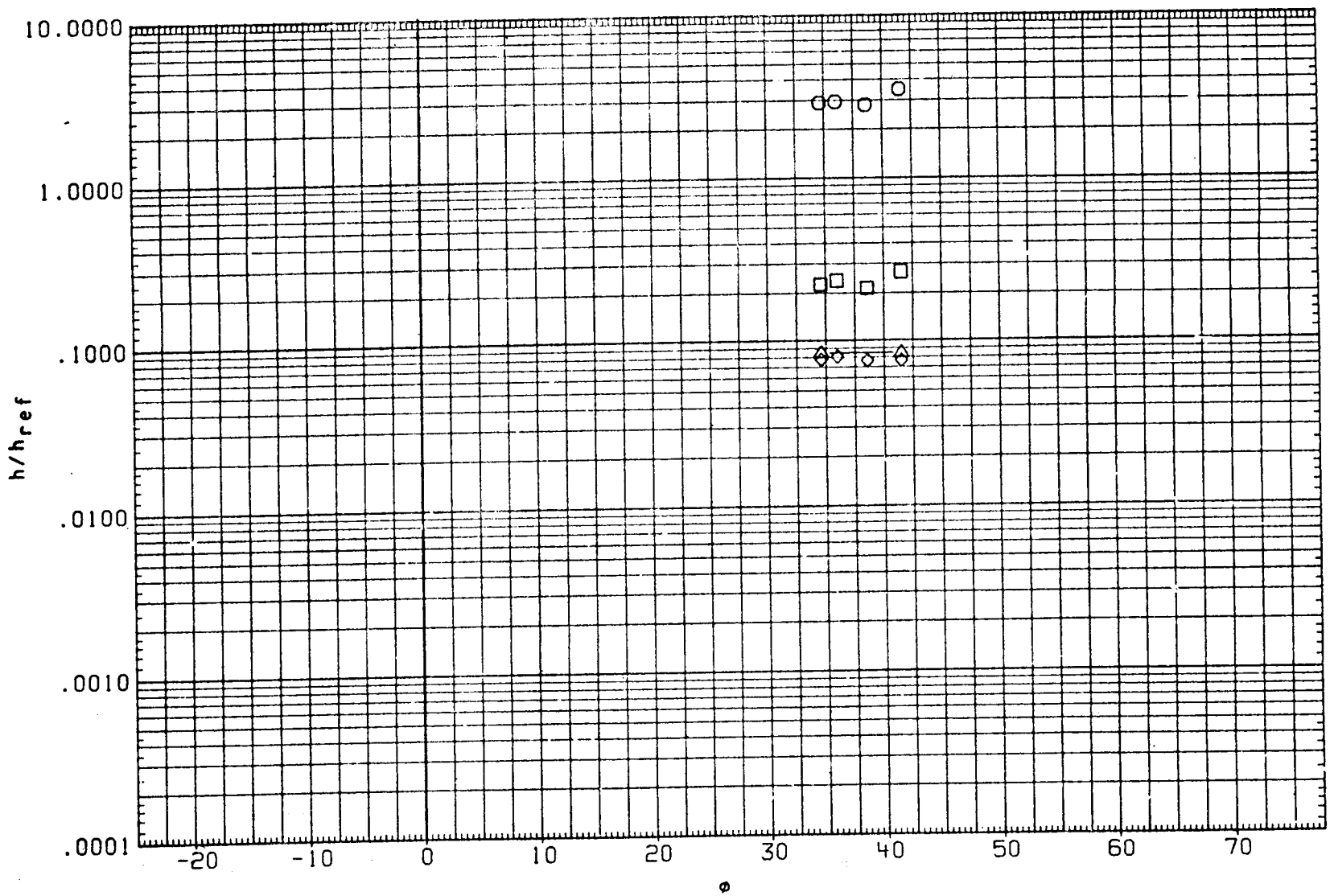

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 61

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

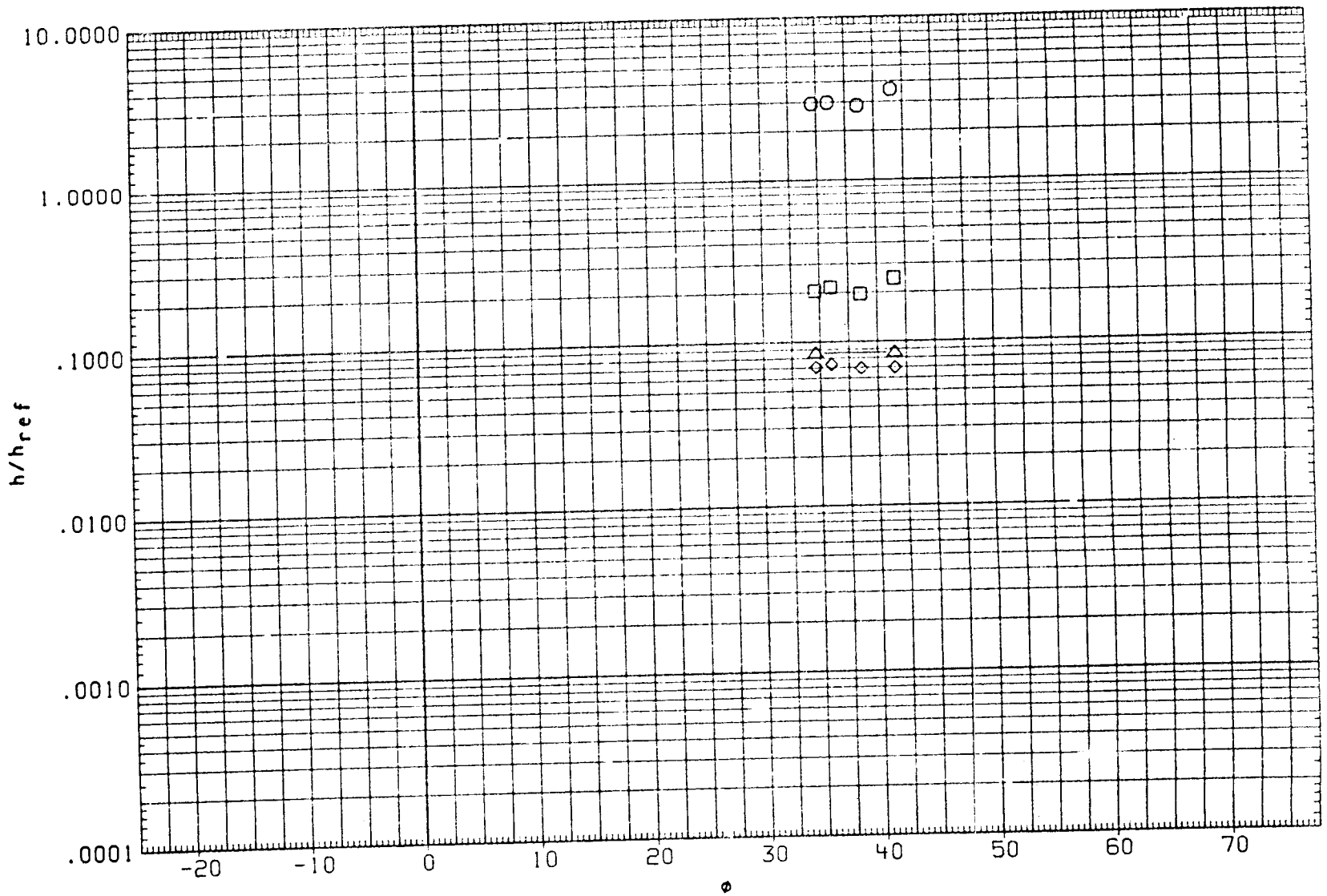

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 62

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2^J0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	MU/HREF	.000	.000	5.000	5.300

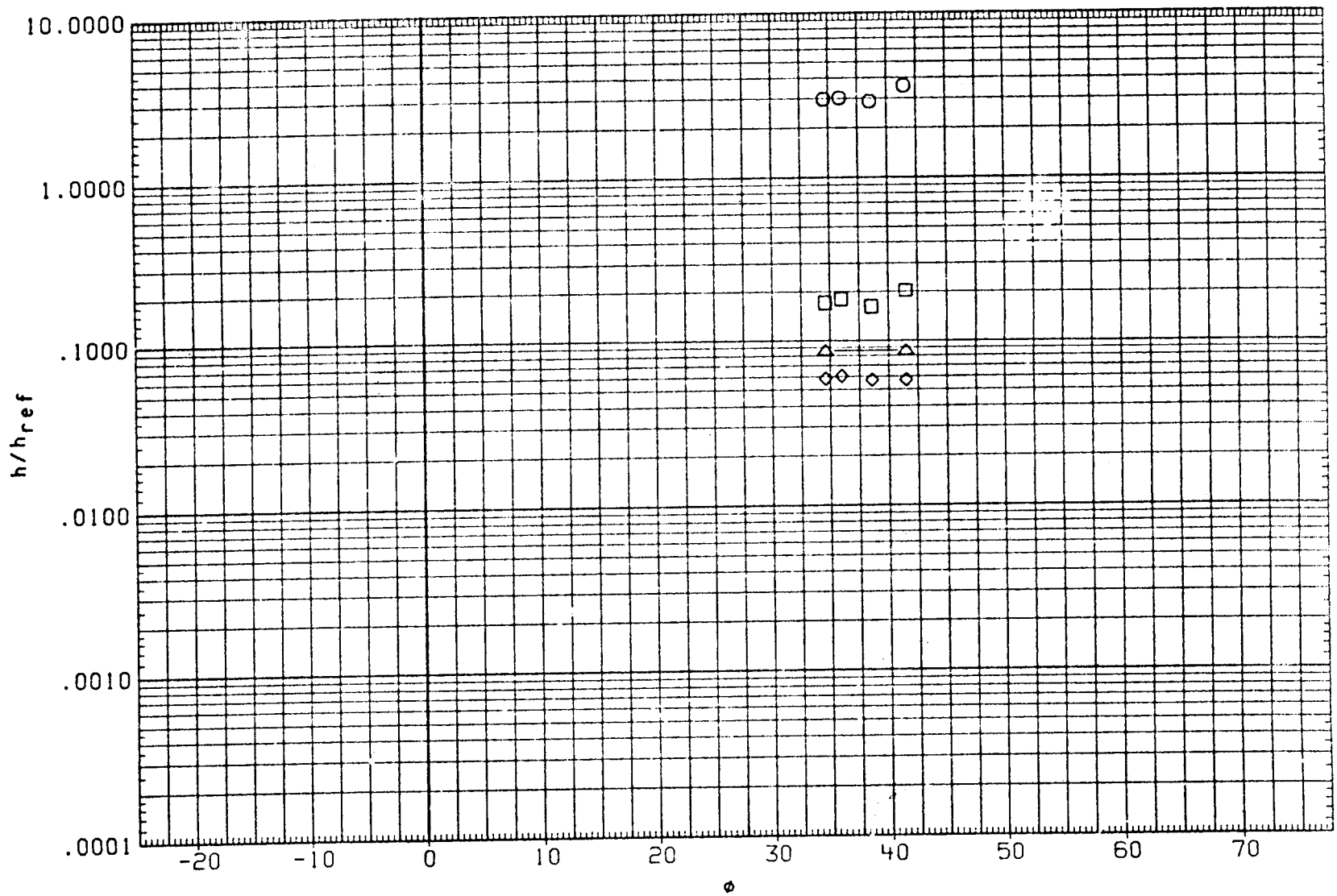

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 63

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

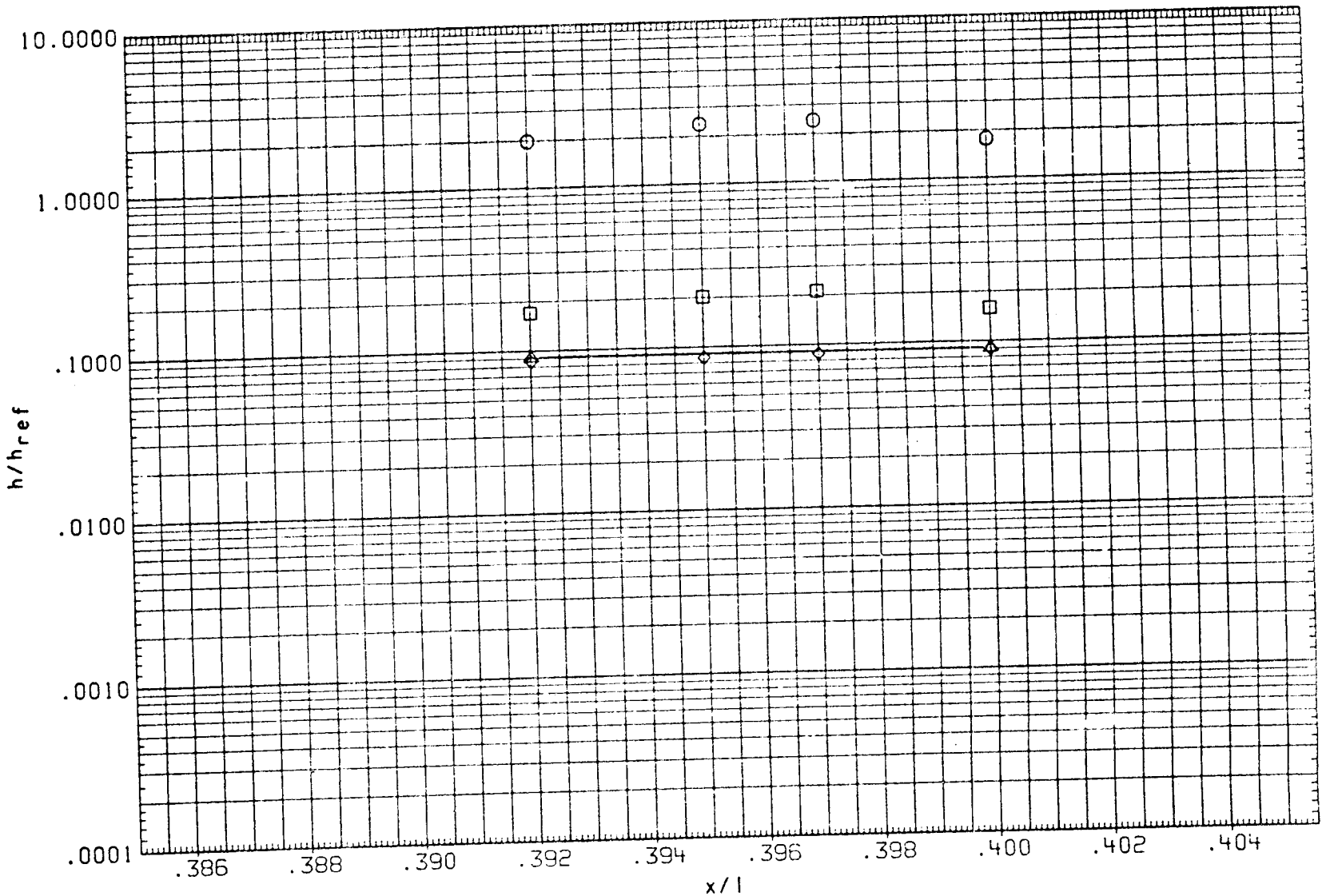

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78 PAGE 64

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

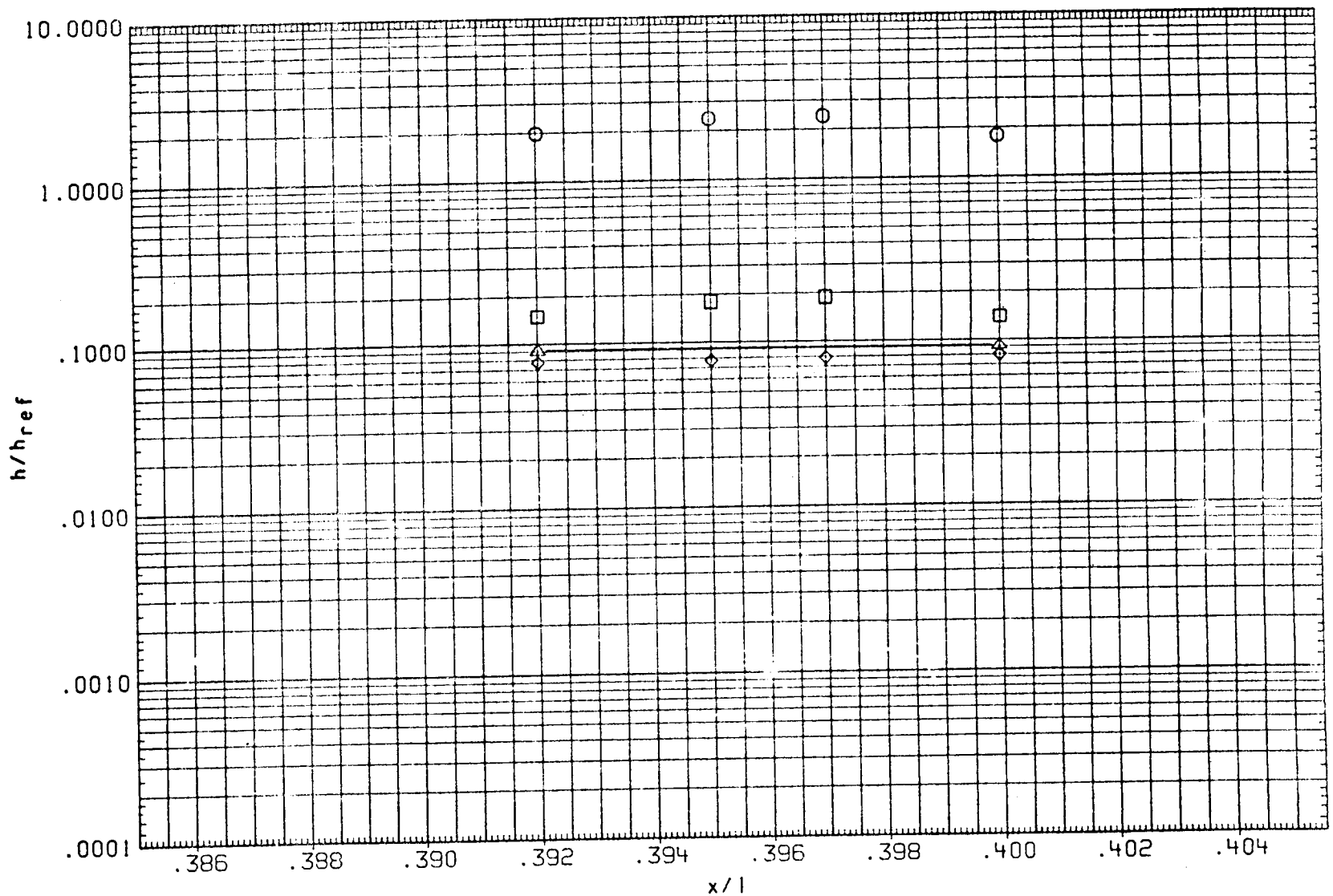

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 65

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

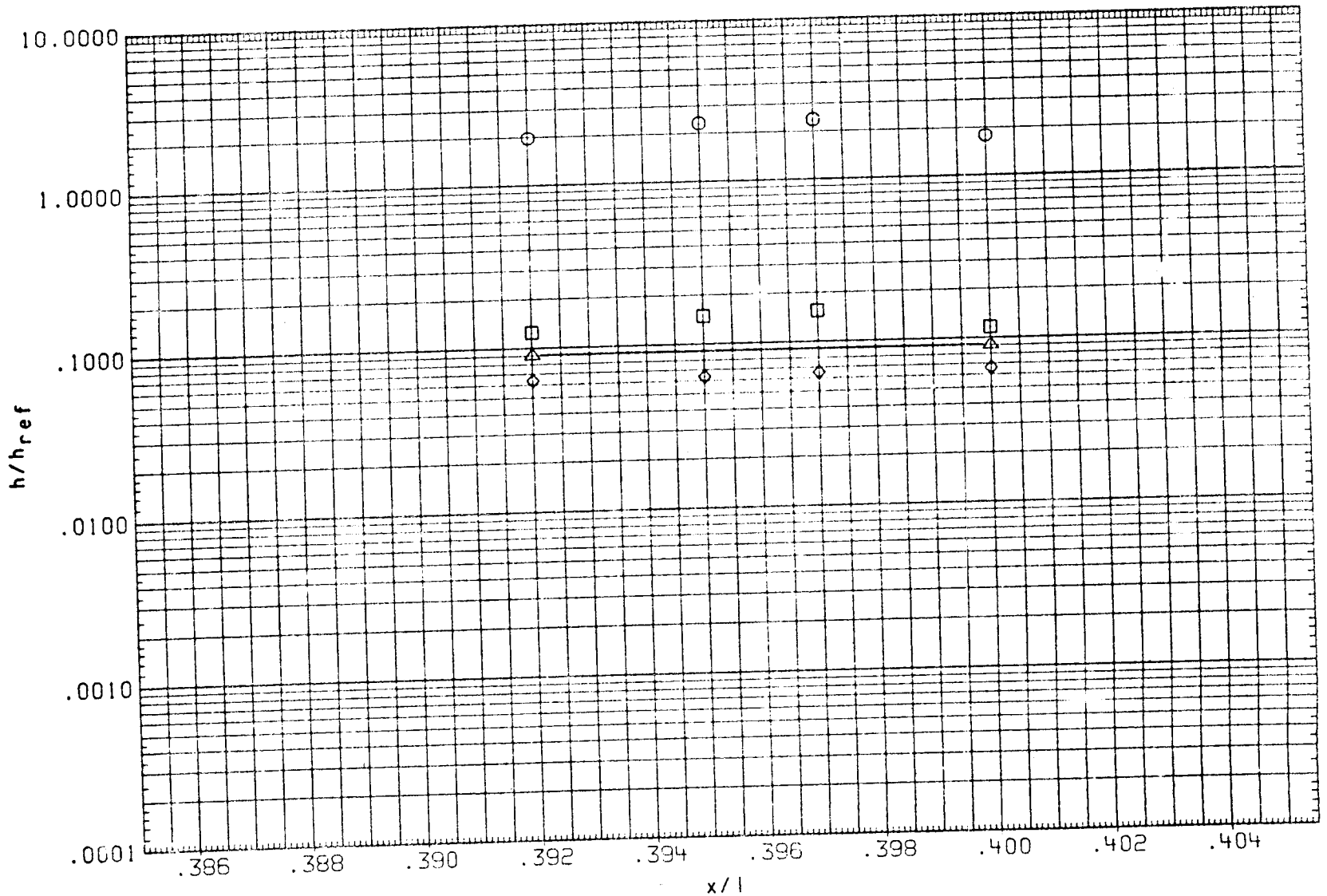

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

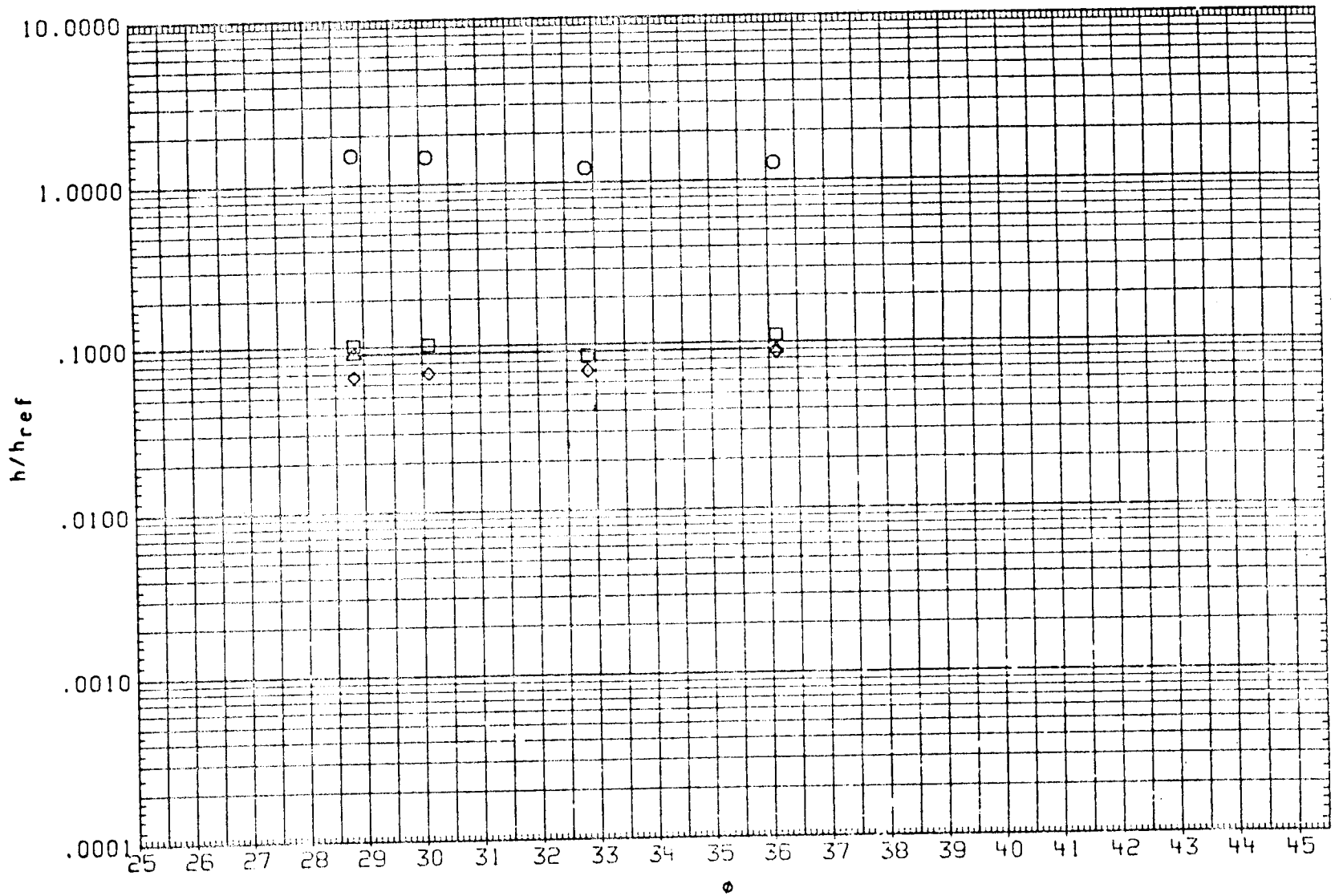

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAU HT = .0058 X L = .403 DATE 22 APR 79 PAGE 67

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001A)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

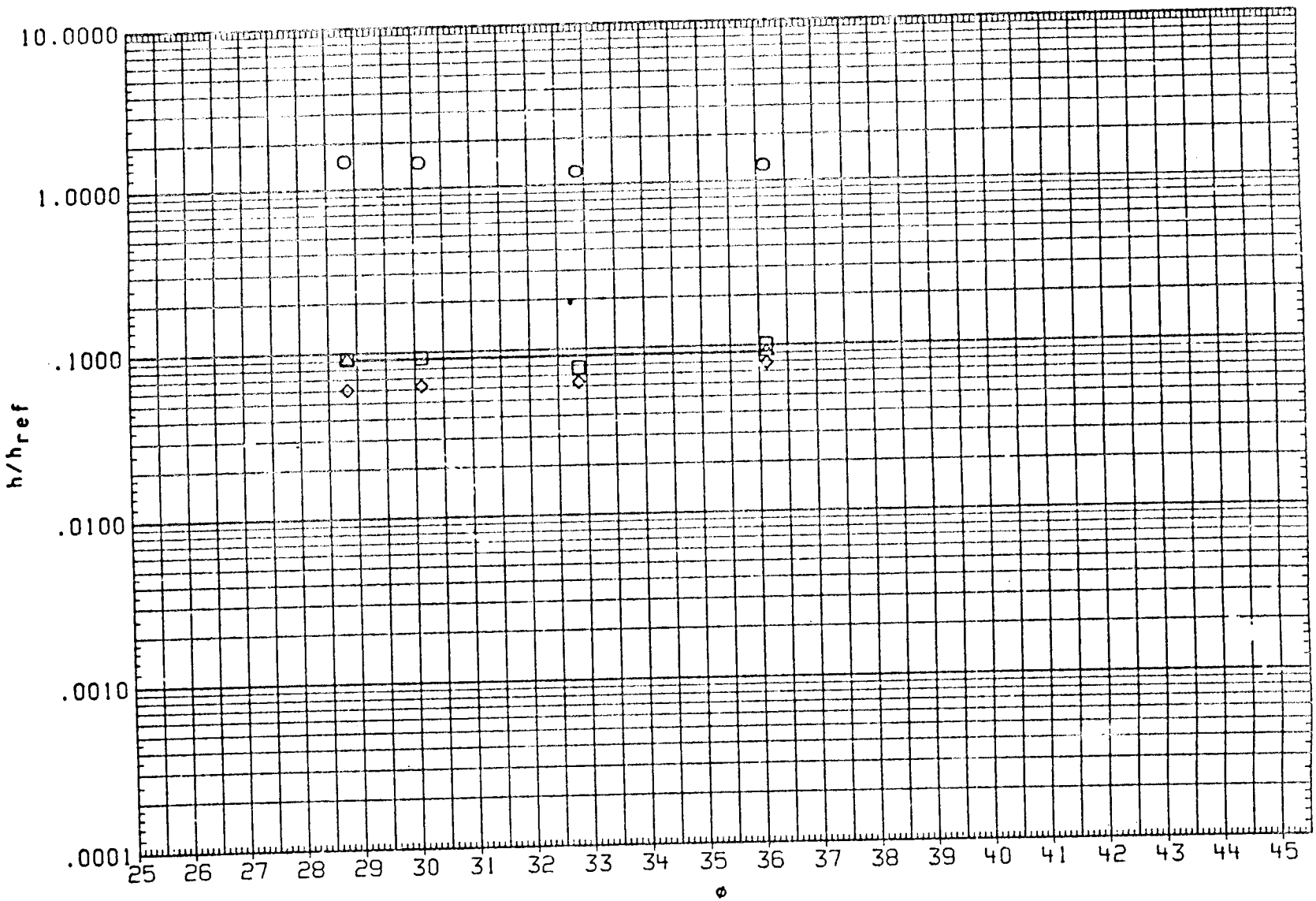

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 68

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

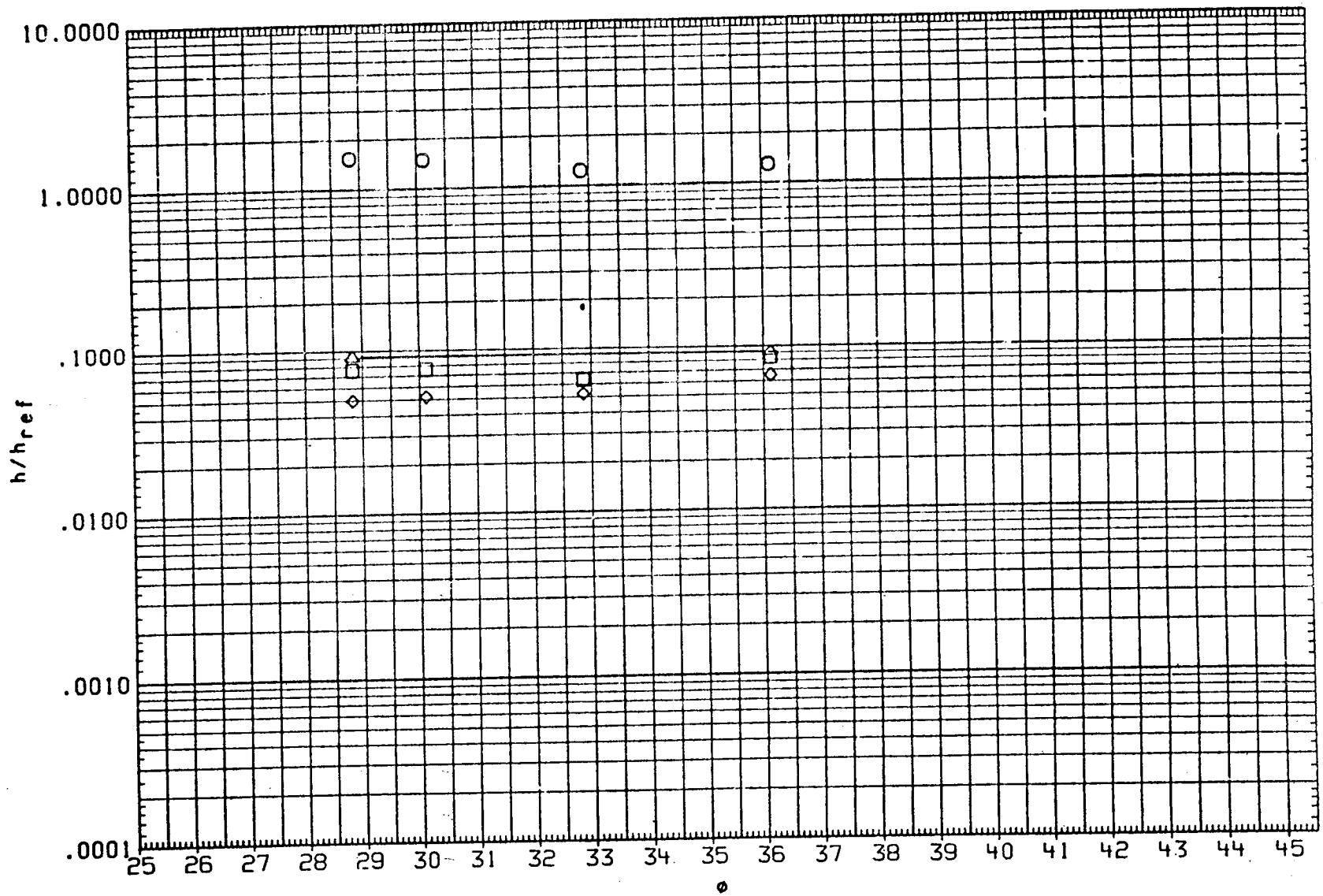

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 69

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	1H51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	1H51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	1H51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	1H51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

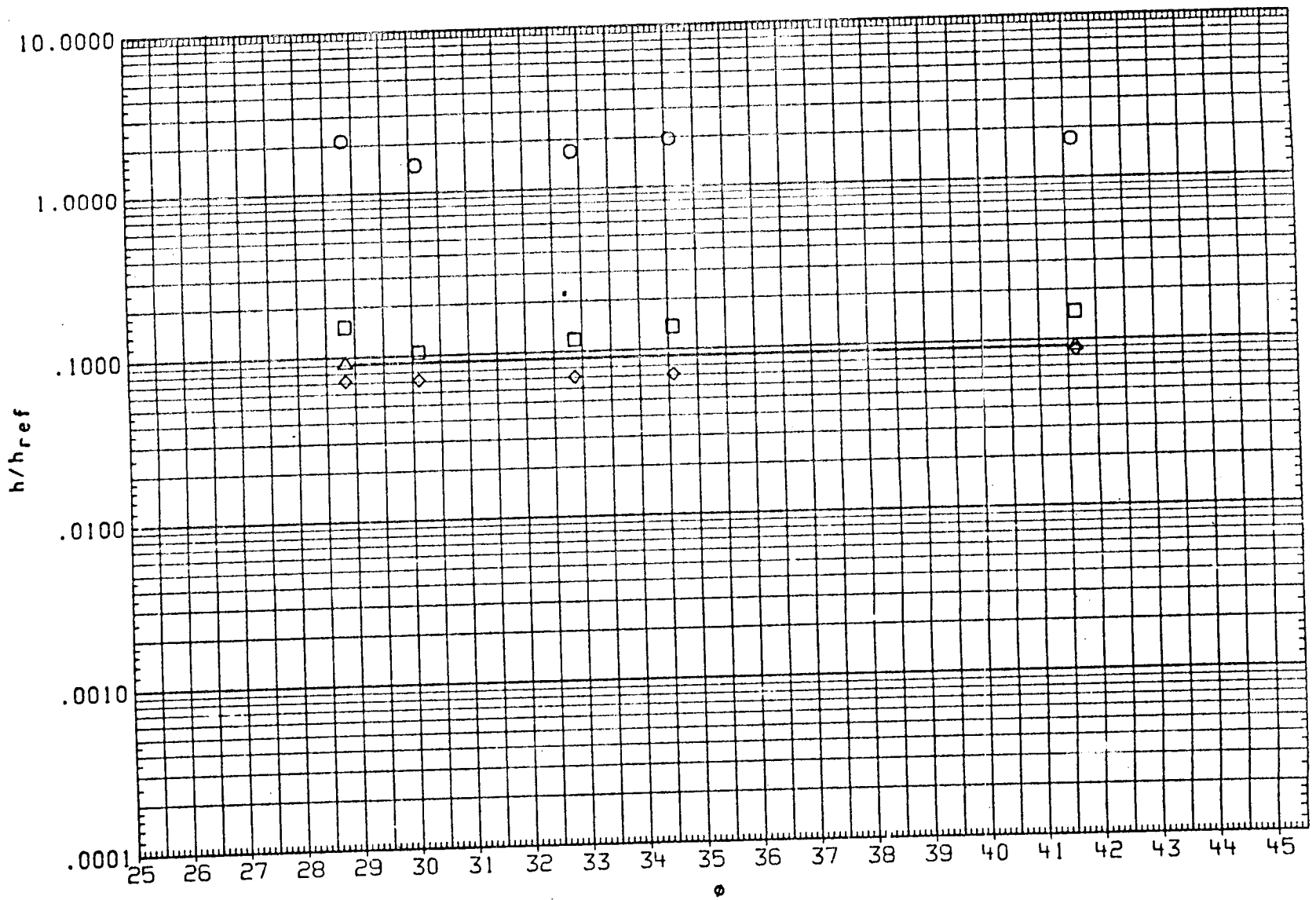

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 70

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

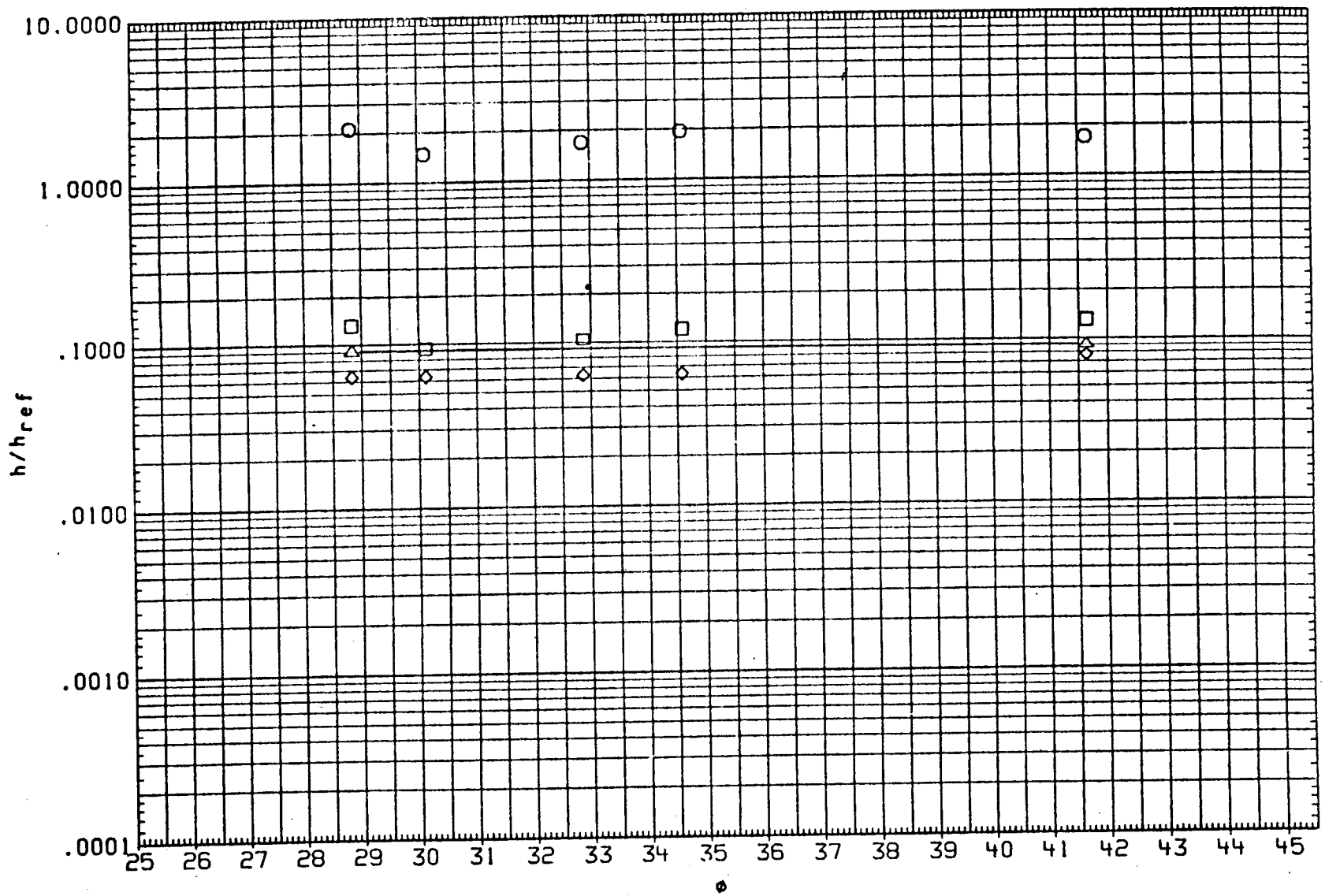

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 71

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(N2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

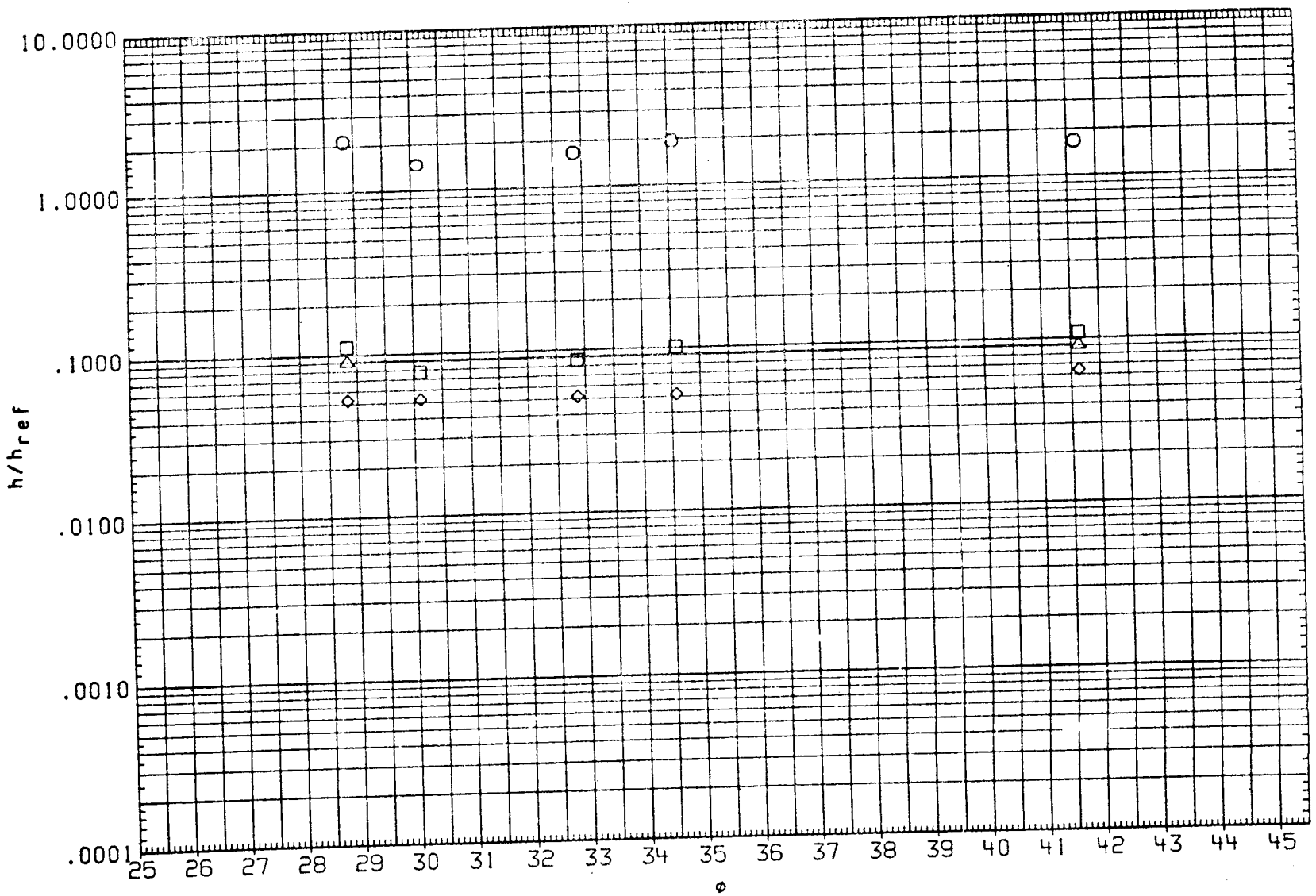

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 72

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

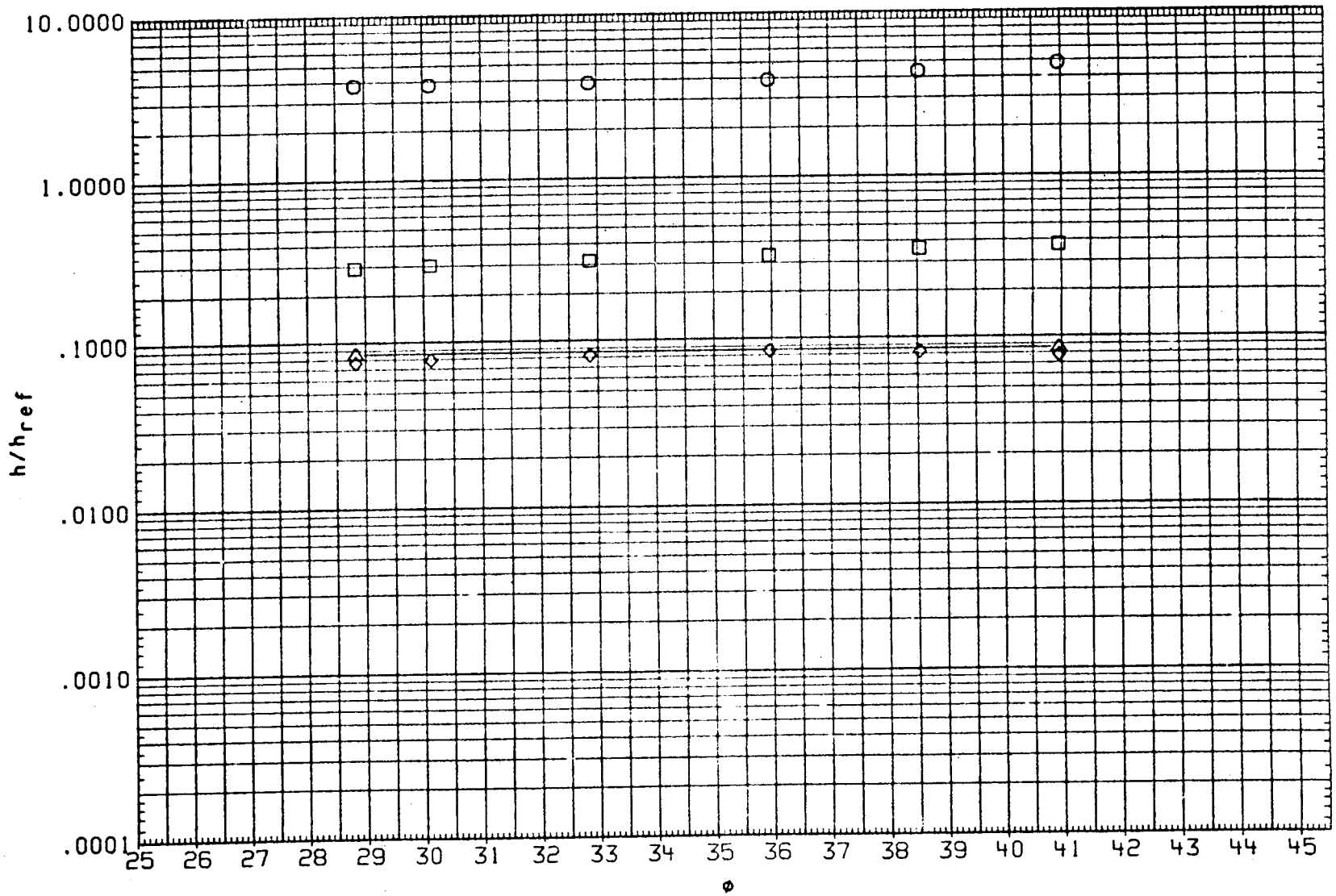

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .540 DATE 22 APR 78 PAGE 73

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

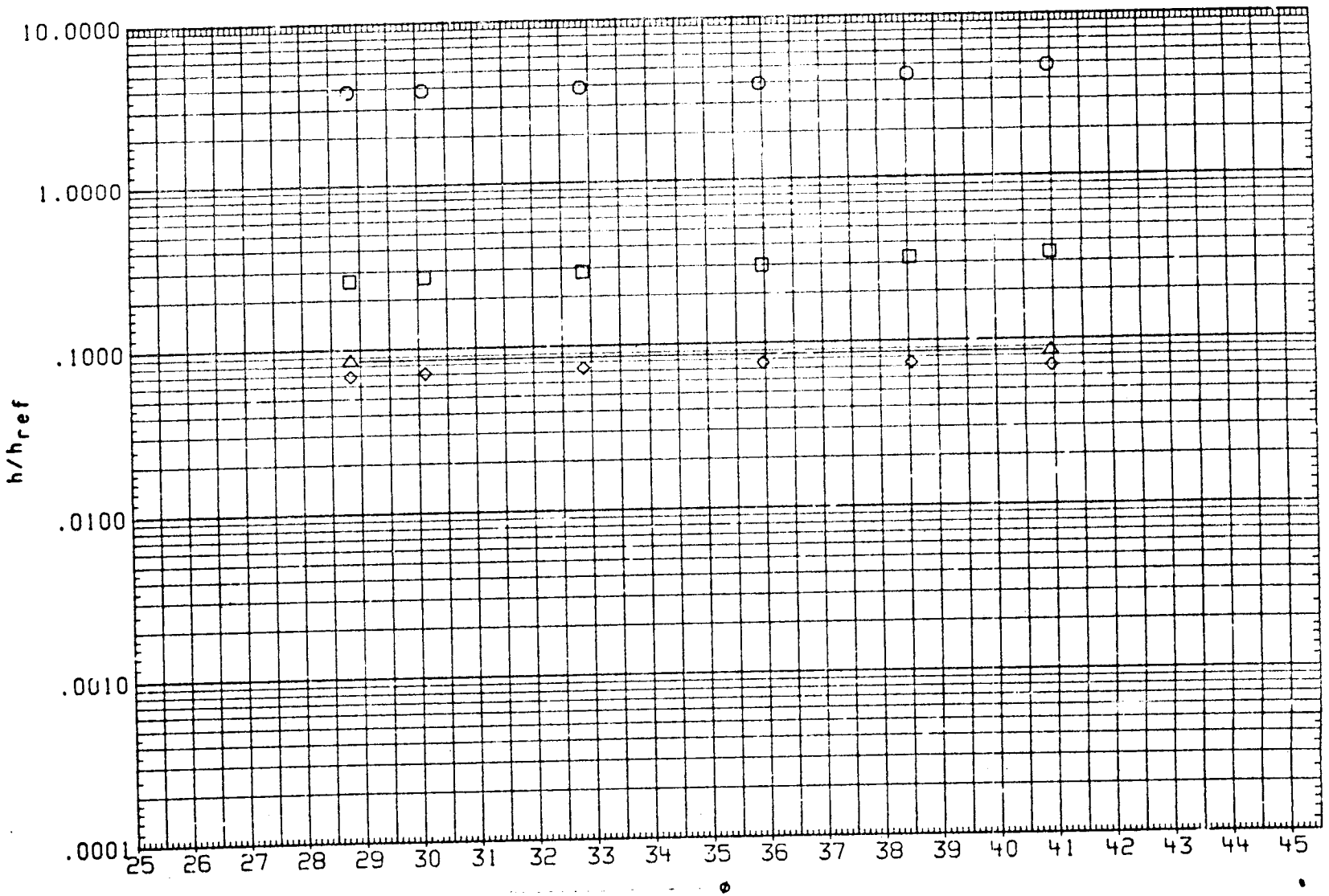

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .540 DATE 22 APR 78 PAGE 74

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

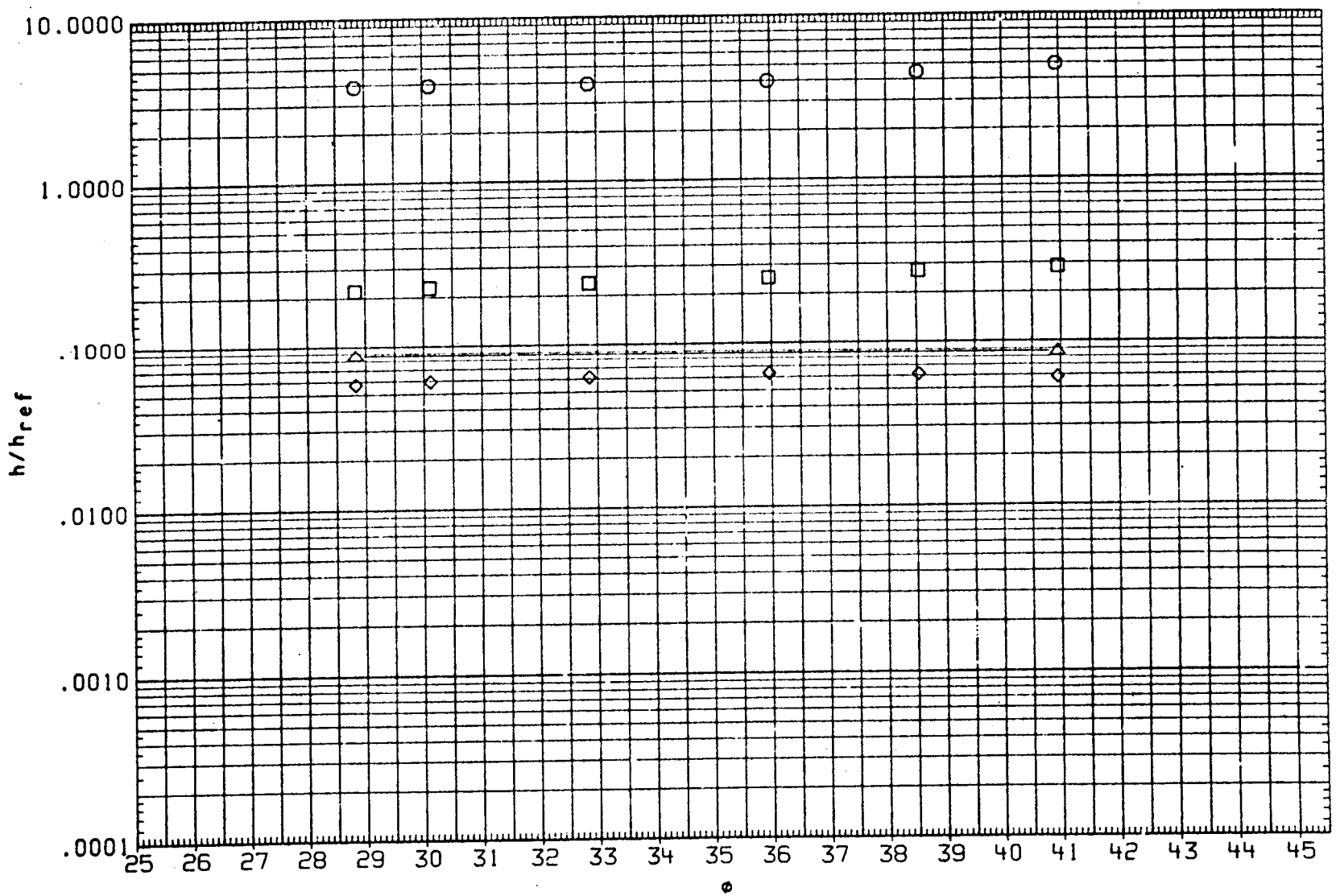

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 75

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

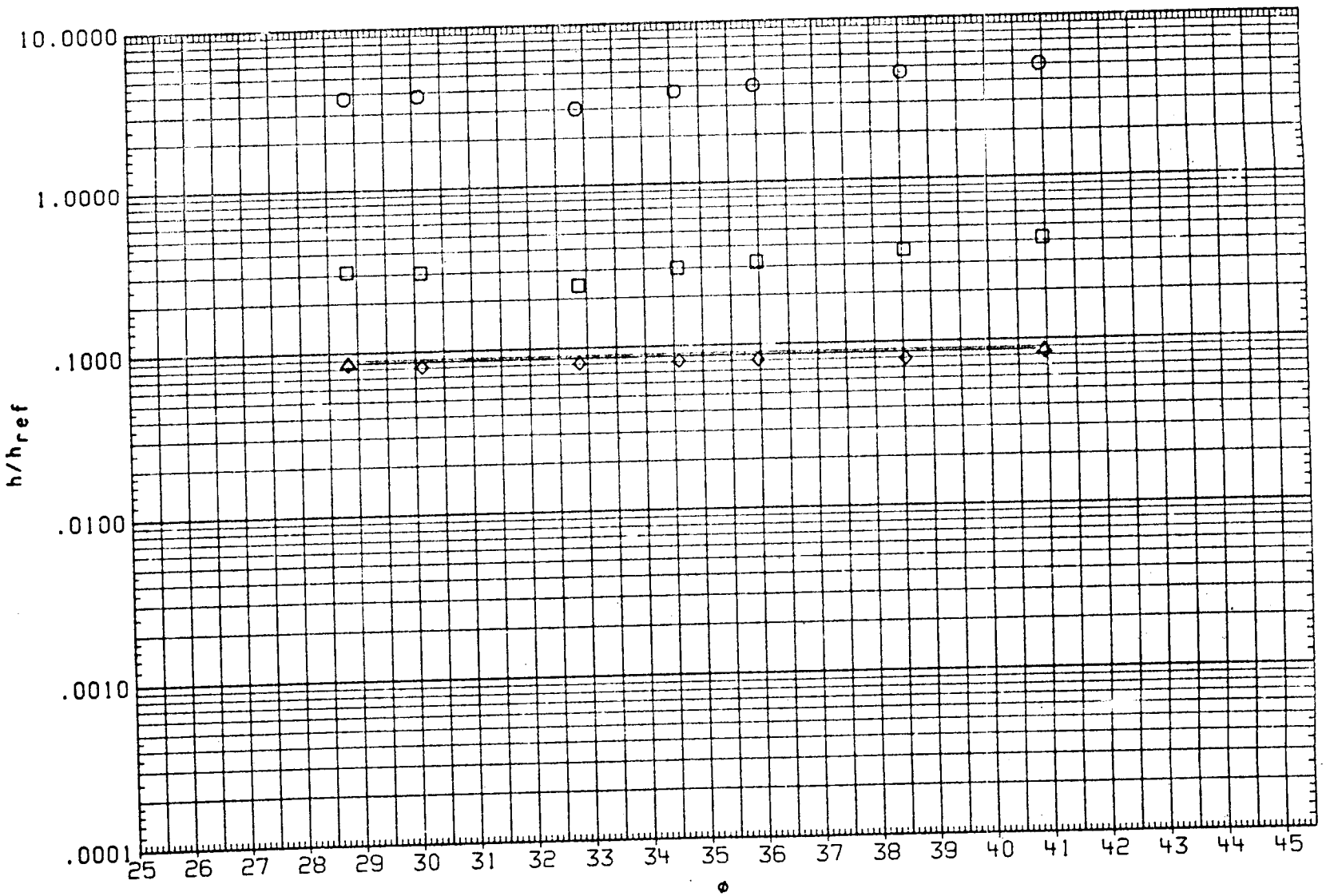

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 76

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

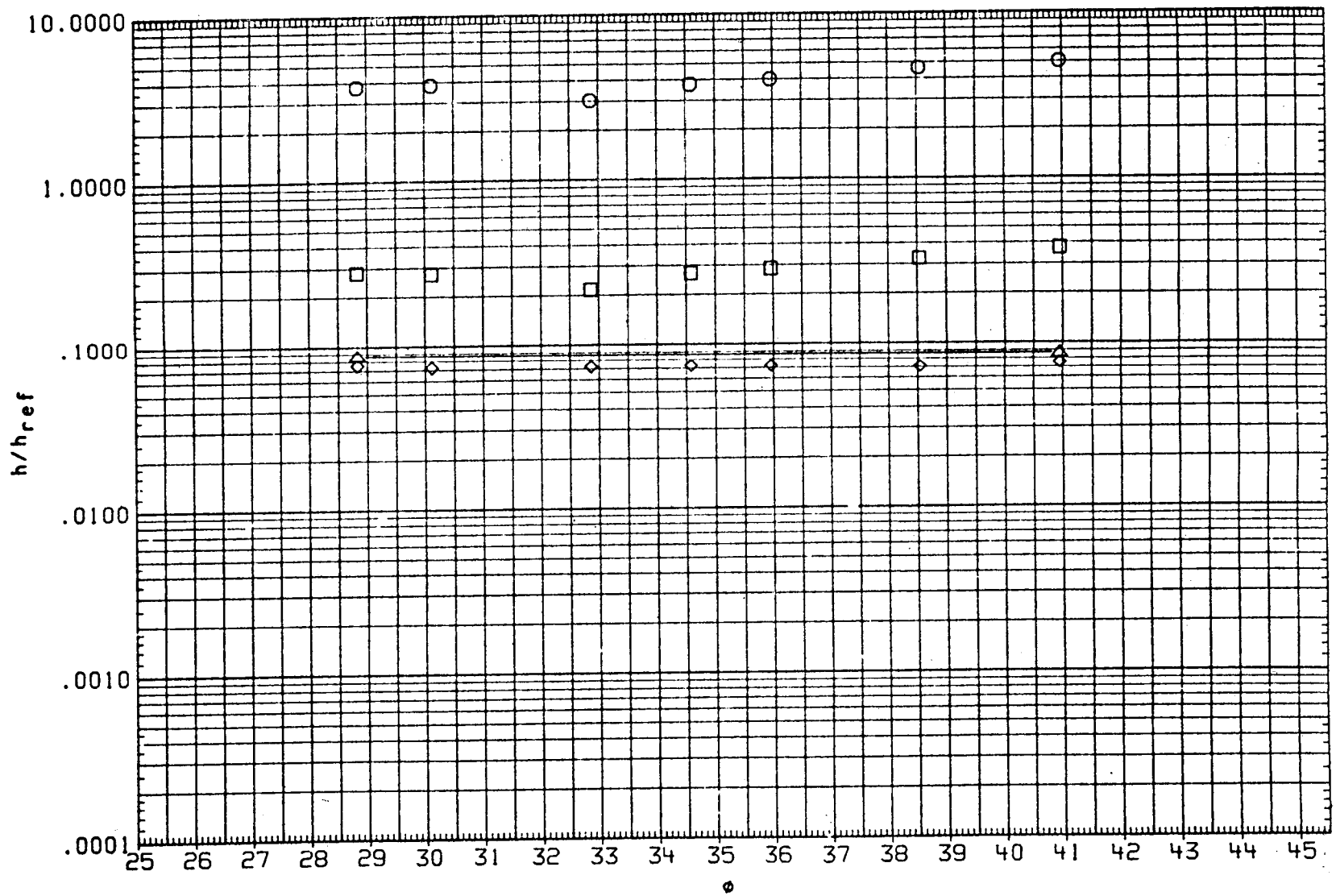

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .542 DATE 22 APR 78 PAGE 77

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

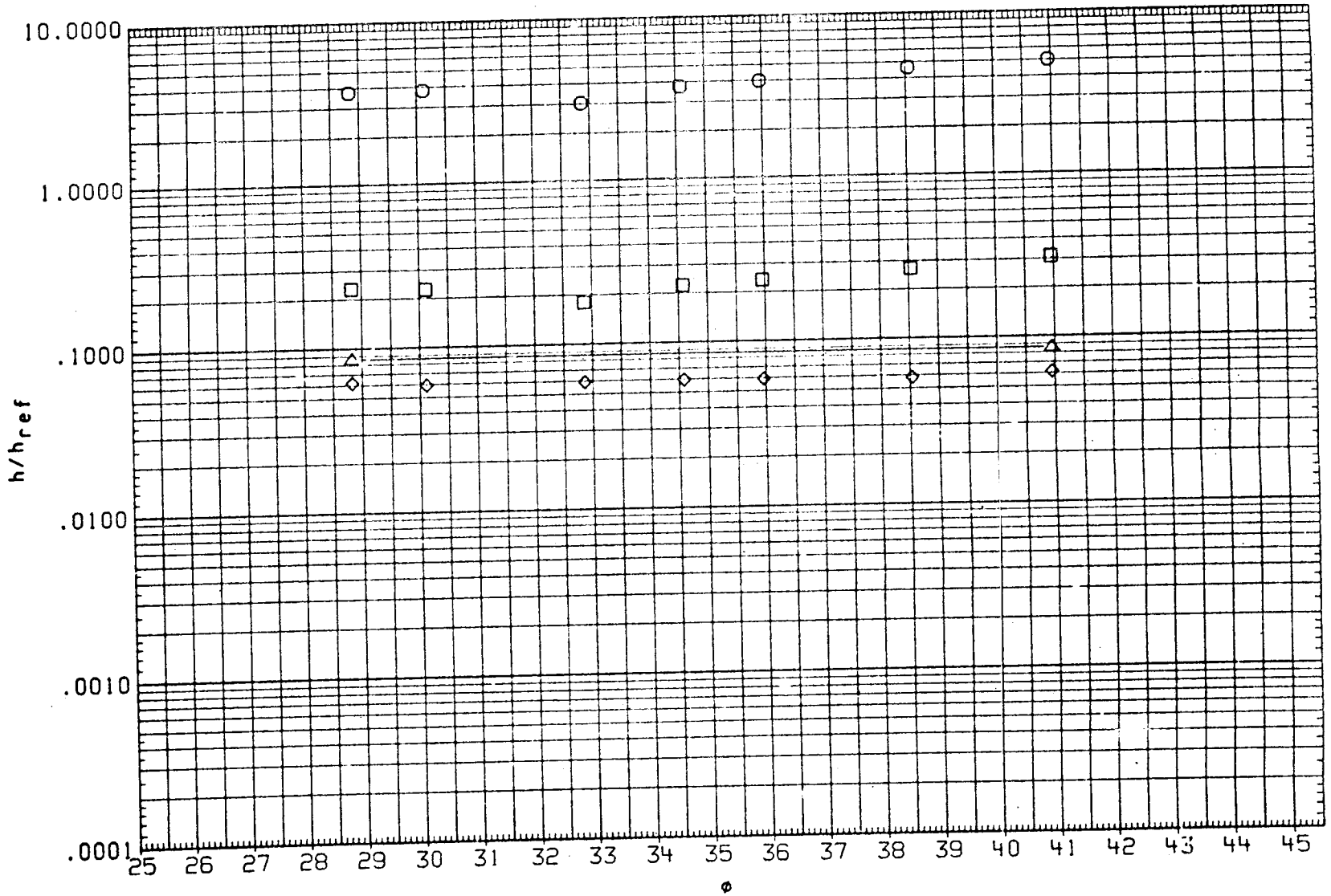

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

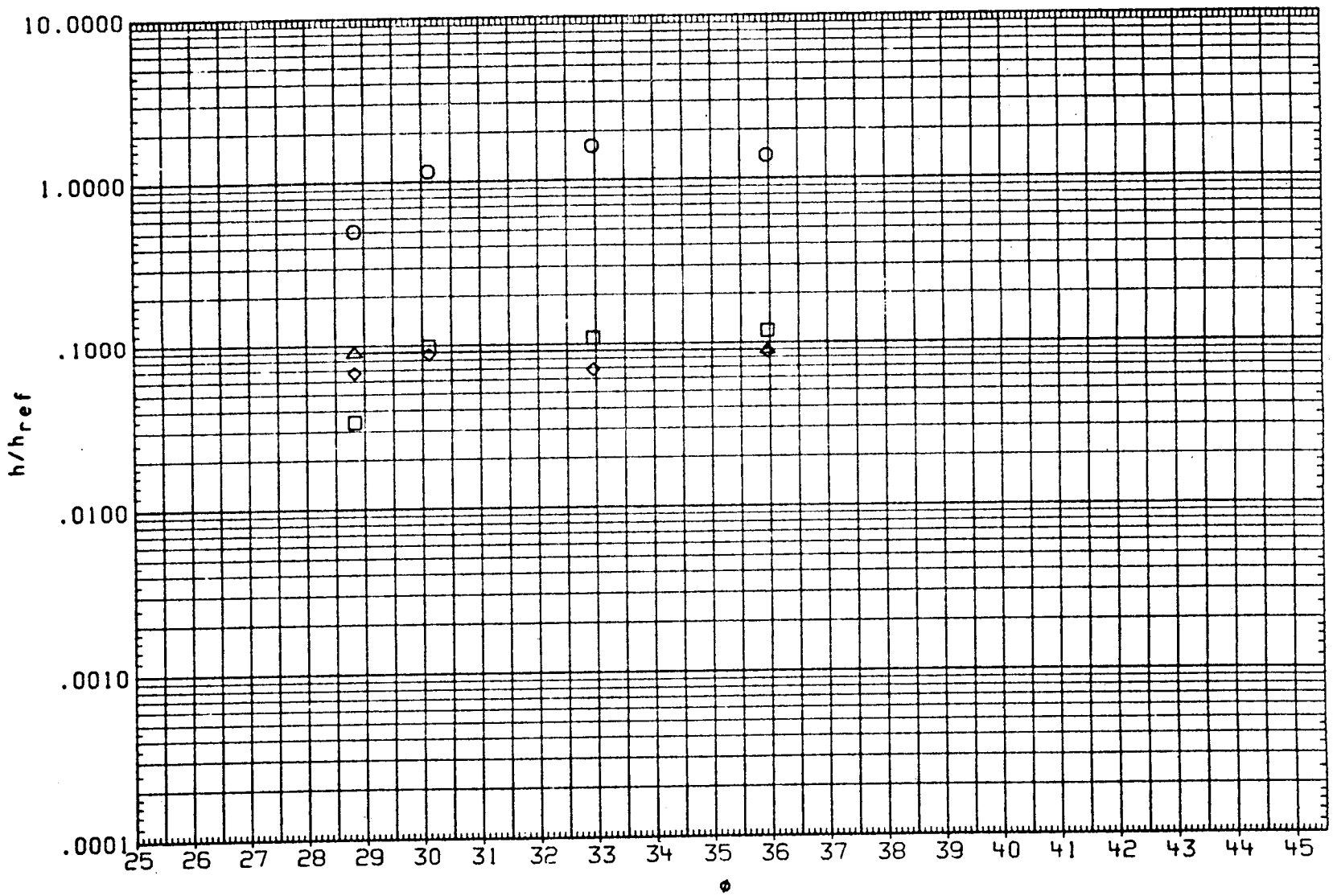

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .441 DATE 22 APR 78 PAGE 79

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

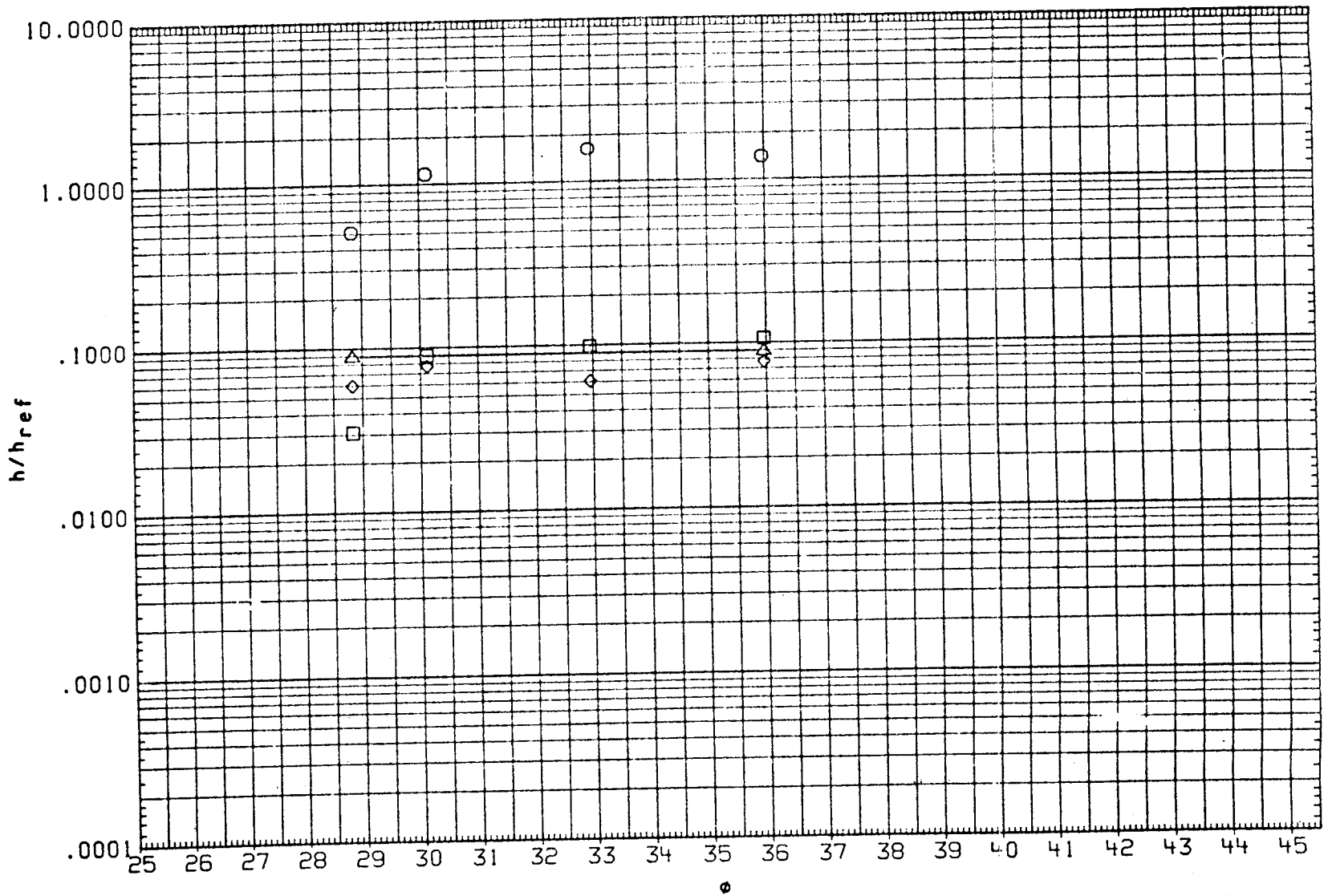

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .441 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

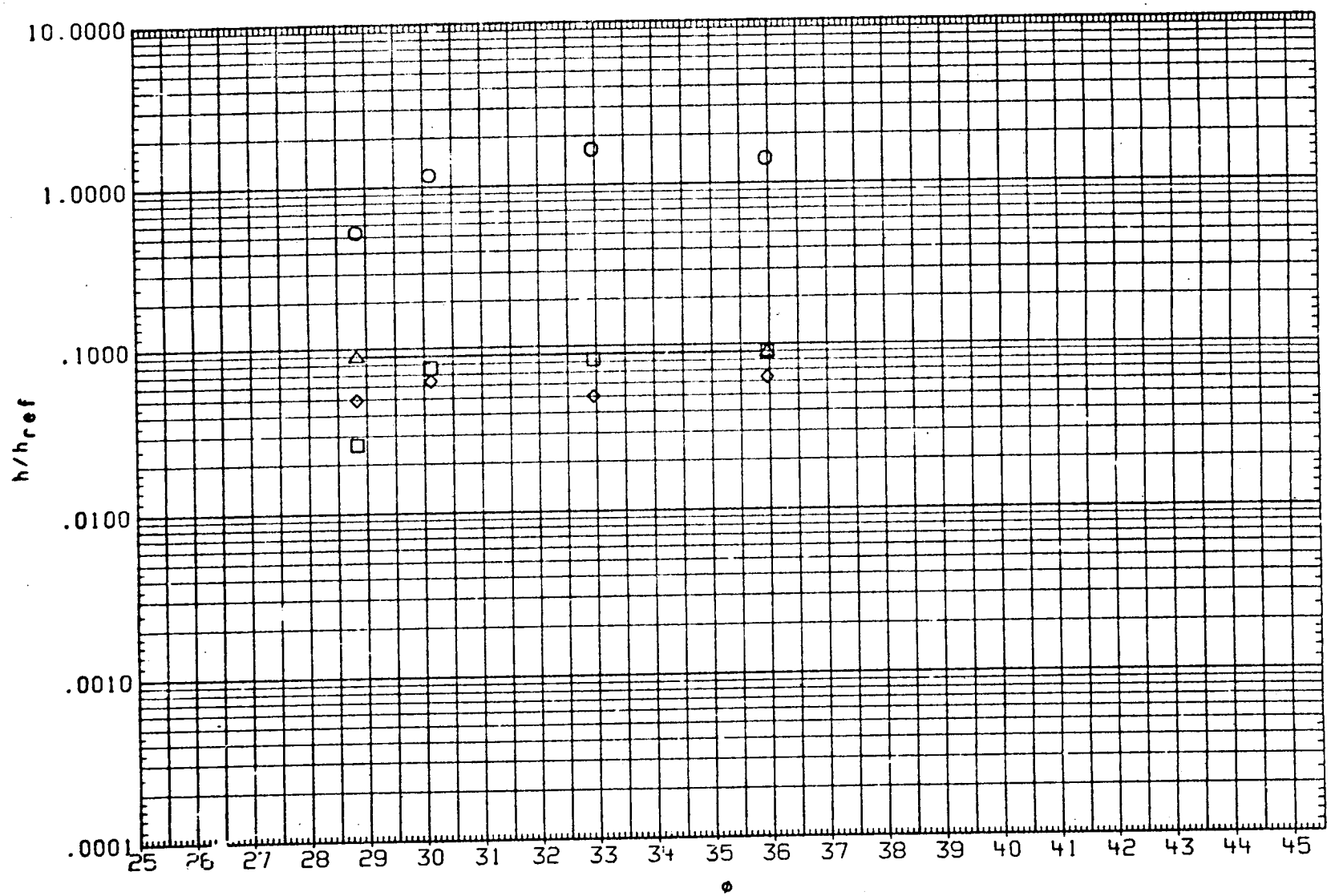

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = 1.000 X/L = .441 DATE 22 APR 78 PAGE 81

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

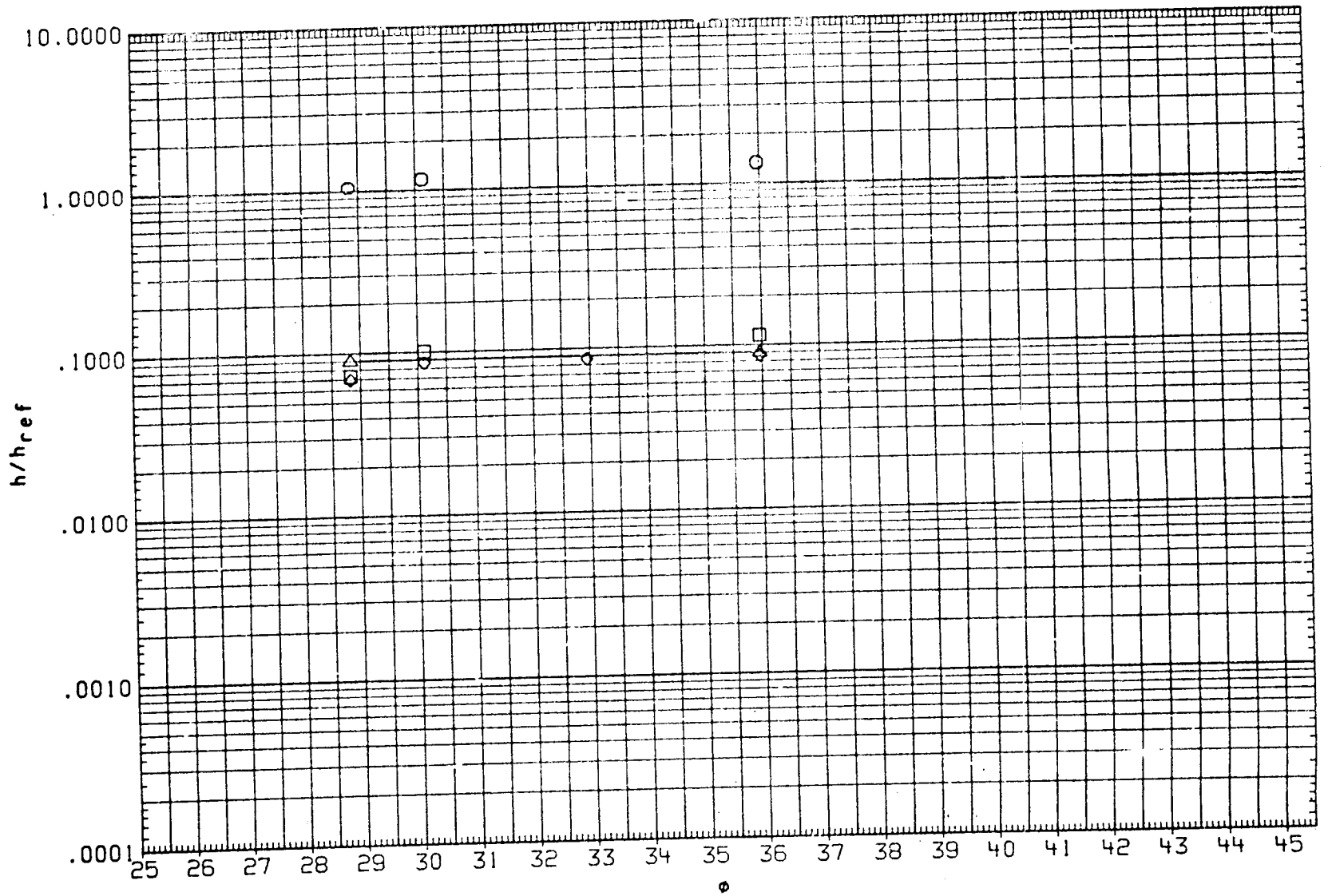

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 82

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

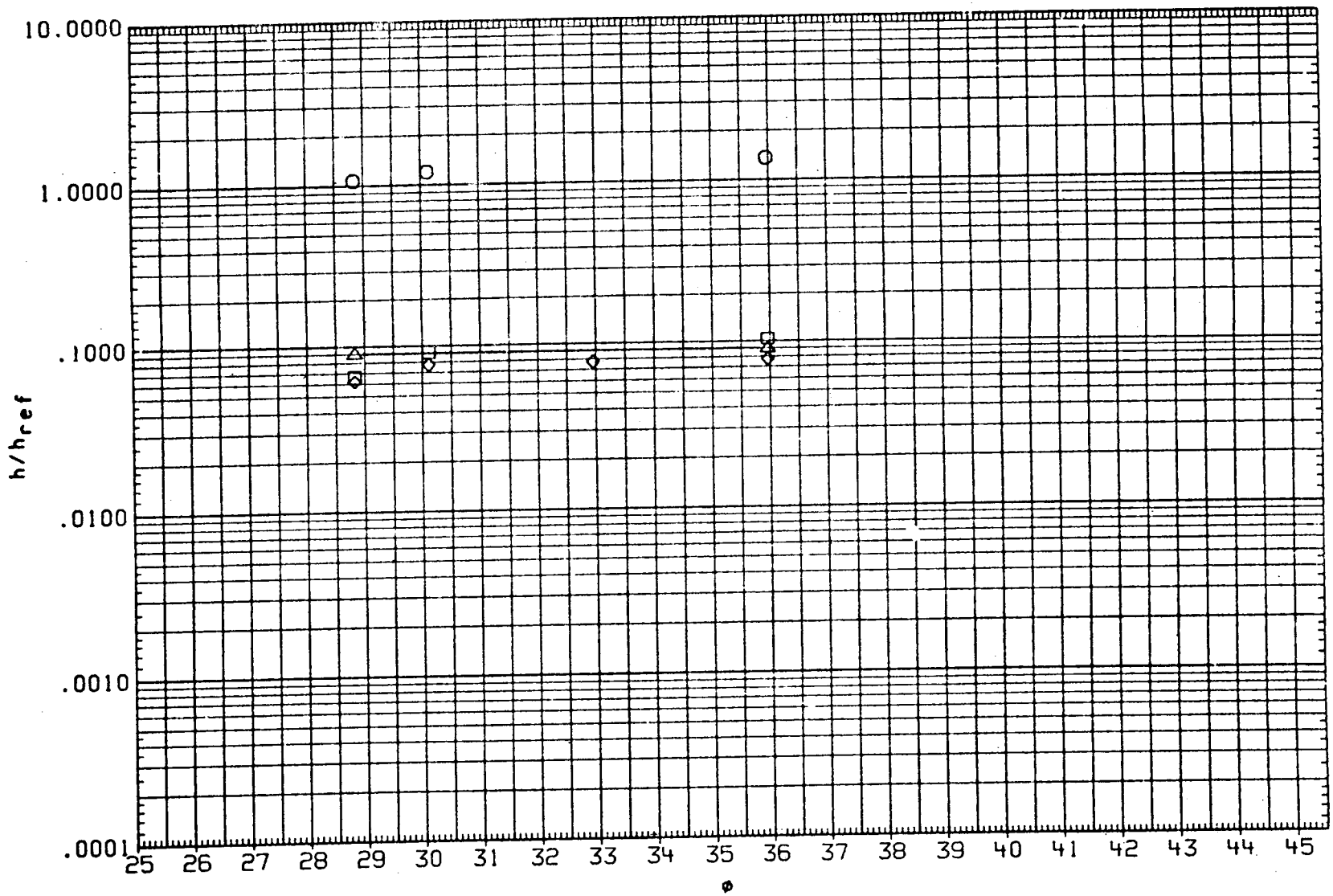

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .443 DATE 22 APR 78 PAGE 83

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

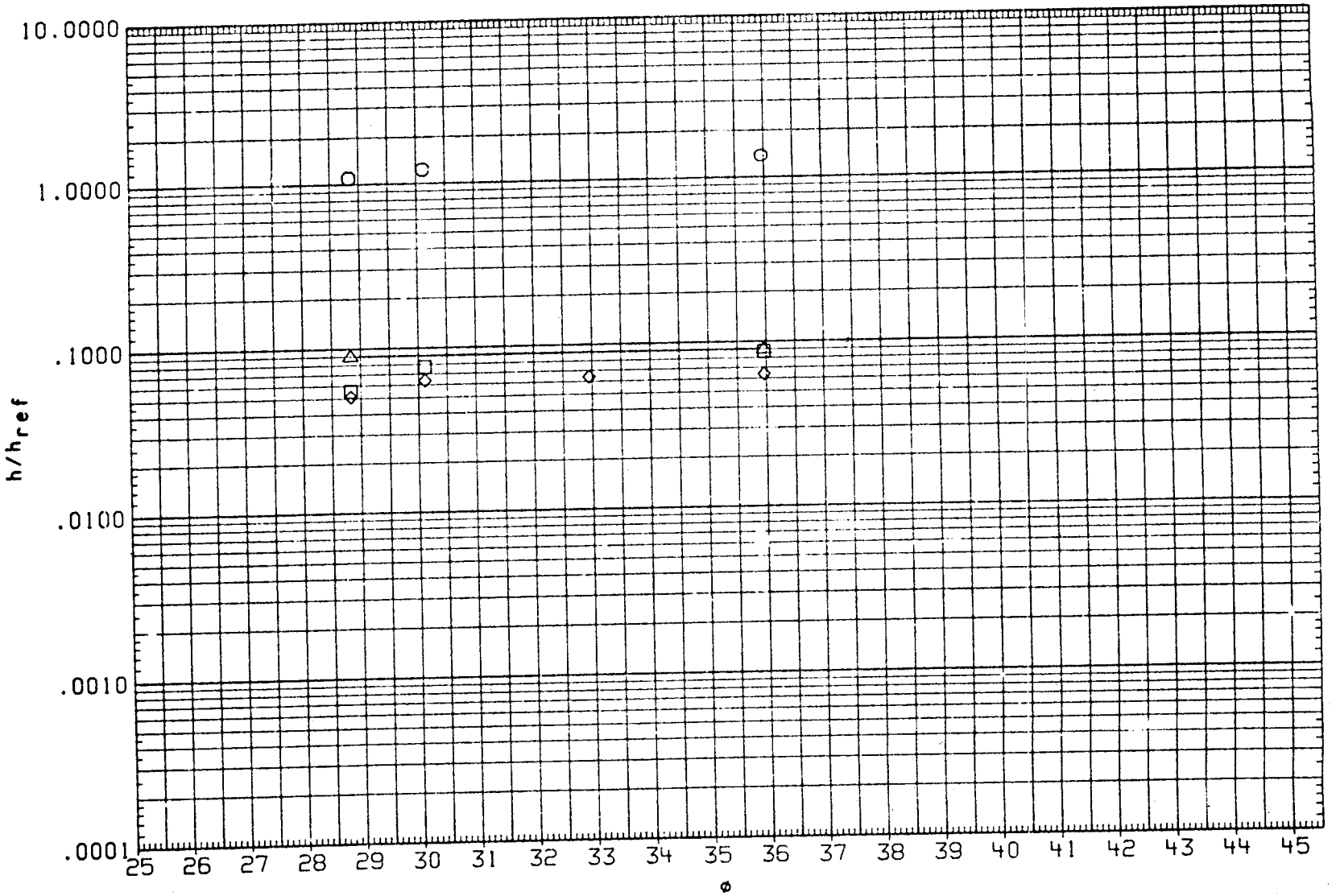

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = 1.000 X/L = .443 DATE 22 APR. 78 PAGE 84

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

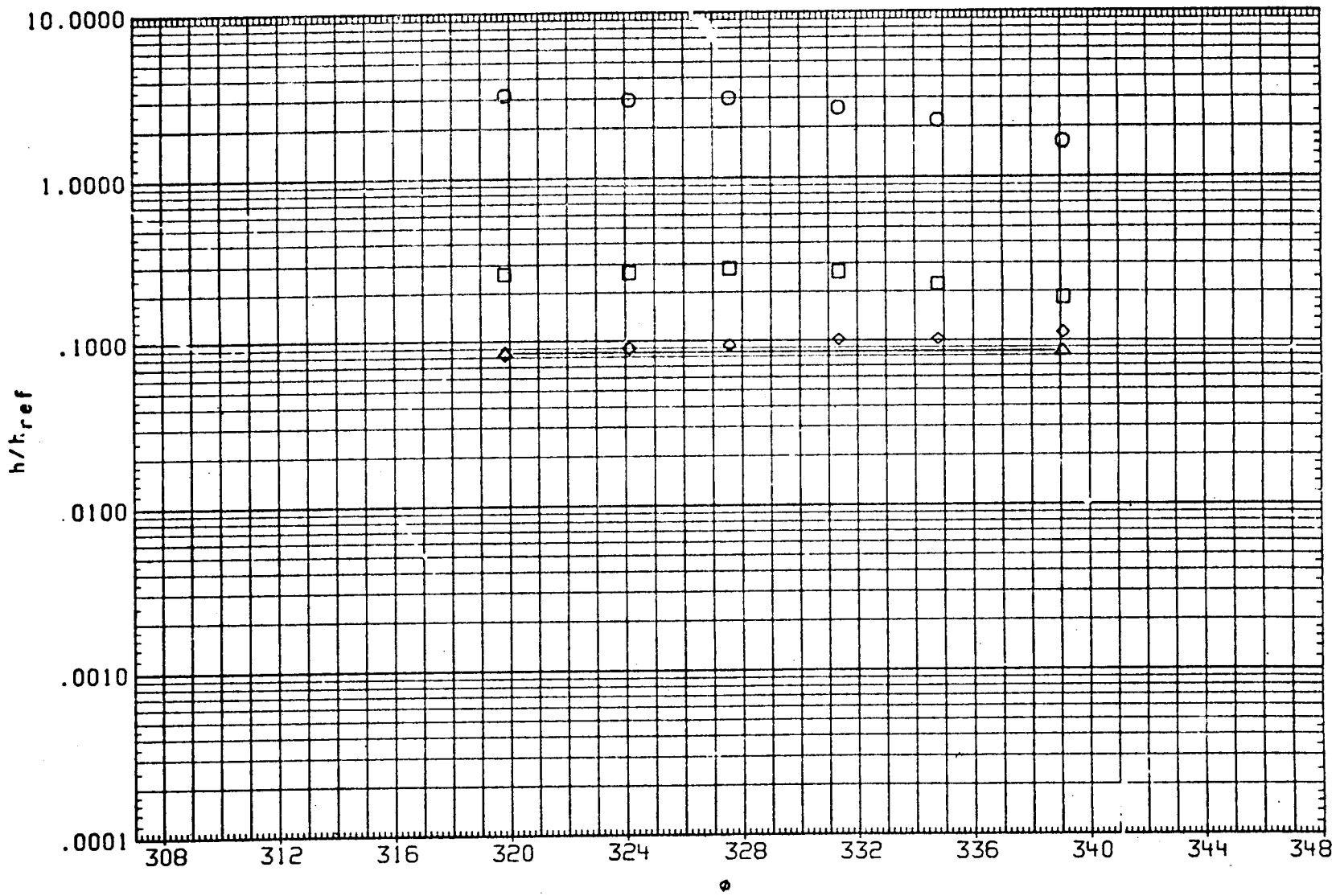

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .571 DATE 22 APR 78 PAGE 85

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

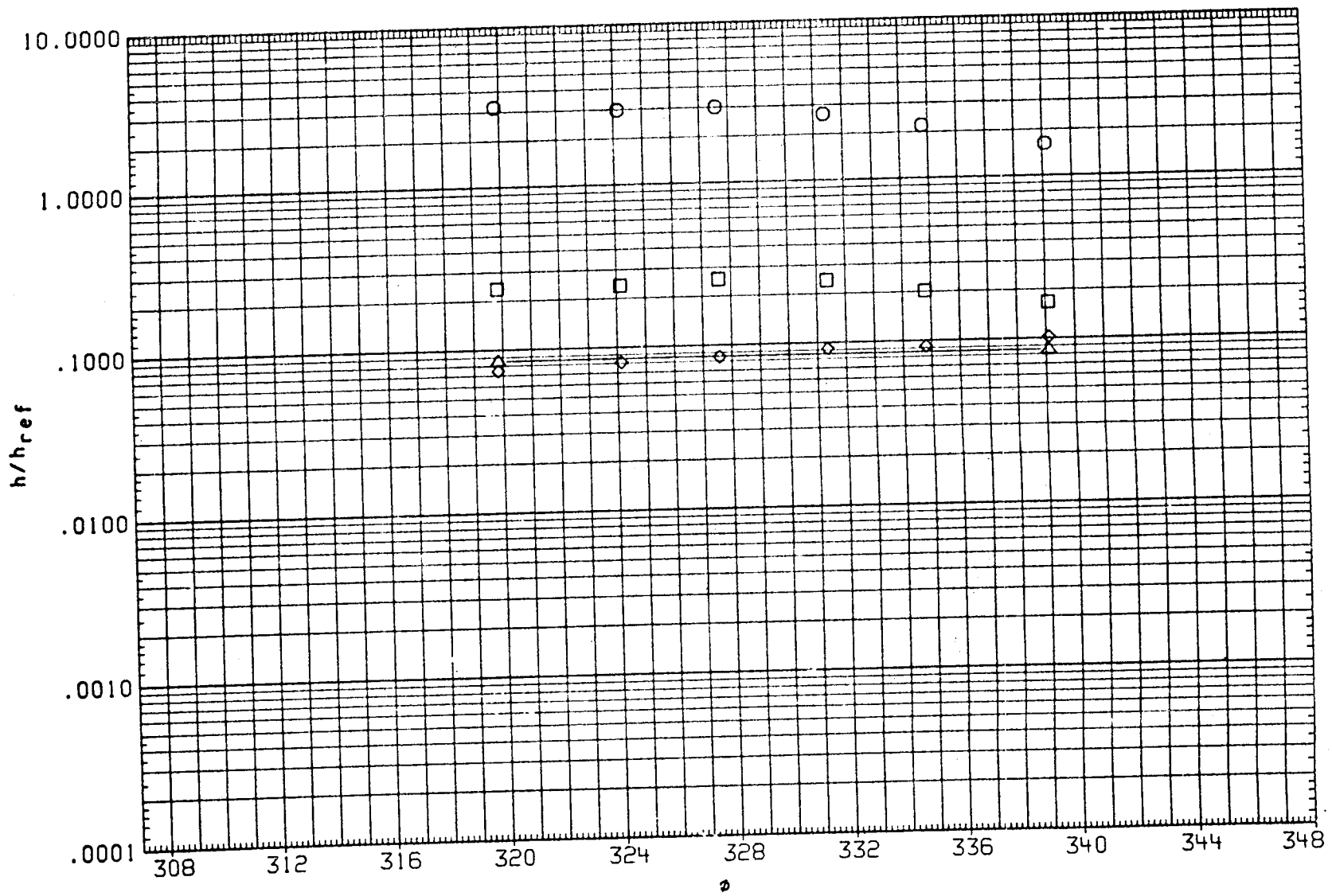

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 86

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20011)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

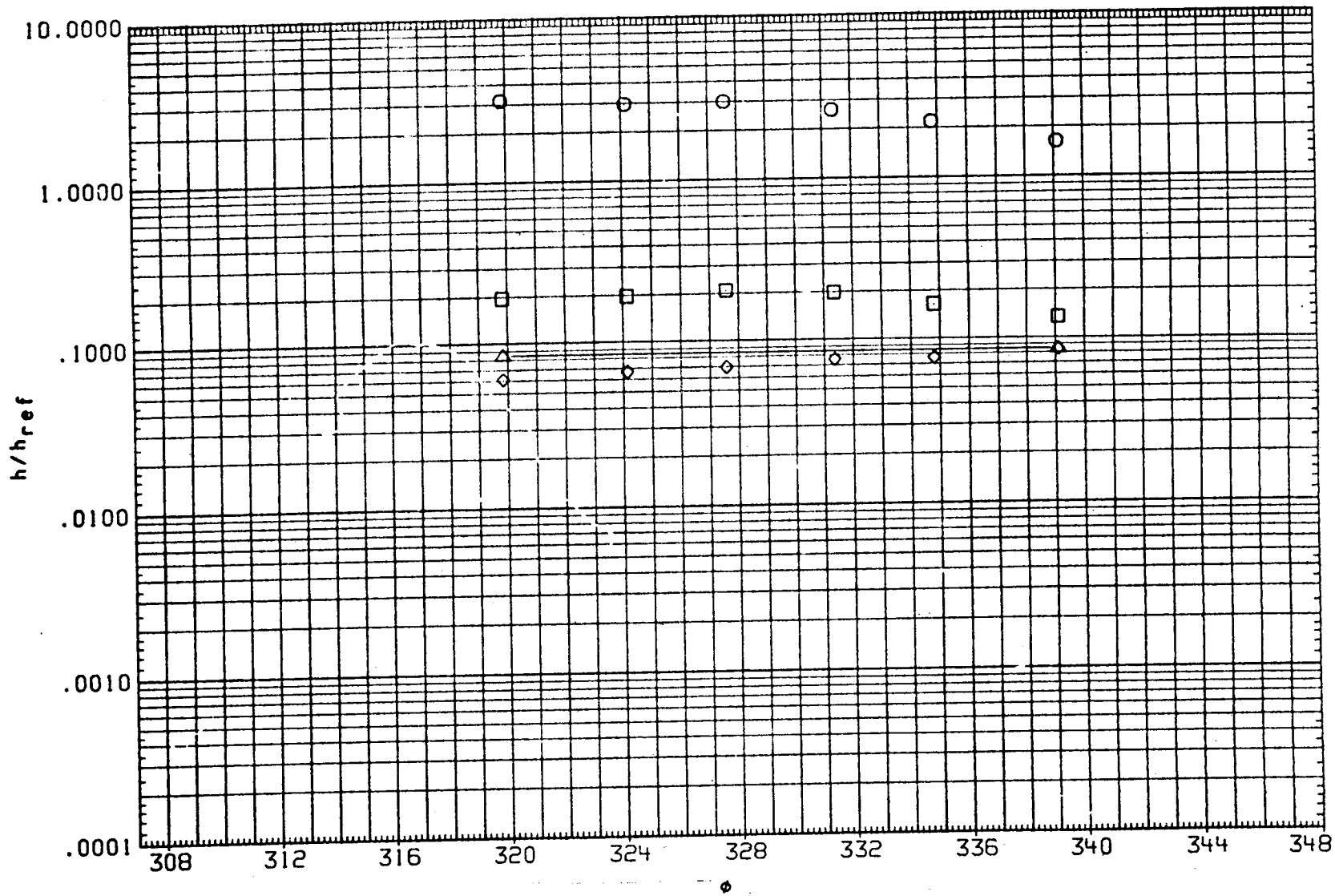

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78 PAGE 87

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

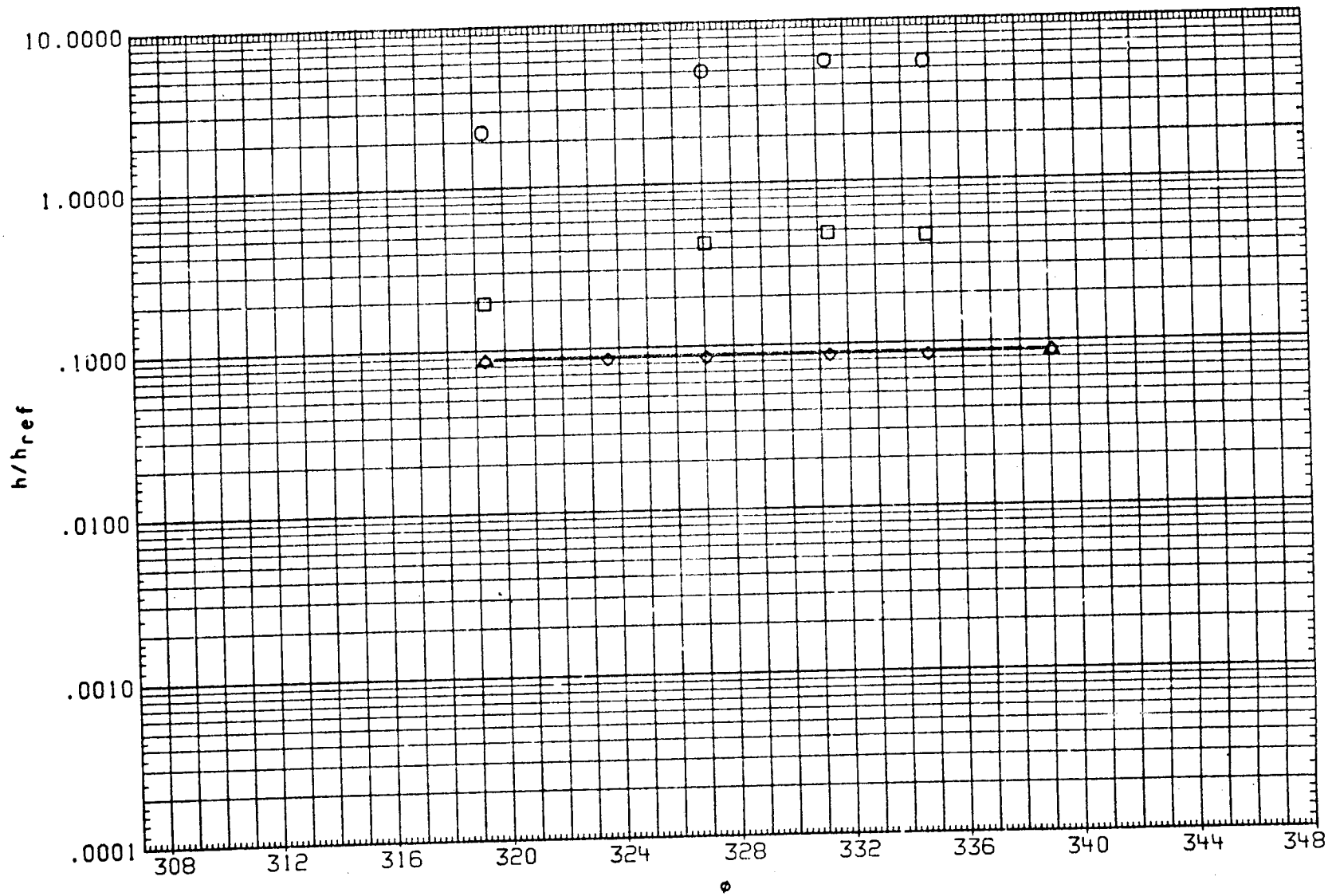

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 88

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B20Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

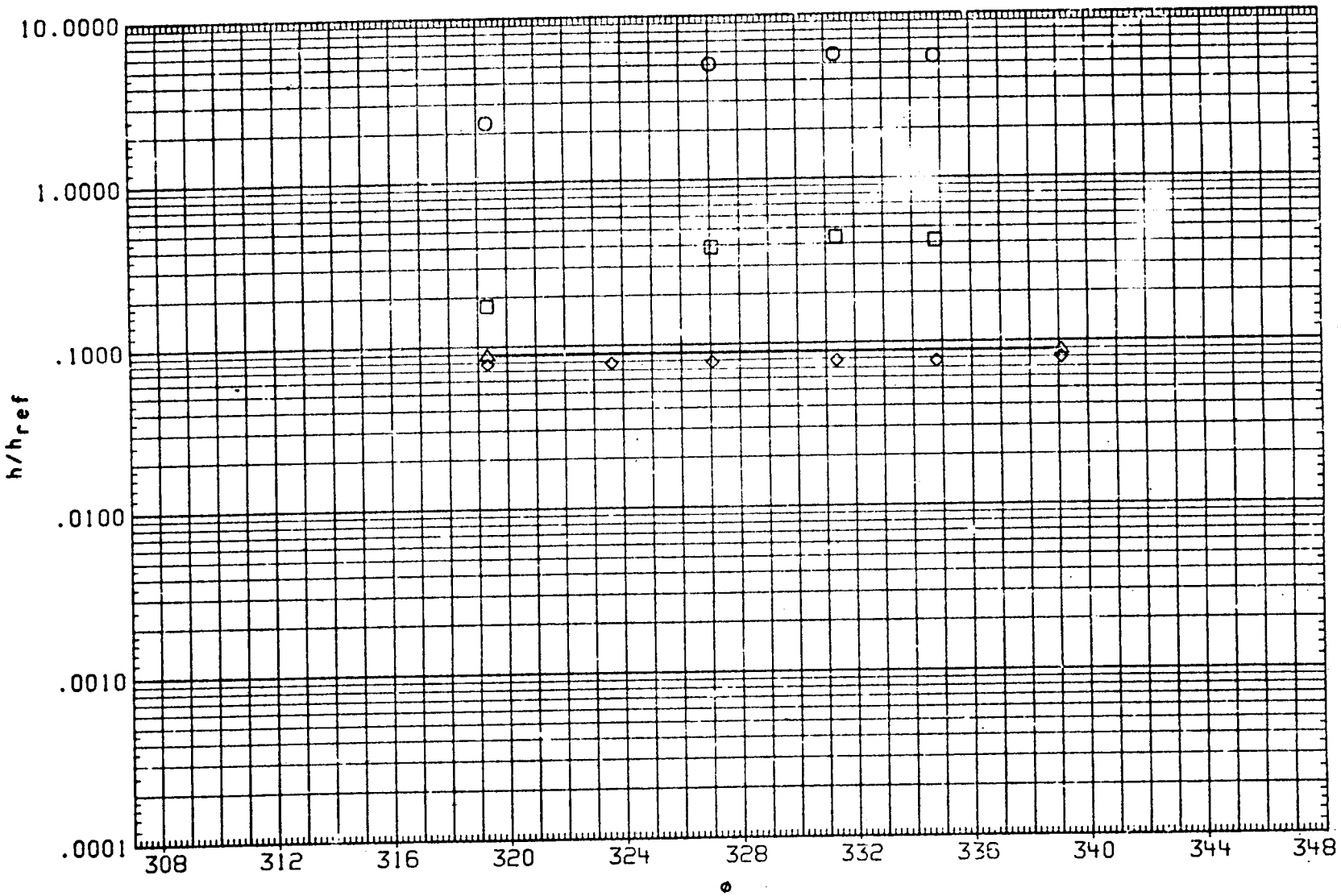

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 89

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/F	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

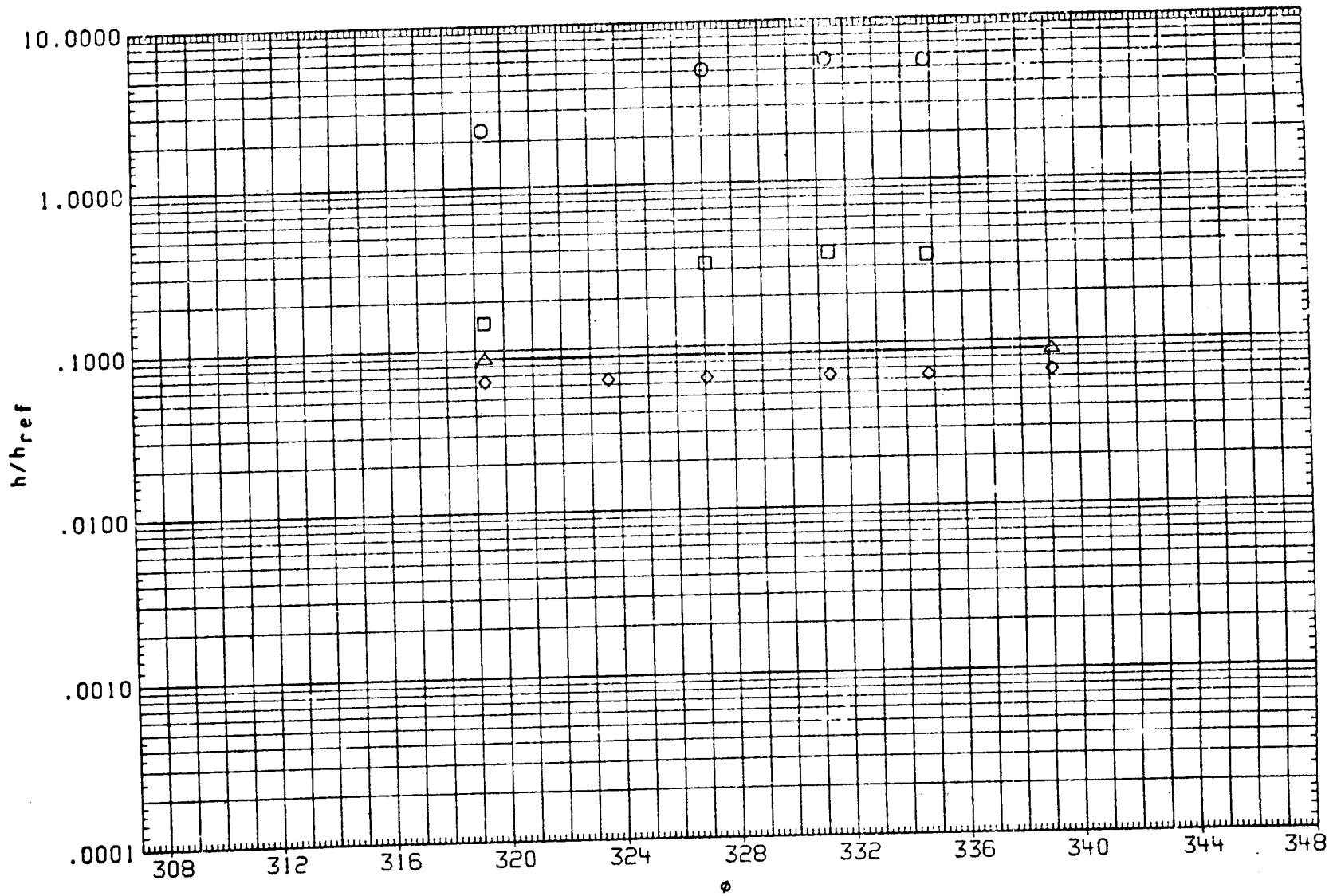

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

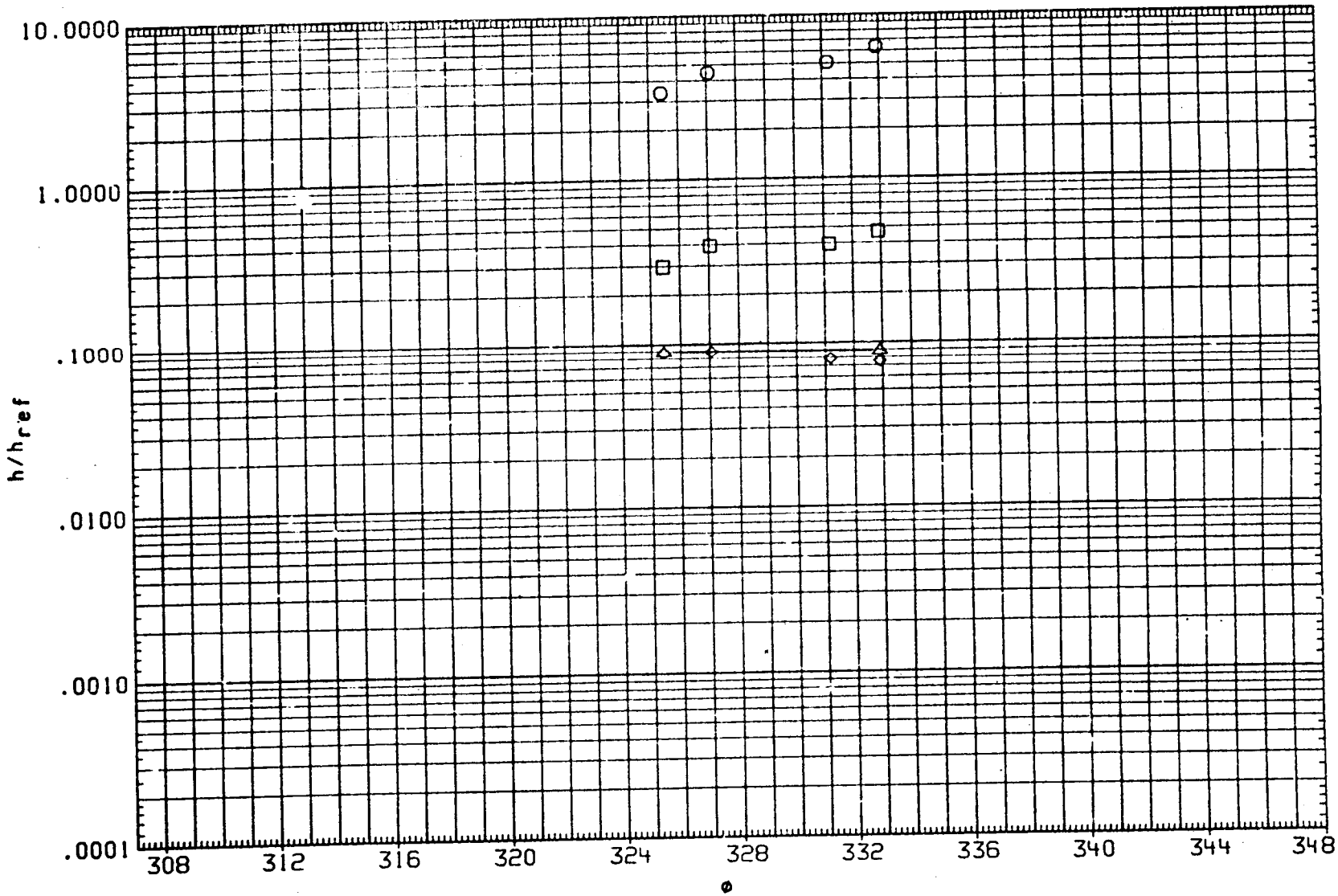

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .482 DATE 22 APR 78 PAGE 91

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(E2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

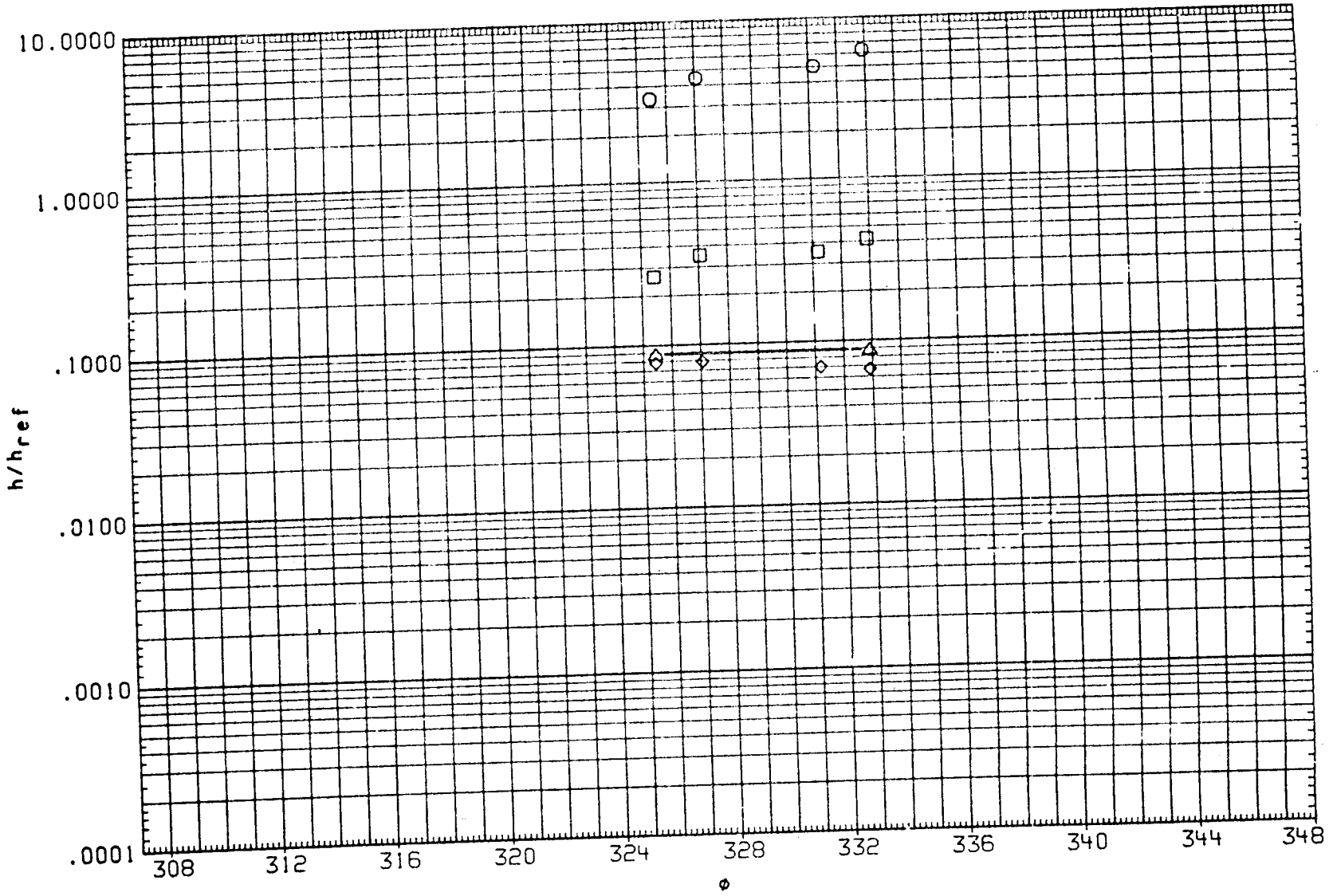

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 92

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

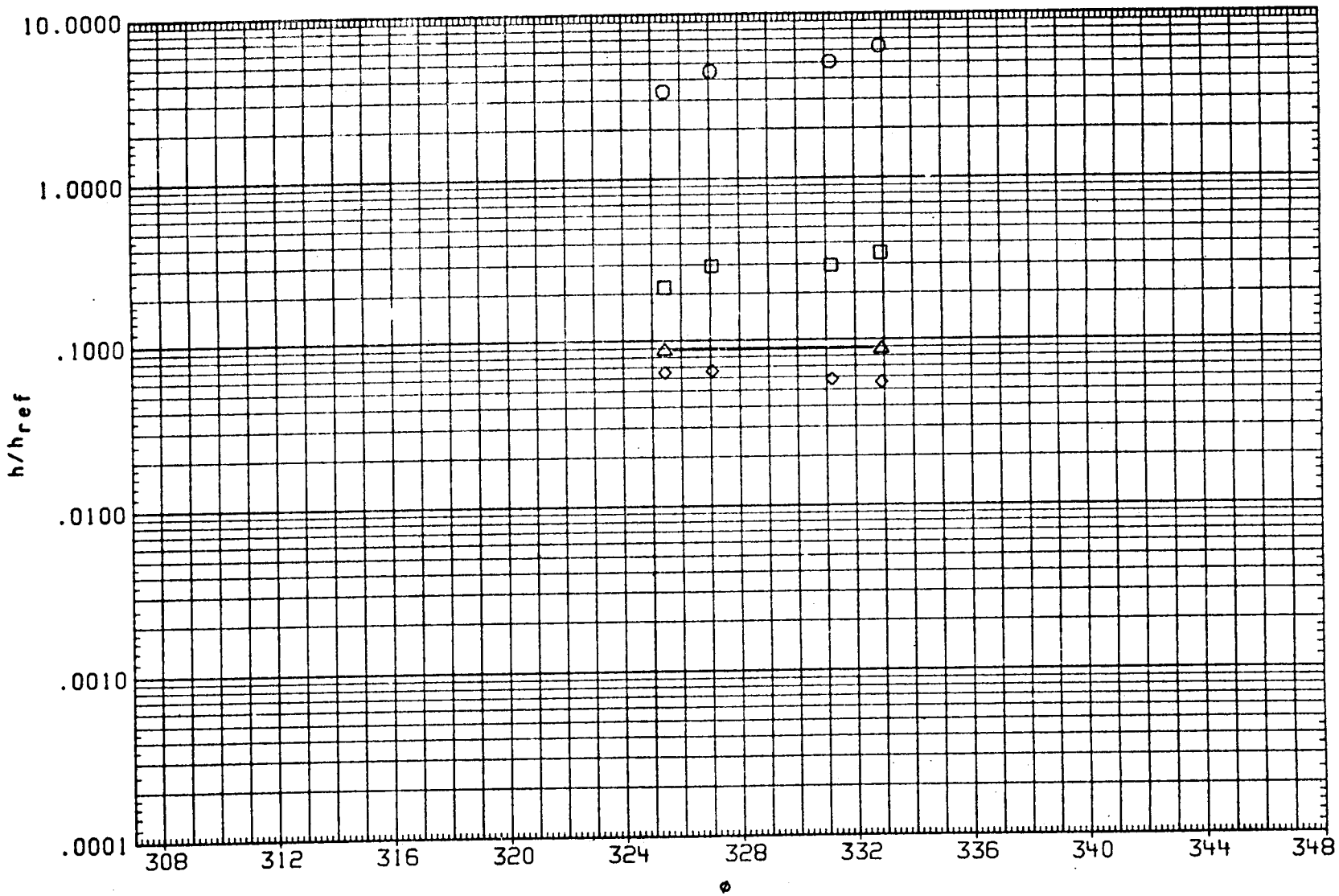

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78 PAGE 93

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

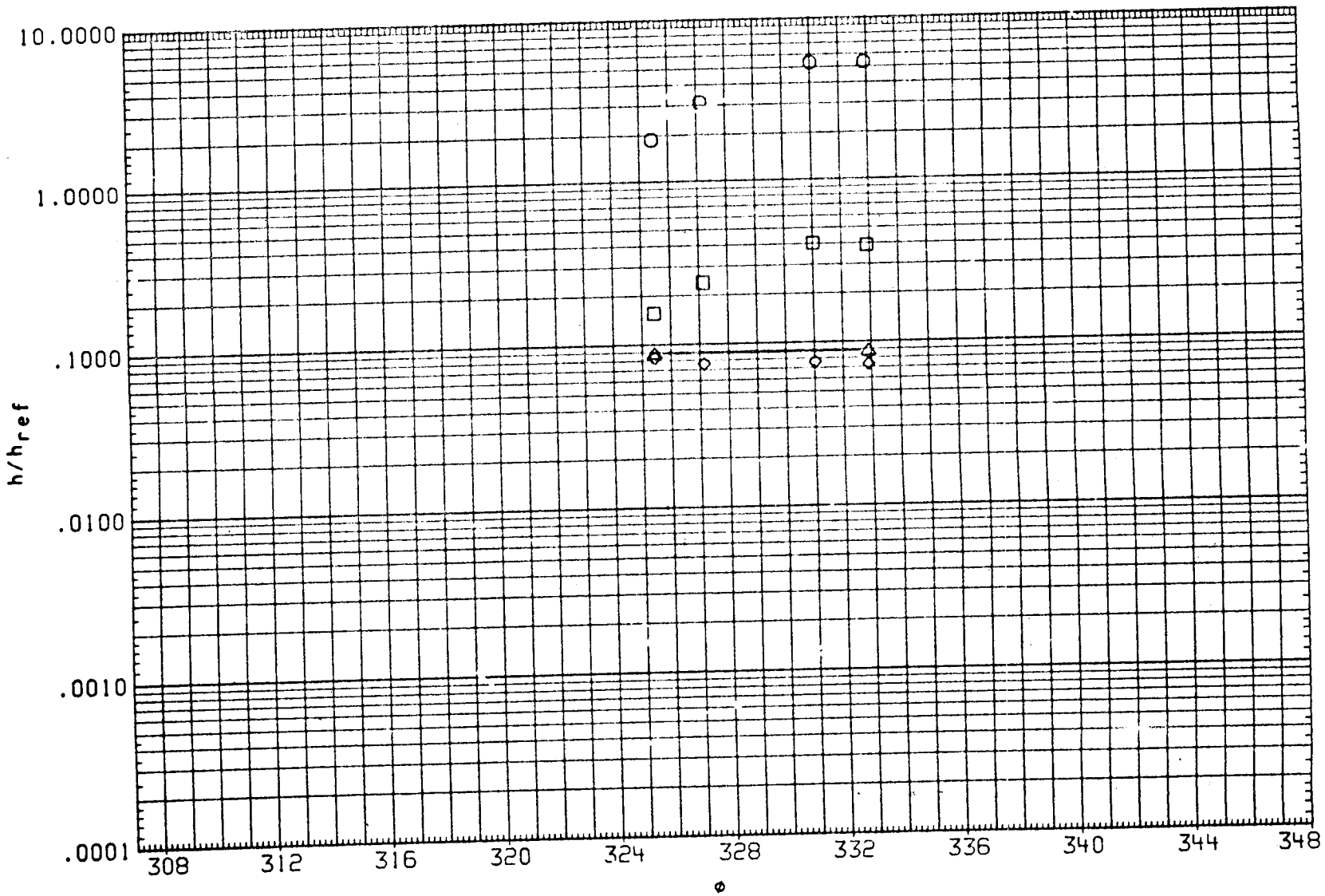

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 94

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M2000A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B2001I)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

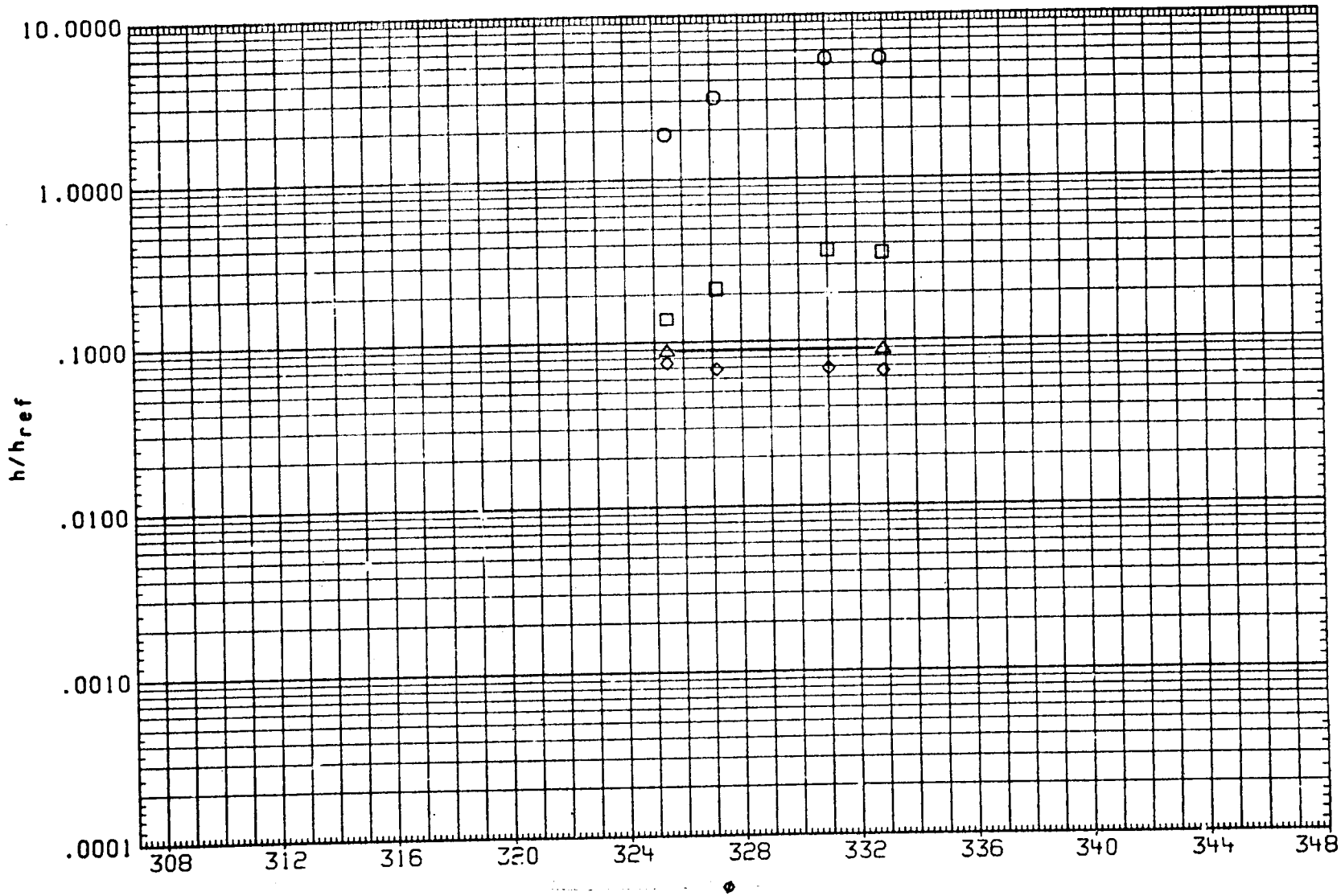

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .473 DATE 22 APR 78 PAGE 95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0A)	○	IH51A (2A+3A+4A-5A-5A)/5A	ET SURFACE	.000	.000	5.000	5.300
(M20Q0A)	□	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(B[illegible]0Q11)	◇	IH51A CONF 5A ET SURFACE		.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

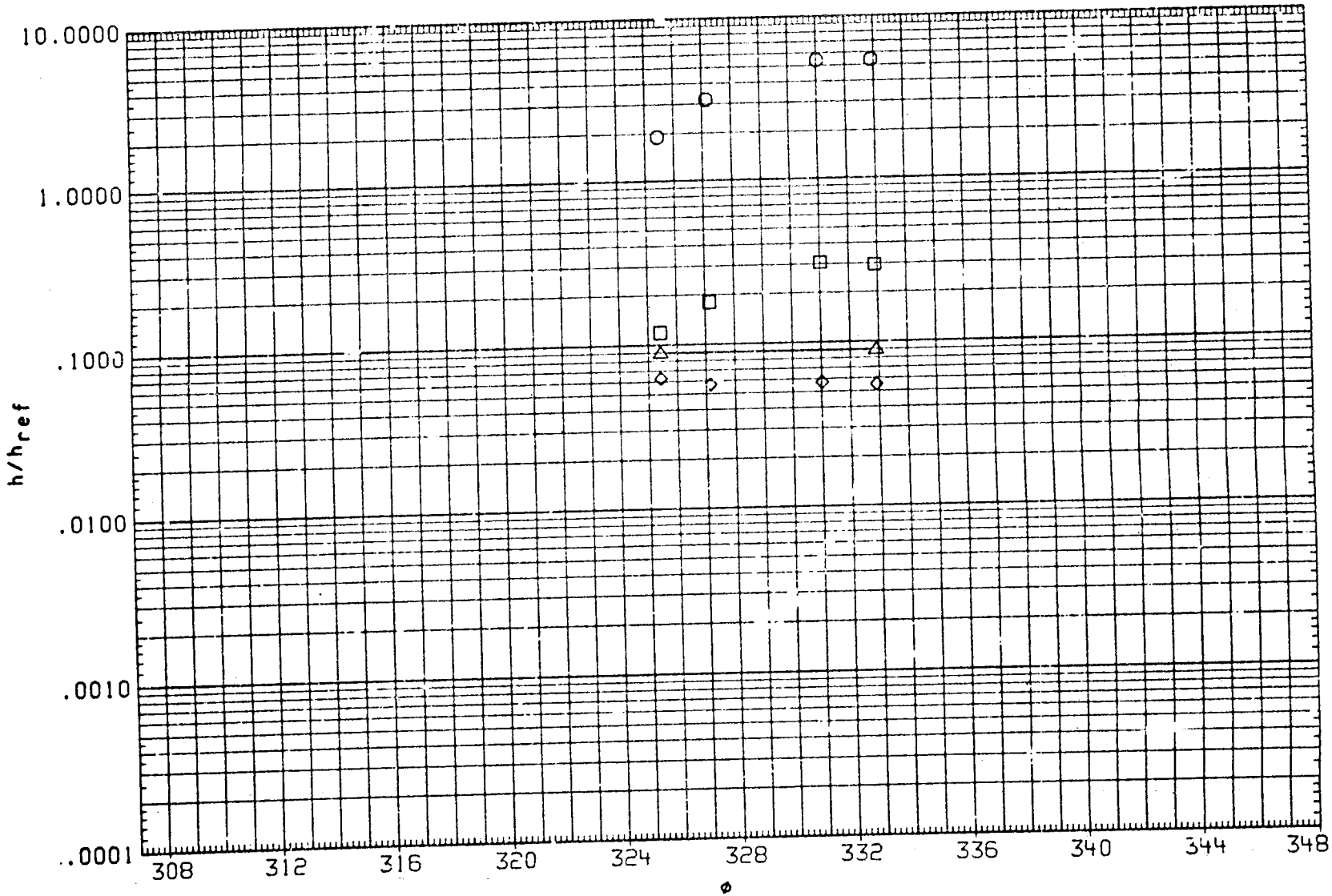

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

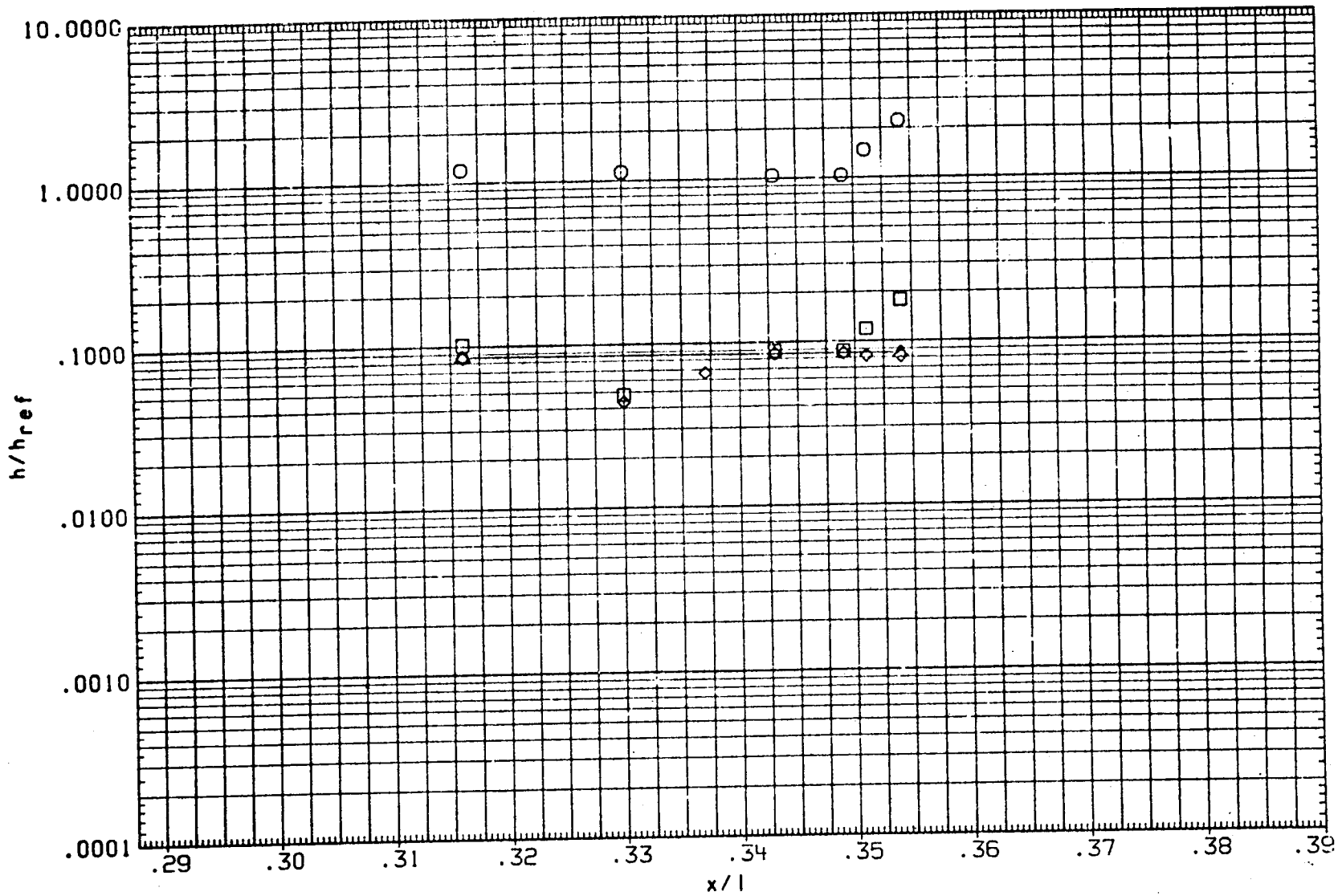

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78 PAGE 97

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005D)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

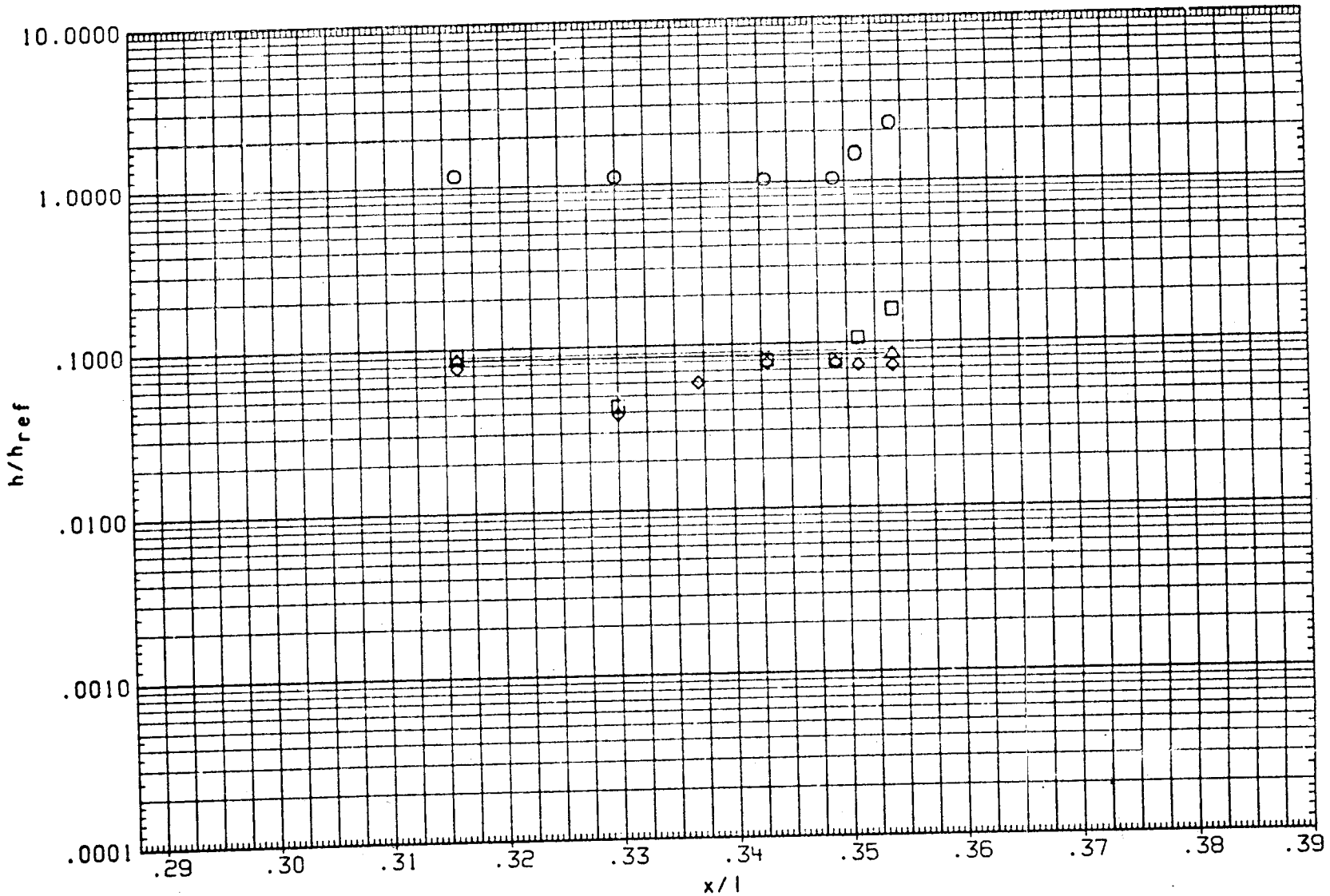

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 PHI = 24.690 DATE 22 APR 78 PAGE 98

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

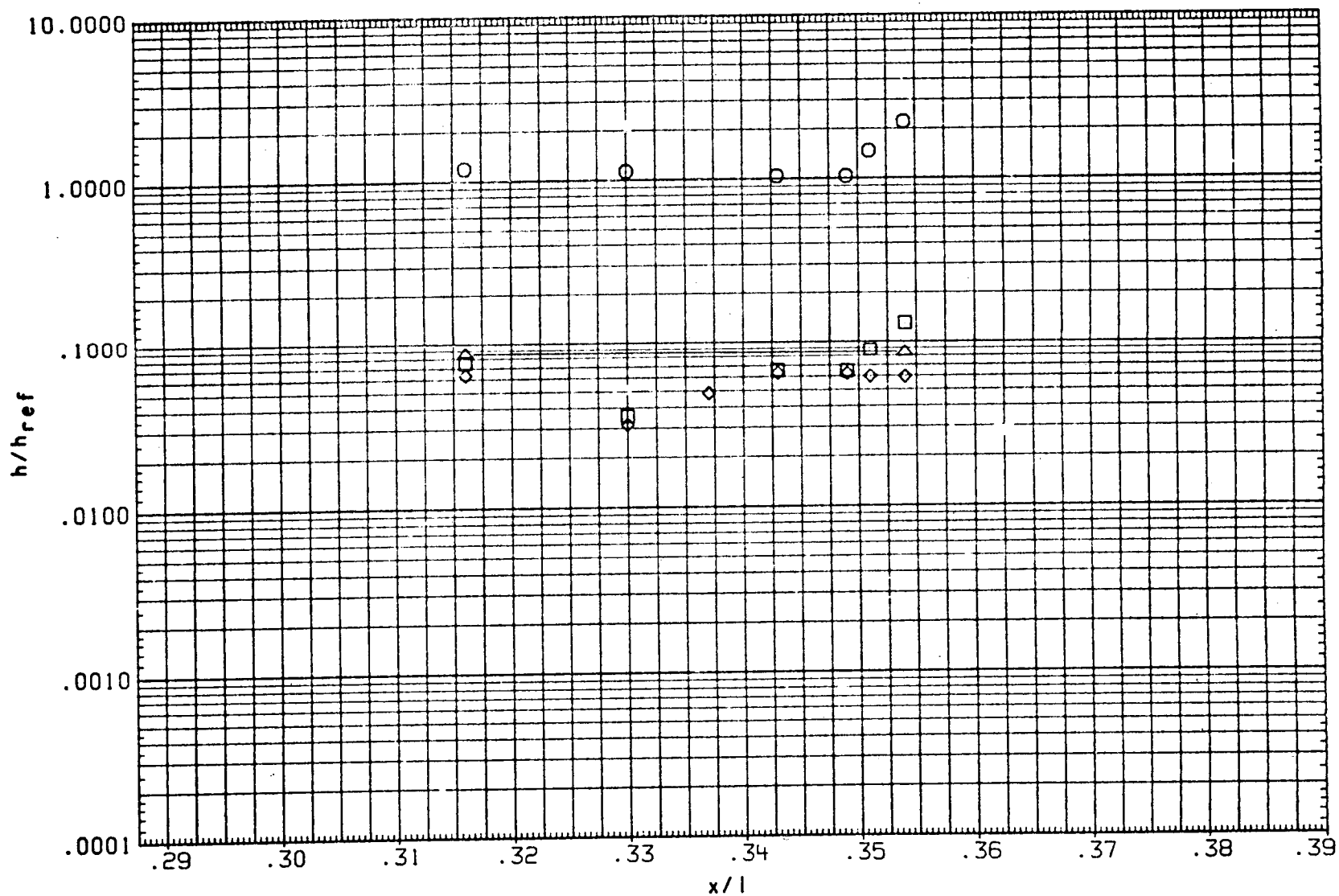

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78 PAGE 99

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0B)	□	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L10)	◇	IH51A CONF 5B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U[illegible]L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

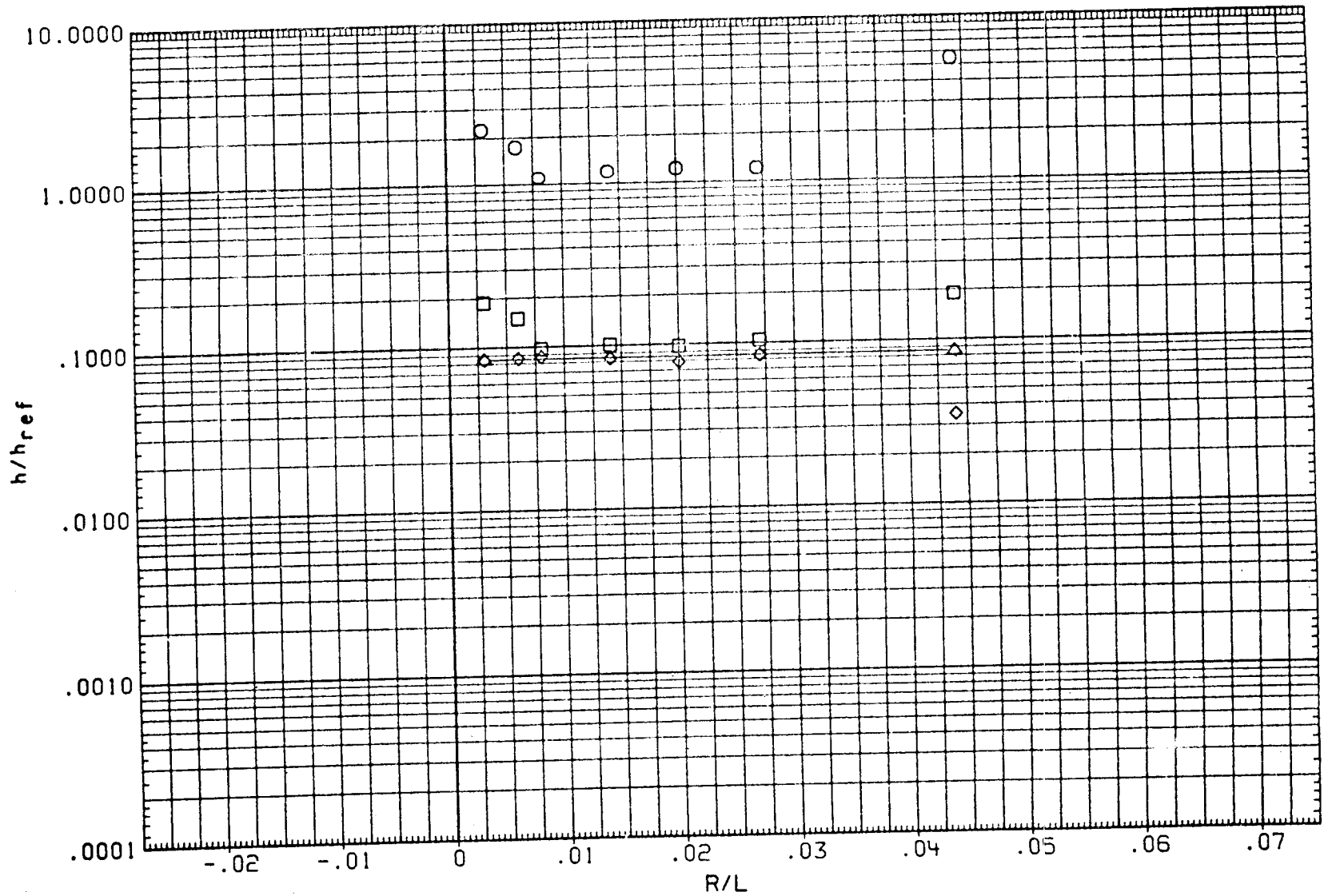

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 100

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0B)	□	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L10)	◇	IH51A CONF 5B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

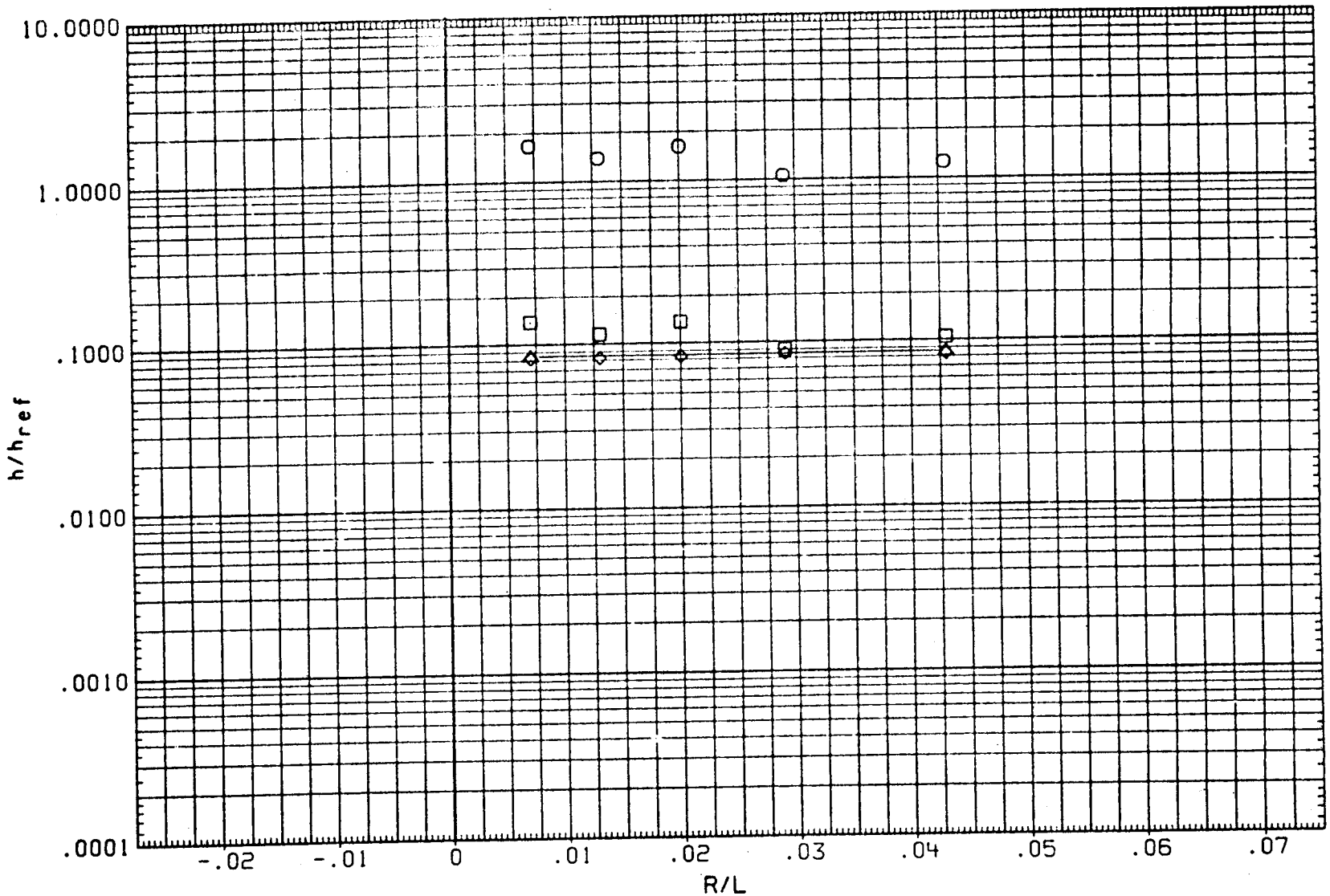

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L08)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L08)	□	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L10)	◇	IH51A CONF 5B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

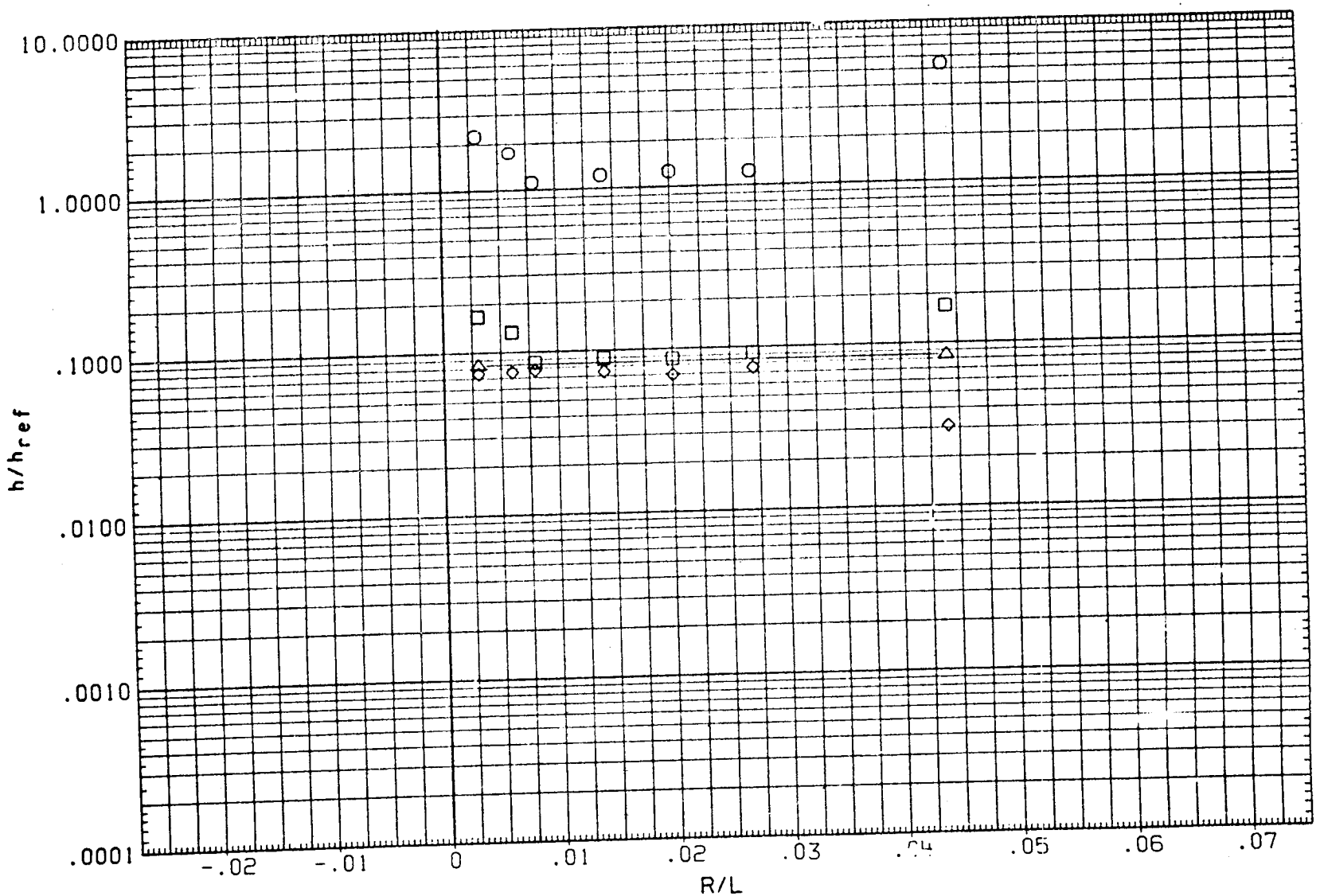

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 102

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L08)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L08)	□	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L10)	◇	IH51A CONF 5B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

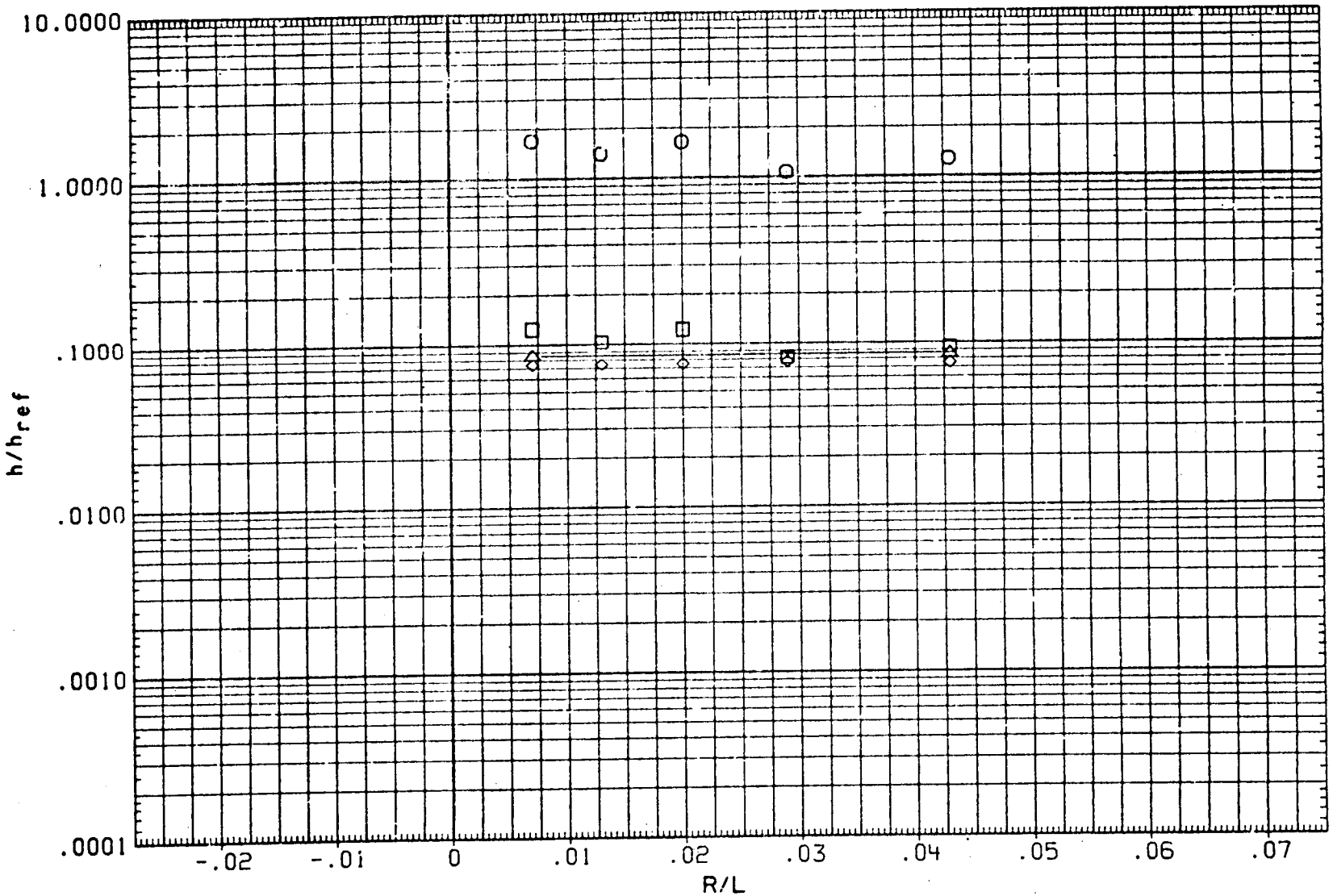

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 103

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L 0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L 0B)	□	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(D20L 10)	◇	IH51A CONF 5B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20 5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

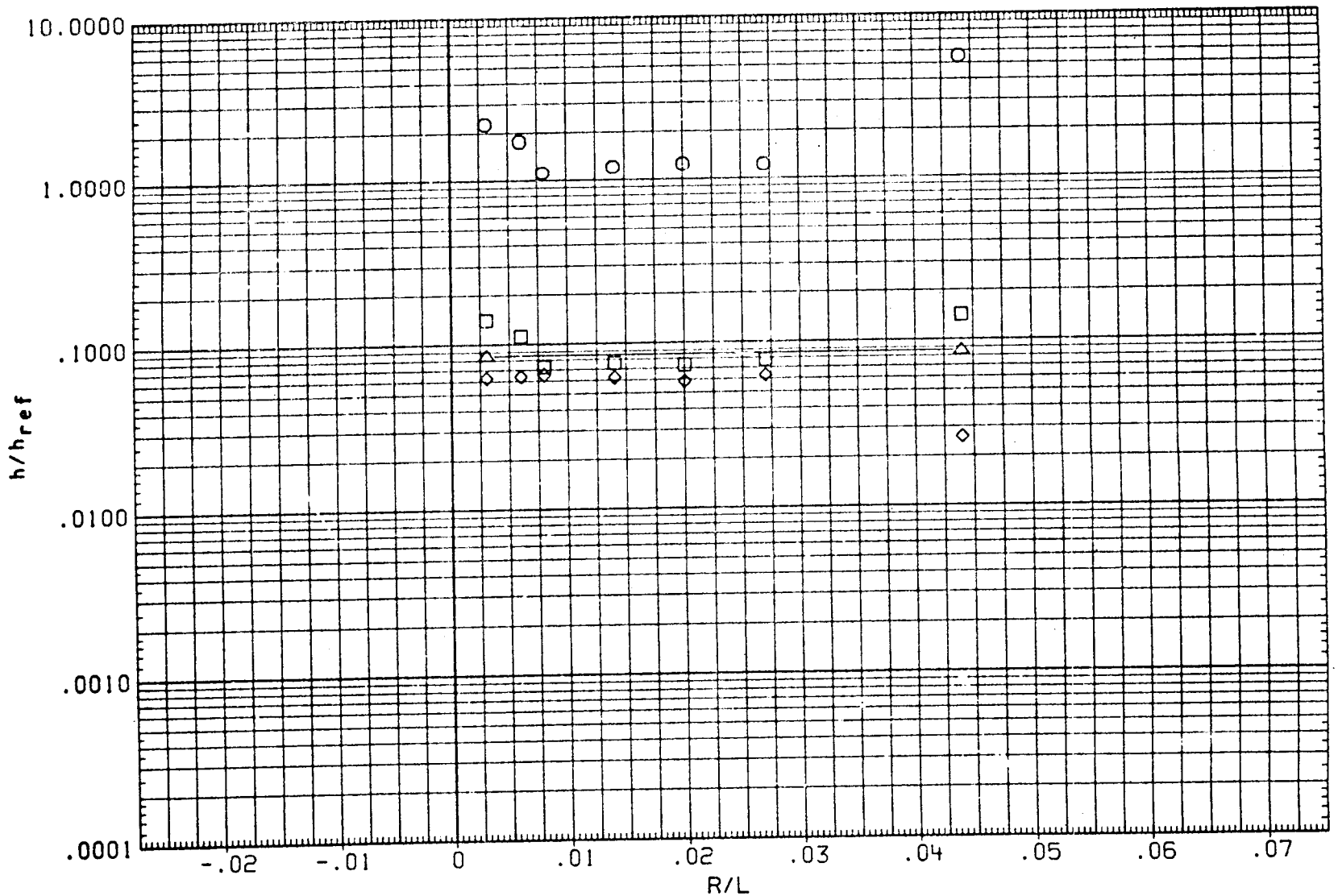

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 104

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20L0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(M20L0B)	□	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(B20L10)	◇	IH51A CONF 5B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

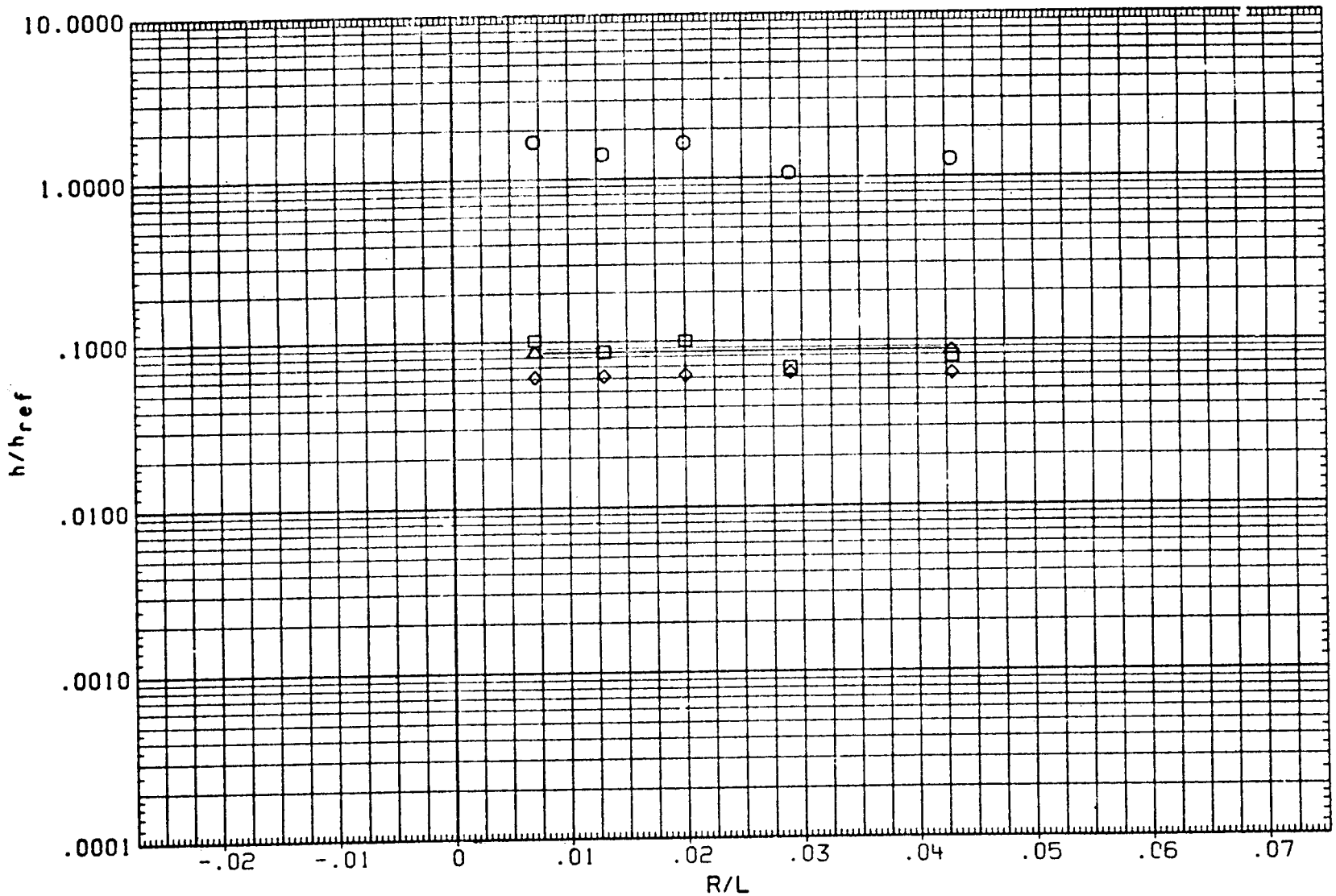

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001O)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

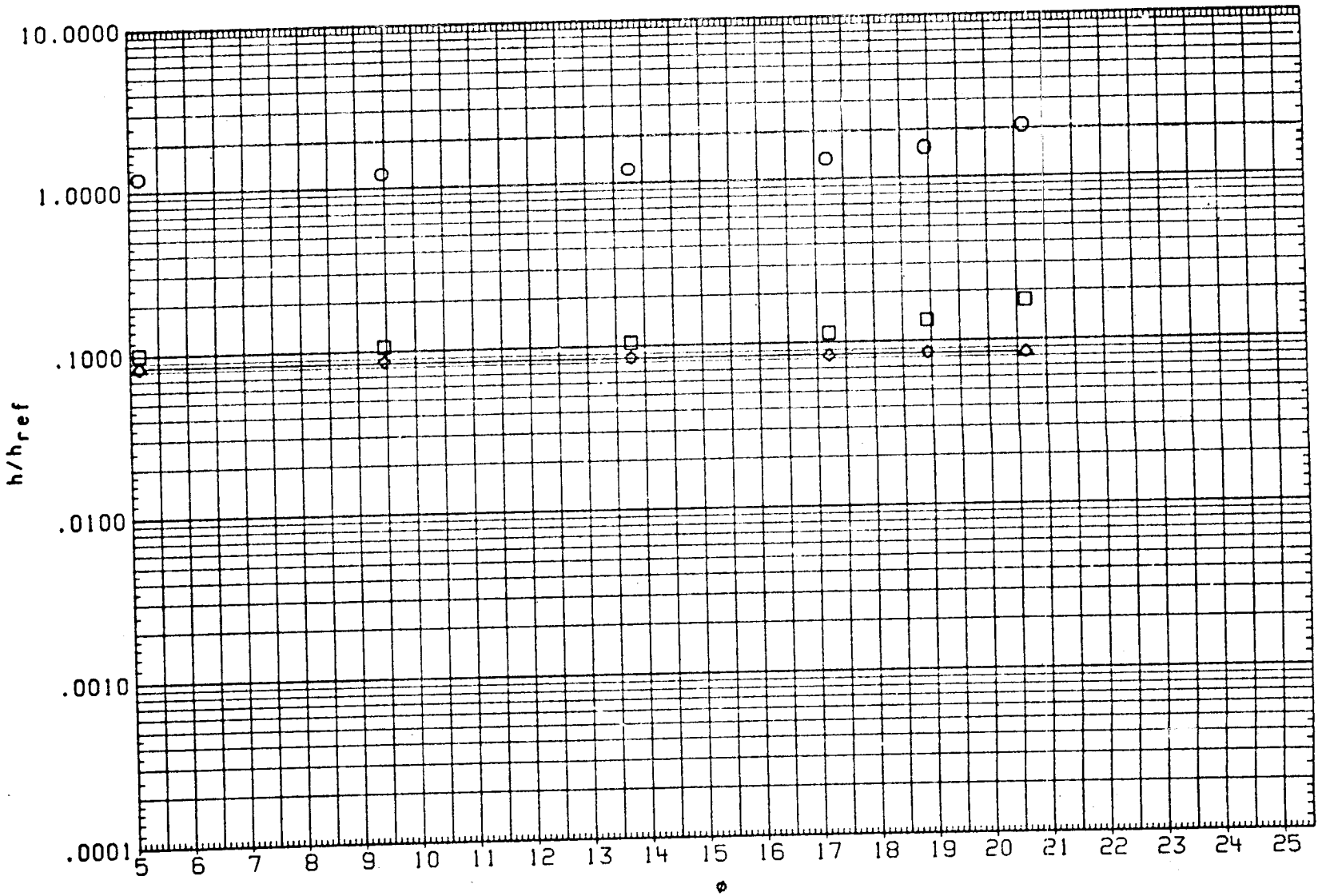

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

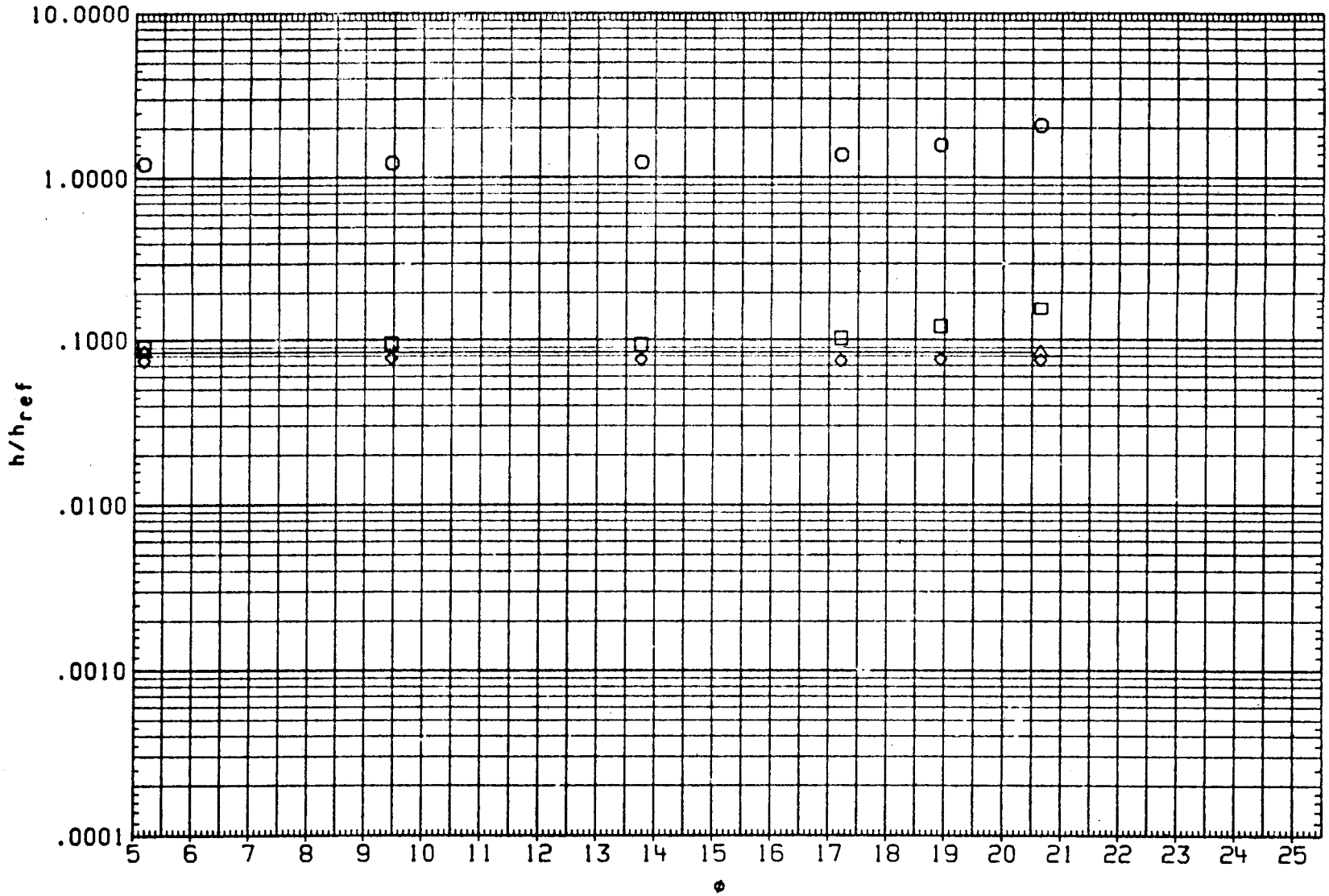

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

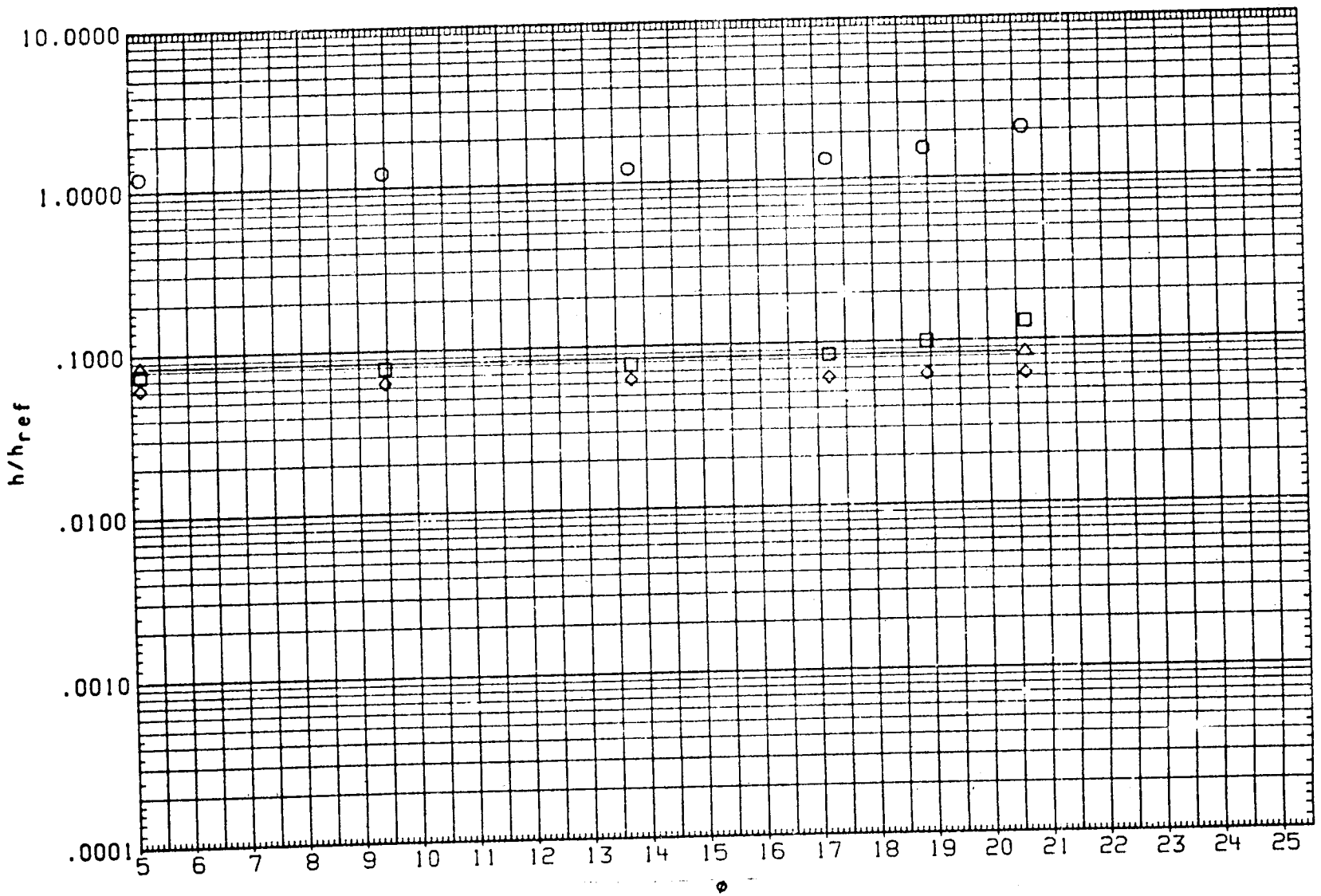

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

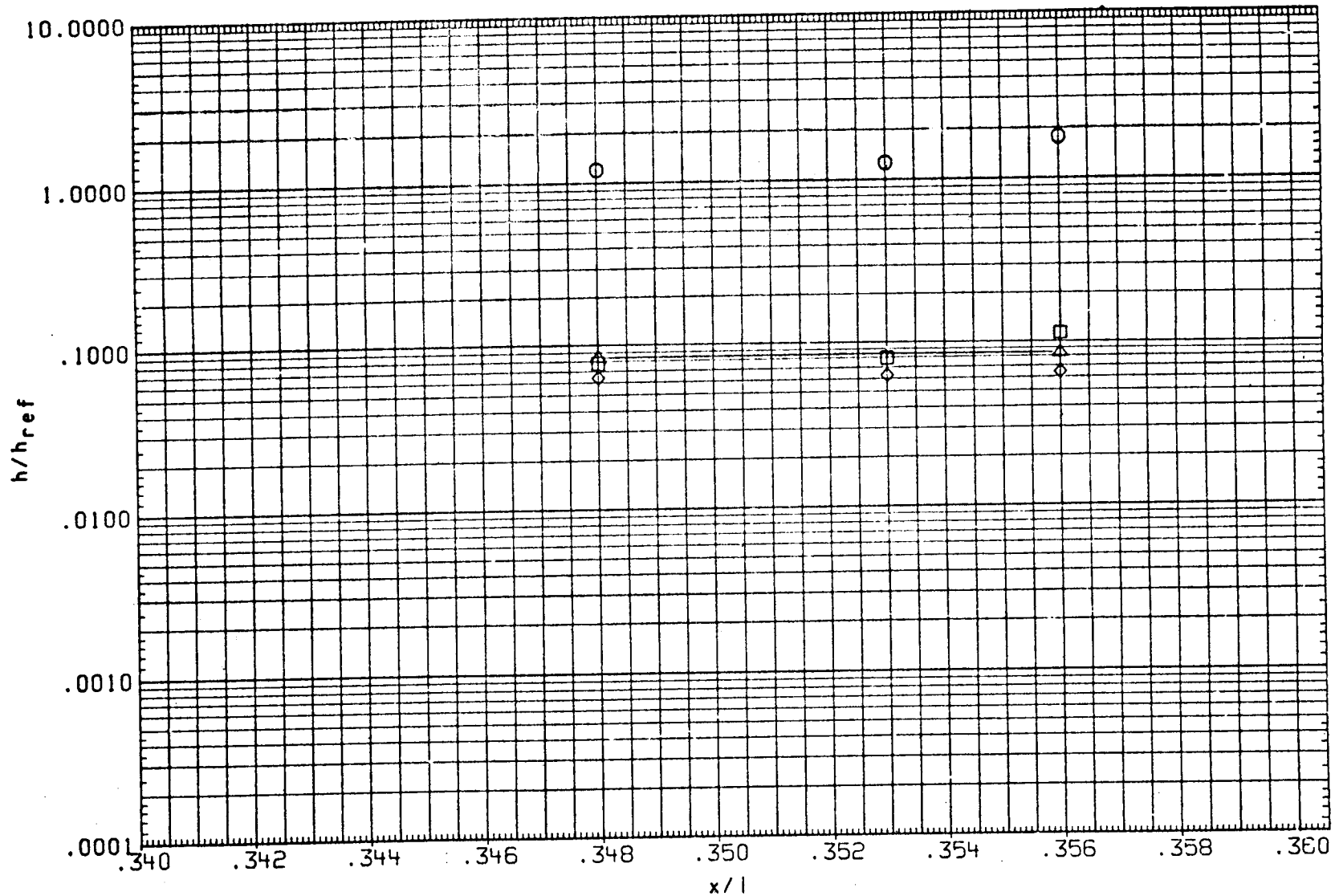

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 109

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2000B)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2000B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

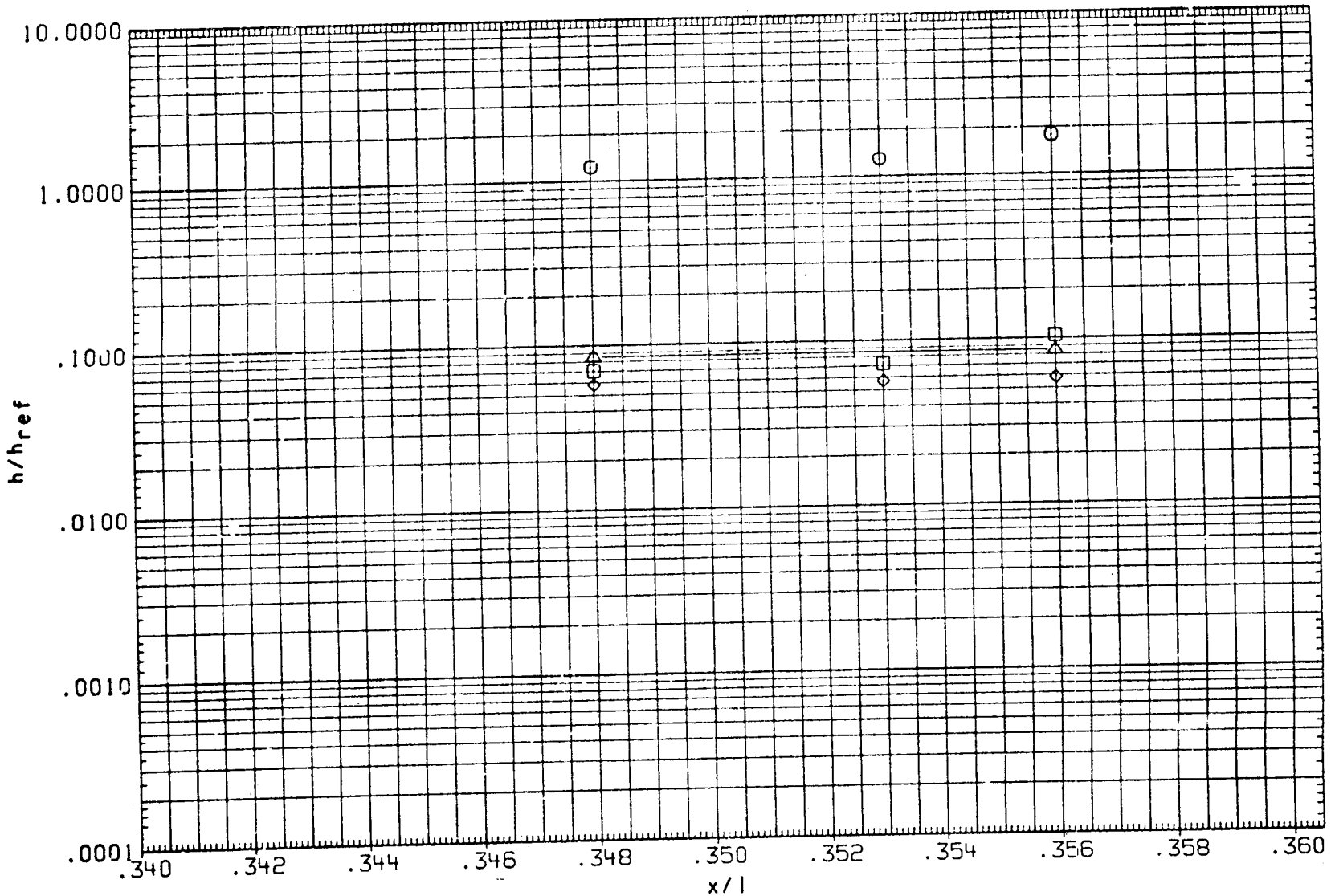

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 110

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B1)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

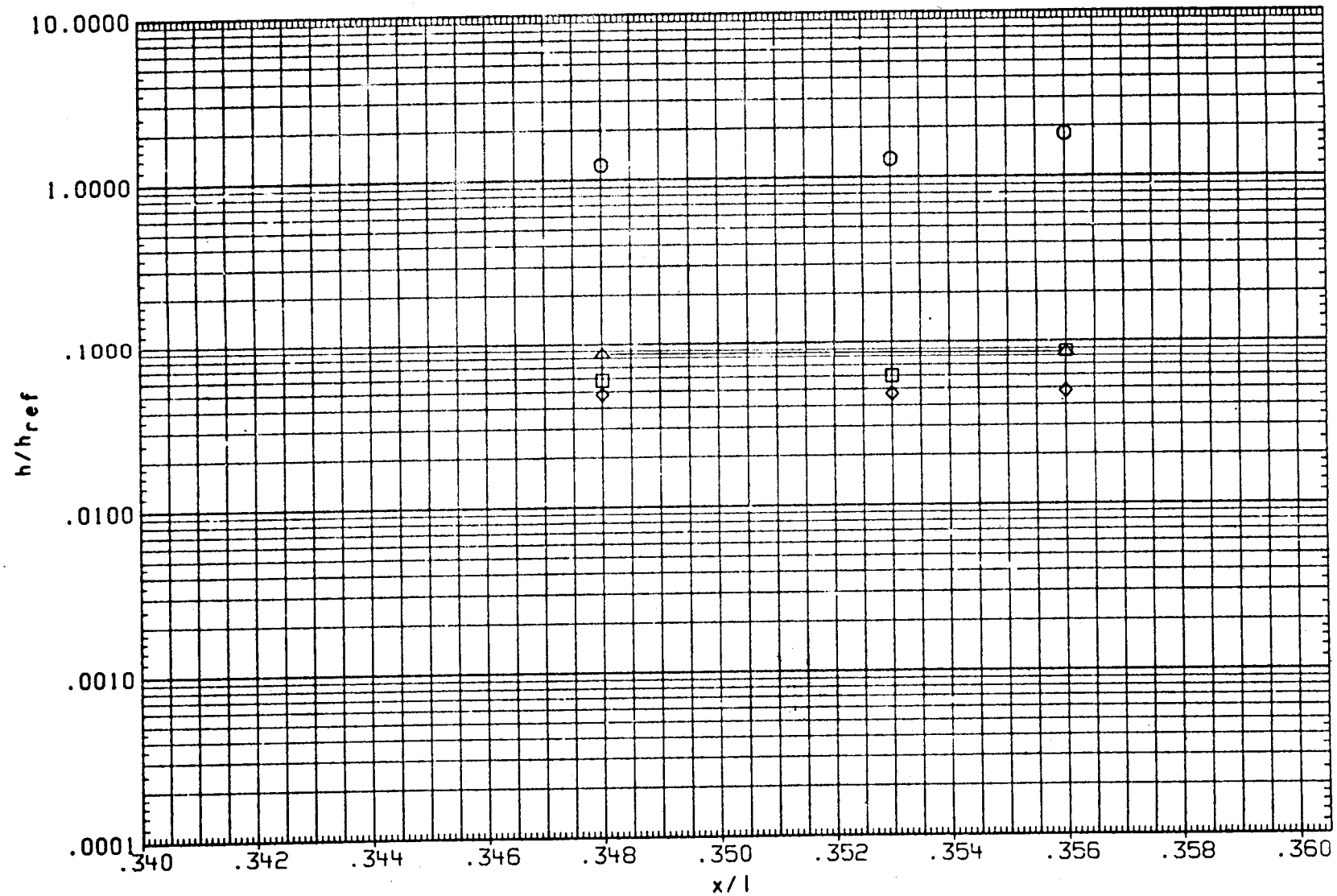

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 111

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20M03)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 A.L. DIA	.000	.000	5.000	5.300
(B20M08)	□	IH51A 2B+3B+4B-5B-5B	LO2 A.L. DIA	.000	.000	5.000	5.300
(B20M10)	◇	IH51A CONF 5B LO2 ANTIGEYSER LINE DIAGONAL		.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

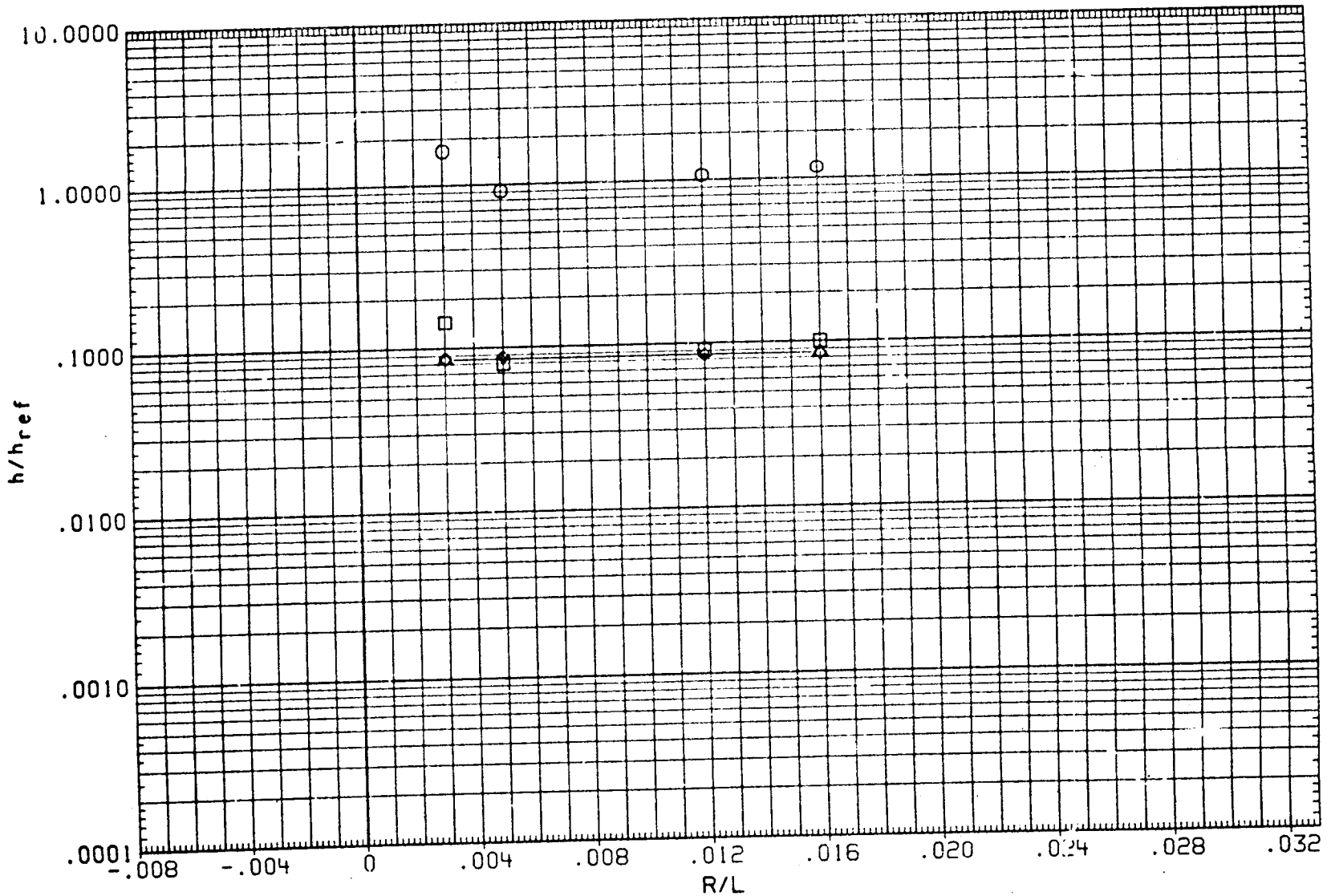

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 112

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20M0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 A.L. DIA	.000	.000	5.000	5.300
(M20M0B)	□	IH51A 2B+3B+4B-5B-5B	LO2 A.L. DIA	.000	.000	5.000	5.300
(B20M10)	◇	IH51A CONF 5B LO2 ANTIGEYSER LINE DIAGONAL		.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

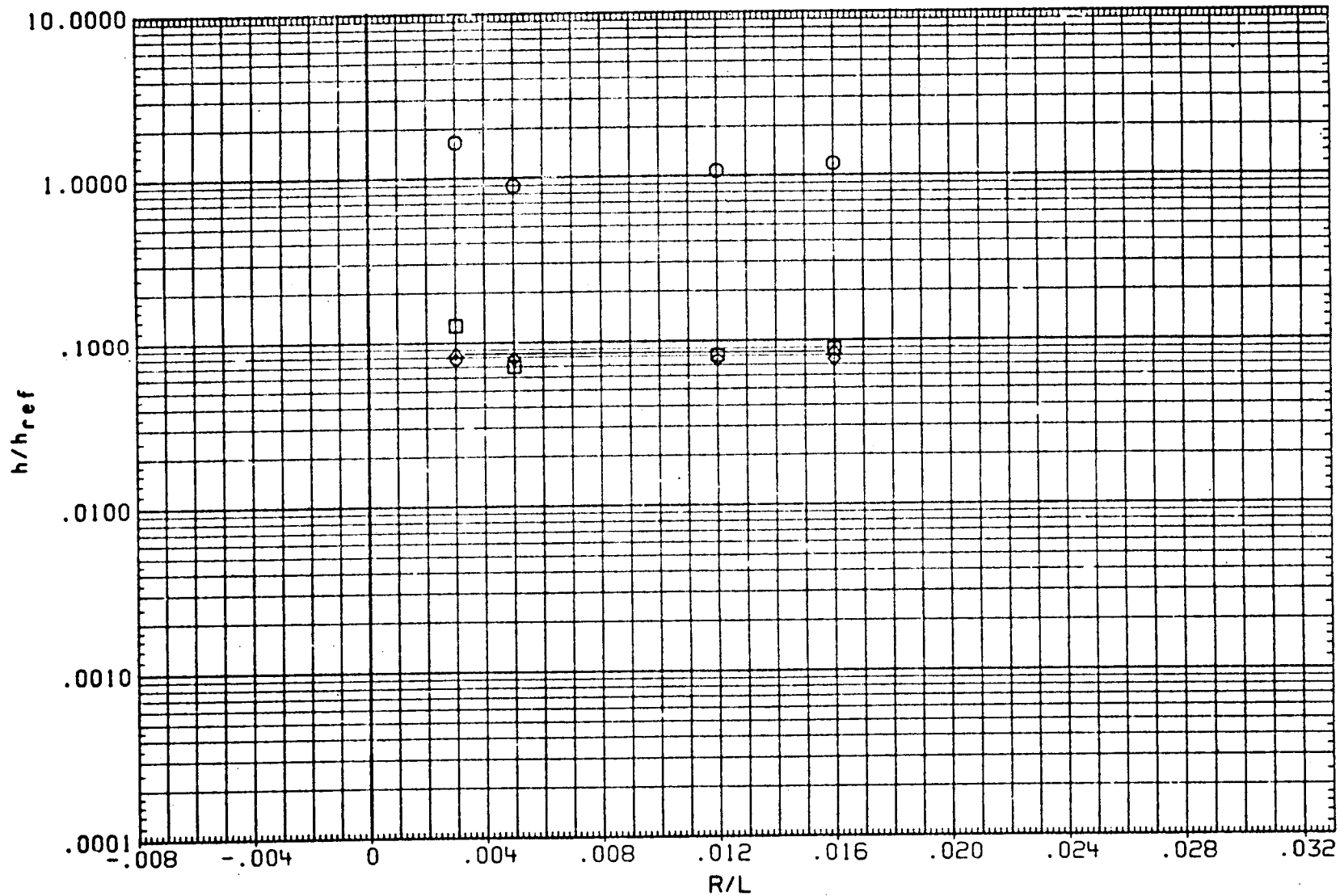

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 113

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20M08)	○	IH51A (2B+3B+4B-5B-5B)/5B	LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M08)	□	IH51A 2B+3B+4B-5B-5B	LO2 A.L. DIA	.000	.000	5.000	5.300
(B20M10)	◇	IH51A CONF 5B LO2 ANTIGEYSER LINE DIAGONAL		.000	.000	5.000	5.300
(U20M58)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

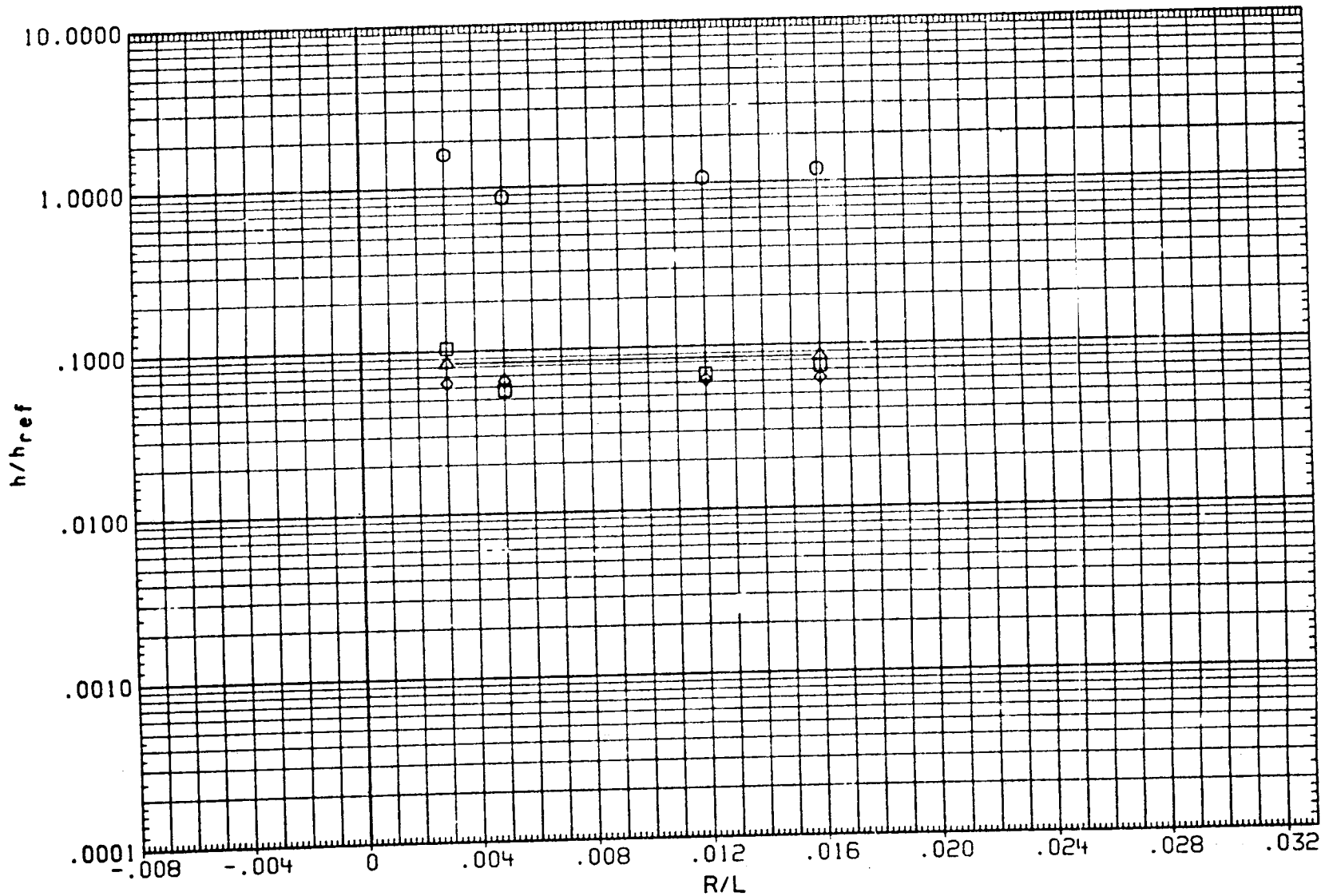

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 114

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

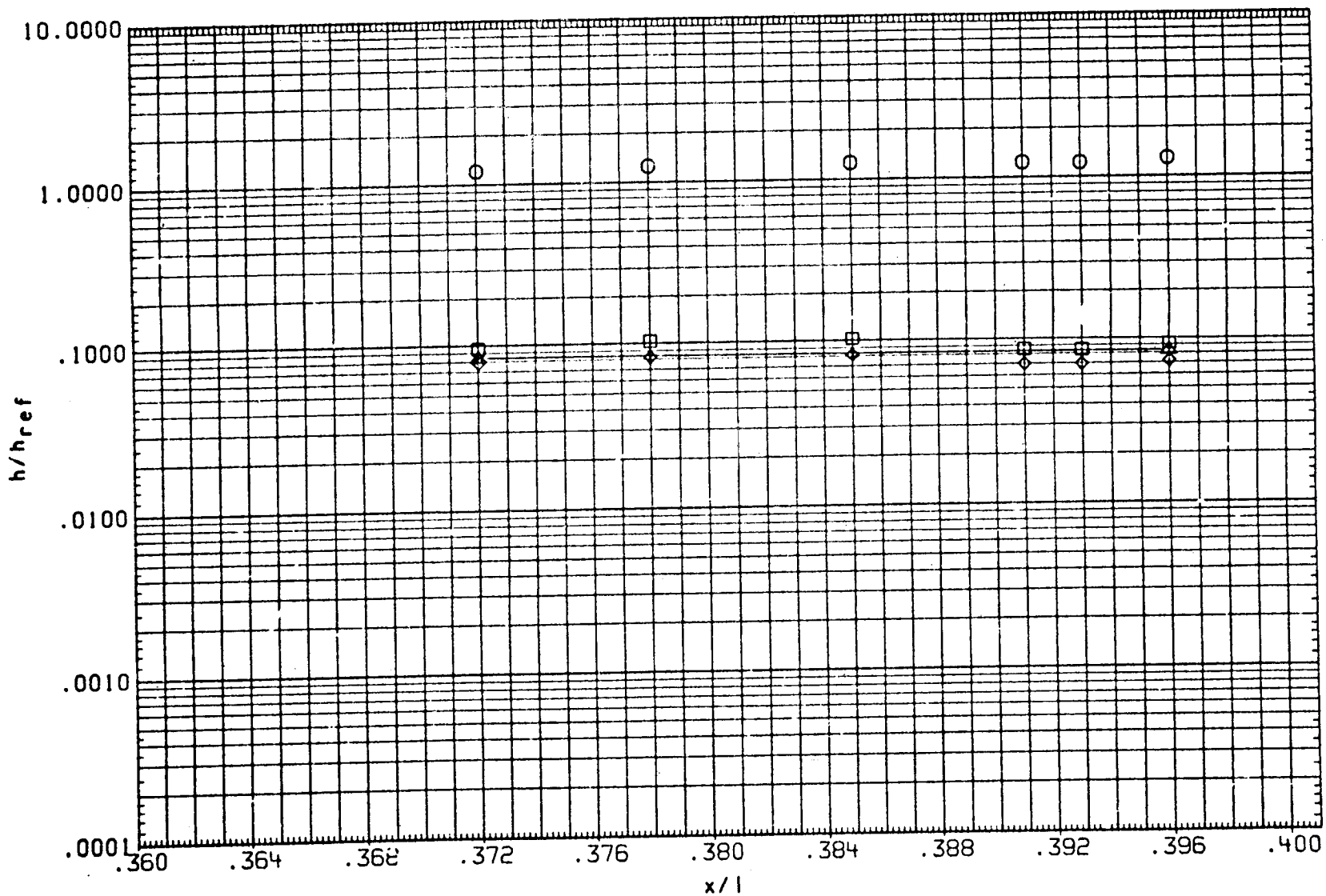

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78 PAGE 115

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

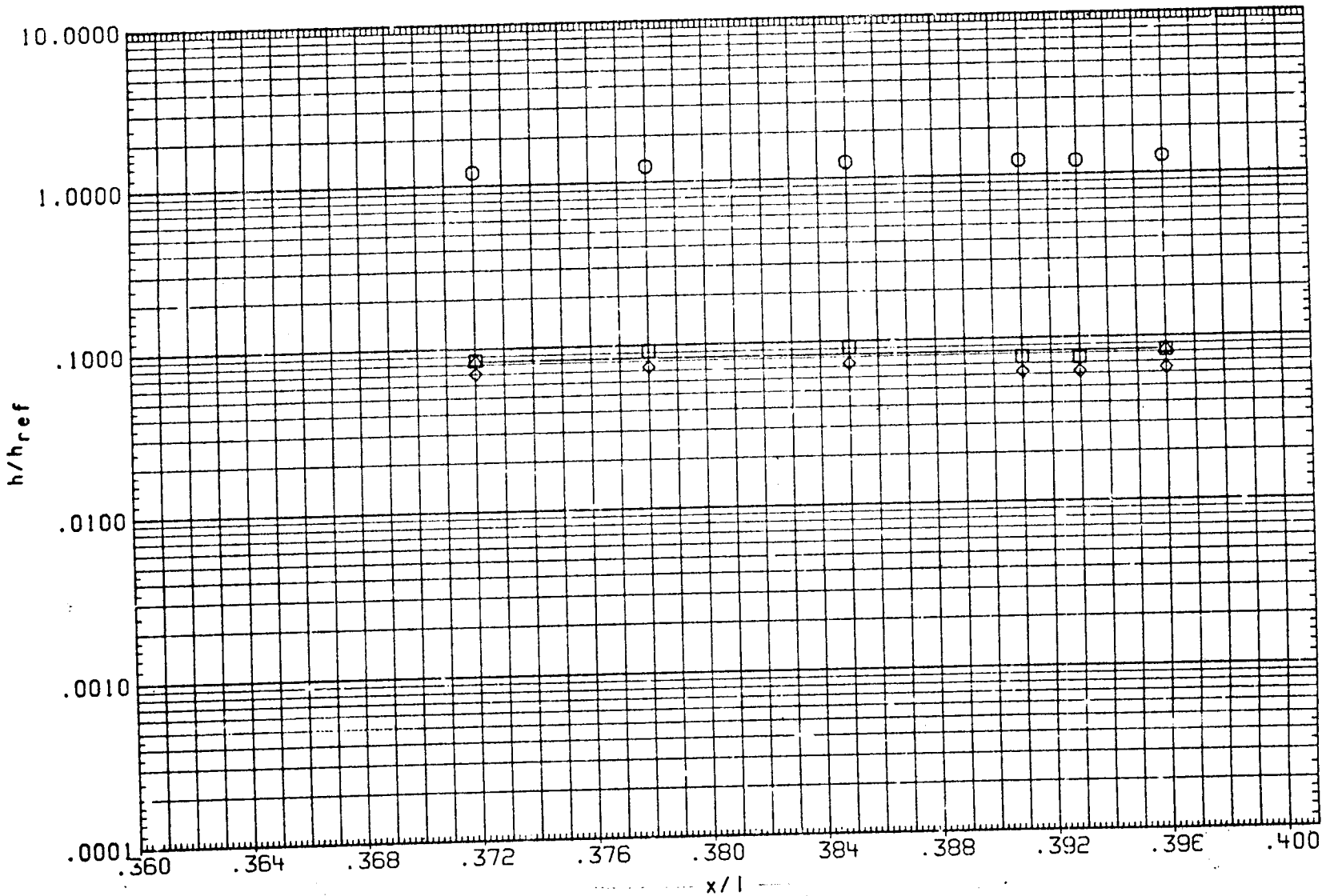

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 116

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2UQ10)	◇	IHC1A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

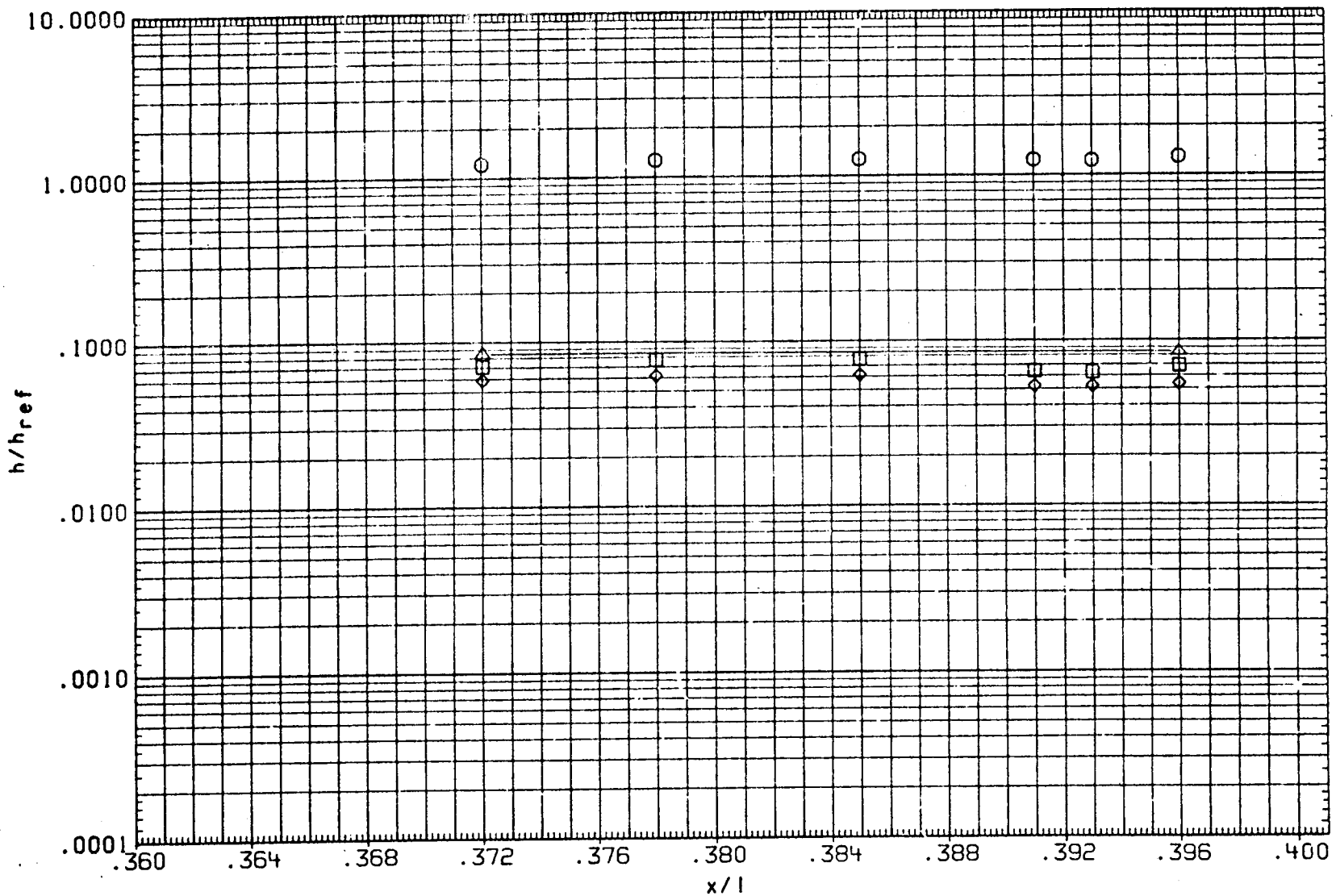

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78 PAGE 117

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20N0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH2 LINE DIA	.000	.000	5.000	5.300
(M20N0B)	□	IH51A 2B+3B+4B-5B-5B	LH2 LINE DIA	.000	.000	5.000	5.300
(B20N10)	◇	IH51A CONF 5B LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

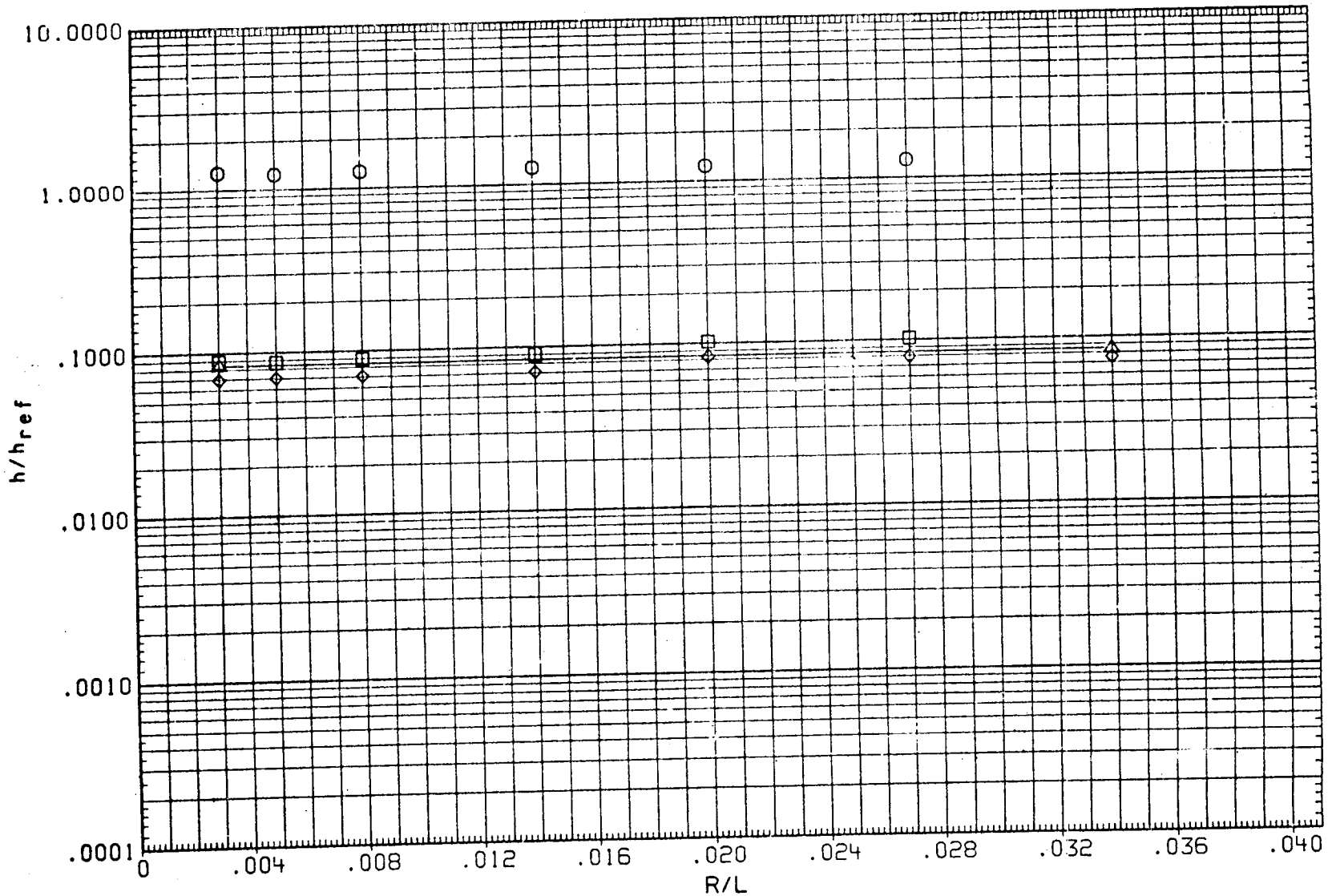

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 118

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20N08)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH2 LINE DIA	.000	.000	5.000	5.300
(M20N08)	□	IH51A 2B+3B+4B-5B-5B	LH2 LINE DIA	.000	.000	5.000	5.300
(B20N10)	◇	IH51A CONF 5B LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

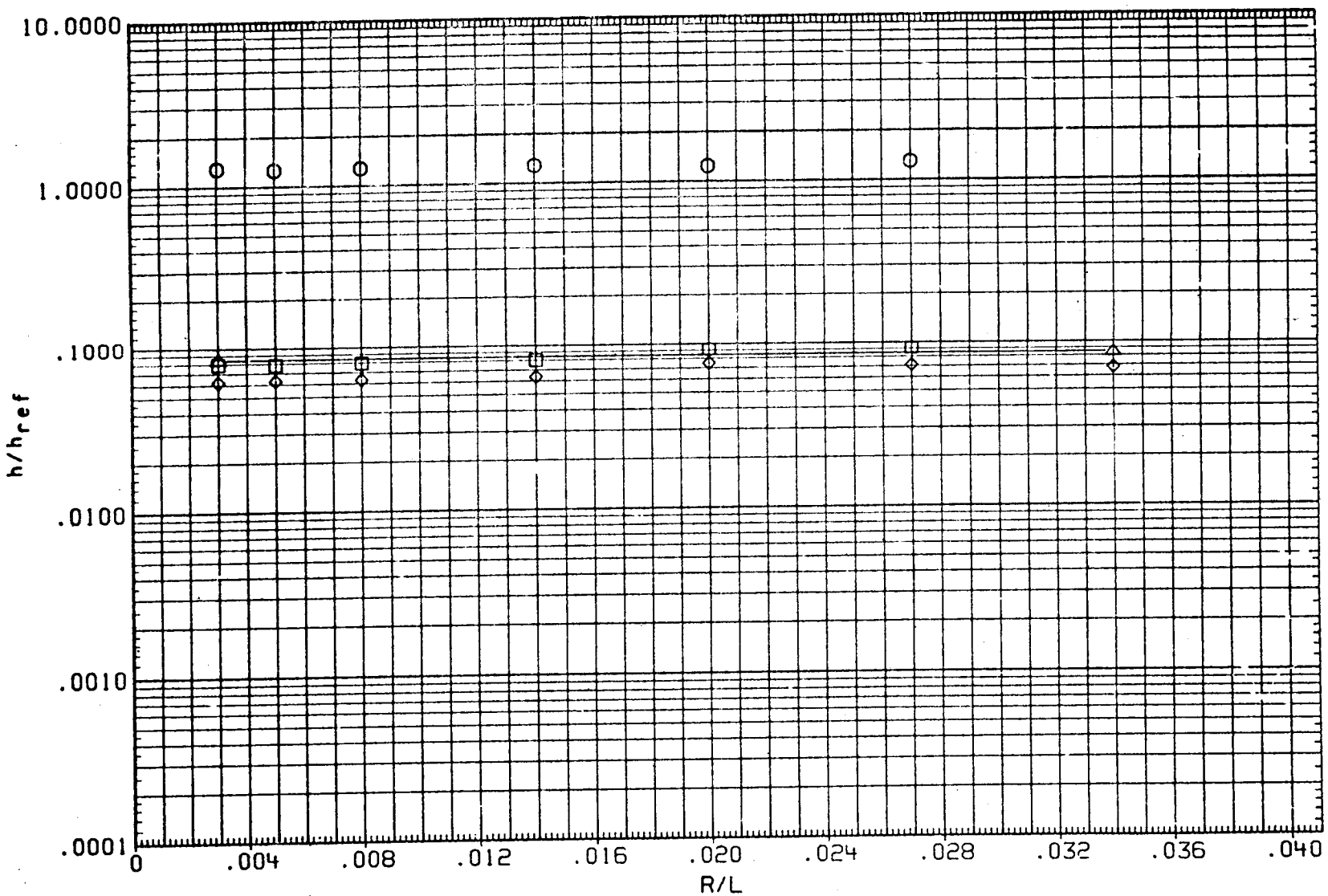

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 119

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20N0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH2 LINE DIA	.000	.000	5.000	5.300
(M20N0B)	□	IH51A 2B+3B+4B-5B-5B	LH2 LINE DIA	.000	.000	5.000	5.300
(B20N10)	◇	IH51A CONF 5B LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

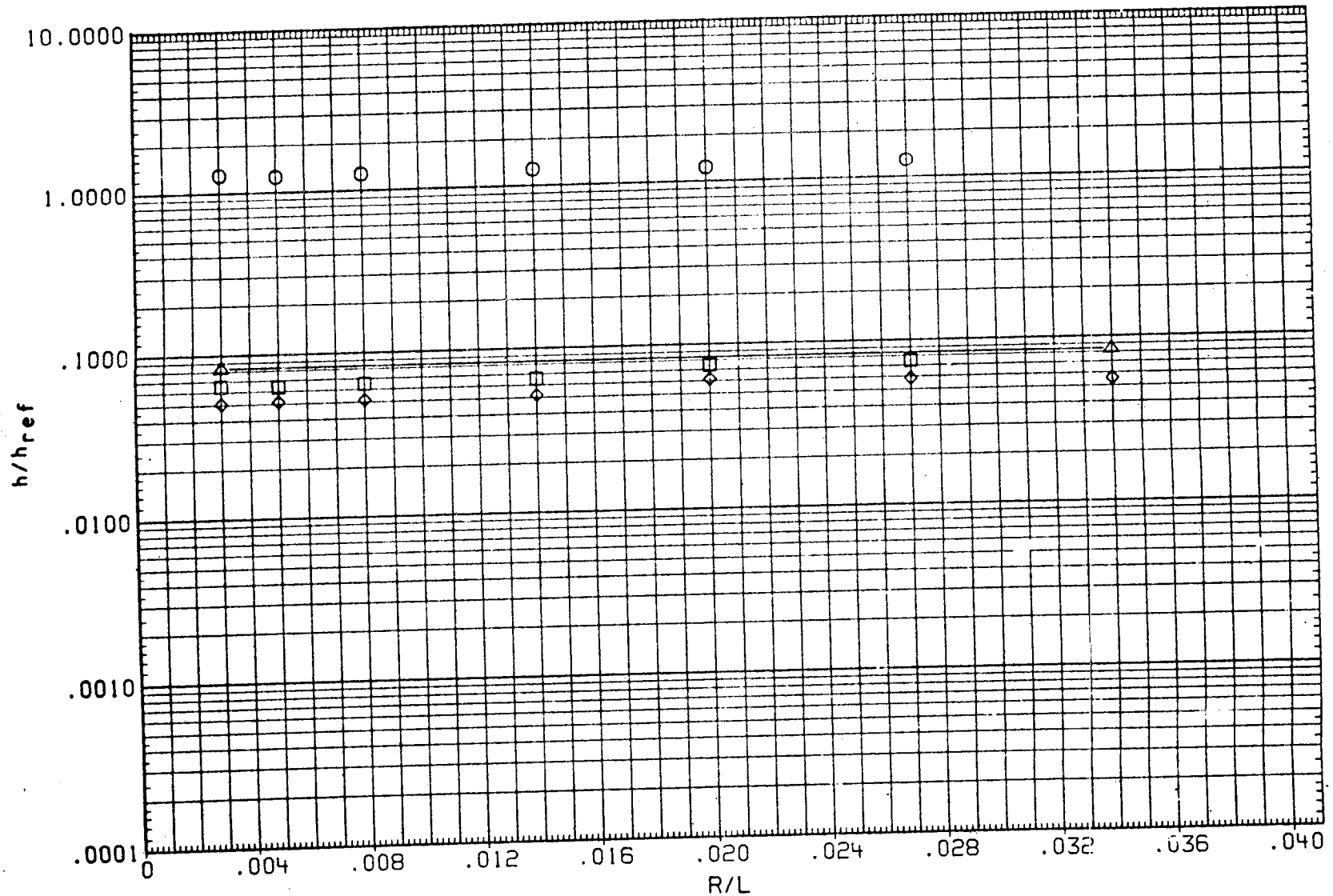

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

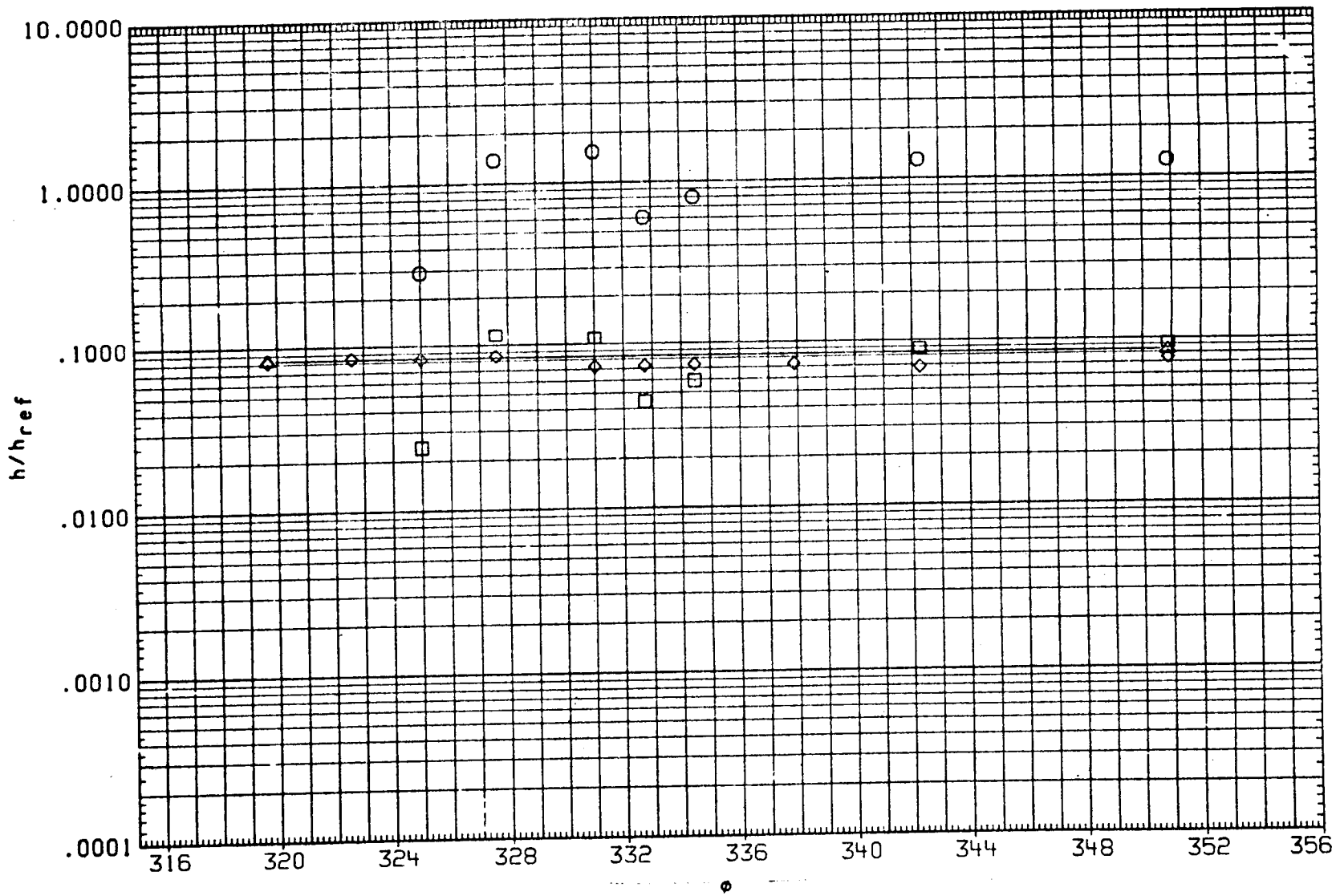

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 □ HAW/HT = .850 X/L = .399 DATE 22 APR 78 PAGE 121

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

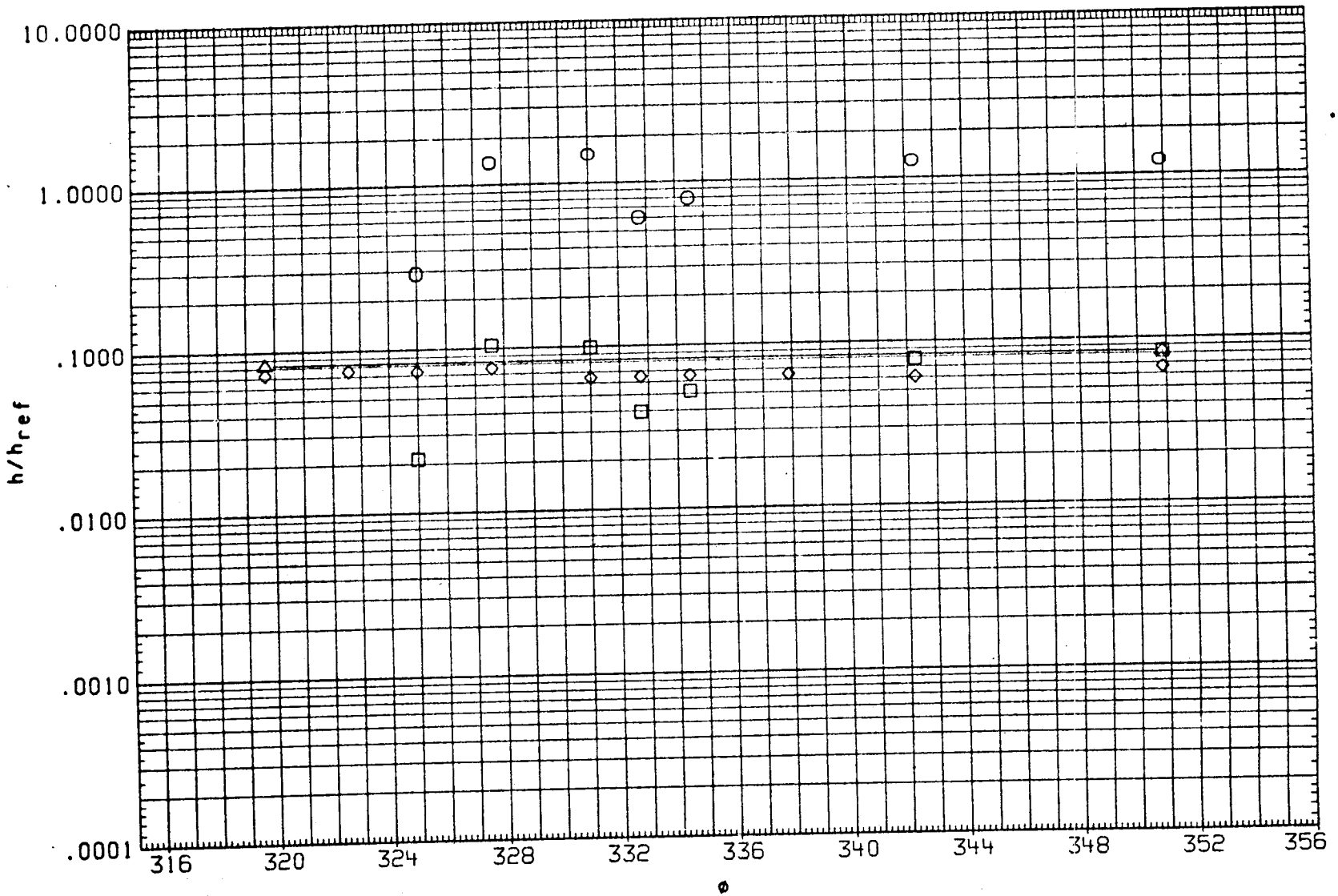

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 □ HAW/HT = .900 X/L = .399 DATE 22 APR 78 PAGE 122

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001O)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

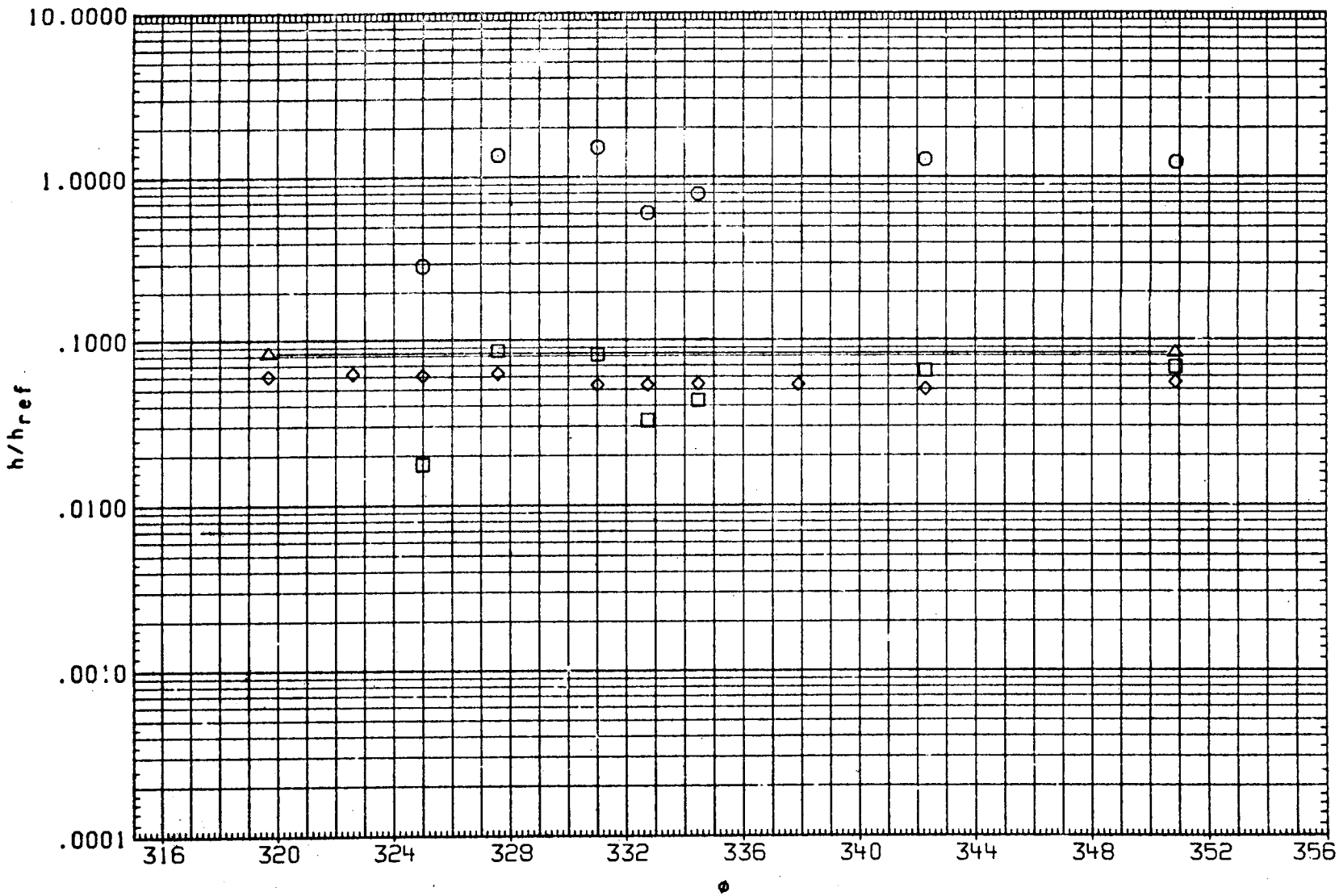

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

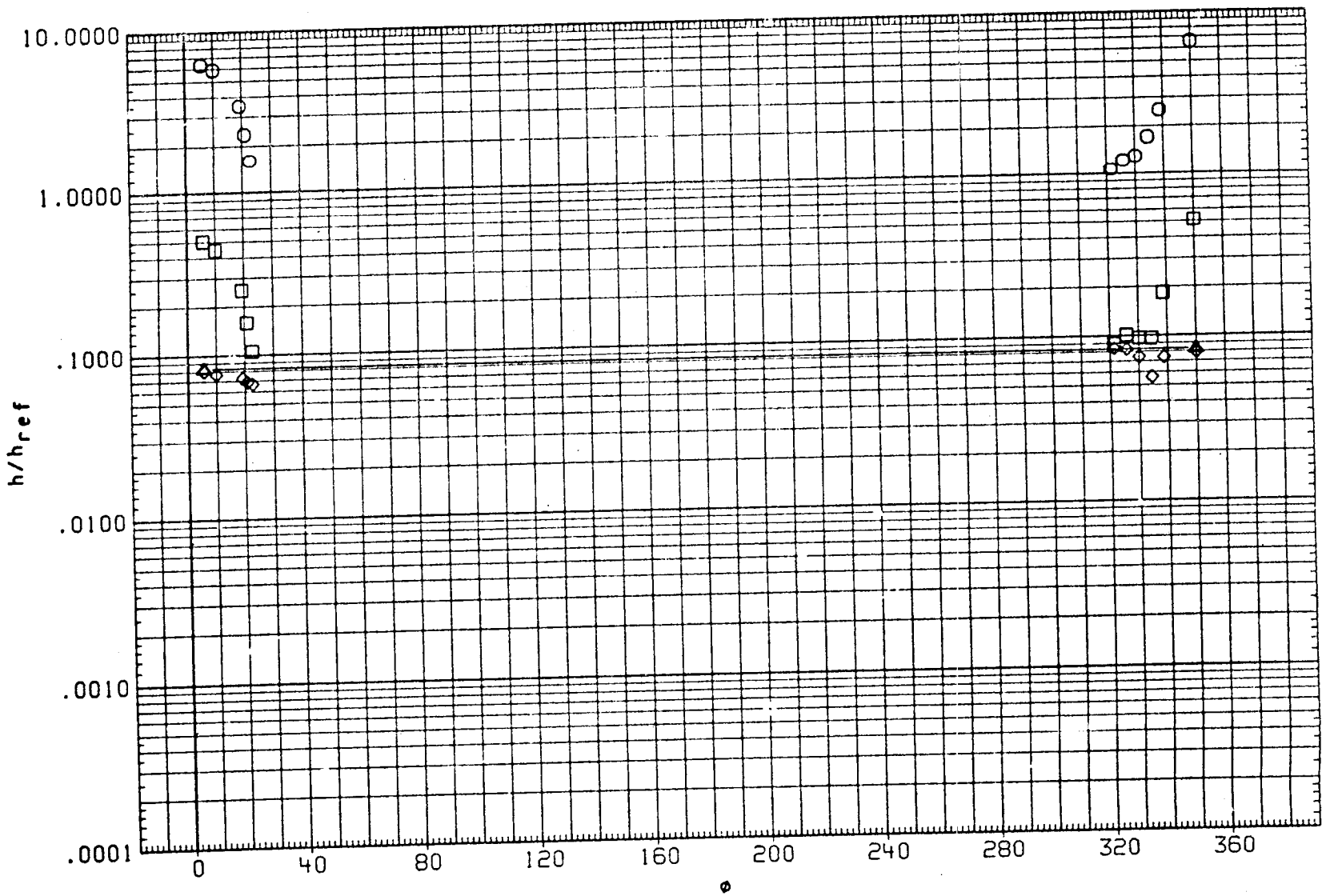

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .850 X/L = .437 DATE 22 APR 78 PAGE 124

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

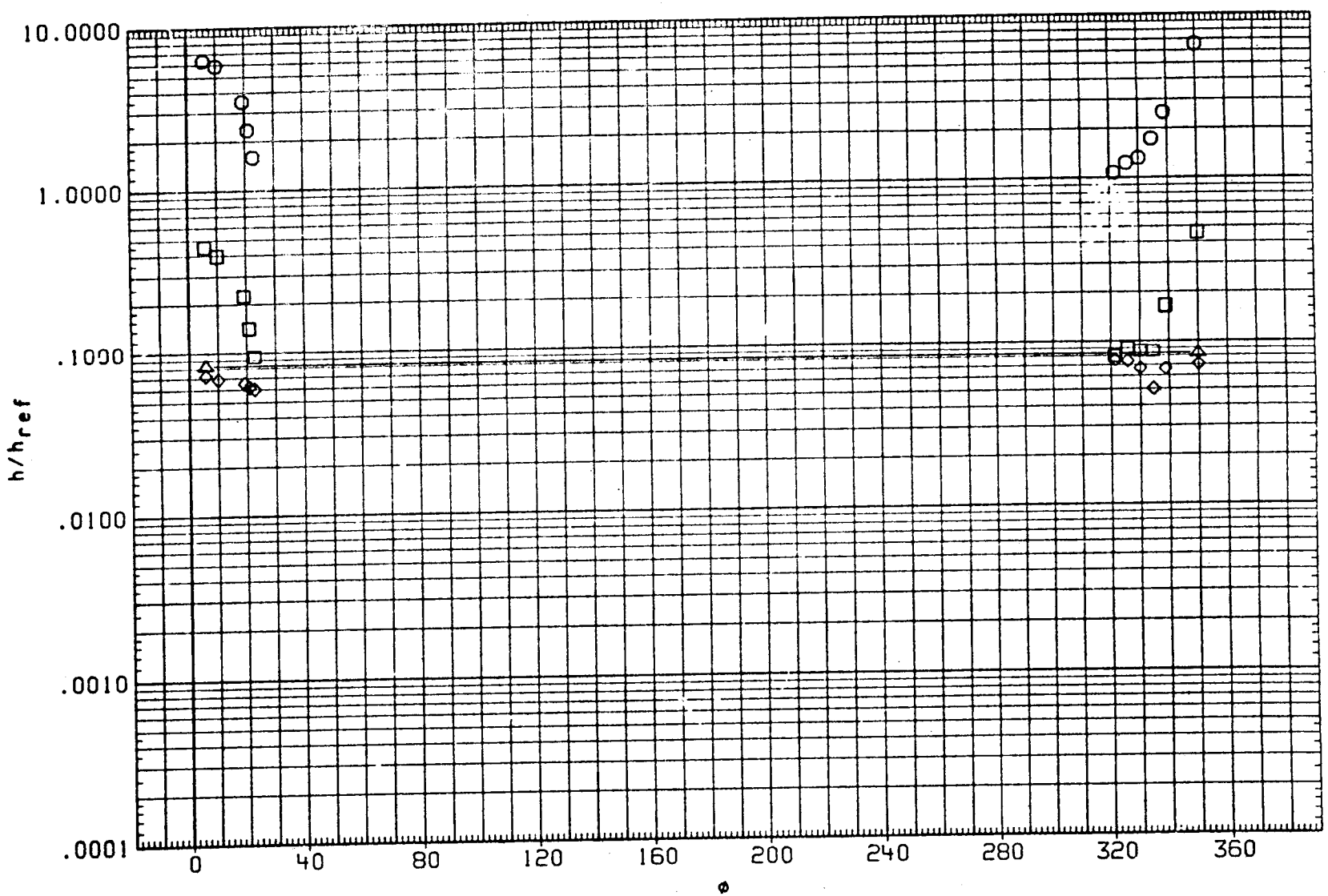

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .900 X/L = .437 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

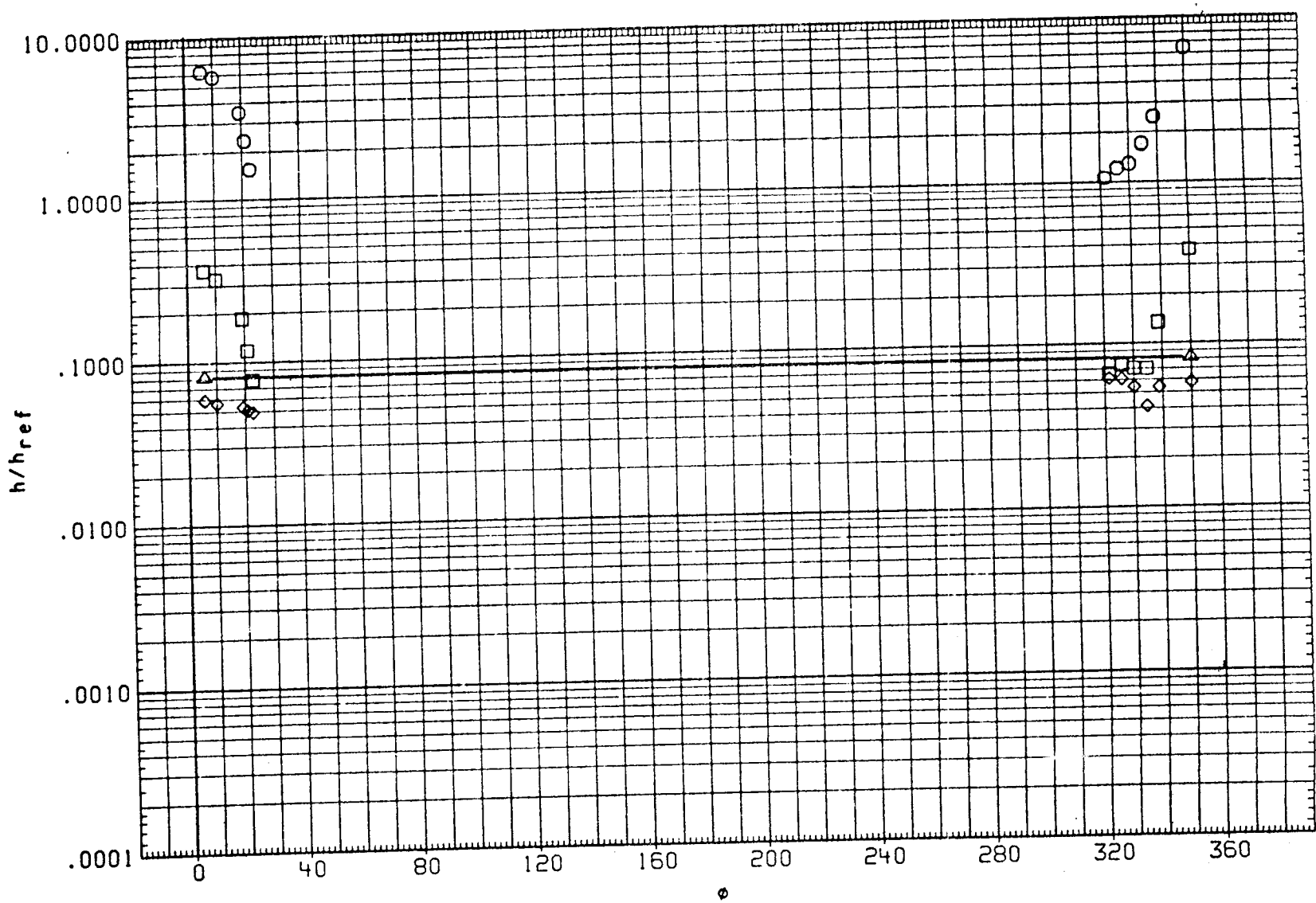

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78 PAGE 126

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

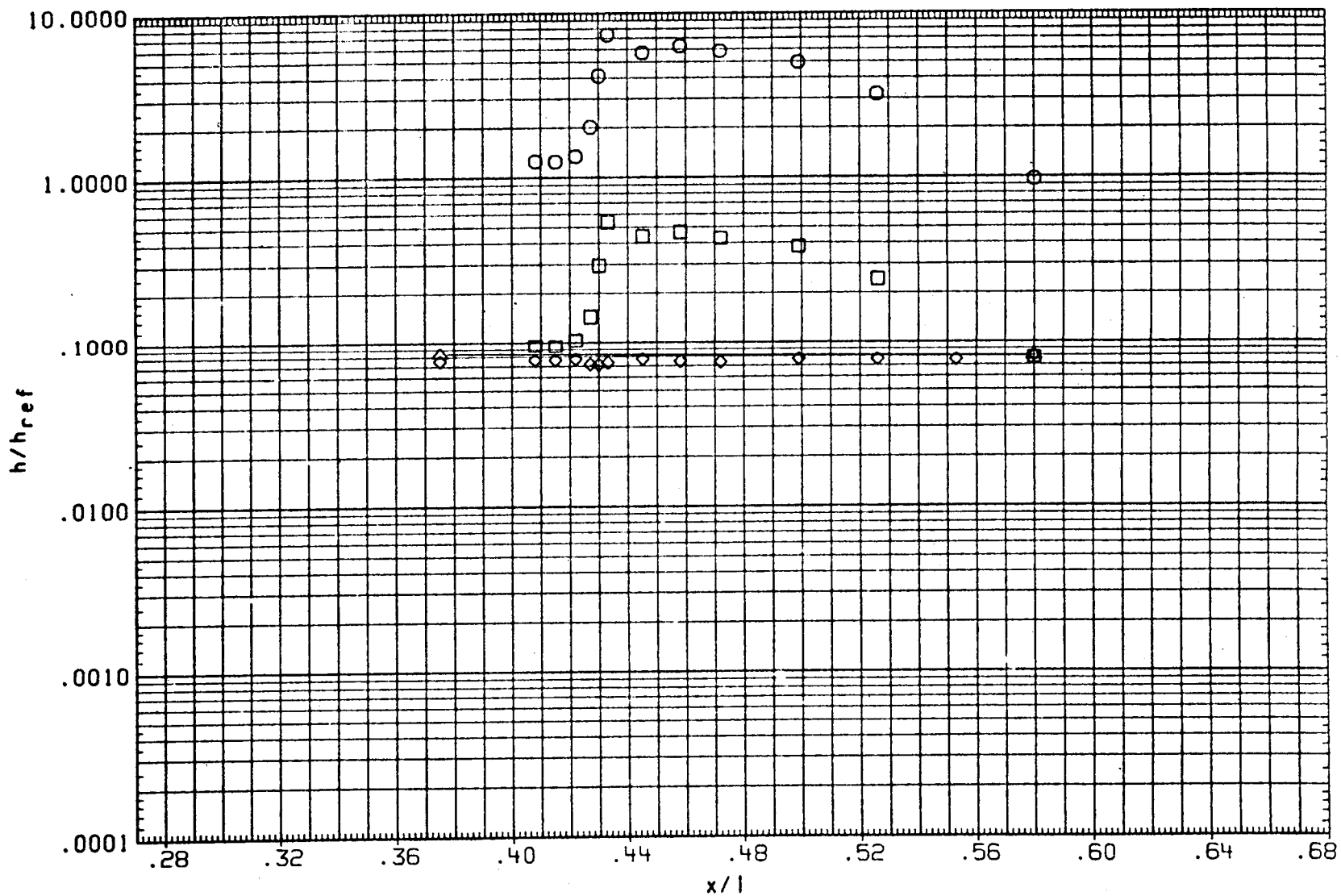

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 127

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

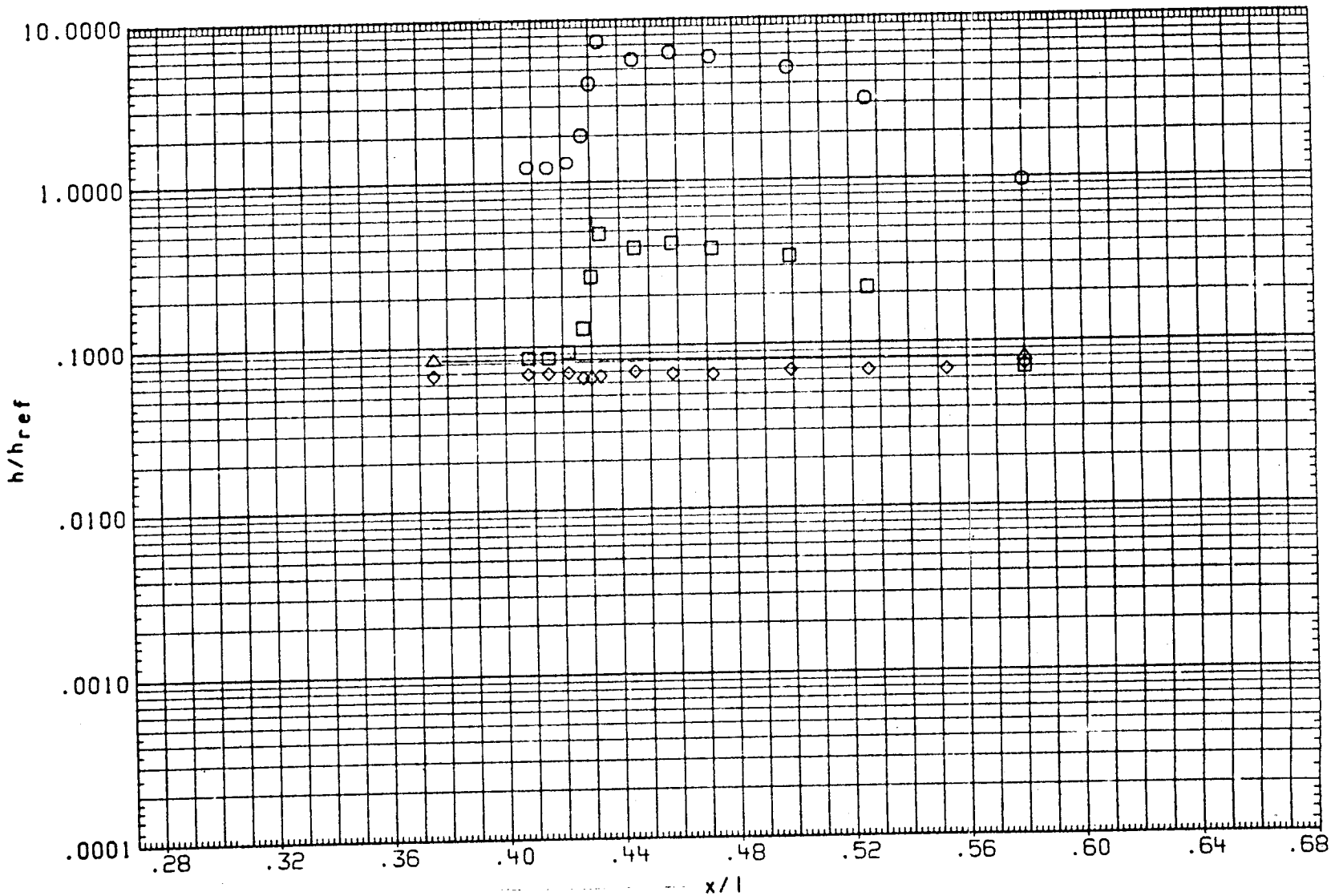

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 128

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001J)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

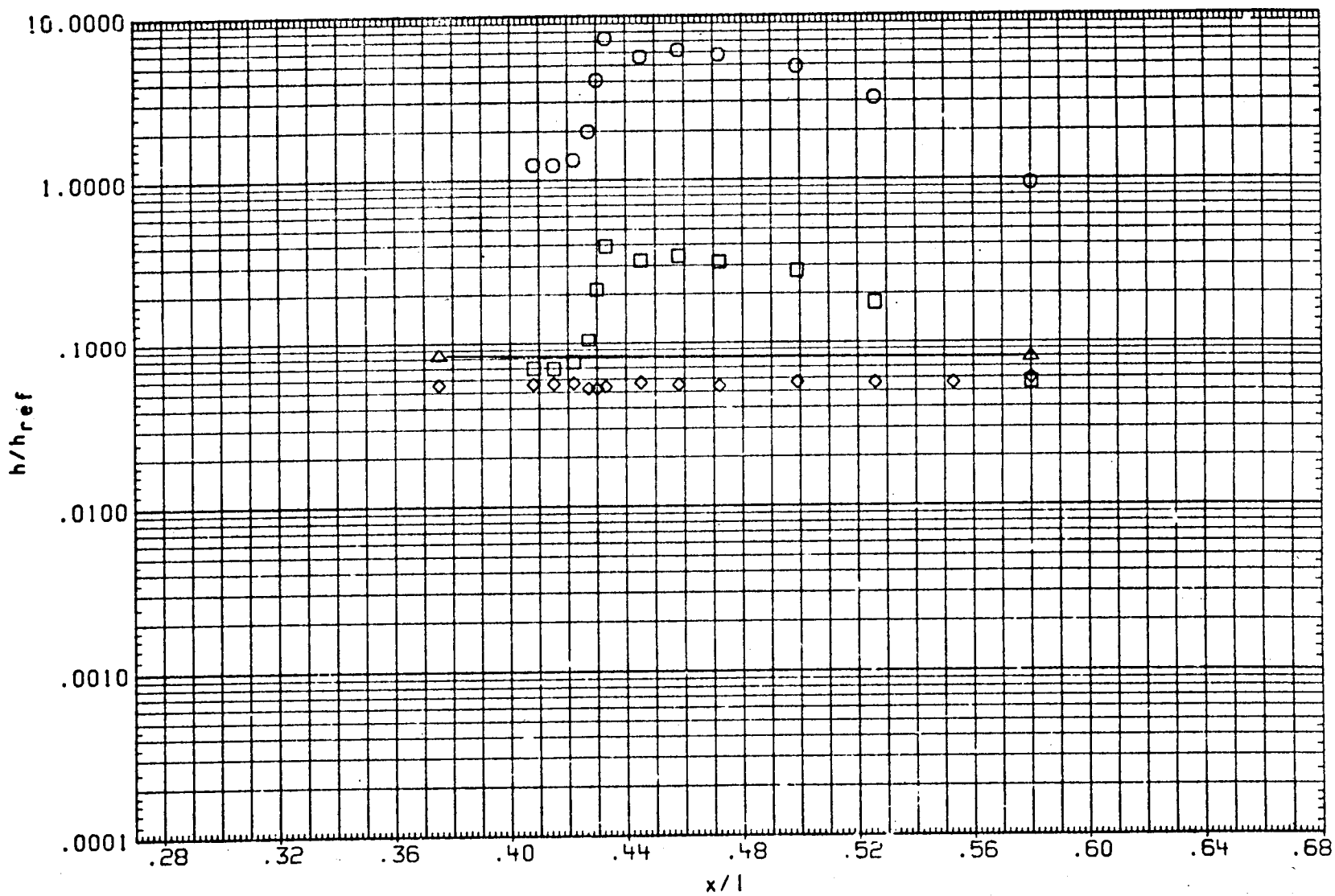

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 129

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

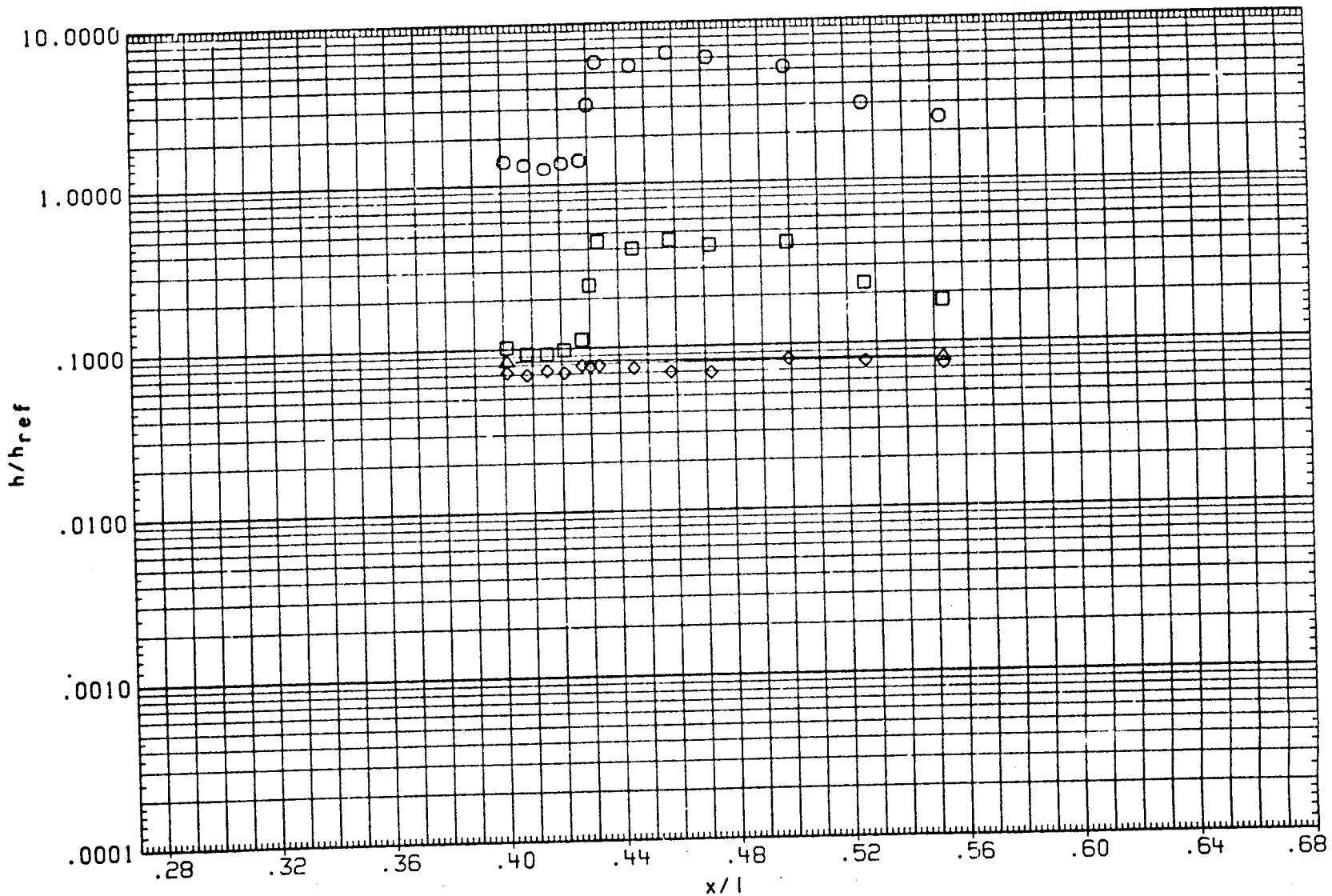

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 130

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

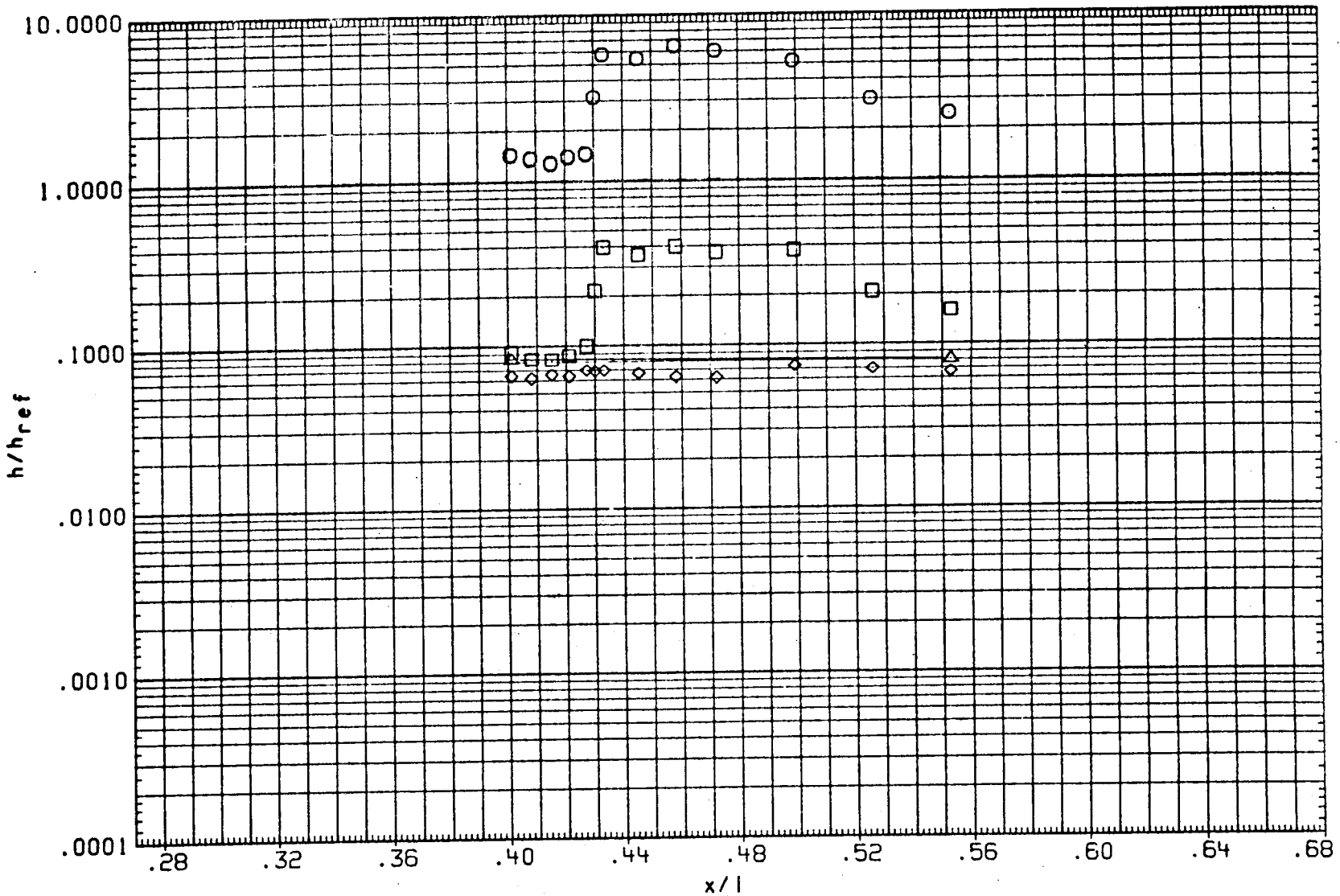

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

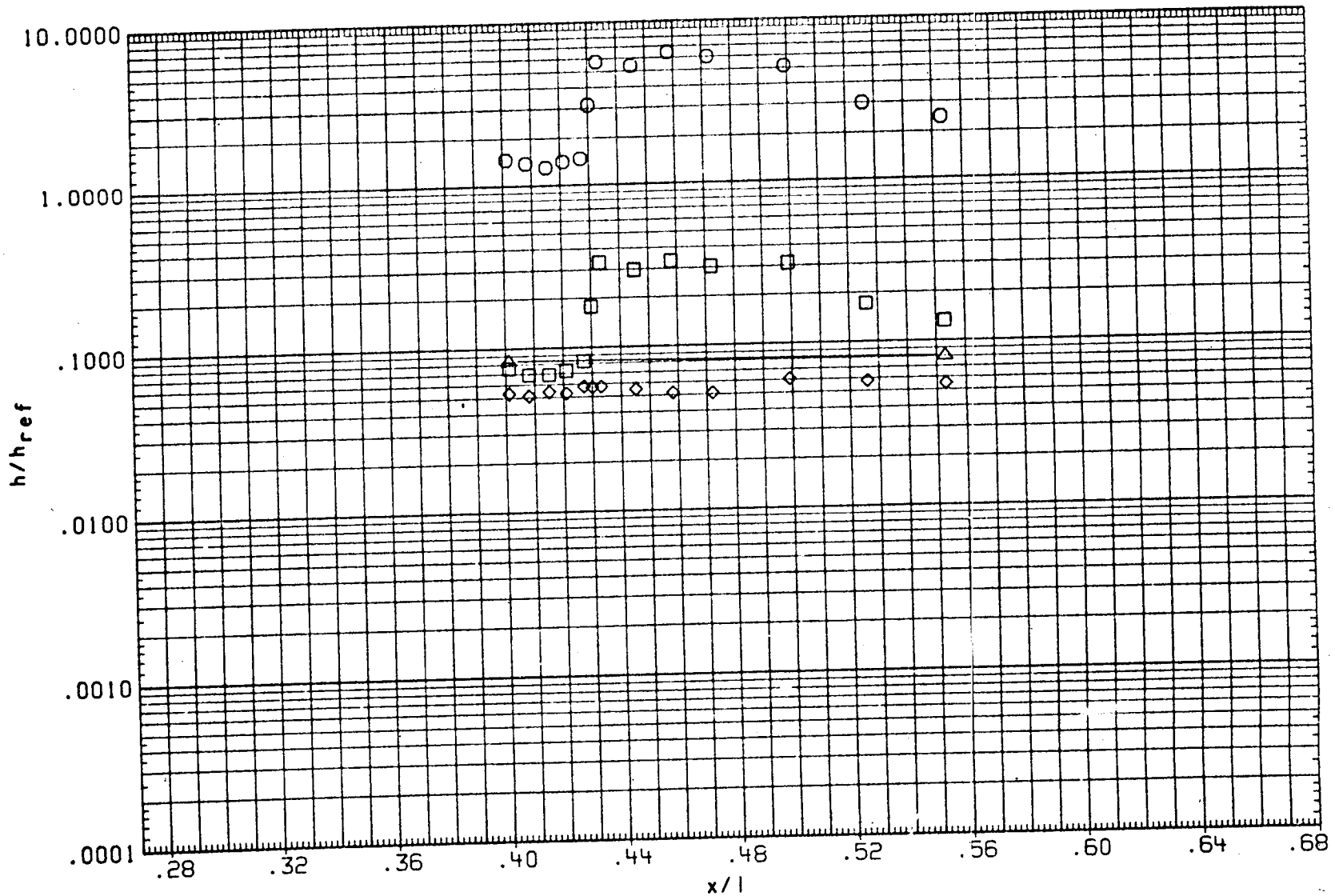

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78 PAGE 132

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH STRUT DIA	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

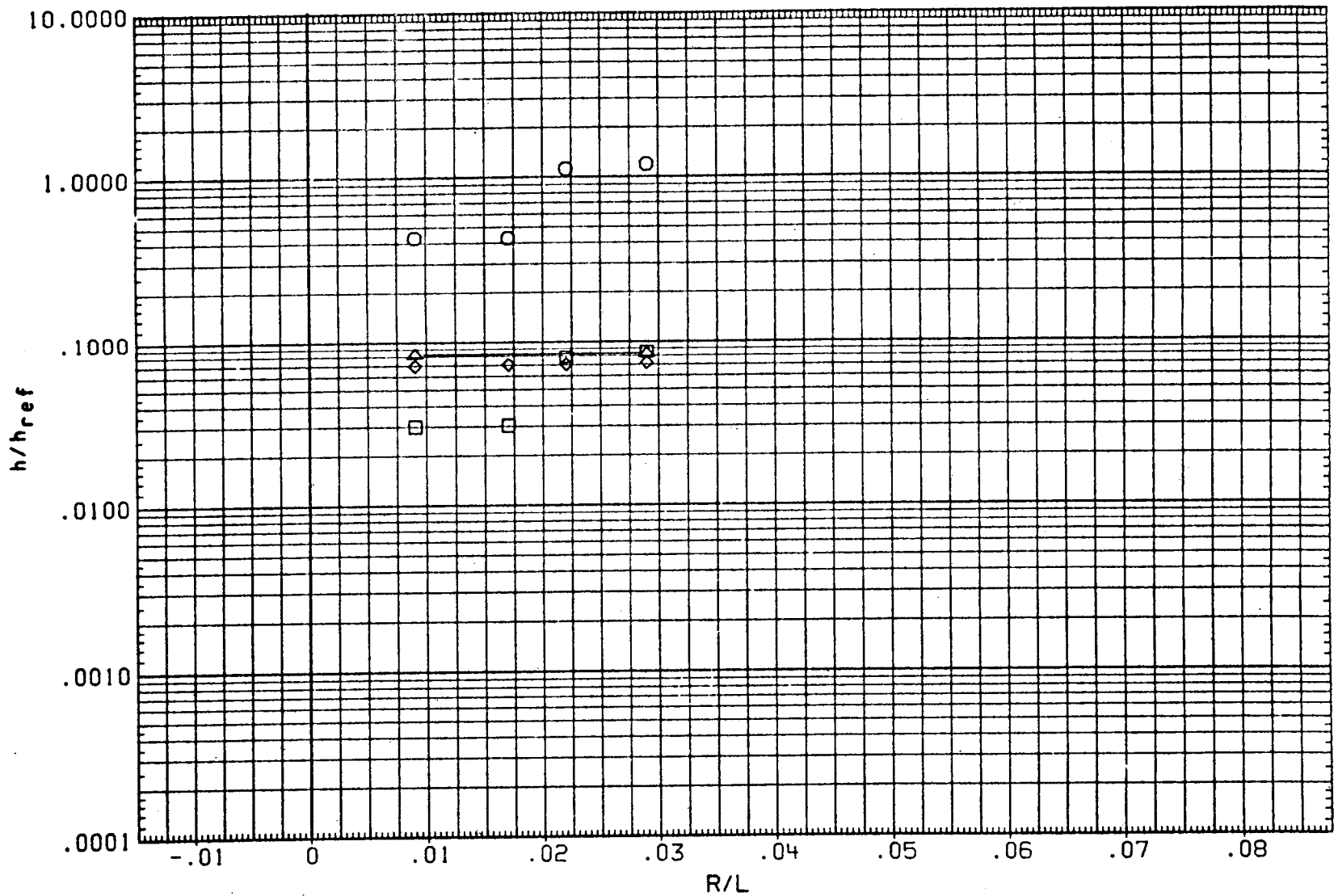

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 133

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH STRUT DIA	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	000	5.000	5.300
(B20010)	◇	IH51A CONF 5B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

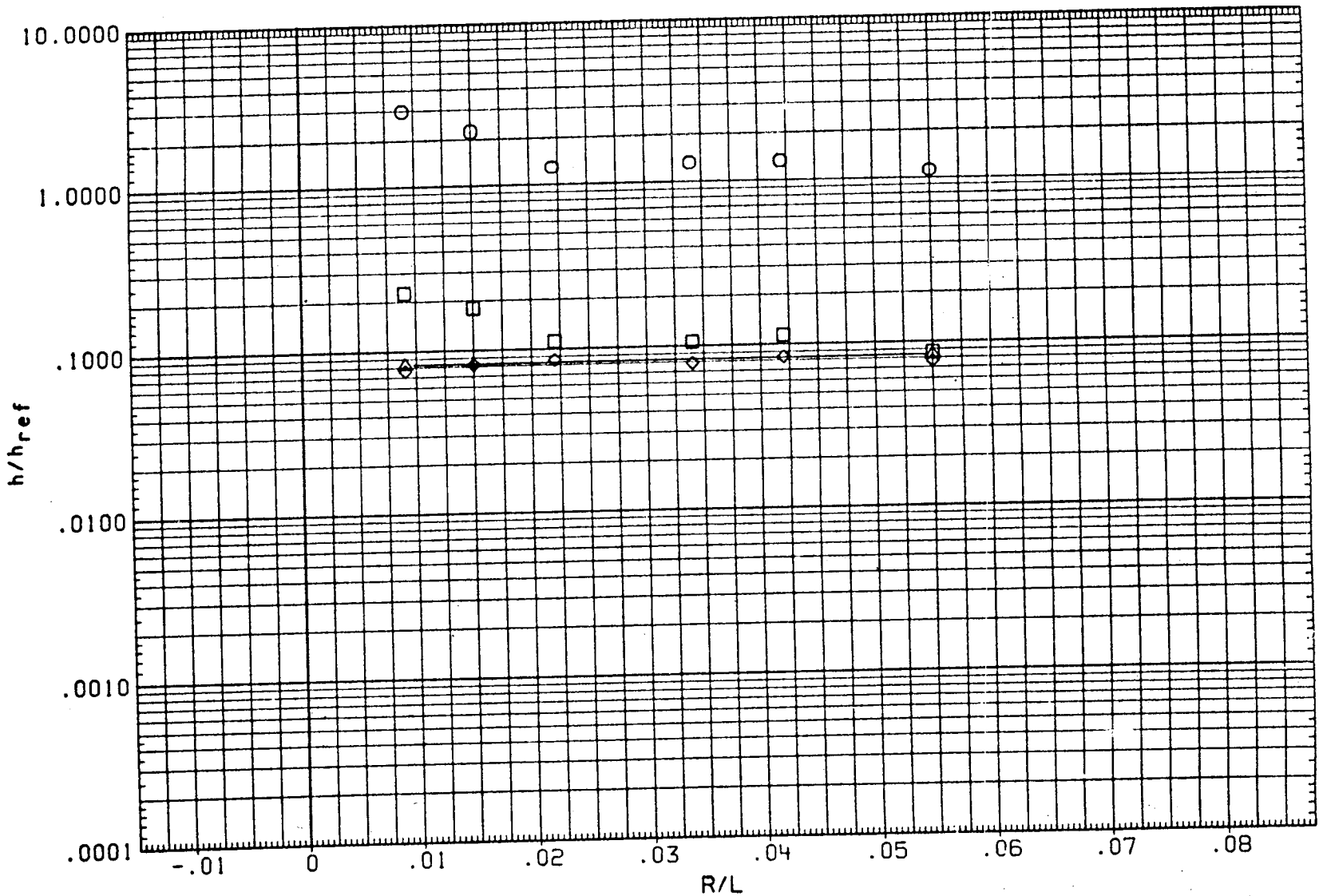

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 134

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH STRUT DIA	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

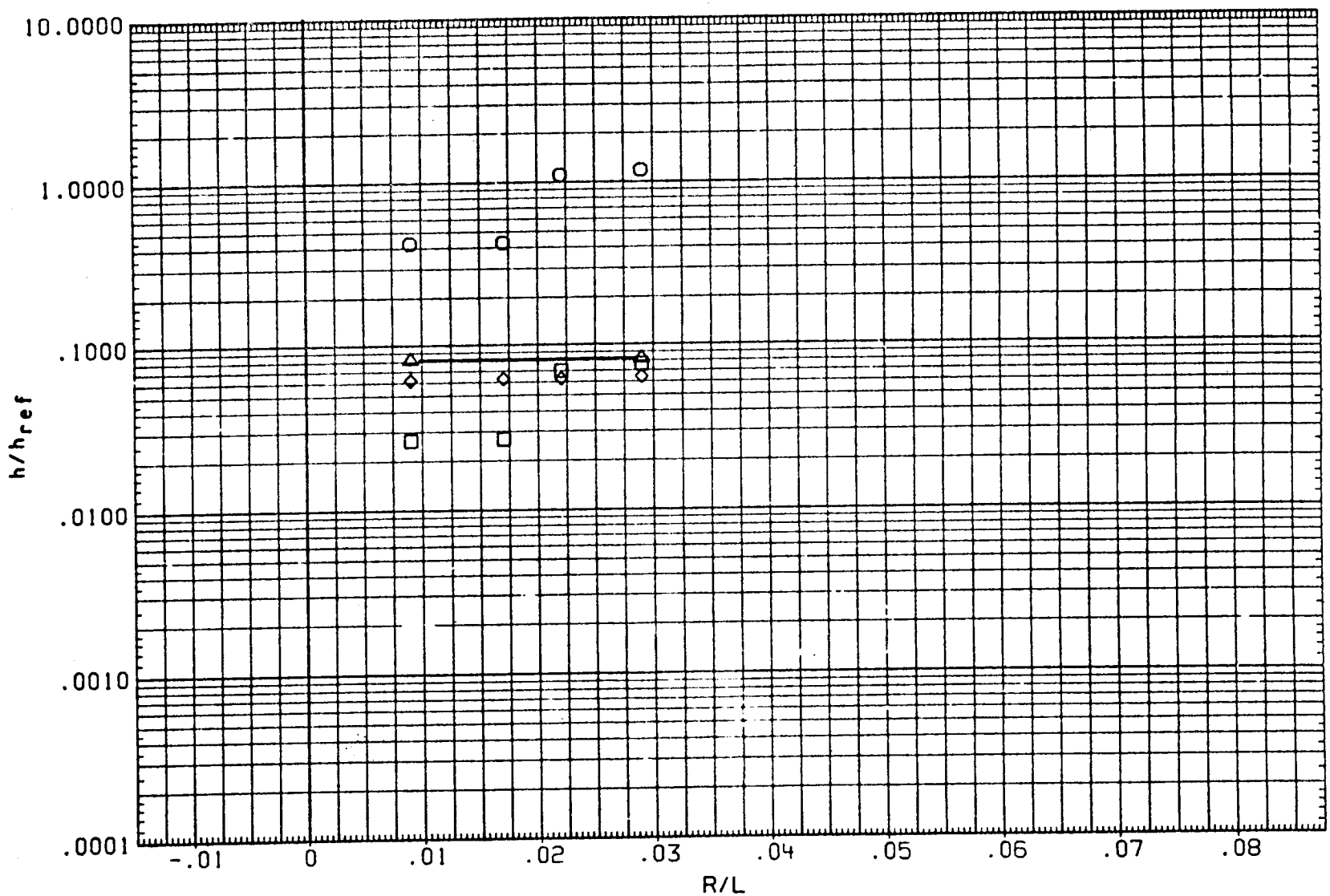

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 135

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH STRUT DIA	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

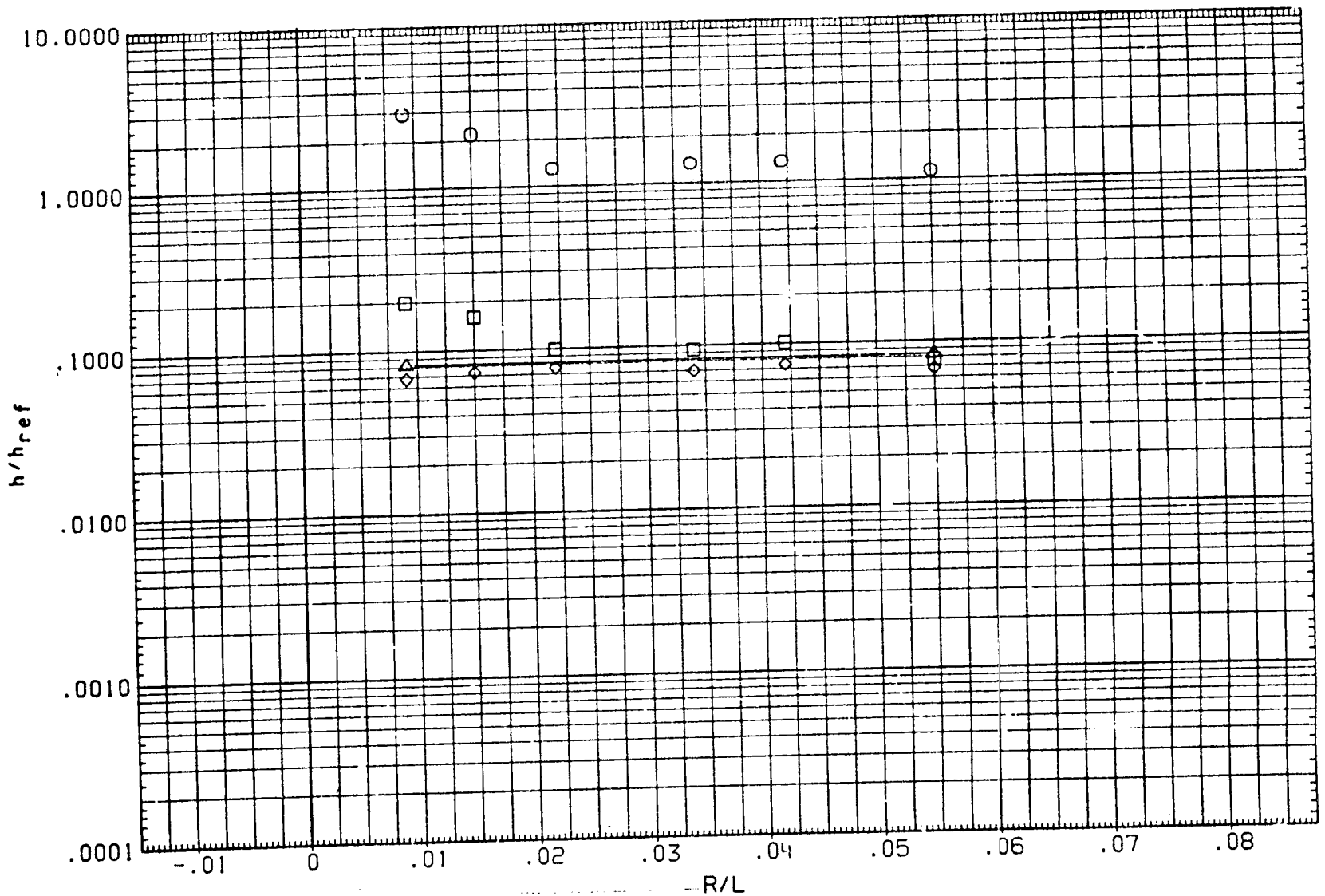

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 136

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	LH STRUT DIA	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

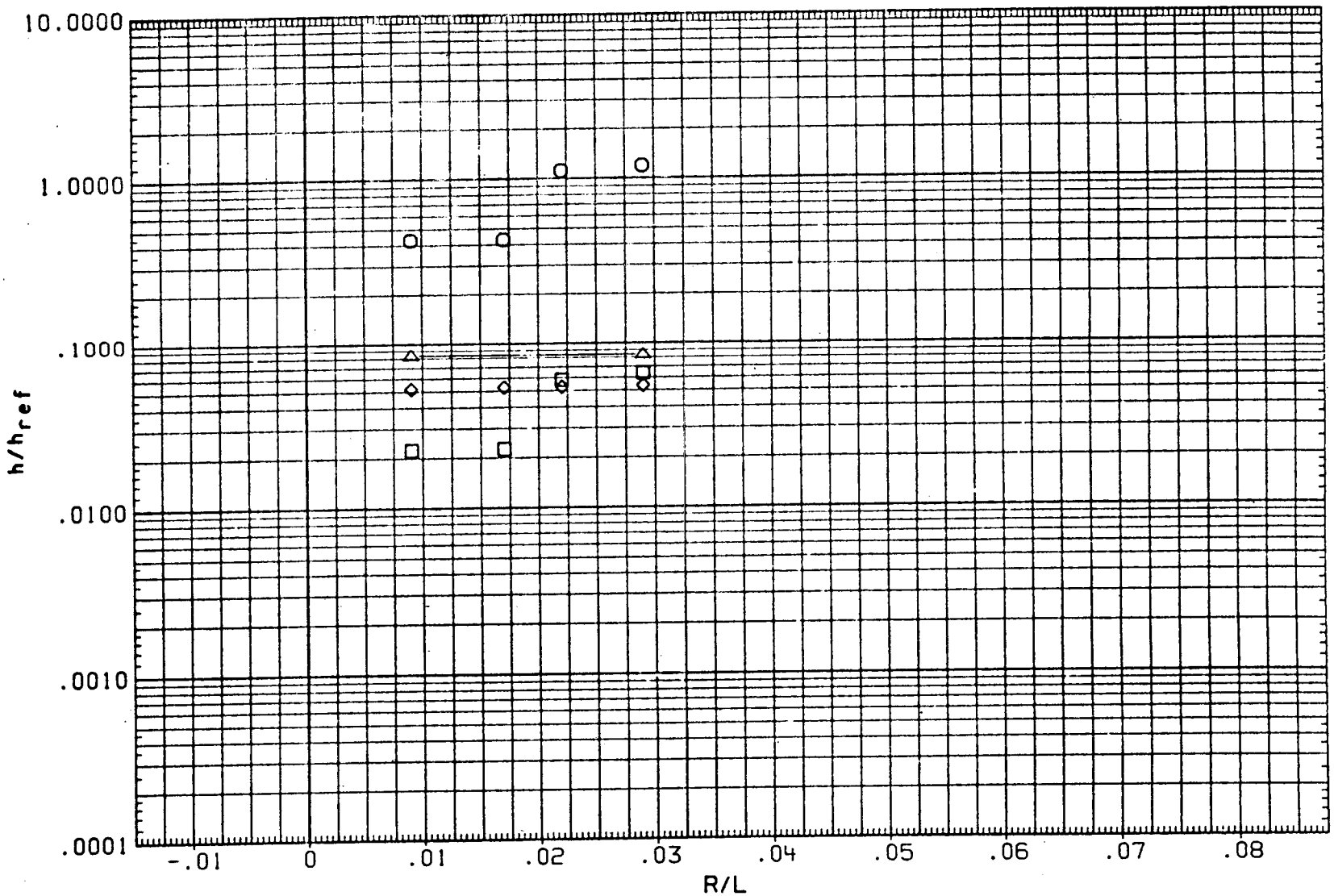

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 137

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4D-5B-5B)/5B	LH STRUT DIA	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

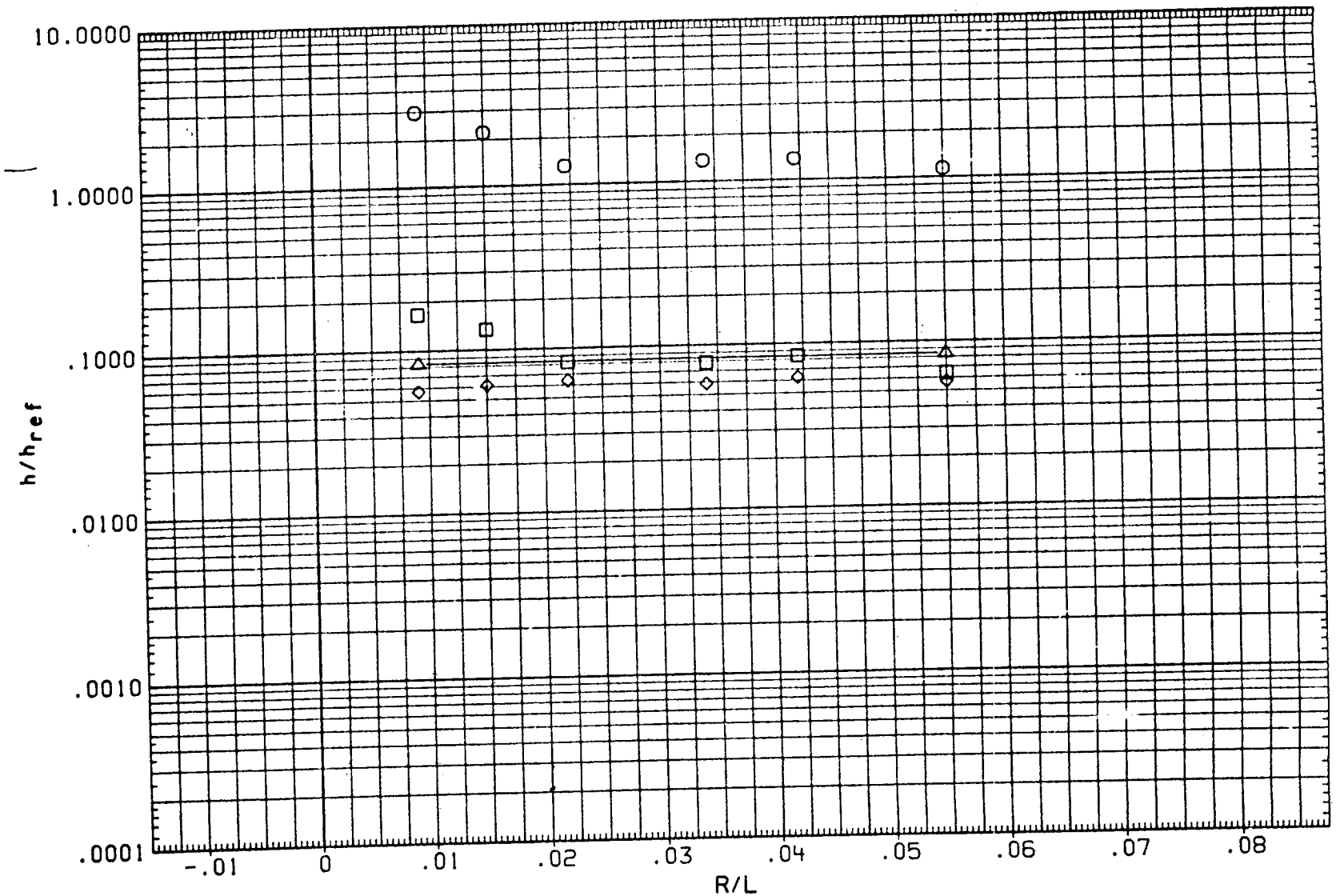

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 138

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0B)	□	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(B20P10)	◇	IH51A CONF 5B RH ATTACH DIAGONAL		.000	000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

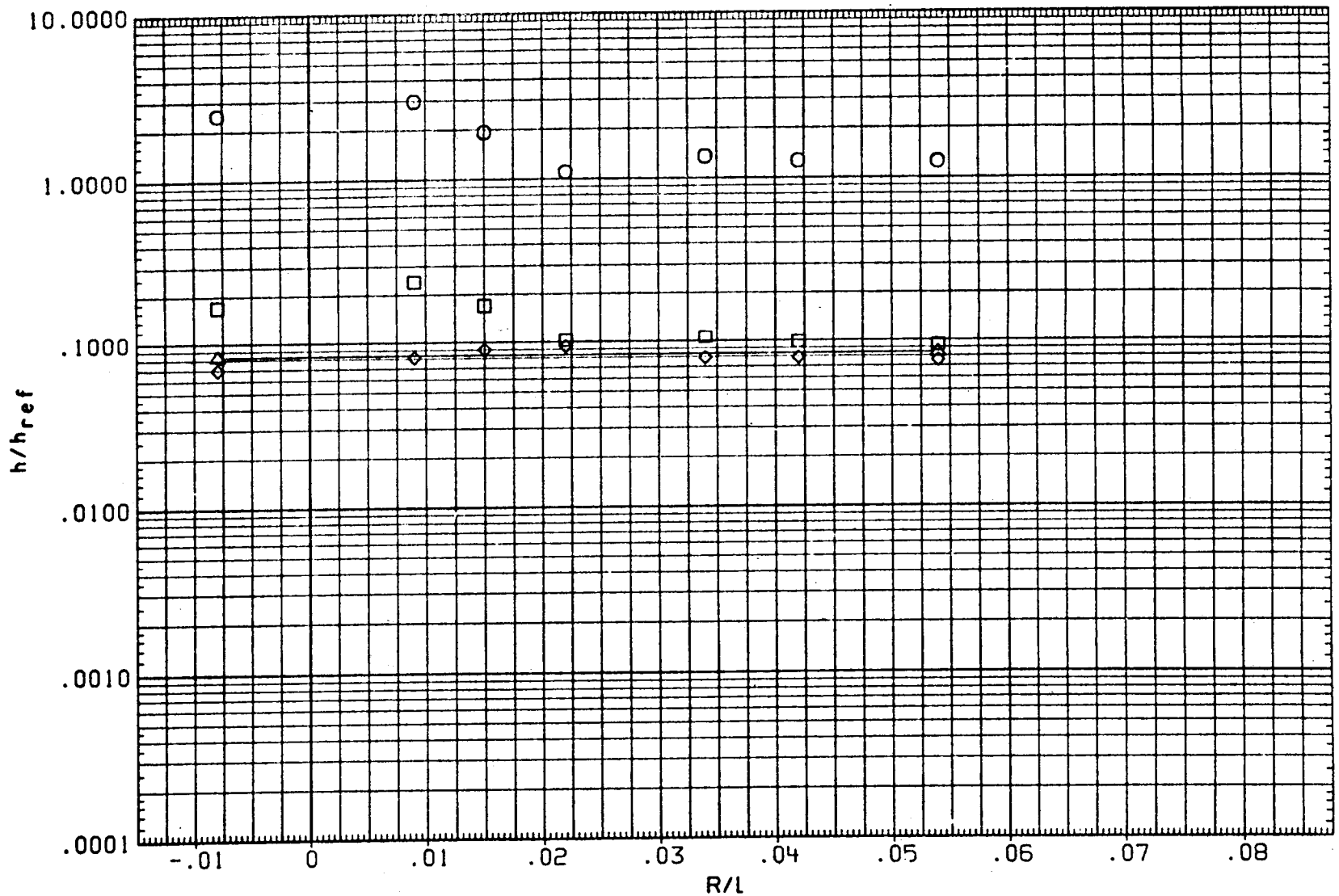

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 139

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0B)	□	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(B20P10)	◇	IH51A CONF 5B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

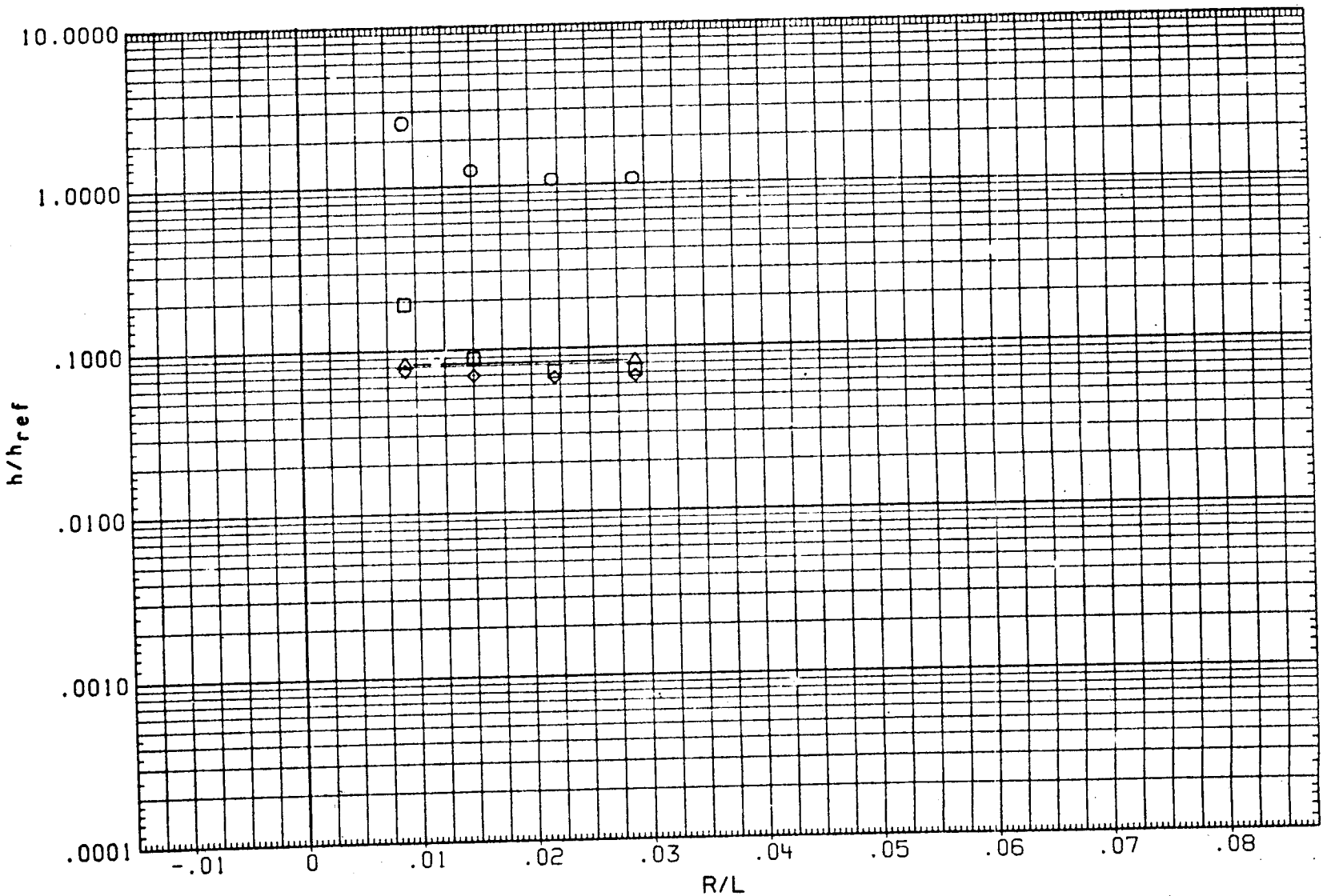

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 140

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0B)	□	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(B20P10)	◇	IH51A CONF 5B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

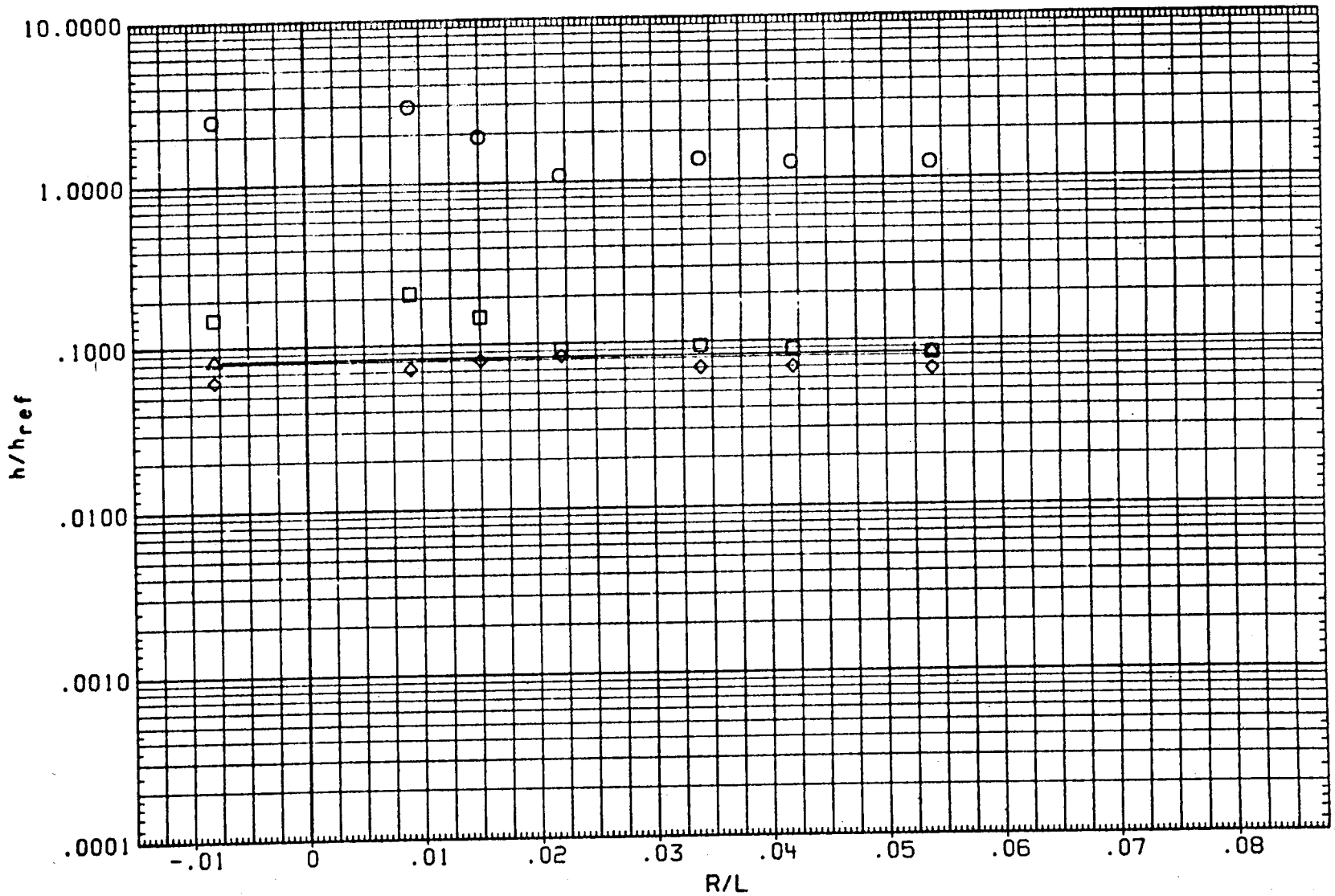

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 141

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0B)	□	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(B20P10)	◇	IH51A CONF 5B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

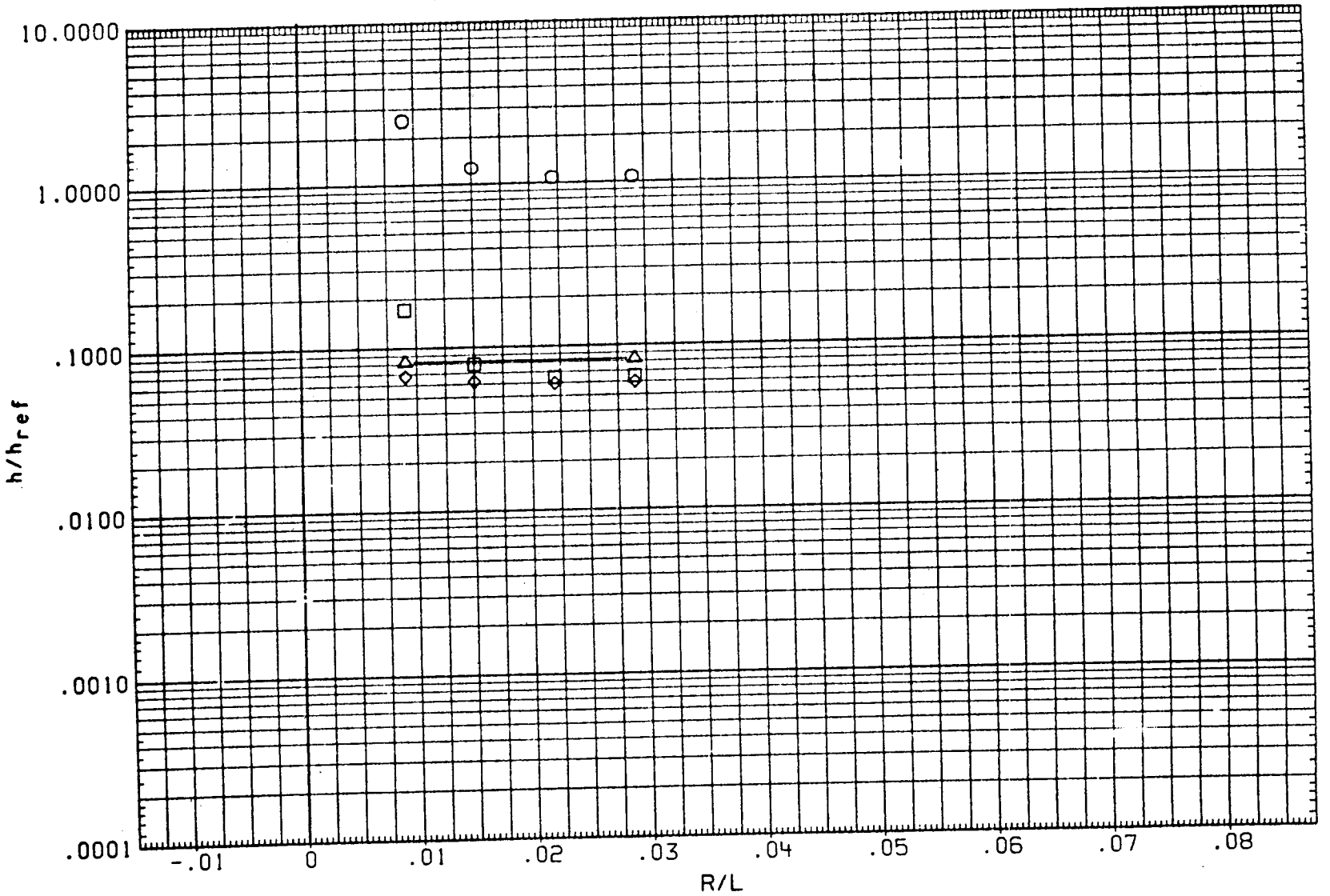

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 142

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0B)	□	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(B20P10)	◇	IH51A CONF 5B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

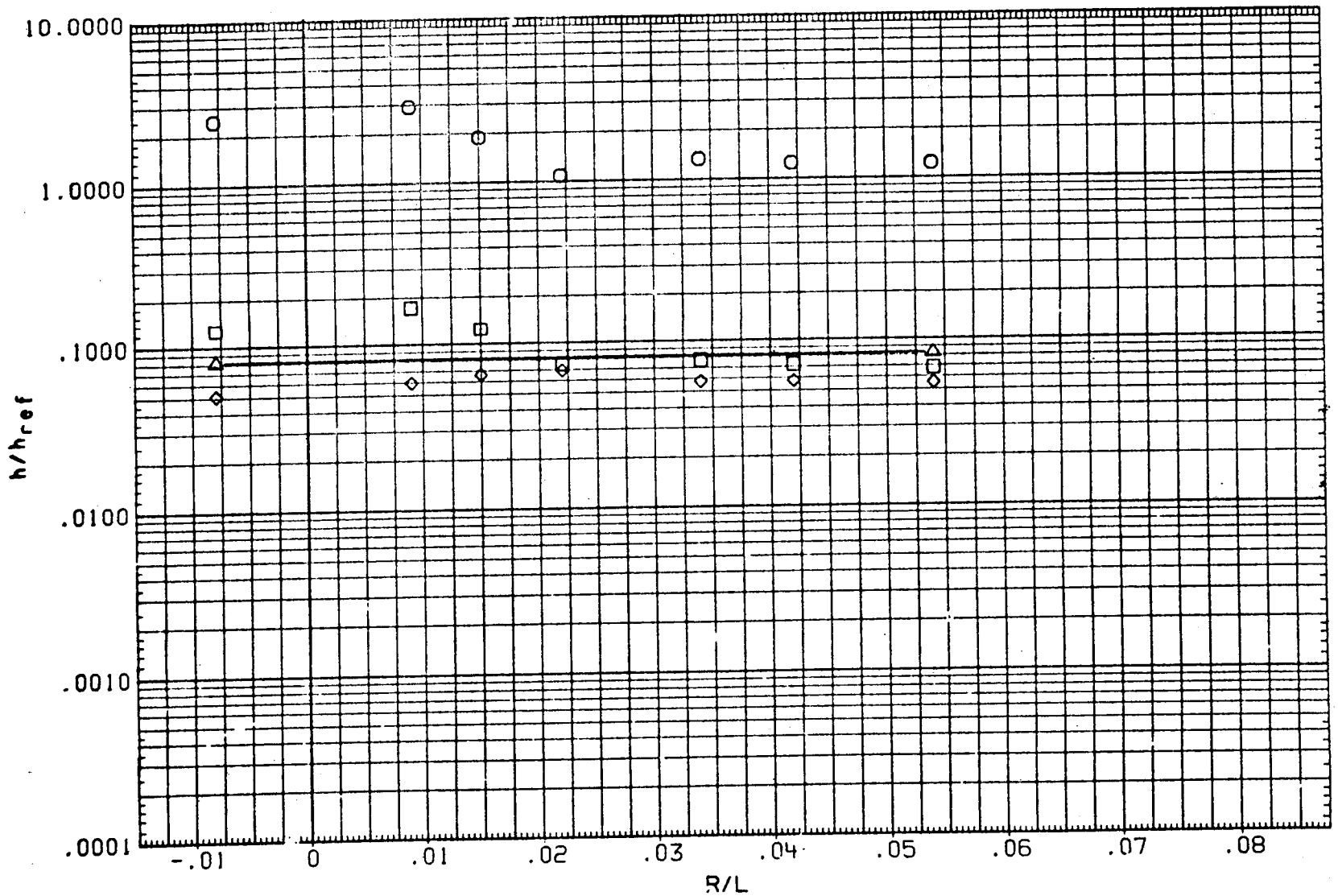

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 143

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20P0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	RH STRUT DIA	.000	.000	5.000	5.300
(M20P0B)	□	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(B20P10)	◇	IH51A CONF 5B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

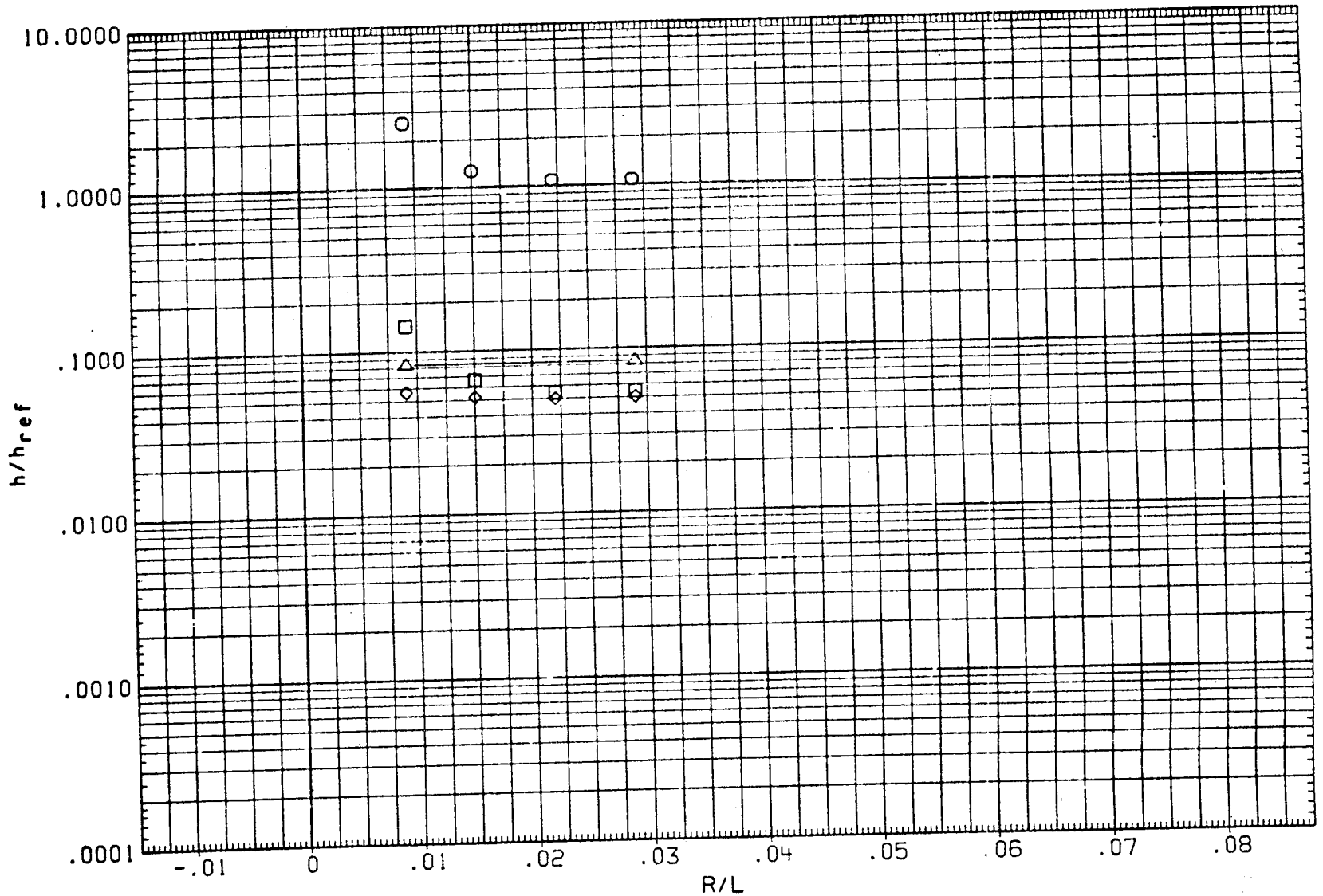

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 144

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

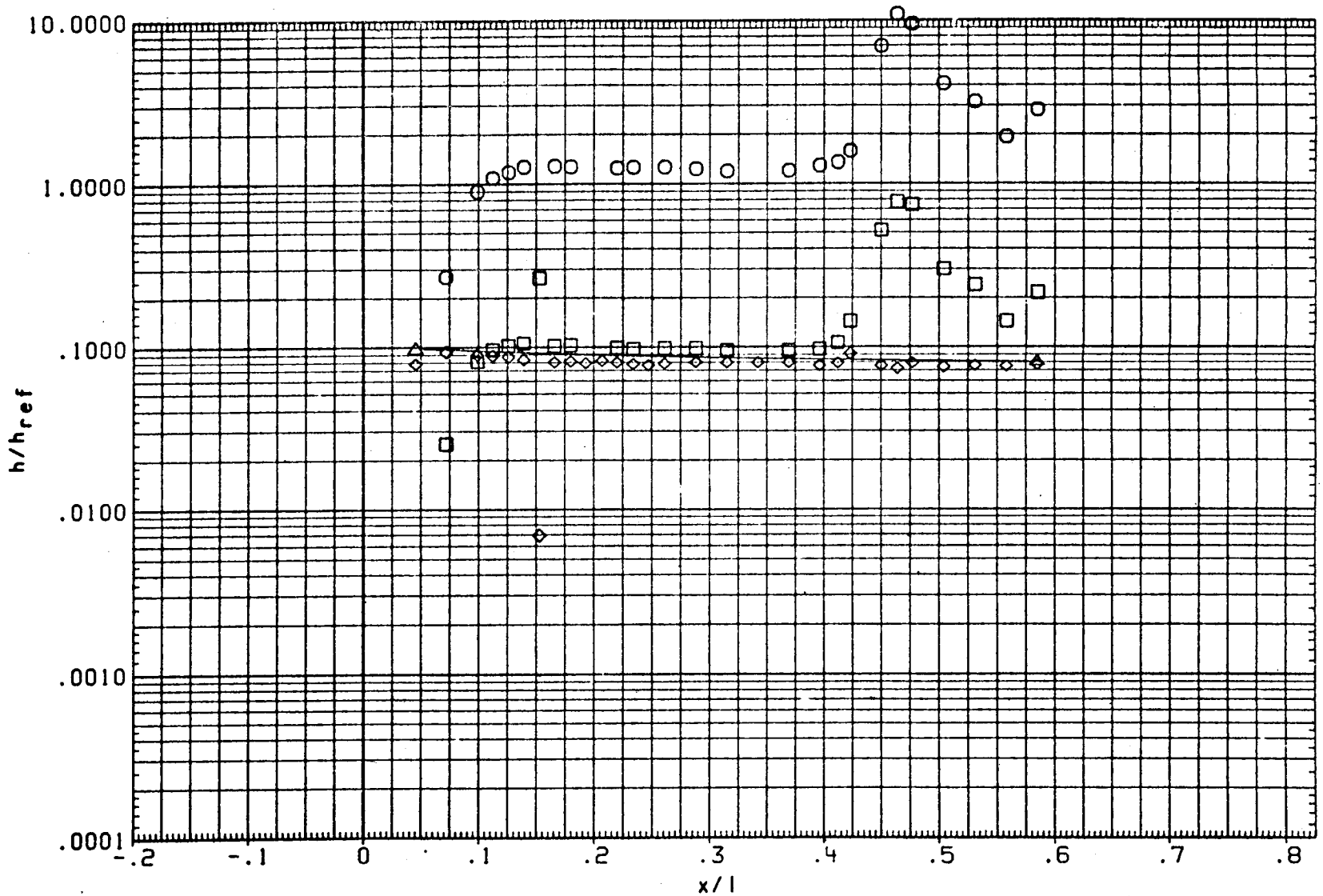

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .850 PHI = .000 DATE 22 APR 78 PAGE 145

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B1)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

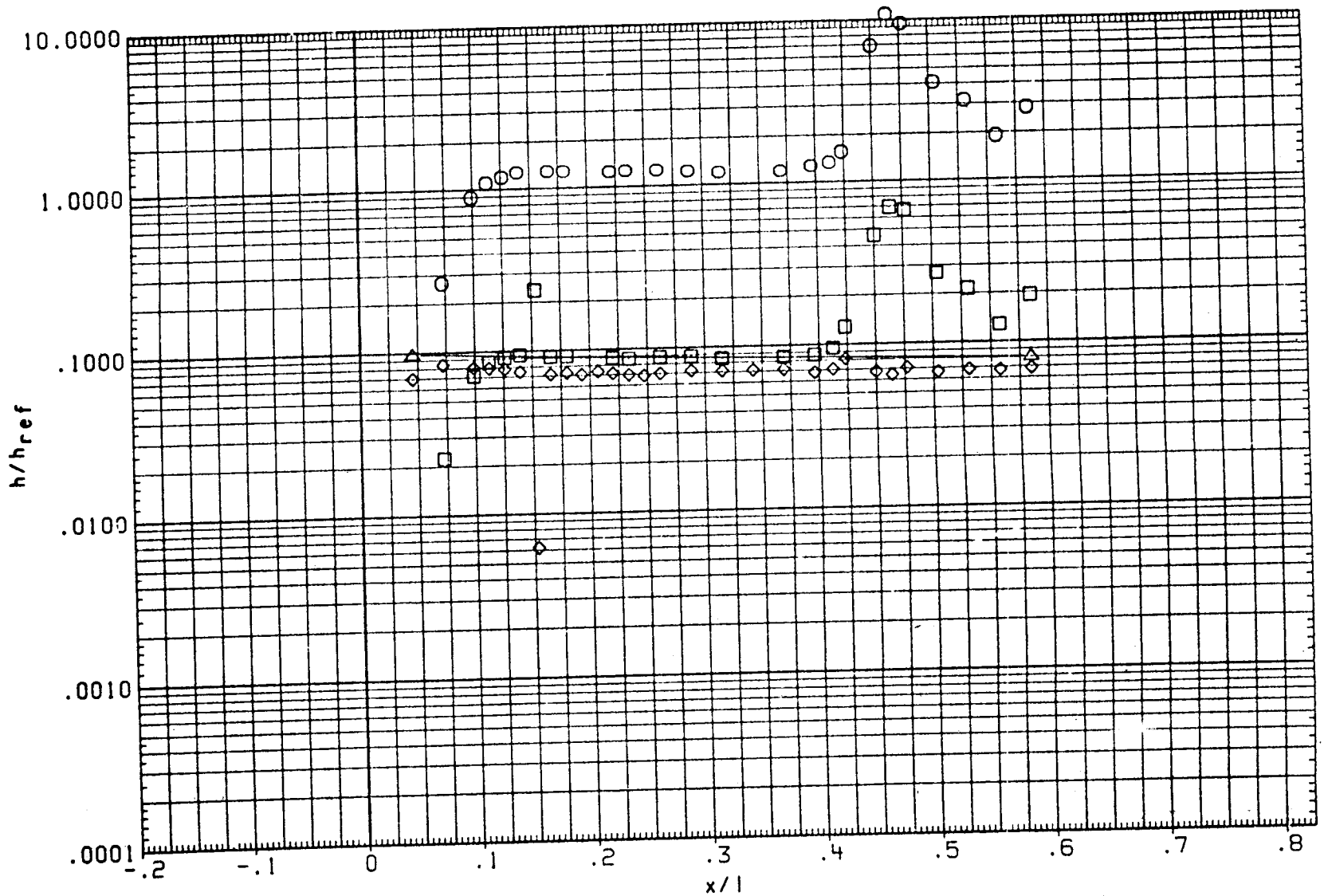

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .900 PHI = .000 DATE 22 APR 78 PAGE 146

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001O)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.301

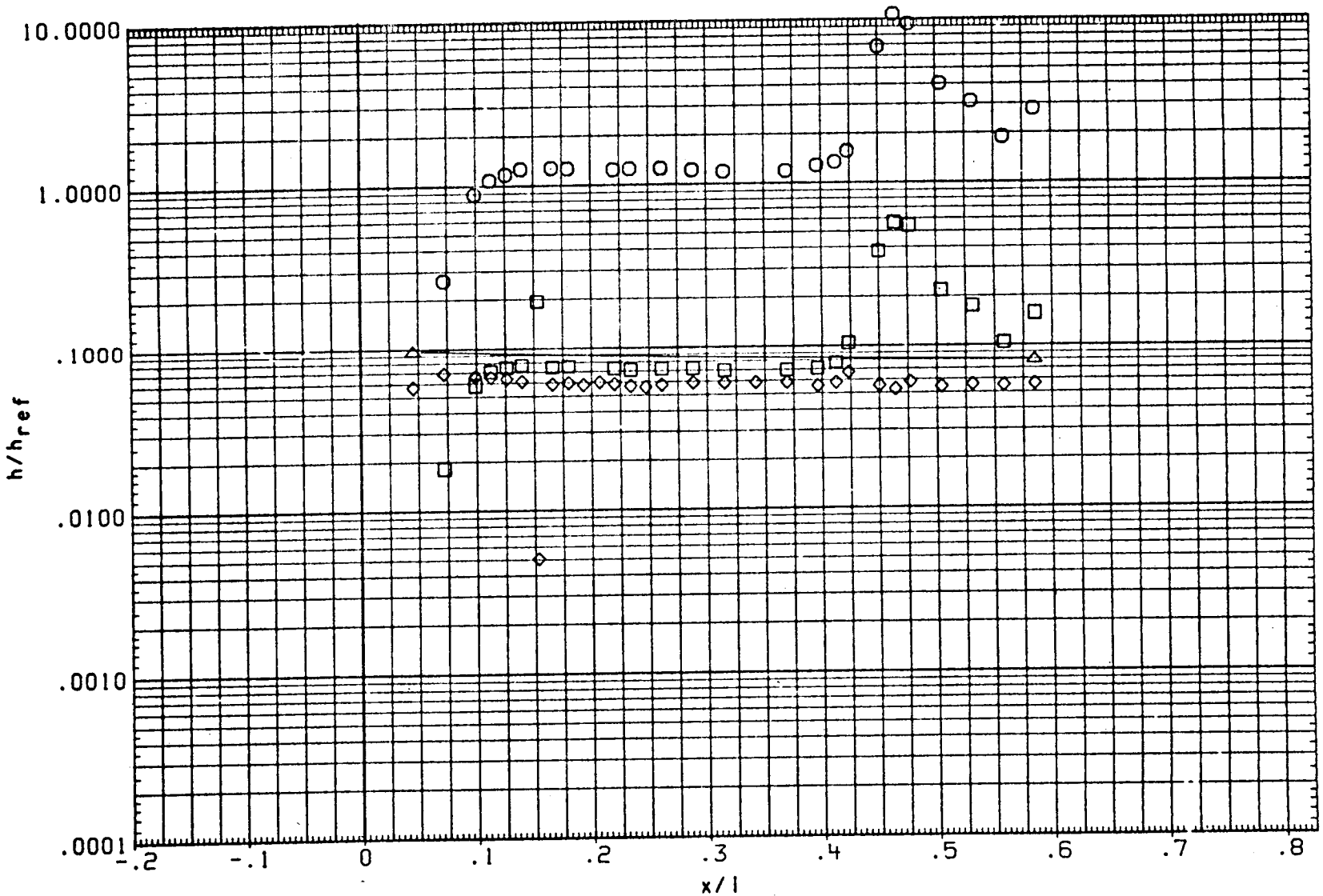

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 147

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

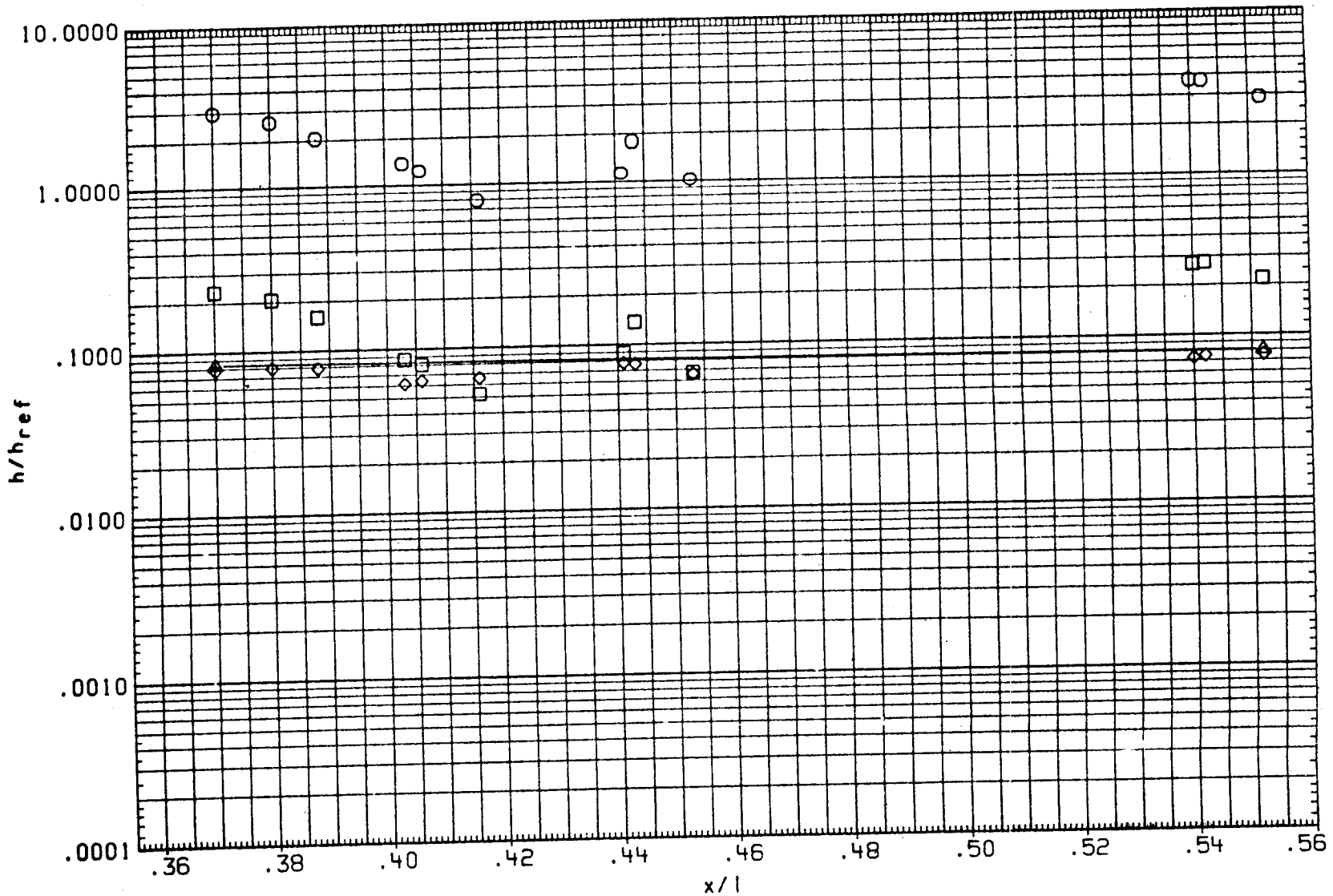

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 148

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

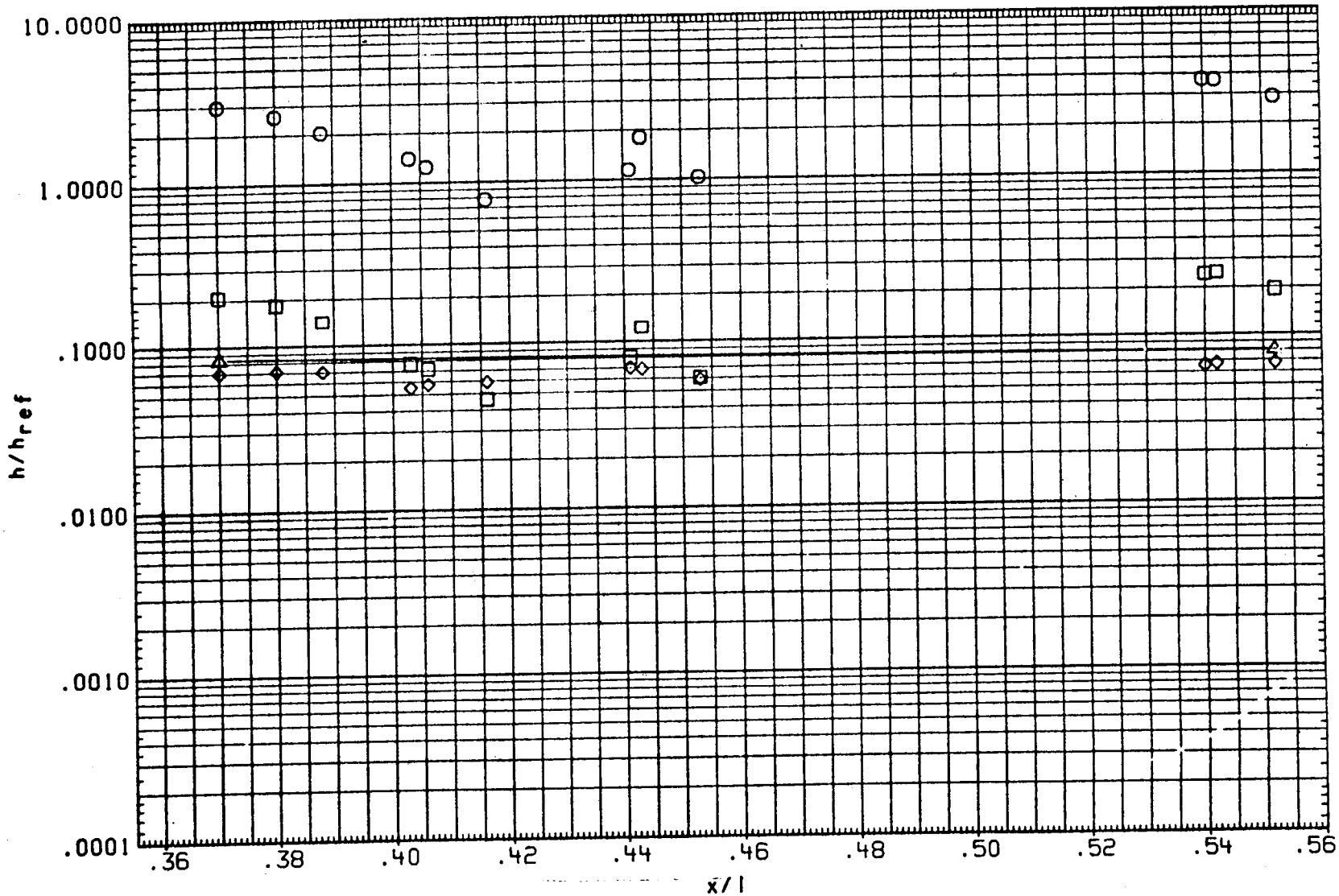

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 149

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

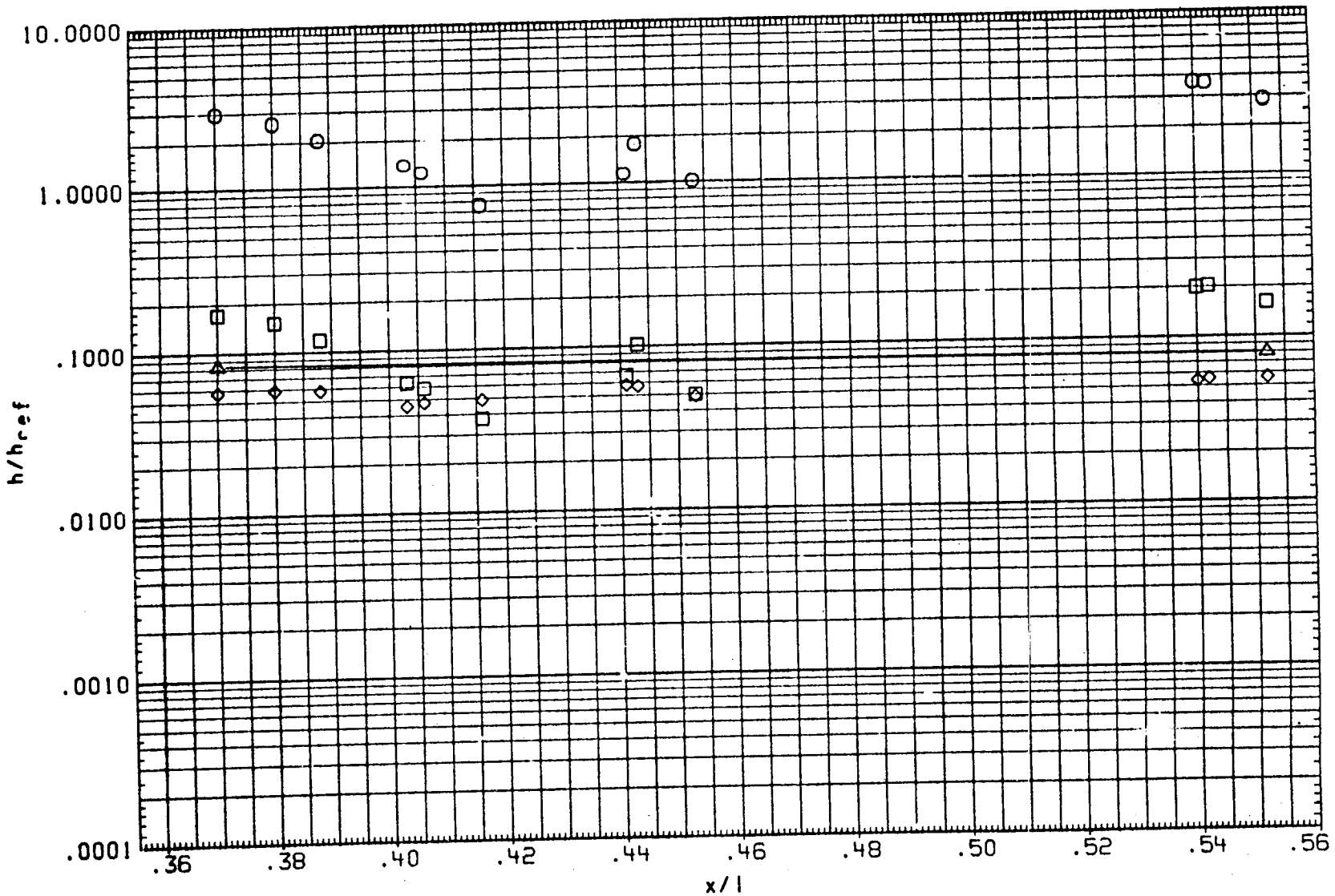

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

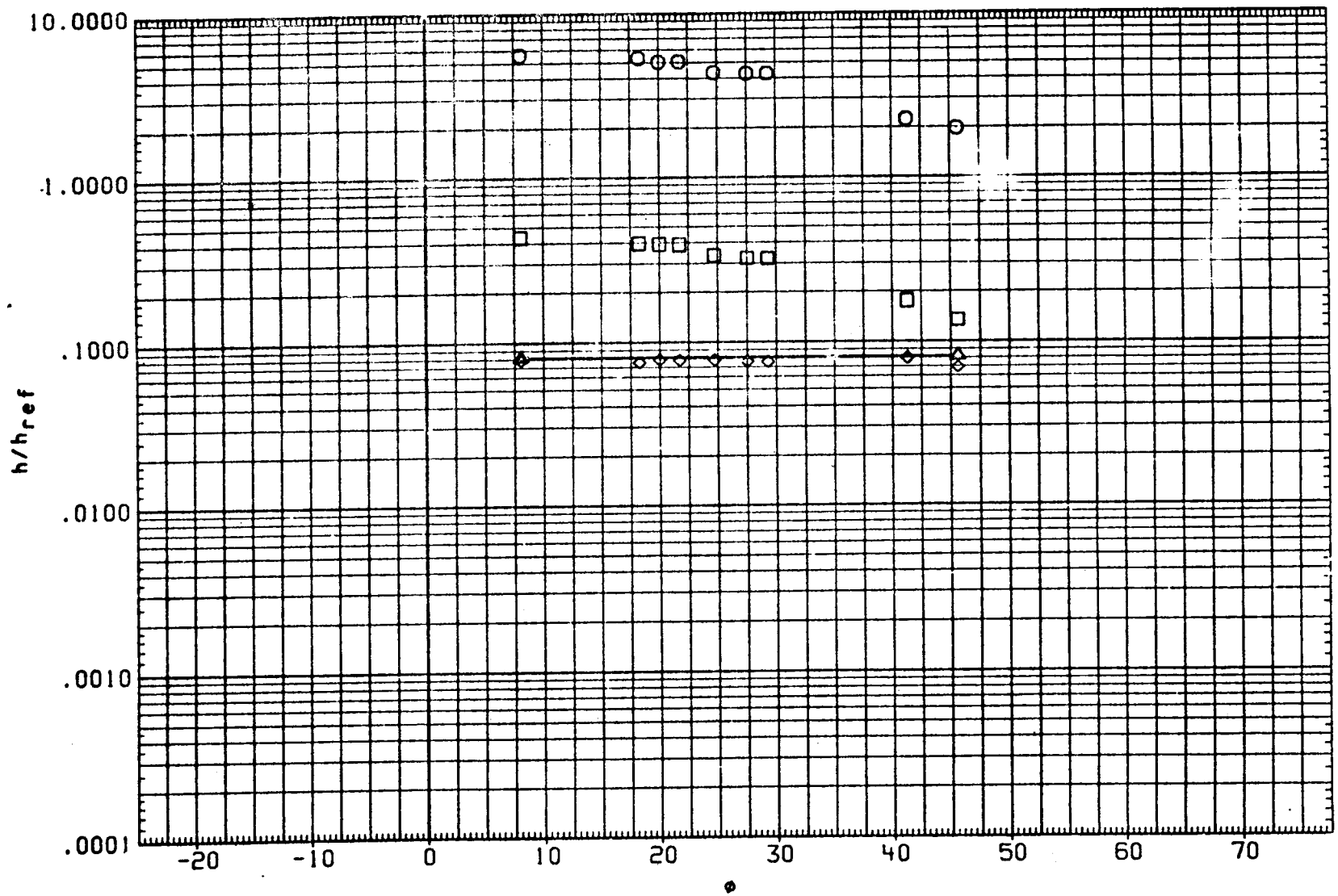

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 151

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

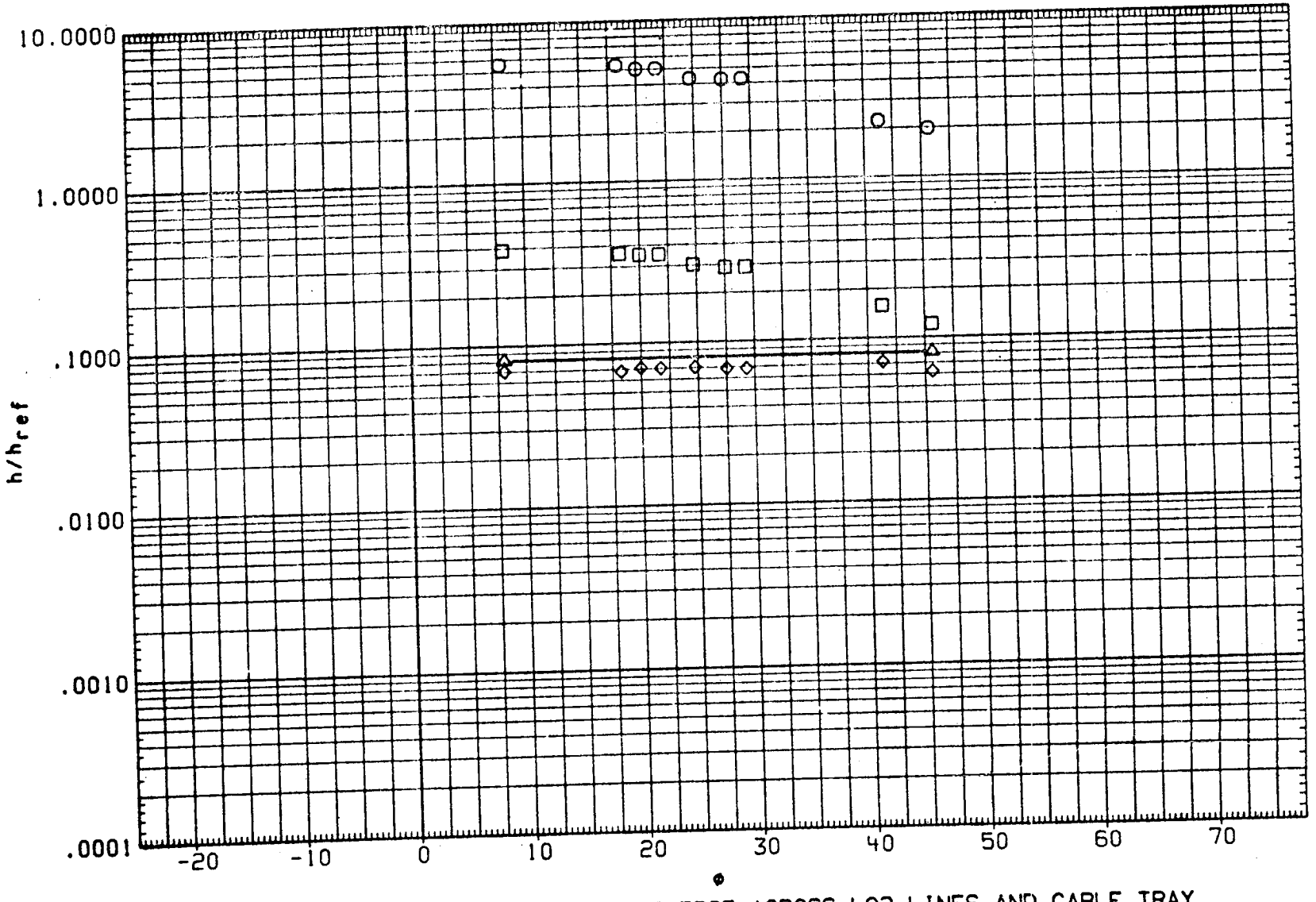

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 152

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20058)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

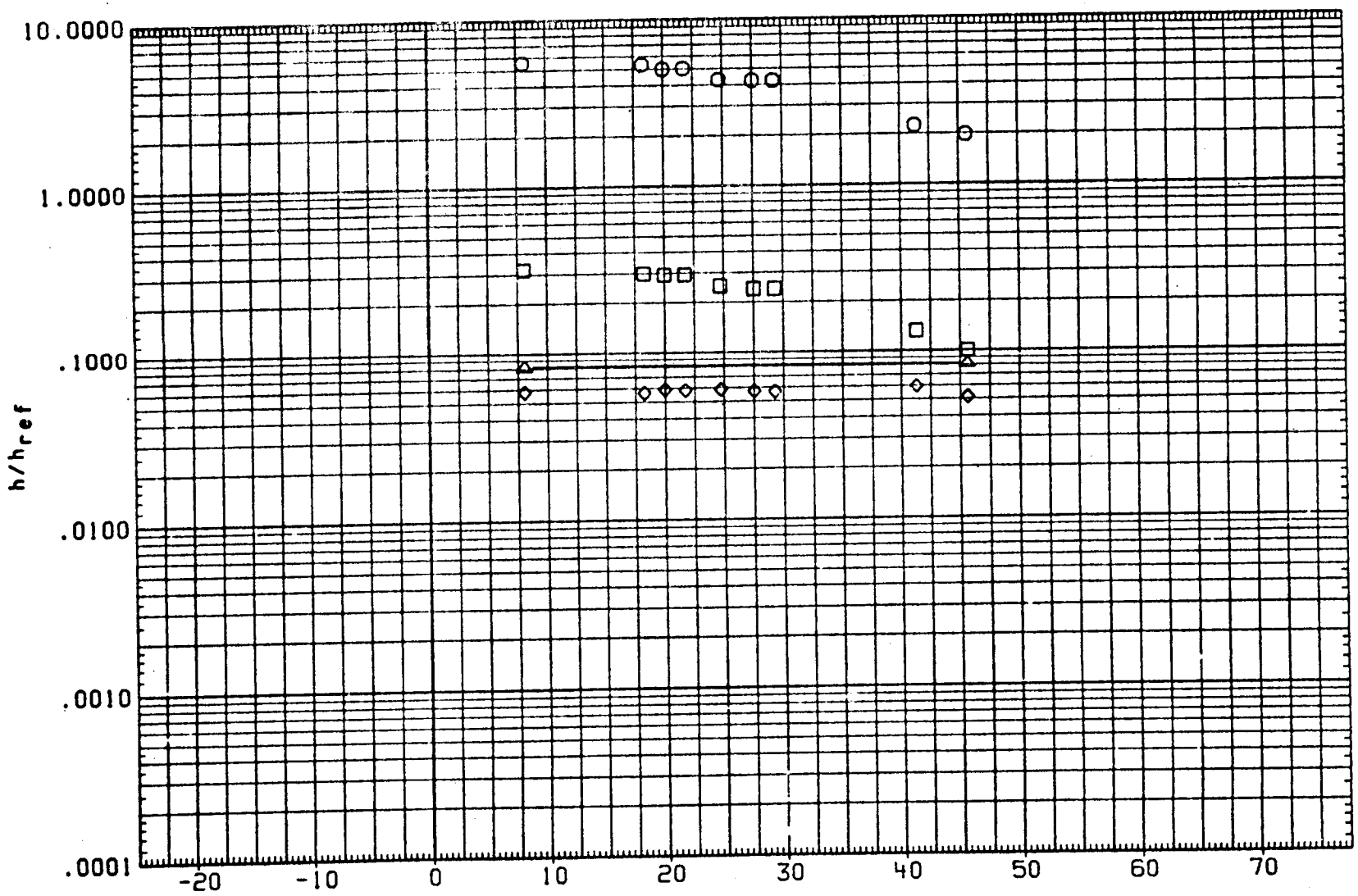

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 153

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2000J0)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2000B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

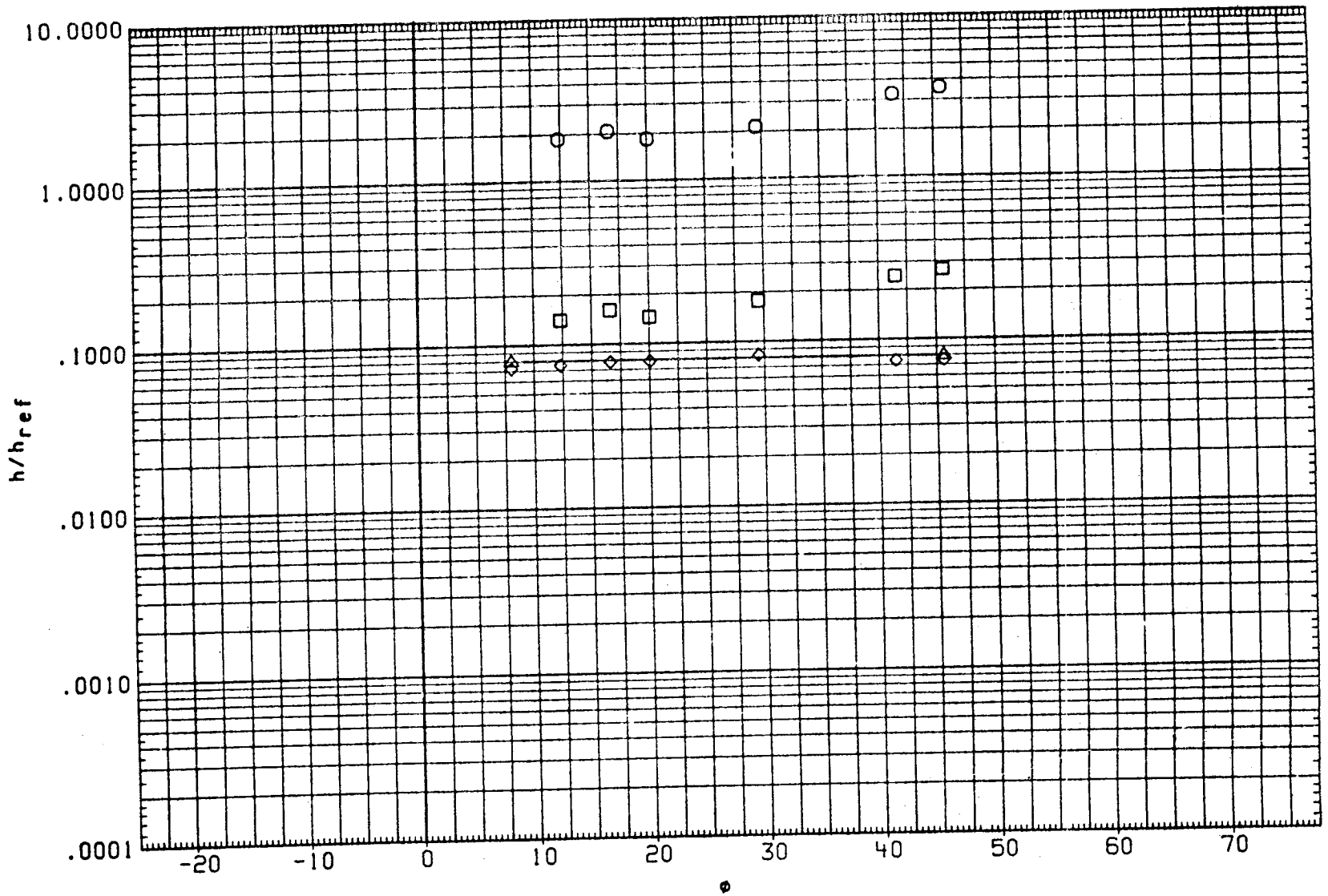

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 154

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

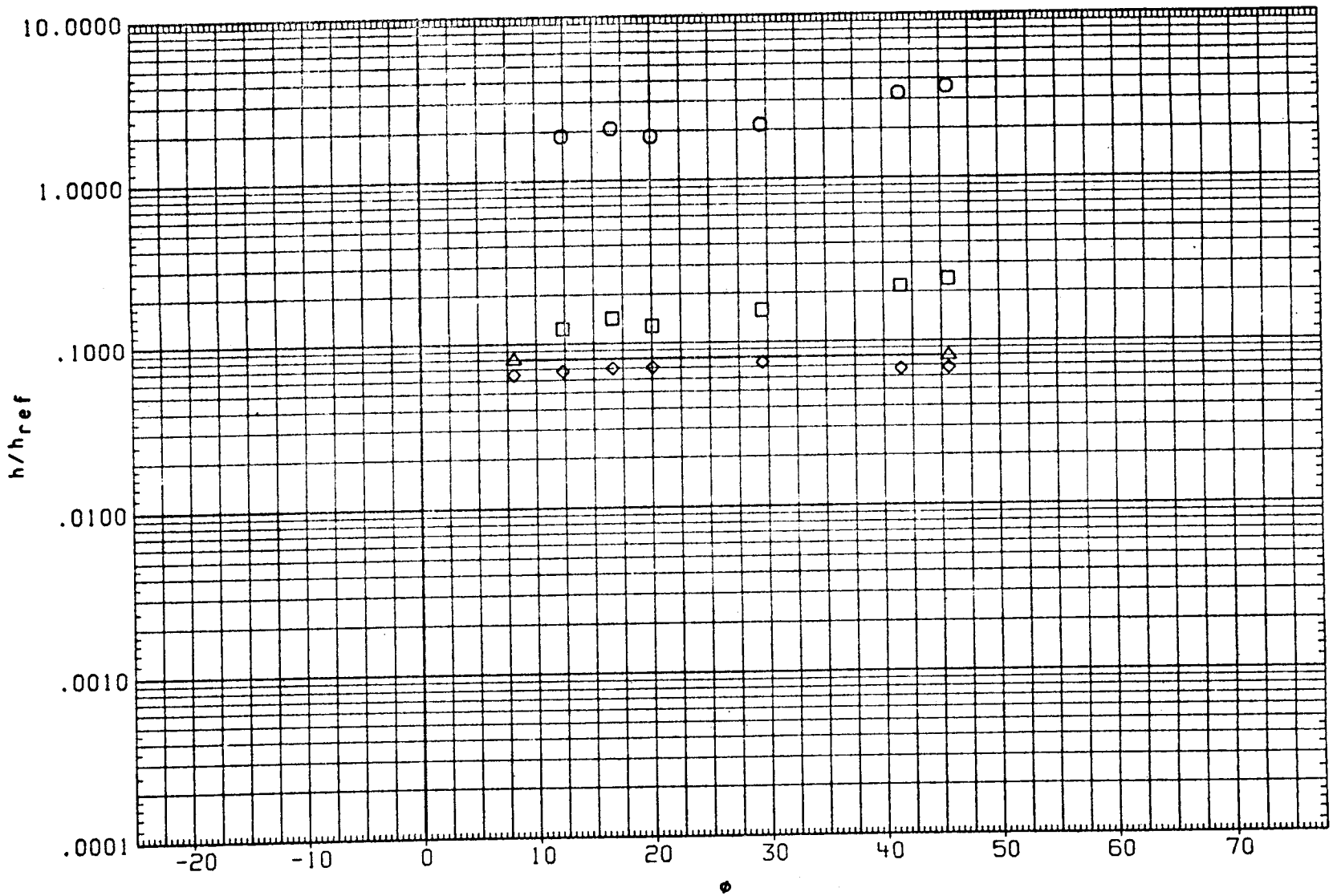

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .578 DATE 22 APR 78 PAGE 155

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

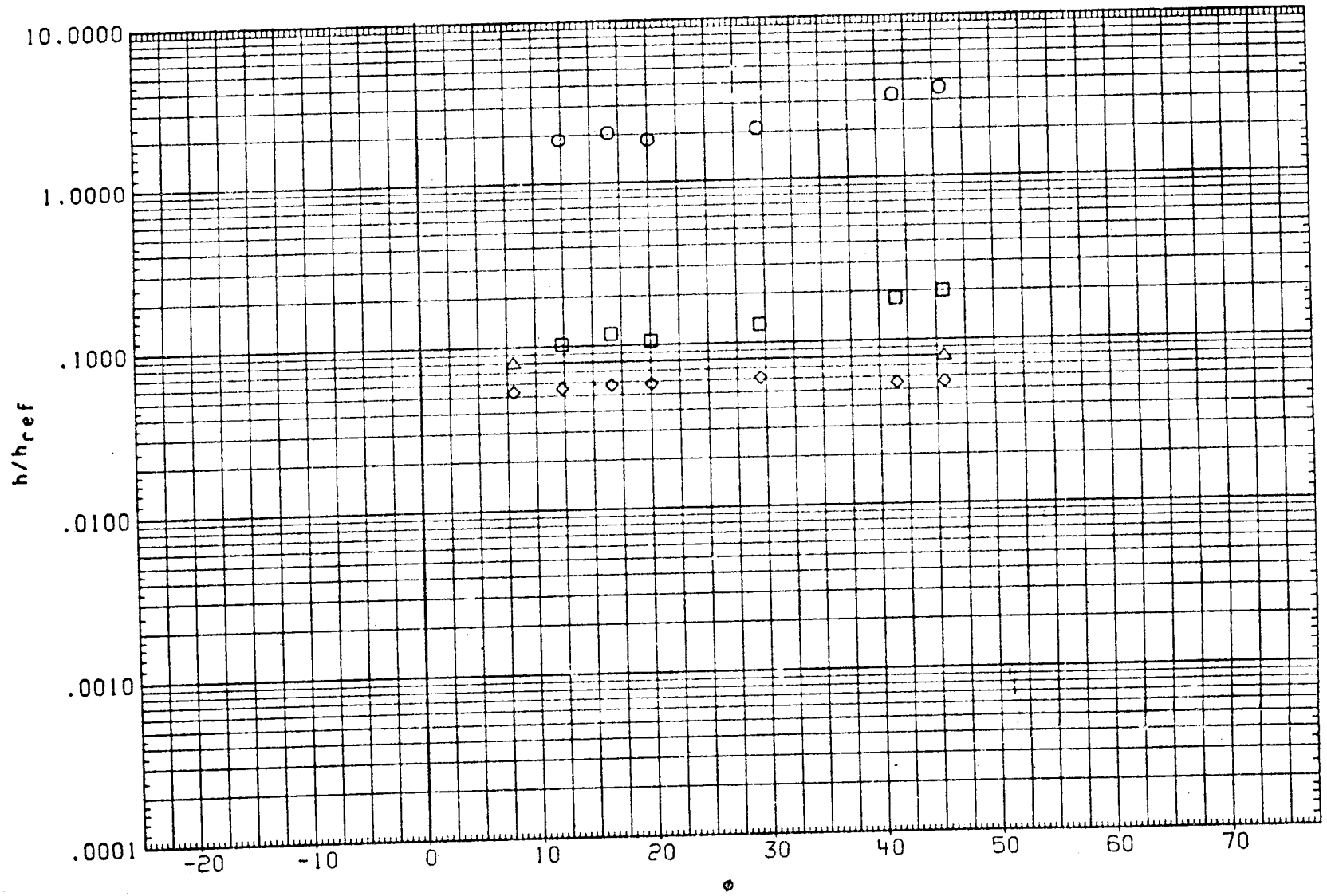

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 156

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

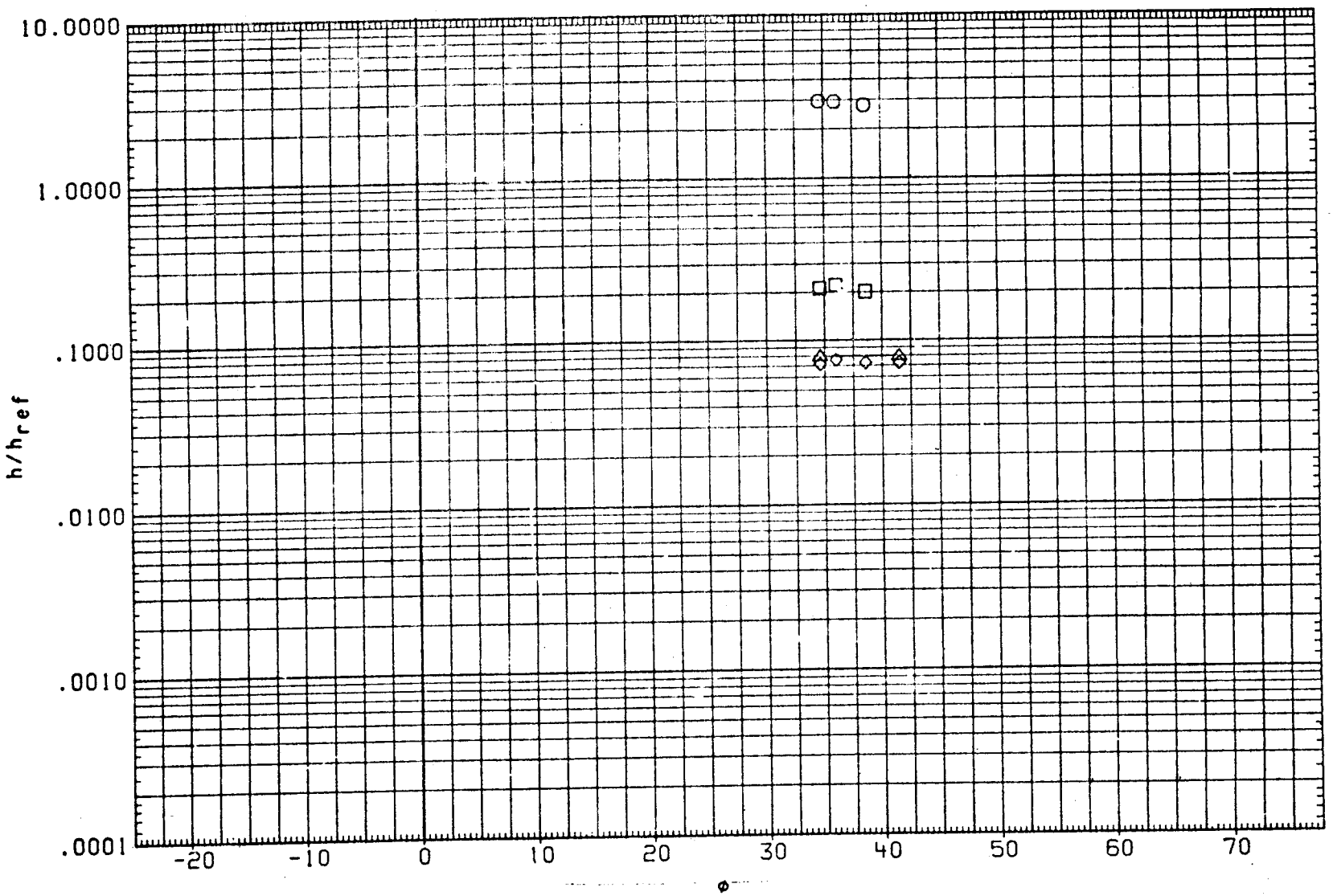

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 157

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

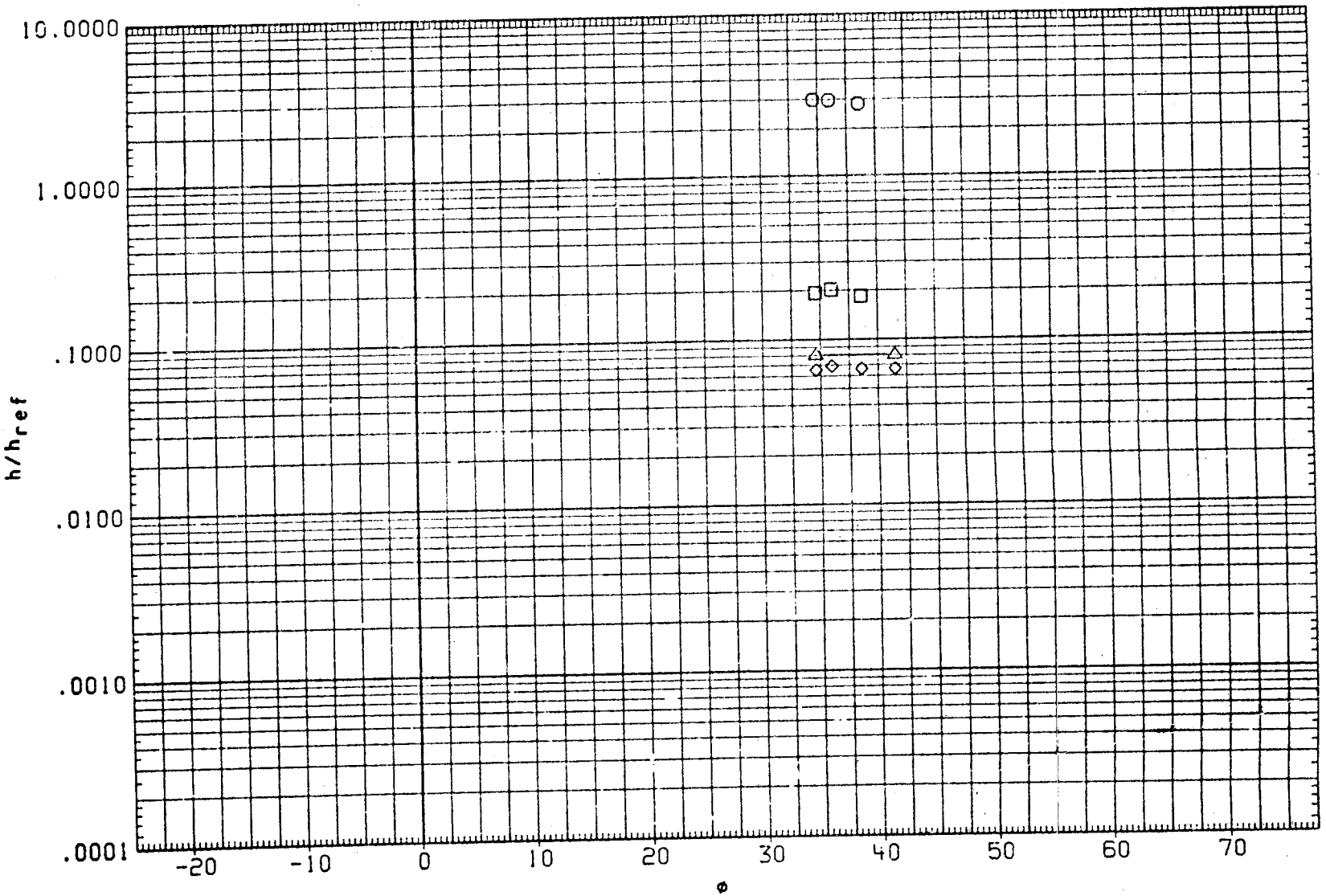

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 158

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

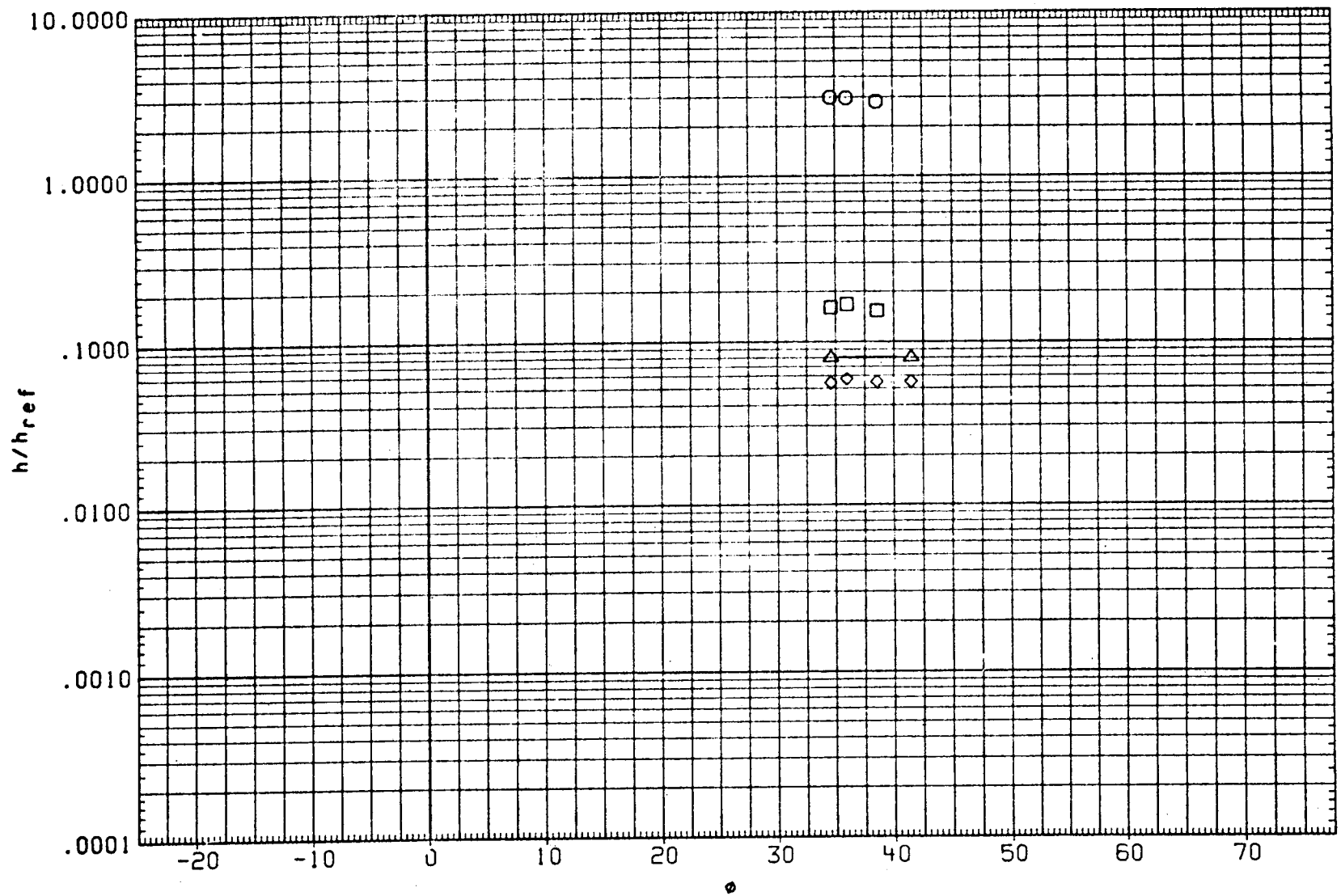

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 159

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001O)	◇	IH51A CONF 56 ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

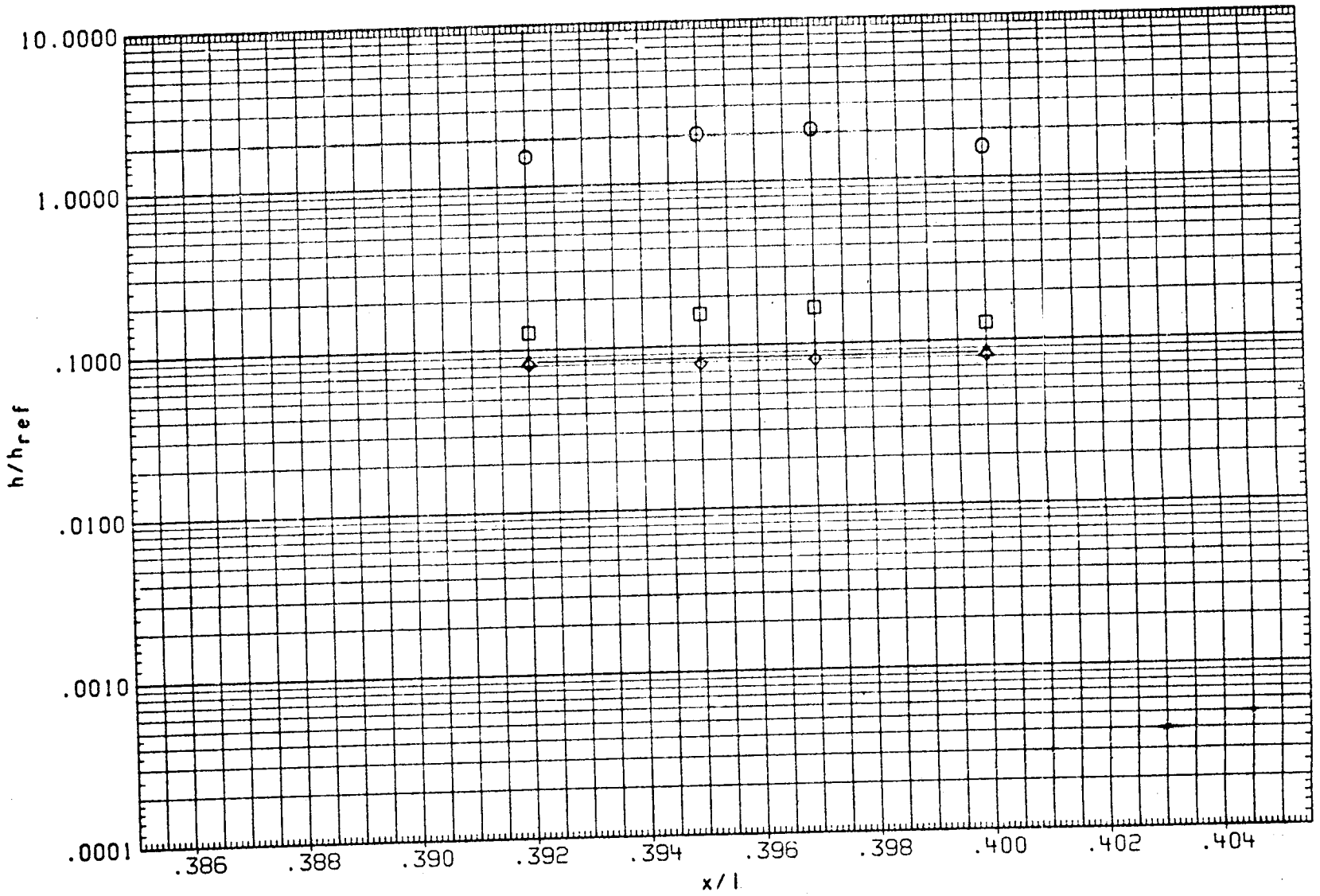

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78 PAGE 160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

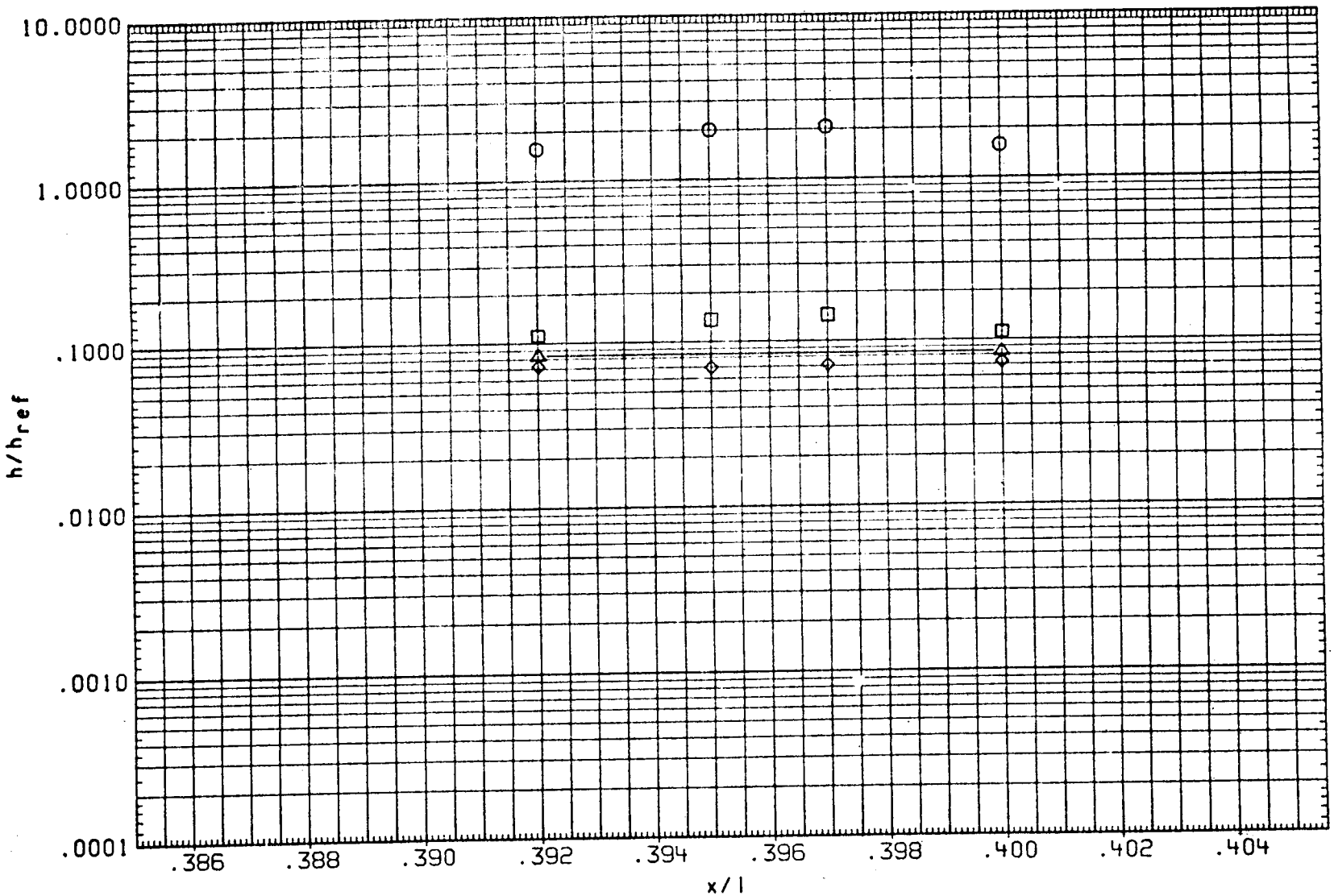

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 161

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(N2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

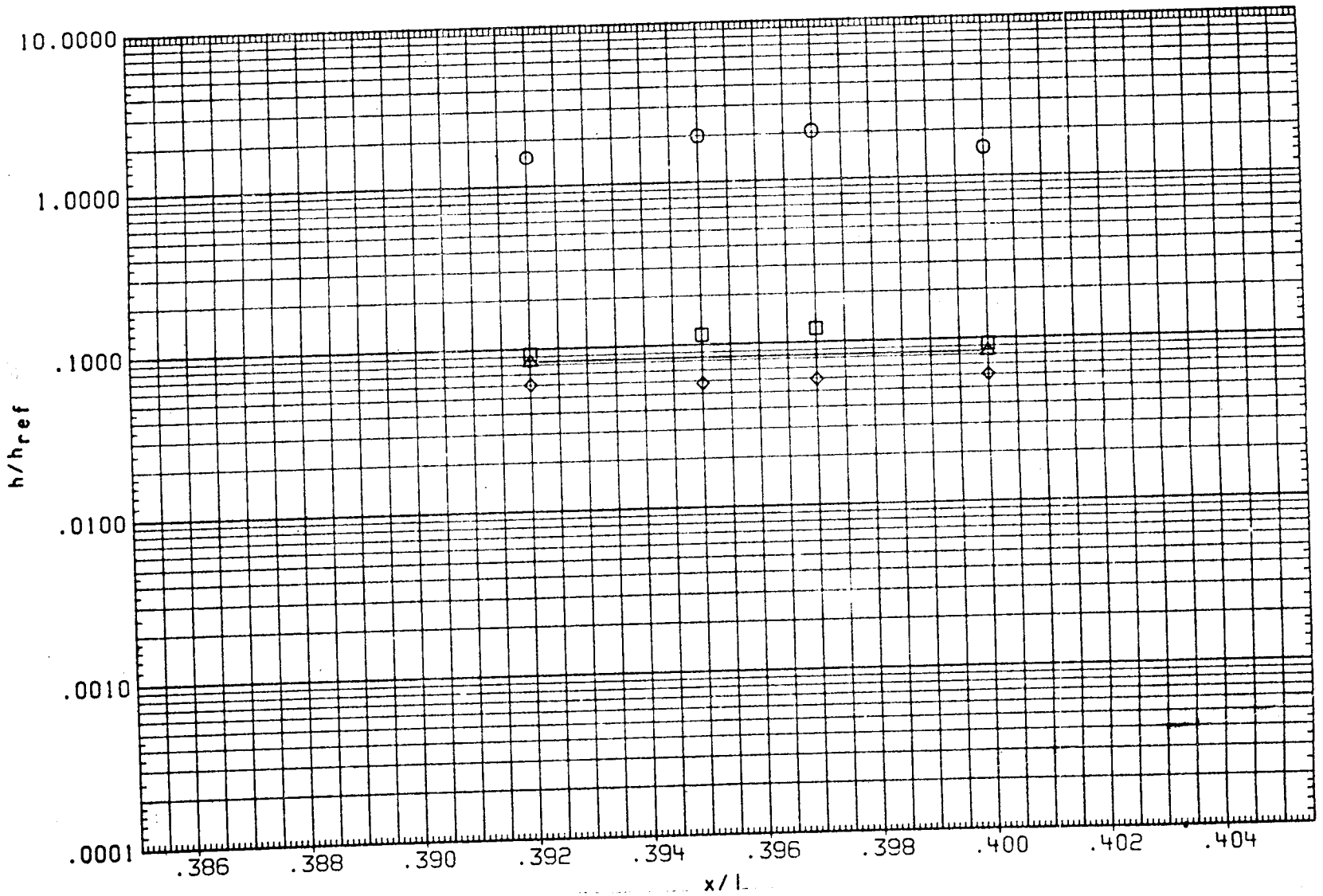

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

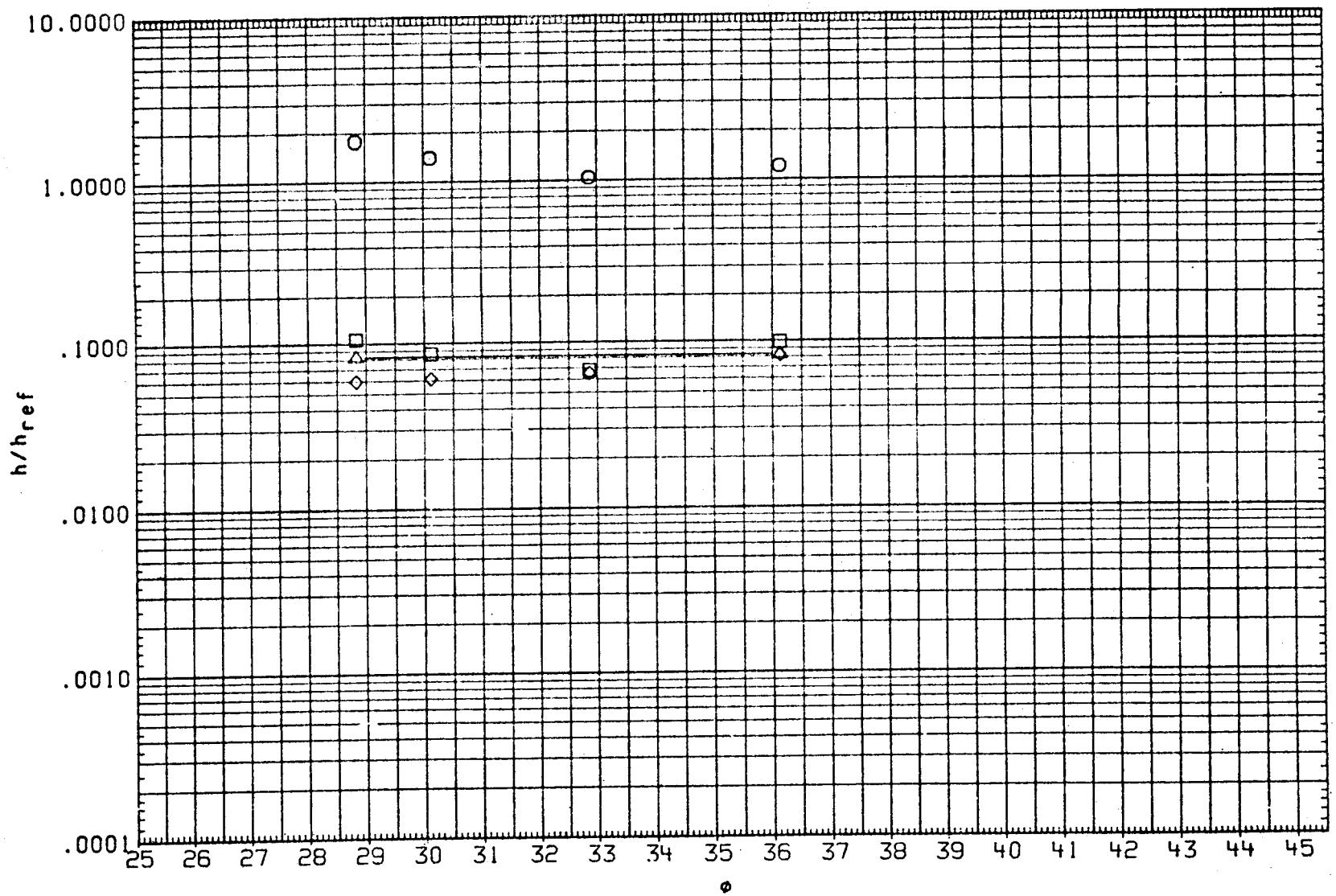

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .403 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

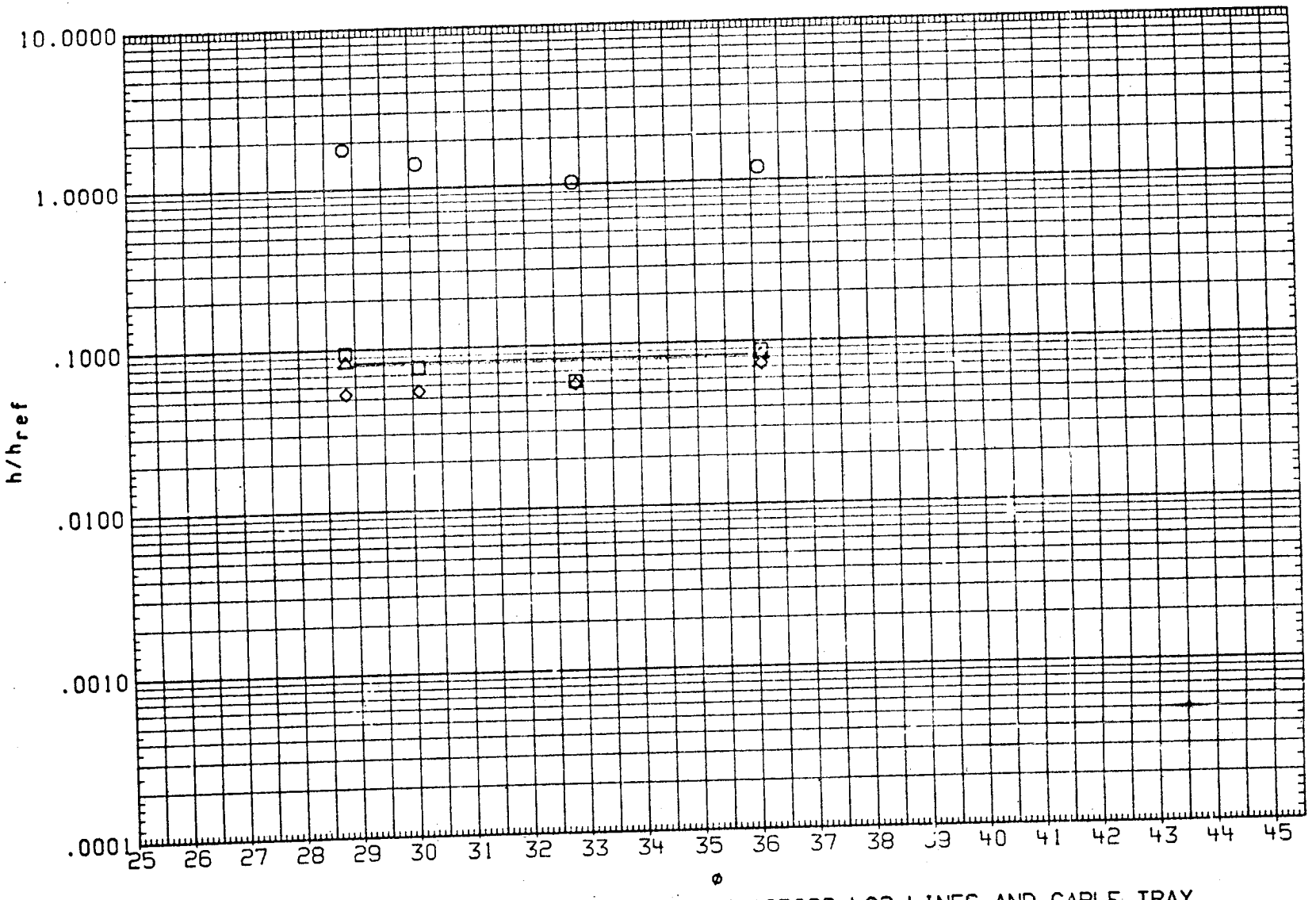

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 164

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

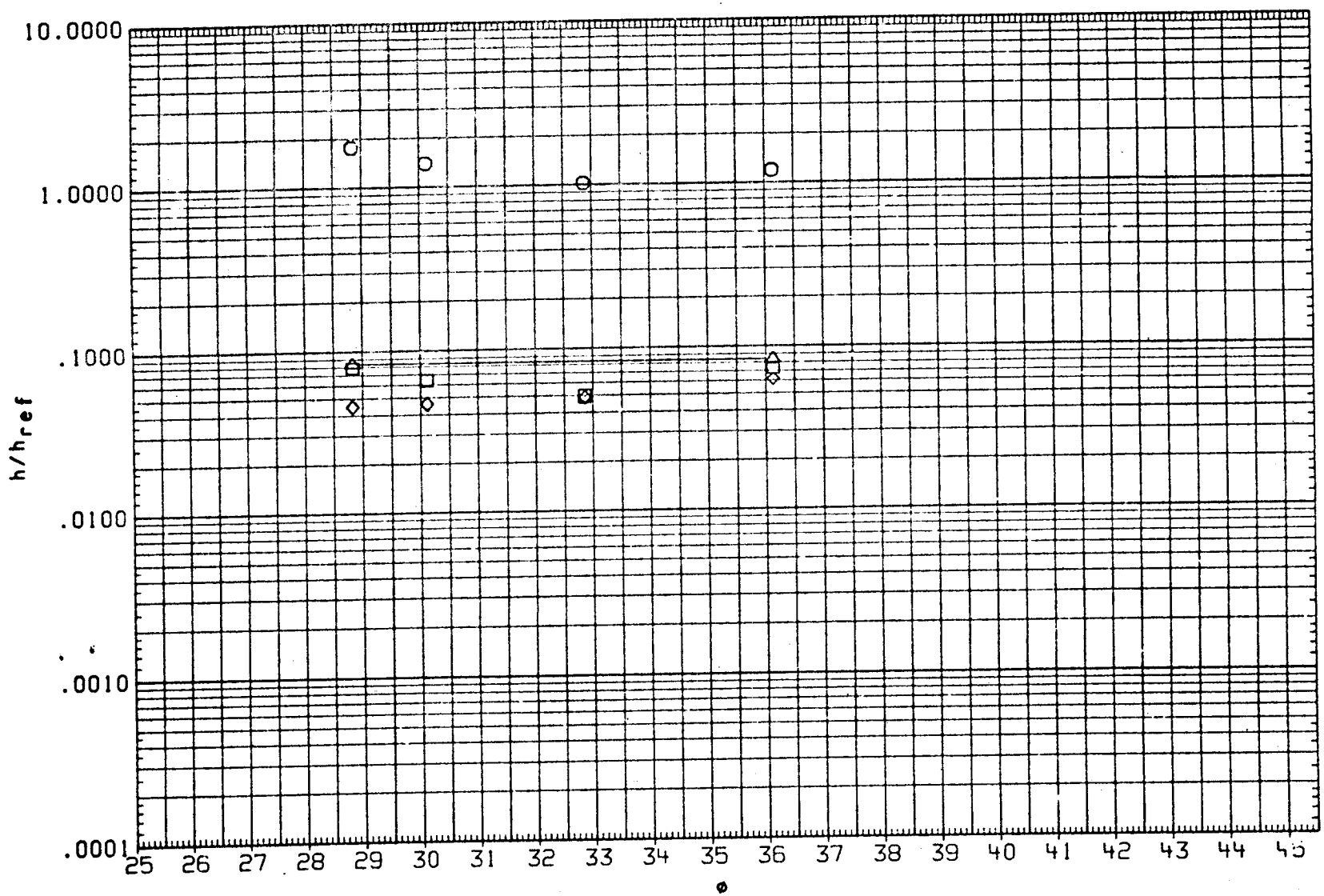

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 165

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

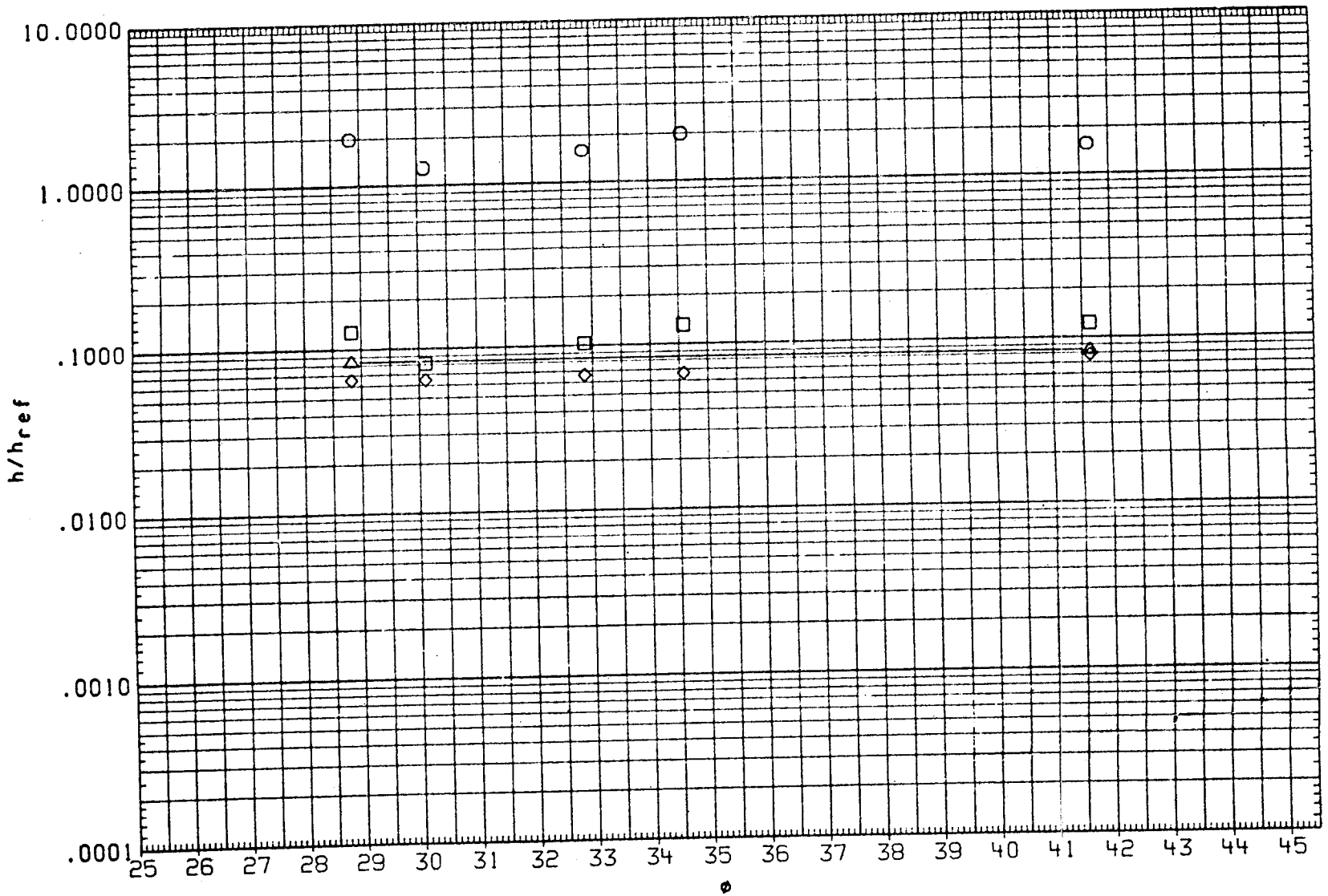

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 166

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

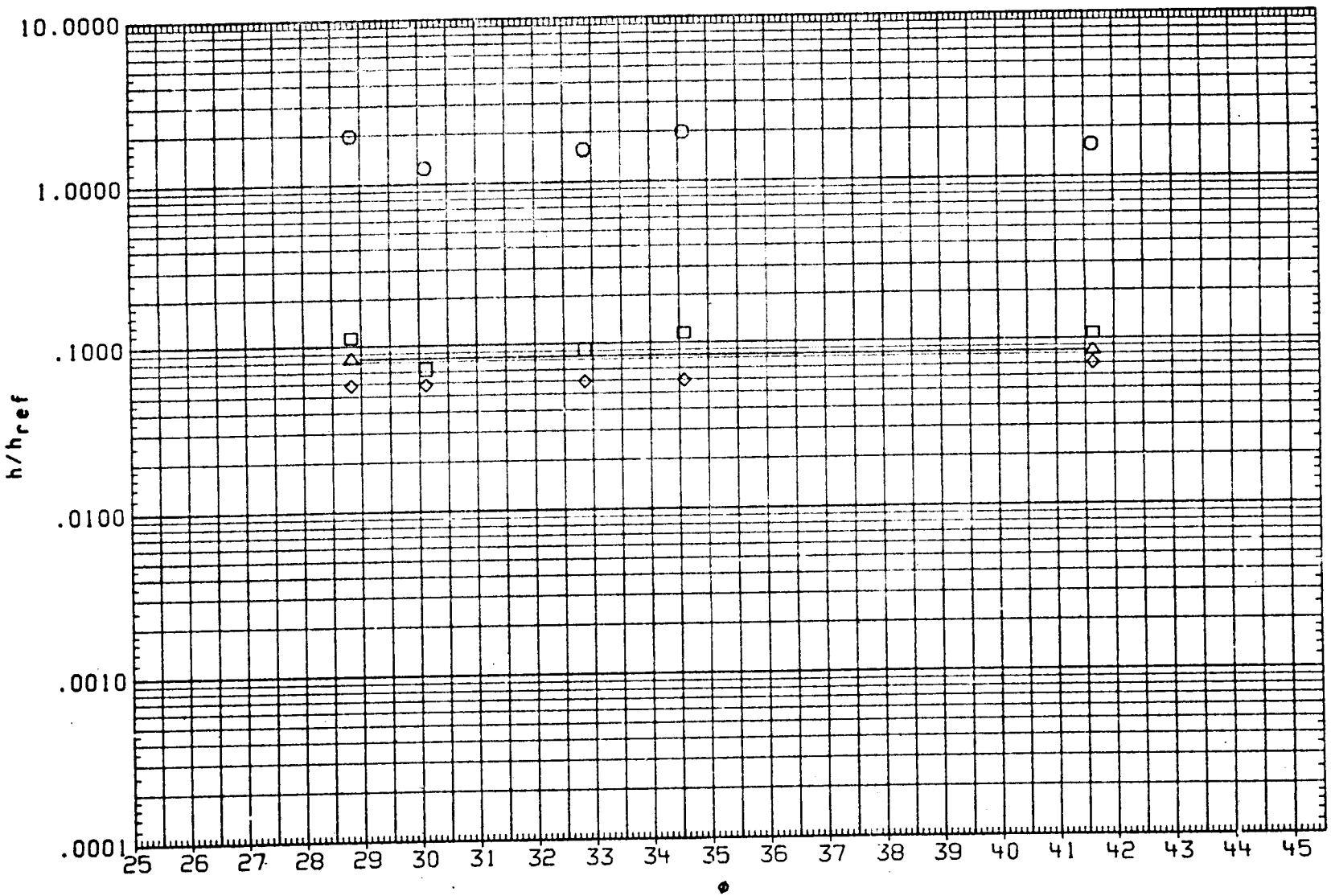

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 167

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

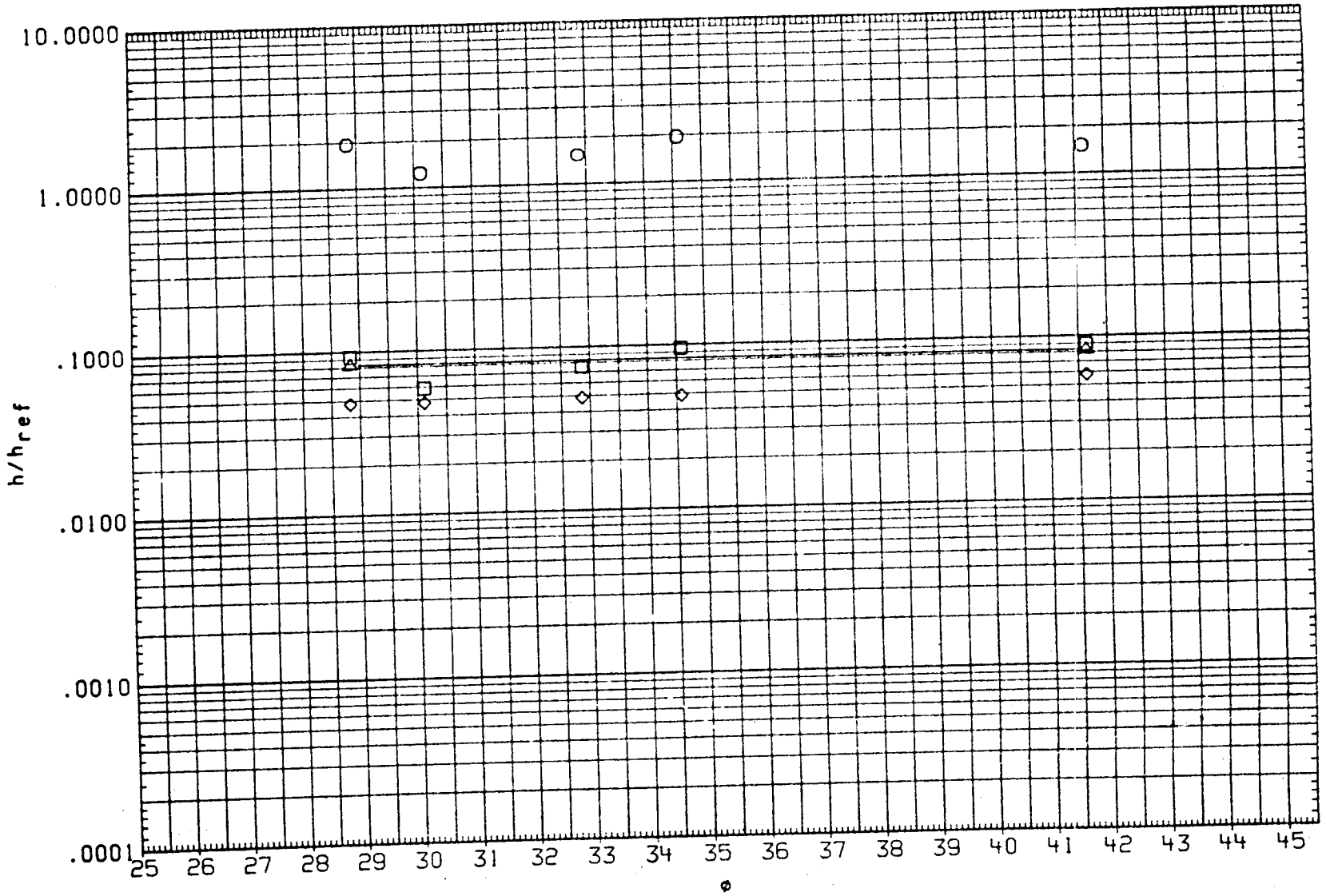

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 168

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

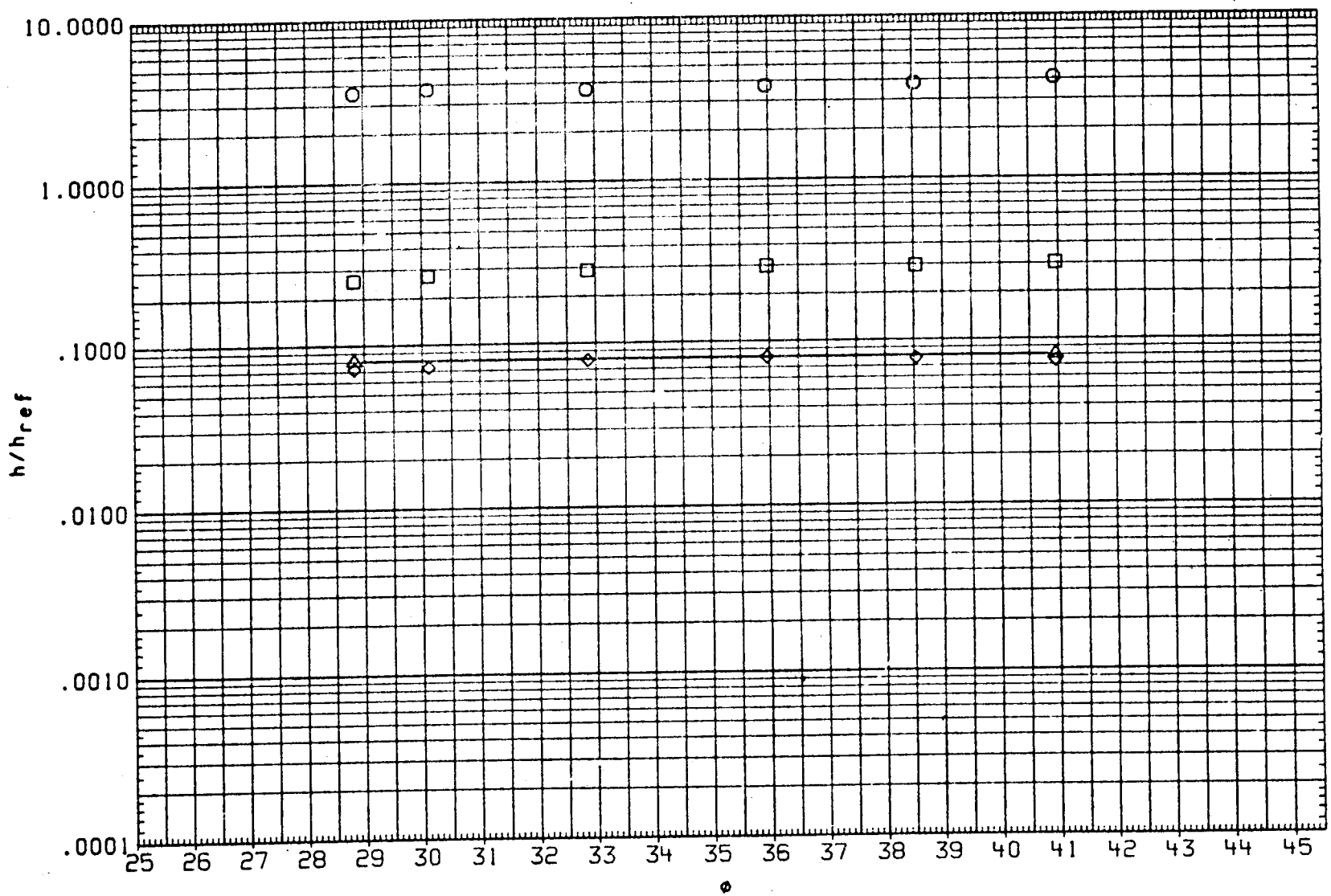

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .540 DATE 22 APR 78 PAGE 169

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

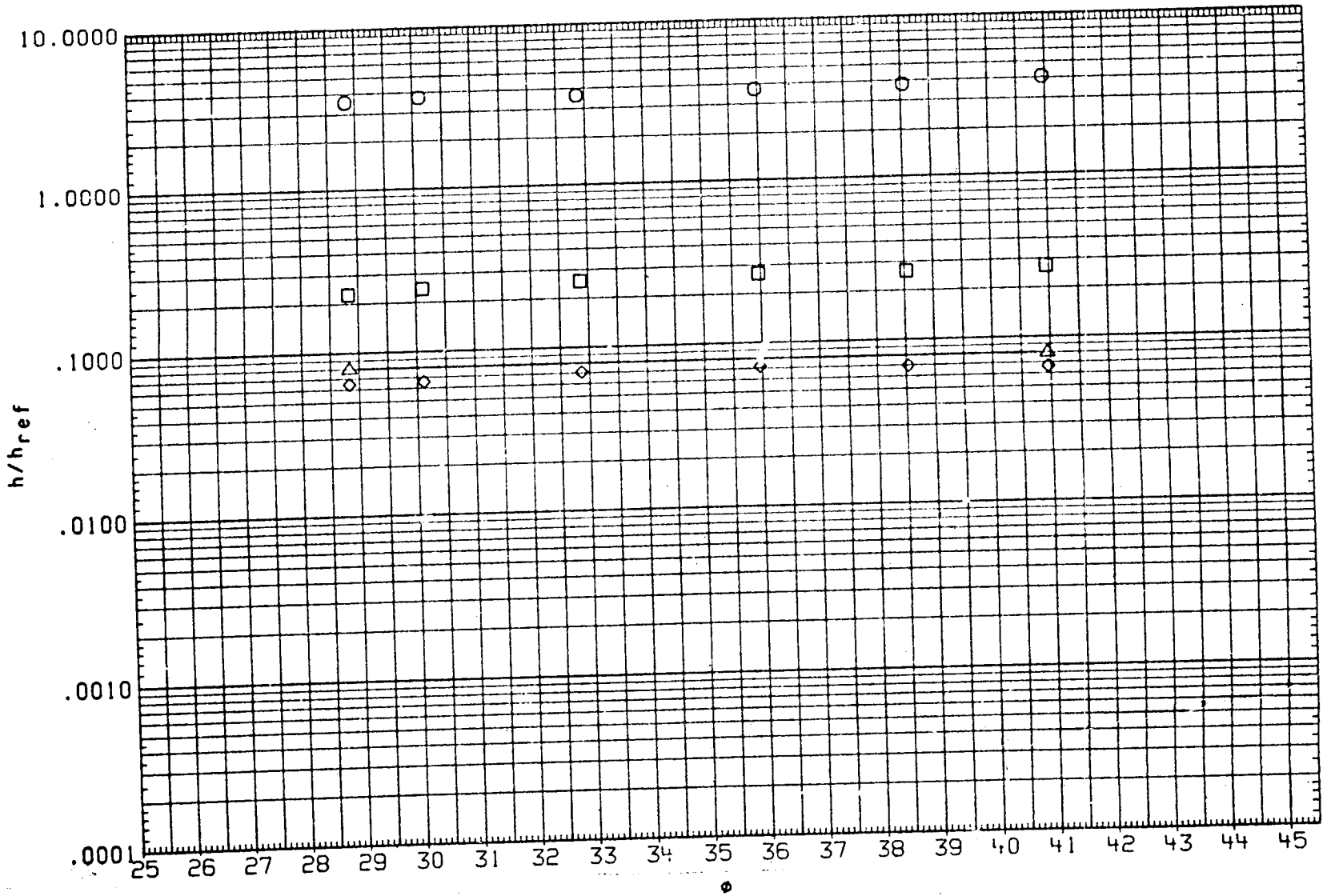

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .540 DATE 22 APR 78 PAGE 170

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

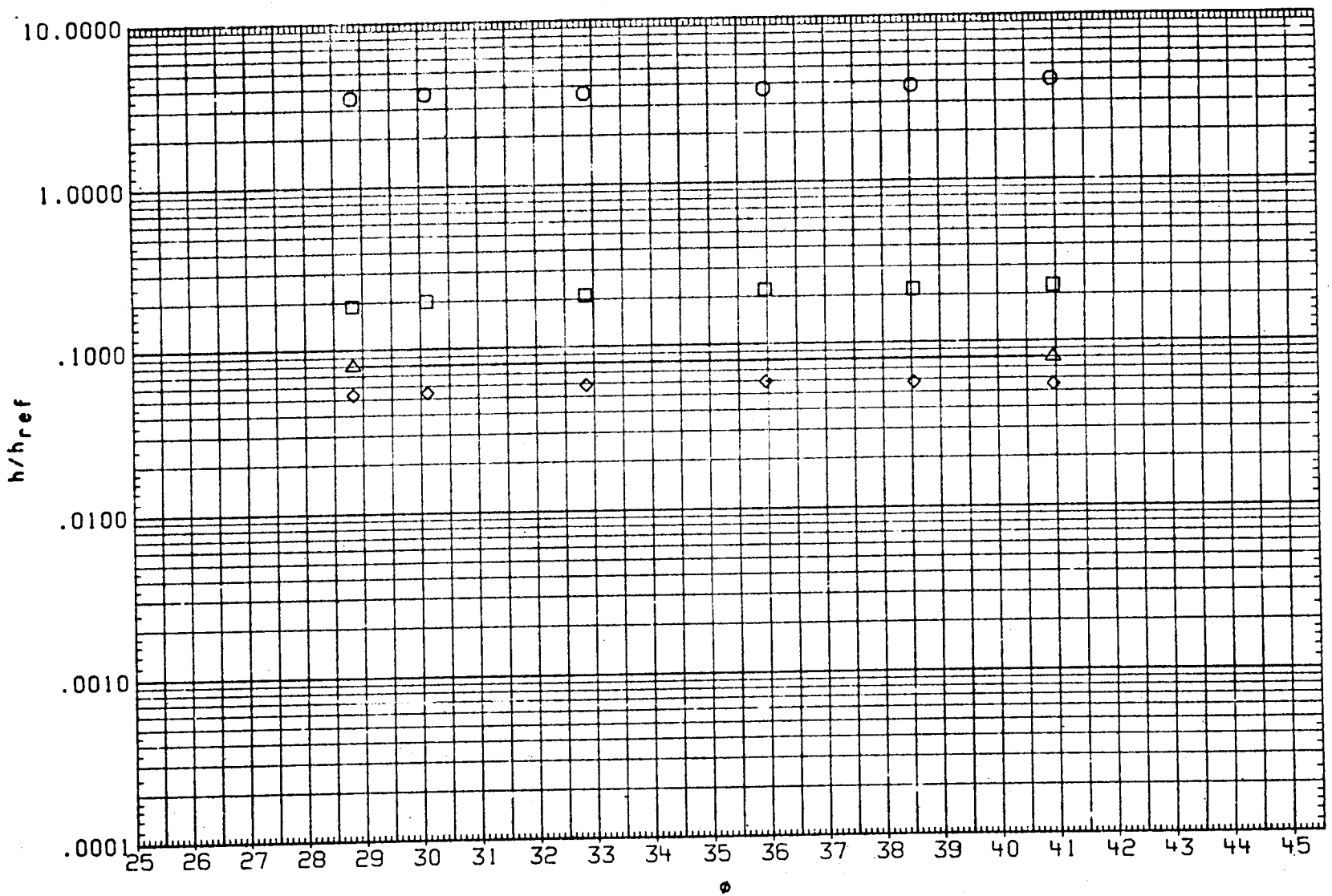

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 171

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20003)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20006)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

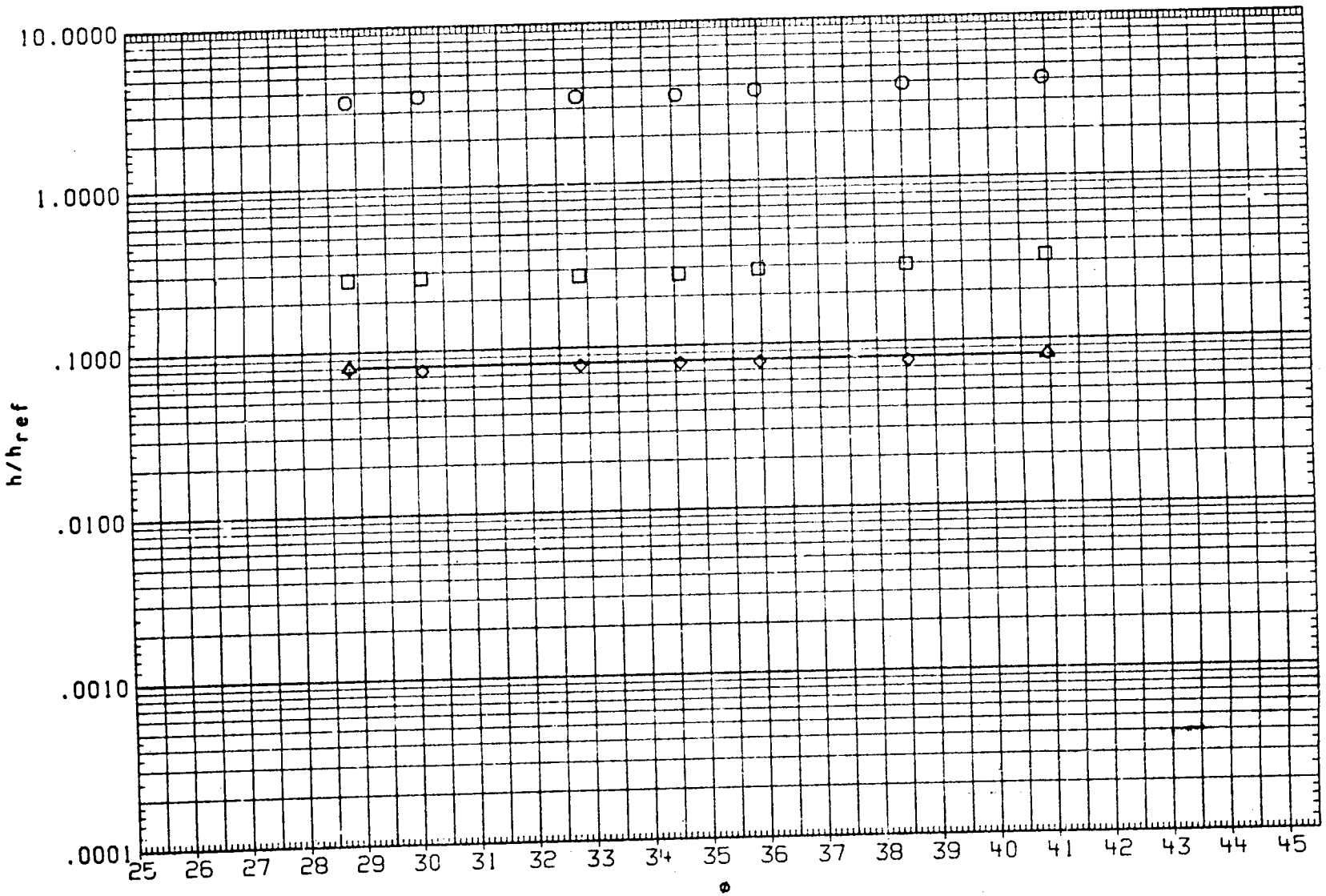

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 172

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001D)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

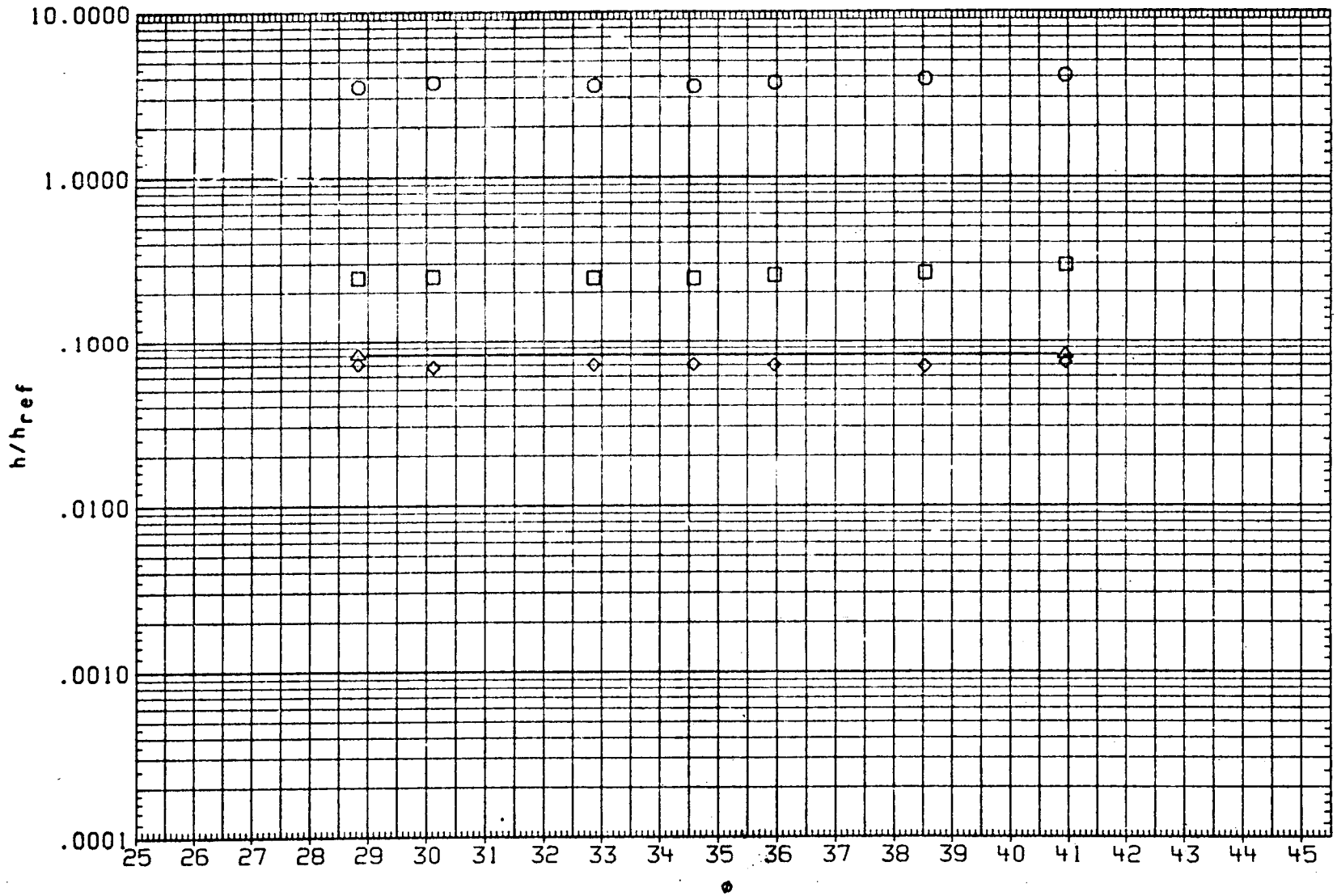

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .542 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

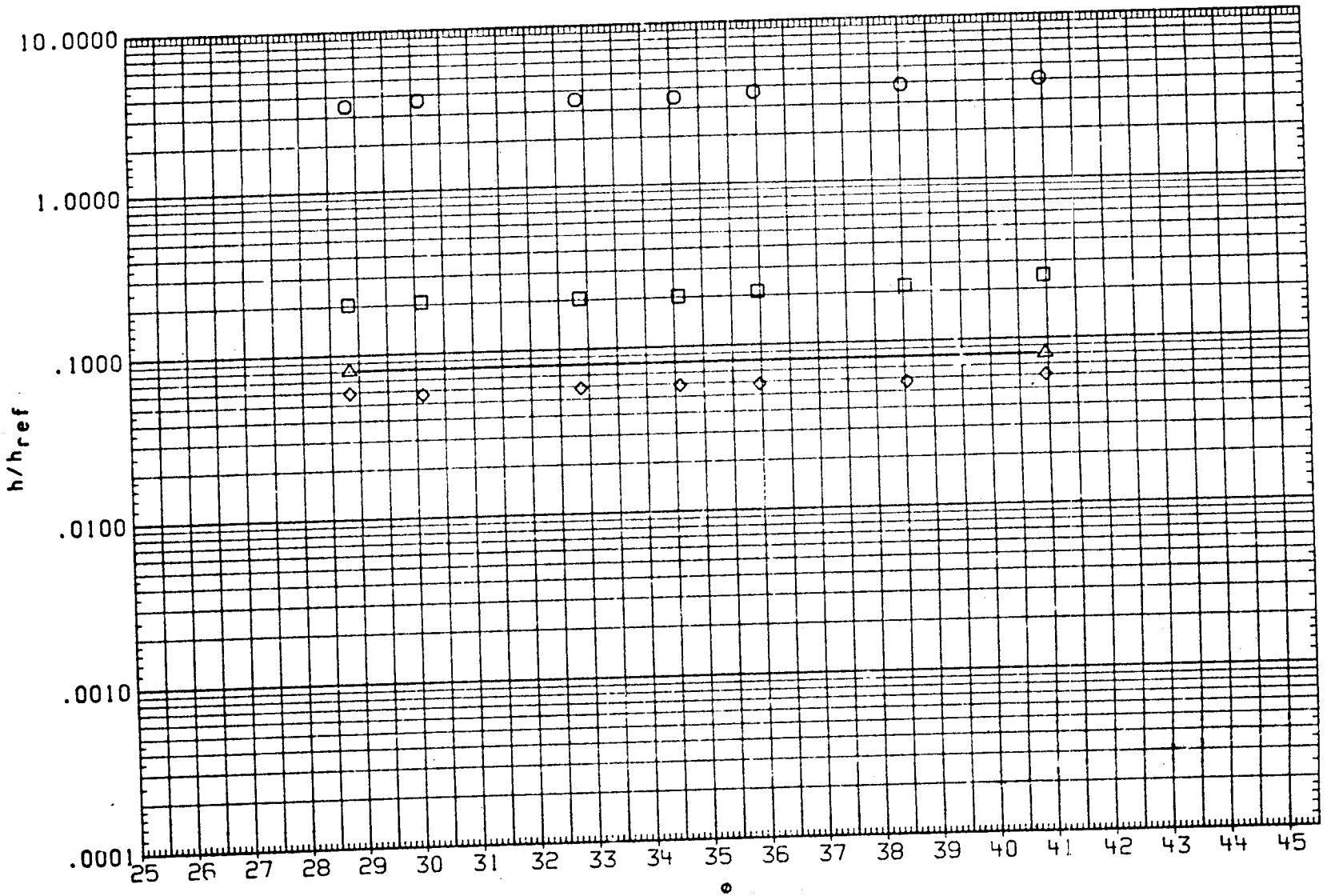

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 174

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2C+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

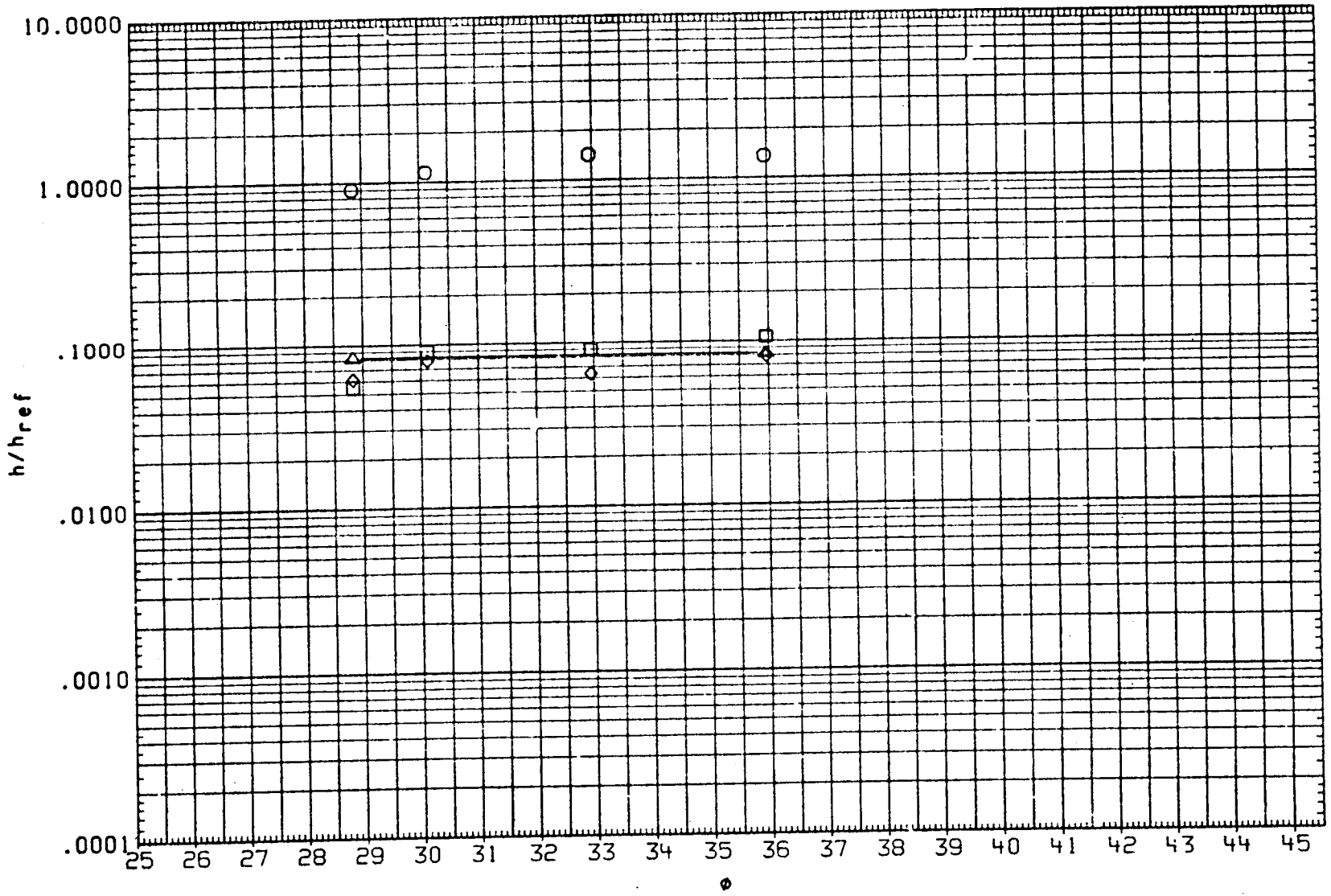

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .441 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

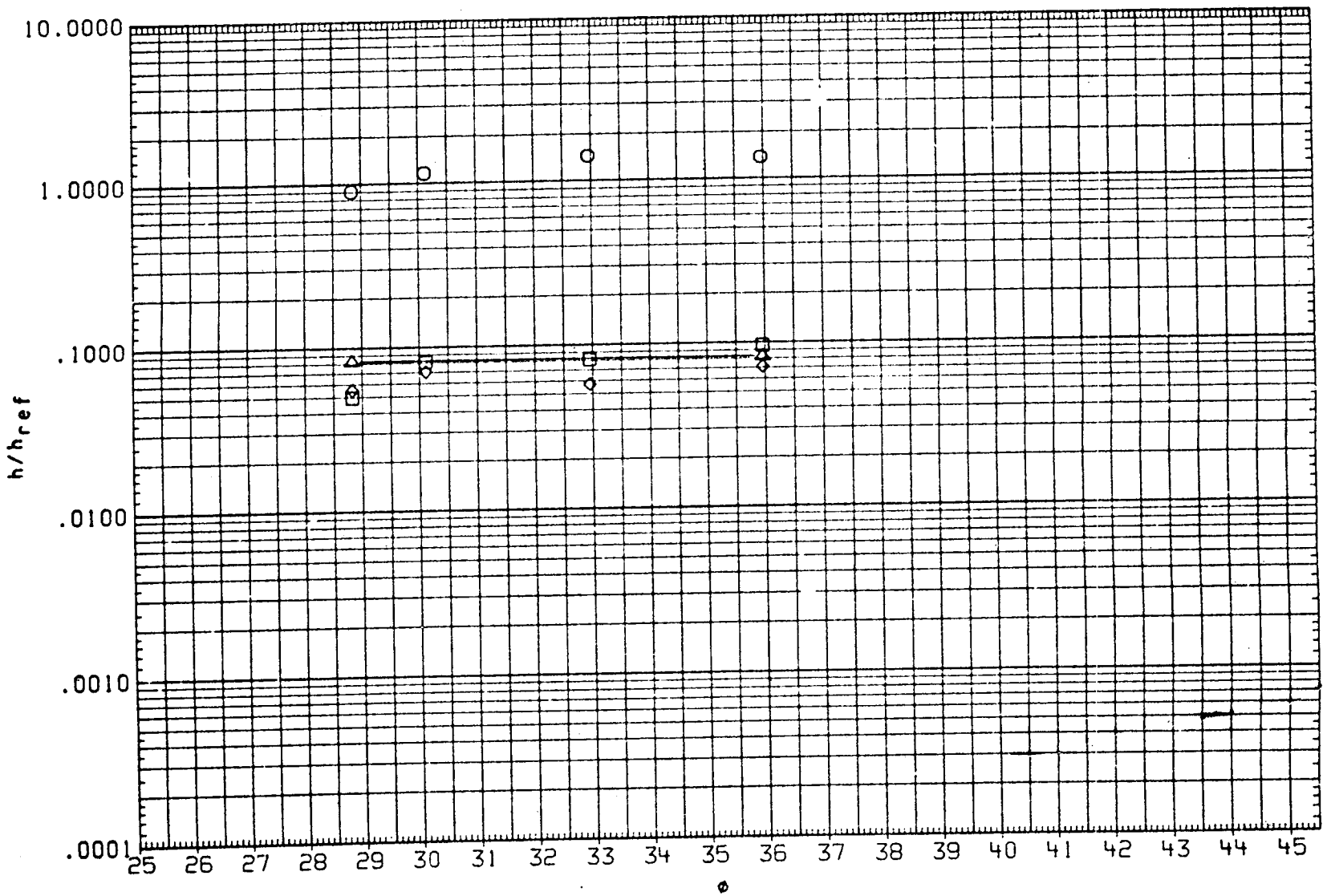

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .441 DATE 22 APR 78 PAGE 176

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

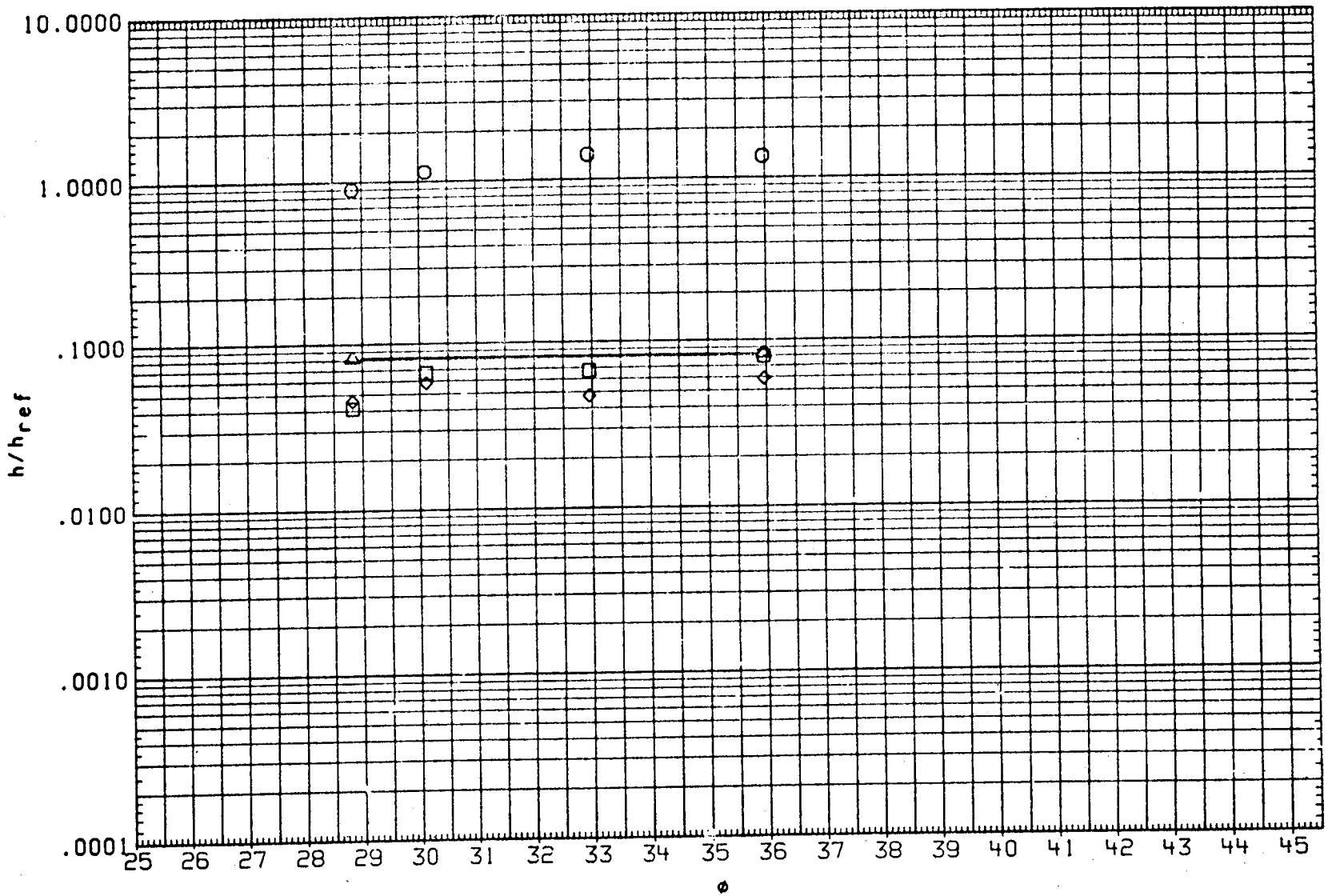

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .441 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

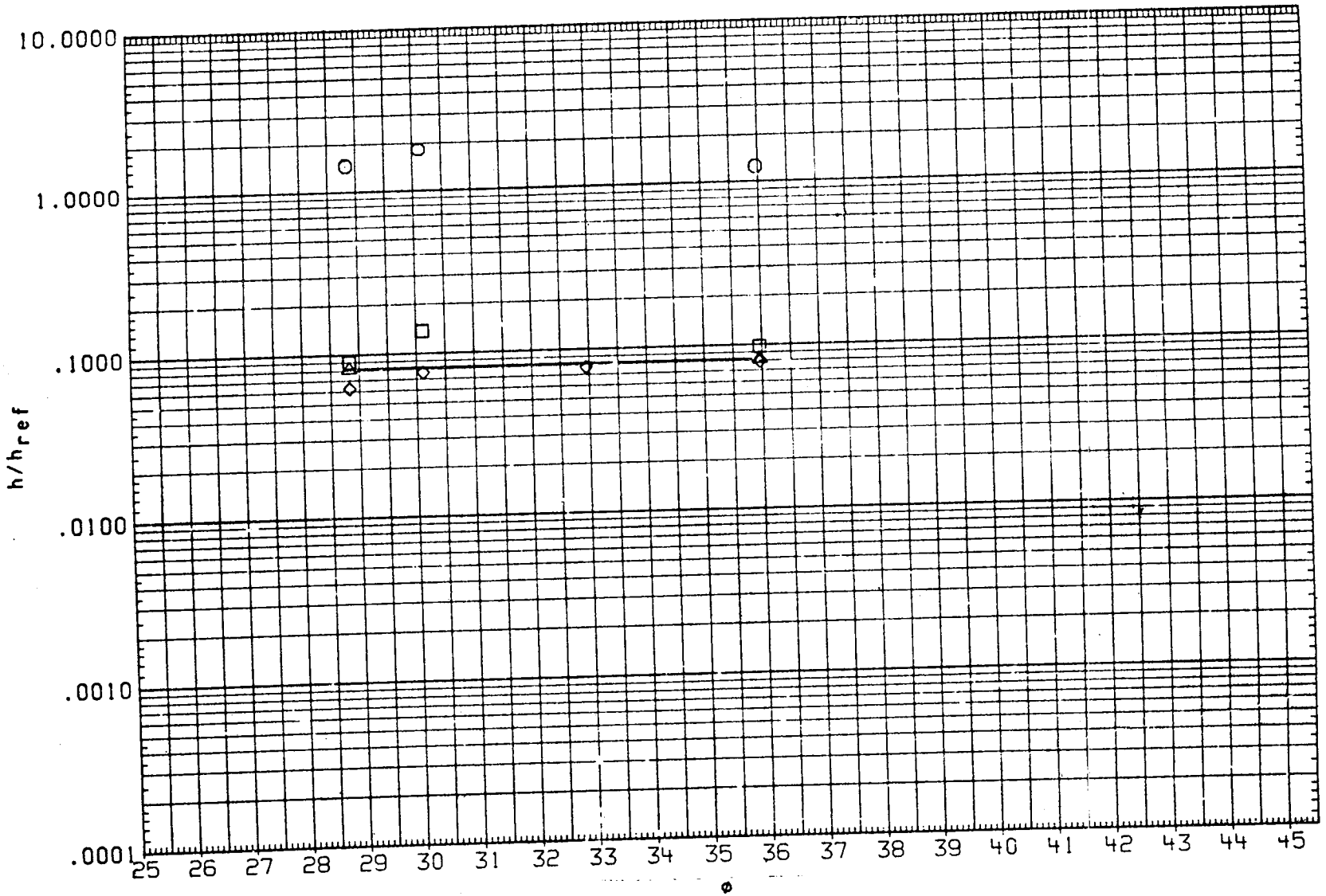

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 178

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

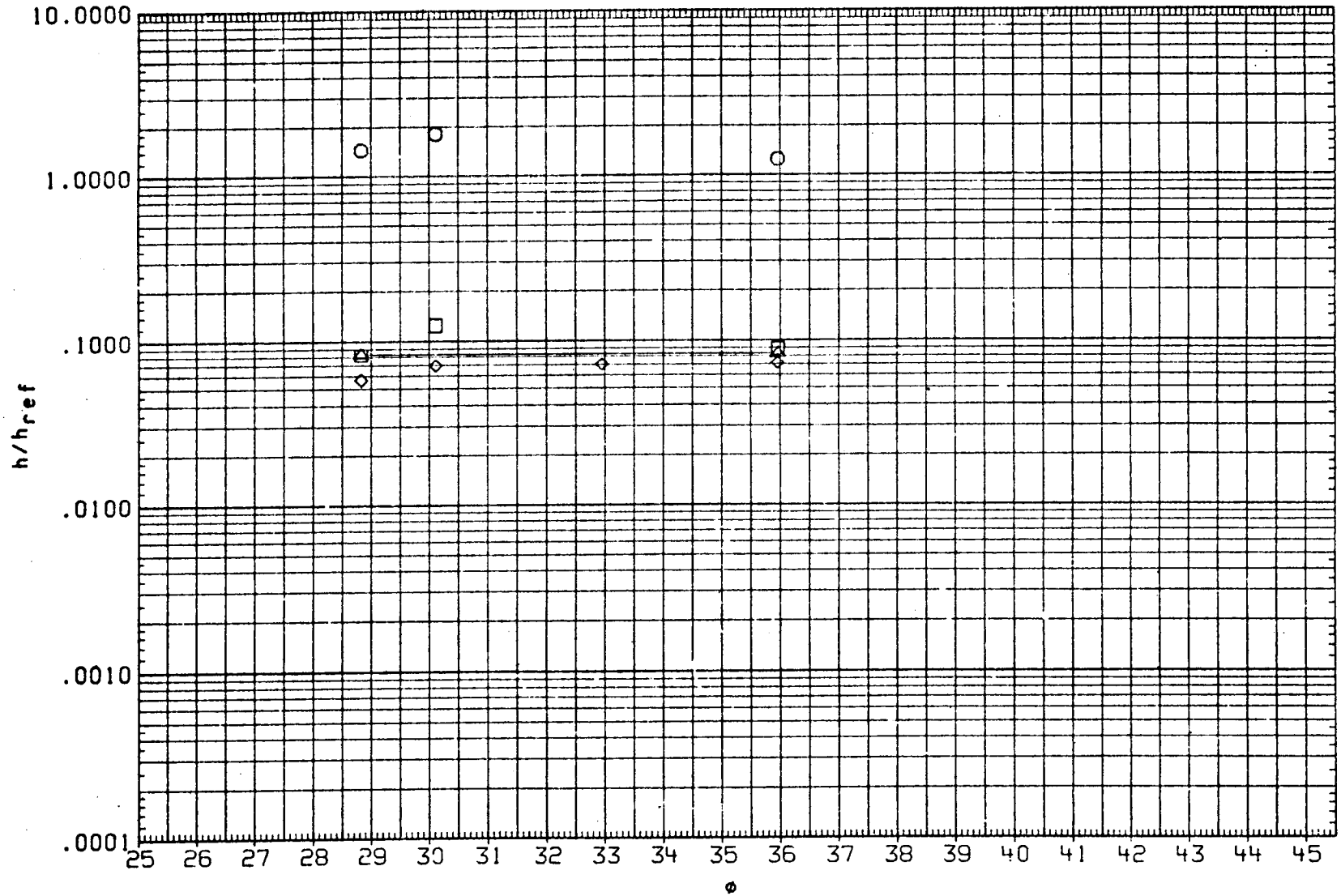

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .443 DATE 22 APR 78 PAGE 179

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

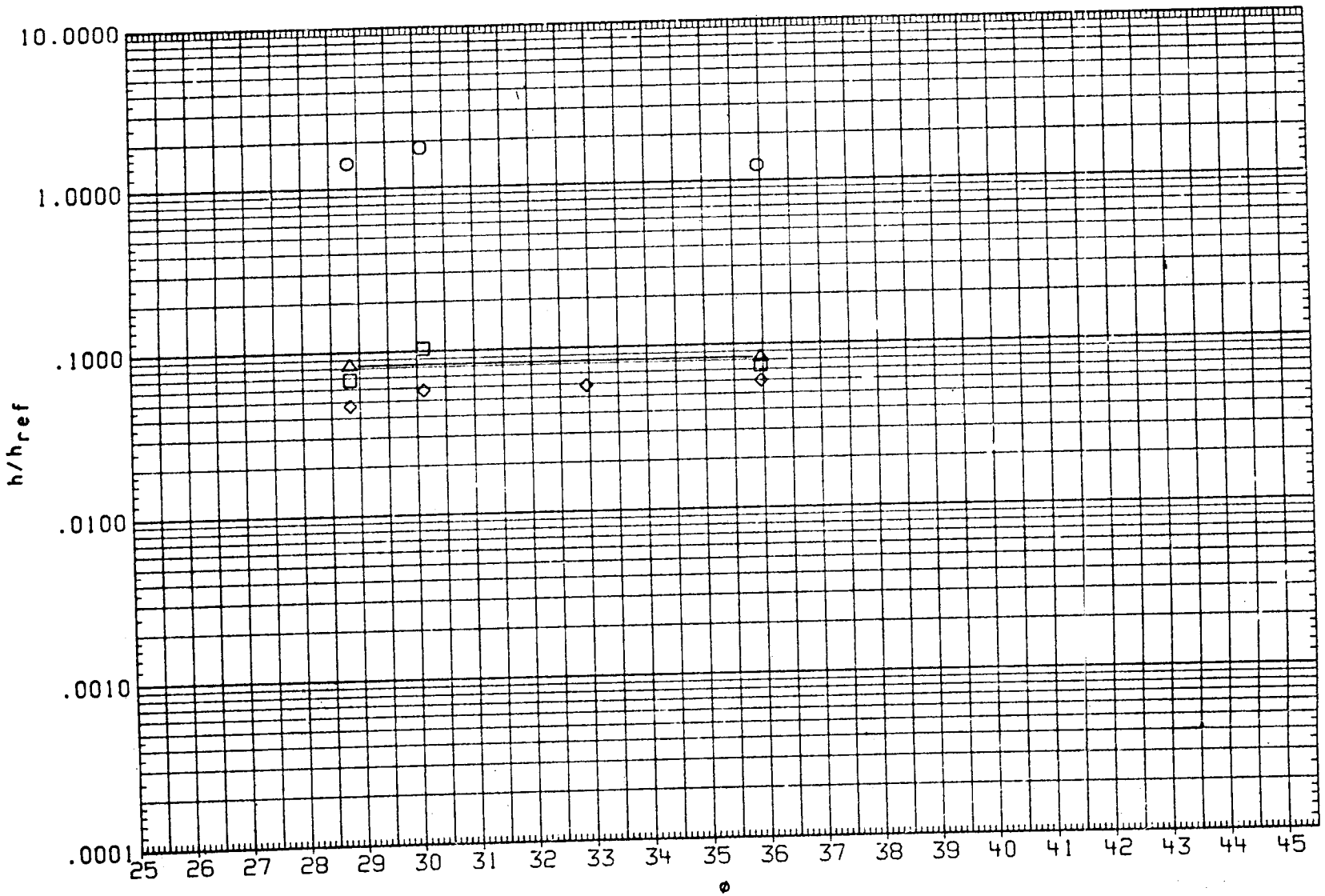

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .443 DATE 22 APR 78 PAGE 180

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

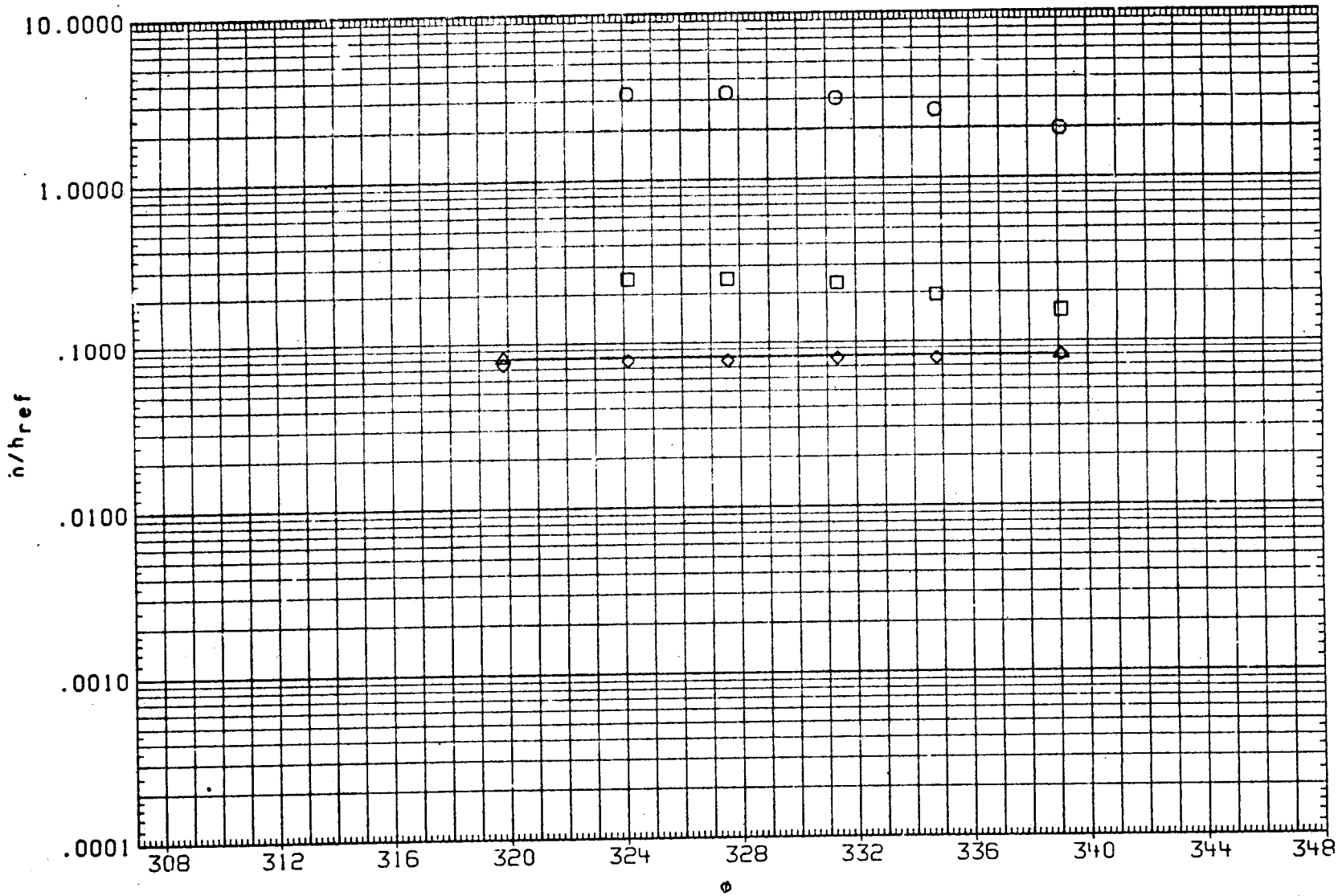

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .571 DATE 22 APR 78 PAGE 181

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001O)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

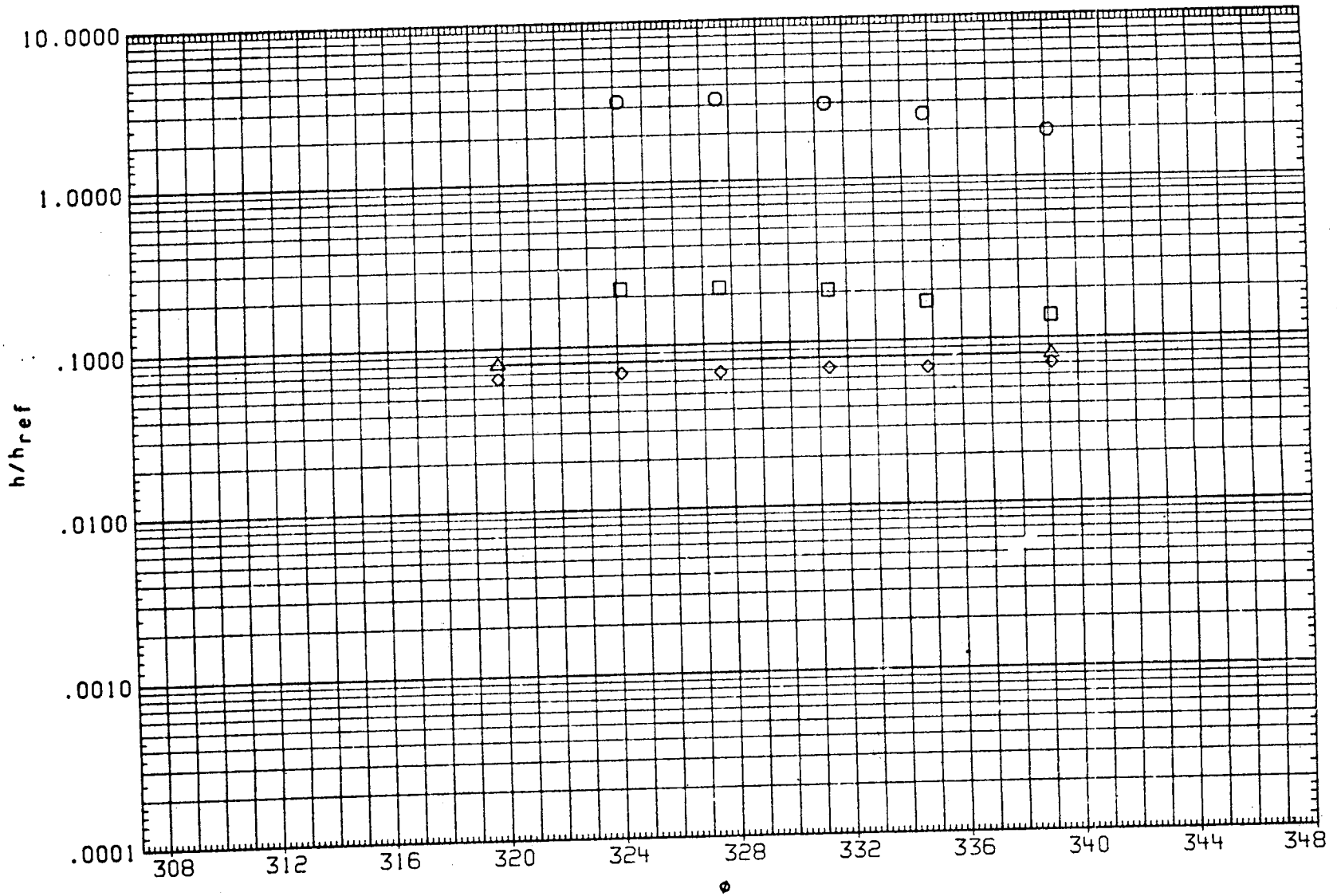

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 182

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20008)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20008)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

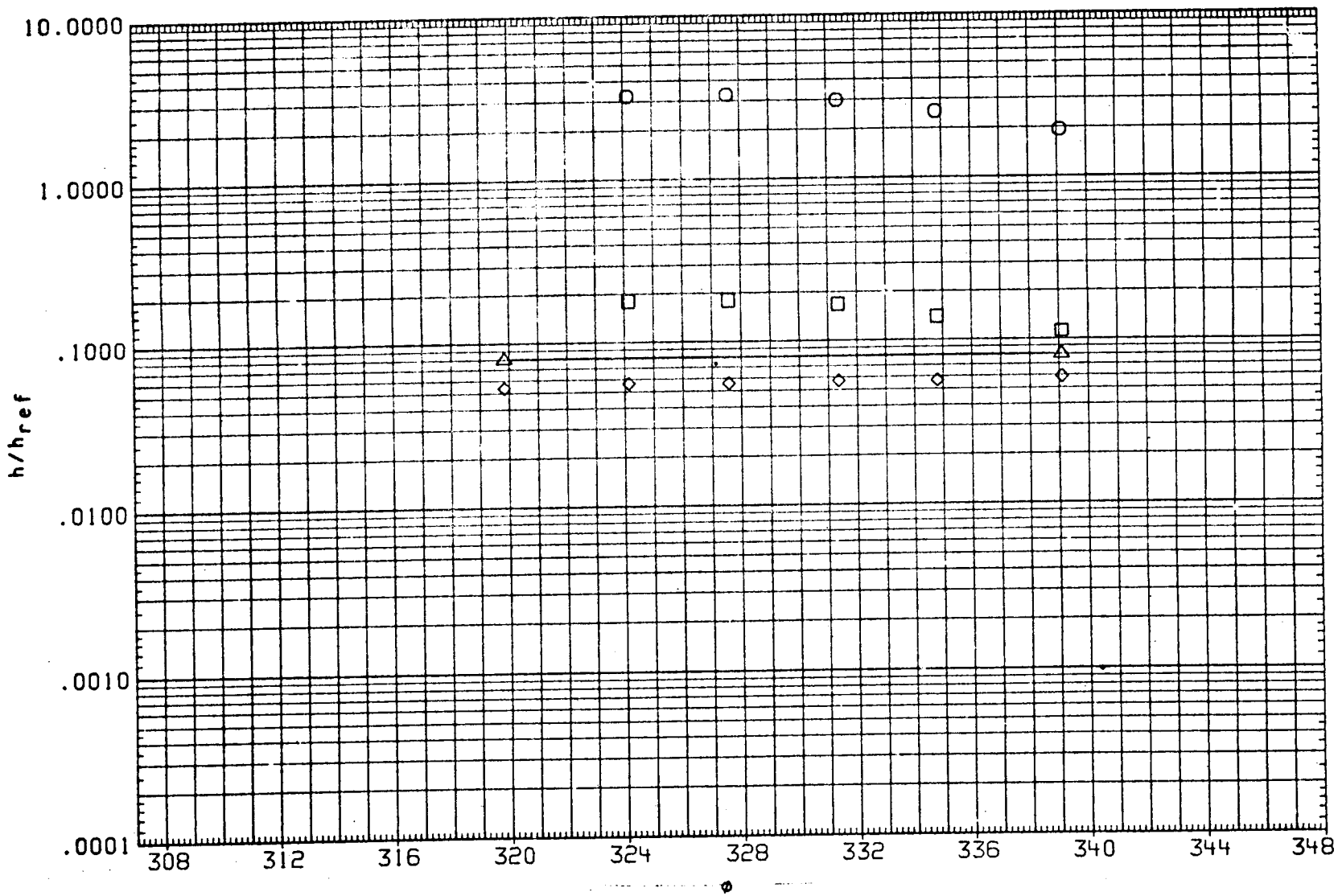

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

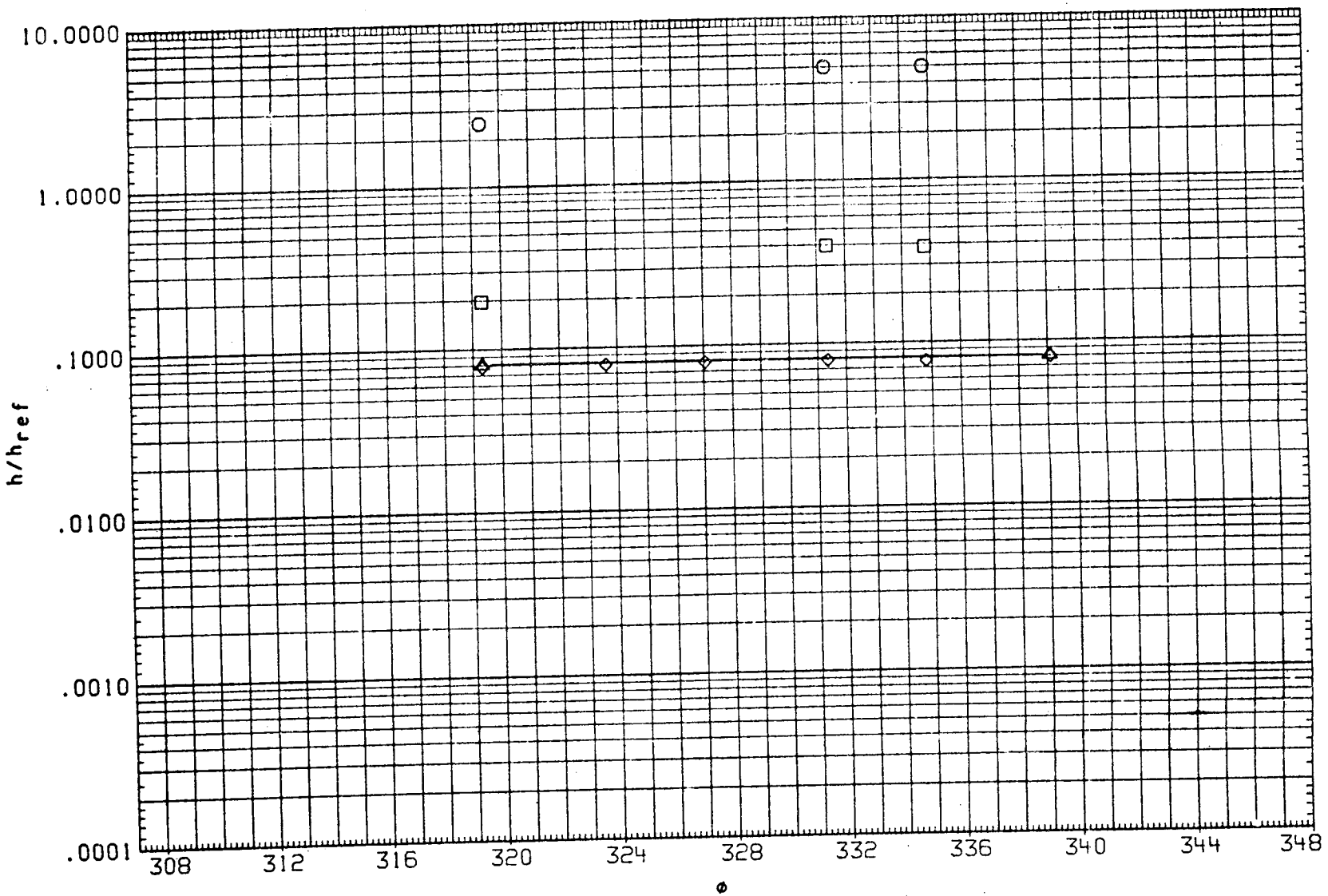

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 184

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

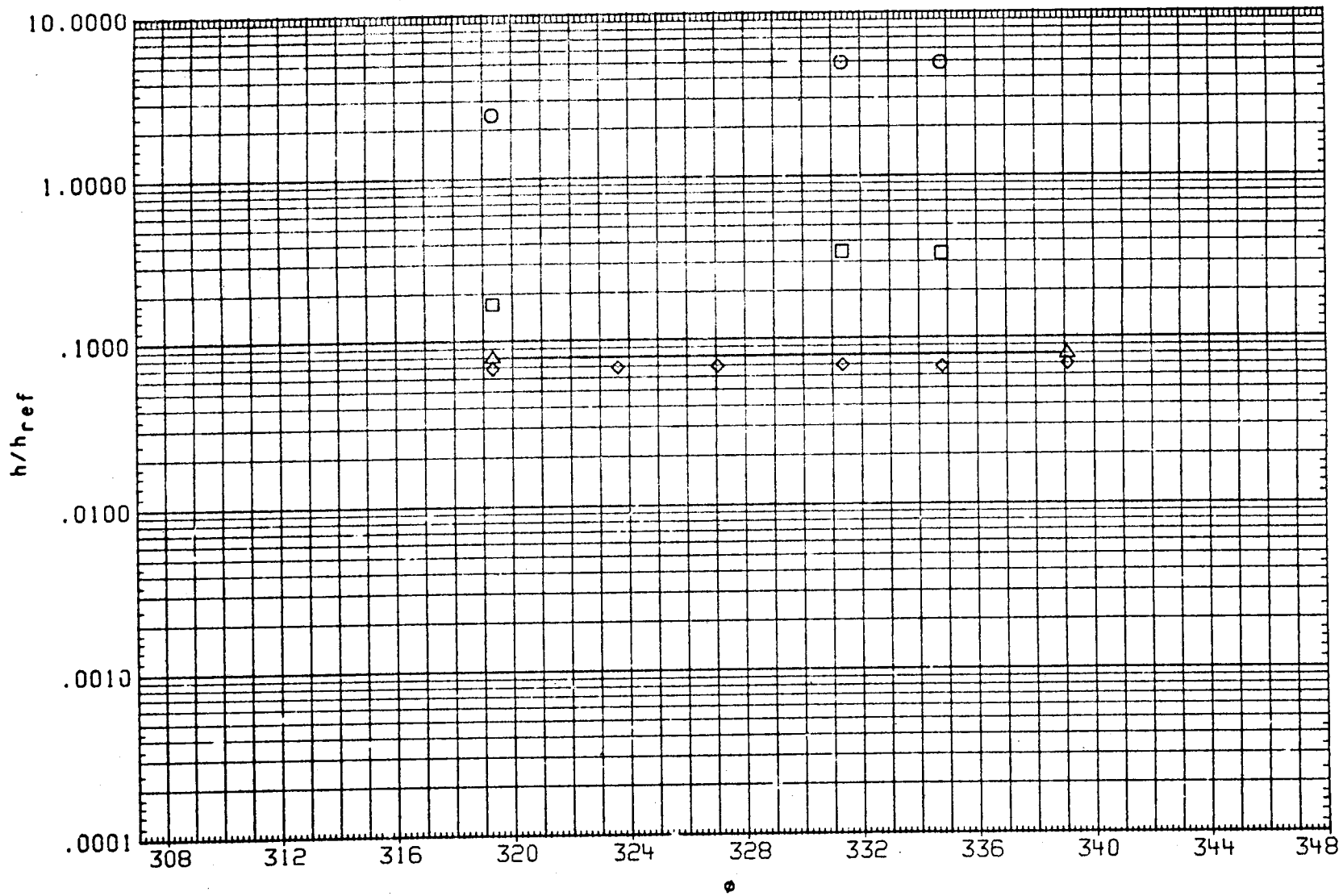

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 185

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

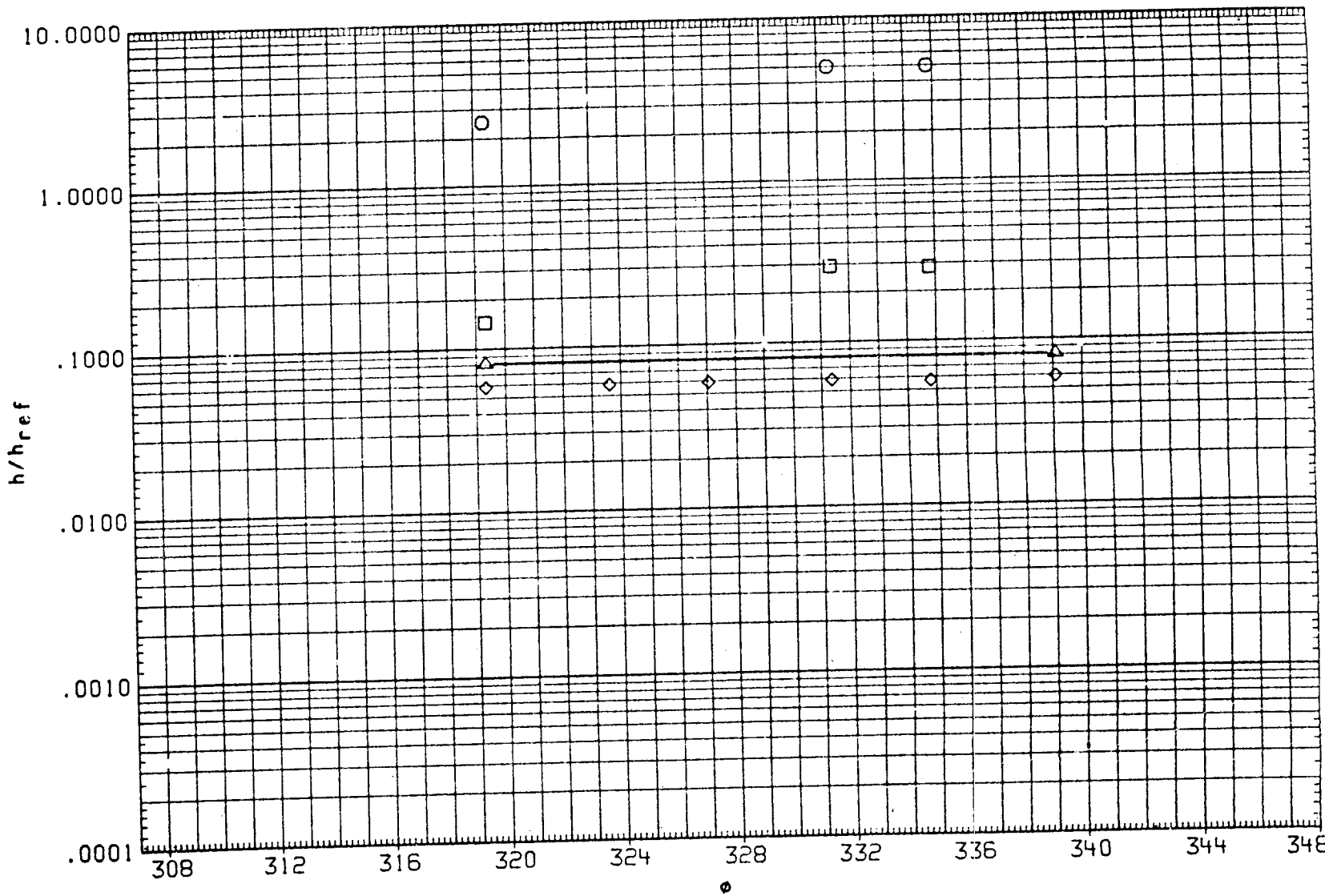

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 186

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

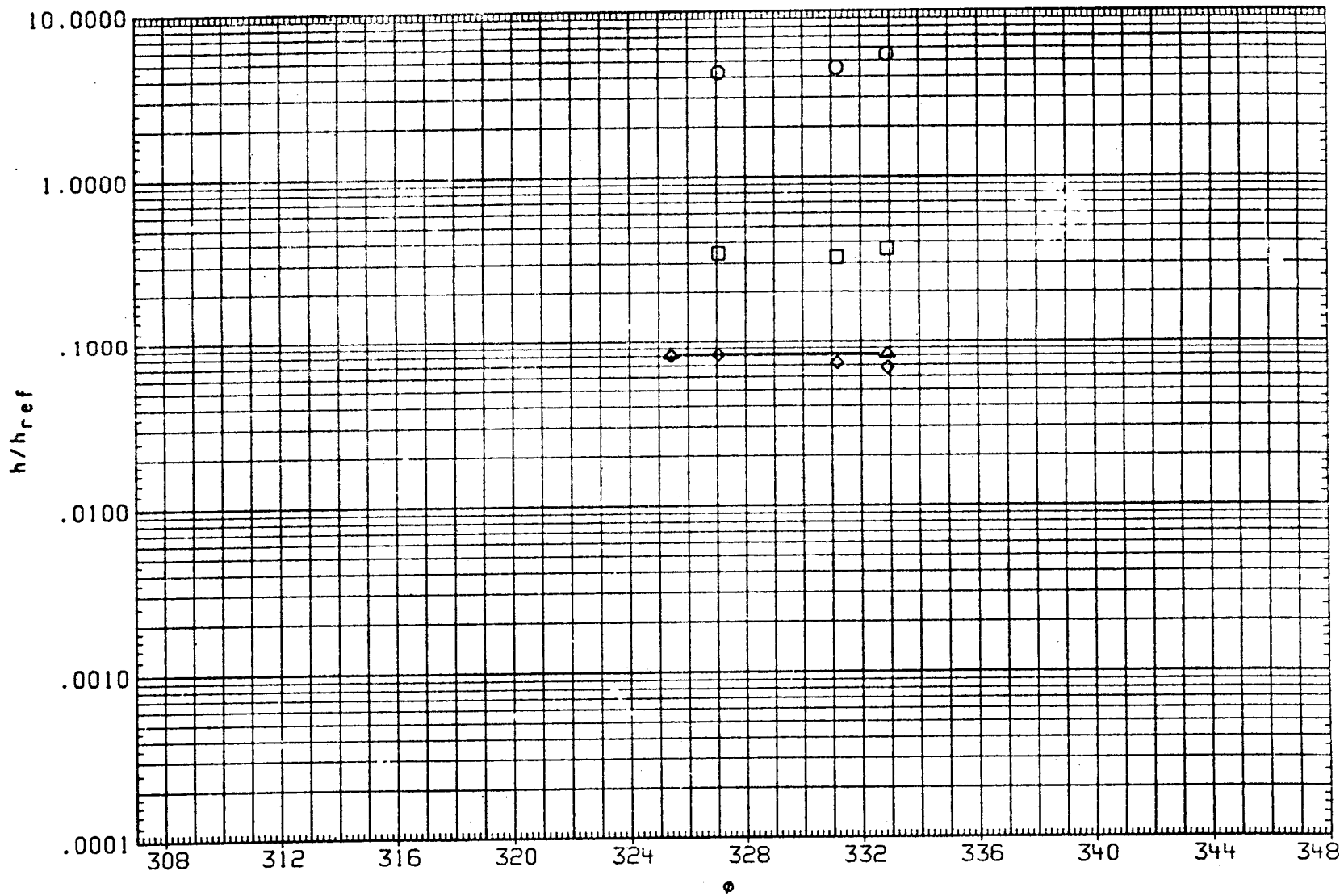

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .482 DATE 22 APR 78 PAGE 187

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

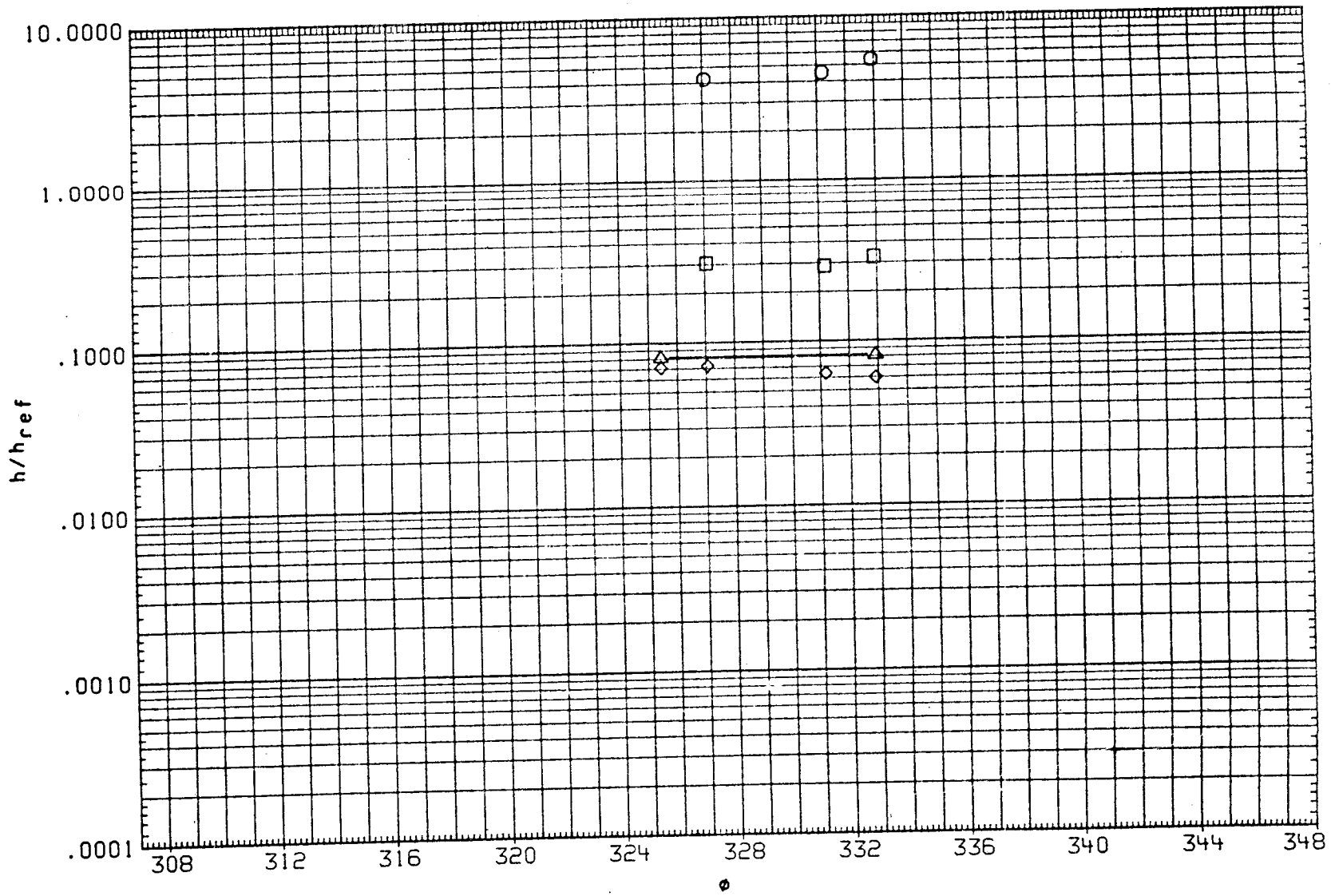

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 188

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

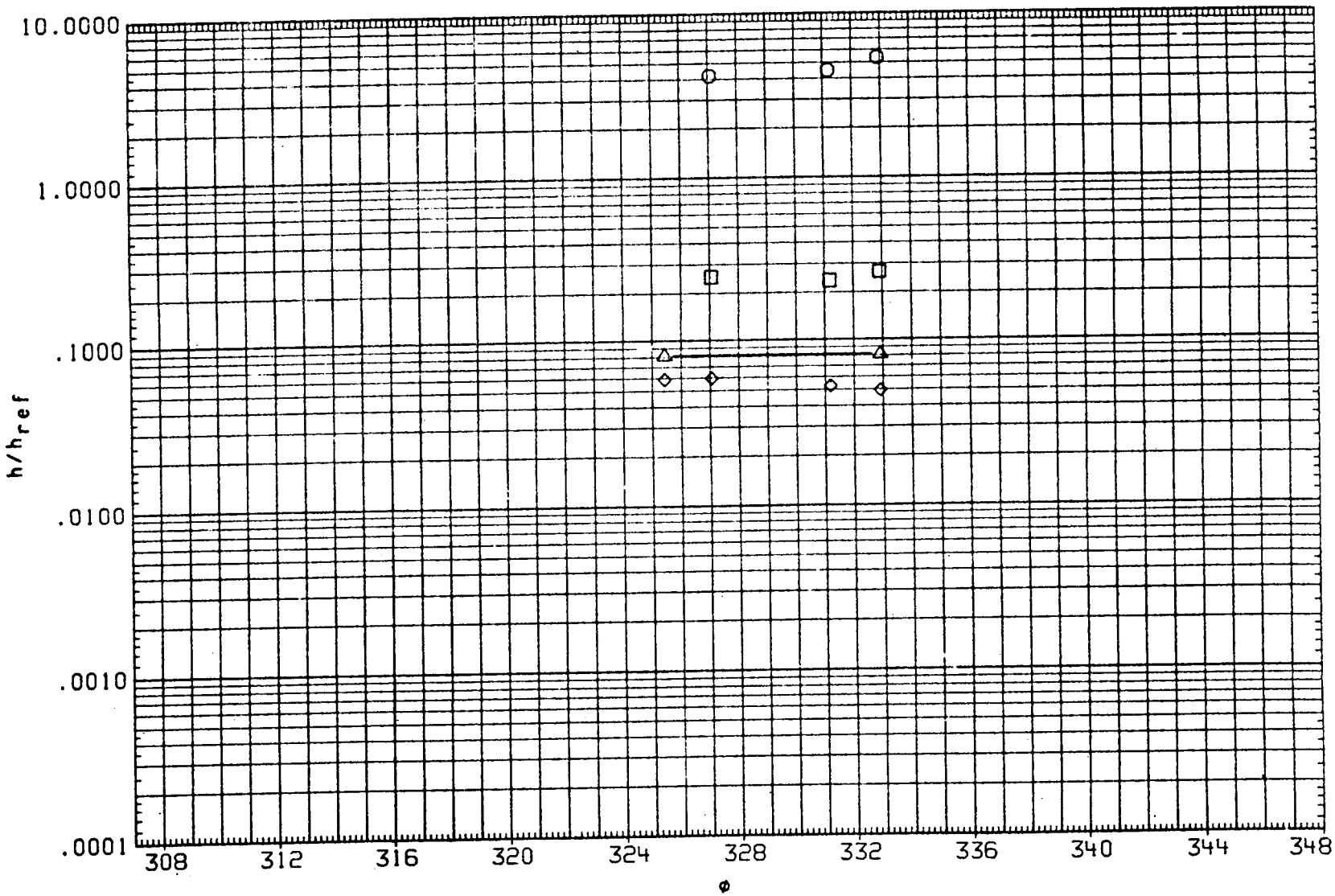

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78 PAGE 185

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20010)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

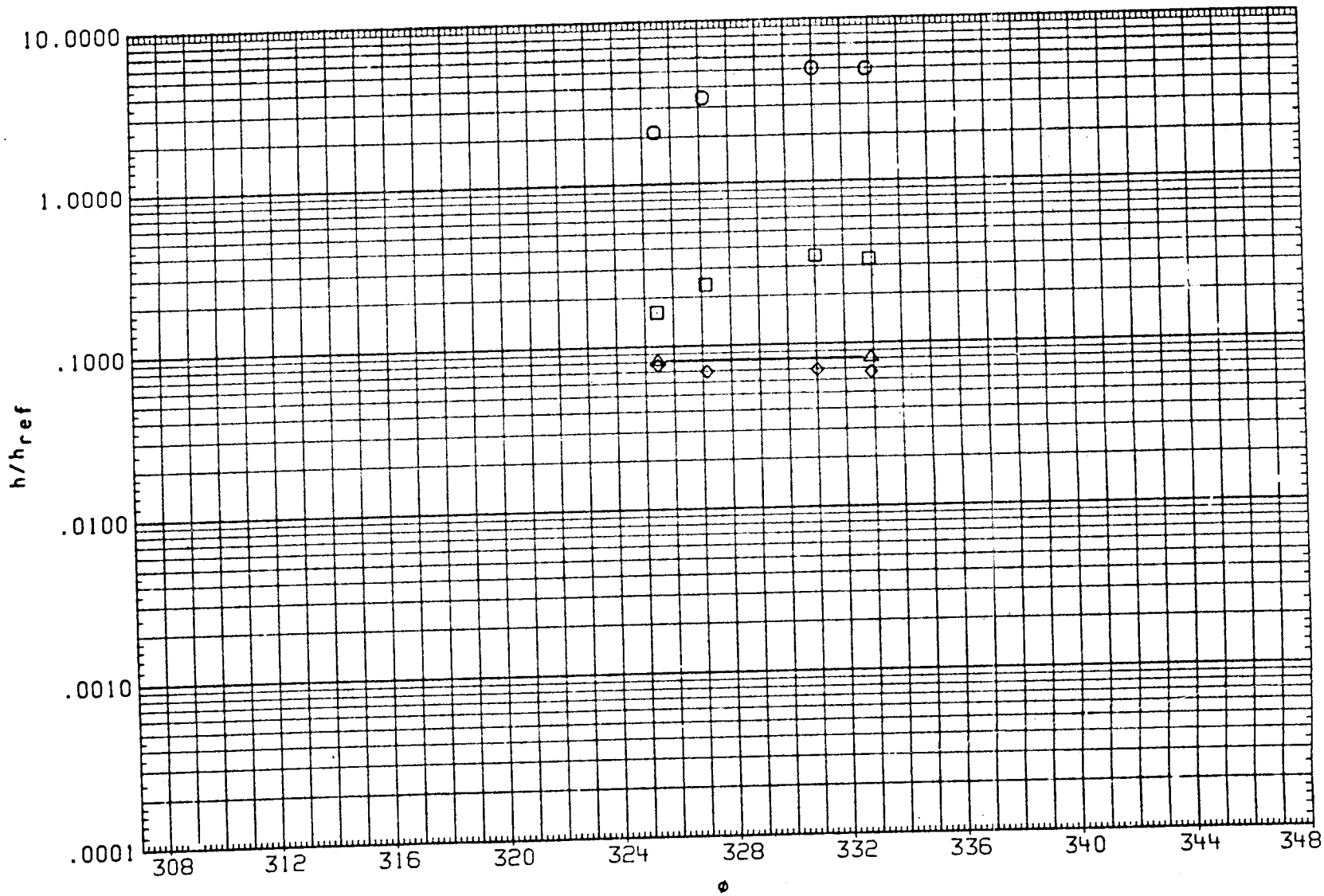

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 190

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S2000B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M2000B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B2001O)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

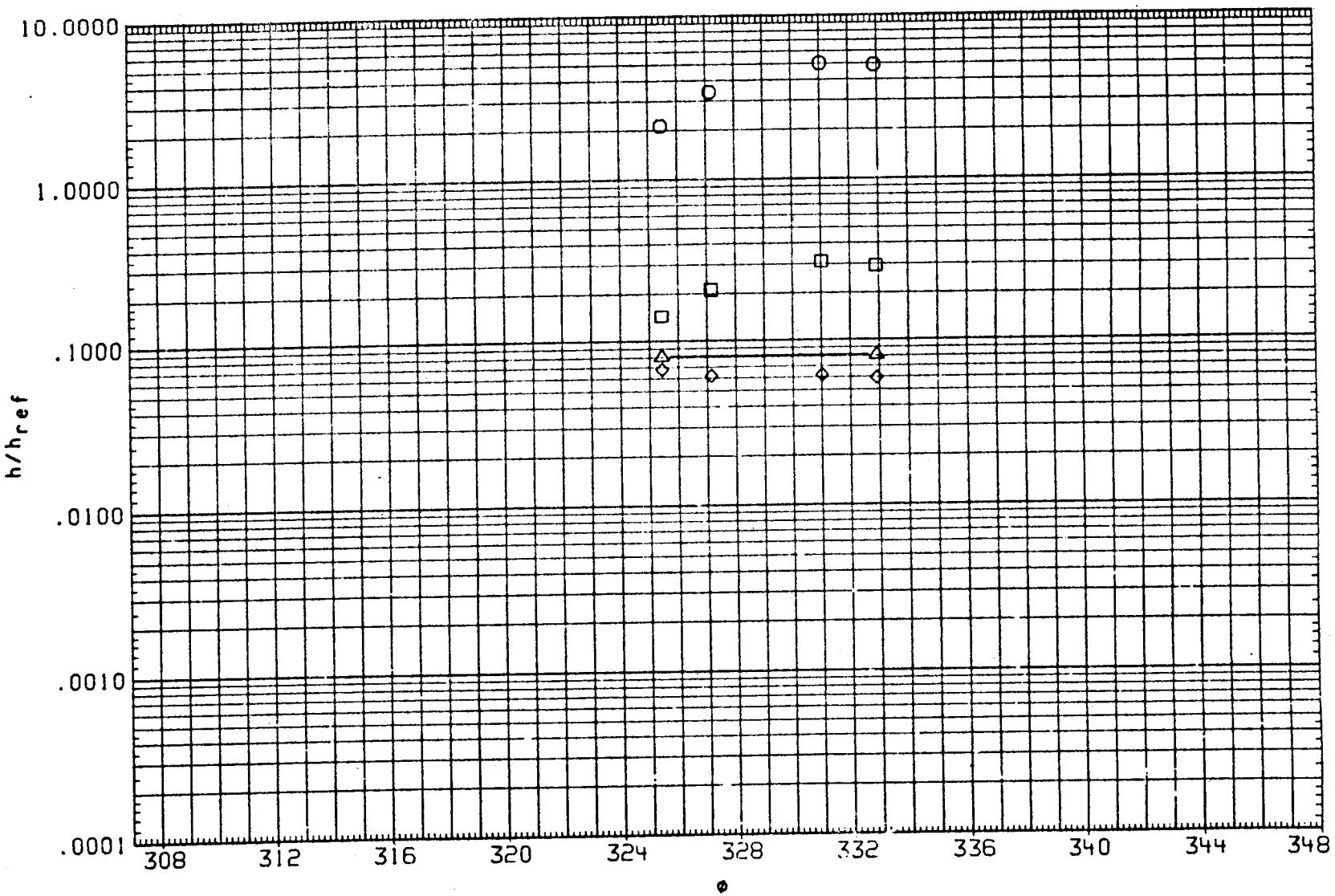

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.290 HAN/HI = .900 X/L = .473 DATE 22 APR 78 PAGE 191

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(S20Q0B)	○	IH51A (2B+3B+4B-5B-5B)/5B	ET SURFACE	.000	.000	5.000	5.300
(M20Q0B)	□	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(B20Q10)	◇	IH51A CONF 5B ET SURFACE		.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

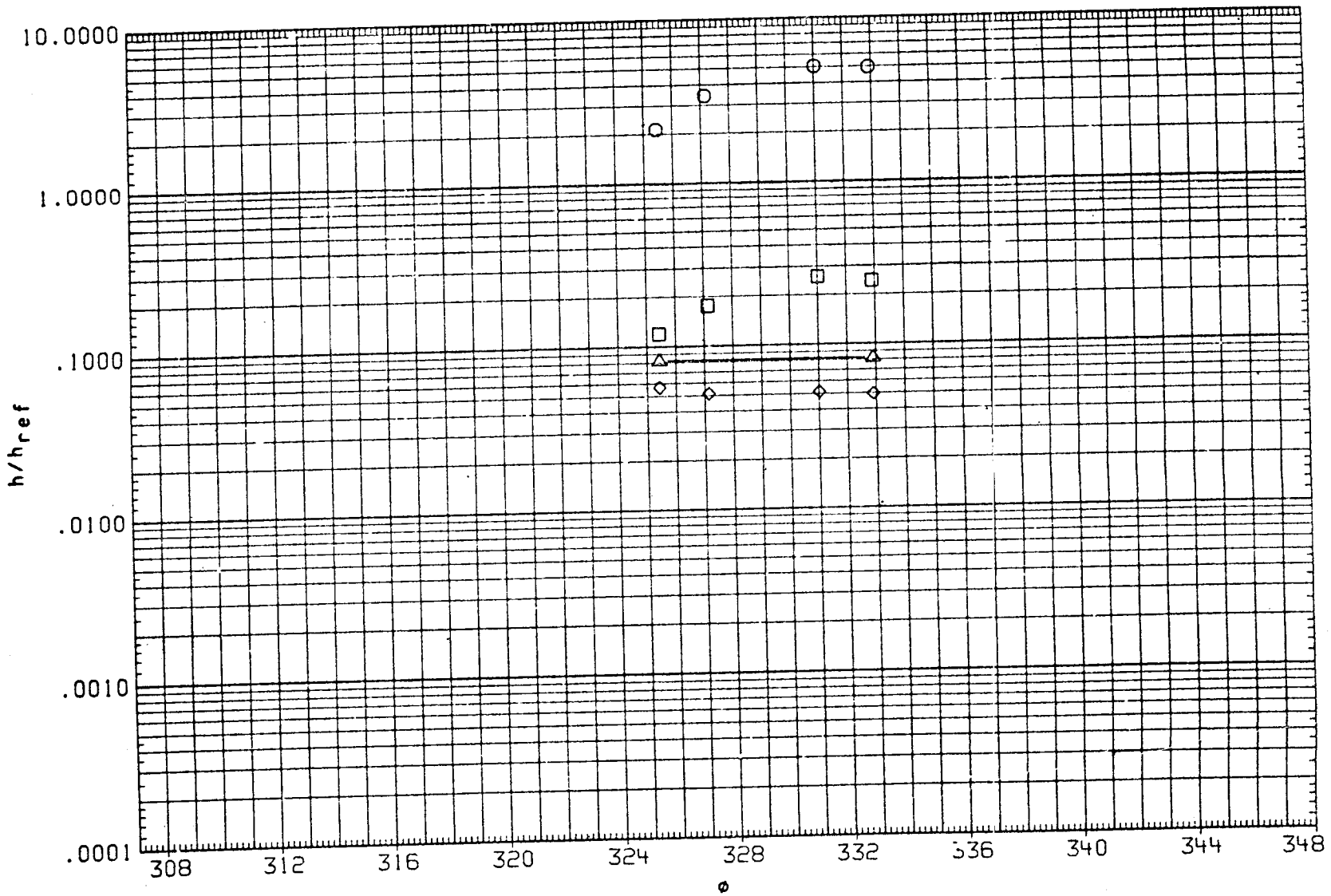

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 192

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2CJ02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

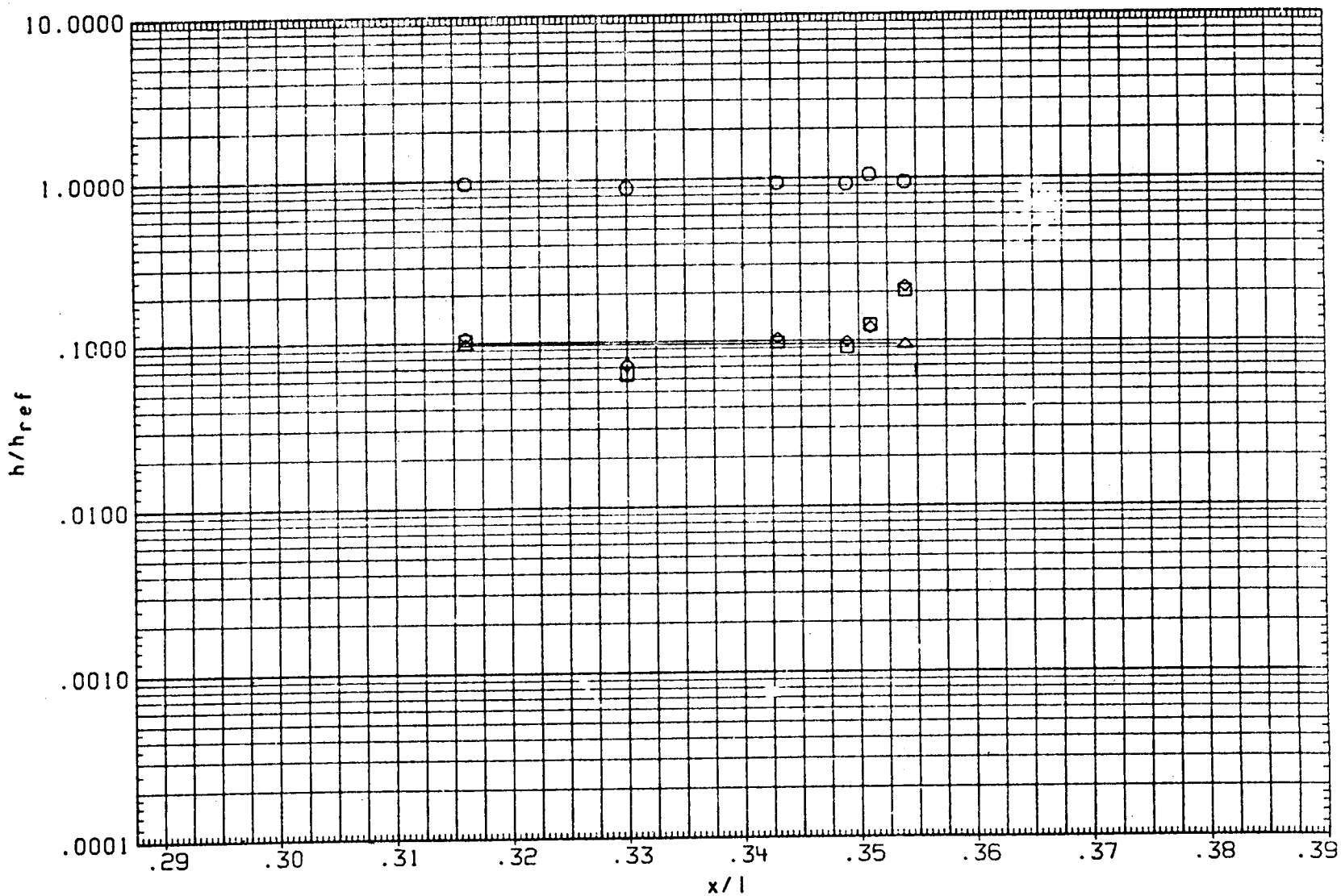

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

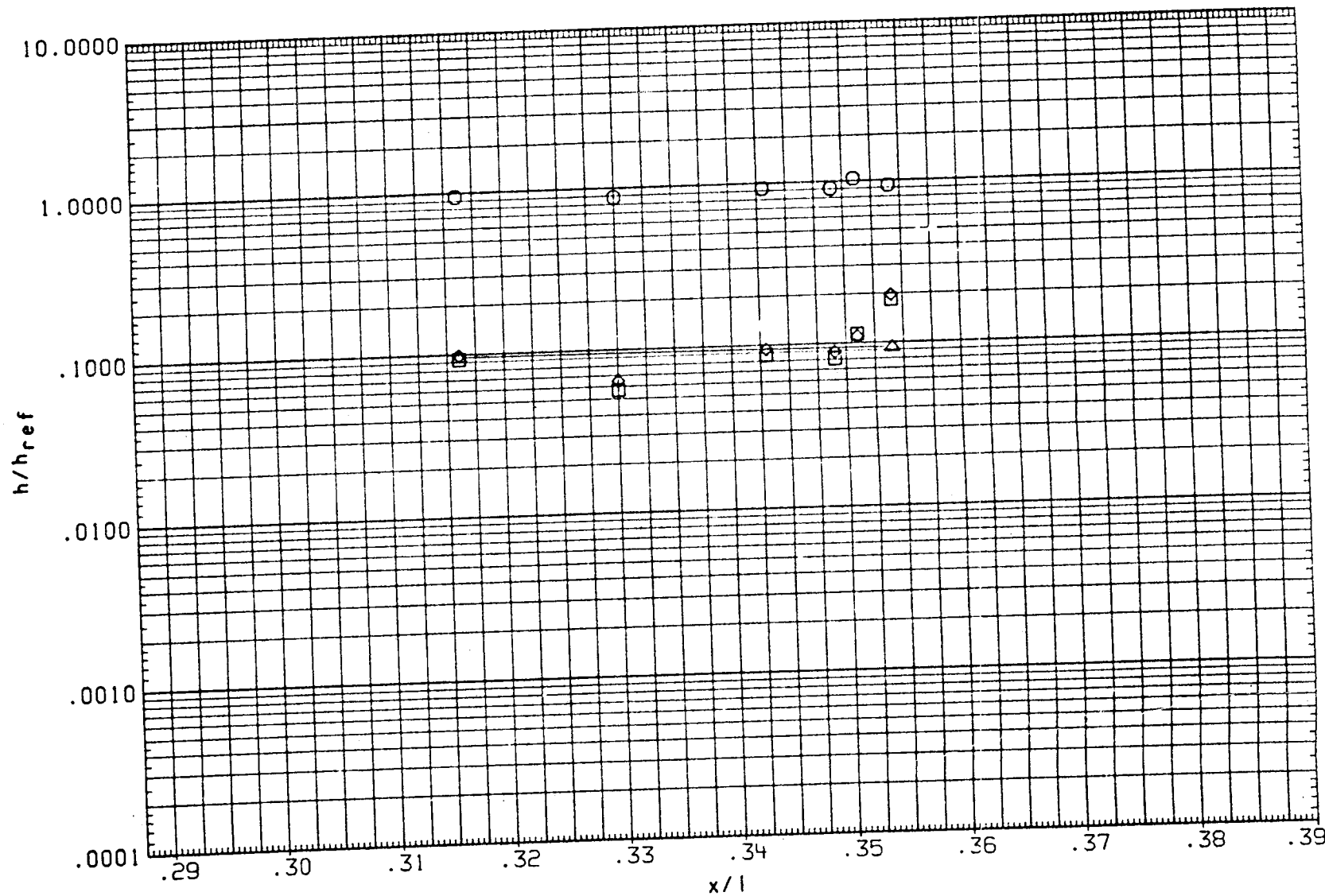

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 PHI = 24.690 DATE 22 APR 78 PAGE 194

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

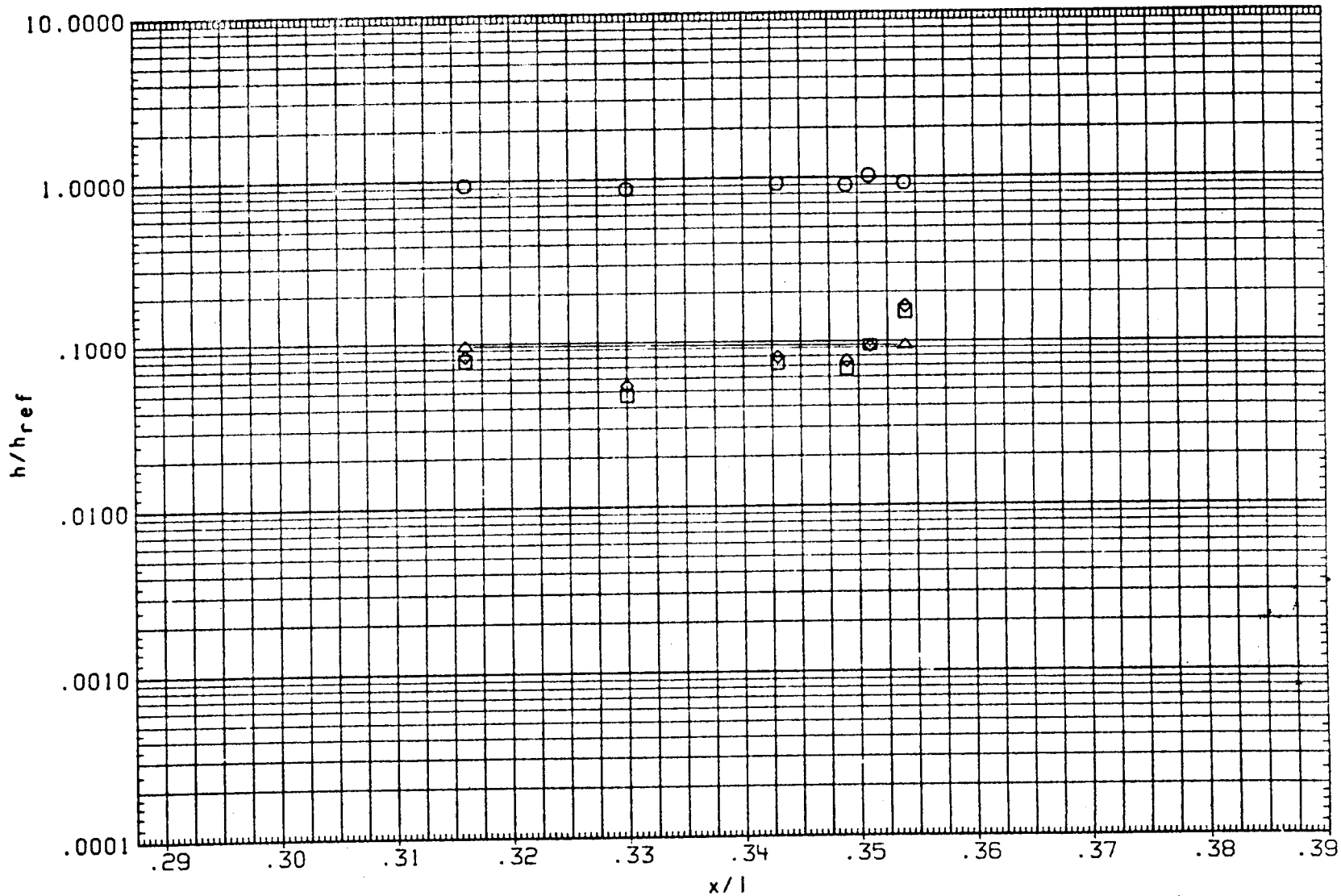

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L02)	□	IH51A CONF 1A LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

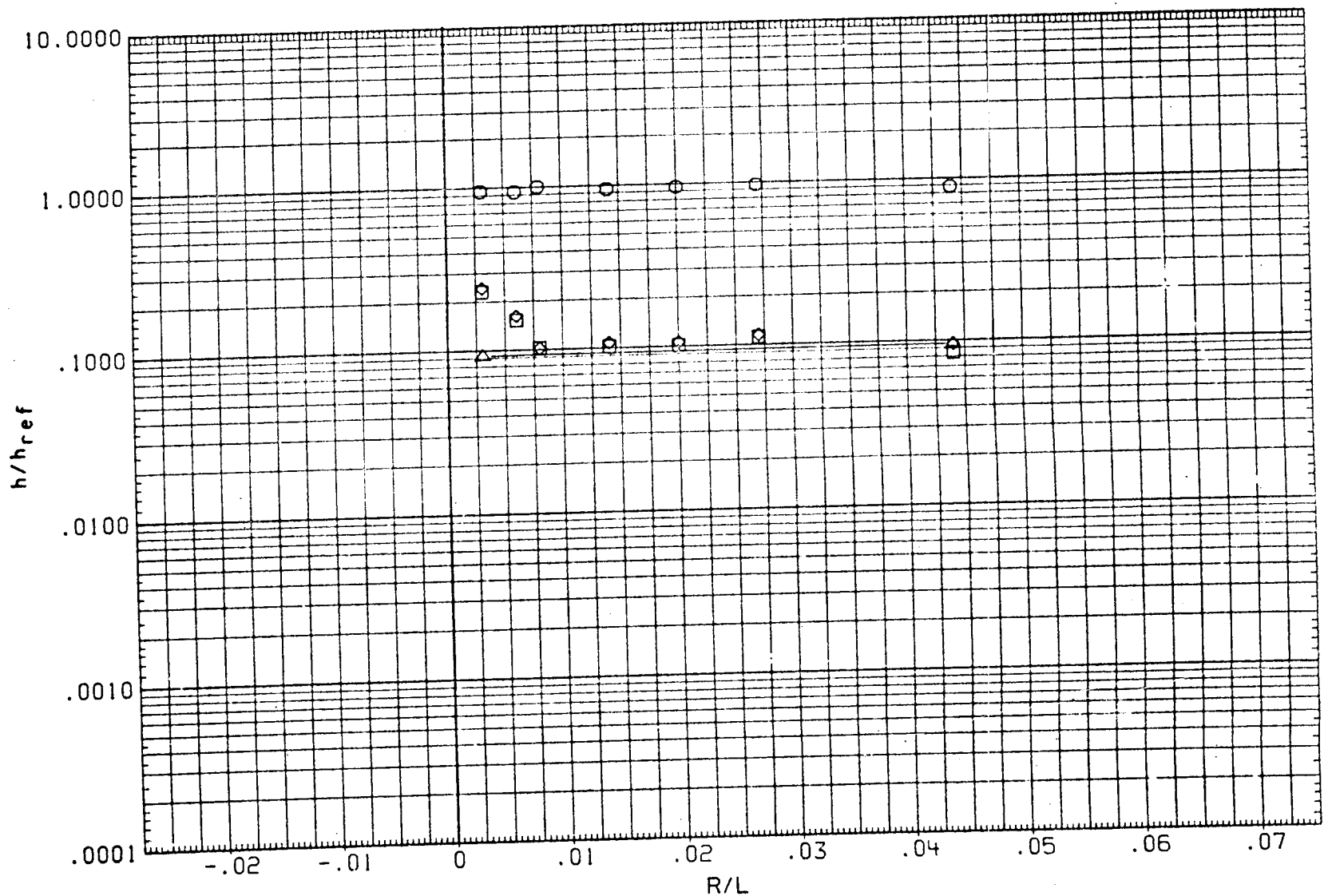

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L02)	□	IH51A CONF 1A LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

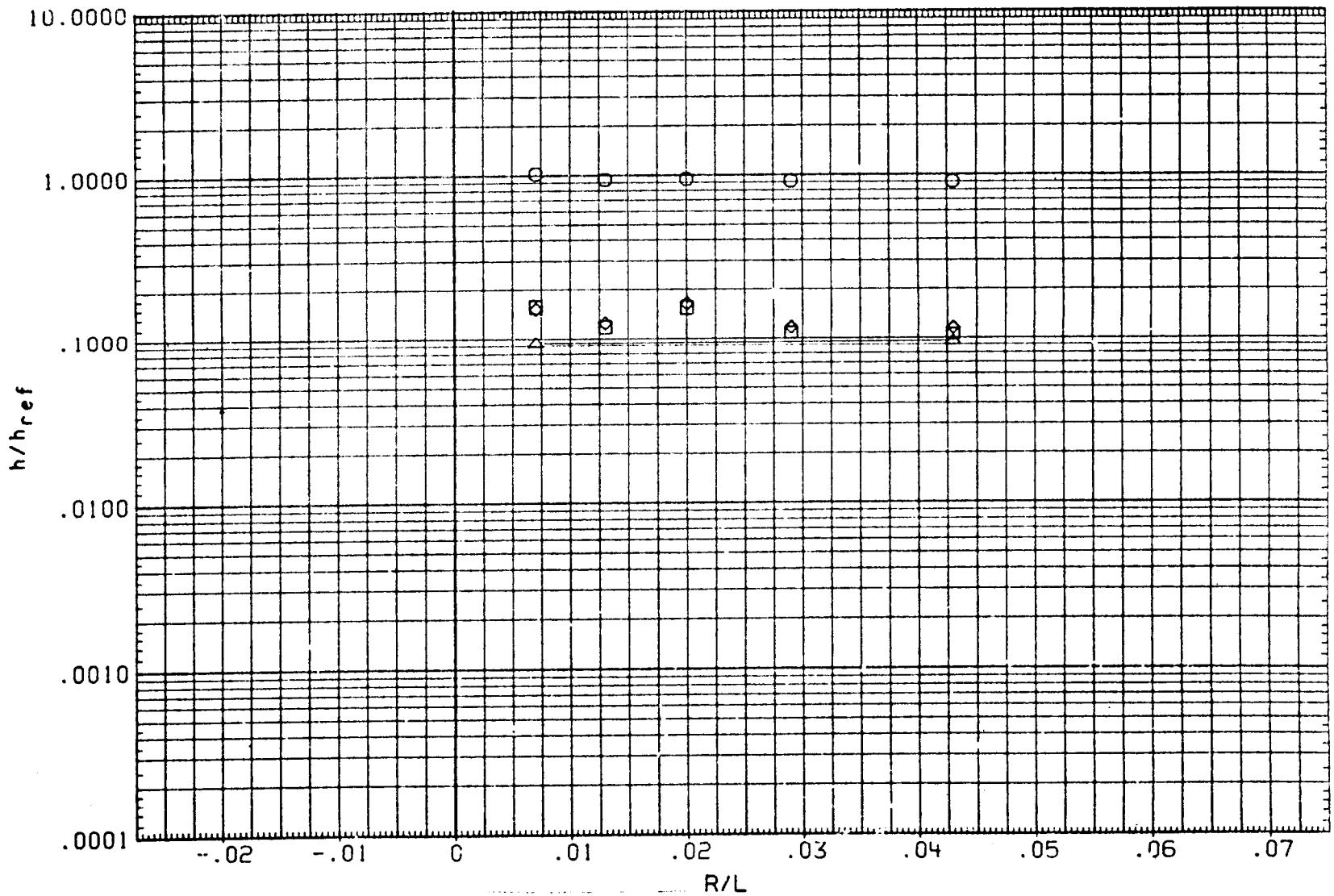

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .650 GAMMA = 45.000 DATE 22 APR 78 PAGE 197

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L02)	□	IH51A CONF 1A LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

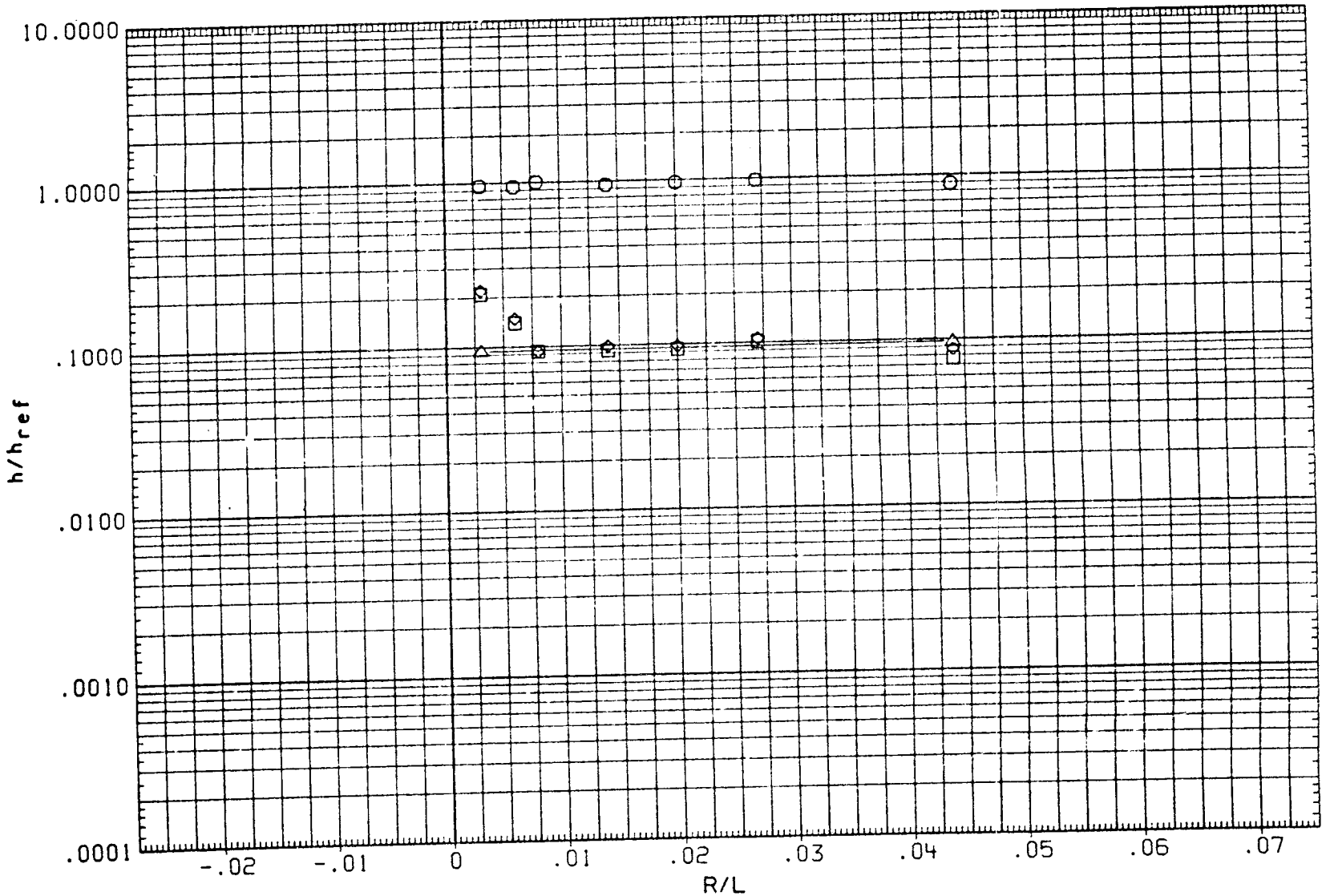

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L02)	□	IH51A CONF 1A LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HW/HREF	.000	.000	5.000	5.300

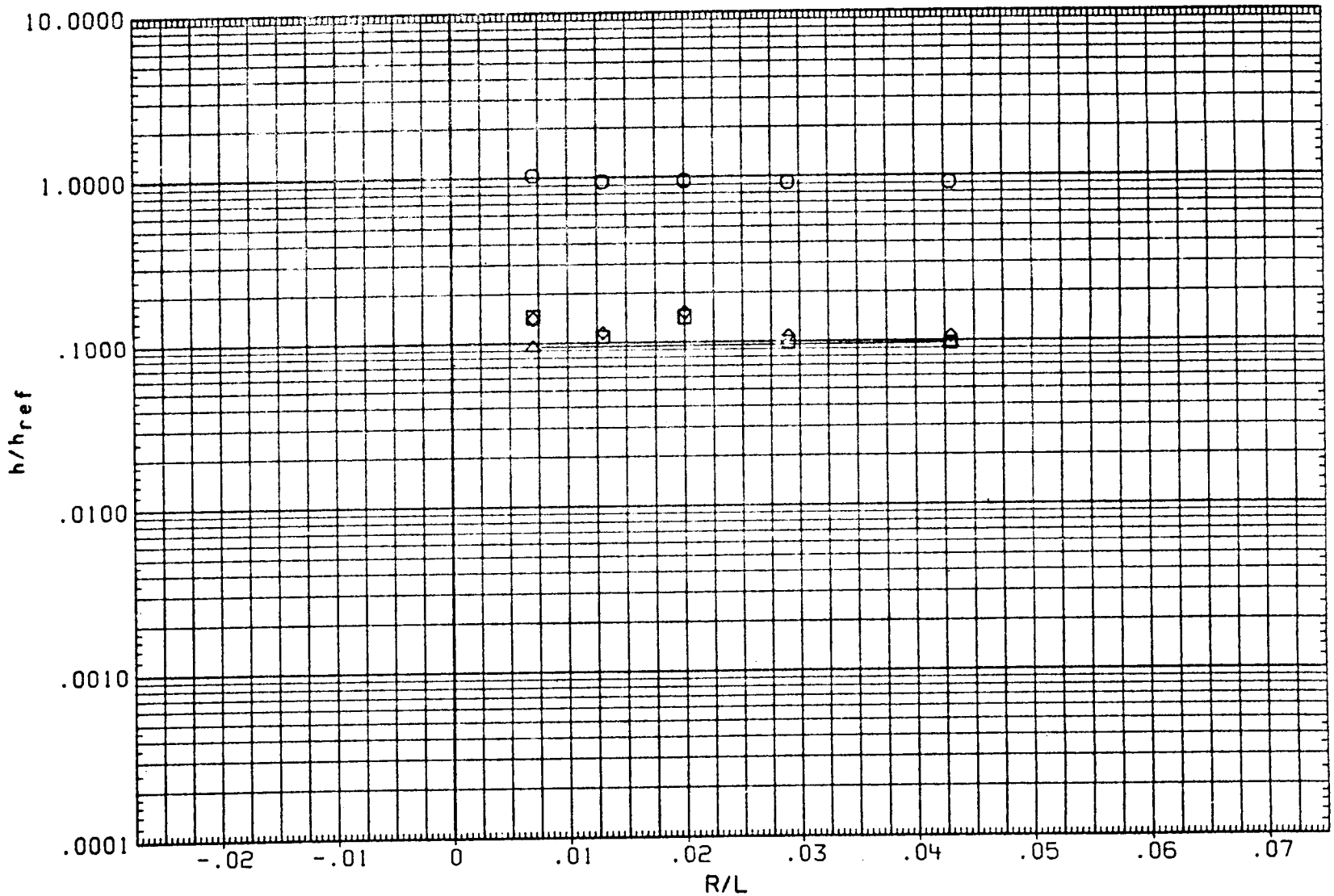

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 199

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L02)	□	IH51A CONF 1A LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

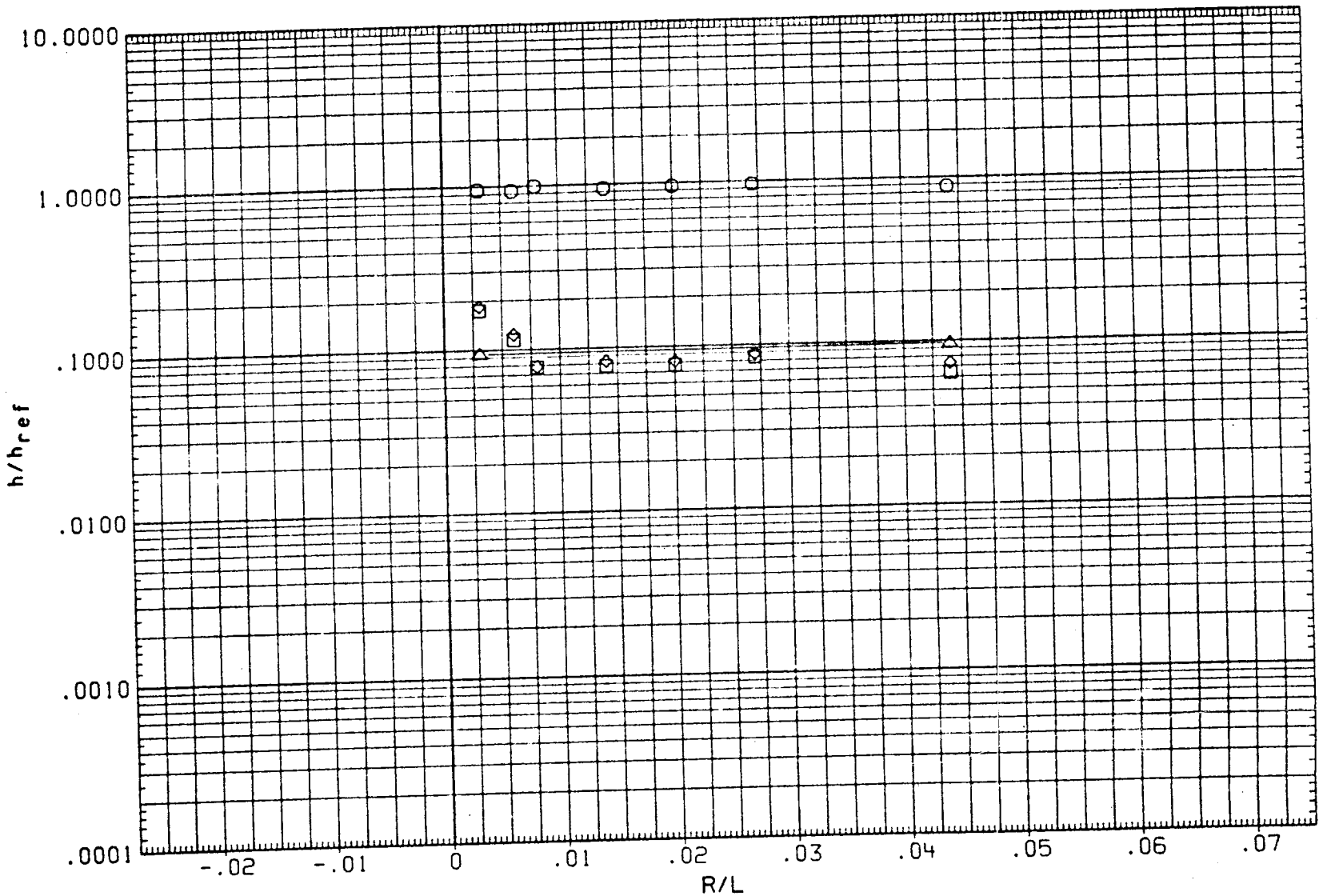

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L02)	□	IH51A CONF 1A LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

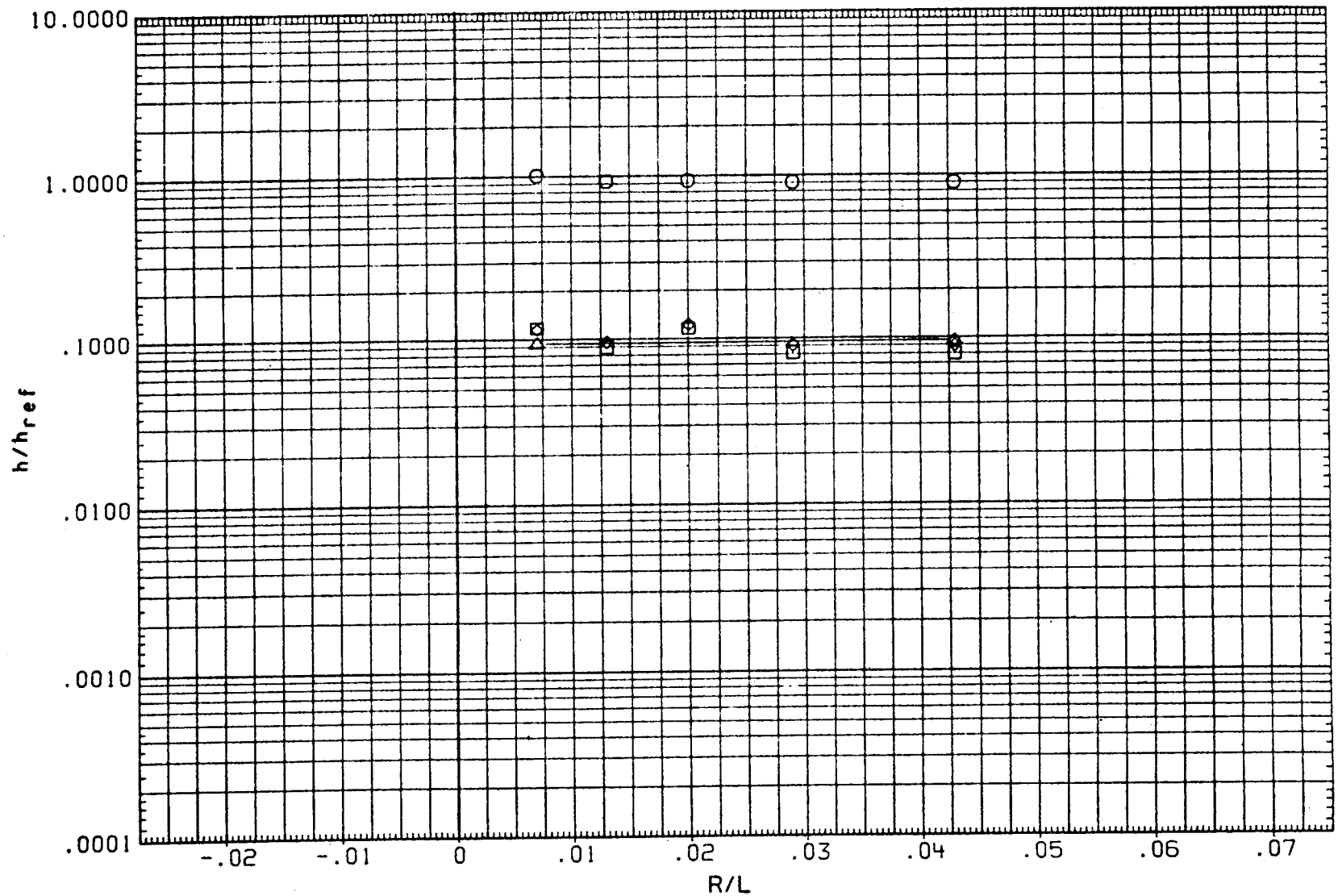

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

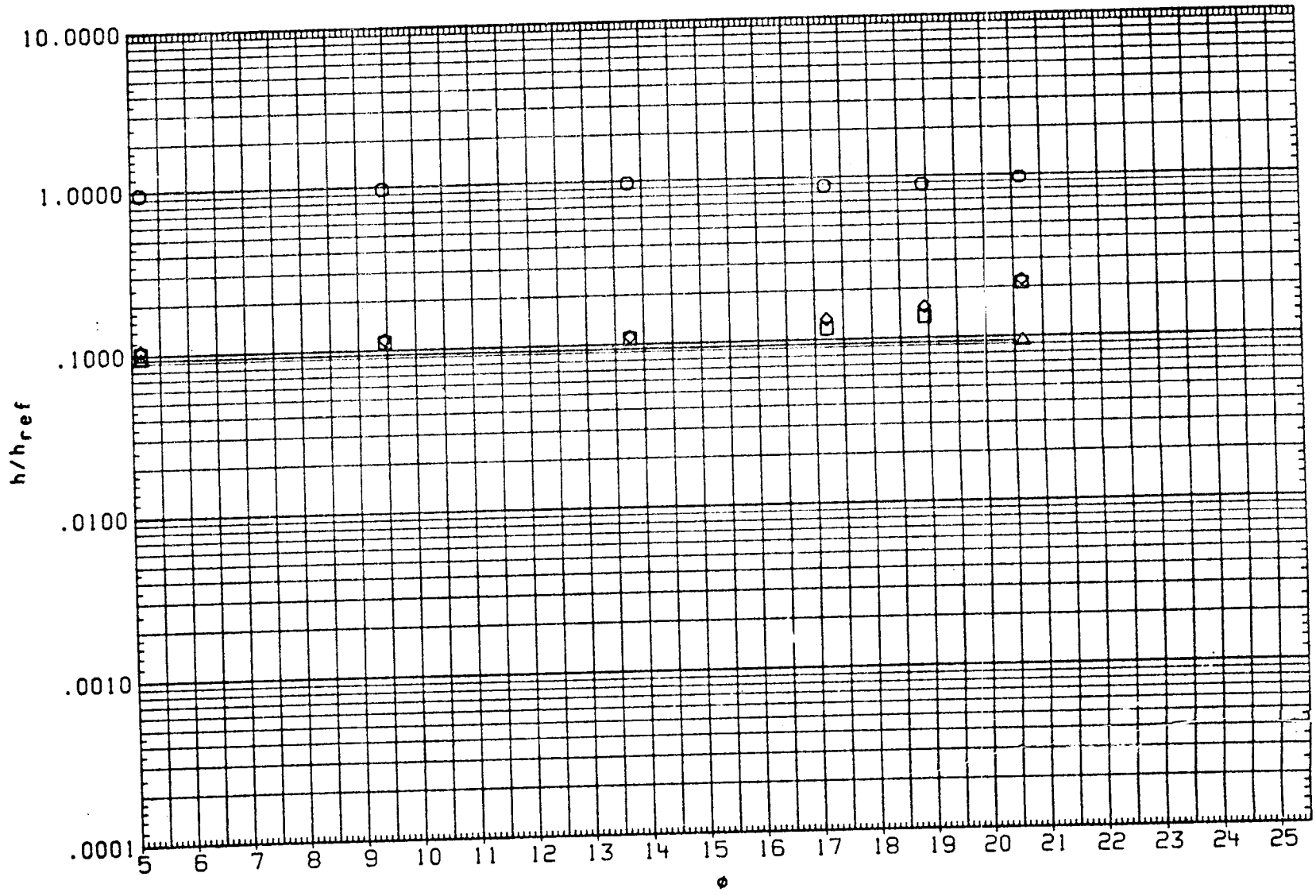

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

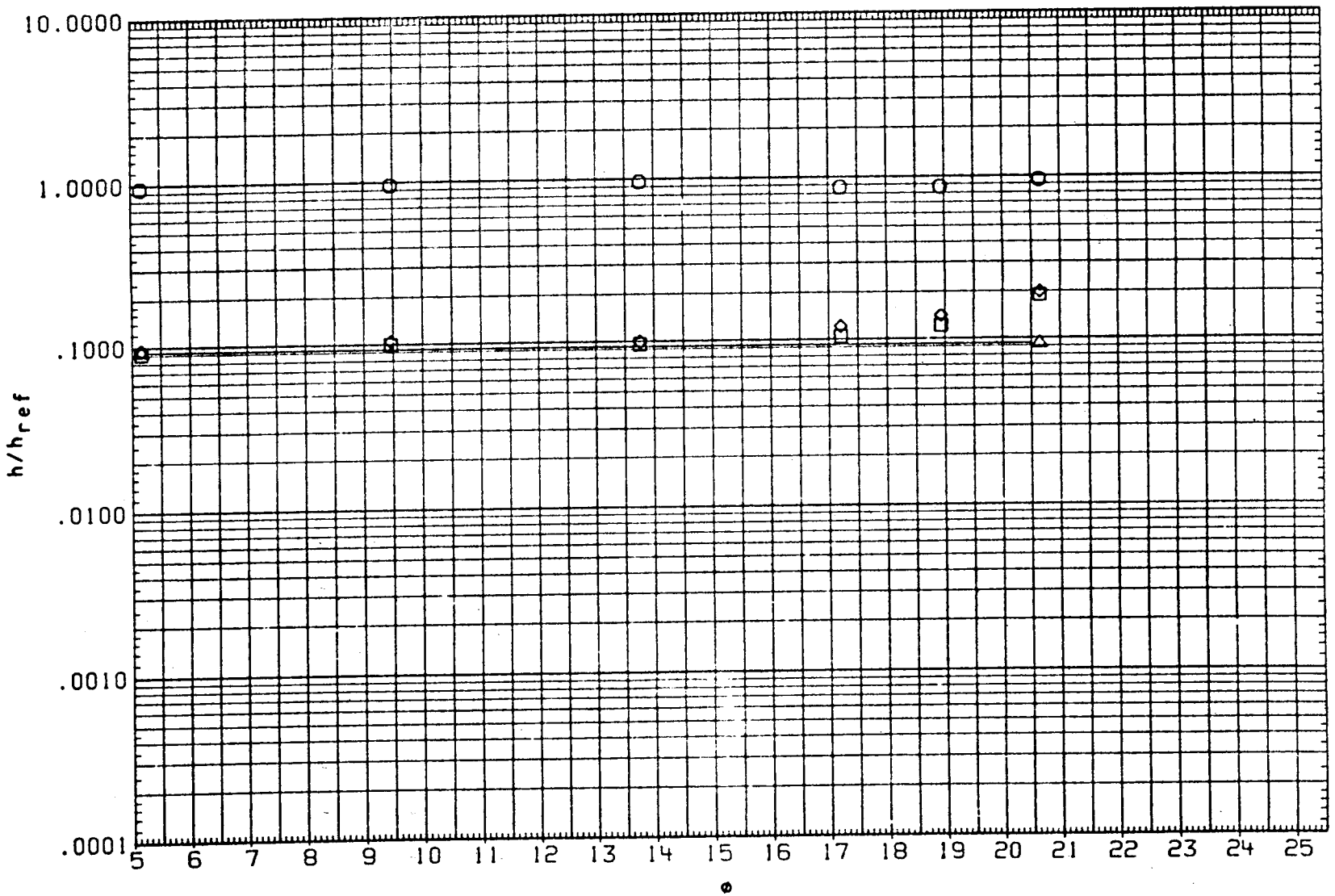

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

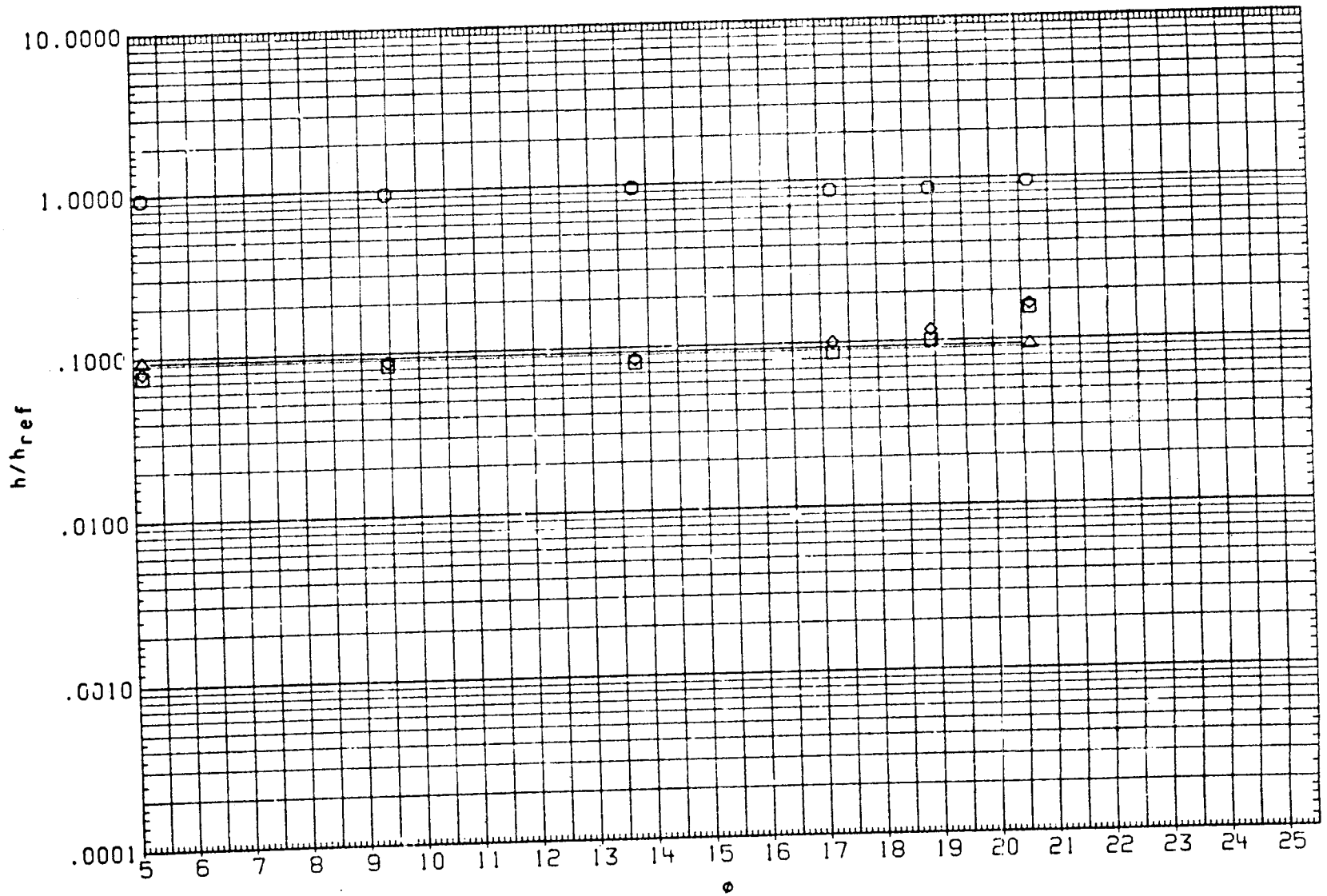

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78 PAGE 204

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

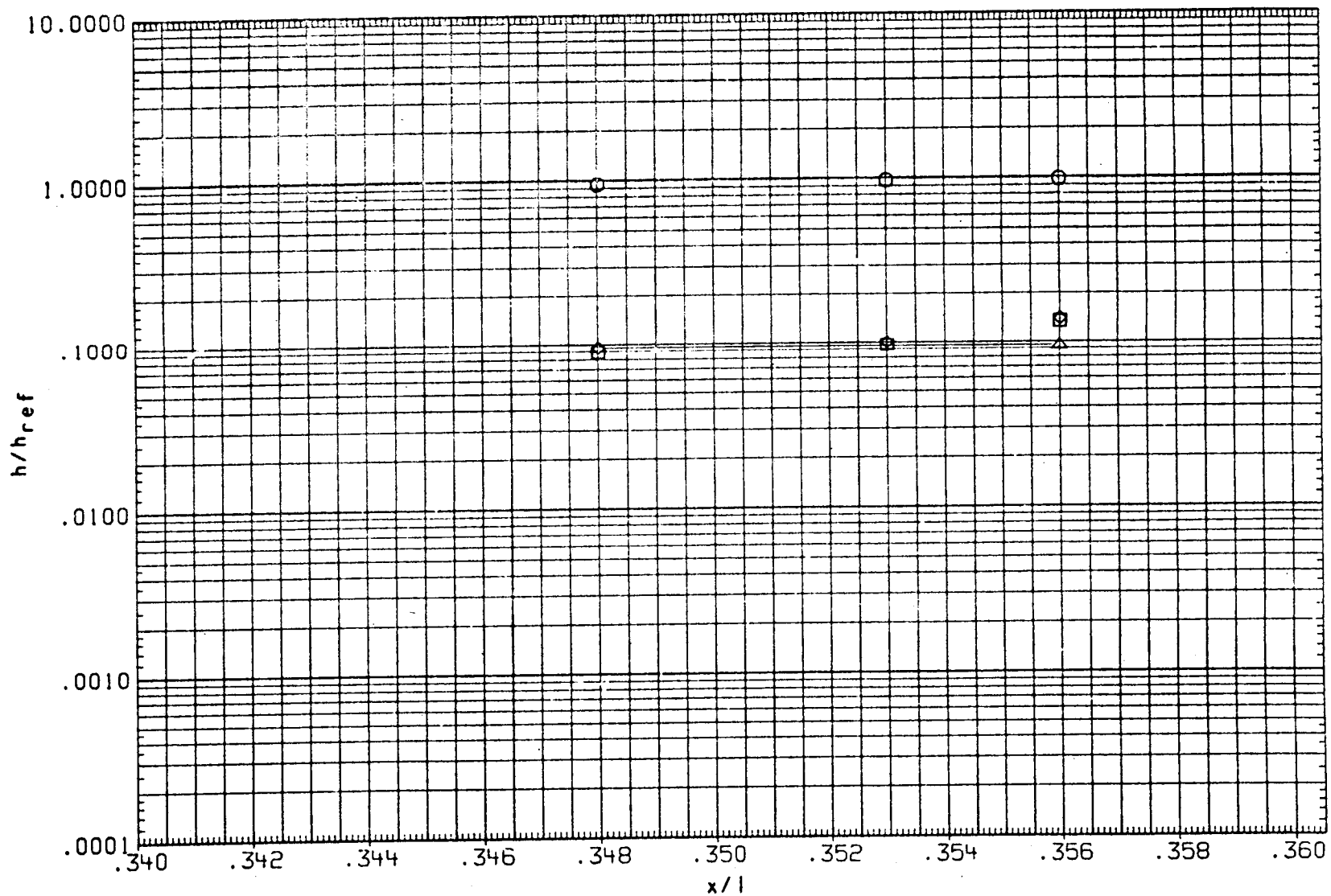

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 205

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

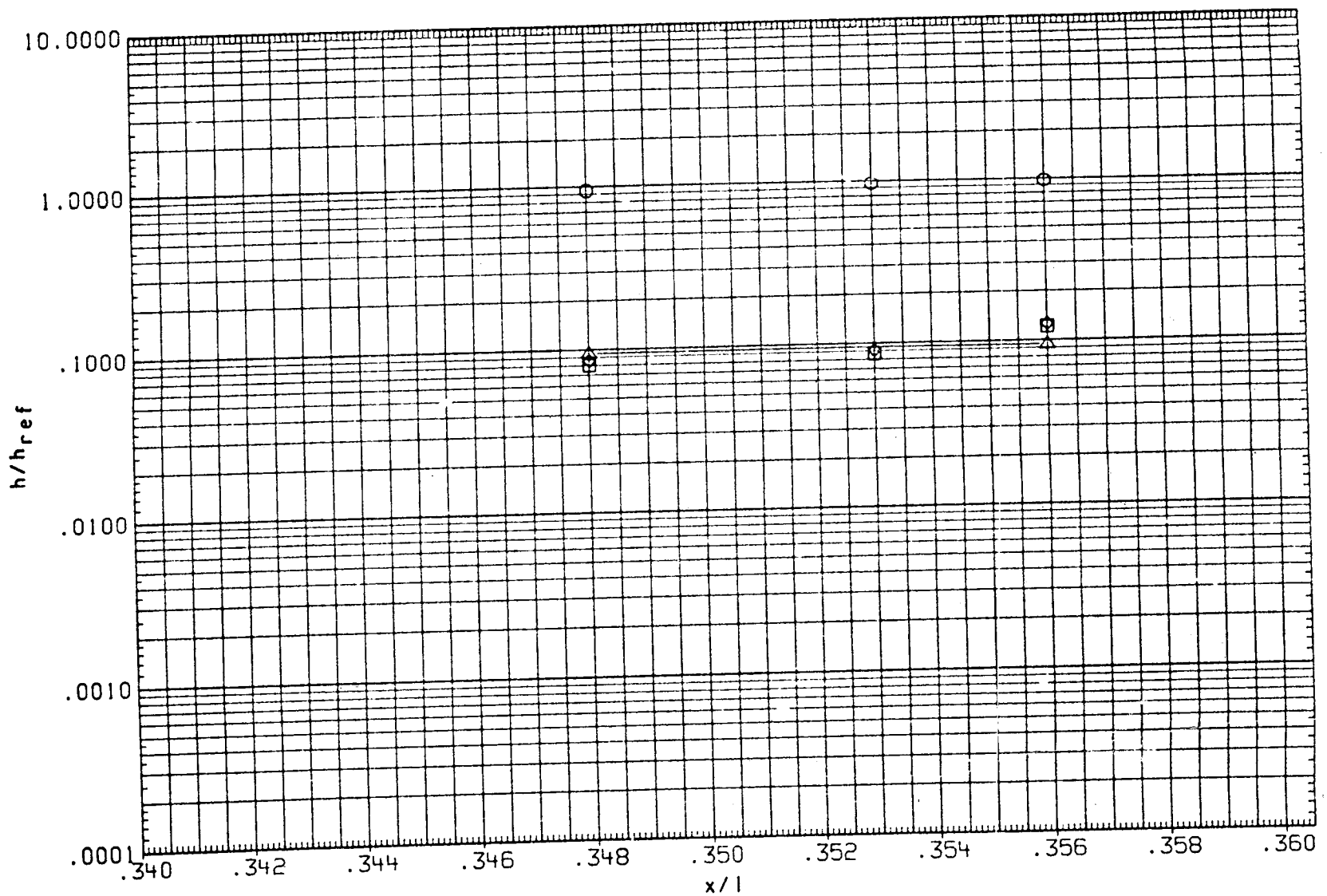

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 206

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

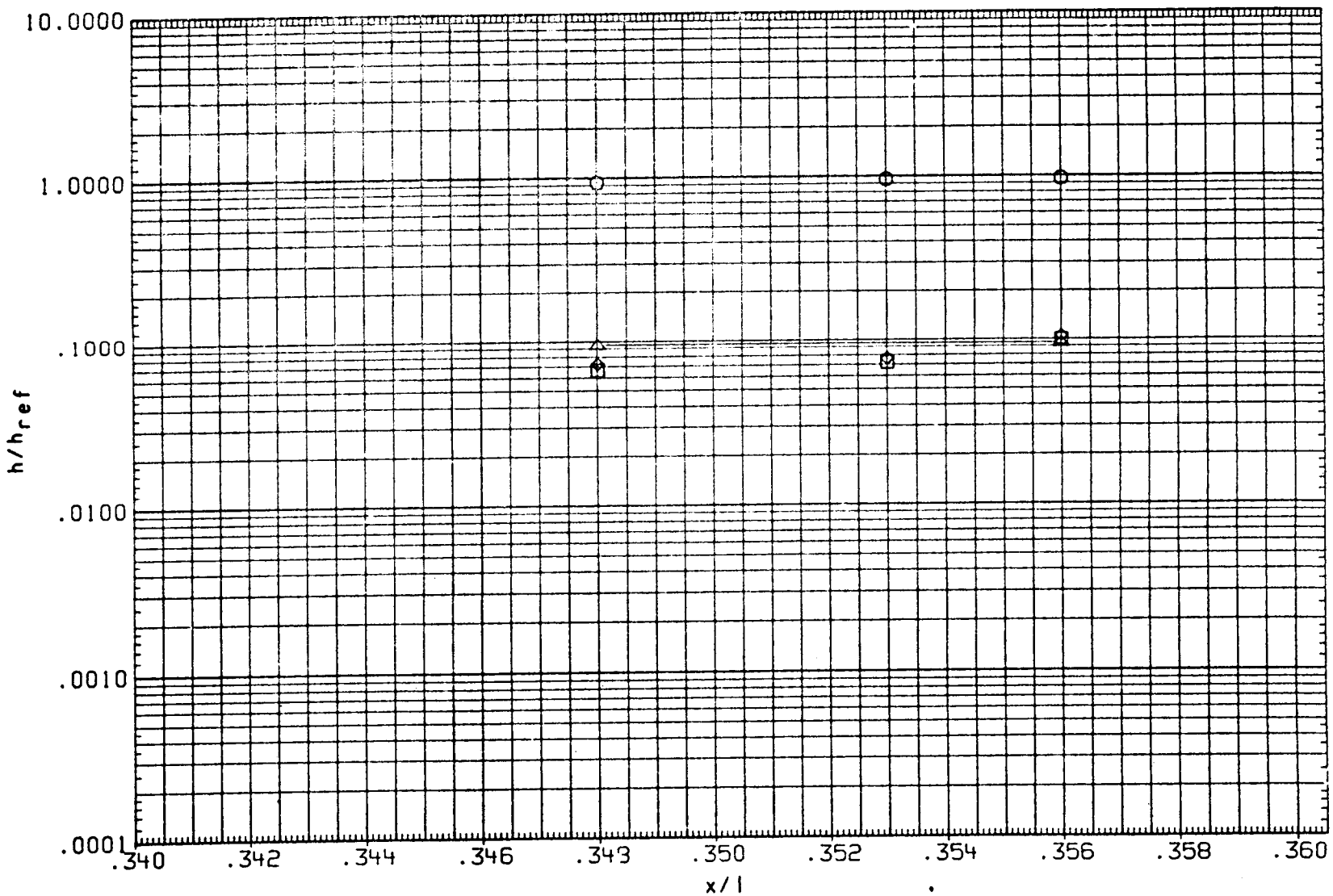

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 207

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20M0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(R20M02)	□	IH51A CONF 1A LO2 ANTIGEYSER LINE DIAGONAL	.000	.000	5.000	5.300
(M20M0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

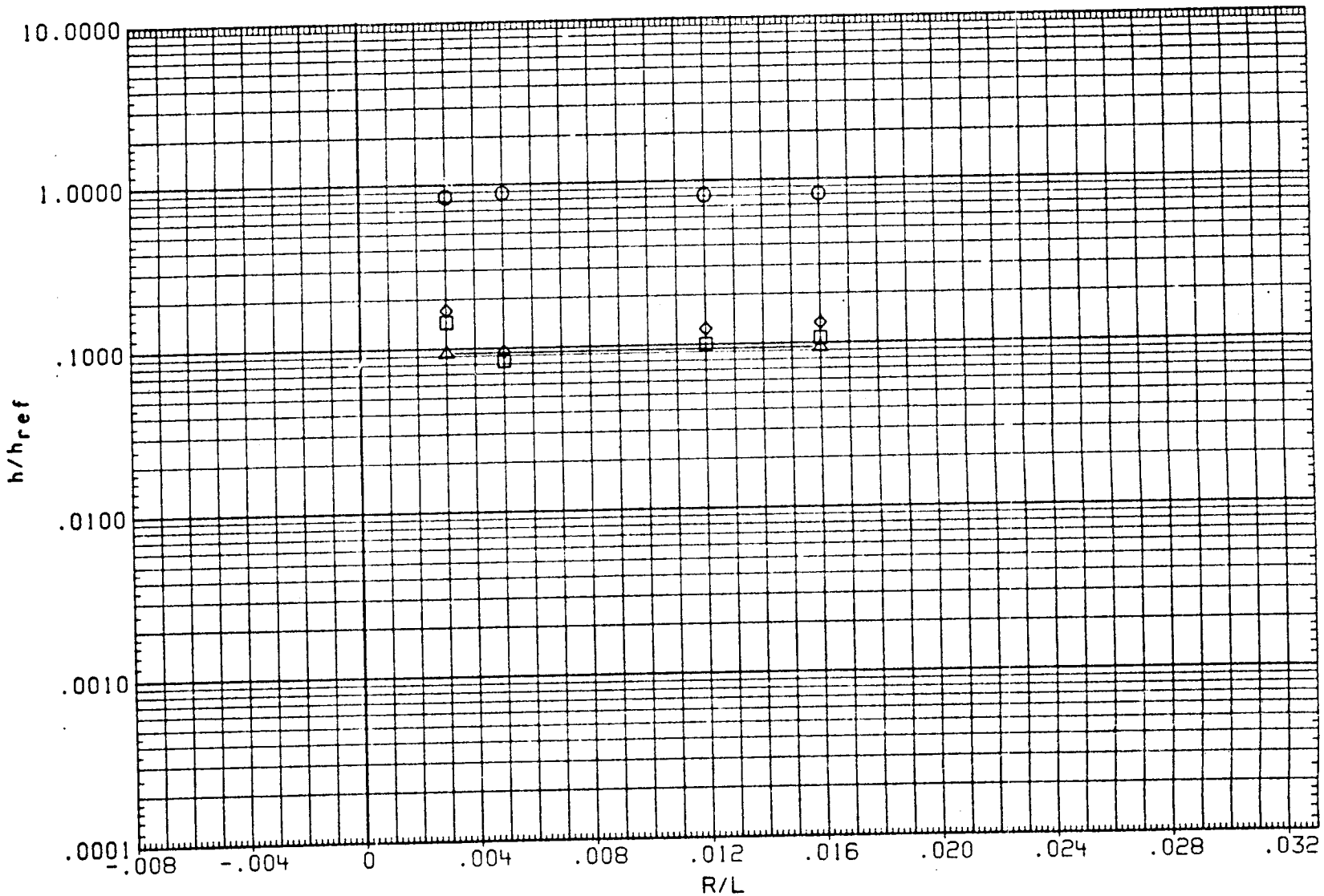

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 208

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20M0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(R20M02)	□	IH51A CONF 1A LO2 ANTIGEYSER LINE DIAGONAL	.000	.000	5.000	5.300
(M20M0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

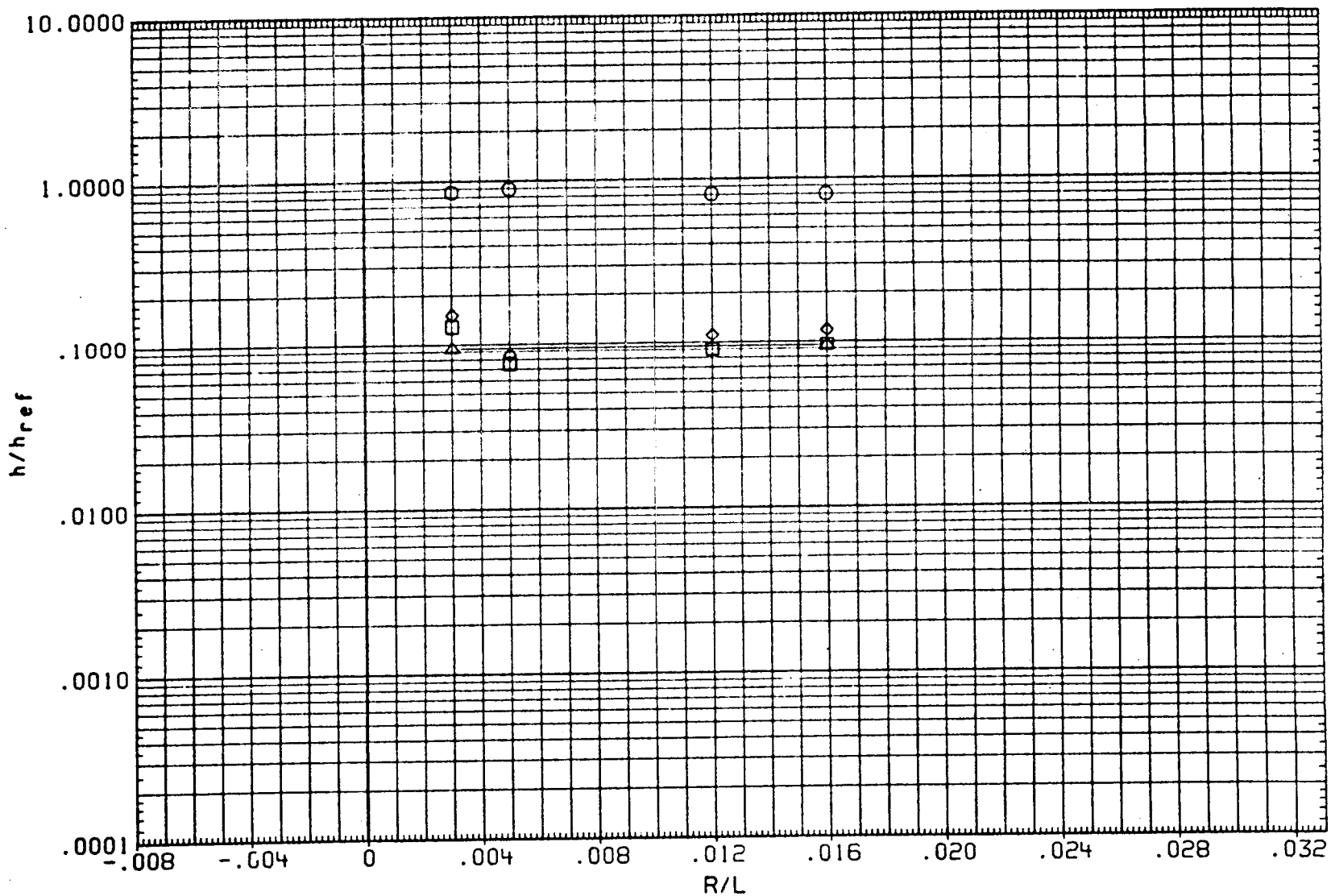

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 209

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20M0A)	○	IH51A 1A/(2A+3A+4A-5A-5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(R20M02)	□	IH51A CONF 1A LO2 ANTIGEYSER LINE DIAGONAL	.000	.000	5.000	5.300
(M20M0A)	◇	IH51A 2A+3A+4A-5A-5A LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

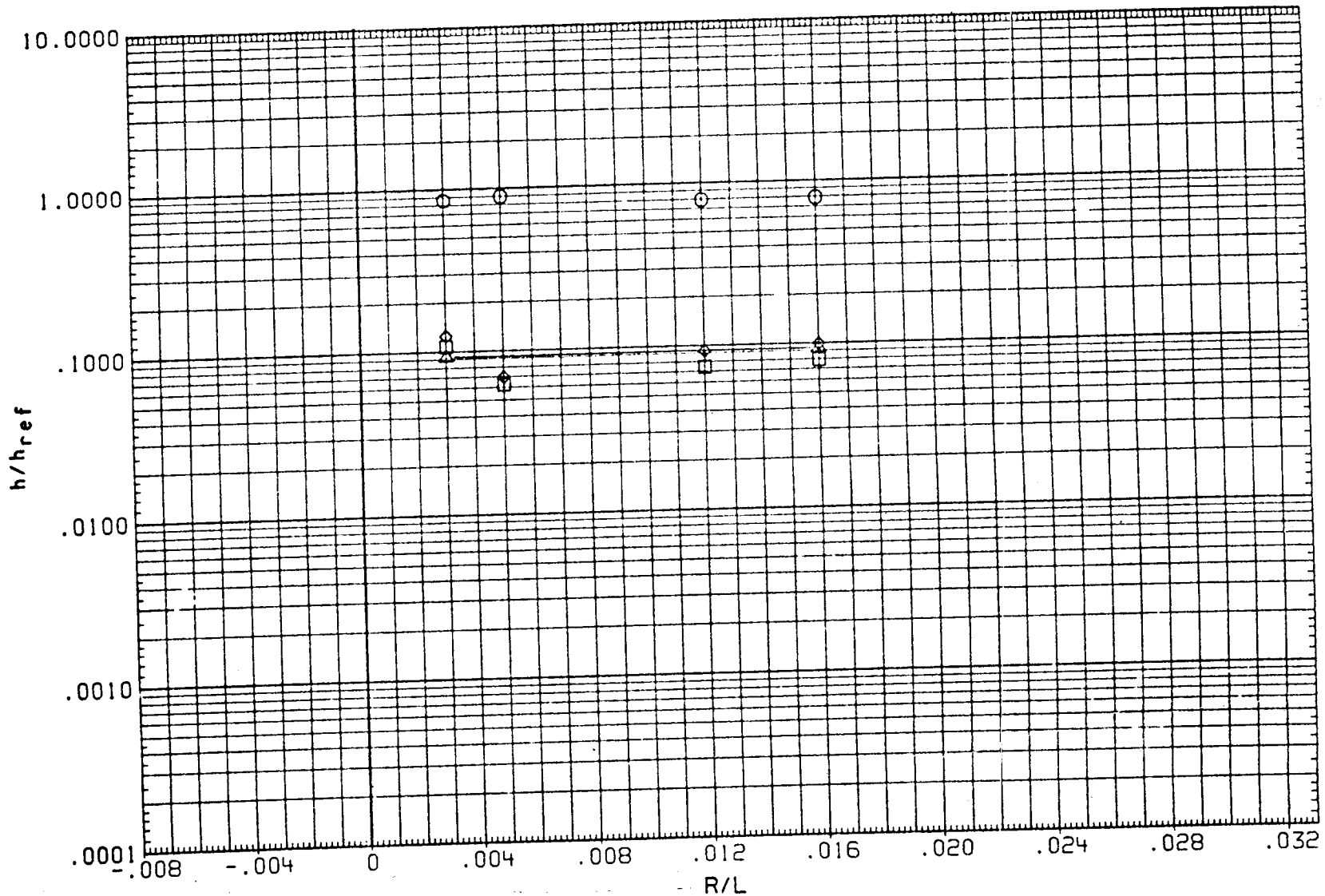

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 210

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

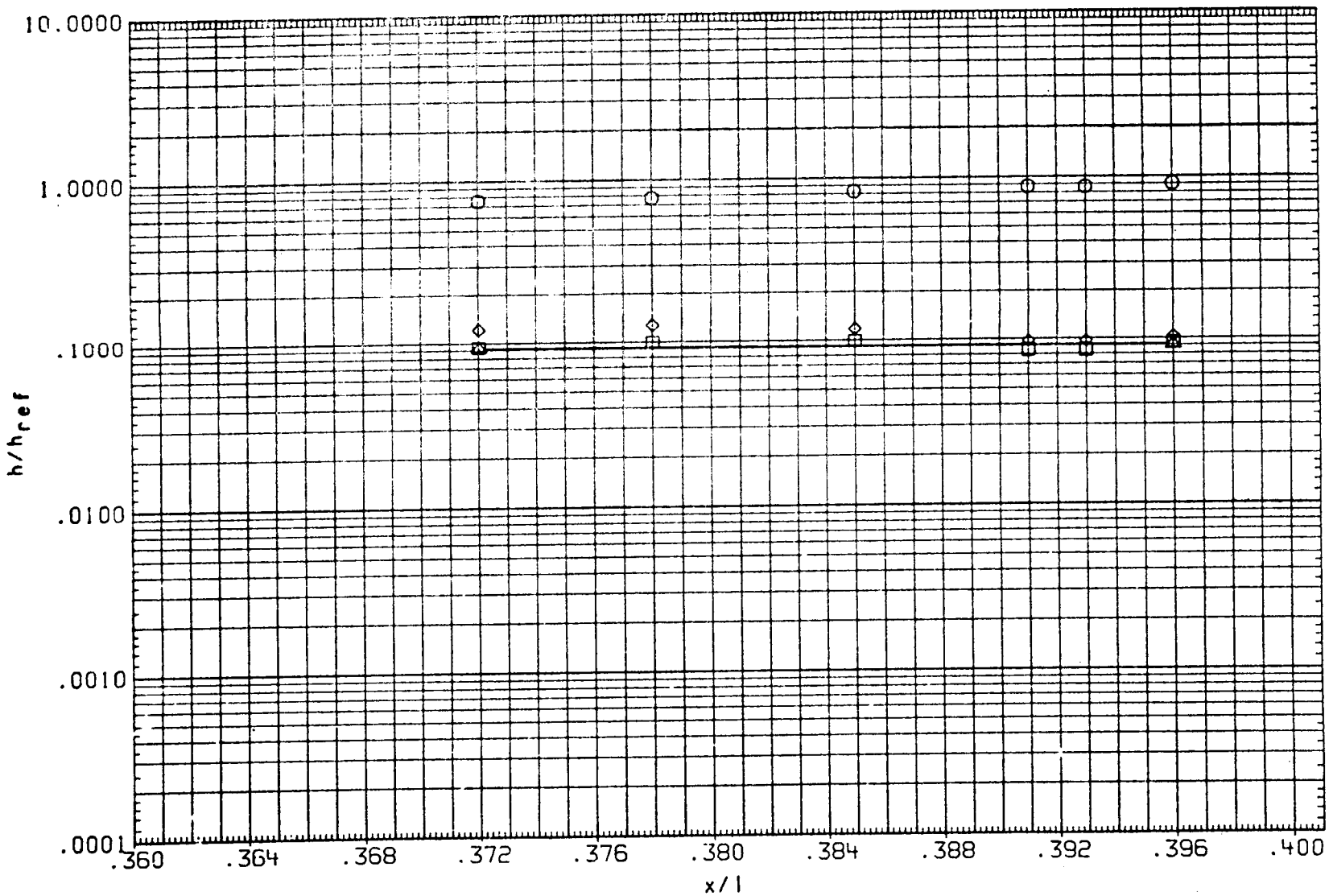

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

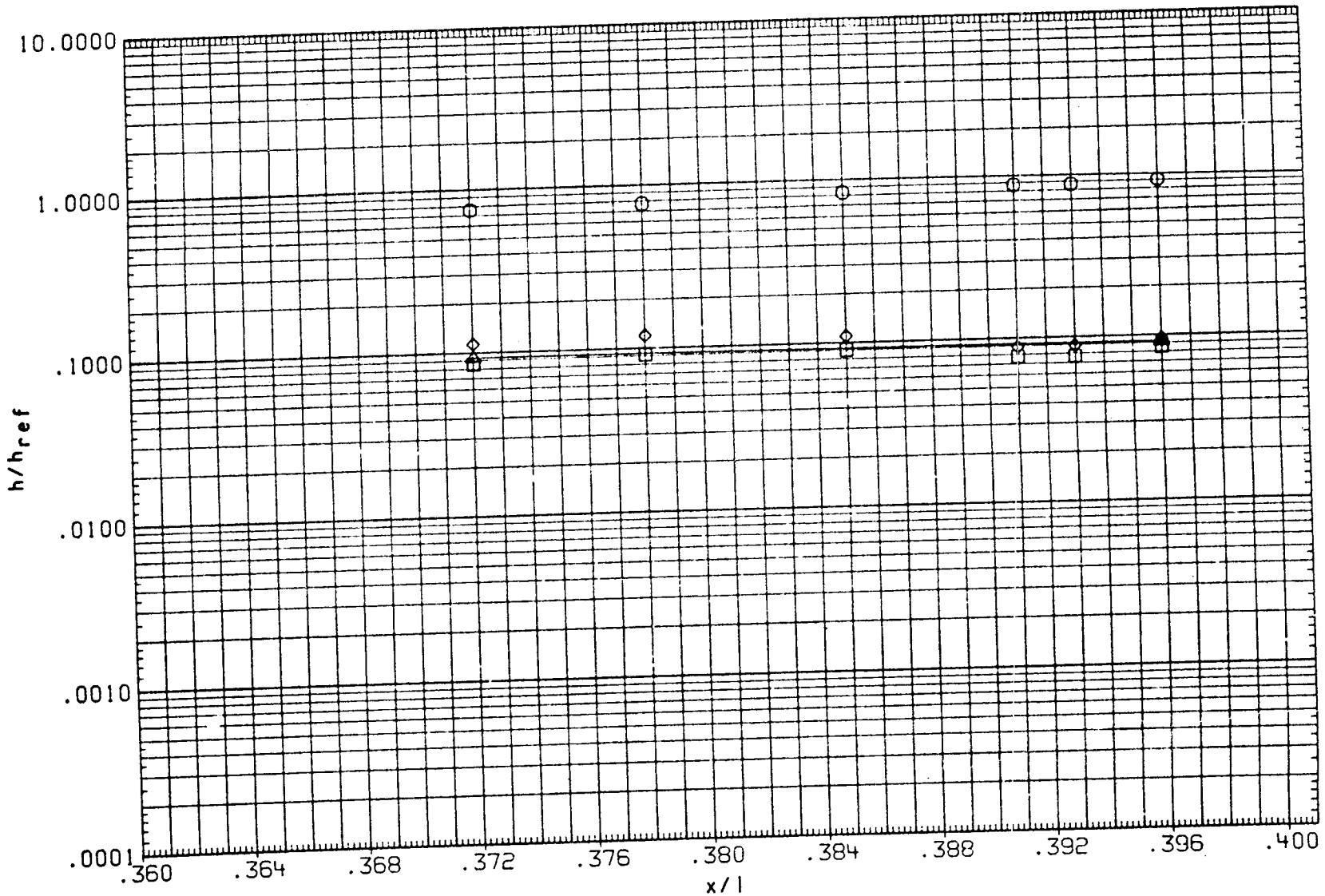

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 212

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

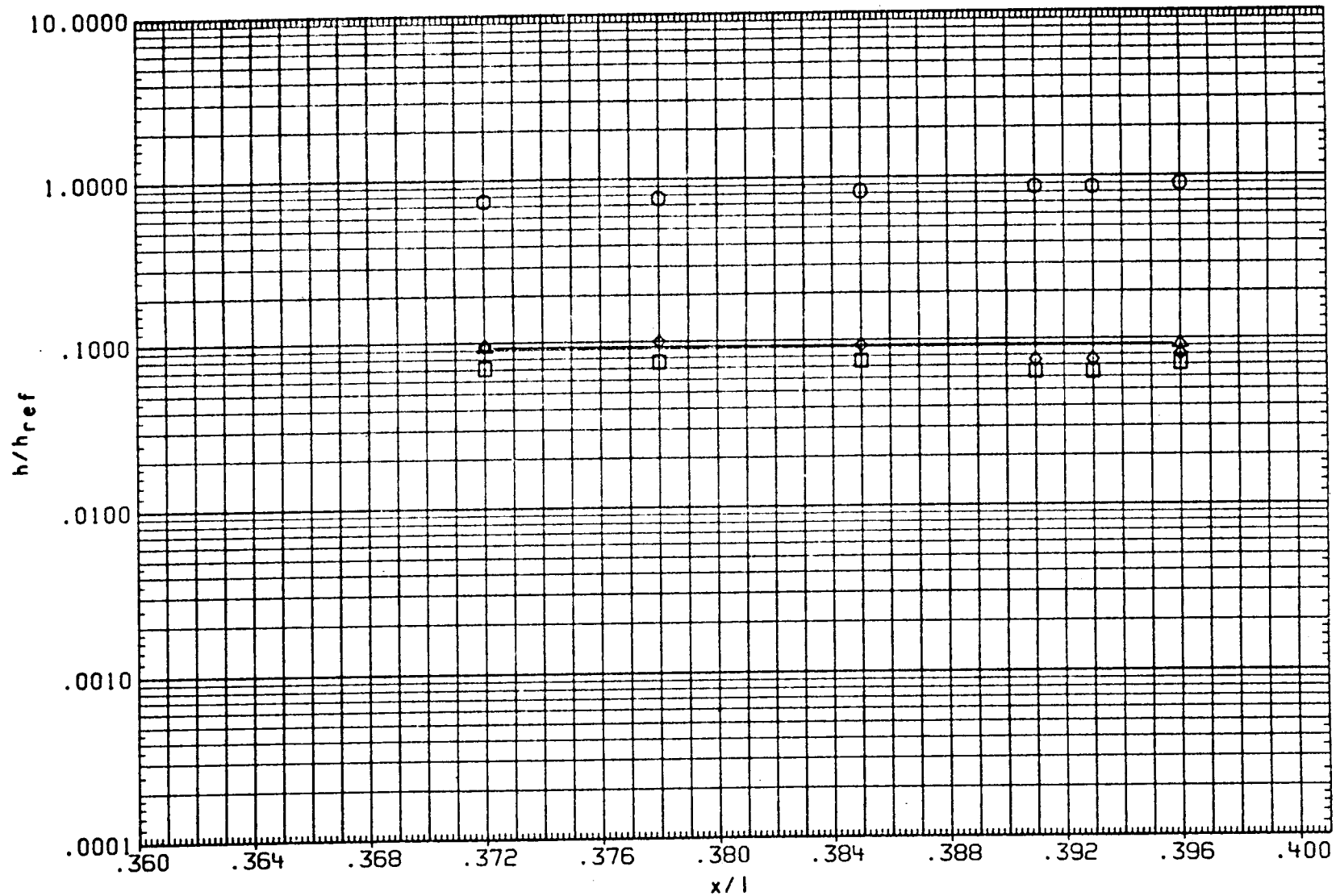

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78 PAGE 213

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20N0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(R20N02)	□	IH51A CONF 1A LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(M20N0A)	◇	IH51A 2A+3A+4A-5A-5A	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

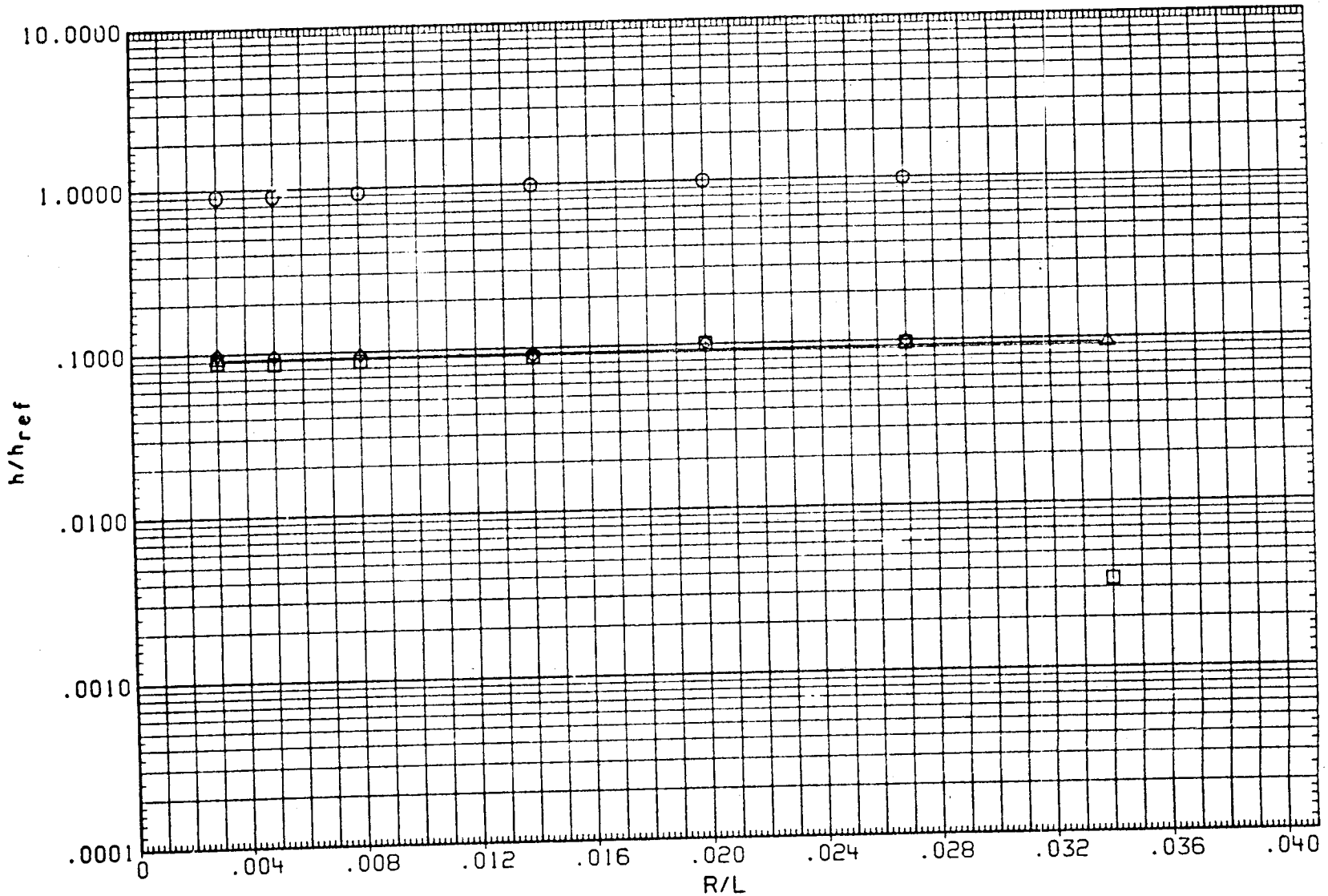

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 2.4

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2ON0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(R2ON02)	□	IH51A CONF 1A LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(M2ON0A)	◇	IH51A 2A+3A+4A-5A-5A	LH2 LINE DIA	.000	.000	5.000	5.300
(U2ON5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

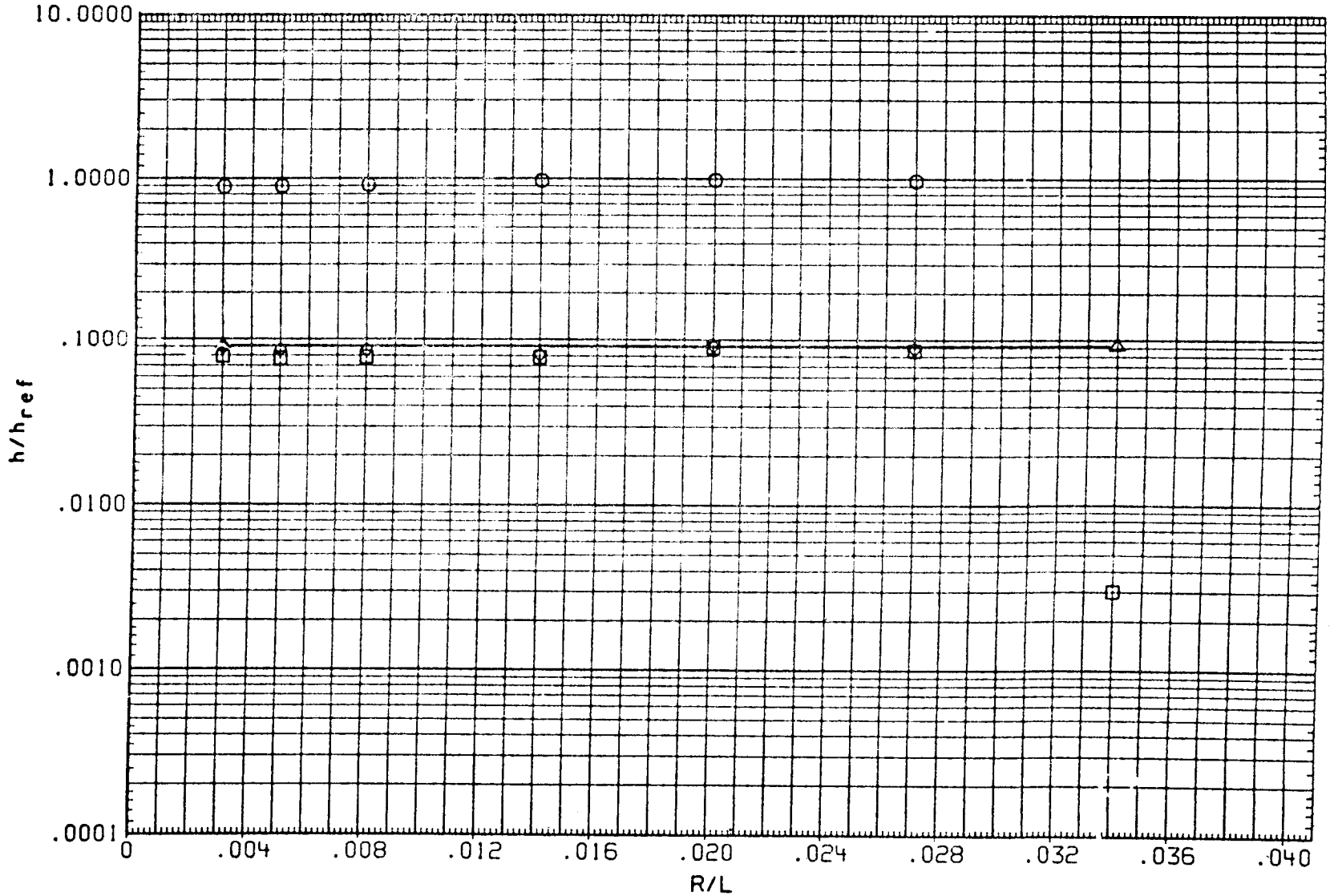

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2ON0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(R2ON02)	□	IH51A CONF 1A LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(M2ON0A)	◇	IH51A 2A+3A+4A-5A-5A	LH2 LINE DIA	.000	.000	5.000	5.300
(U2ON5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

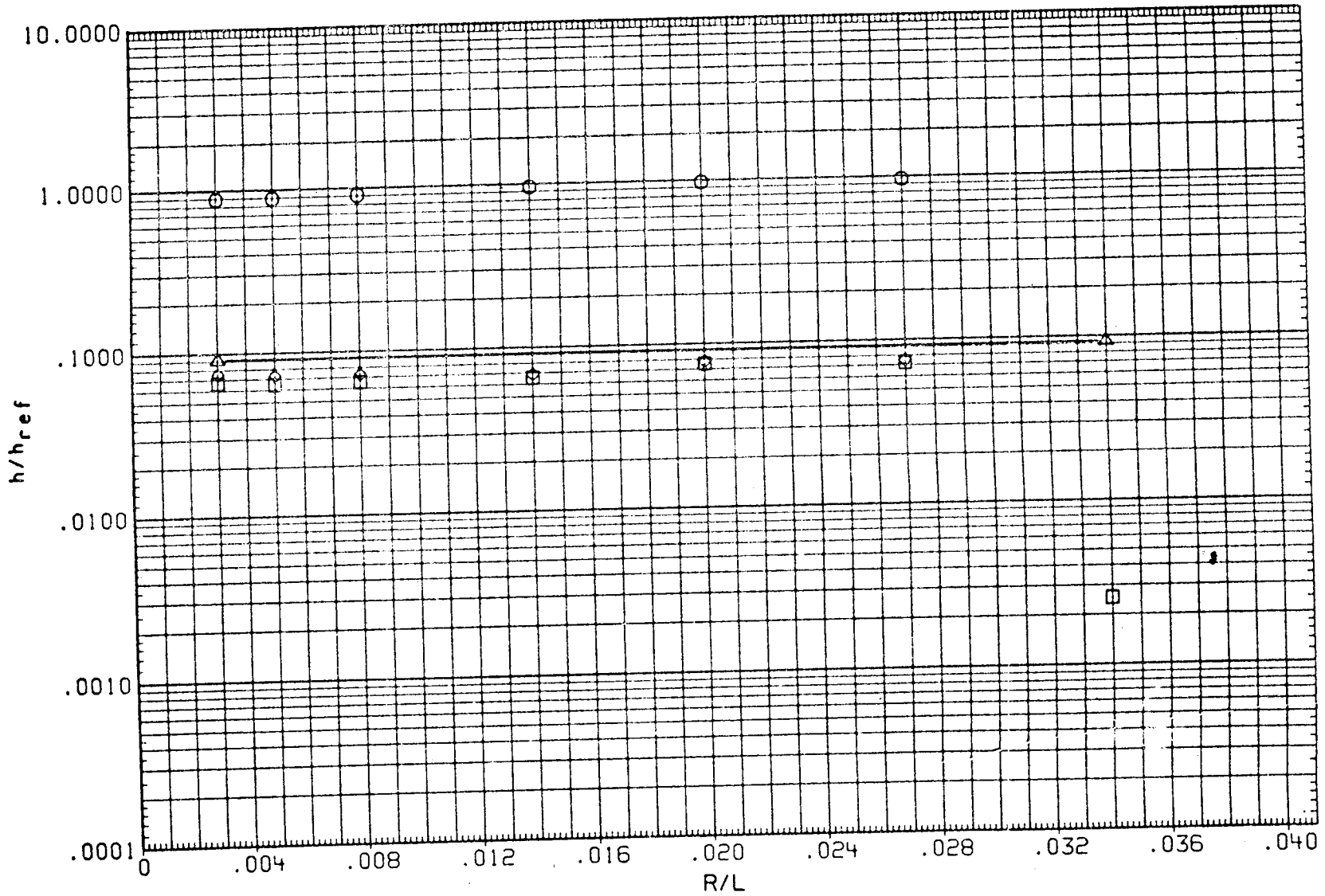

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 216

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

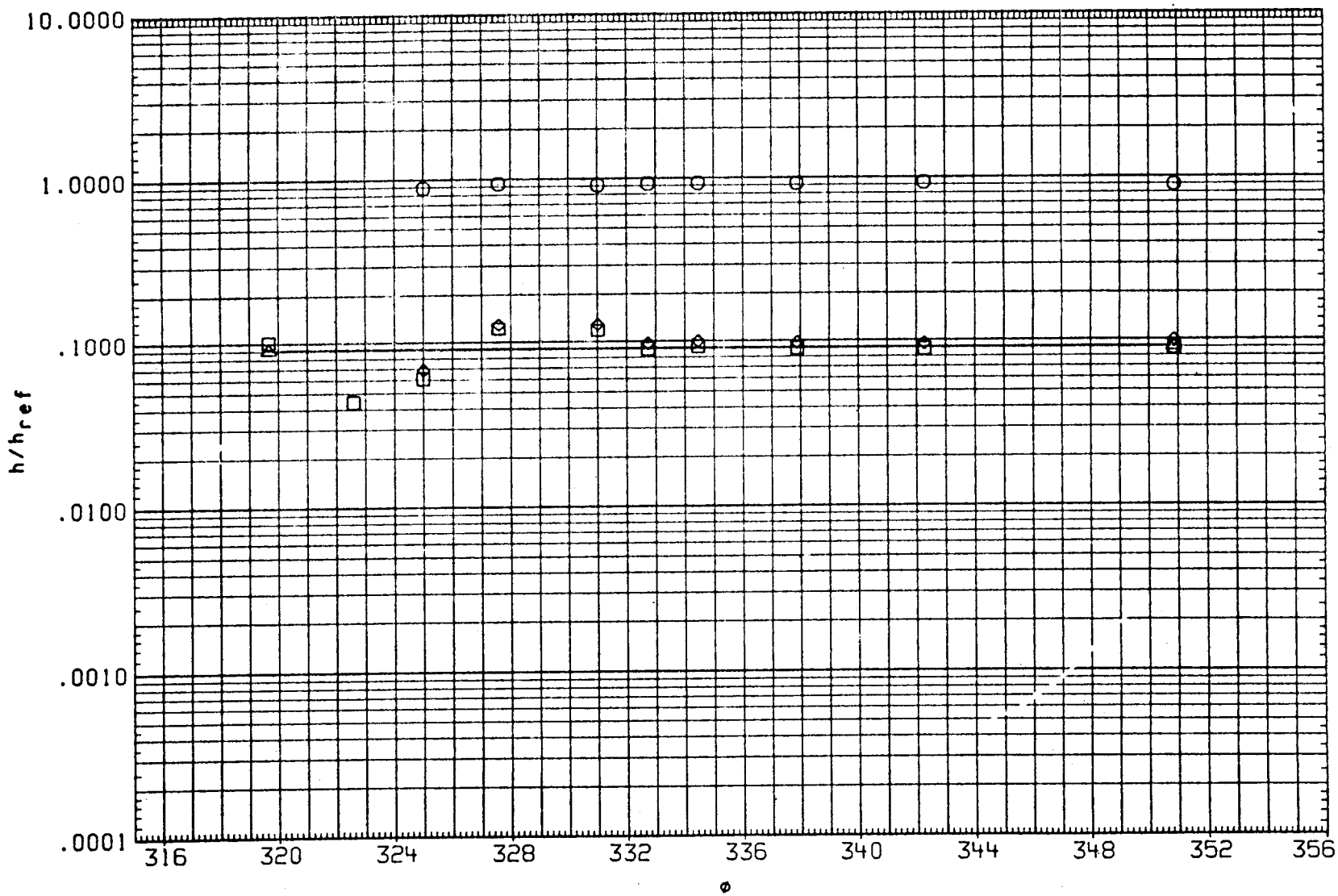

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .399 DATE 22 APR 78 PAGE 217

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

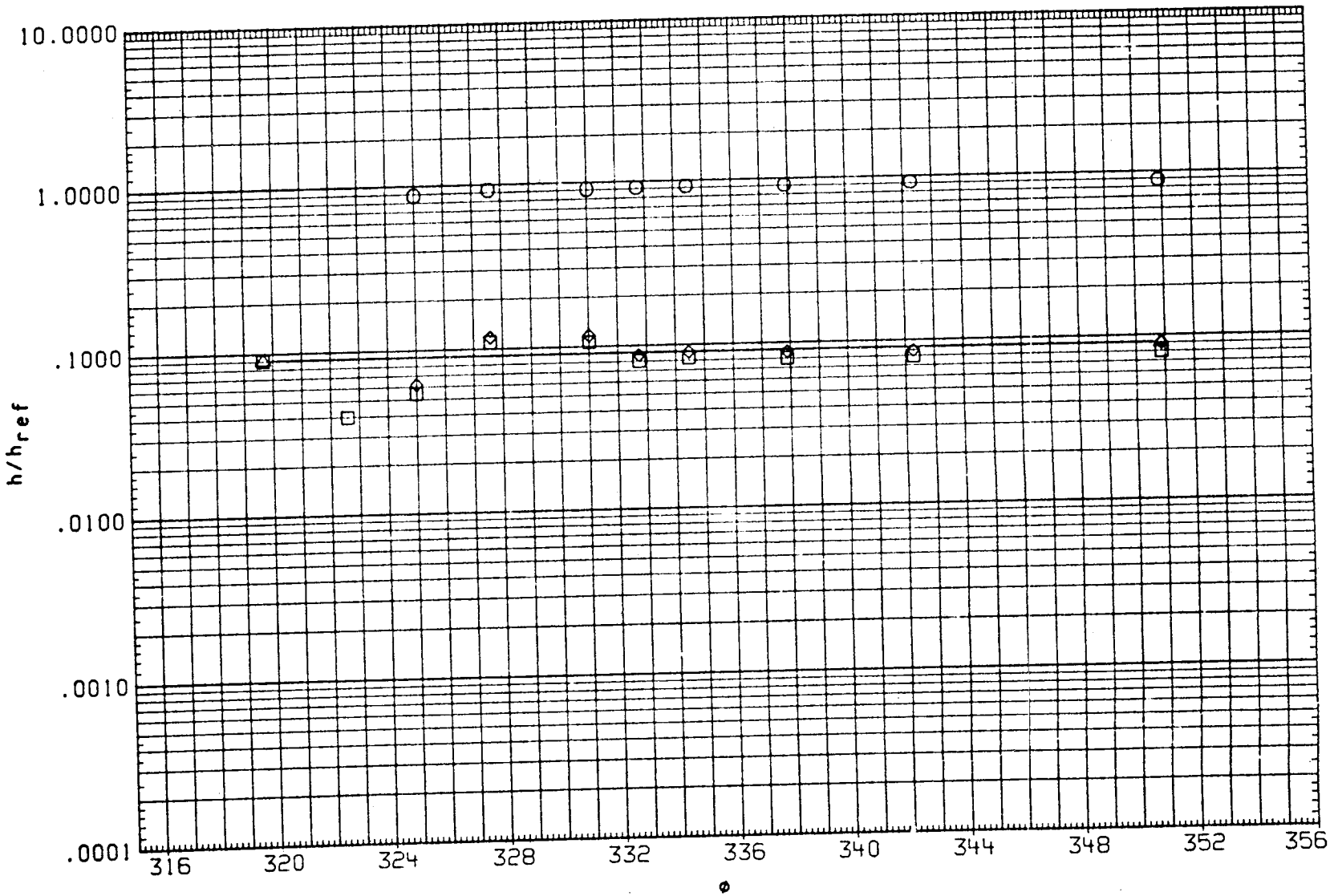

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .399 DATE 22 APR 78 PAGE 218

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

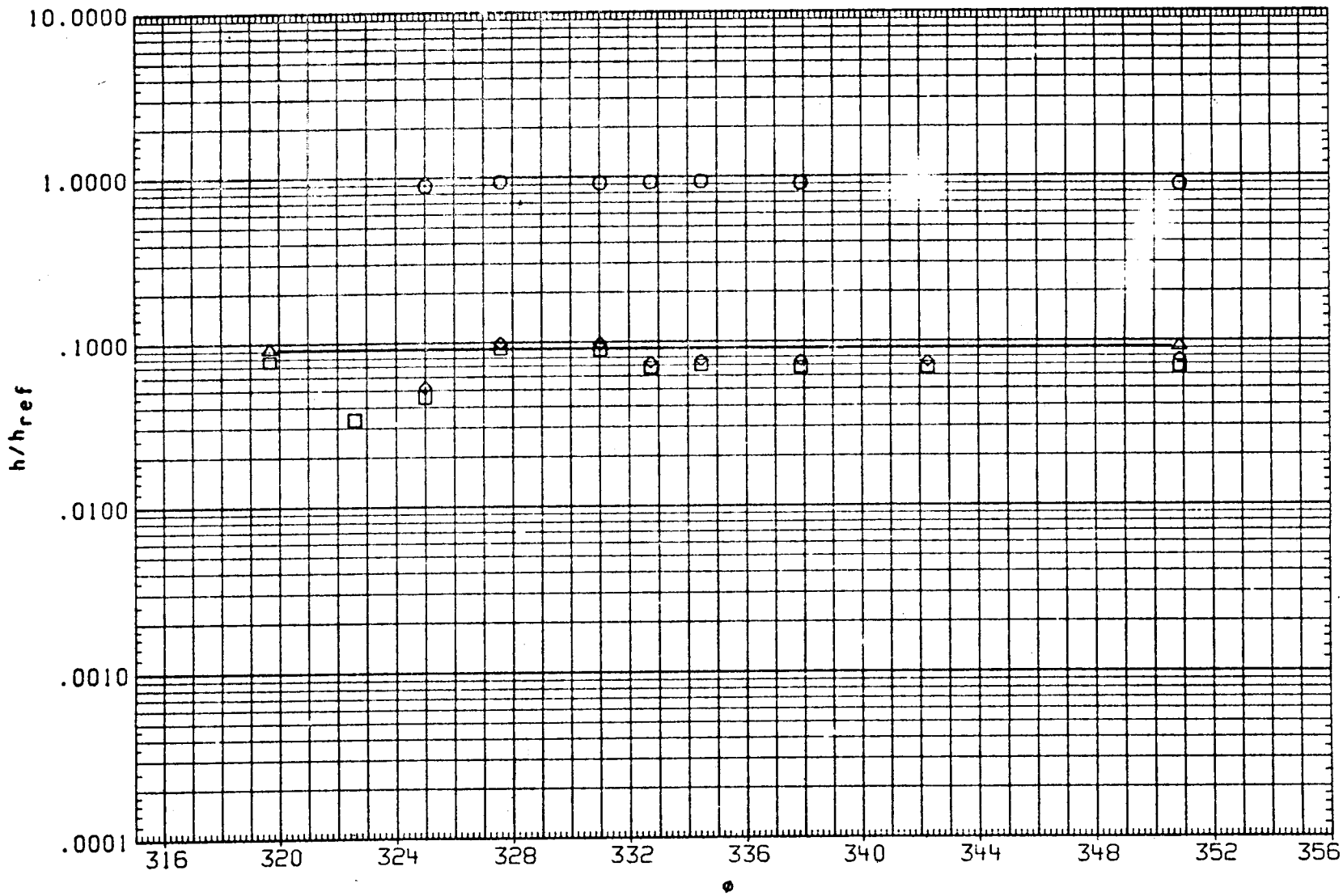

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .399 DATE 22 APR 78 PAGE 219

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

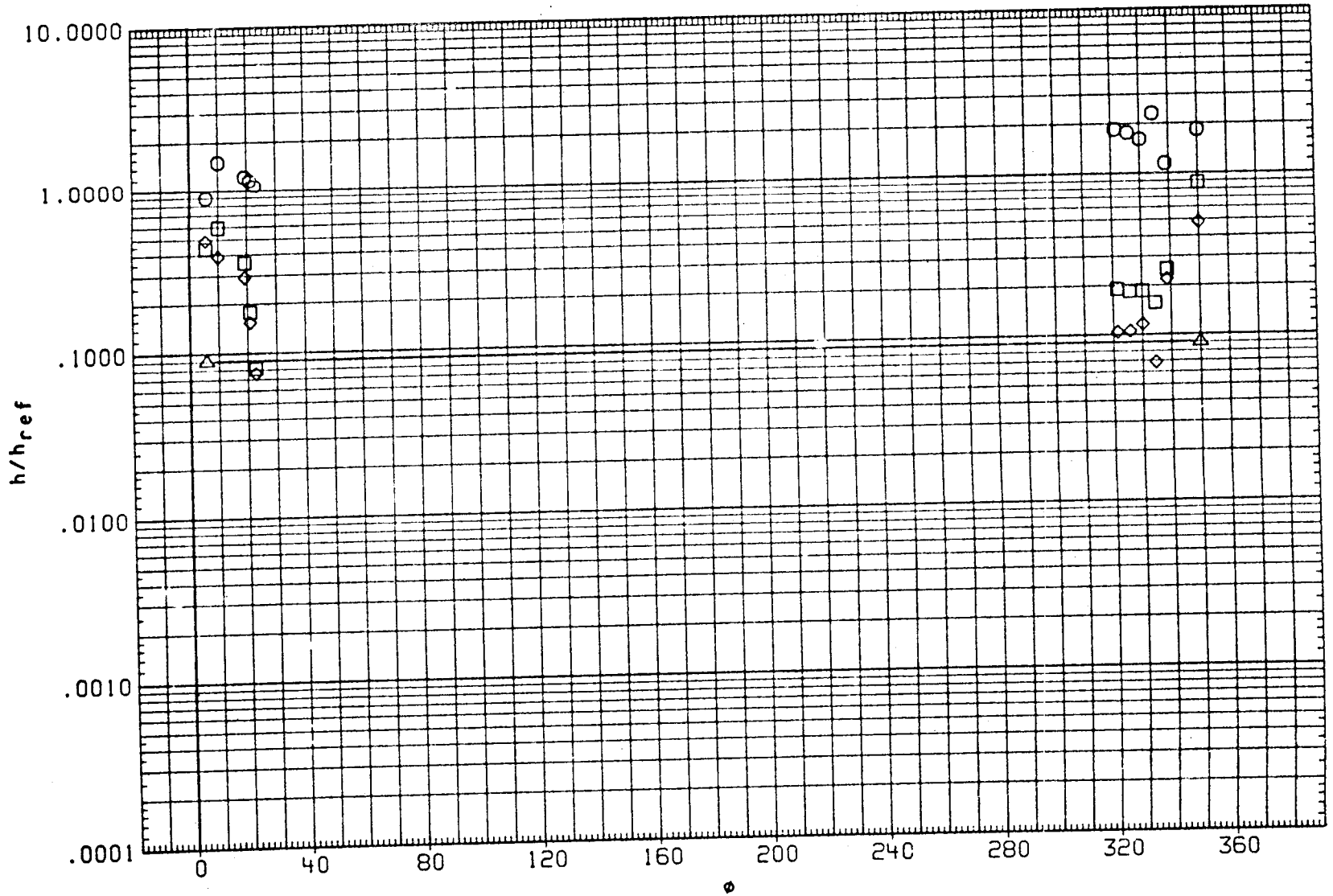

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .850 X/L = .437 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

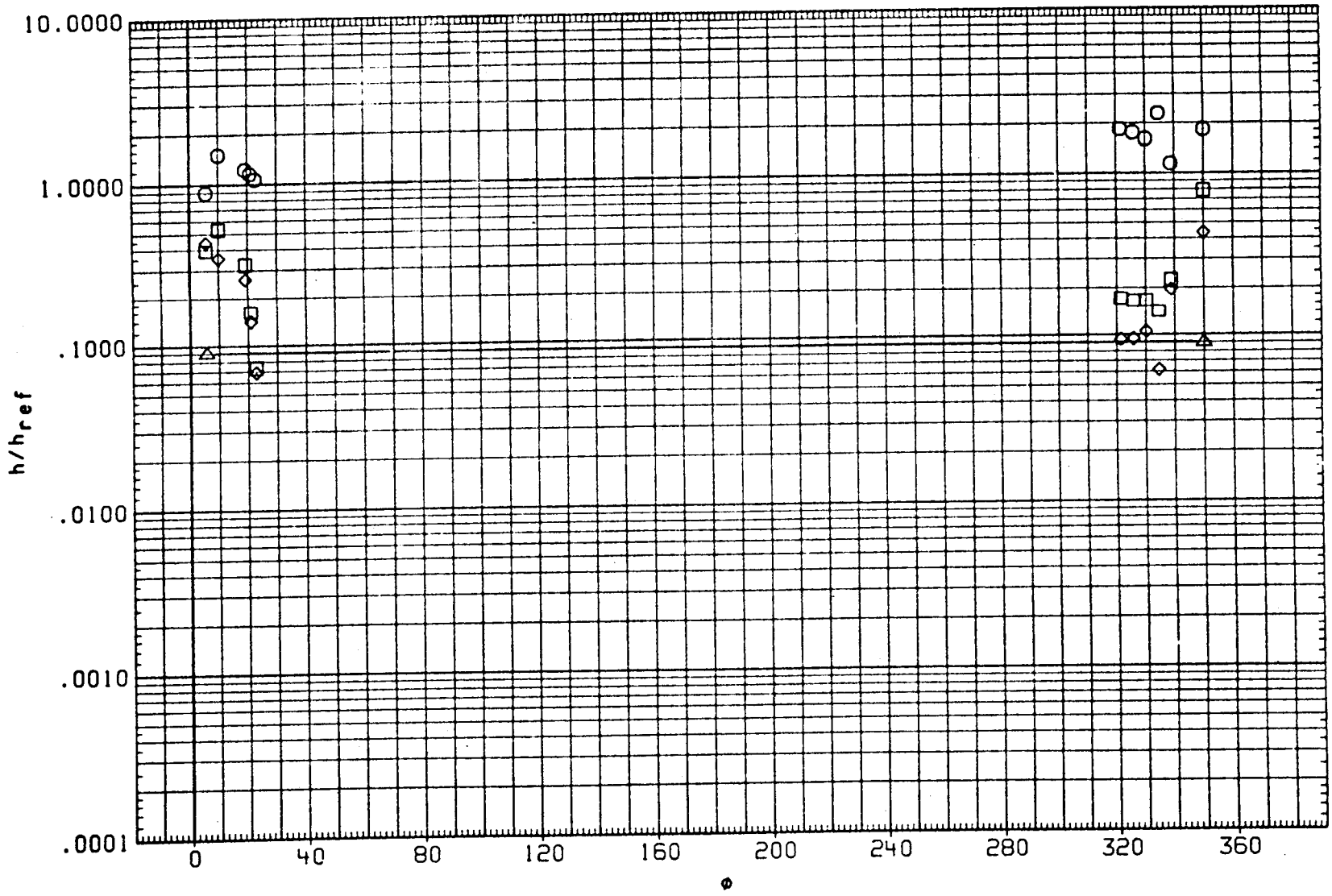

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .900 X/L = .437 DATE 22 APR 78 PAGE 221

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

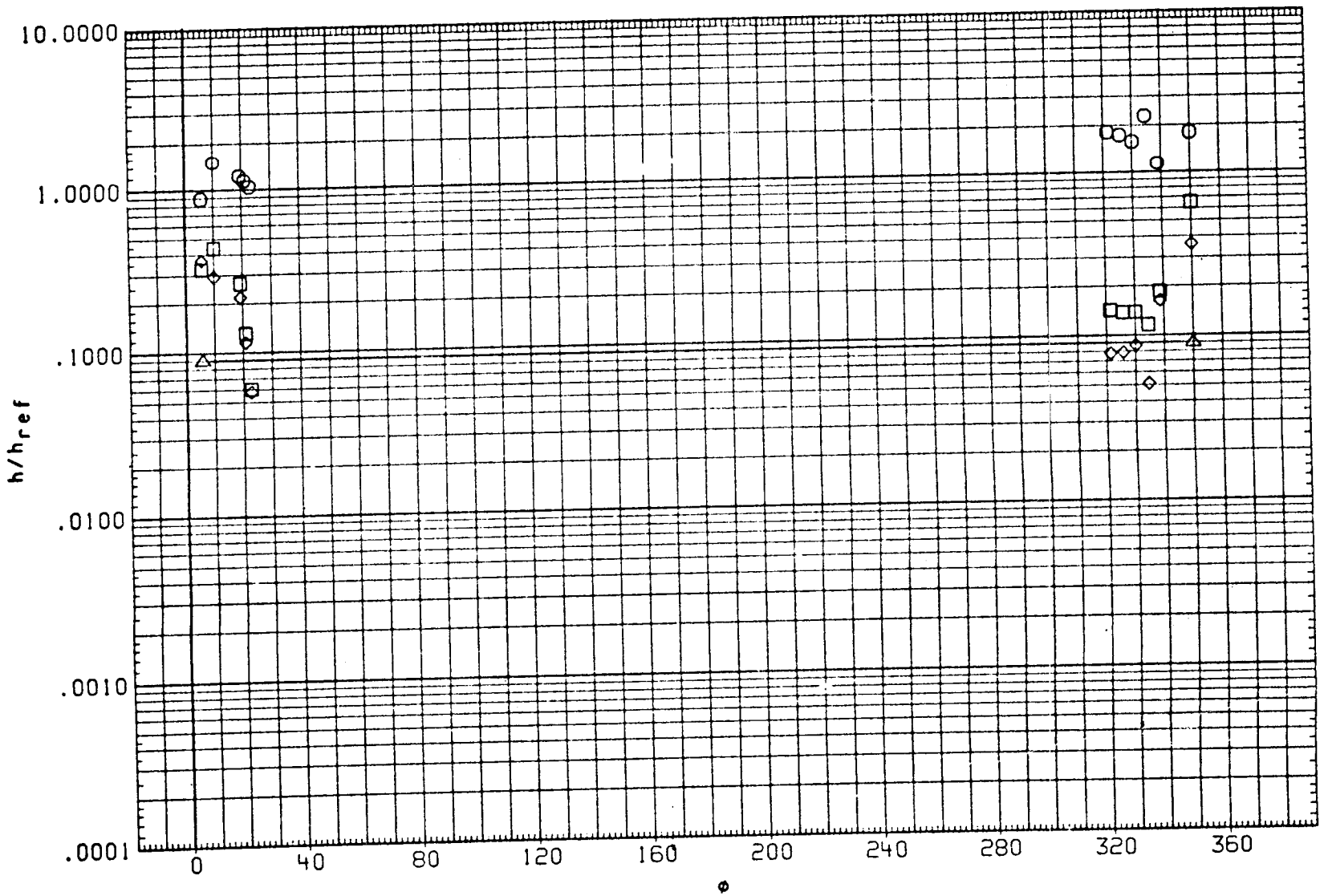

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78 PAGE 222

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

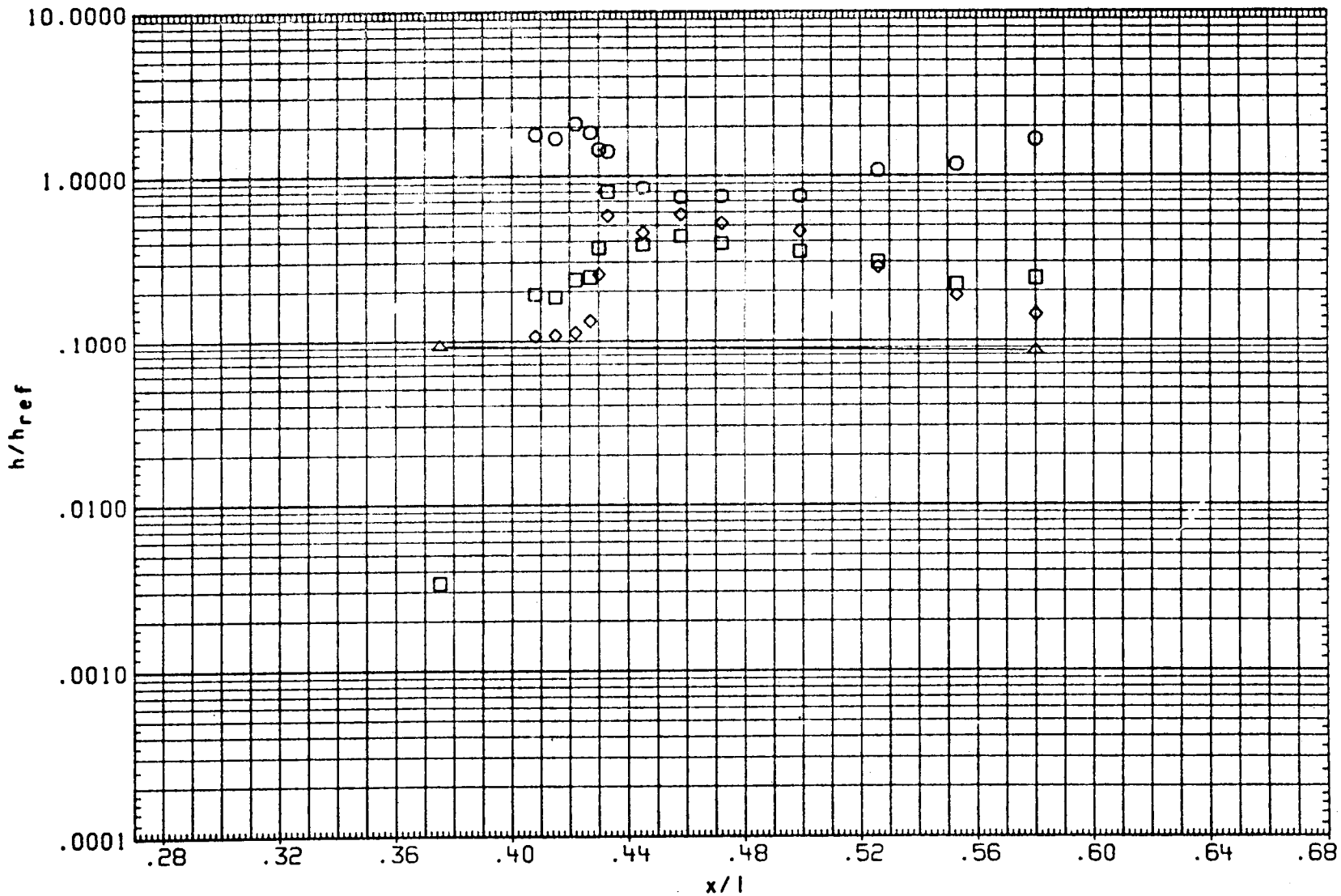

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 223

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

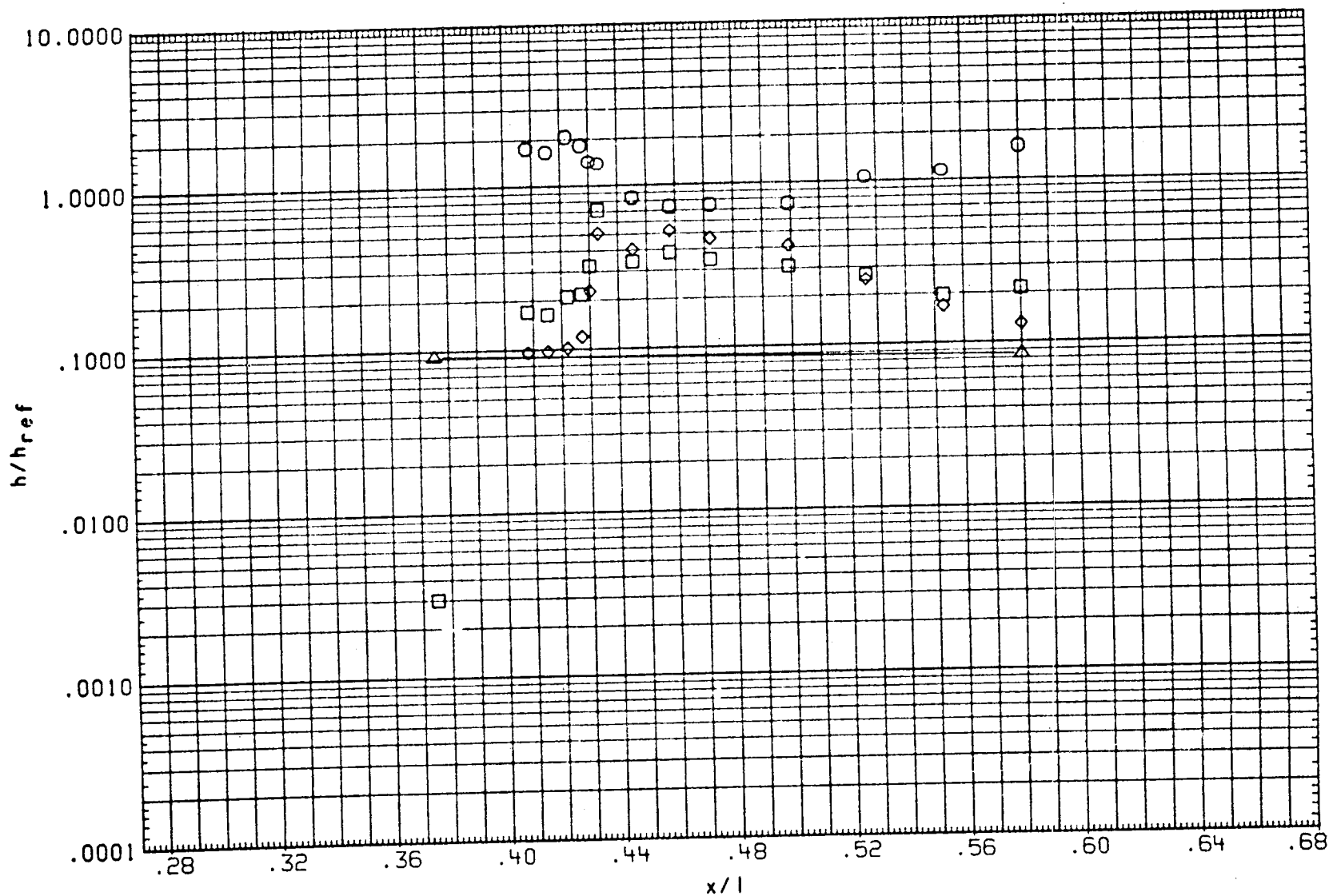

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 224

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

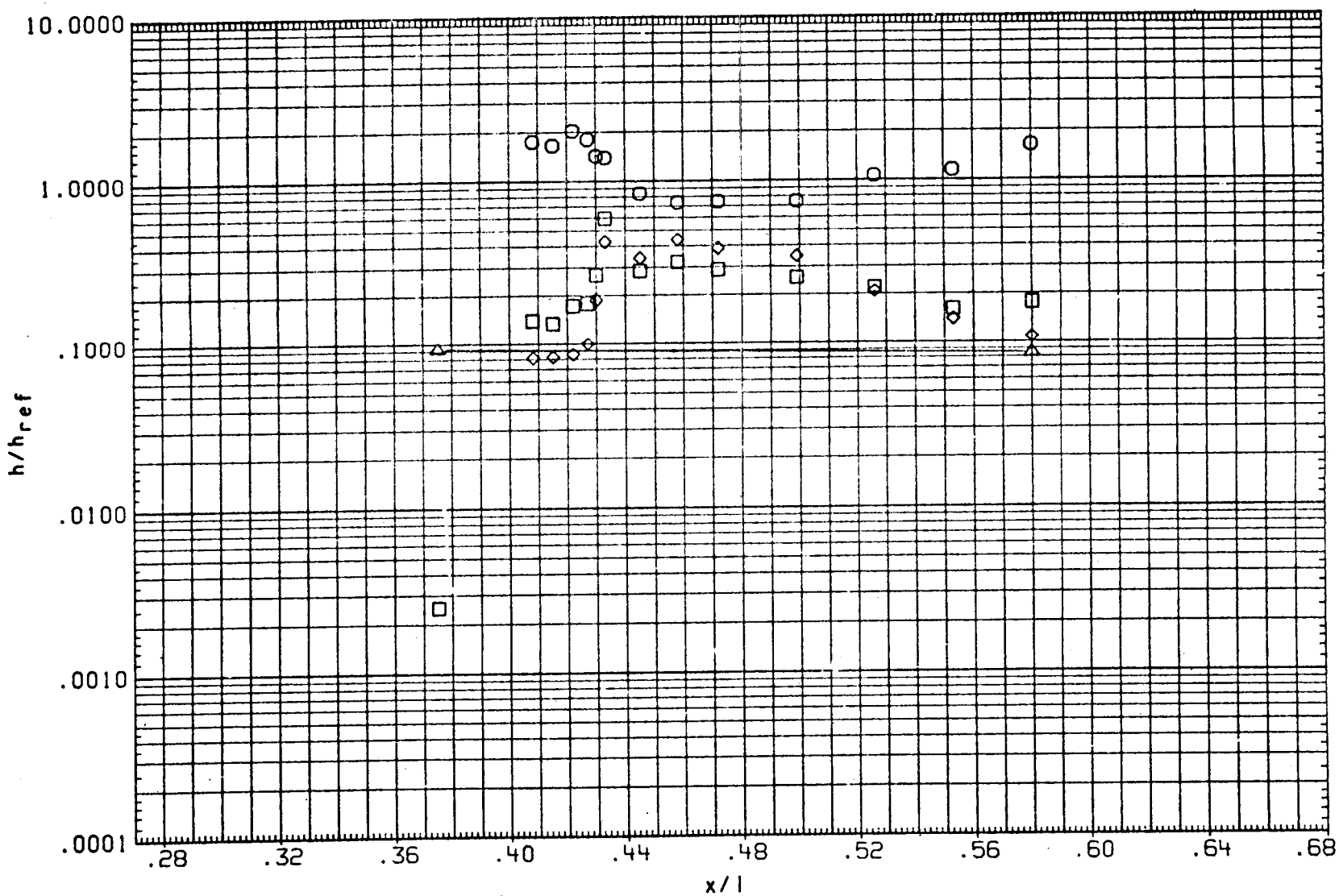

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 225

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

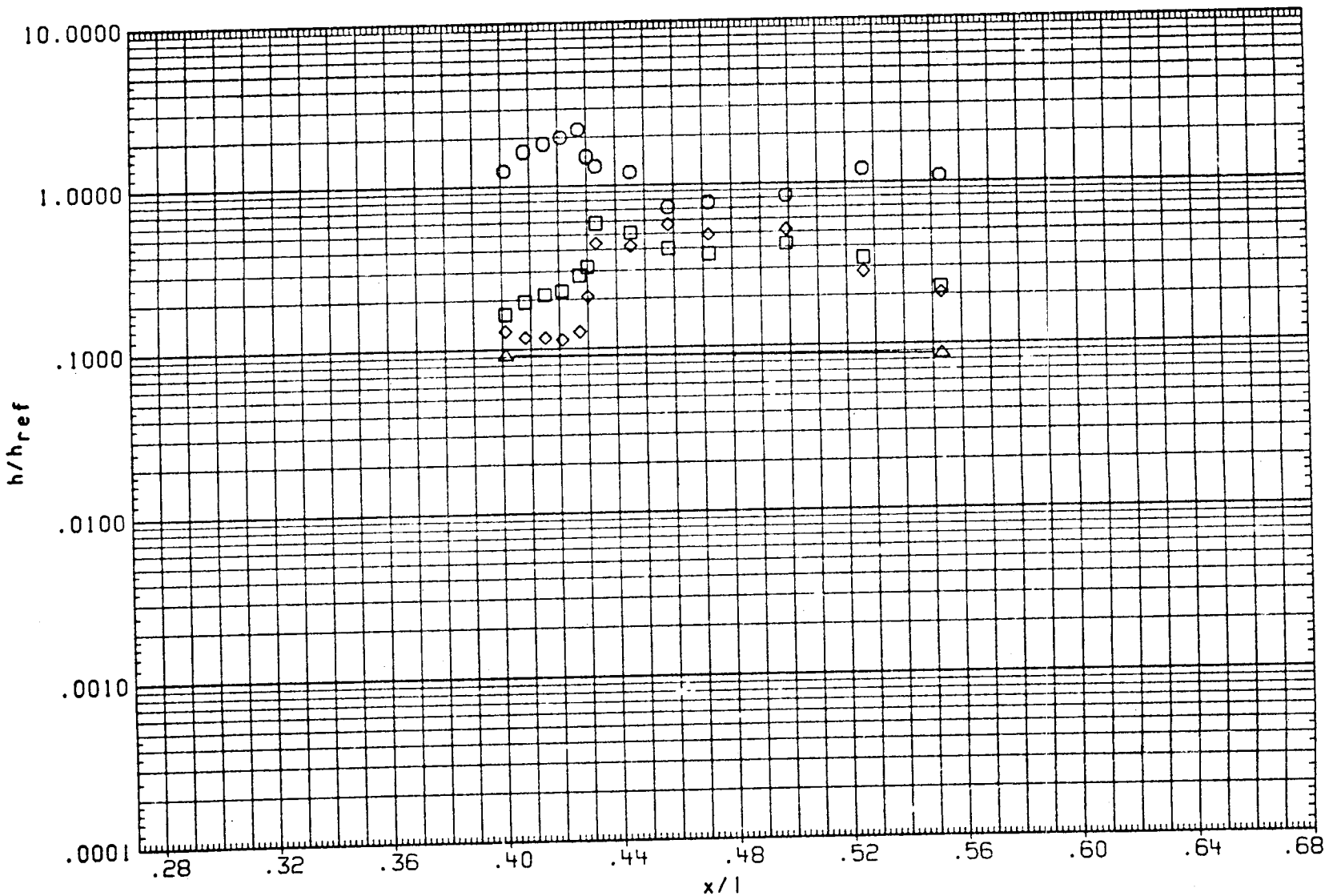

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 226

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

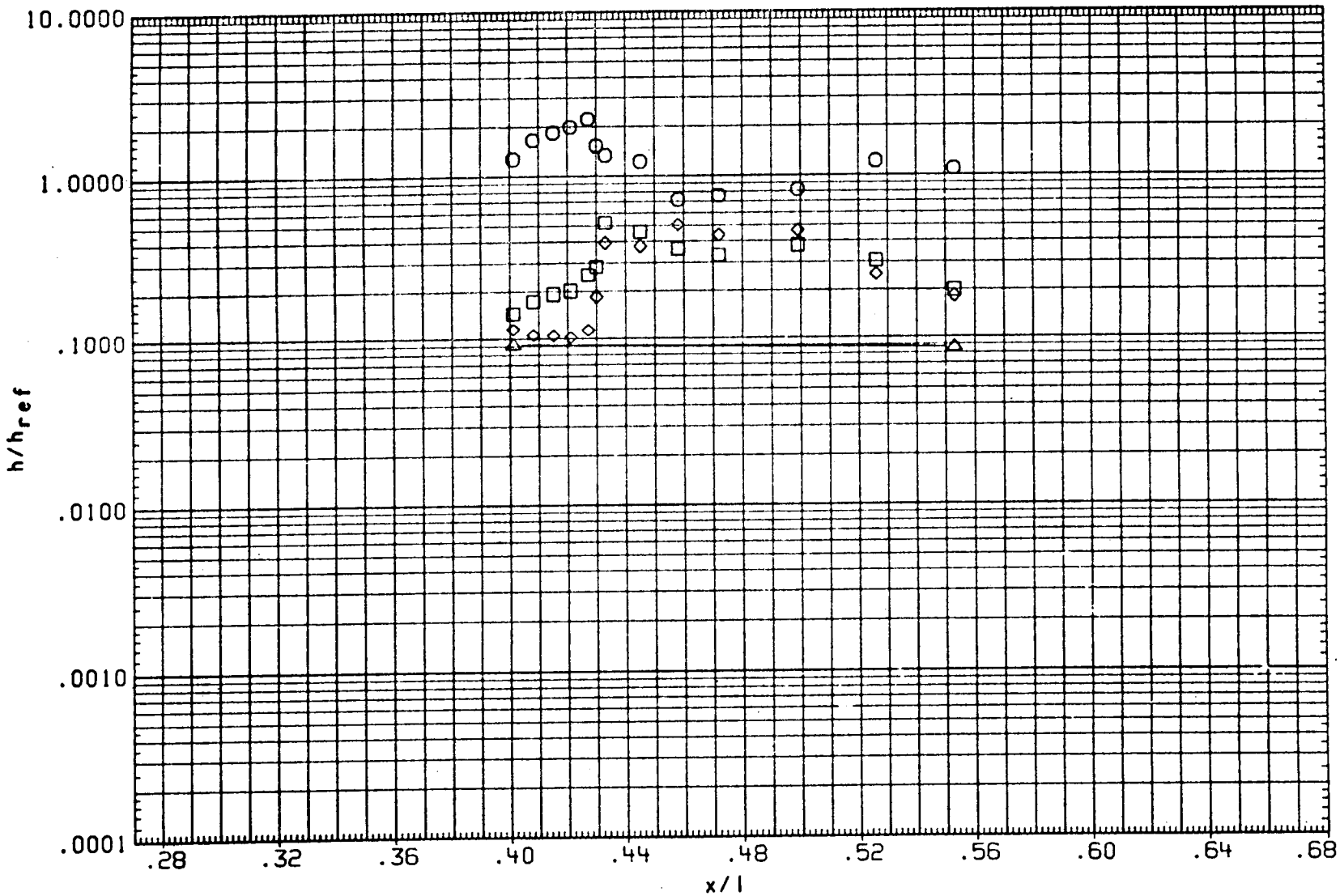

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78 PAGE 227

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

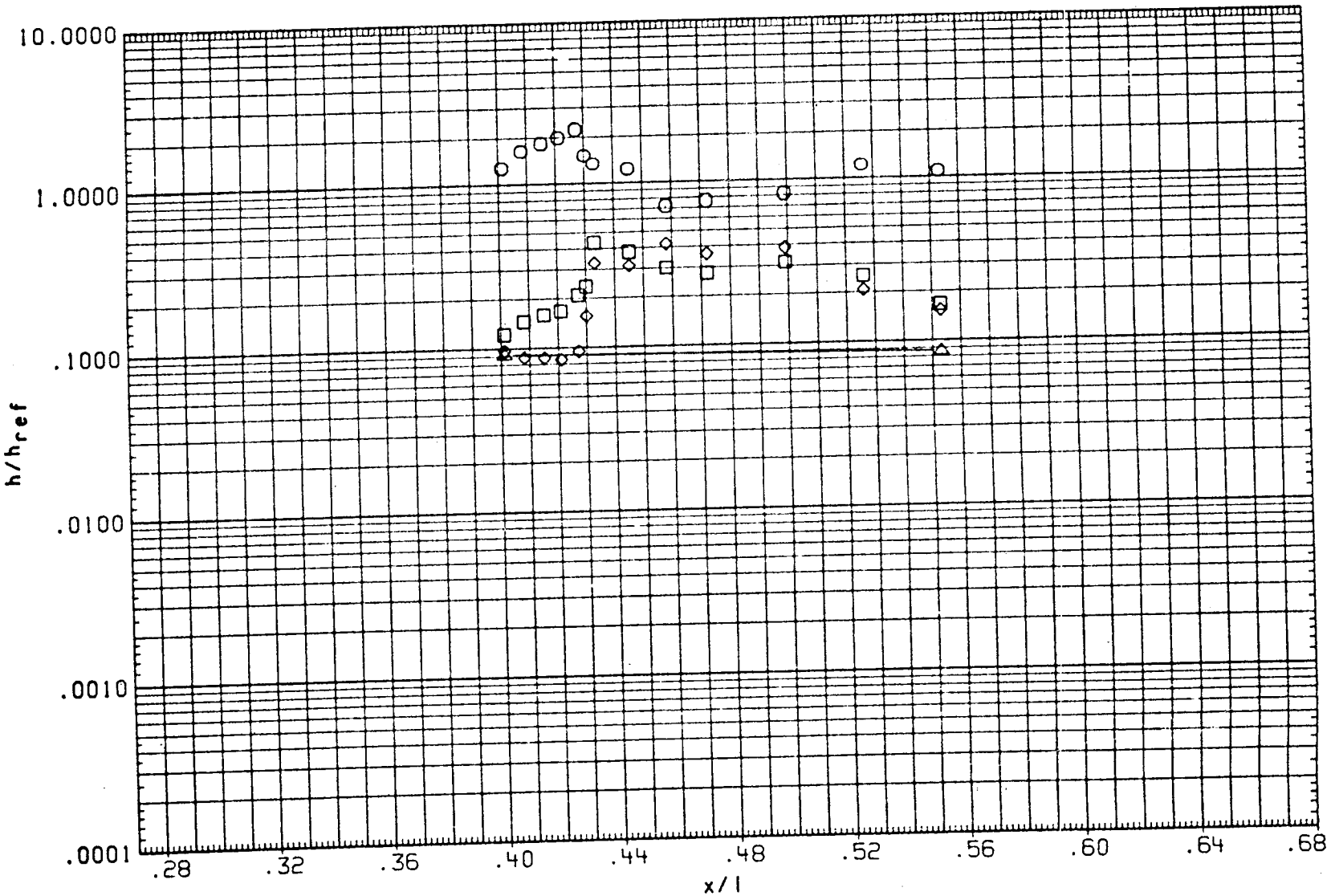

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78 PAGE 228

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

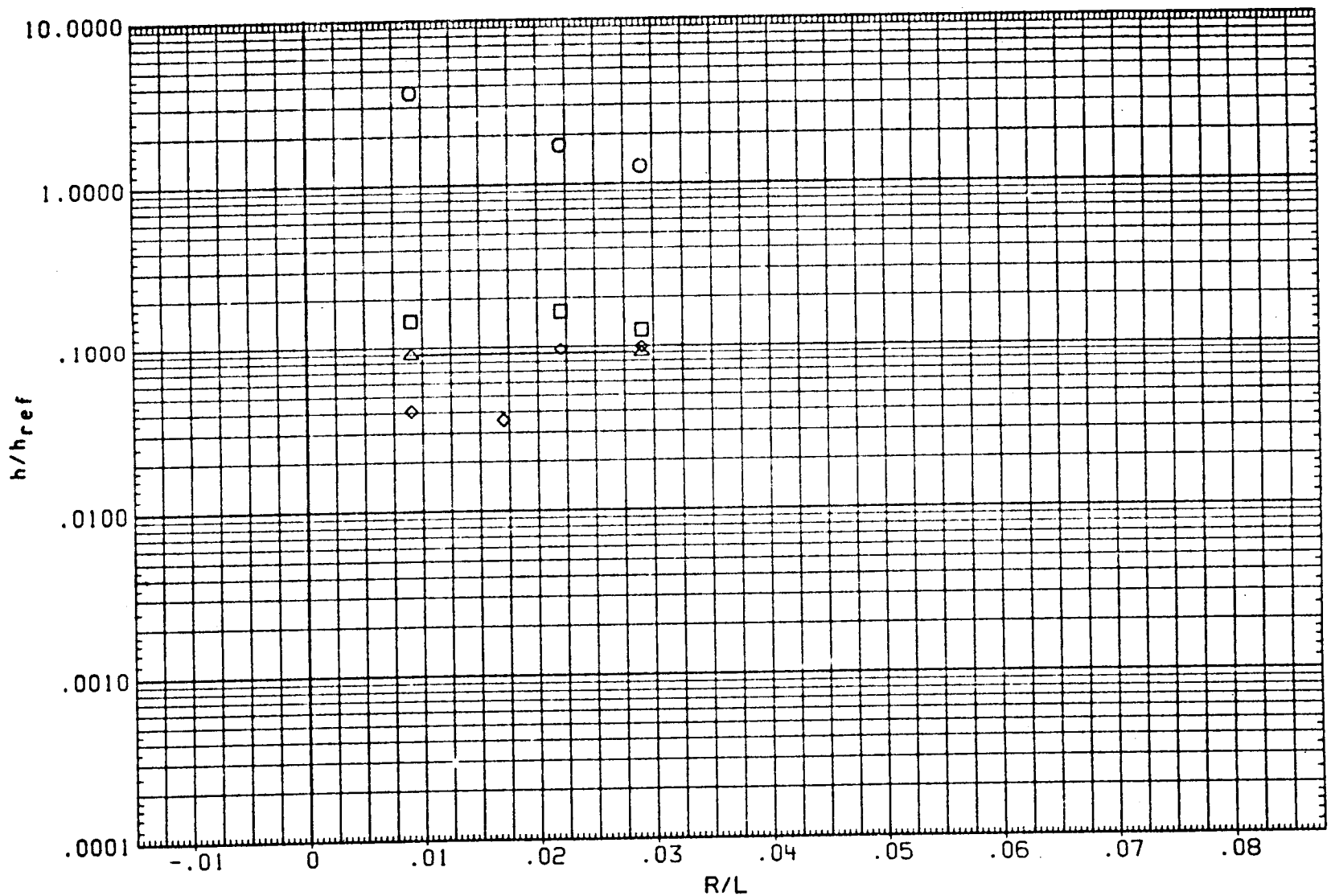

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

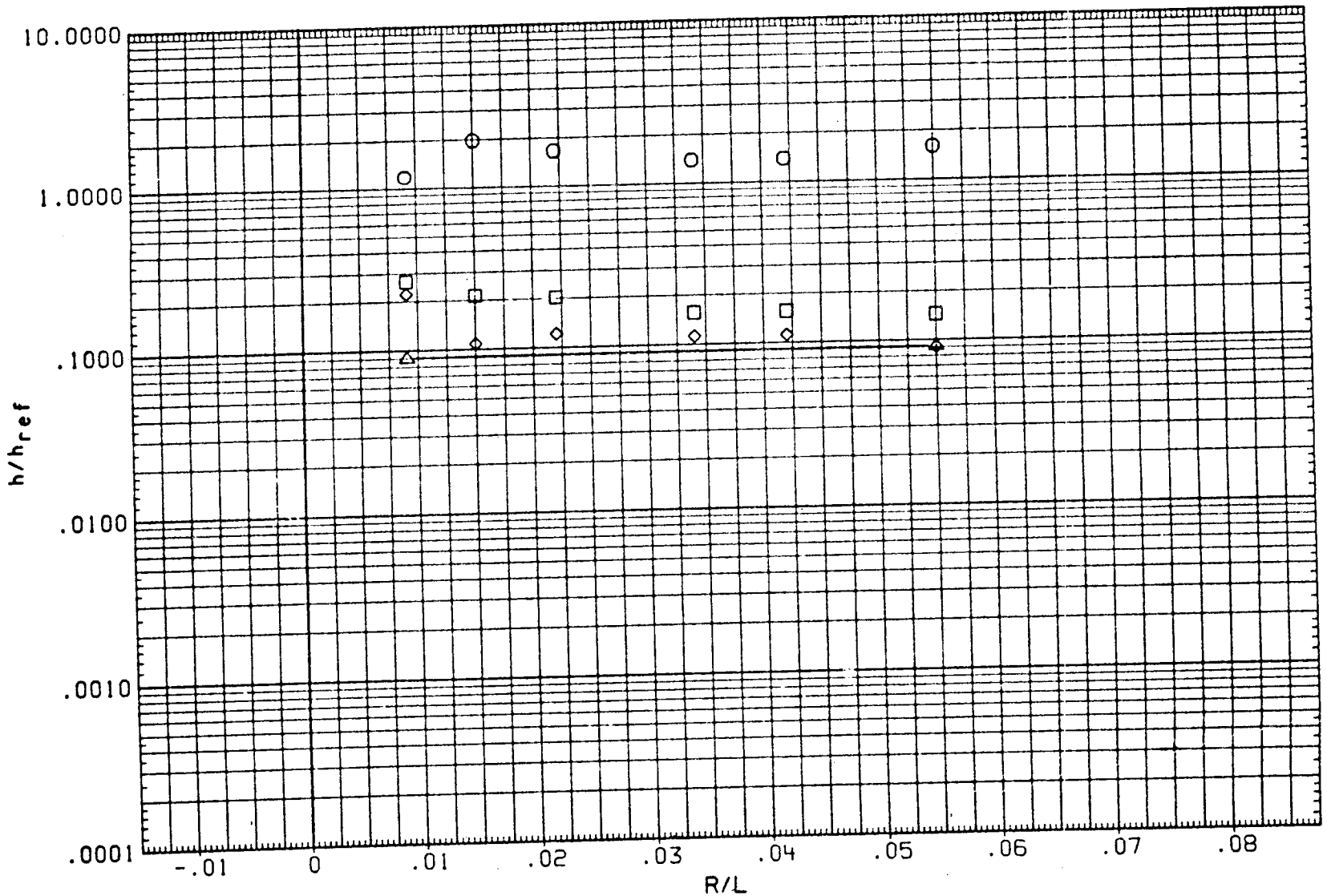

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 230

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH STRUT DIA	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

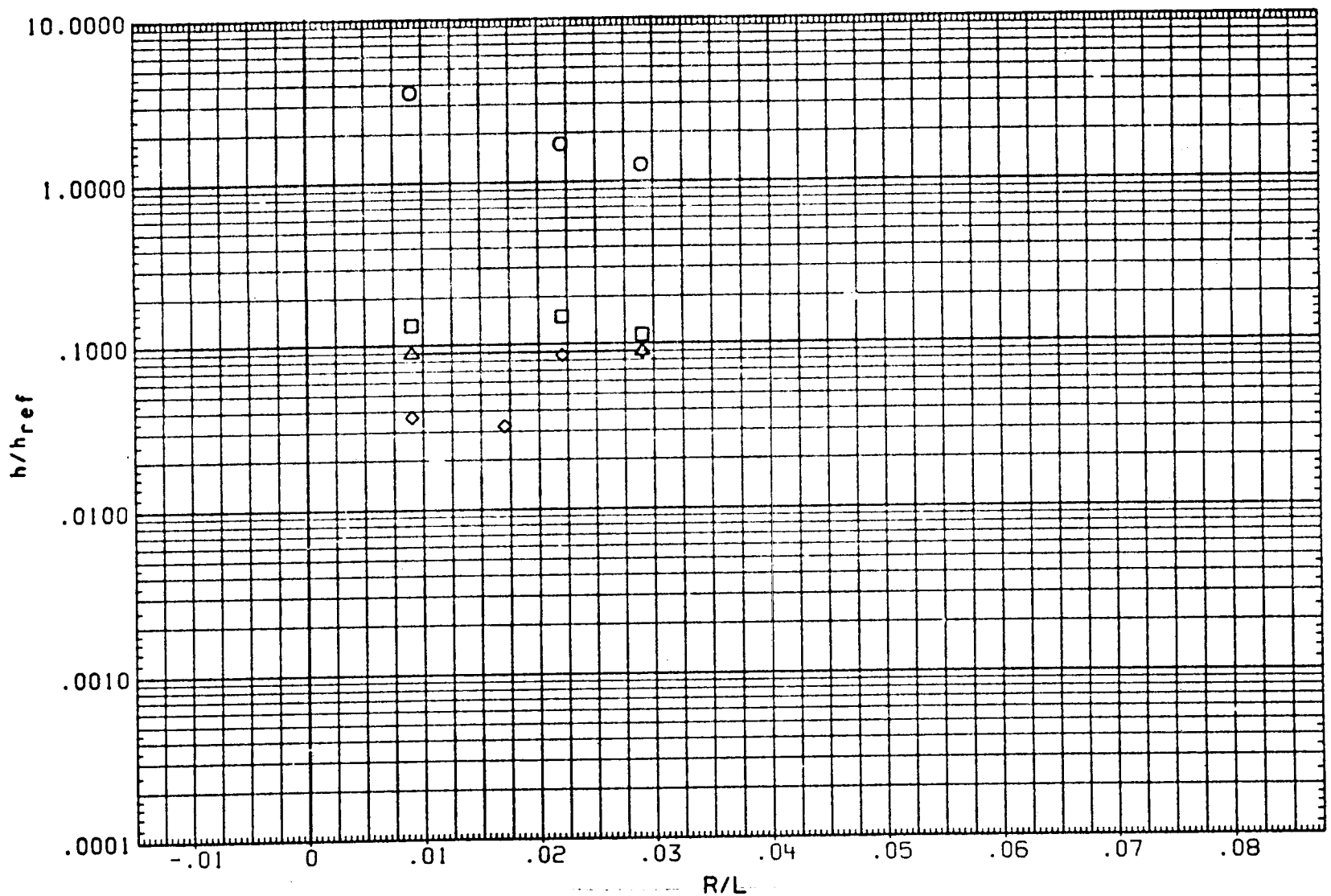

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 231

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

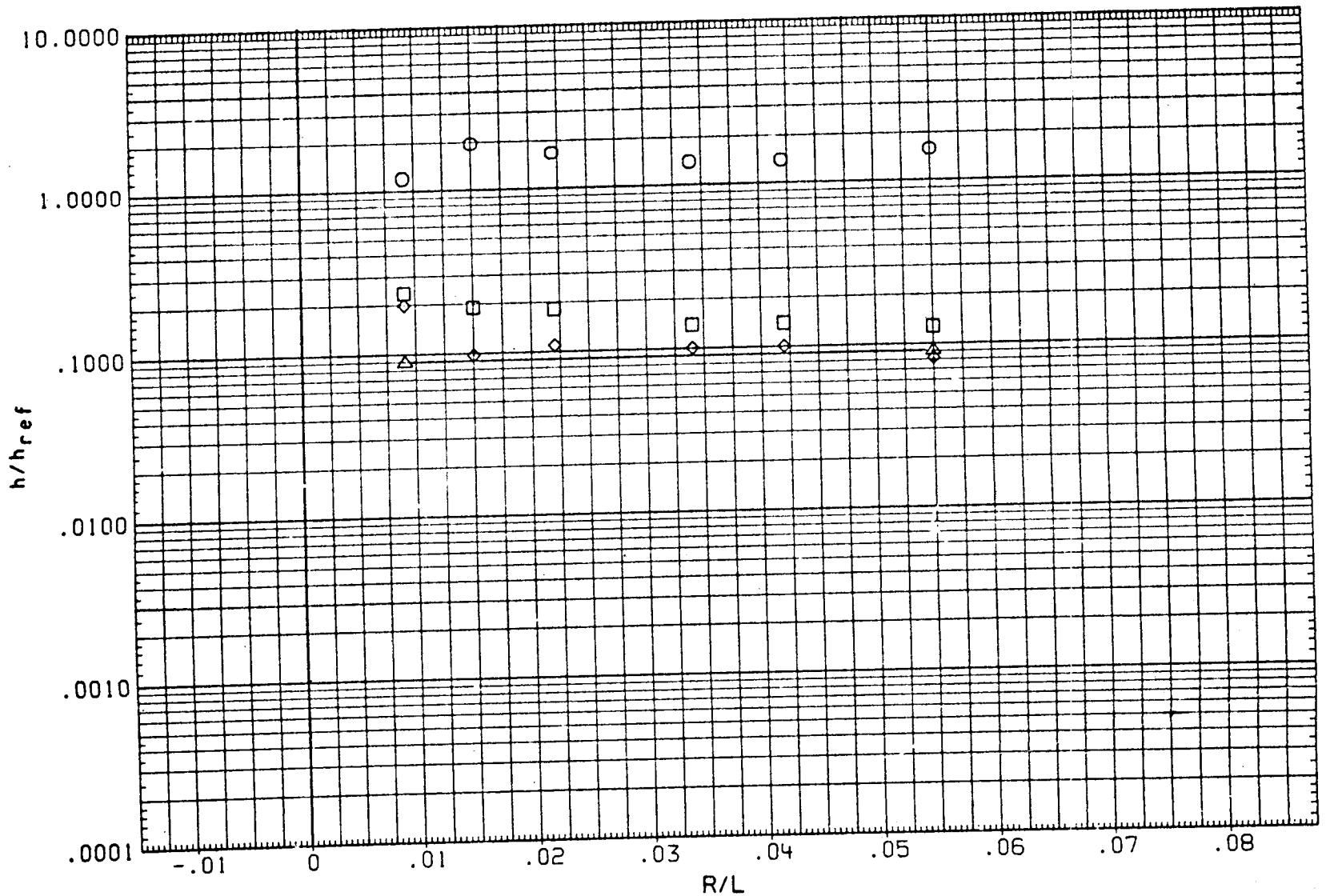

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 232

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH STRUT DIA	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

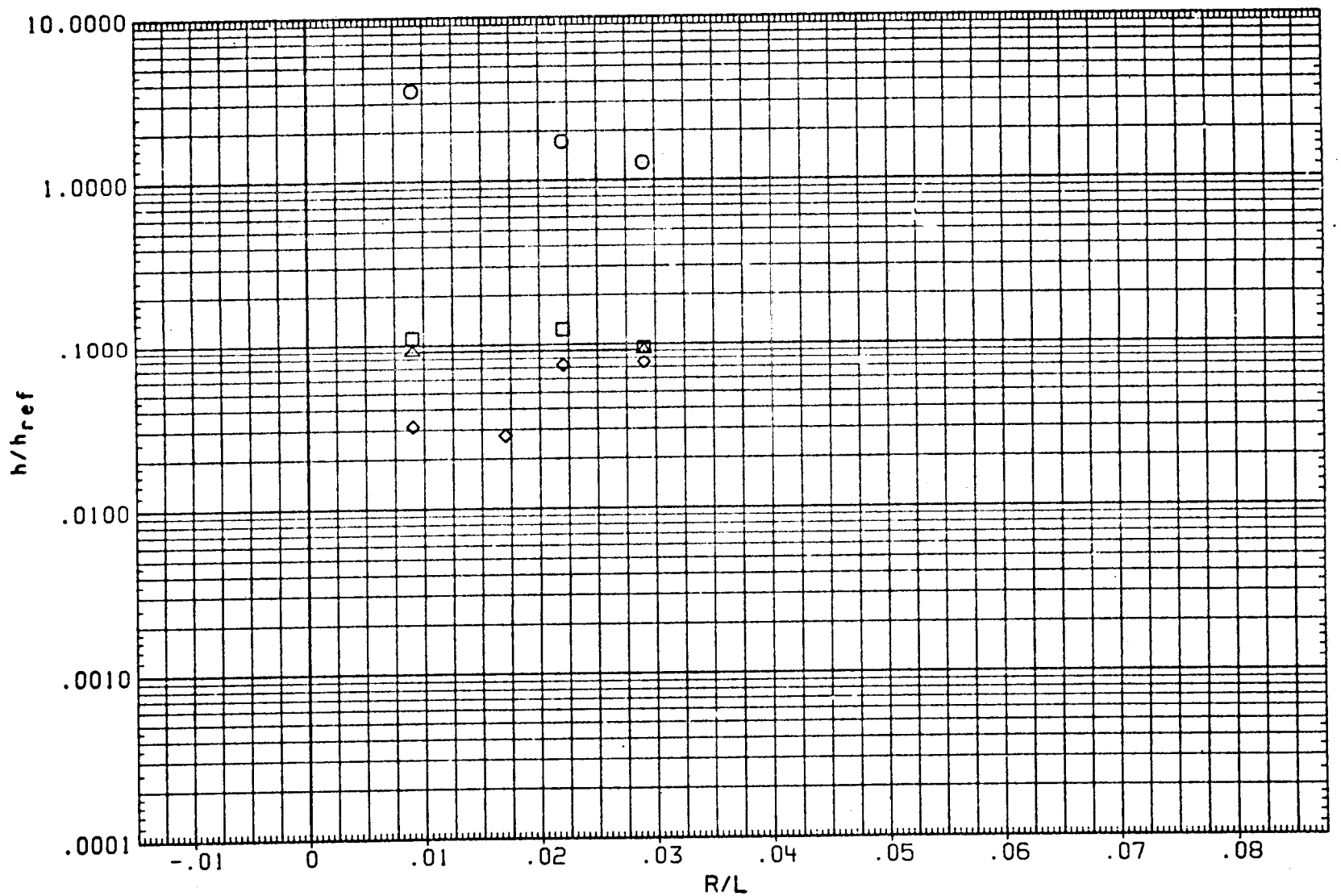

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 233

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	LH STRUT DIA	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

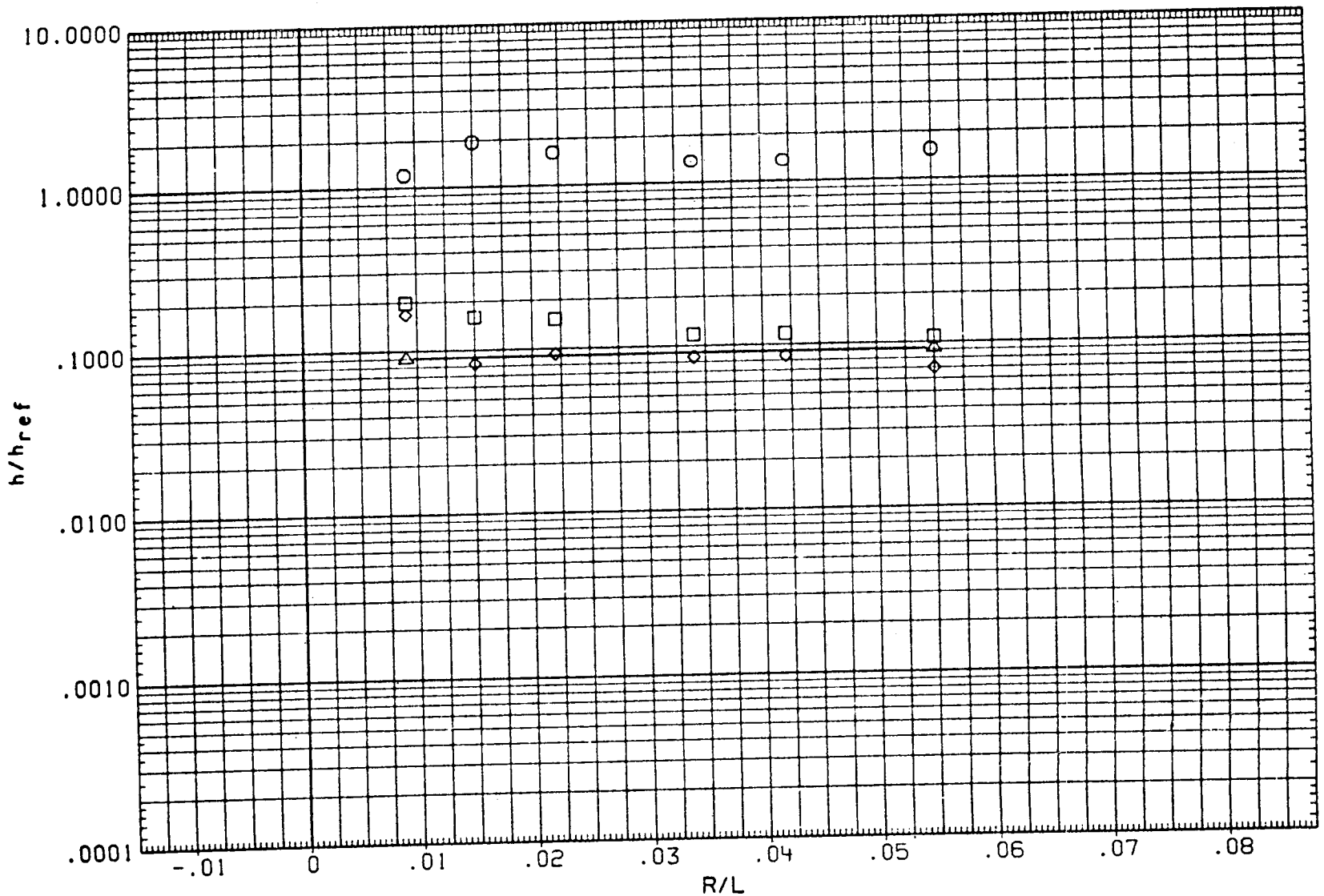

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 234

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P02)	□	IH51A CONF 1A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0A)	◇	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

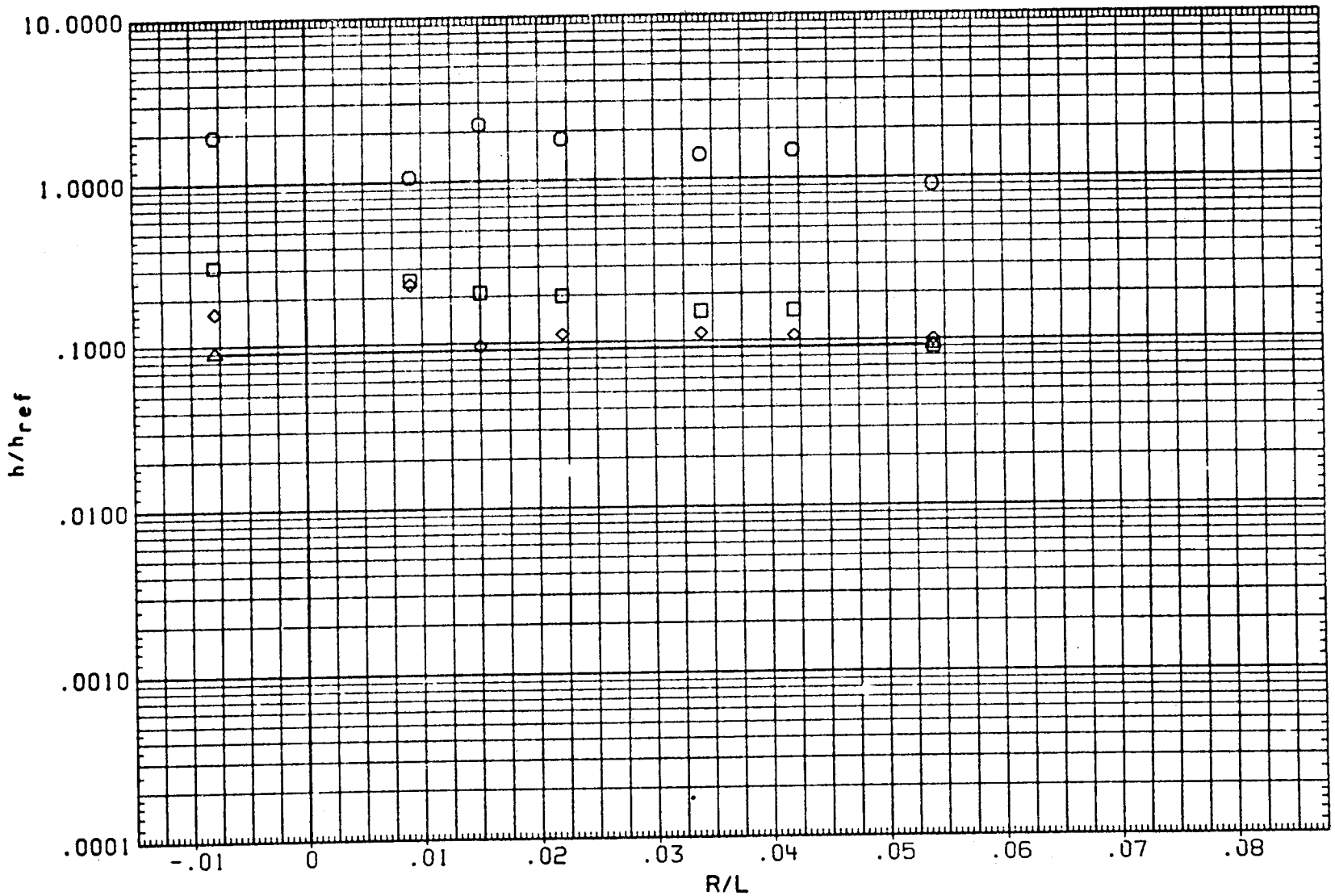

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 235

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P02)	□	IH51A CONF 1A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0A)	◇	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

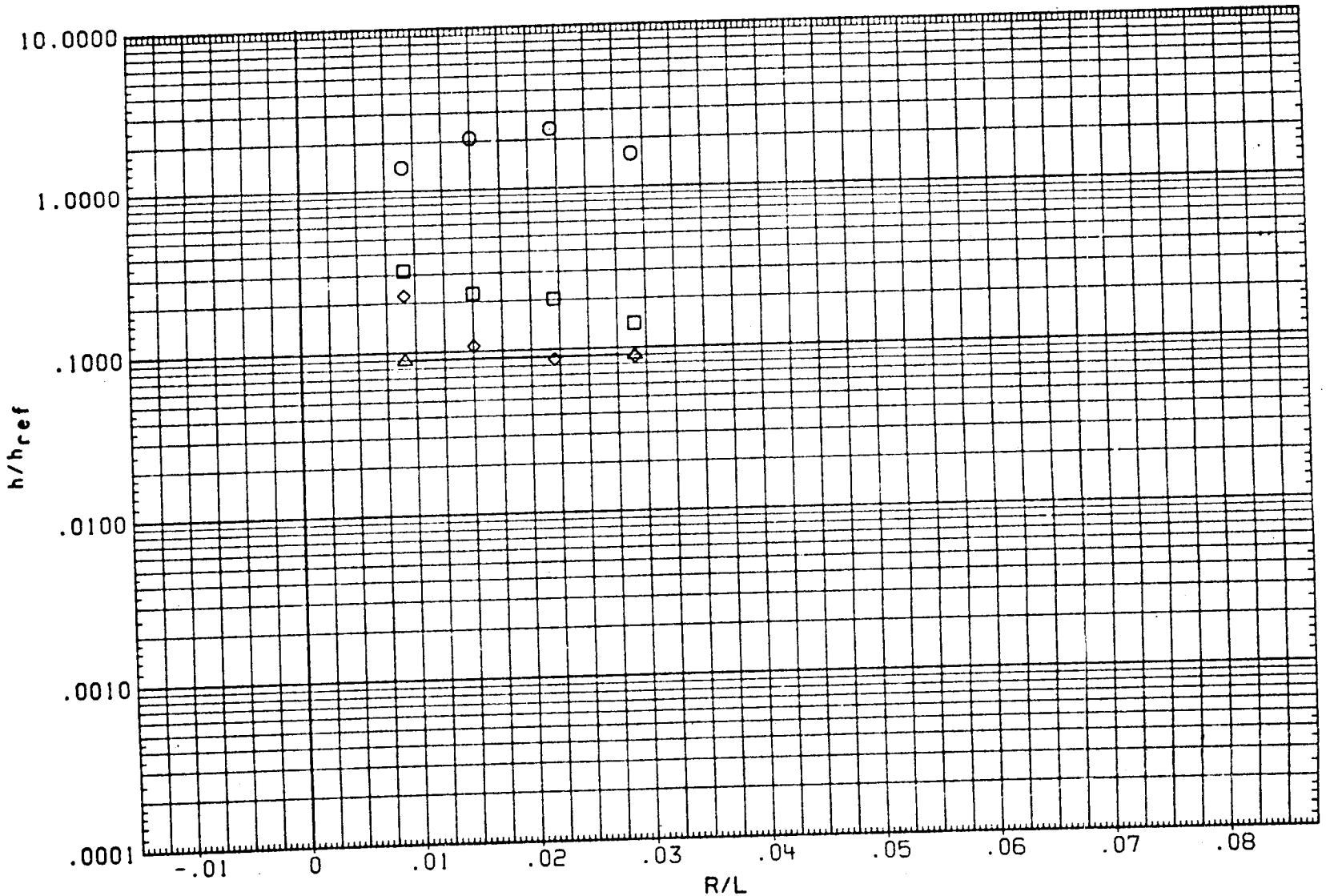

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 236

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P02)	□	IH51A CONF 1A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0A)	◇	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

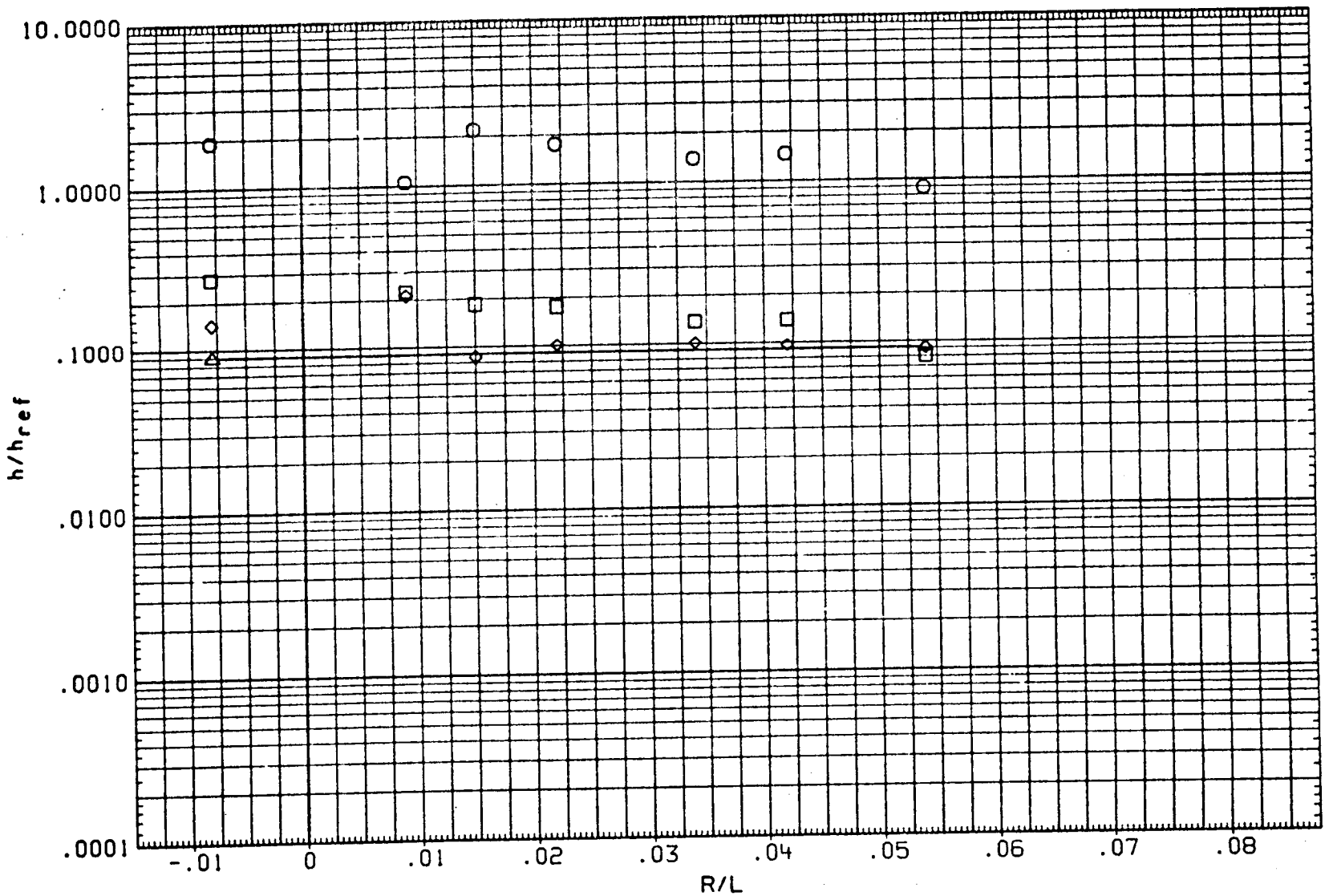

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P02)	□	IH51A CONF 1A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0A)	◇	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

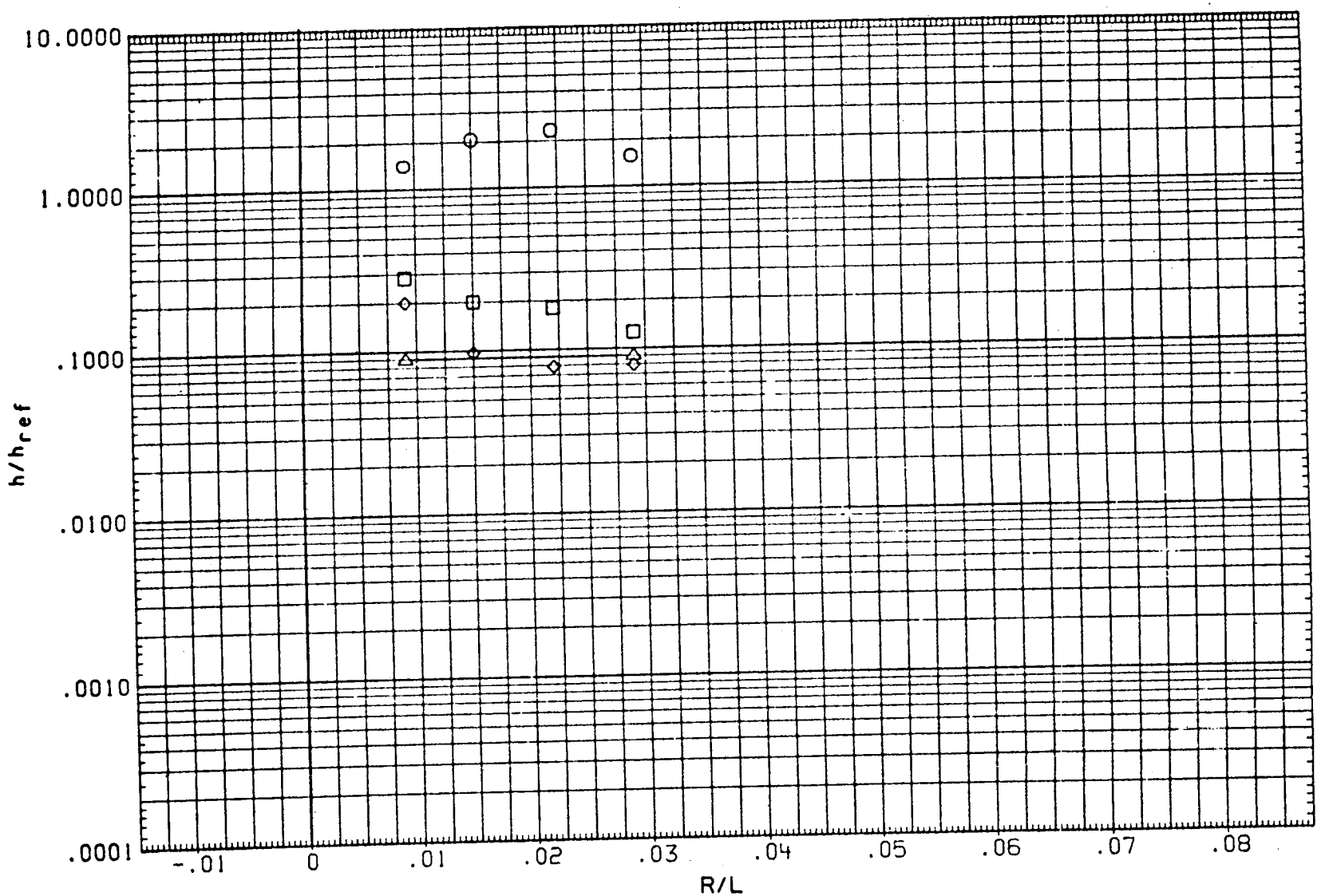

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 238

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P02)	□	IH51A CONF 1A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0A)	◇	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

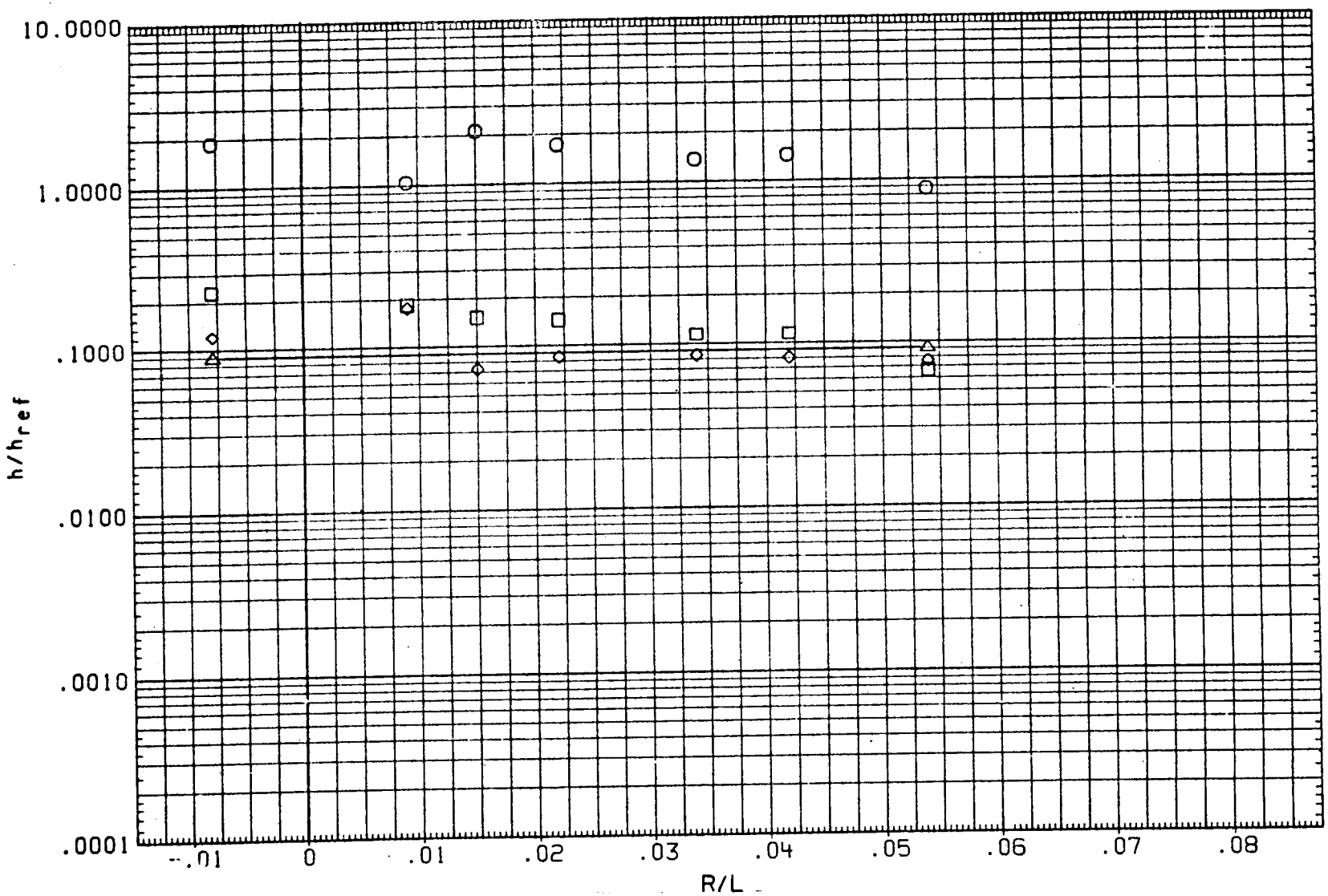

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 239

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P02)	□	IH51A CONF 1A RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0A)	◇	IH51A 2A+3A+4A-5A-5A	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

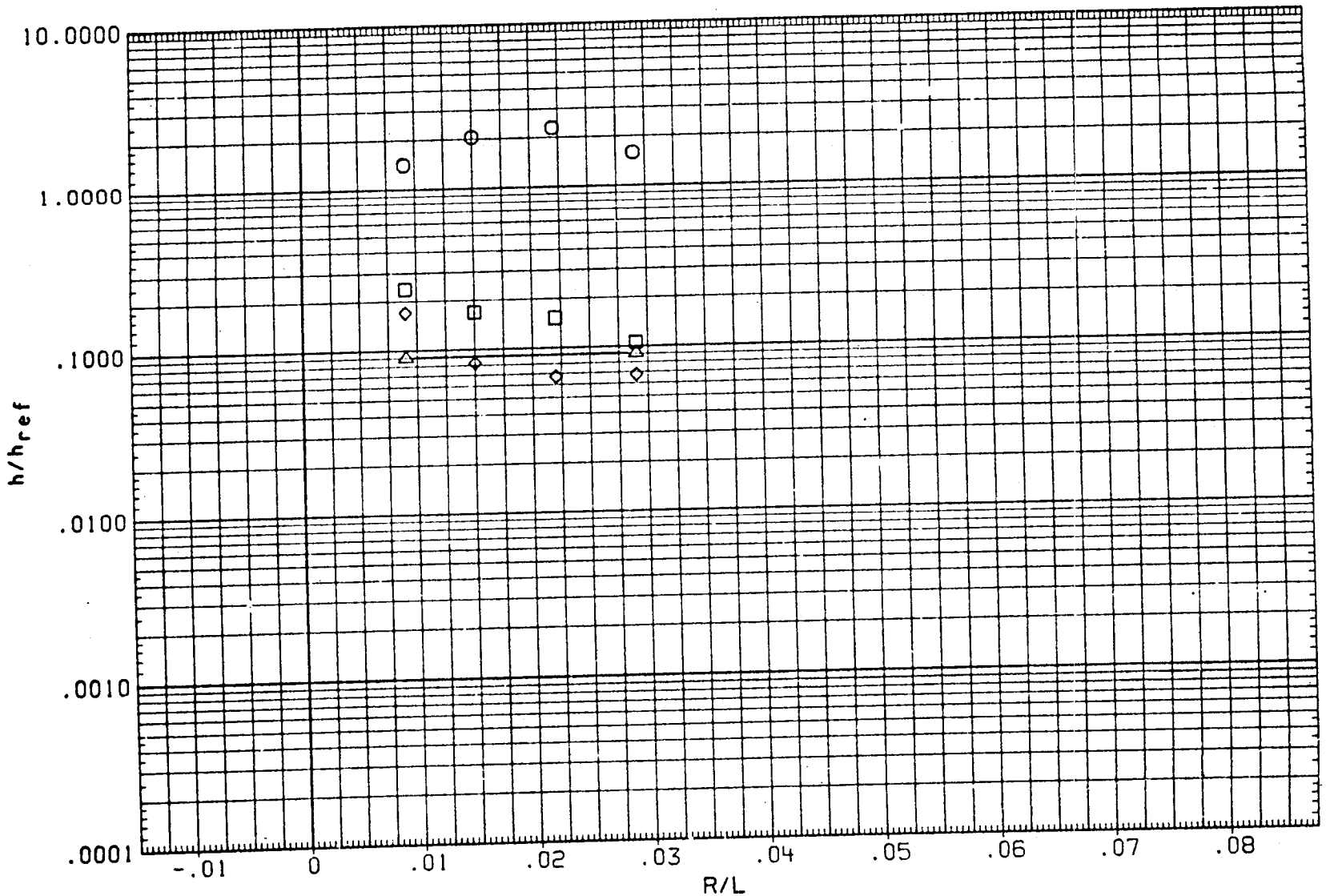

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 240

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

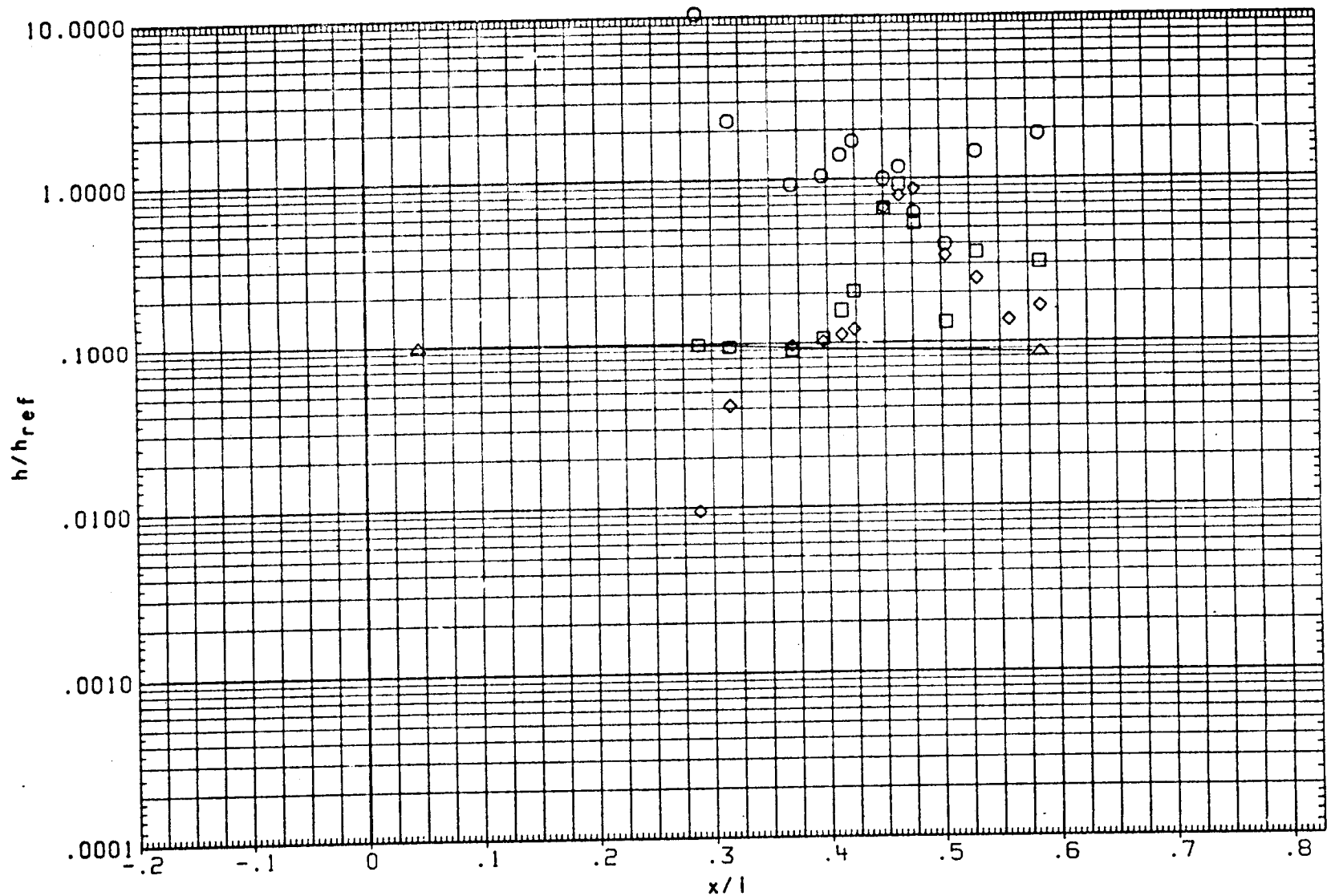

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = .850 PHI = .000 DATE 22 APR 78 PAGE 241

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(.2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

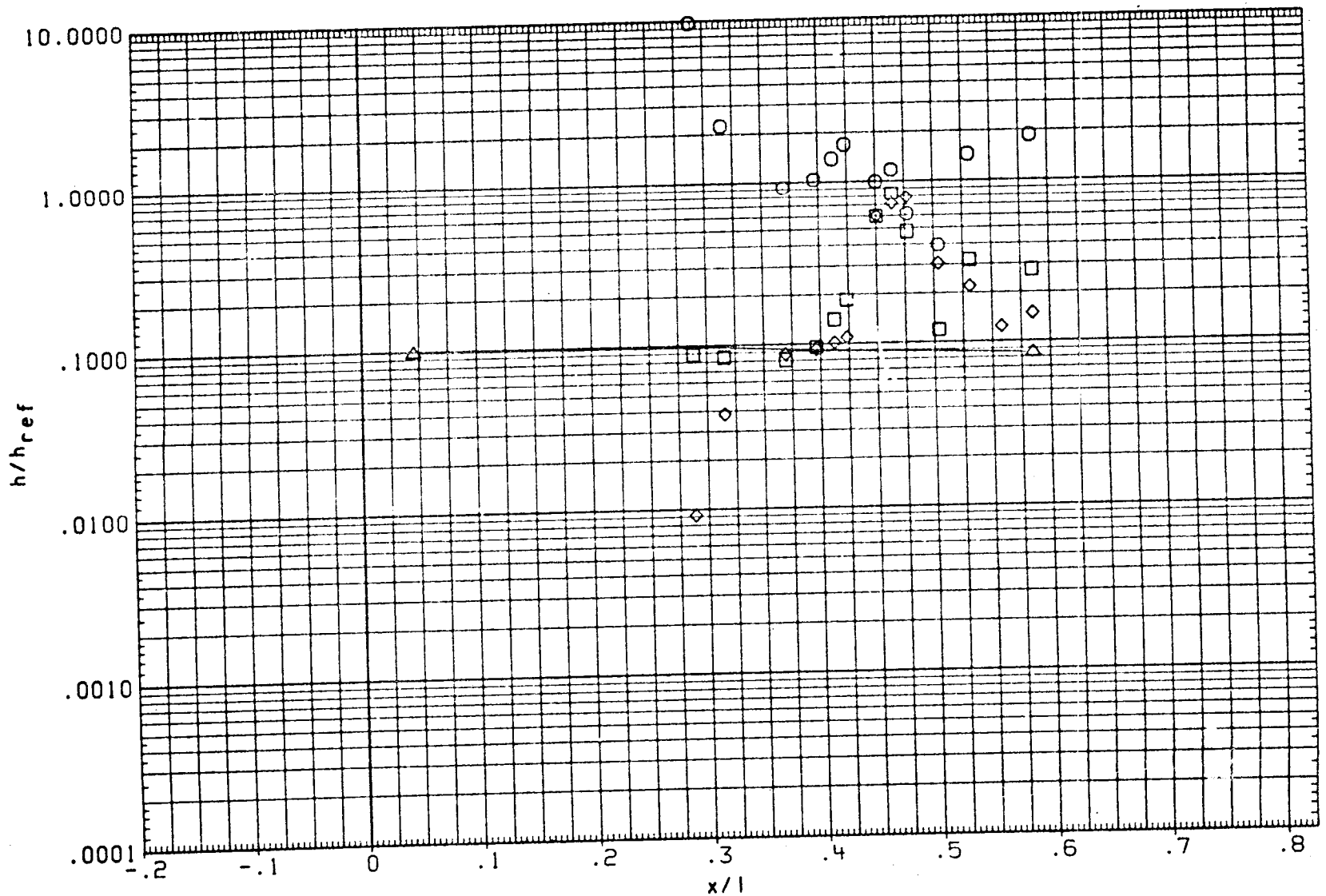

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = .900 PHI = .000 DATE 22 APR 78 PAGE 242

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

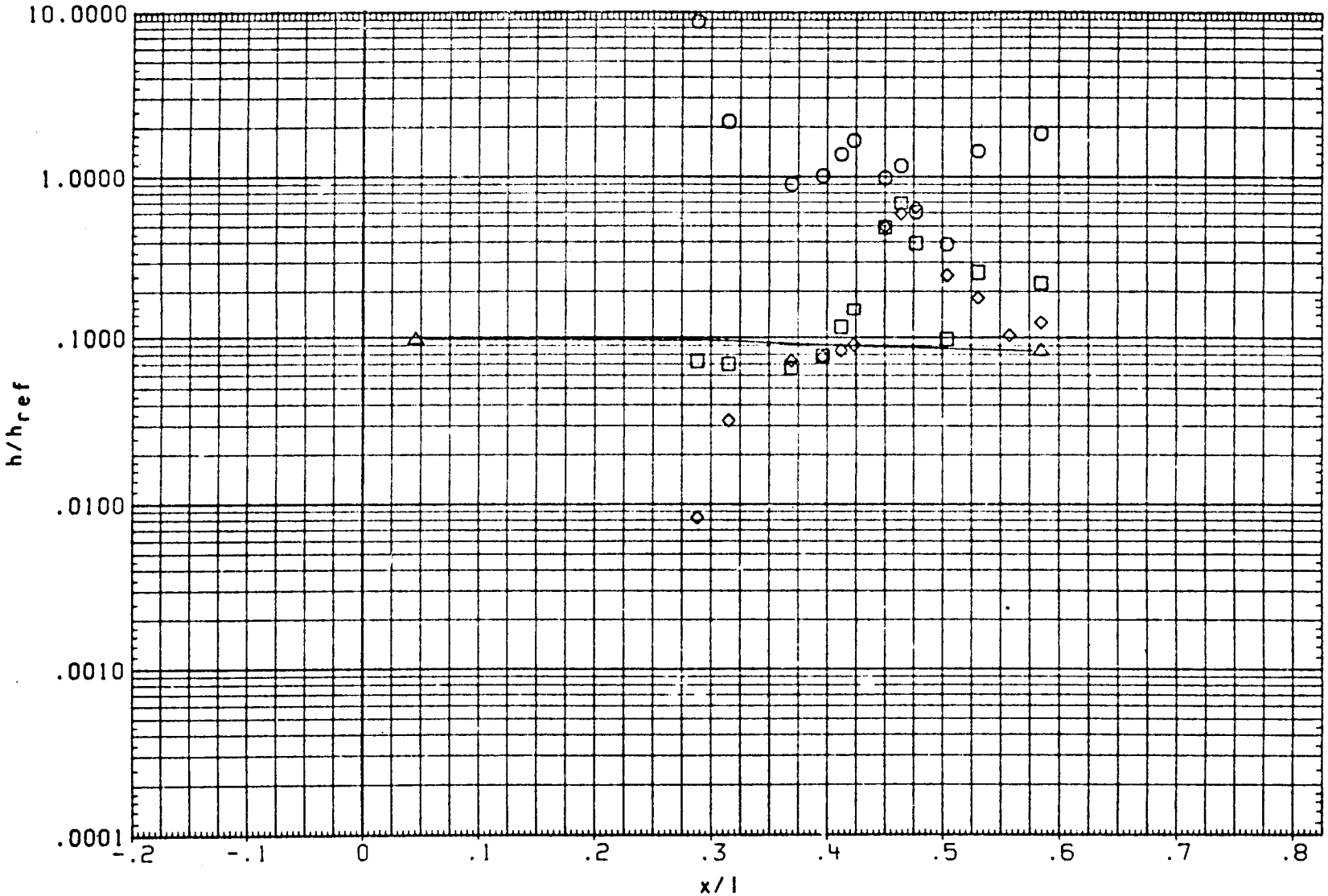

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 243

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20G02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

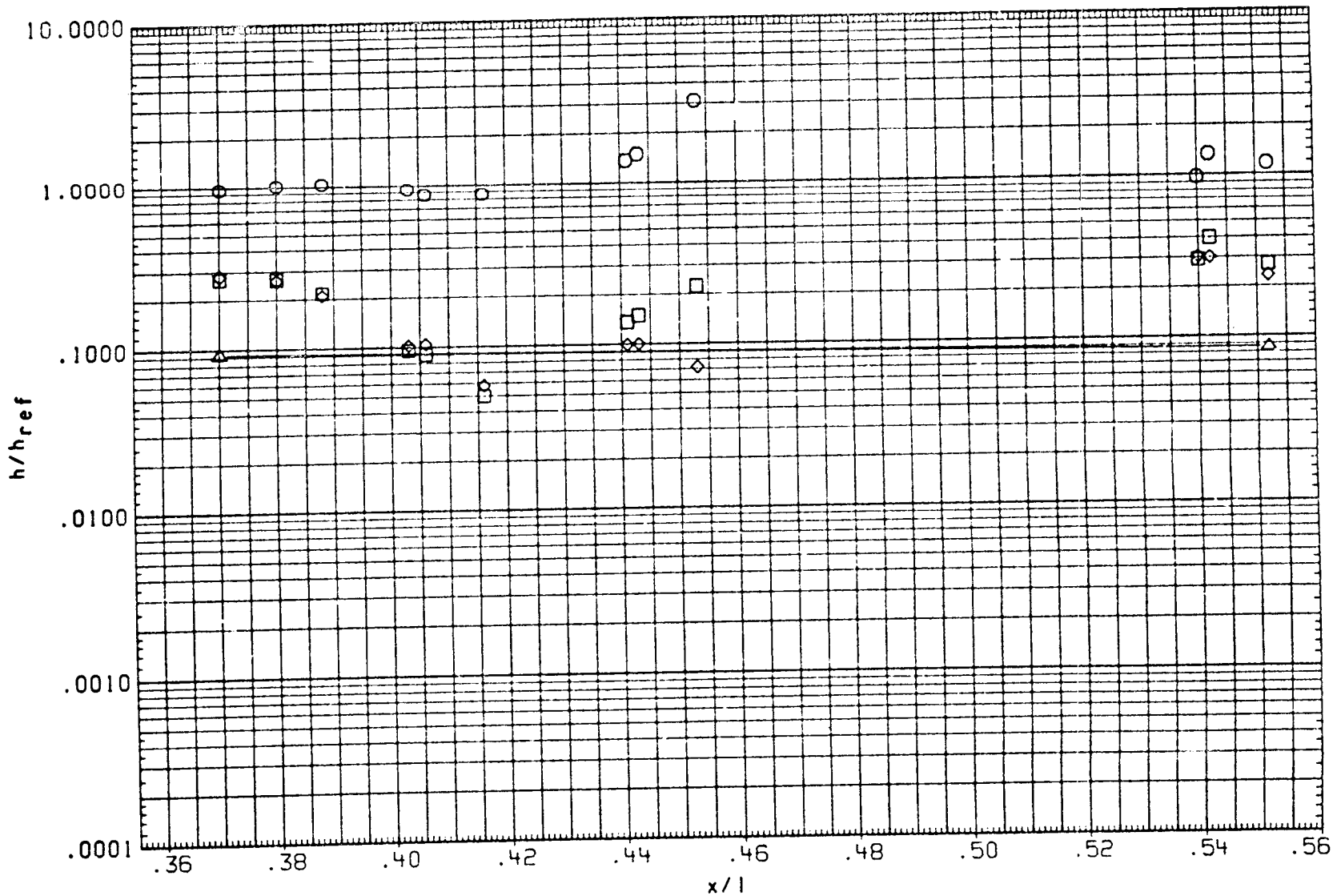

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 244

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

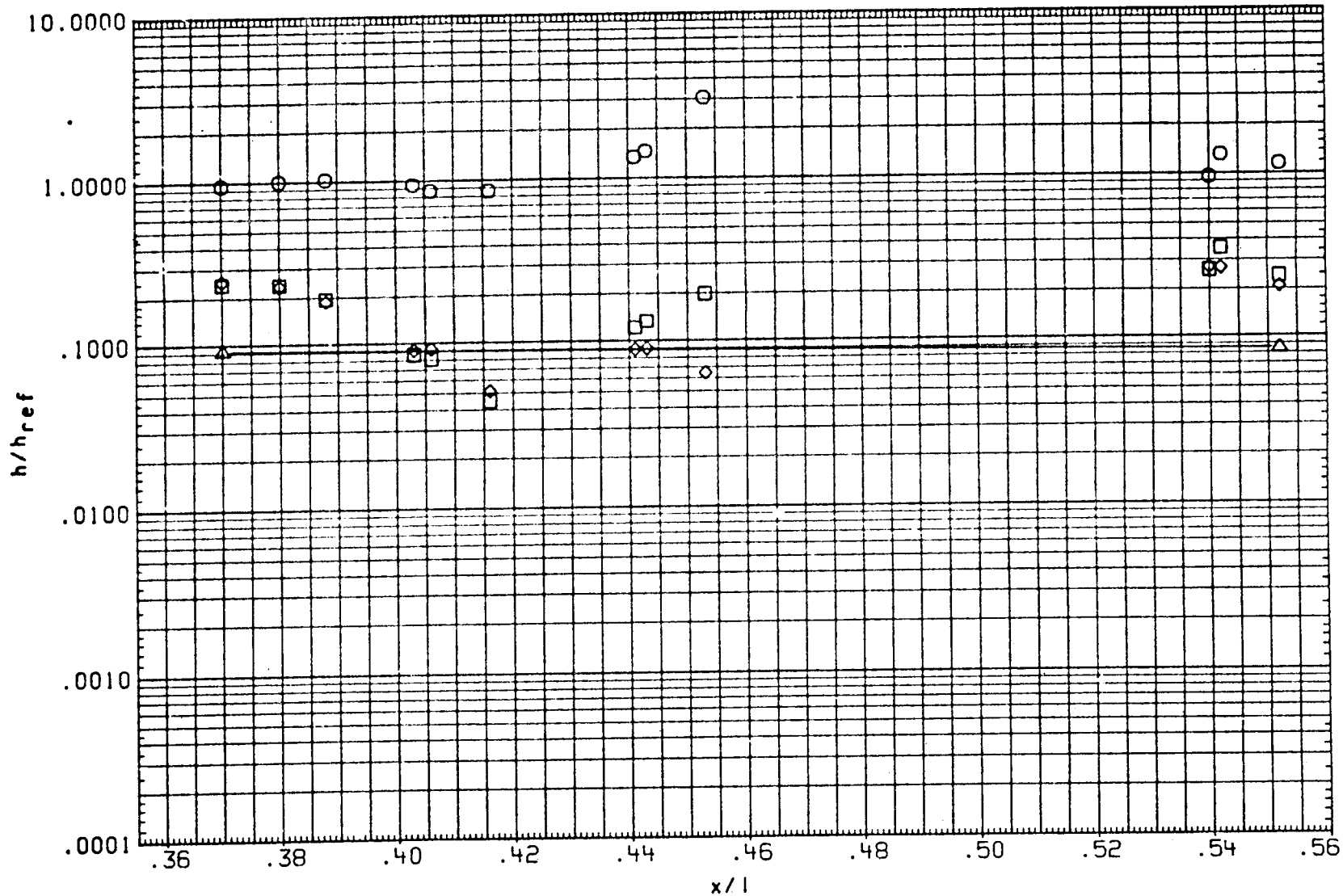

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 245

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

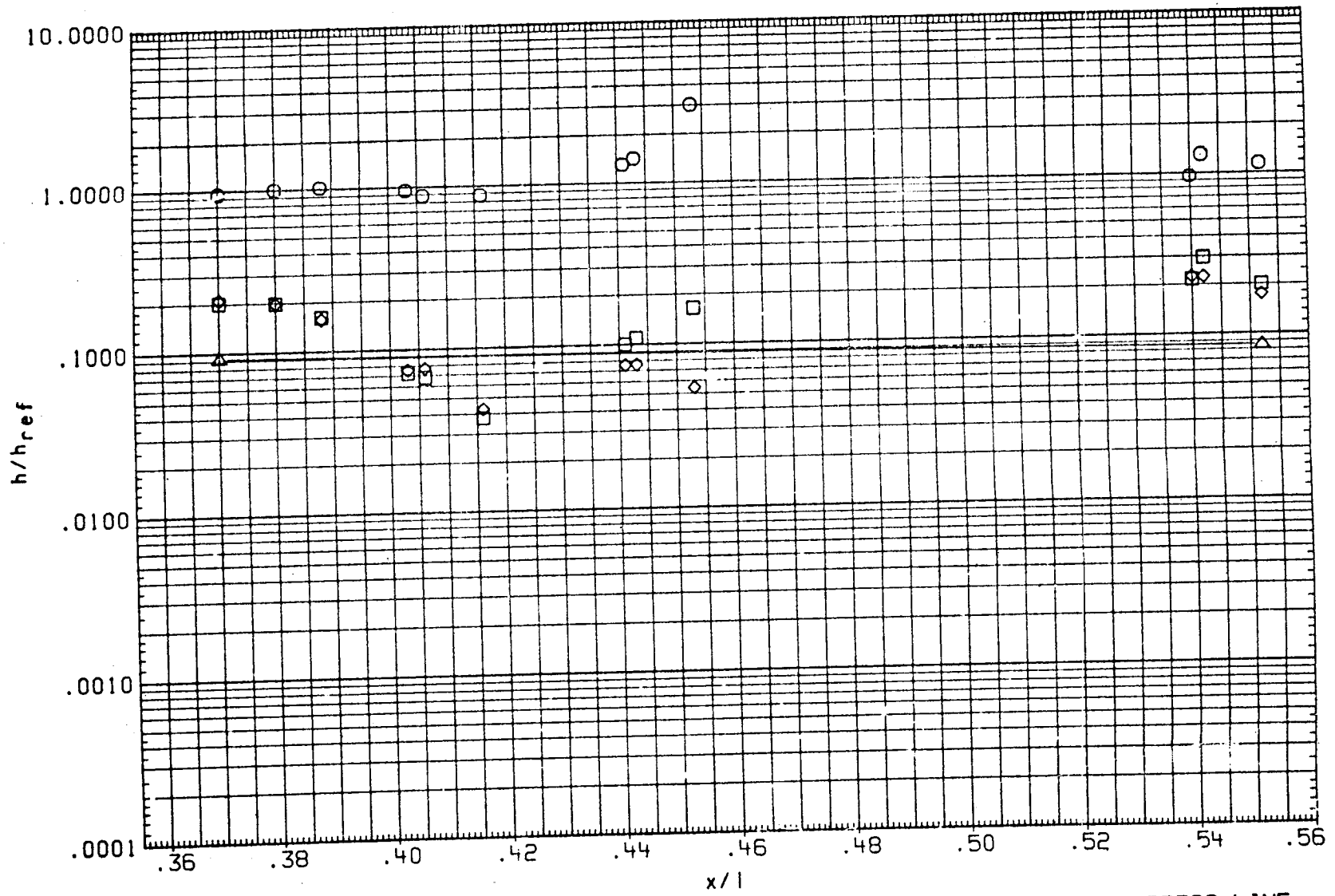

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 246

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

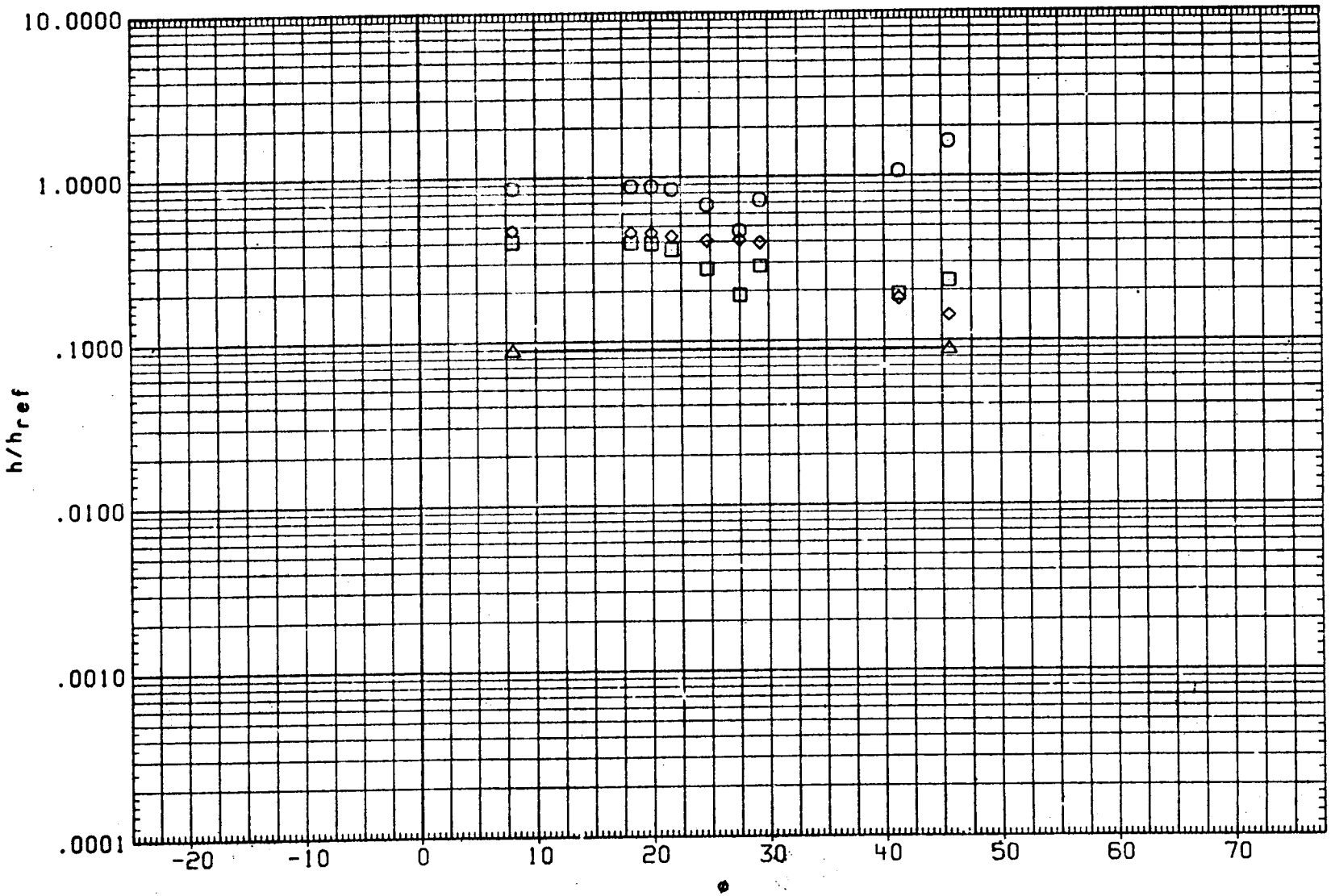

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 247

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005/)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

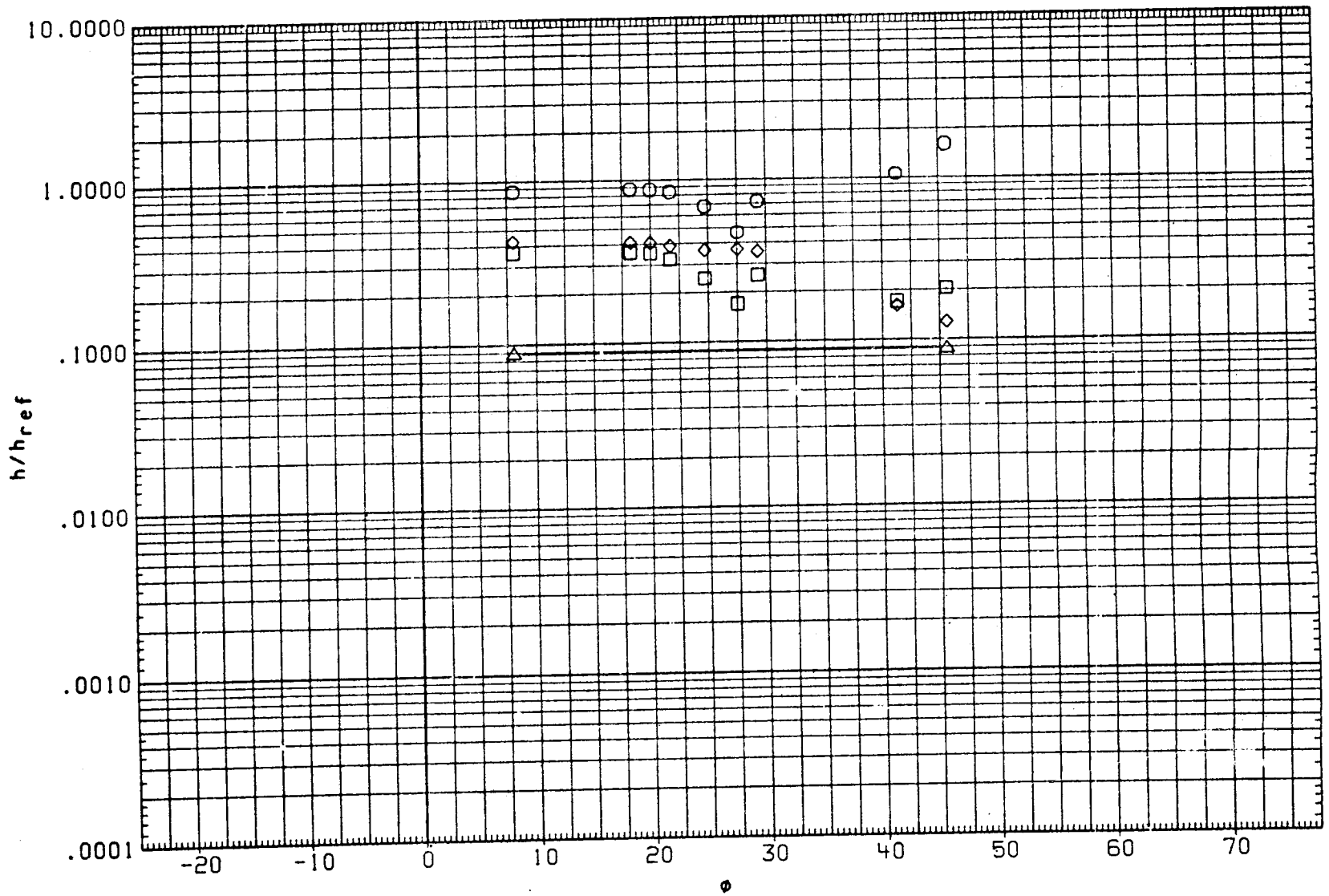

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 248

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

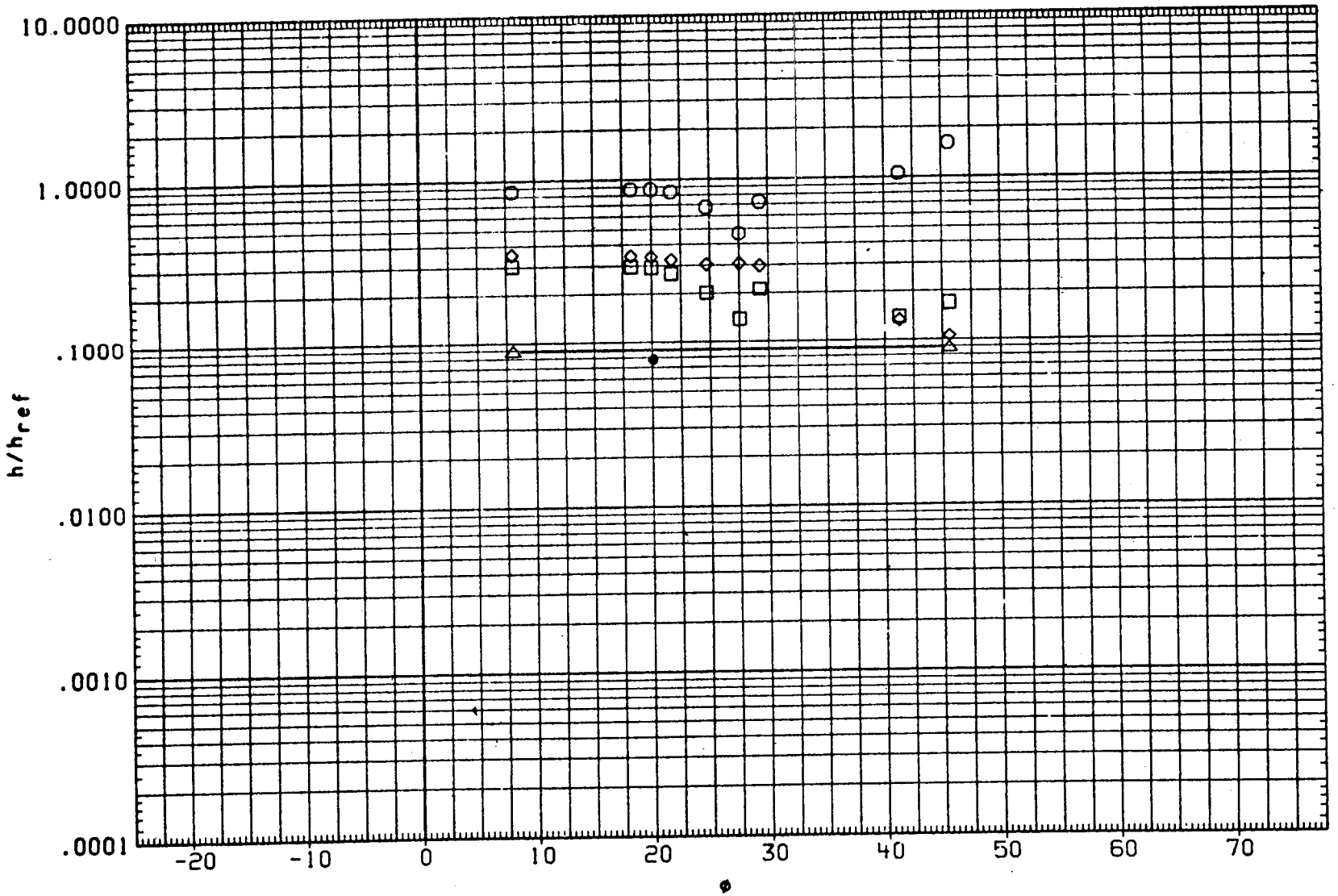

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 249

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

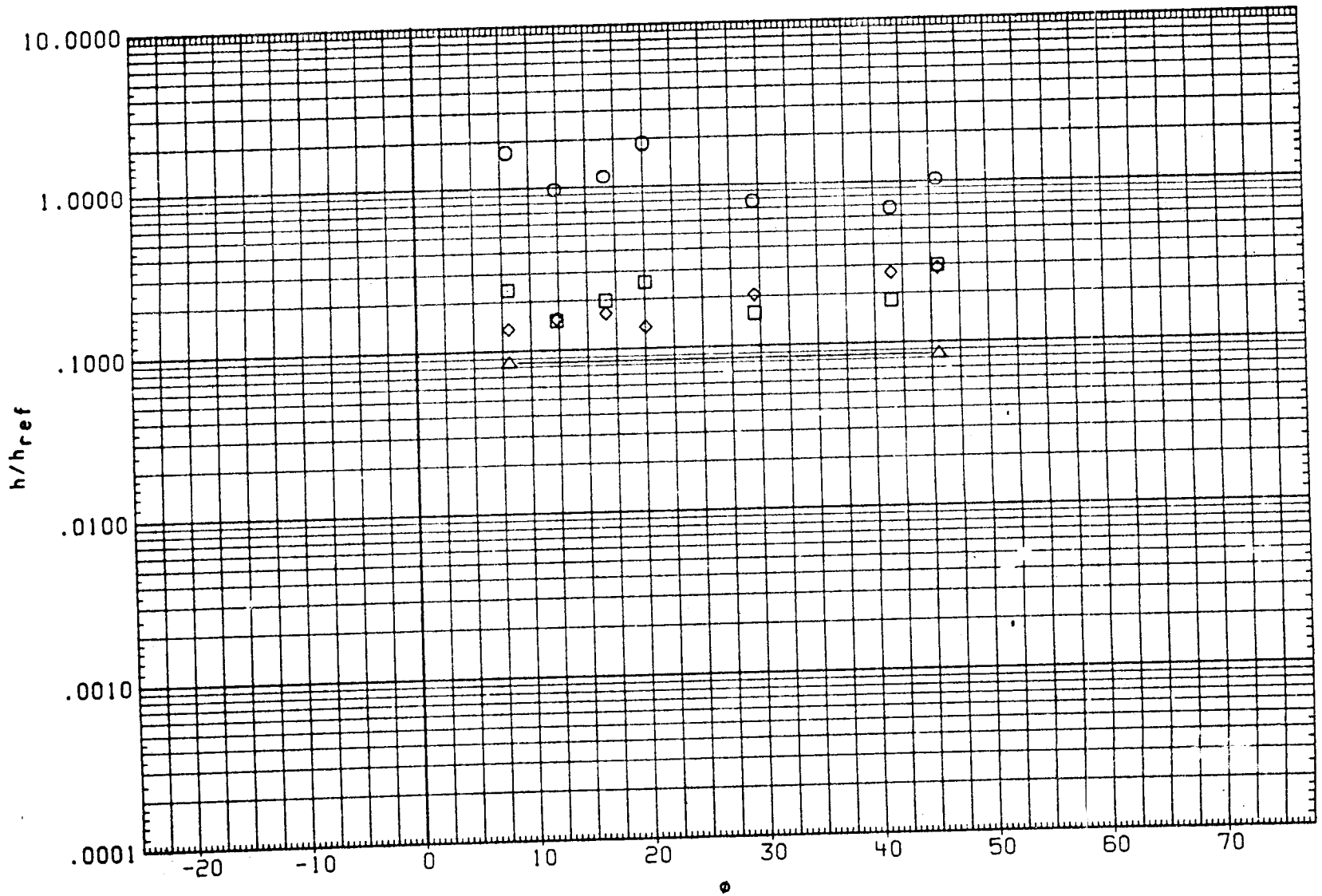

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

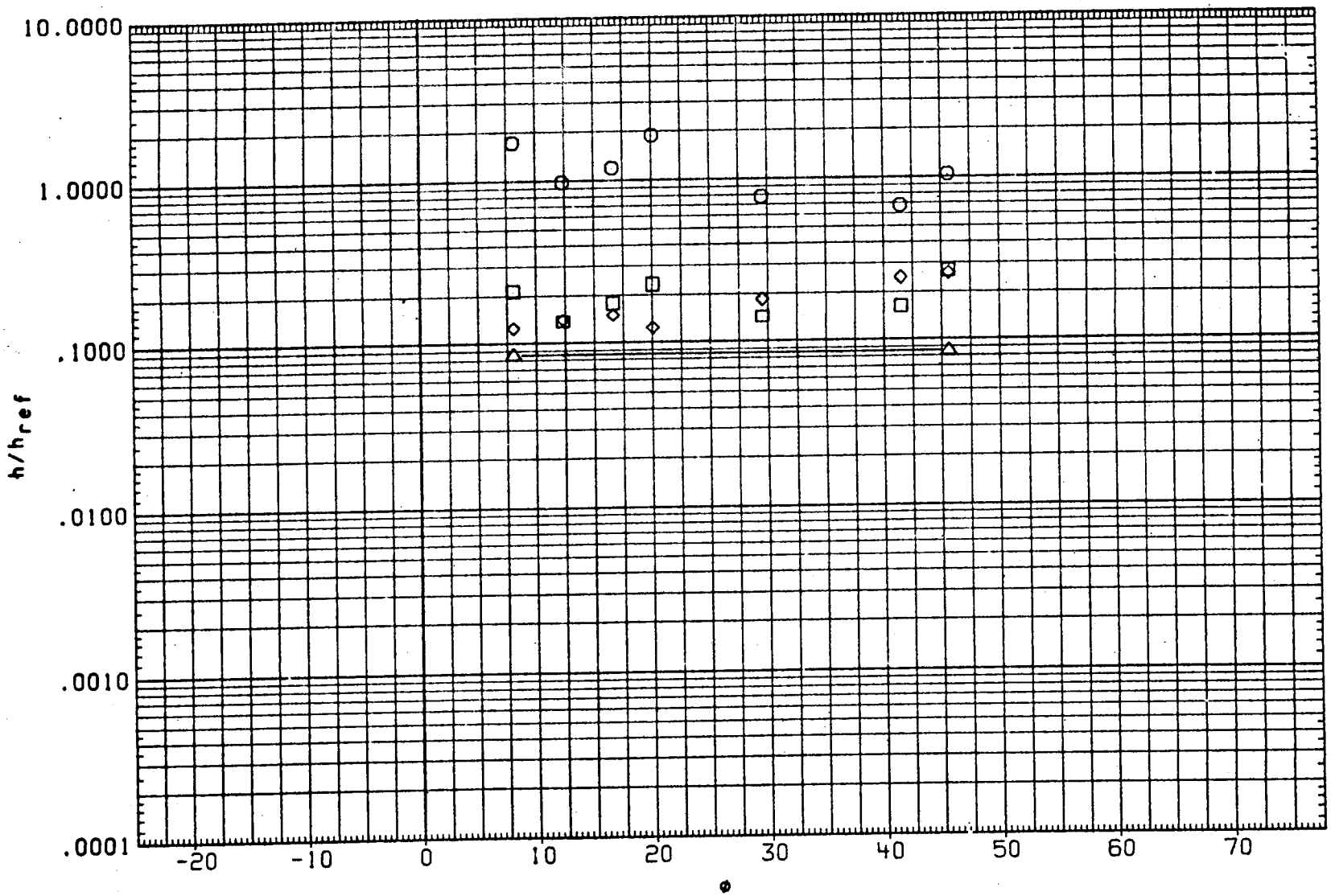

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .578 DATE 22 APR 78 PAGE 251

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

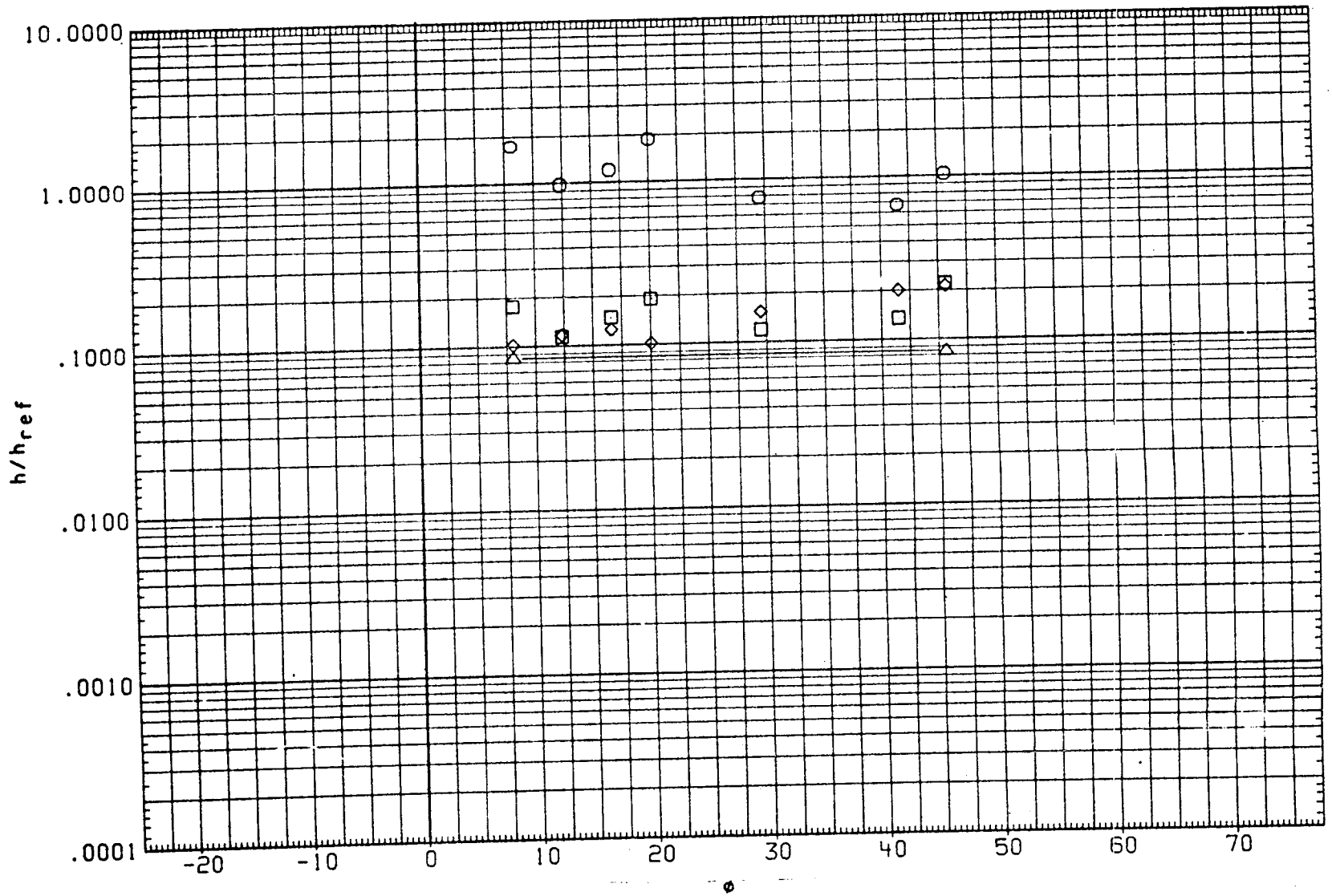

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 252

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.300	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

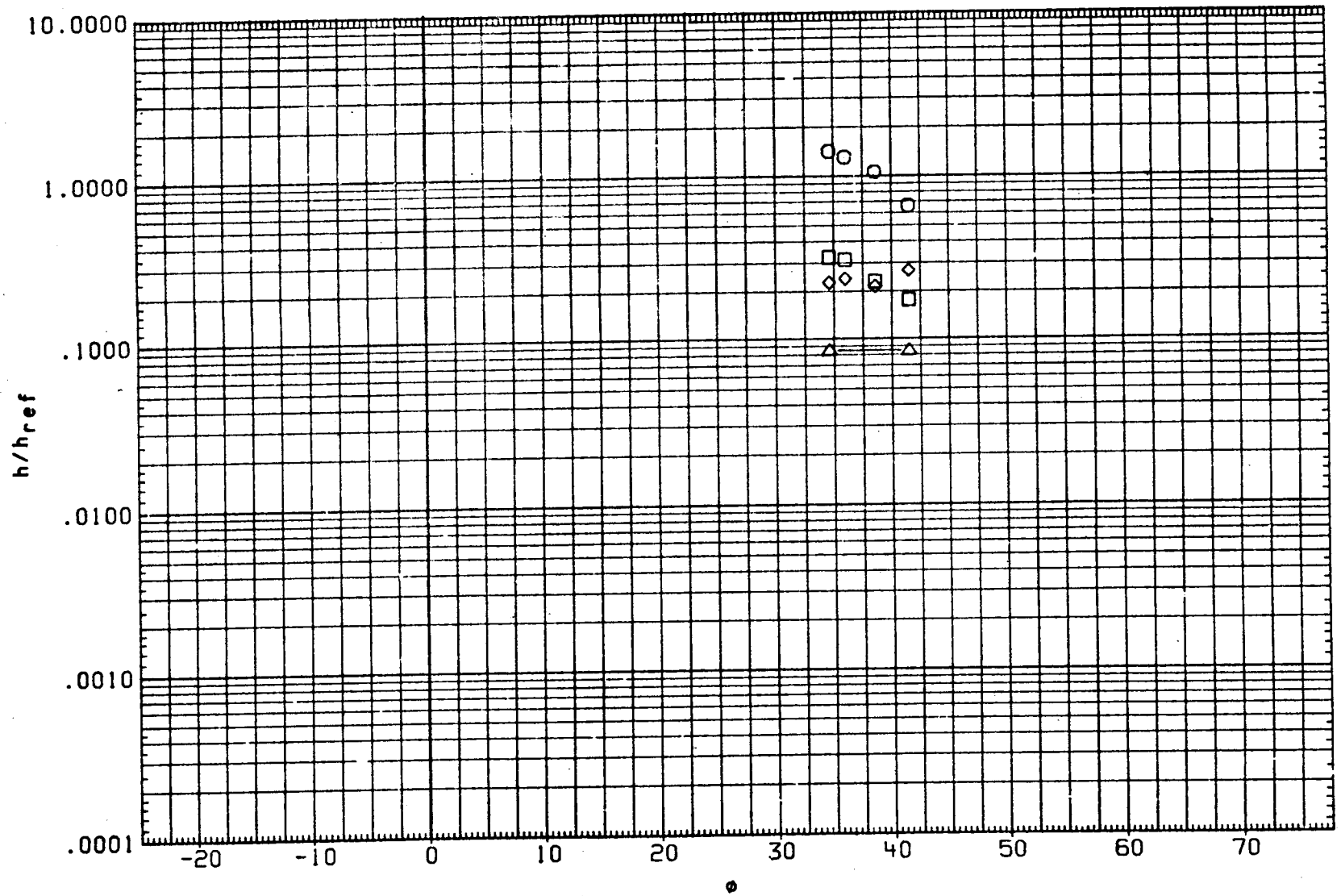

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 253

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

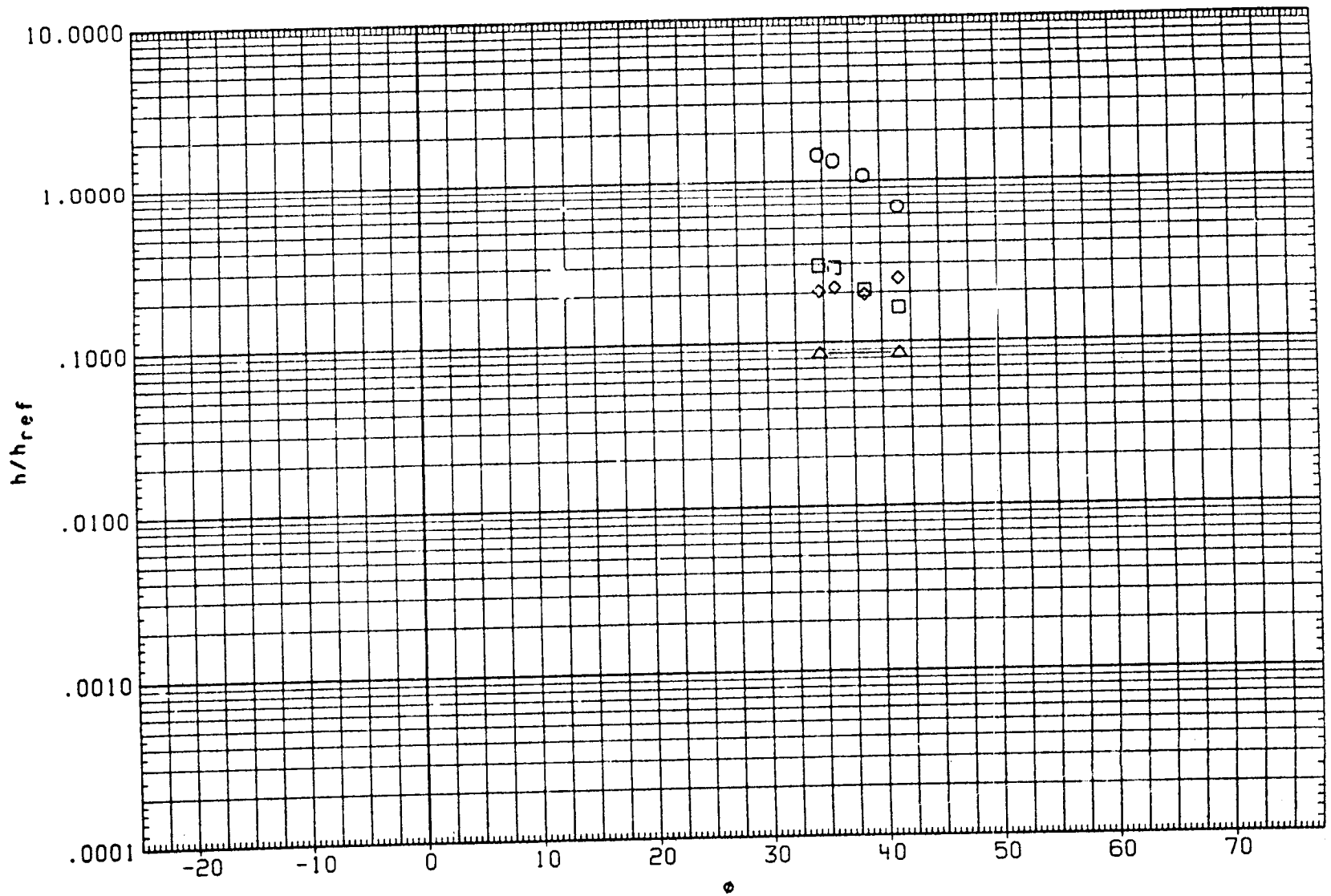

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 254

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

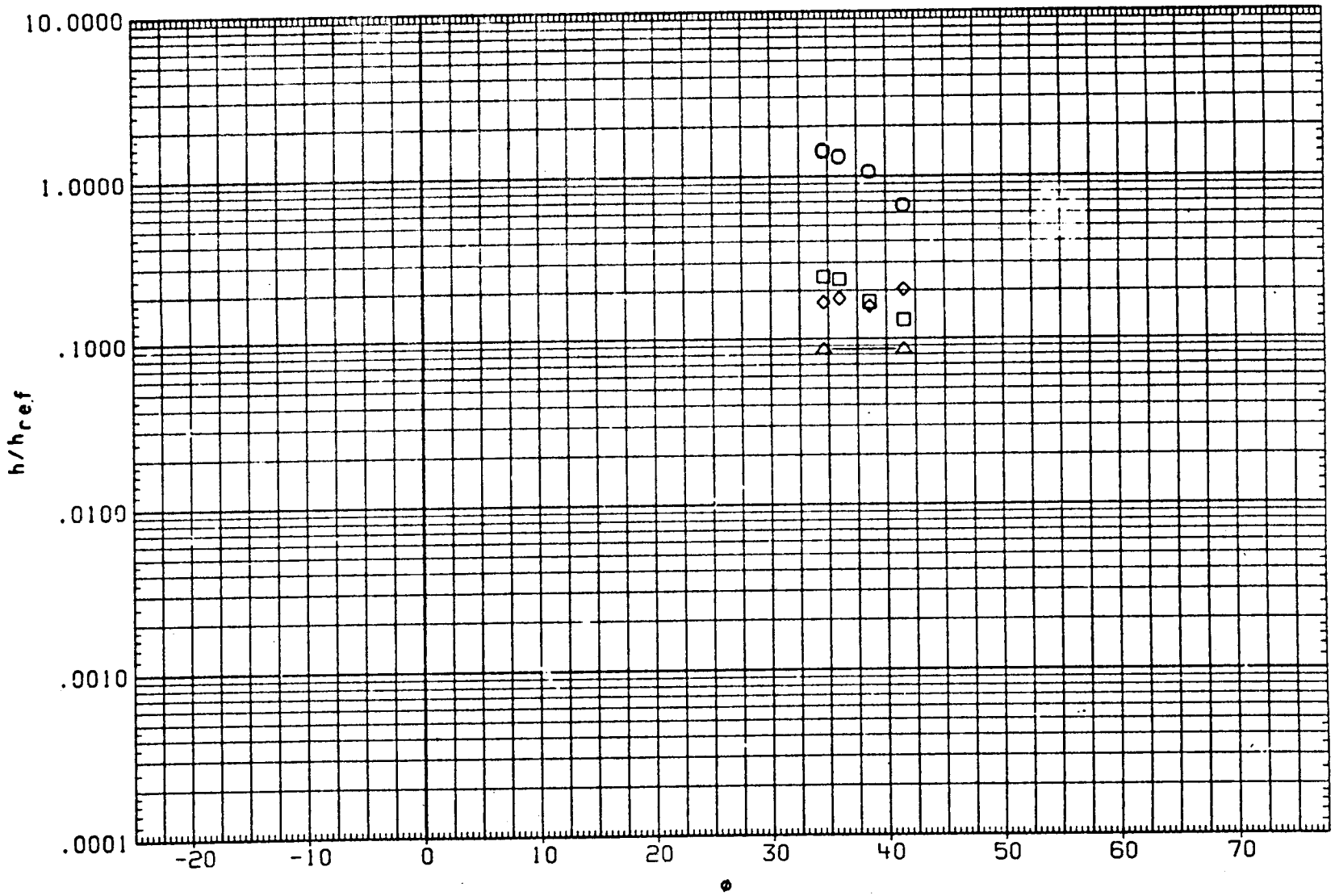

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 255

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

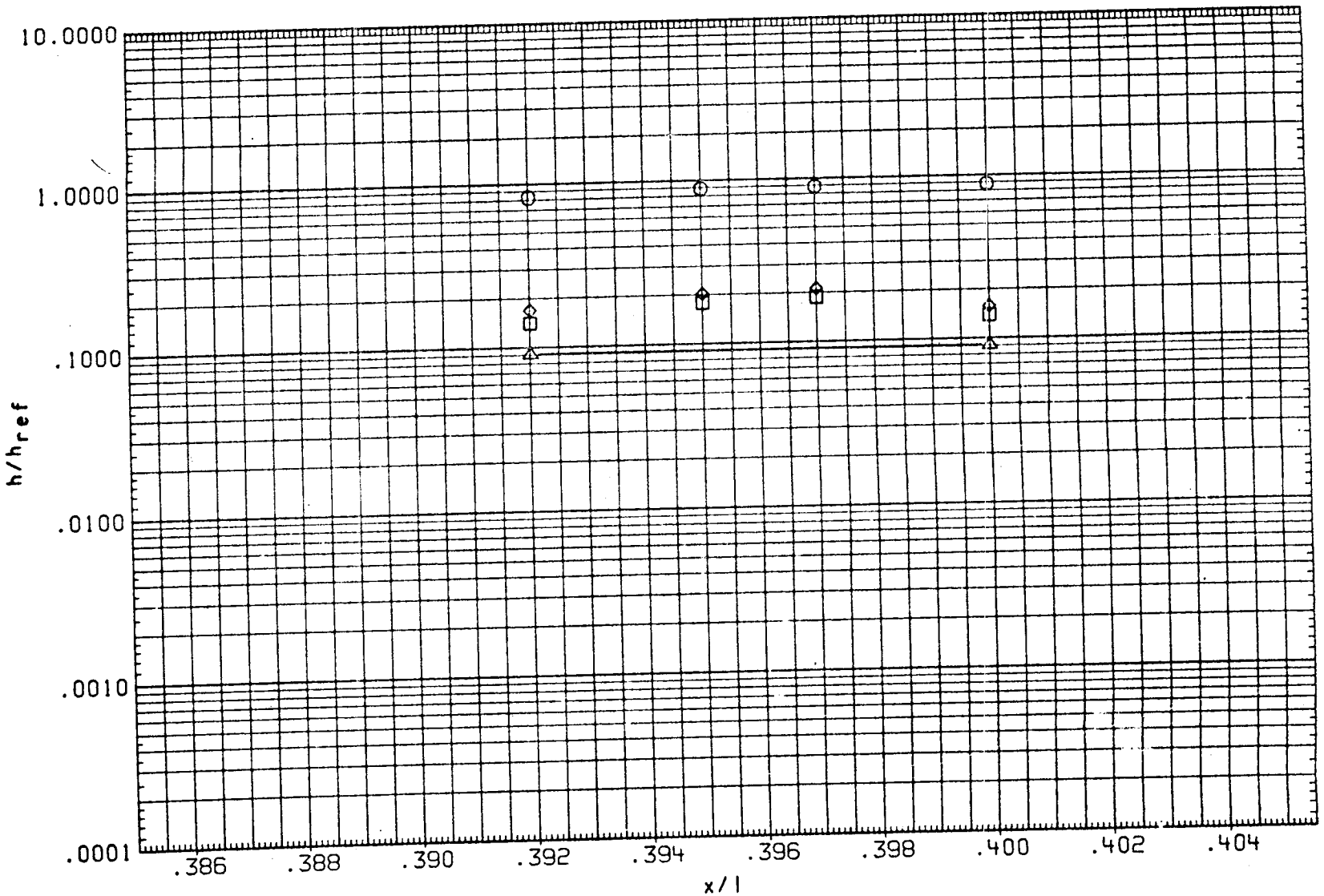

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78 PAGE 256

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

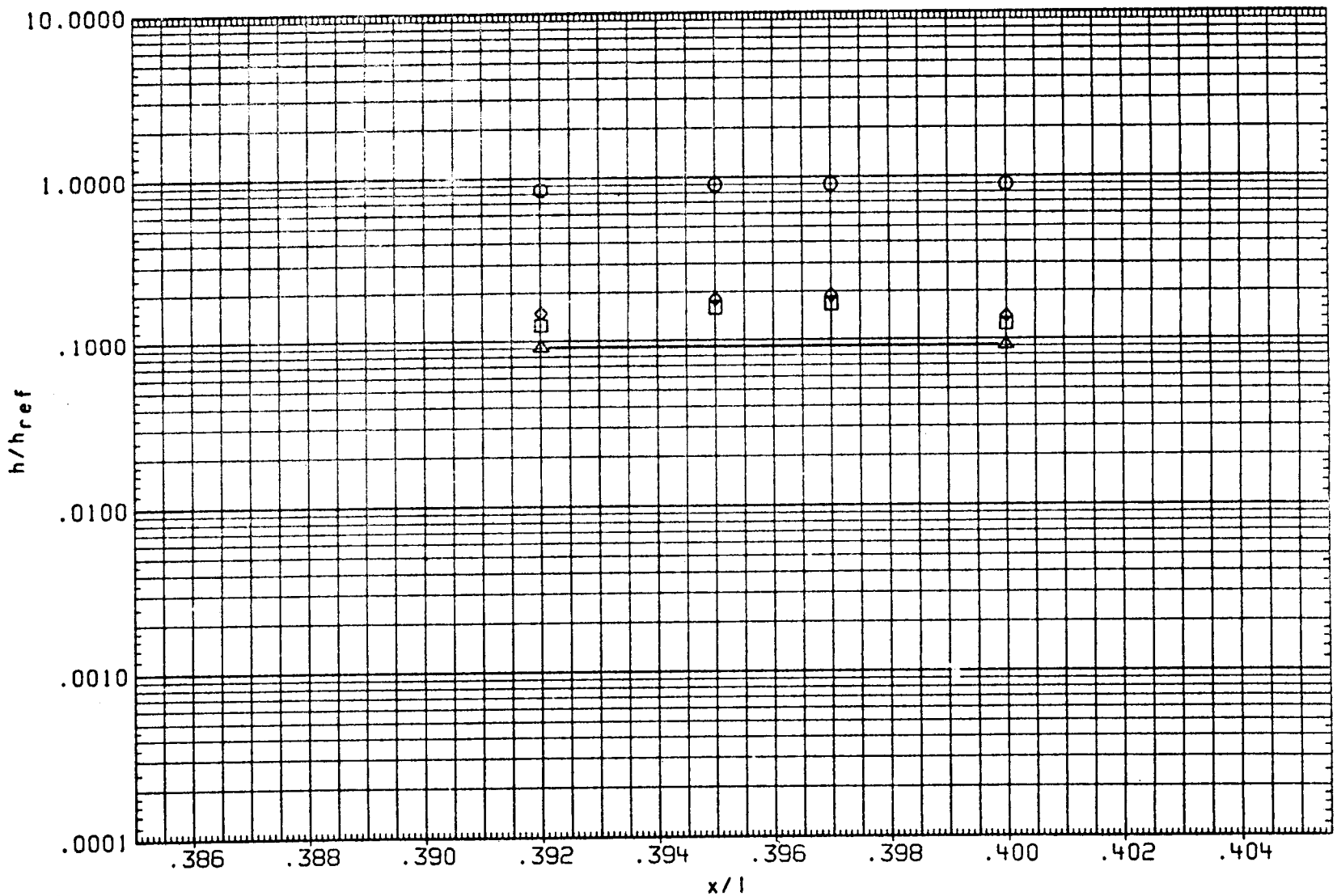

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 257

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

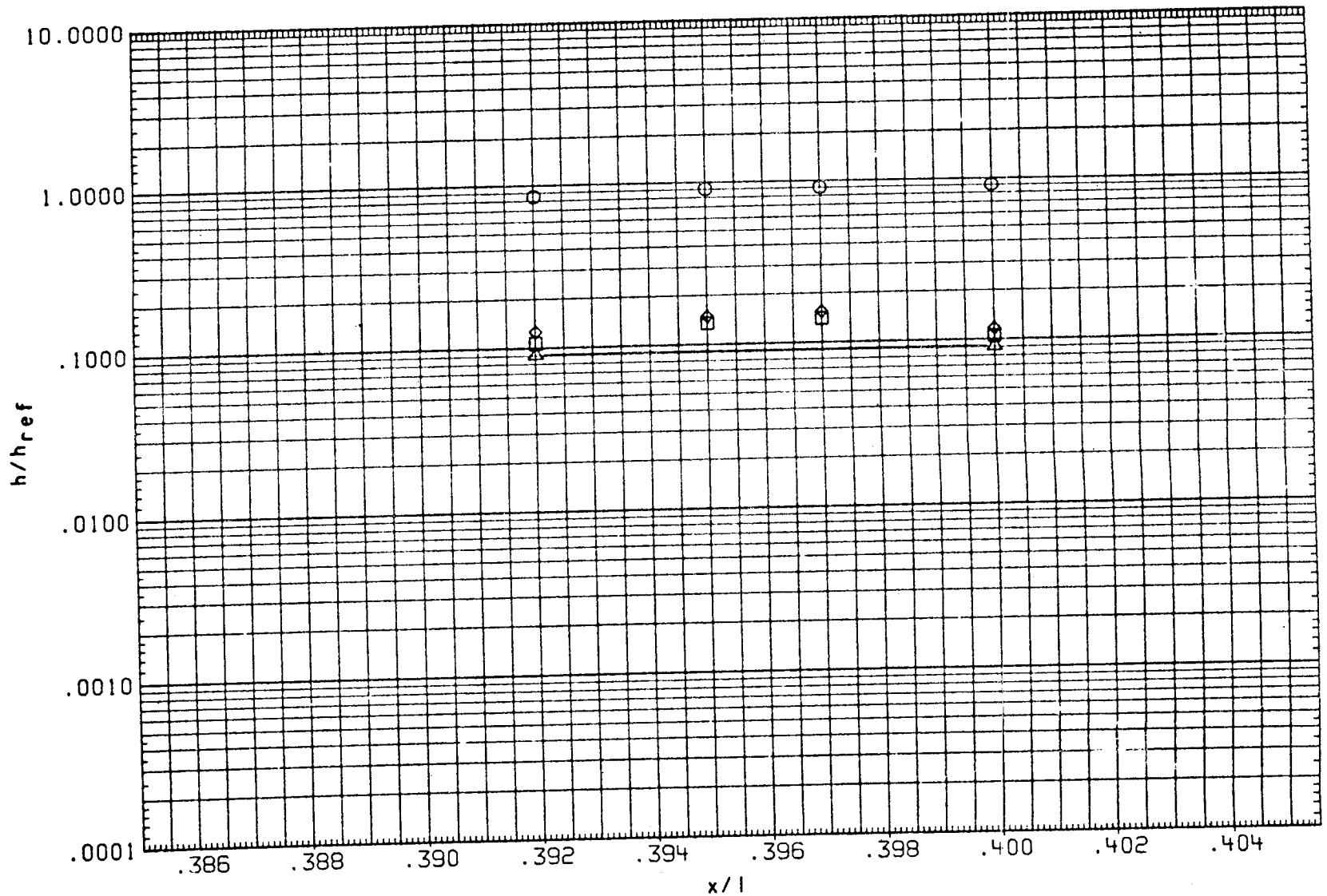

FIG. 73 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78 PAGE 258

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

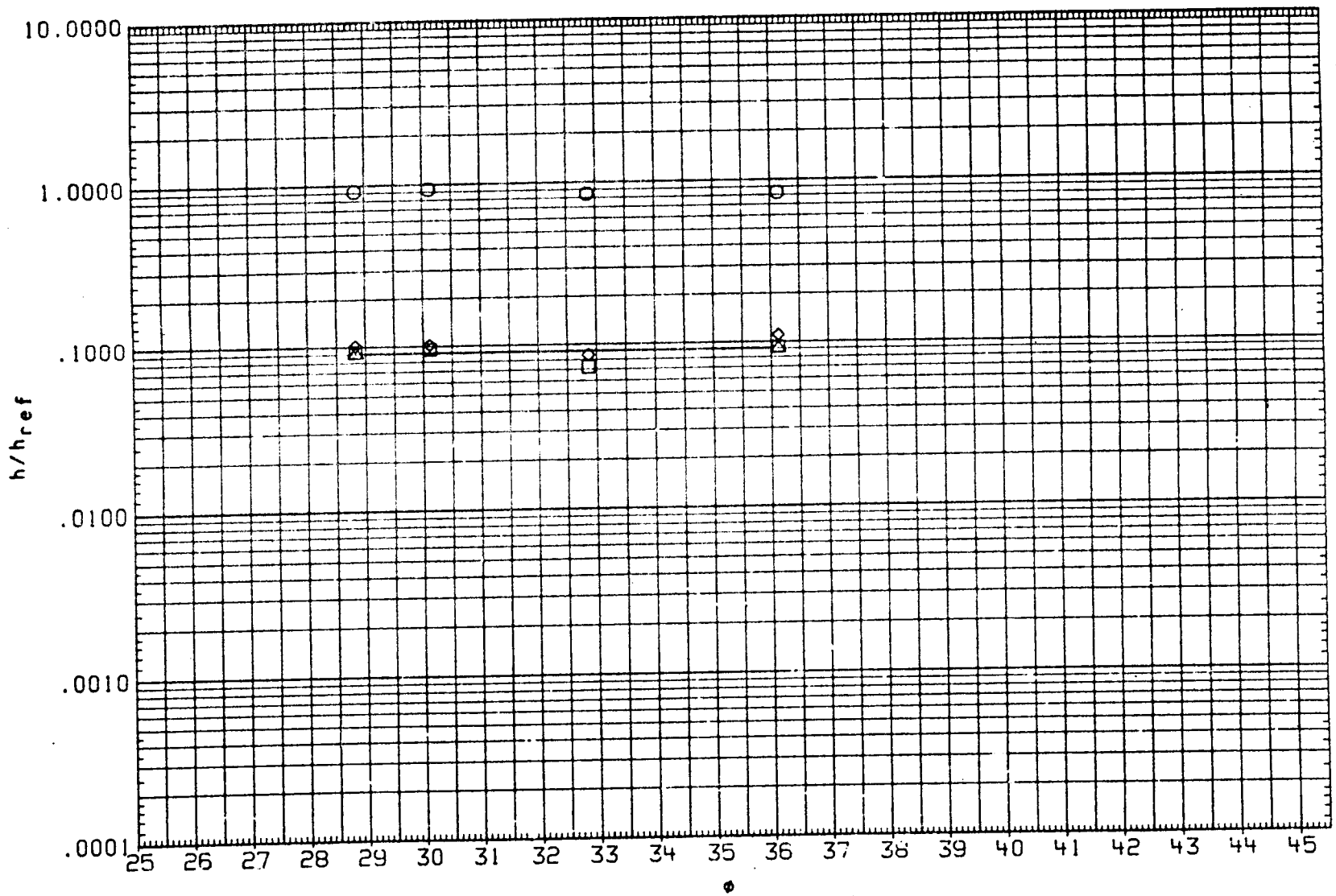

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .855 X/L = .403 DATE 22 APR 78 PAGE 259

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

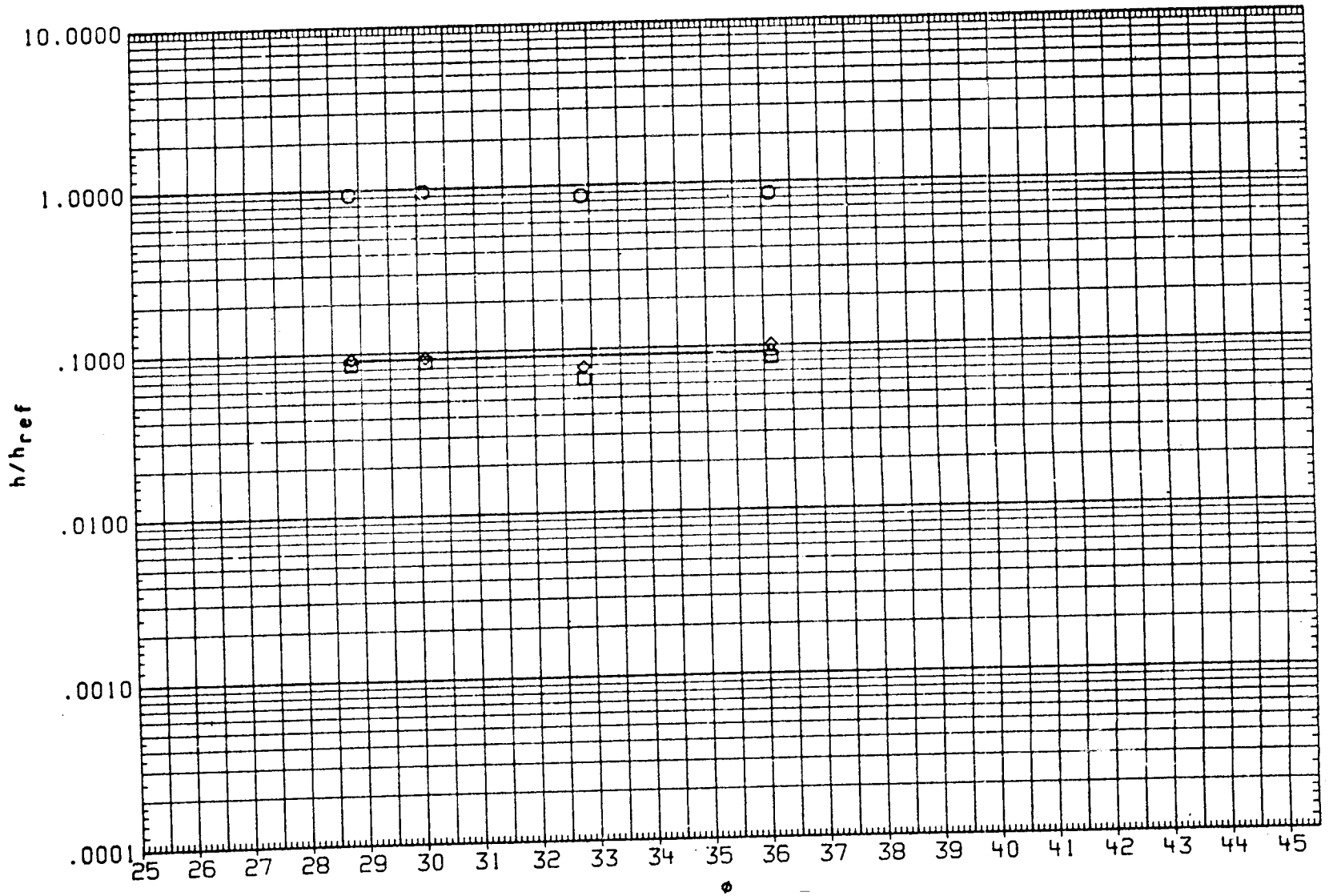

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 260

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

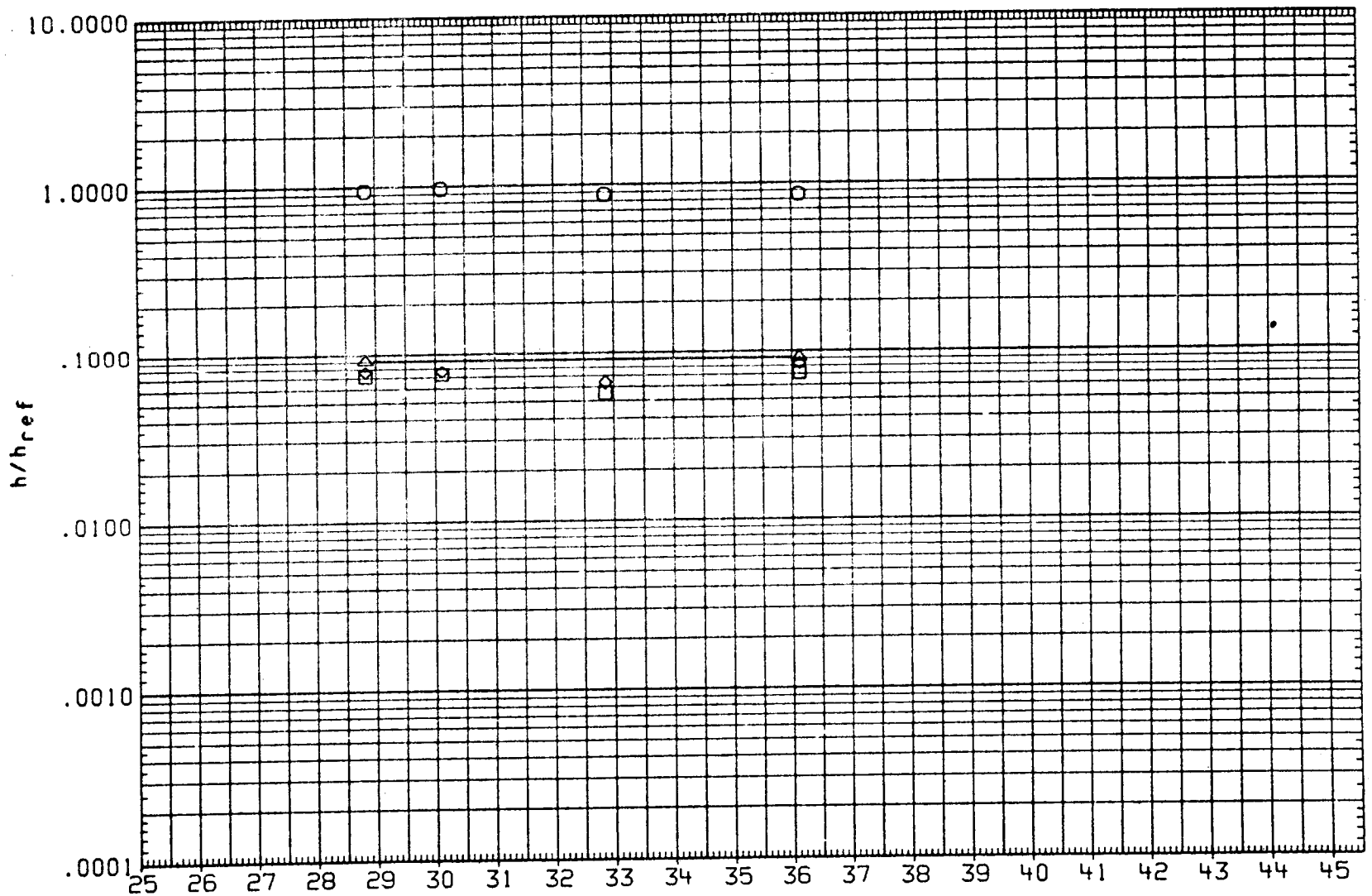

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 261

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

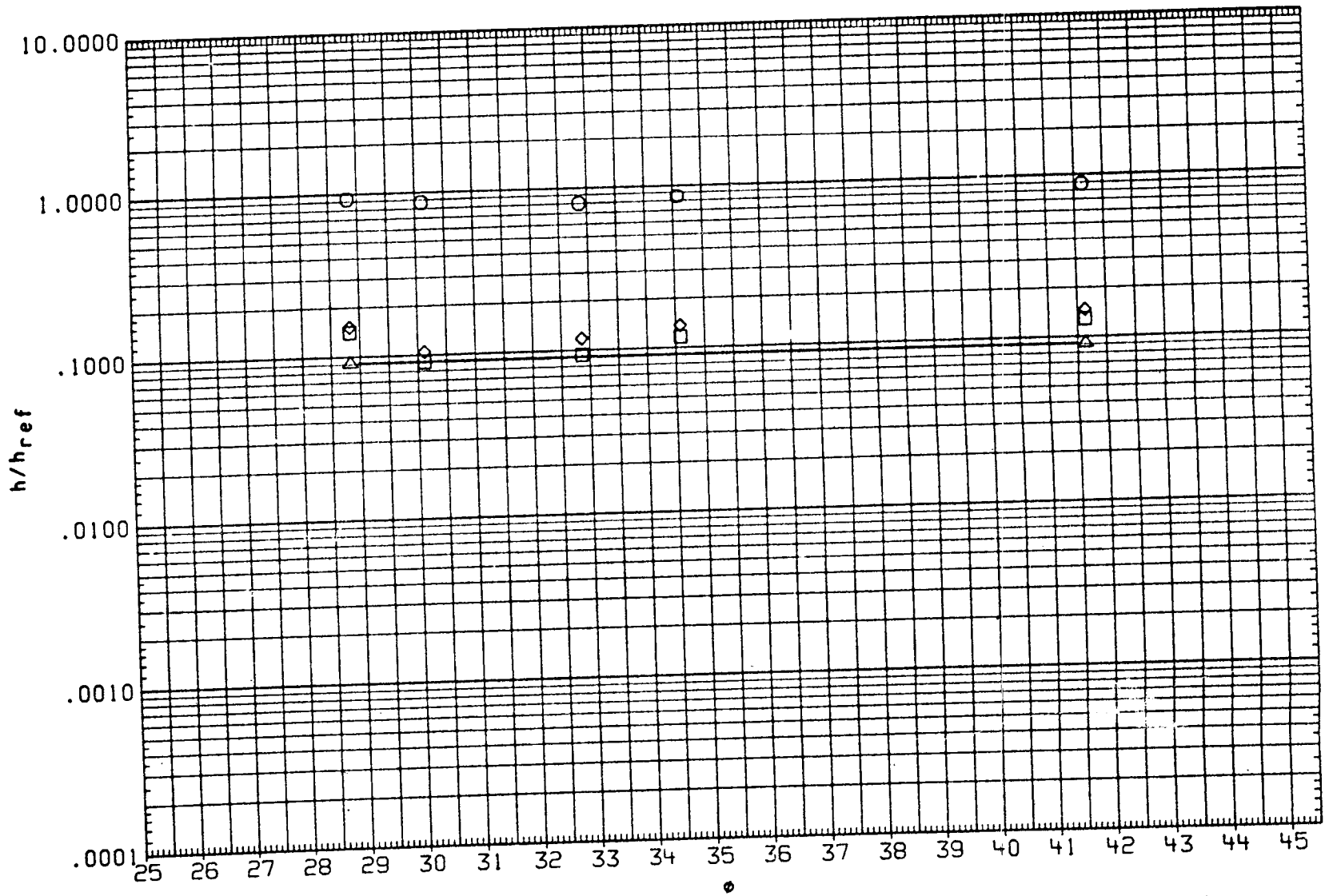

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 262

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

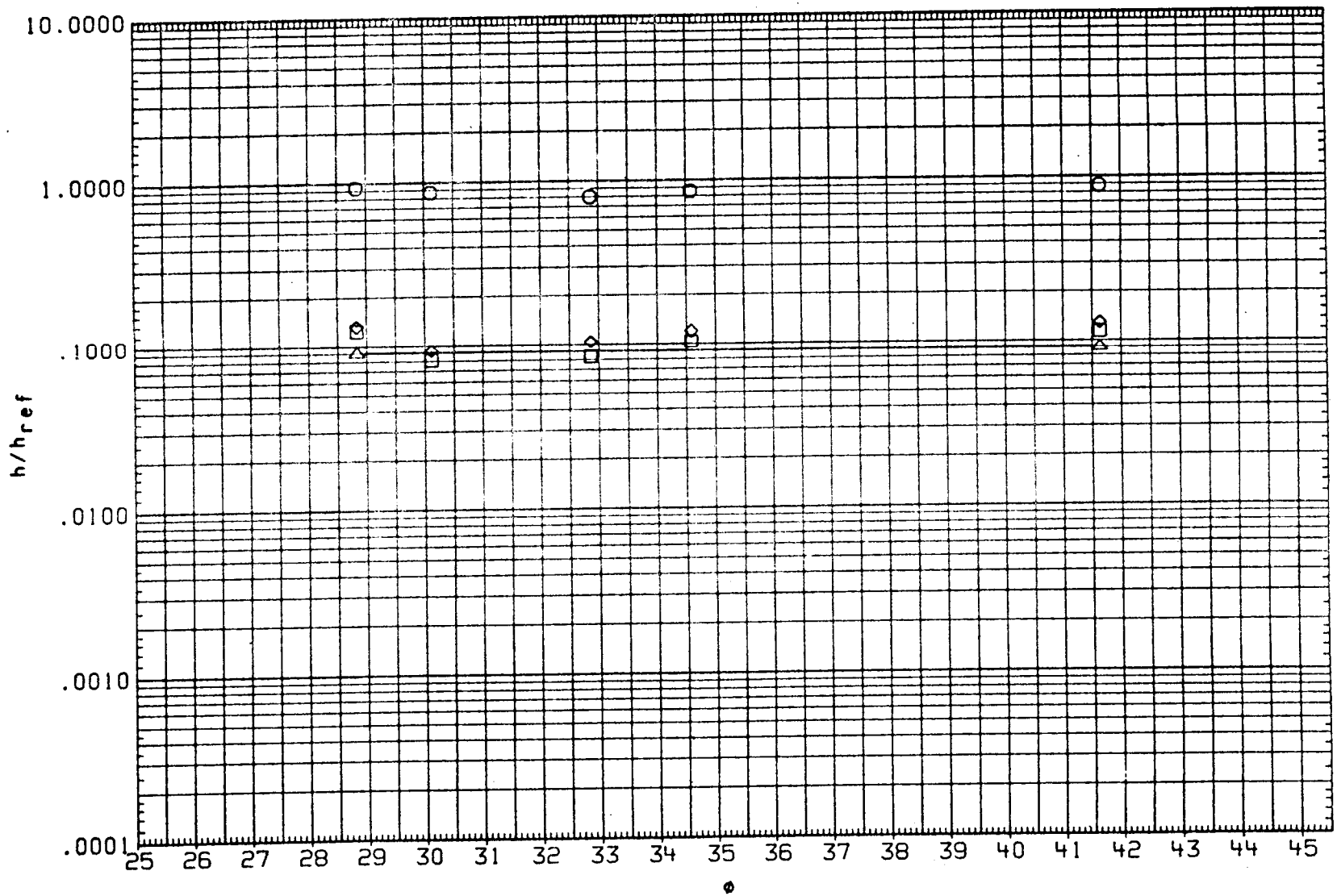

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 263

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

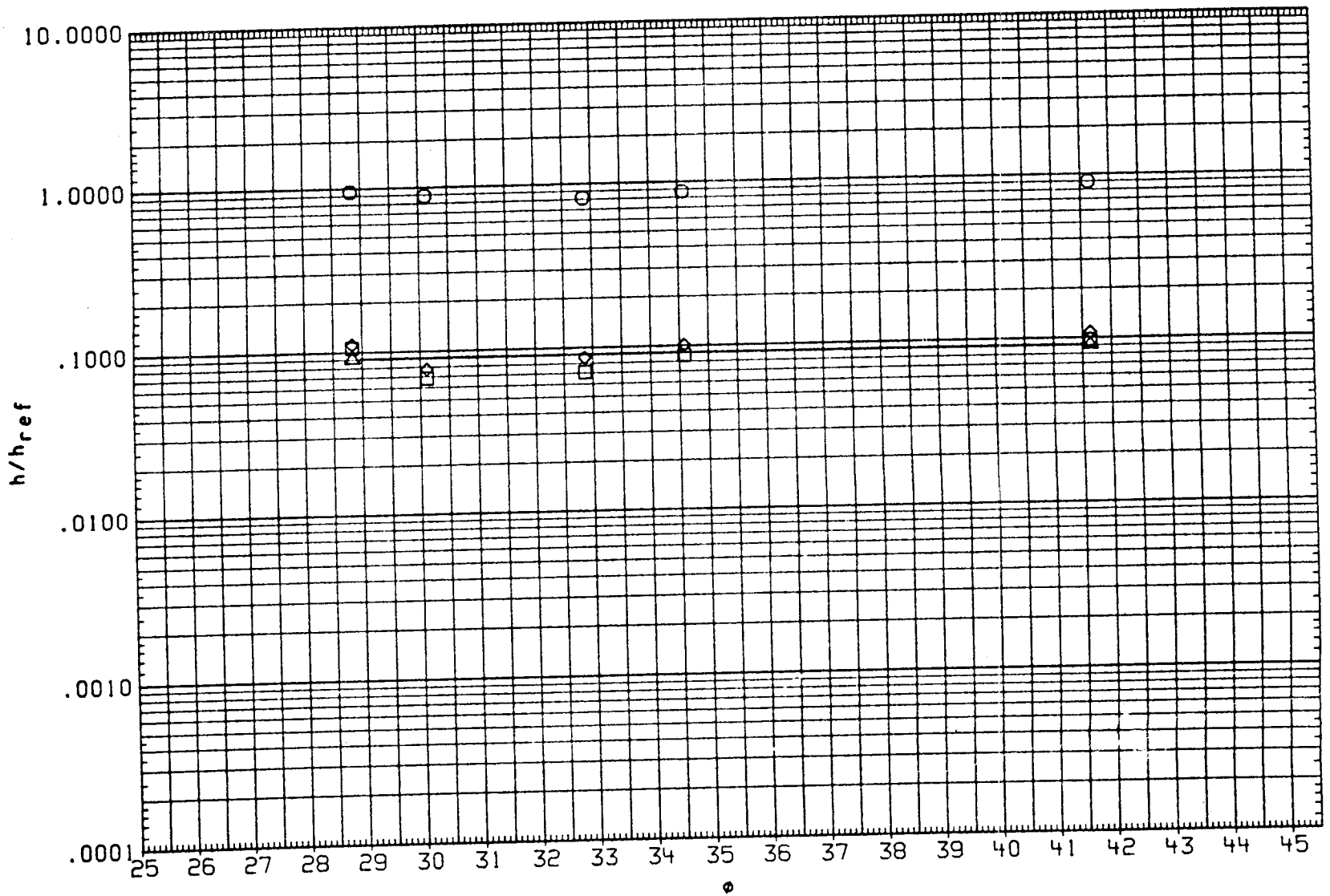

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 264

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

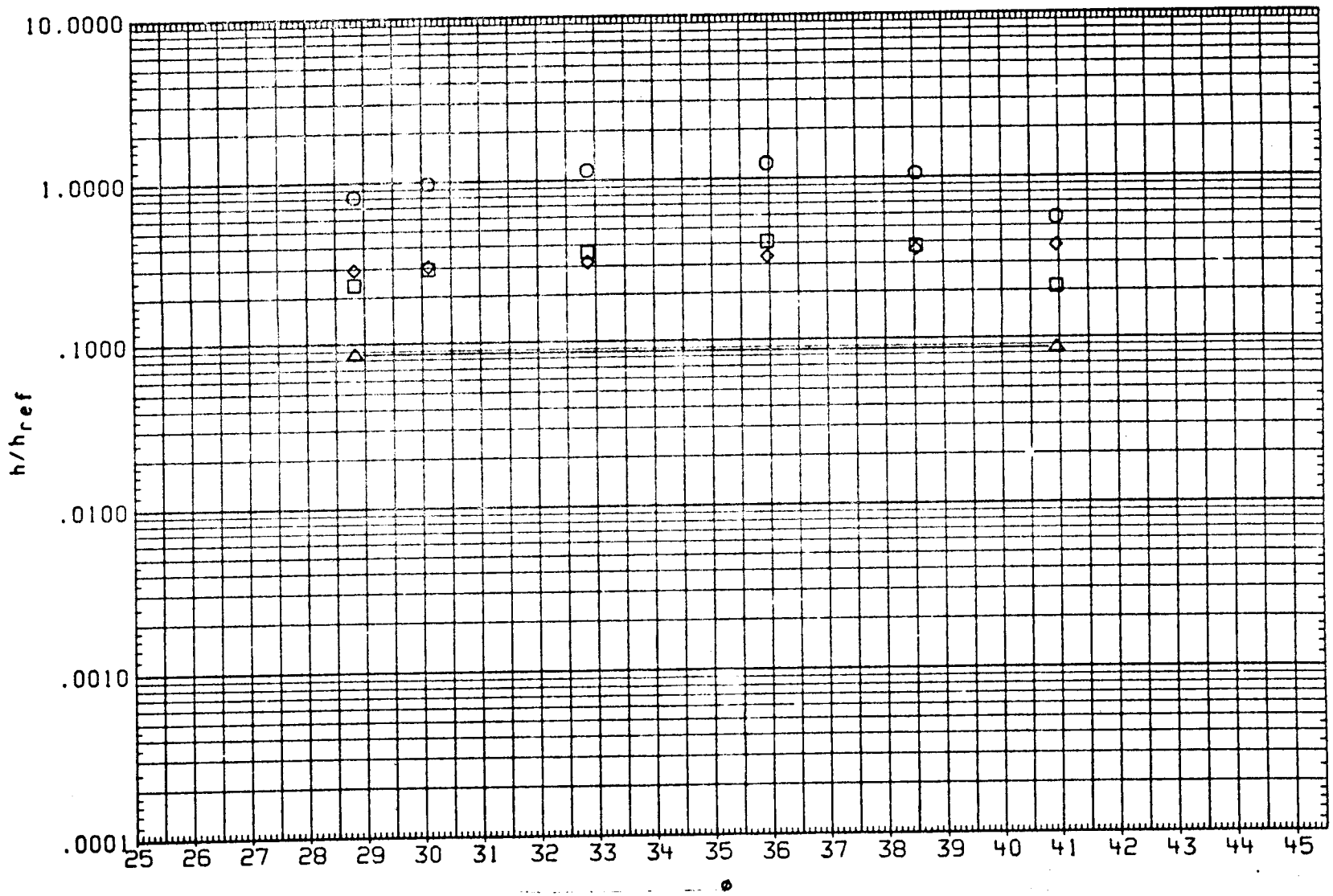

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

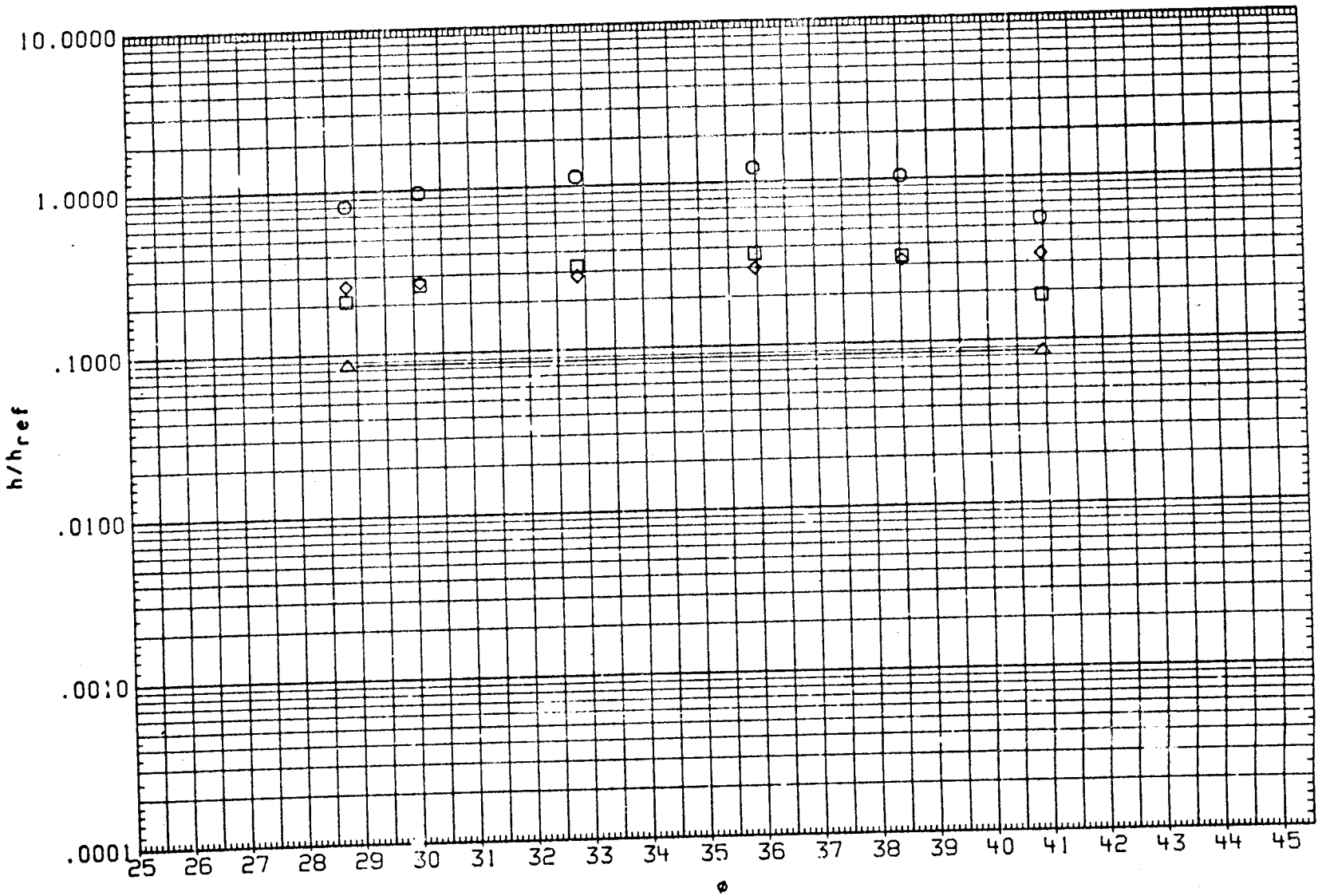

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

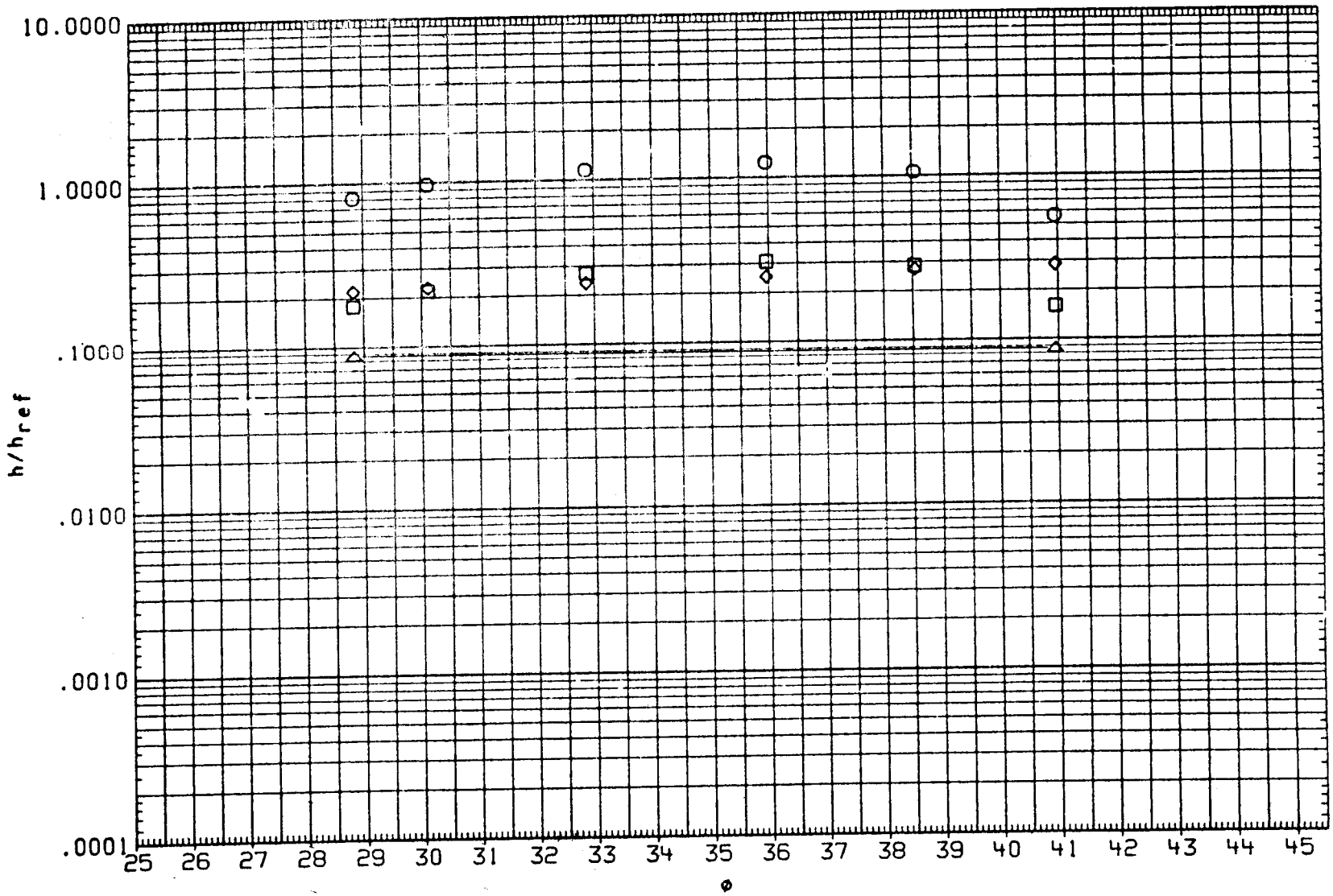

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 267

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

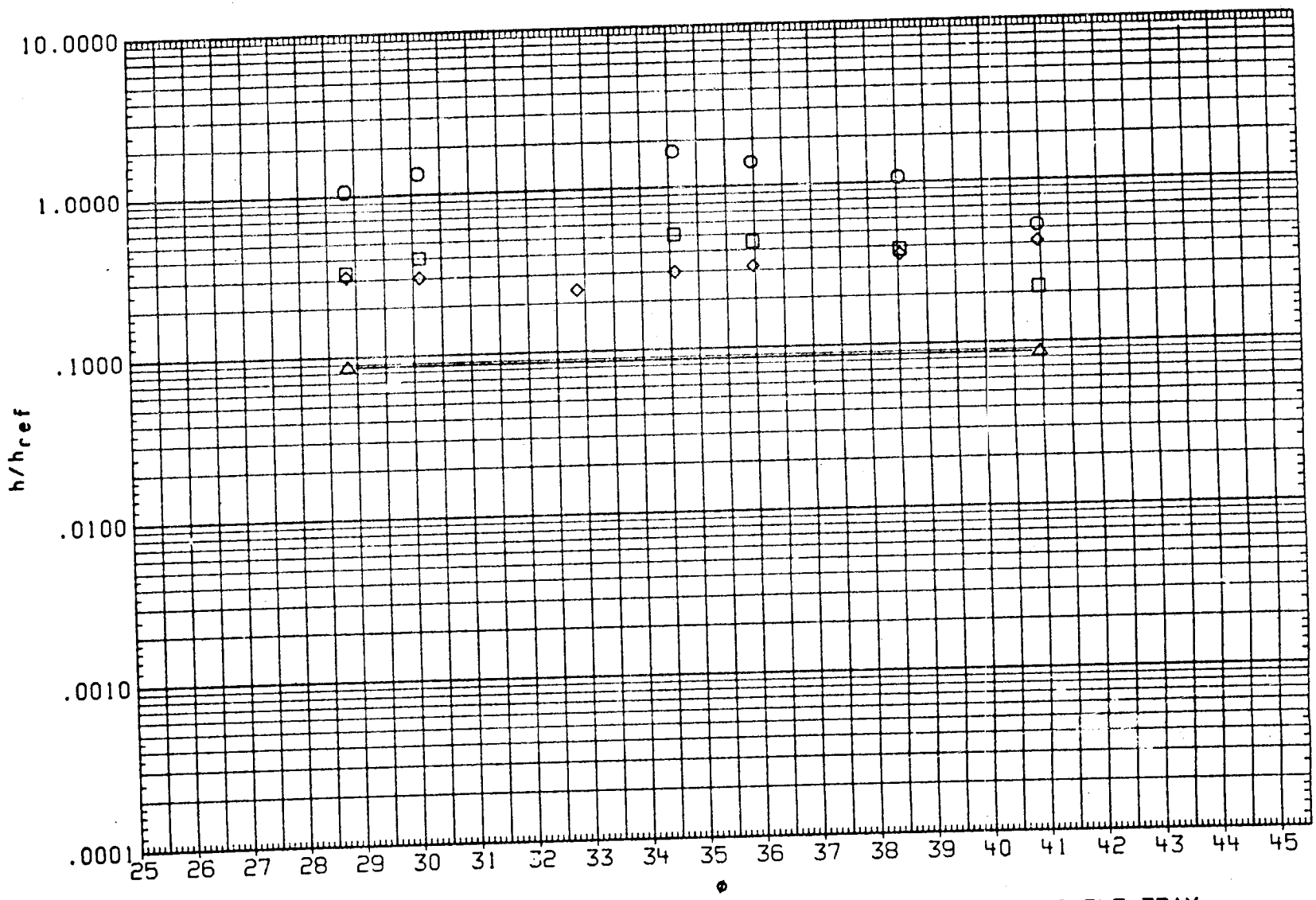

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 268

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

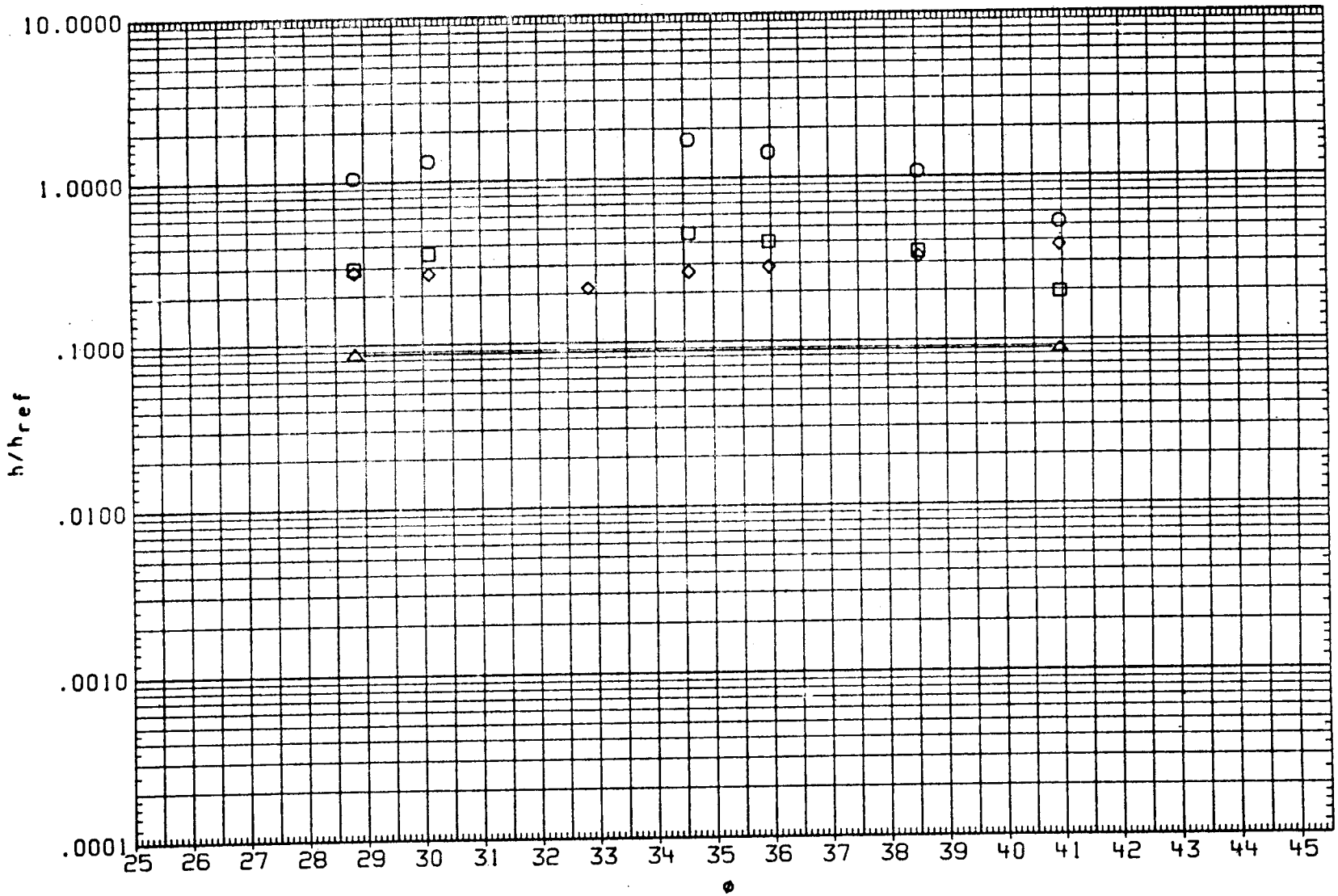

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .542 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

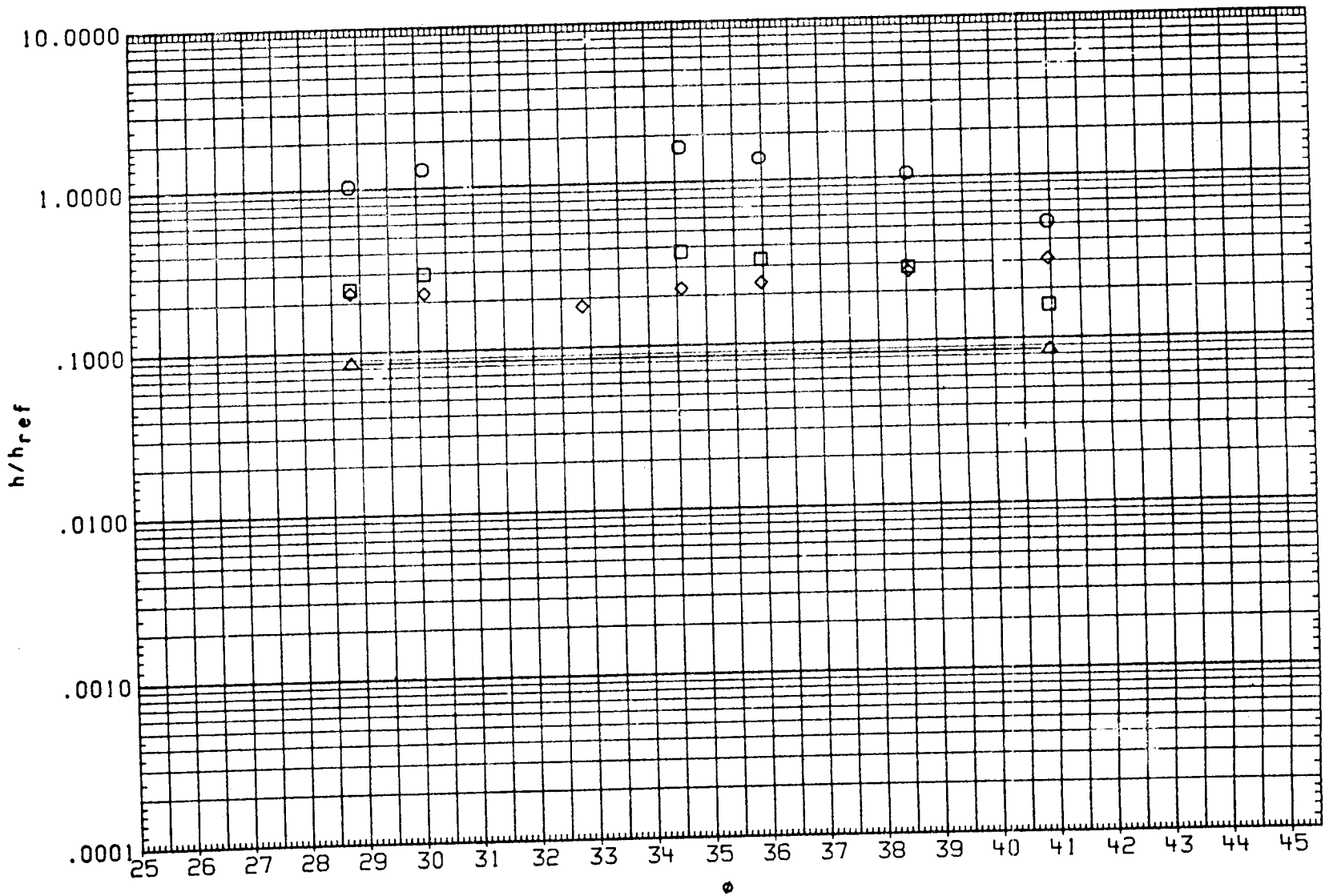

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 270

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

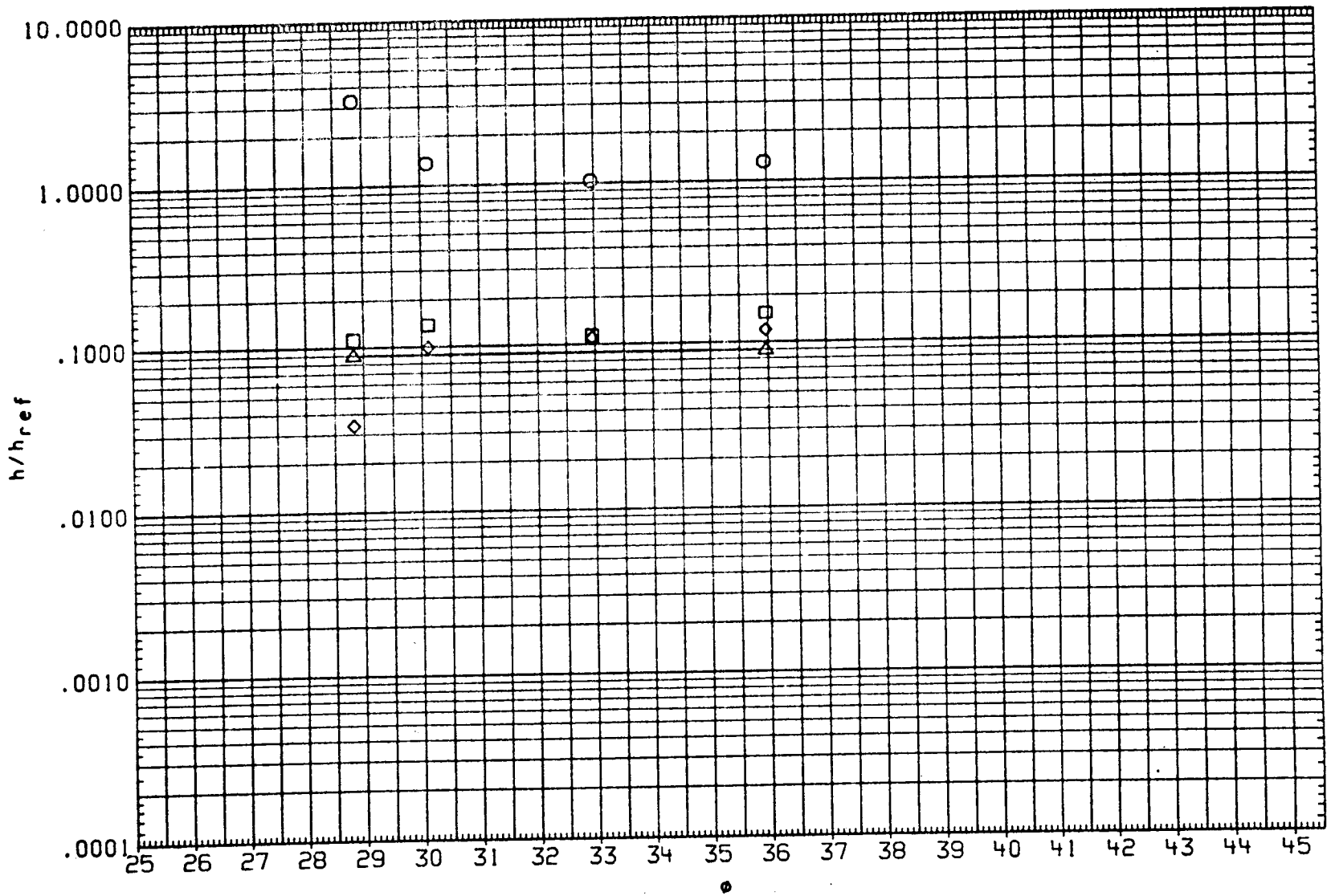

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .441 DATE 22 APR 78 PAGE 271

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

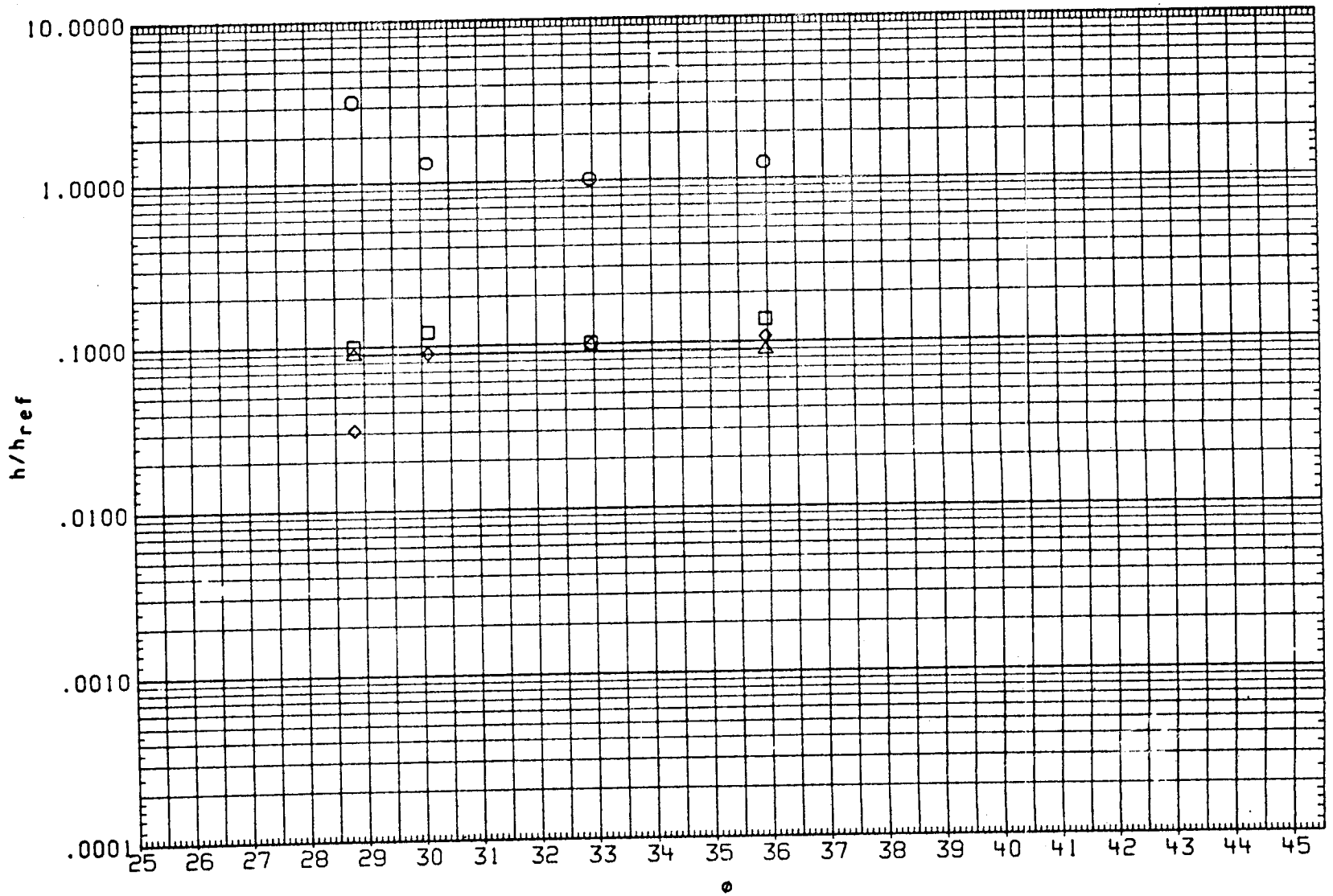

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .441 DATE 22 APR 78 PAGE 272

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20002)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

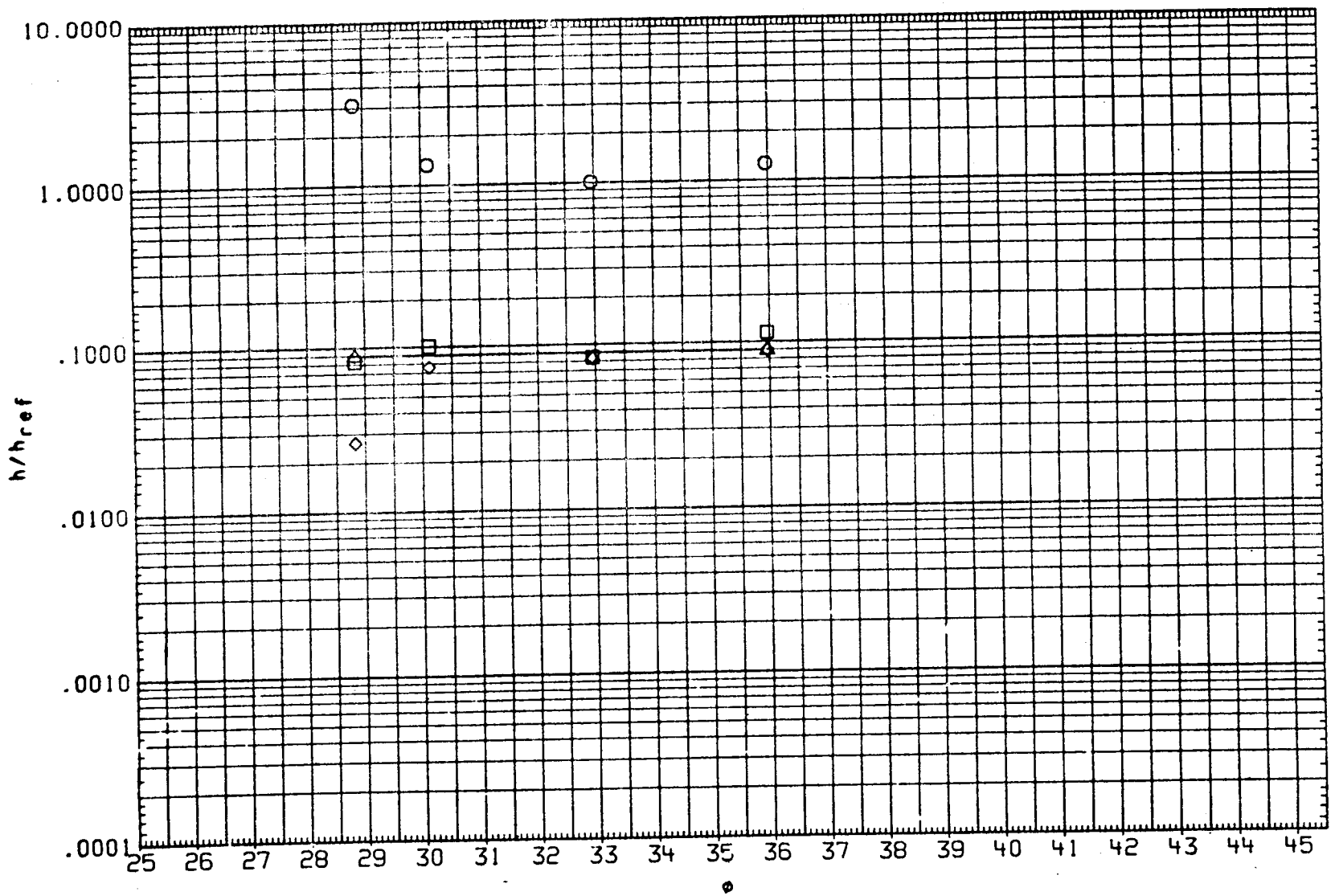

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HΓ = 1.000 X/L = .441 DATE 22 APR 78 PAGE 273

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Q2)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

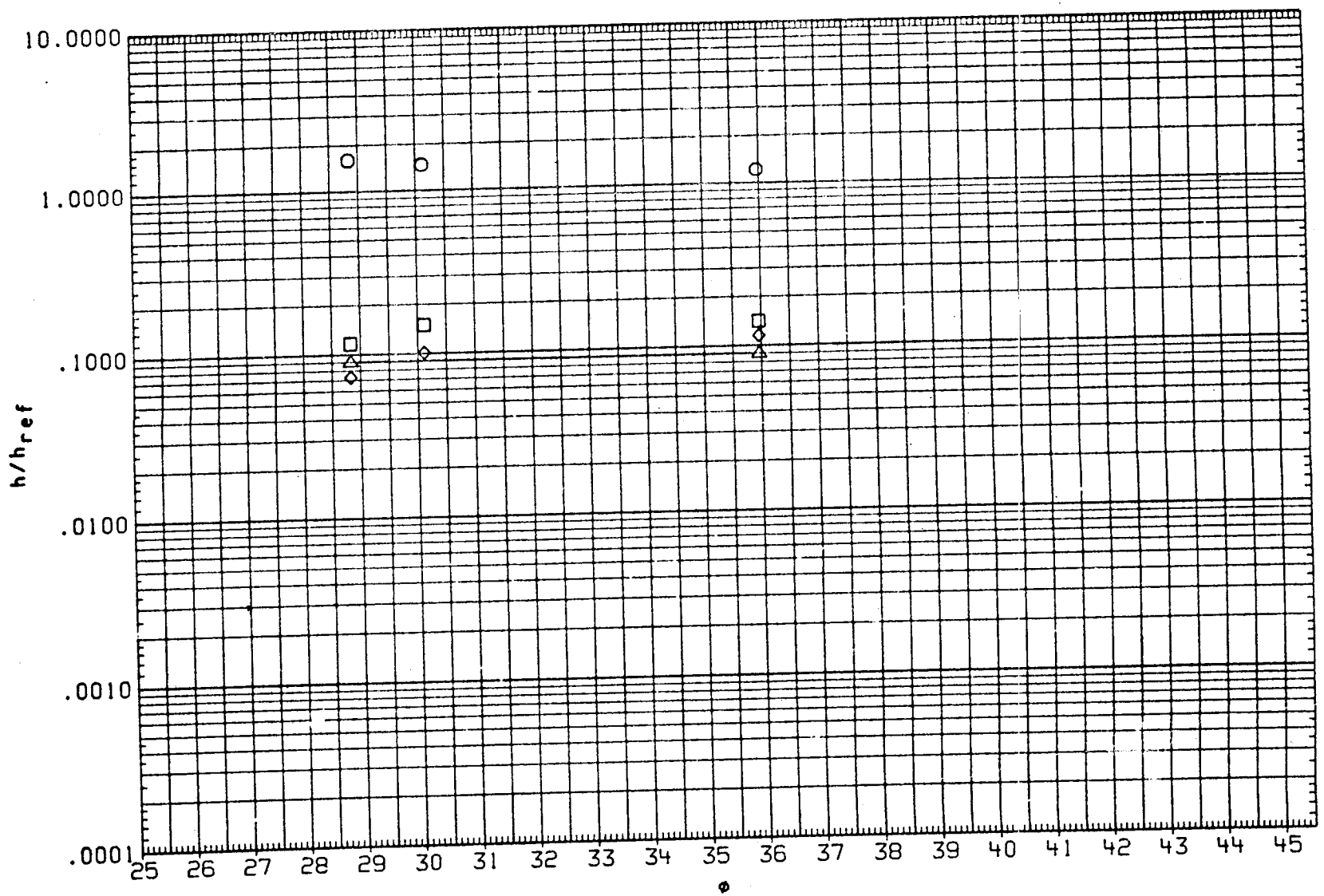

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 274

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2GQ5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

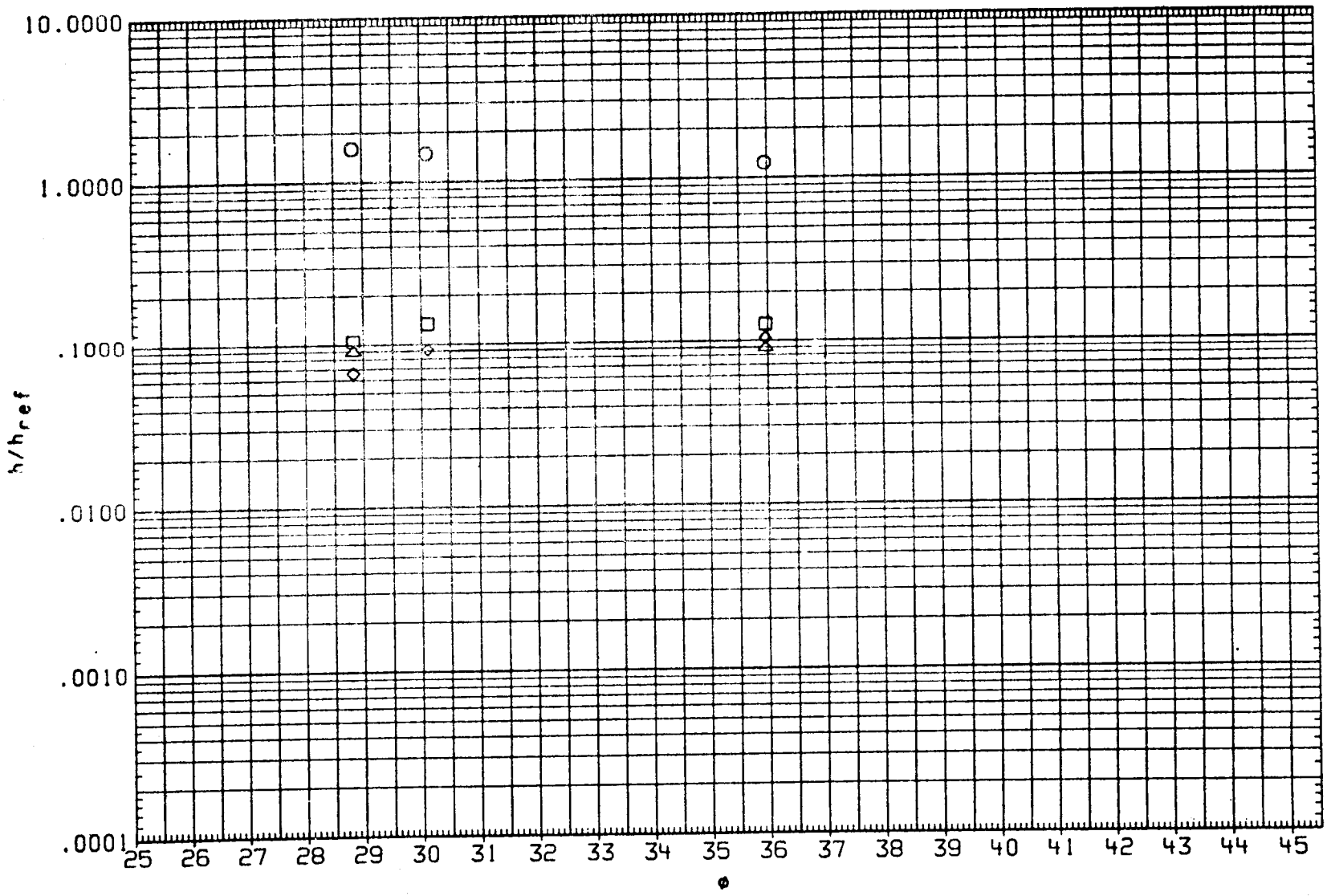

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .443 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

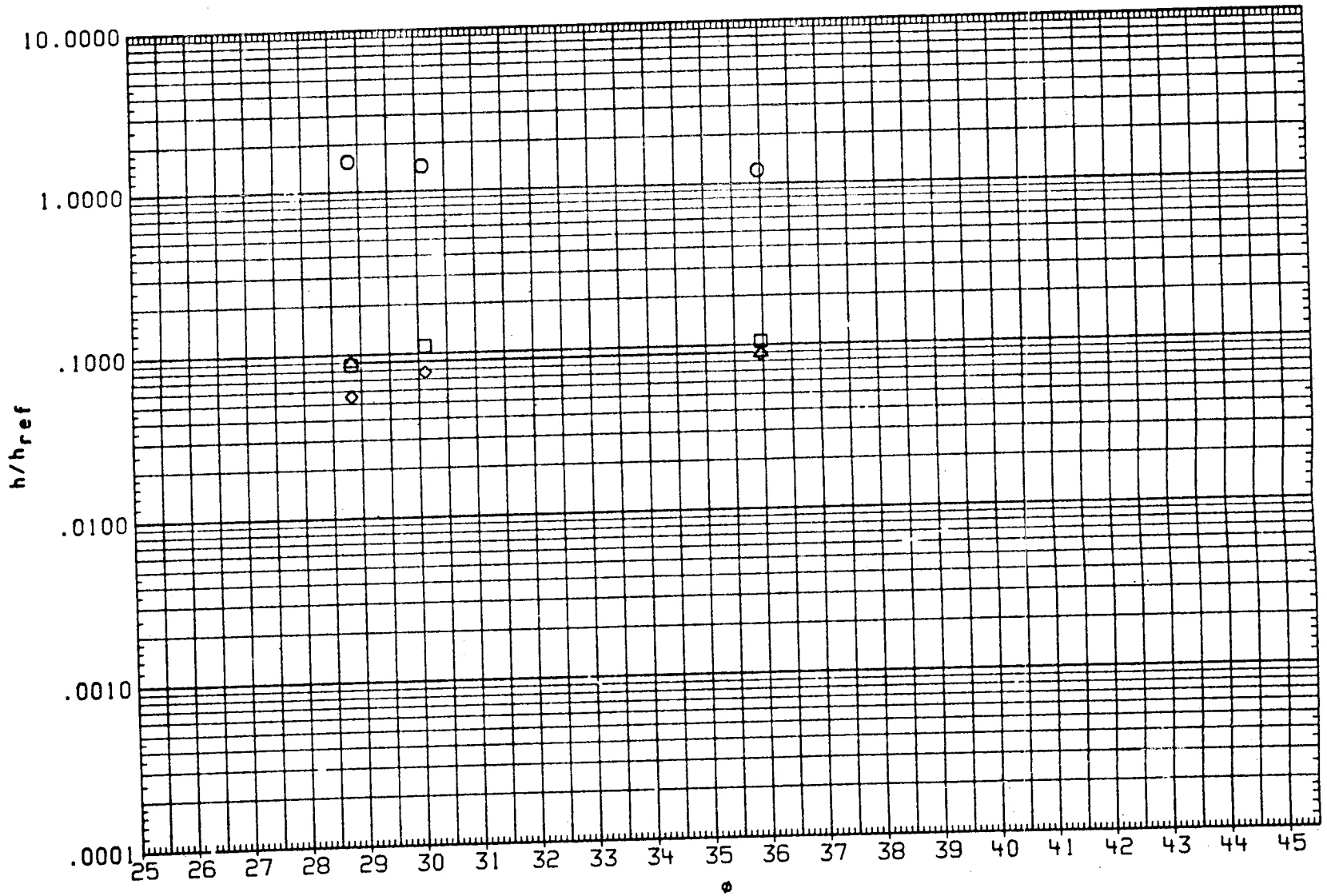

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = 1.000 X/L = .443 DATE 22 APR 78 PAGE 276

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

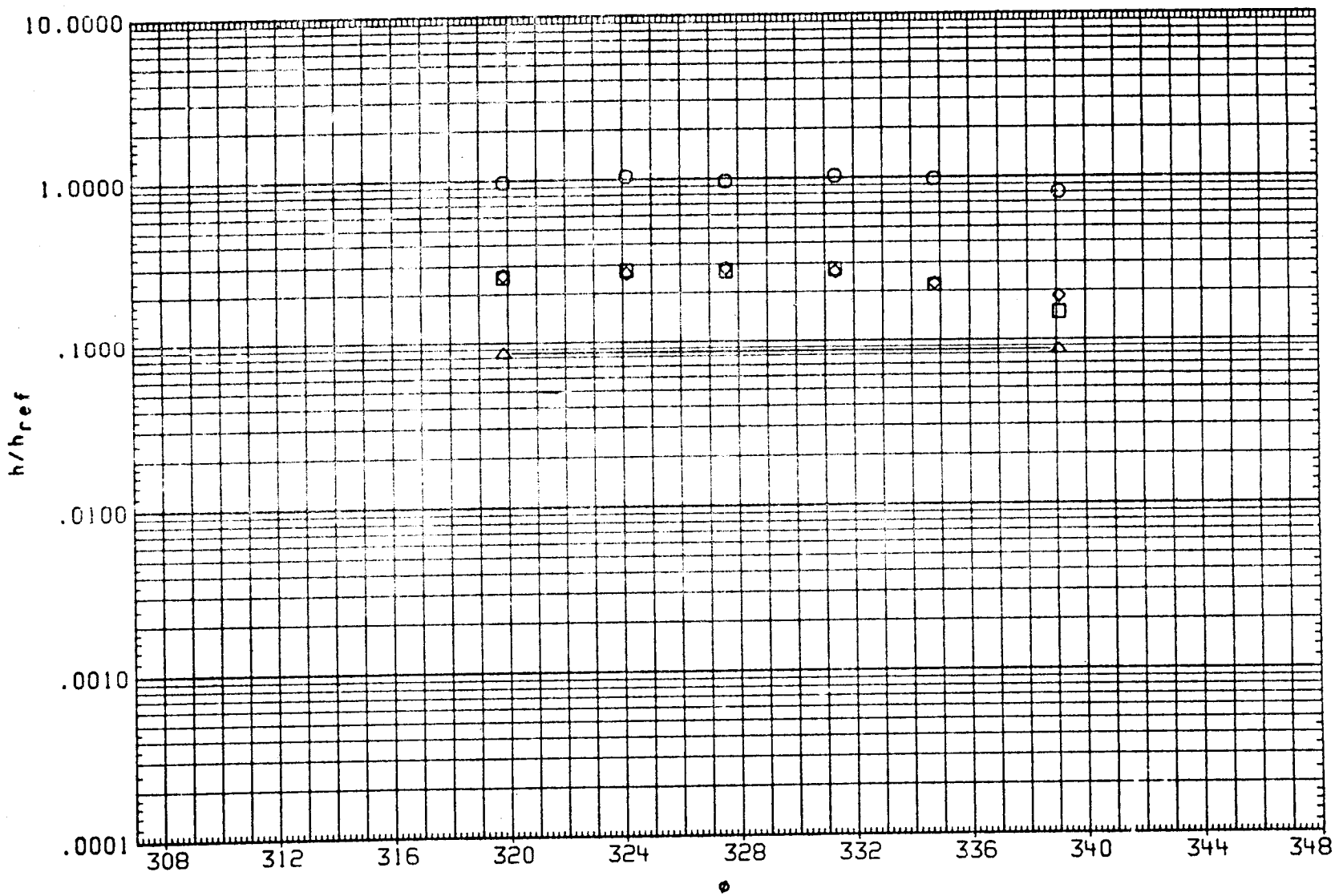

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .571 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

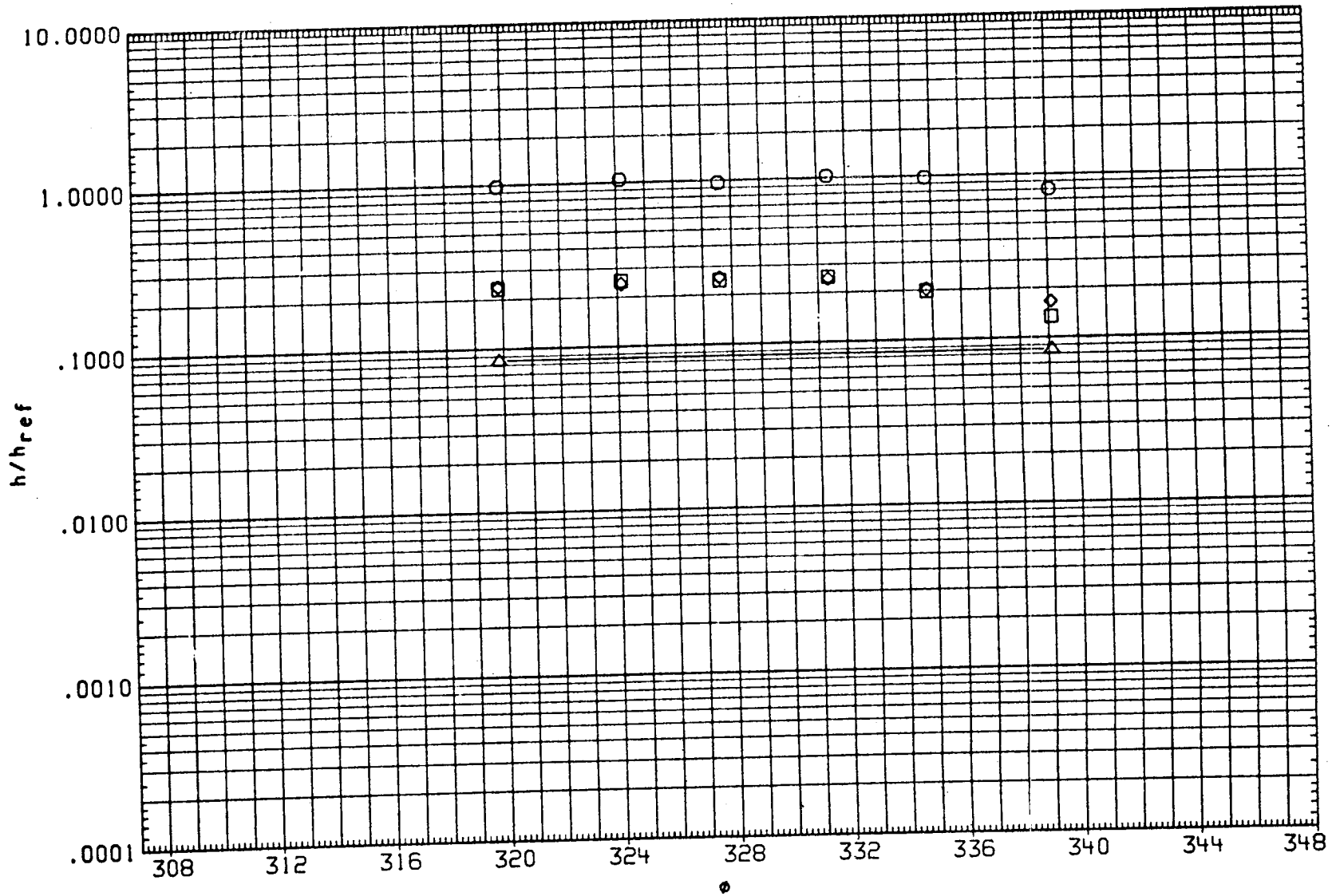

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 278

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

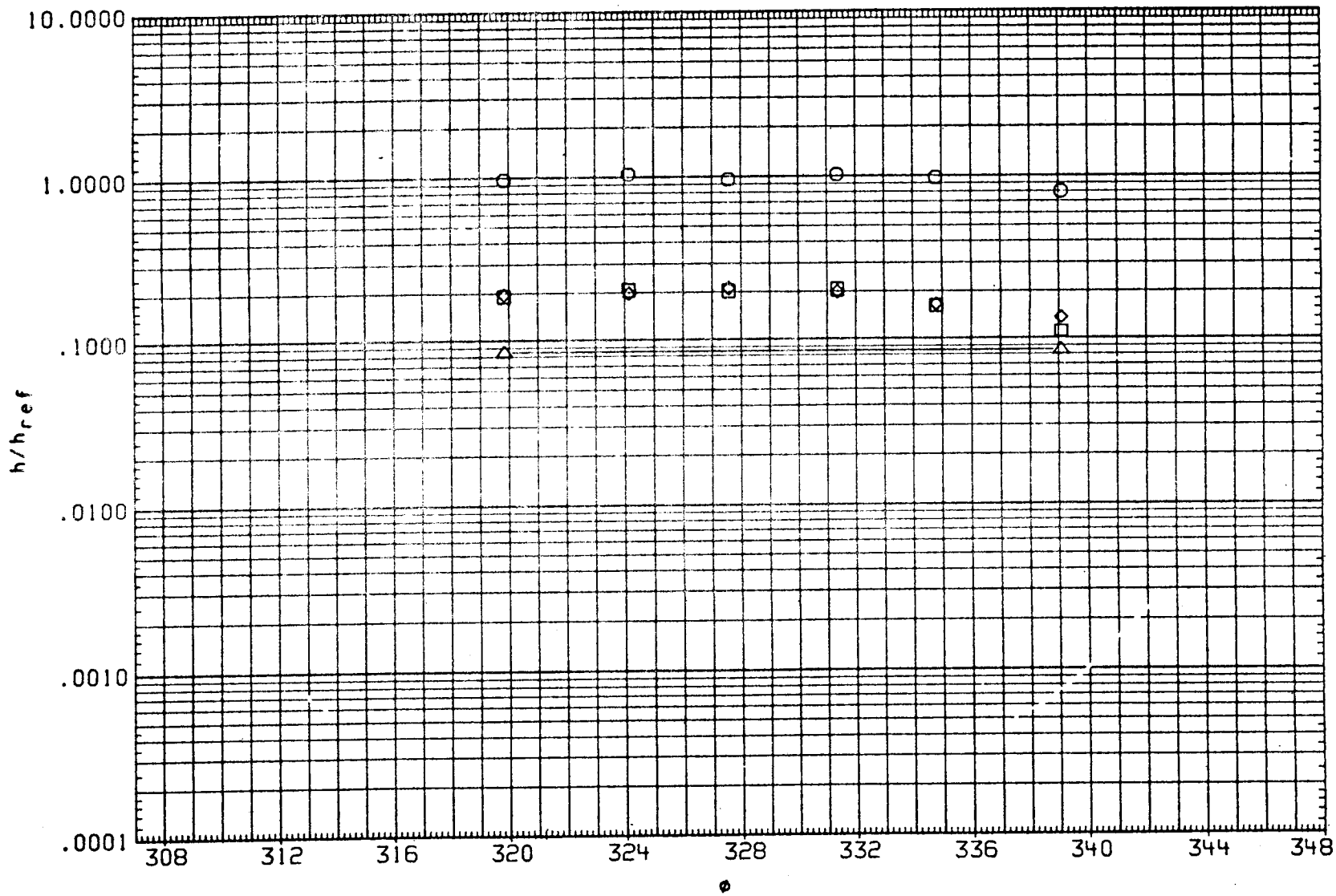

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

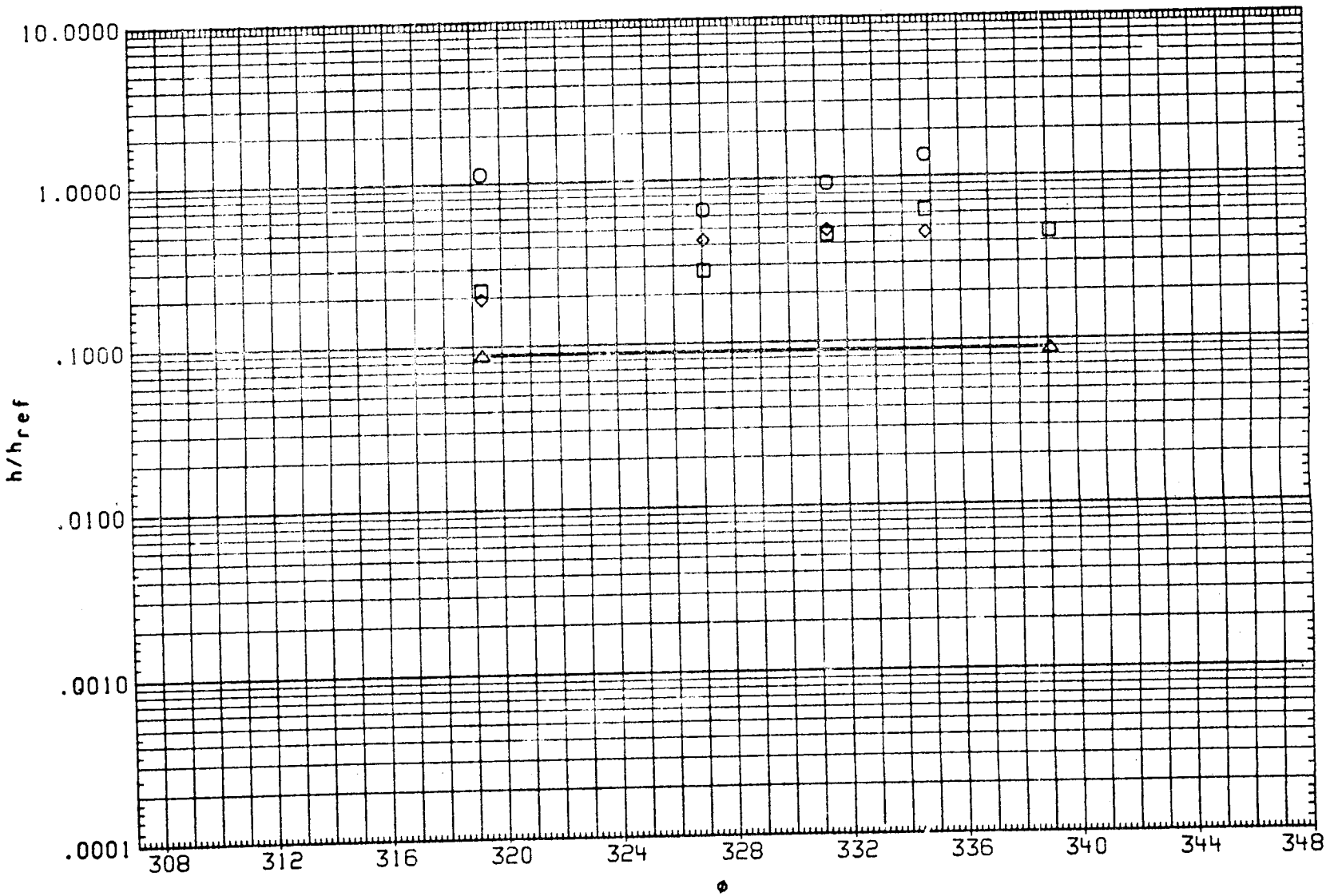

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 280

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

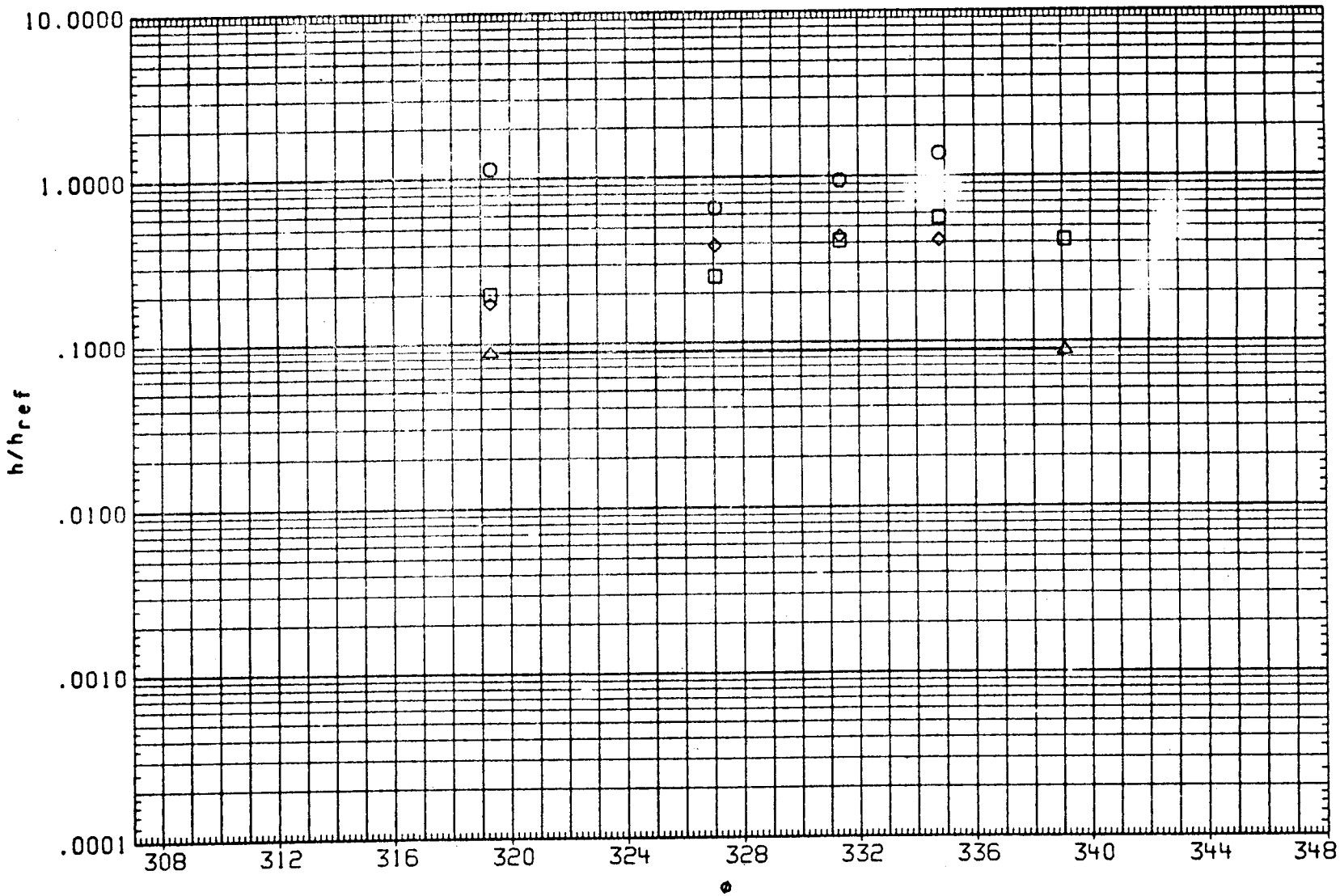

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 281

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(N2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

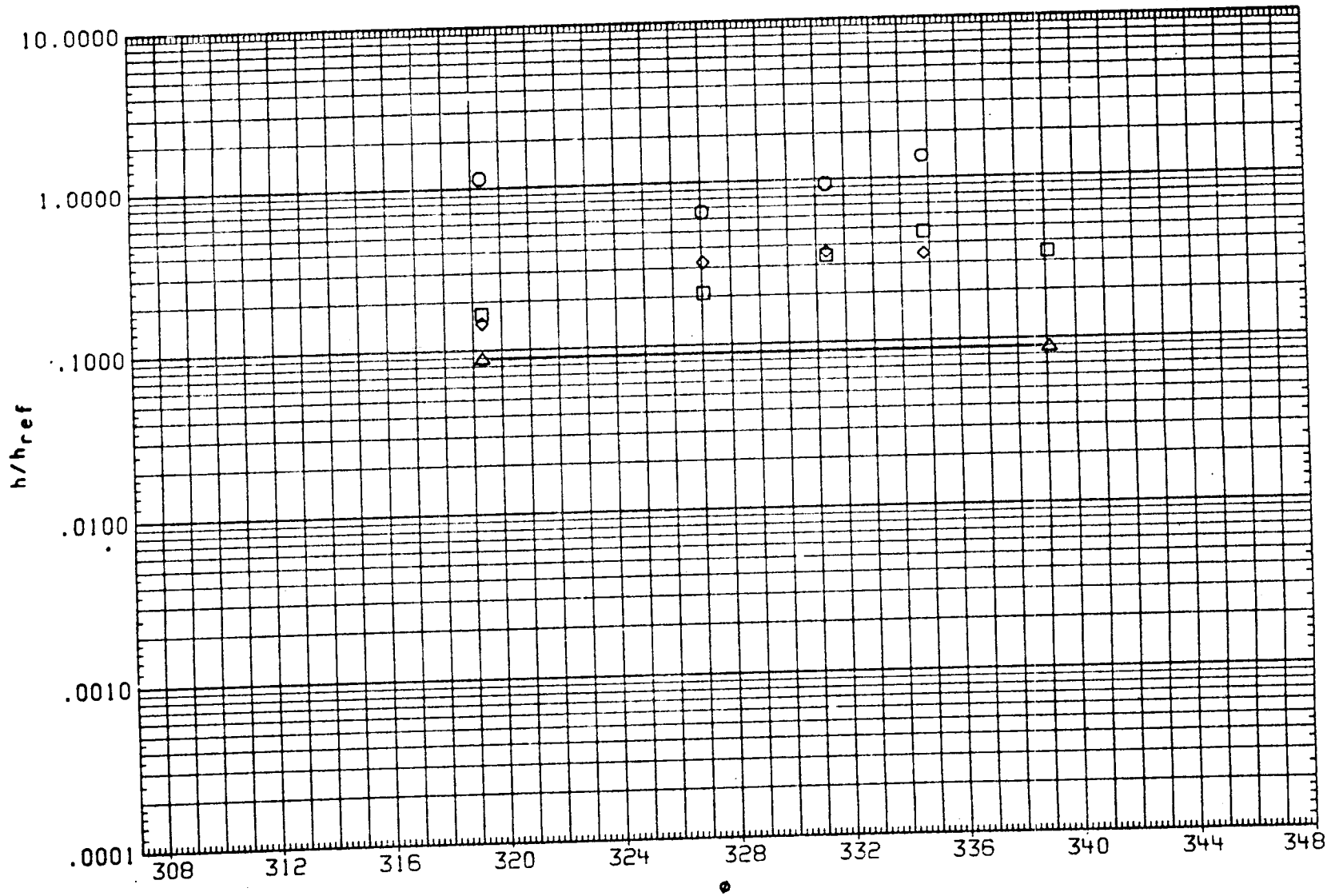

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 282

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

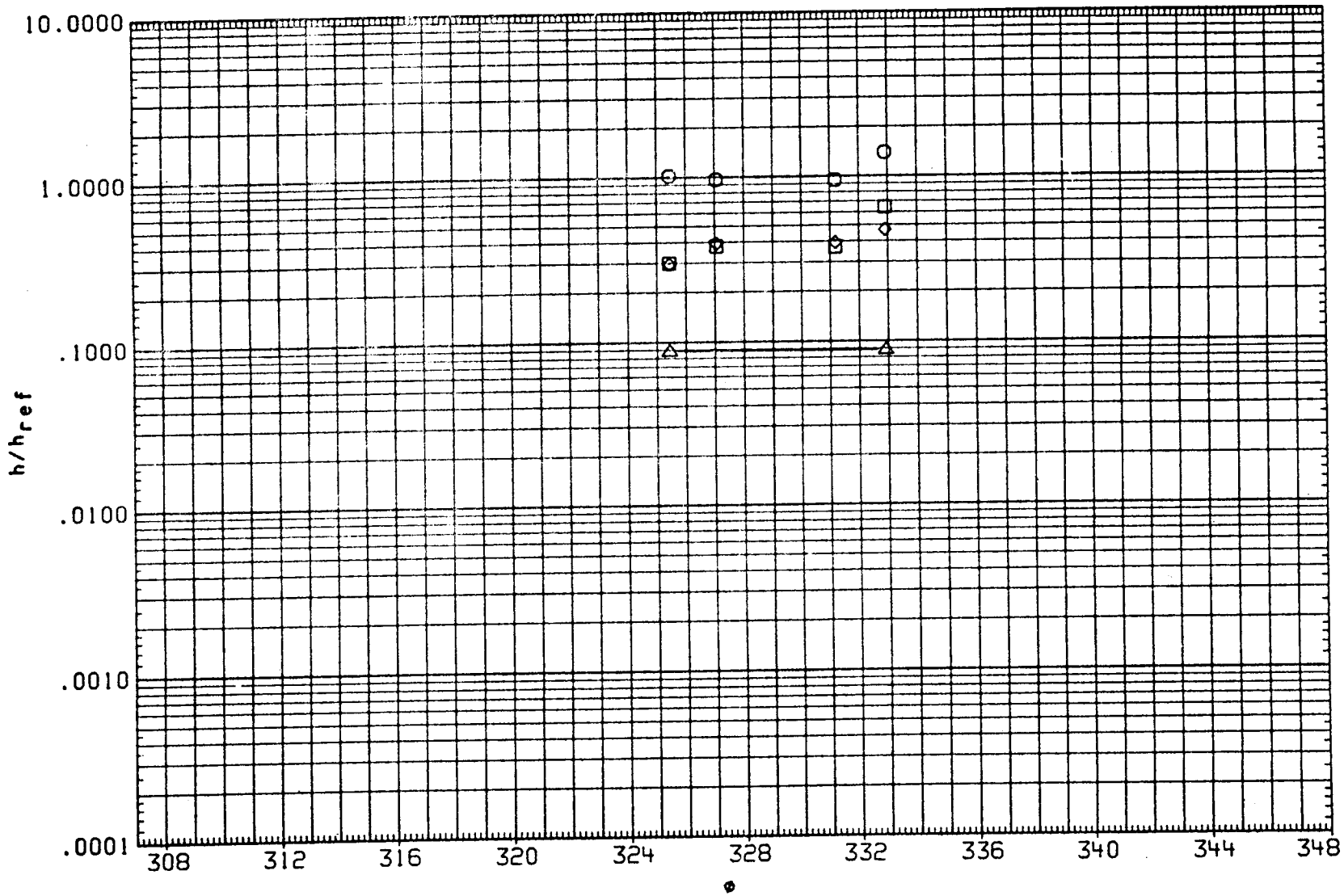

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .482 DATE 22 APR 78 PAGE 283

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	1H51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	1H51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	1H51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	1H51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

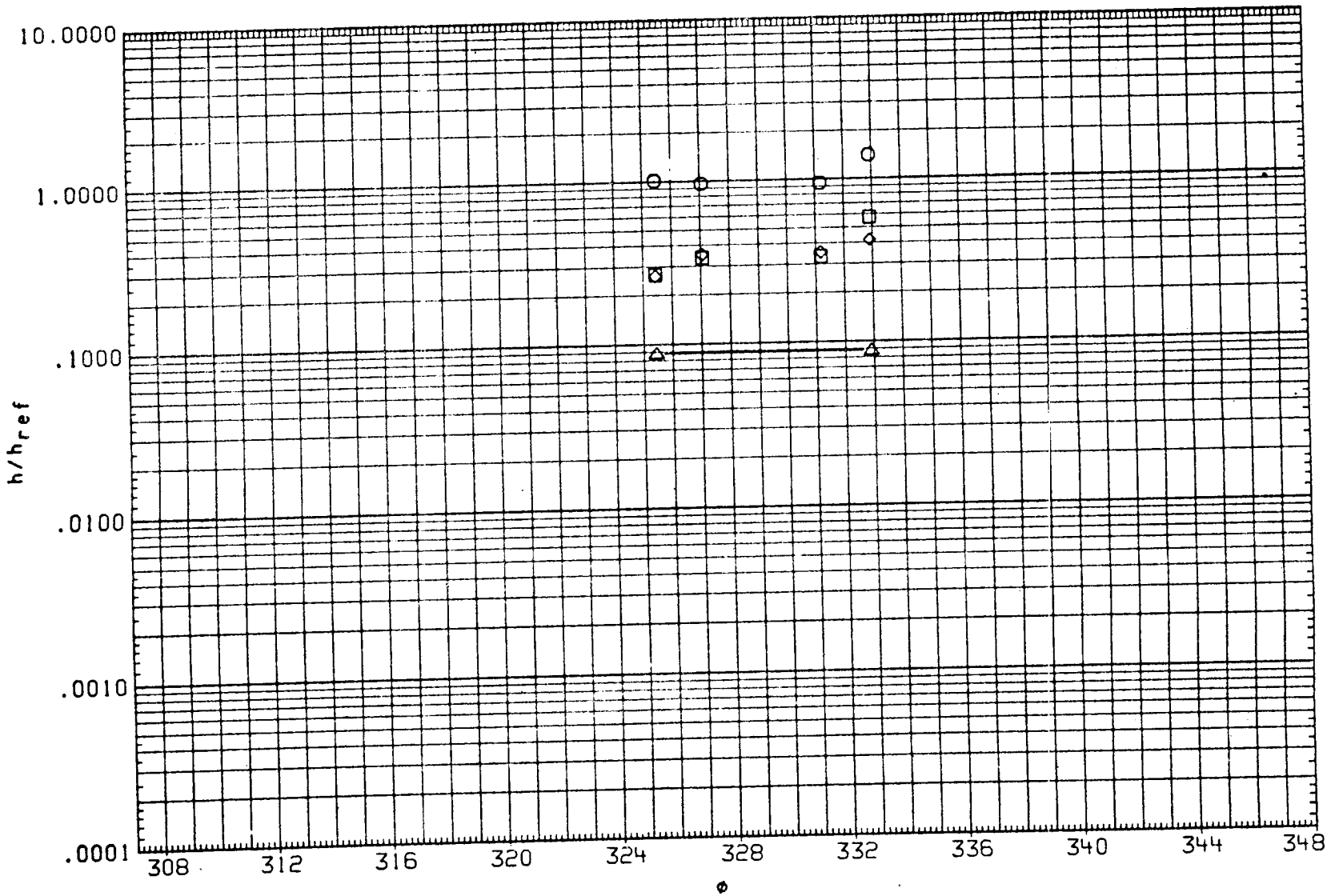

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 284

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

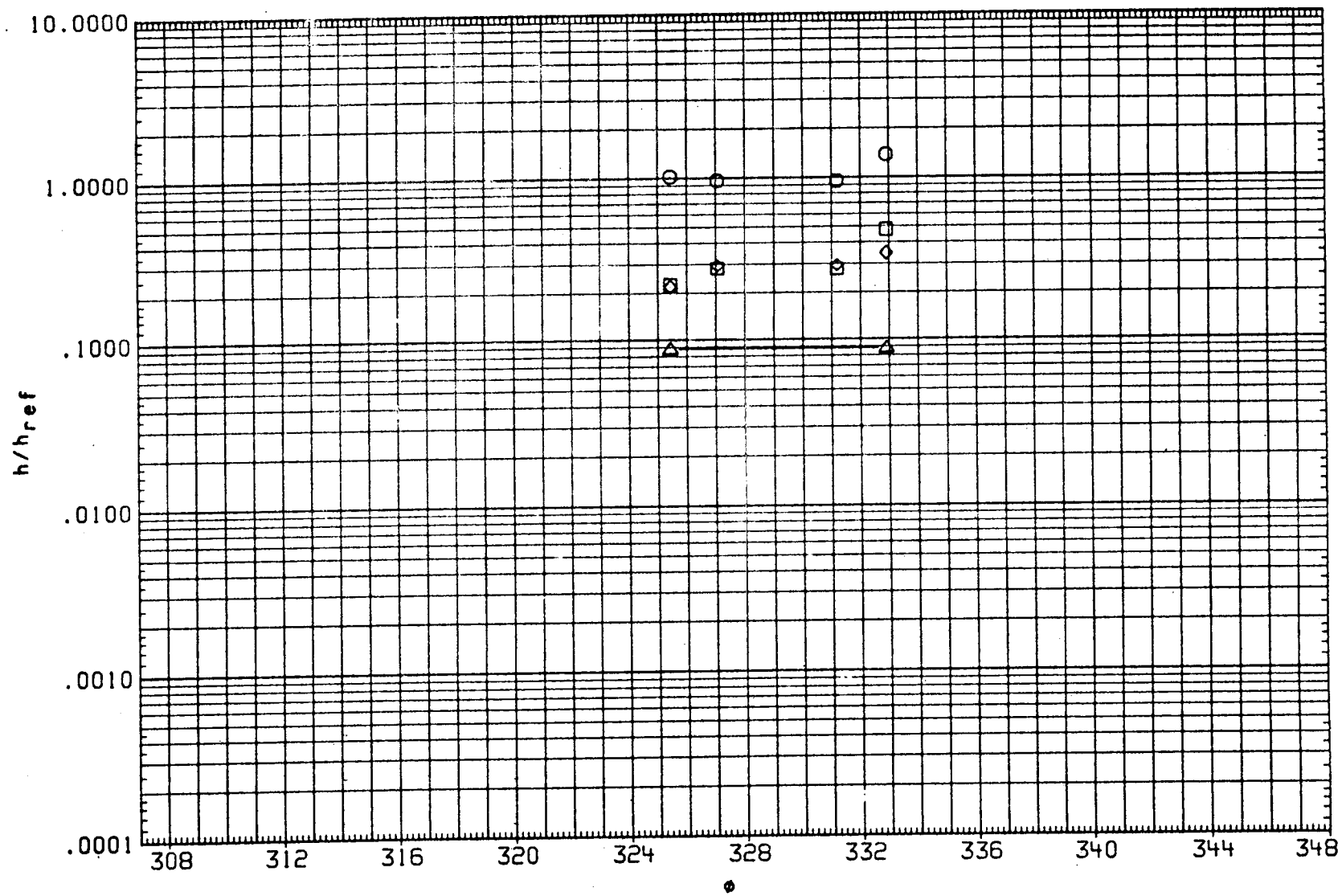

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

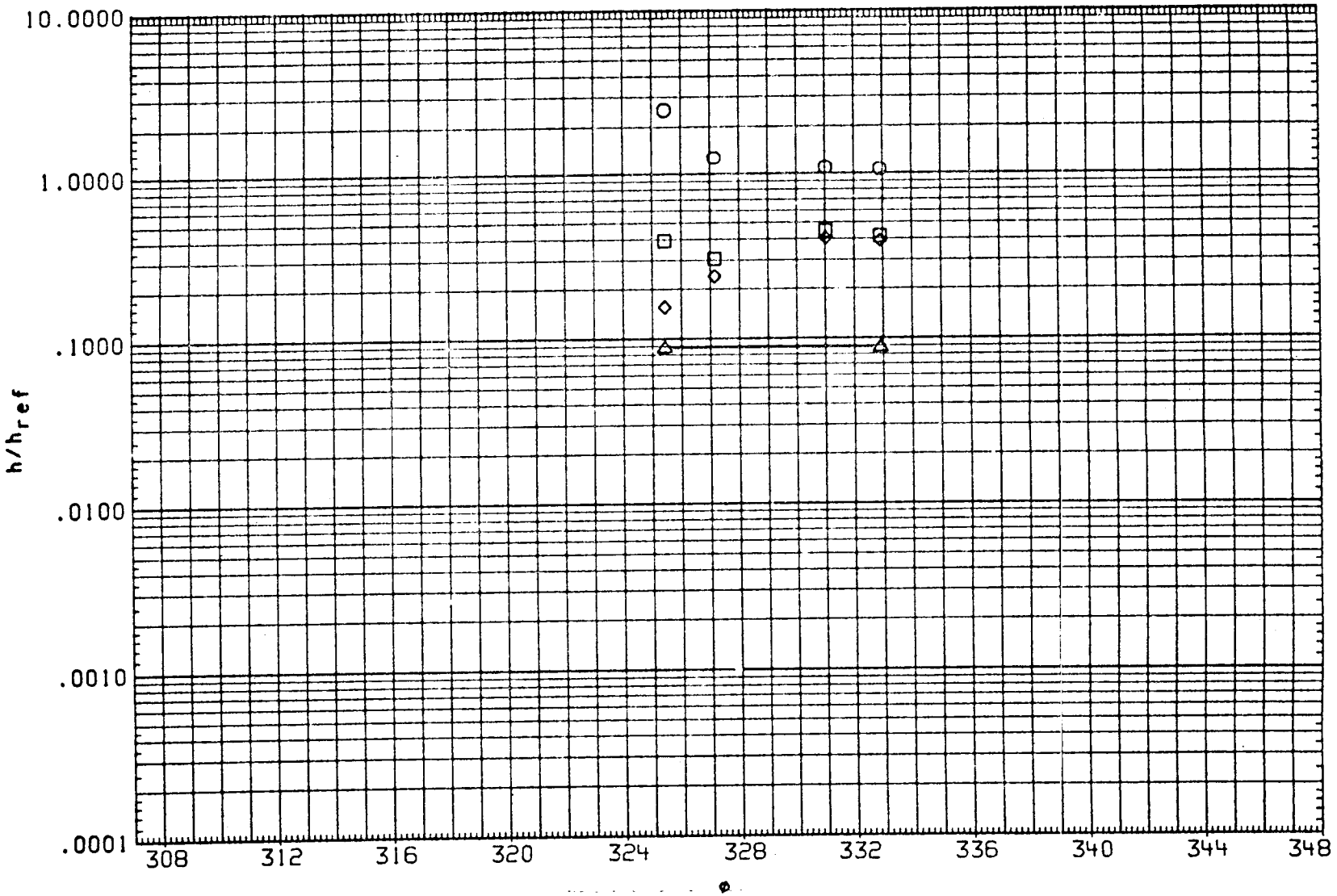

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 286

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R2000Z)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M2000A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

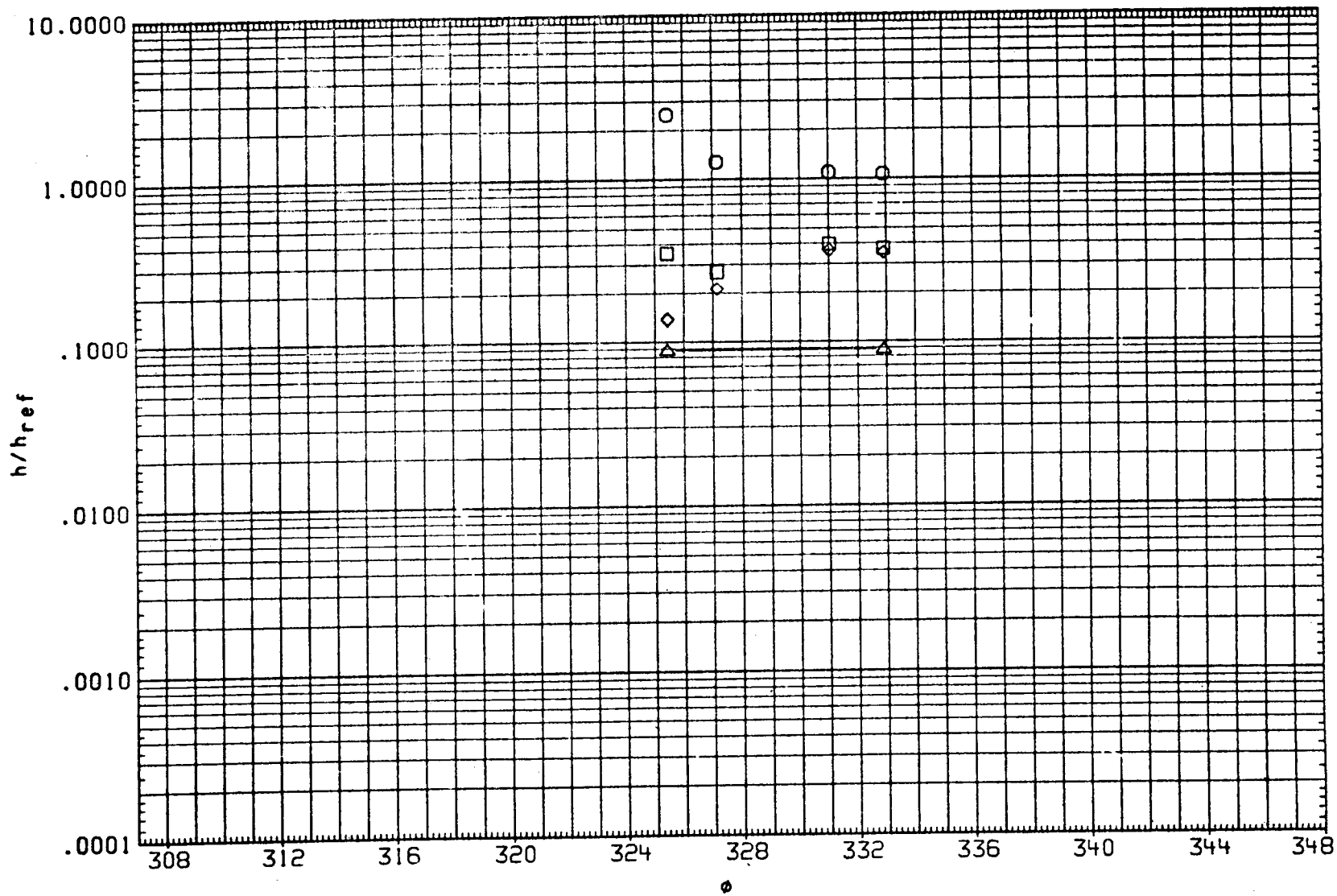

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .473 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0A)	○	IH51A 1A/(2A+3A+4A-5A-5A)	ET SURFACE	.000	.000	5.000	5.300
(R20Q02)	□	IH51A CONF 1A ET SURFACE		.000	.000	5.000	5.300
(M20Q0A)	◇	IH51A 2A+3A+4A-5A-5A	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

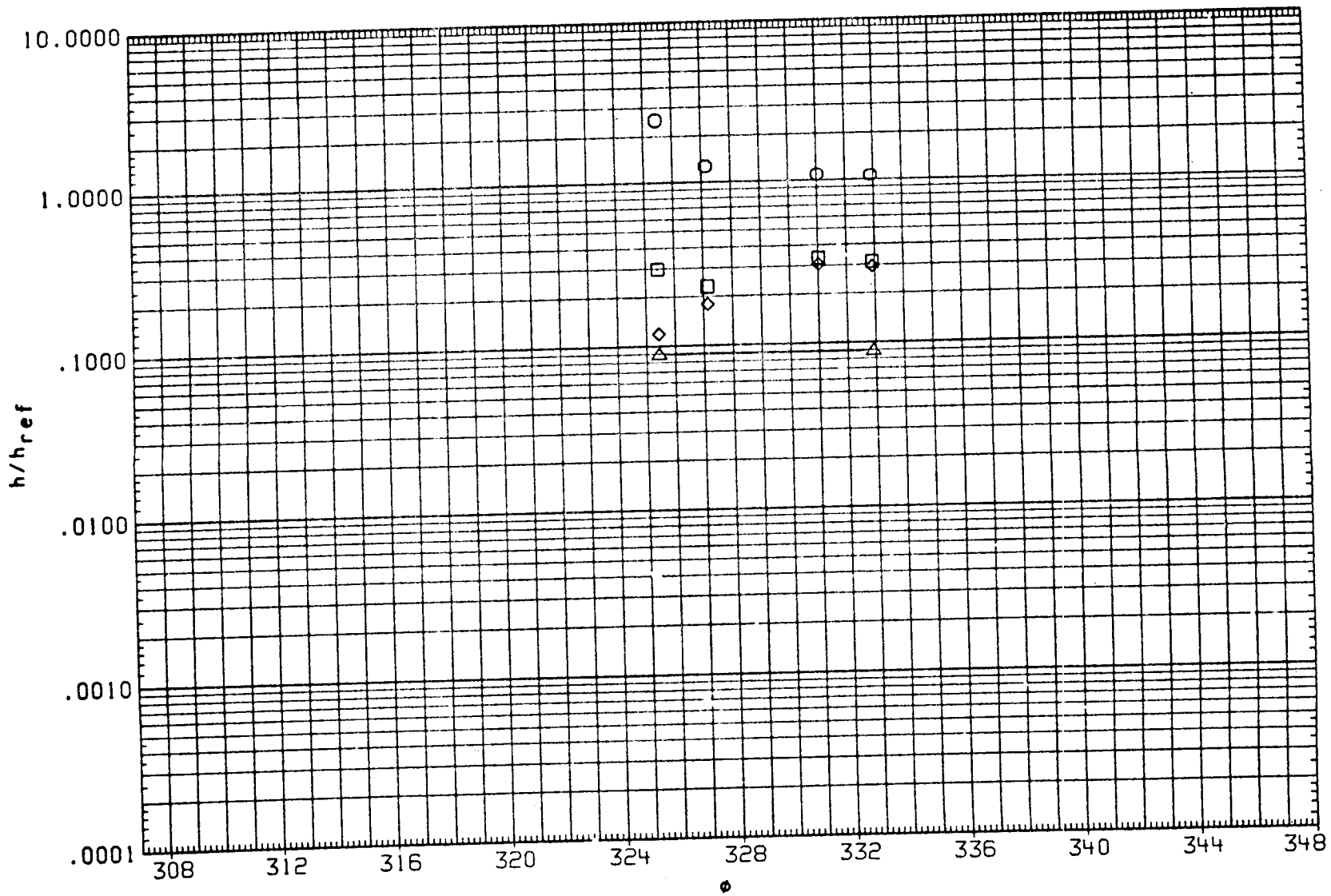

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 288

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

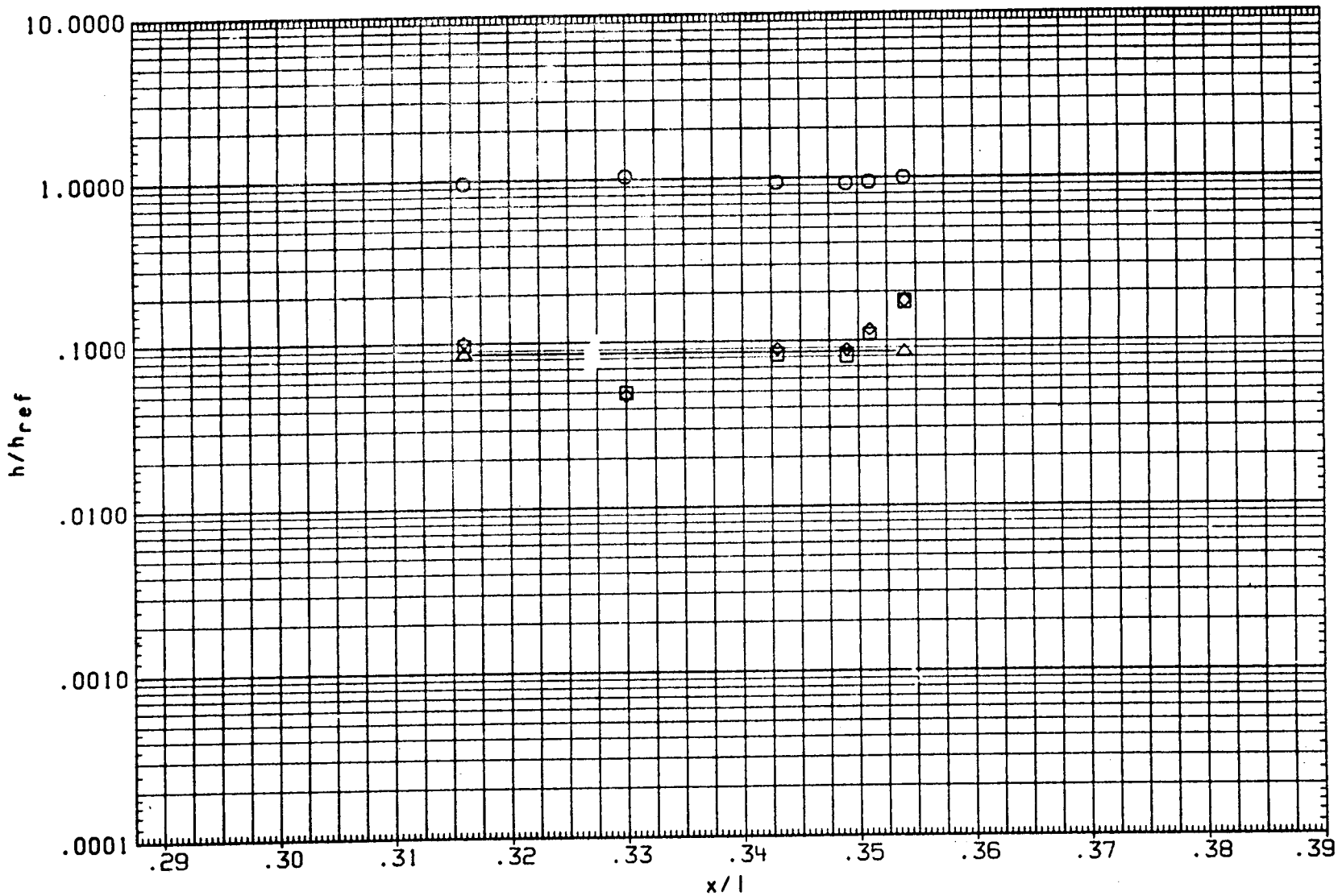

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78 PAGE 289

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

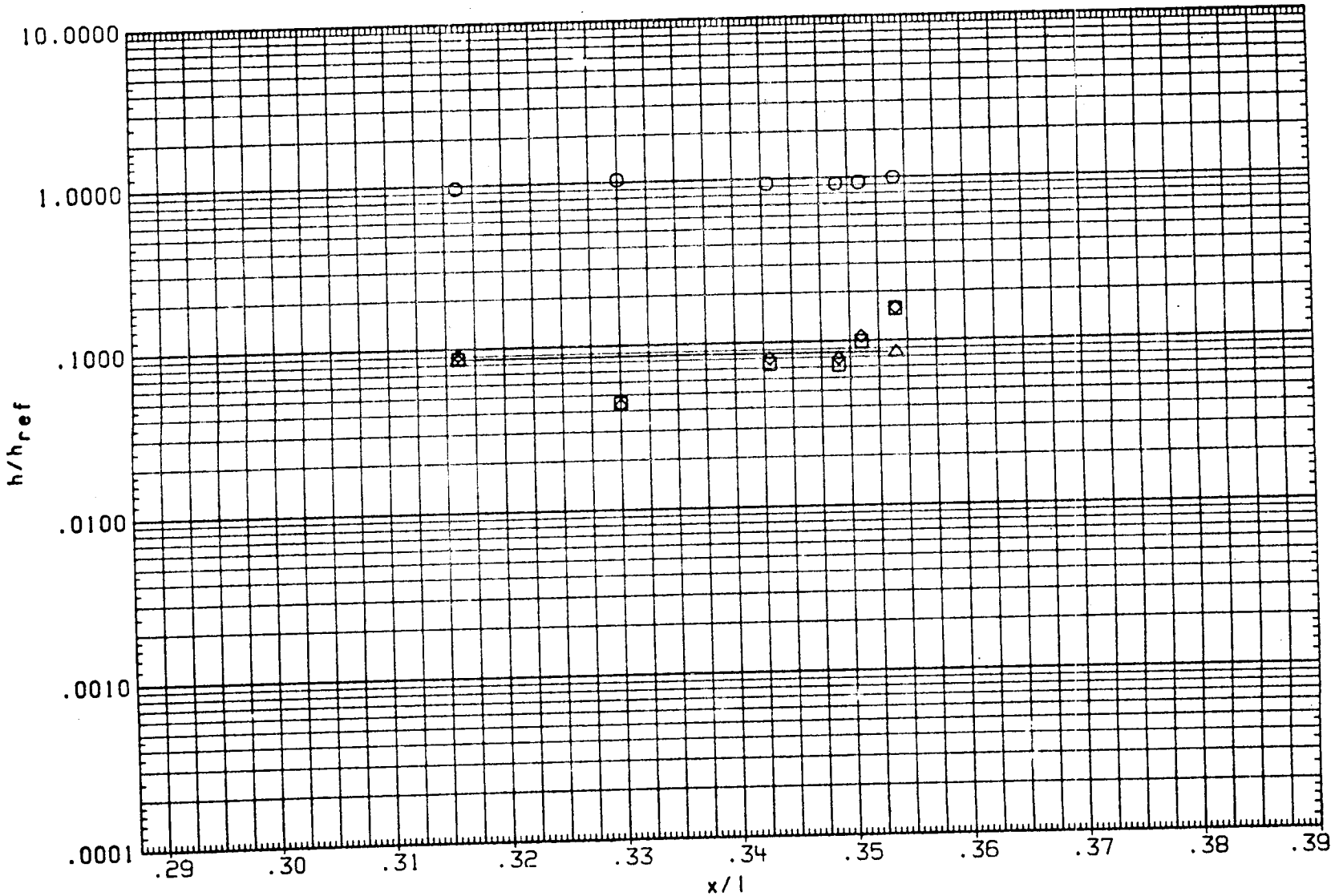

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 PHI = 24.690 DATE 22 APR 78 PAGE 290

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

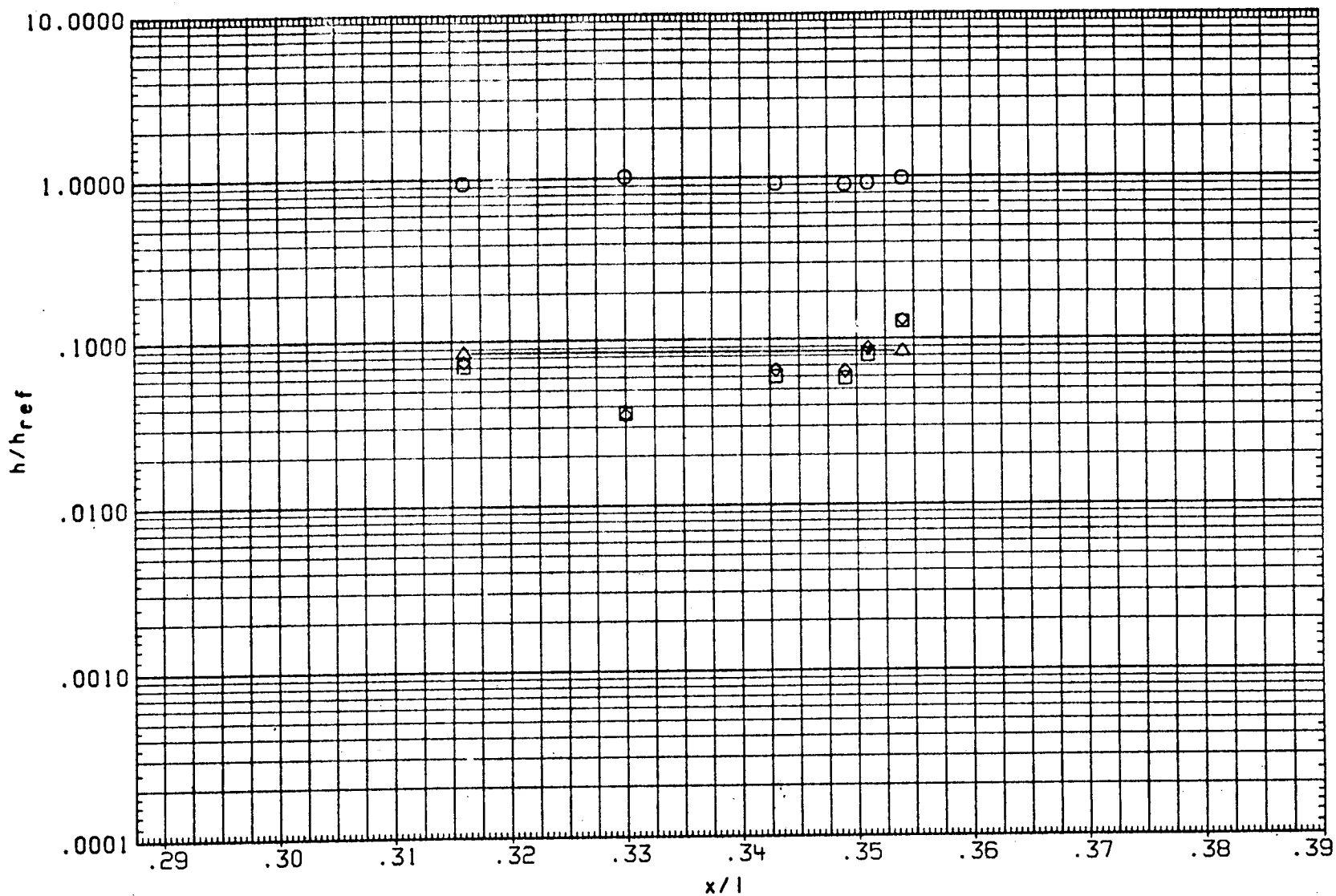

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78 PAGE 291

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20L0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L01)	□	IH51A CONF 1B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(M20L0B)	◇	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

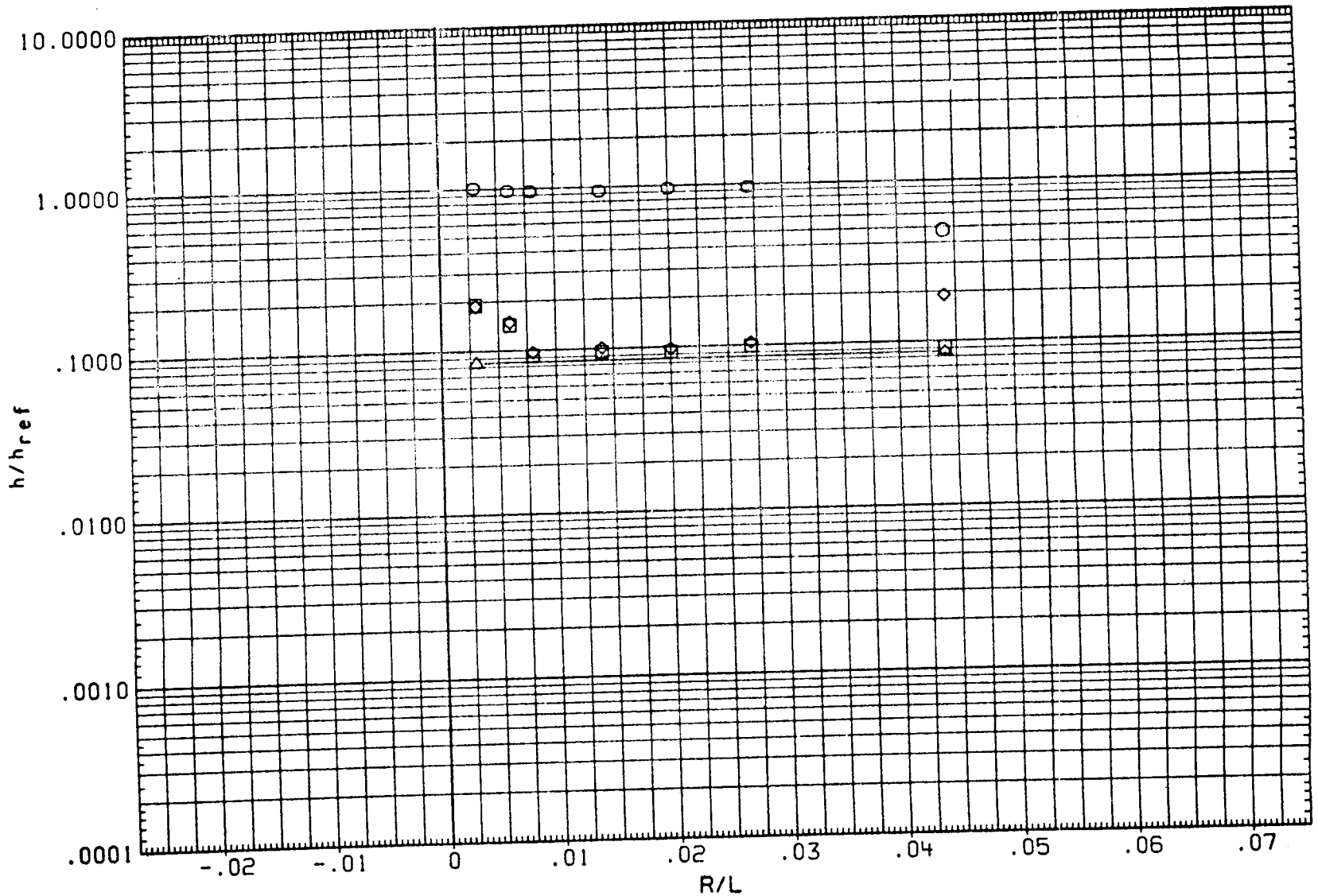

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0B)	○	IH51A 1B/(2B+3B+4B-5B-5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L01)	□	IH51A CONF 1B LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0B)	◇	IH51A 2B+3B+4B-5B-5B LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

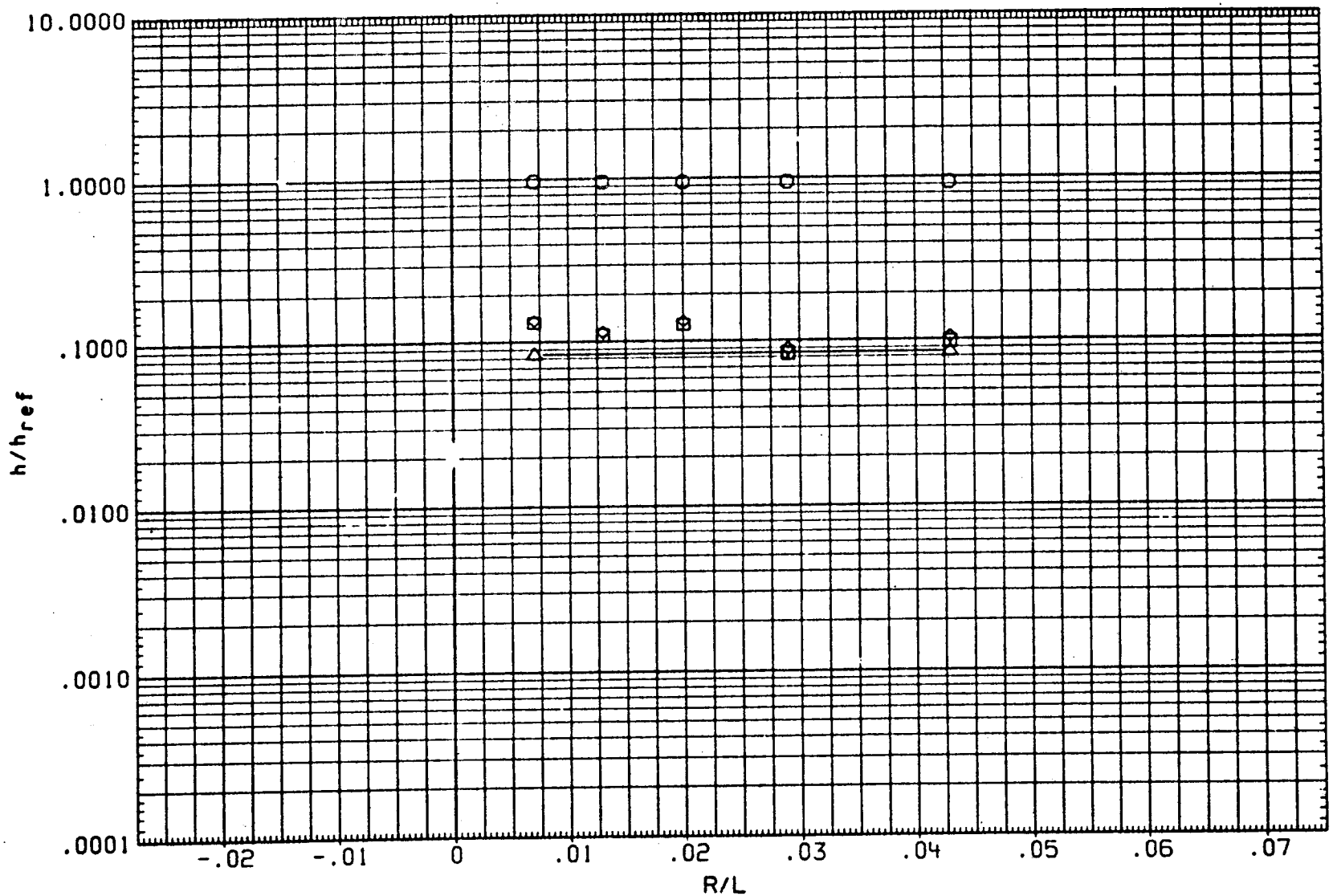

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0B)	○	IH51A 1B/(2B+3B+4B-5B-5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L01)	□	IH51A CONF 1B LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0B)	◇	IH51A 2B+3B+4B-5B-5B LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

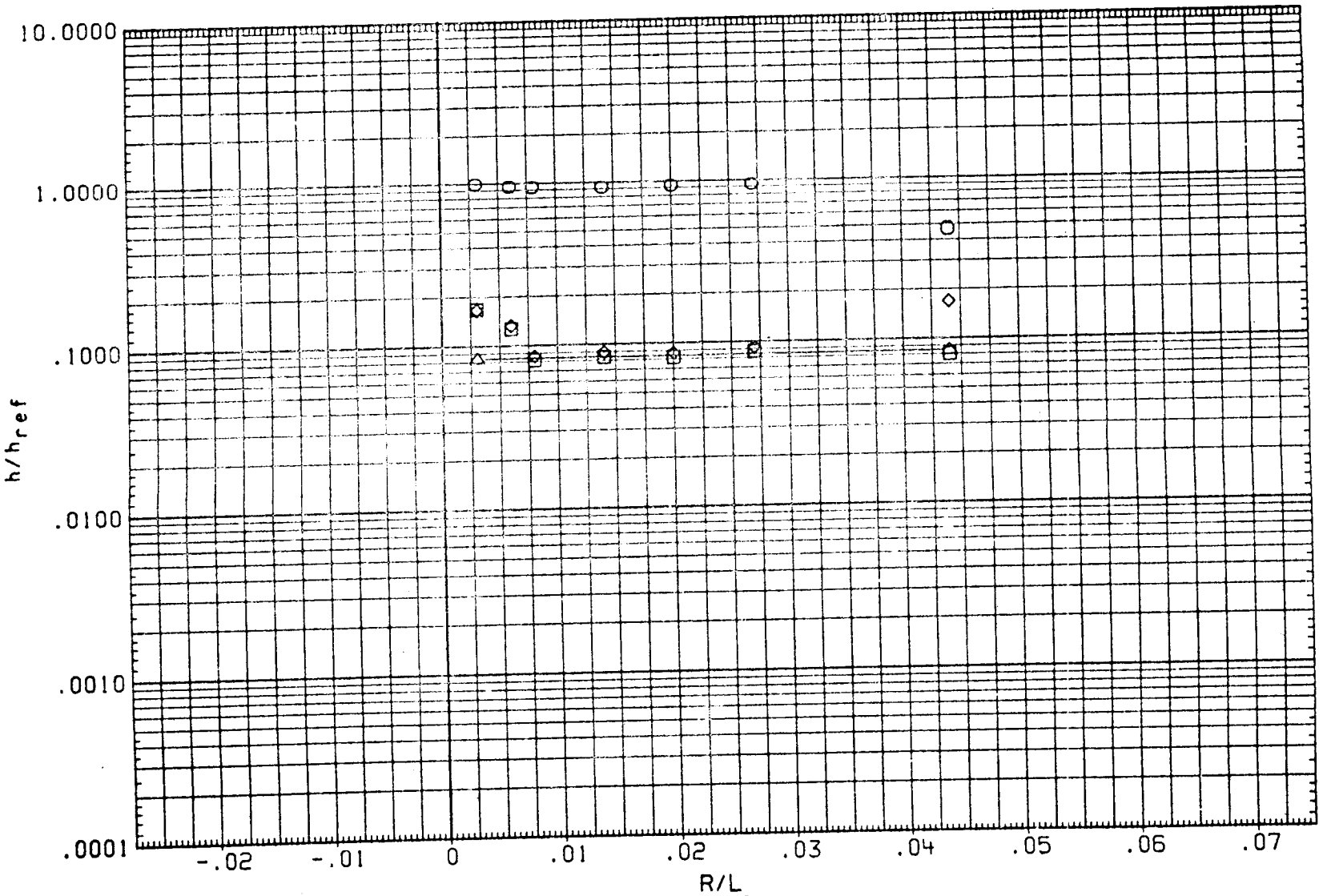

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 294

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L0B)	○	IH51A 1B/(2B+3B+4B-5B-5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L01)	□	IH51A CONF 1B LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L0B)	◇	IH51A 2B+3B+4B-5B-5B LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HW/HREF	.000	.000	5.000	5.300

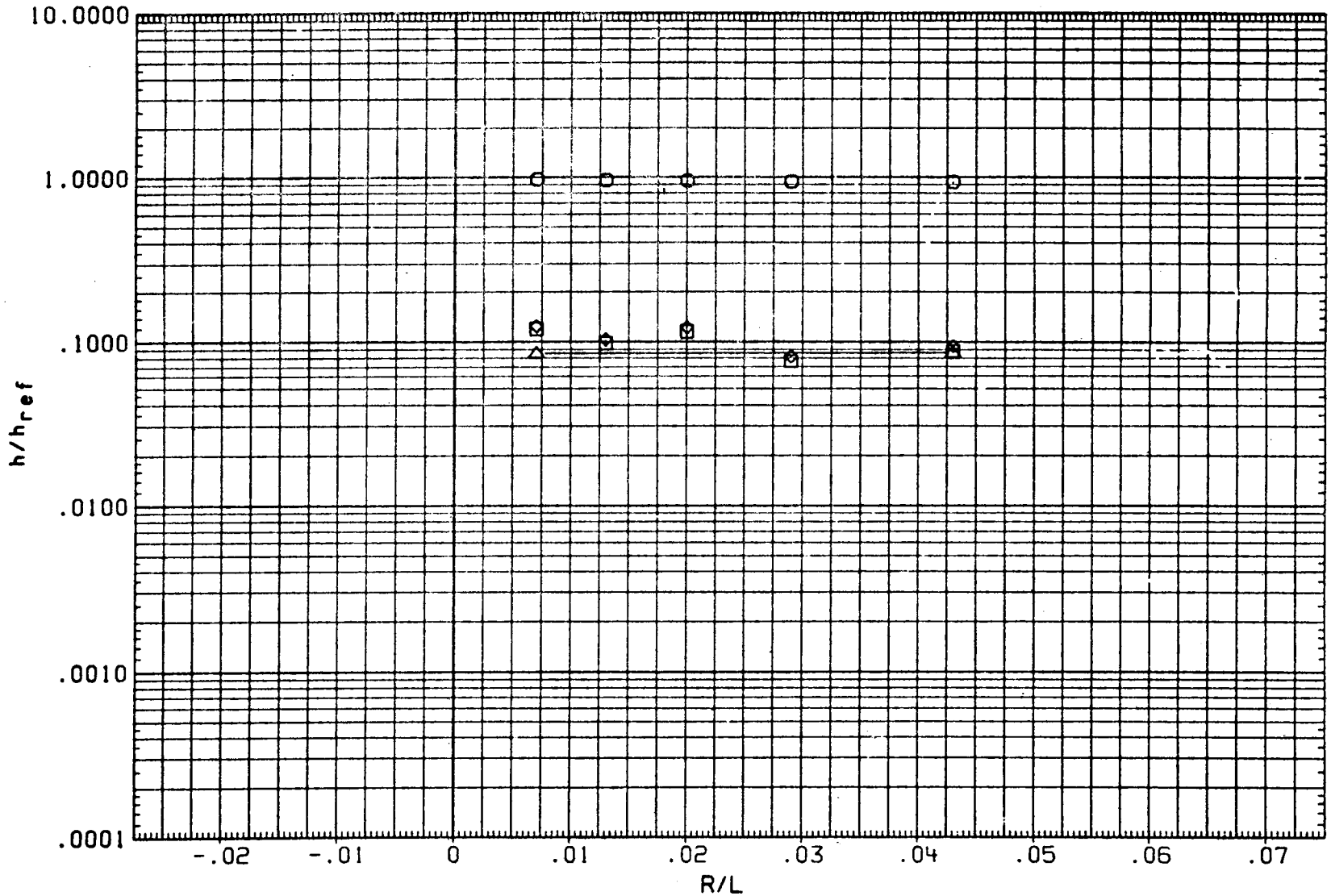

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 295

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20L0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L01)	□	IH51A CONF 1B LO2 FEED LINE DIAGONAL		.000	.000	5.000	5.300
(M20L0B)	◇	IH51A 2B+3B+4B-5B-5B	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

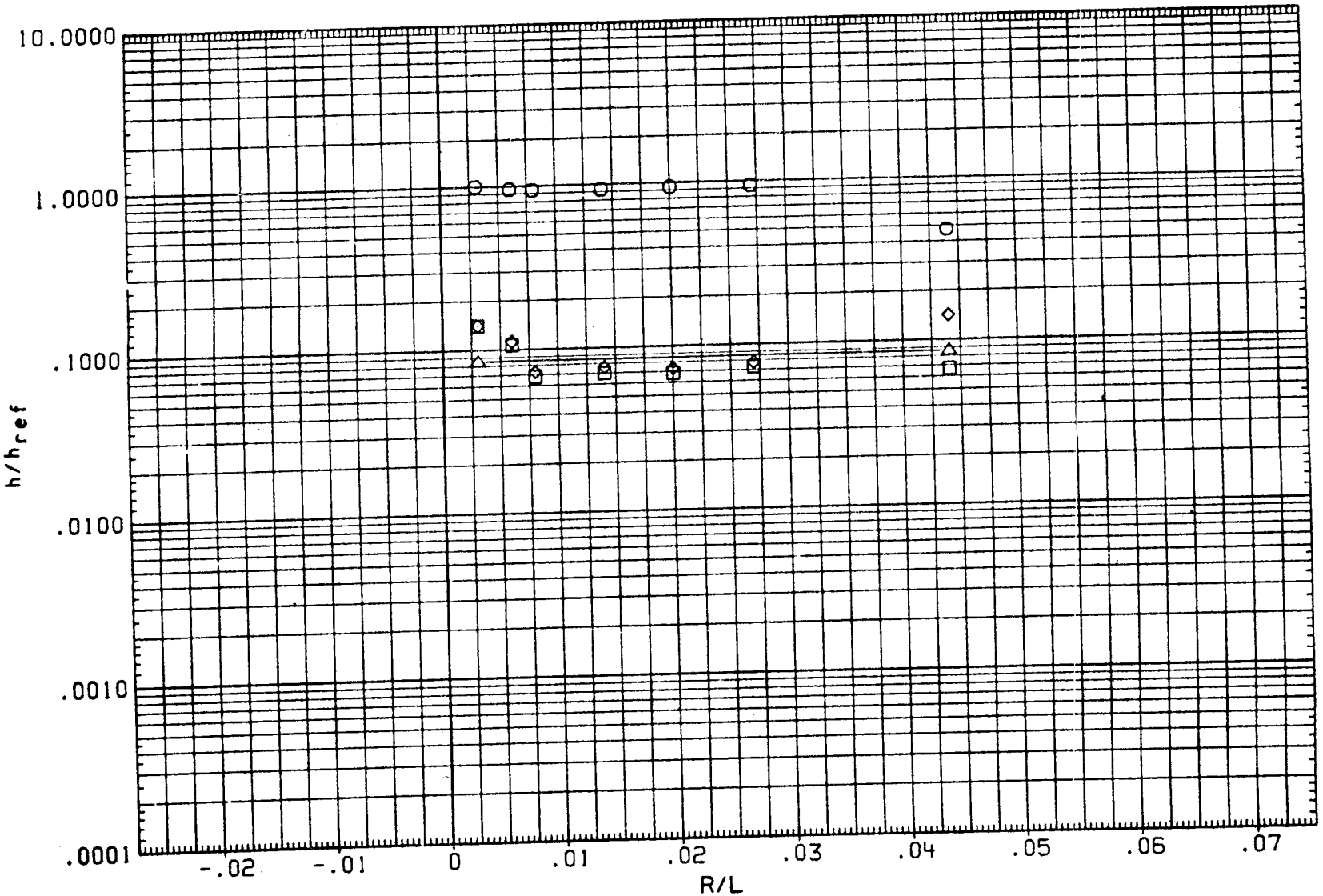

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 296

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20L08)	○	IH51A 1B/(2B+3B+4B-5B-5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(R20L01)	□	IH51A CONF 1B LO2 FEED LINE DIAGONAL	.000	.000	5.000	5.300
(M20L08)	◇	IH51A 2B+3B+4B-5B-5B LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L58)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

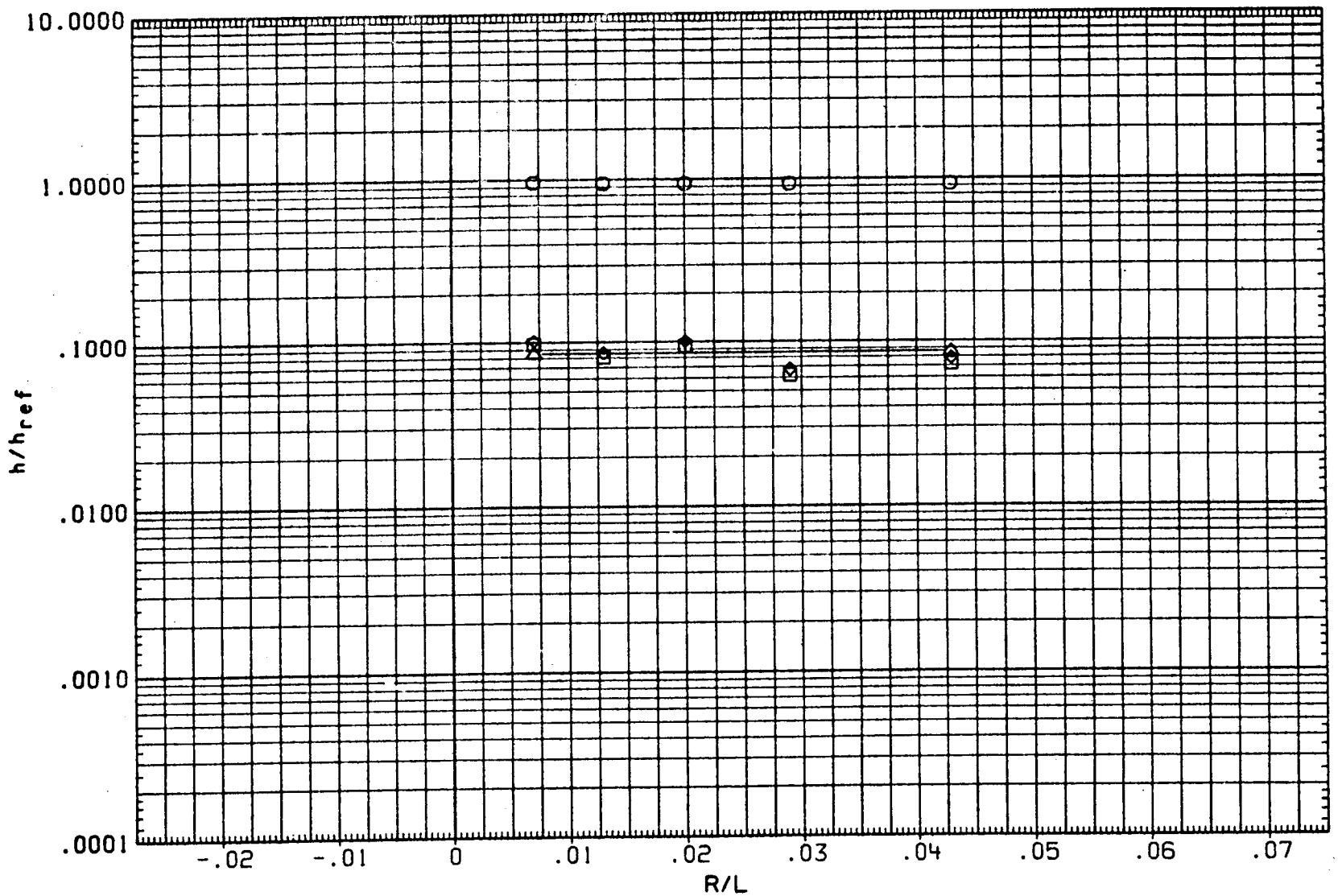

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 297

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

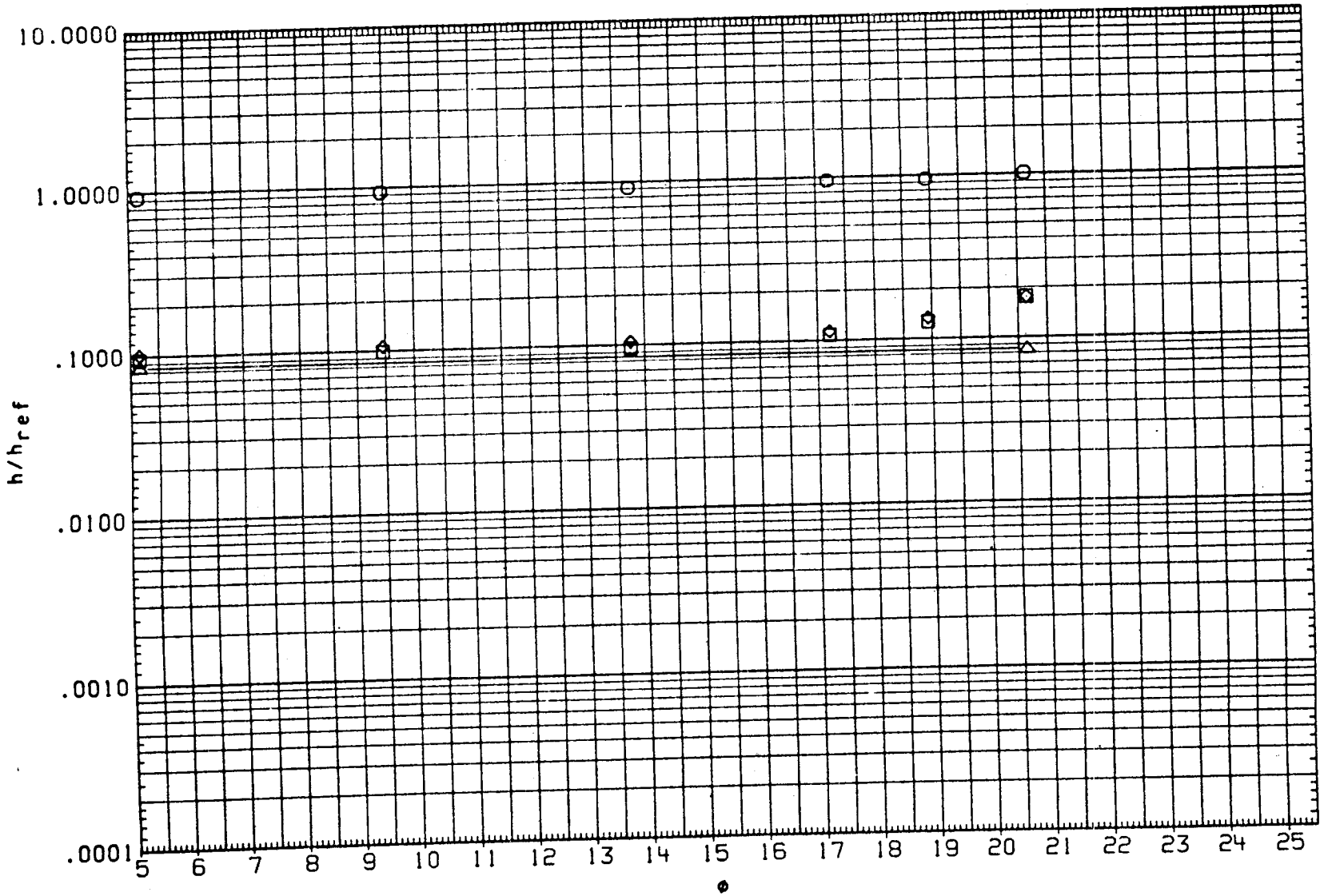

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 X/L = .357 DATE 22 APR 78 PAGE 298

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

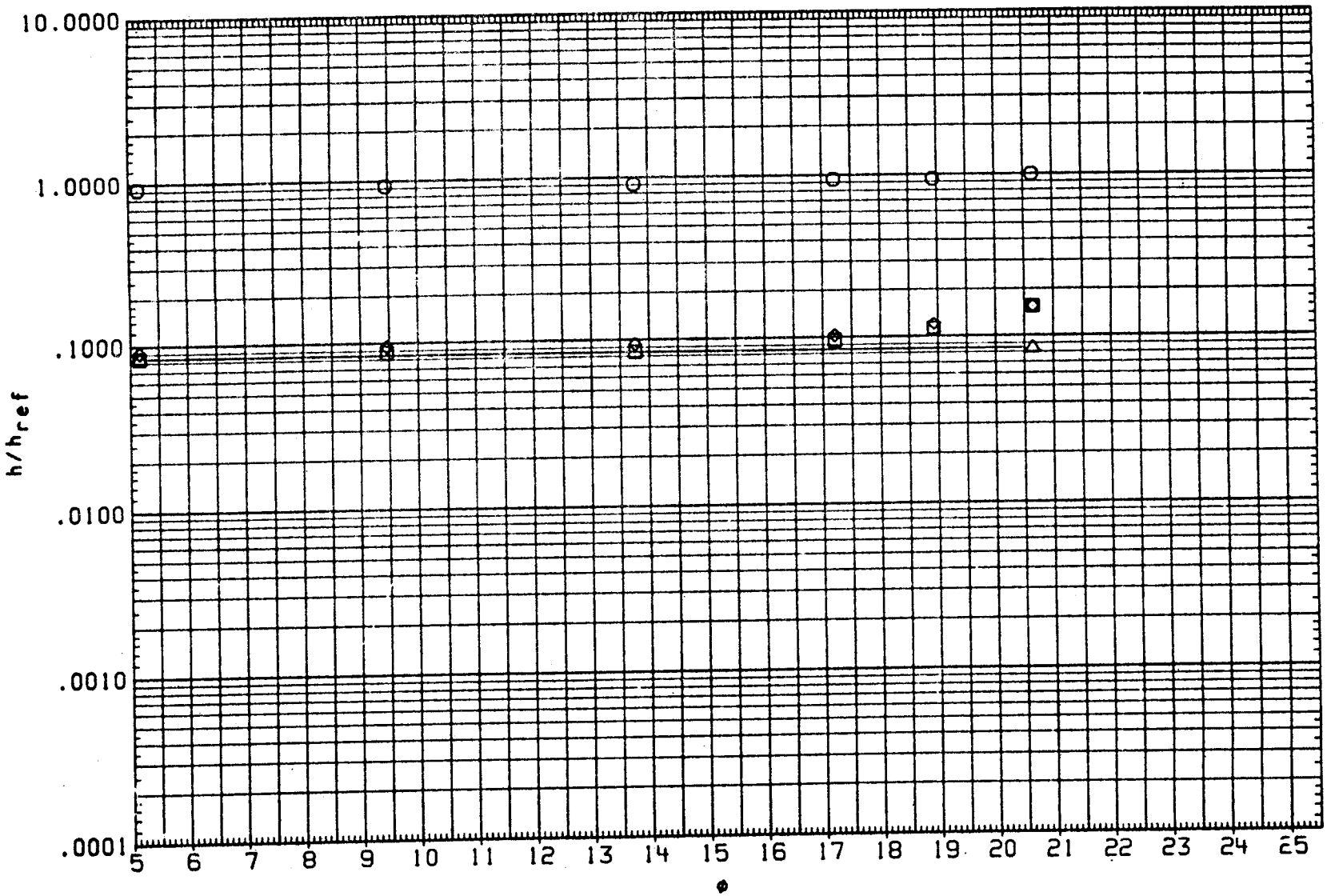

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20008)	○	1H51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20001)	□	1H51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20008)	◇	1H51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	1H51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

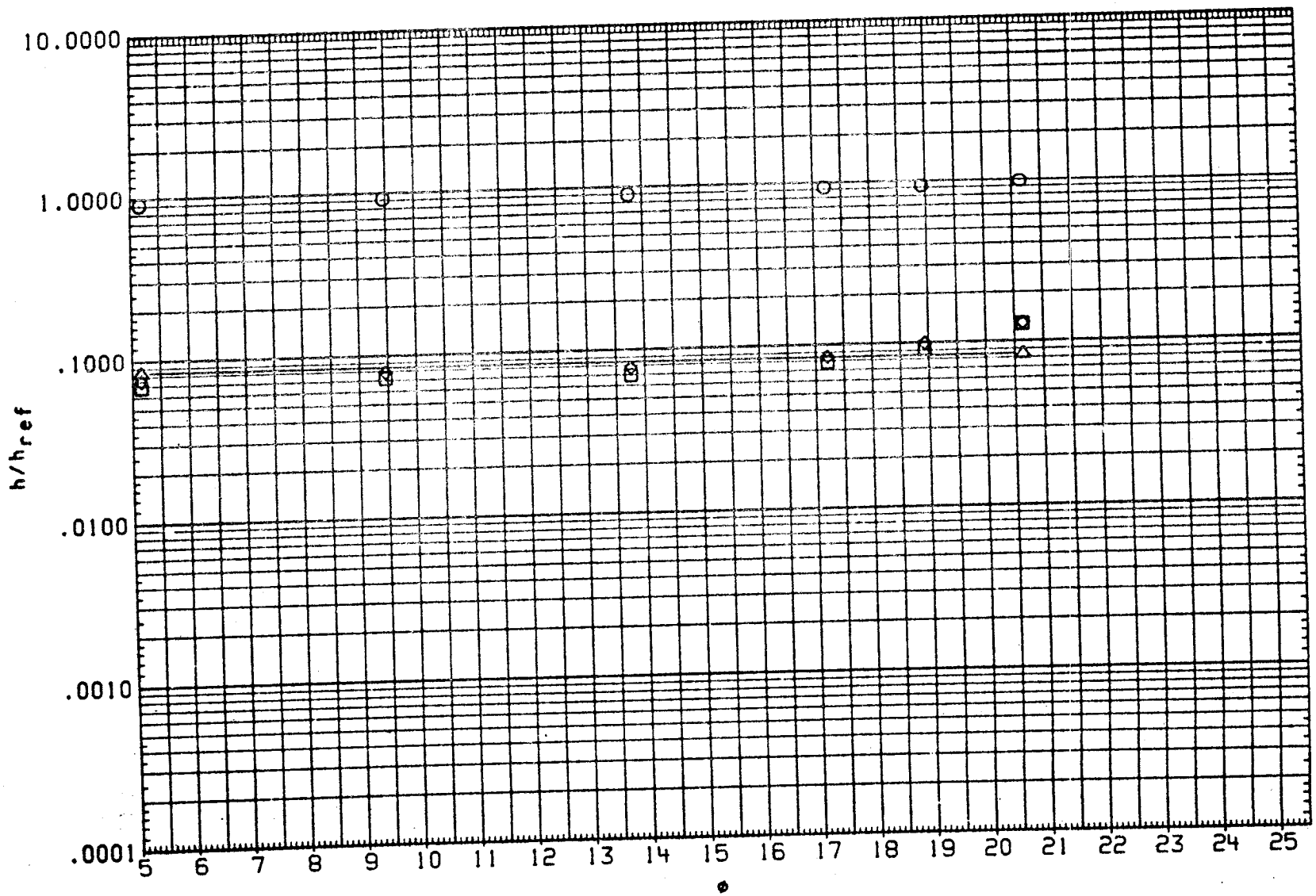

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q08)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q08)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q56)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

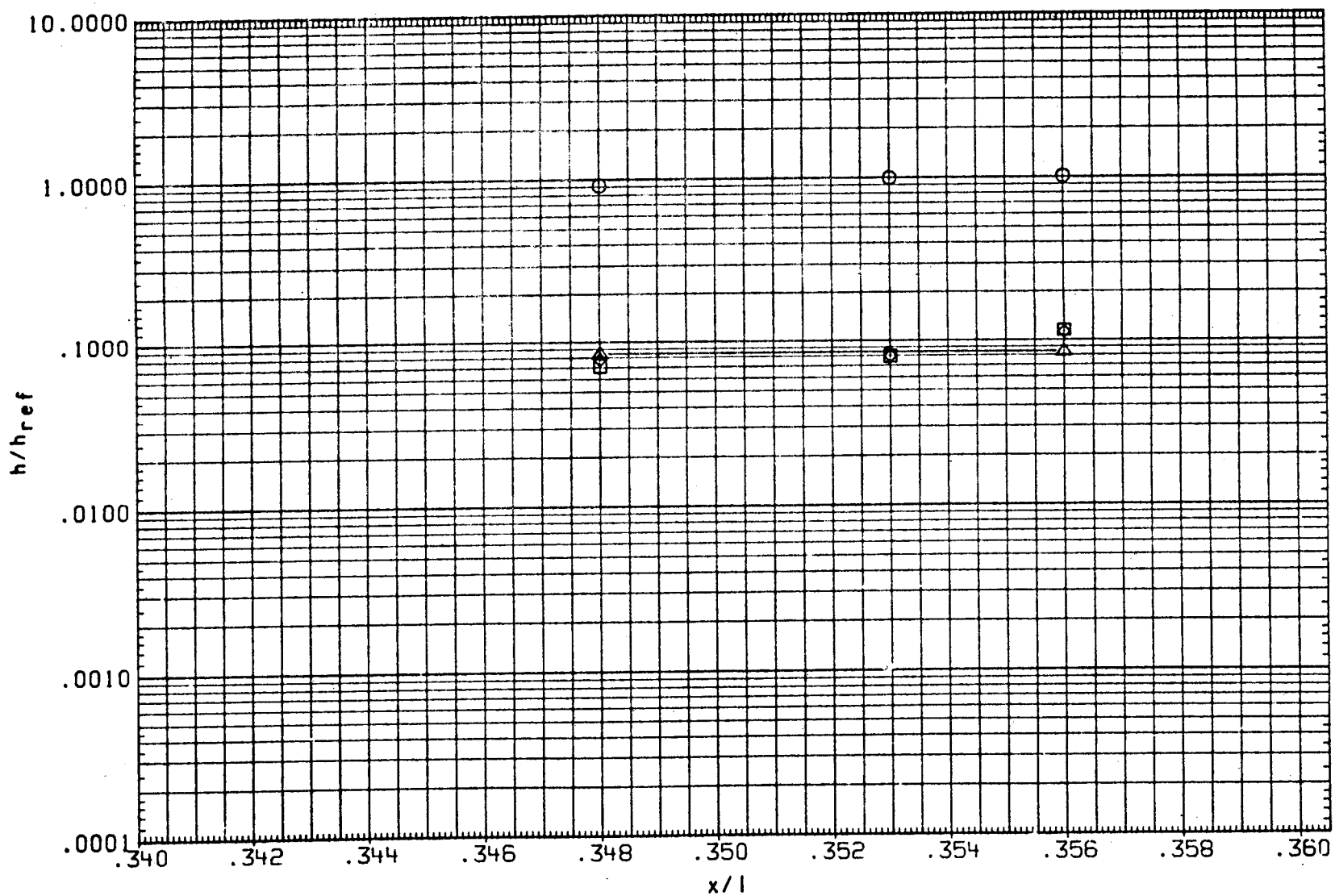

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 301

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

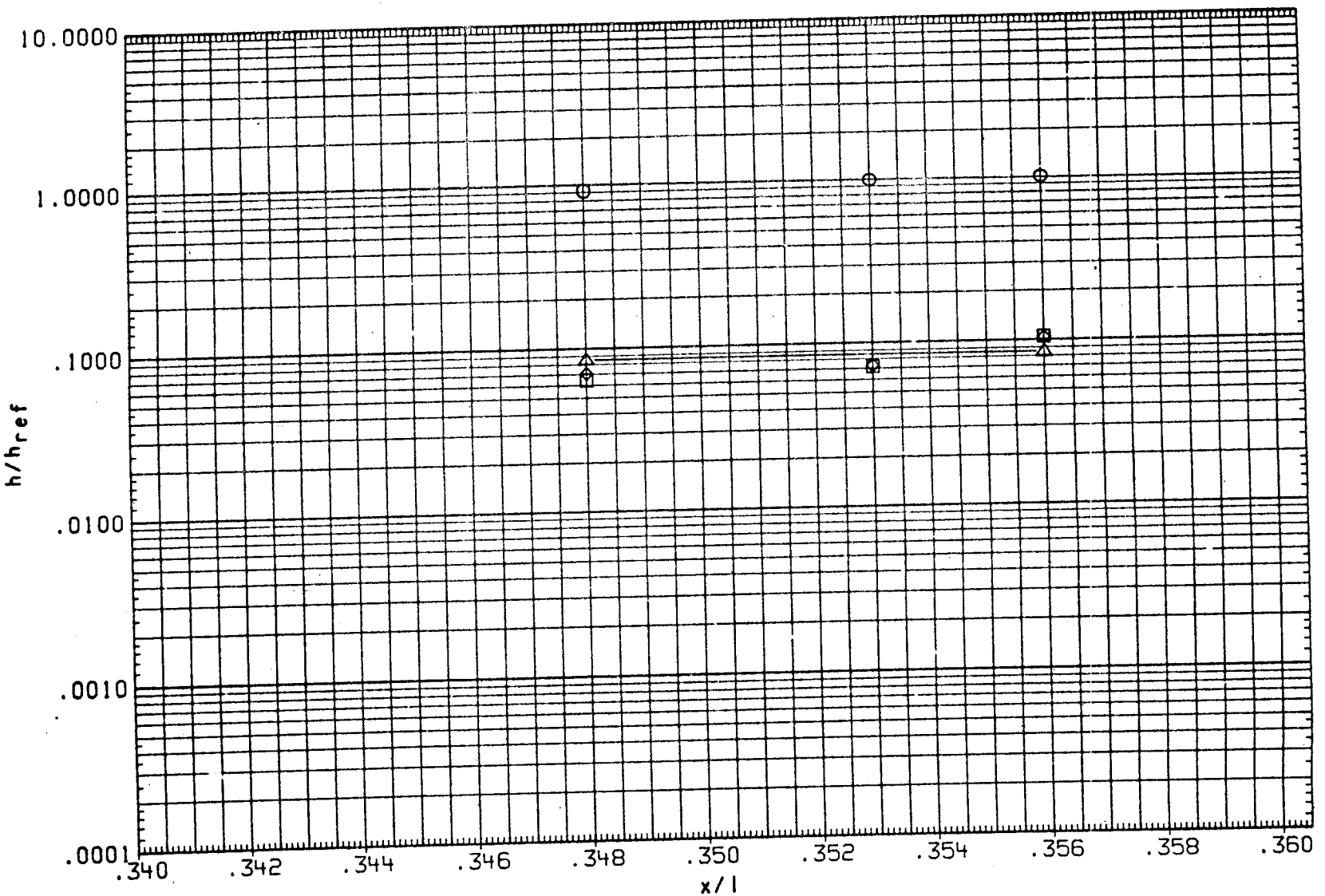

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 302

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

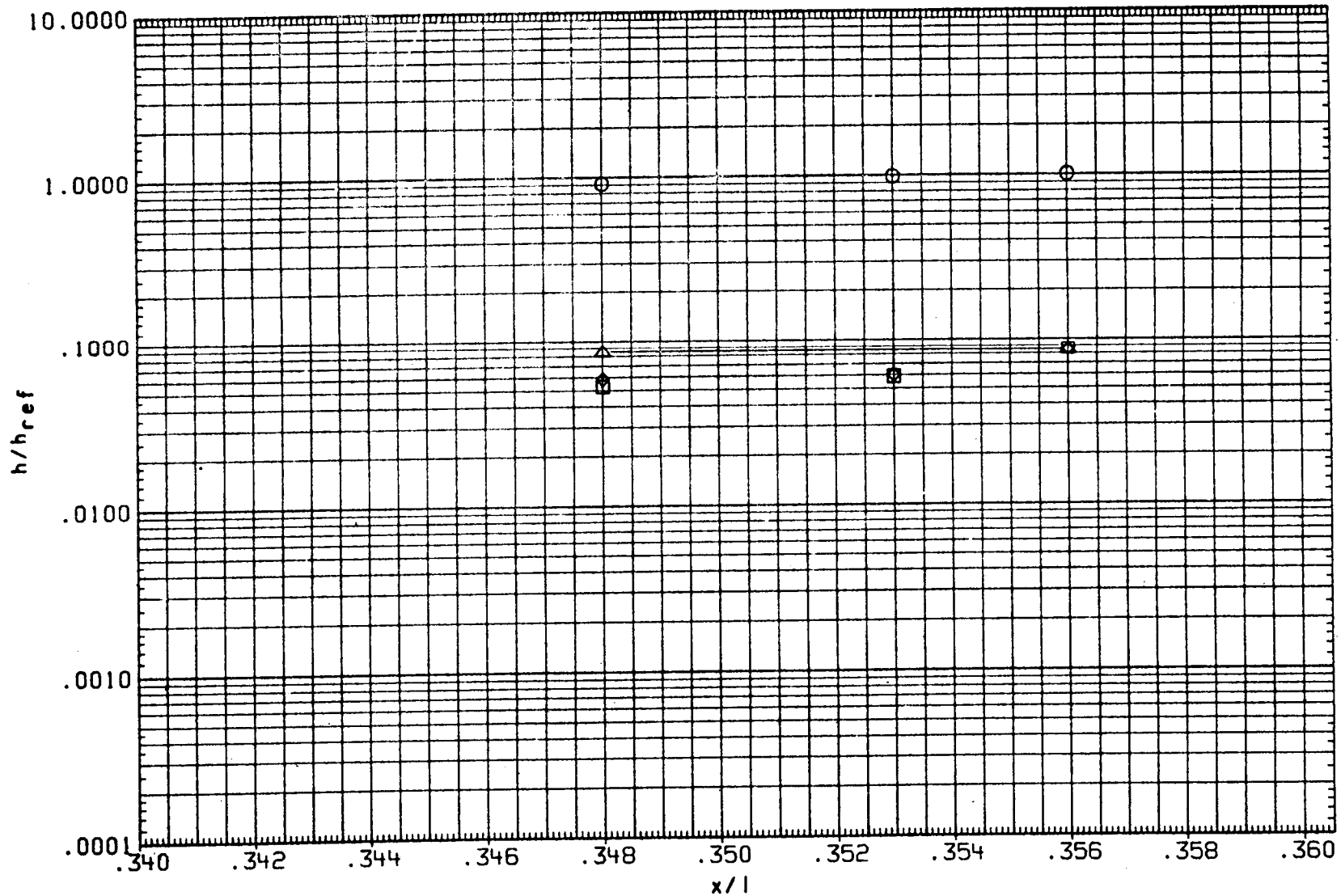

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 303

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V[illegible]10B)	○	IH51A 1B/(2B+3B+4B-5B-5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(R20M01)	□	IH51A CONF 1B LO2 ANTIGEYSER LINE DIAGONAL	.000	.000	5.000	5.300
(M20M0B)	◇	IH51A 2B+3B+4B-5B-5B LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

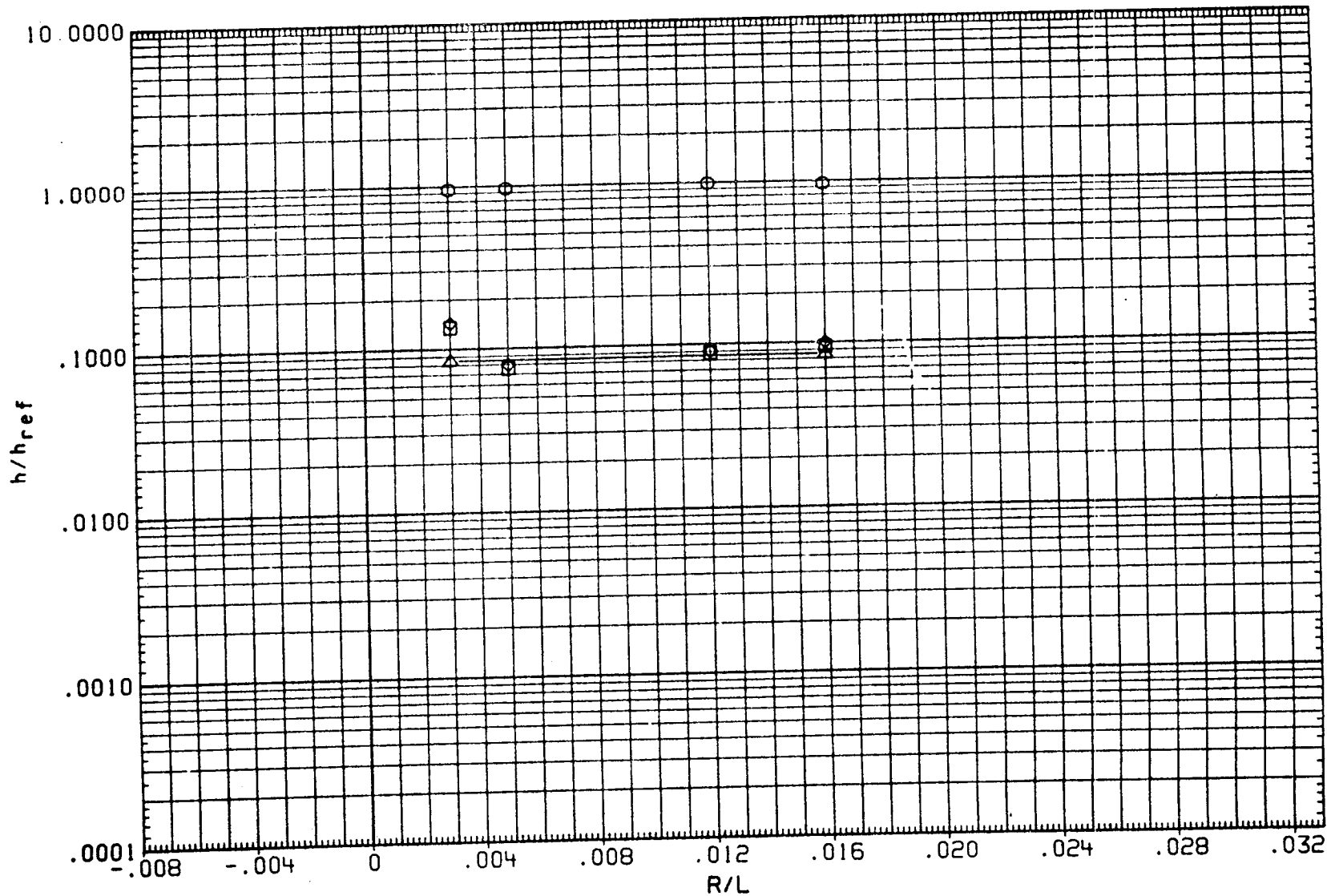

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 304

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20M0B)	○	IH51A 1B/(2B+3B+4B-5B-5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(R20M01)	□	IH51A CONF 1B LO2 ANTIGEYSER LINE DIAGONAL	.000	.000	5.000	5.300
(M20M0B)	◇	IH51A 2B+3B+4B-5B-5B LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

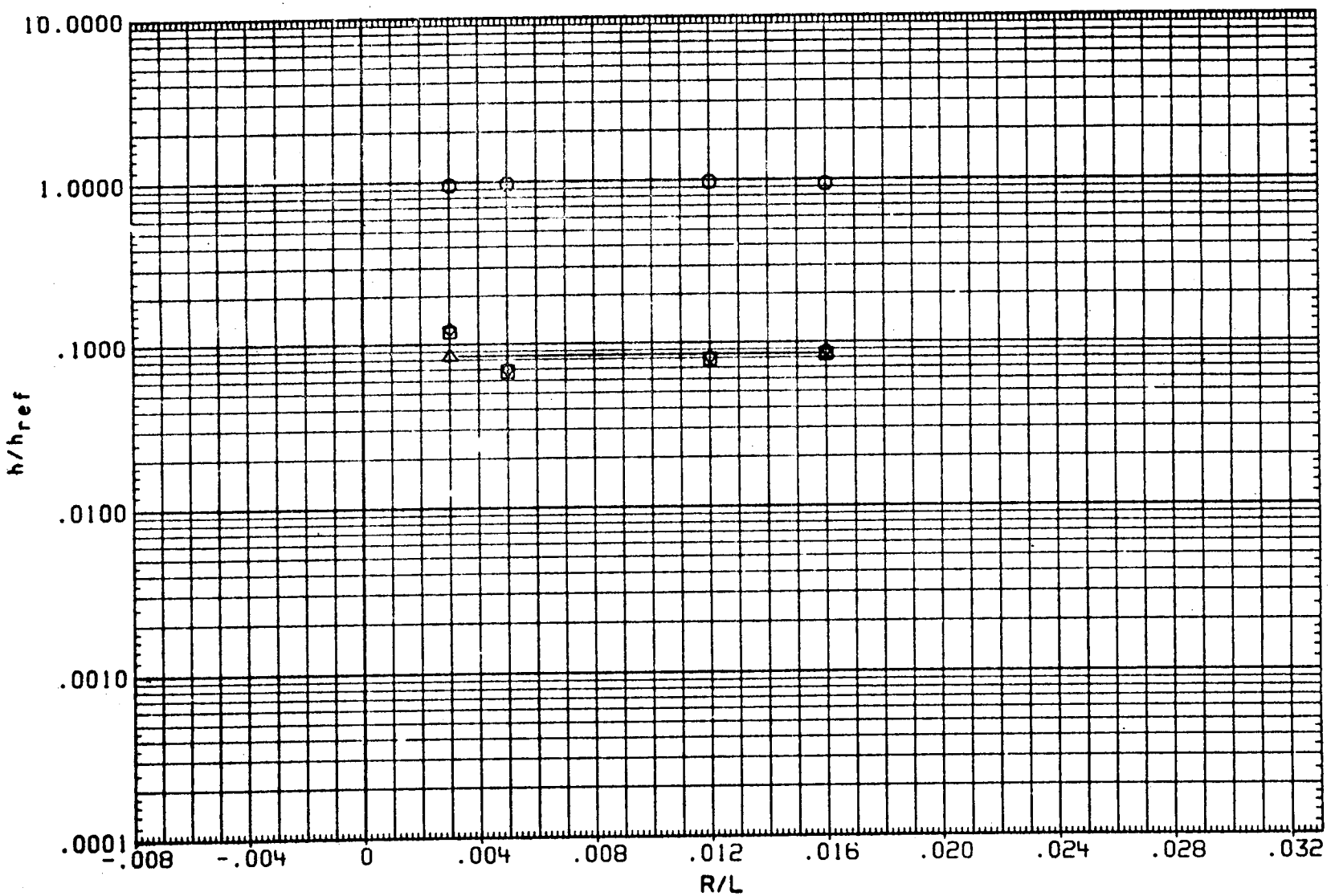

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 305

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(V20M0B)	○	IH51A 1B/(2B+3B+4B-5B-5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(R20M01)	□	IH51A CONF 1B LO2 ANTIGEYSER LINE DIAGONAL	.000	.000	5.000	5.300
(M20M0B)	◇	IH51A 2B+3B+4B-5B-5B LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

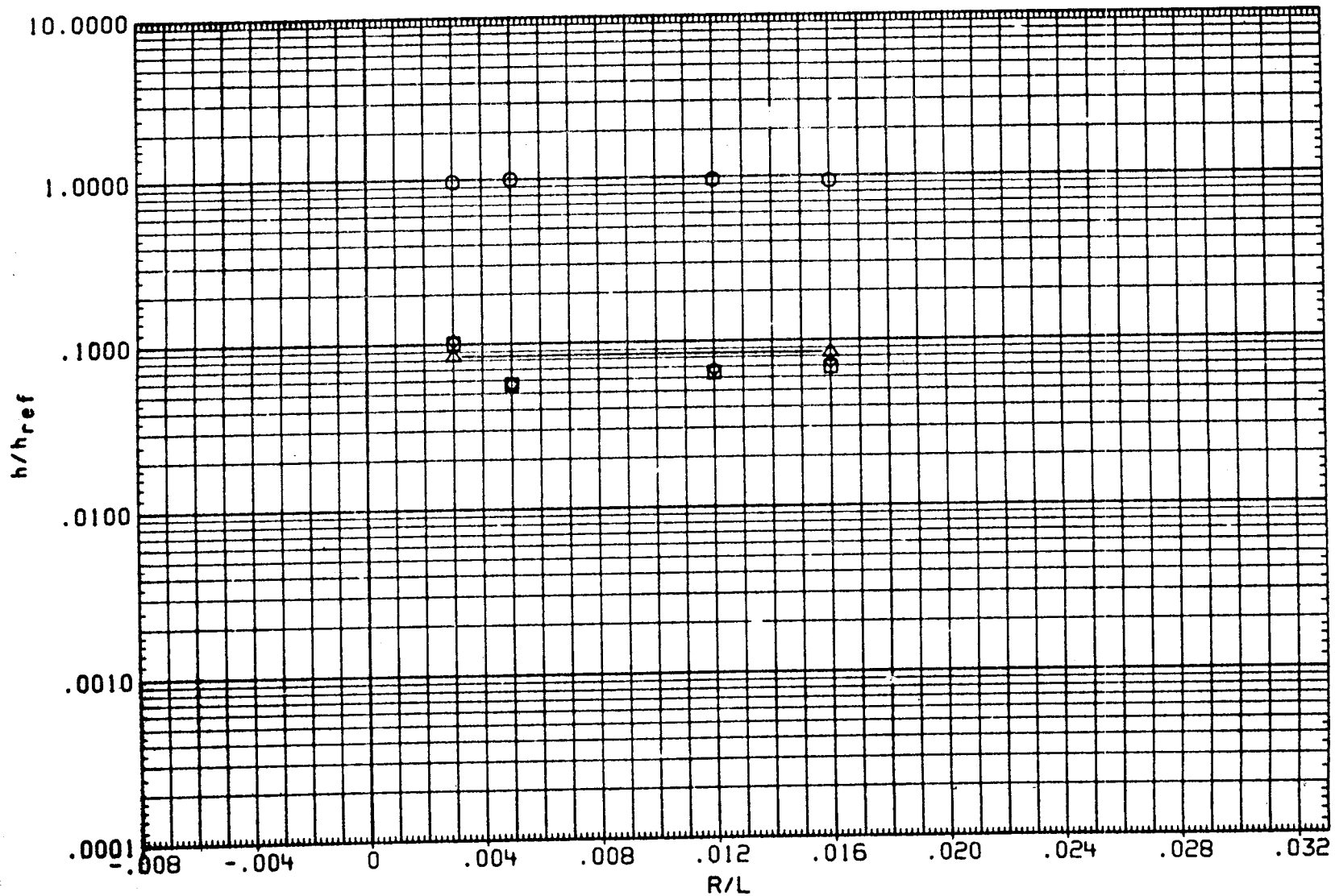

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 306

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

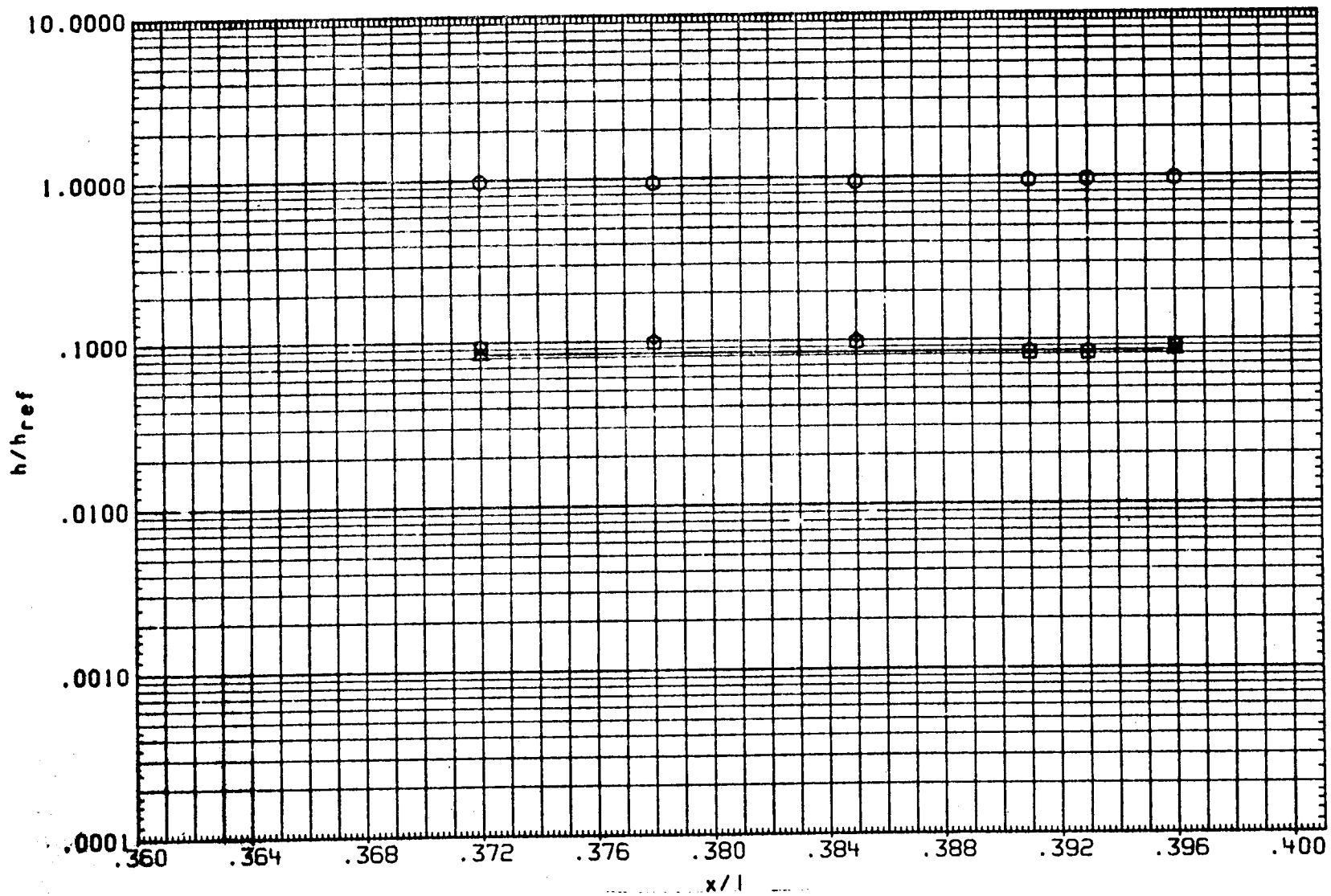

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.300	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

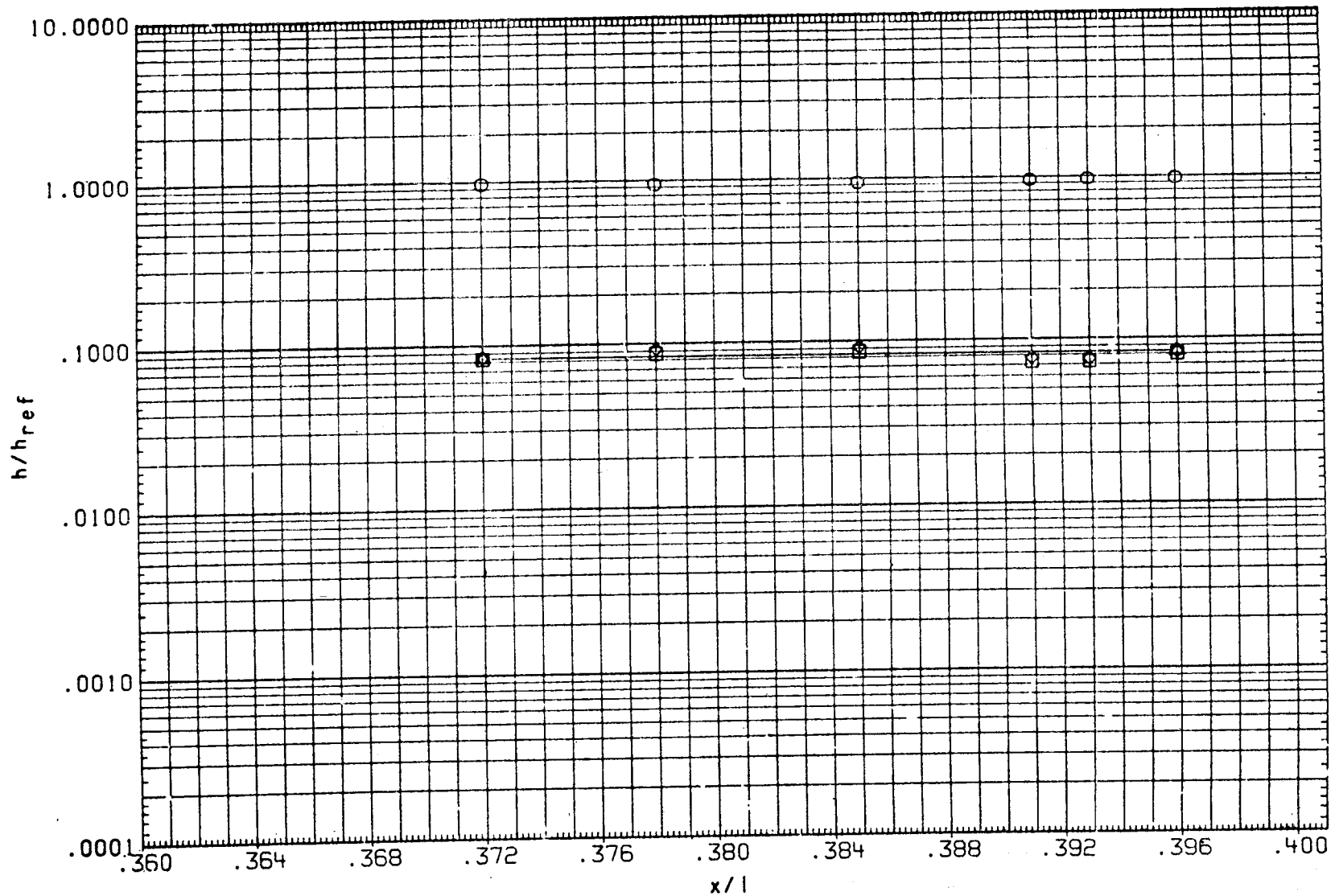

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 308

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q0I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

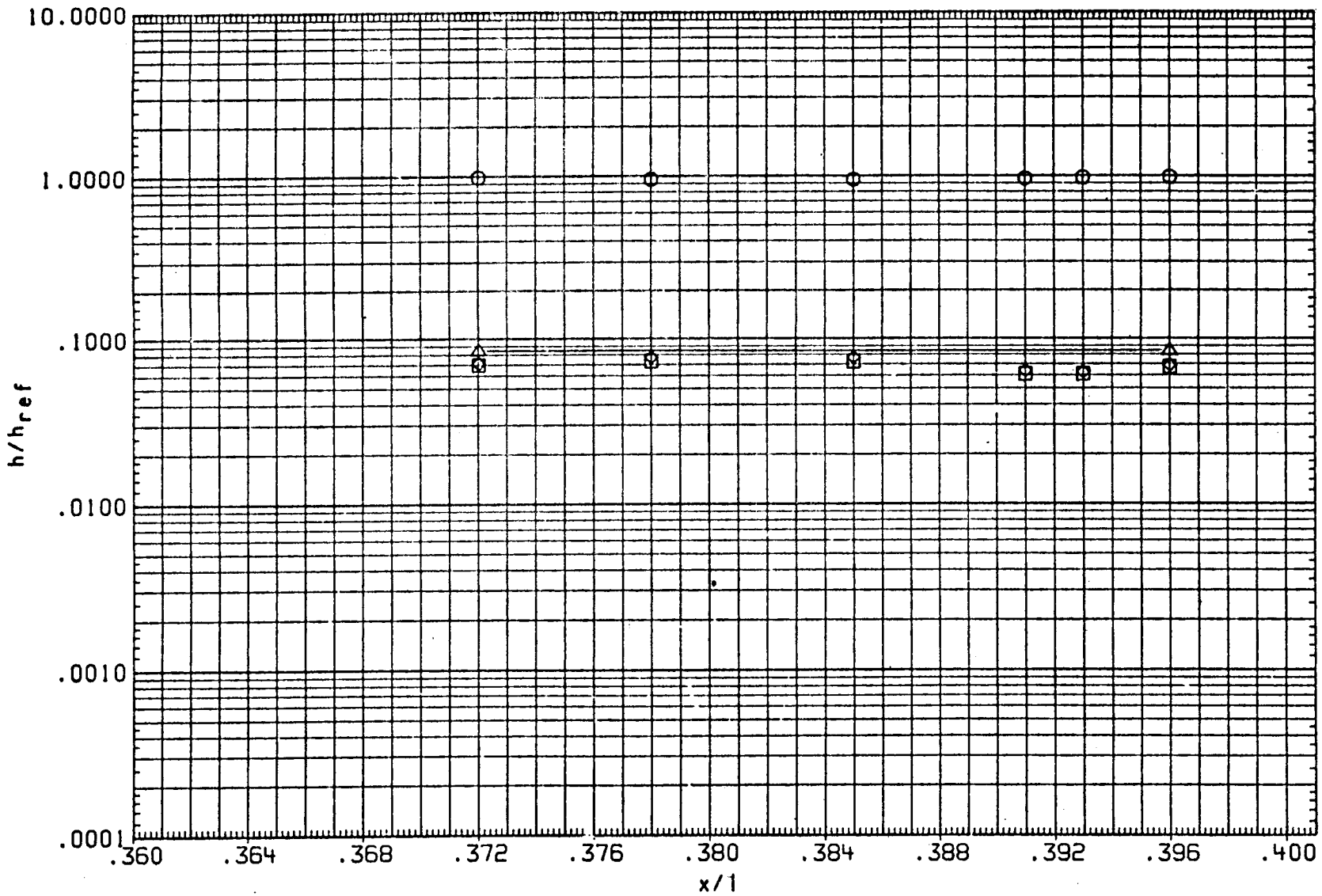

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78 PAGE 309

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2ON0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(R2ON01)	□	IH51A CONF 1B LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(M2ON0B)	◇	IH51A 2B+3B+4B-5B-5B	LH2 LINE DIA	.000	.000	5.000	5.300
(U2ON5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

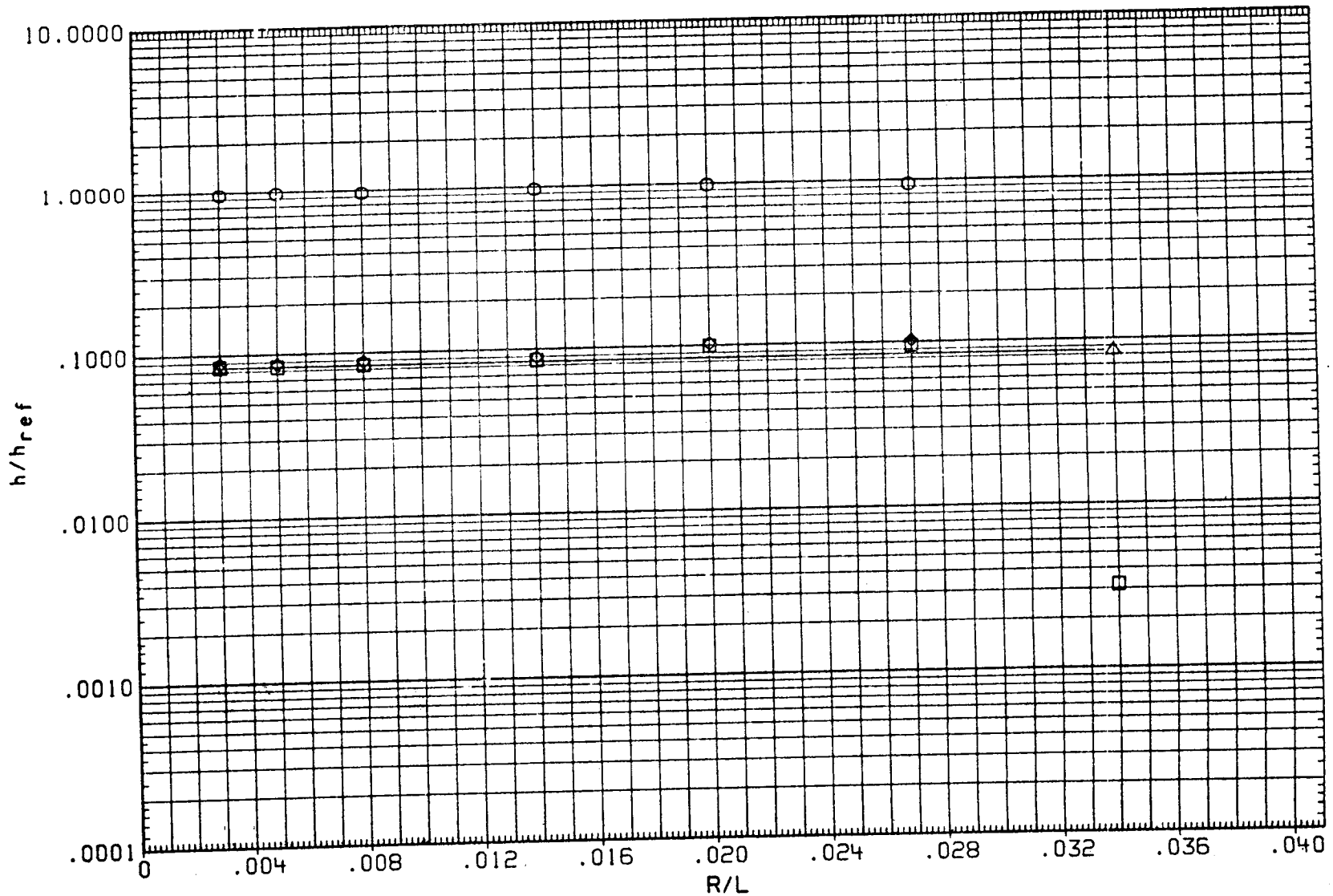

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 310

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20N08)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(R20N01)	□	IH51A CONF 1B LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(M20N08)	◇	IH51A 2B+3B+4B-5B-5B	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N58)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

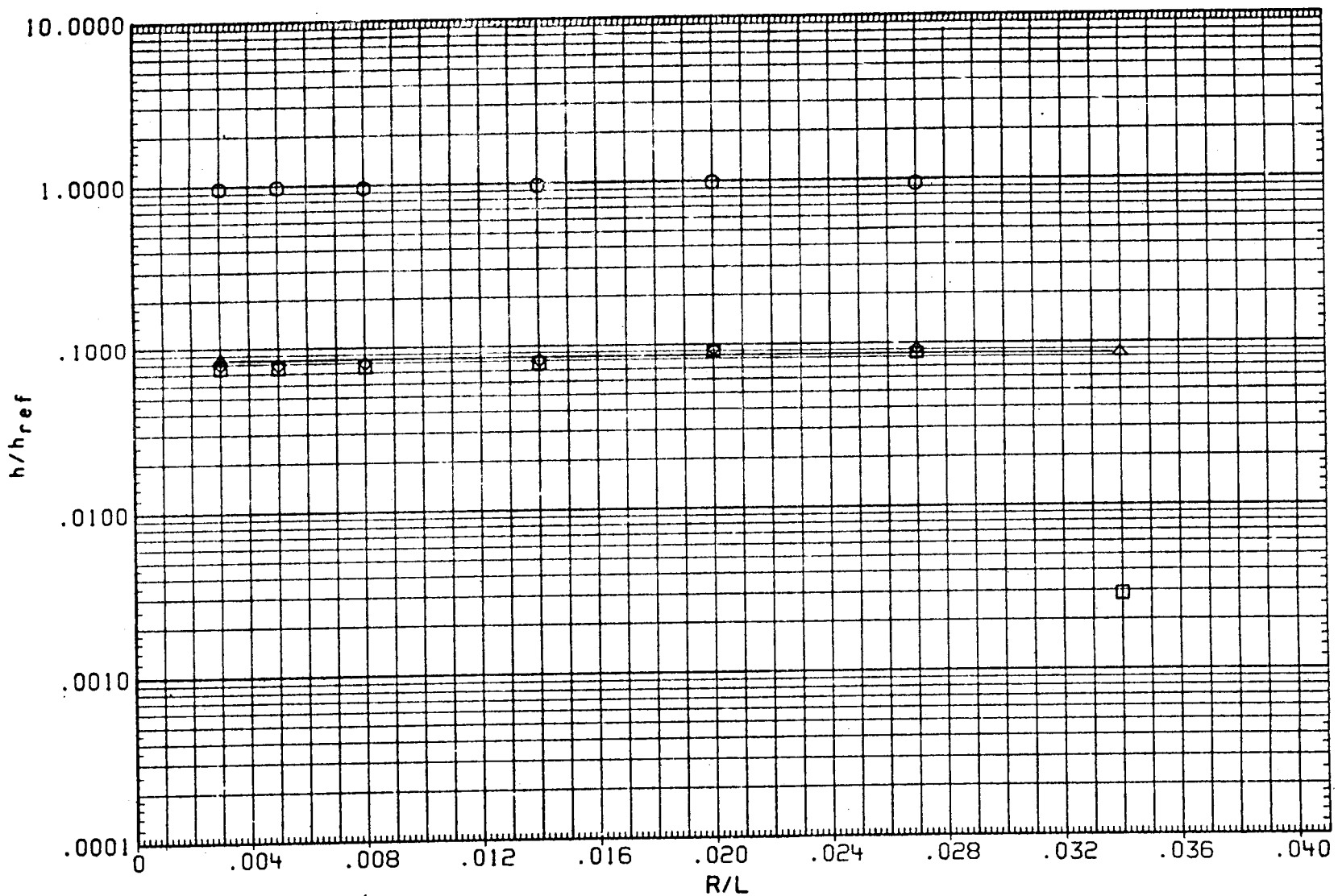

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 311

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20N0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(R20N01)	□	IH51A CONF 1B LH2 LINE DIAGONAL		.000	.000	5.000	5.300
(M20N0B)	◇	IH51A 2B+3B+4B-5B-5B	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

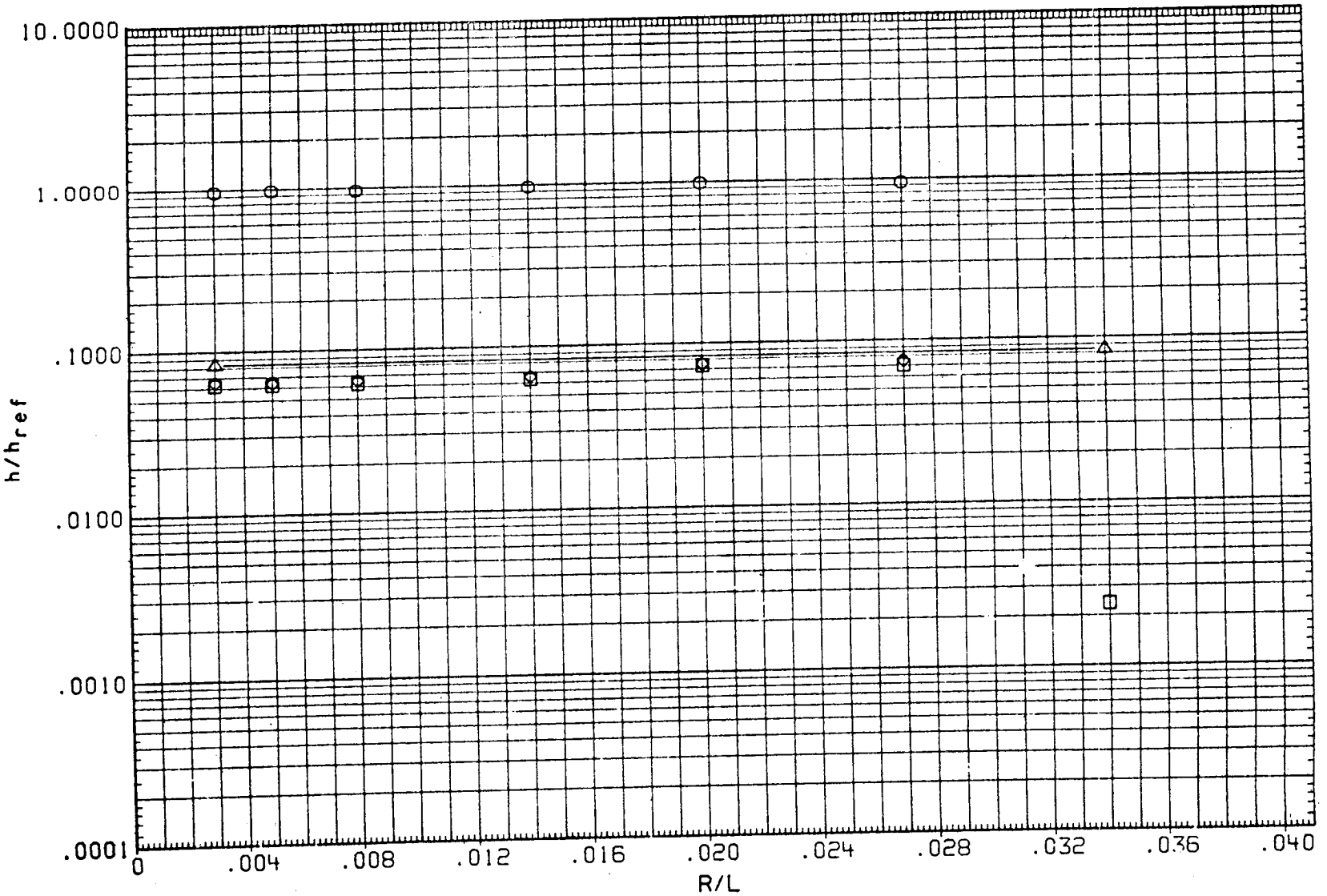

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 312

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

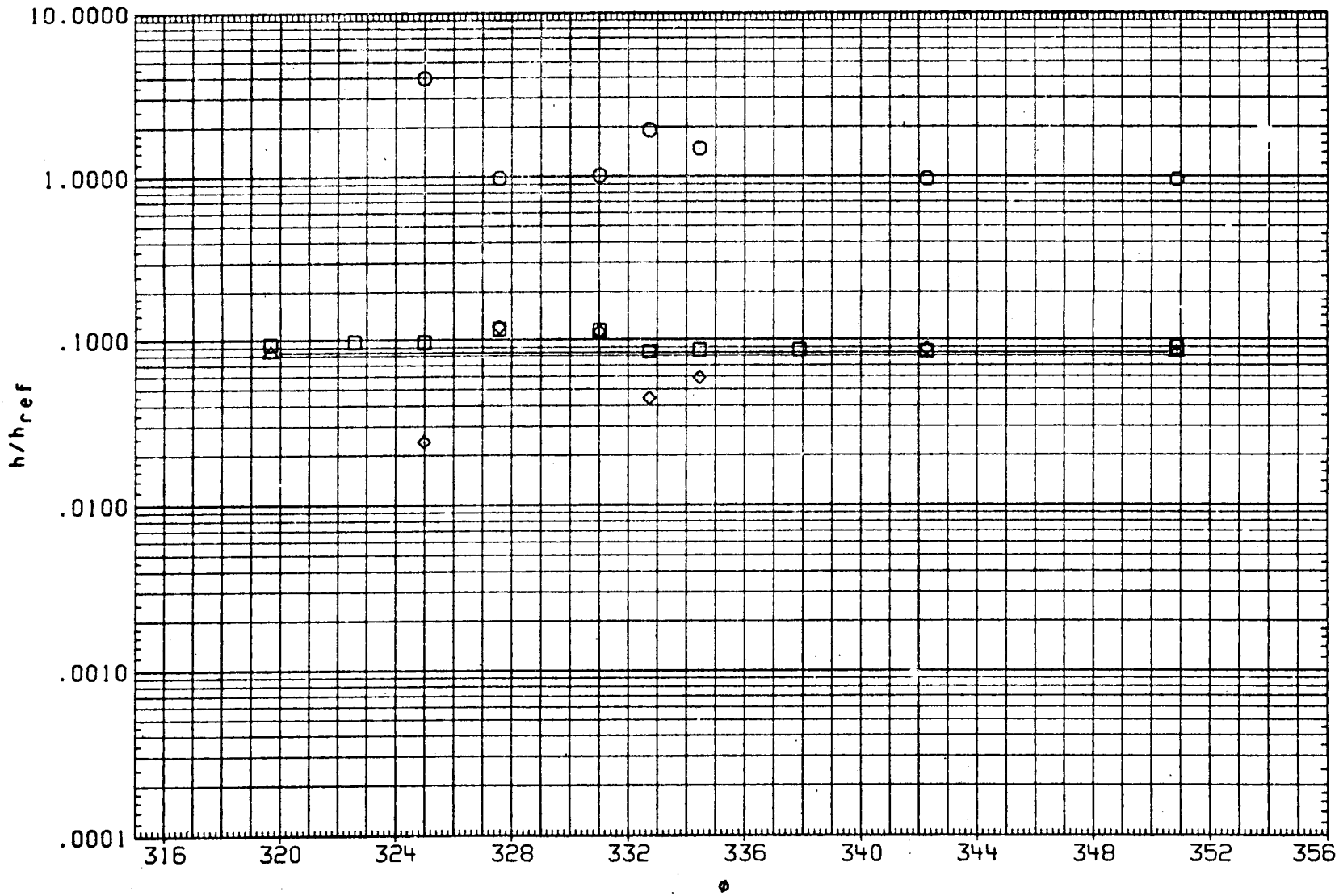

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .399 DATE 22 APR 78 PAGE 313

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

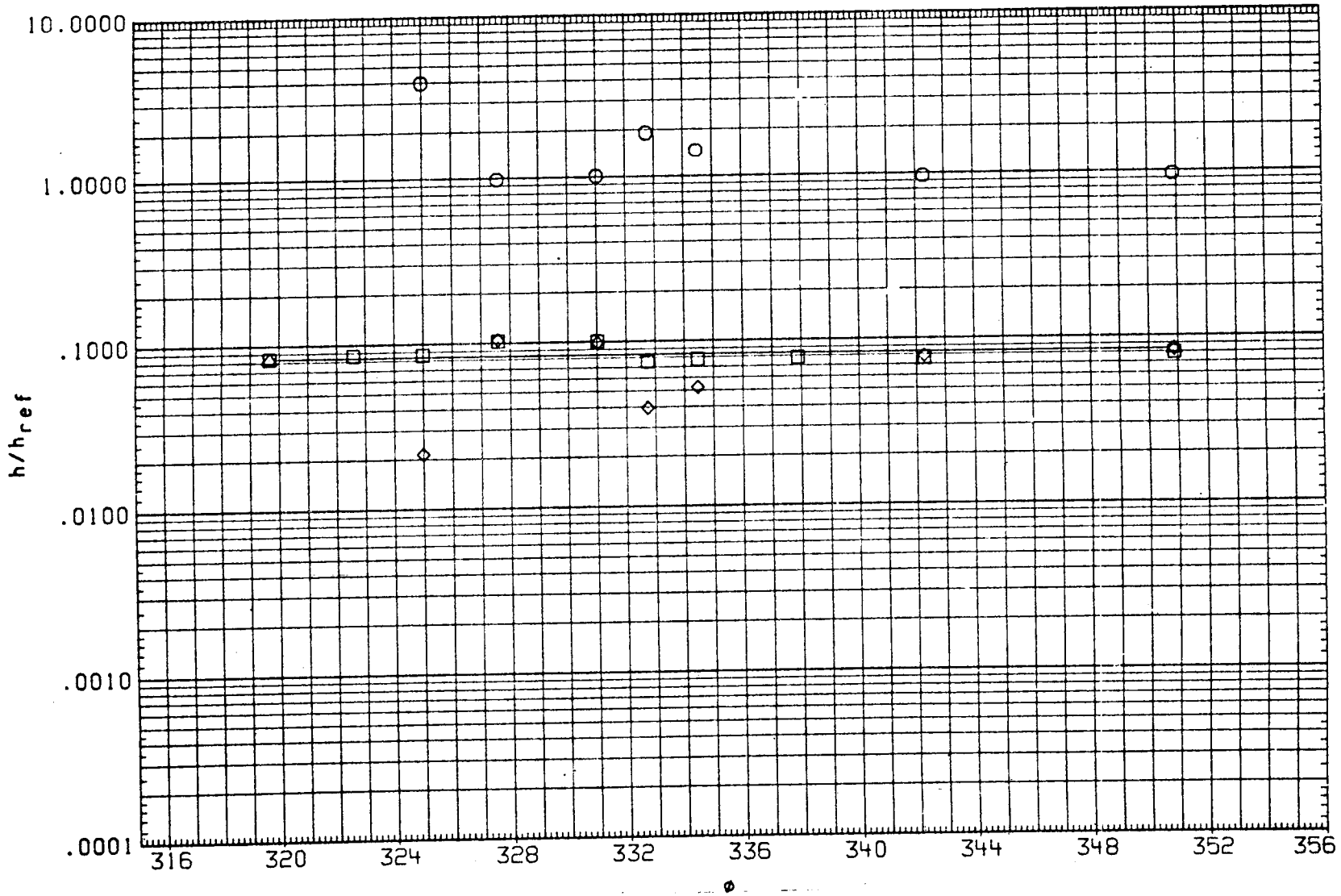

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .399 DATE 22 APR 78 PAGE 314

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

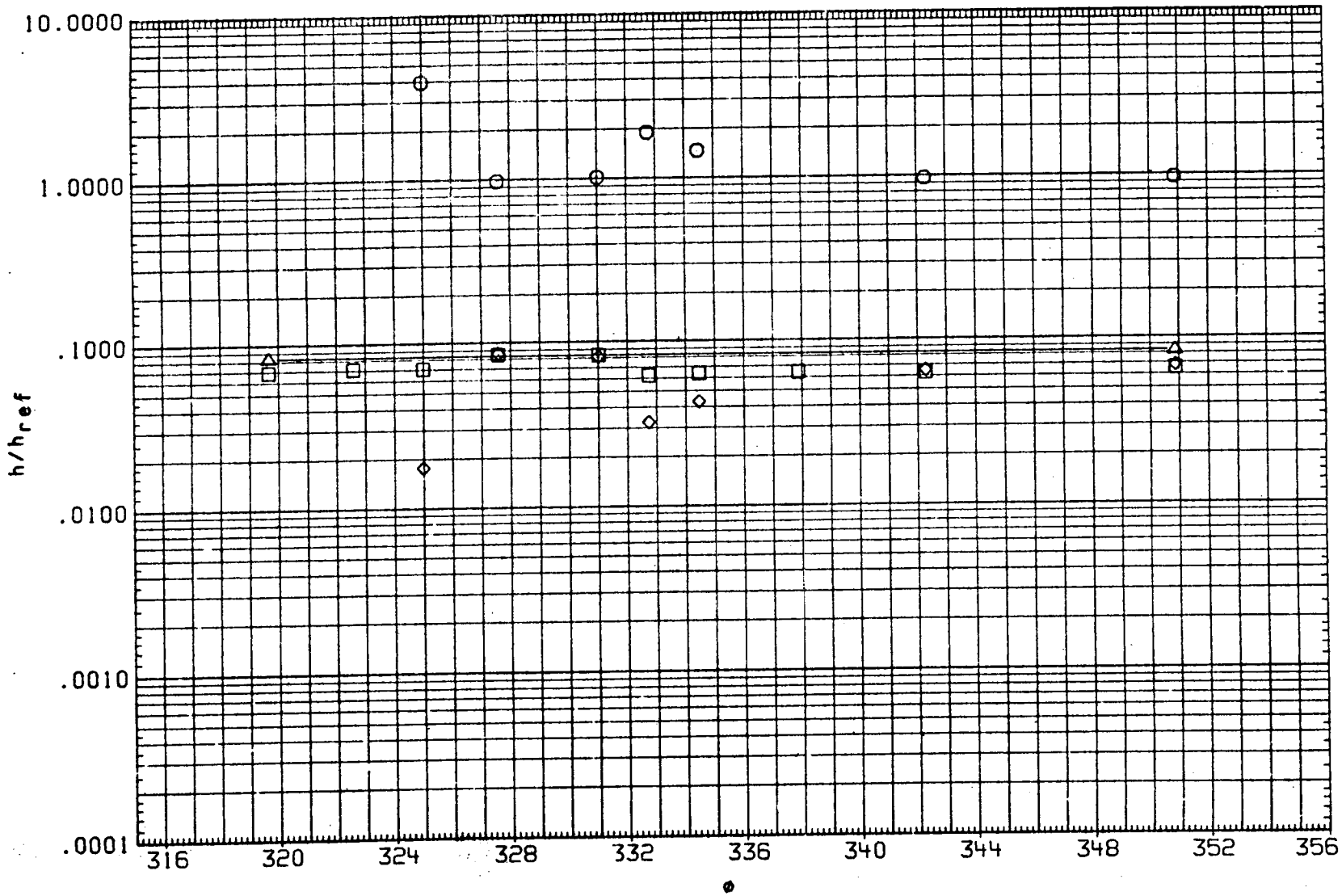

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .399 DATE 22 APR 78 PAGE 315

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

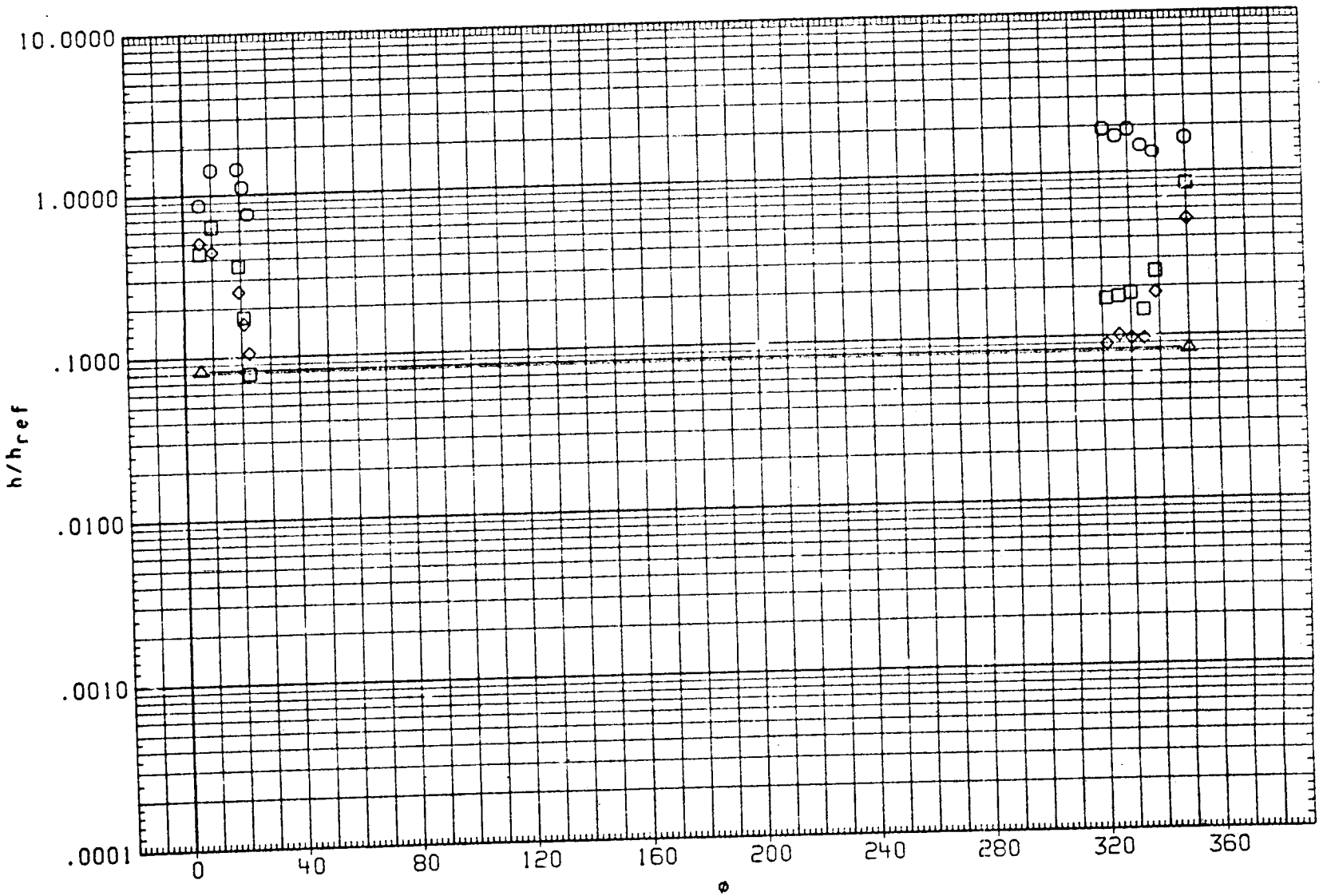

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .850 X/L = .437 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20003)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20001)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20008)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

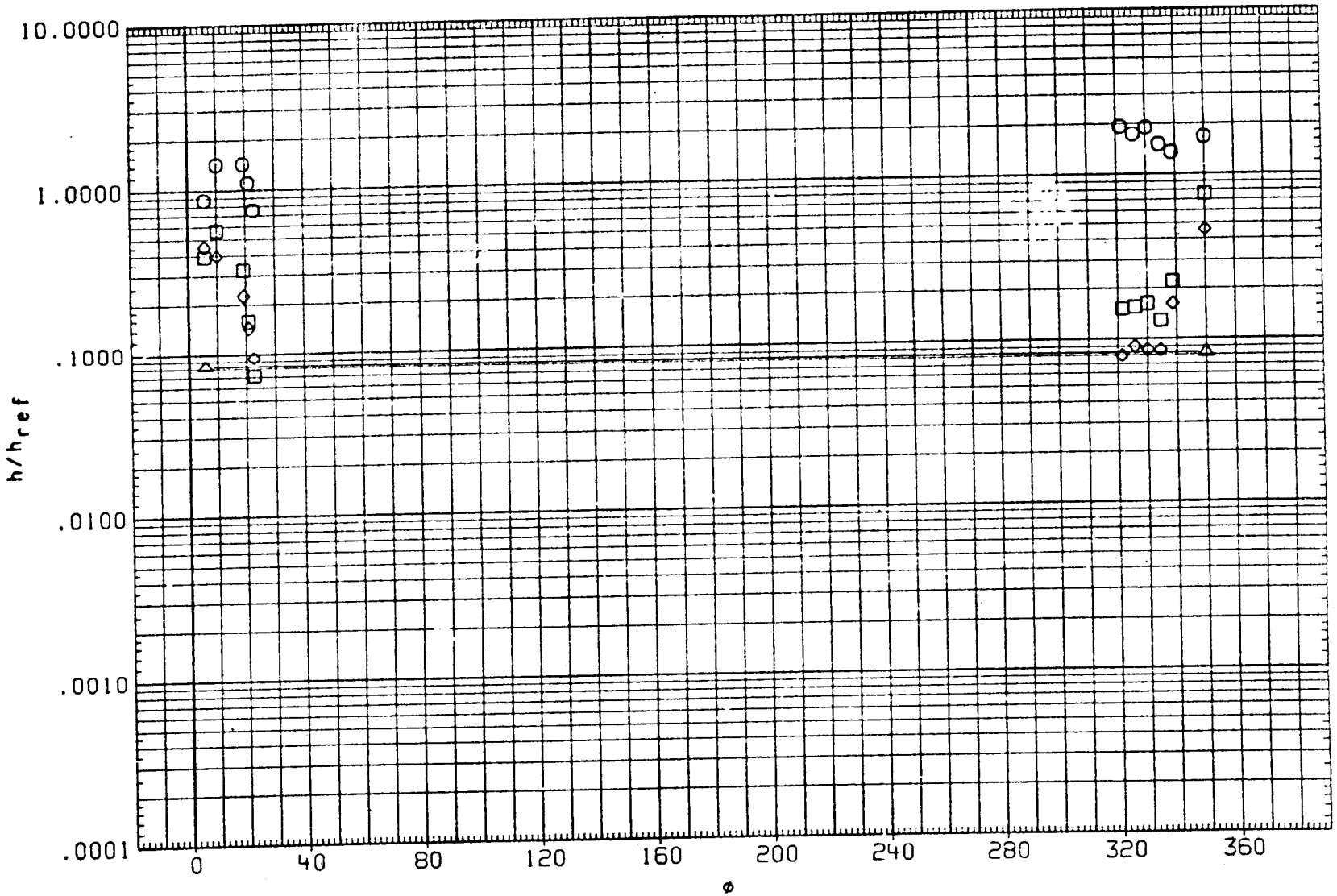

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .900 X/L = .437 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

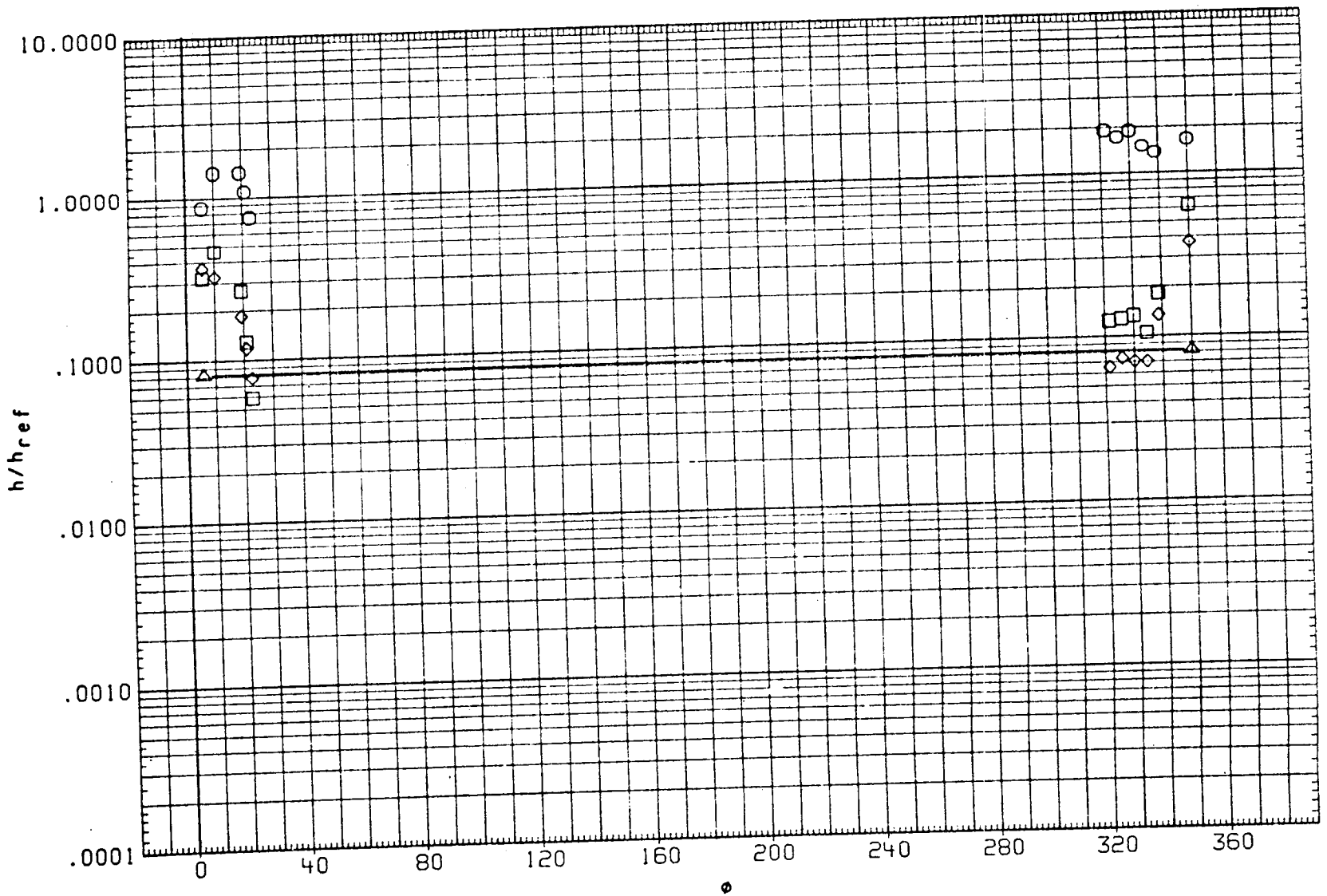

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

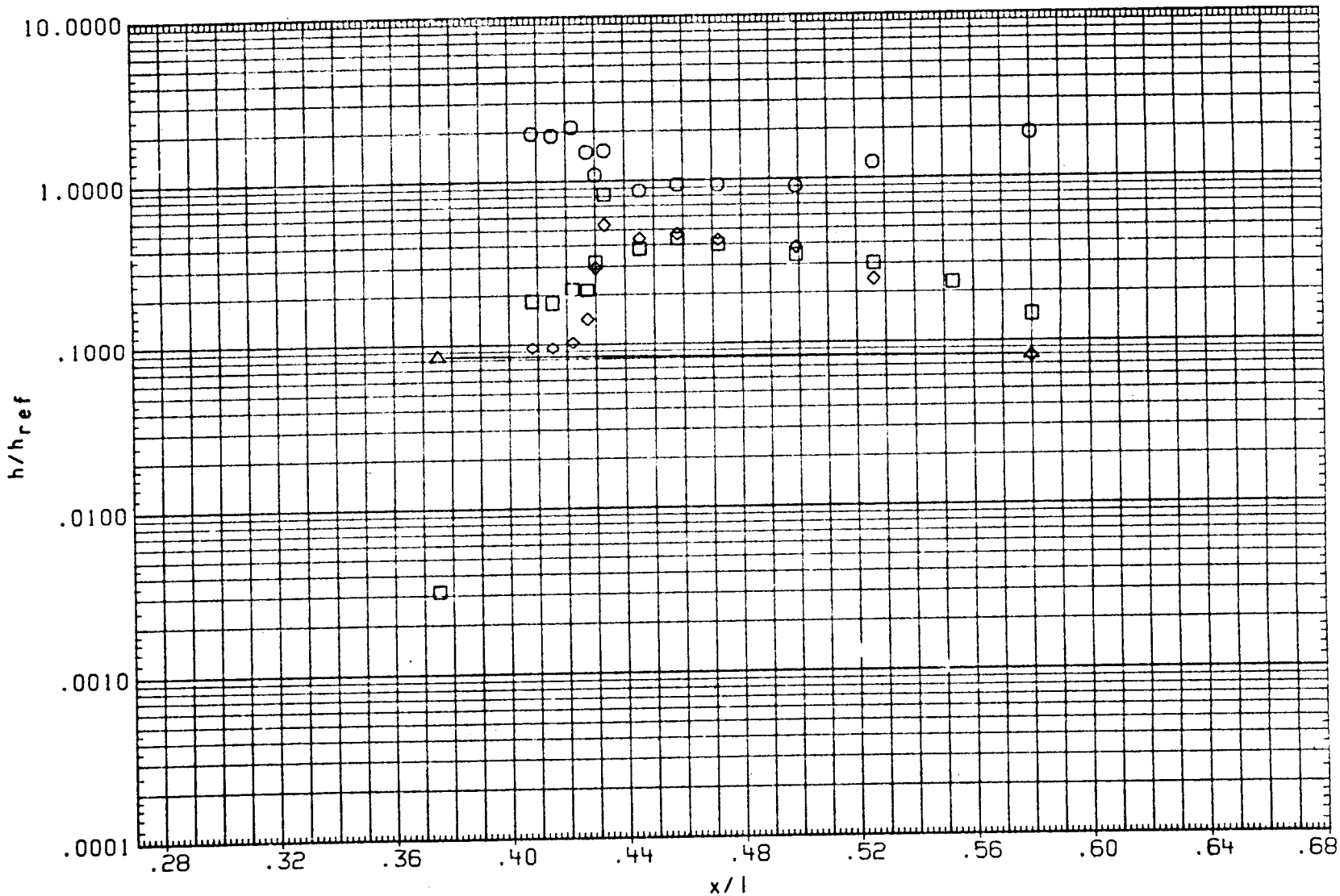

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 319

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

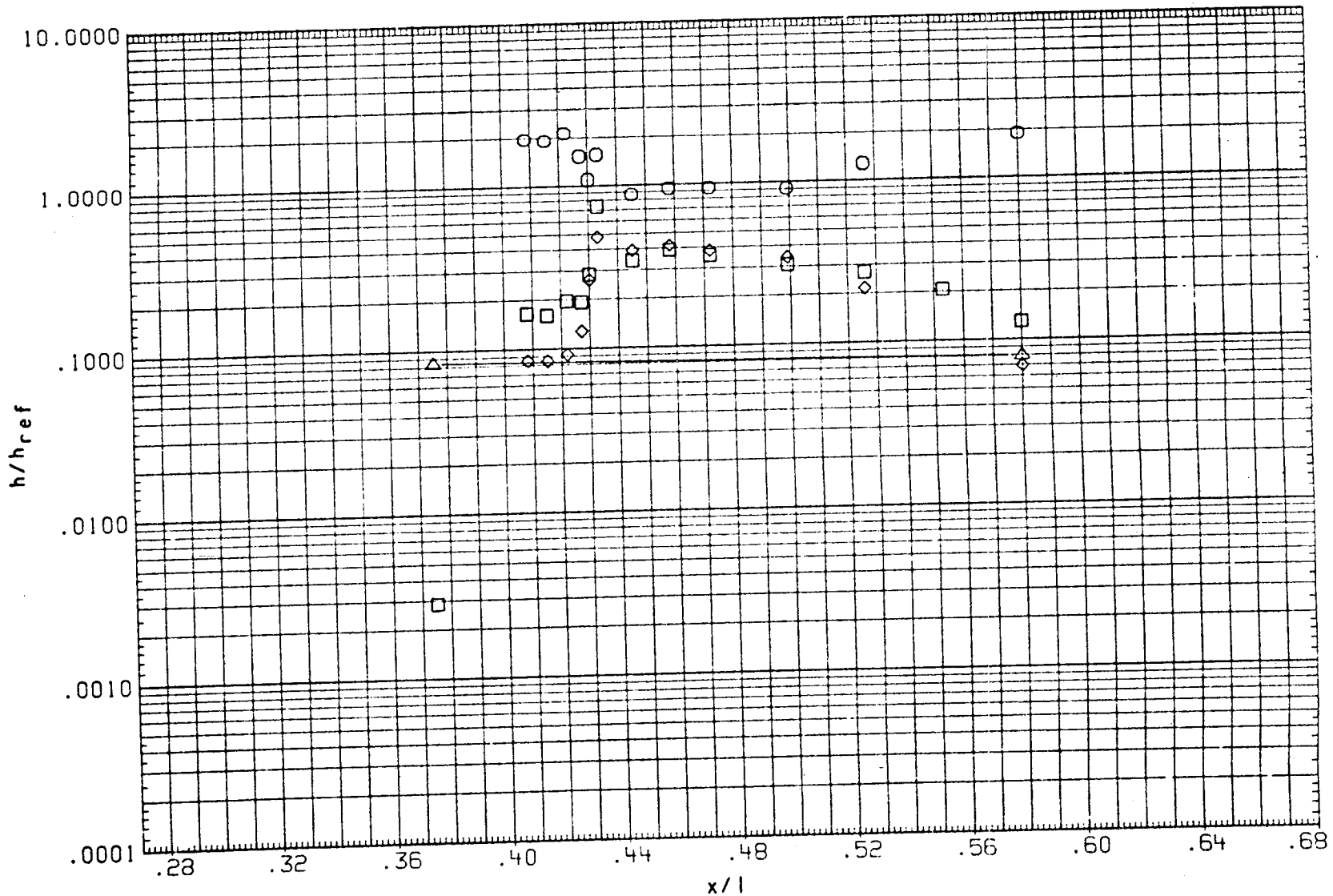

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

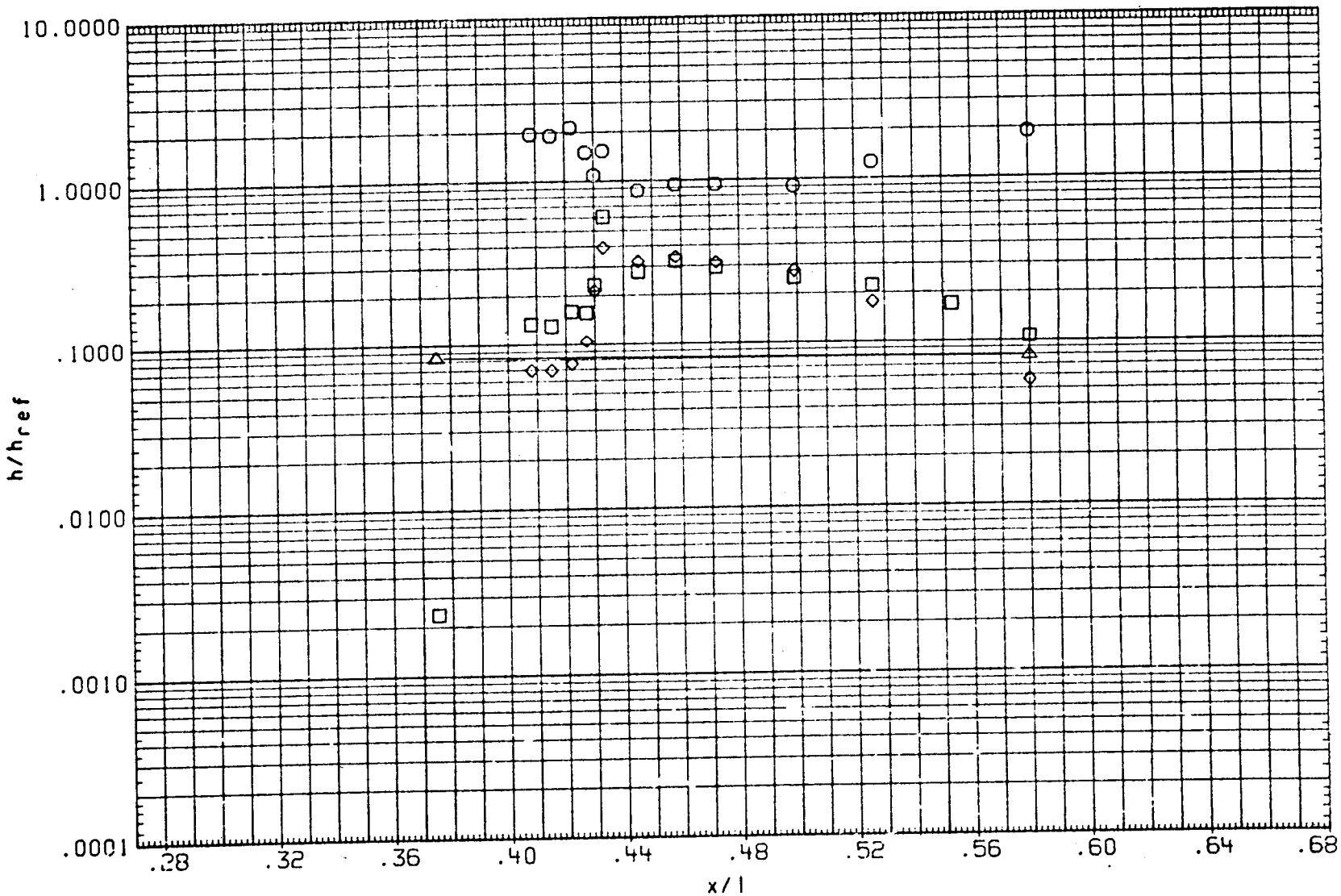

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 321

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

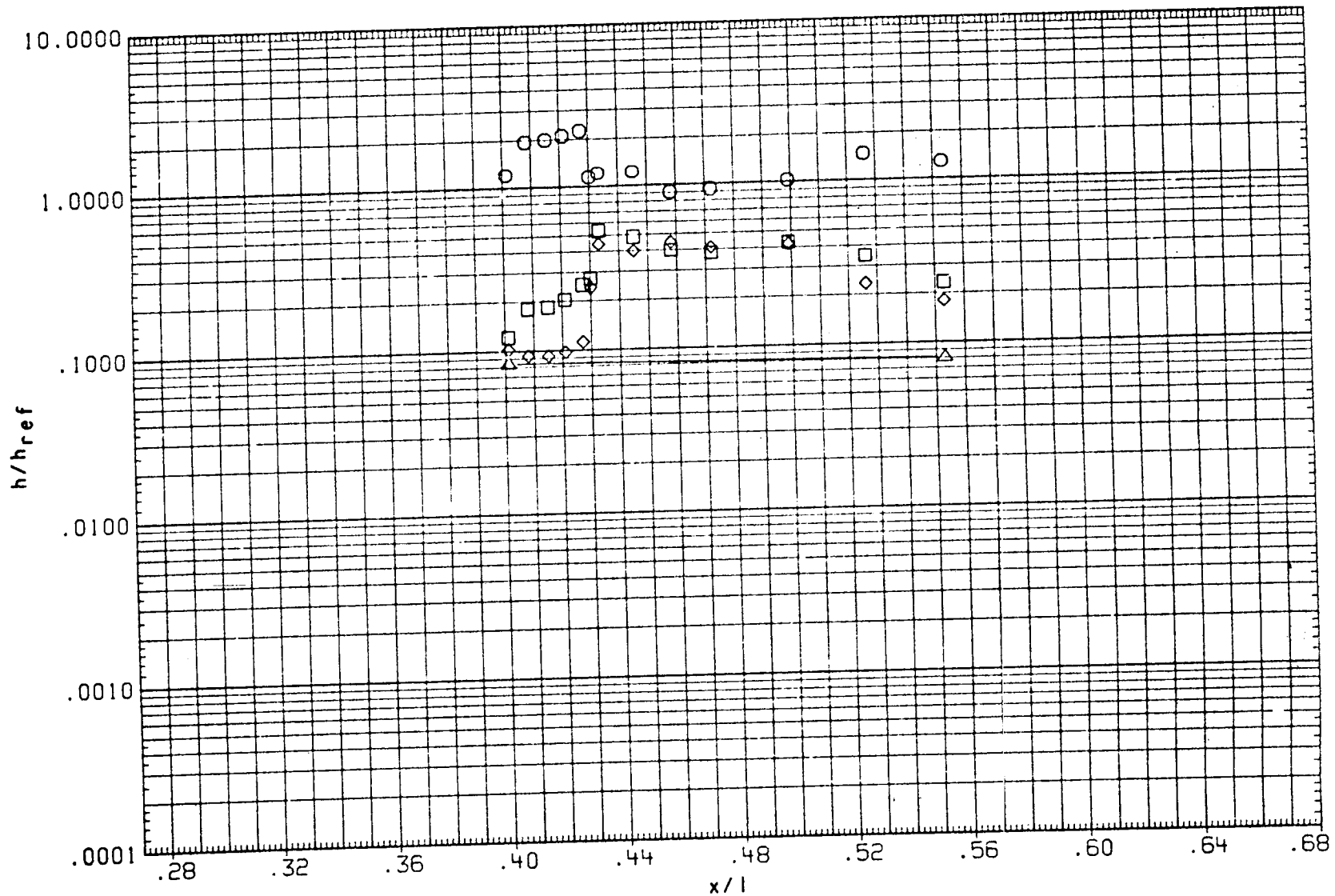

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 322

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

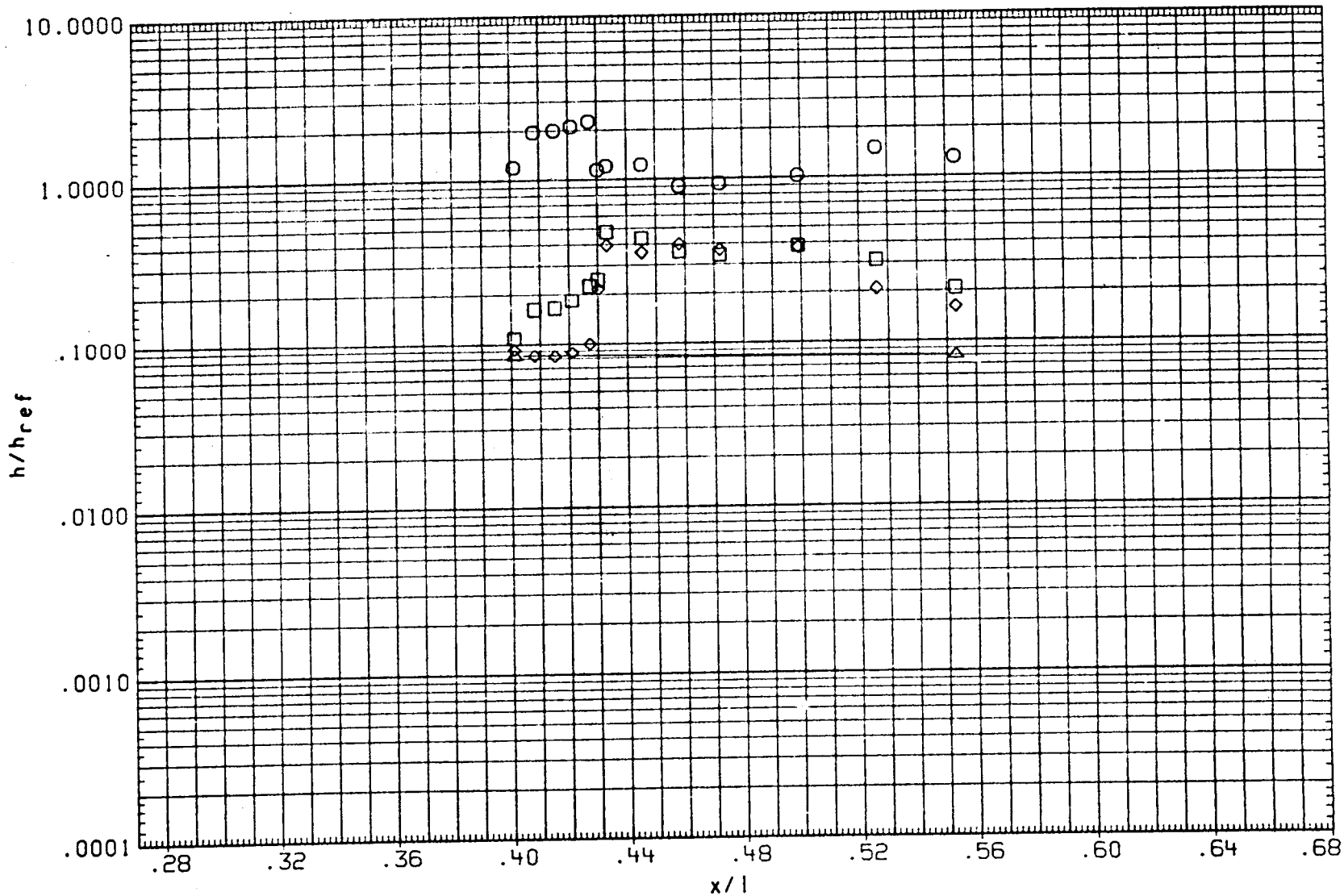

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78 PAGE 323

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

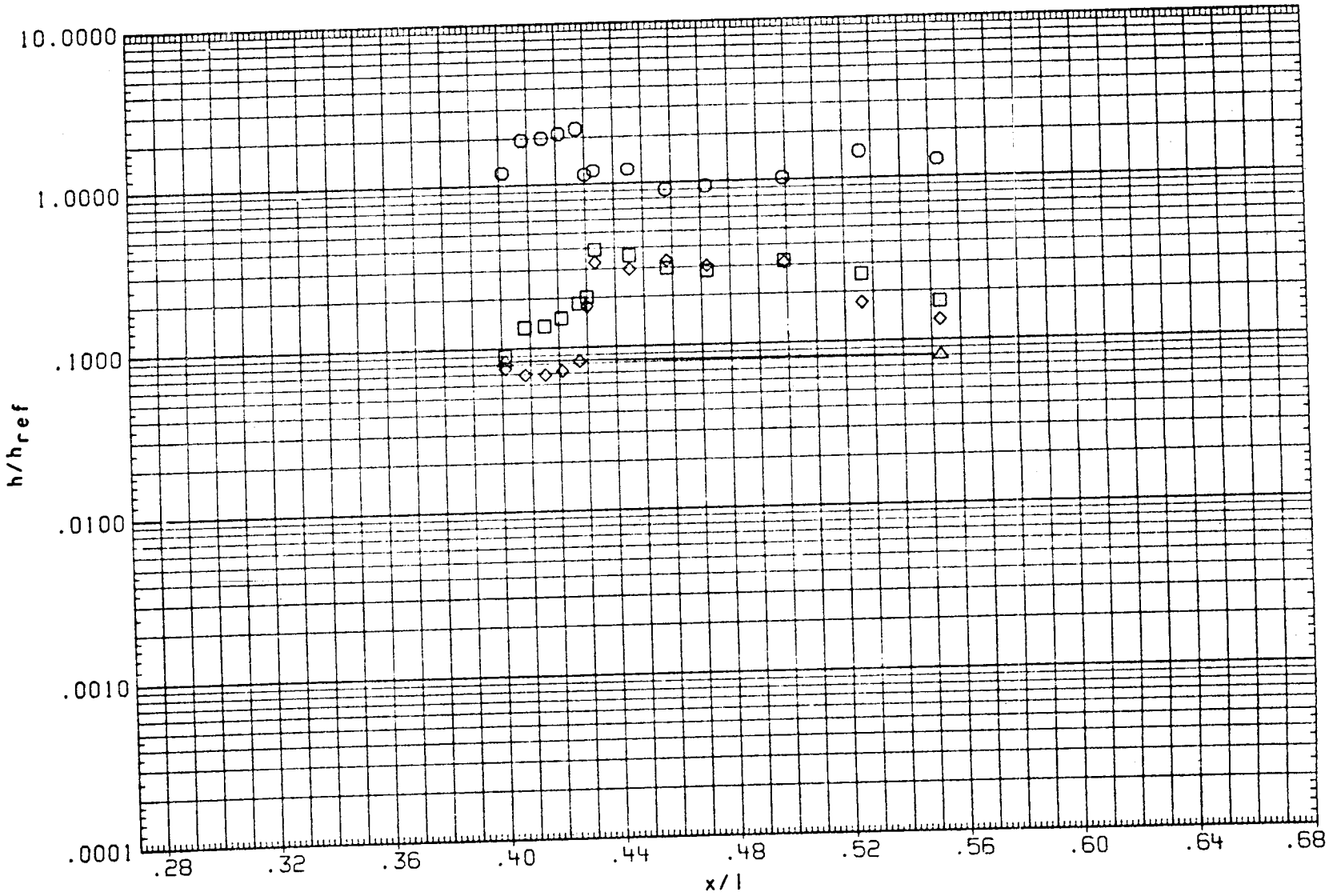

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HW/HREF	.000	.000	5.000	5.300

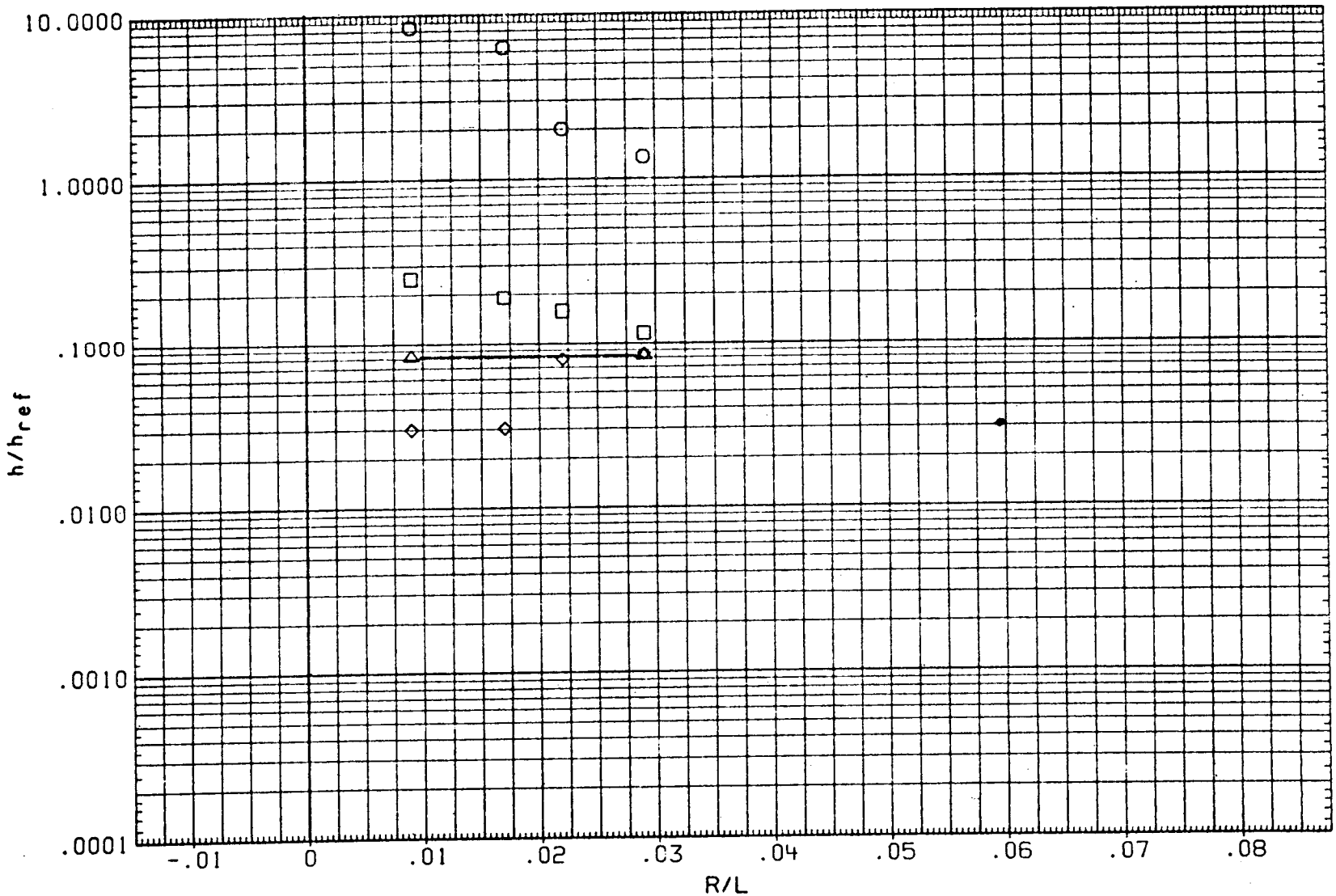

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 325

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

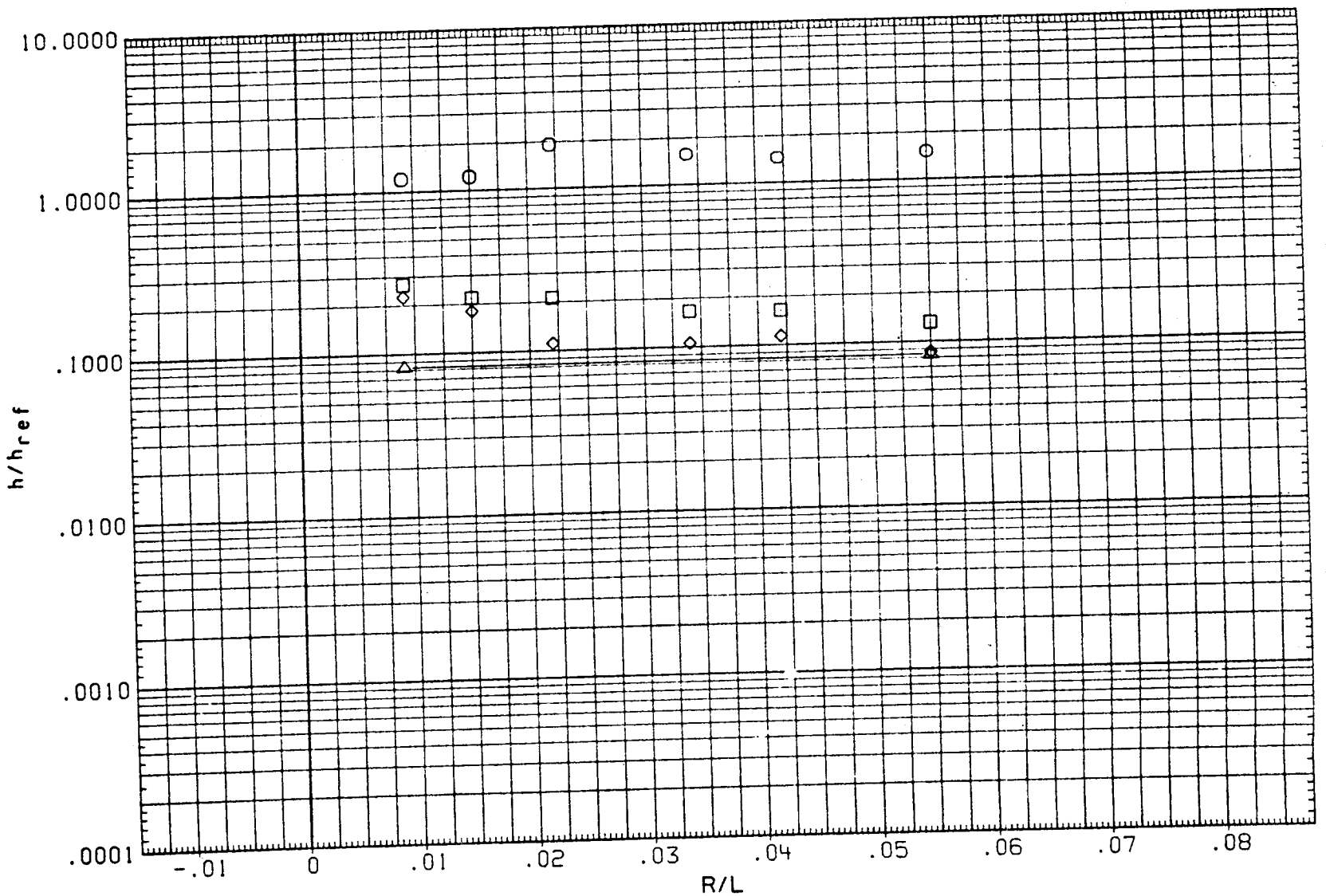

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 326

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

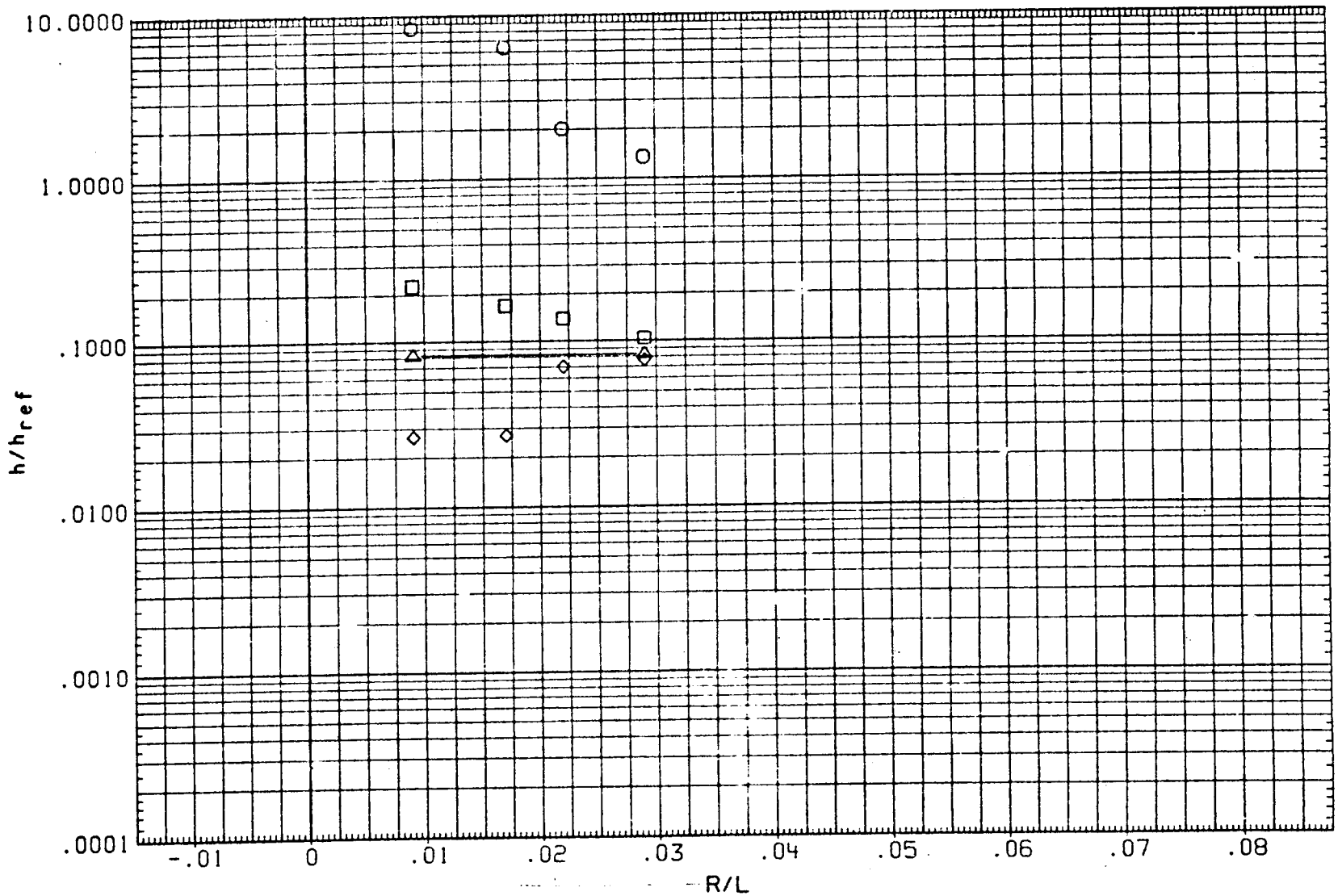

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 327

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

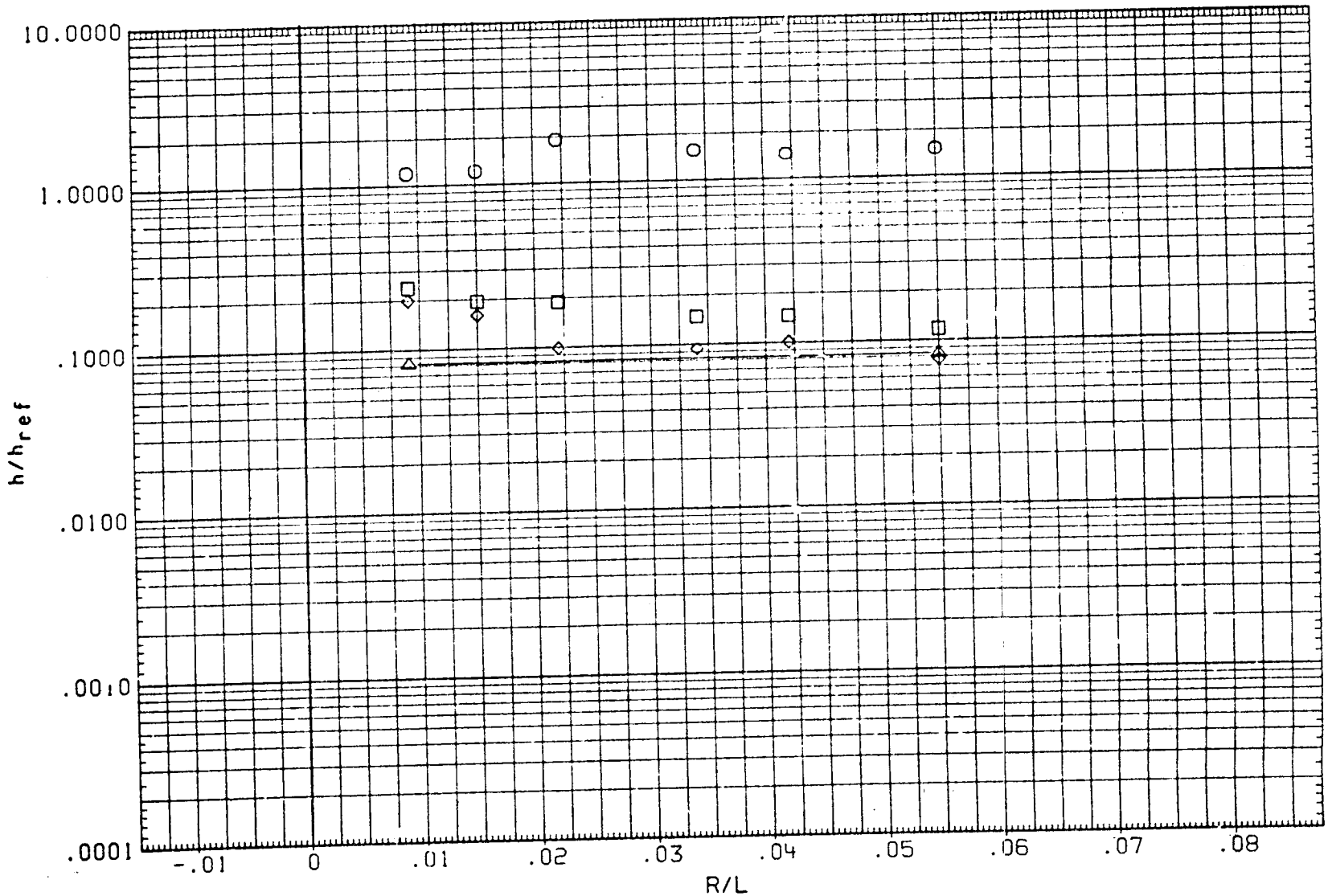

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

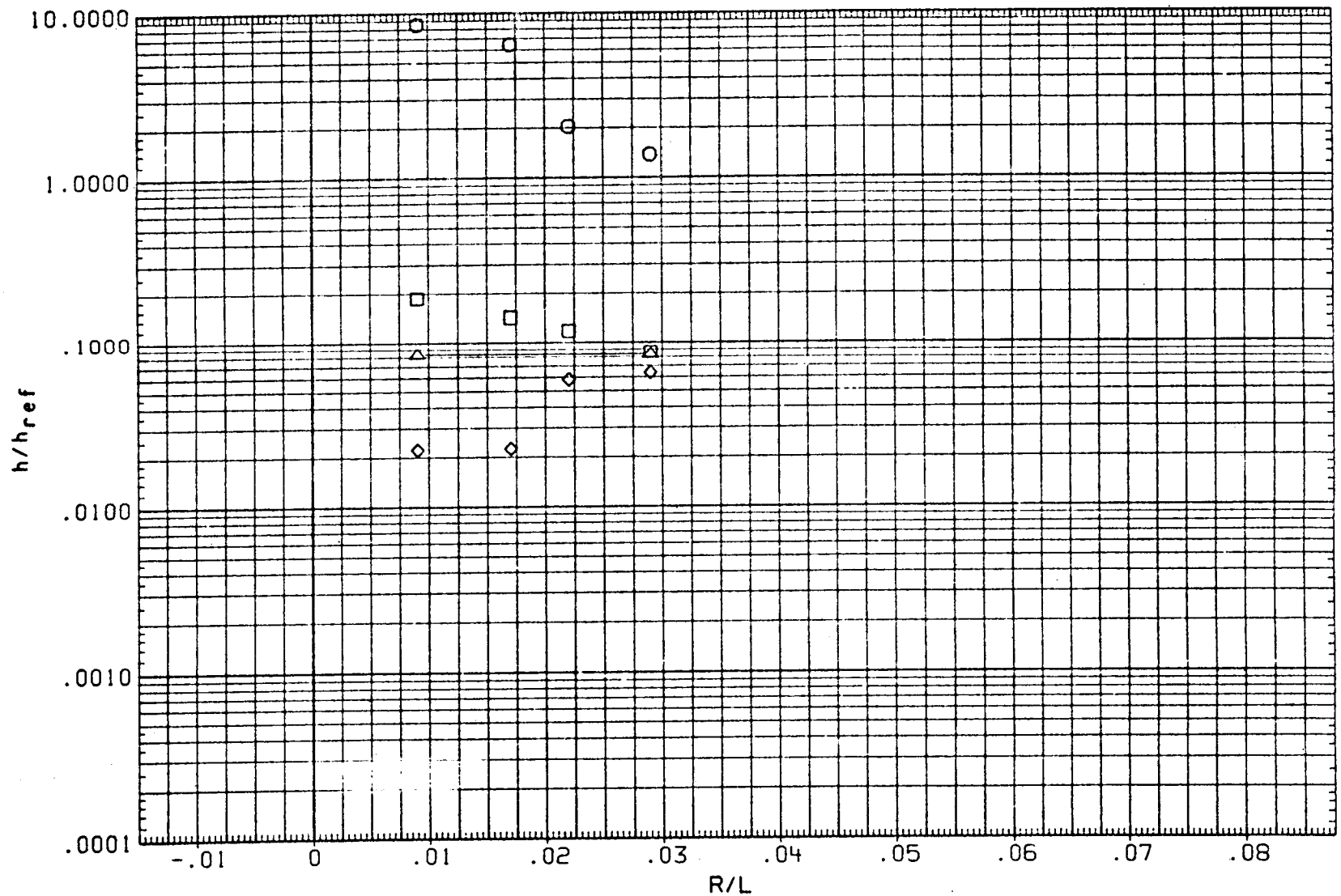

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 329

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	LH STRUT DIA	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B LH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	000	5.000	5.300

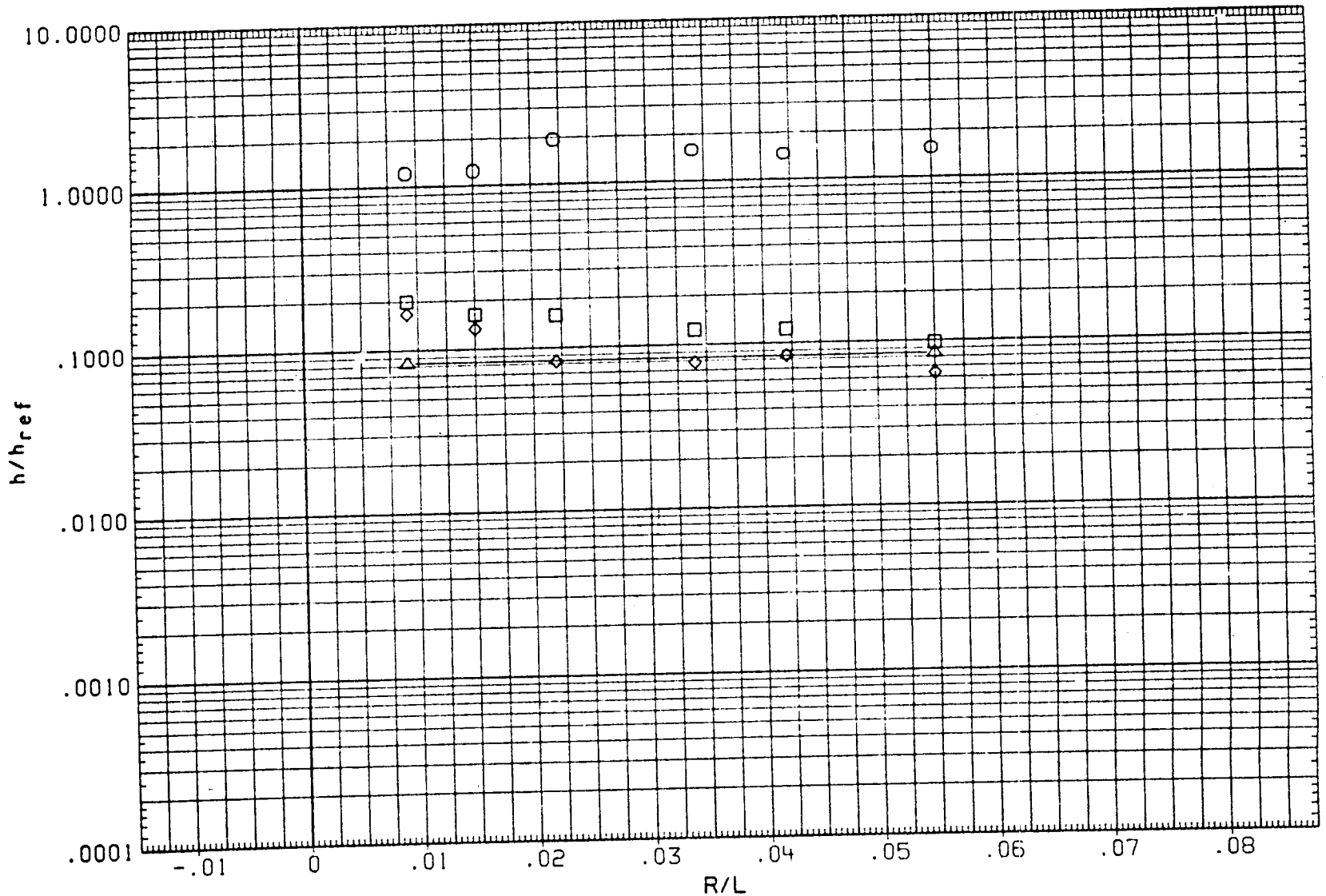

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 330

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P01)	□	IH51A CONF 1B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0B)	◇	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

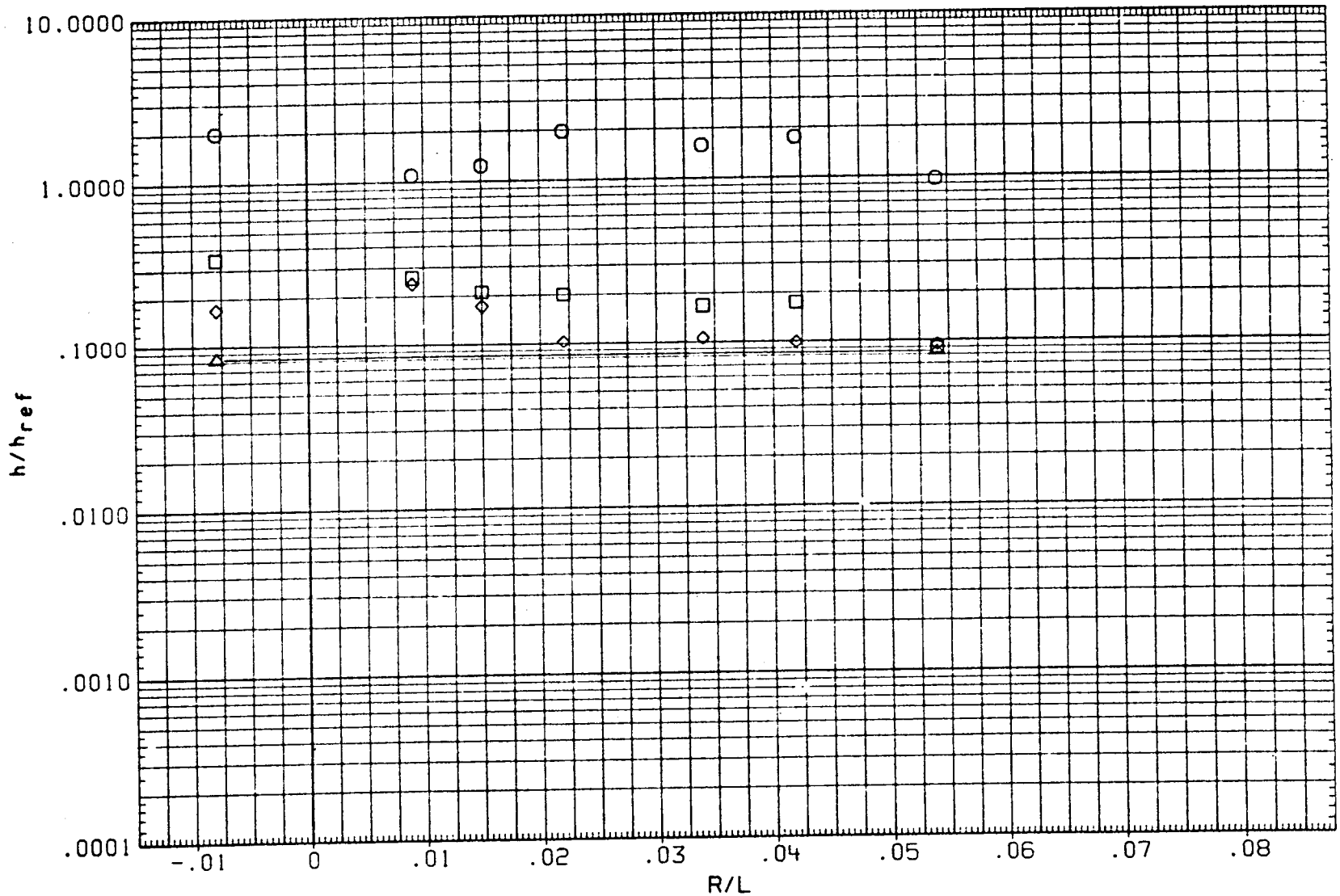

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 331

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P01)	□	IH51A CONF 1B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0B)	◇	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

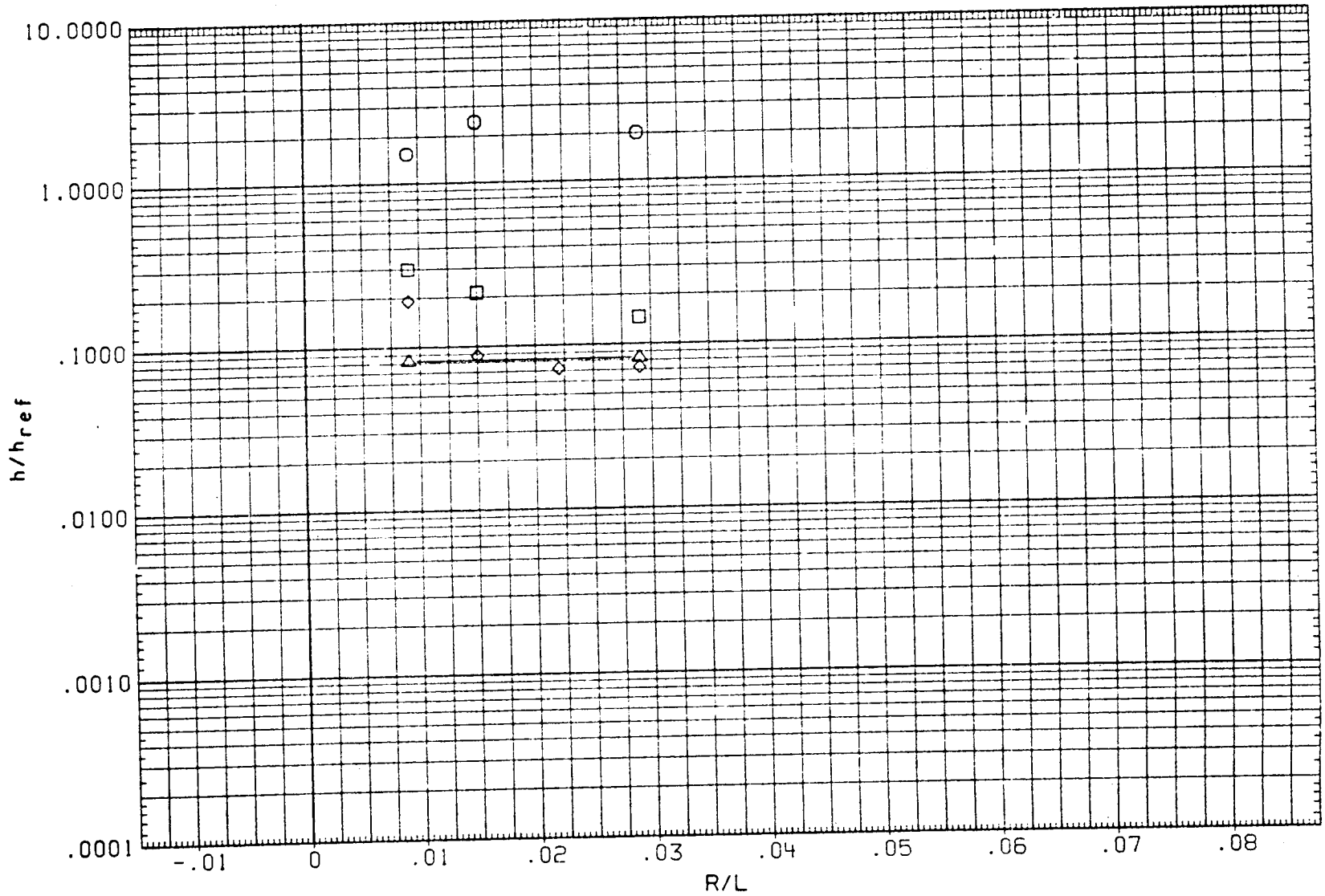

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 332

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P01)	□	IH51A CONF 1B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0B)	◇	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

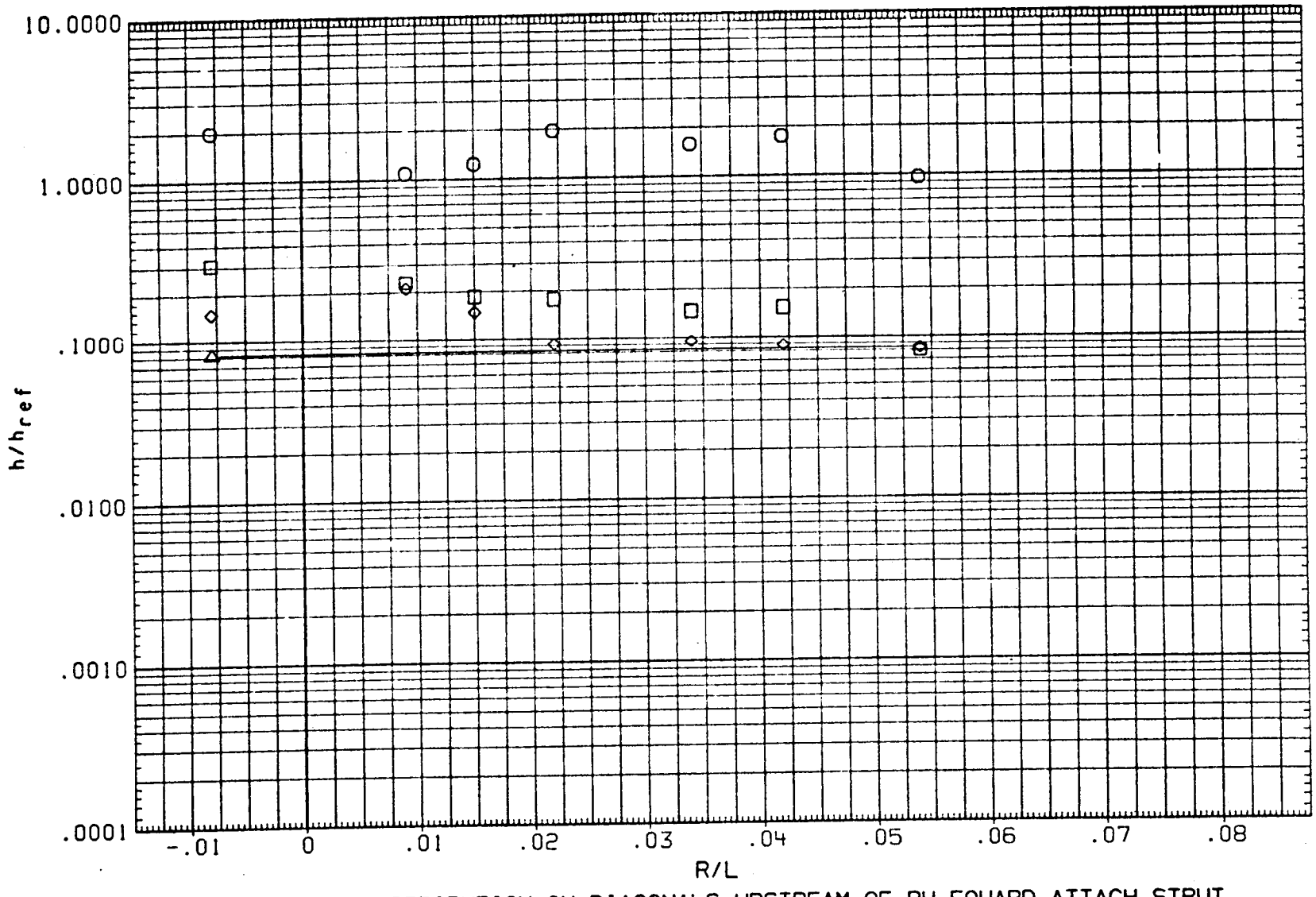

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 333

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P01)	□	IH51A CONF 1B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0B)	◇	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

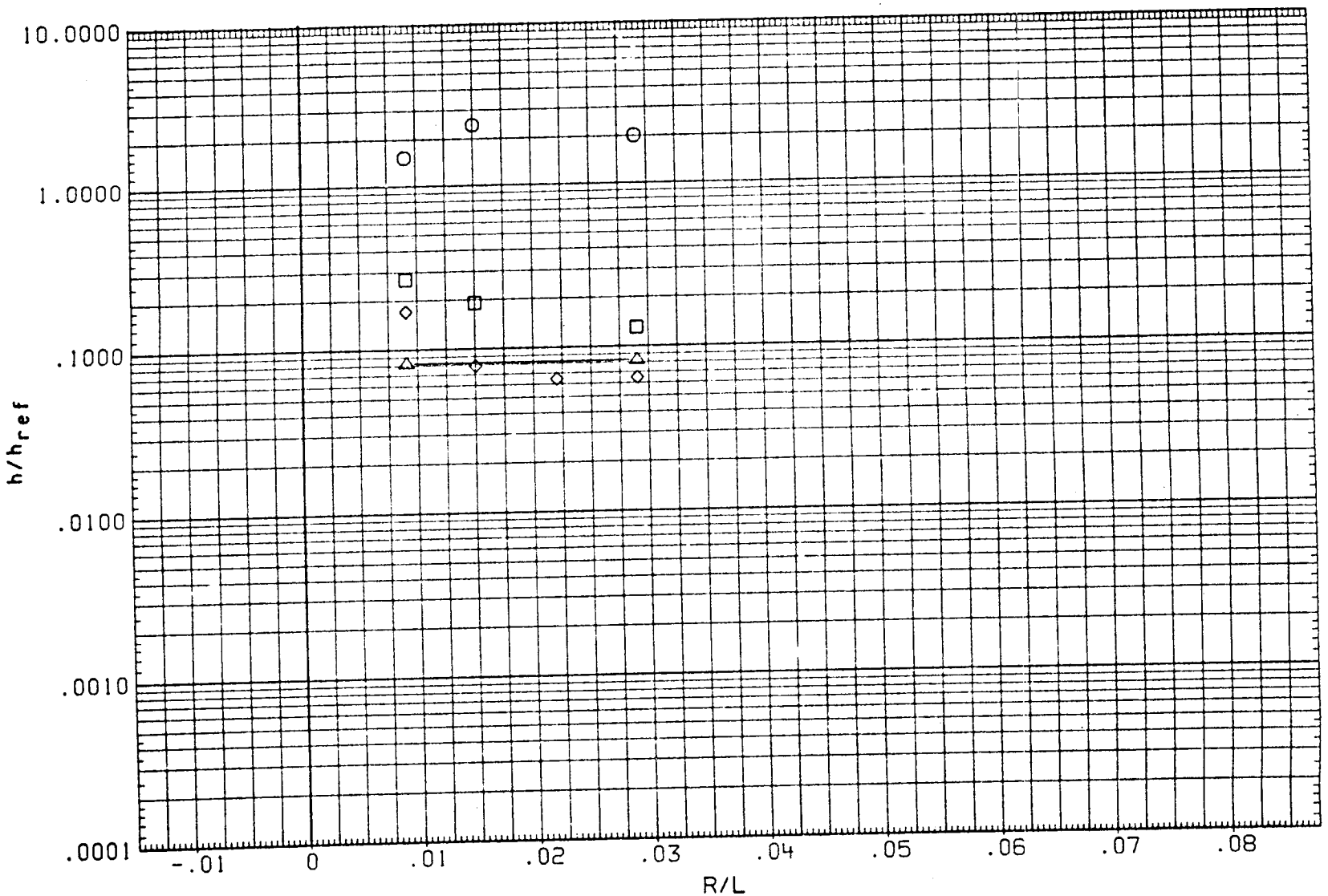

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 334

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P01)	□	IH51A CONF 1B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0B)	◇	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

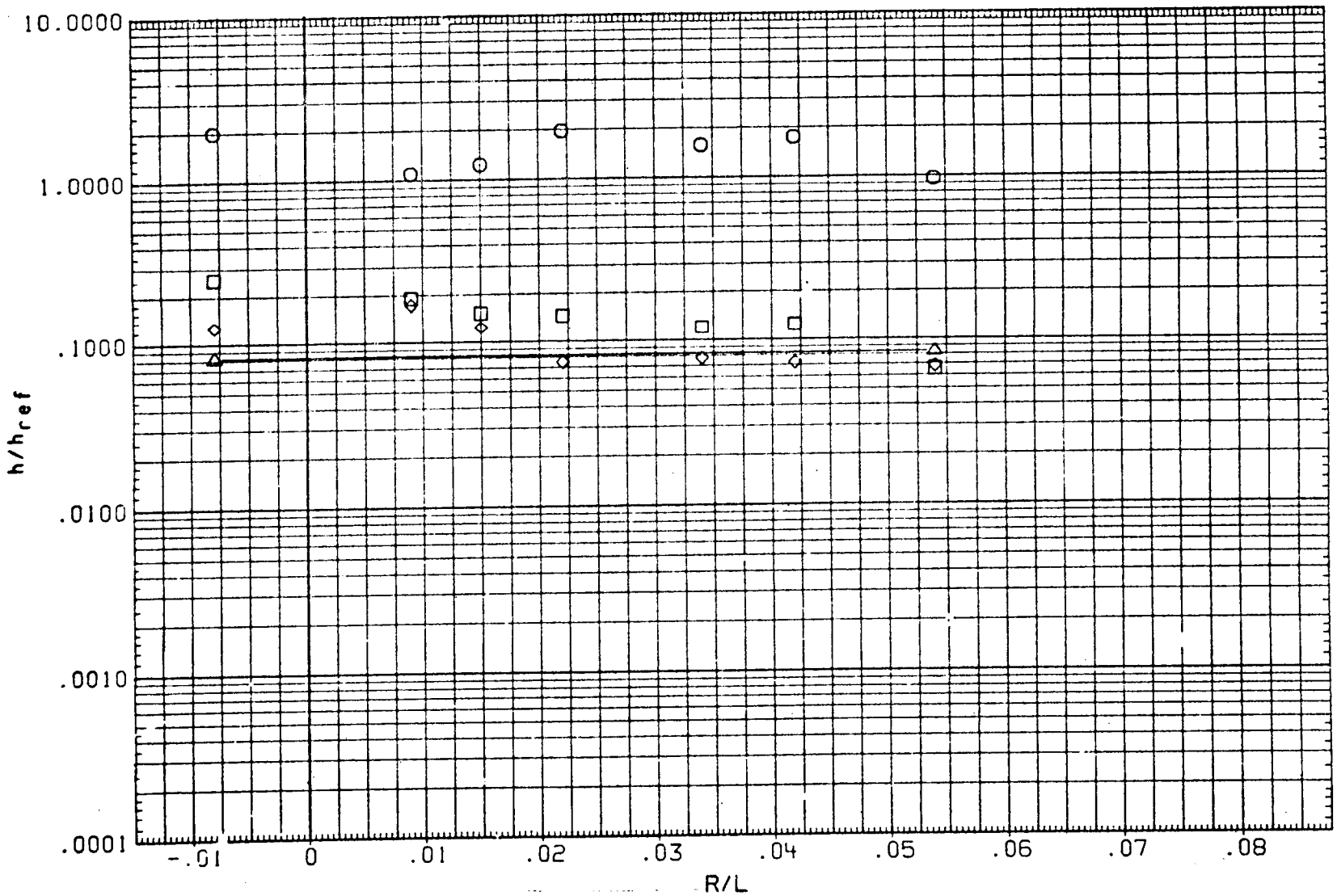

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20P0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	RH STRUT DIA	.000	.000	5.000	5.300
(R20P01)	□	IH51A CONF 1B RH ATTACH DIAGONAL		.000	.000	5.000	5.300
(M20P0B)	◇	IH51A 2B+3B+4B-5B-5B	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

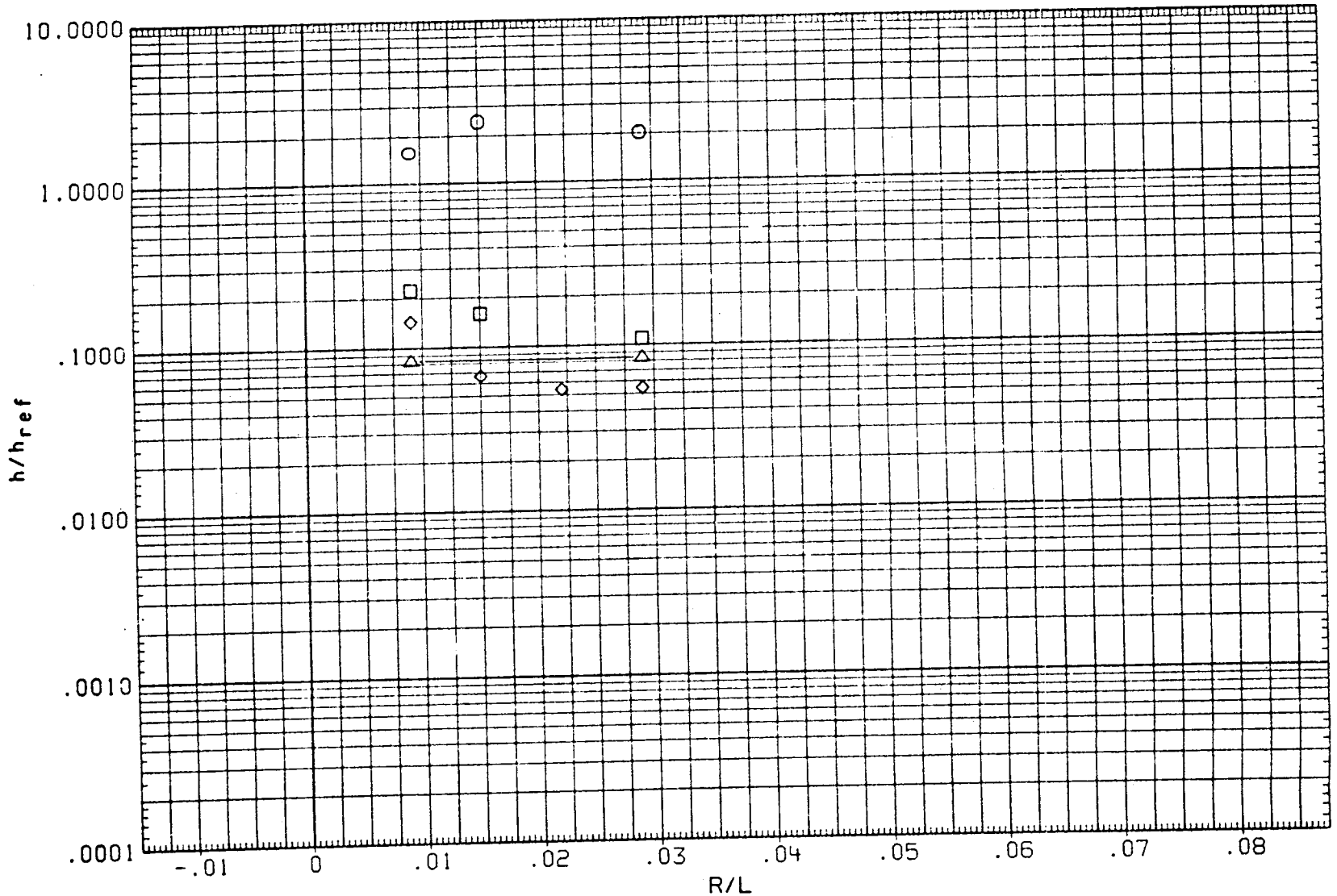

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 336

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

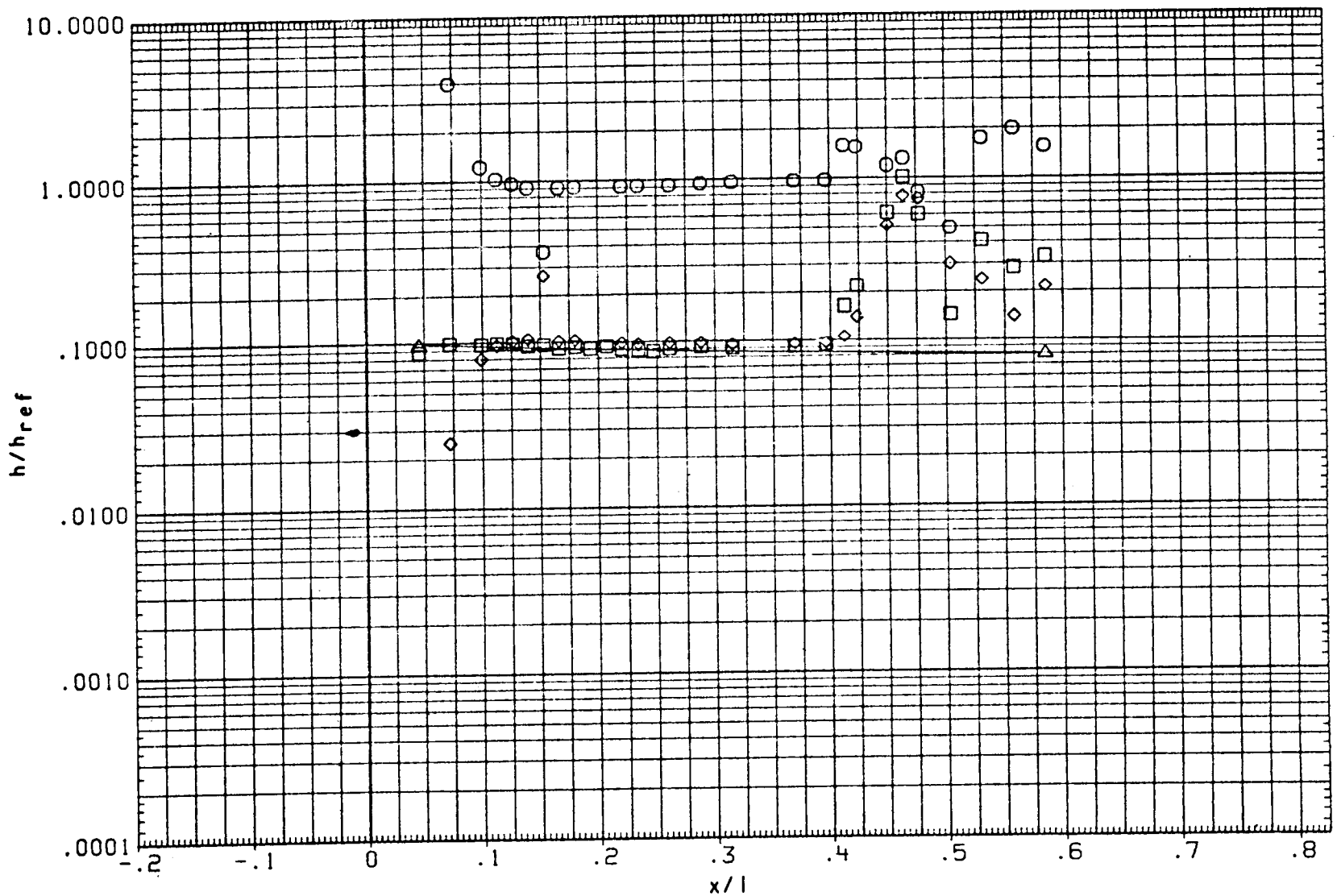

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .850 PHI = .000 DATE 22 APR 78 PAGE 337

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

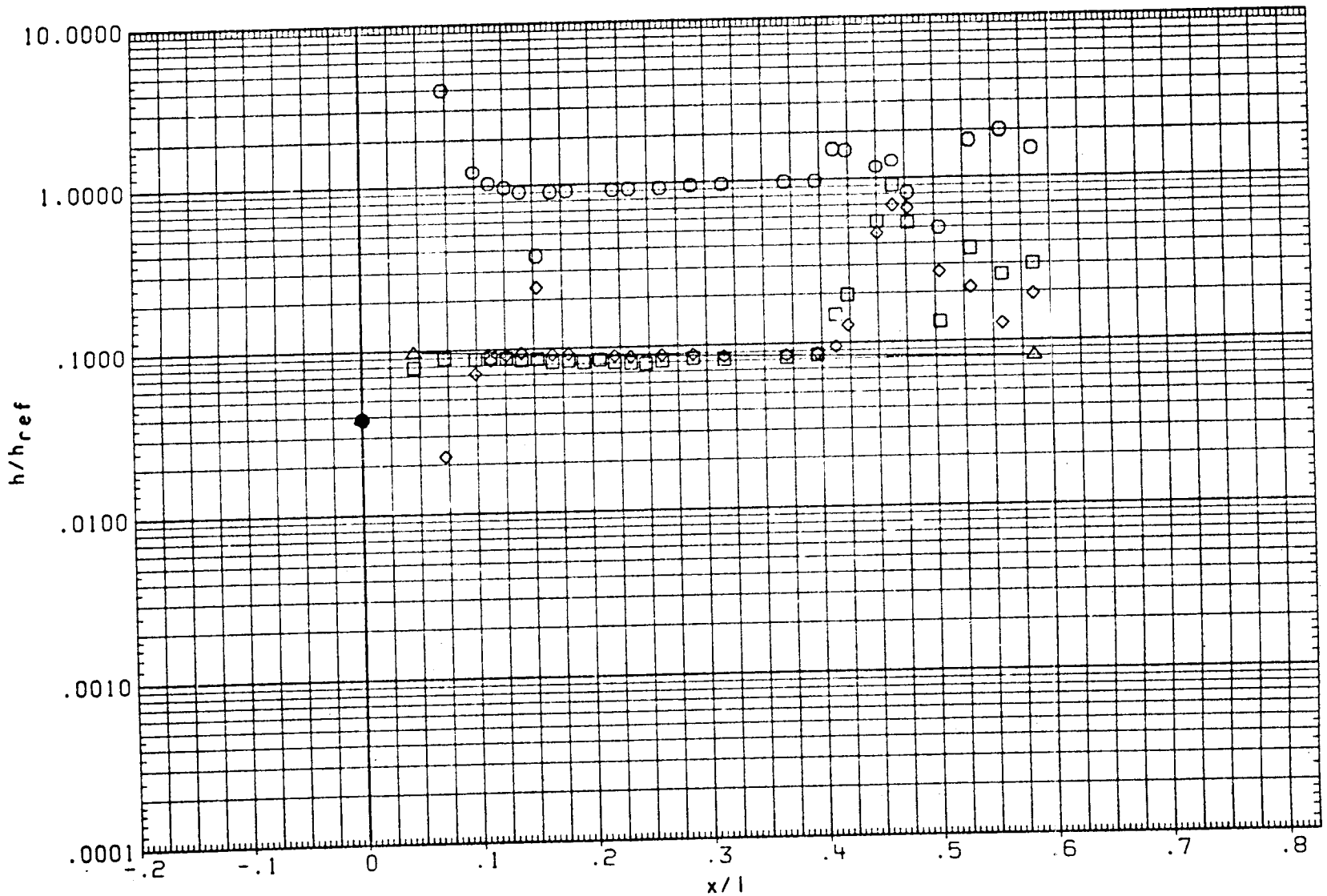

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .900 PHI = .000 DATE 22 APR 78 PAGE 338

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

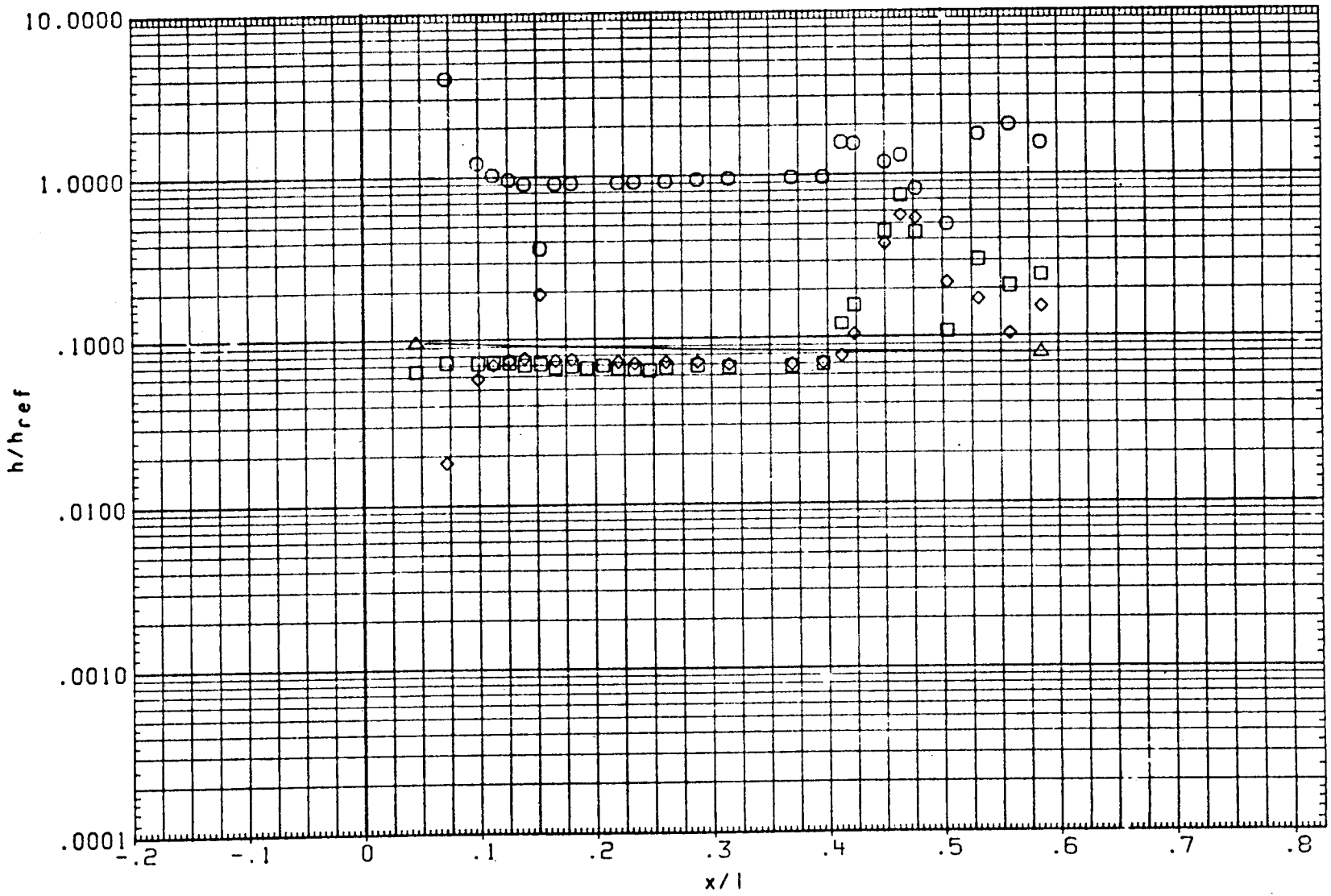

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 339

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

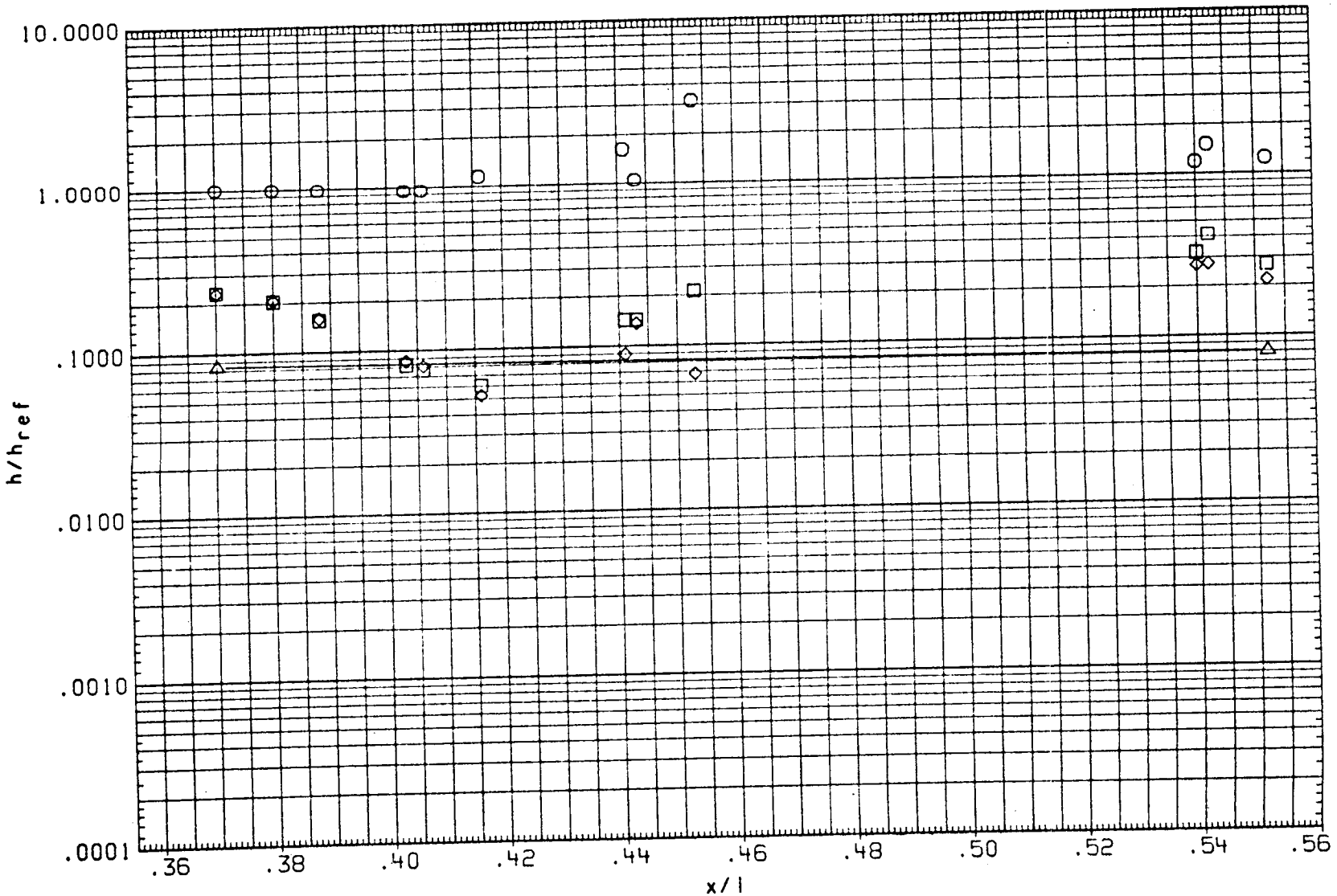

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 340

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

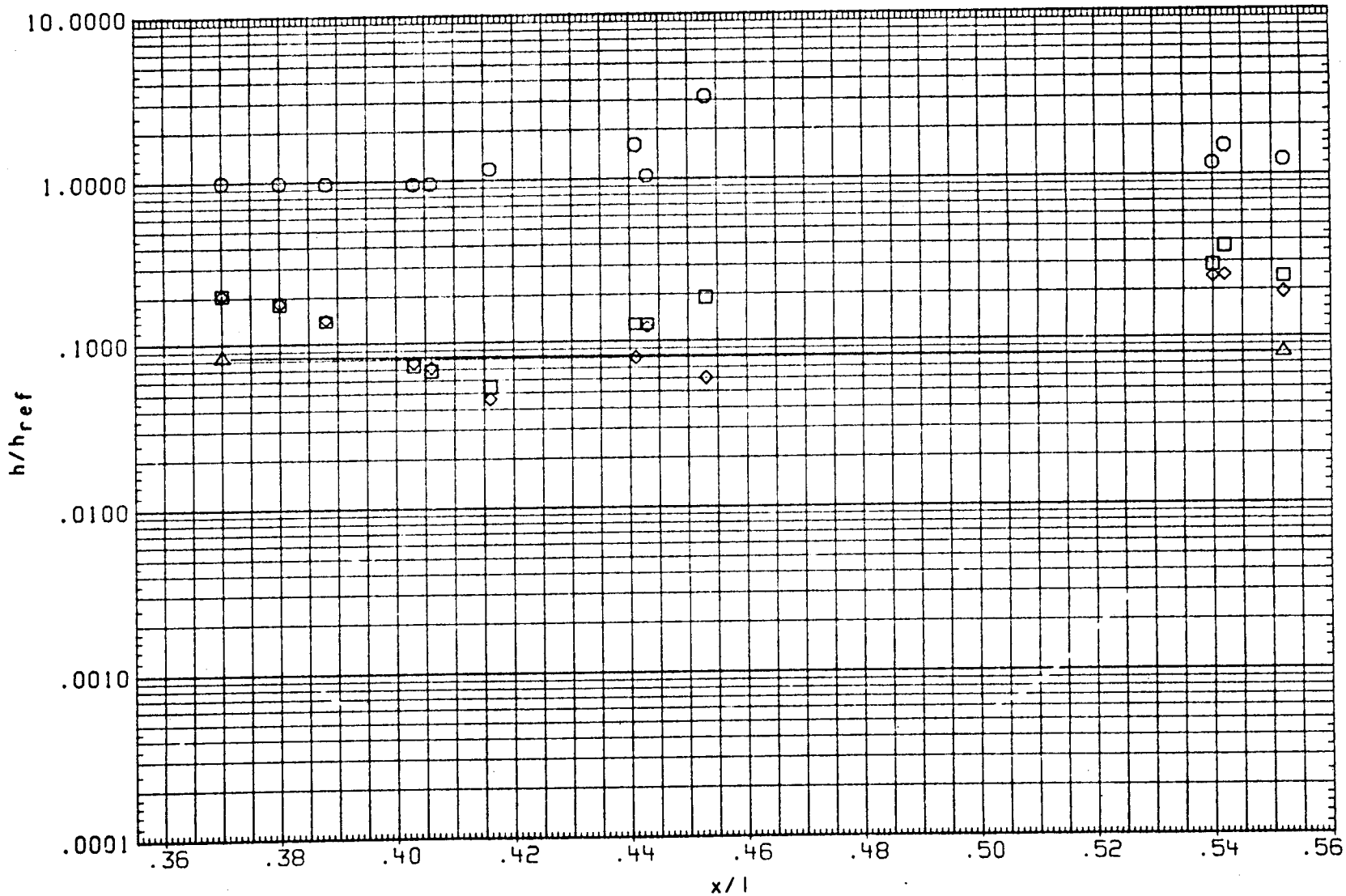

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 341

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

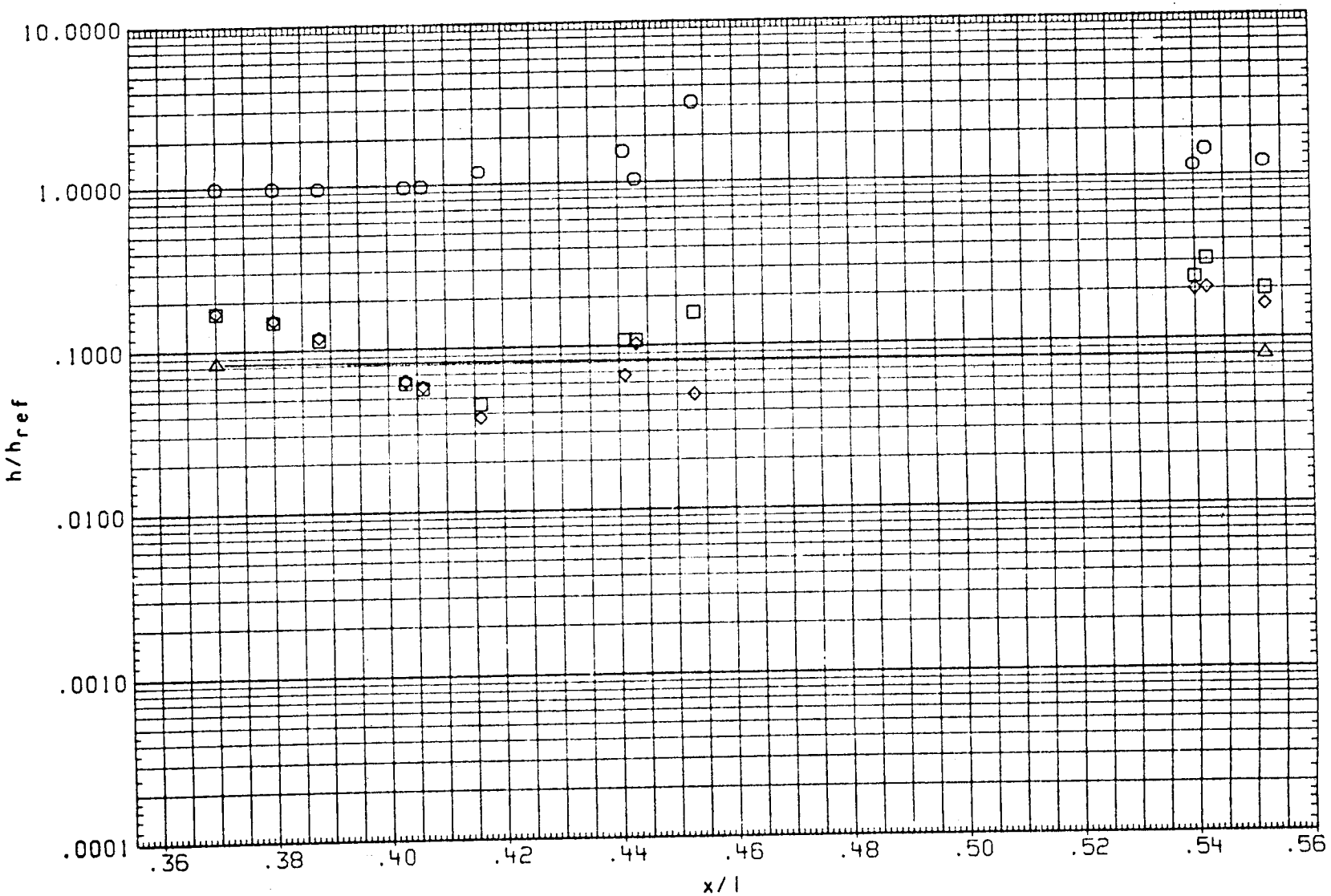

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 342

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

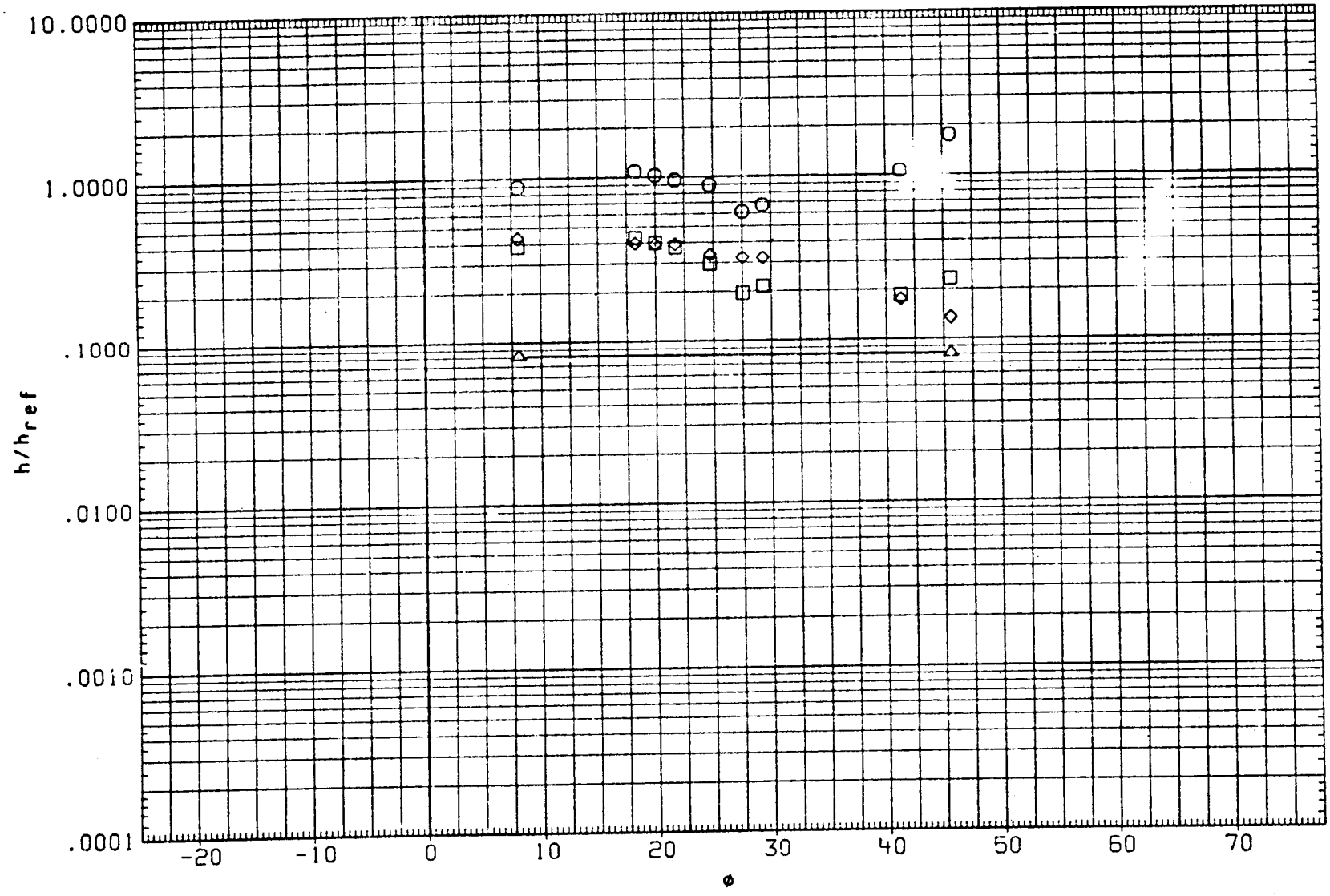

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 343

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

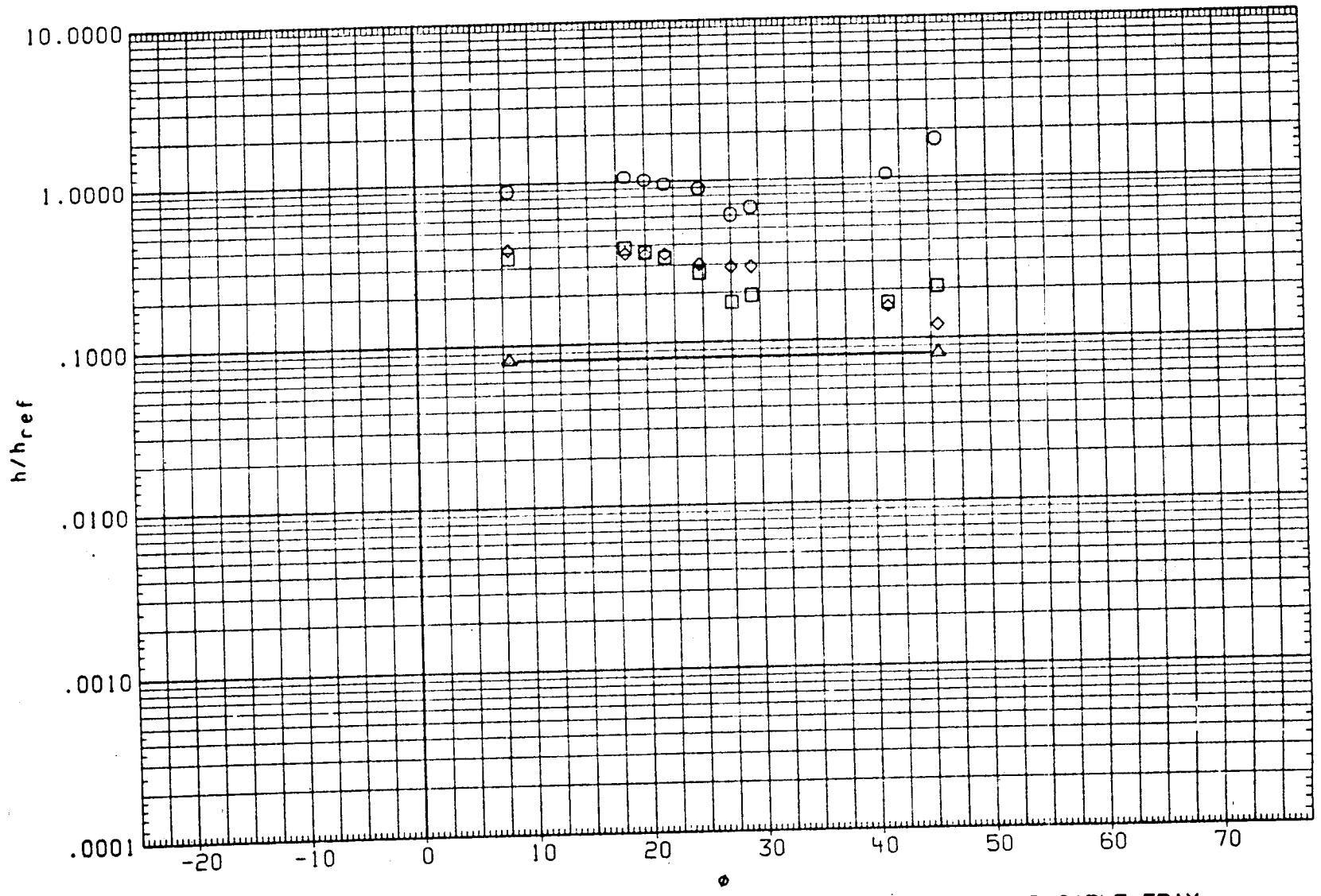

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 344

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5G ET SURFACE	HU/HREF	.000	.000	5.000	5.300

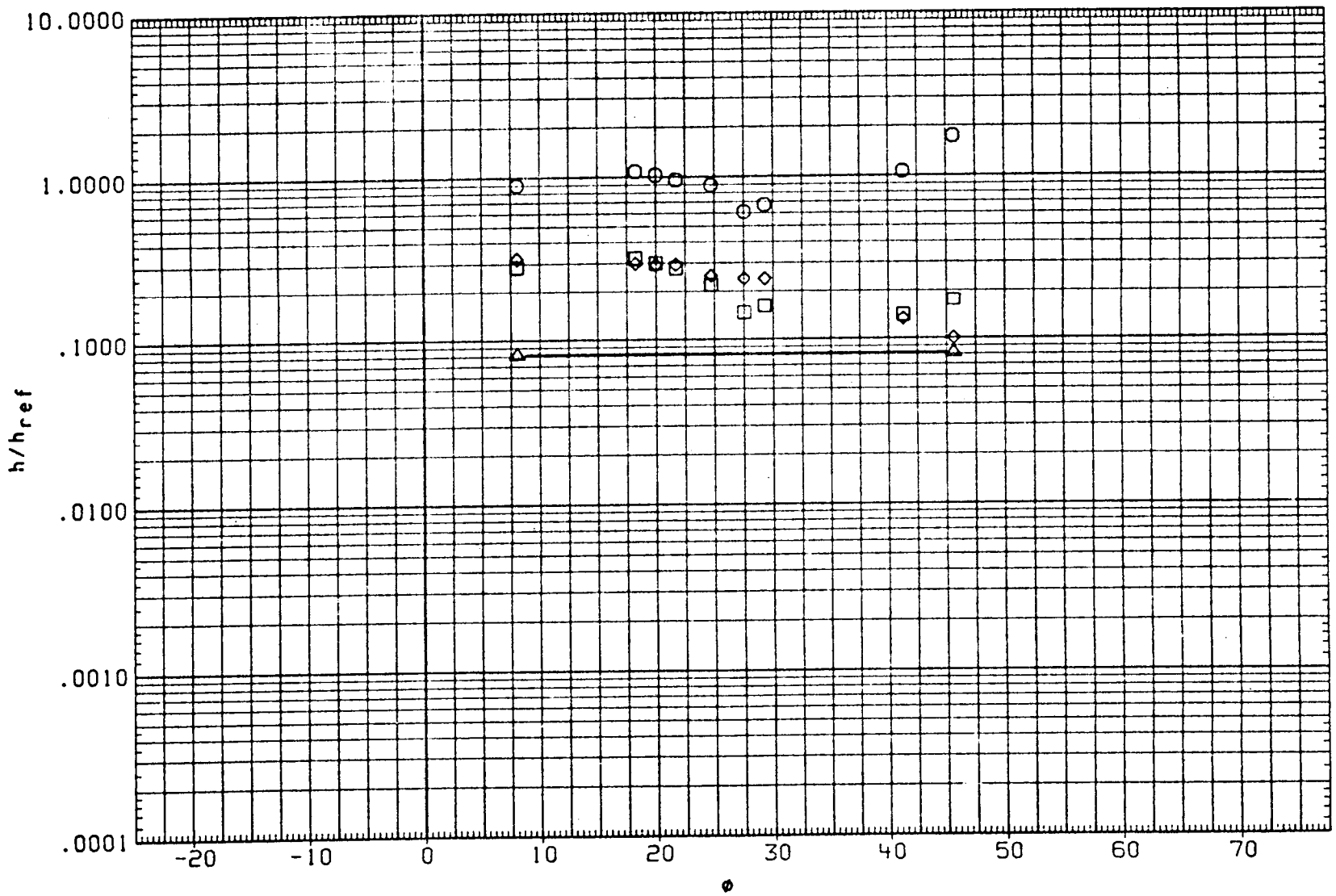

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 345

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

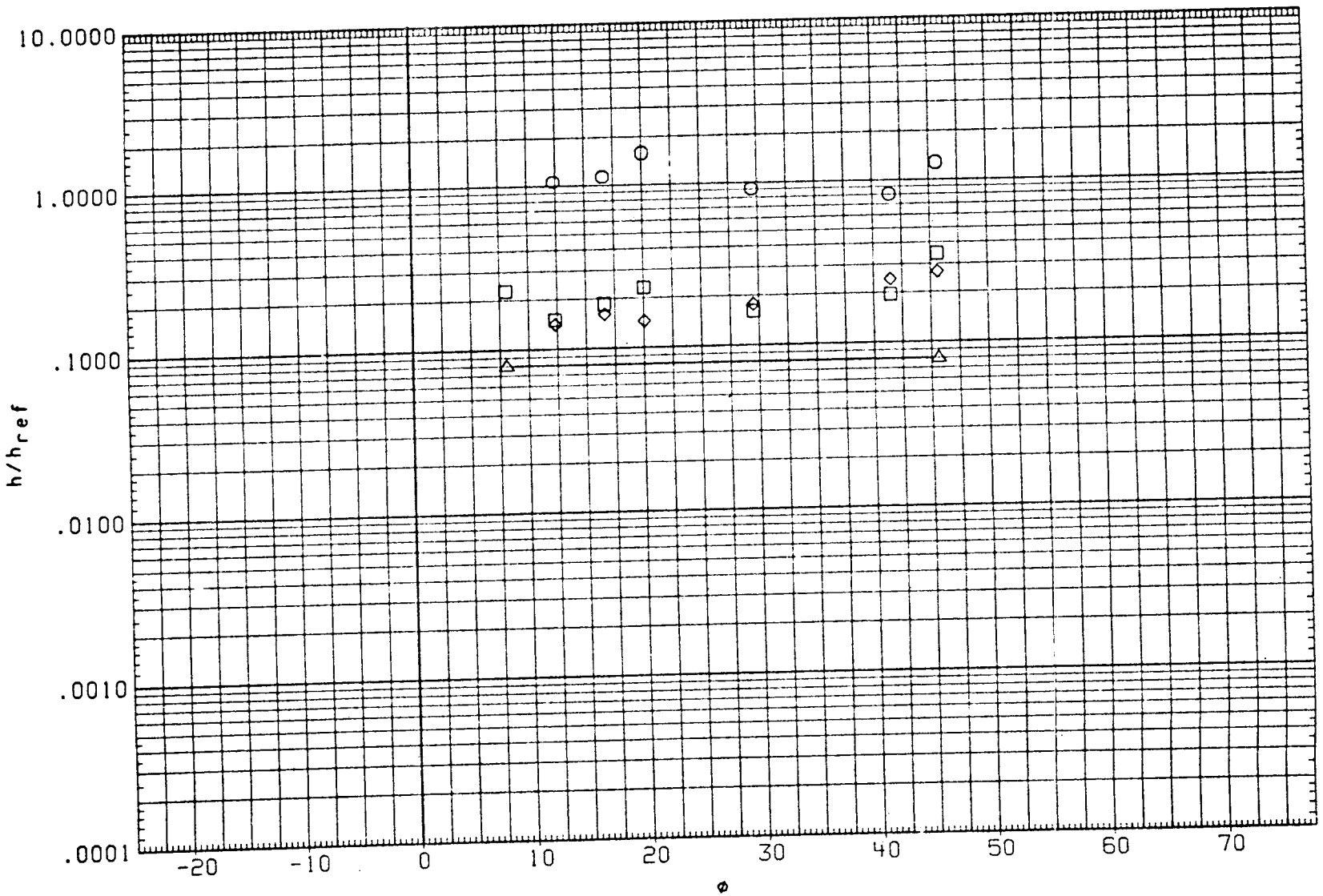

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 346

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

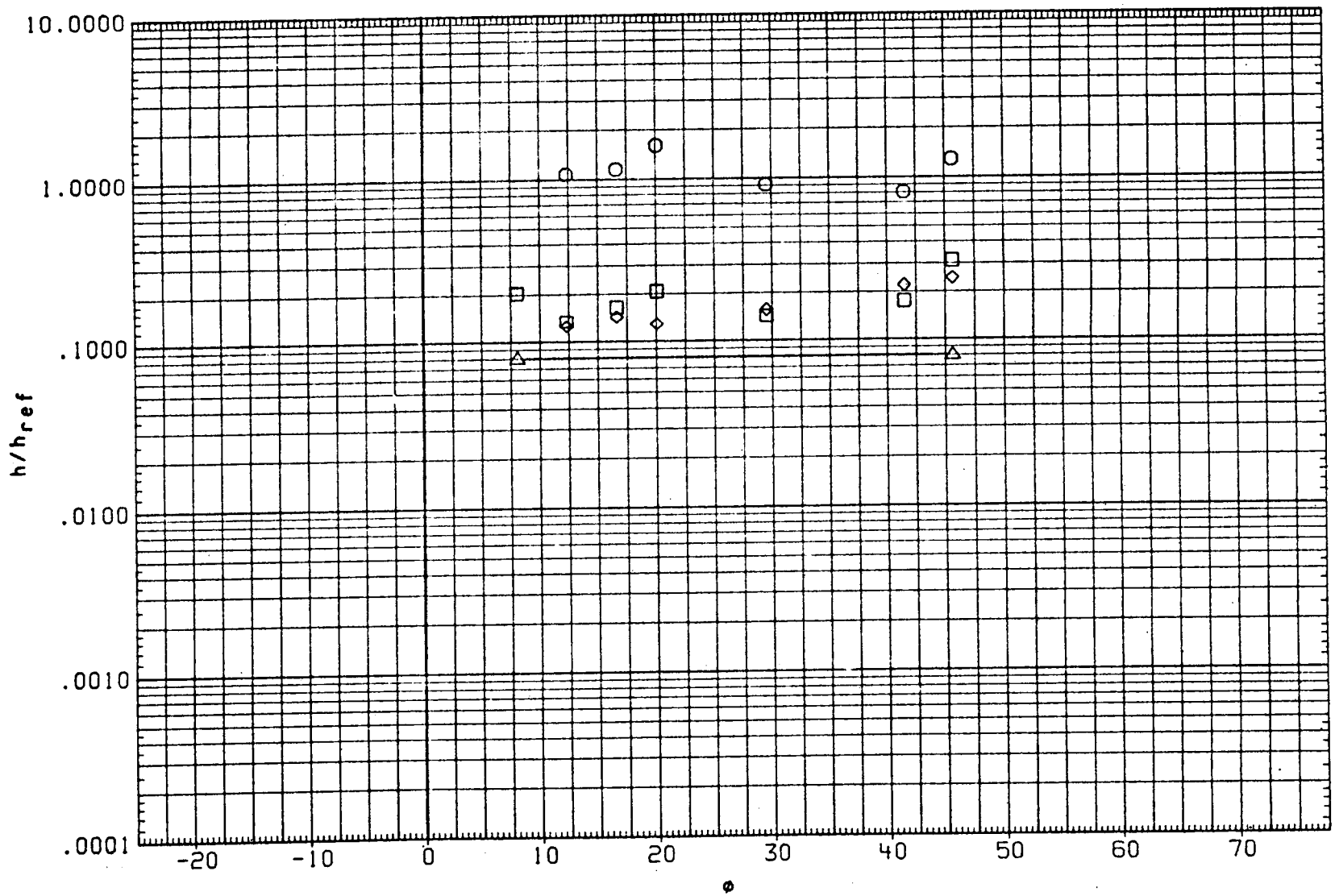

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .578 DATE 22 APR 78 PAGE 347

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20001)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

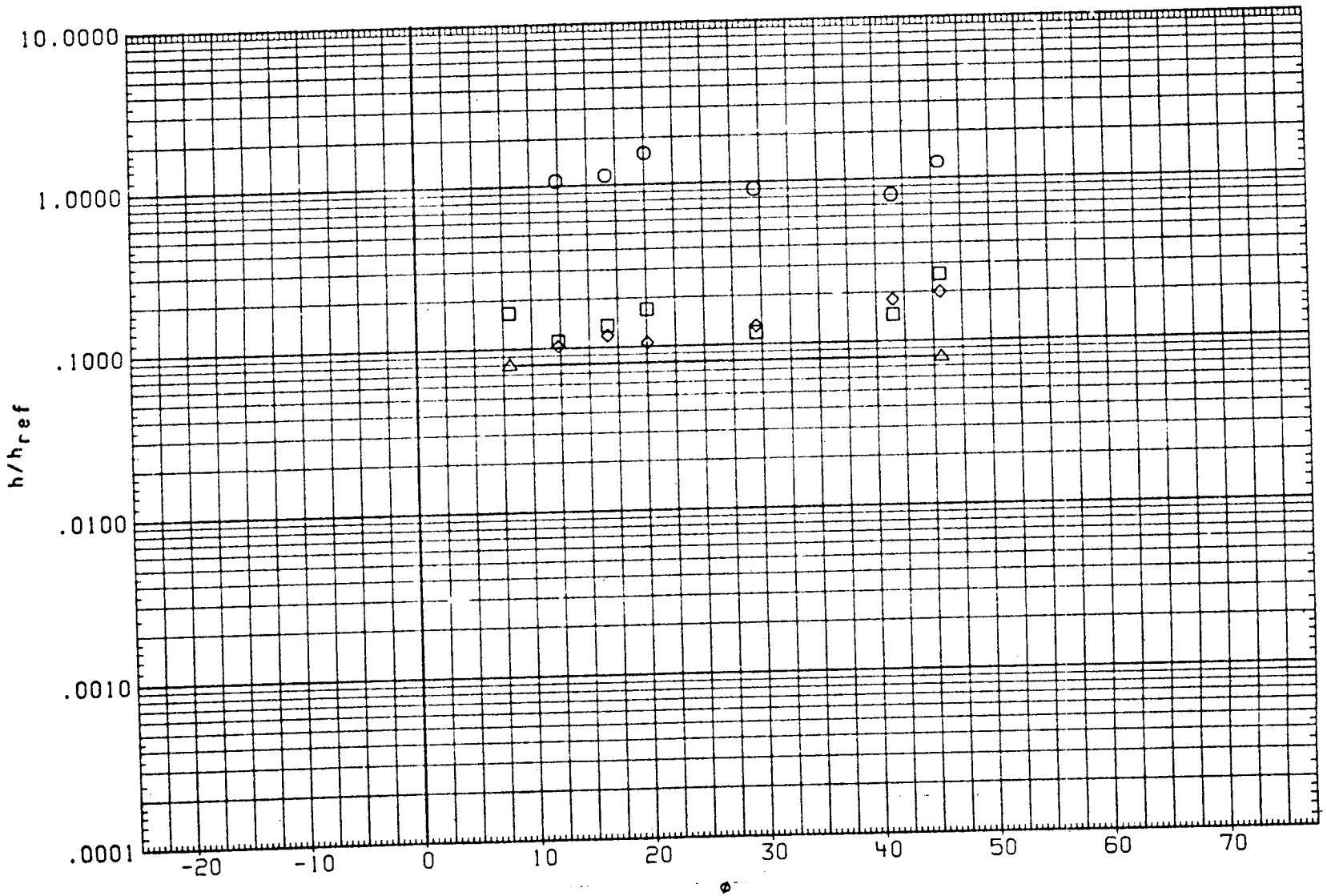

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 348

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

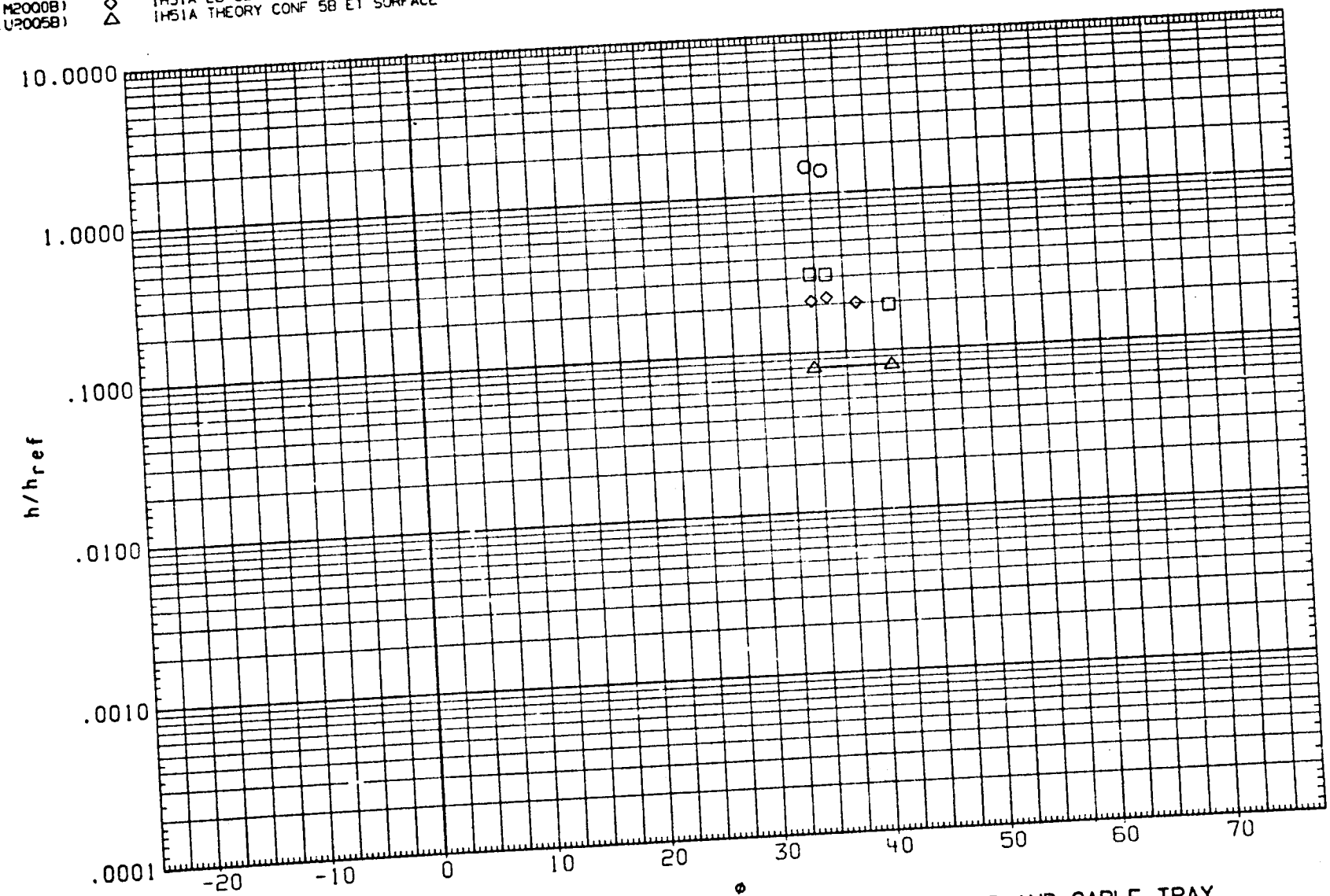

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 349

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

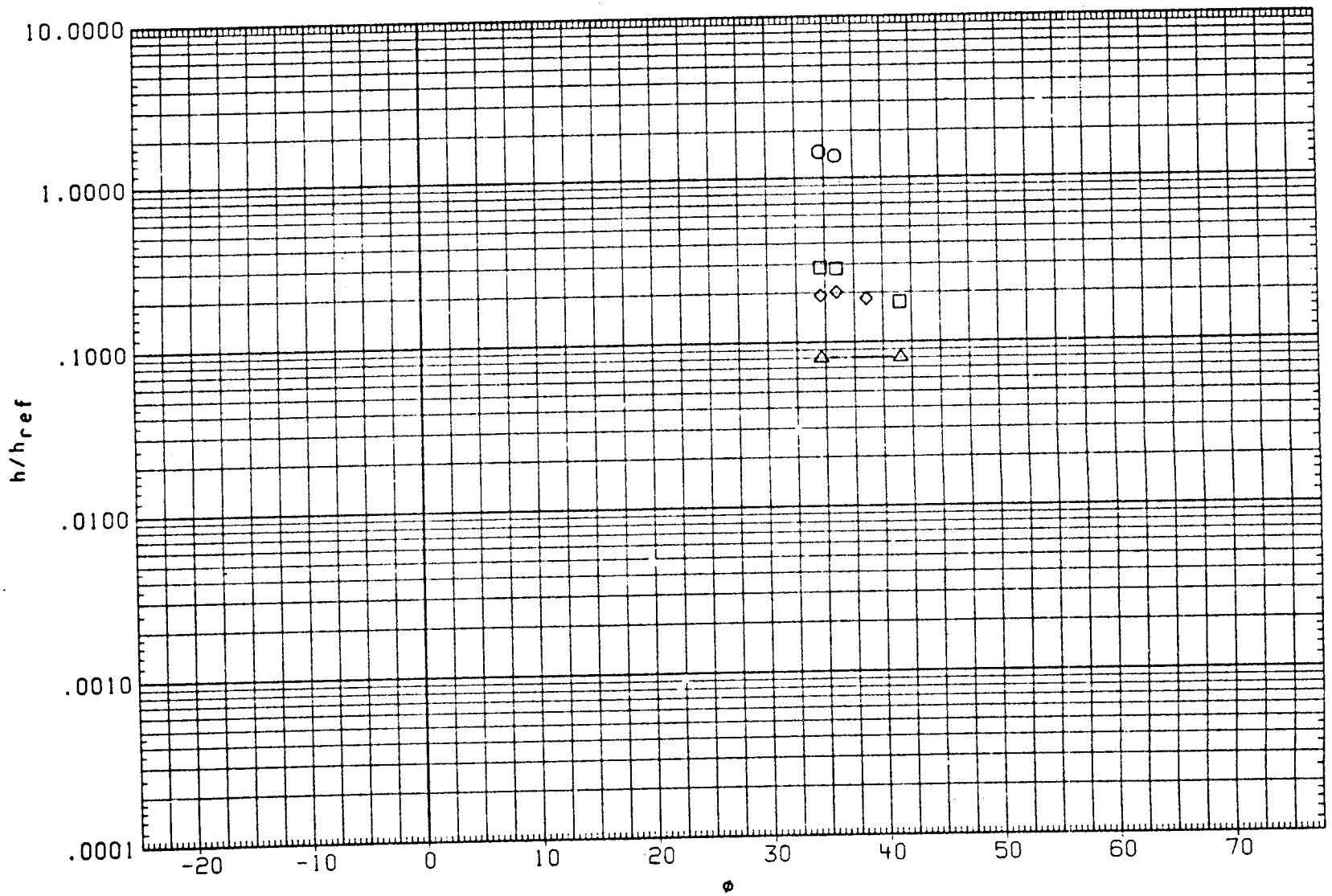

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 350

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

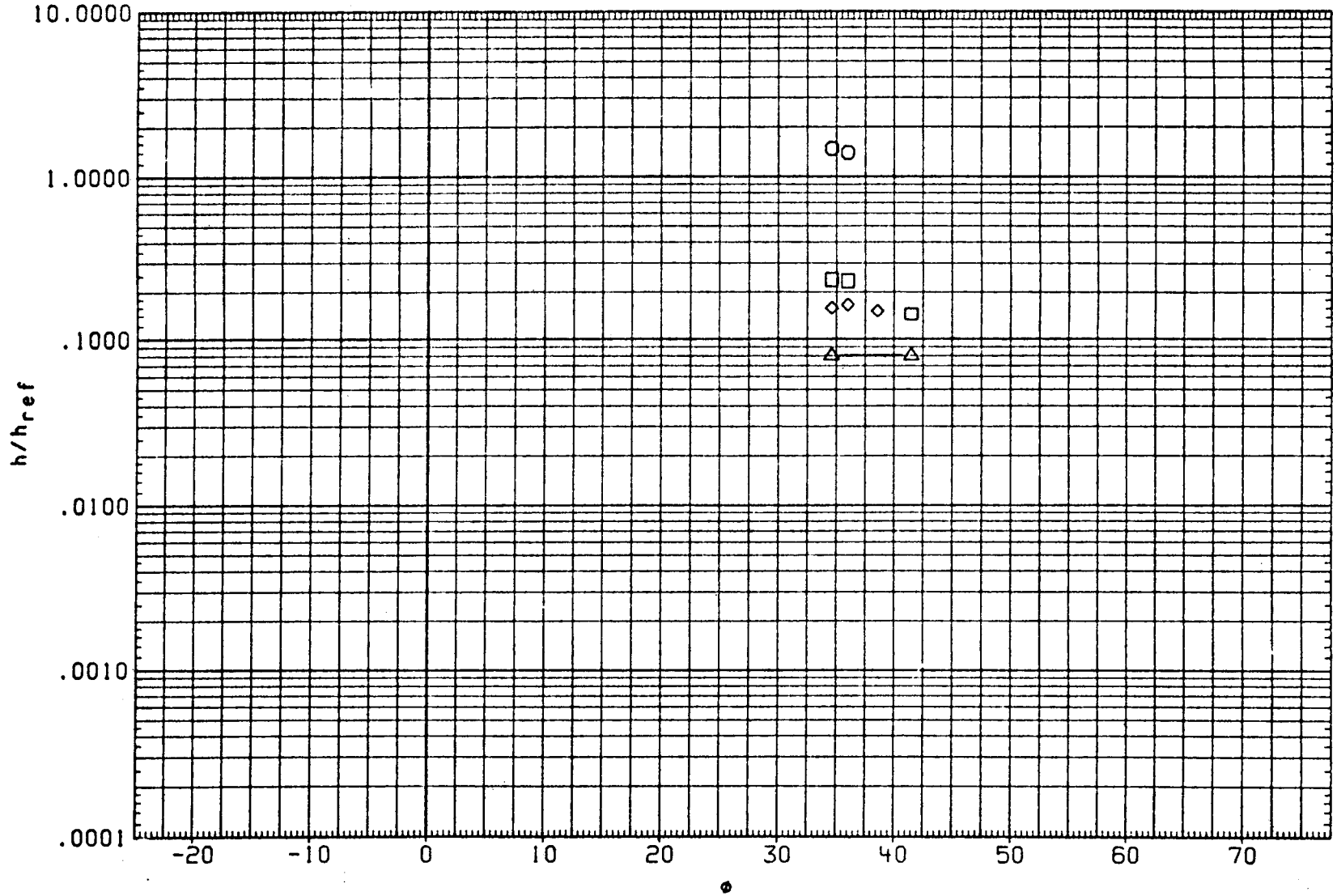

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 351

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

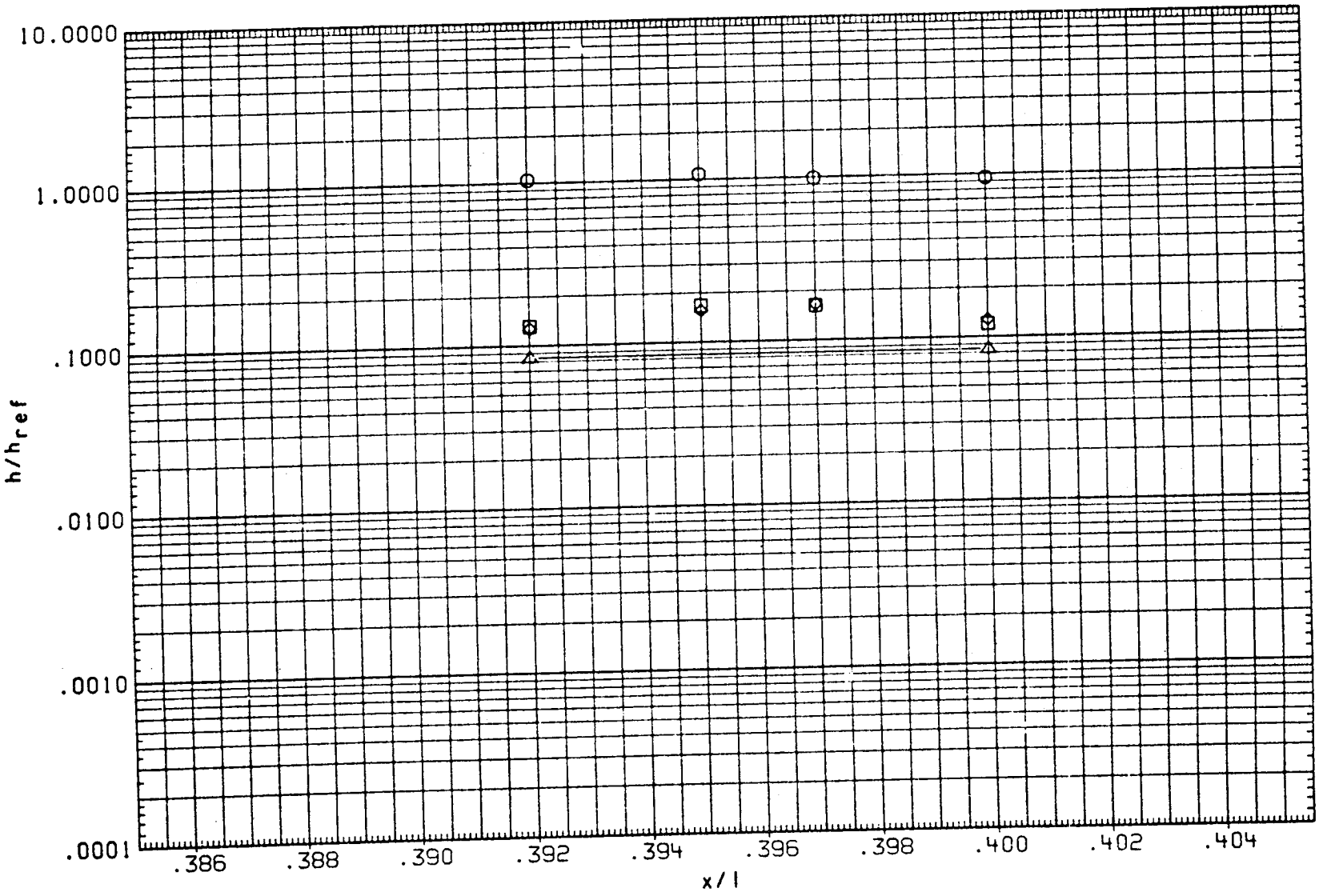

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

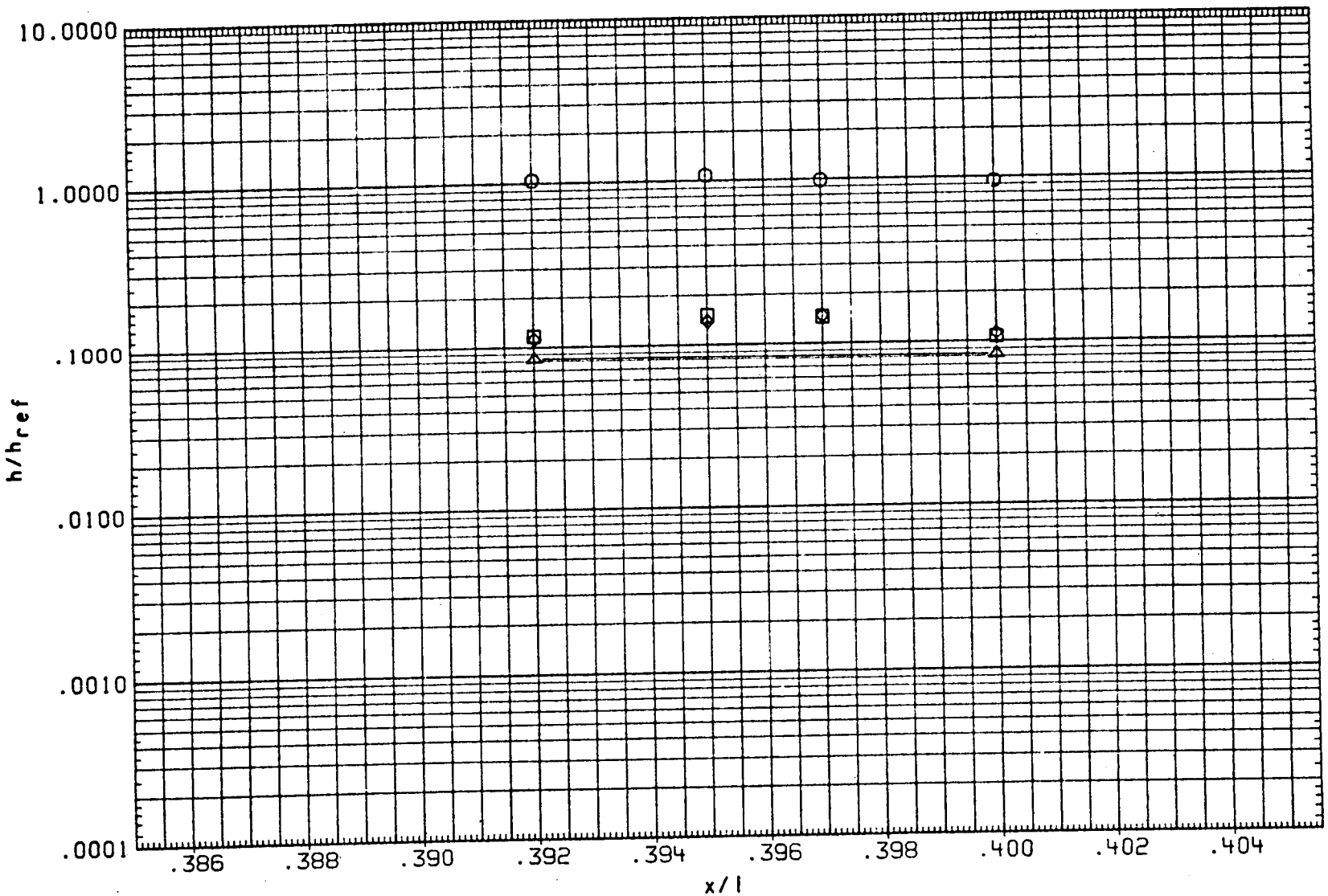

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 353

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

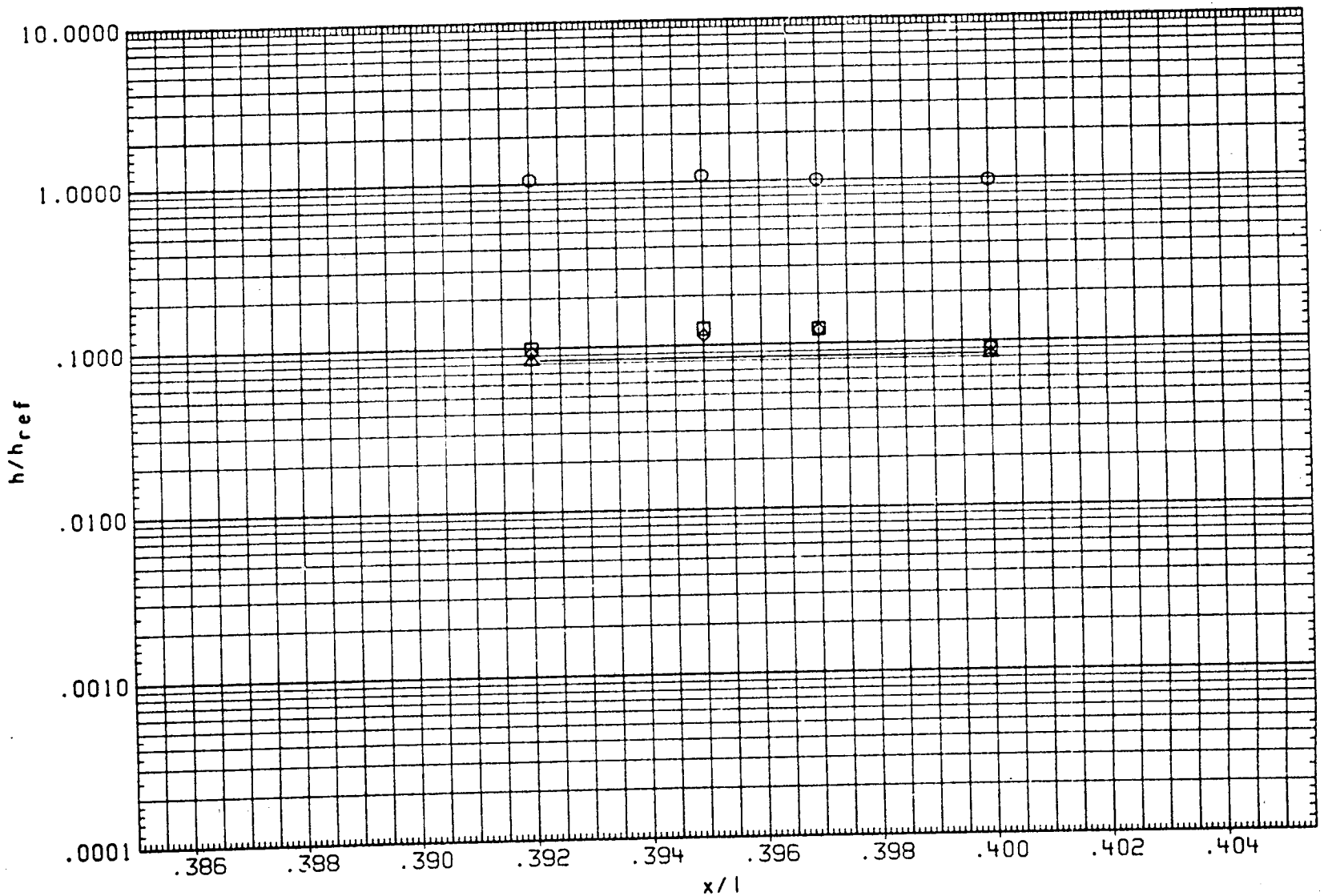

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

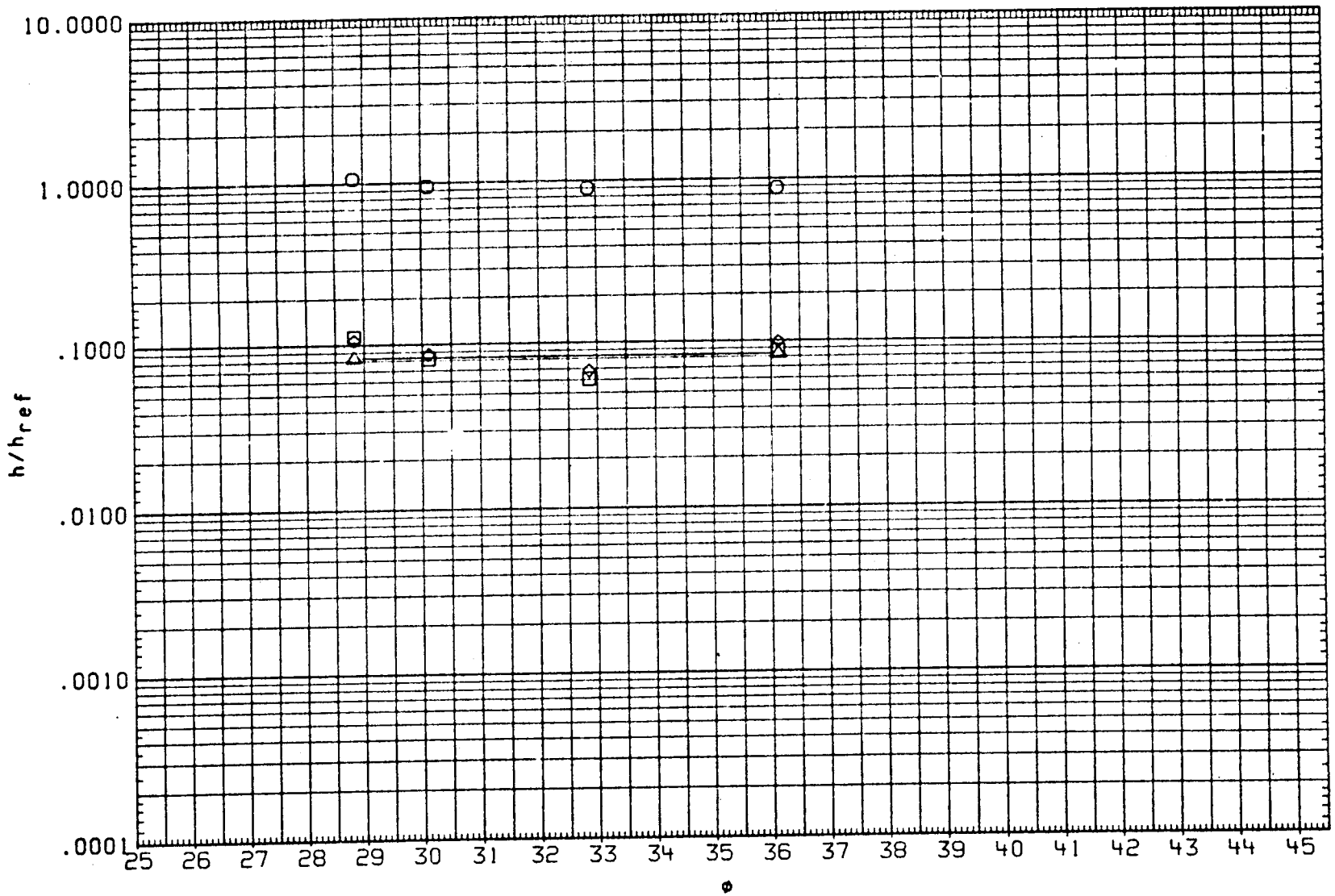

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .403 DATE 22 APR 78 PAGE 355

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20001)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

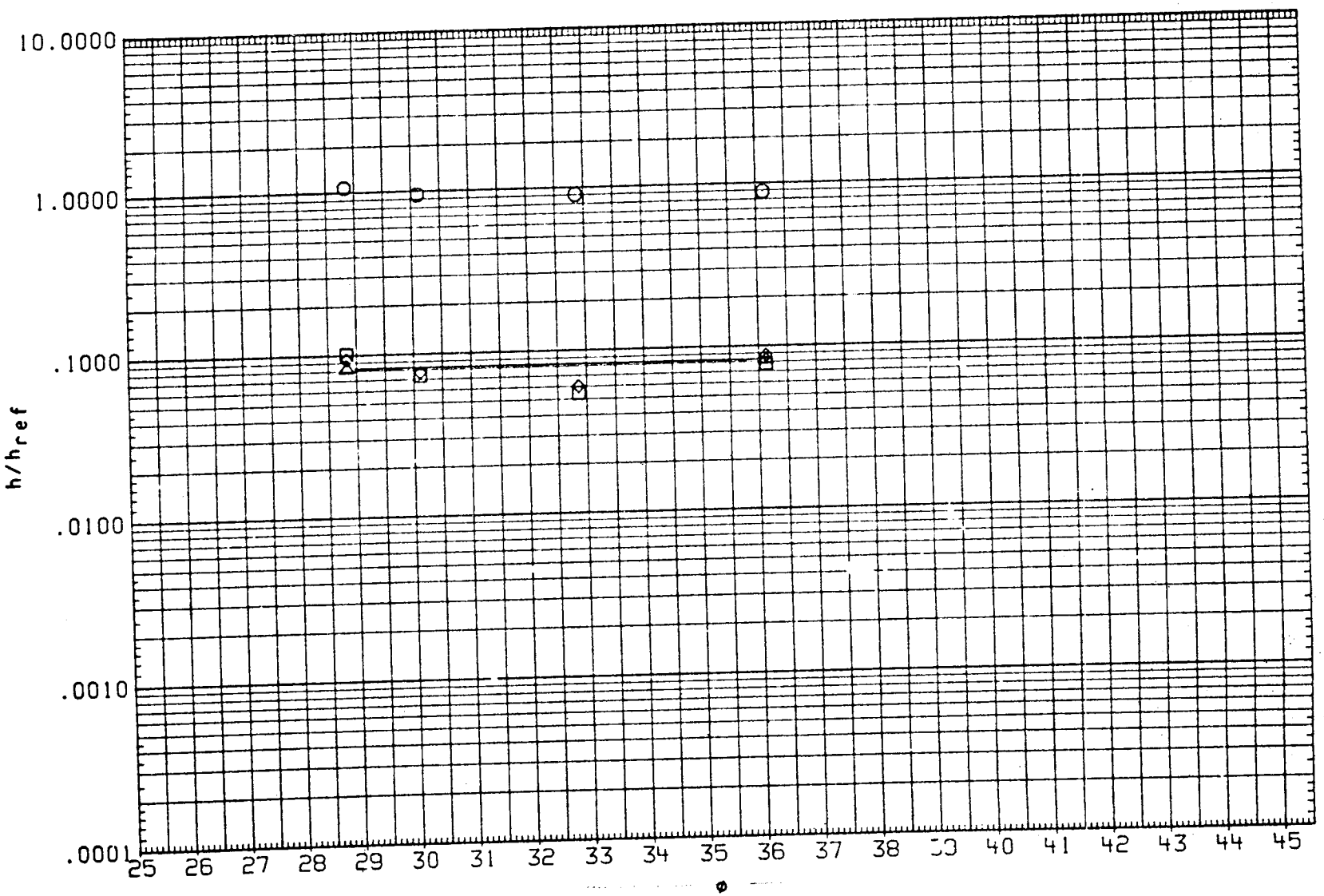

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 356

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

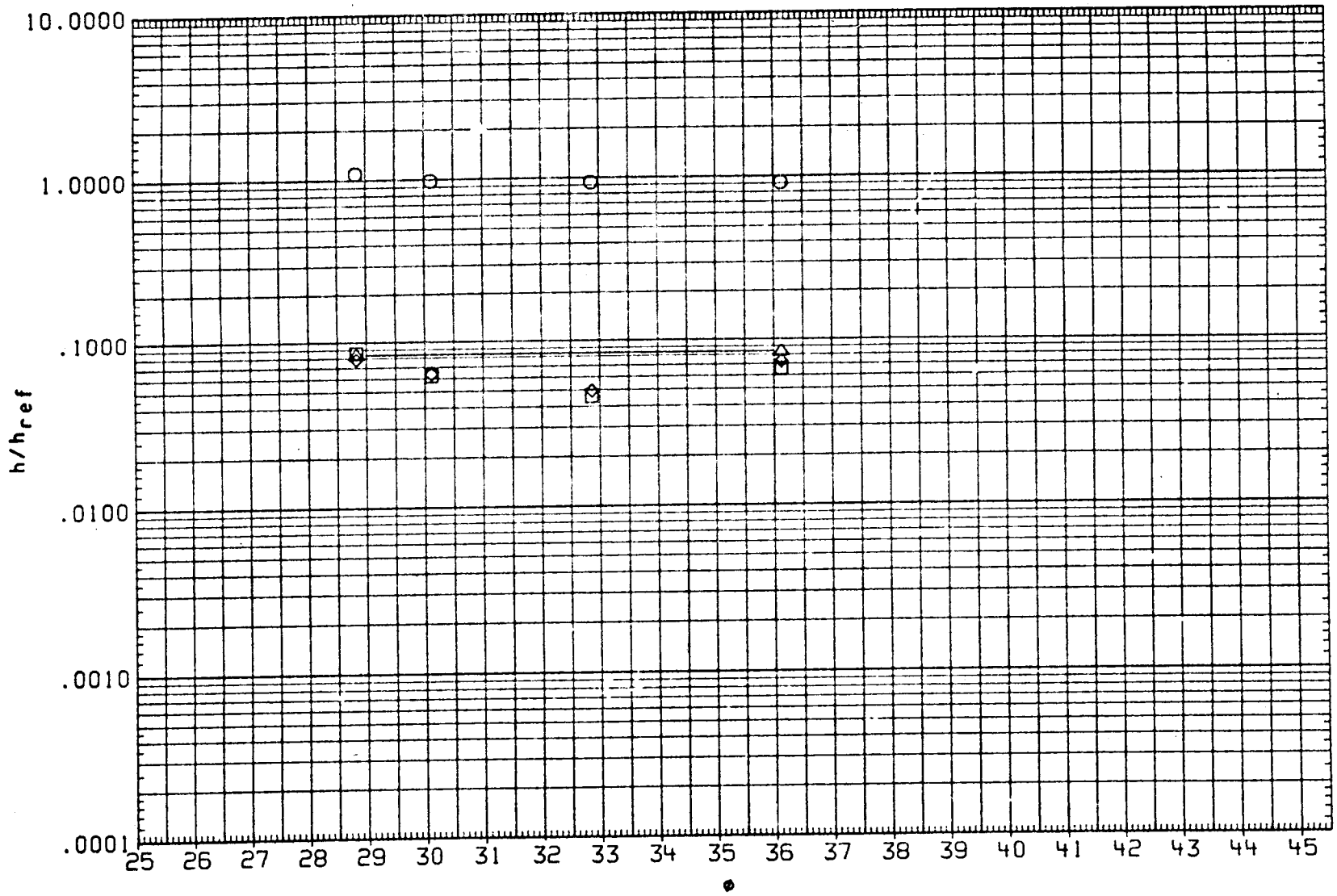

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 357

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

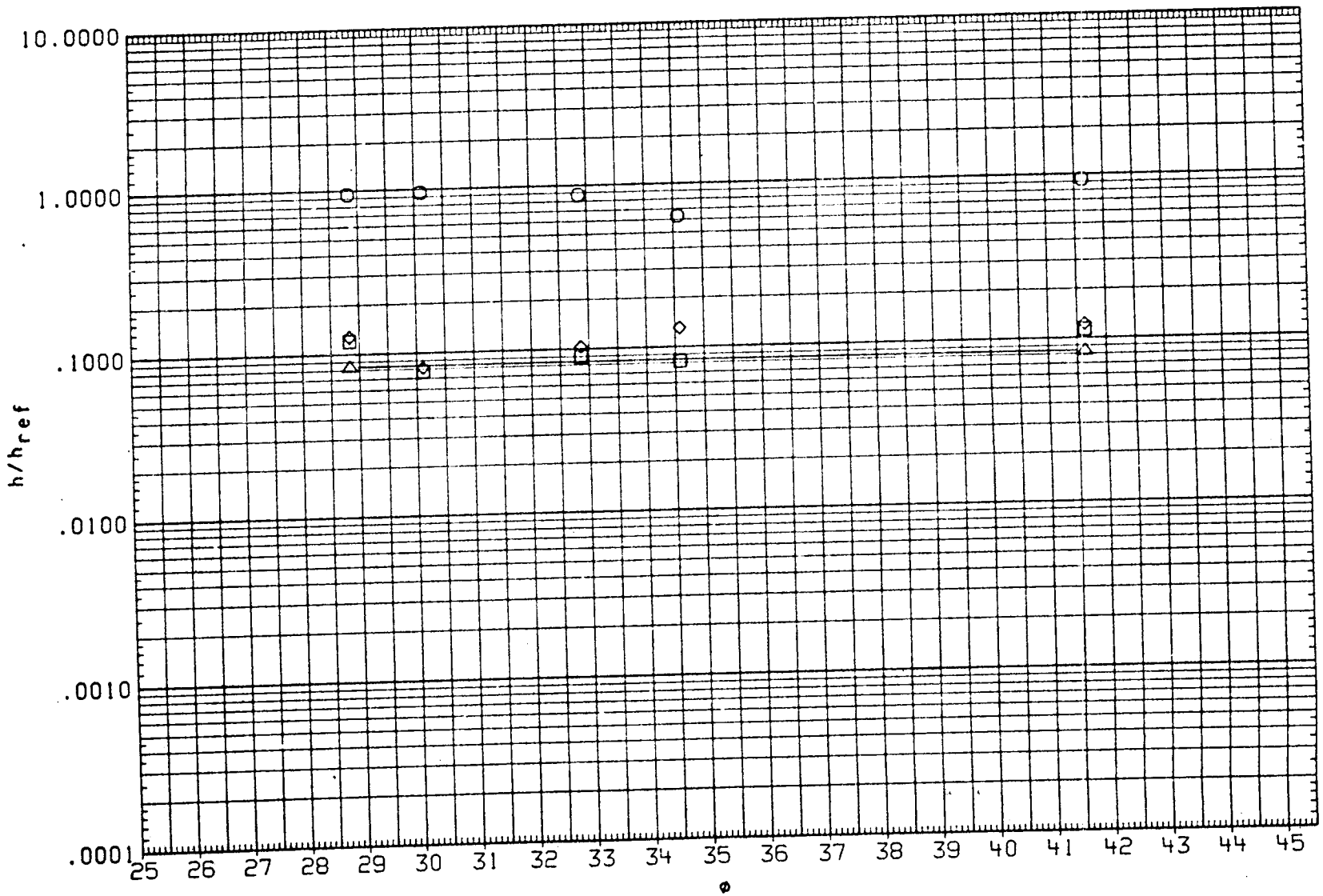

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 358

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20001)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

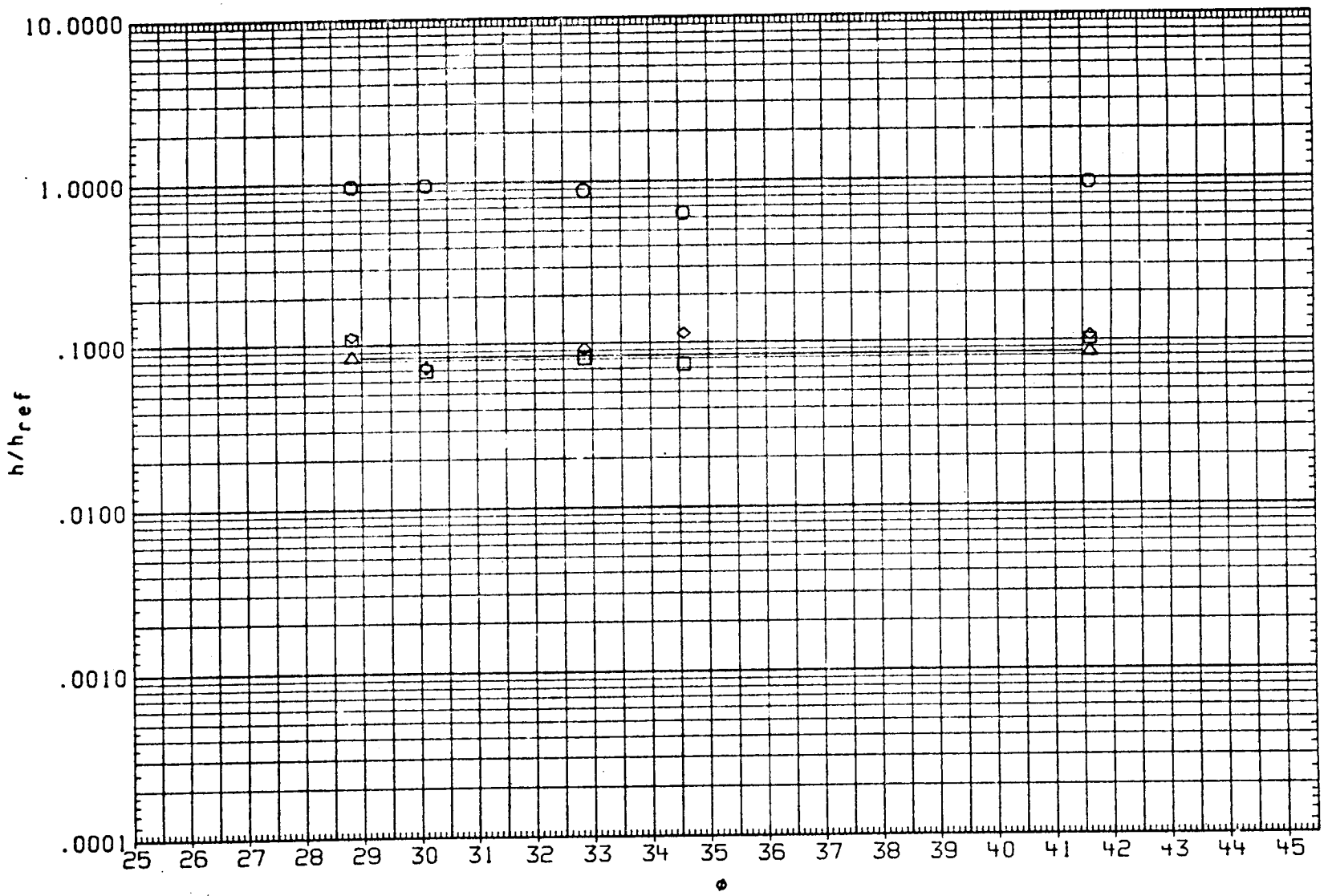

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 359

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

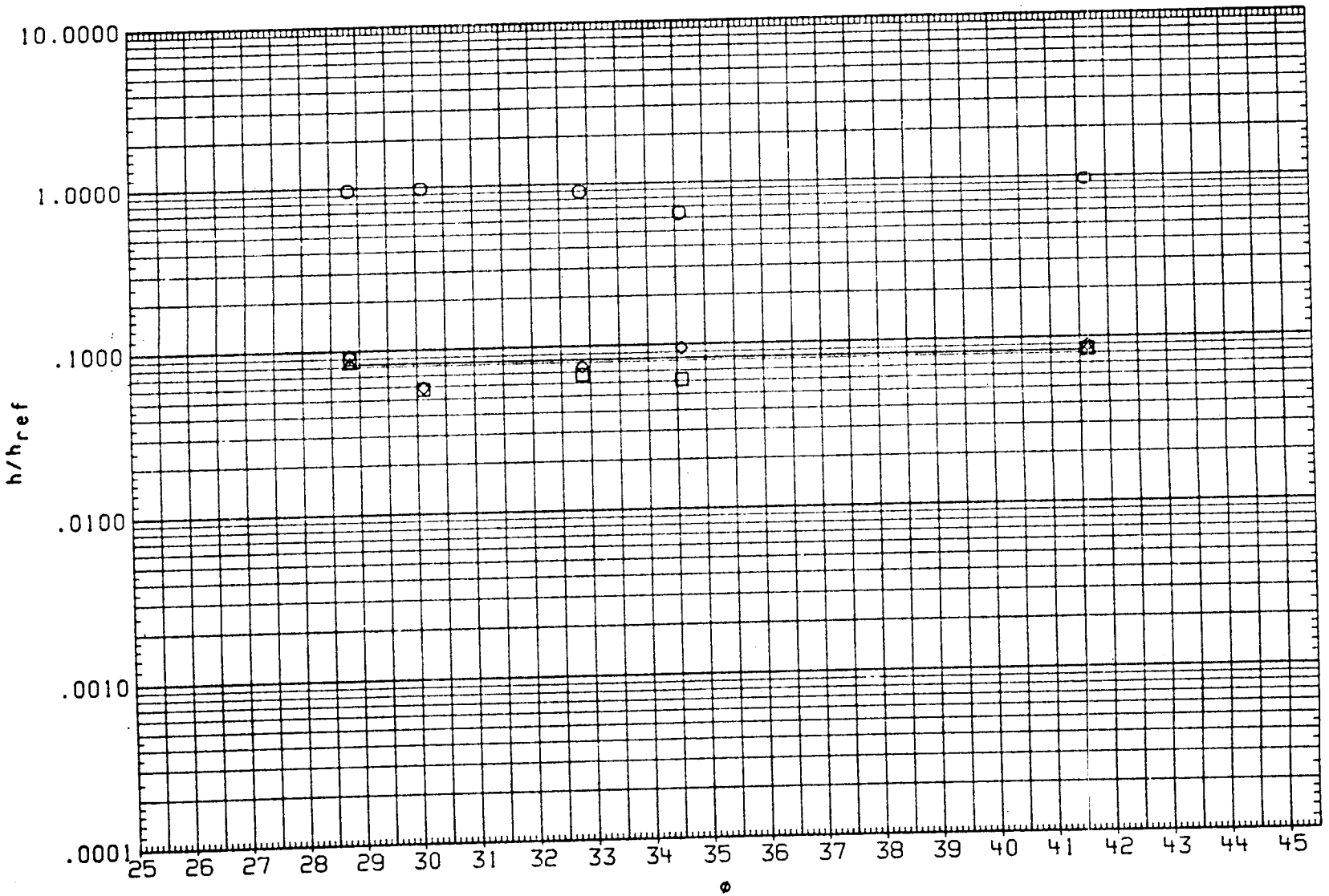

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 360

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

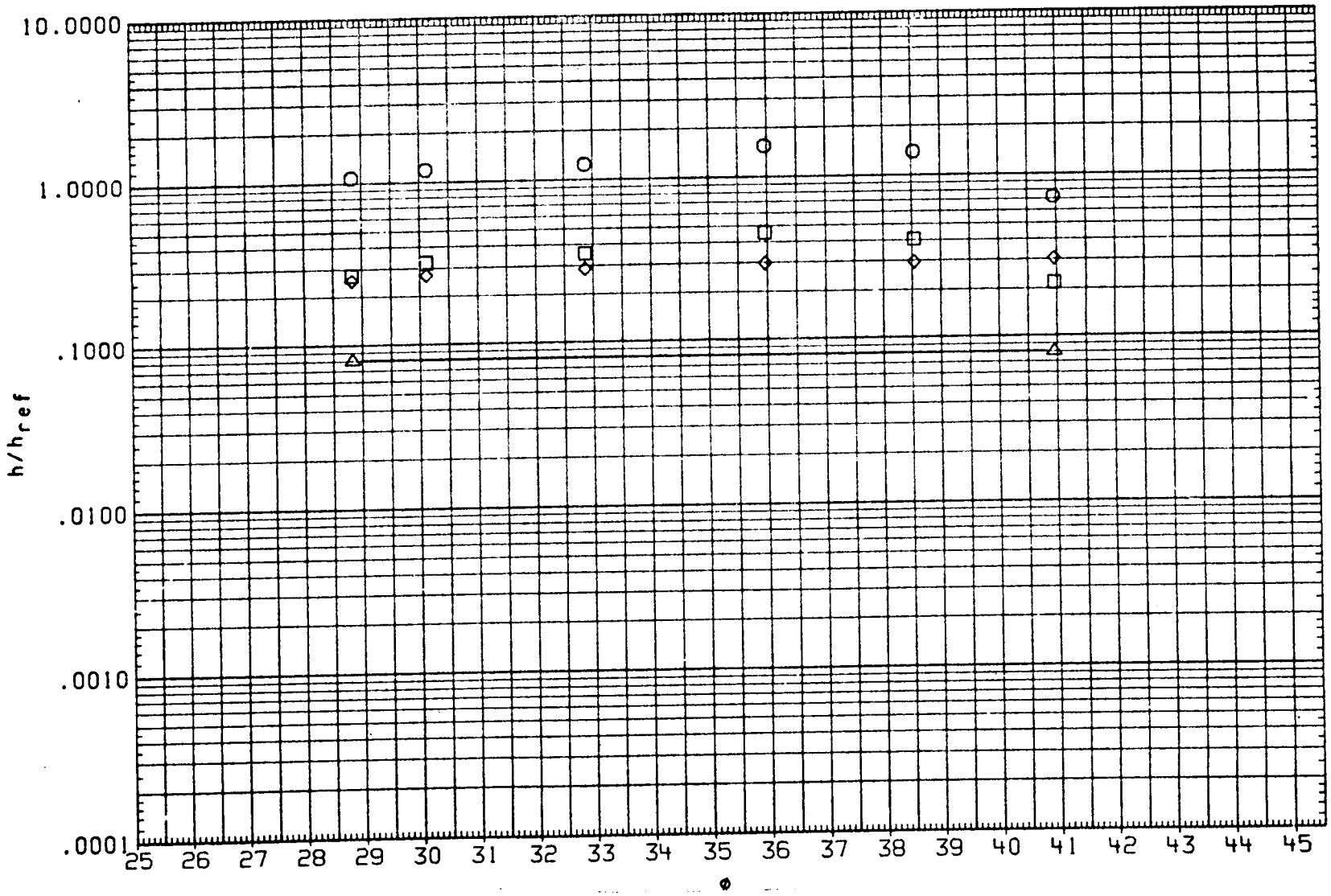

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .540 DATE 22 APR 78 PAGE 361

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

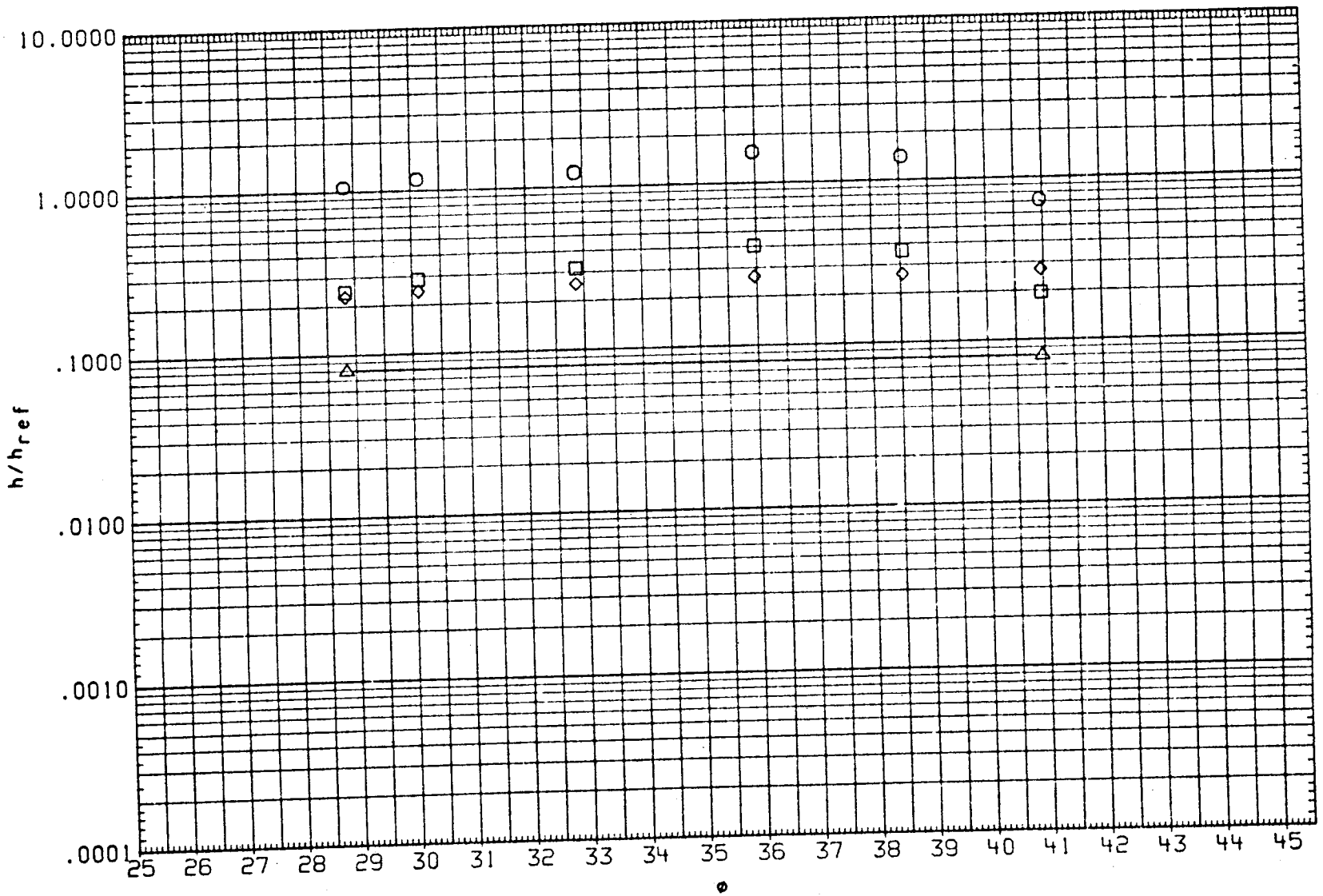

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .540 DATE 22 APR 78 PAGE 362

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

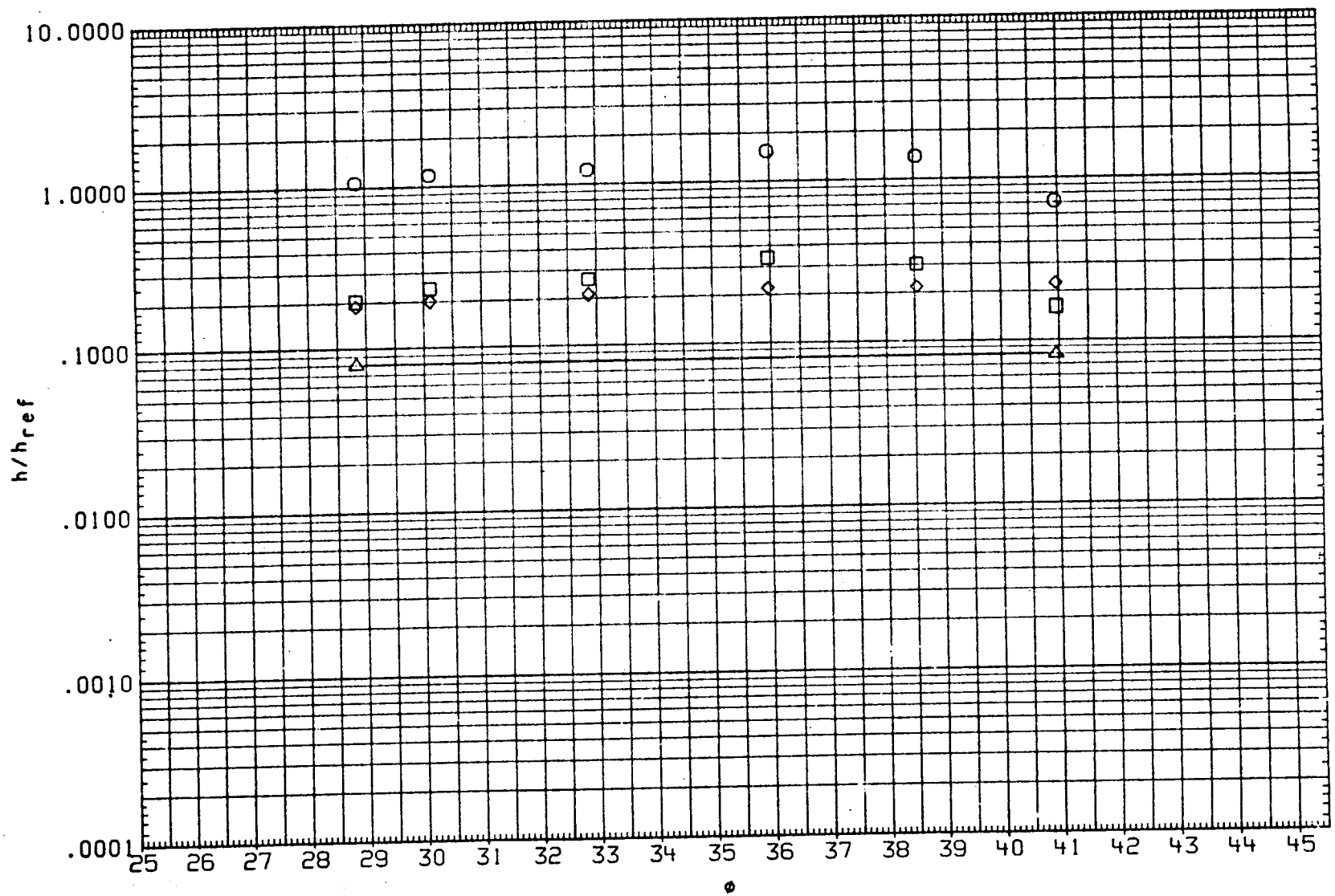

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 363

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

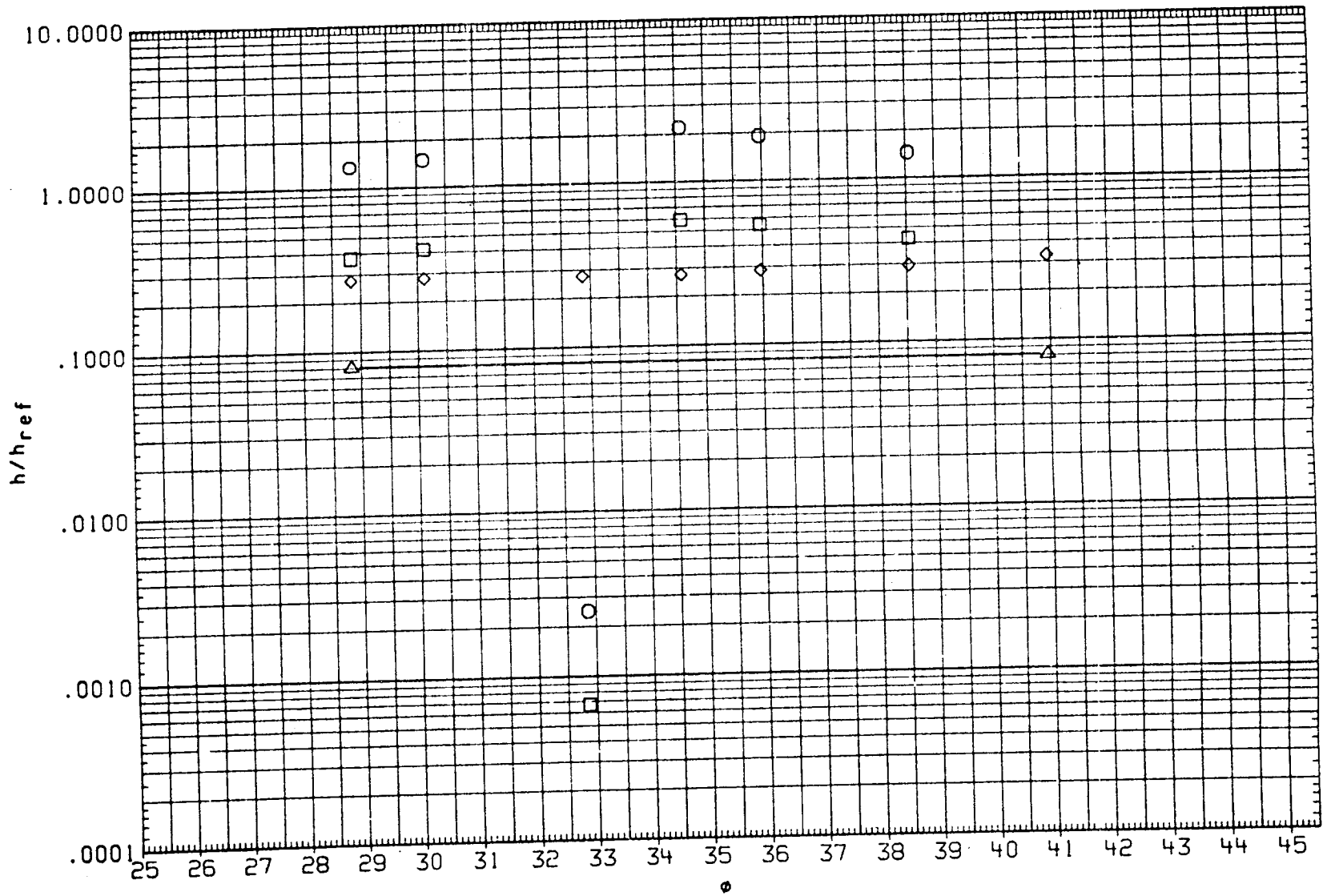

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 364

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

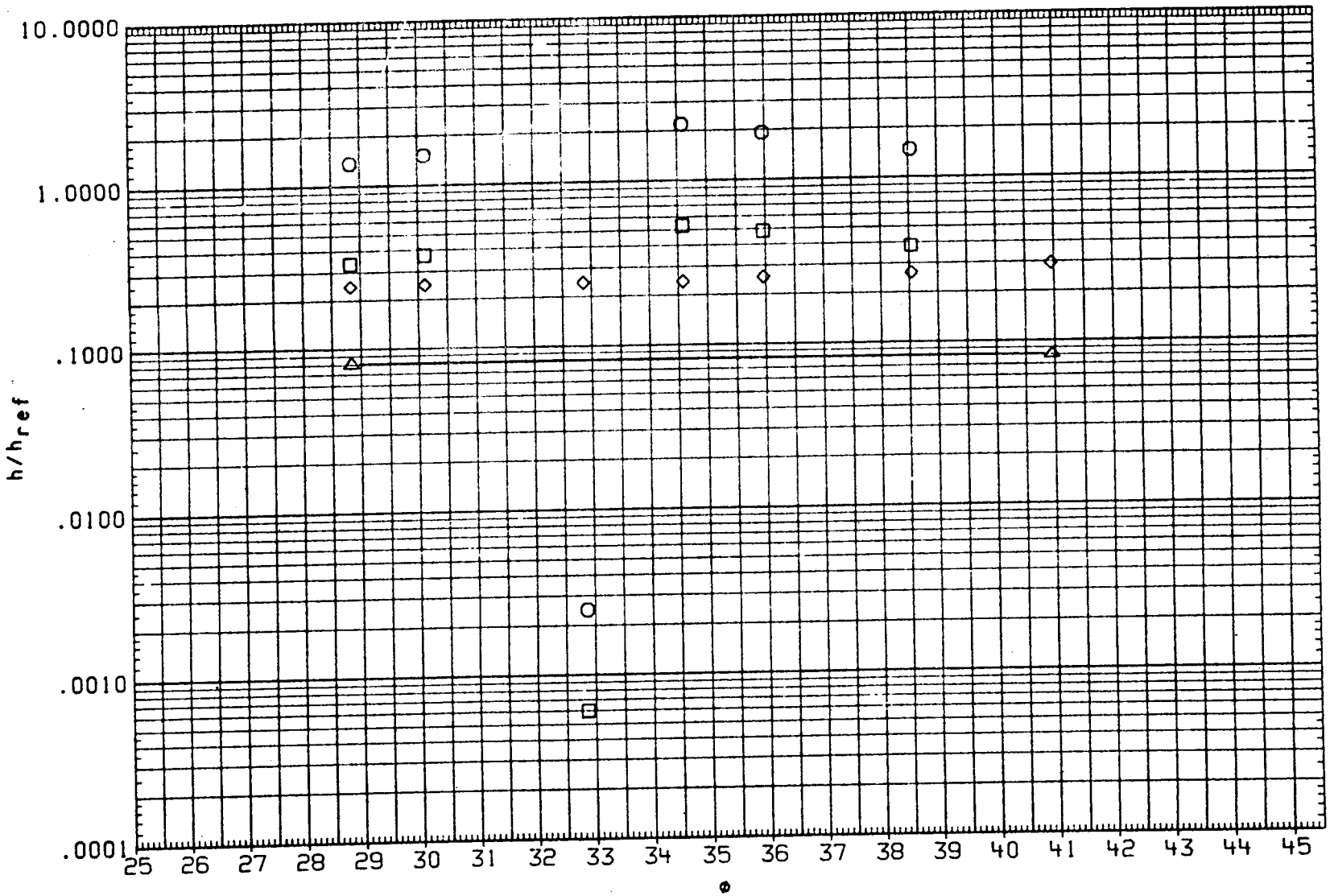

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .542 DATE 22 APR 78 PAGE 365

SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

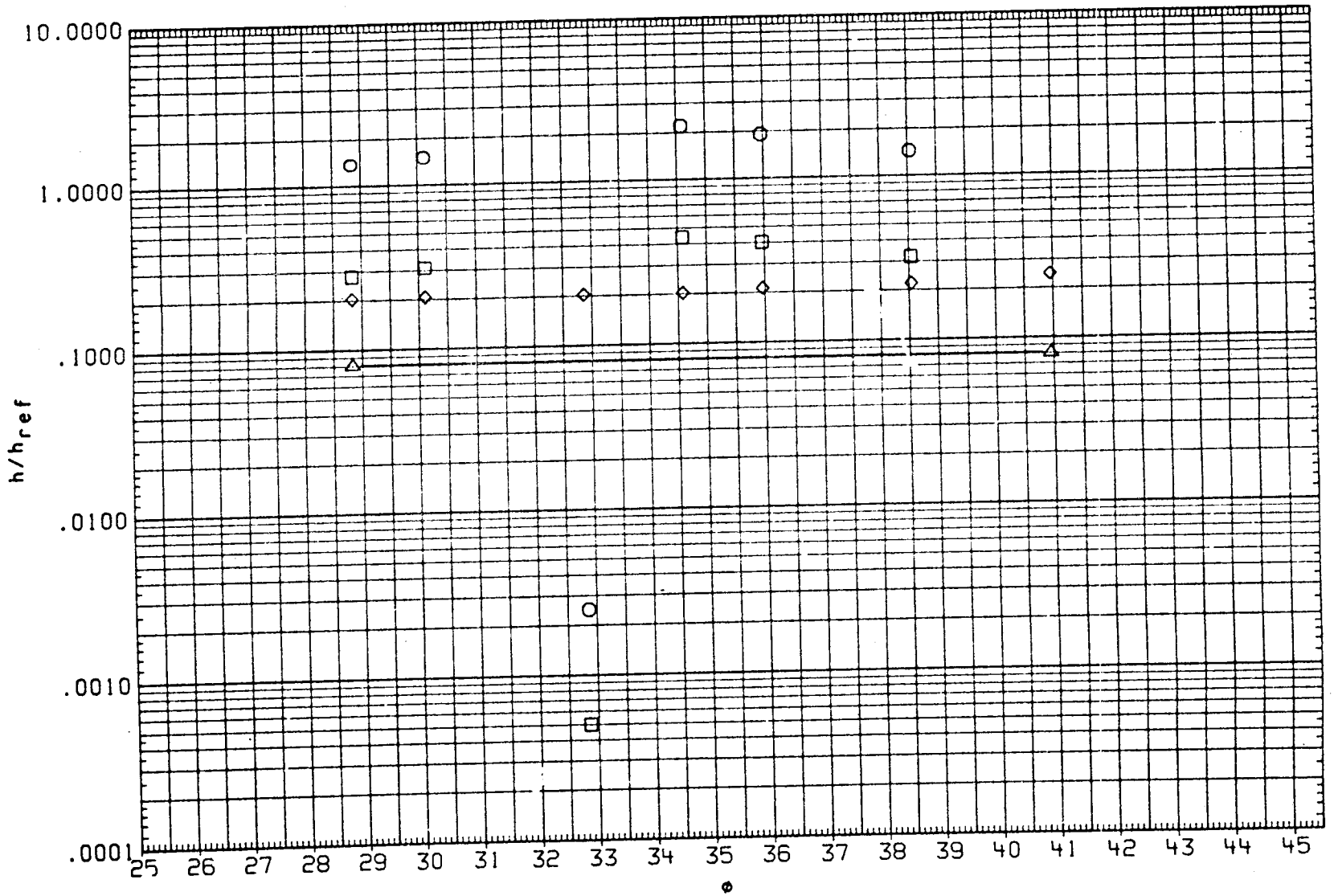

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 366

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

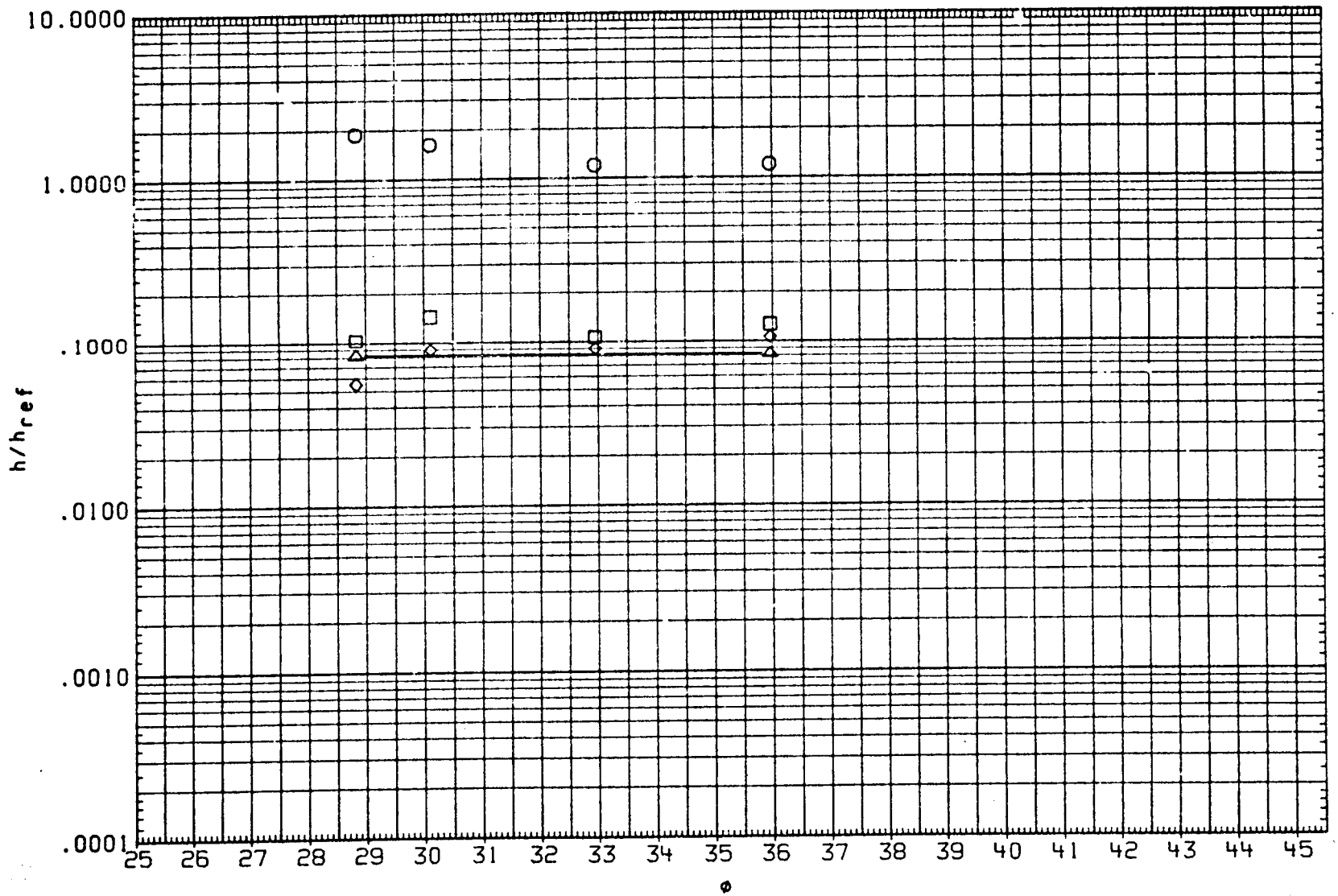

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .441 DATE 22 APR 78 PAGE 367

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

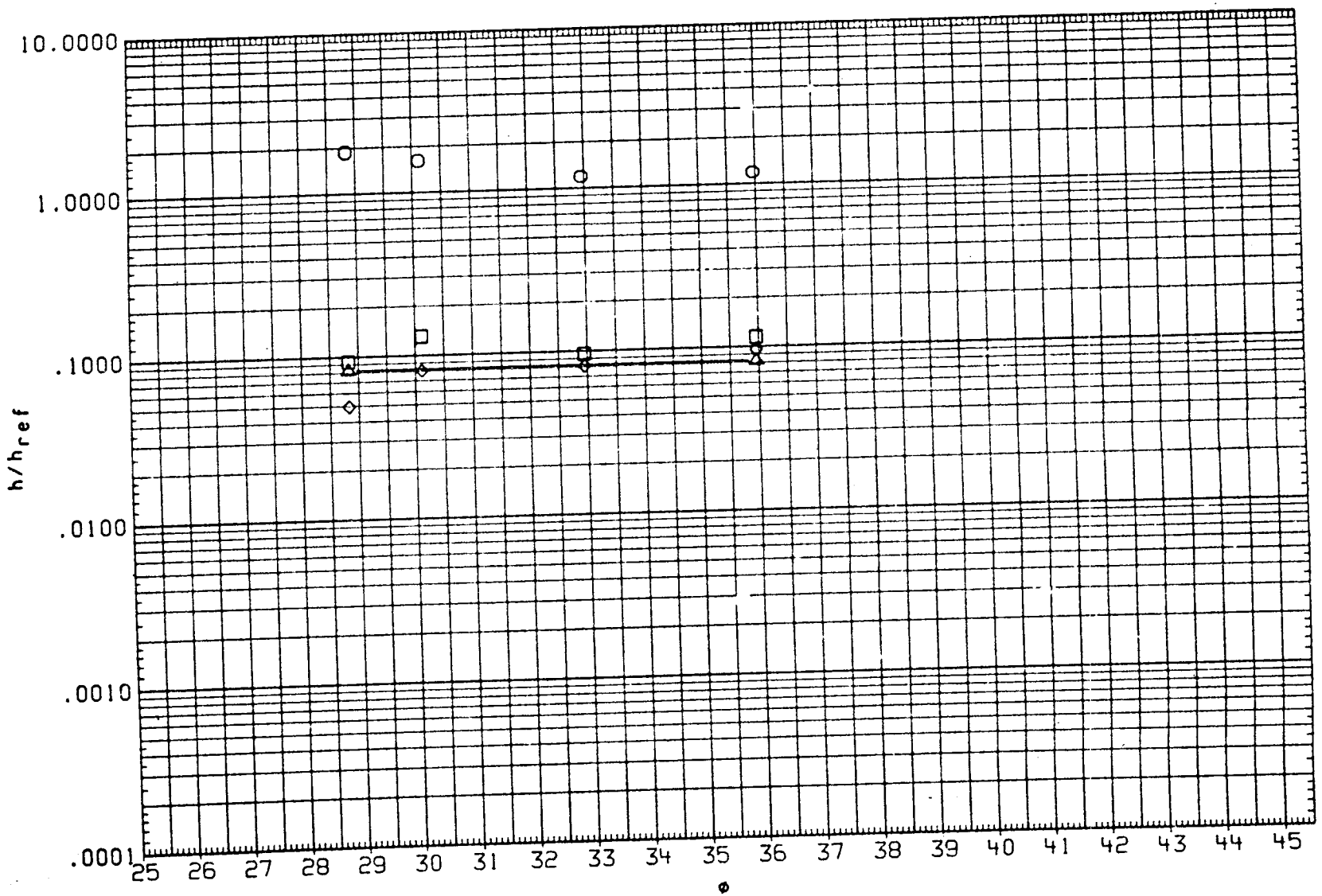

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .441 DATE 22 APR 78 PAGE 368

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20008)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20001)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20008)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20056)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

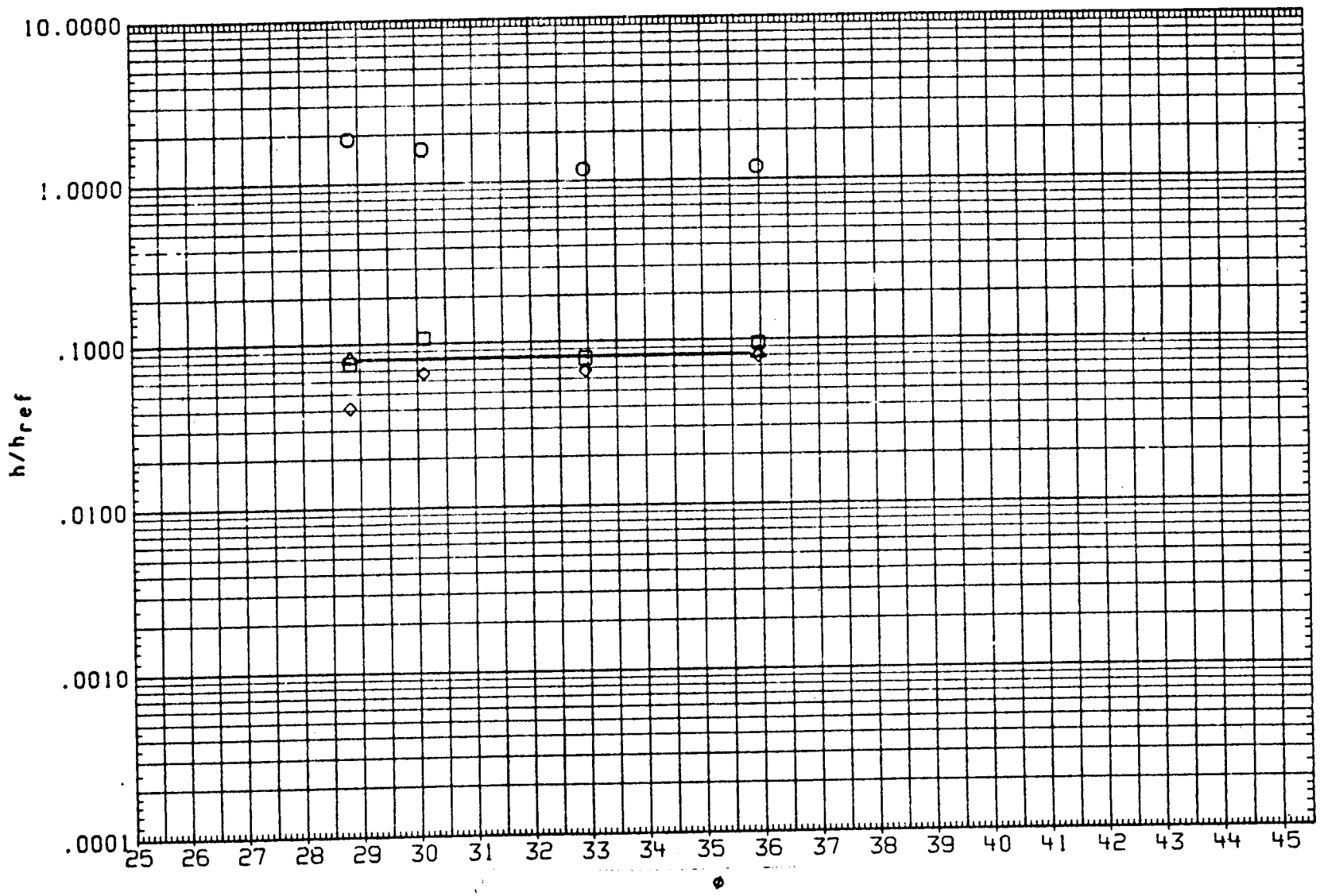

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .441 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

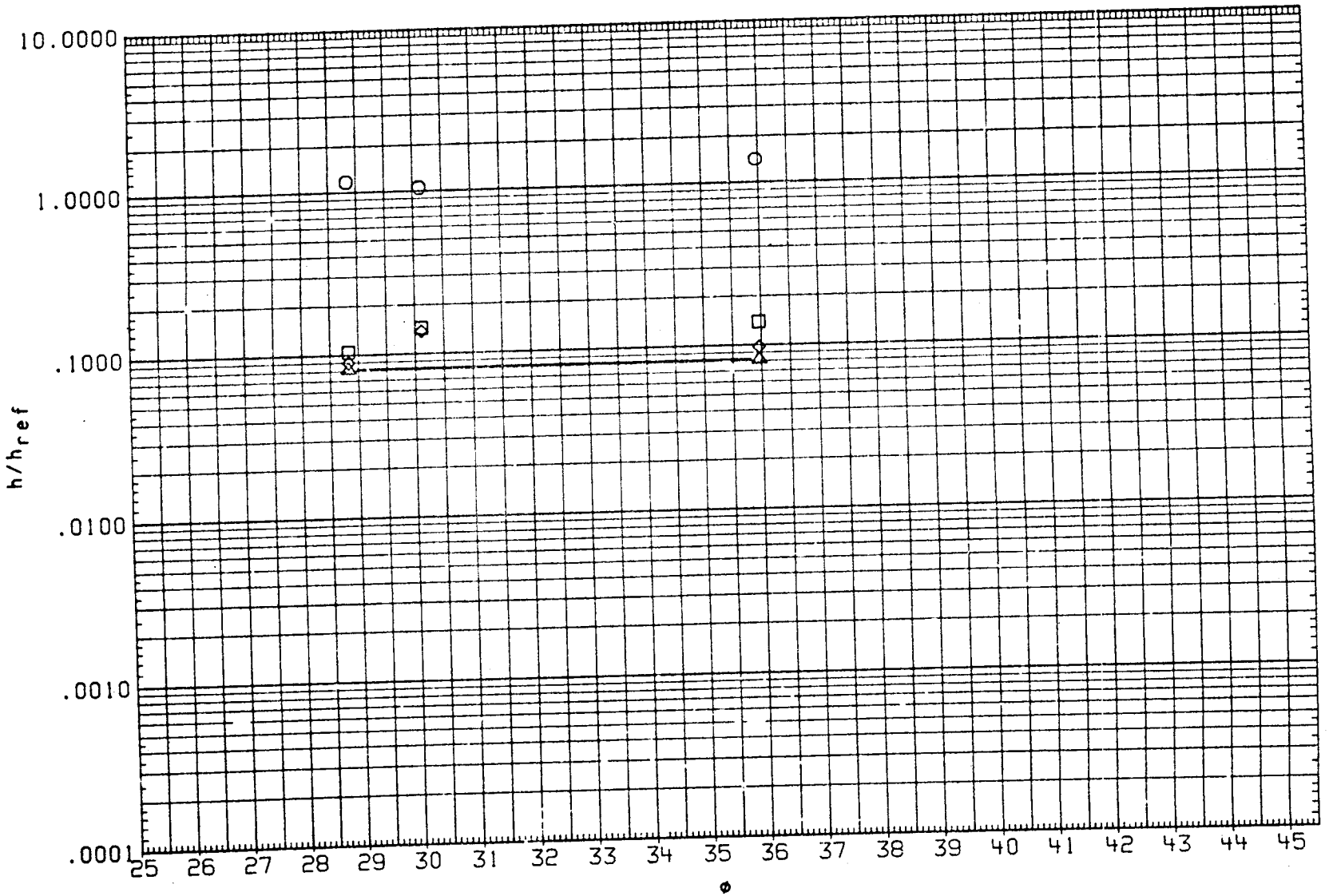

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 370

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

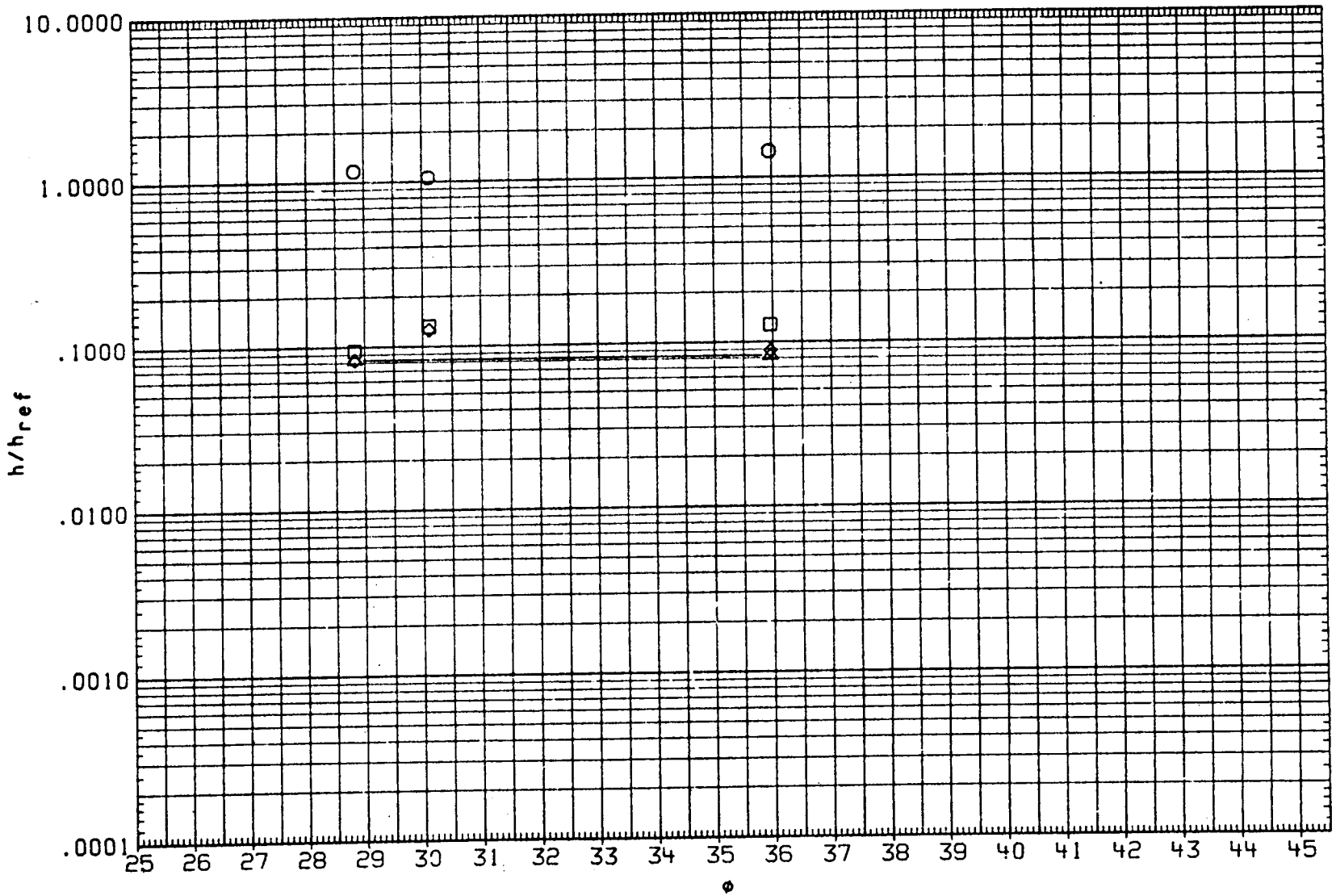

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .443 DATE 22 APR 78 PAGE 371

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

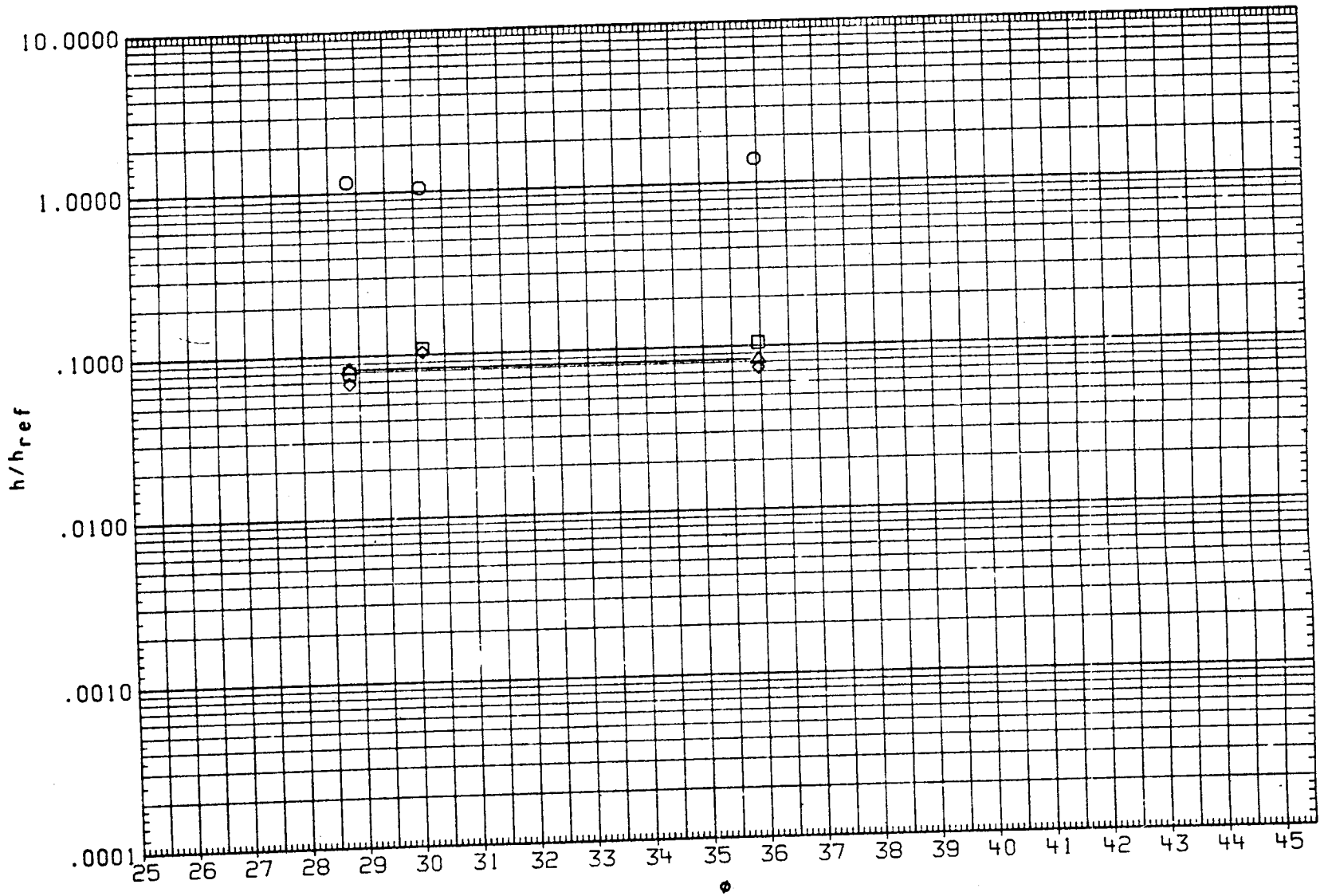

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .443 DATE 22 APR 78 PAGE 372

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(T20001)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

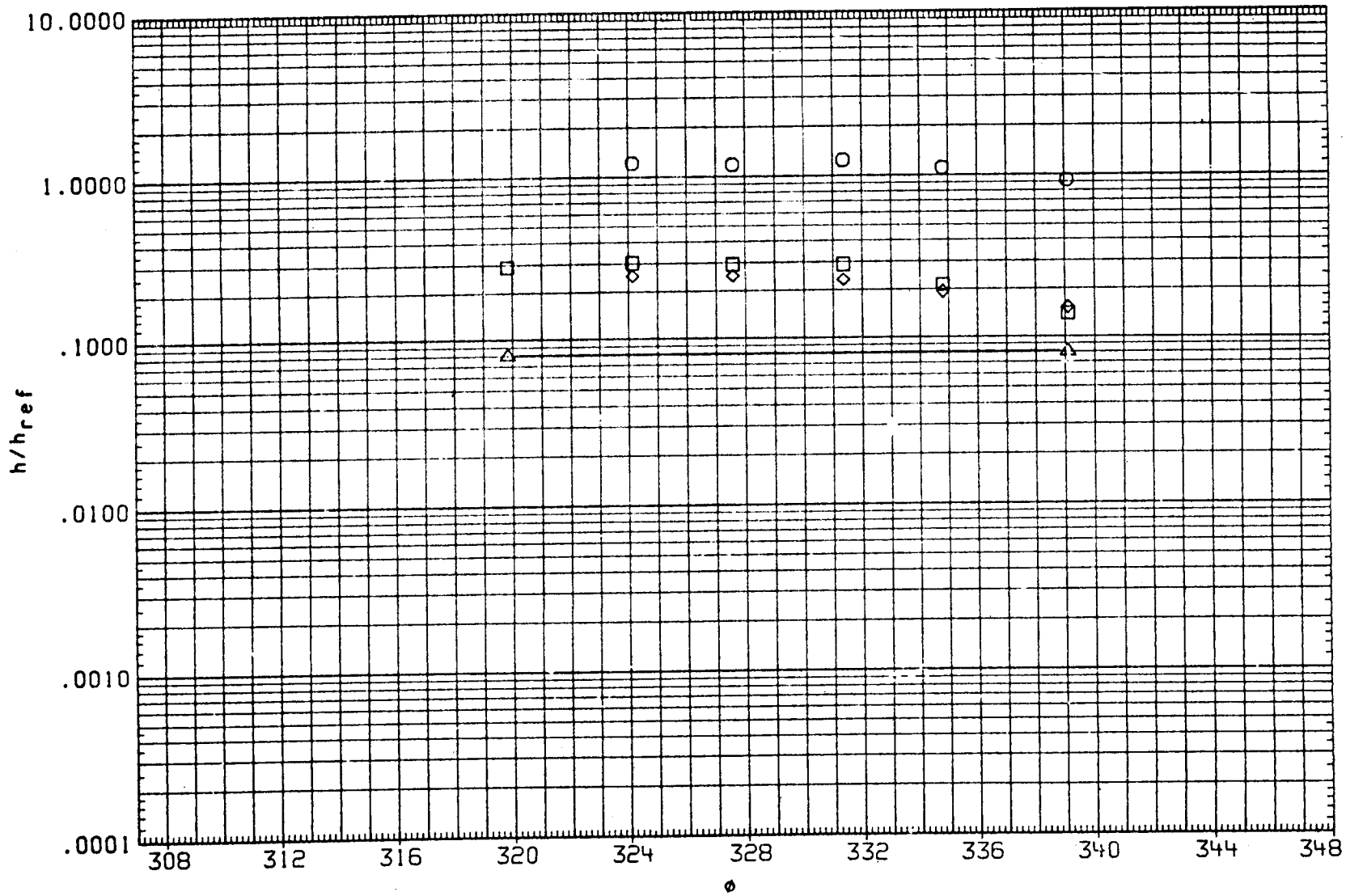

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .571 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

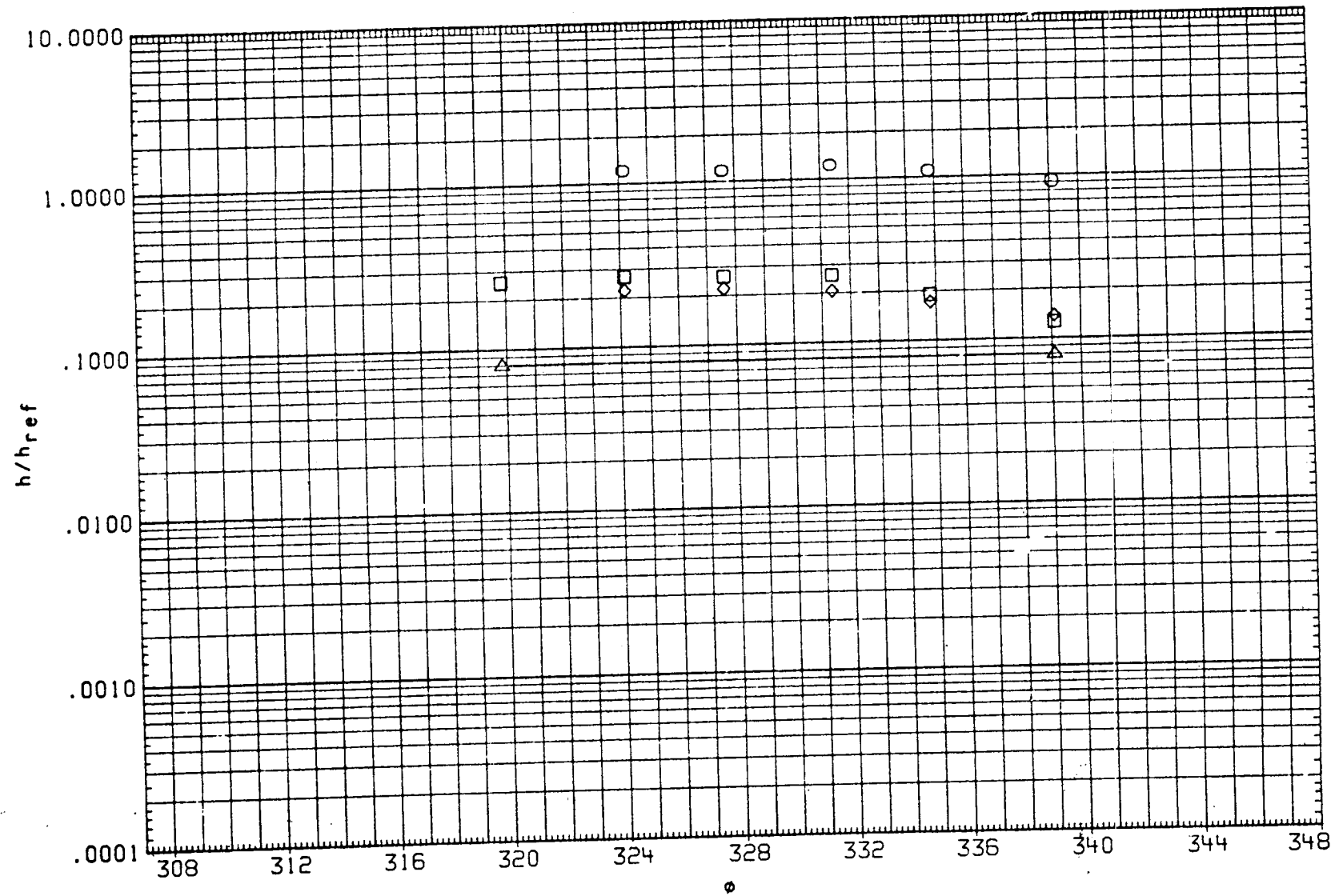

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 374

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

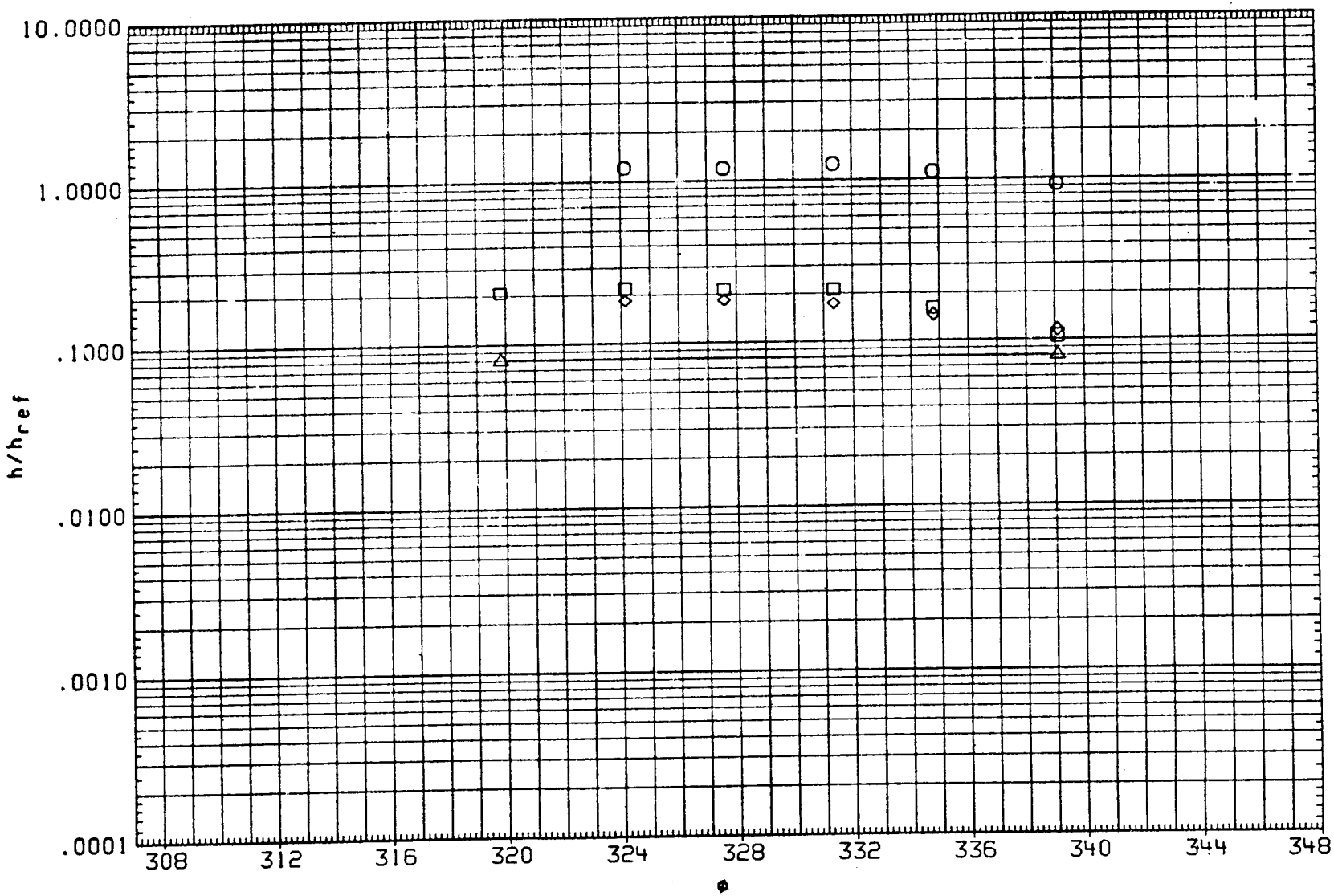

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

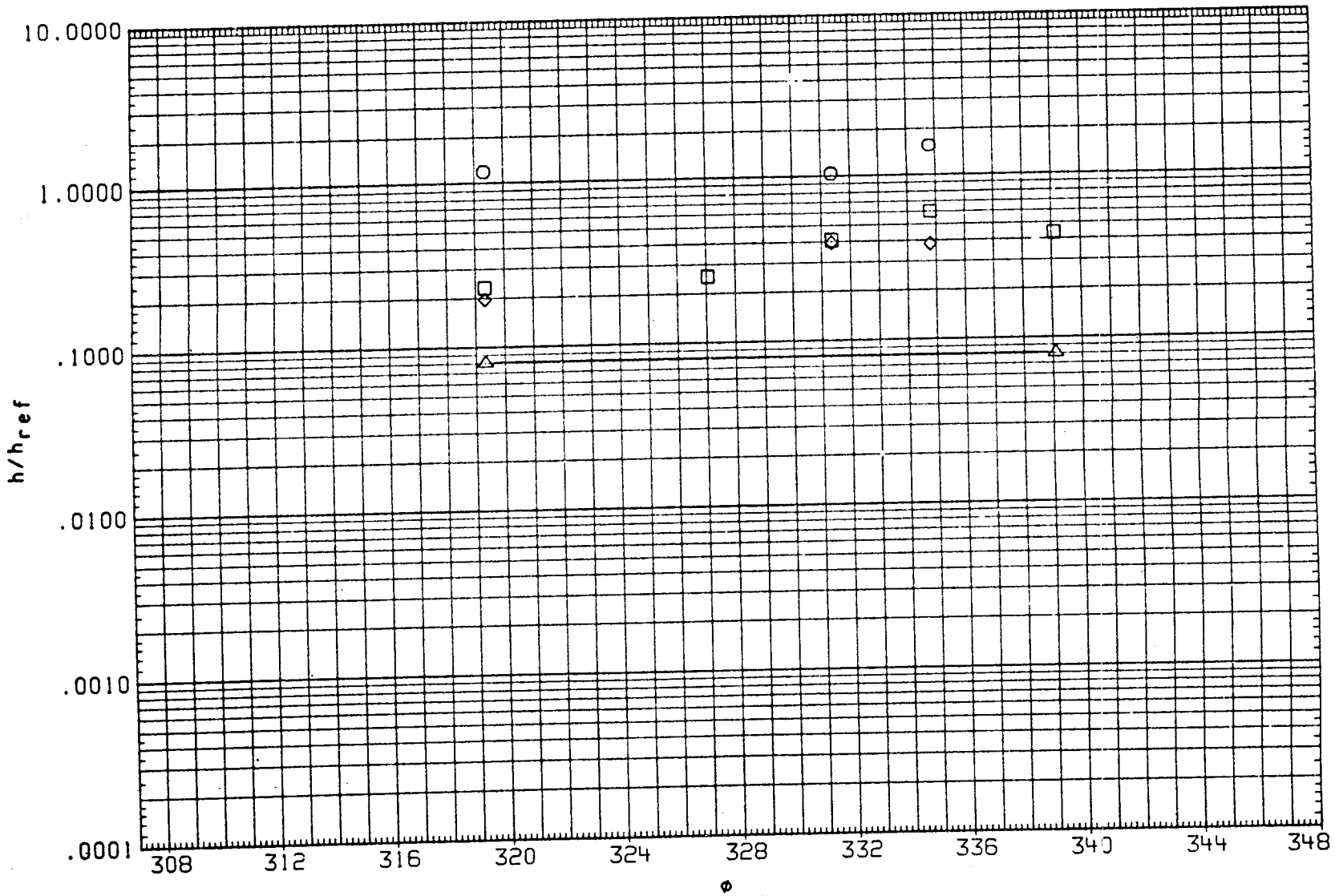

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 376

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

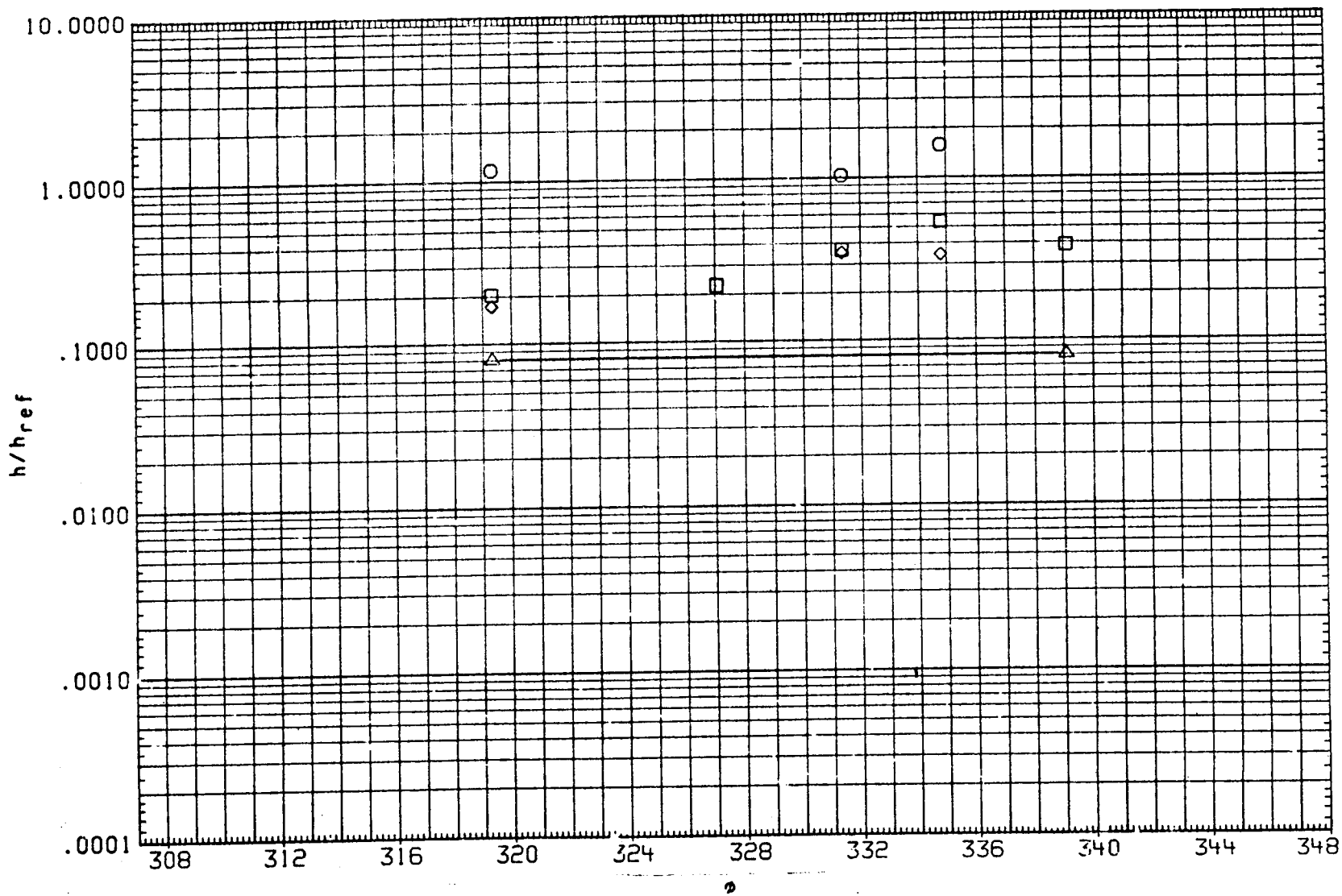

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 377

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

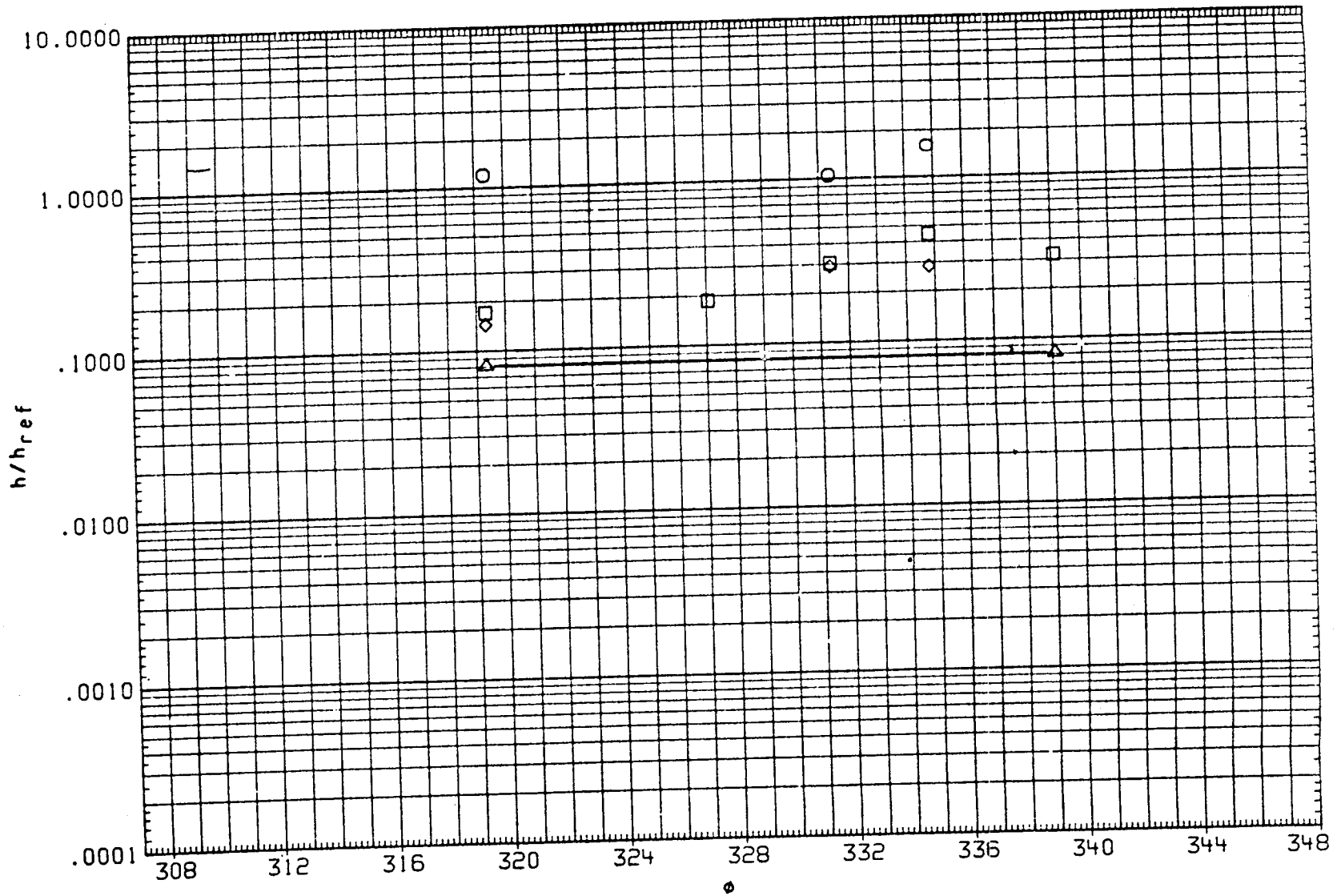

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 378

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

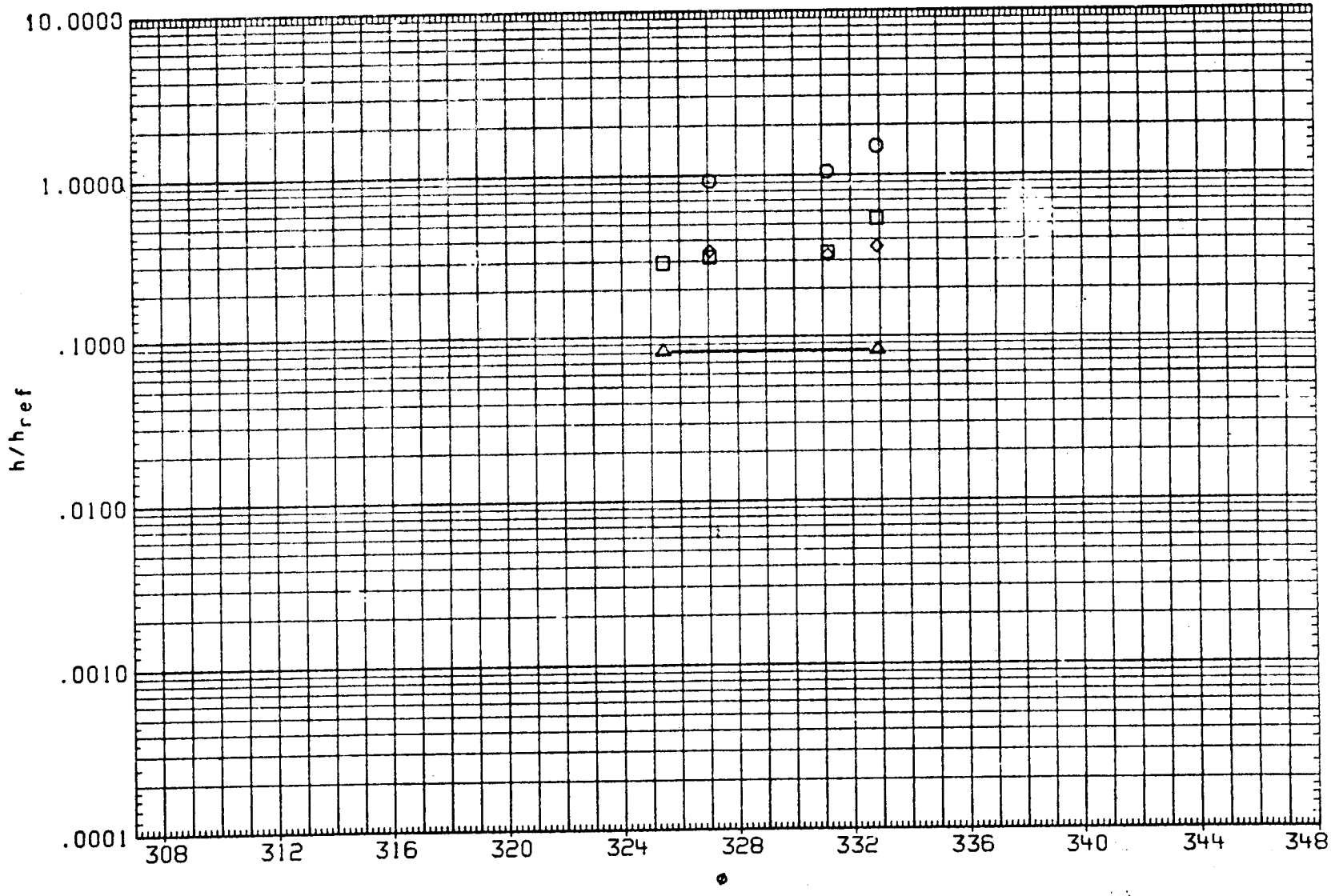

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .482 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

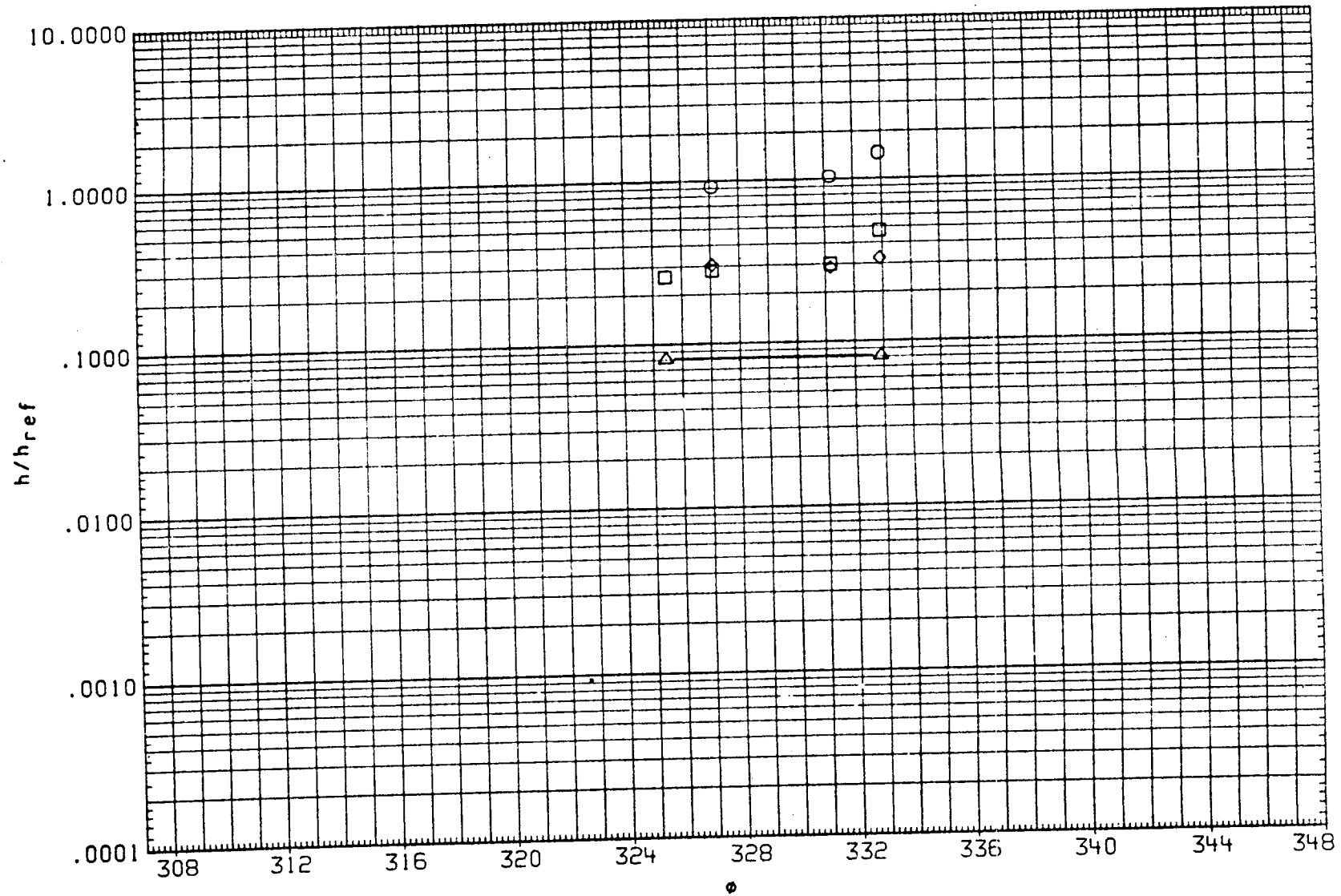

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 380

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V2000B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R2000I)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M2000B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

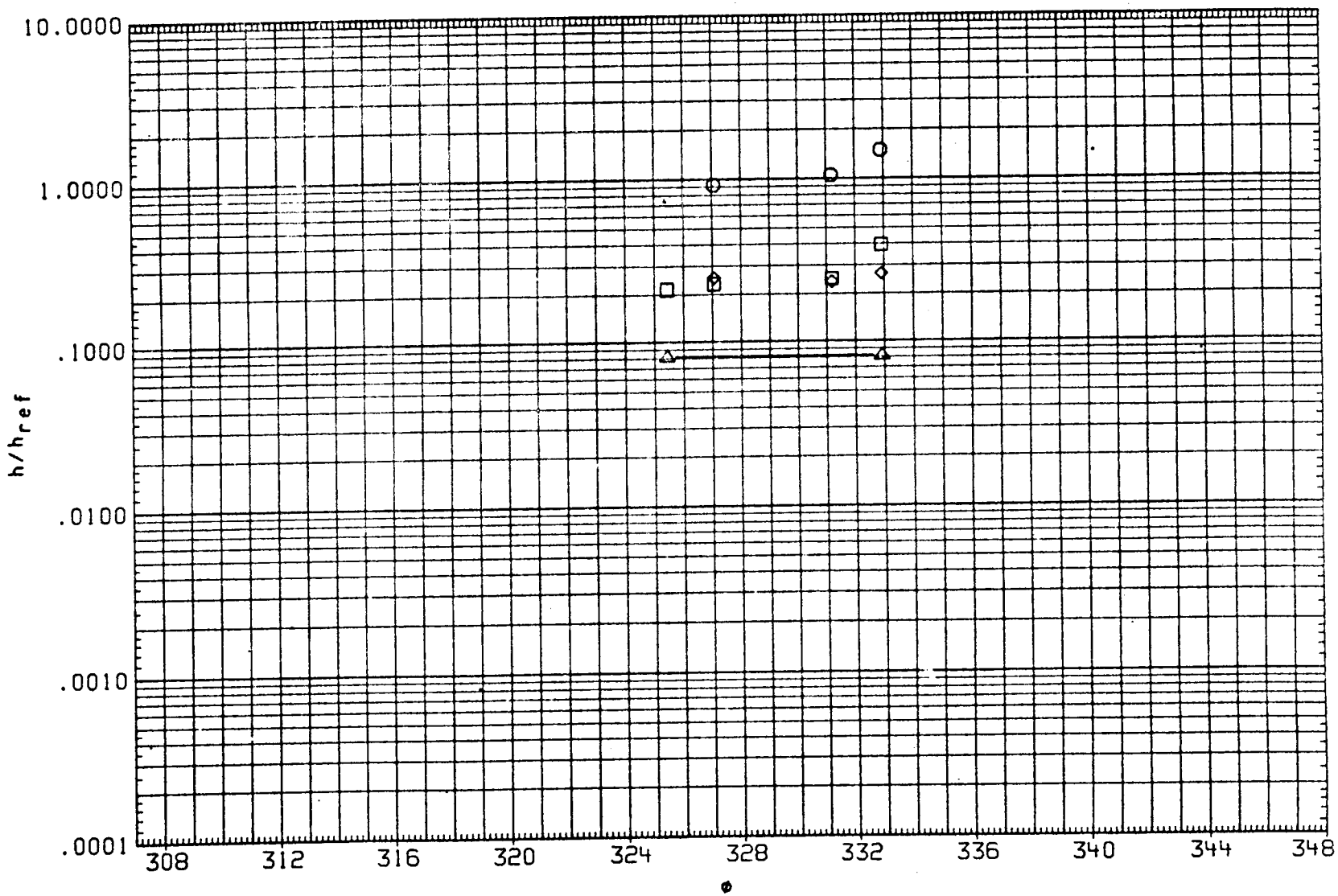

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78 PAGE 381

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

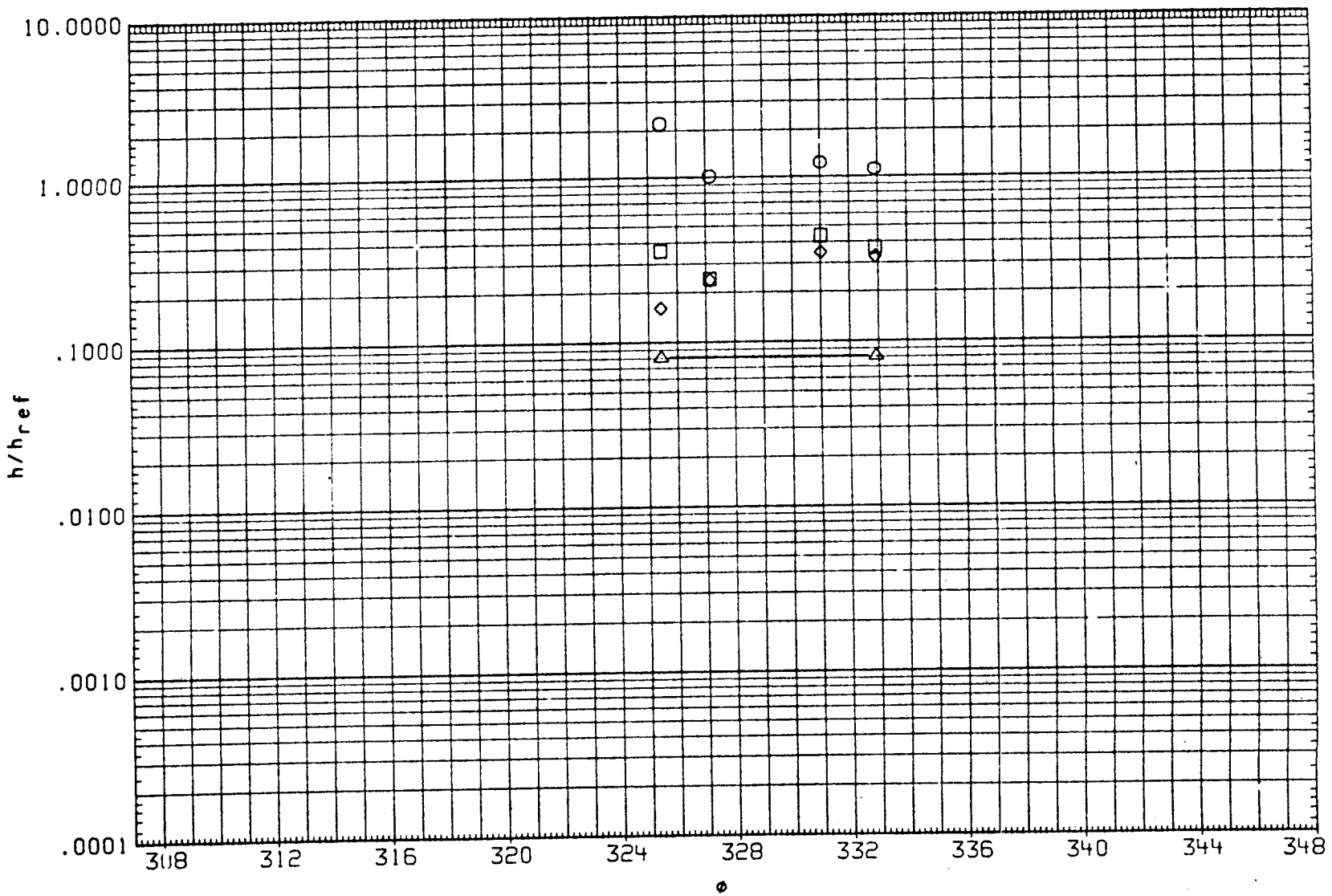

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 382

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

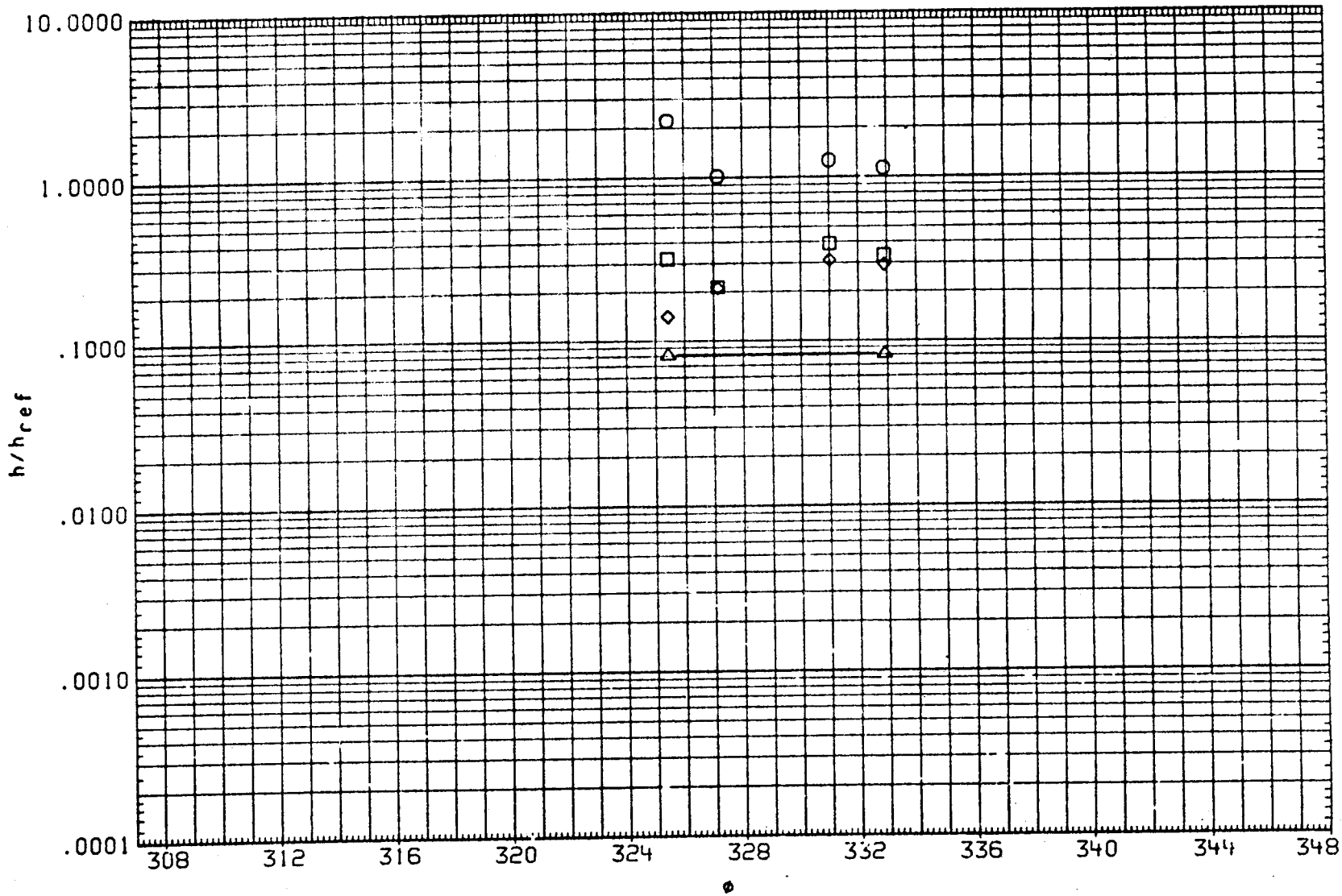

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .903 X/L = .473 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(V20Q0B)	○	IH51A 1B/(2B+3B+4B-5B-5B)	ET SURFACE	.000	.000	5.000	5.300
(R20Q01)	□	IH51A CONF 1B ET SURFACE		.000	.000	5.000	5.300
(M20Q0B)	◇	IH51A 2B+3B+4B-5B-5B	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

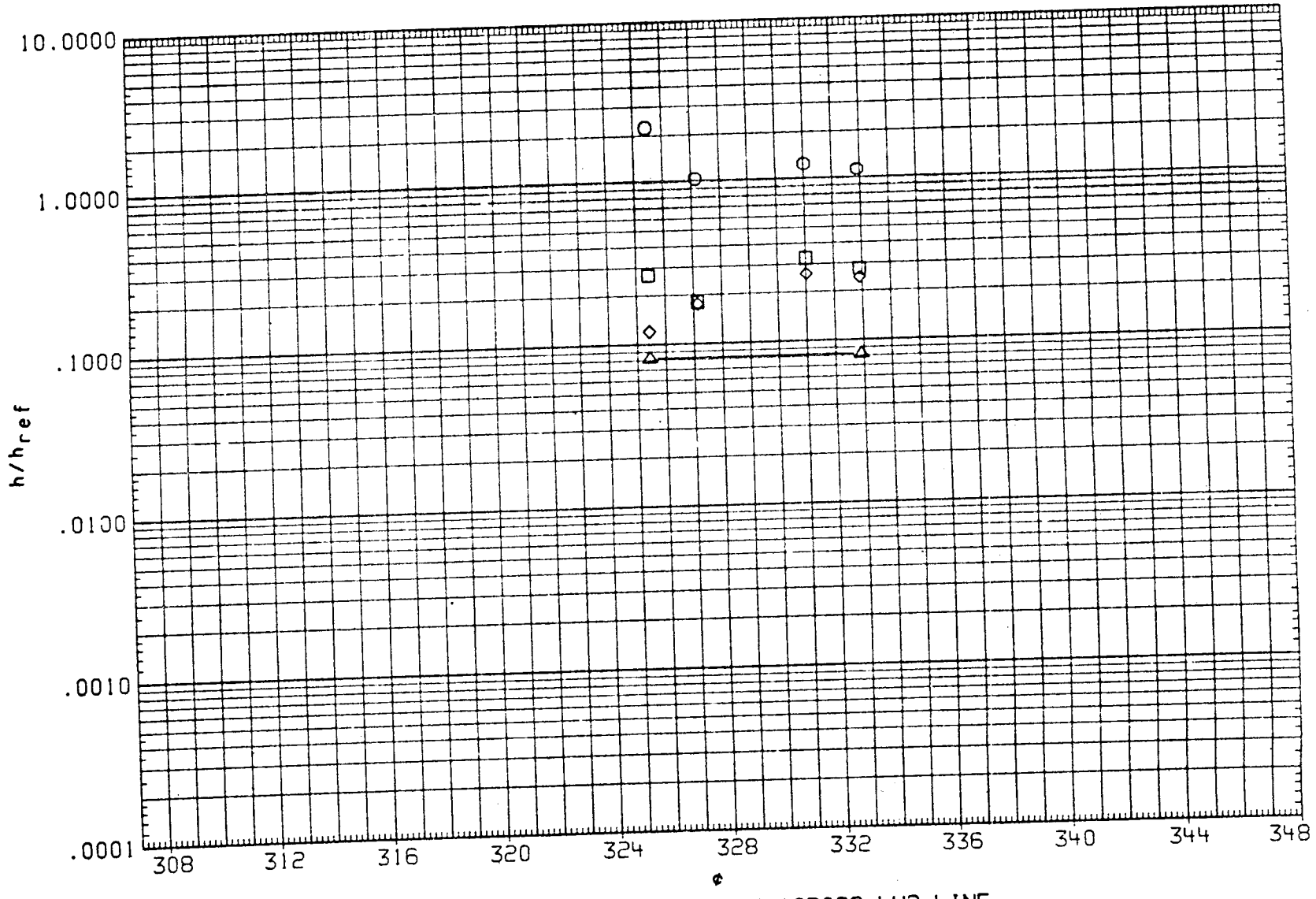

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 384

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20C0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

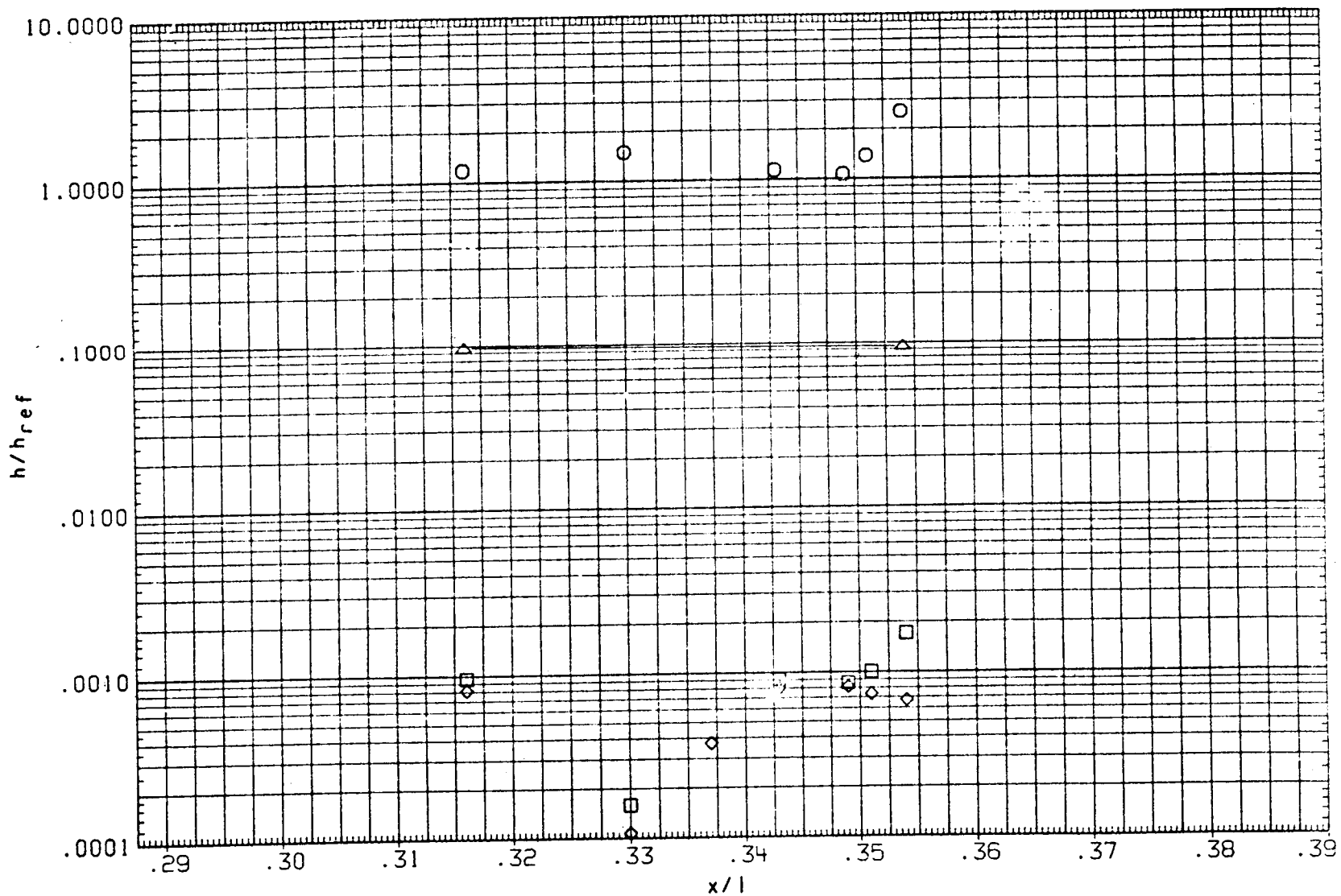

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

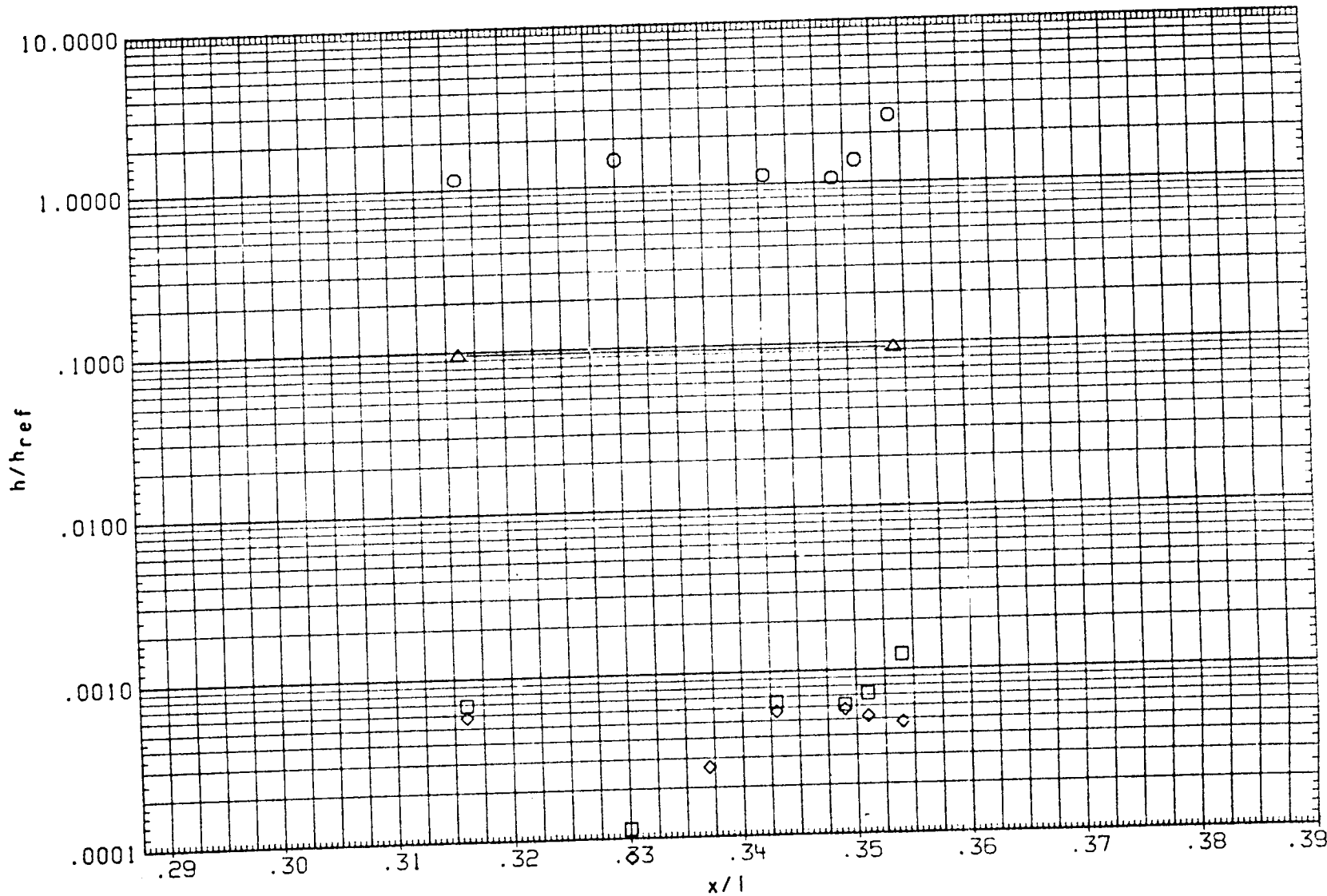

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 PHI = 24.690 DATE 22 APR 78 PAGE 386

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

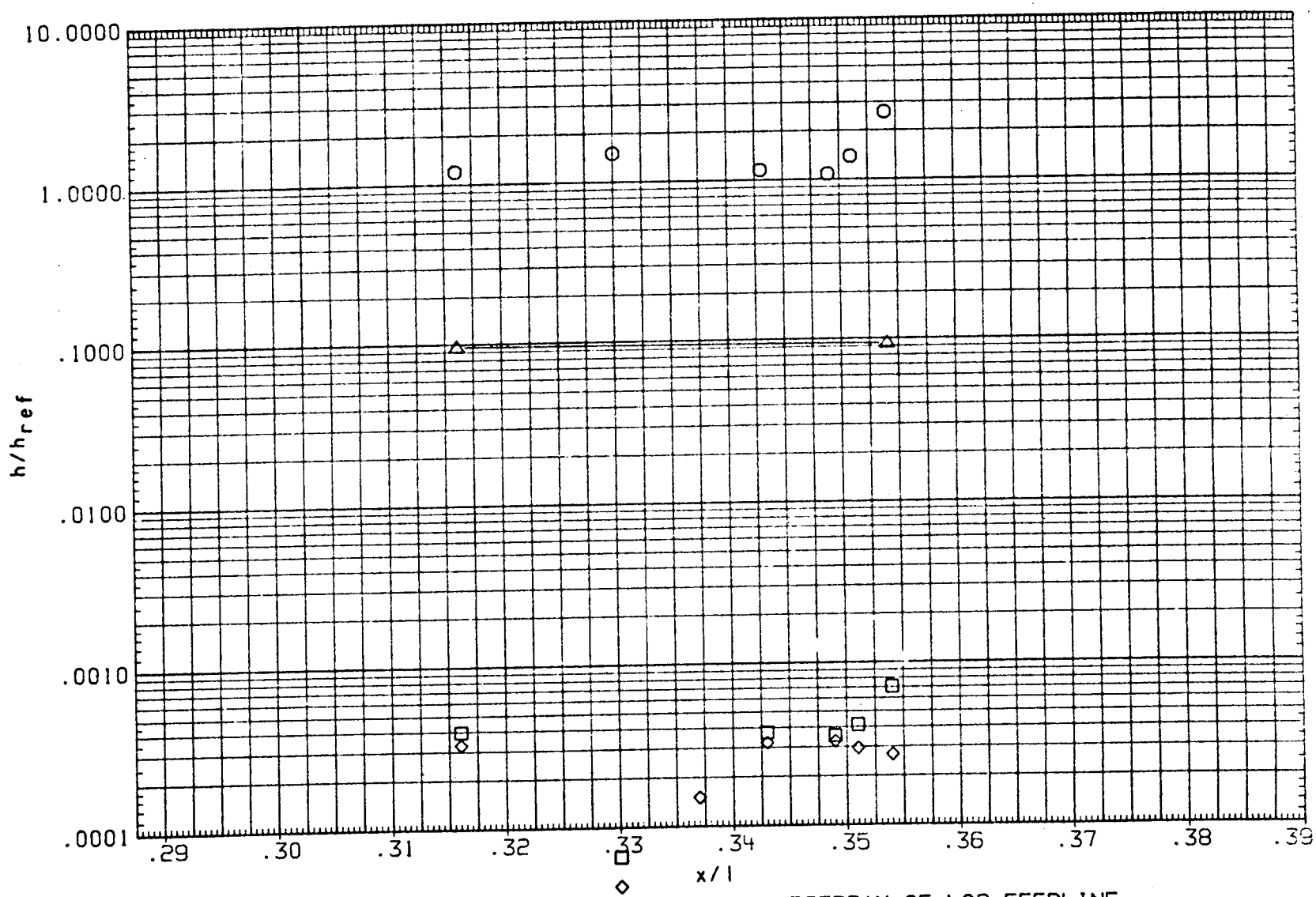

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0A)	□	IH51A (2A)(3A)(4A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0A)	◇	IH51A (5A)(5A)(5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

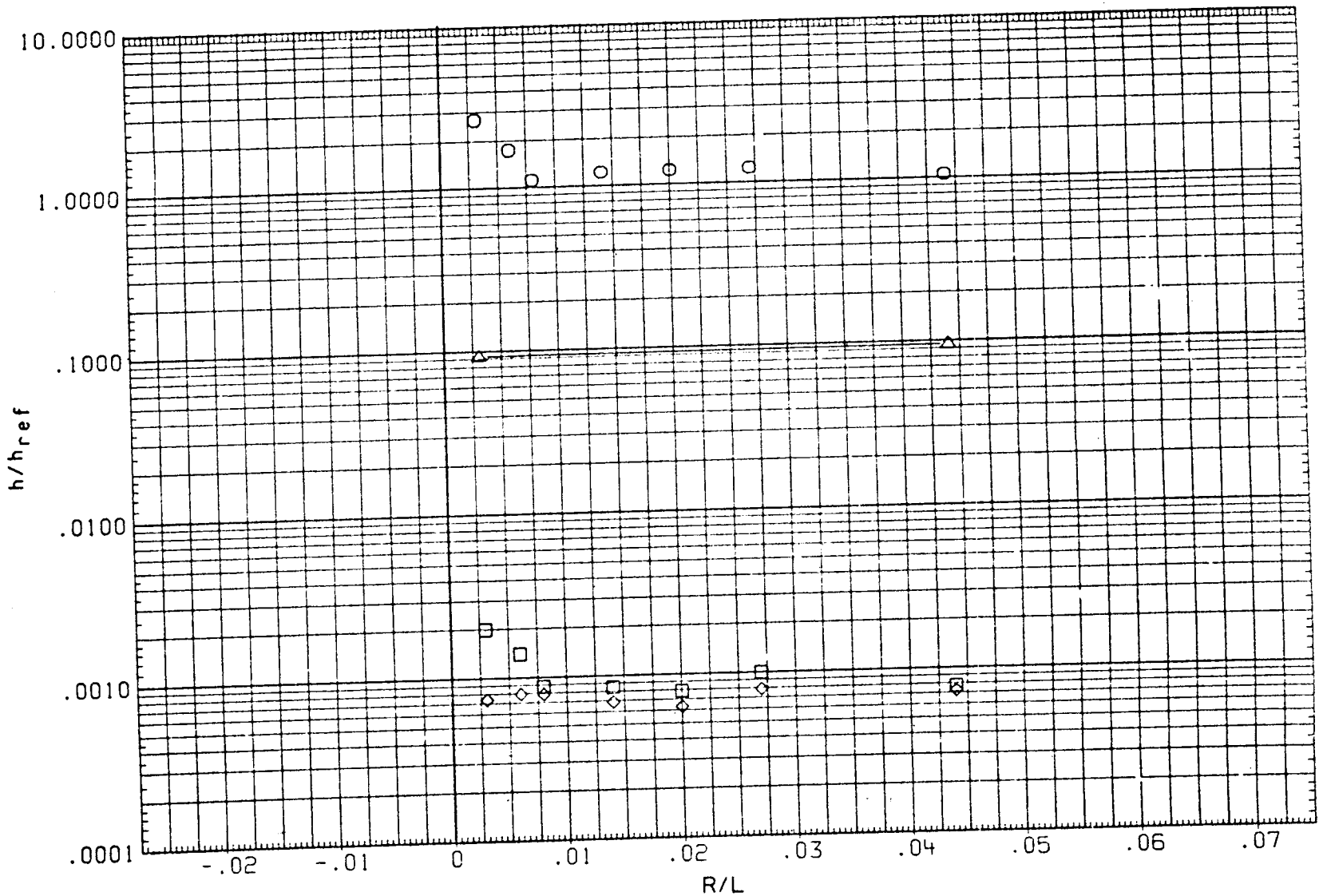

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 388

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0A)	□	IH51A (2A)(3A)(4A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0A)	◇	IH51A (5A)(5A)(5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

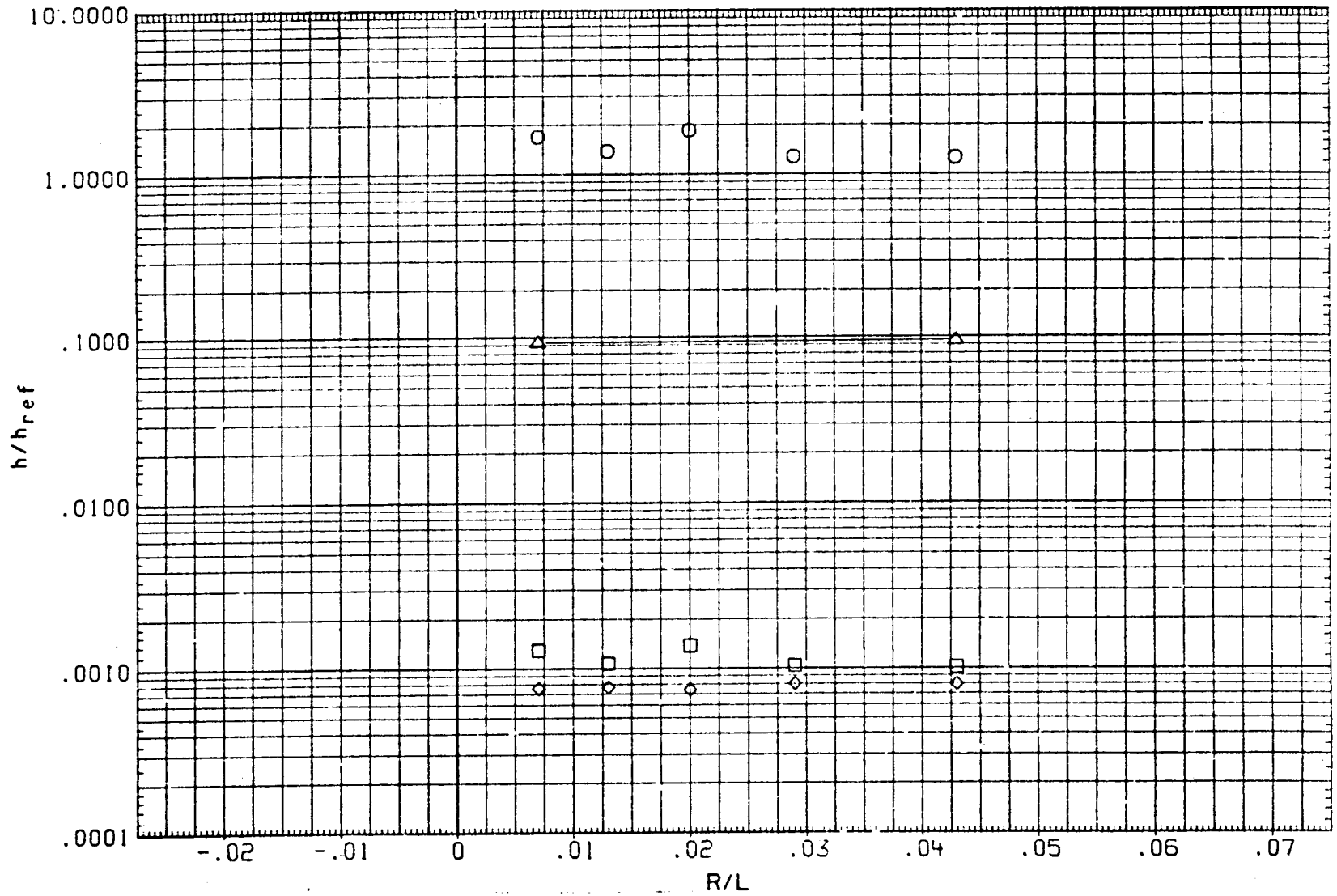

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0A)	□	IH51A (2A)(3A)(4A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0A)	◇	IH51A (5A)(5A)(5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

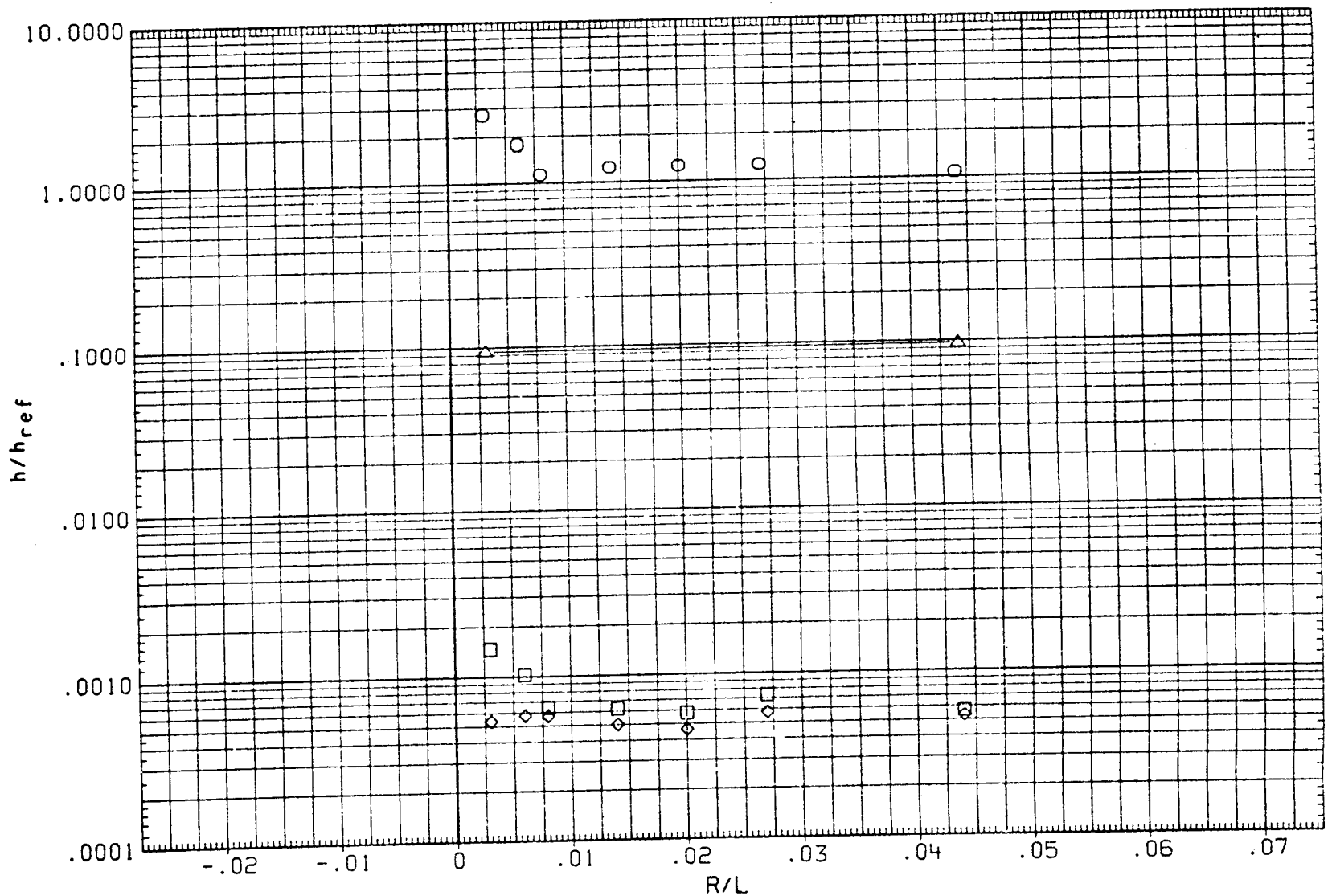

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 390

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0A)	□	IH51A (2A)(3A)(4A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0A)	◇	IH51A (5A)(5A)(5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

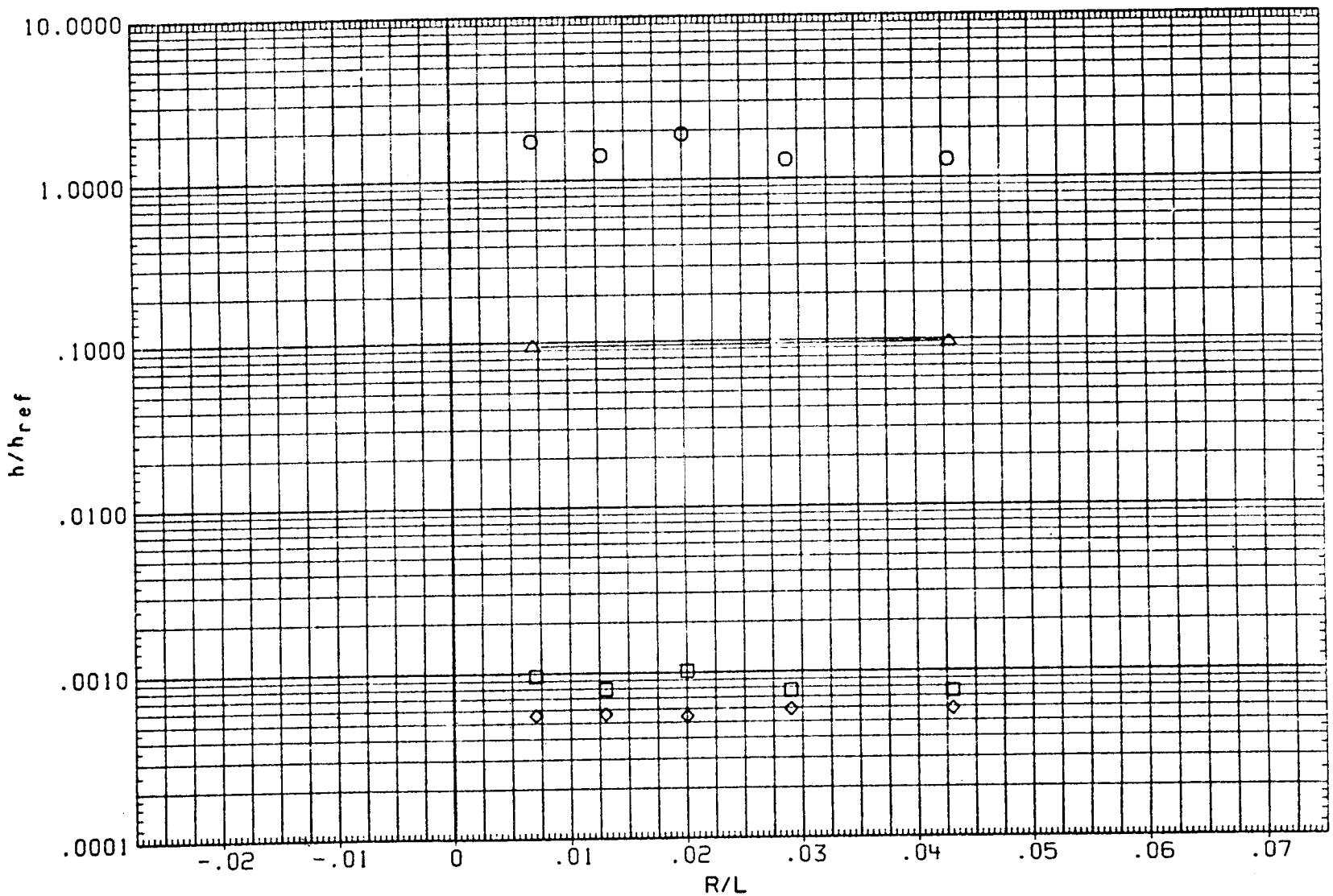

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 391

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0A)	□	IH51A (2A)(3A)(4A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0A)	◇	IH51A (5A)(5A)(5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

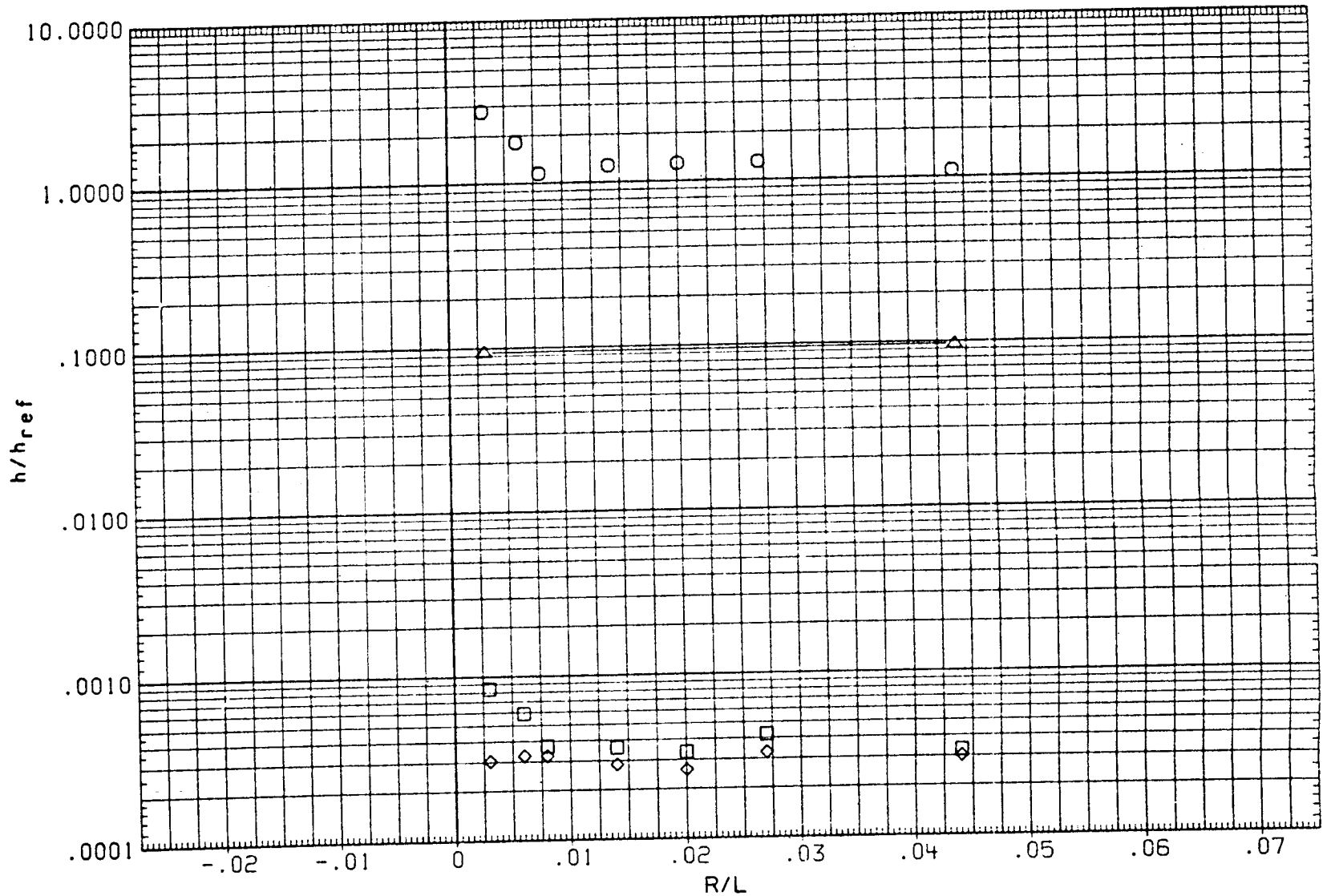

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 392

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0A)	□	IH51A (2A)(3A)(4A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0A)	◇	IH51A (5A)(5A)(5A)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

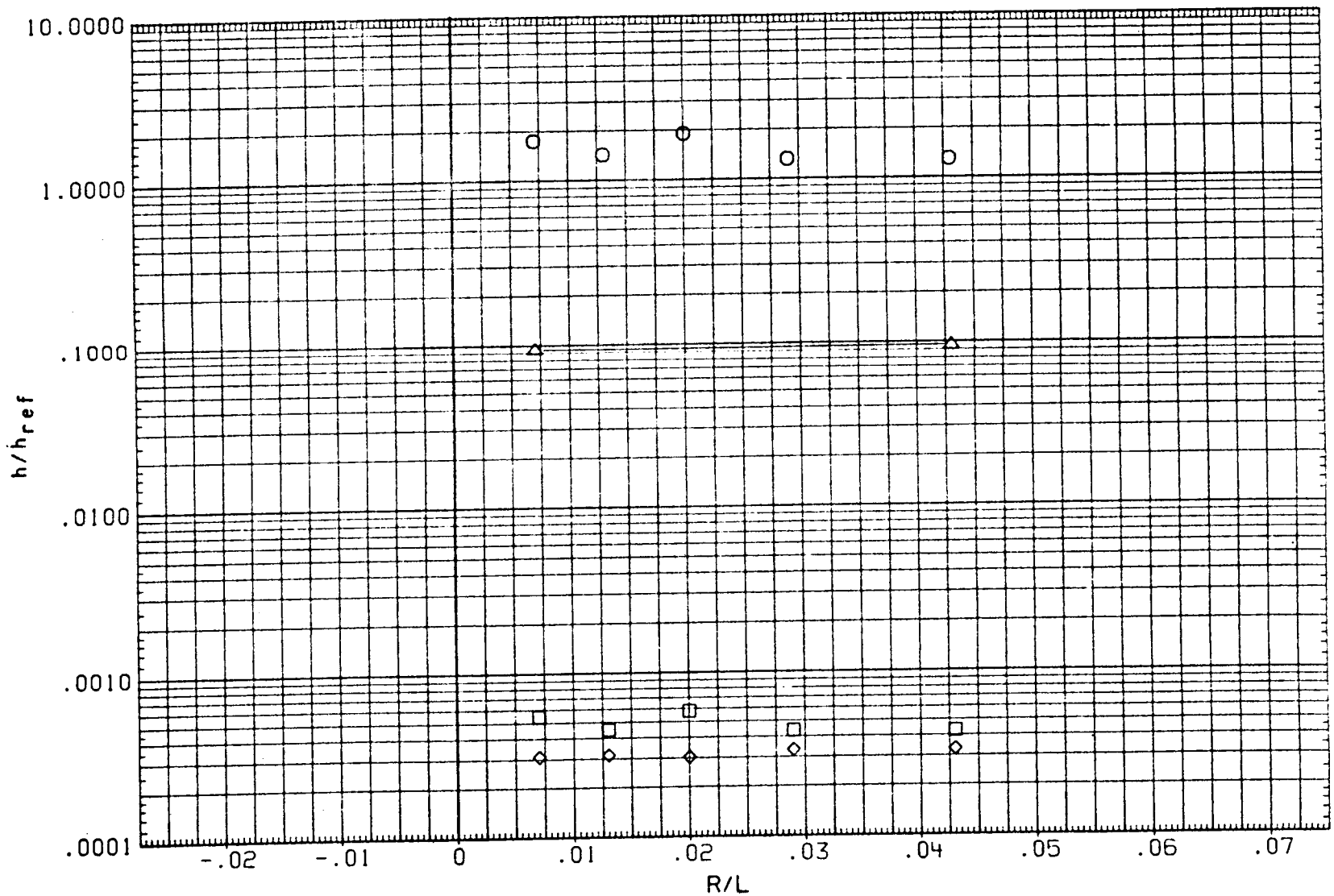

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

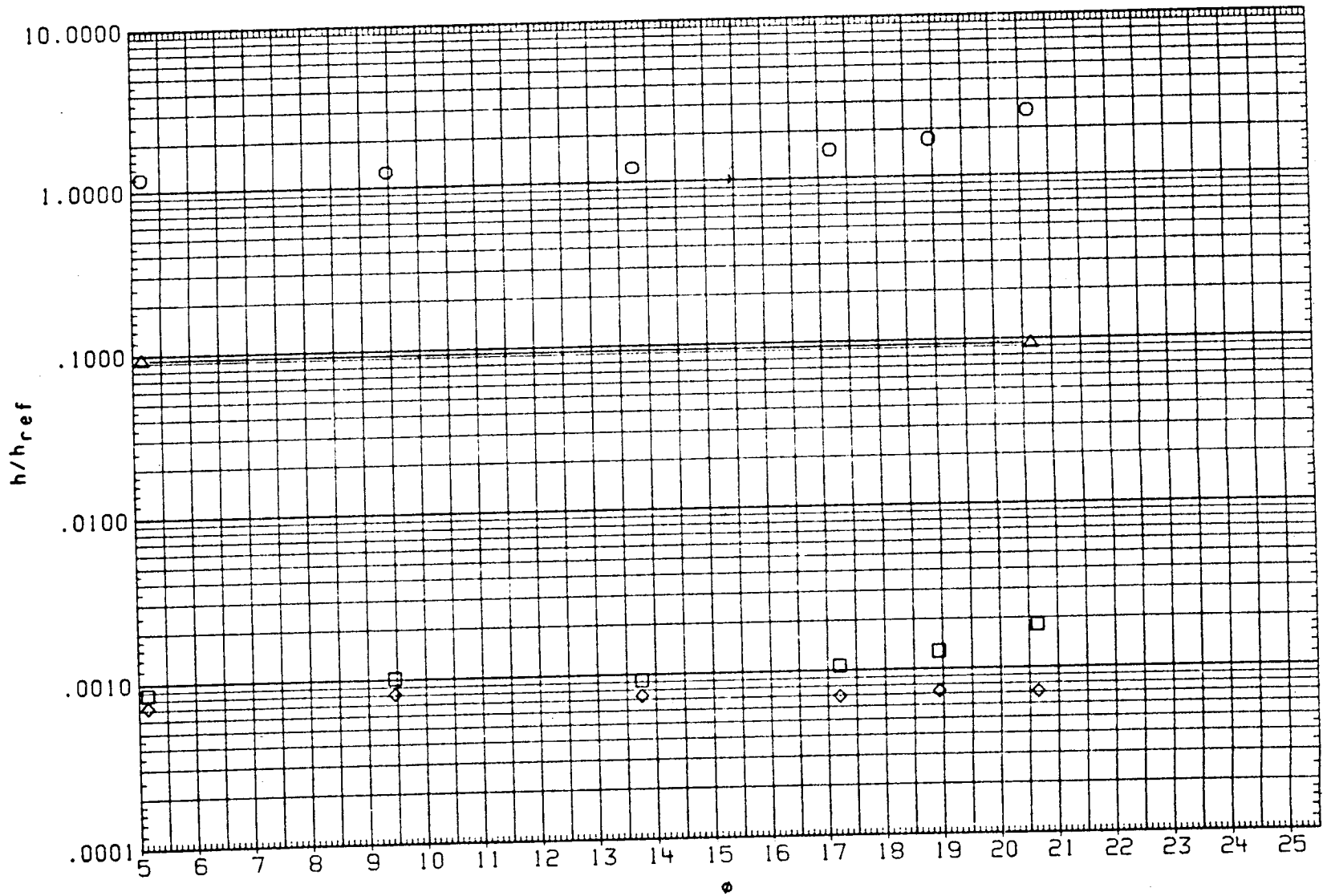

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

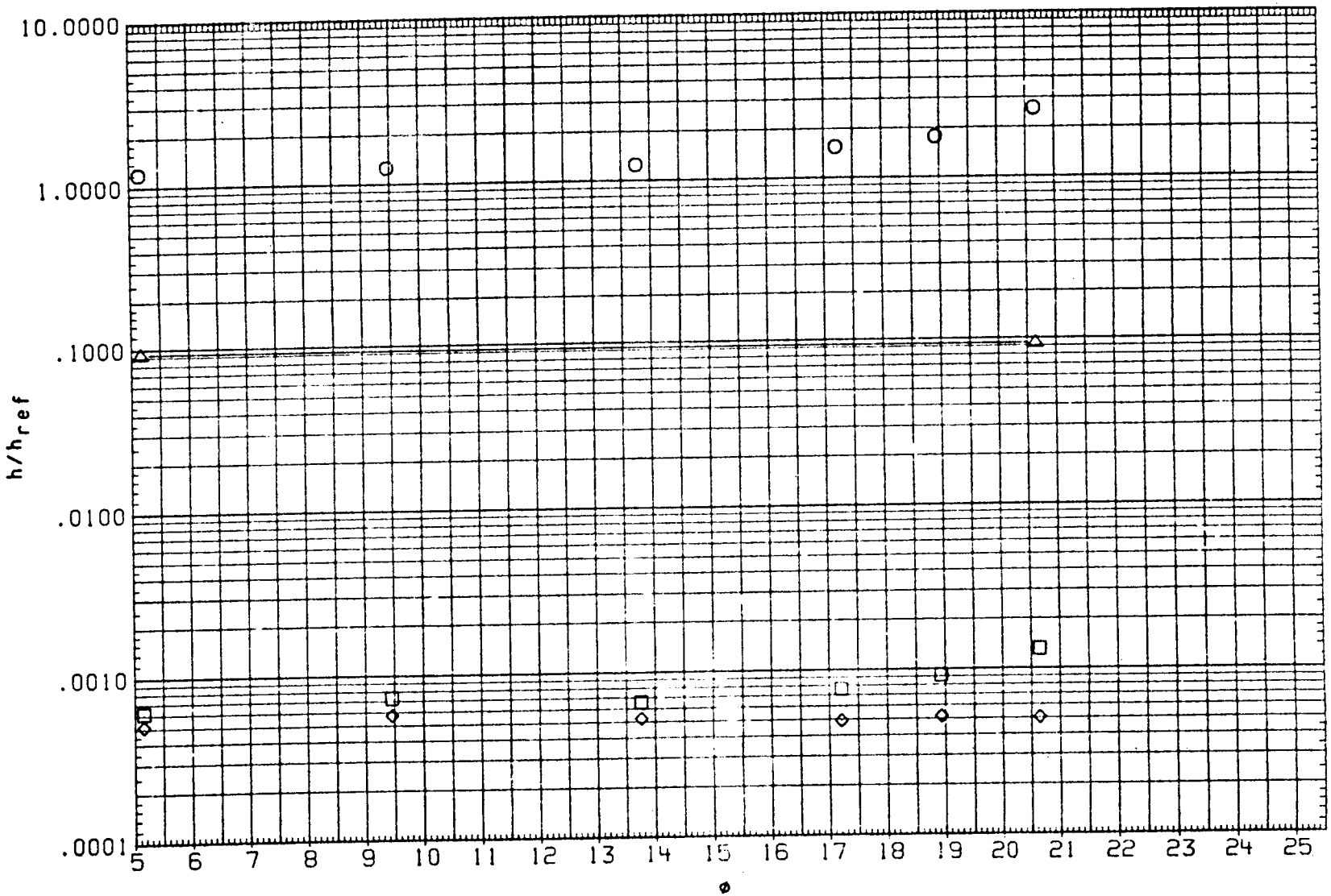

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

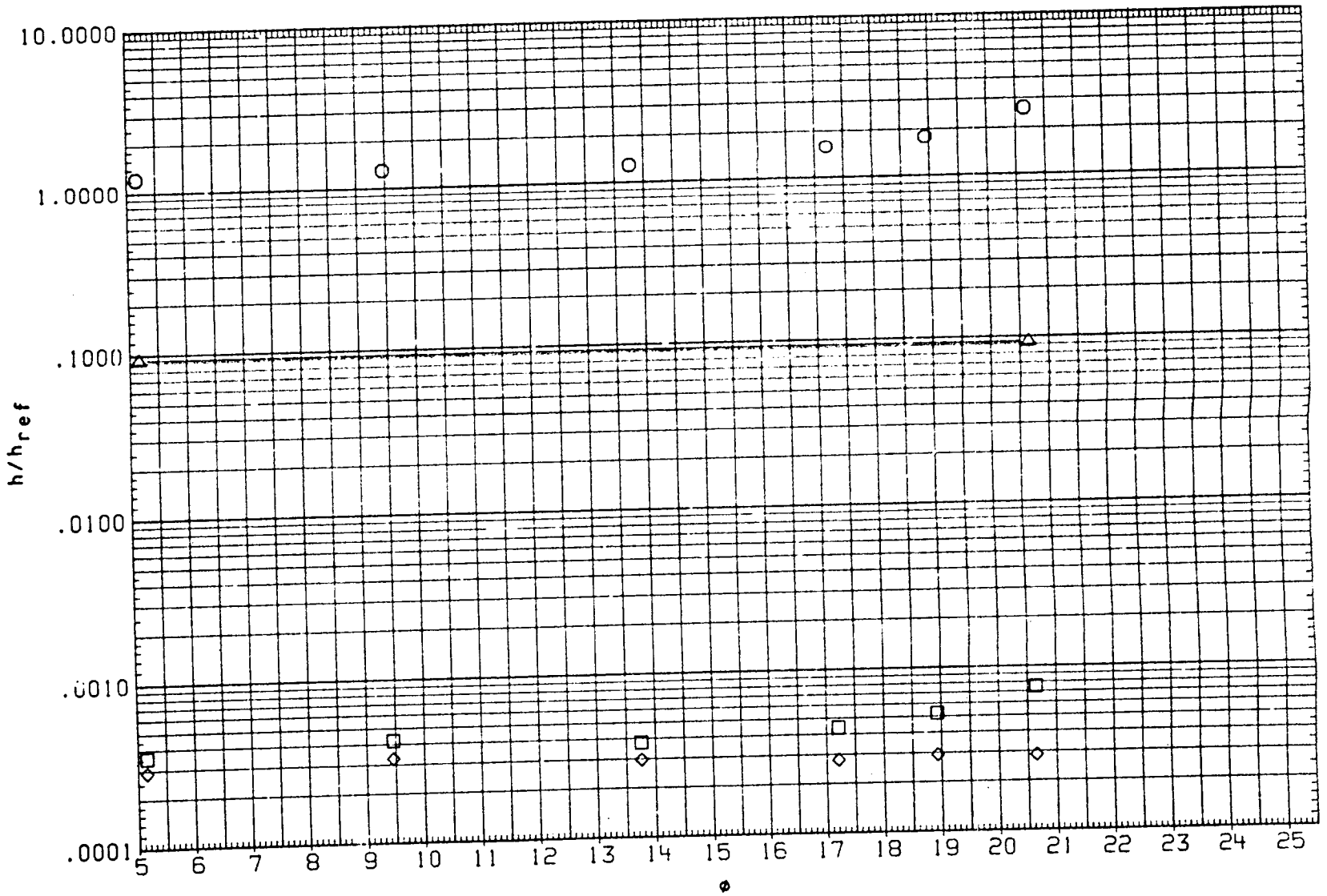

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78 PAGE 396

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

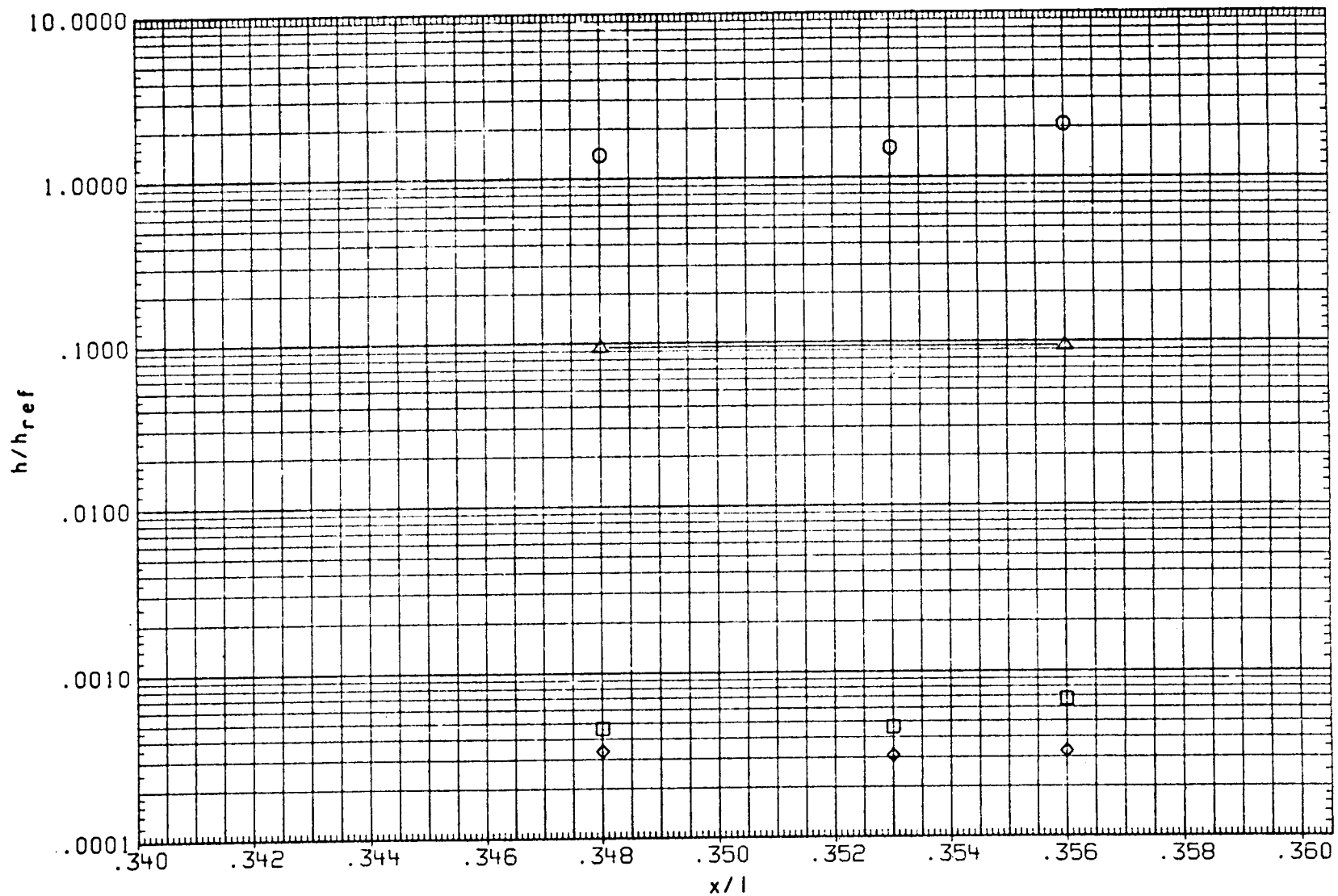

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 397

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

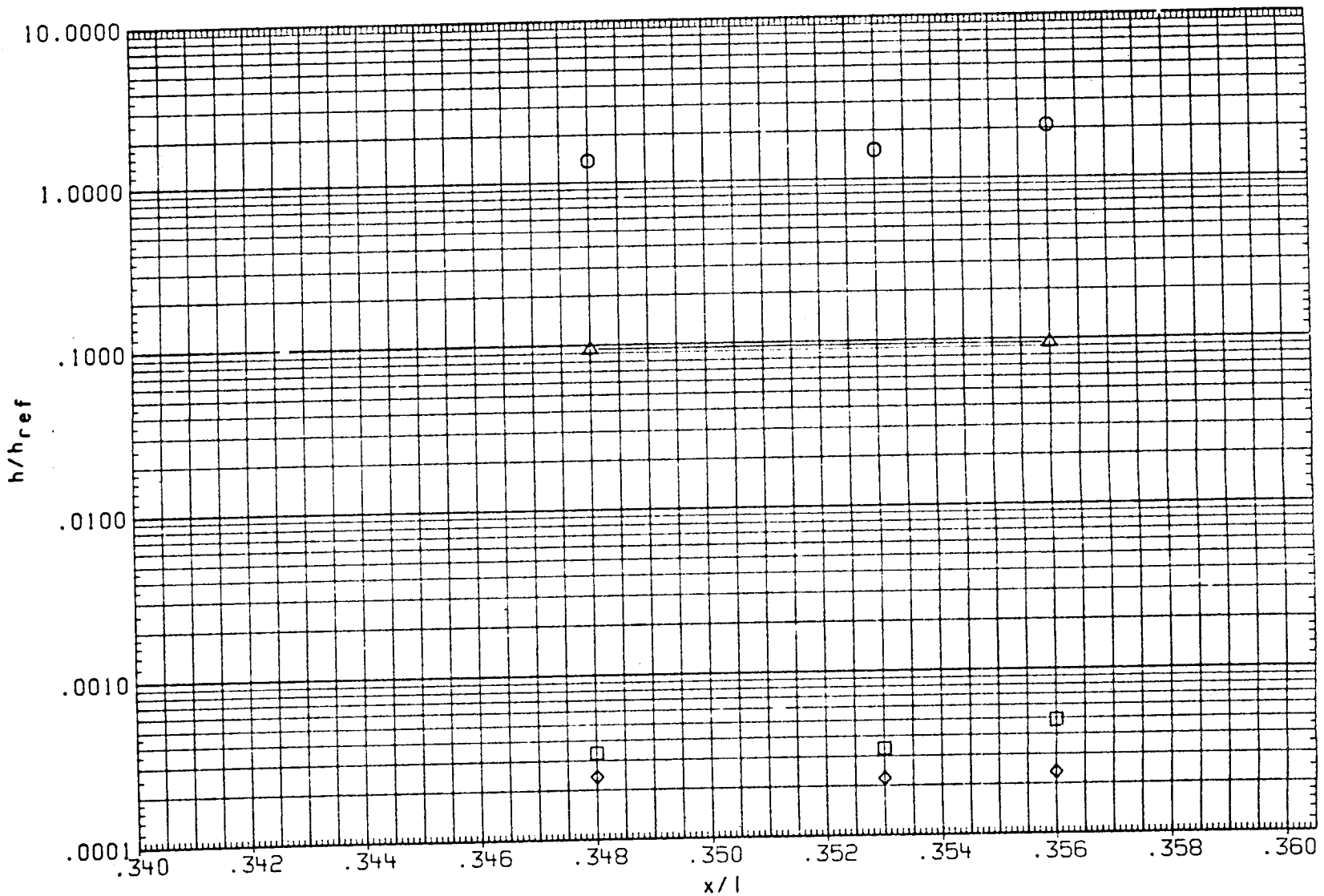

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 398

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

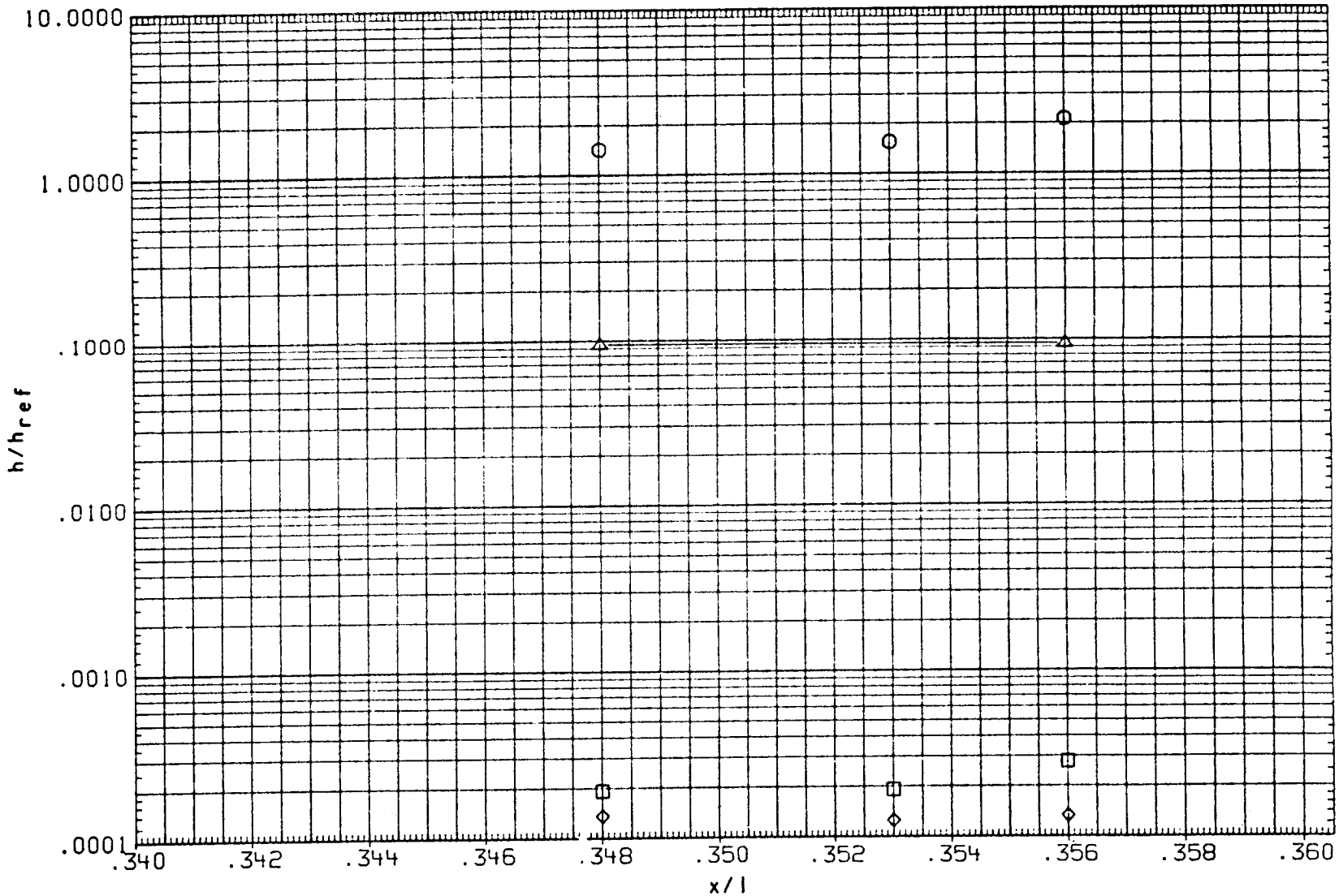

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 399

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20M0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(J20M0A)	□	IH51A (2A)(3A)(4A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(K20M0A)	◇	IH51A (5A)(5A)(5A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

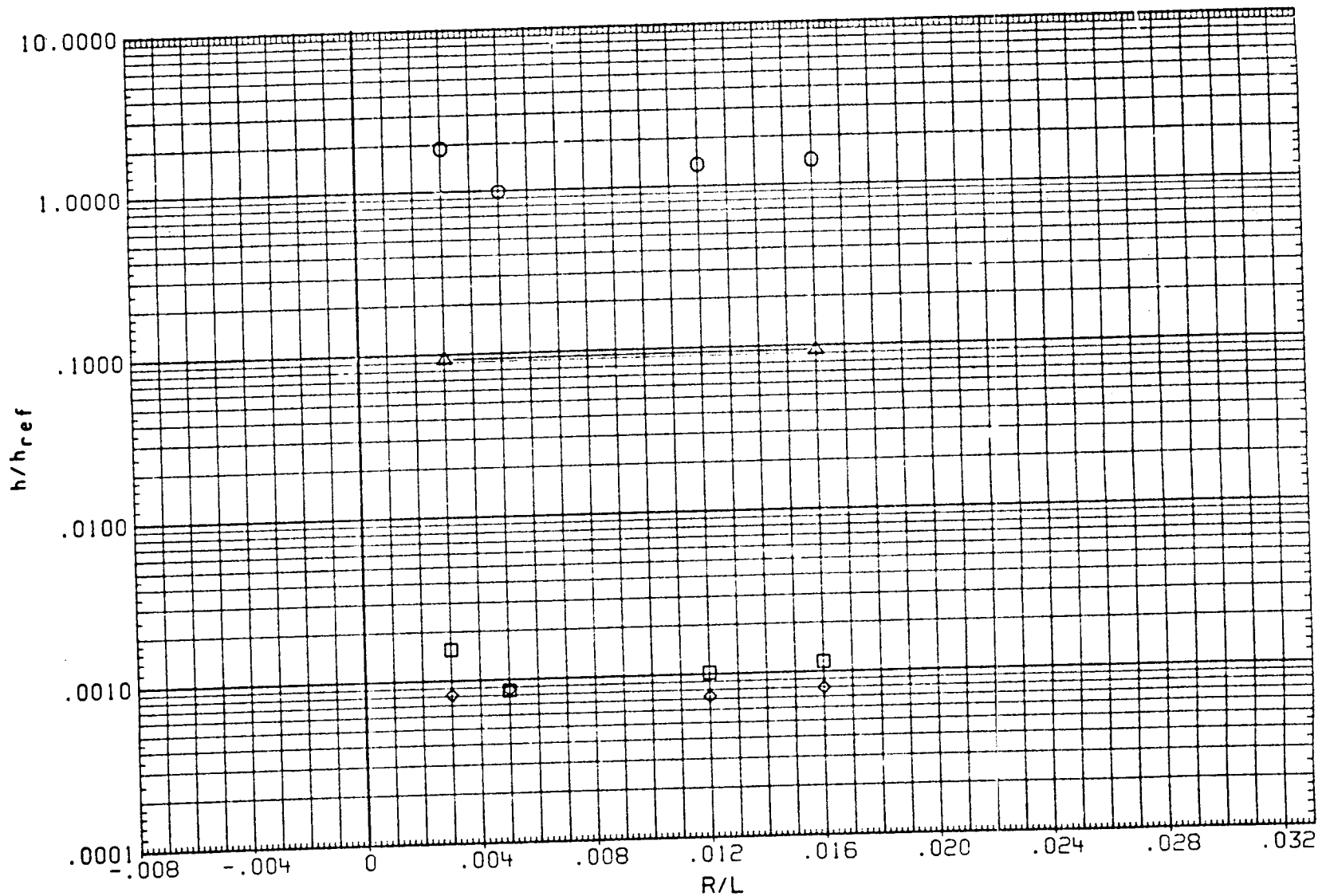

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20M0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(J20M0A)	□	IH51A (2A)(3A)(4A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(K20M0A)	◇	IH51A (5A)(5A)(5A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

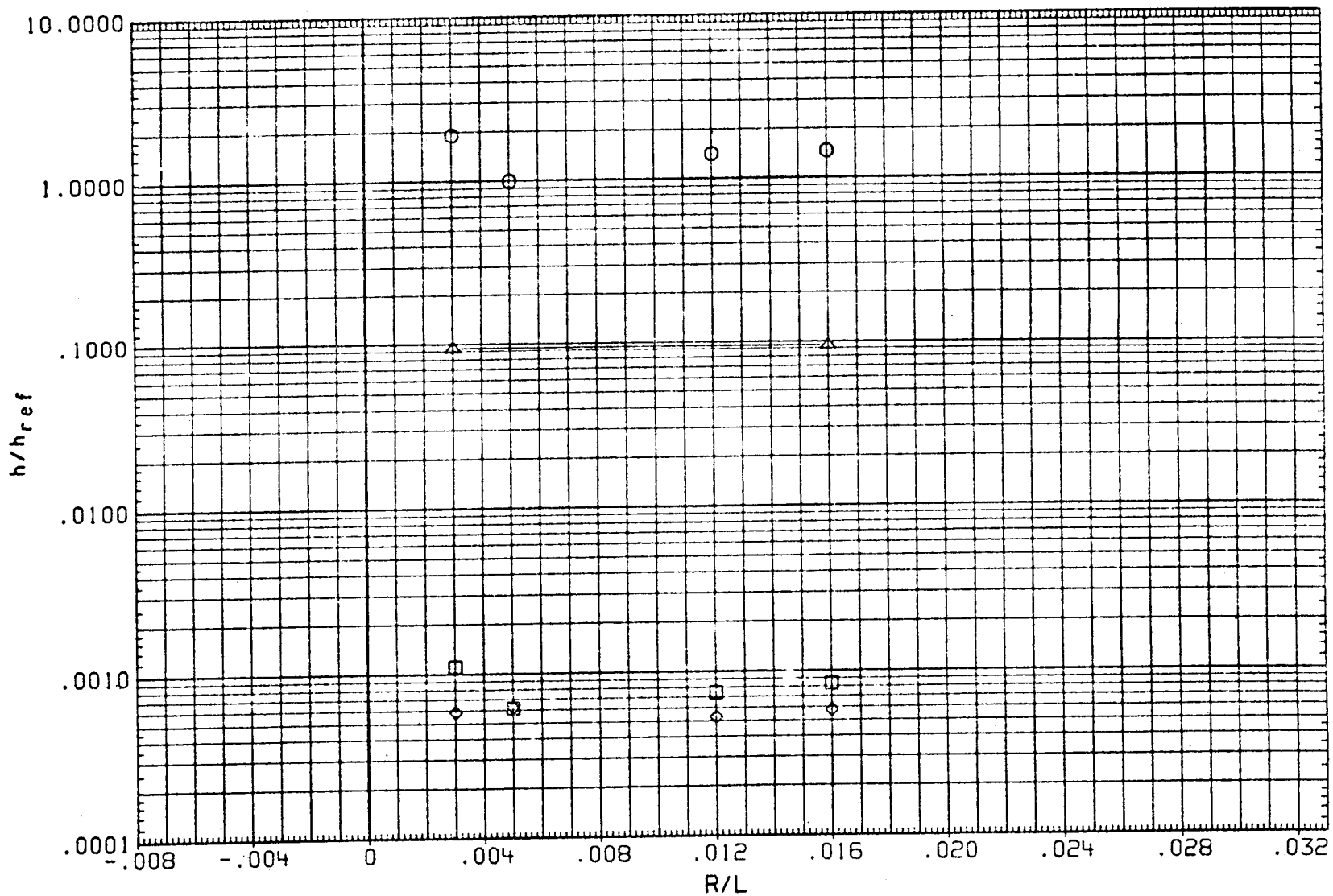

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 401

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20M0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(J20M0A)	□	IH51A (2A)(3A)(4A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(K20M0A)	◇	IH51A (5A)(5A)(5A)	LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

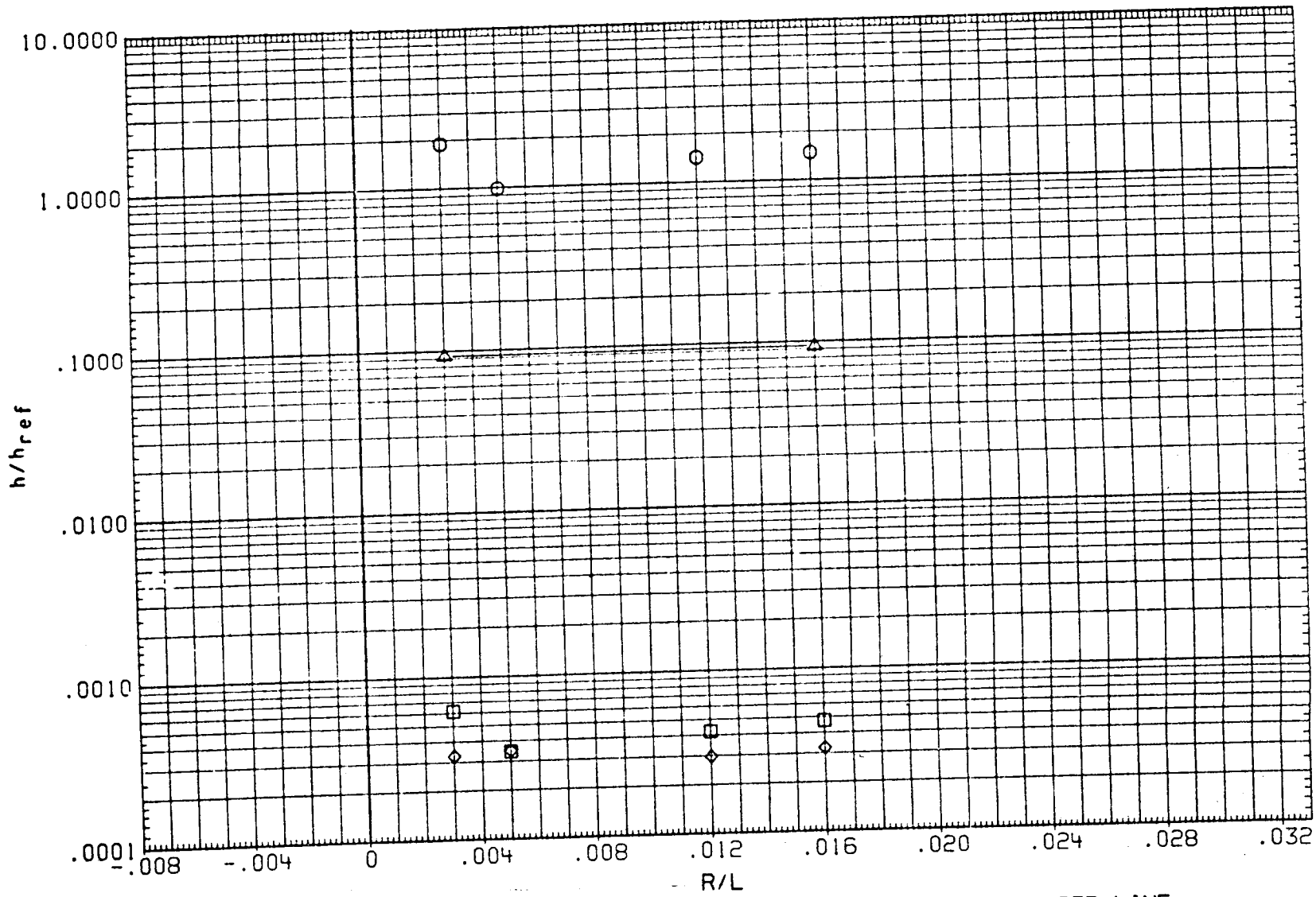

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 402

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

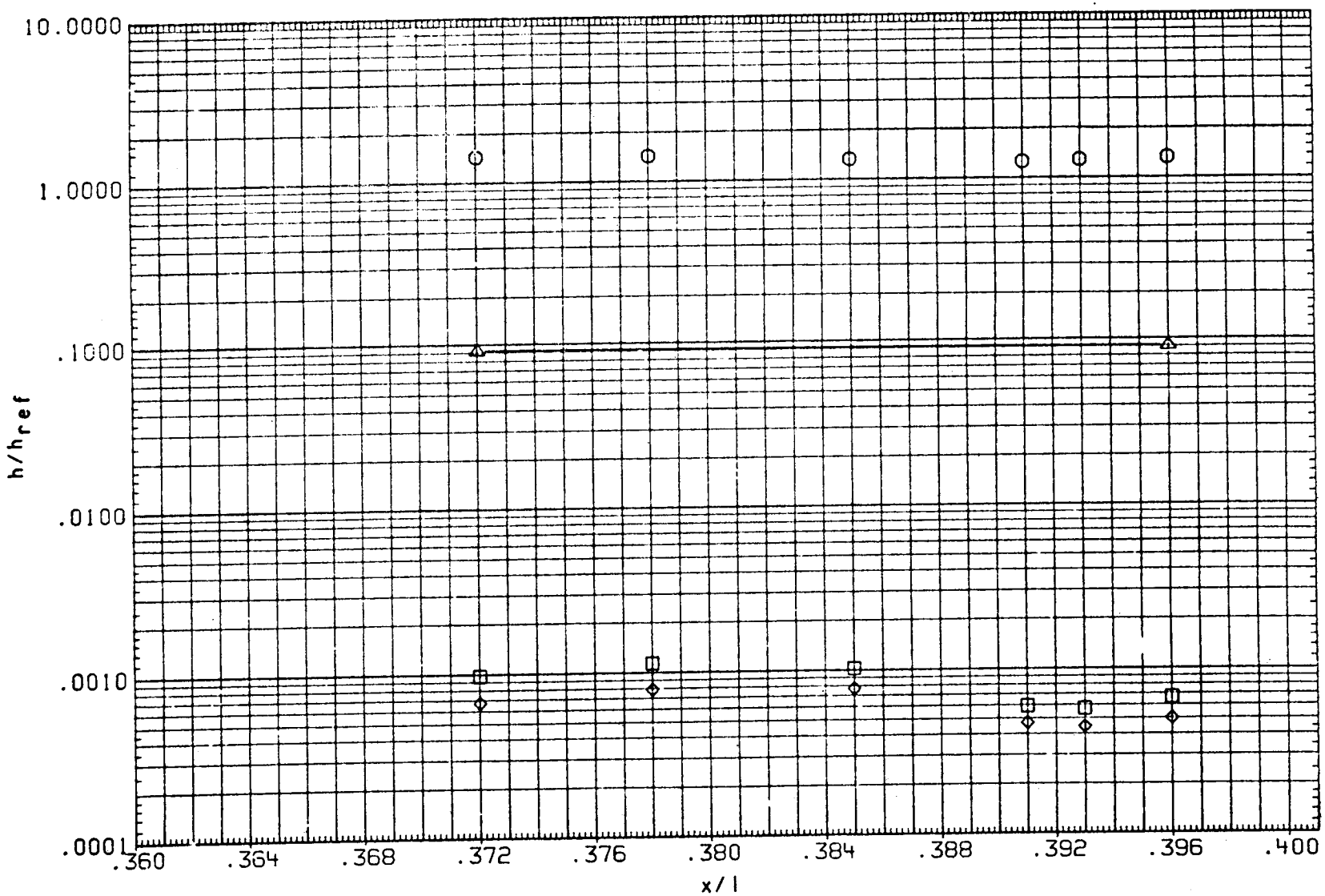

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

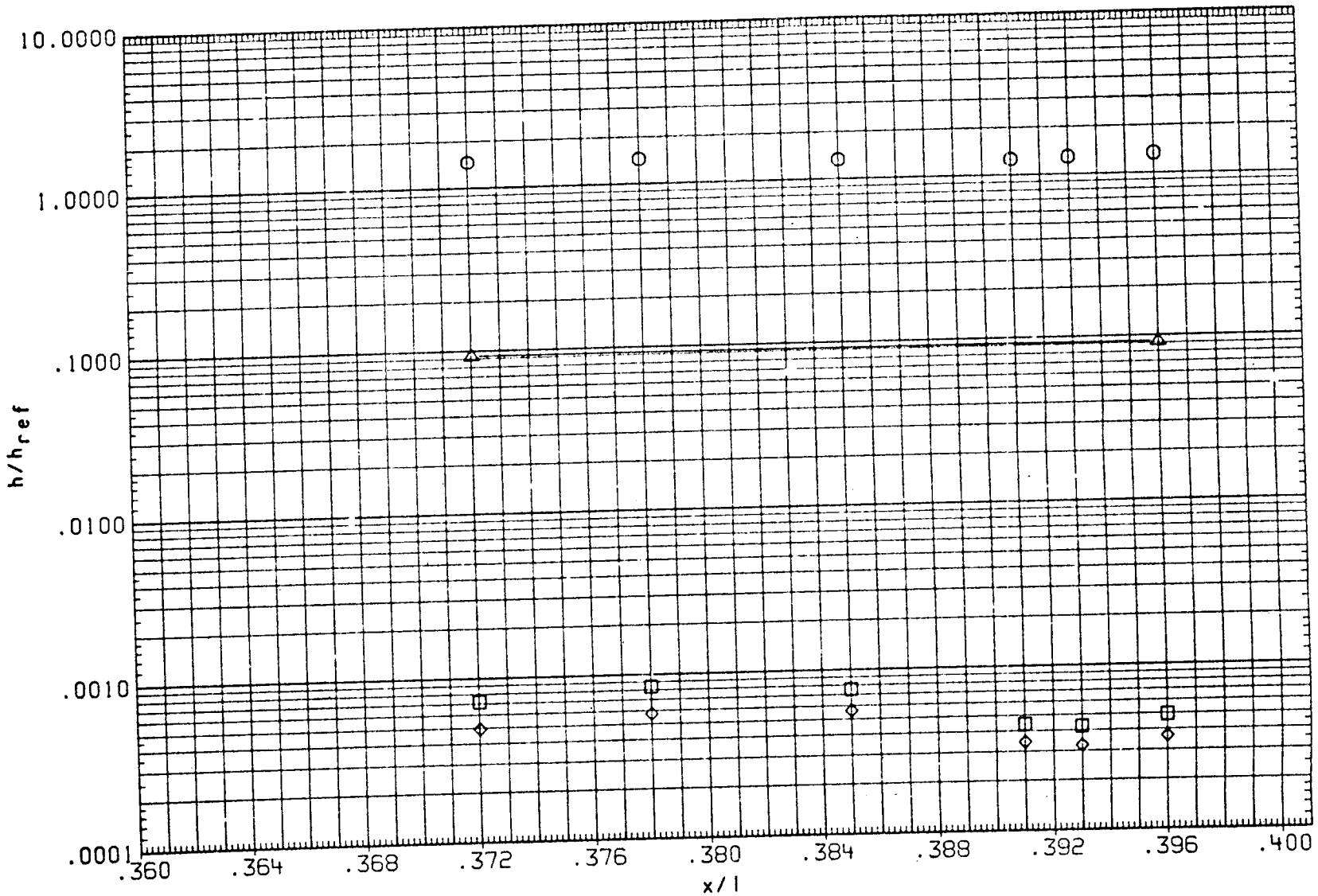

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 404

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

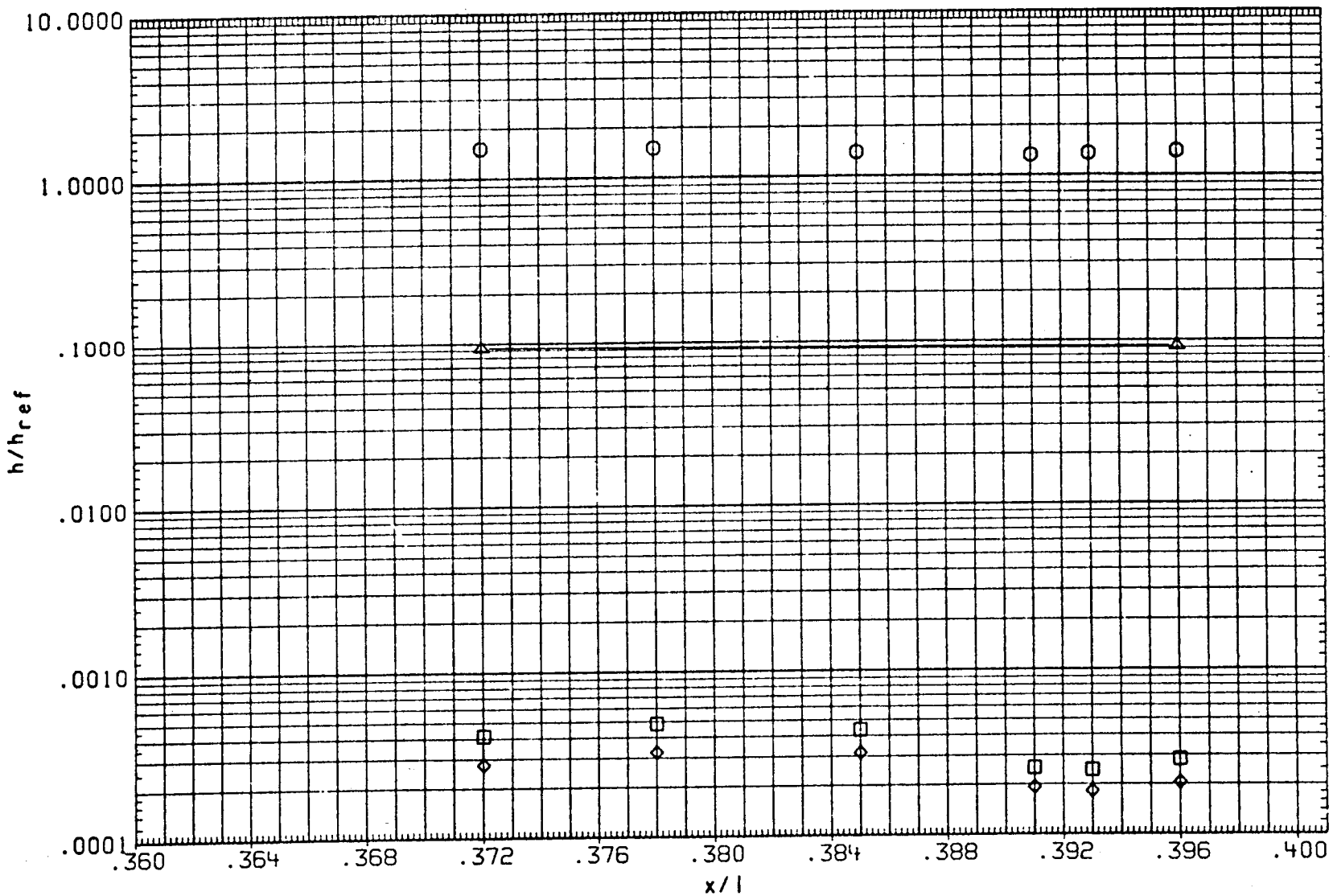

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78 PAGE 405

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20N0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(J20N0A)	□	IH51A (2A)(3A)(4A)	LH2 LINE DIA	.000	.000	5.000	5.300
(K20N0A)	◇	IH51A (5A)(5A)(5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

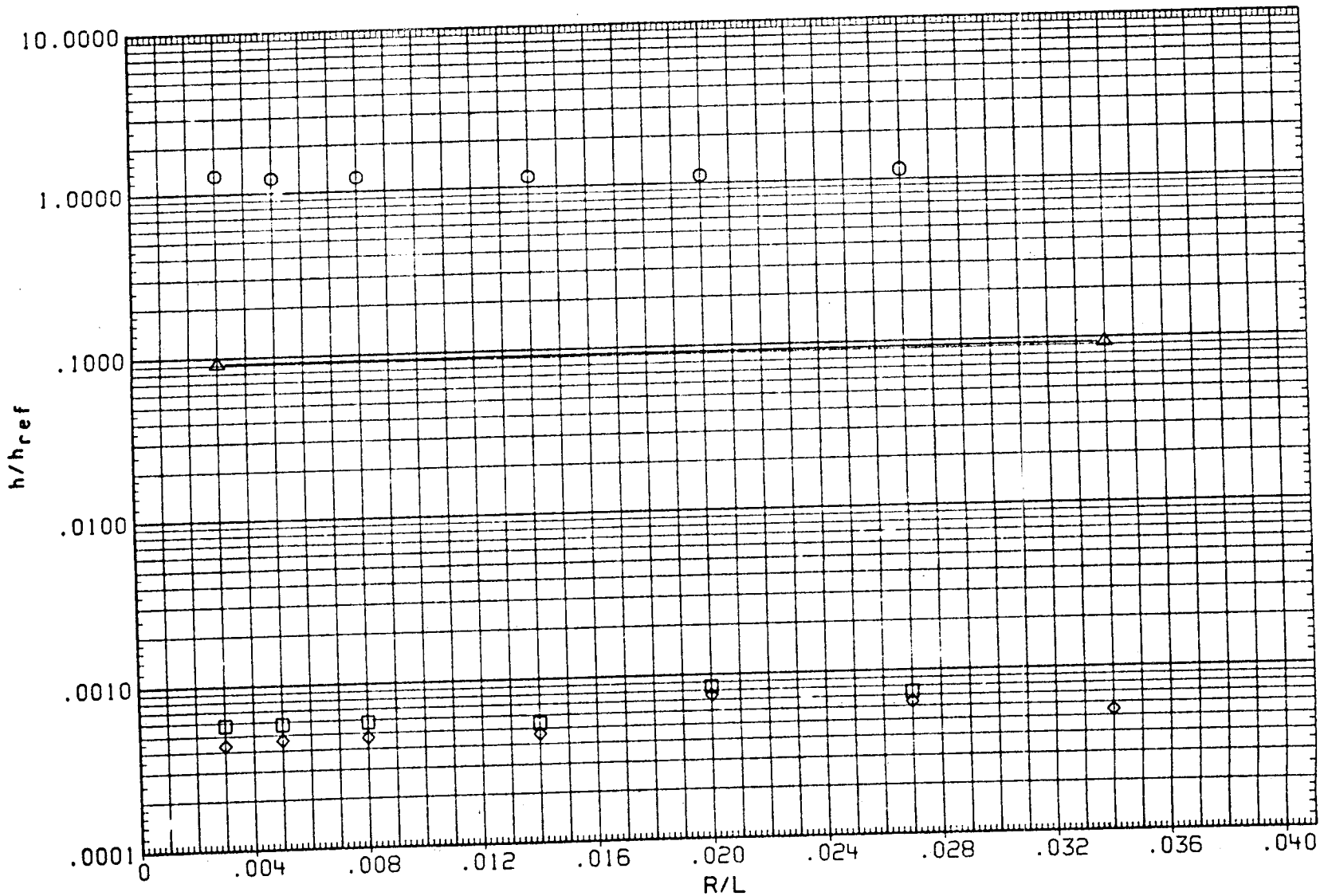

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 406

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20N0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(J20N0A)	□	IH51A (2A)(3A)(4A)	LH2 LINE DIA	.000	.000	5.000	5.300
(K20N0A)	◇	IH51A (5A)(5A)(5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

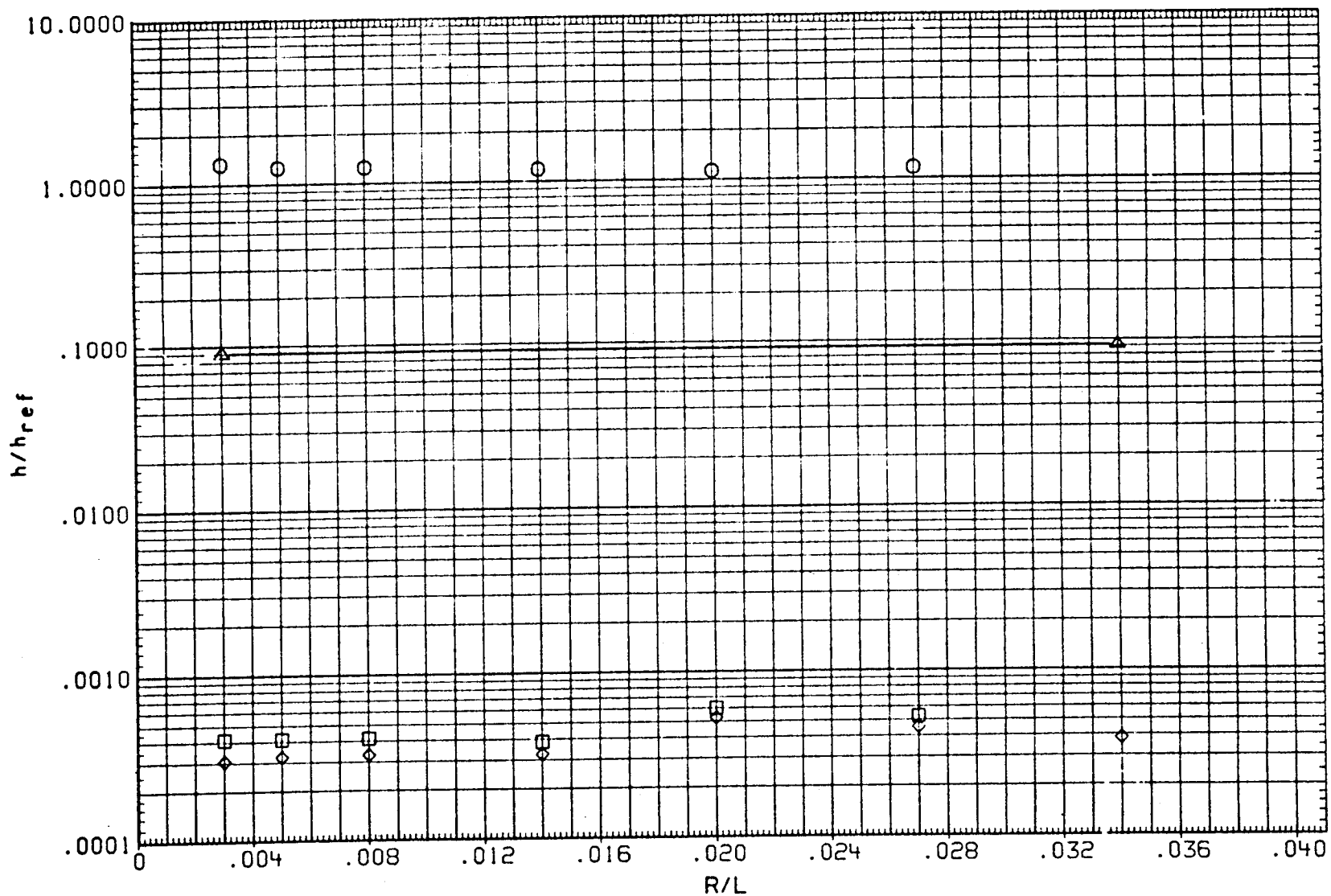

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 407

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20N0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(J20N0A)	□	IH51A (2A)(3A)(4A)	LH2 LINE DIA	.000	.000	5.000	5.300
(K20N0A)	◇	IH51A (5A)(5A)(5A)	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

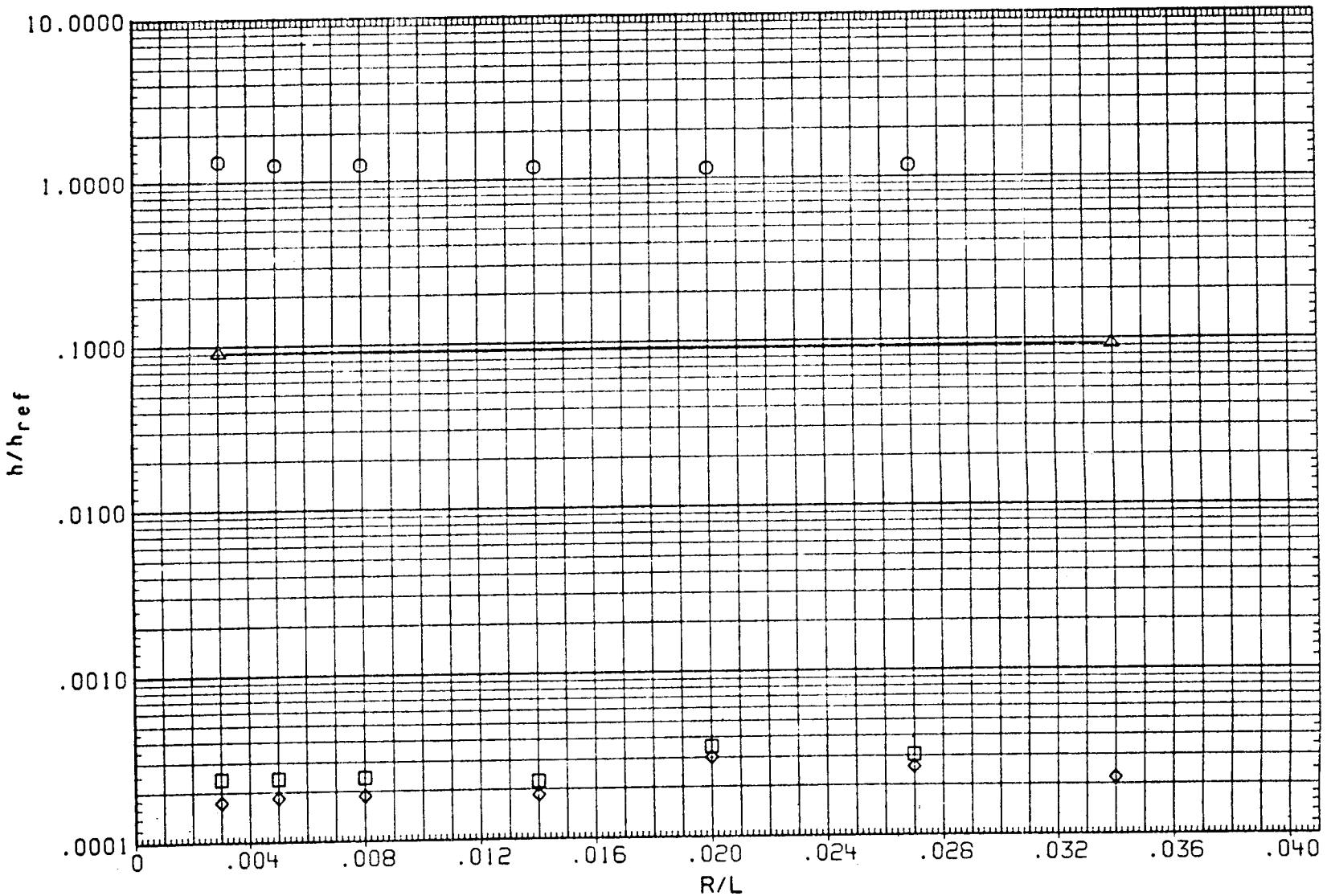

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 408

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

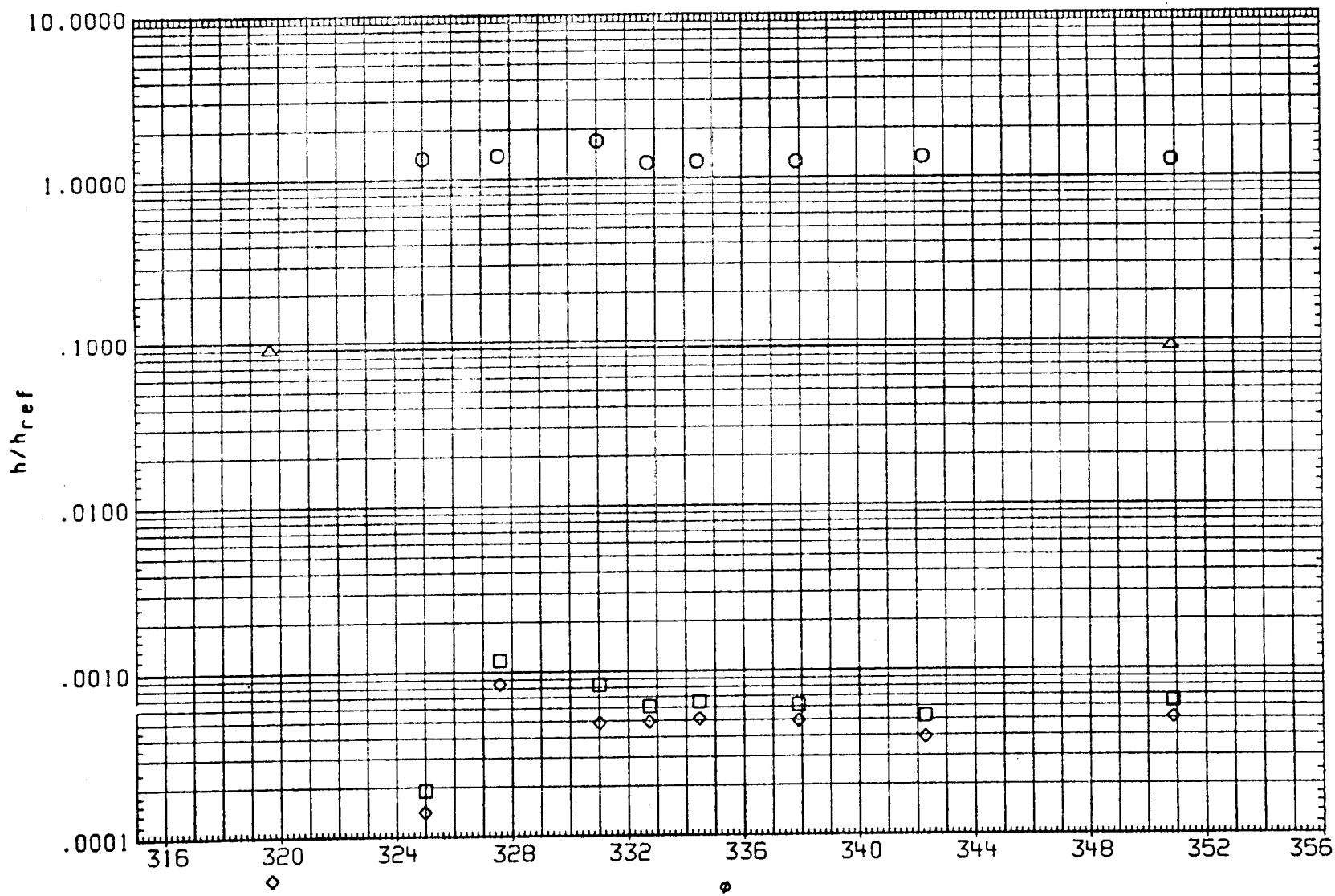

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/H◇ = .850 X/L = .399 DATE 22 APR 78 PAGE 409

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN./FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

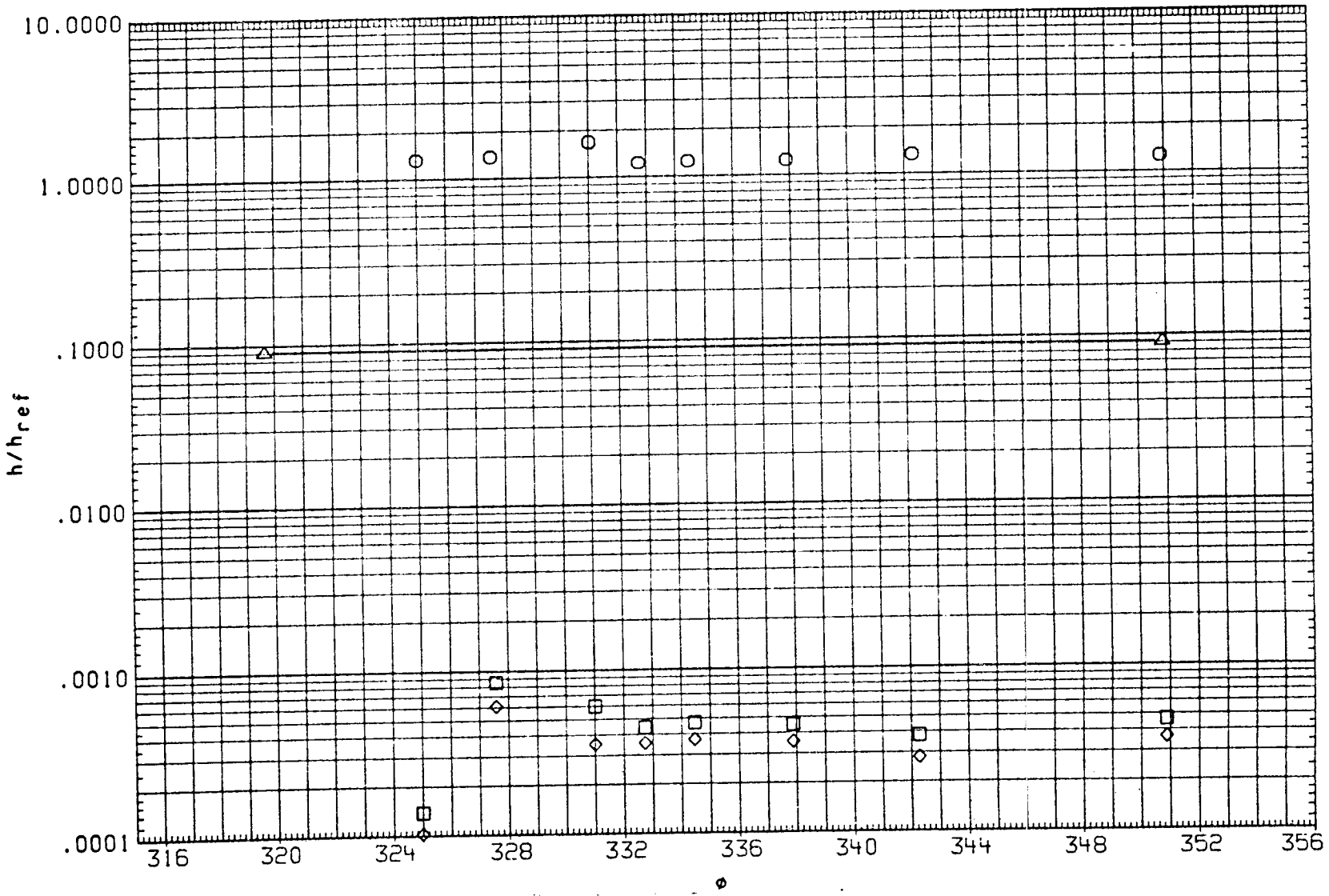

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HI = .900 X/L = .399 DATE 22 APR 78 PAGE 410

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

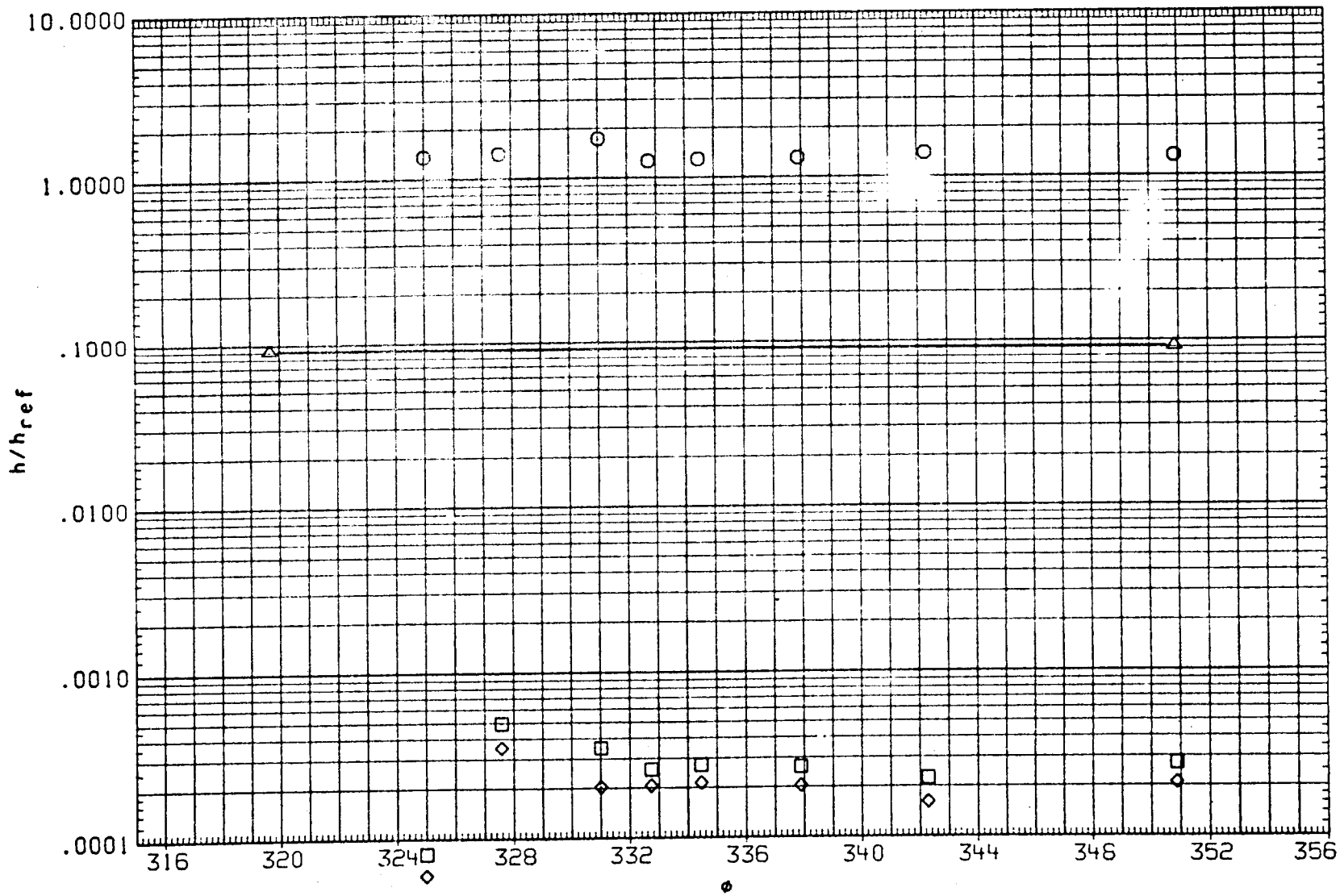

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HI = 1.000 X/L = .399 DATE 22 APR 78 PAGE 411

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

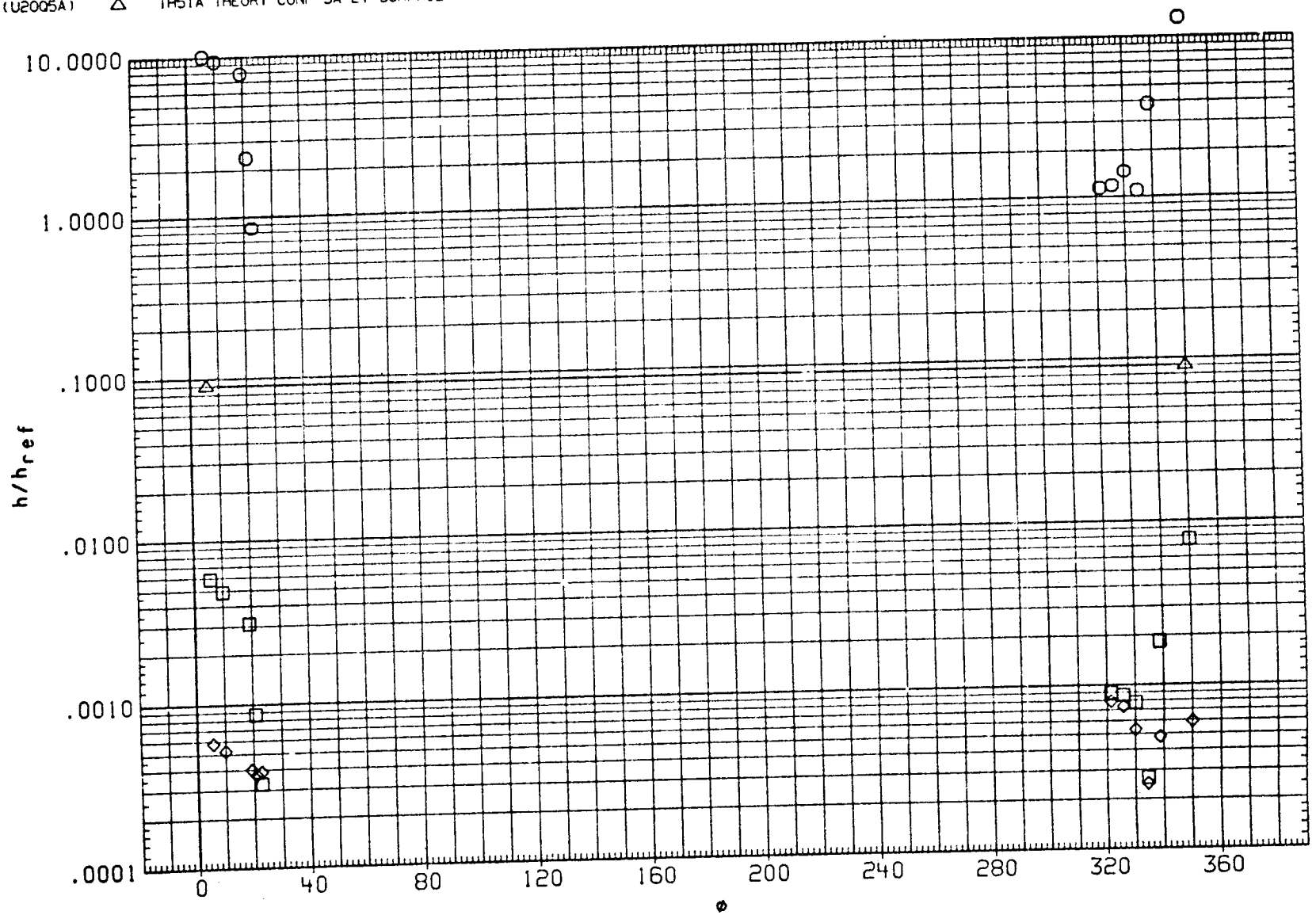

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .850 X/L = .437 DATE 22 APR 78 PAGE 412

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

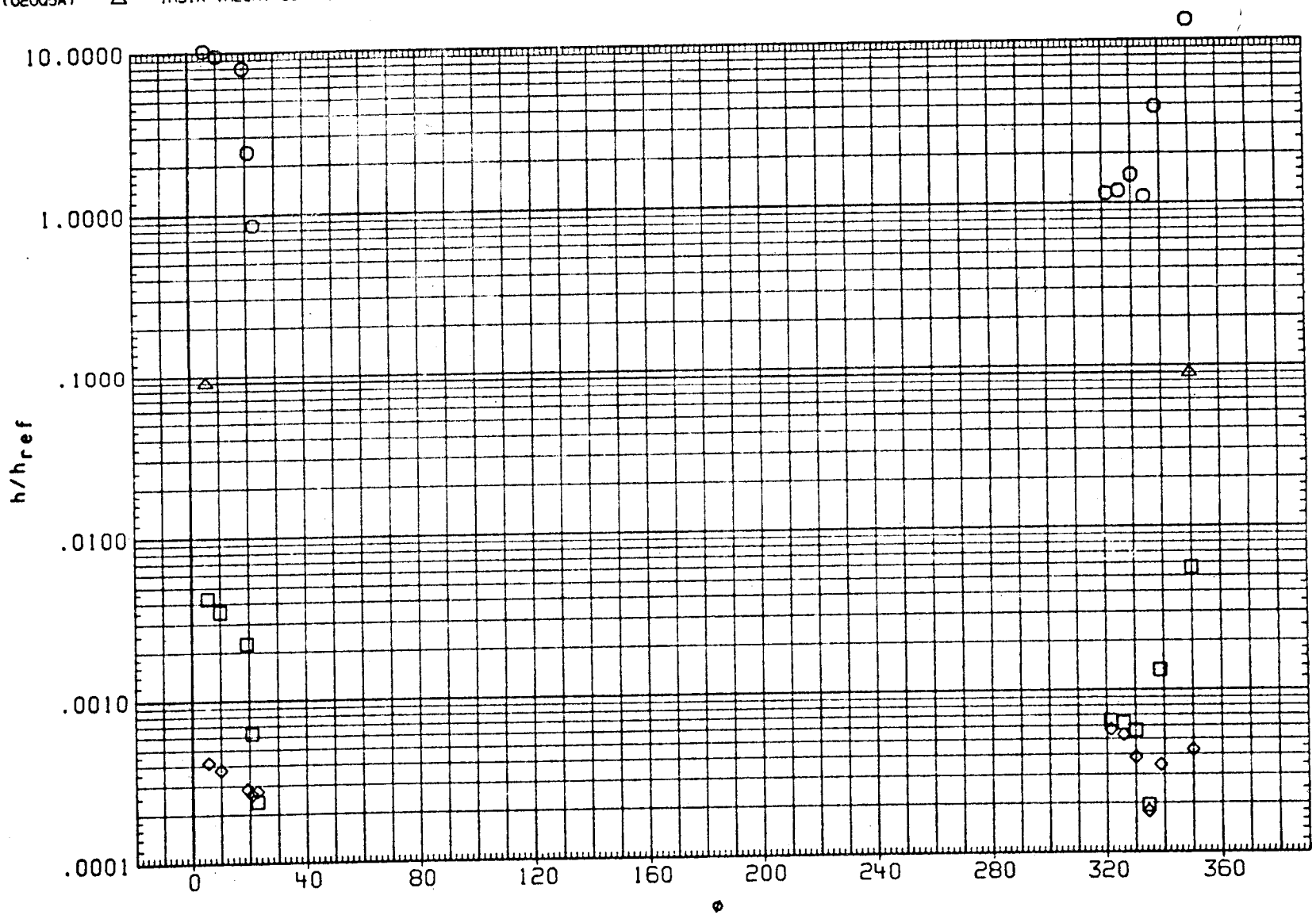

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .900 X/L = .437 DATE 22 APR 78 PAGE 413

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

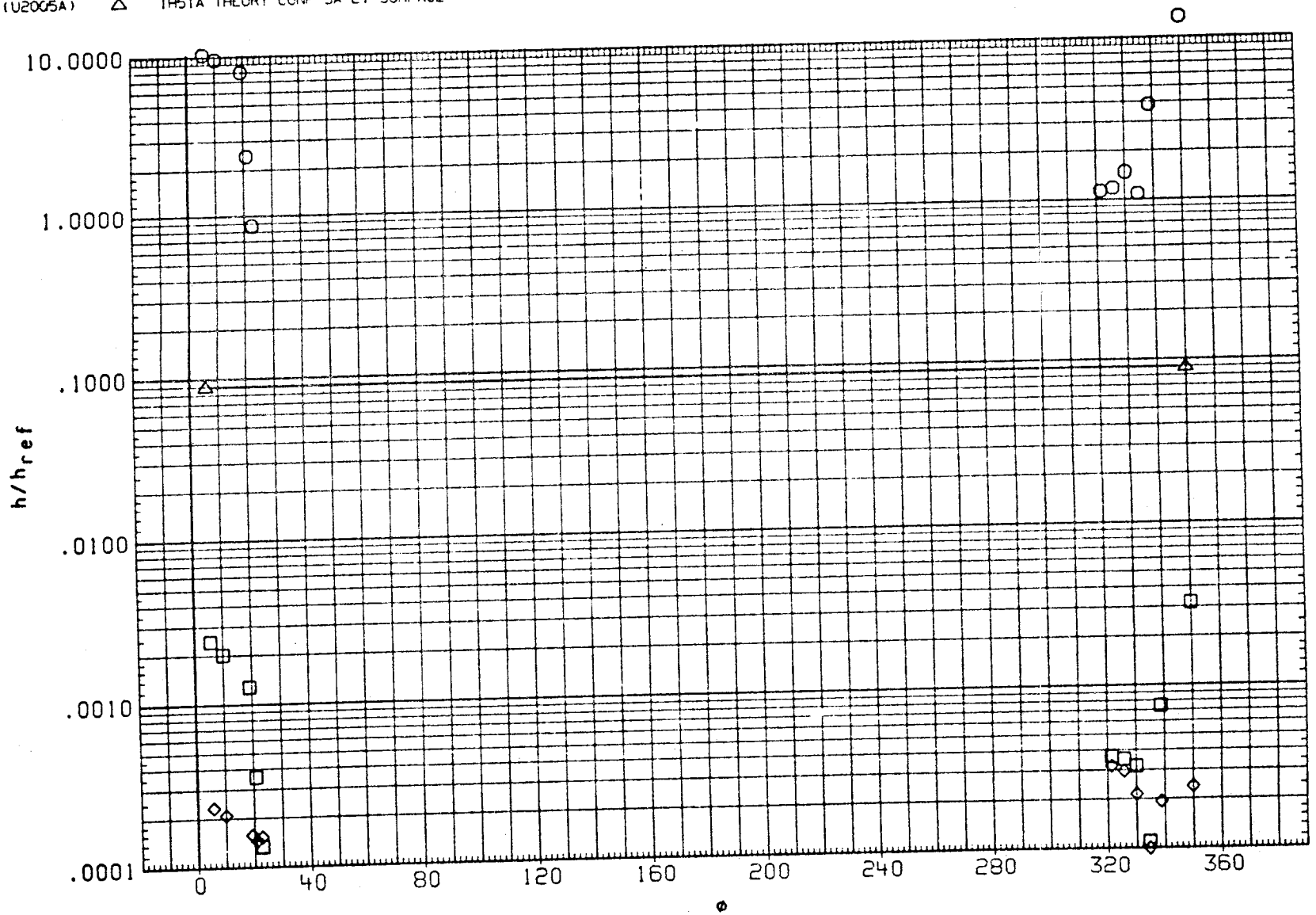

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78 PAGE 414

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

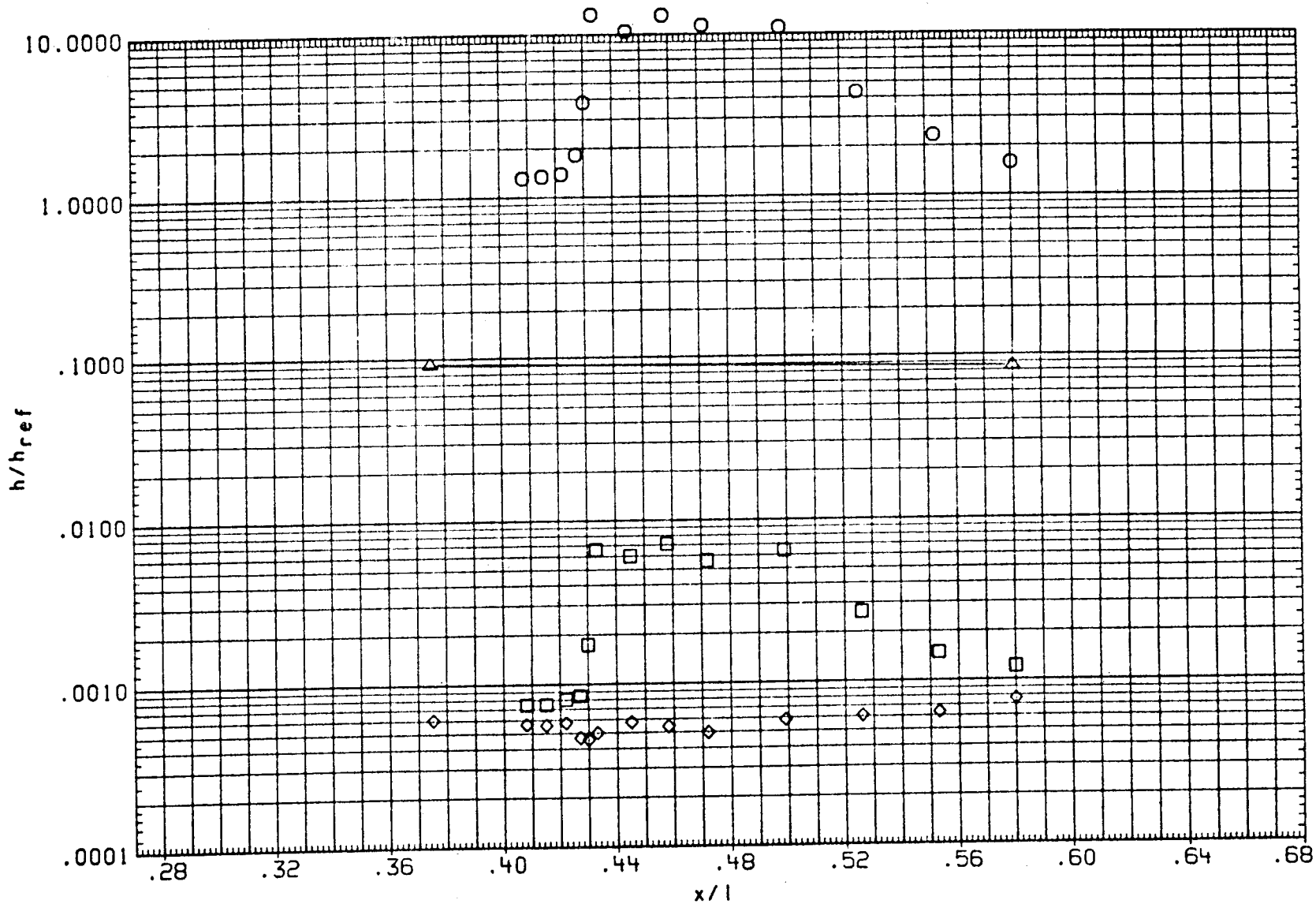

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 415

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

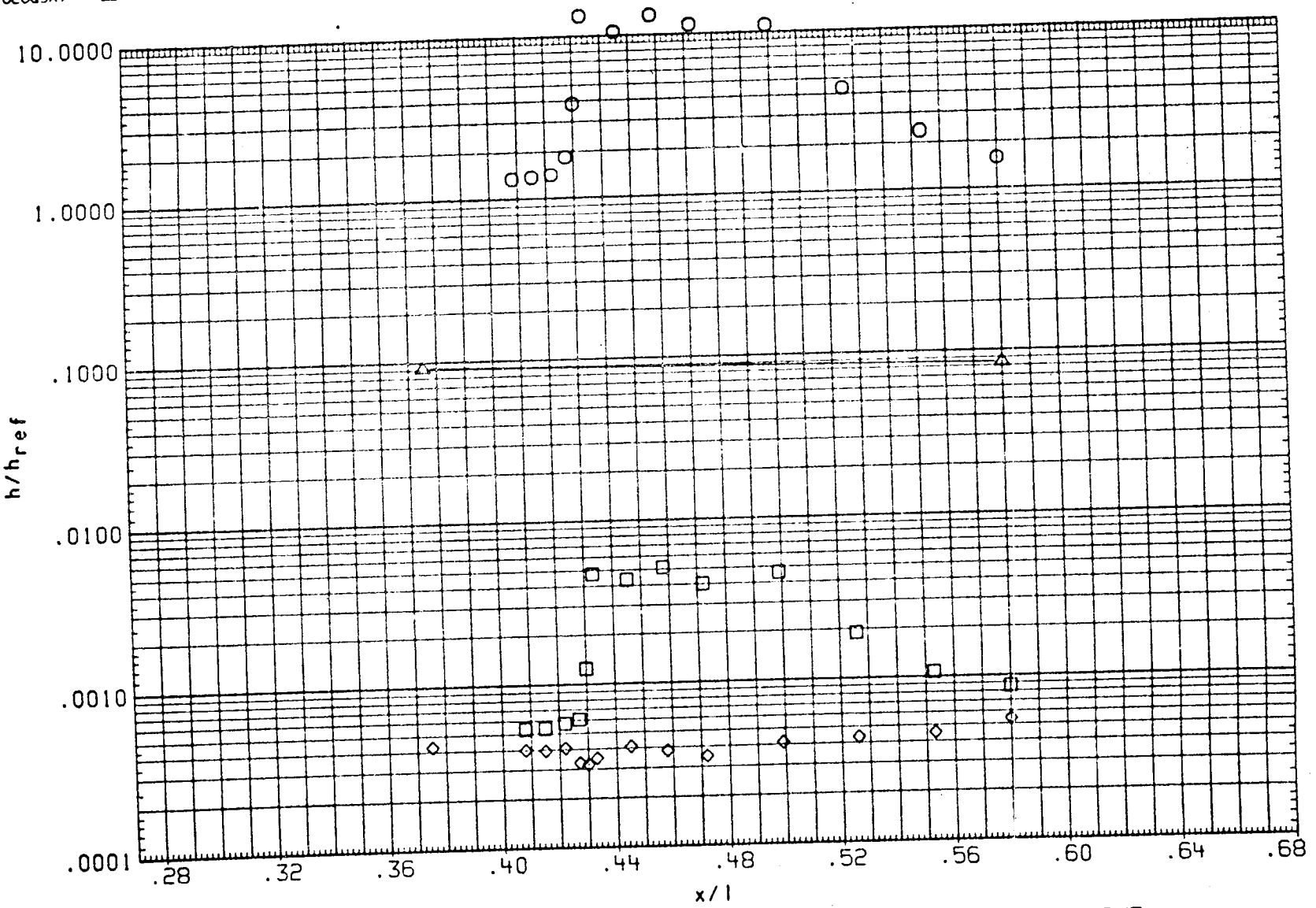

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 416

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

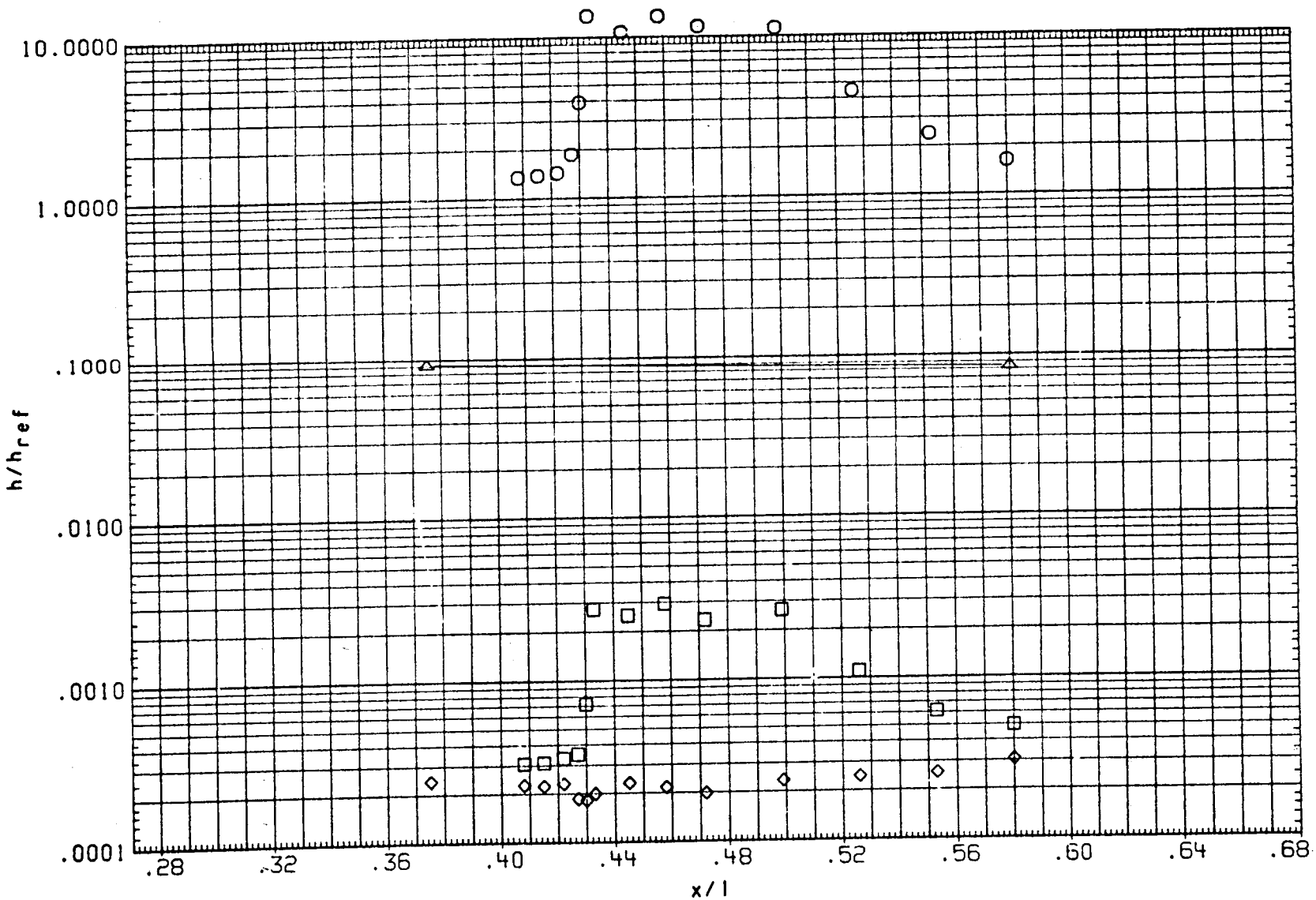

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 417

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

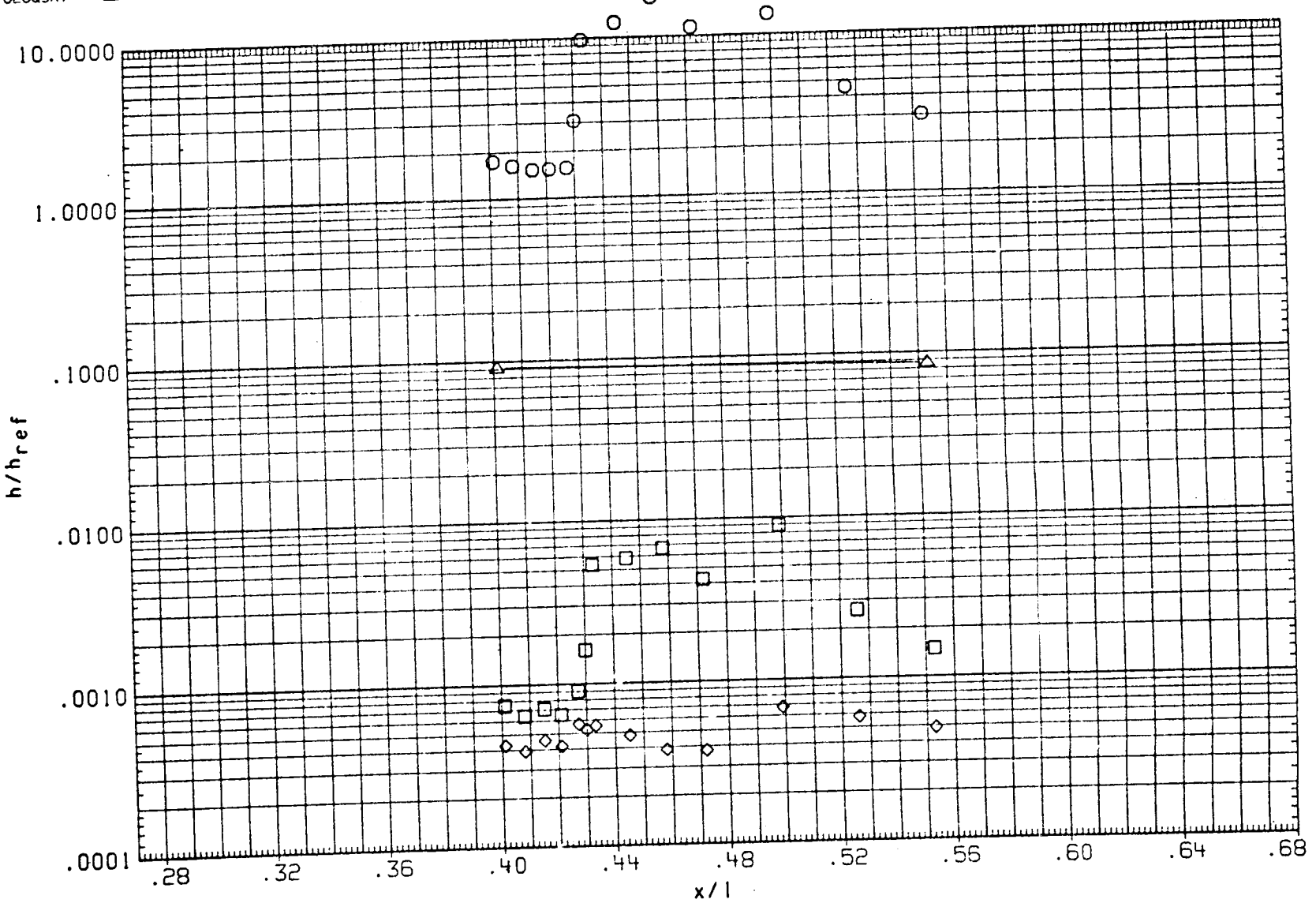

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 418

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

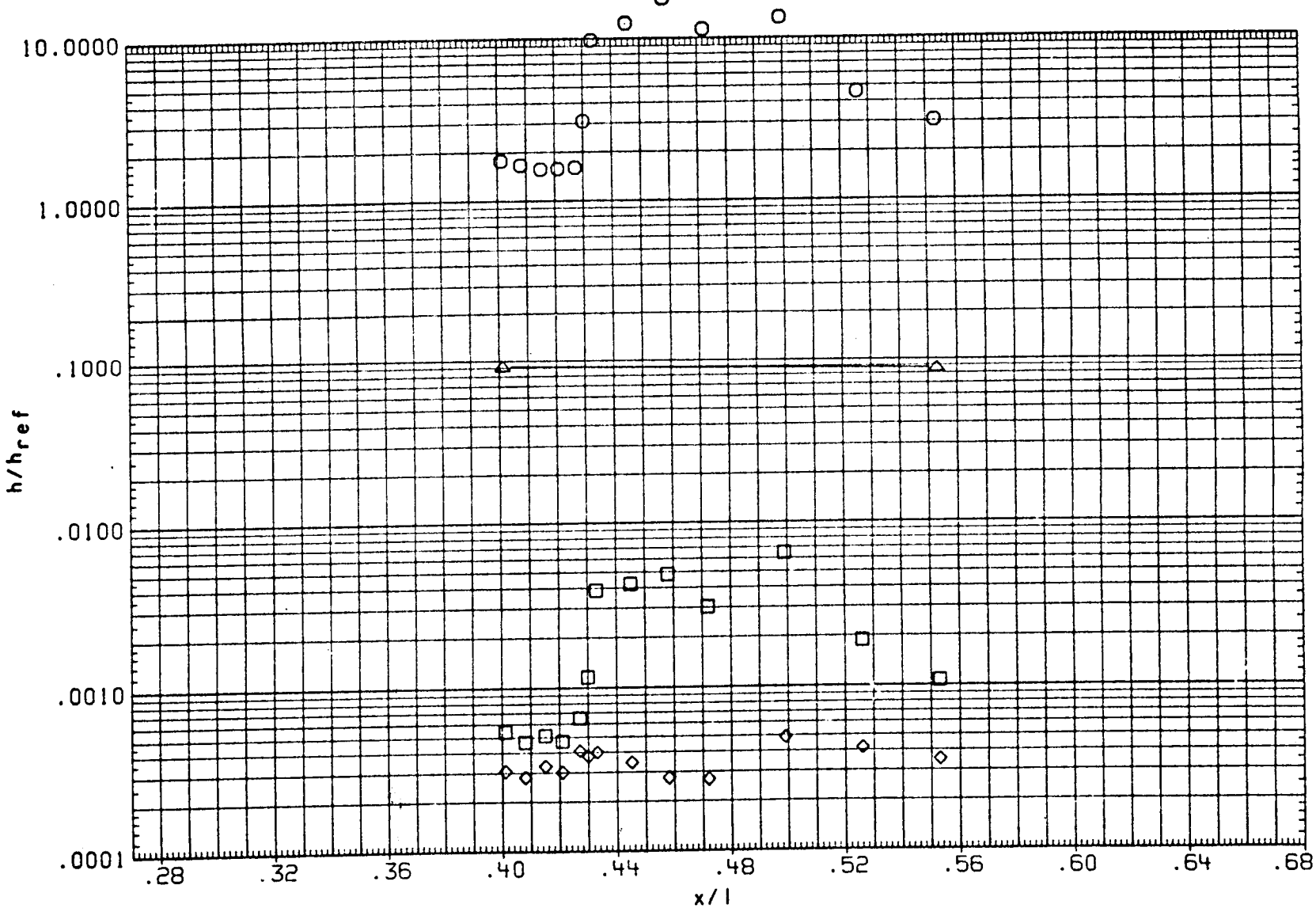

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78 PAGE 419

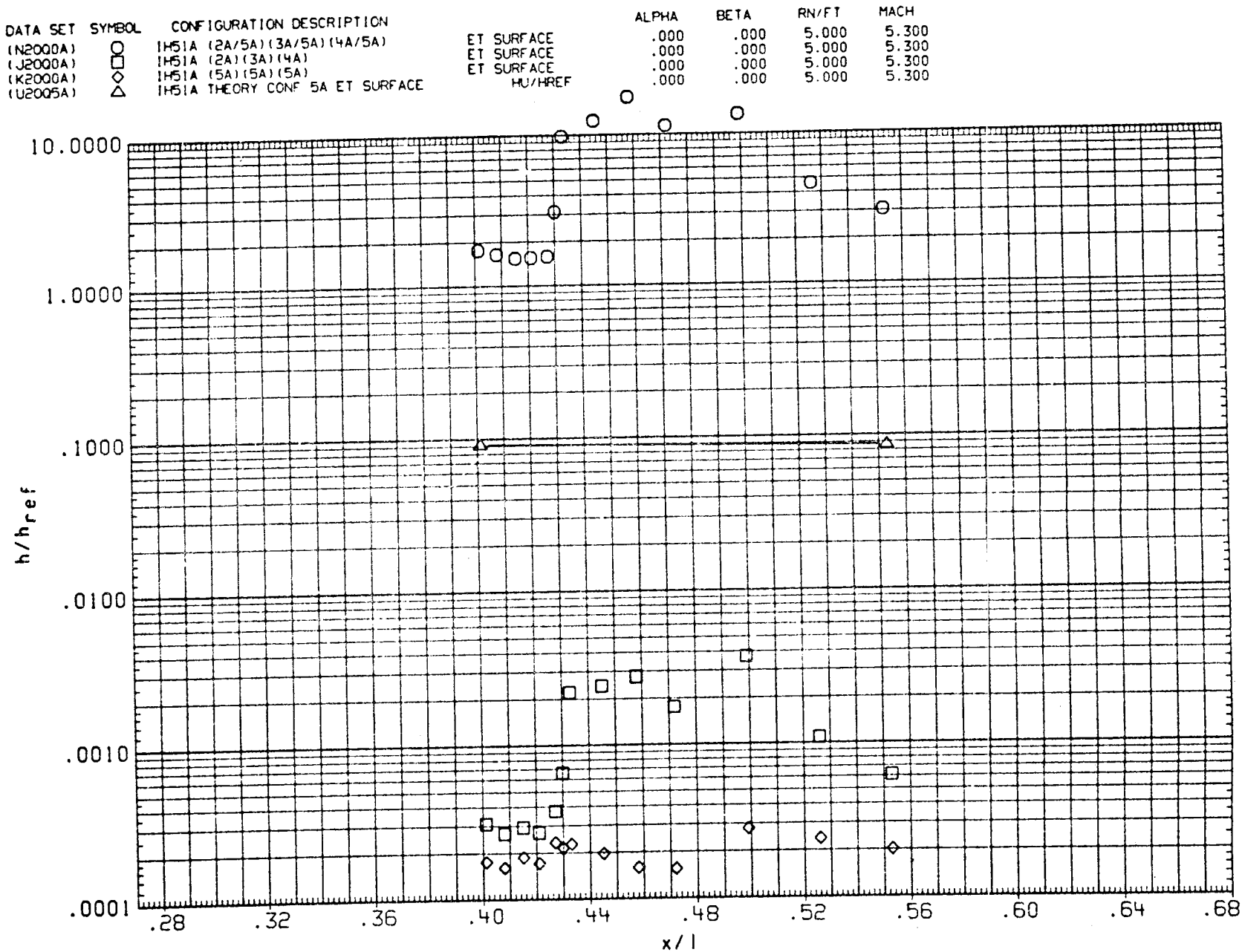

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78 PAGE 420

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

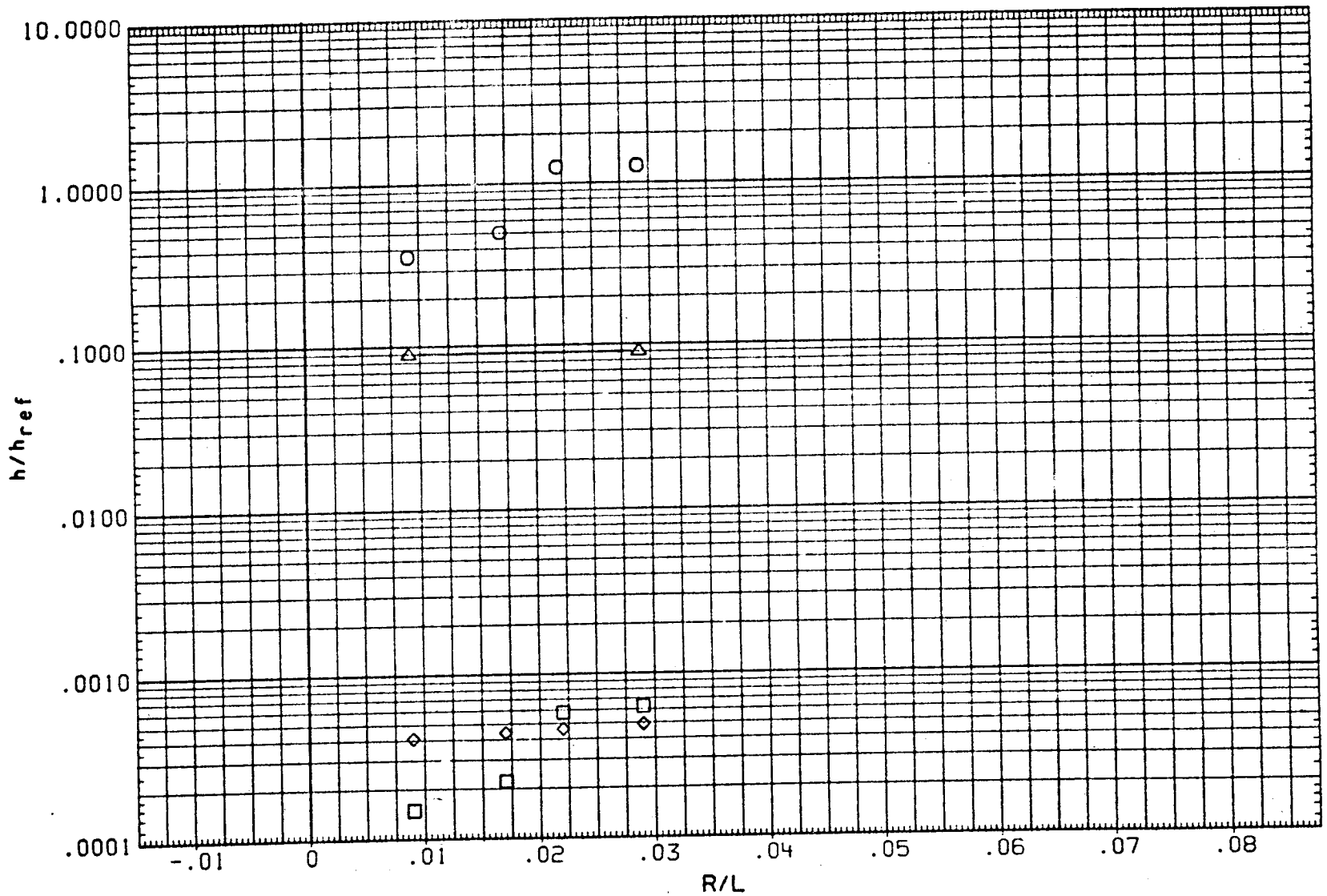

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 421

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

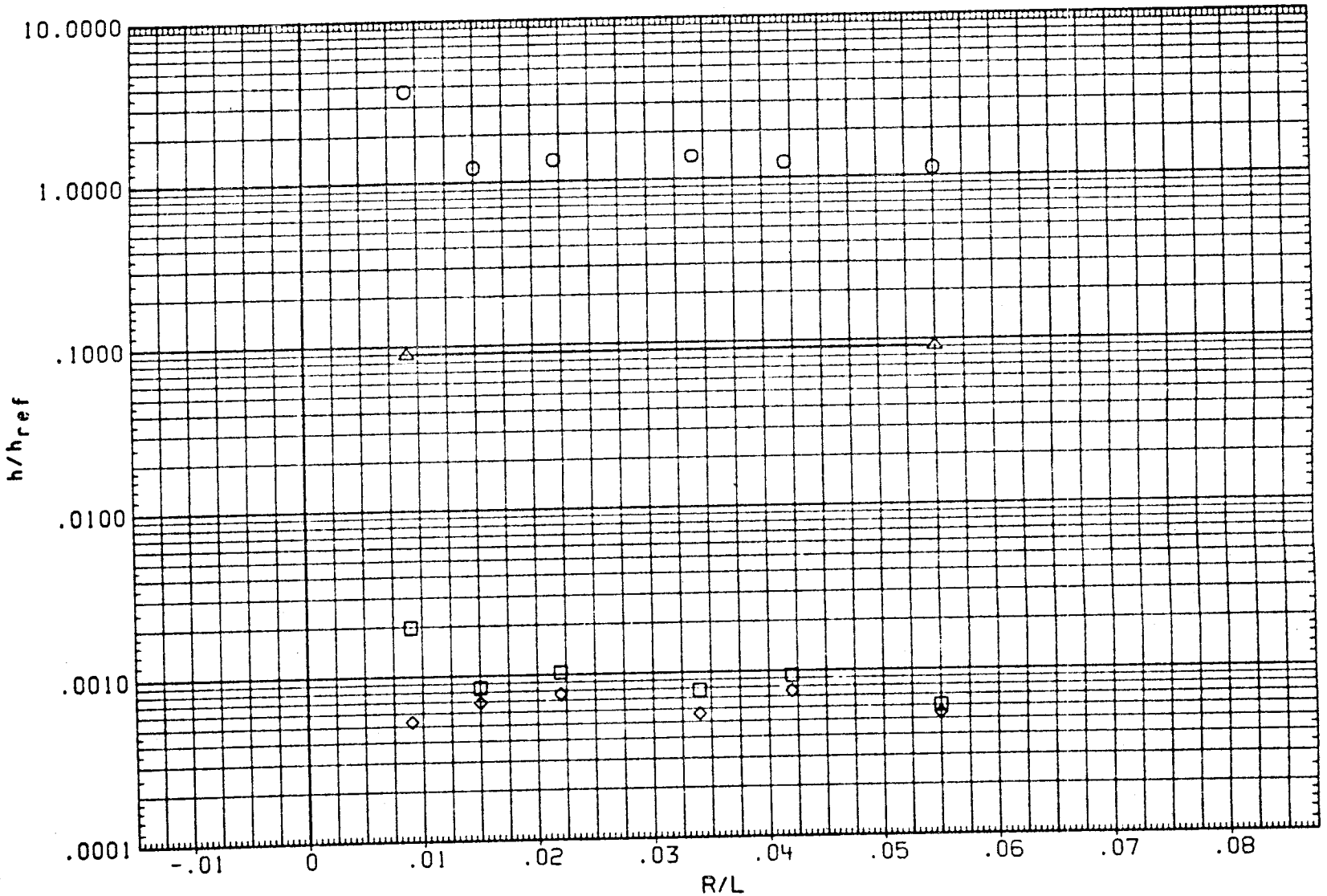

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 422

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

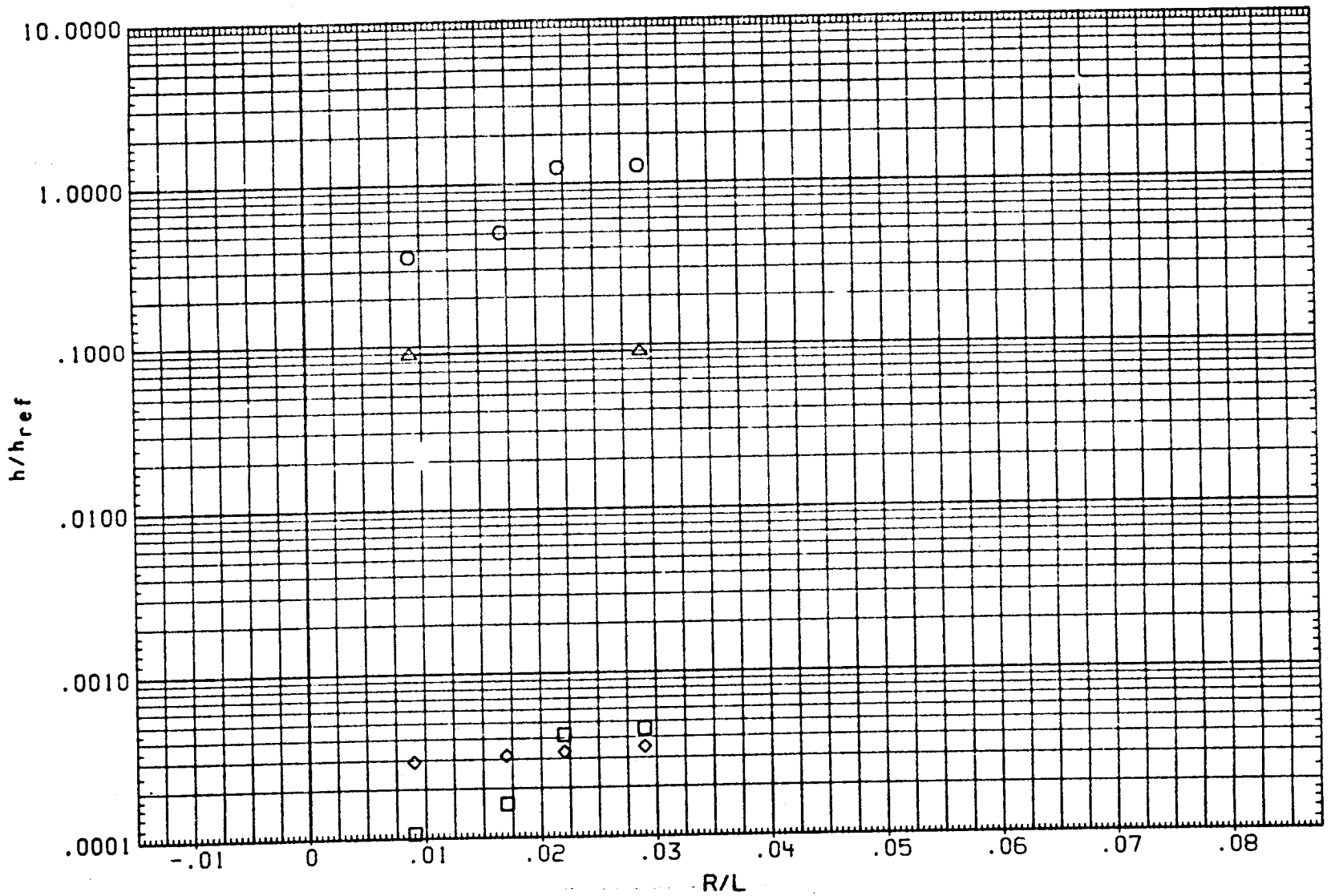

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

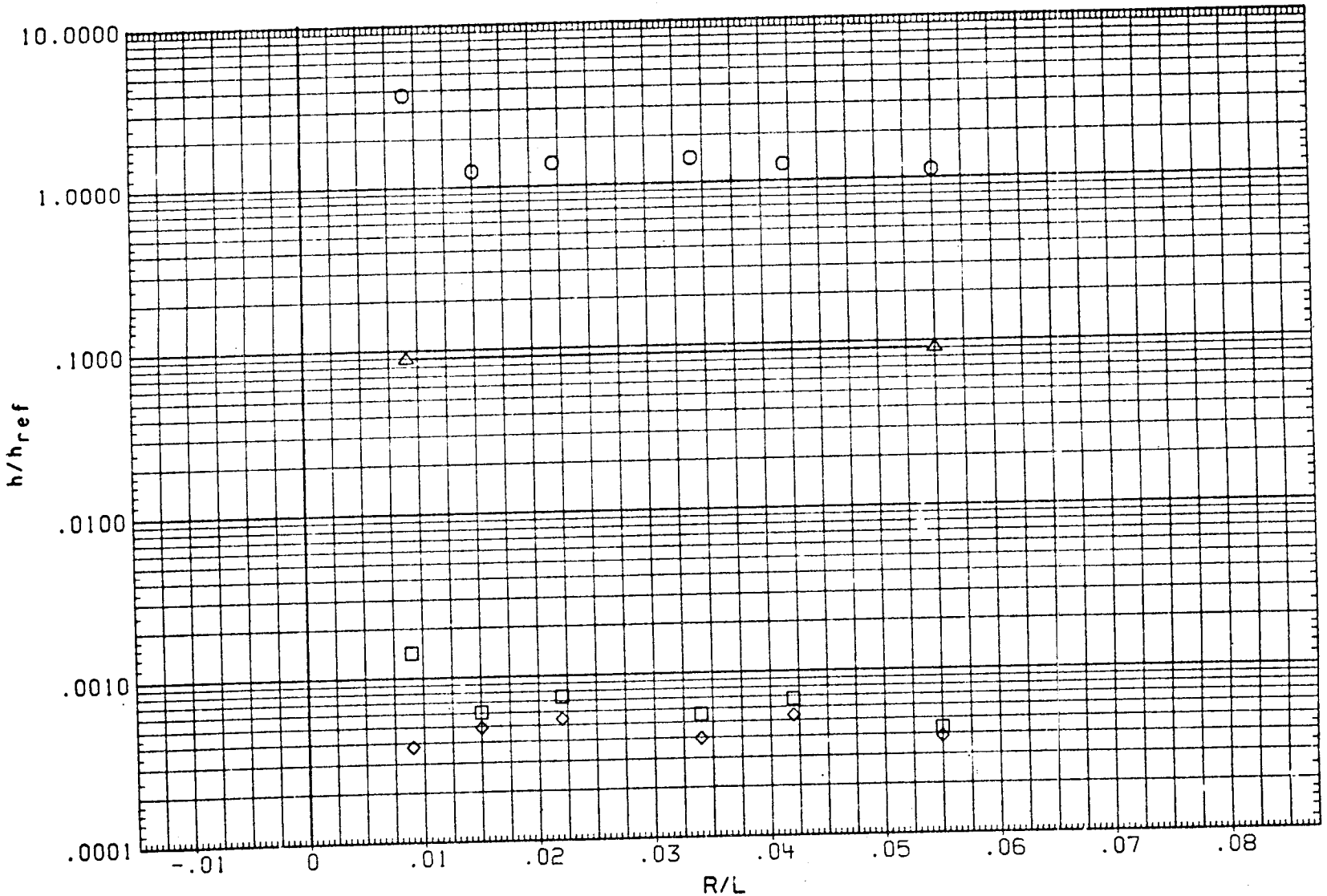

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 424

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

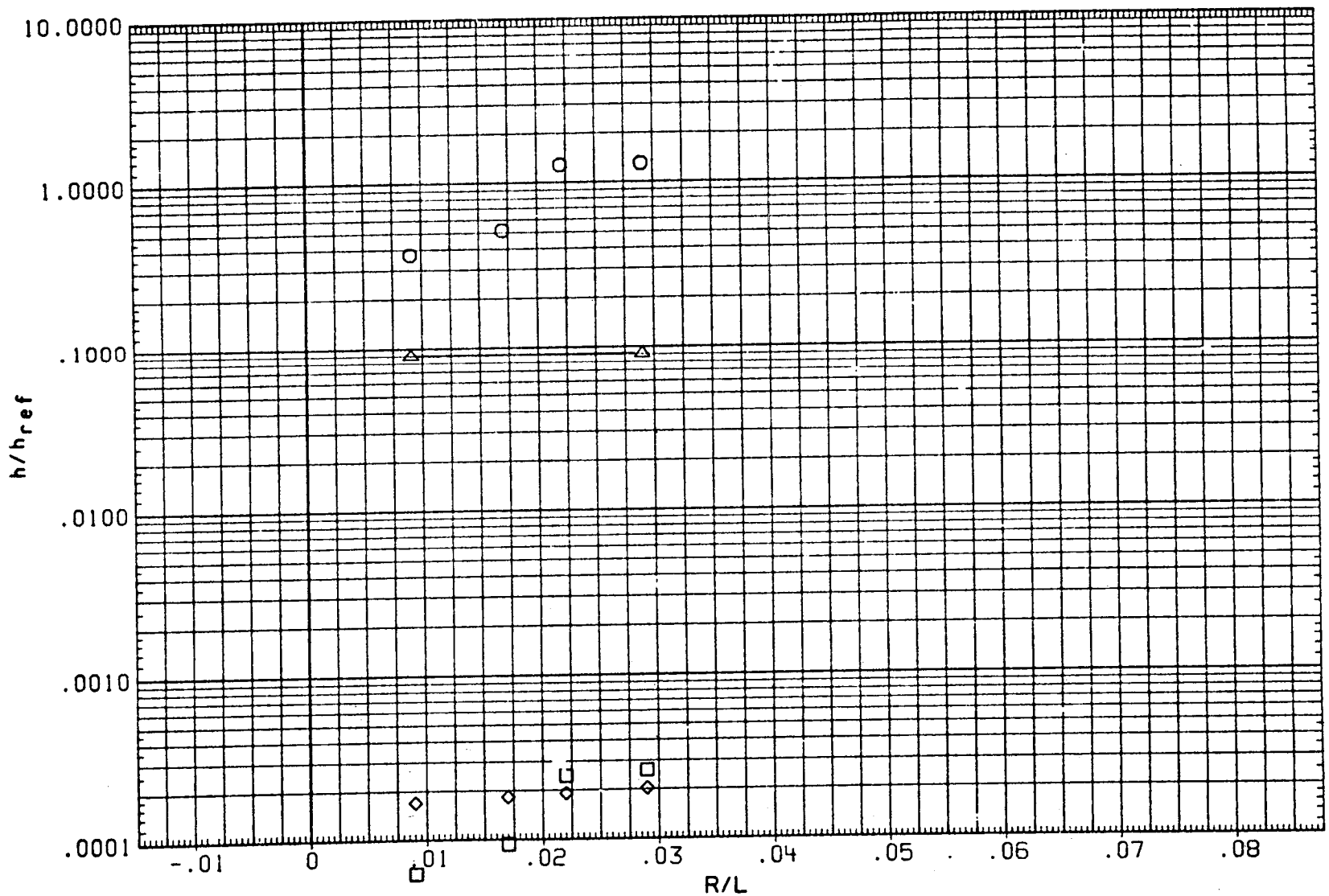

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 425

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

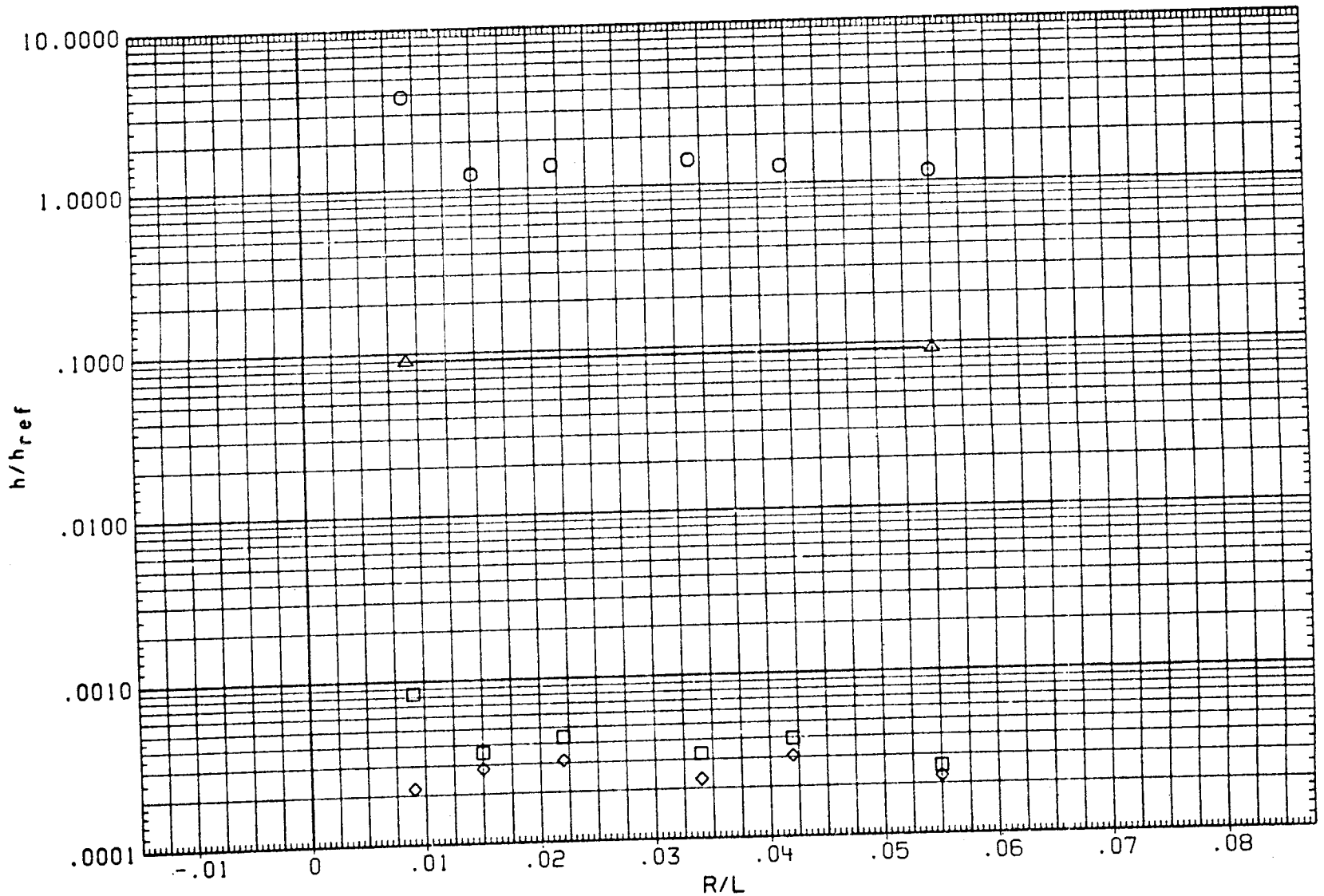

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 426

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0A)	□	IH51A (2A)(3A)(4A)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0A)	◇	IH51A (5A)(5A)(5A)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

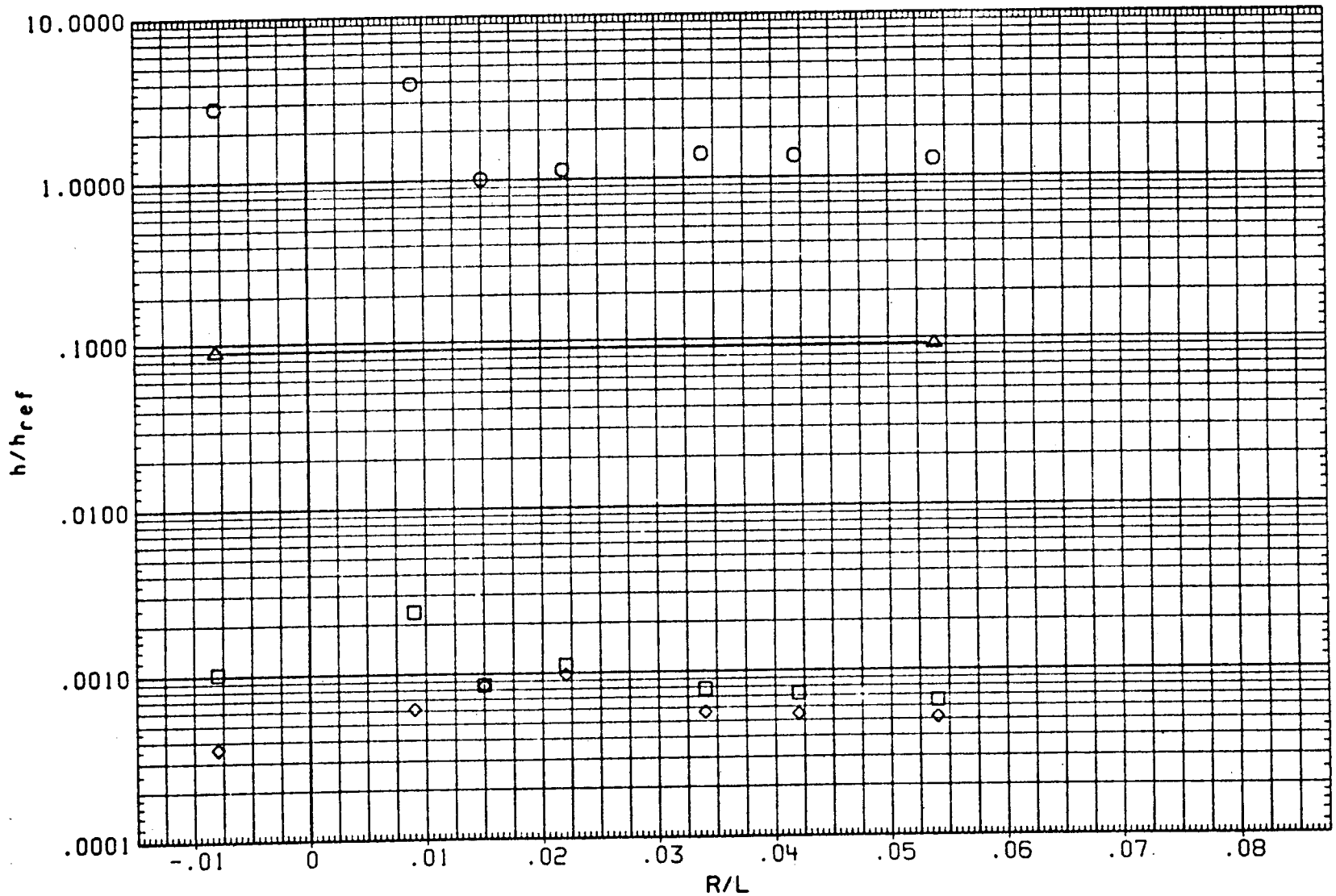

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 427

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0A)	□	IH51A (2A)(3A)(4A)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0A)	◇	IH51A (5A)(5A)(5A)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

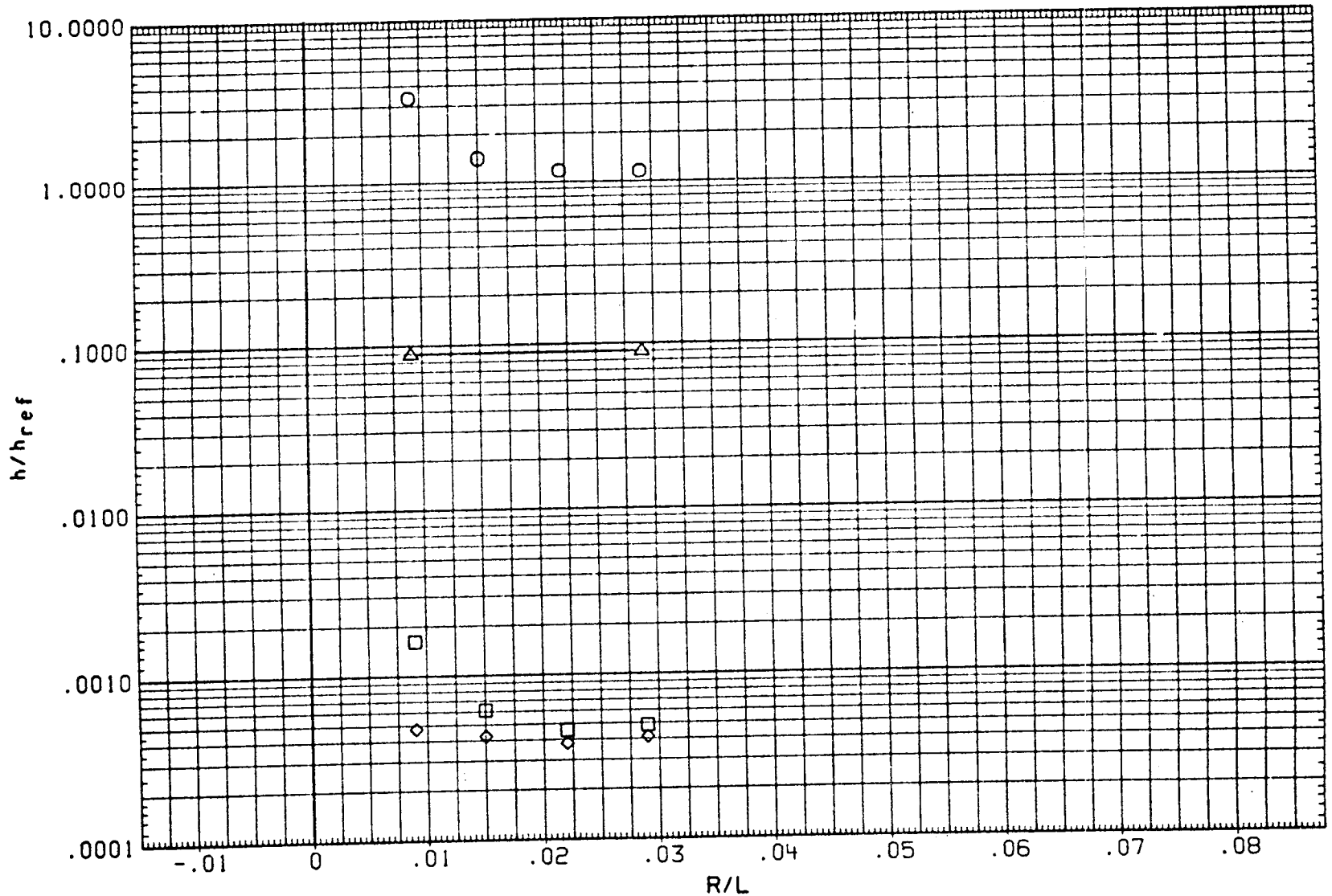

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 428

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0A)	□	IH51A (2A)(3A)(4A)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0A)	◇	IH51A (5A)(5A)(5A)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

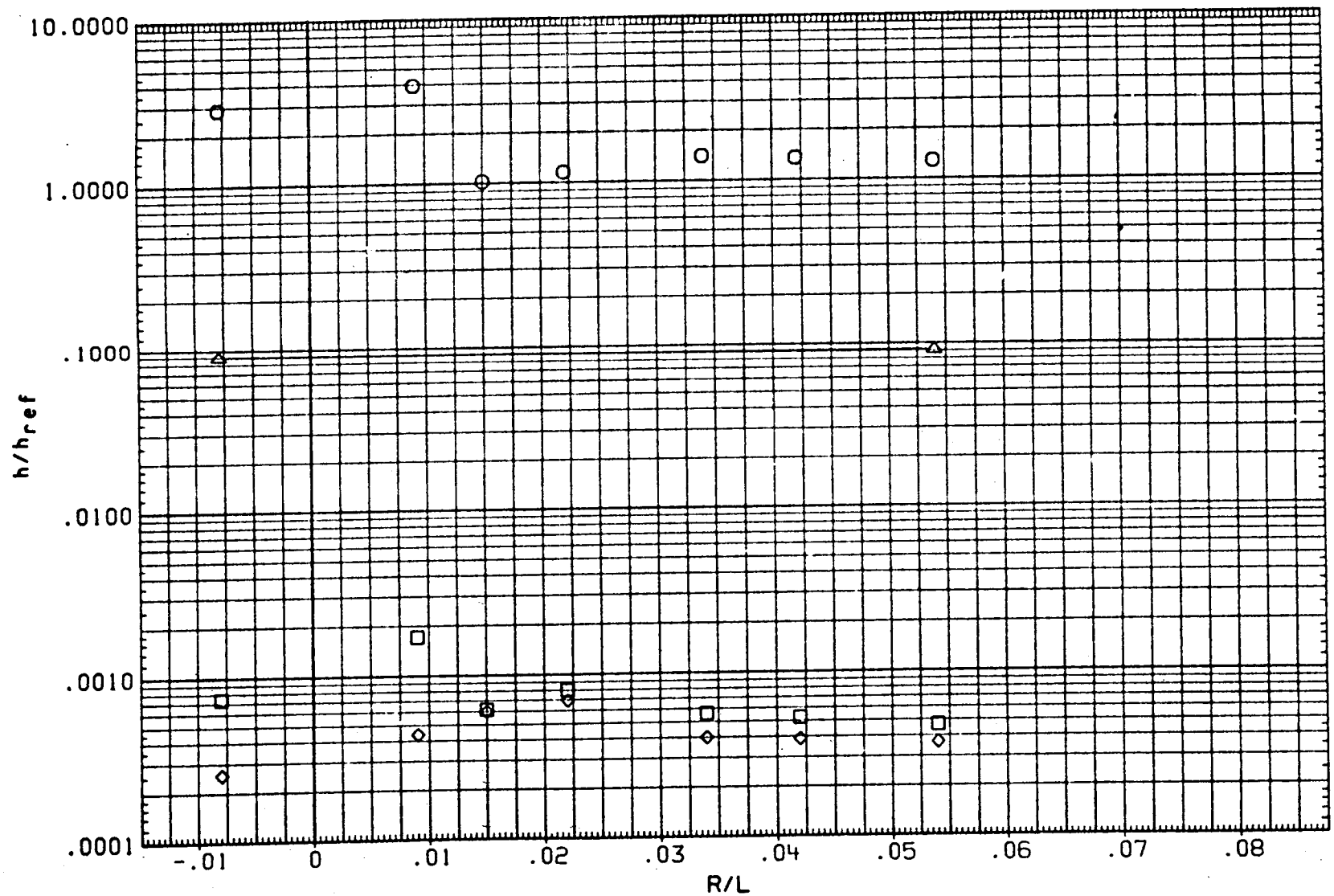

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 429

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0A)	□	IH51A (2A)(3A)(4A)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0A)	◇	IH51A (5A)(5A)(5A)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

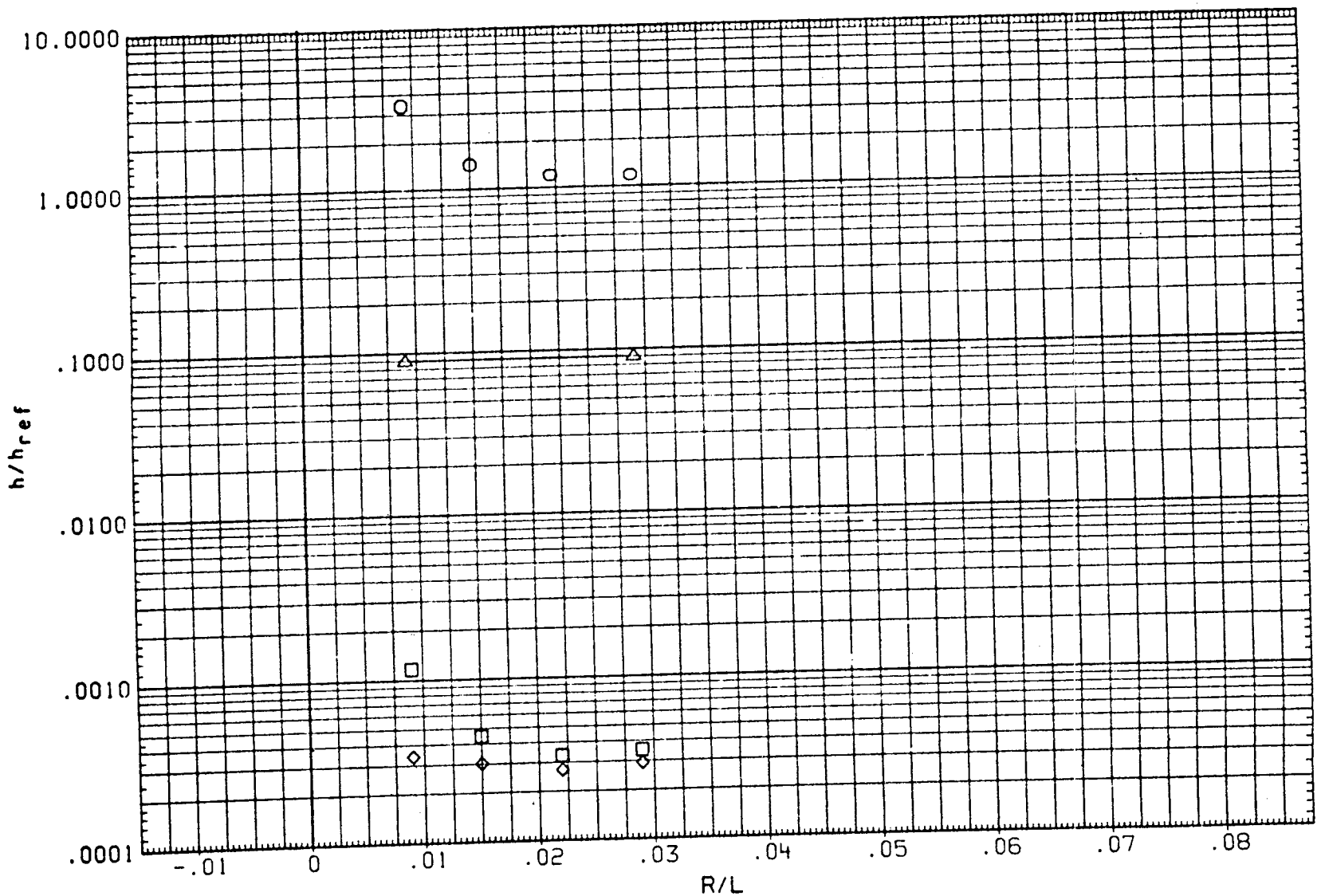

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0A)	□	IH51A (2A)(3A)(4A)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0A)	◇	IH51A (5A)(5A)(5A)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

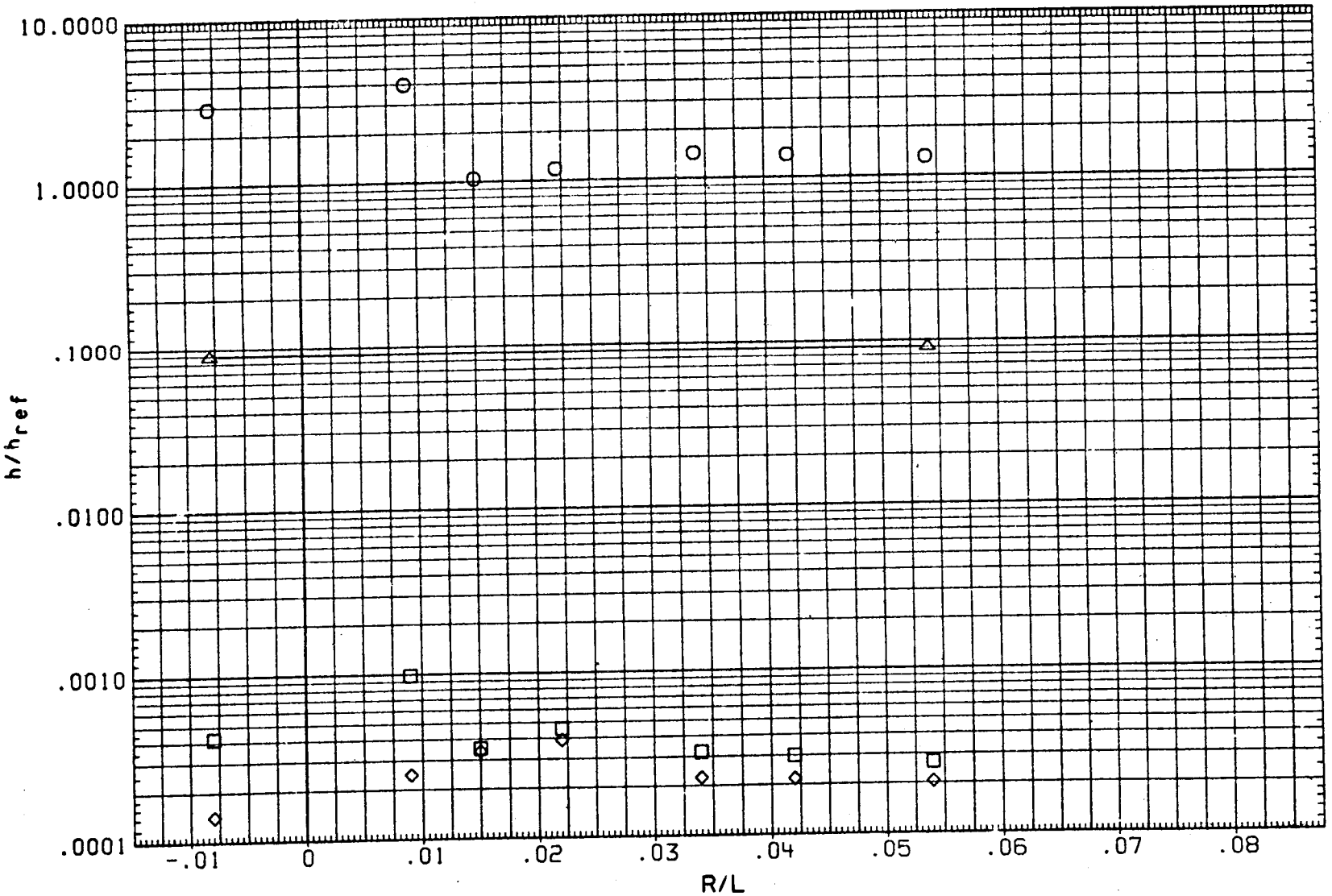

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 431

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0A)	□	IH51A (2A)(3A)(4A)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0A)	◇	IH51A (5A)(5A)(5A)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

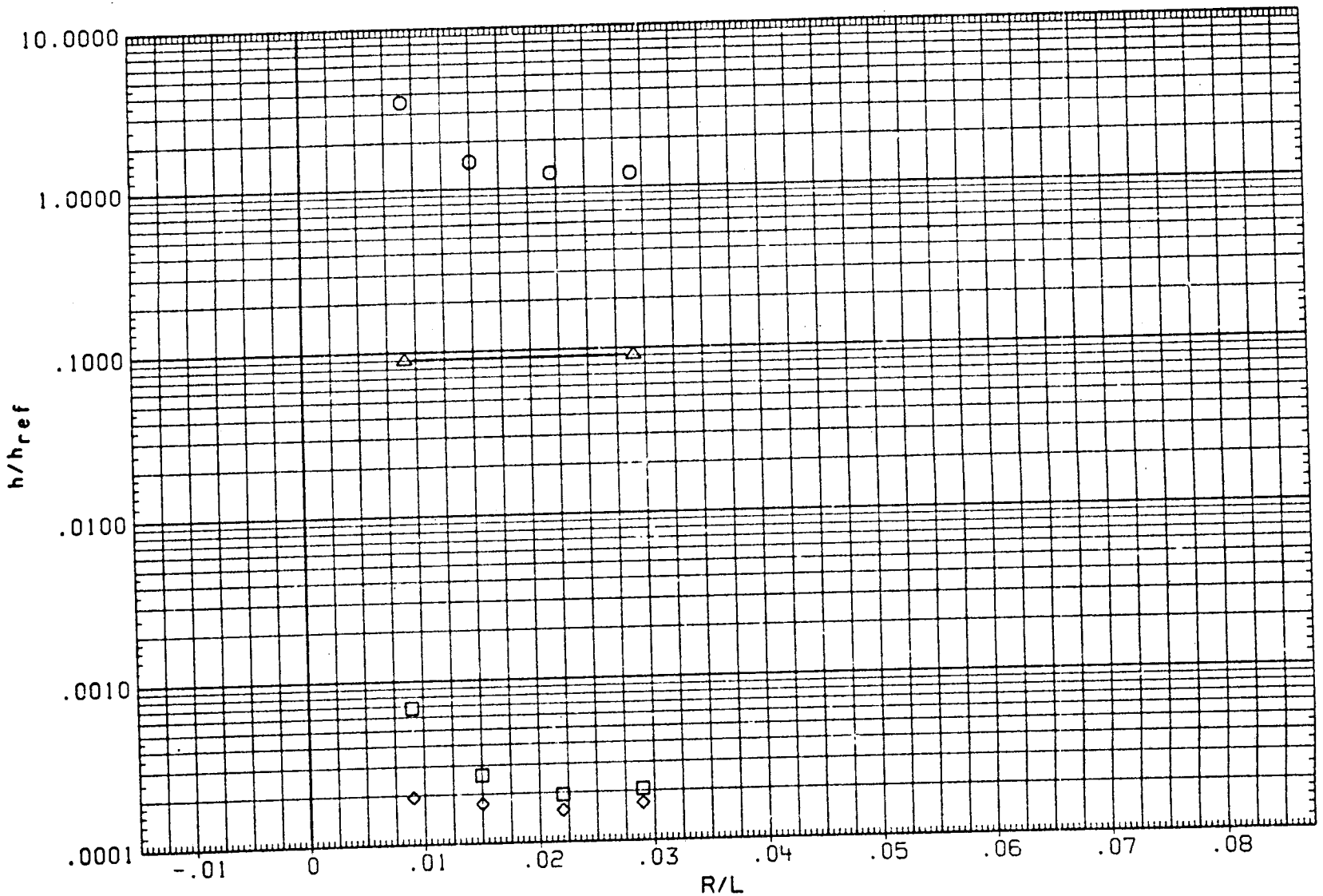

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 432

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

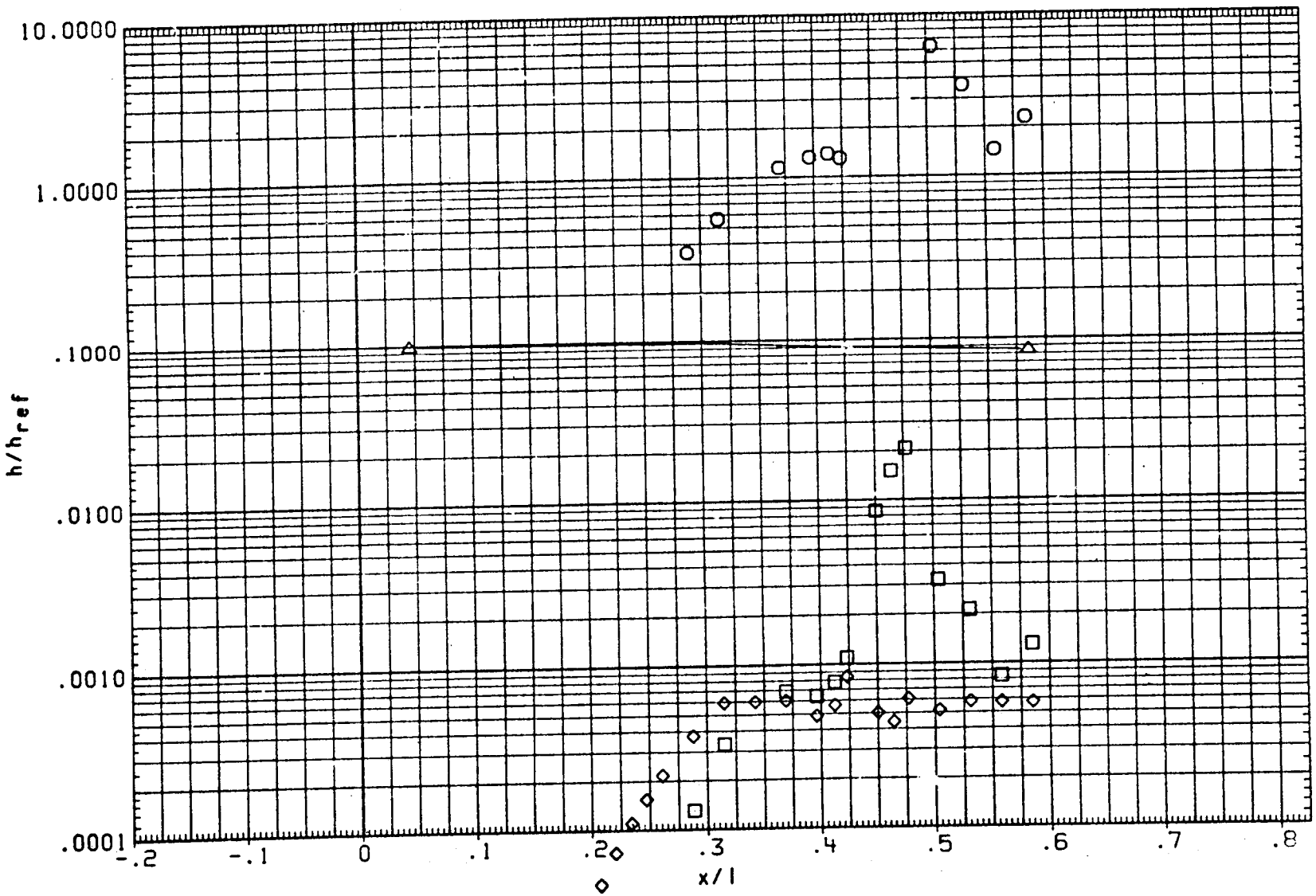

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = .850 PHI = .000 DATE 22 APR 78 PAGE 433

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

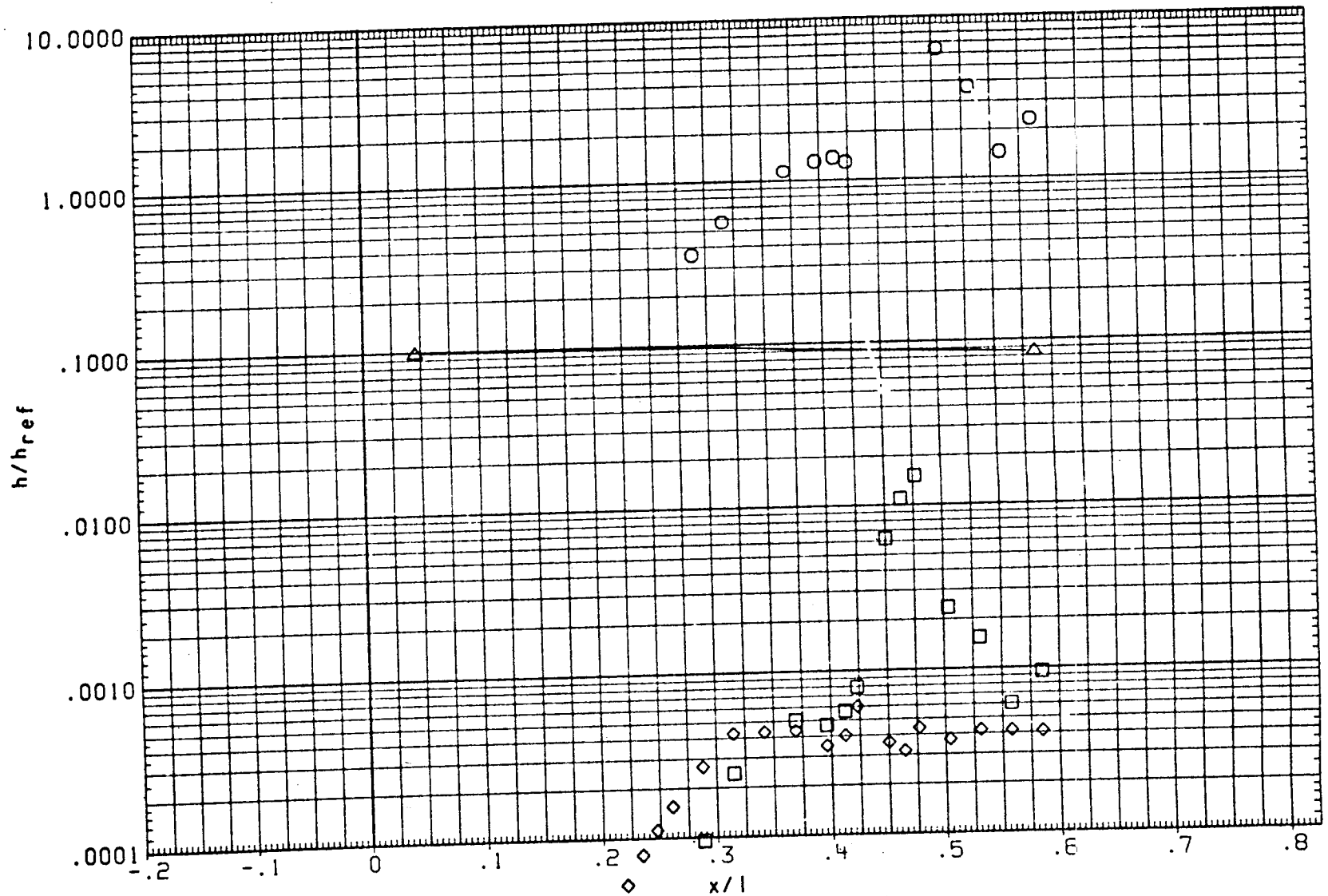

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = .900 RHO = .000 DATE 22 APR 78 PAGE 434

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

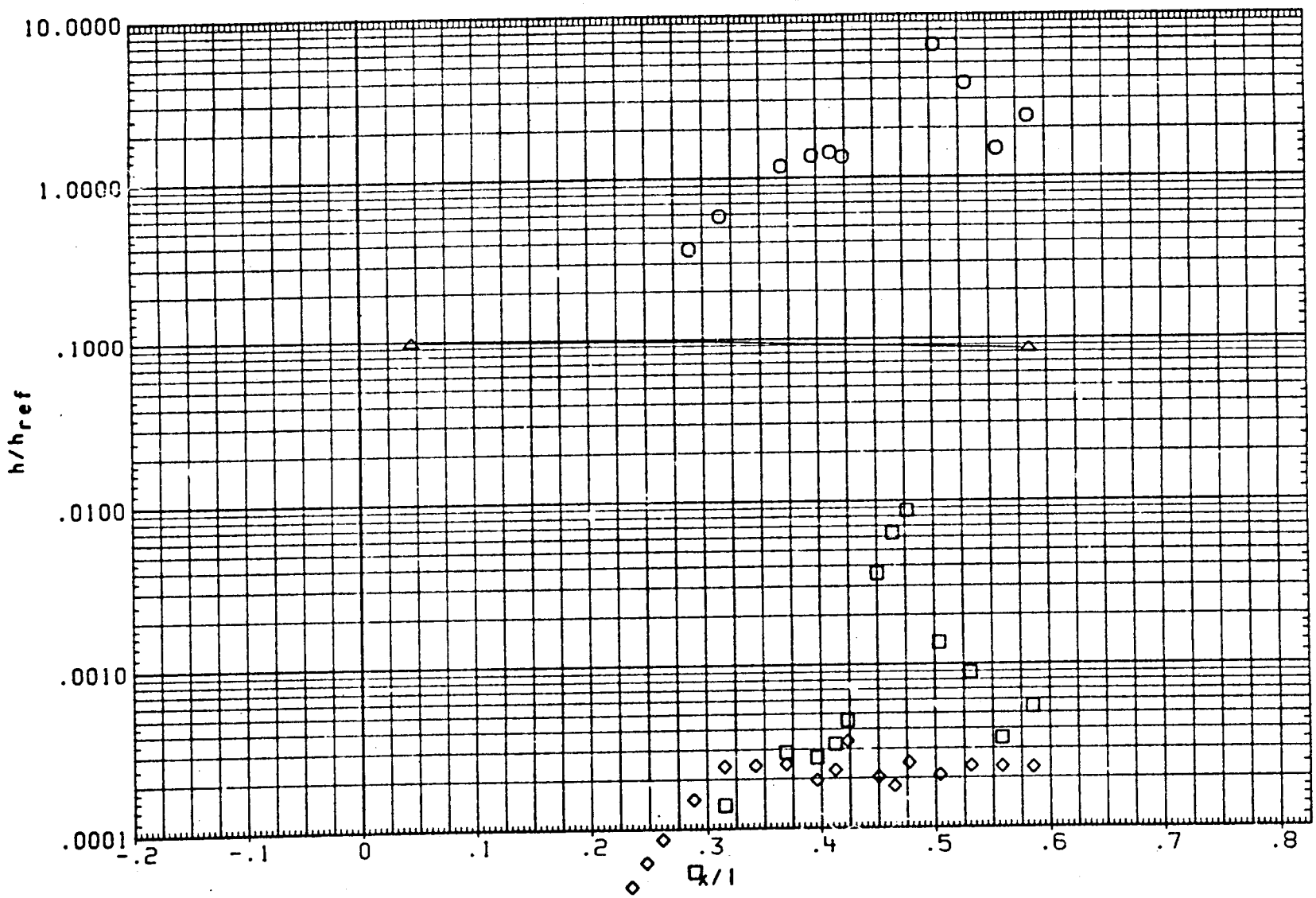

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 435

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

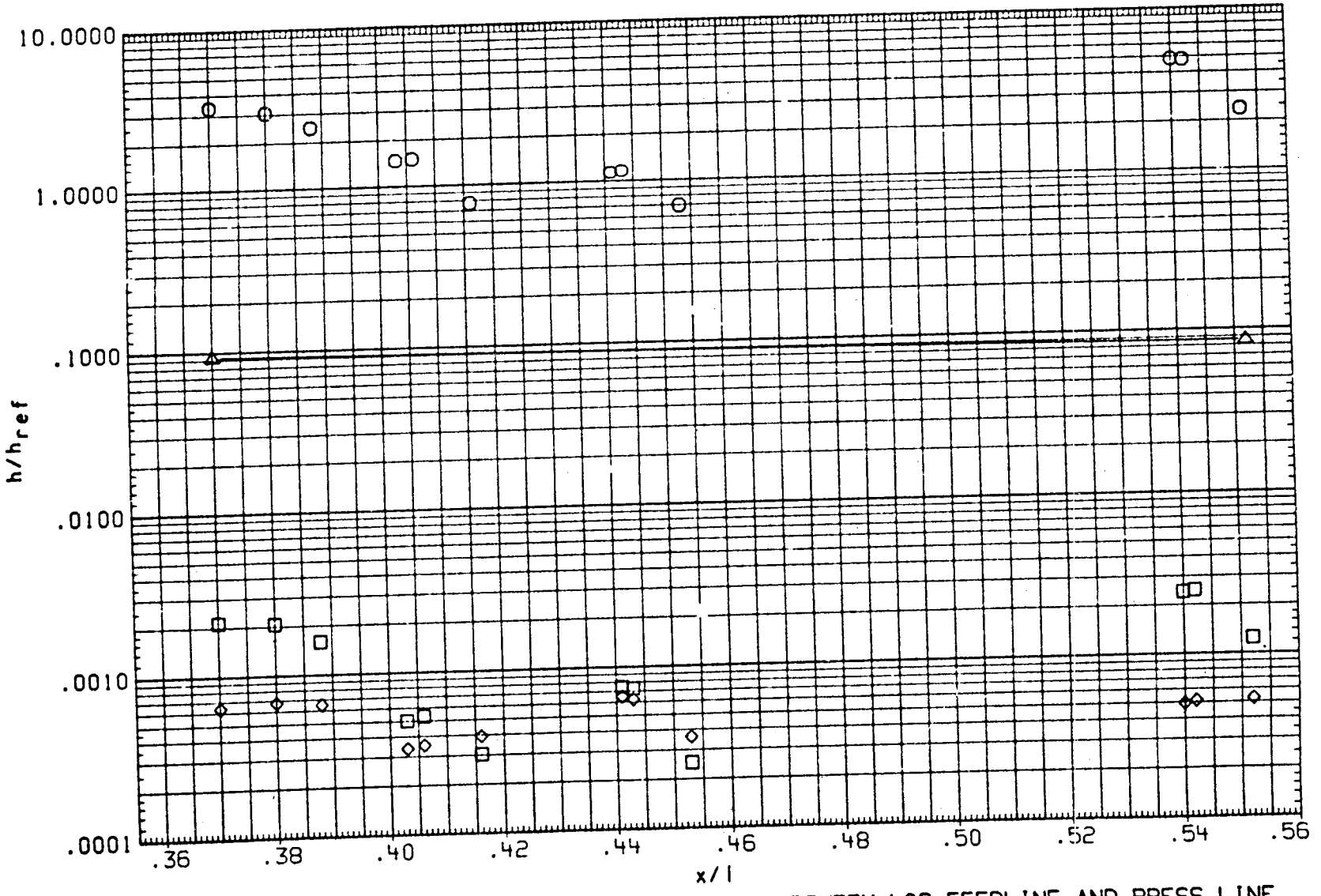

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 436

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

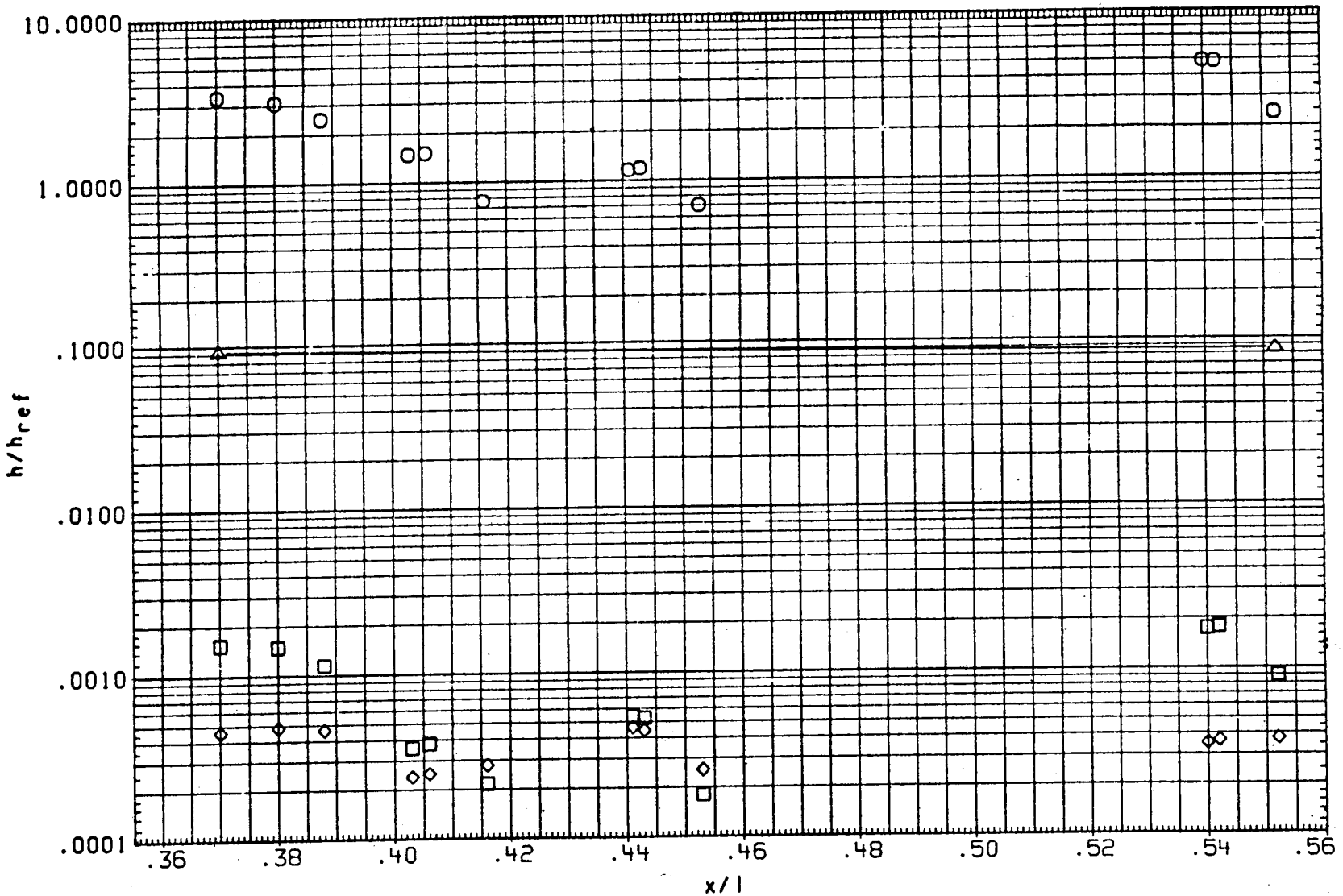

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 437

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

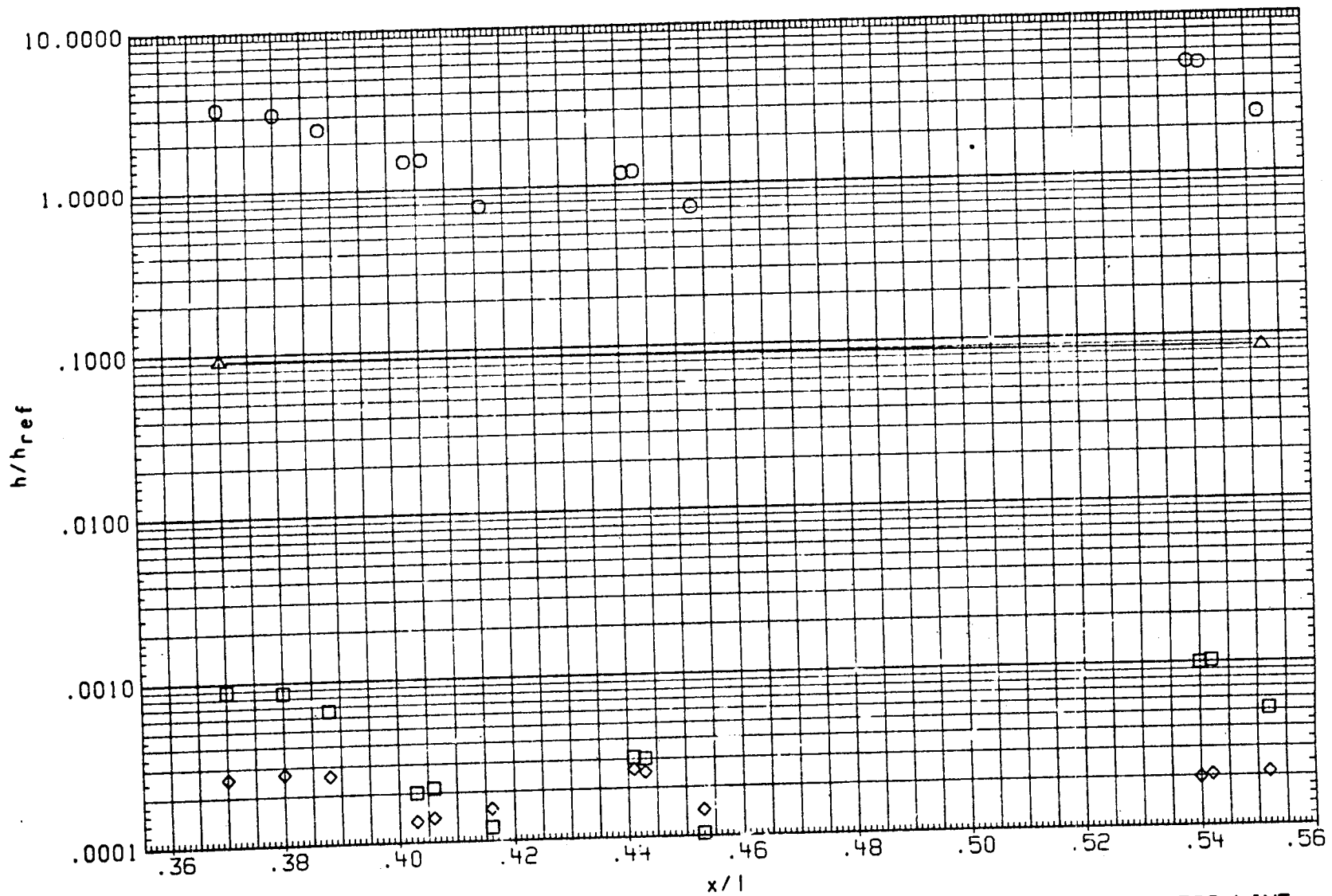

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 438

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

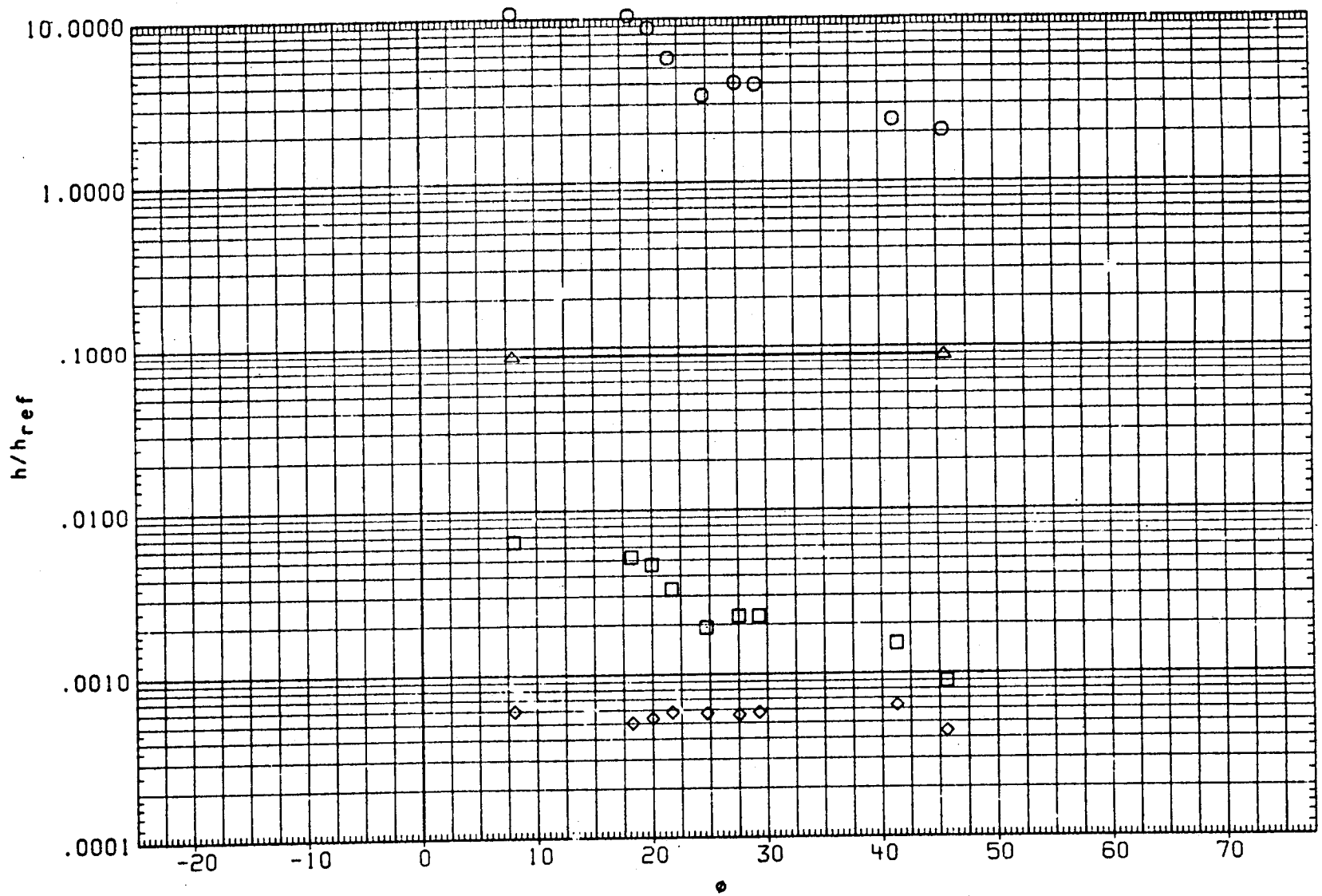

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 439

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

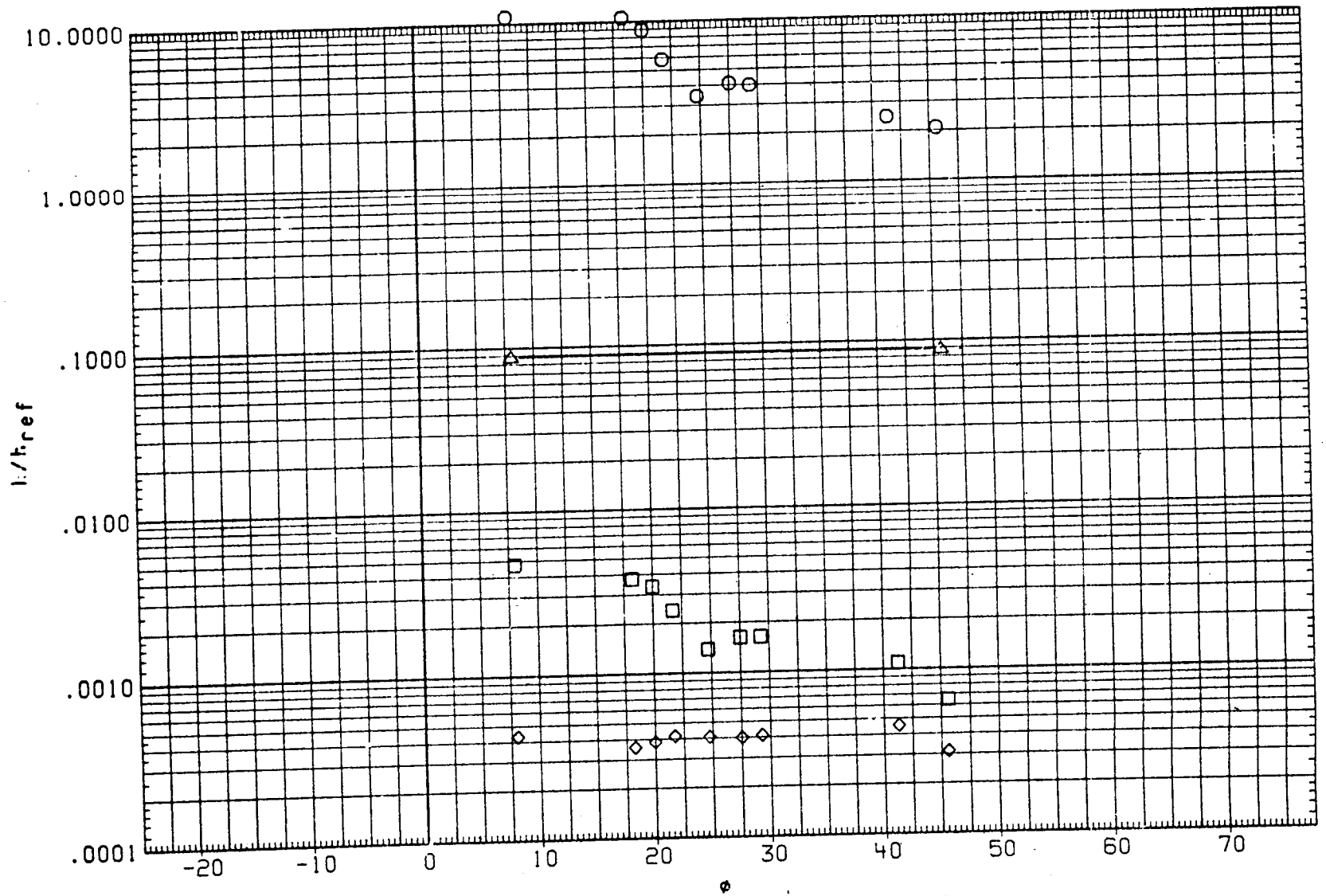

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 440

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

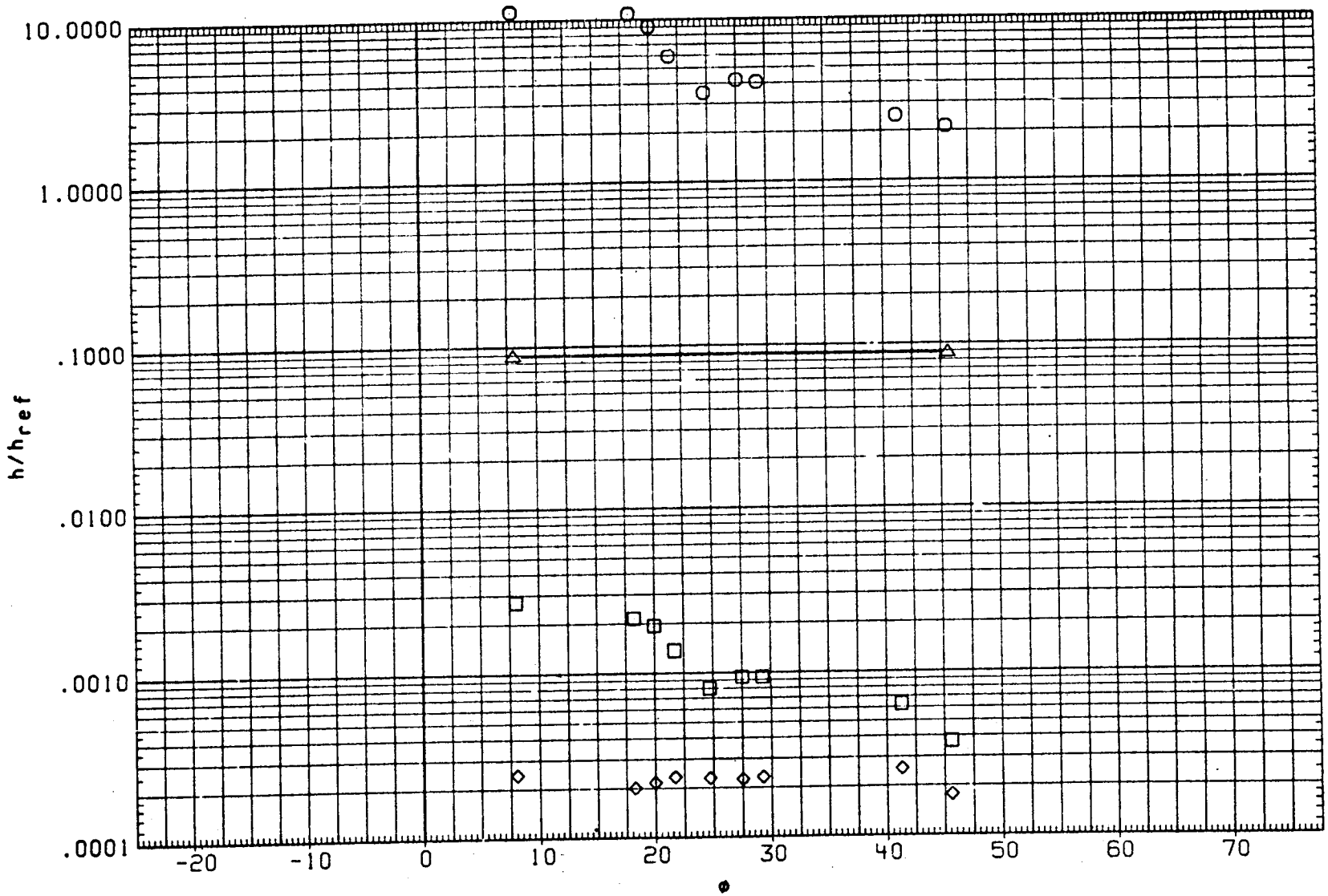

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 441

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

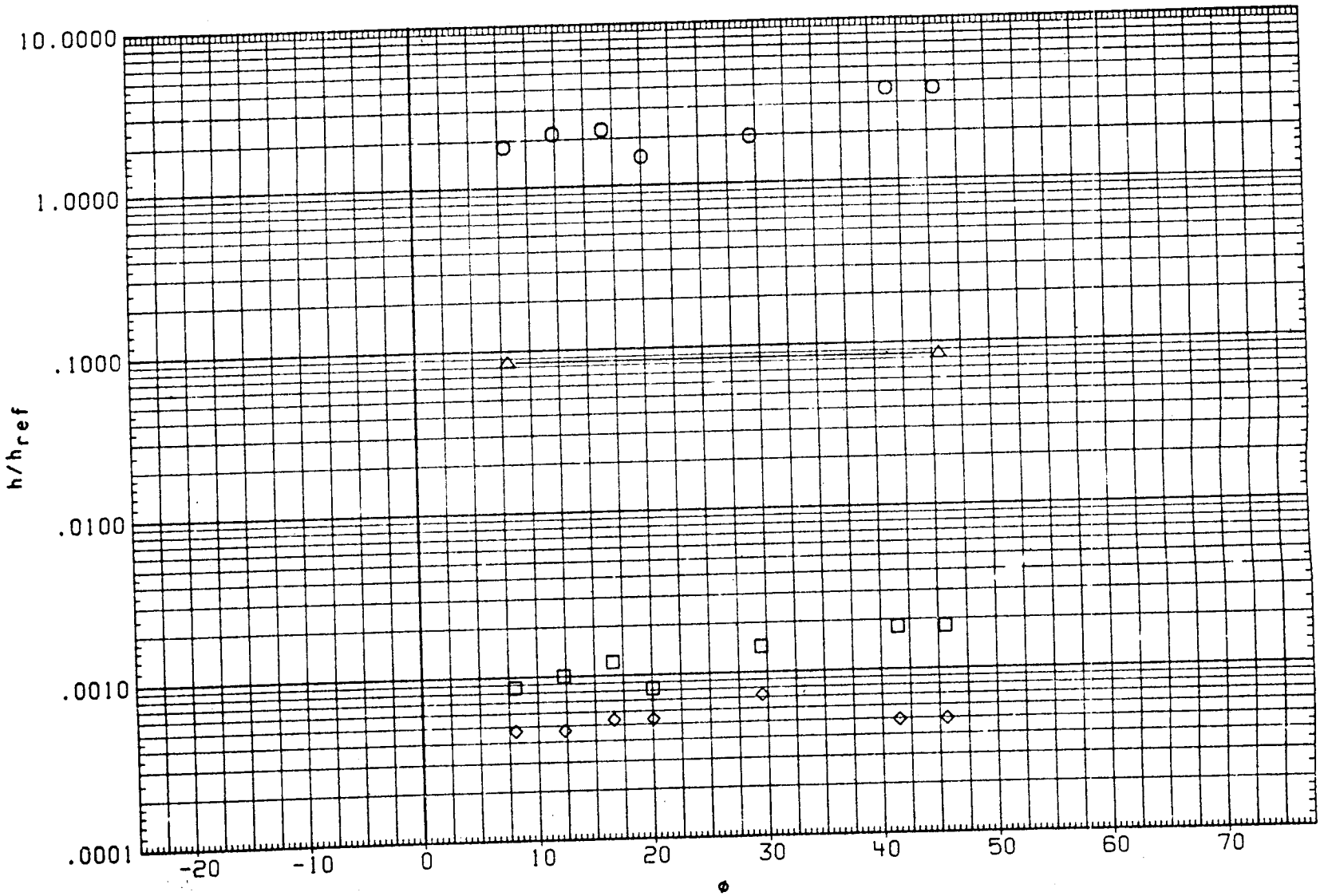

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 442

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

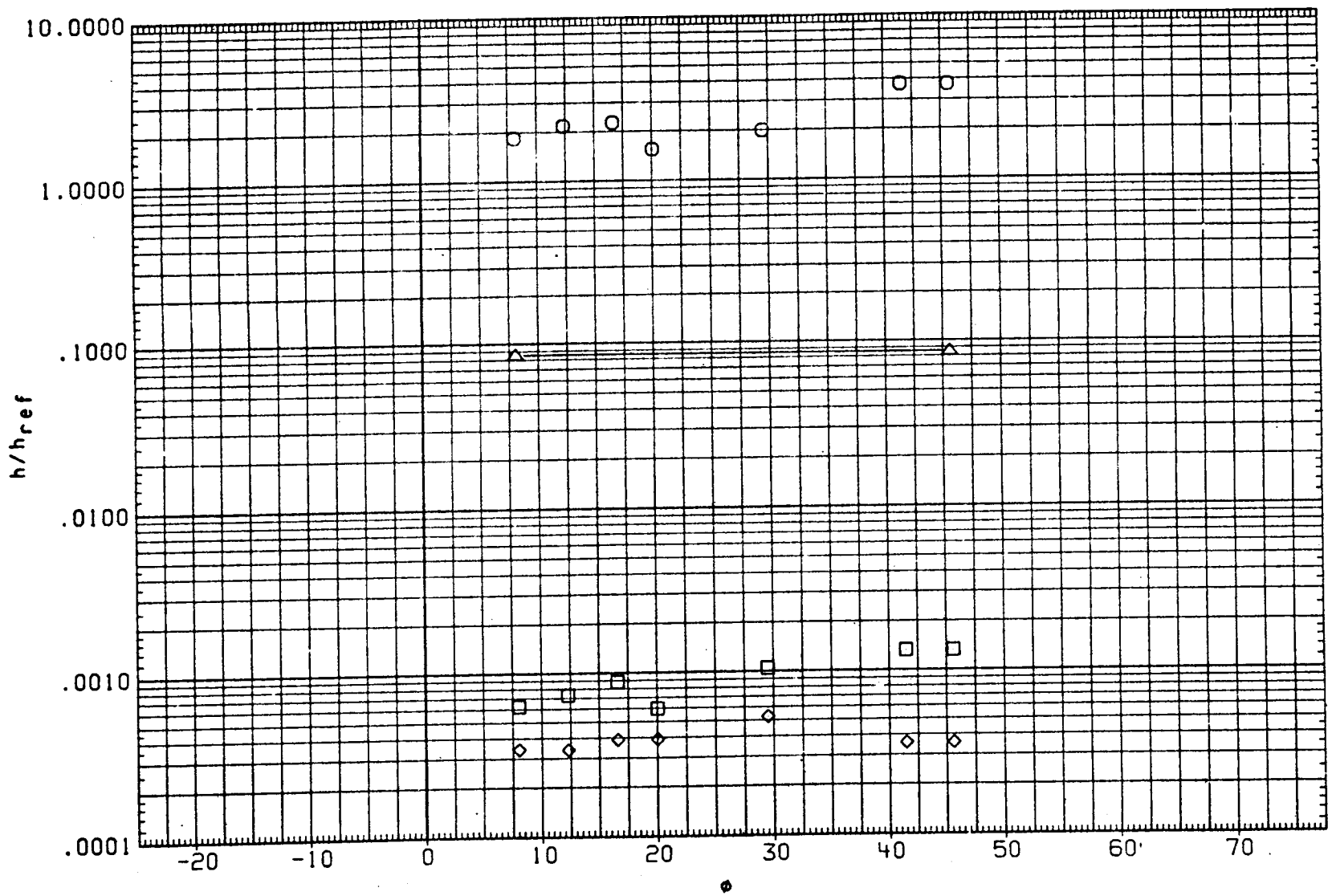

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .578 DATE 22 AFR 78 PAGE 443

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

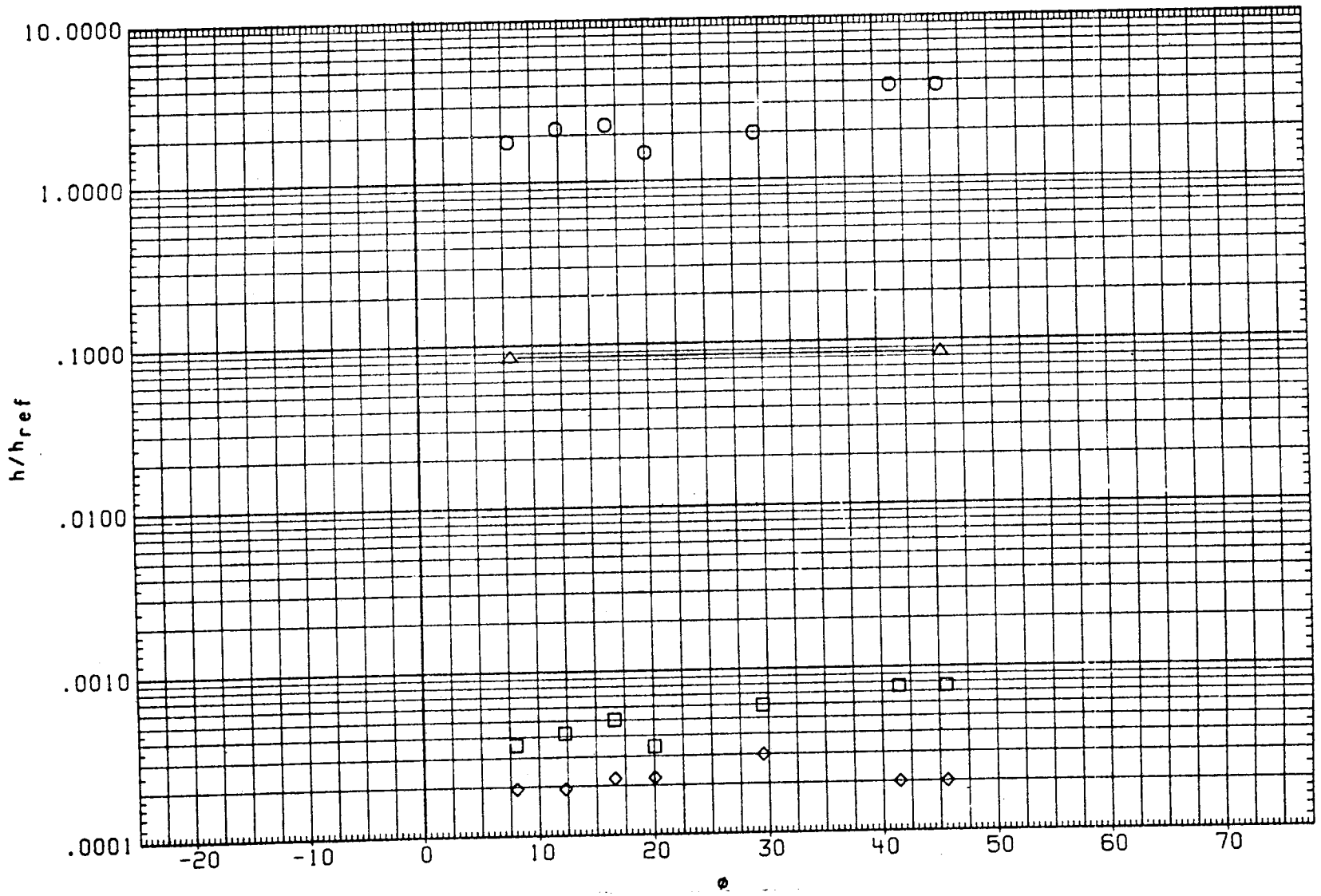

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 444

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

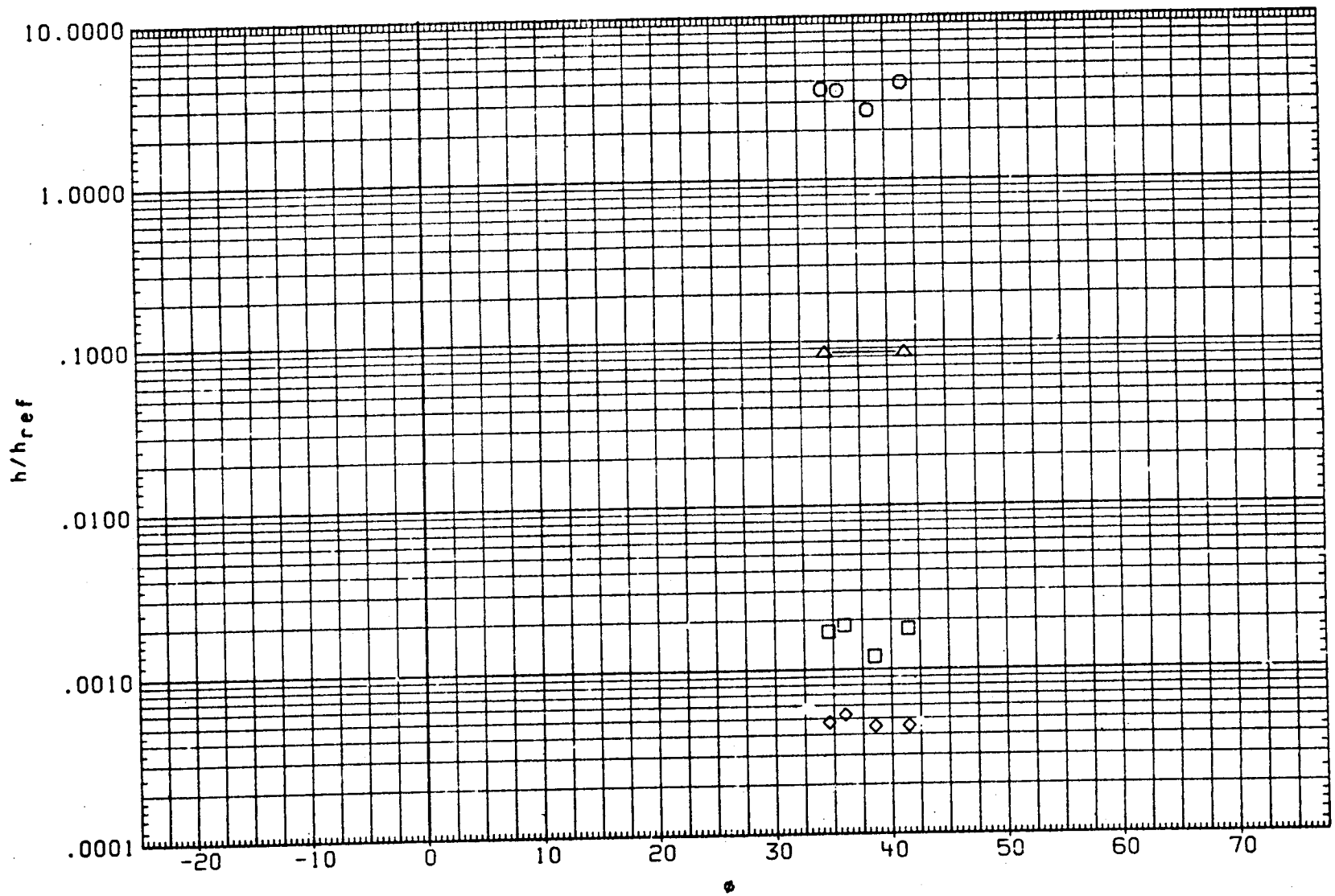

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 445

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

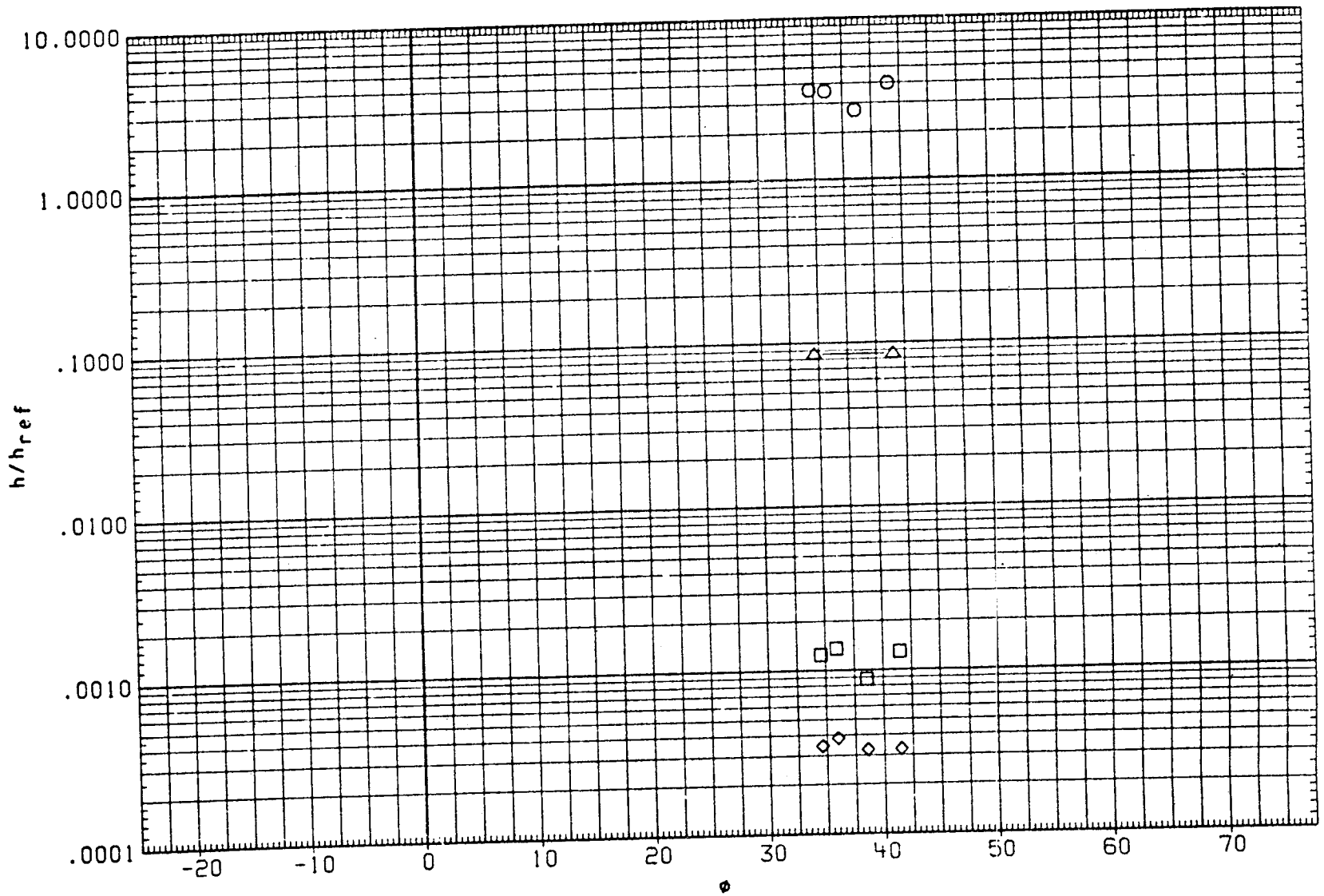

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 446

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

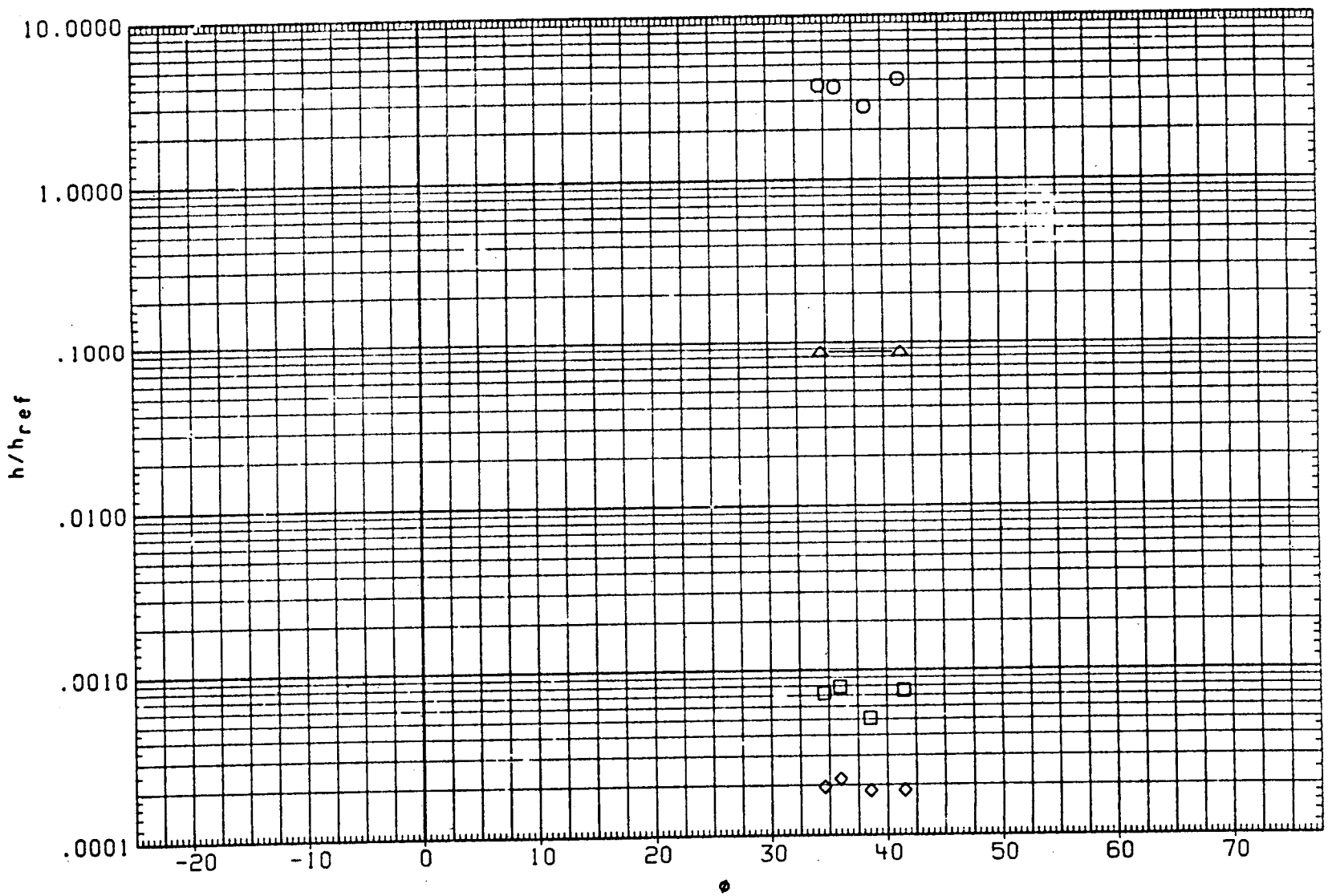

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 447

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

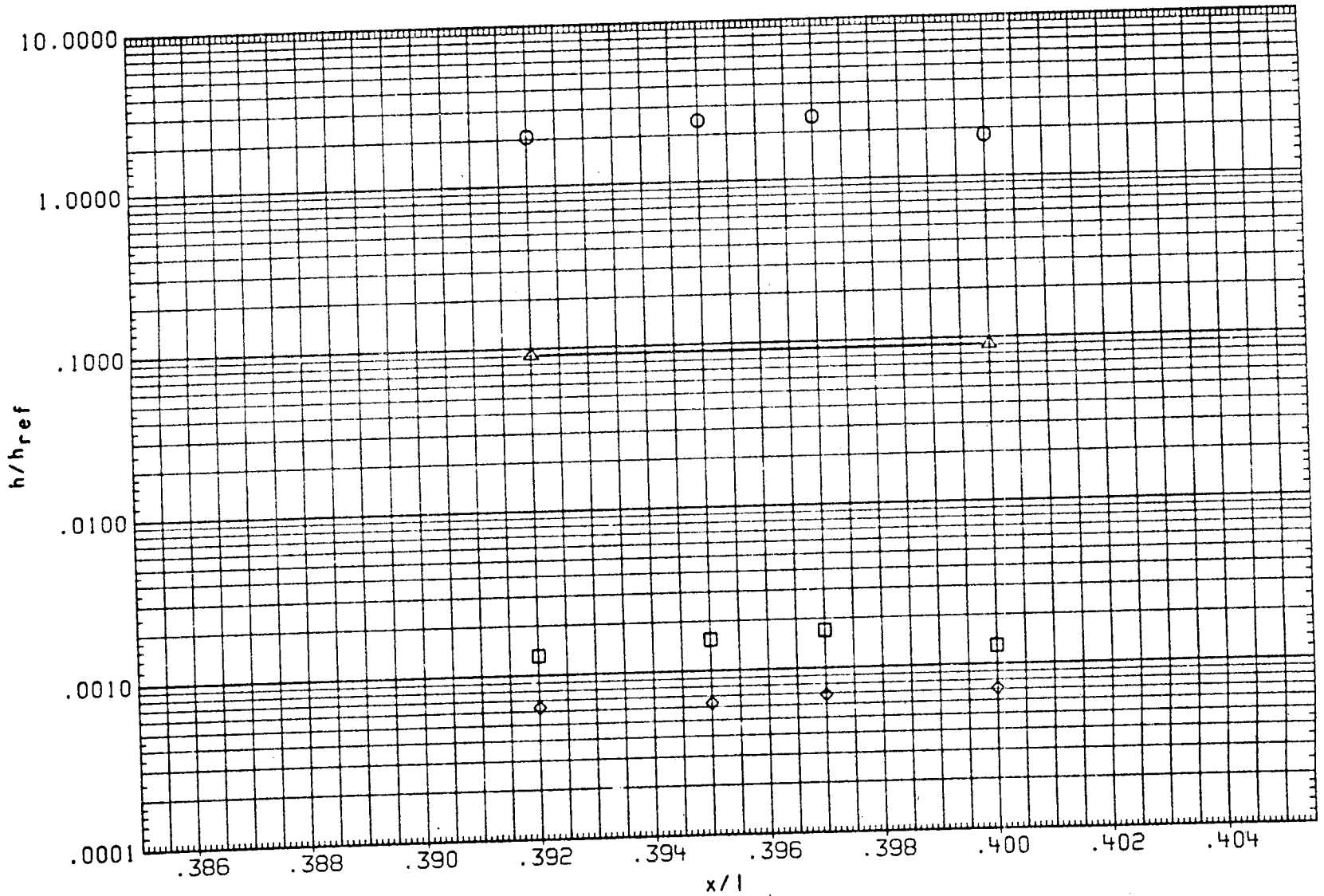

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78 PAGE 448

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

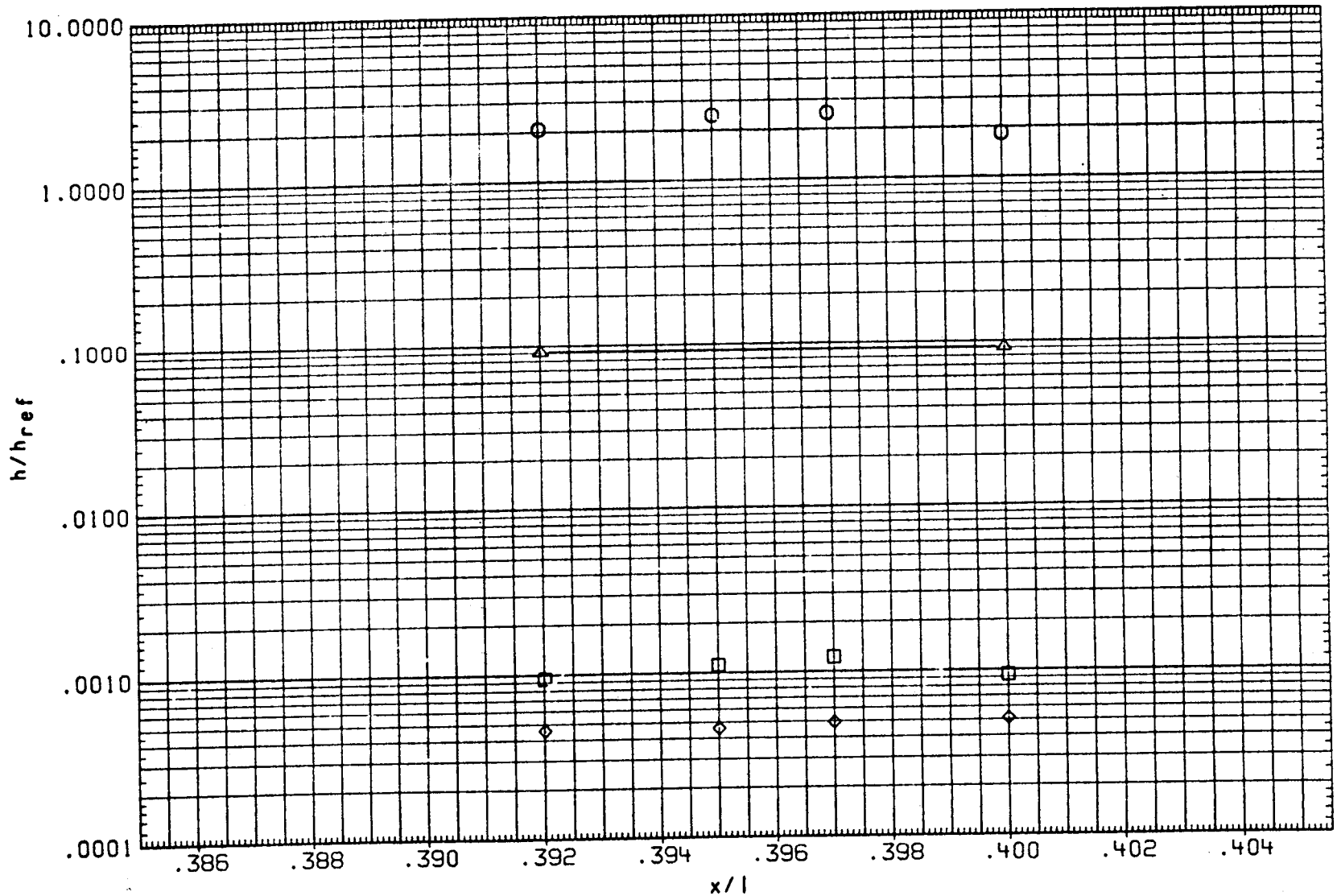

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 449

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

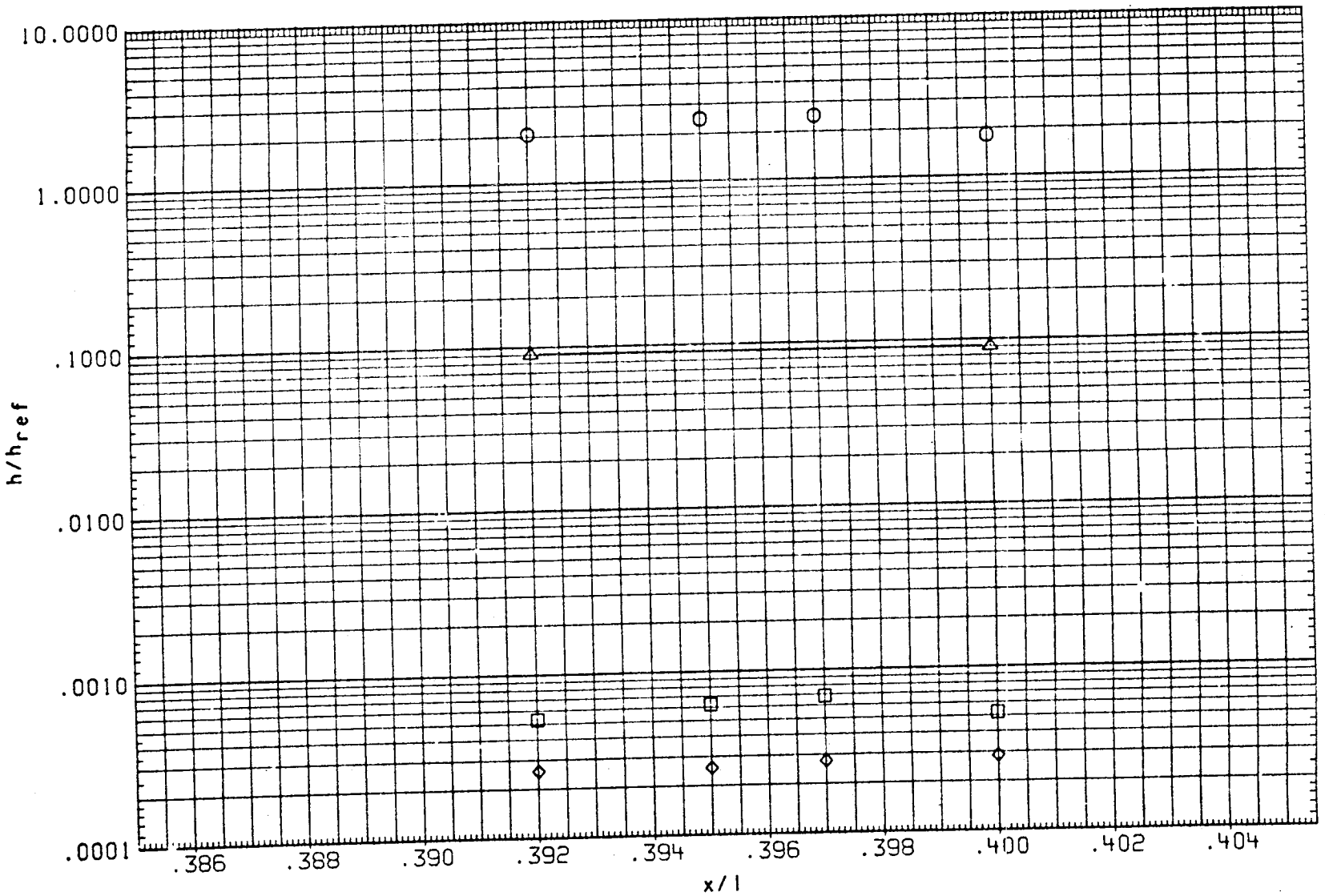

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78 PAGE 450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

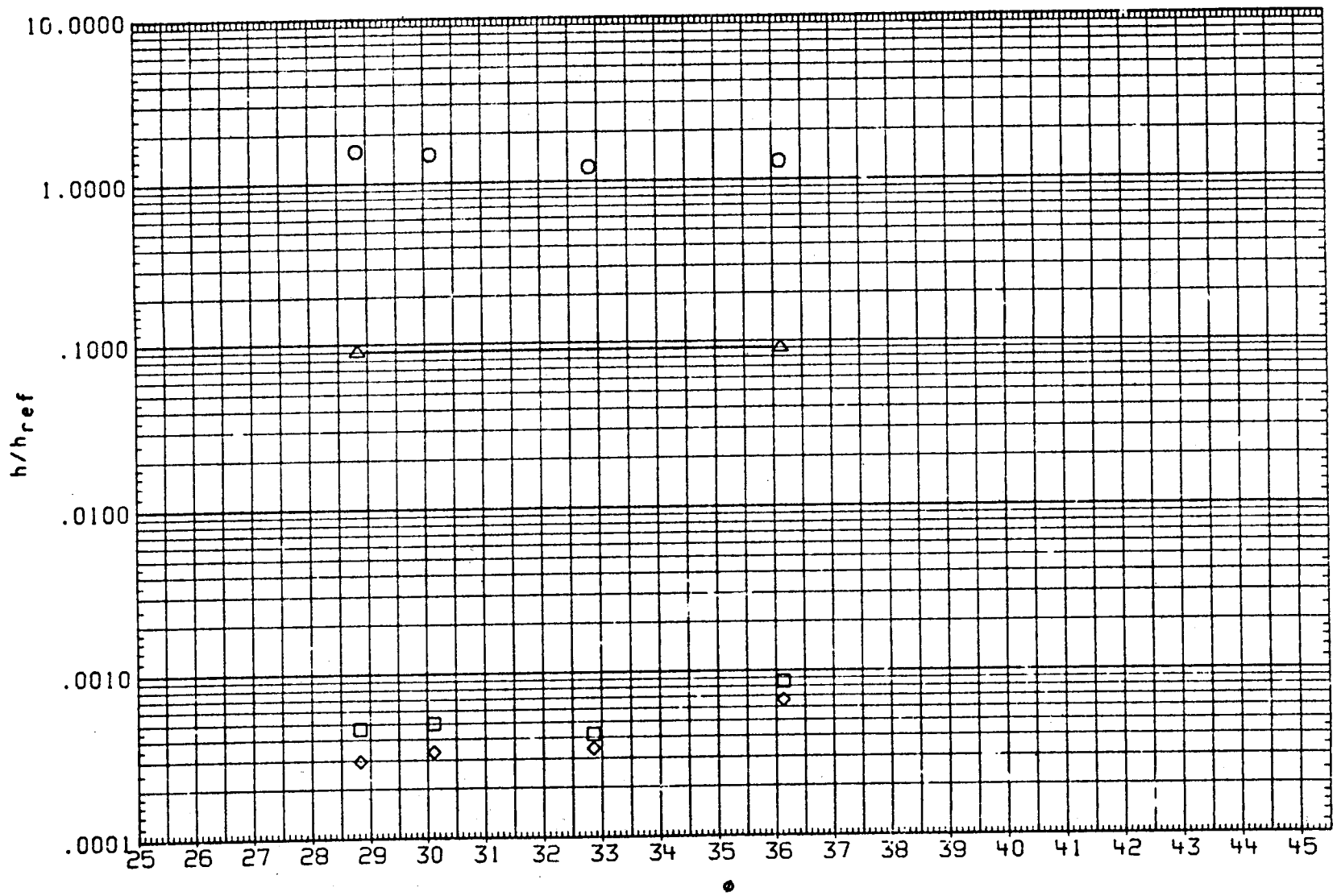

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .403 DATE 22 APR 78 PAGE 451

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

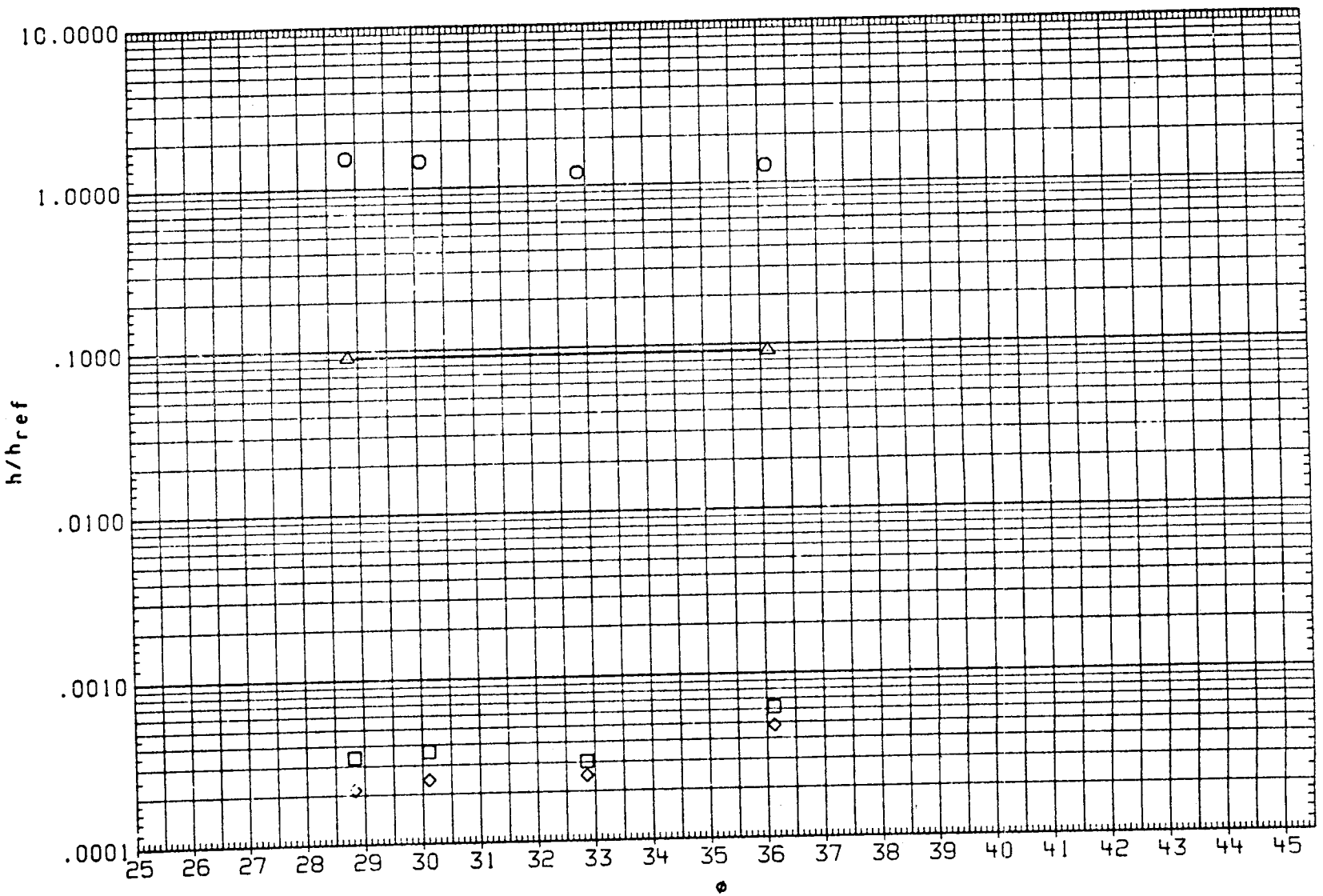

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 452

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

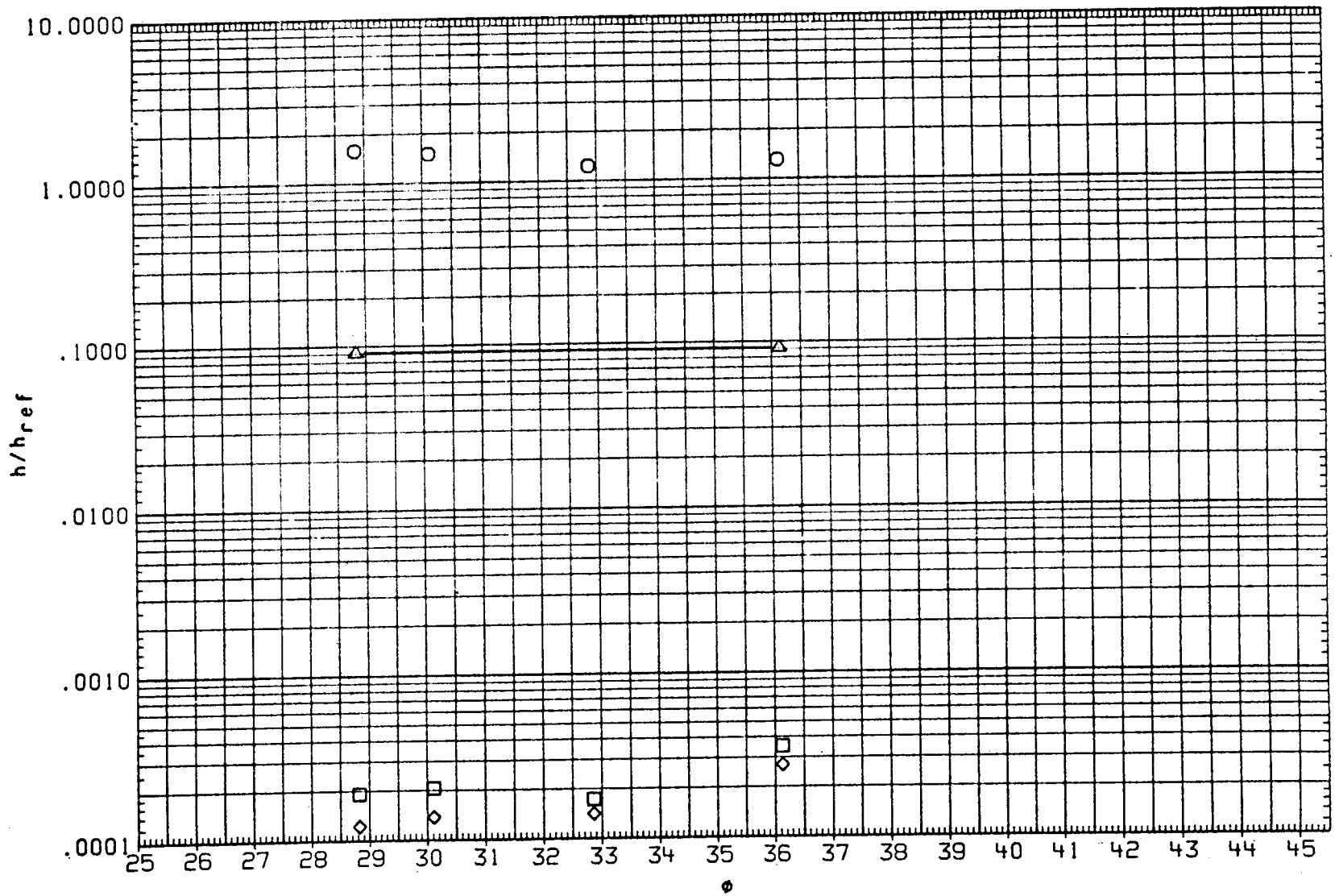

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 453

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

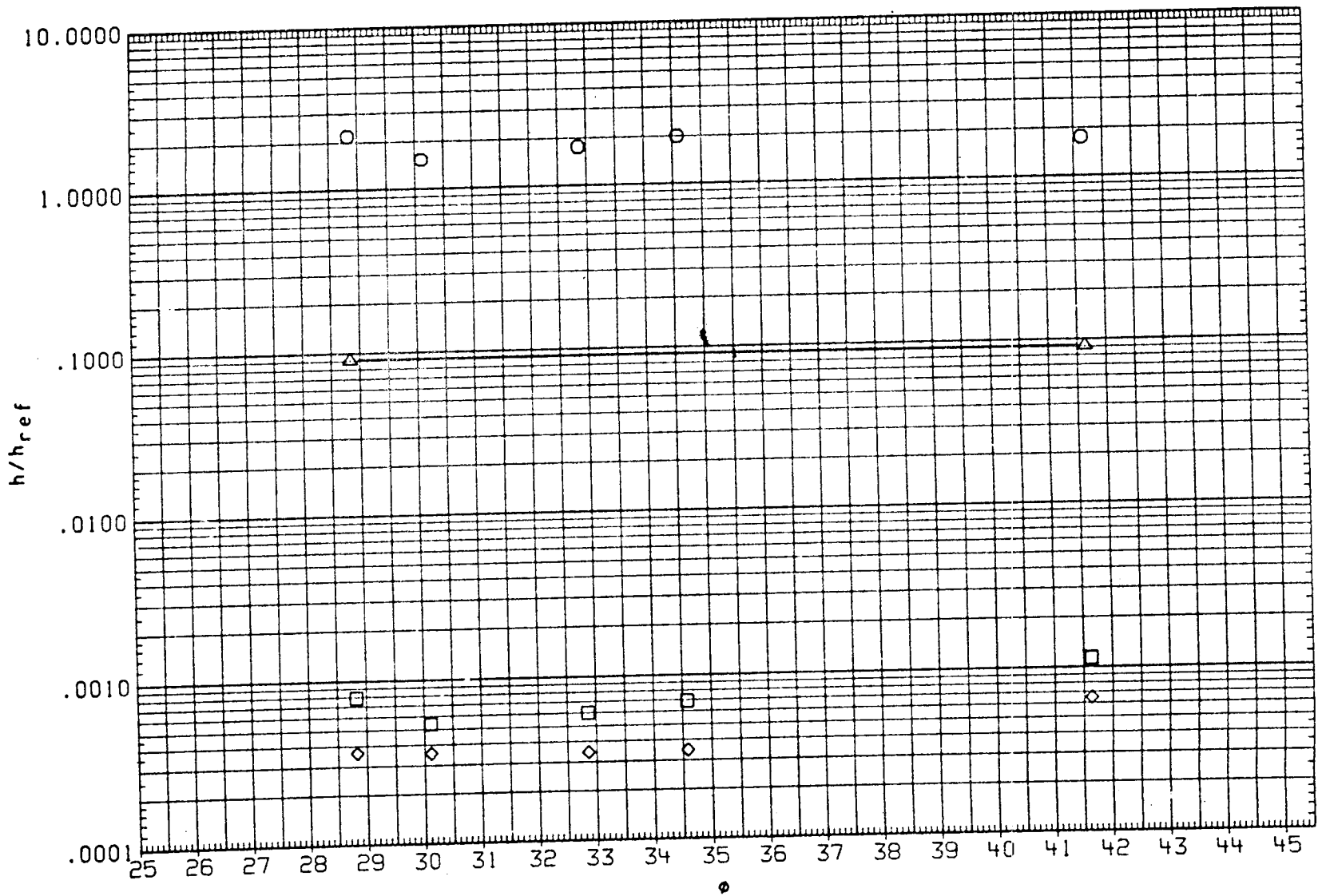

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 454

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

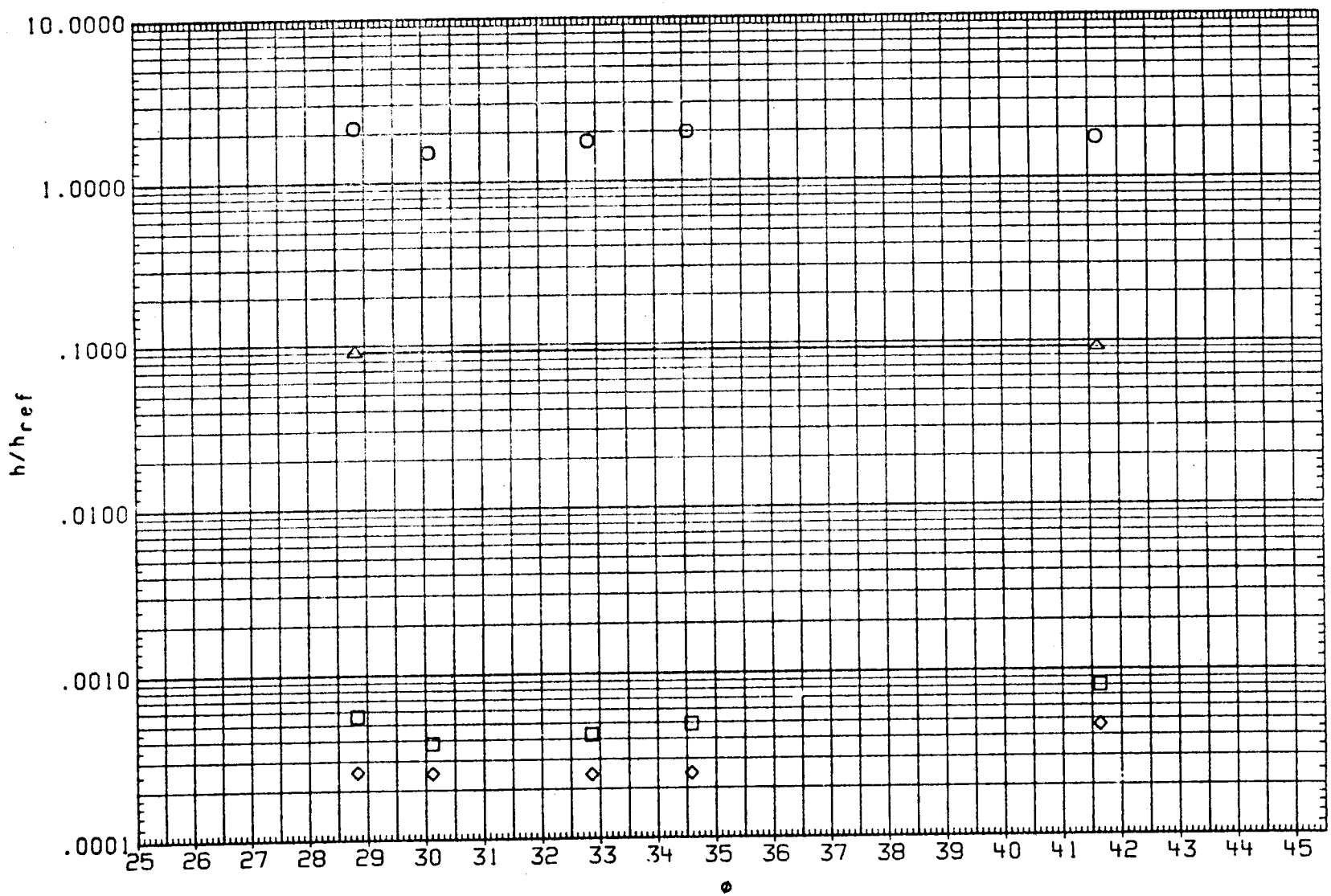

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 455

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

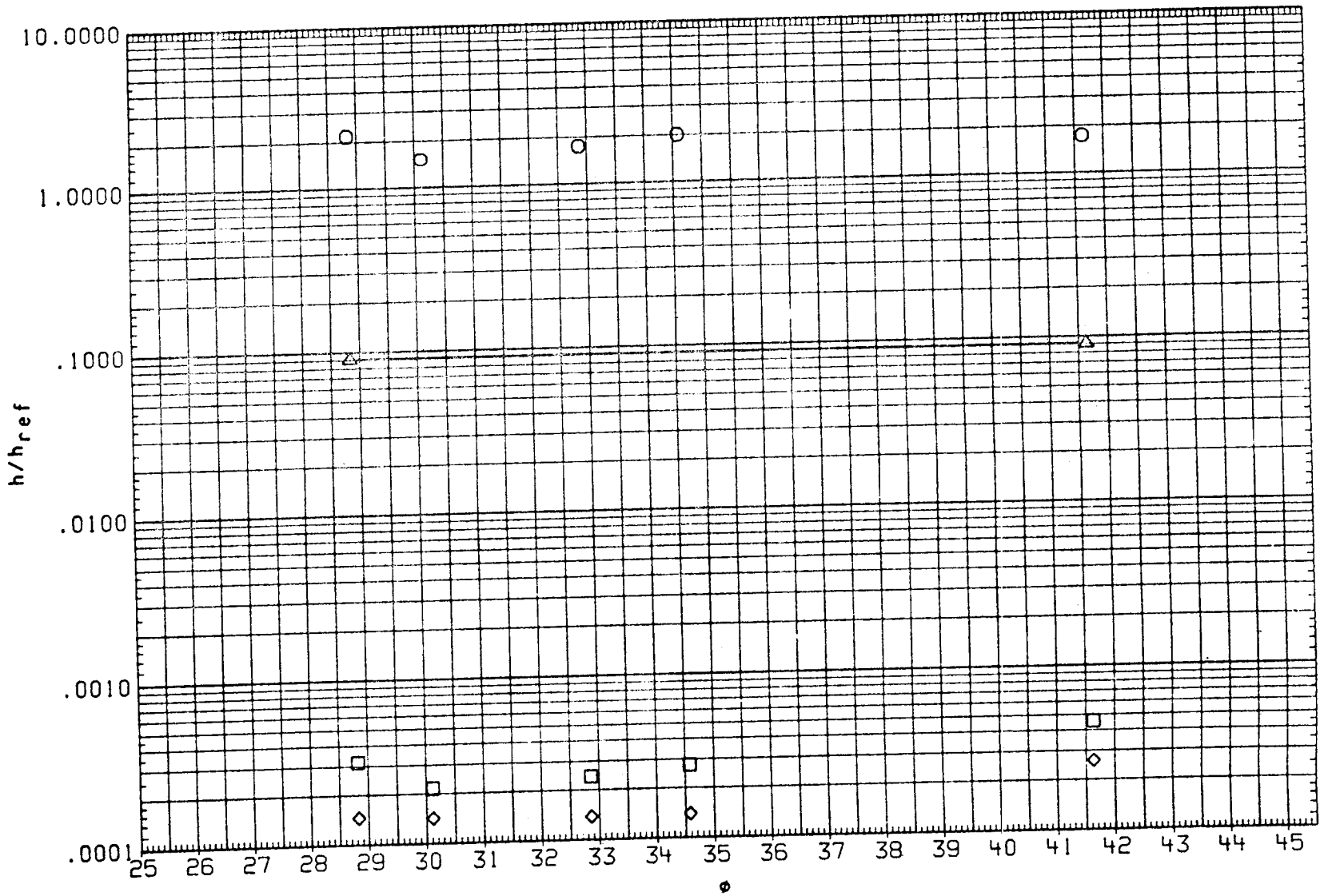

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 456

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

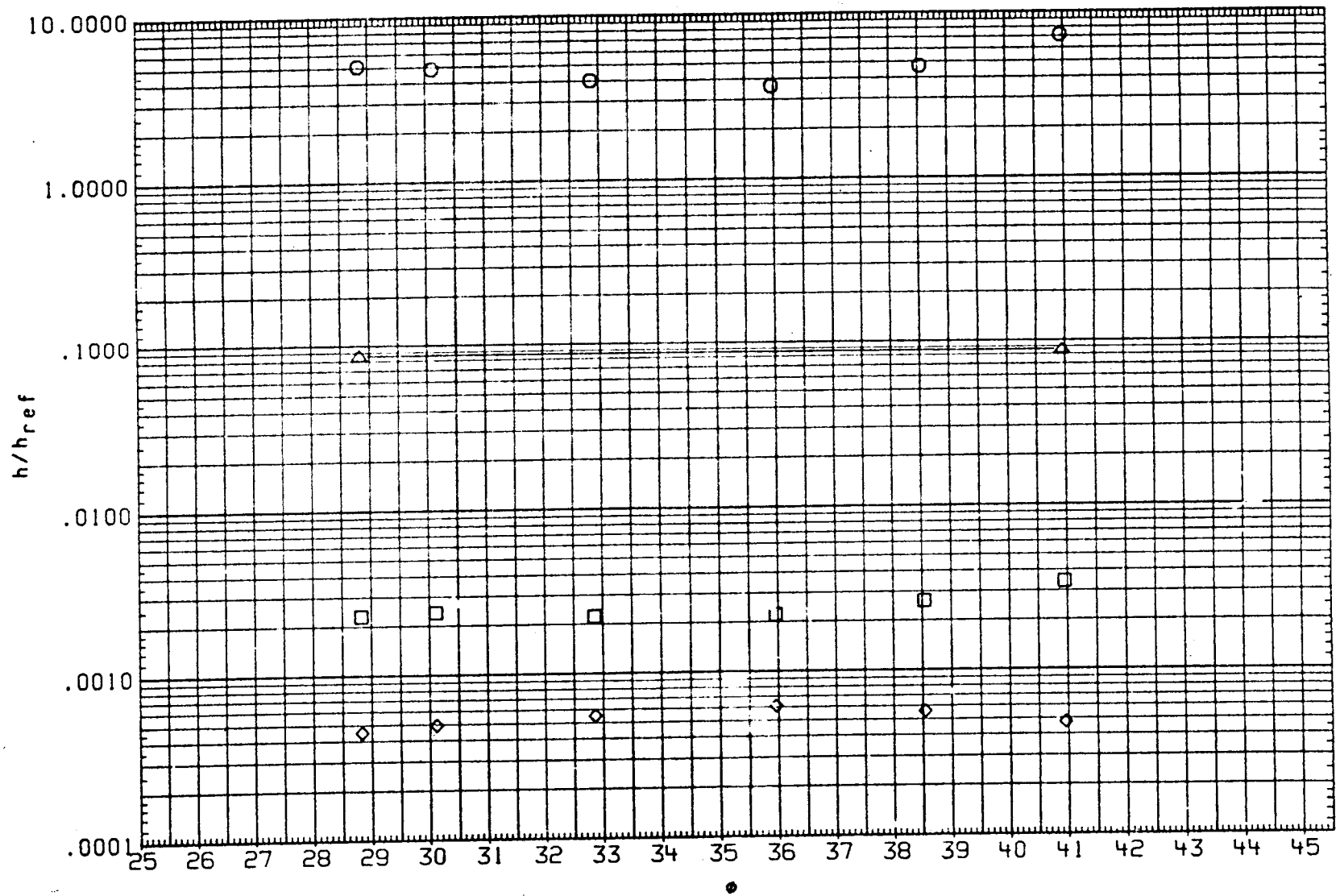

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .540 DATE 22 APR 78 PAGE 457

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

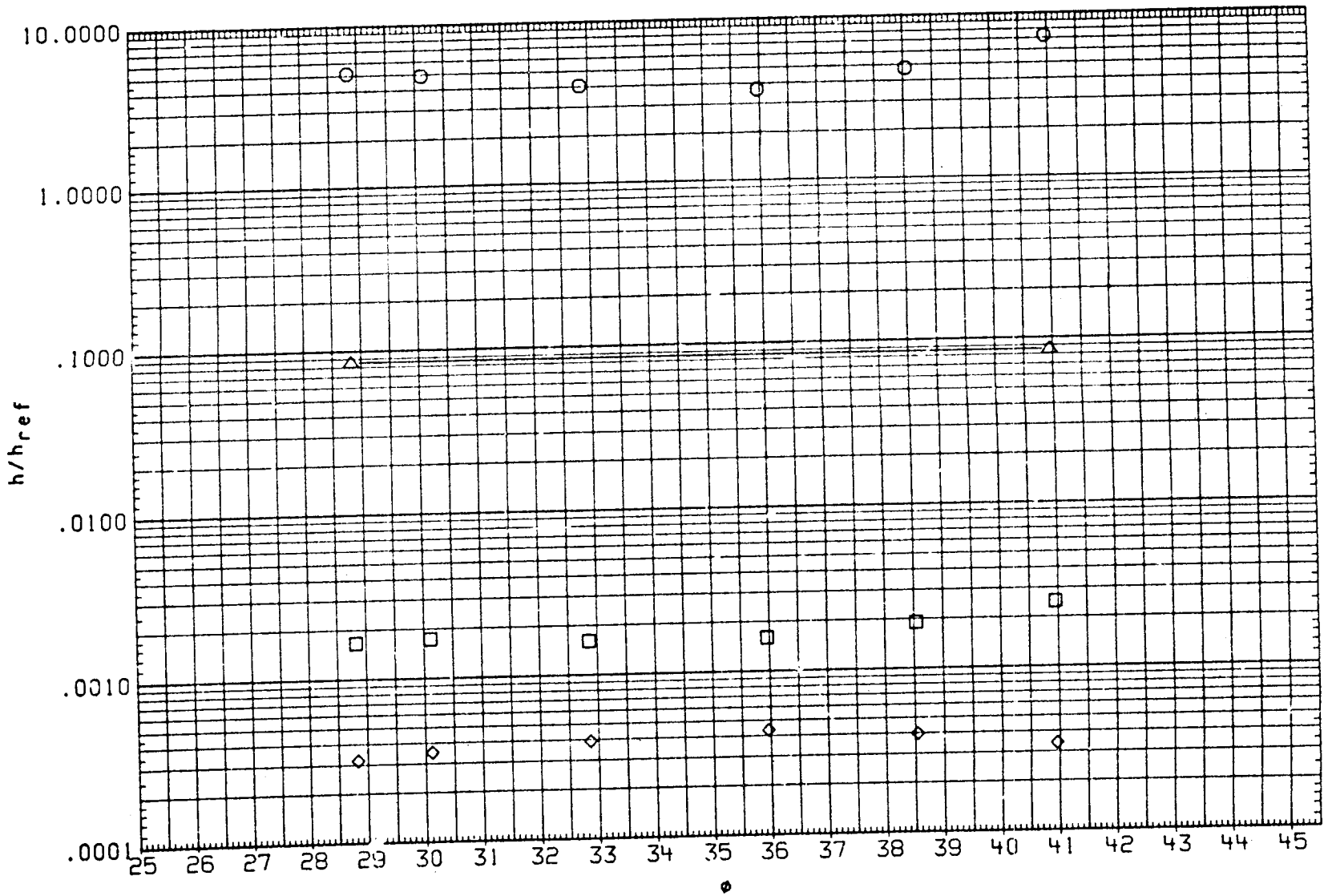

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .540 DATE 22 APR 78 PAGE 458

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

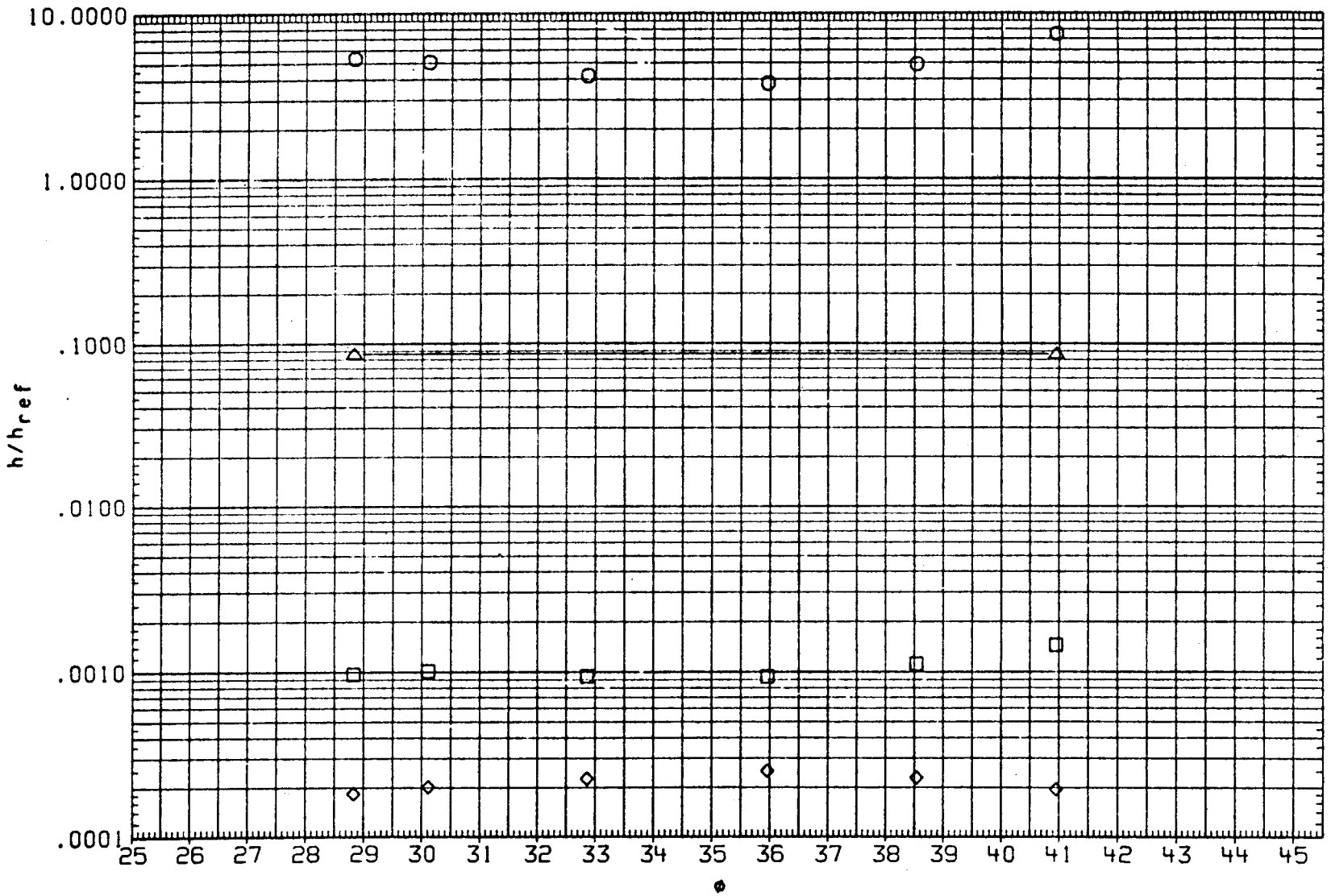

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 459

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

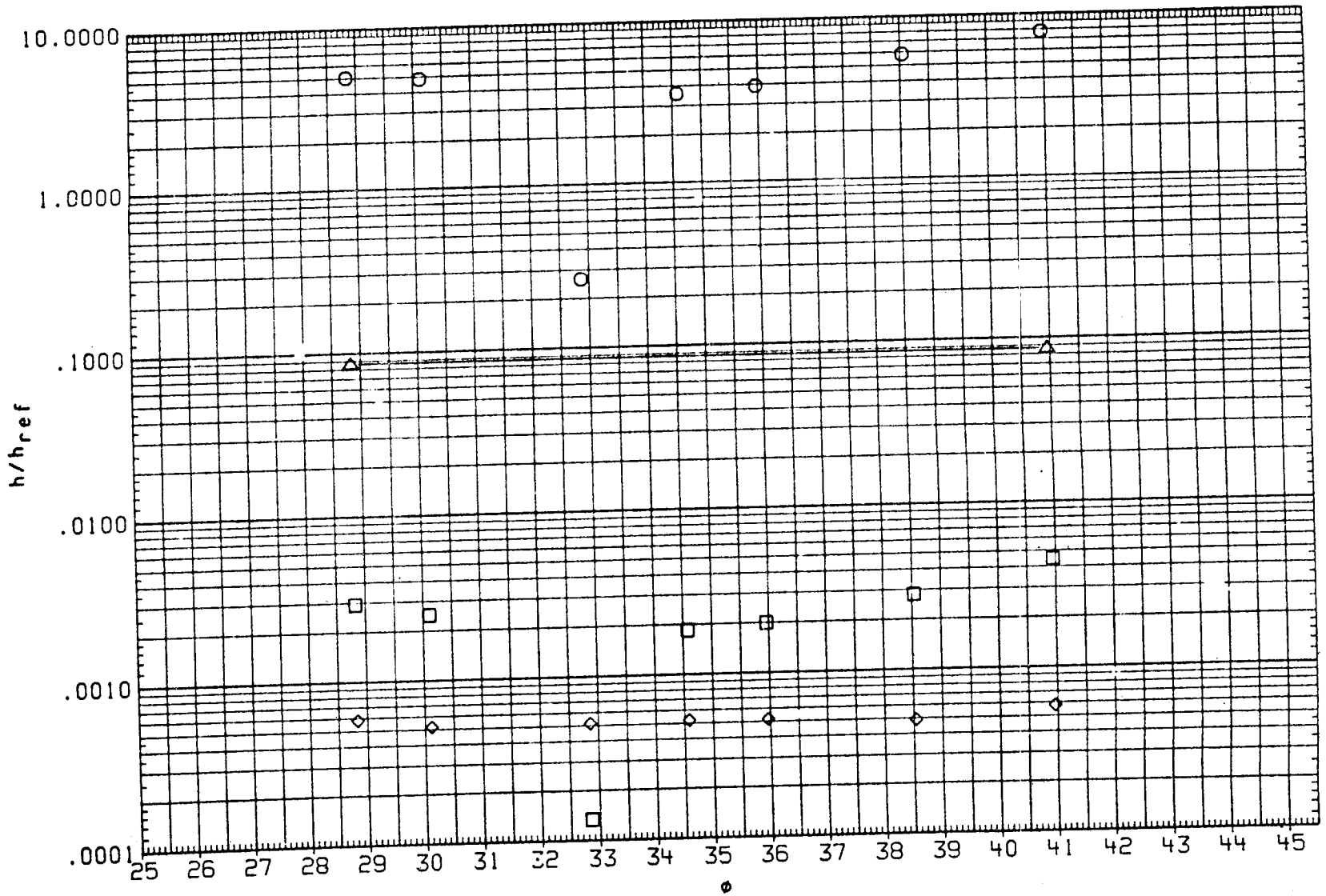

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 460

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

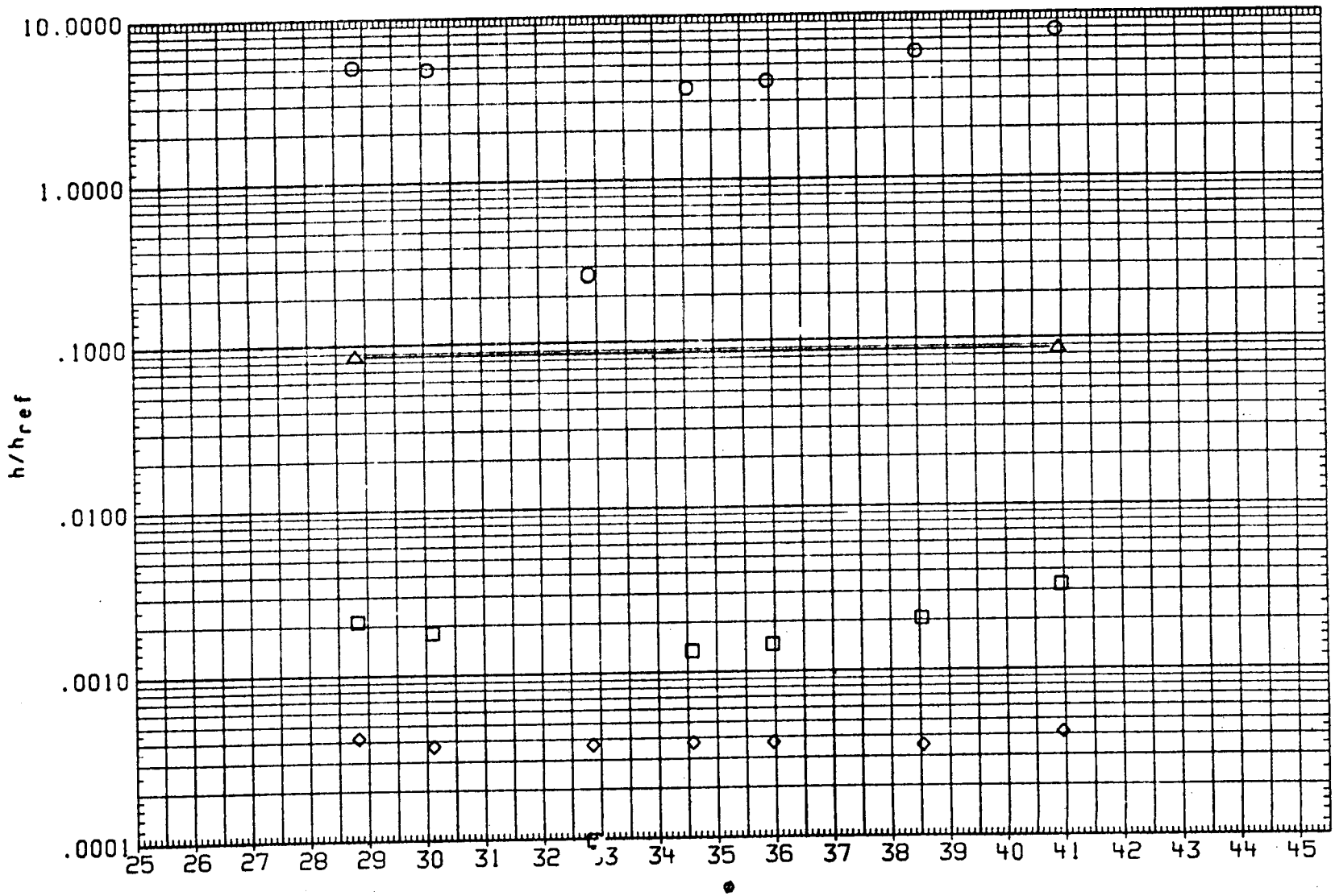

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .542 DATE 22 APR 78 PAGE 461

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

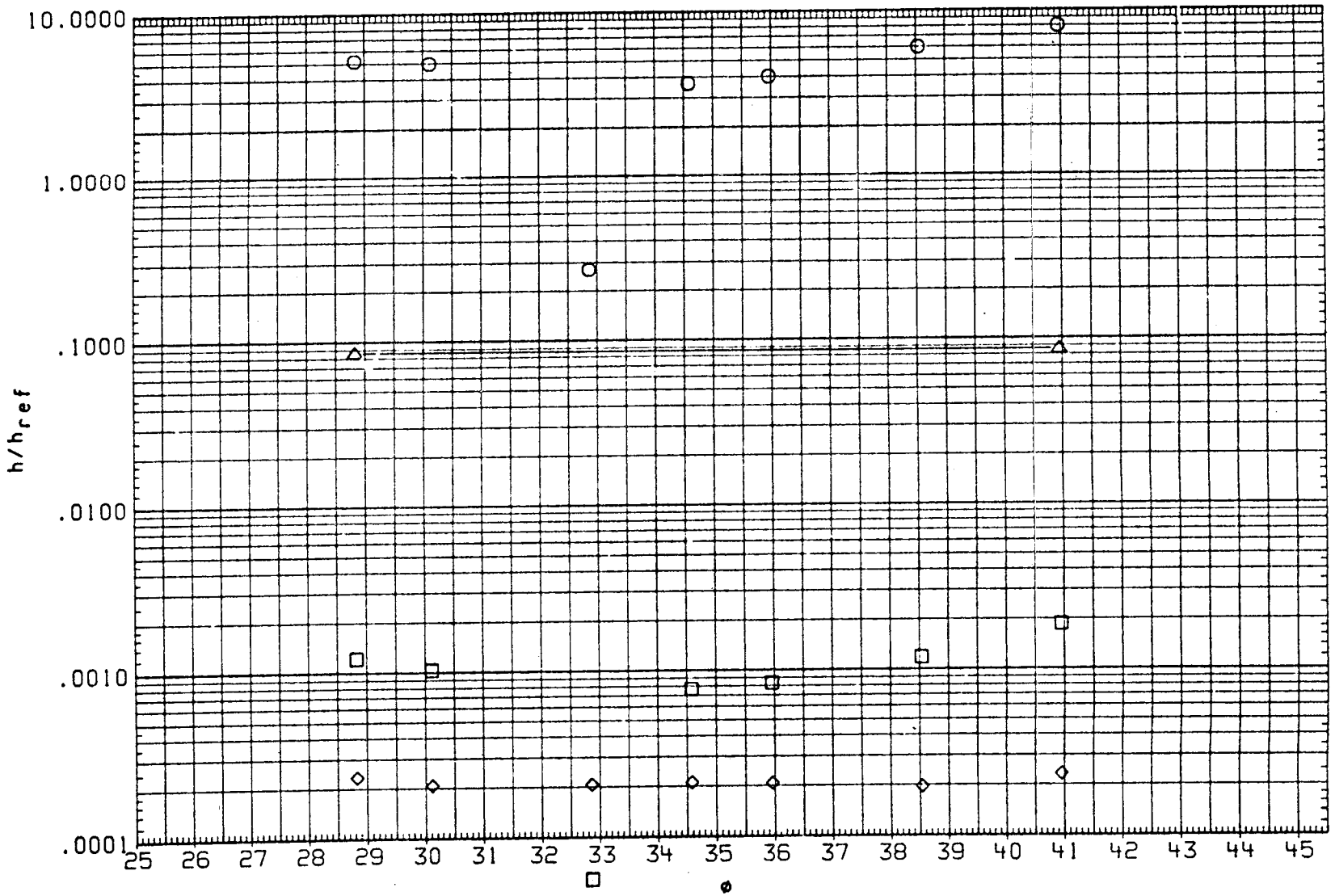

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 462

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

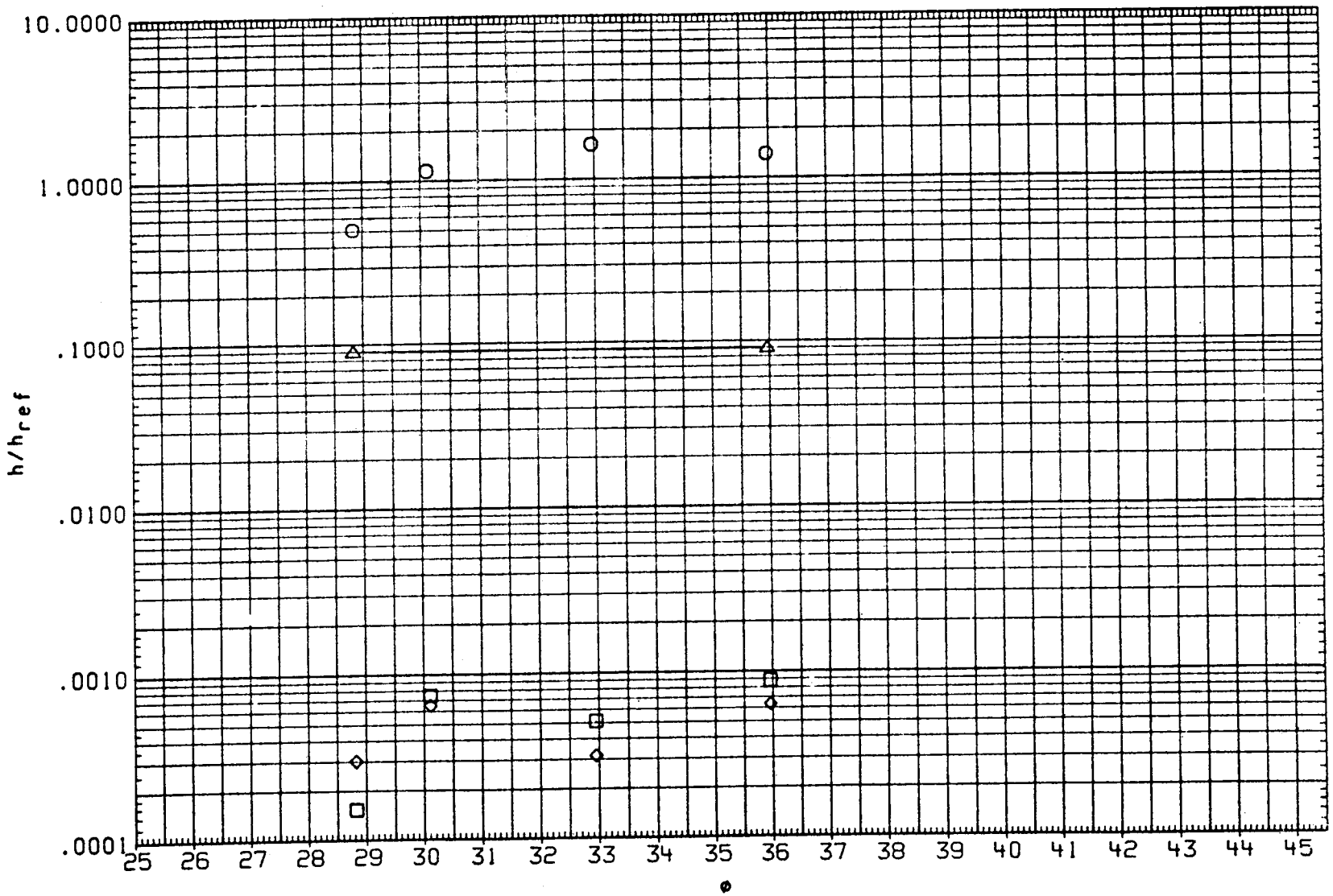

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .441 DATE 22 APR 78 PAGE 463

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

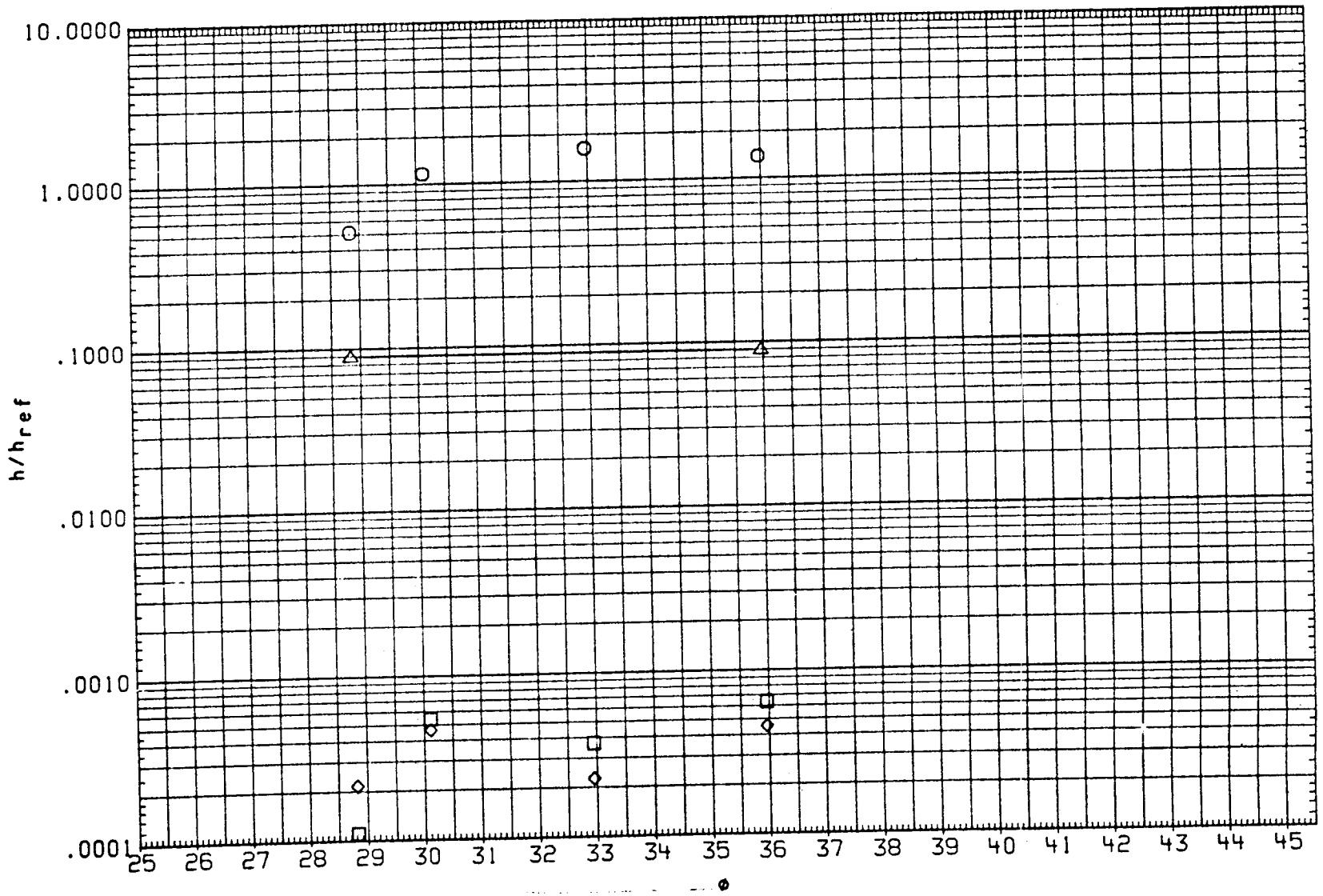

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .441 DATE 22 APR 78 PAGE 464

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

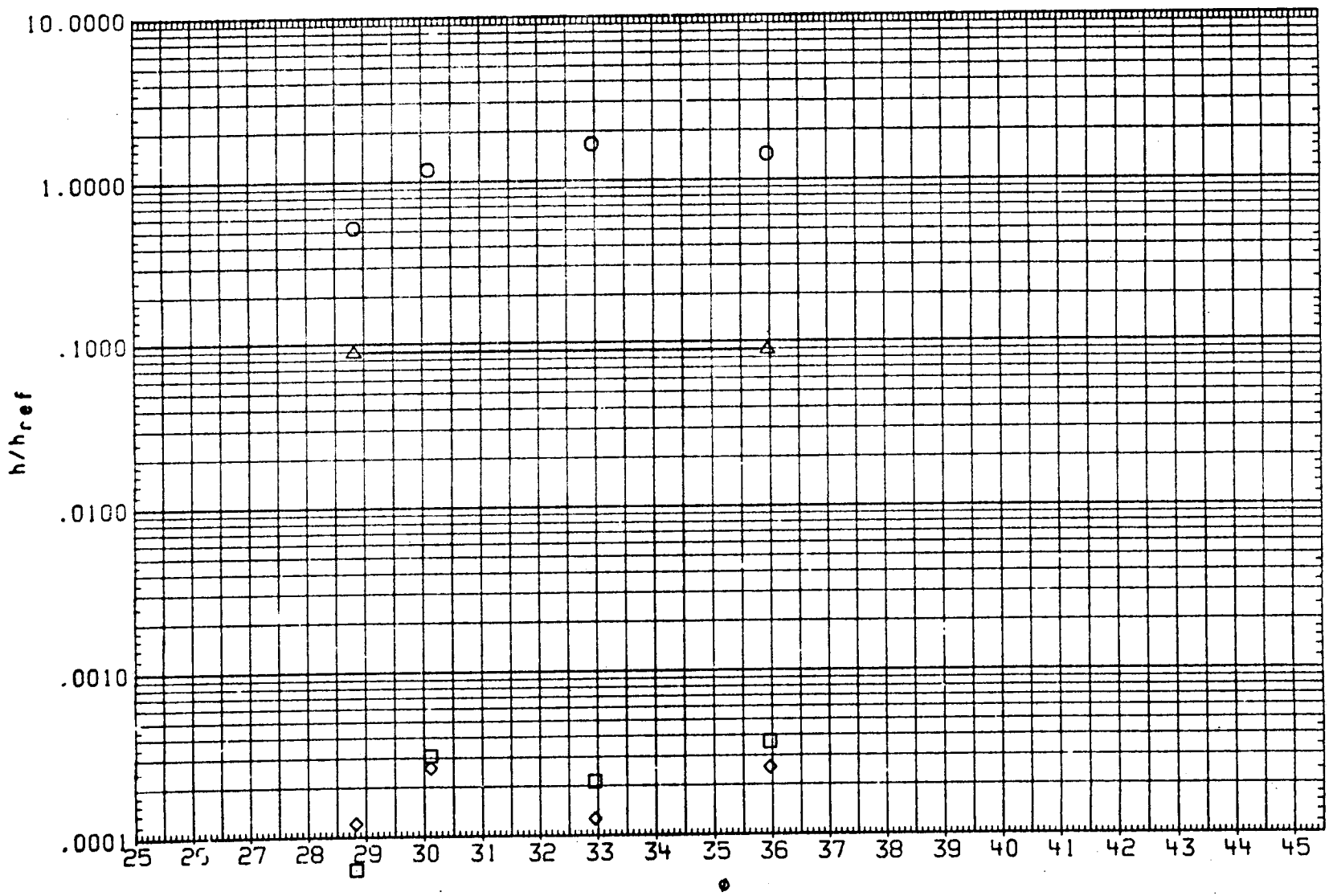

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = 1.000 X/L = .441 DATE 22 APR 78 PAGE 465

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

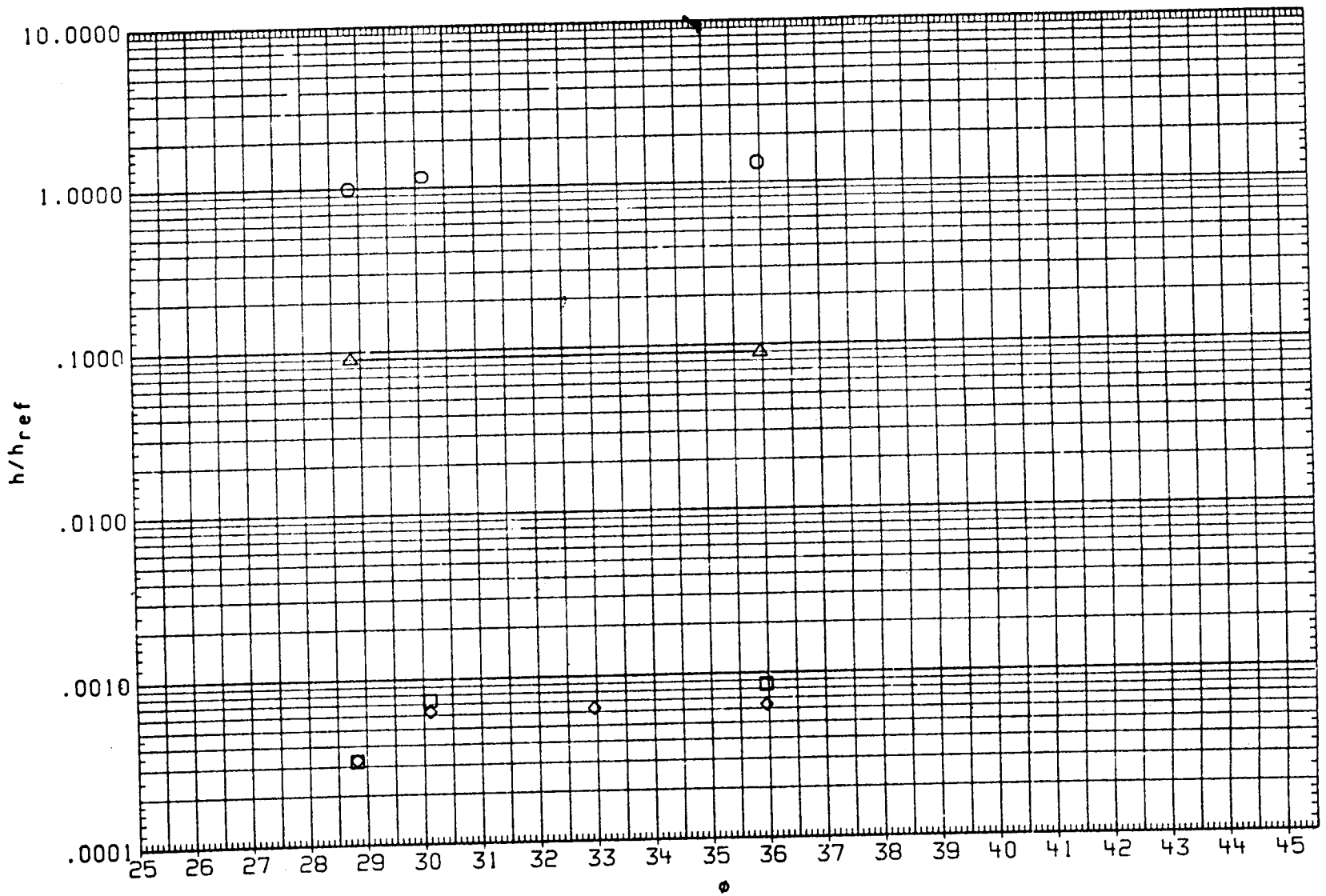

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 466

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

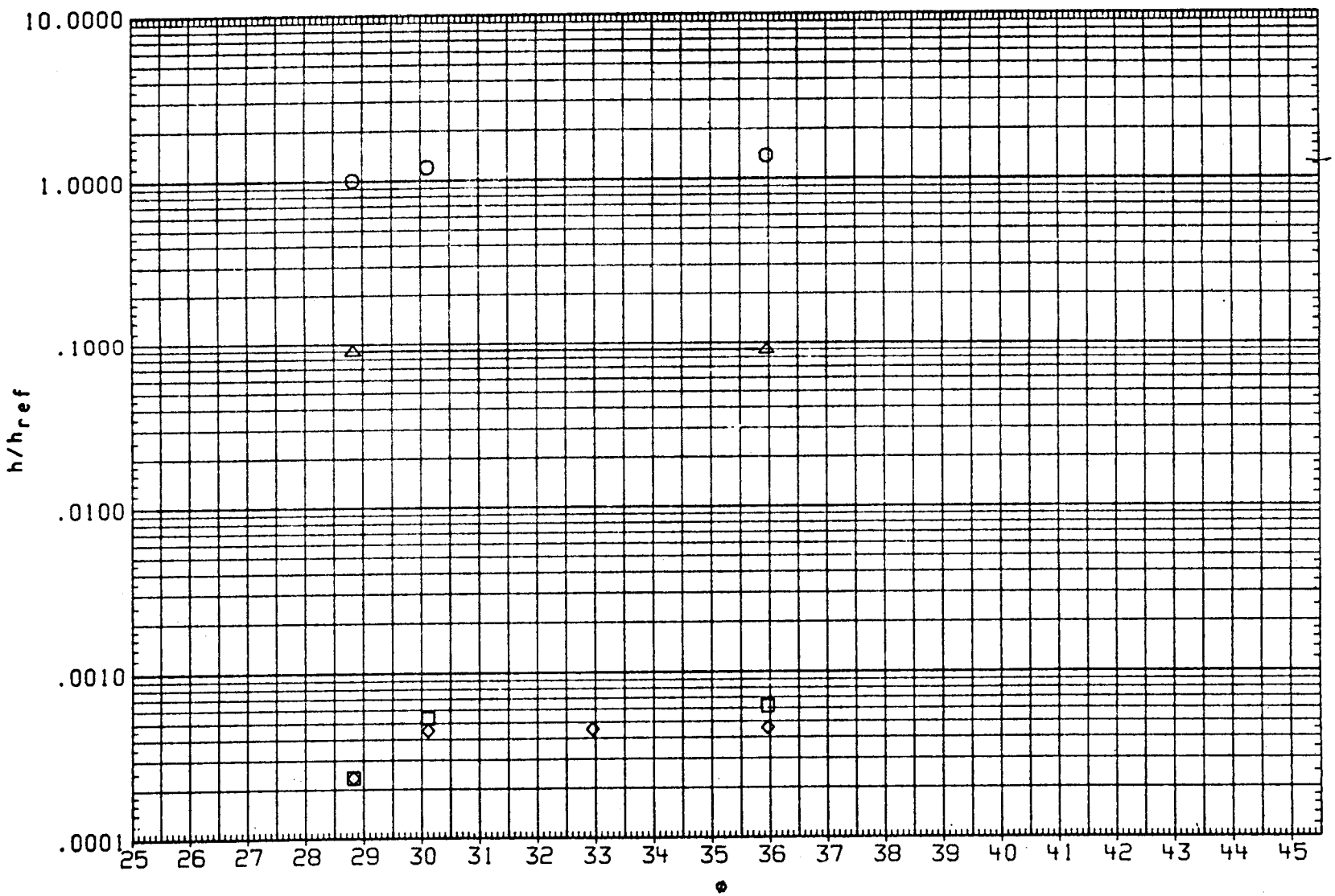

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .443 DATE 22 APR 78 PAGE 467

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

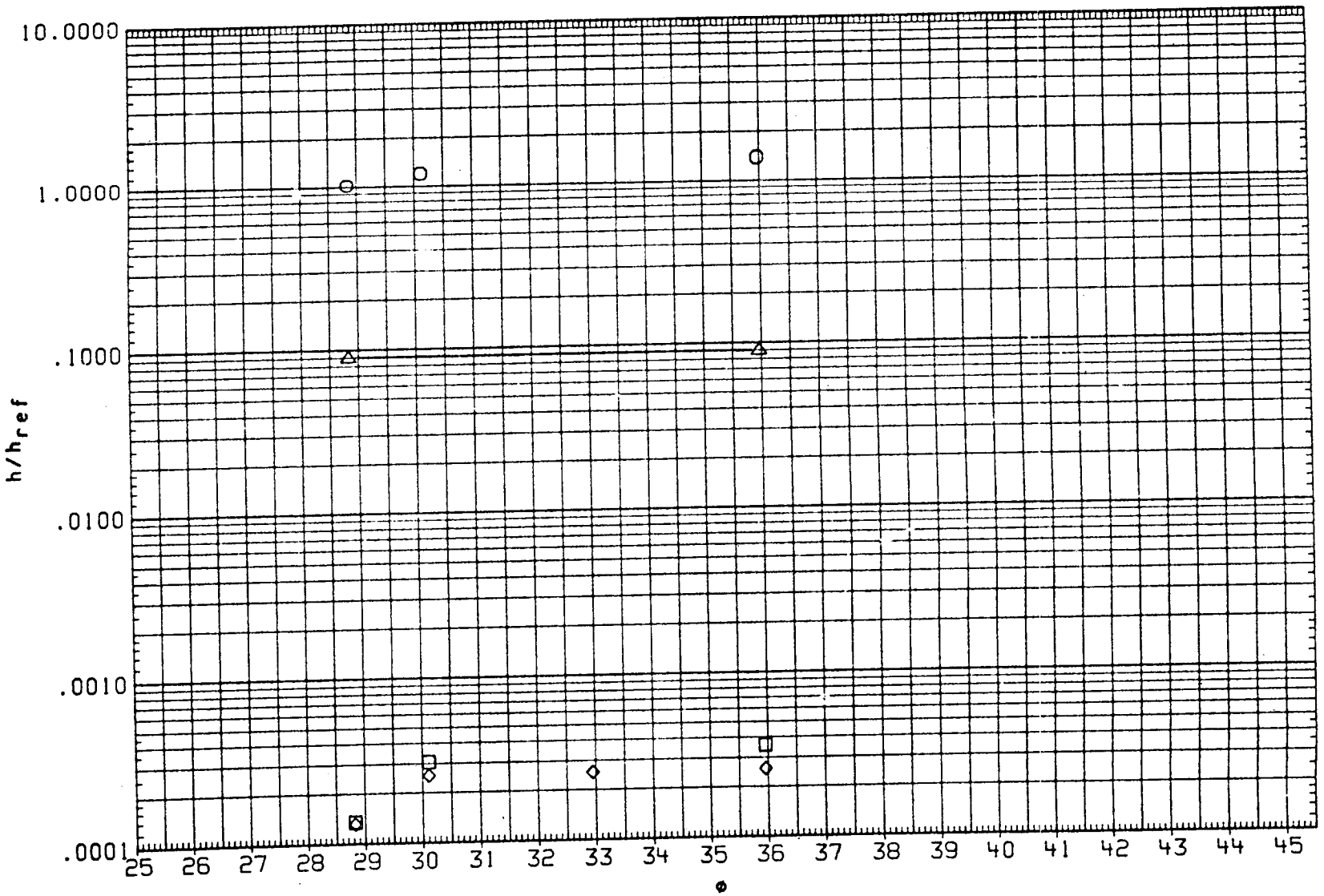

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = 1.000 X/L = .443 DATE 22 APR 78 PAGE 468

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

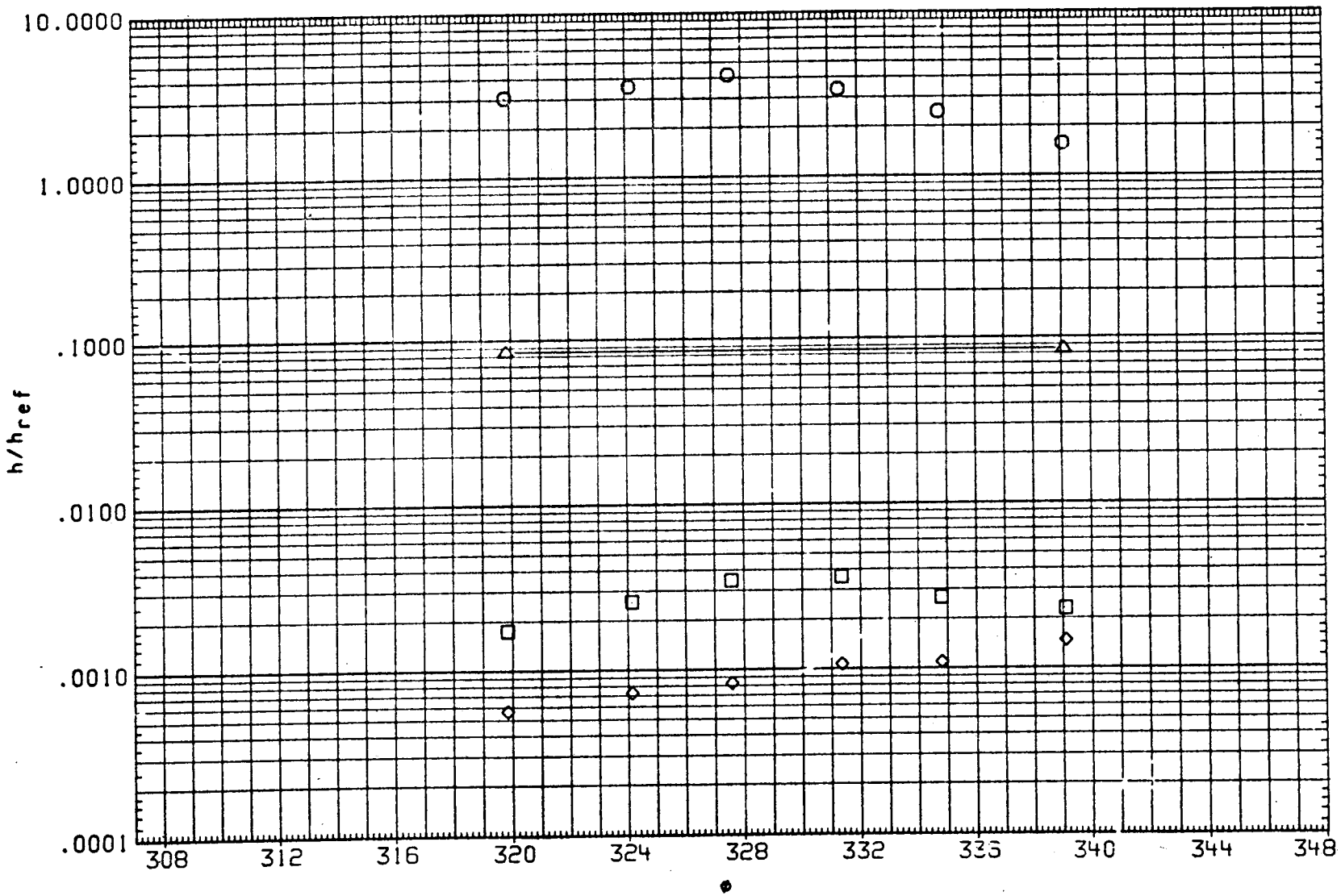

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .571 DATE 22 APR 78 PAGE 469

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

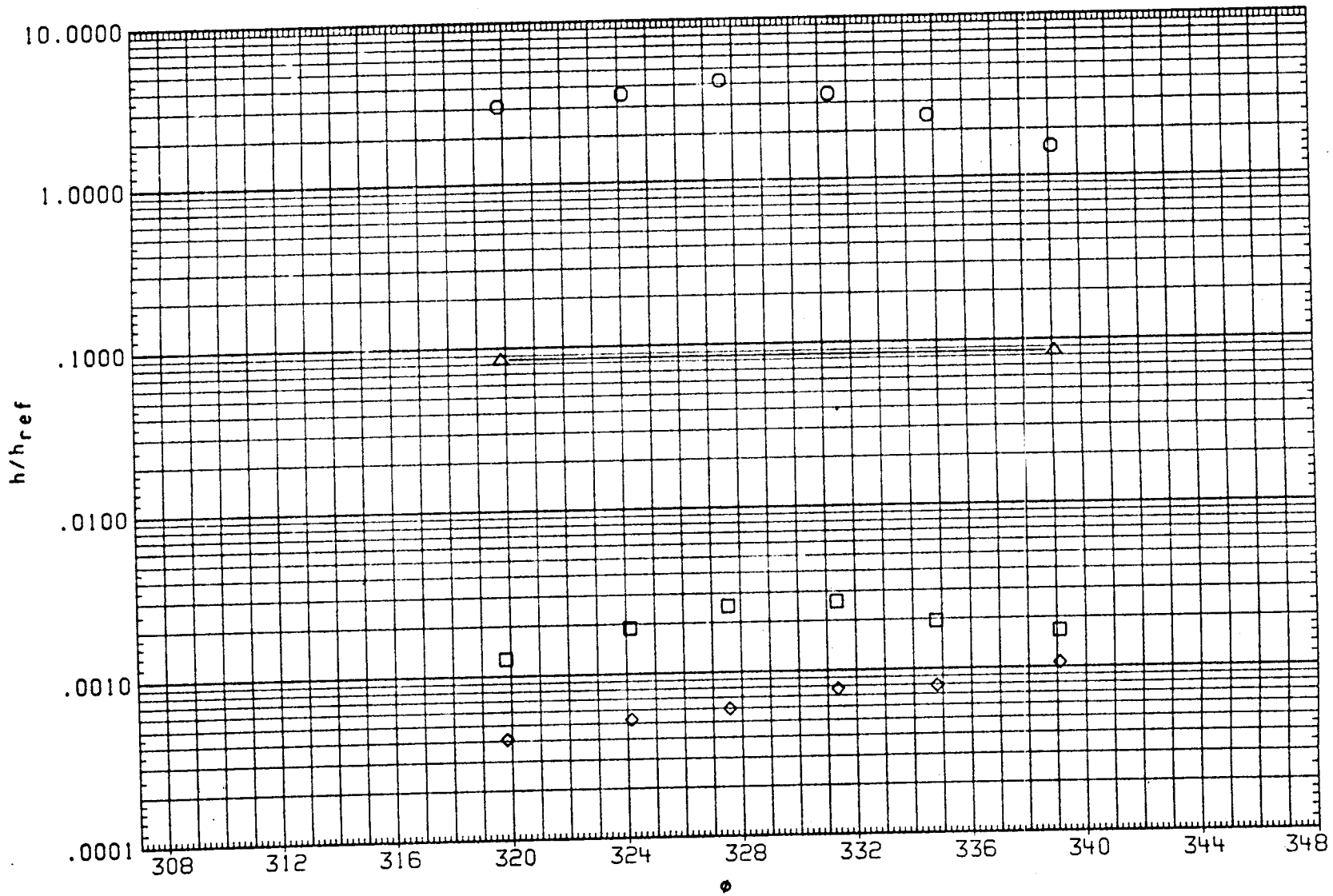

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 470

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

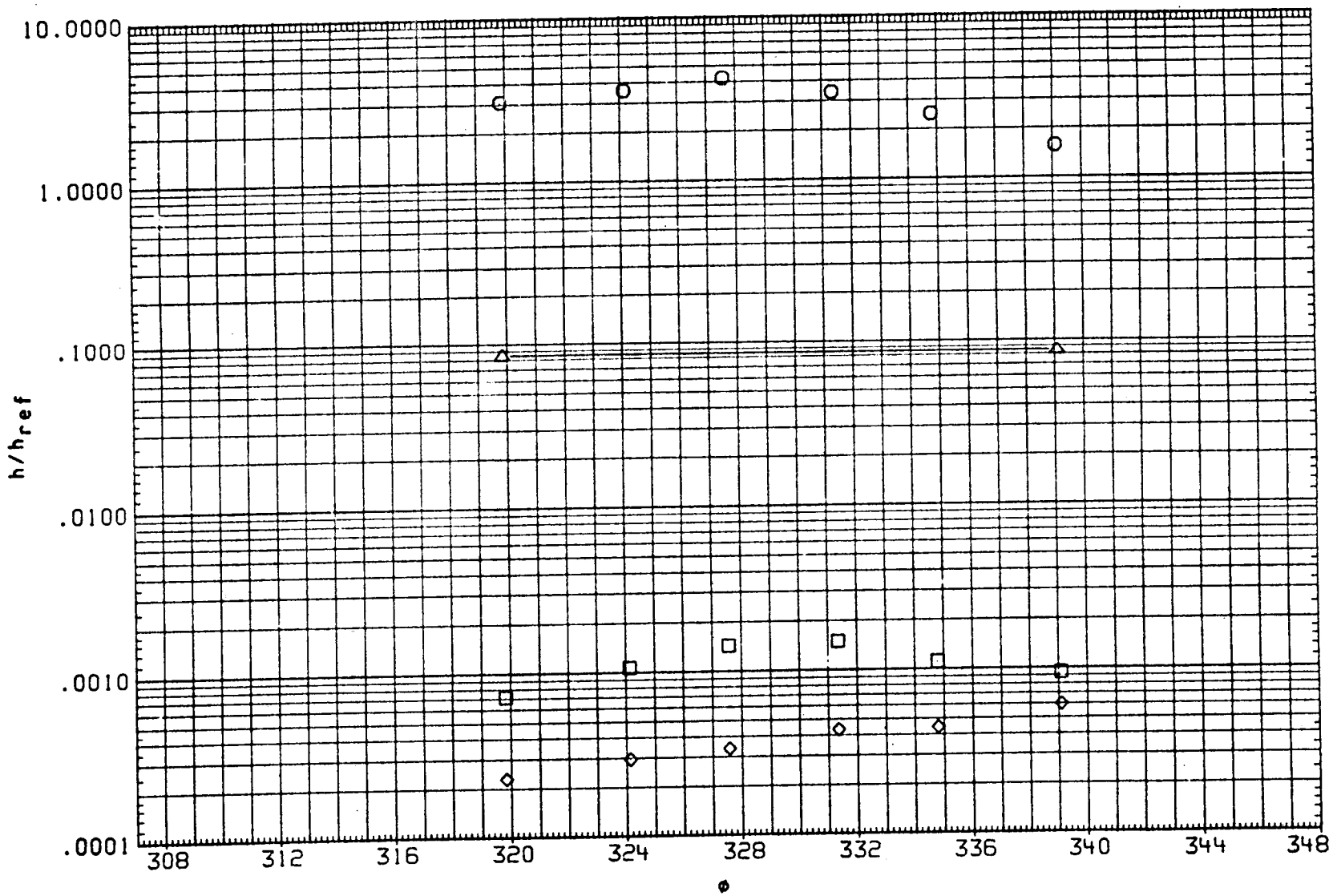

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78 PAGE 471

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

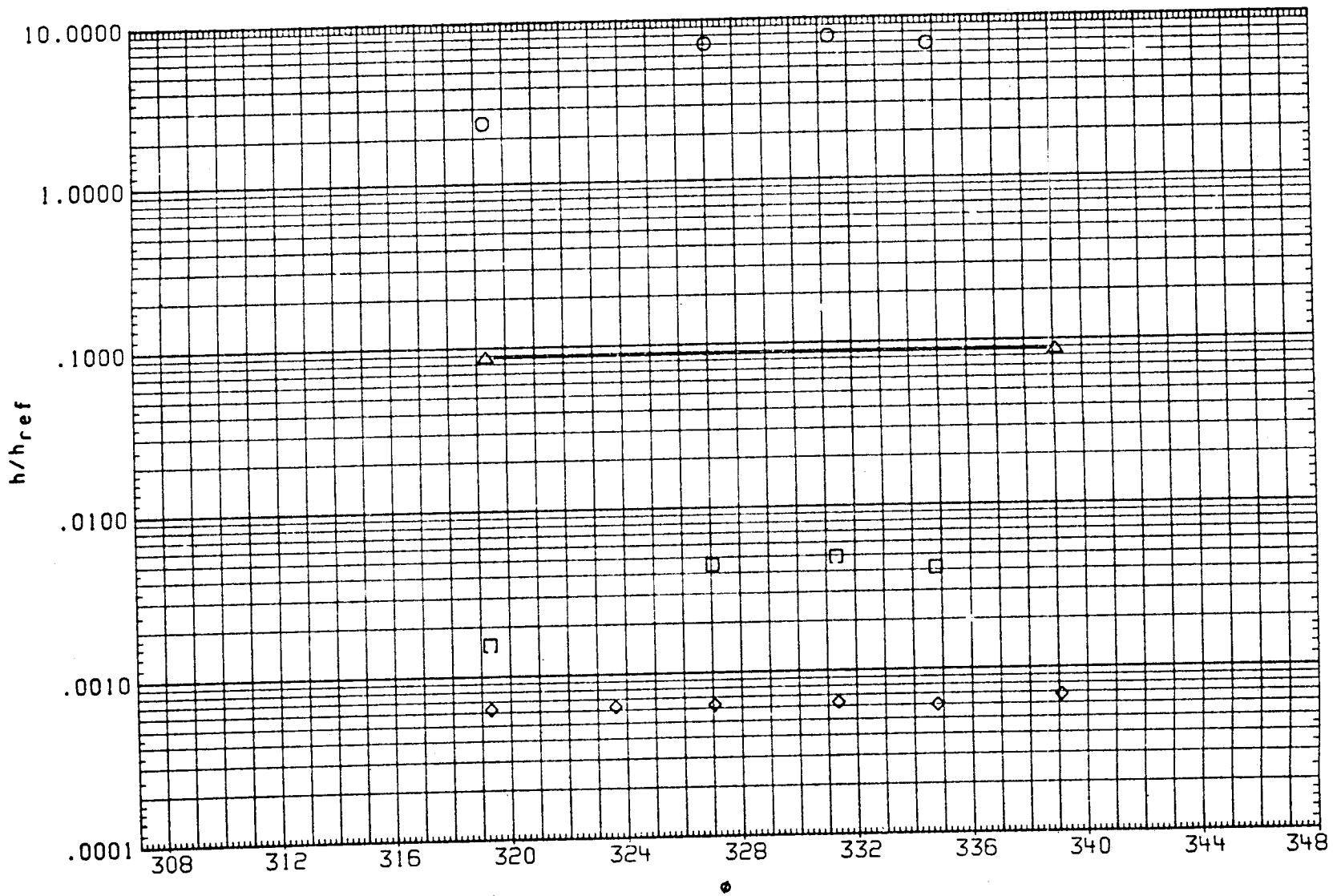

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 472

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

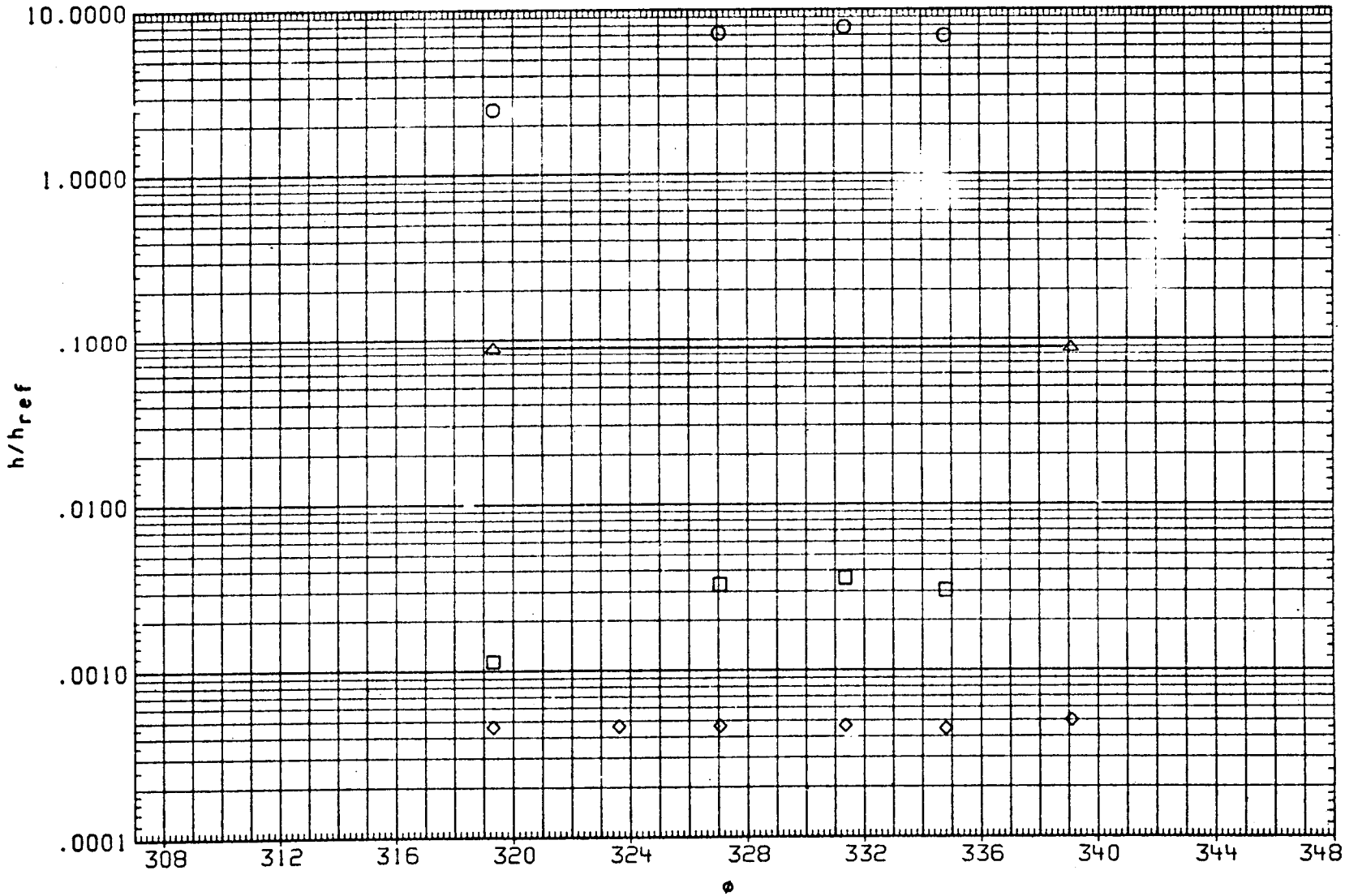

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 473

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

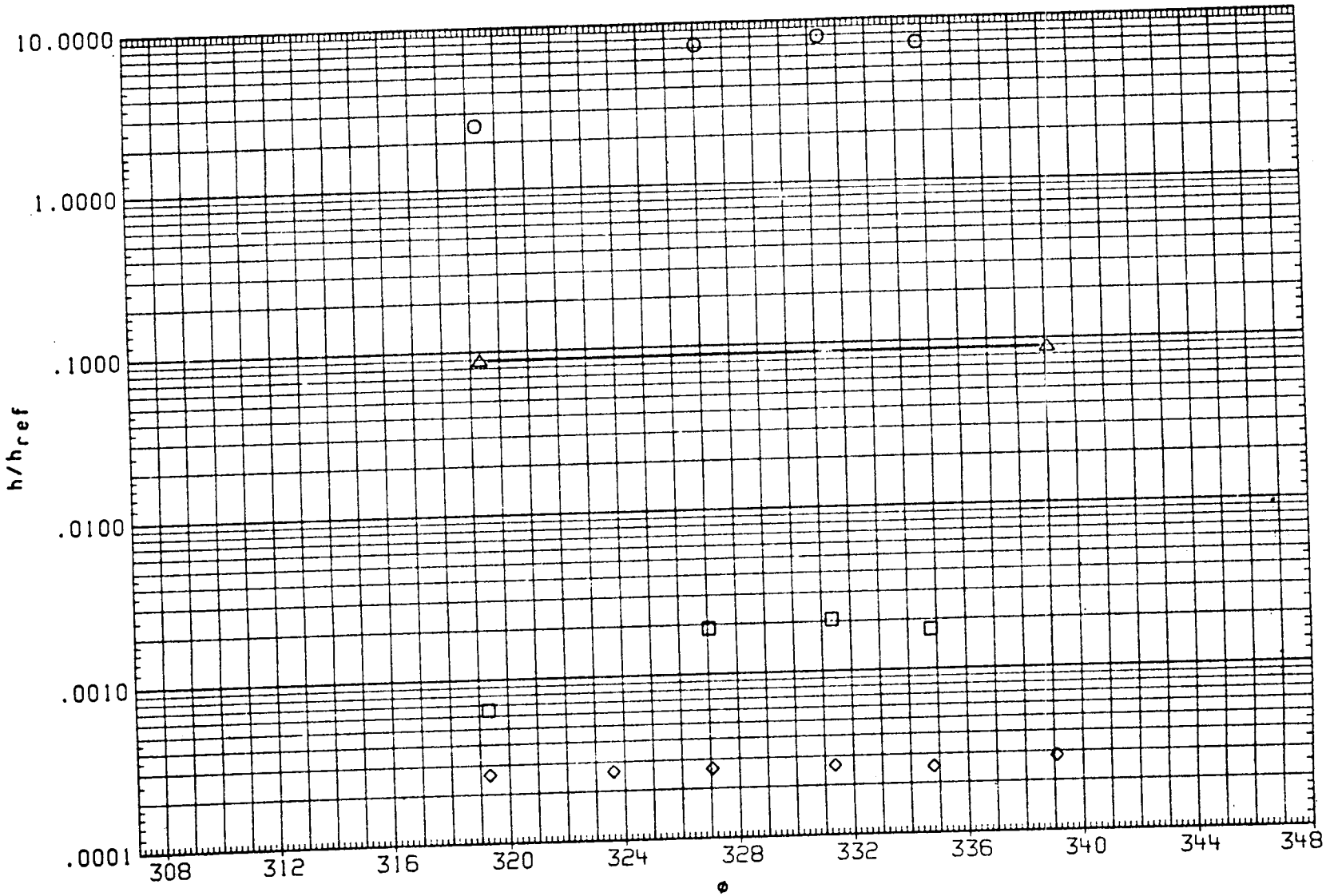

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 474

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

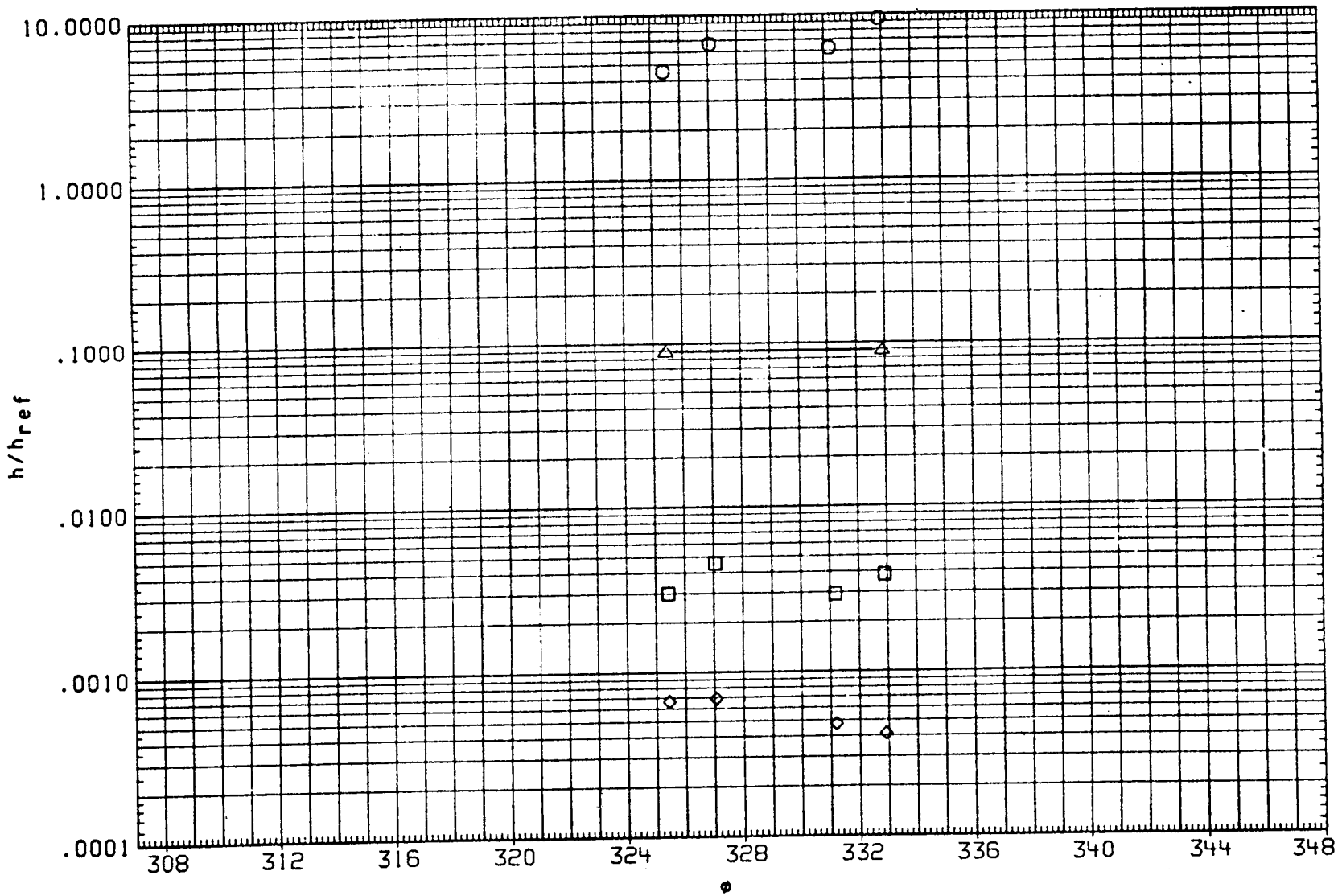

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .482 DATE 22 APR 78 PAGE 475

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

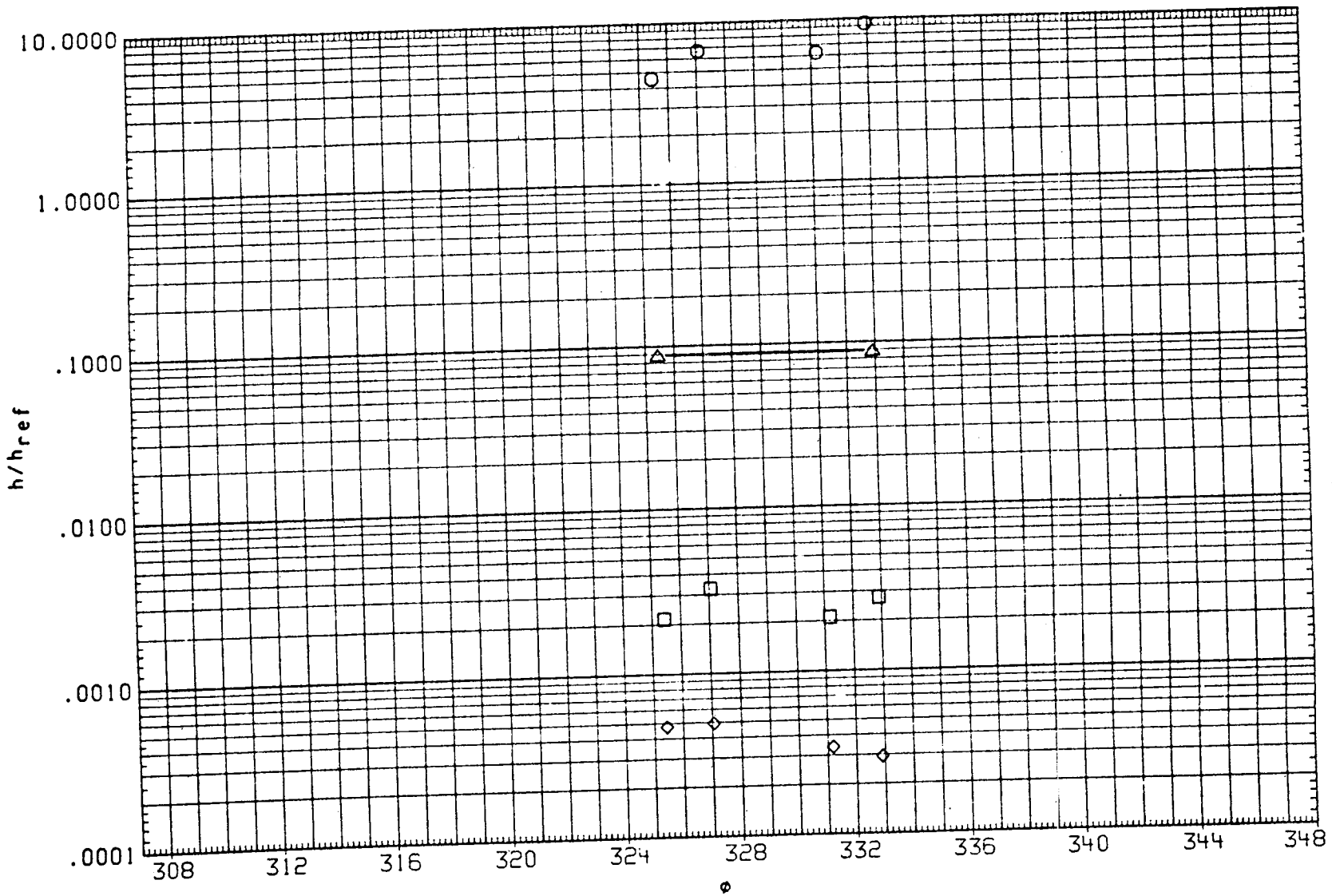

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 476

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

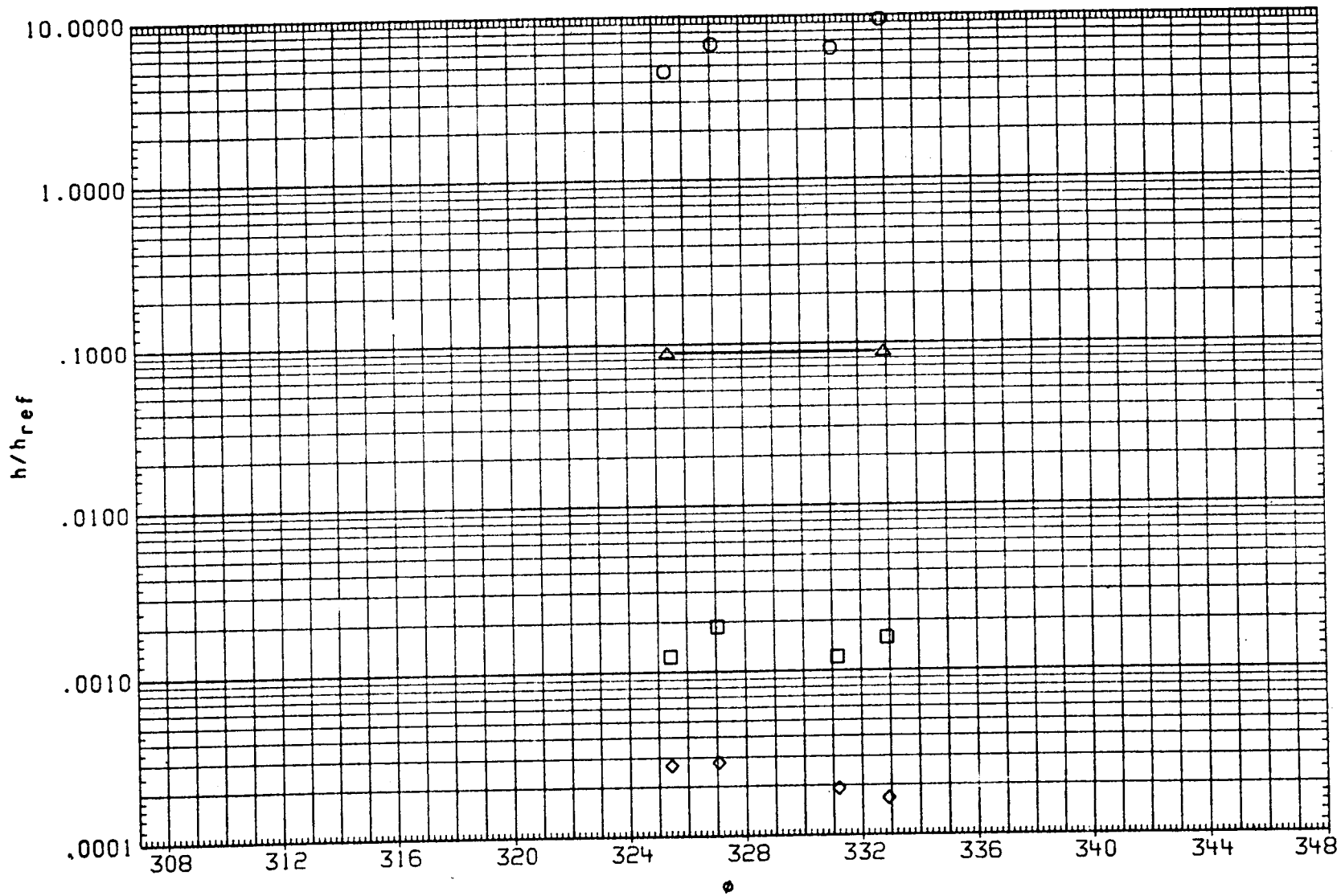

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78 PAGE 477

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

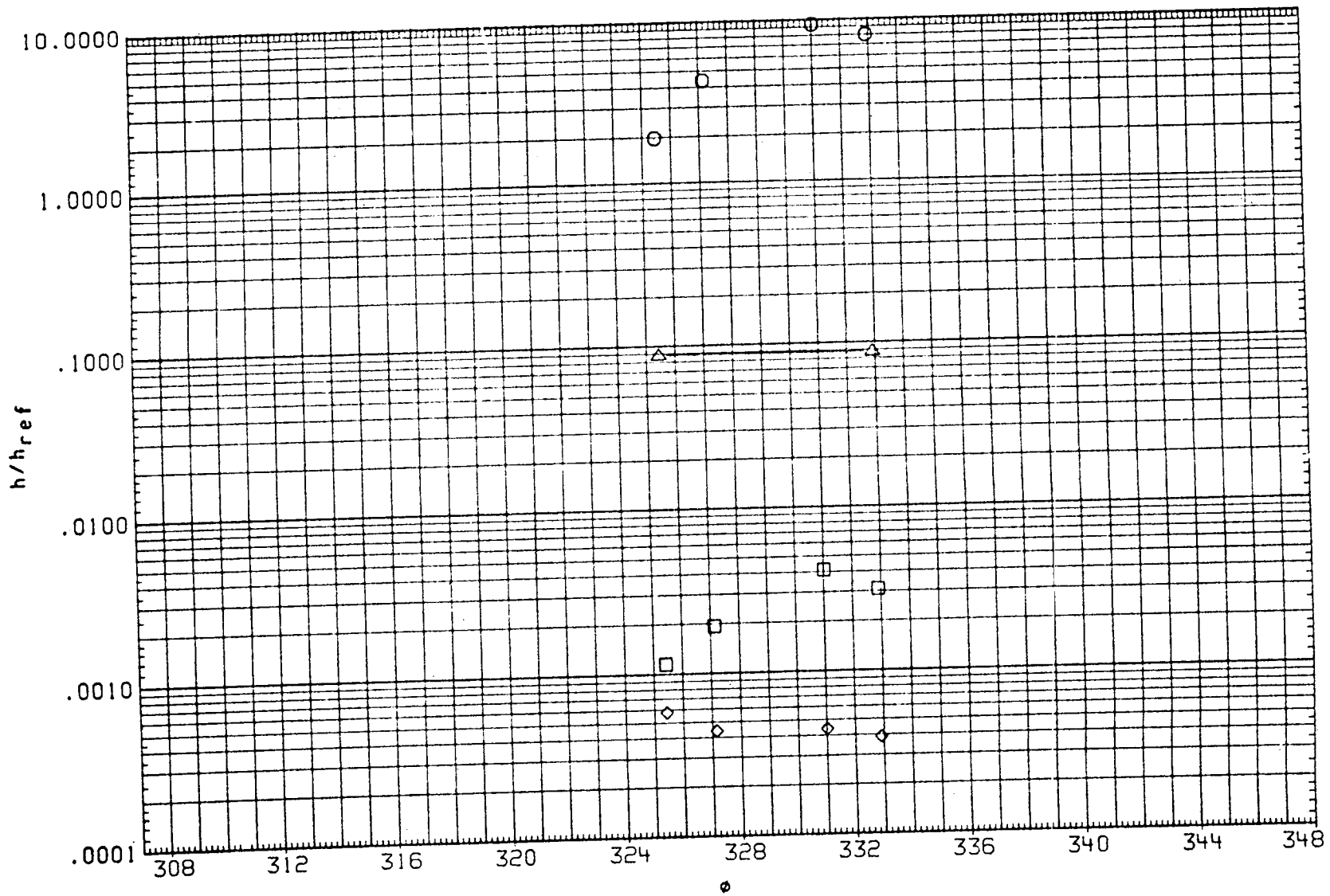

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 478

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J2000A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K2000A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

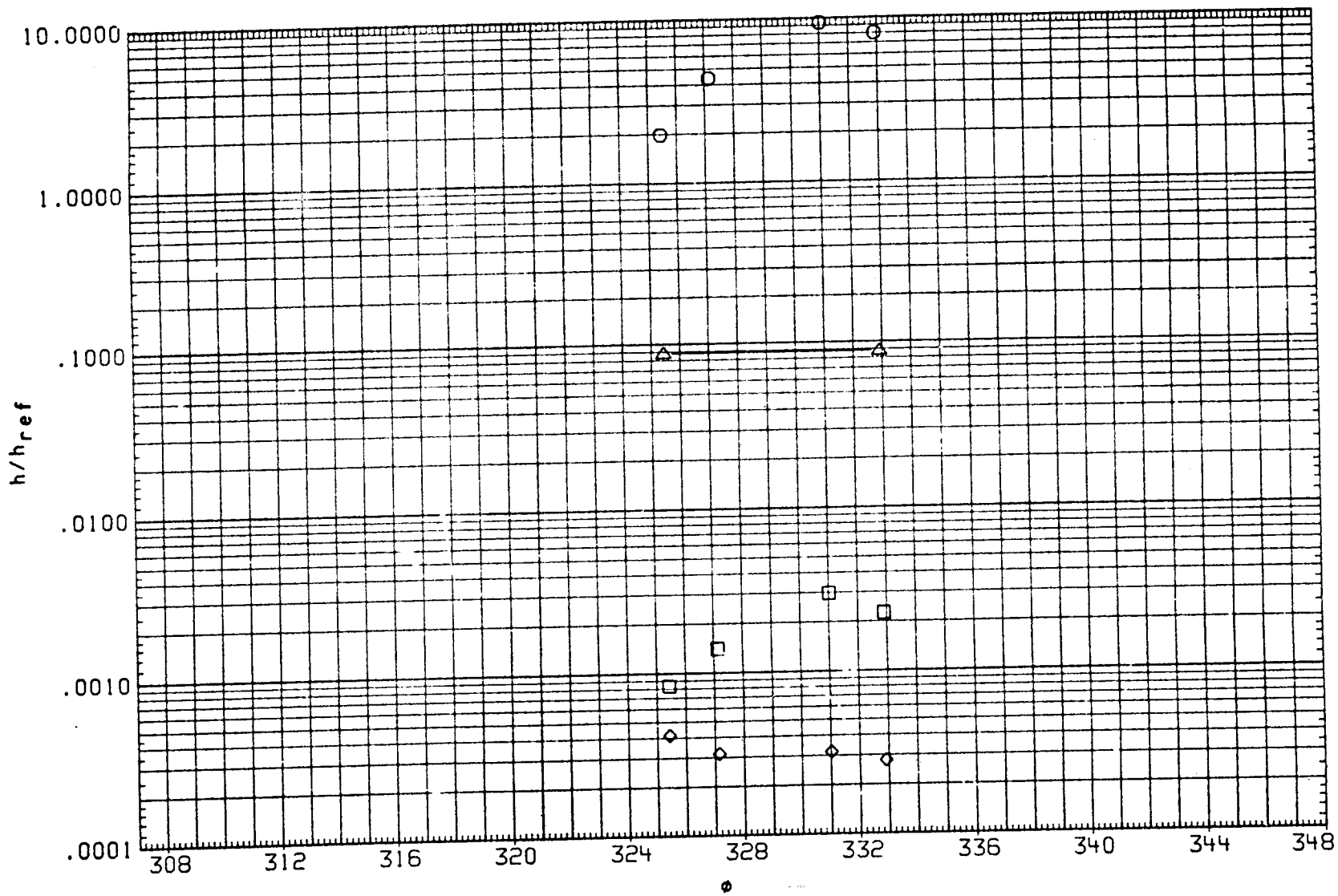

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .473 DATE 22 APR 78 PAGE 479

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0A)	○	IH51A (2A/5A)(3A/5A)(4A/5A)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0A)	□	IH51A (2A)(3A)(4A)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0A)	◇	IH51A (5A)(5A)(5A)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE	HU/HREF	.000	.000	5.000	5.300

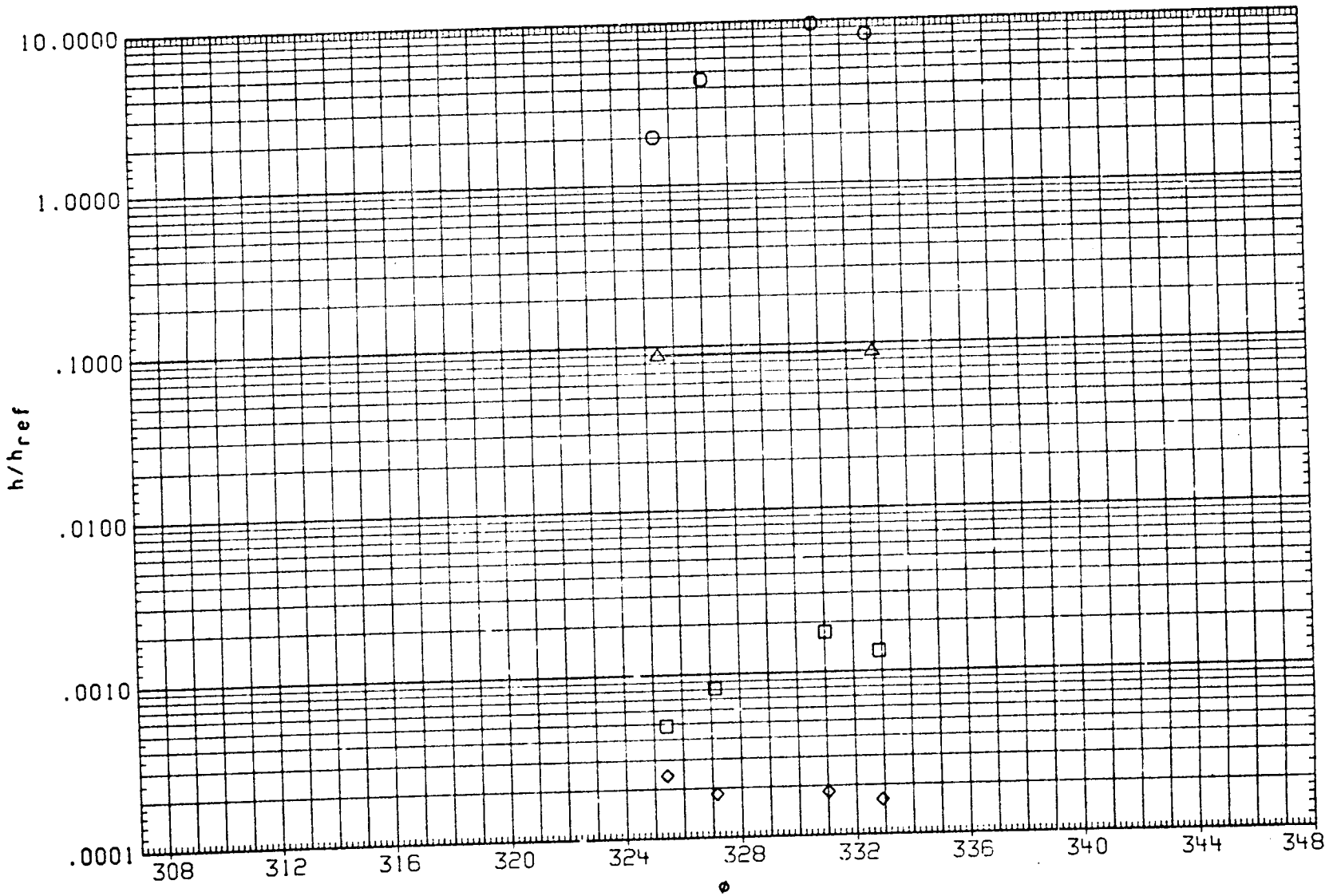

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 480

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

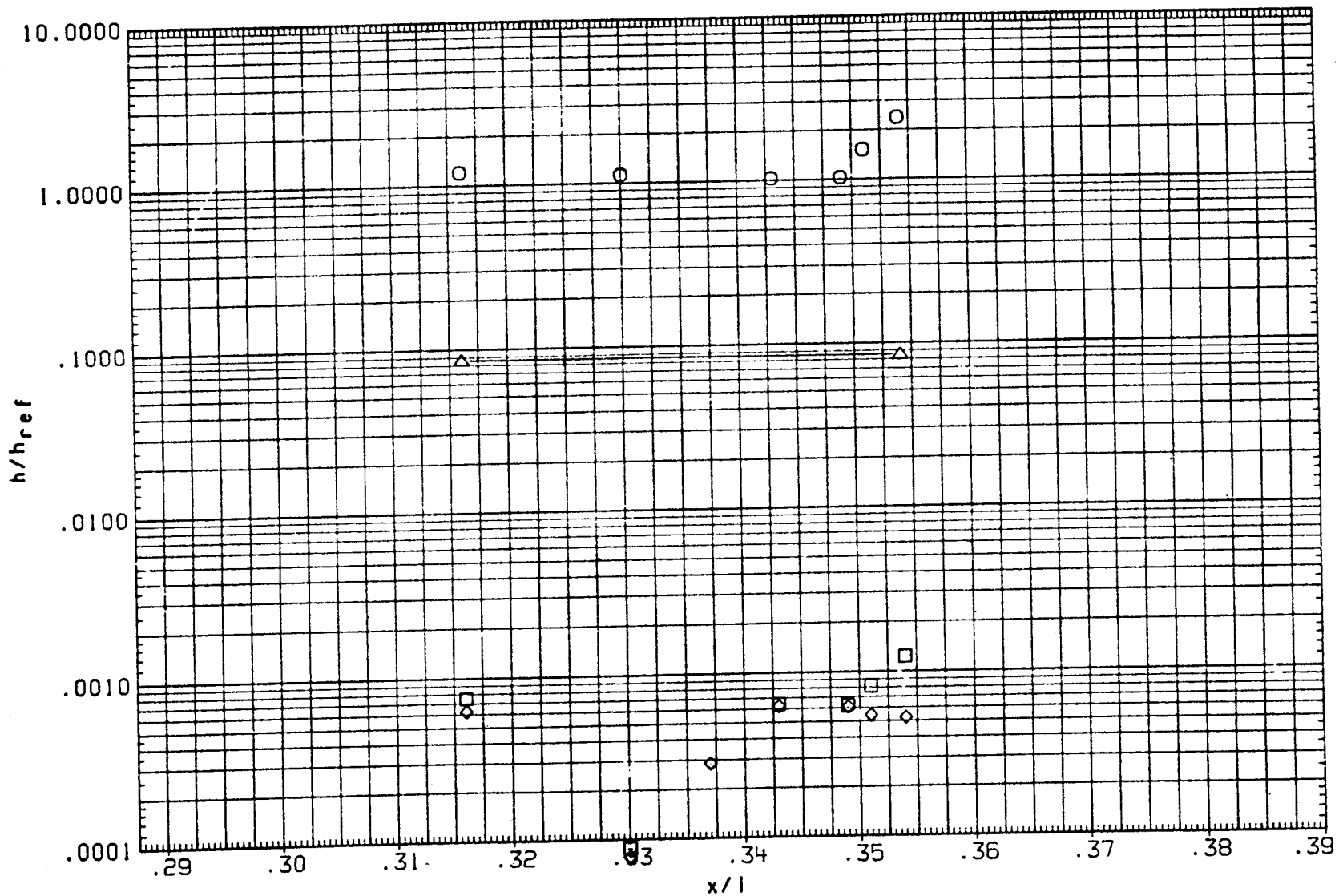

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78 PAGE 481

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

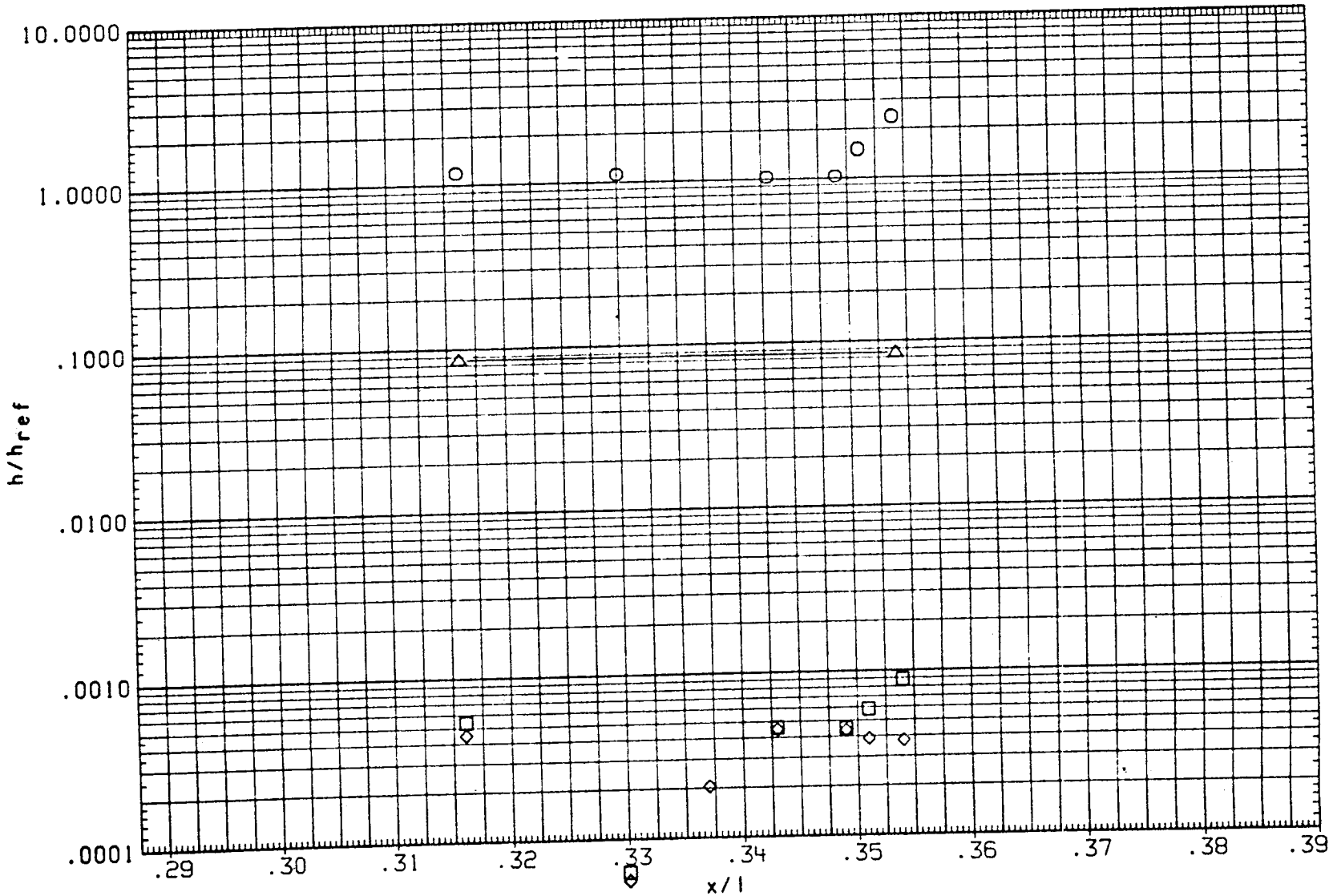

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 PHI = 24.690 DATE 22 APR '78 PAGE 482

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

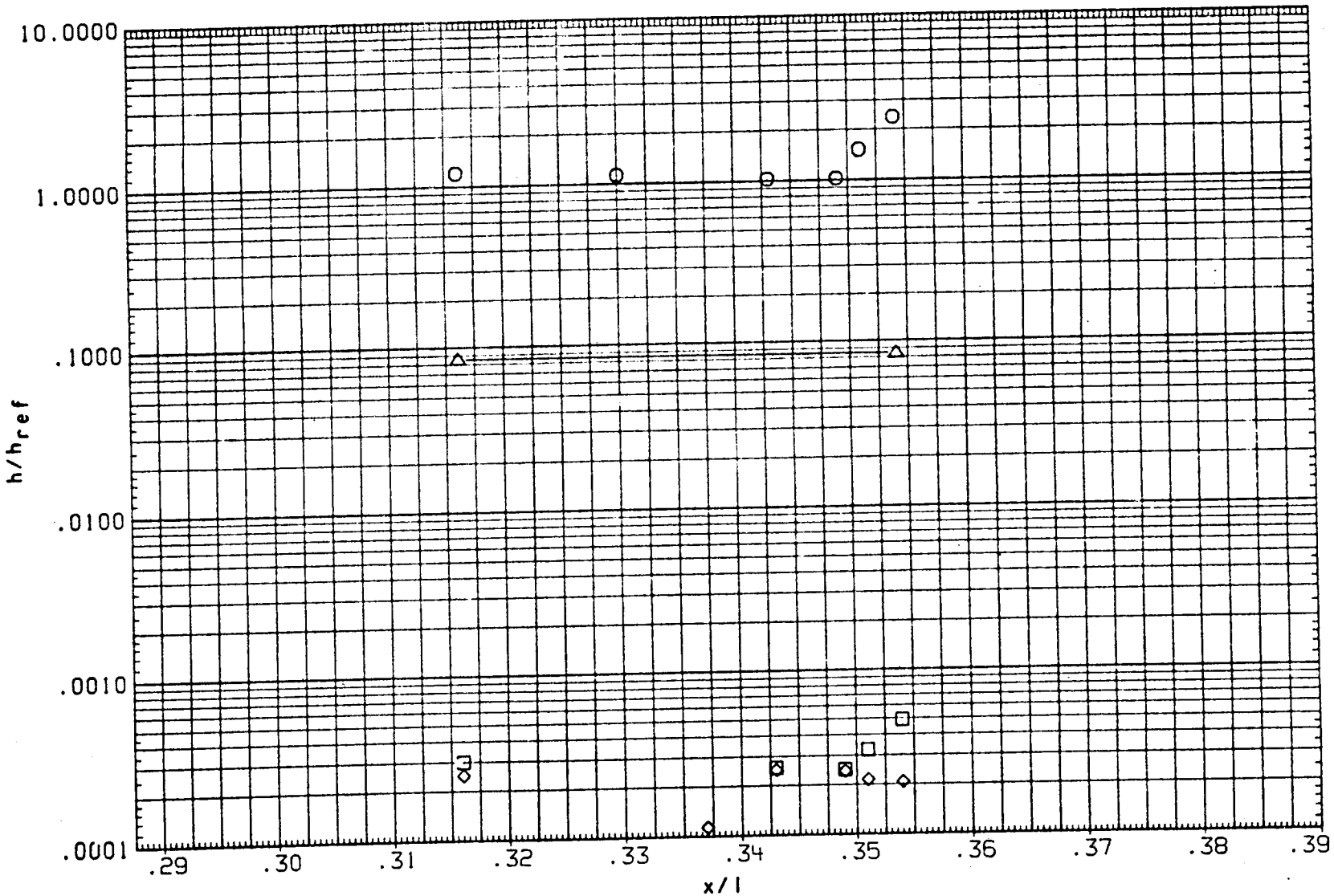

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78 PAGE 483

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0B)	□	IH51A (2B)(3B)(4B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0B)	◇	IH51A (5B)(5B)(5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

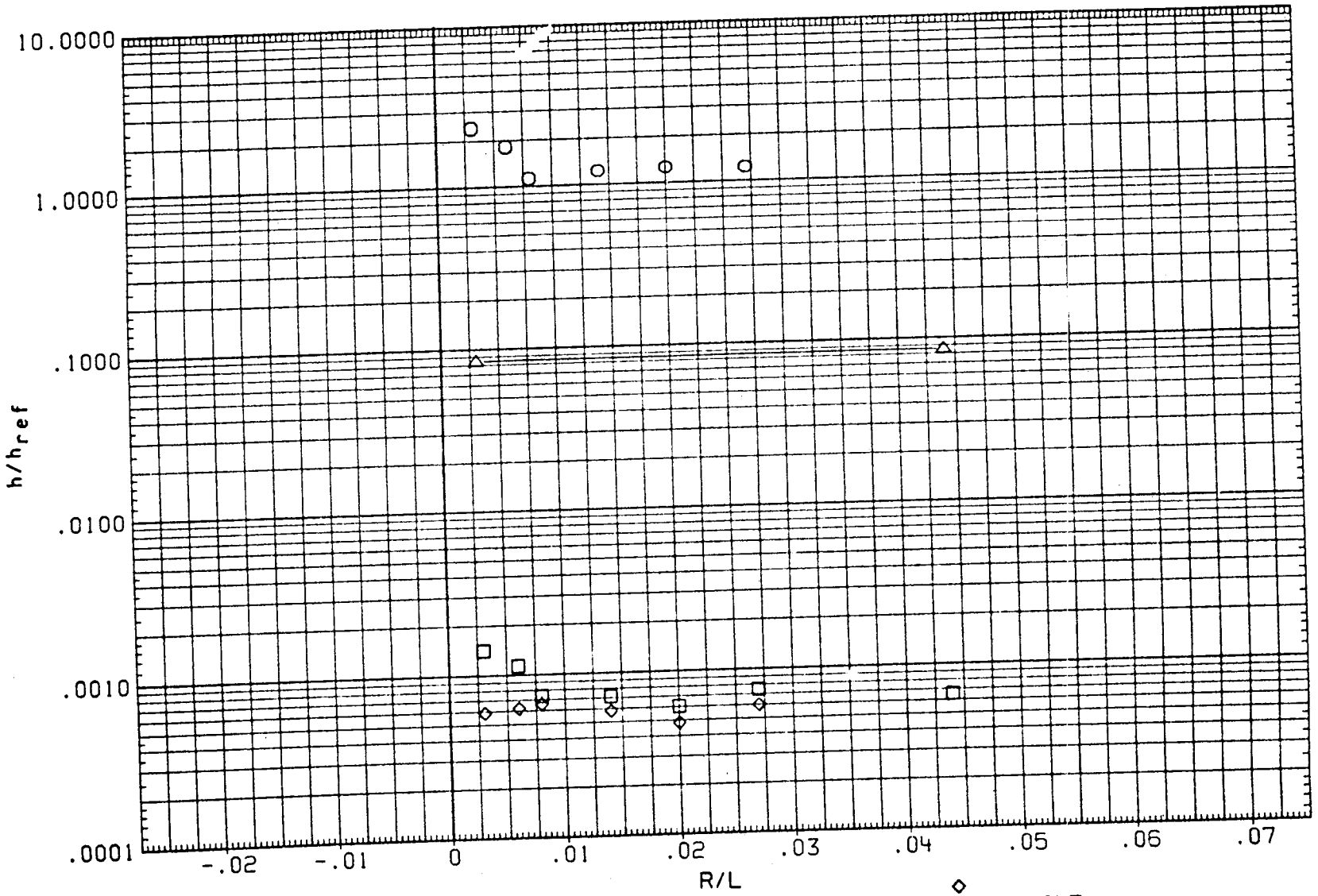

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 484

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0B)	□	IH51A (2B)(3B)(4B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0B)	◇	IH51A (5B)(5B)(5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

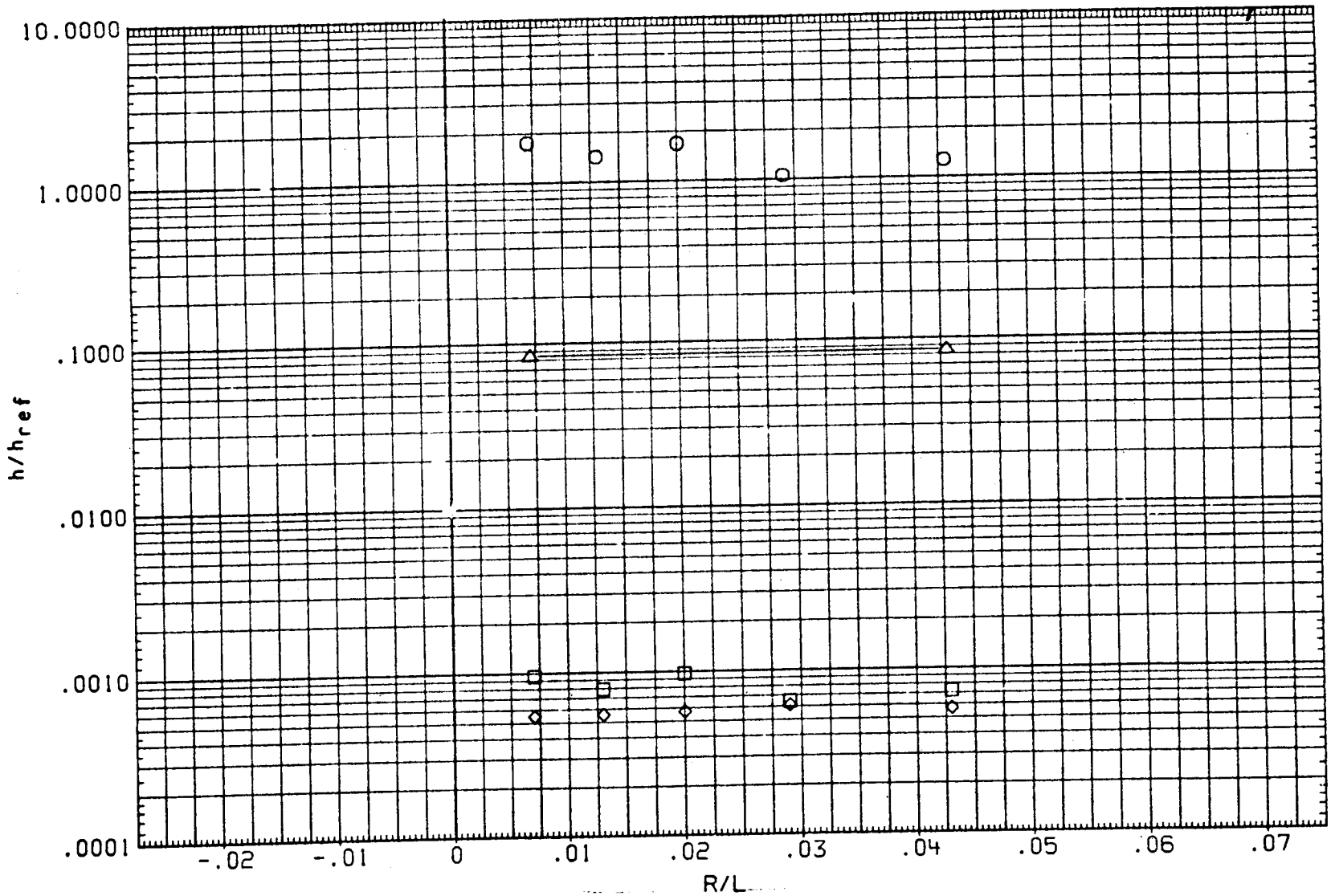

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0B)	□	IH51A (2B)(3B)(4B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0B)	◇	IH51A (5B)(5B)(5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000		○

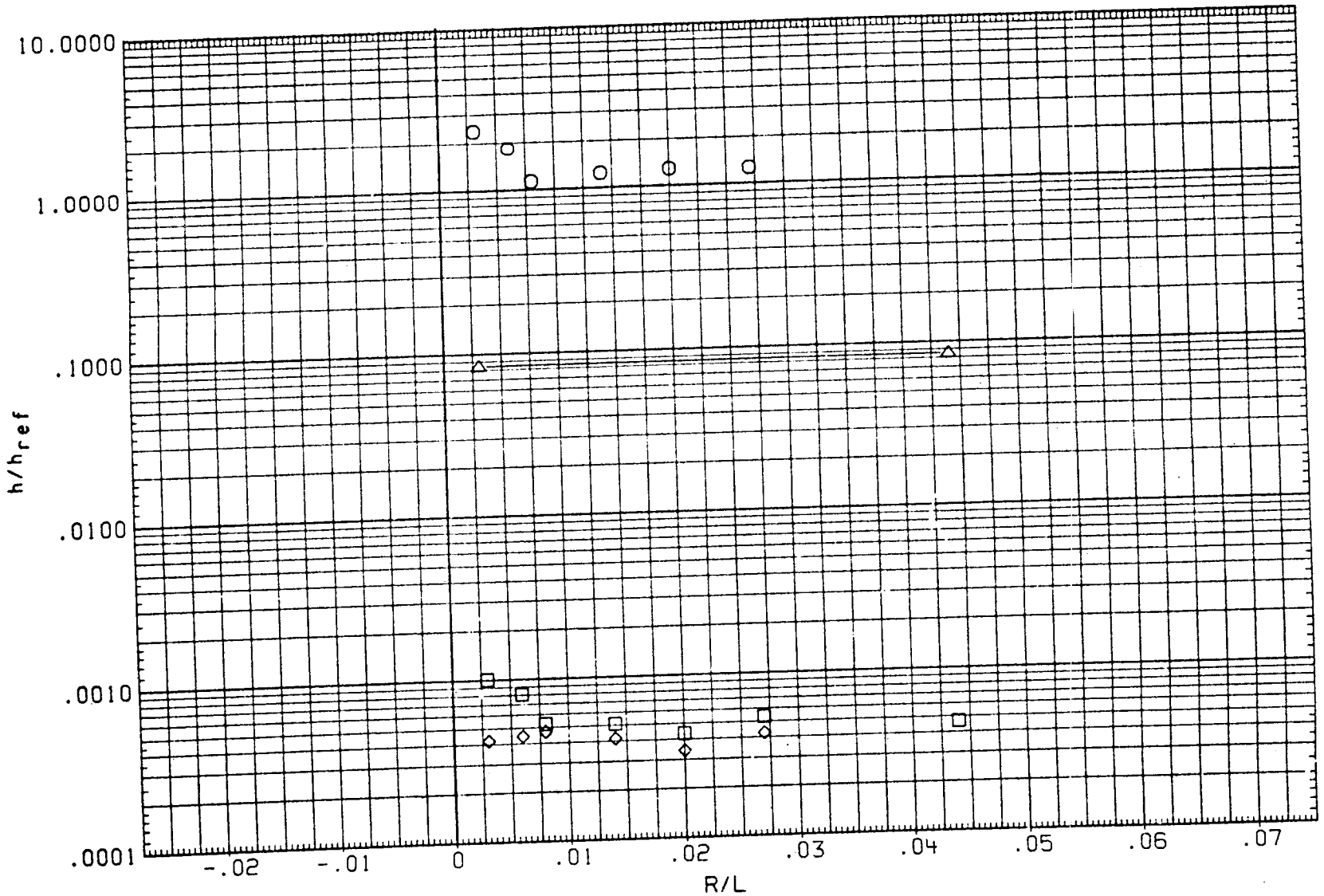

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2◇FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0B)	□	IH51A (2B)(3B)(4B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0B)	◇	IH51A (5B)(5B)(5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

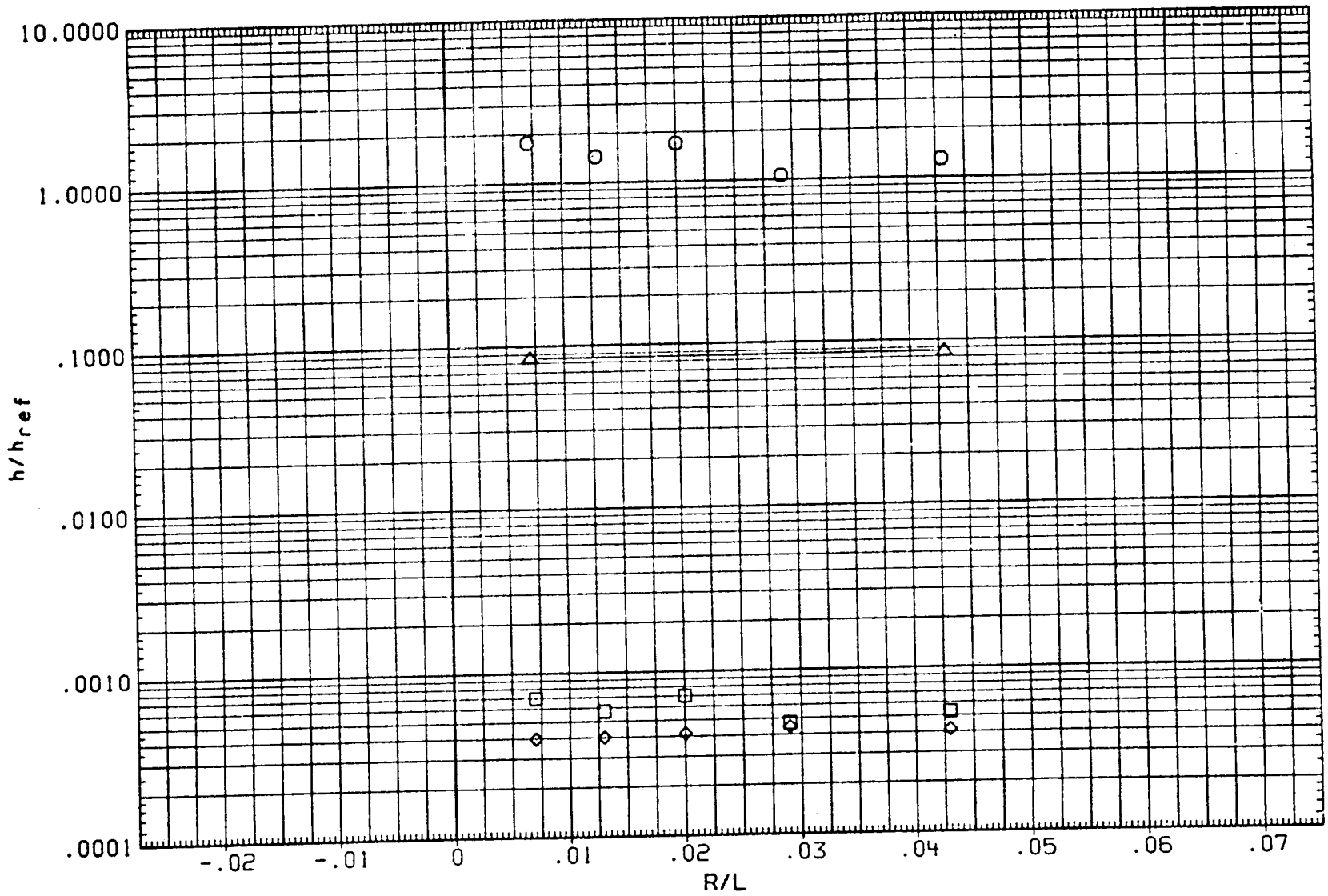

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 487

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0B)	□	IH51A (2B)(3B)(4B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0B)	◇	IH51A (5B)(5B)(5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

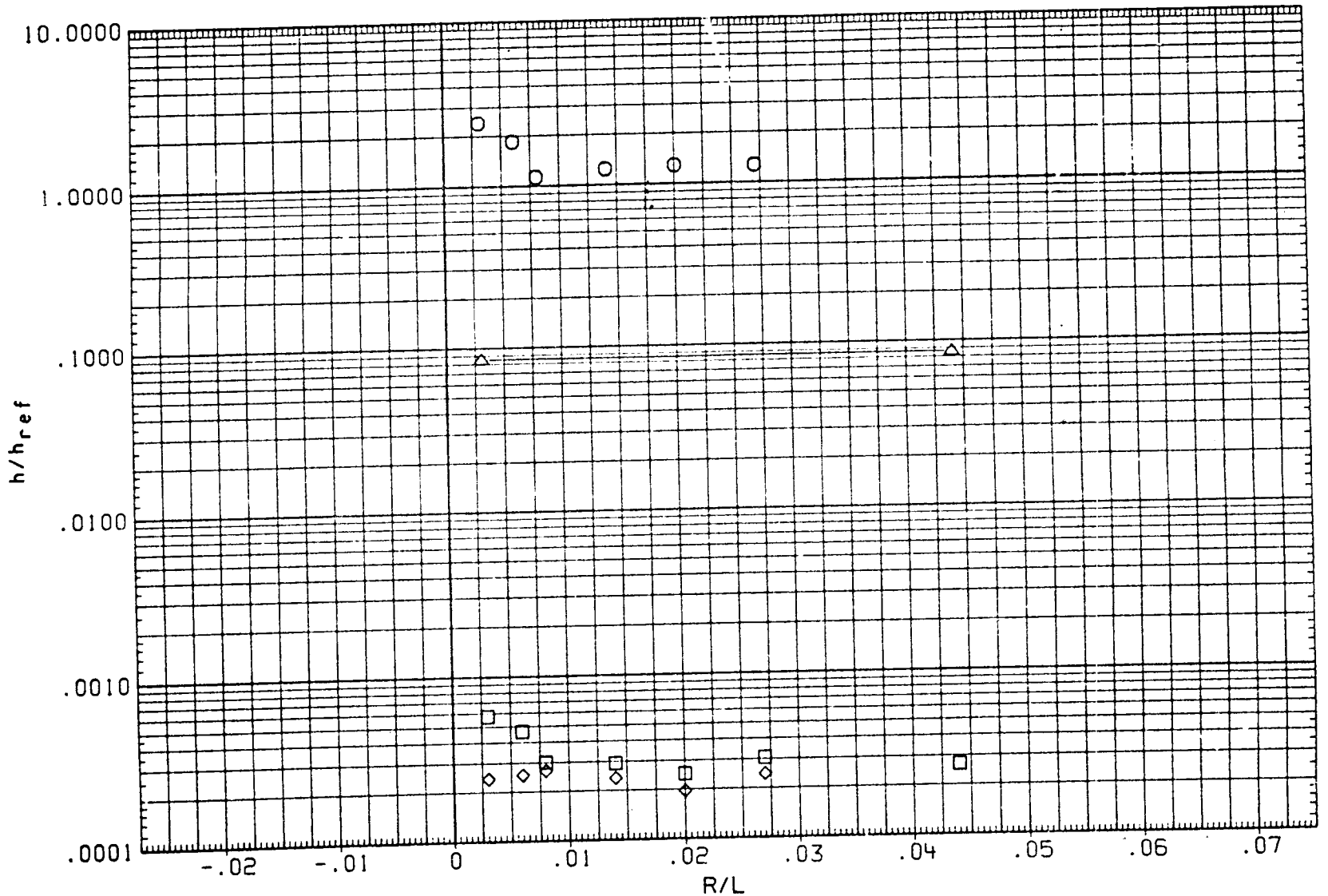

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 488

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20L0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(J20L0B)	□	IH51A (2B)(3B)(4B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(K20L0B)	◇	IH51A (5B)(5B)(5B)	LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF		.000	.000	5.000	5.300

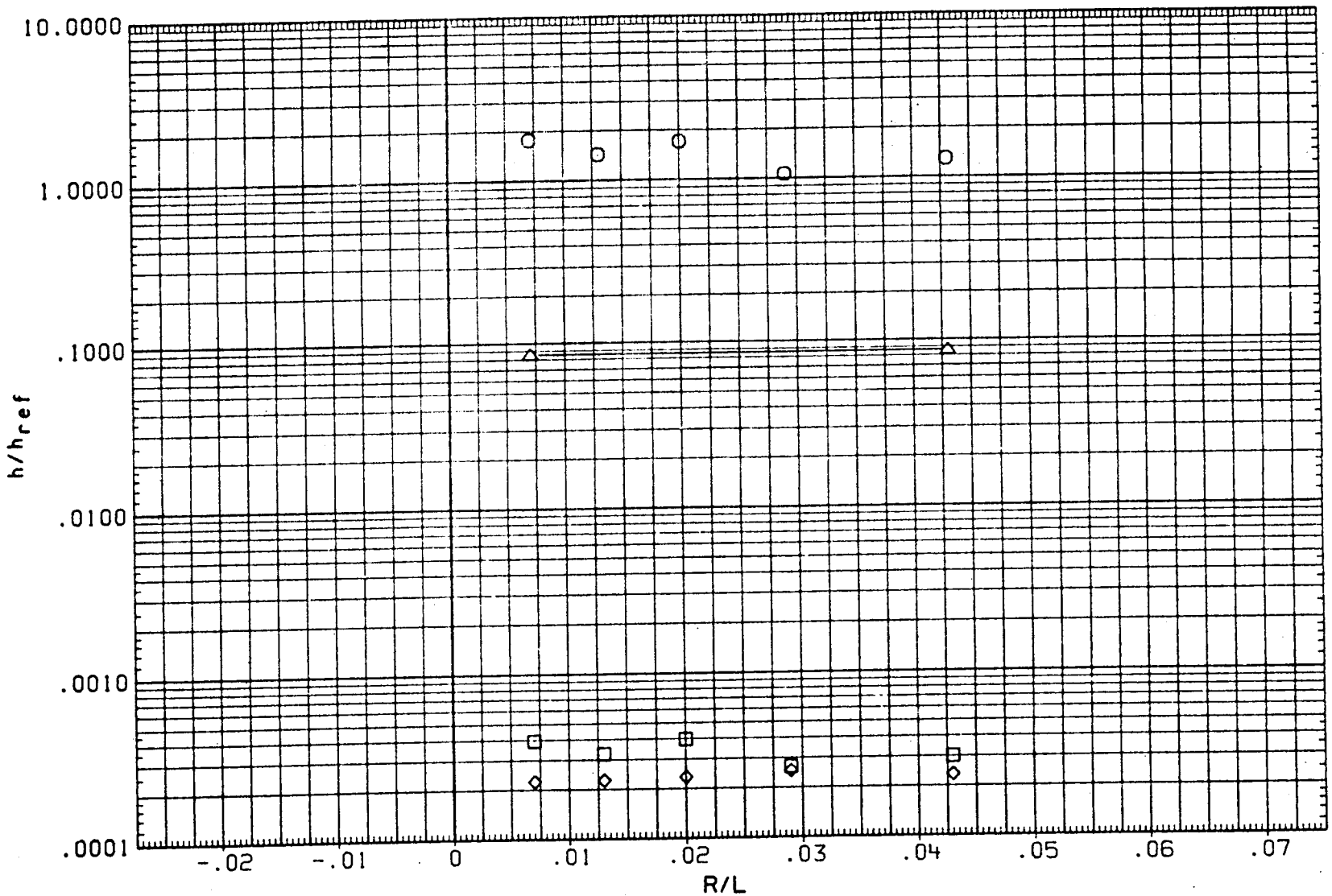

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 489

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

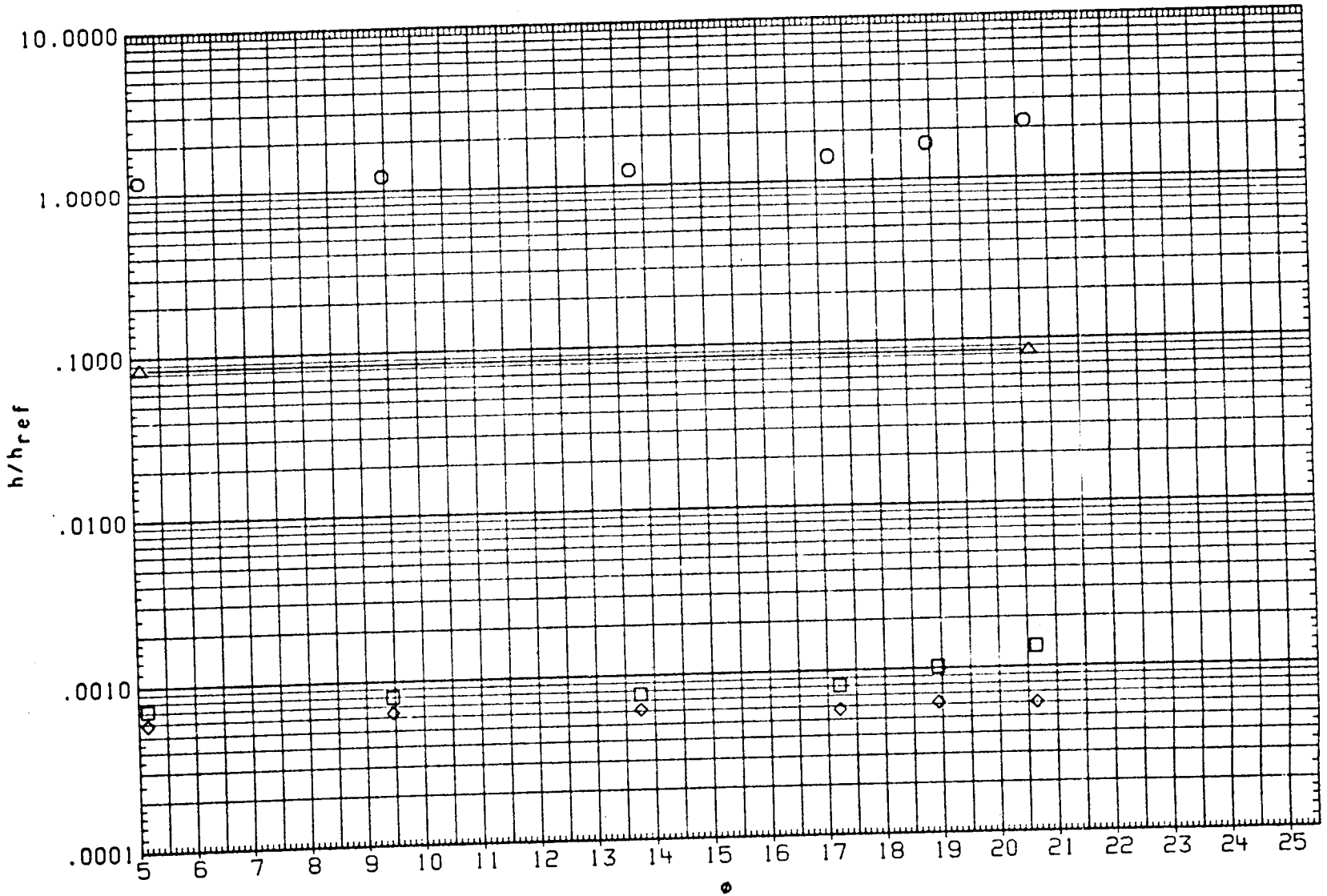

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 X/L = .357 DATE 22 APR 78 PAGE 490

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

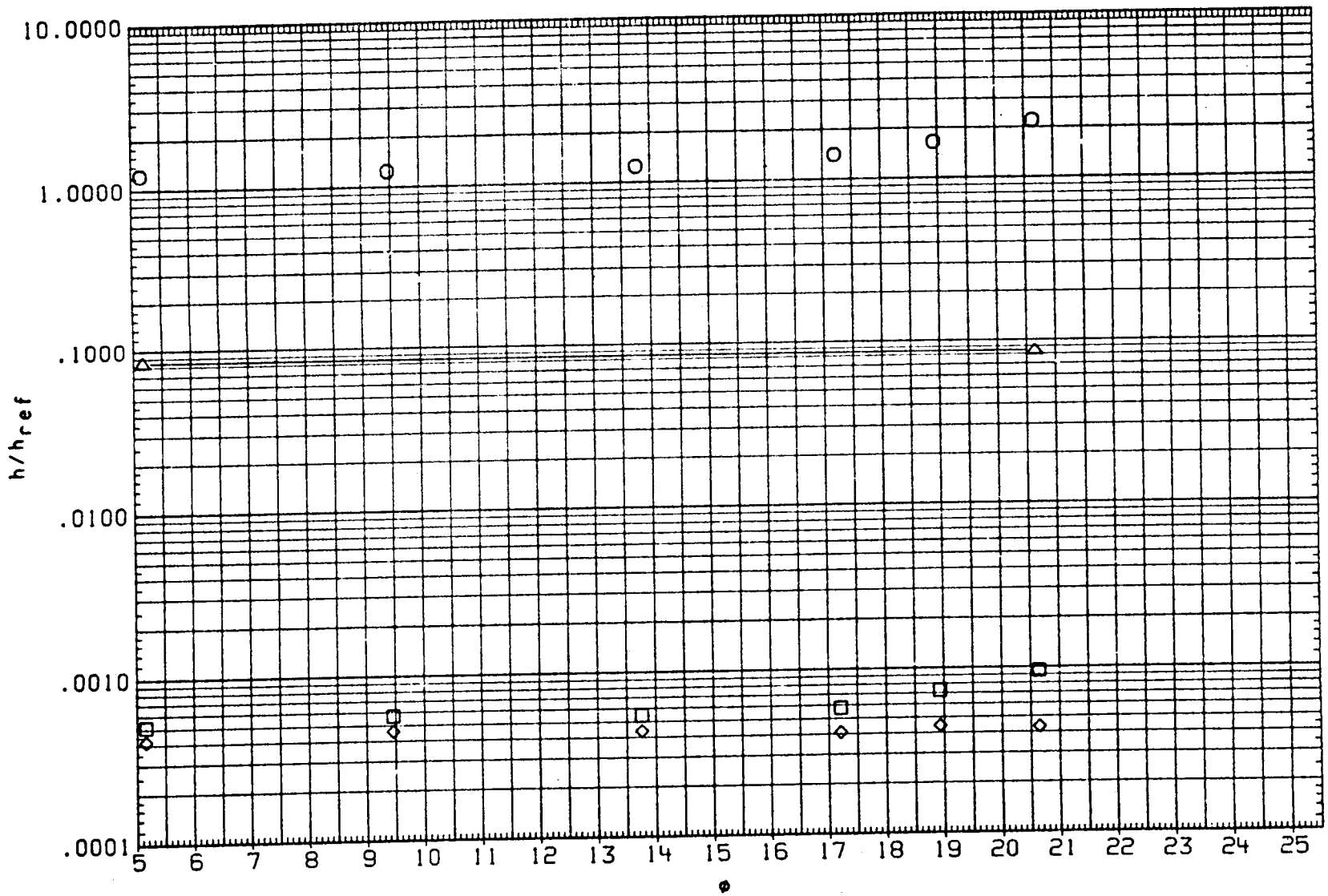

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 X/L = .357 DATE 22 APR 78 PAGE 491

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

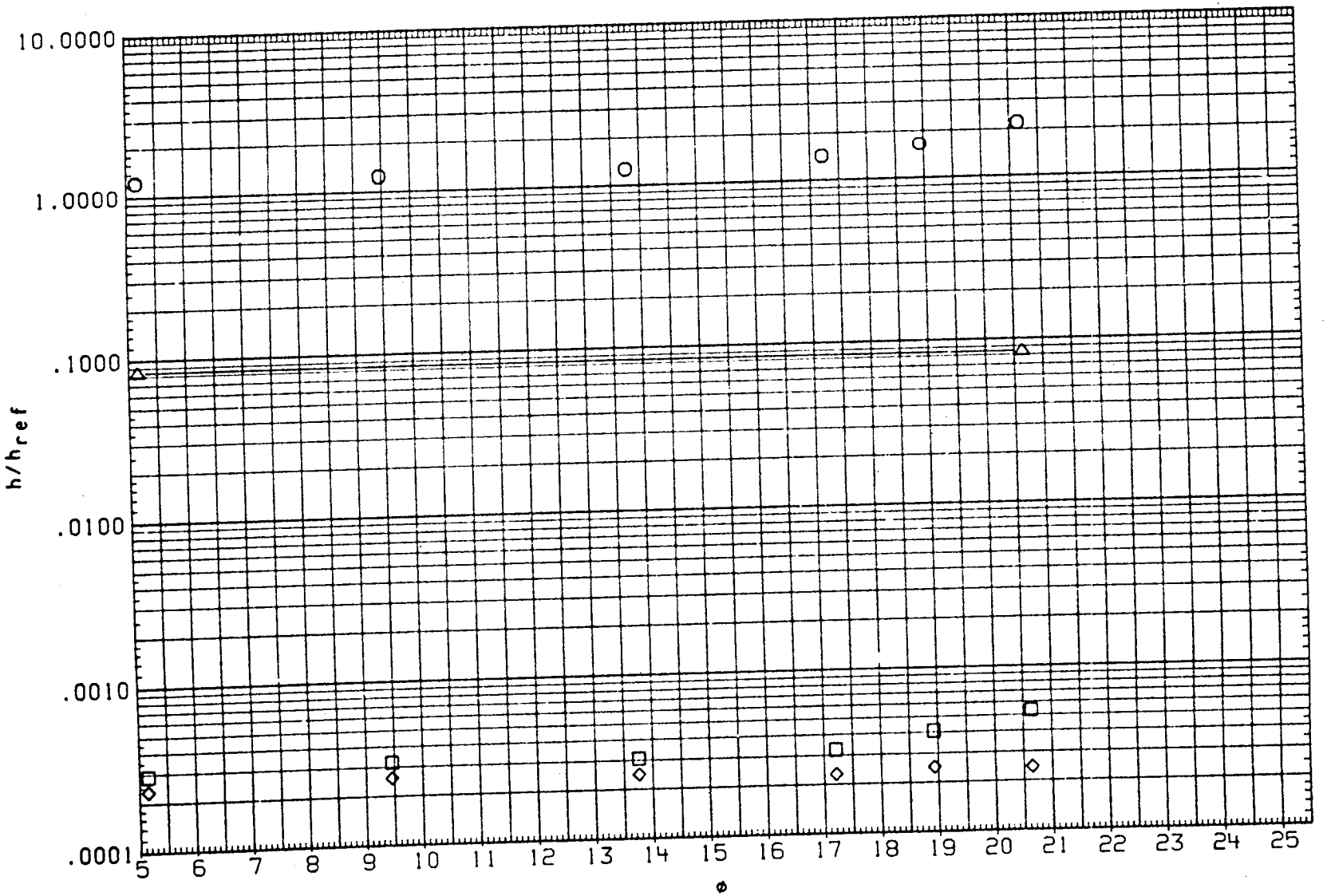

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78 PAGE 492

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

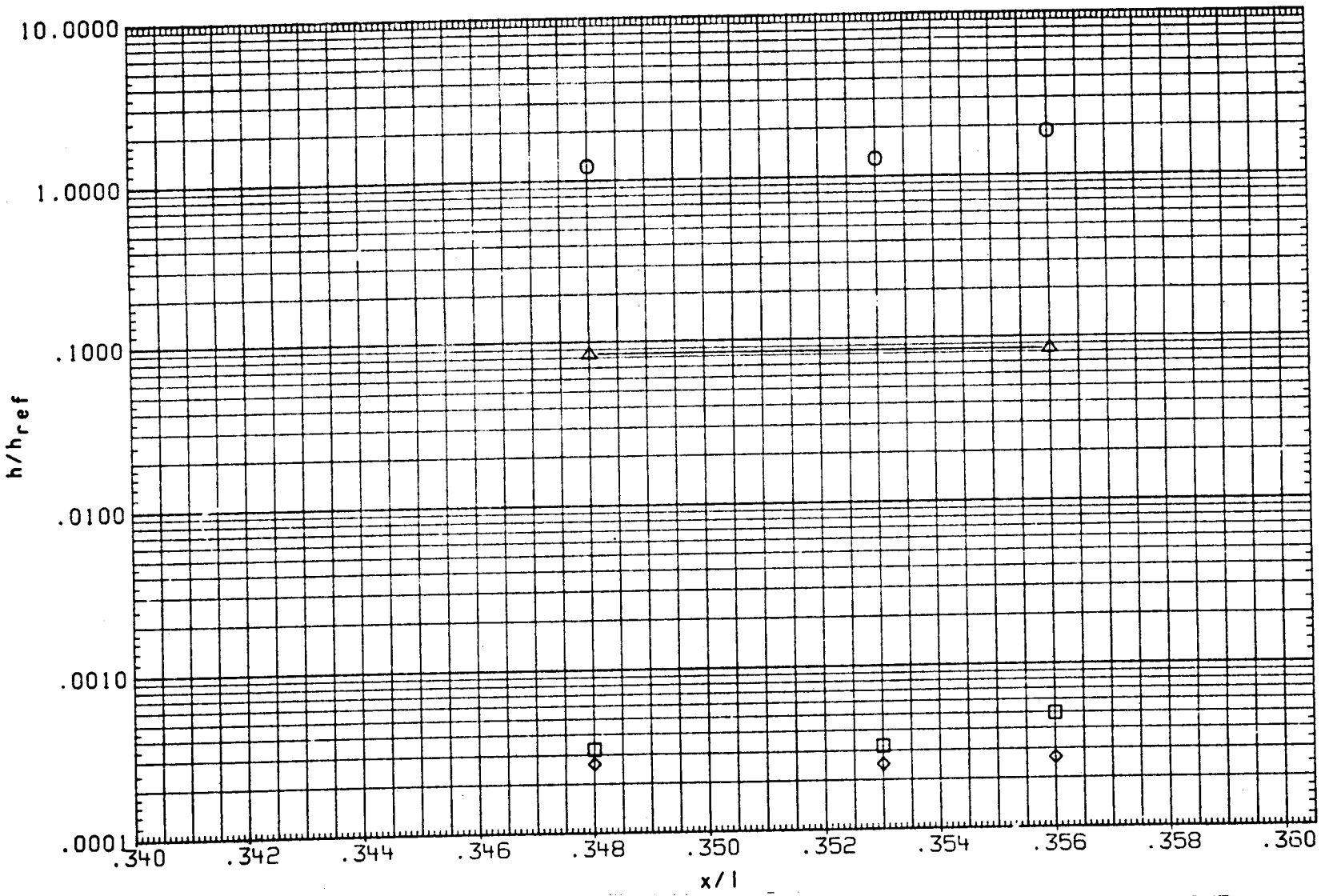

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 493

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

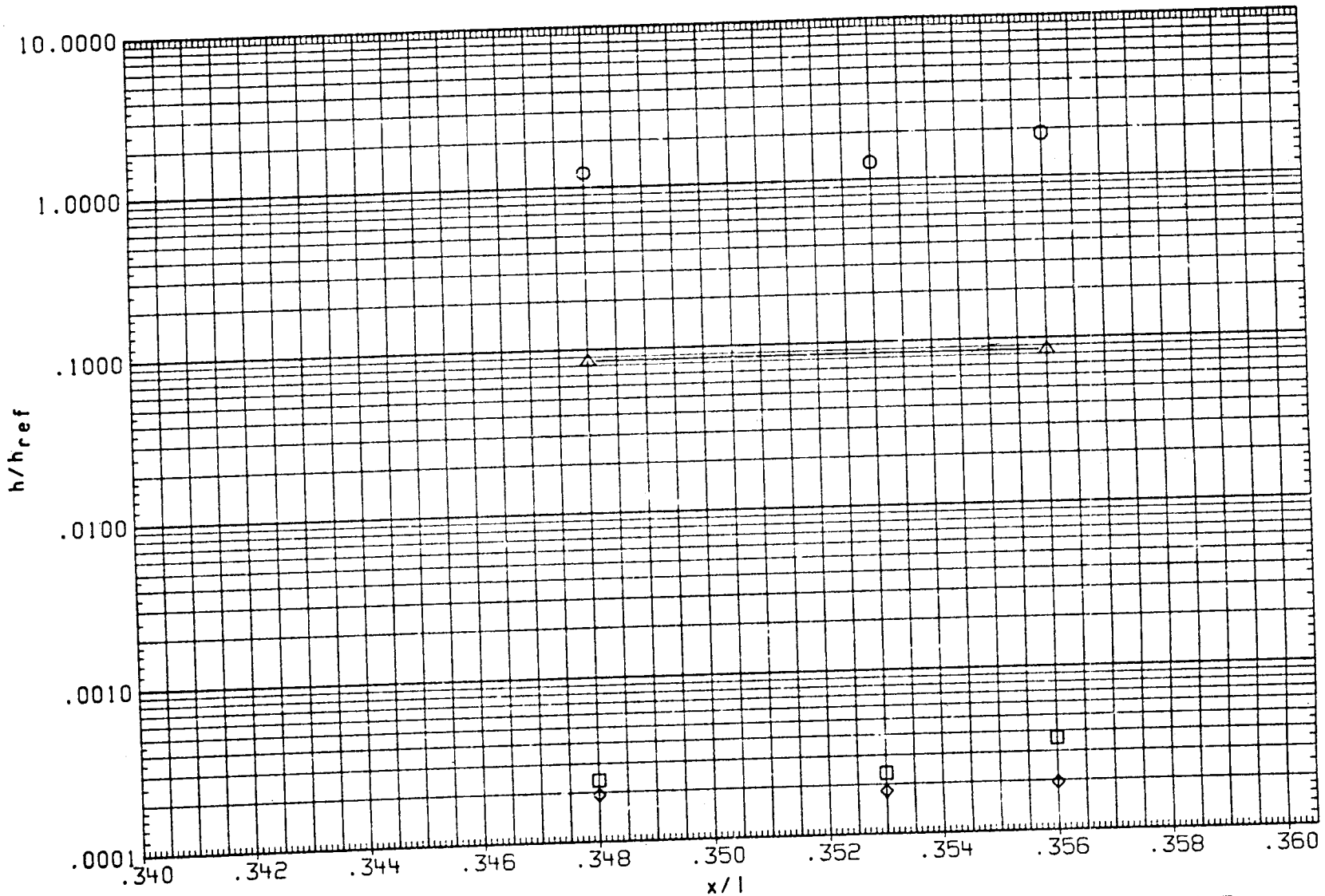

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 494

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

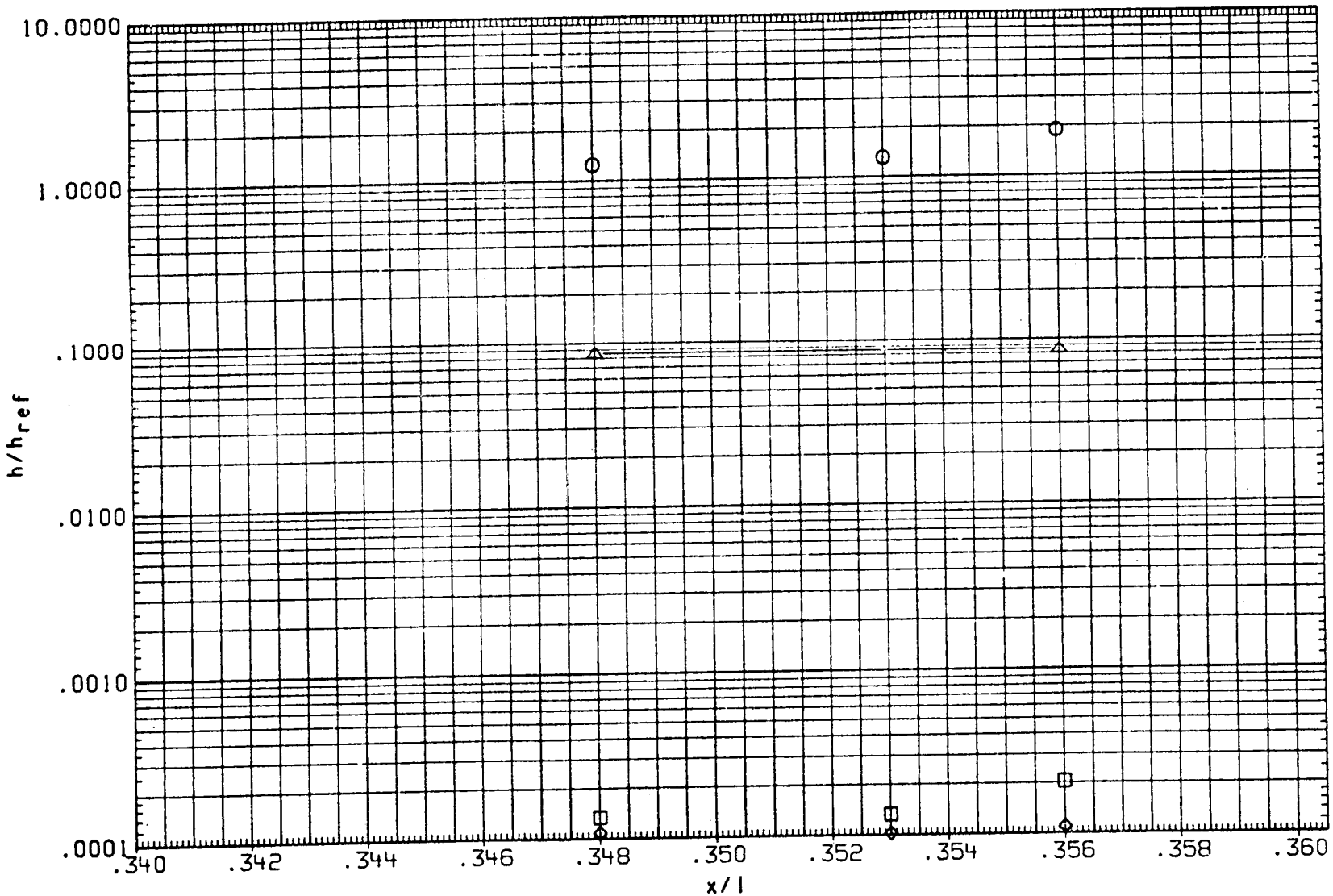

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 495

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(J20M0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(J20M0B)	□	IH51A (2B)(3B)(4B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(K20M0B)	◇	IH51A (5B)(5B)(5B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

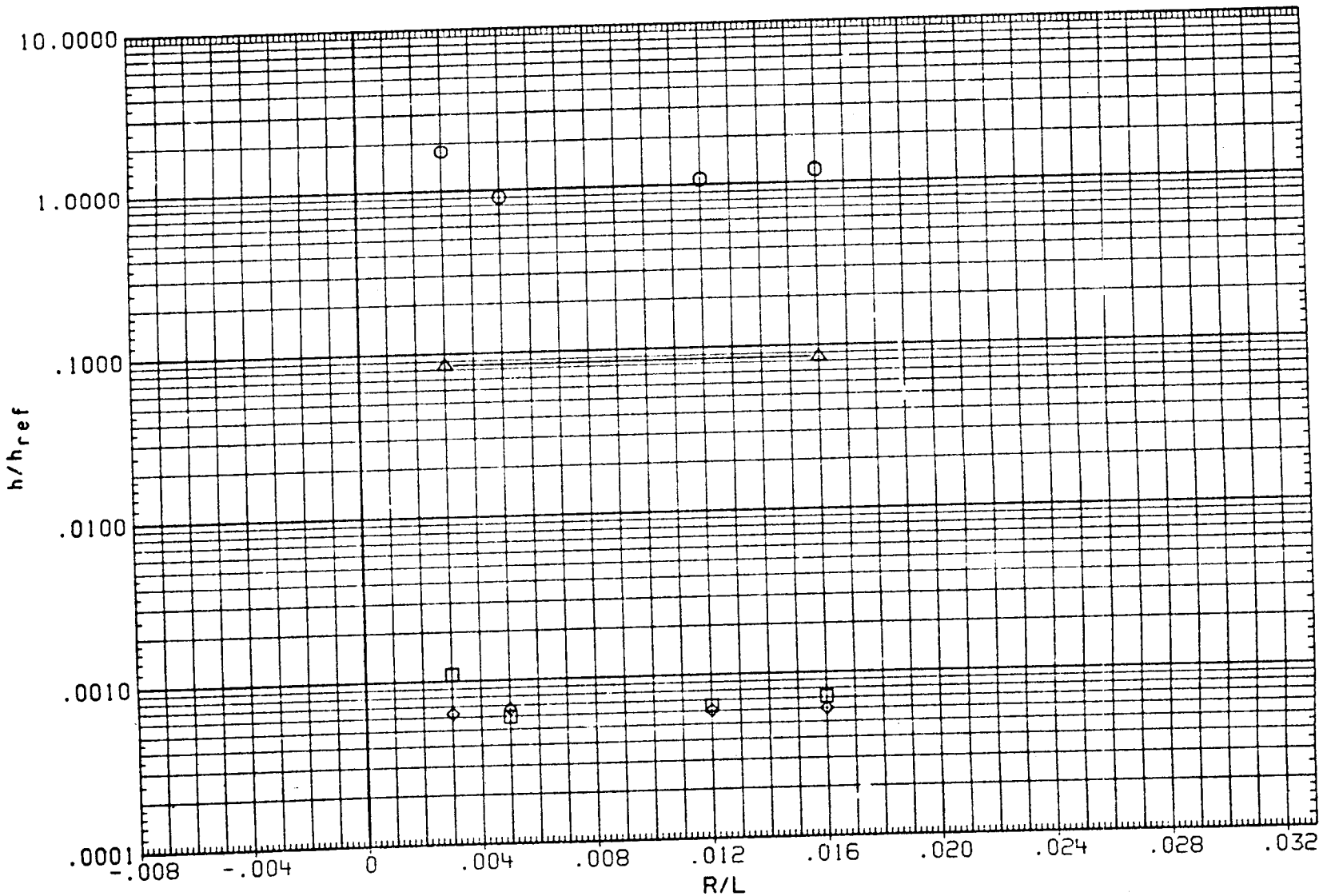

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 496

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20M0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(J20M0B)	□	IH51A (2B)(3B)(4P)	LO2 A.L. DIA	.000	.000	5.000	5.300
(K20M0B)	◇	IH51A (5B)(5B)(5B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

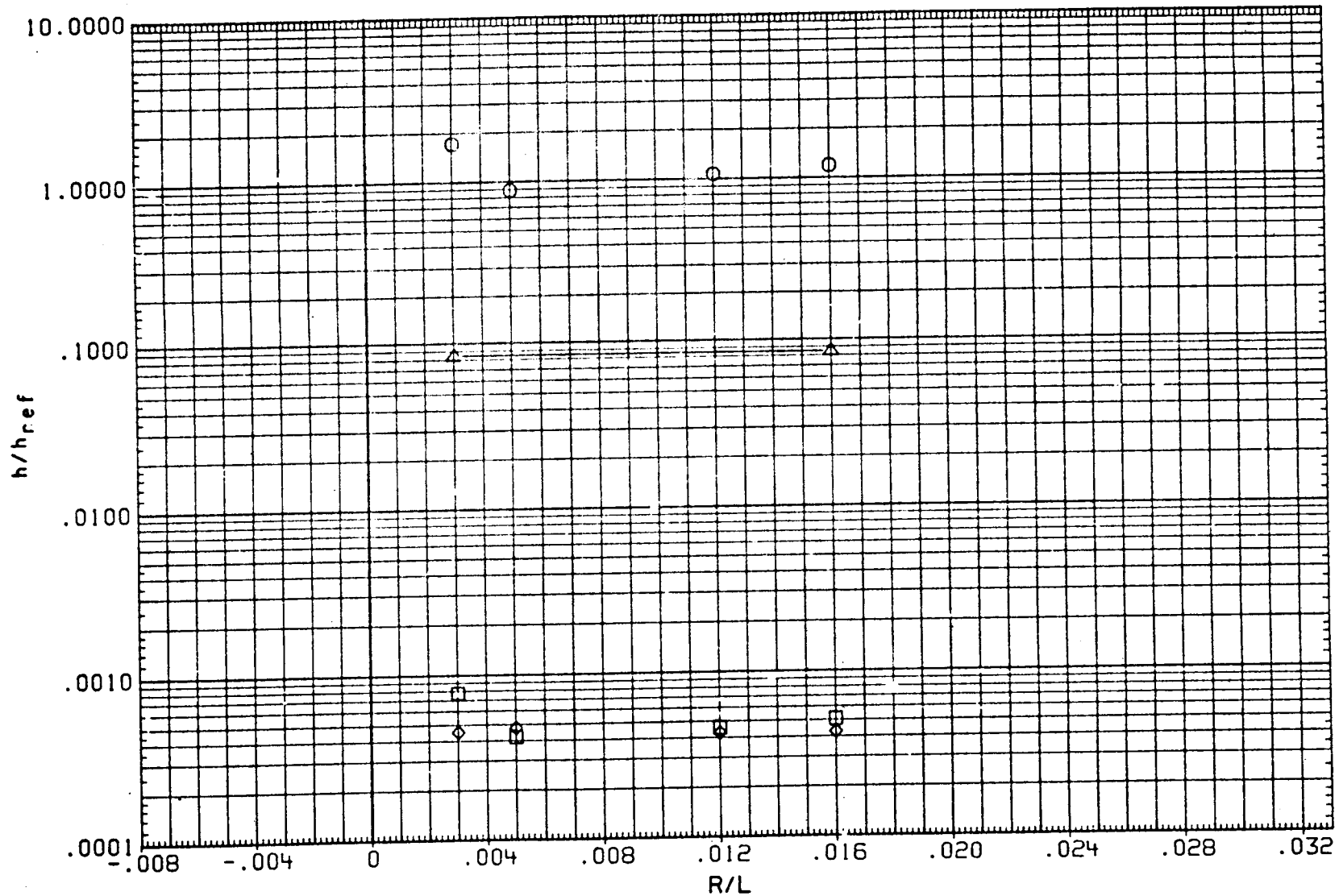

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 497

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20M0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(J20M0B)	□	IH51A (2B)(3B)(4B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(K20M0B)	◇	IH51A (5B)(5B)(5B)	LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF		.000	.000	5.000	5.300

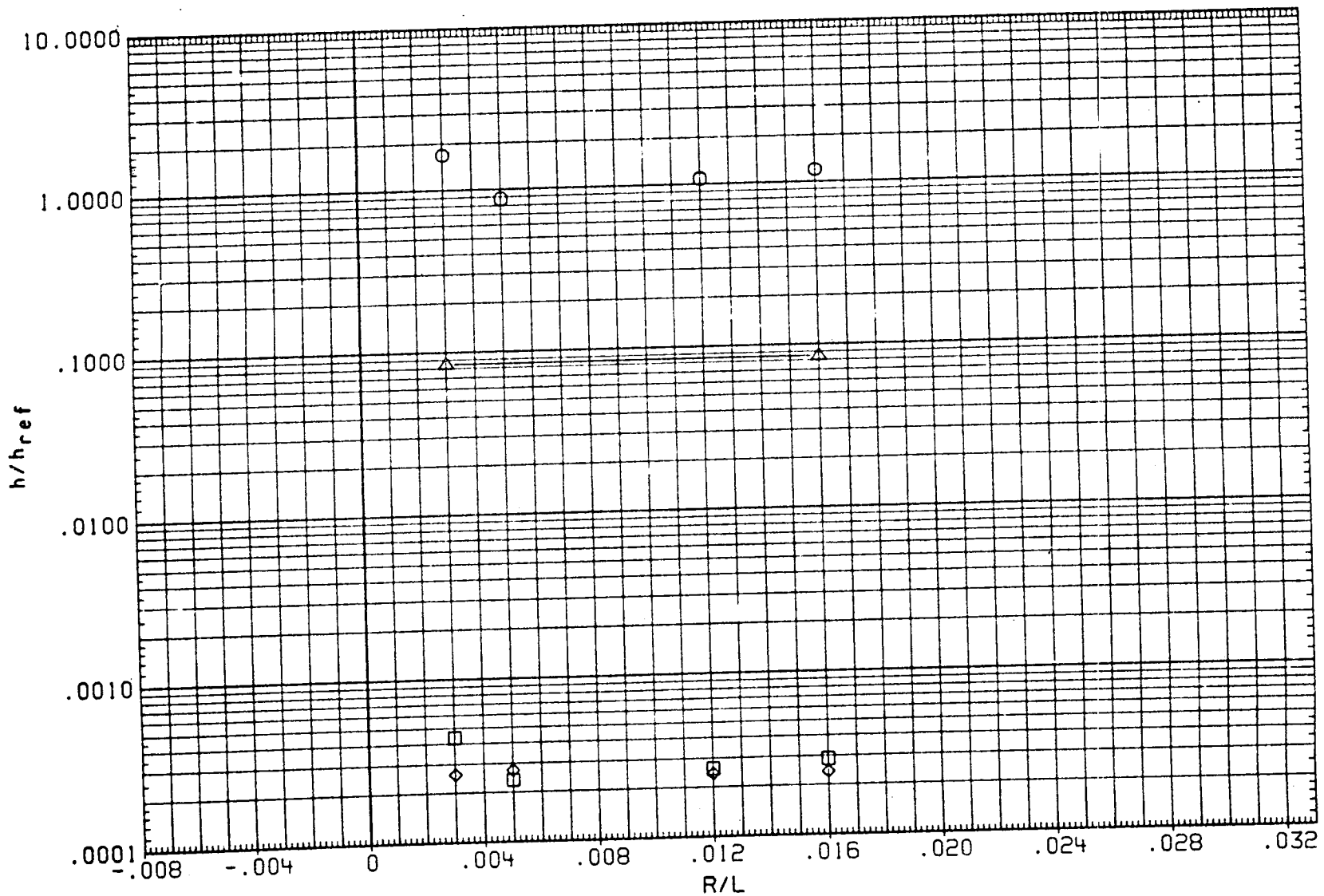

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 498

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

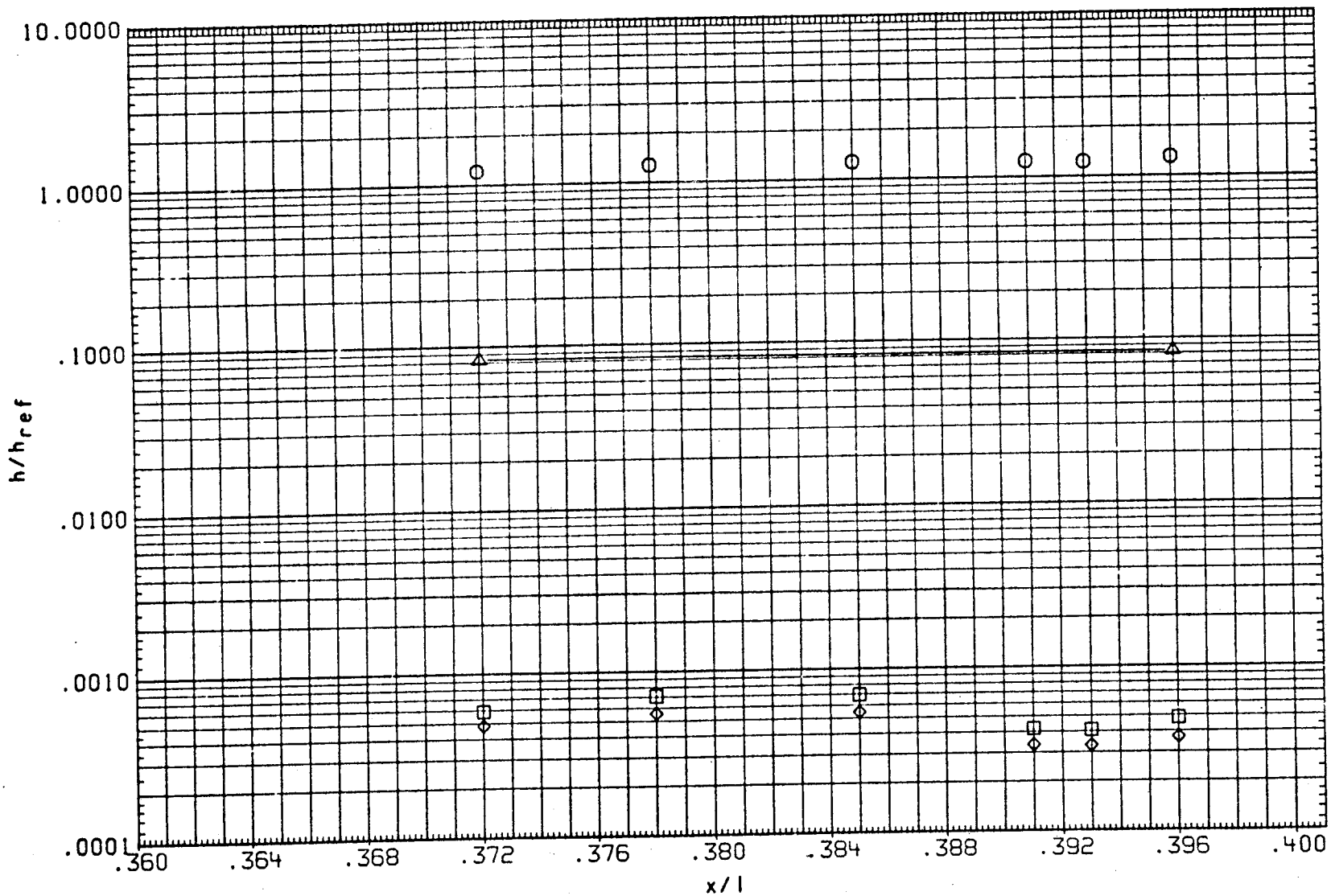

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78 PAGE 499

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

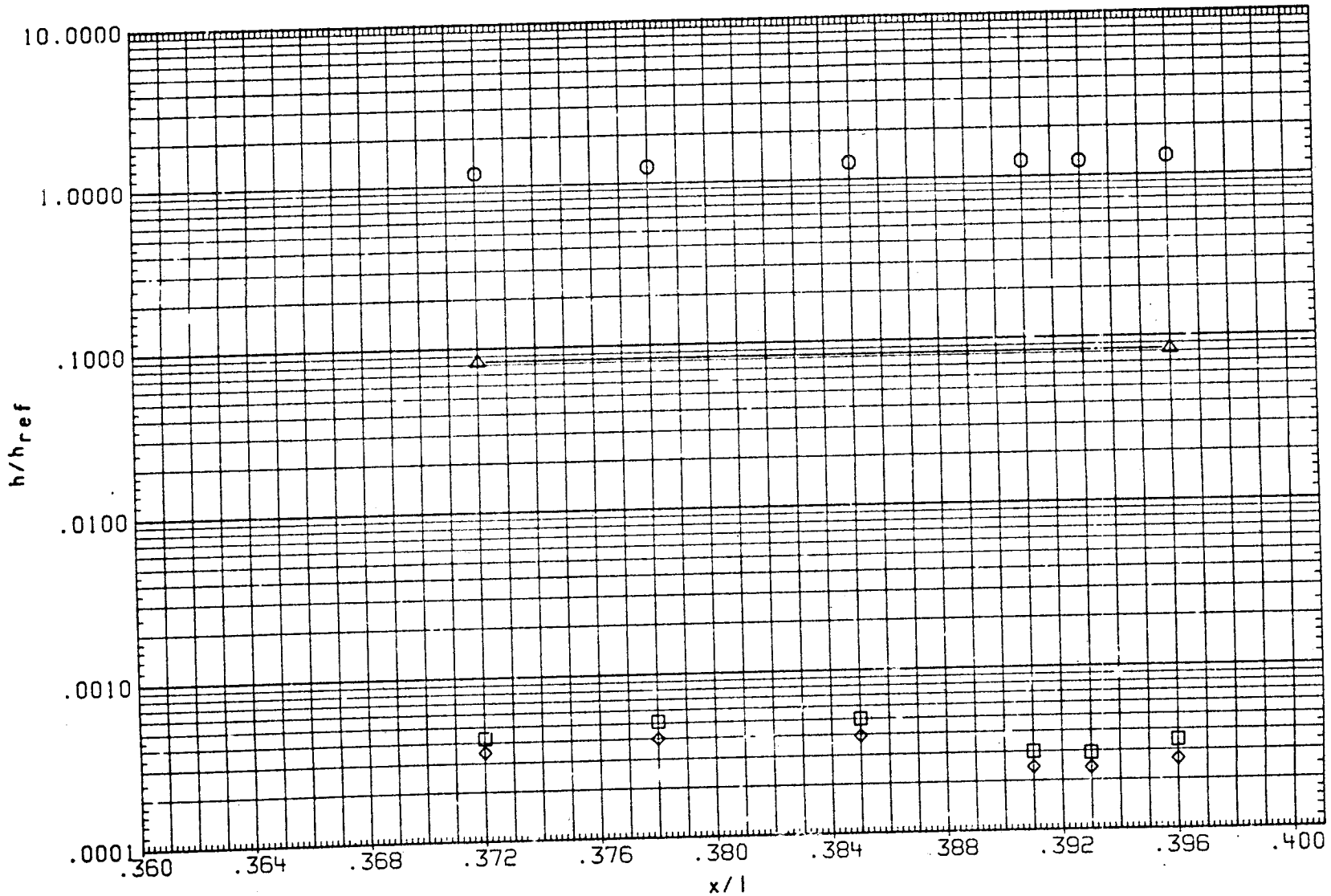

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

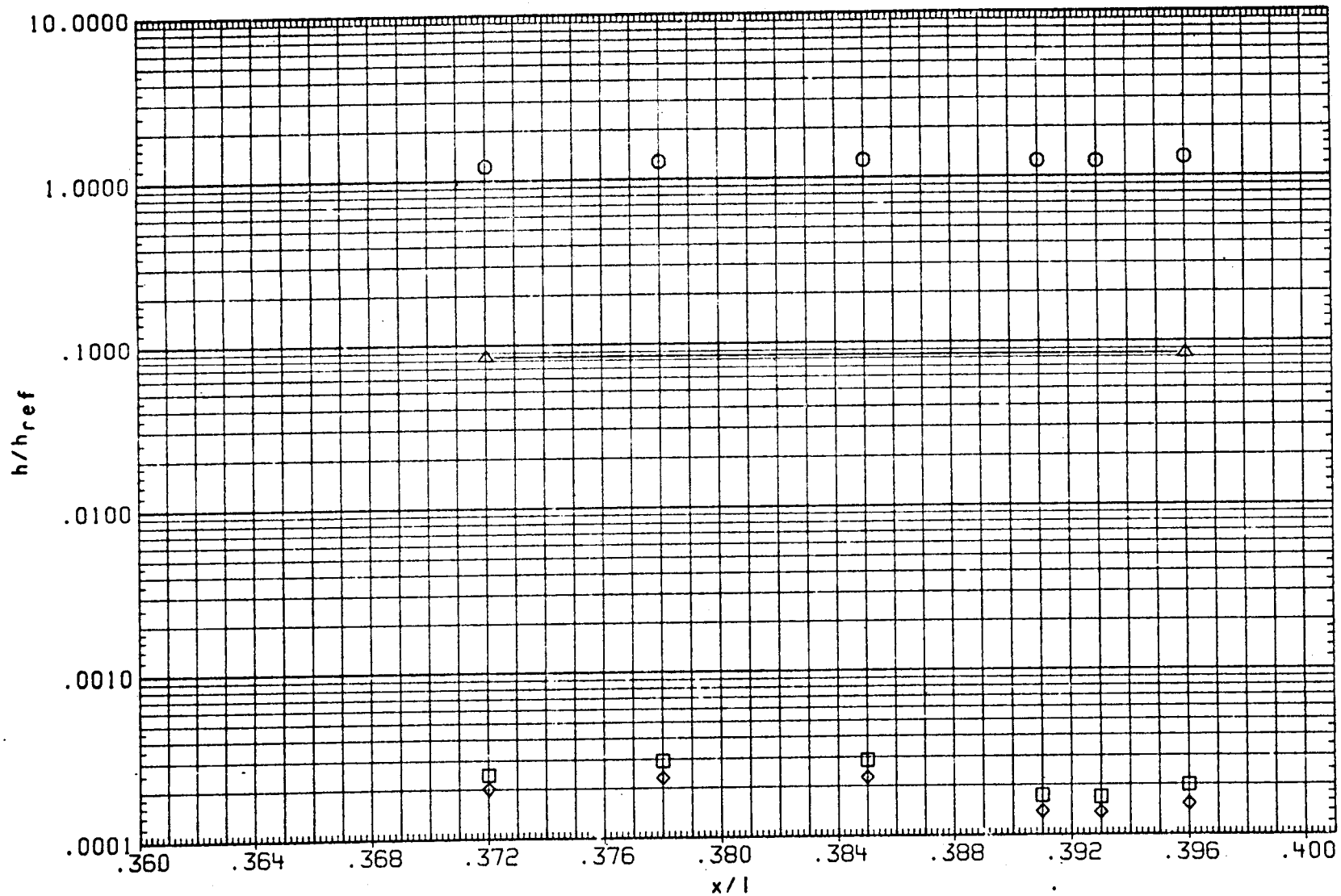

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78 PAGE 501

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20N0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(J20N0B)	□	IH51A (2B)(3B)(4B)	LH2 LINE DIA	.000	.000	5.000	5.300
(K20N0B)	◇	IH51A (5B)(5B)(5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

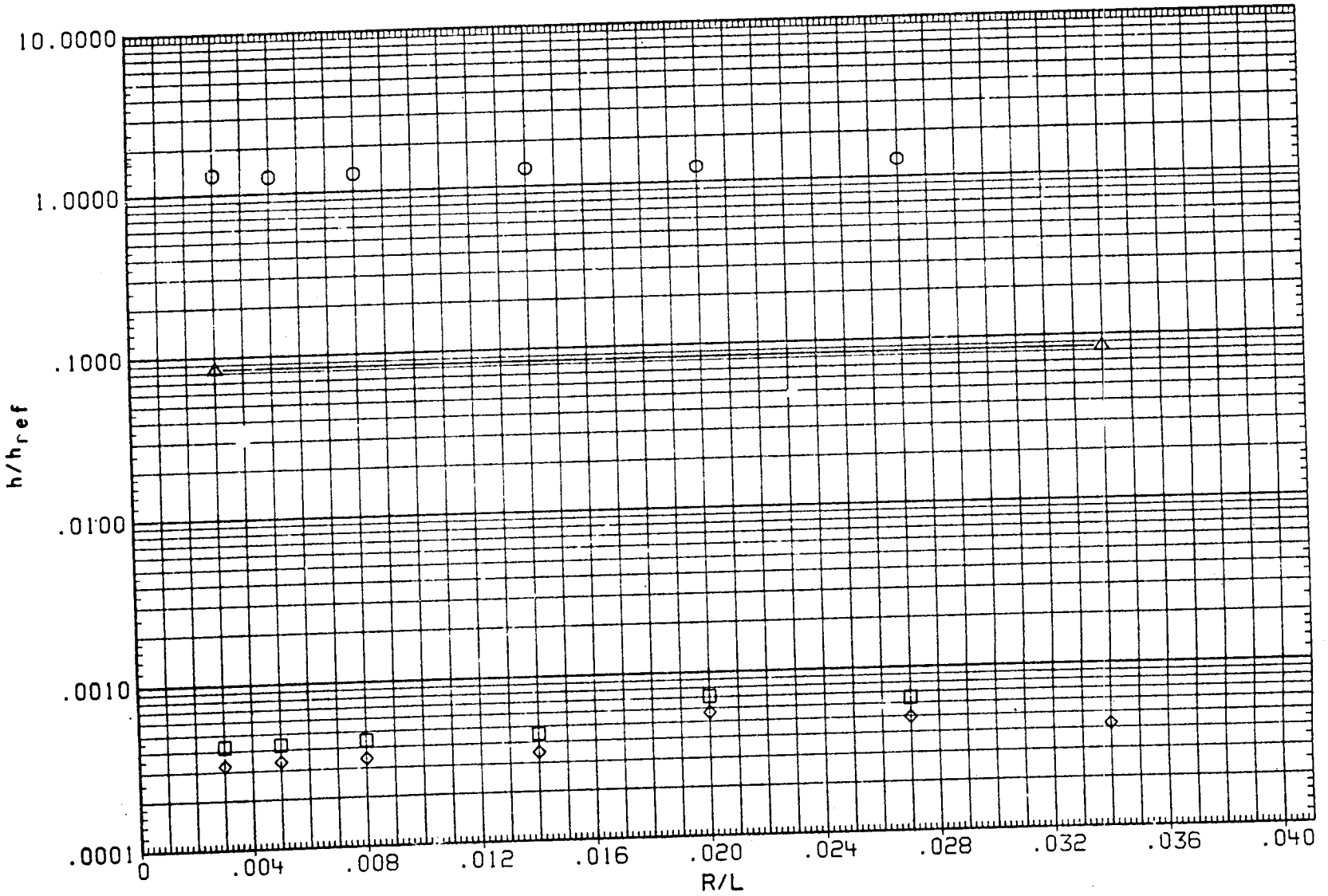

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 502

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20N0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(J20N0B)	□	IH51A (2B)(3B)(4B)	LH2 LINE DIA	.000	.000	5.000	5.300
(K20N0B)	◇	IH51A (5B)(5B)(5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

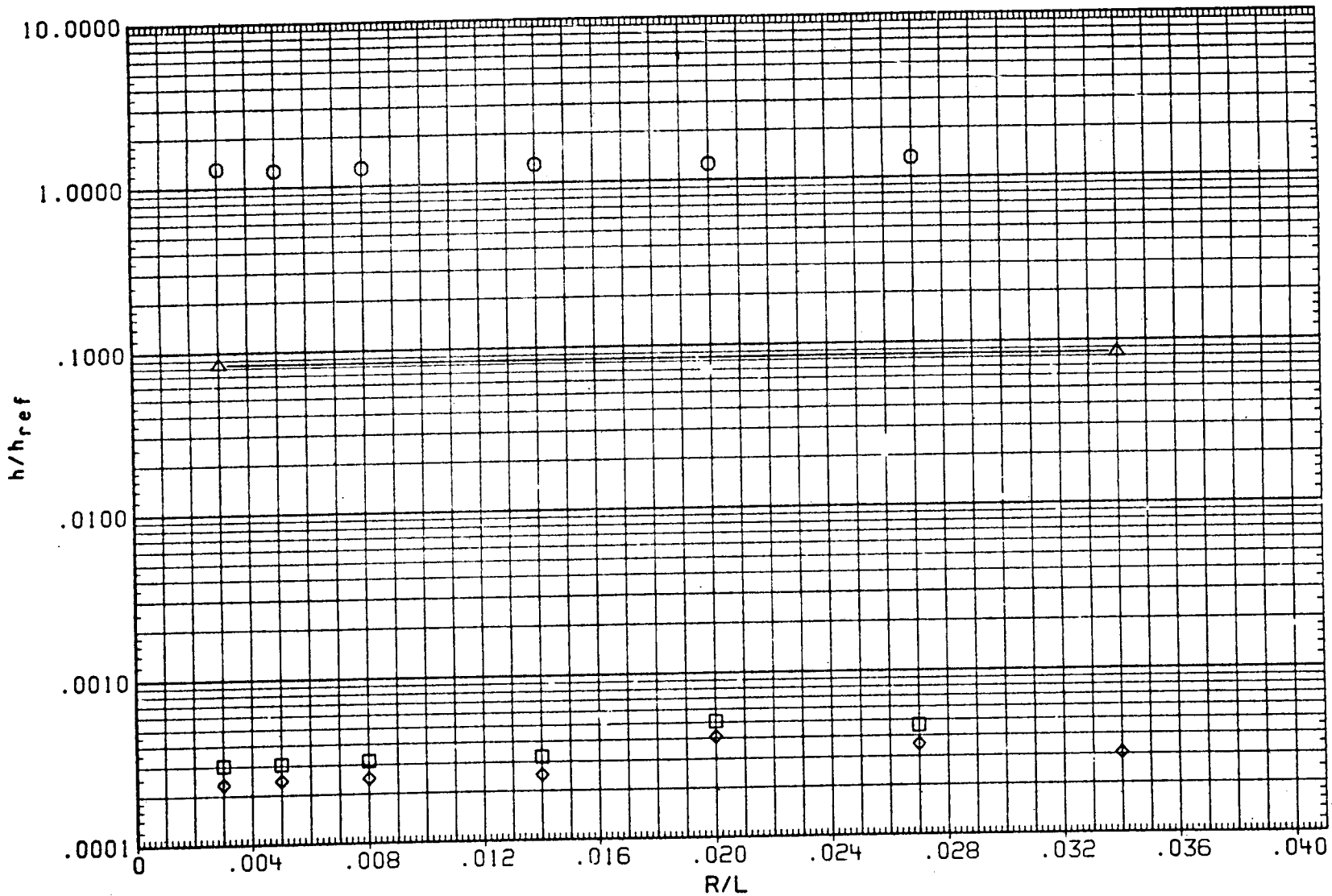

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 503

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20N0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(J20N0B)	□	IH51A (2B)(3B)(4B)	LH2 LINE DIA	.000	.000	5.000	5.300
(K20N0B)	◇	IH51A (5B)(5B)(5B)	LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL	HU/HREF	.000	.000	5.000	5.300

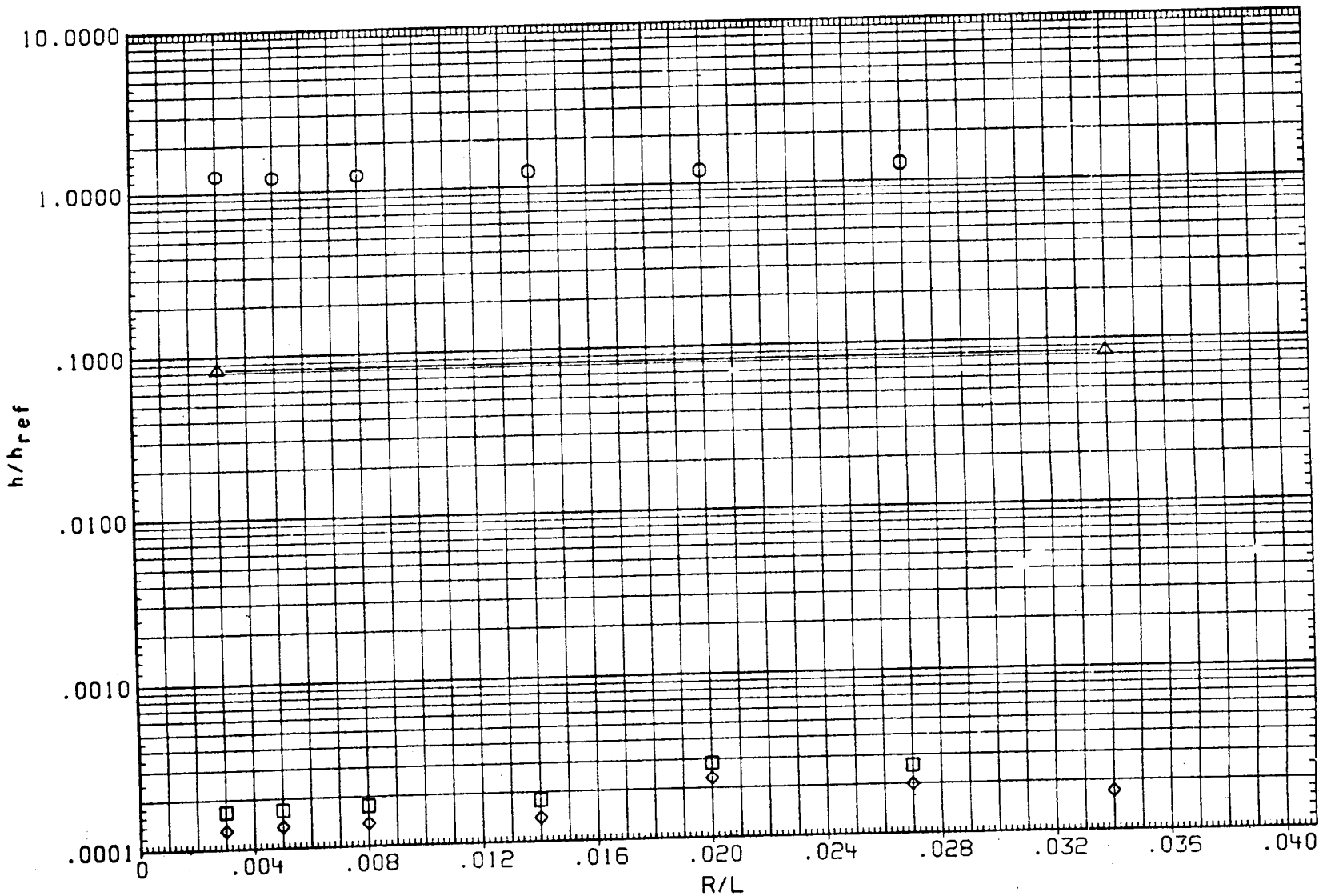

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 504

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

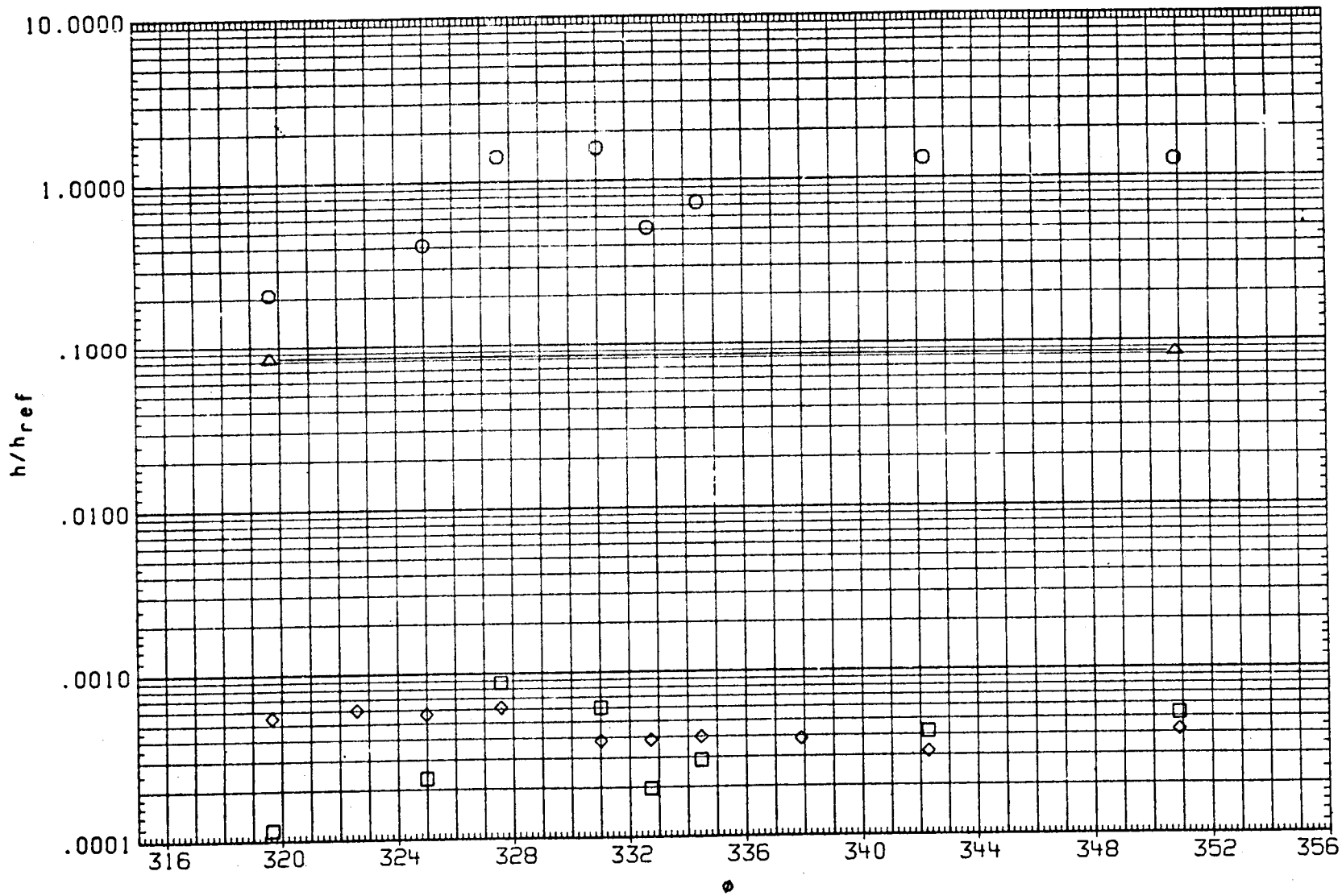

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .399 DATE 22 APR 78 PAGE 505

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

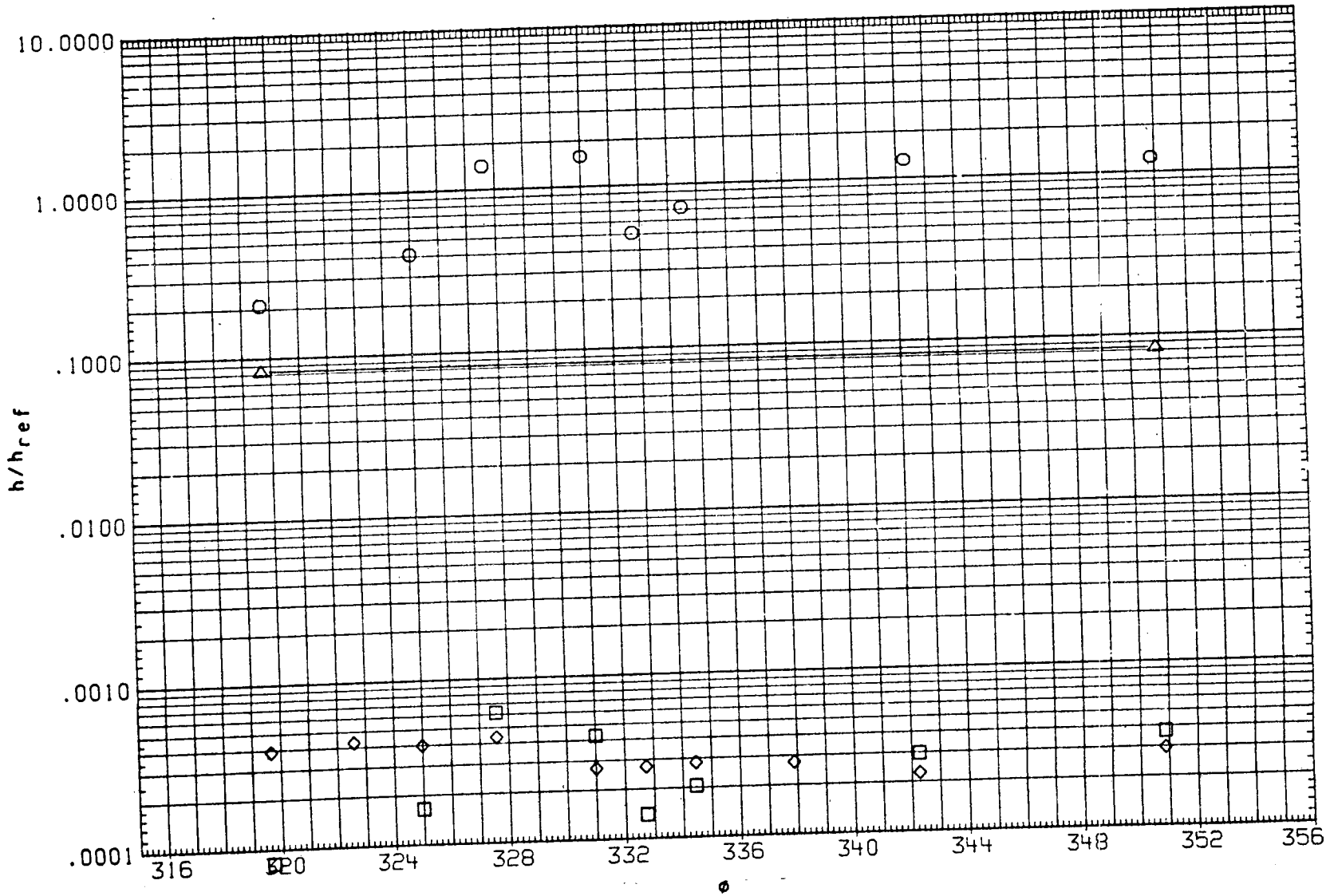

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .399 DATE 22 APR 78 PAGE 506

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

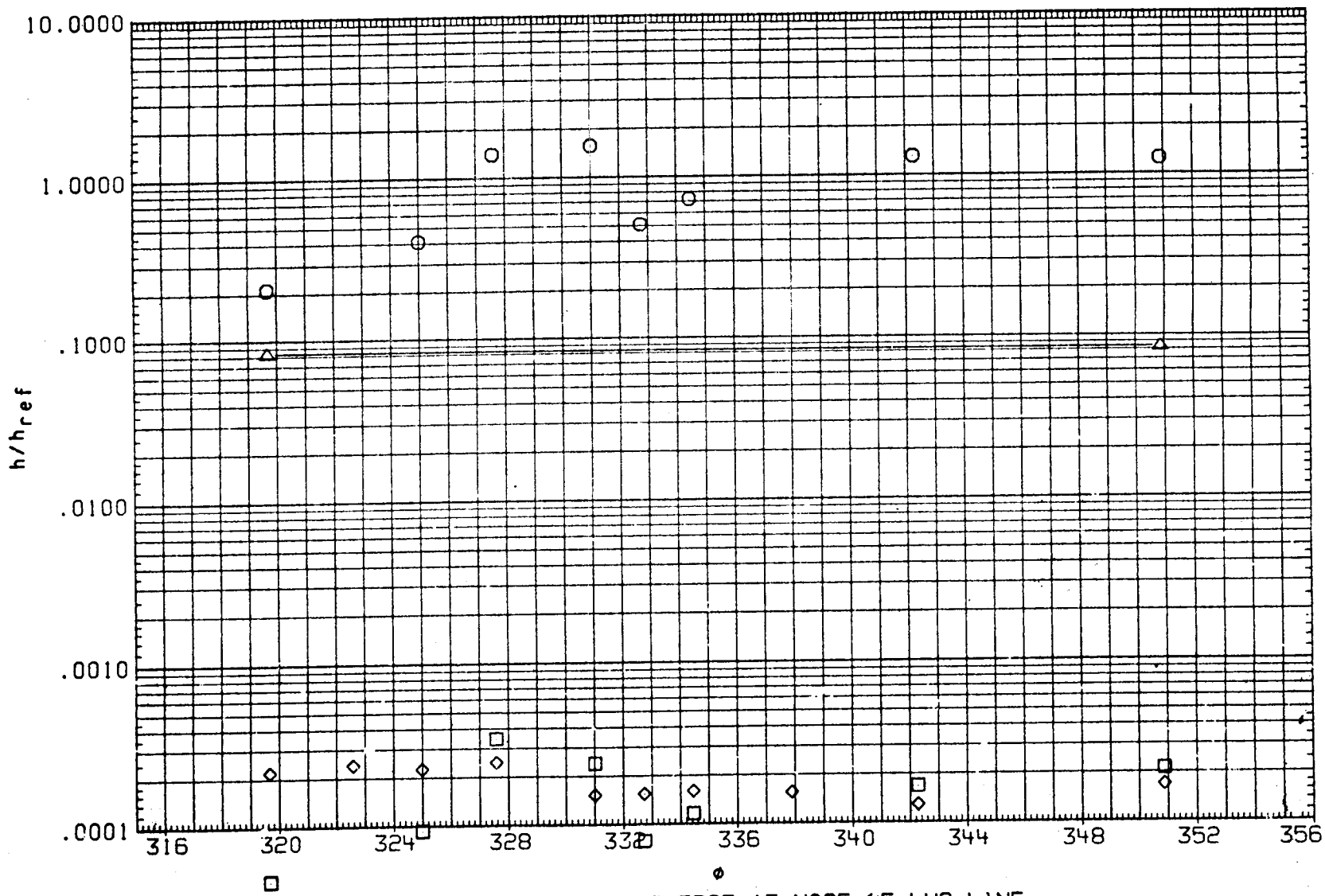

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .399 DATE 22 APR 78 PAGE 507

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

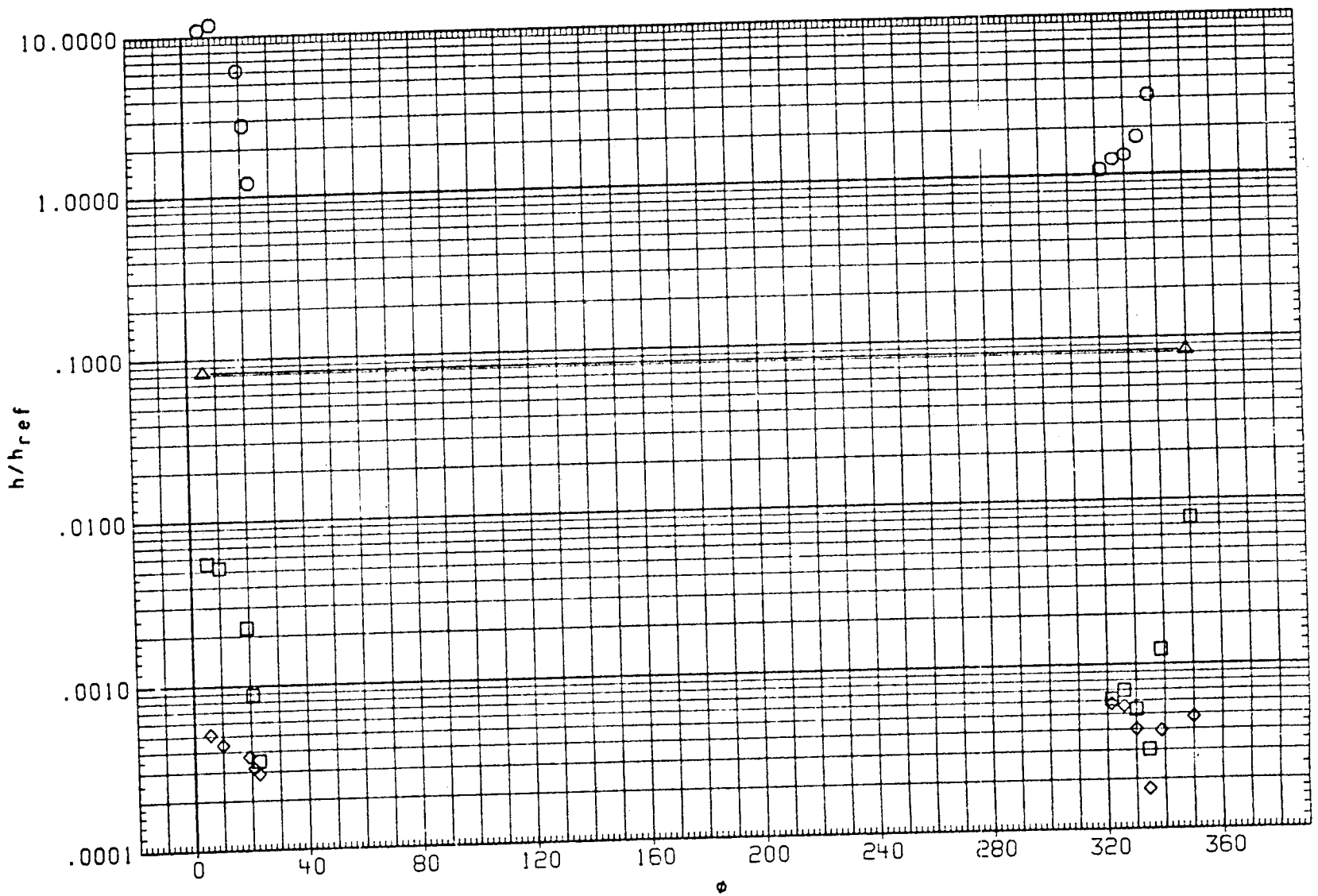

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .850 X/L = .437 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

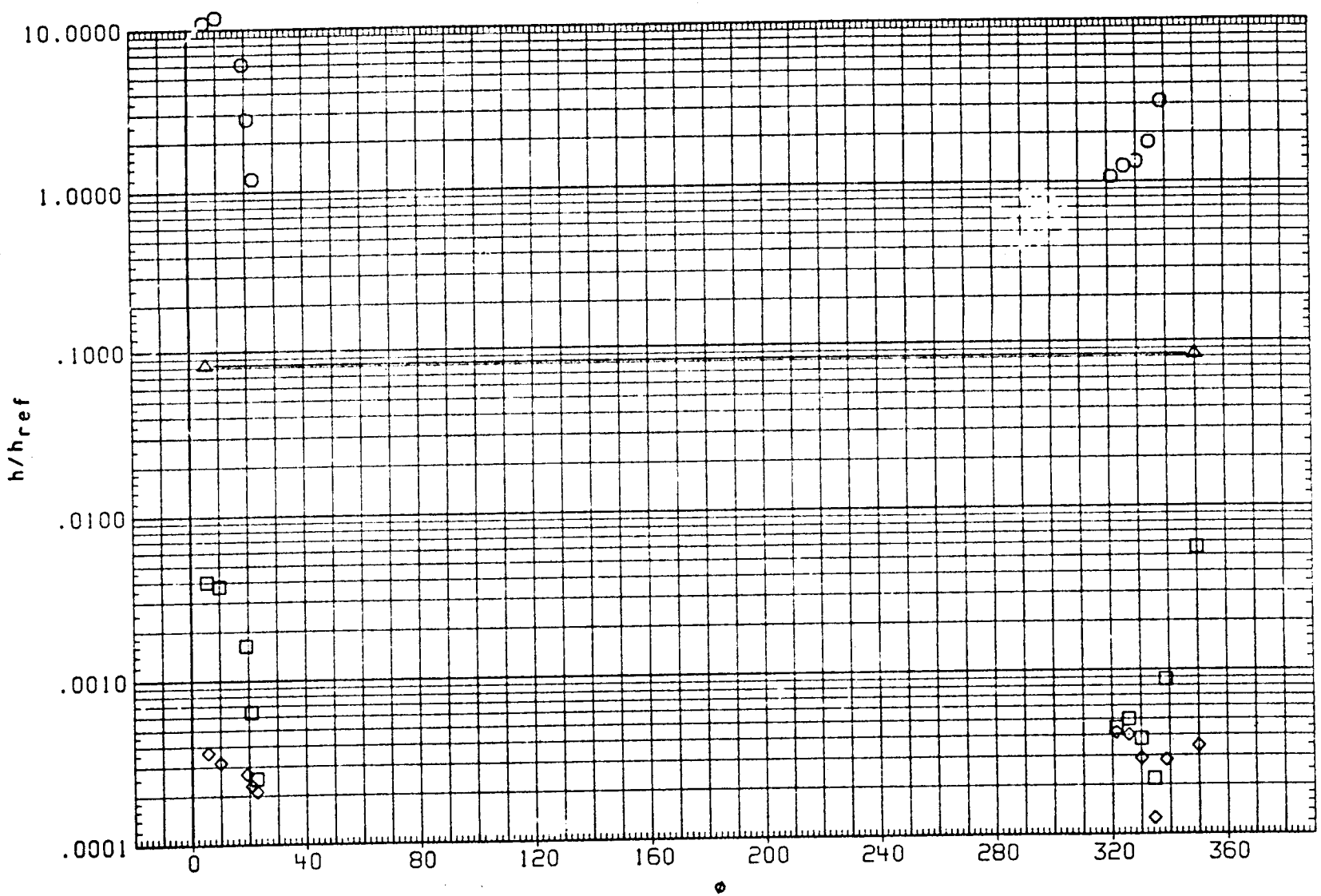

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .900 X/L = .437 DATE 22 APR 78 PAGE 509

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

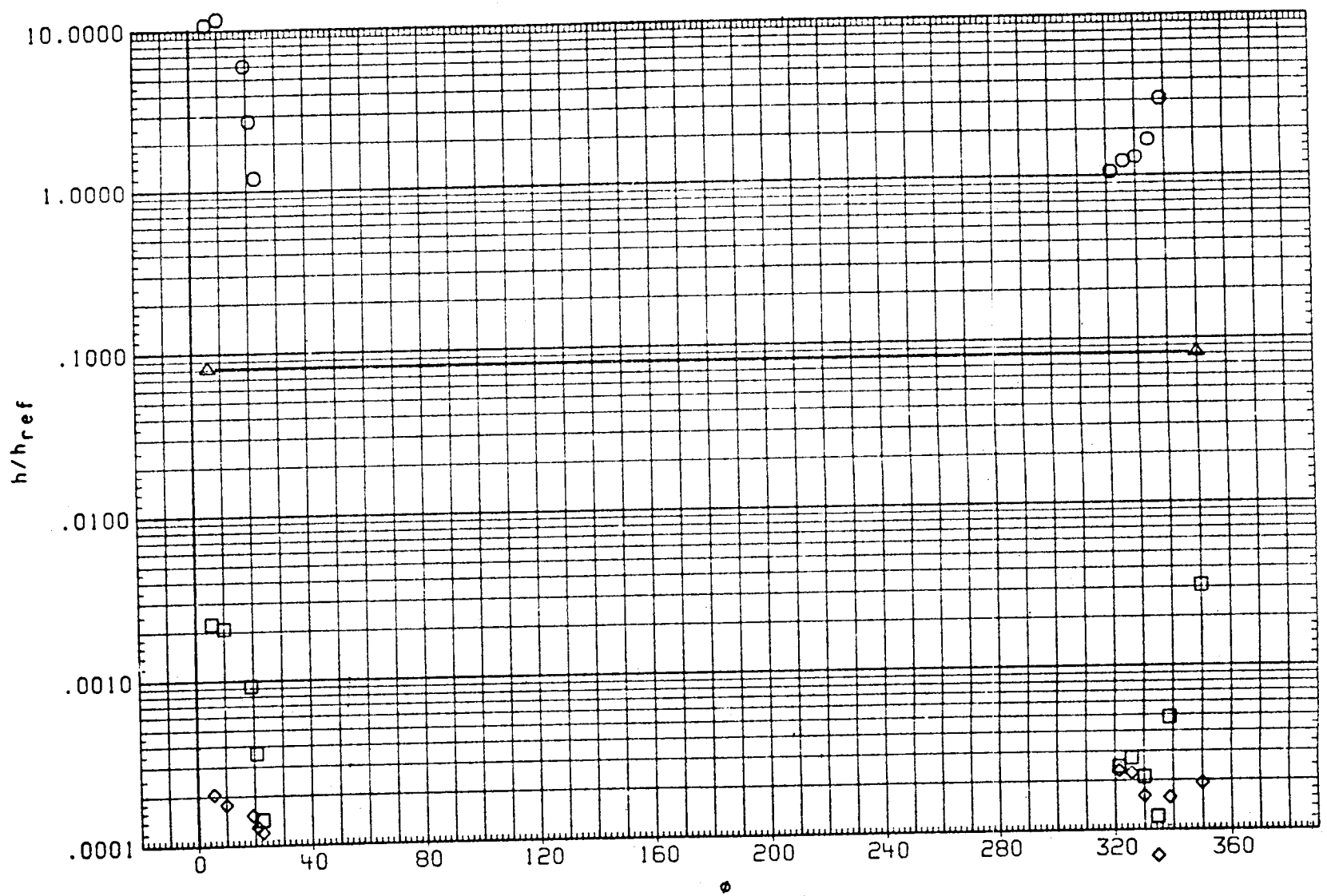

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78 PAGE 510

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

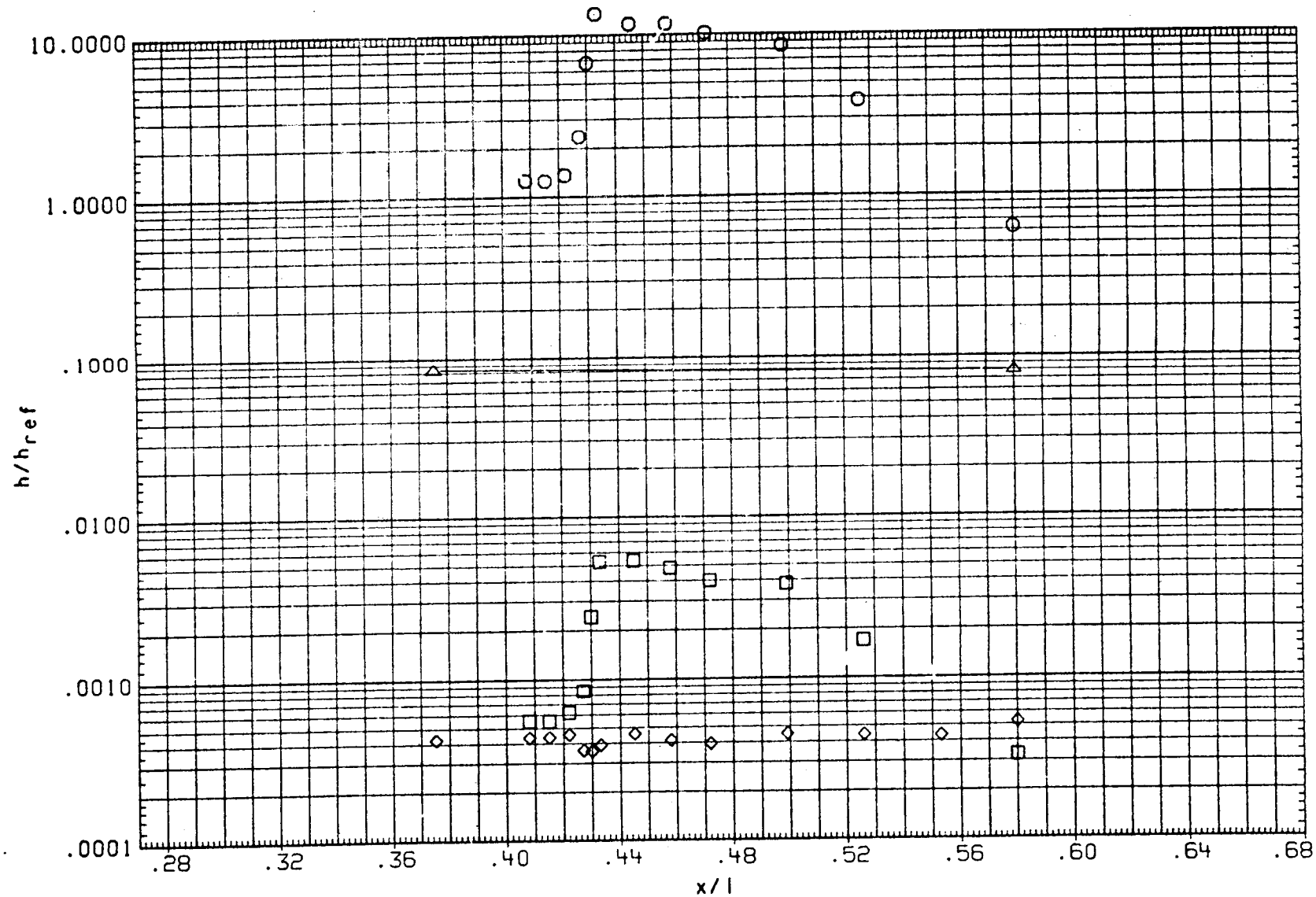

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 511

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

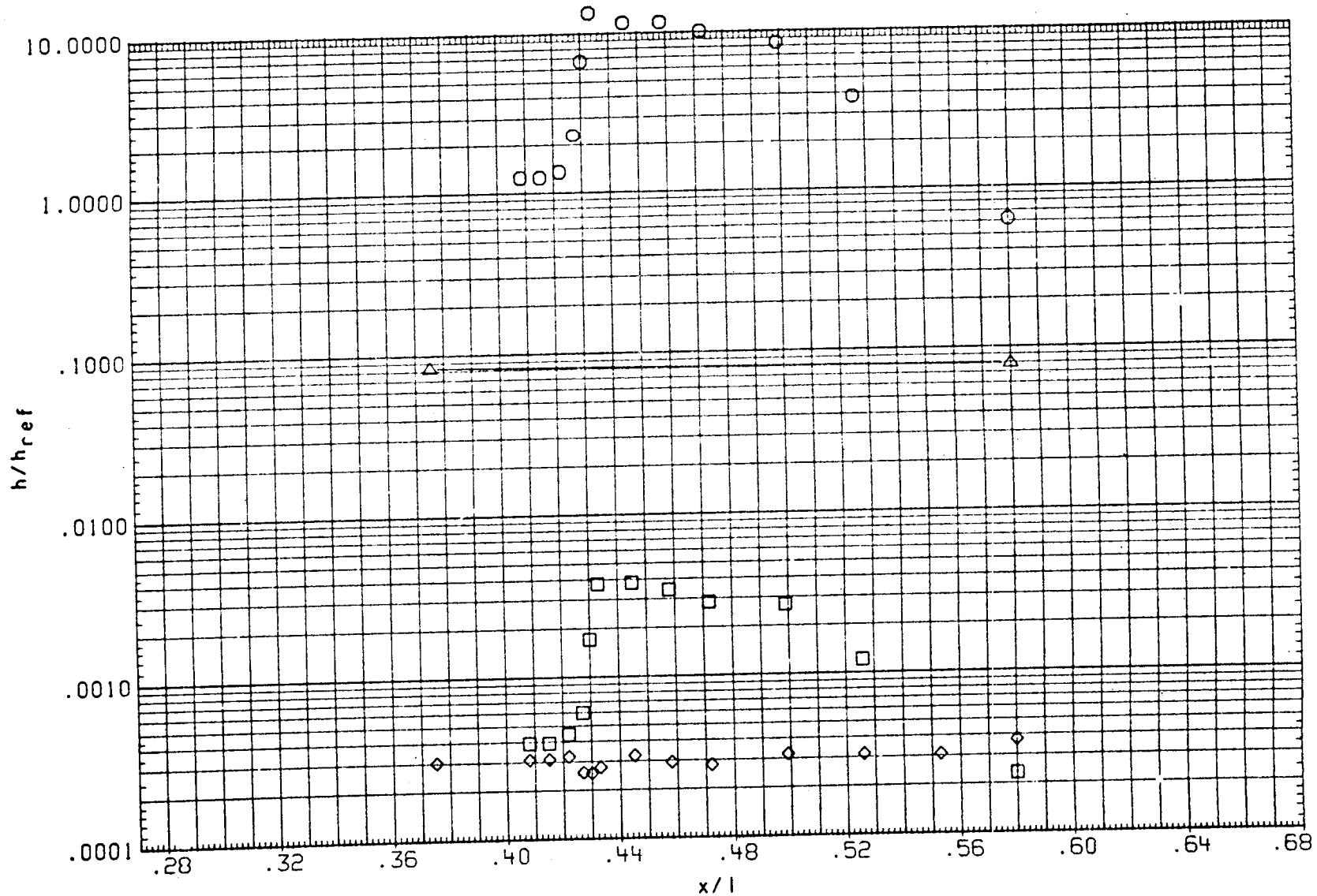

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 512

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

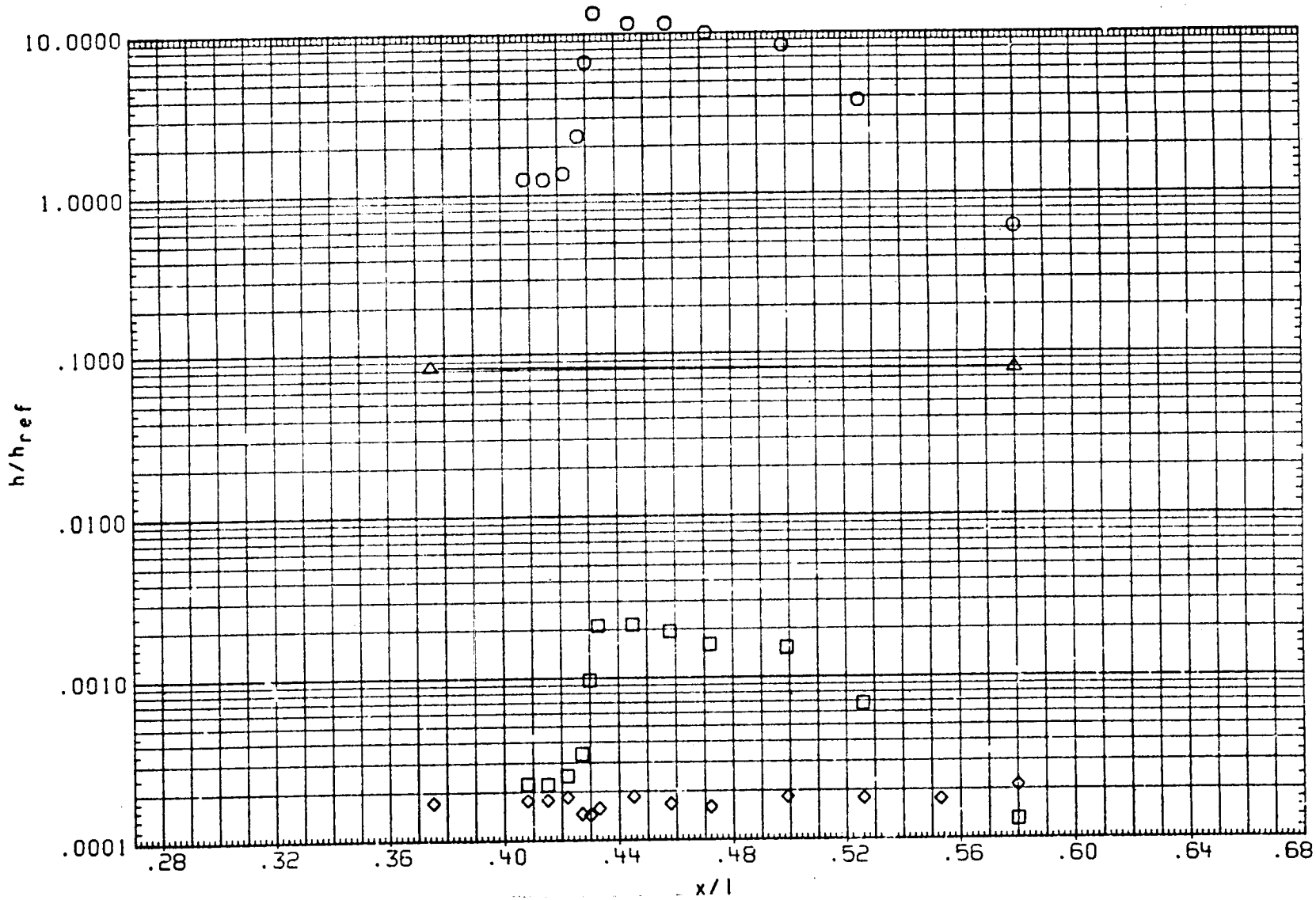

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 51

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	PN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

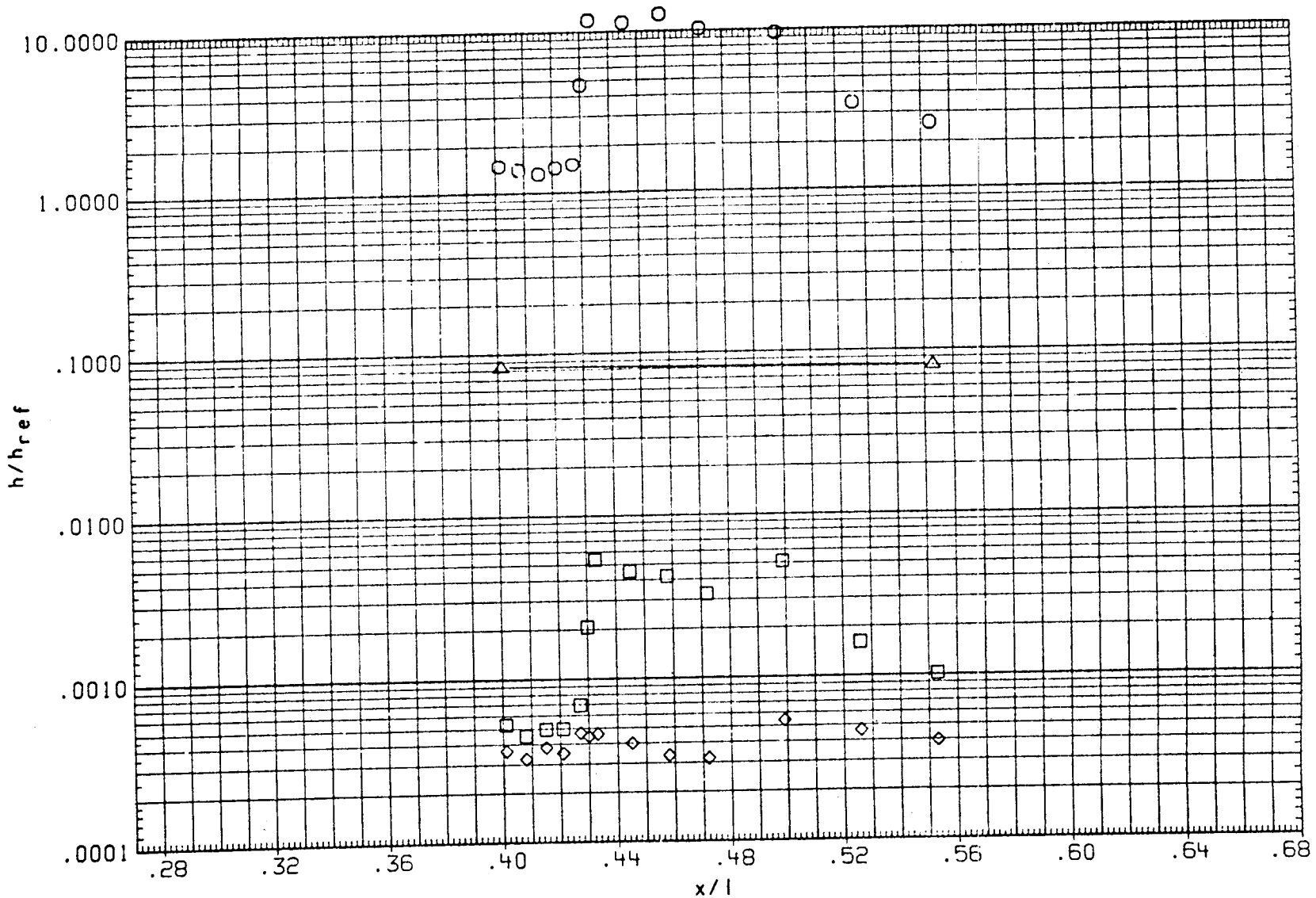

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 514

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

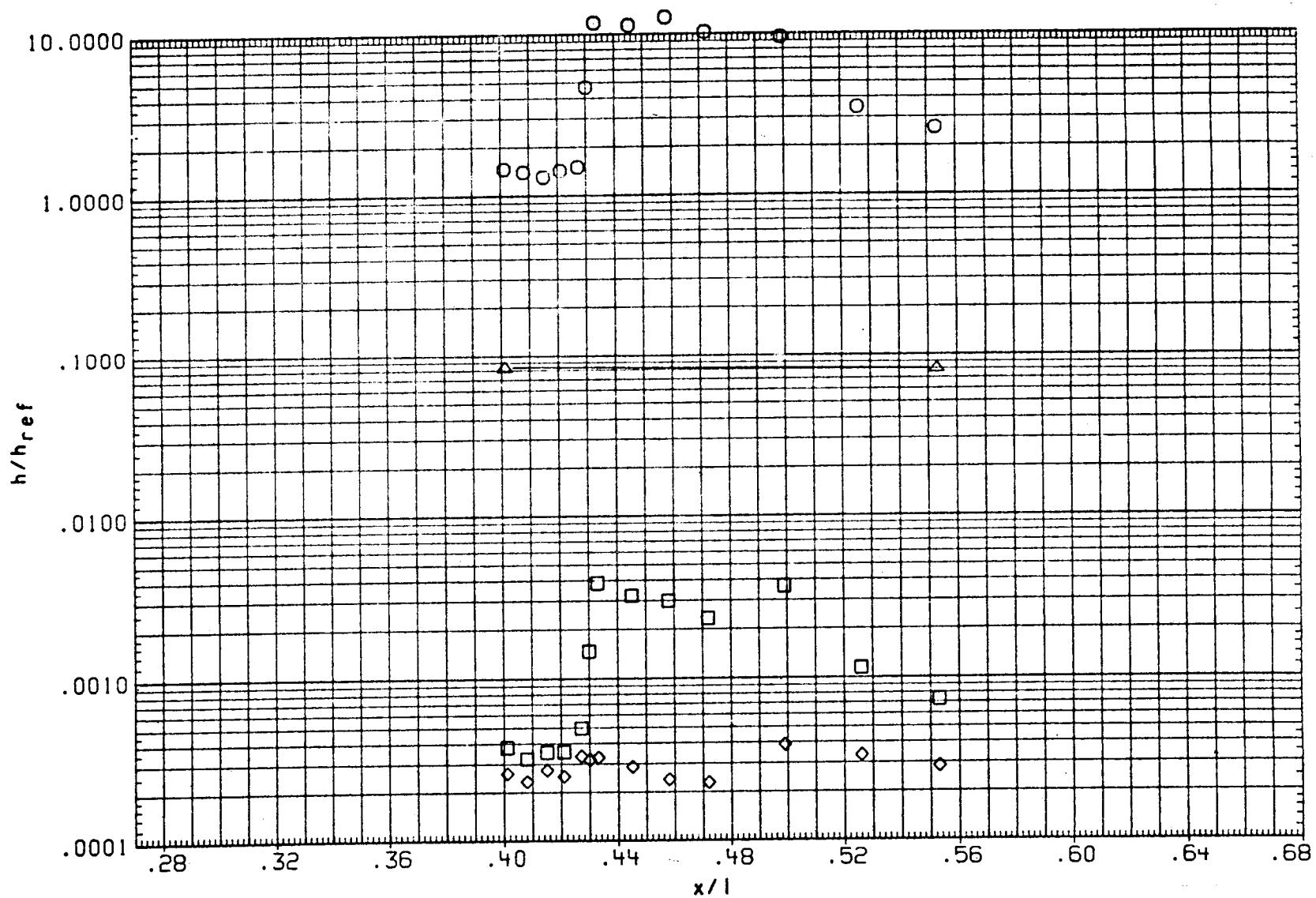

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78 PAGE 515

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

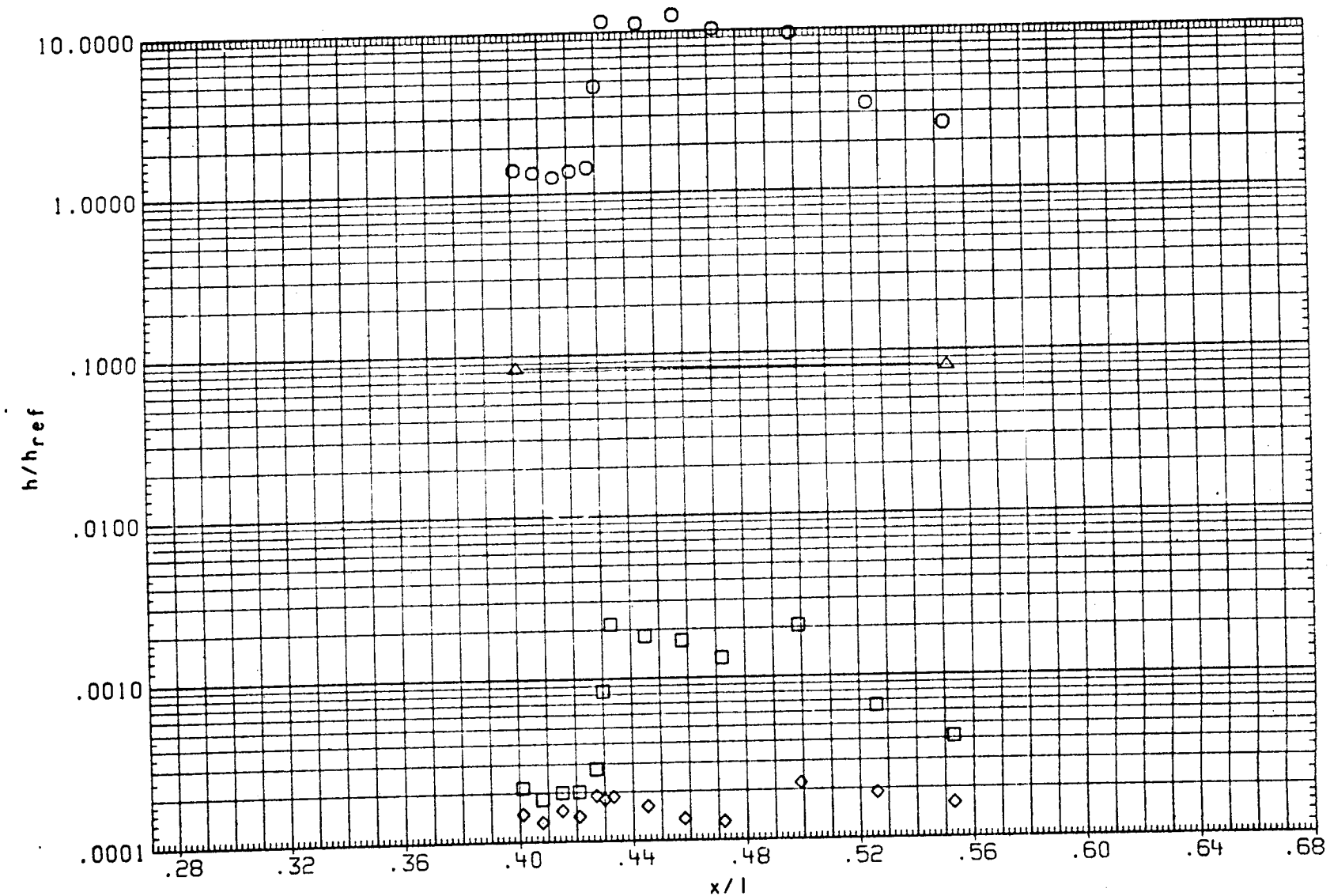

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78 PAGE 516

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

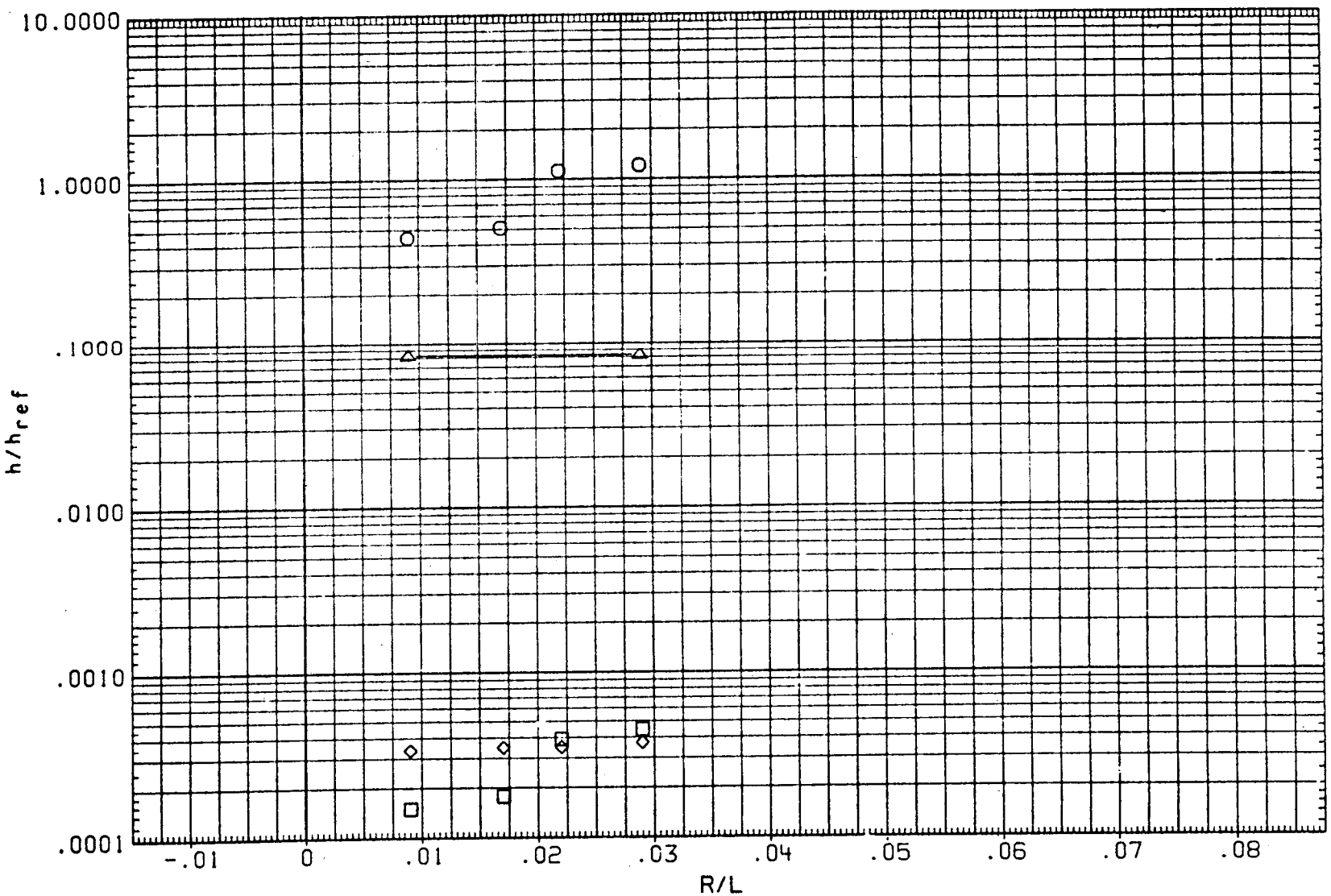

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 517

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

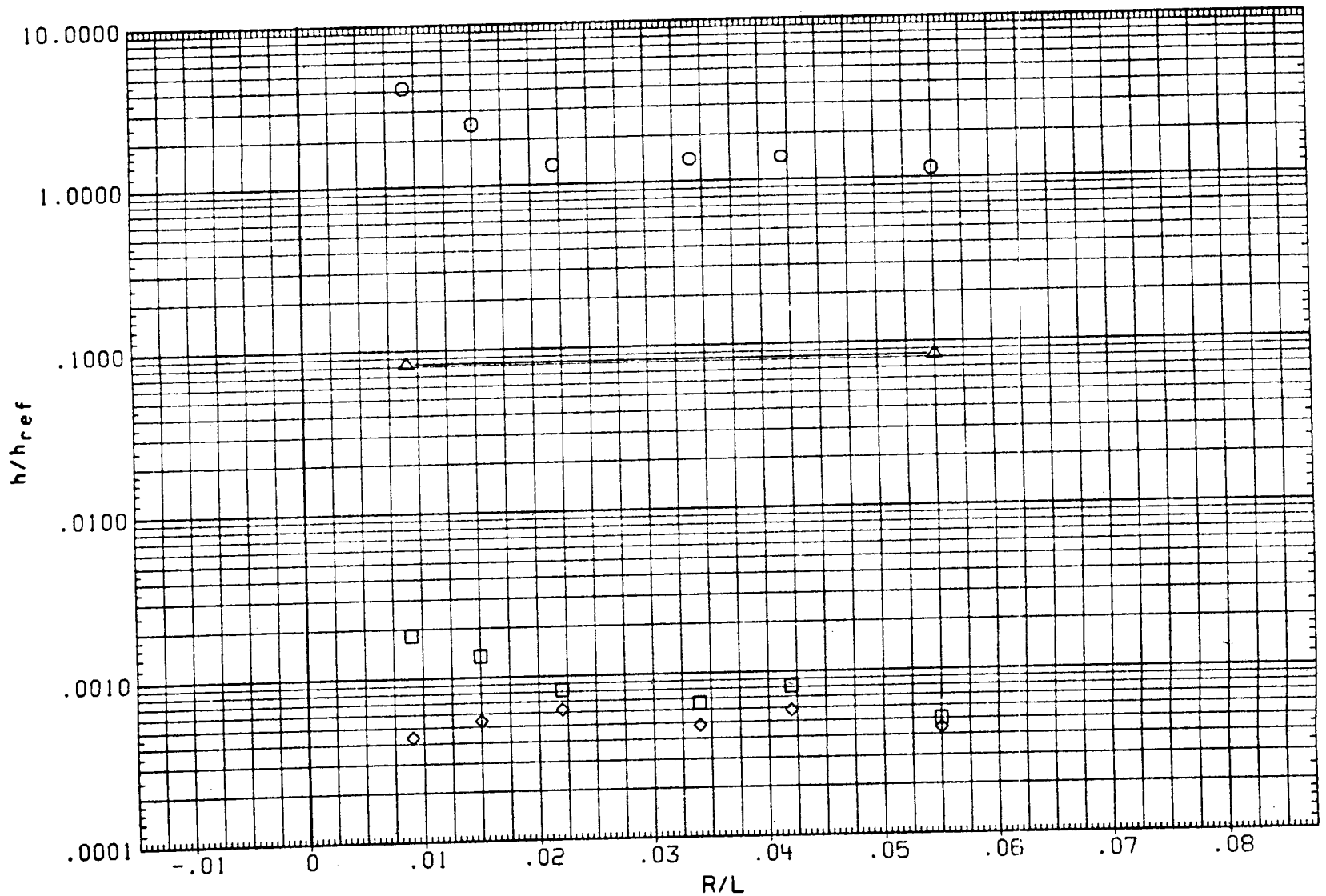

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 518

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

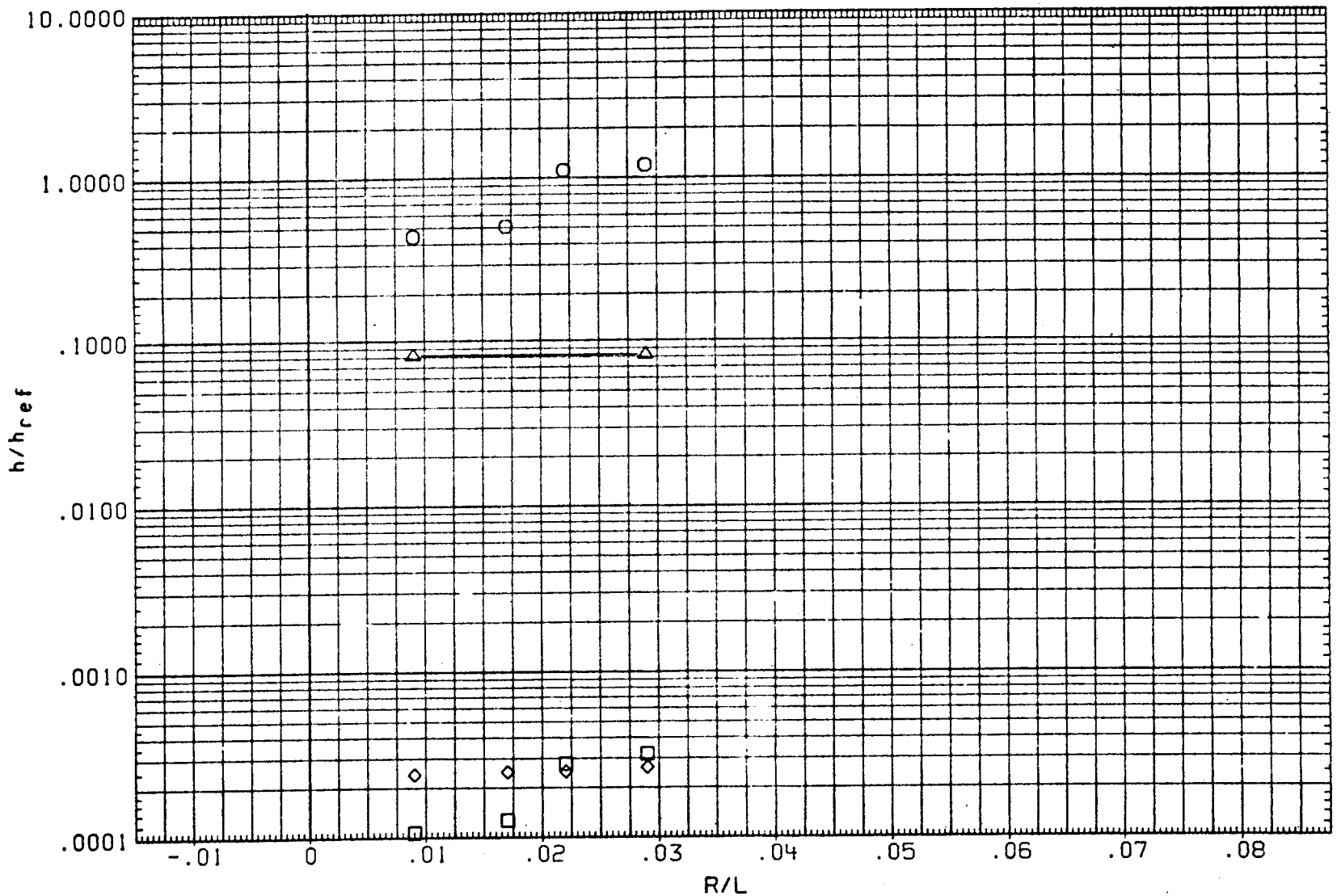

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 519

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

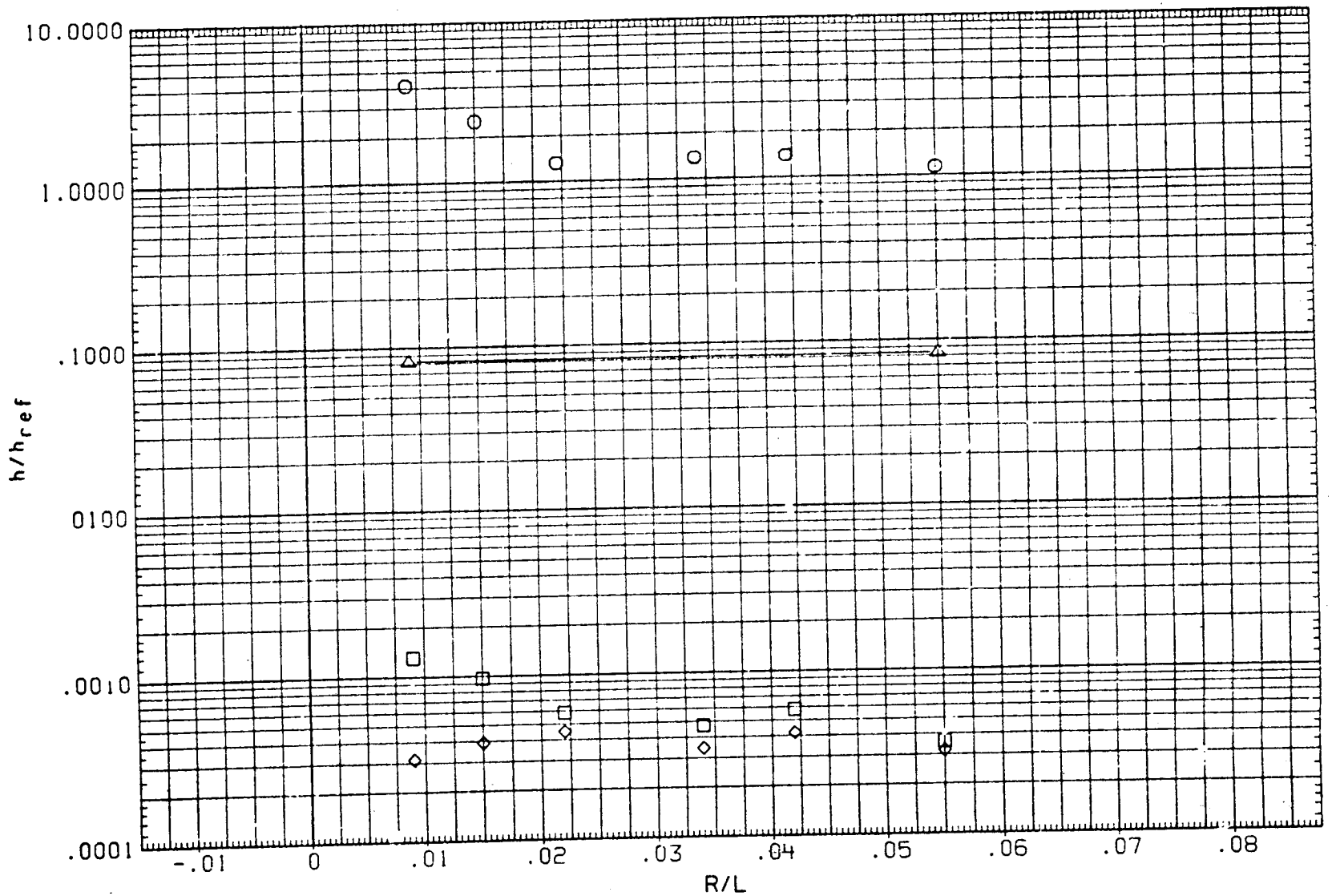

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 520

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

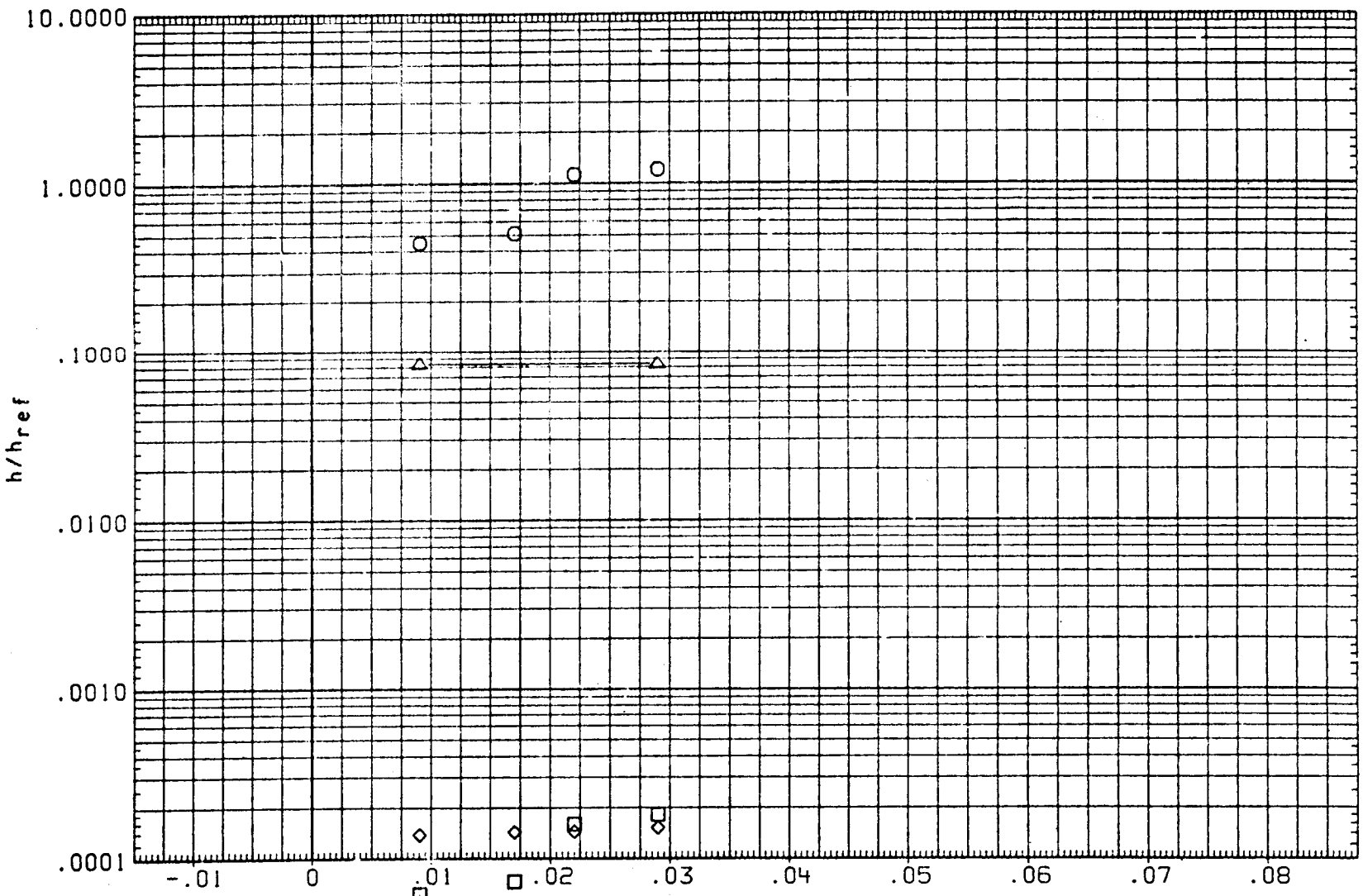

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 521

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	LH STRUT DIA	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	LH STRUT DIA	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

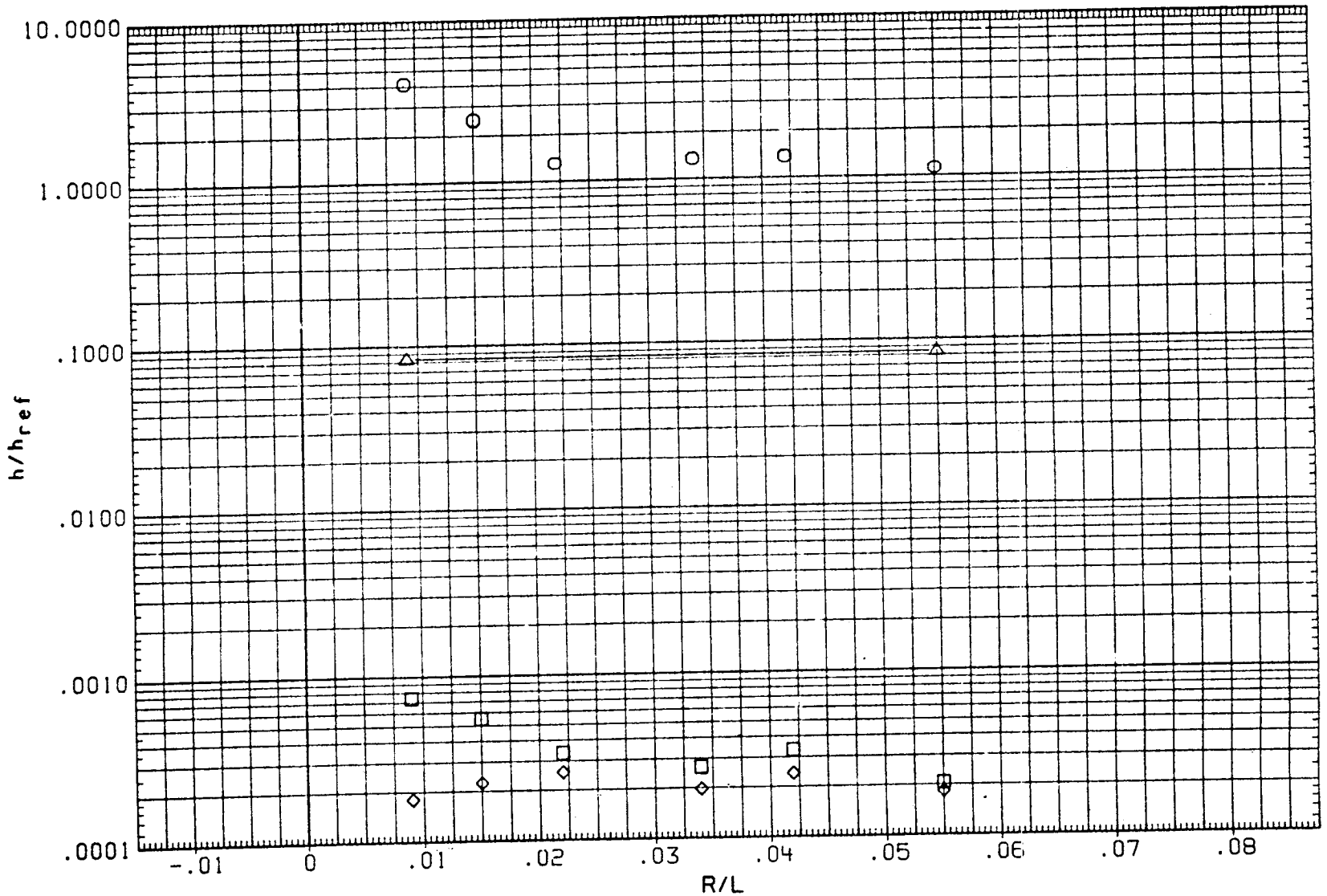

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 522

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0B)	□	IH51A (2B)(3B)(4B)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0B)	◇	IH51A (5B)(5B)(5B)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

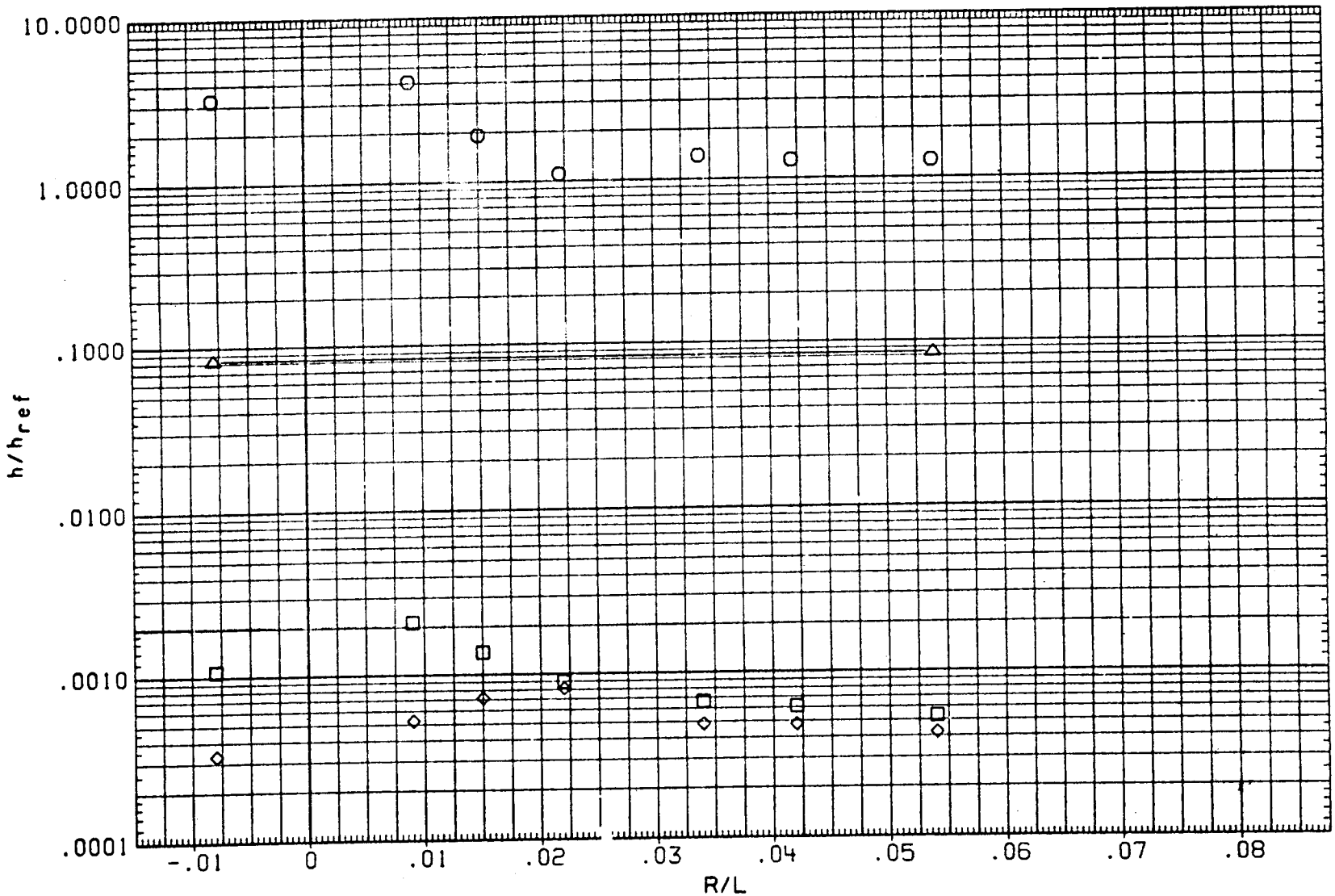

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0B)	□	IH51A (2B)(3B)(4B)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0B)	◇	IH51A (5B)(5B)(5B)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

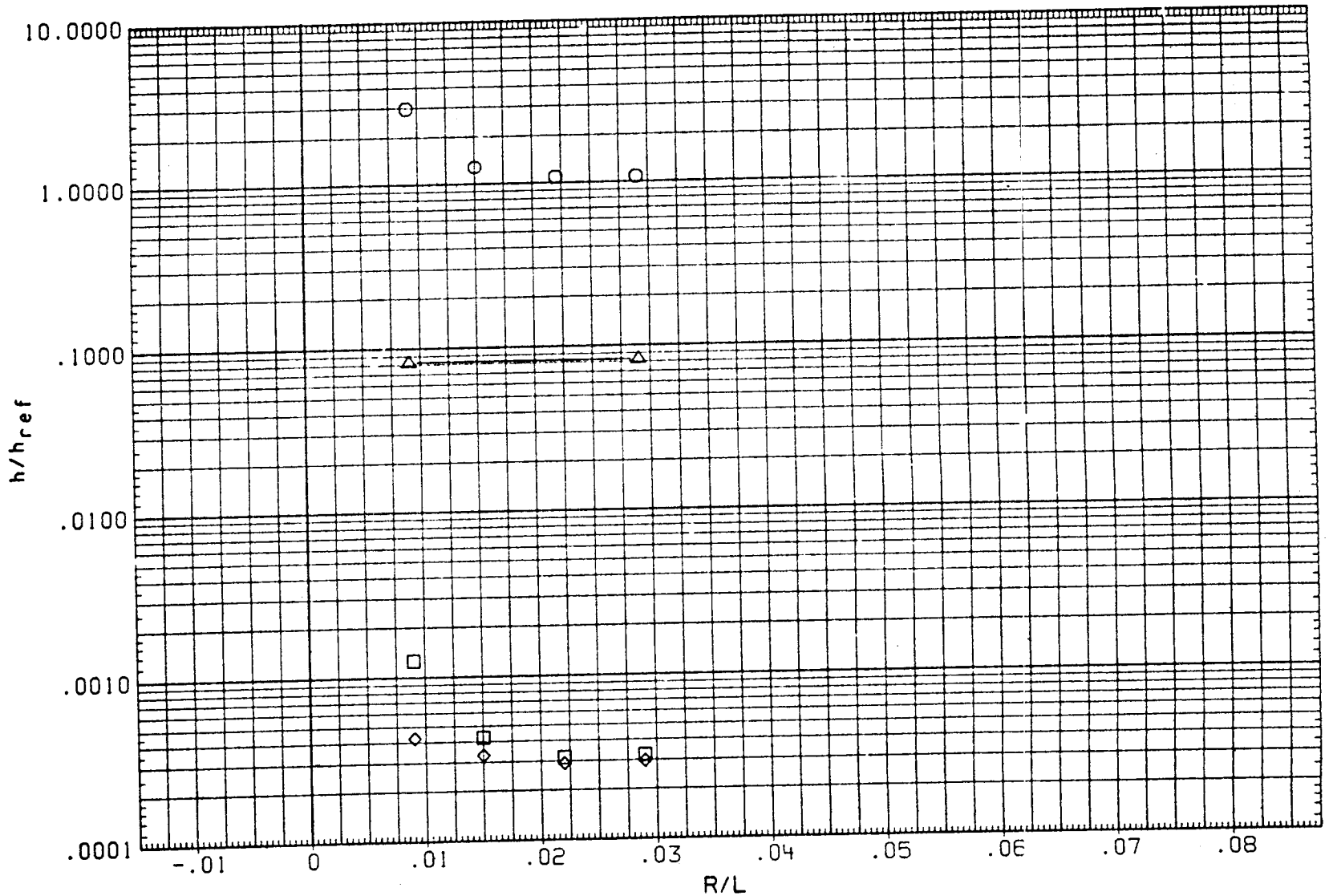

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 524

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0B)	□	IH51A (2B)(3B)(4B)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0B)	◇	IH51A (5B)(5B)(5B)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

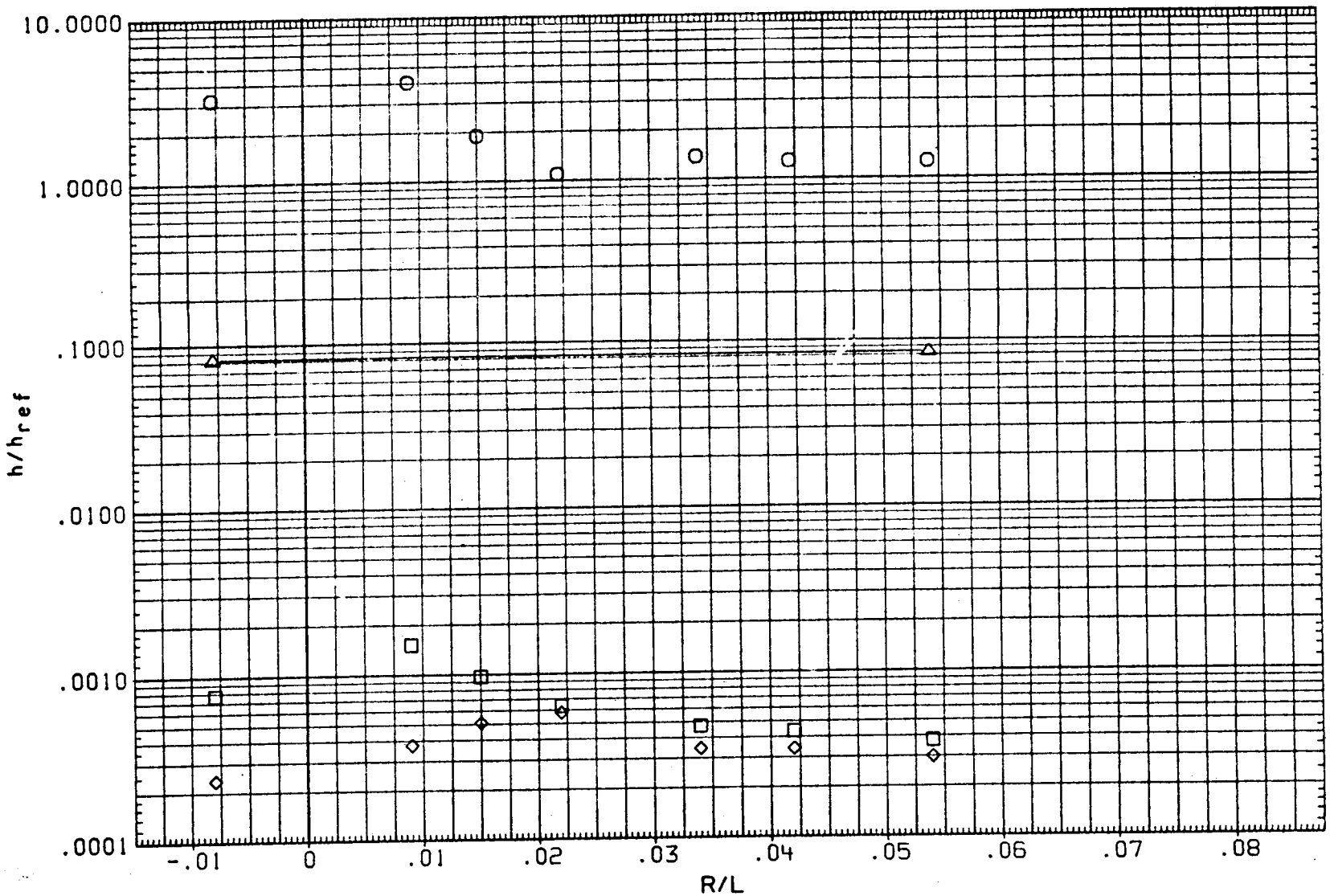

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 525

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0B)	□	IH51A (2B)(3B)(4B)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0B)	◇	IH51A (5B)(5B)(5B)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

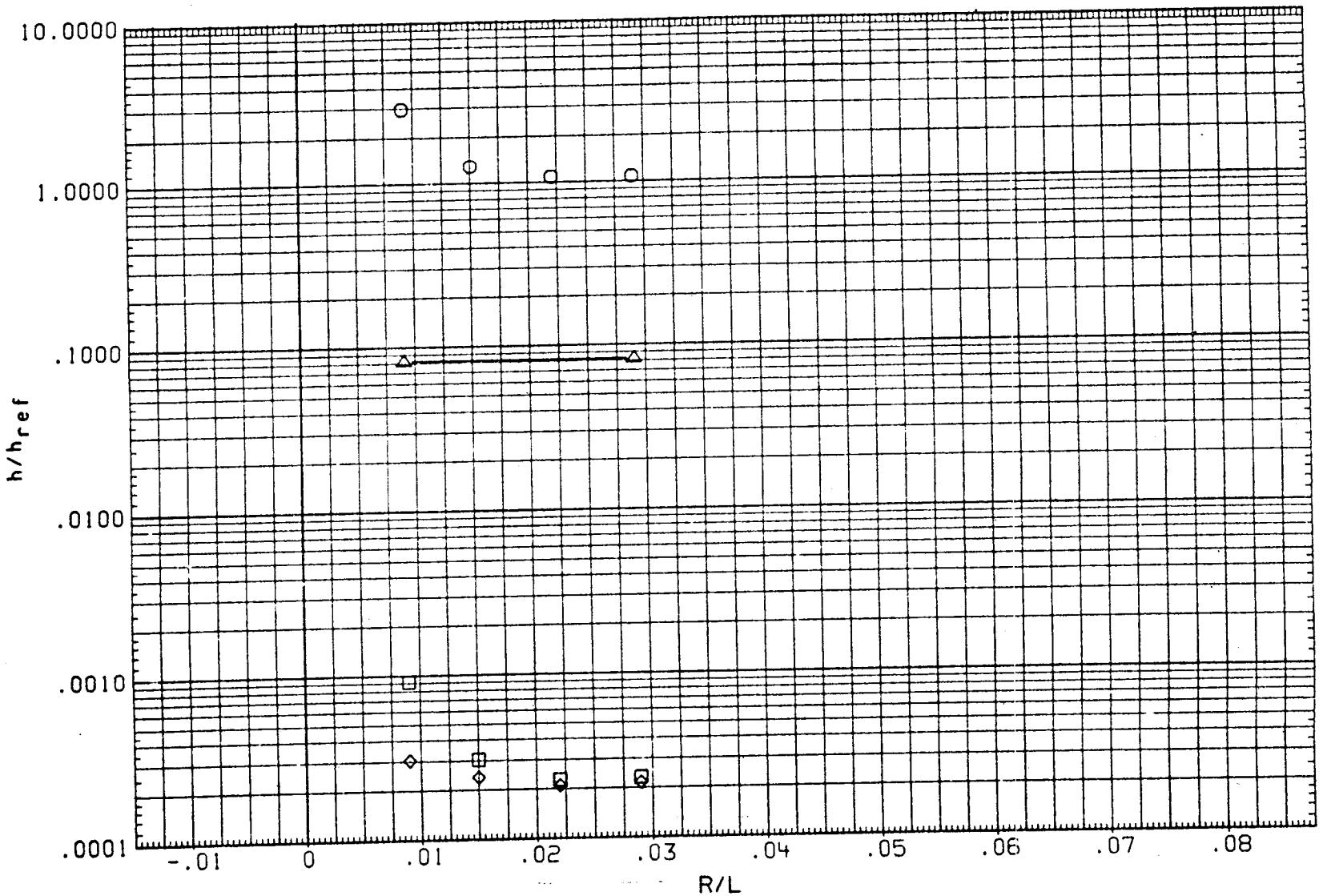

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 526

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0B)	□	IH51A (2B)(3B)(4B)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0B)	◇	IH51A (5B)(5B)(5B)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

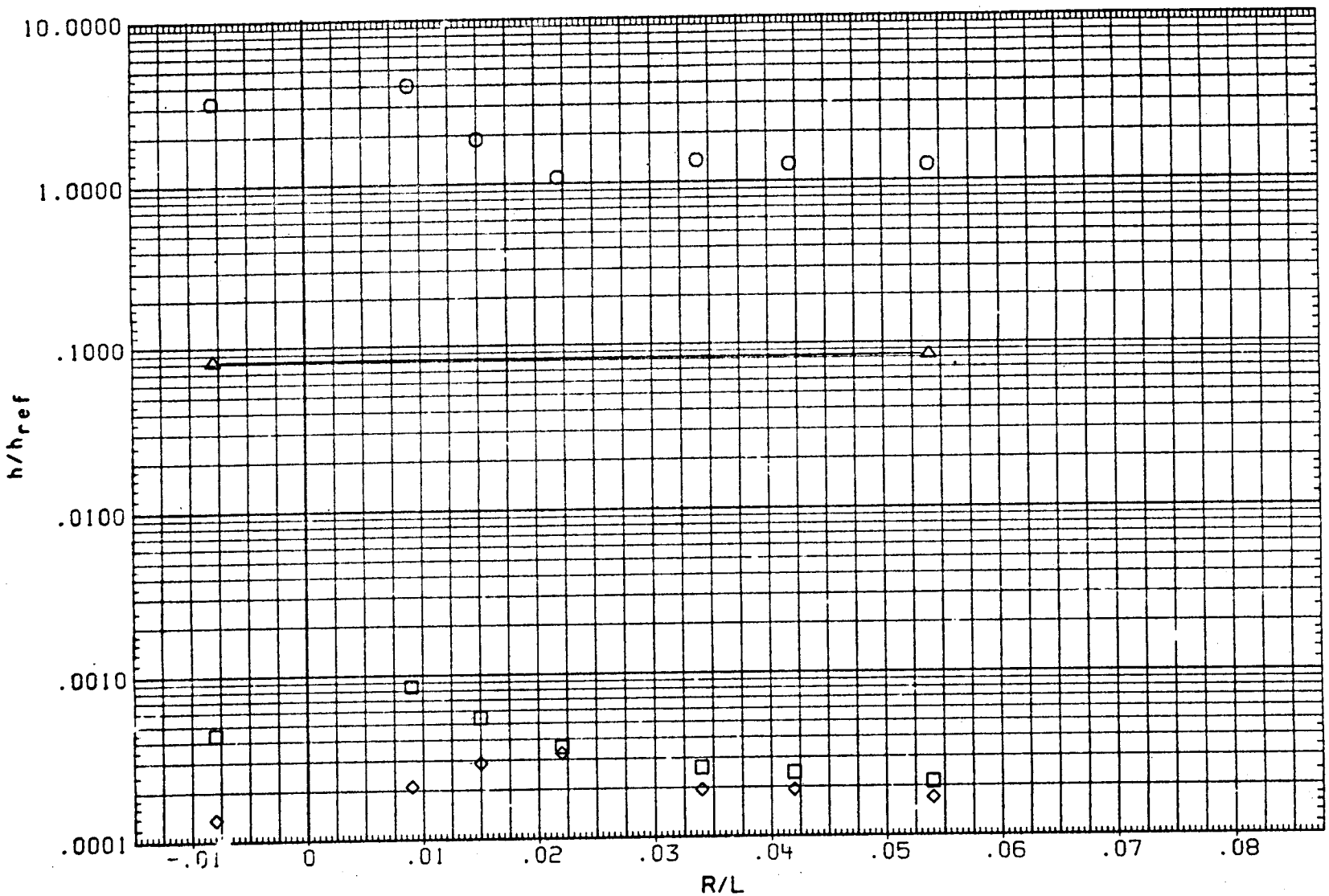

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 527

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20P0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	RH STRUT DIA	.000	.000	5.000	5.300
(J20P0B)	□	IH51A (2B)(3B)(4B)	RH STRUT DIA	.000	.000	5.000	5.300
(K20P0B)	◇	IH51A (5B)(5B)(5B)	RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG.	HU/HREF	.000	.000	5.000	5.300

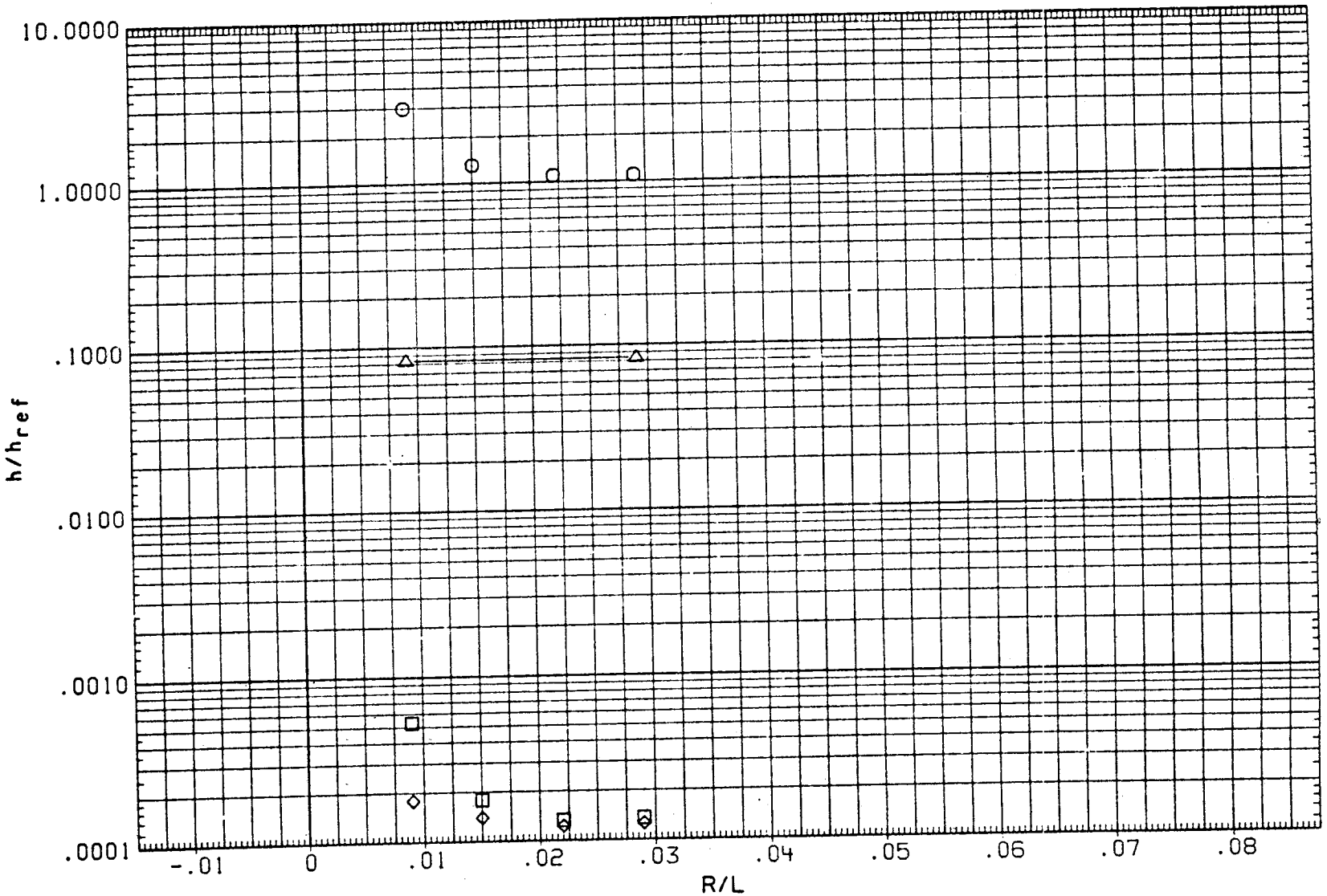

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 528

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

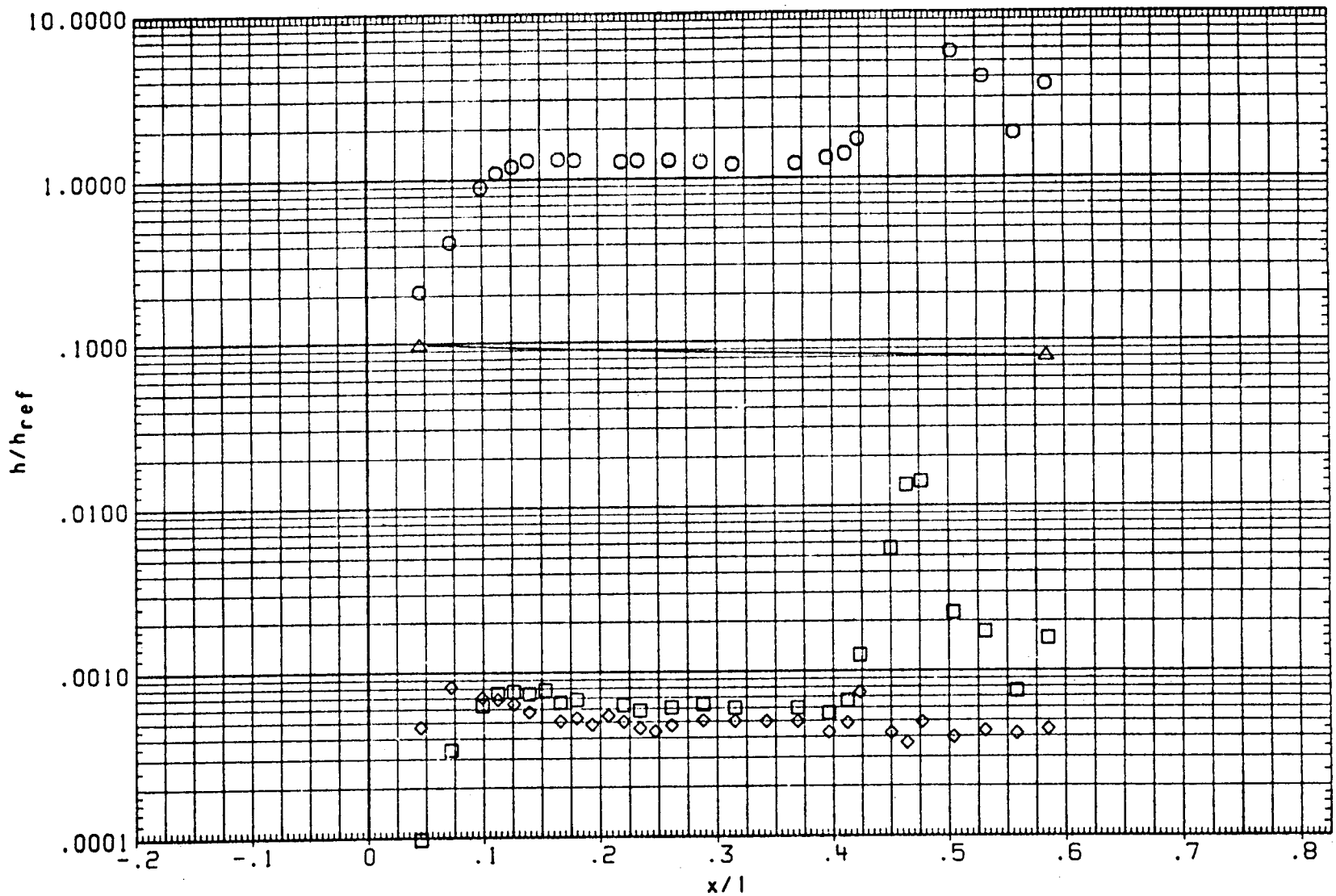

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .850 PHI = .000 DATE 22 APR 78 PAGE 529

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

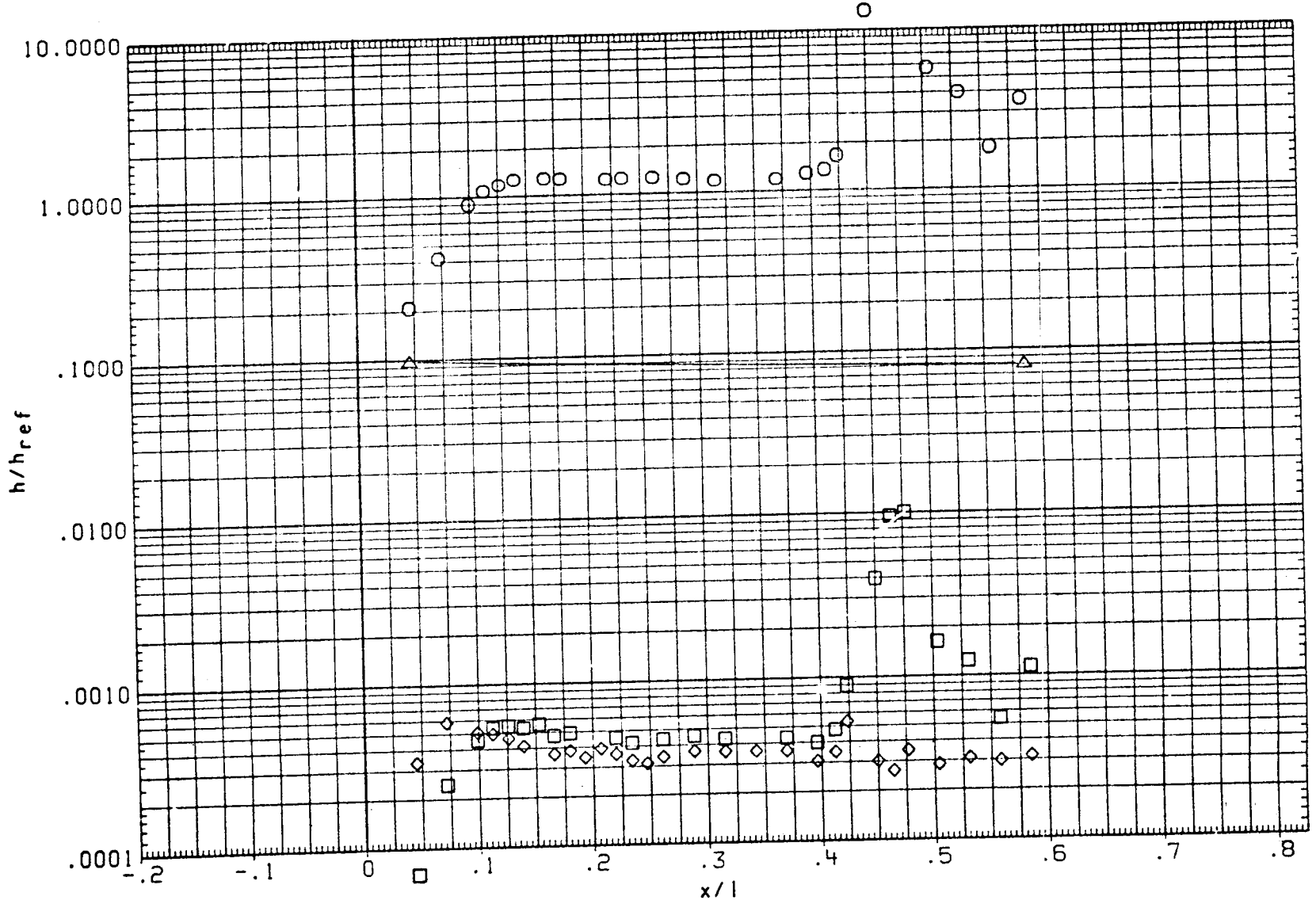

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .900 ◇PHI = .000 DATE 22 APR 78 PAGE 530

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

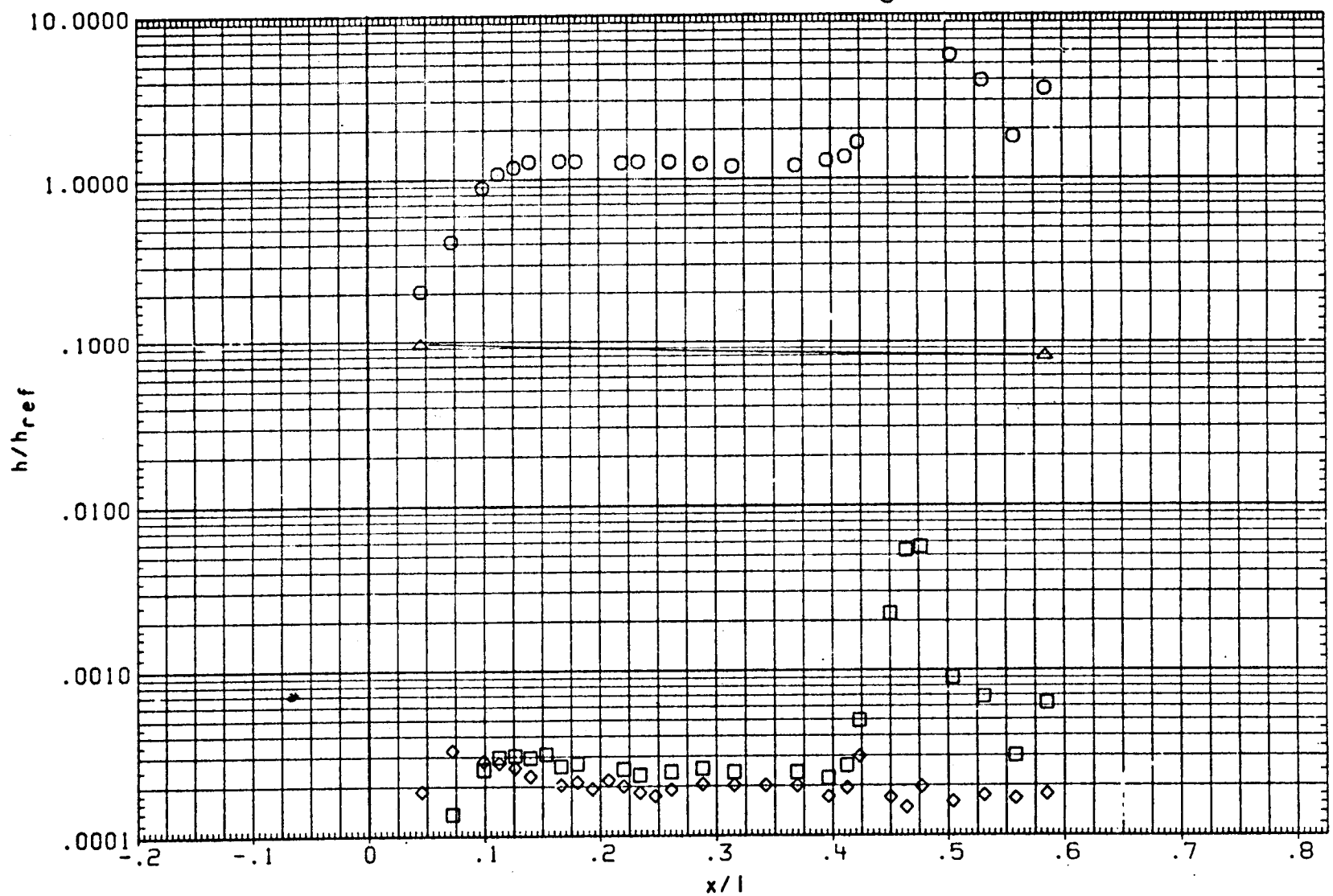

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 531

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

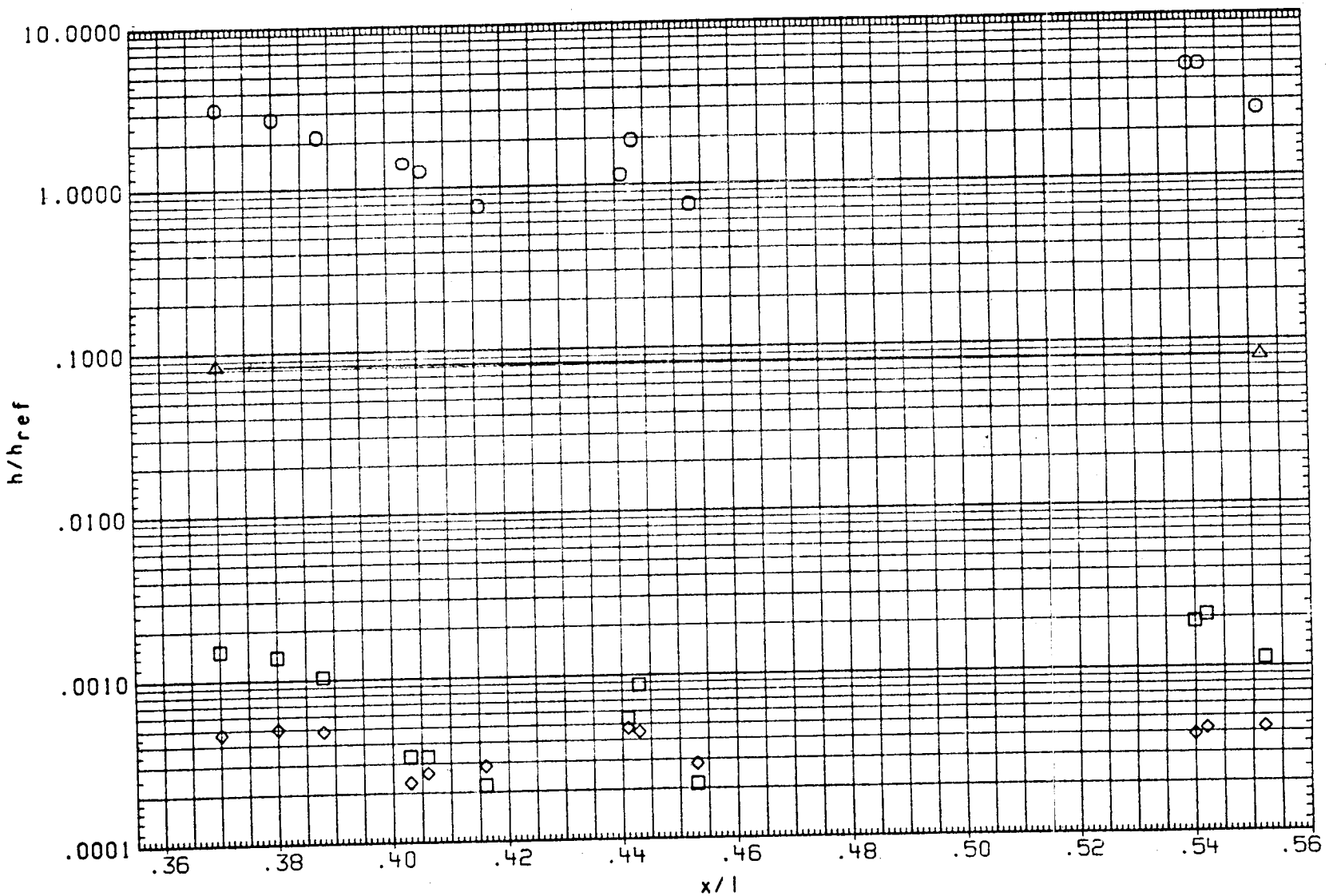

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 532

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(H2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

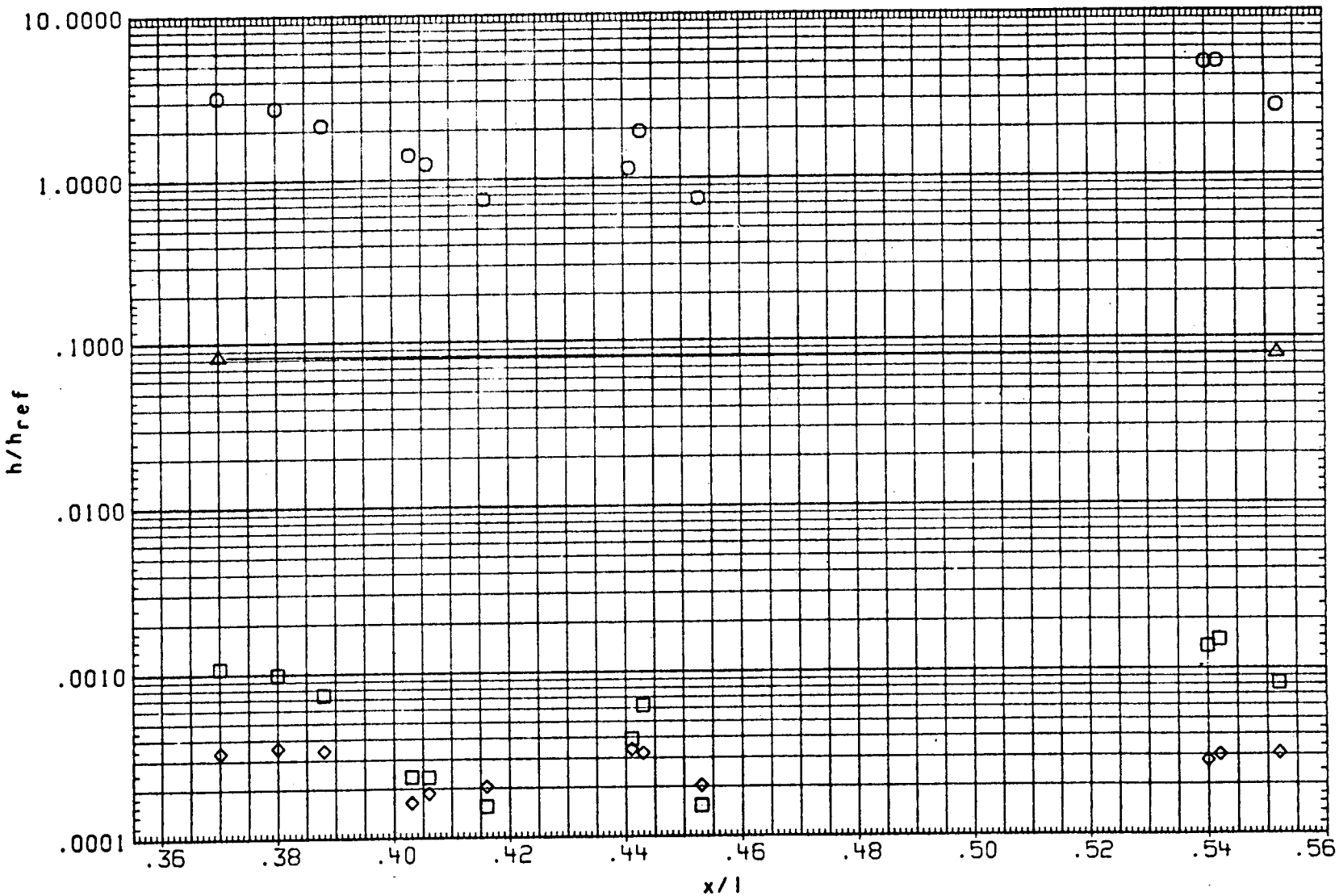

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 533

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

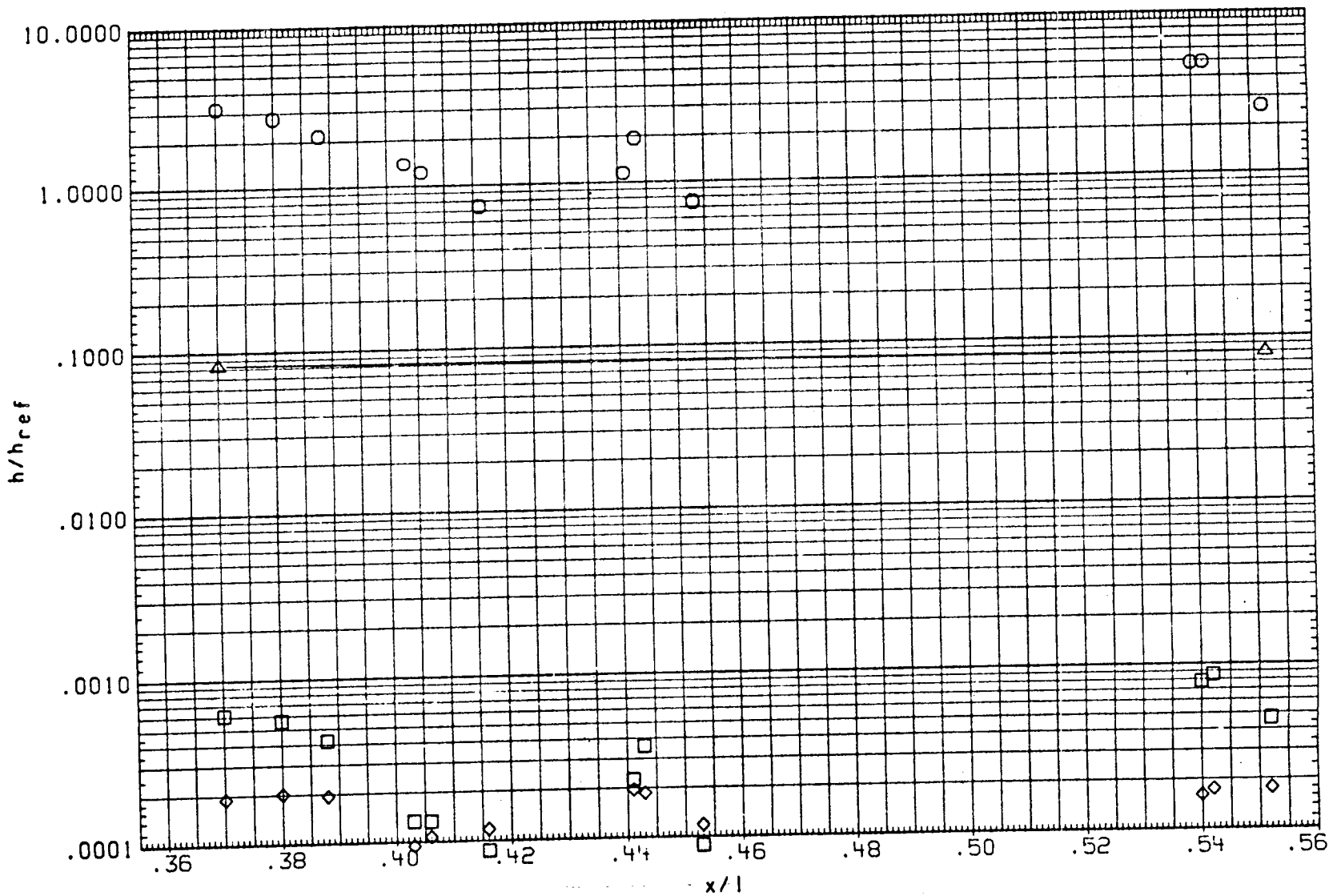

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

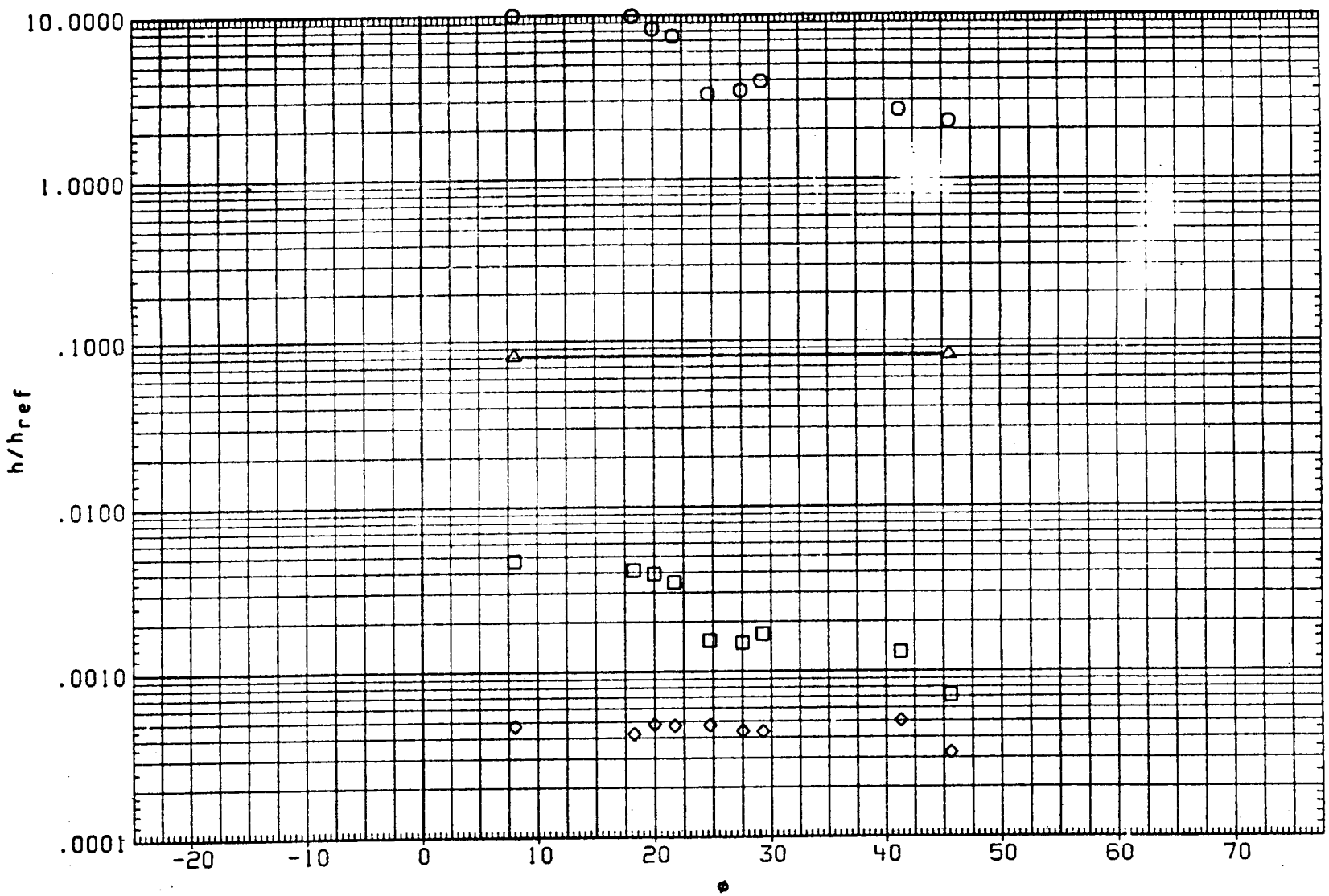

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 535

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

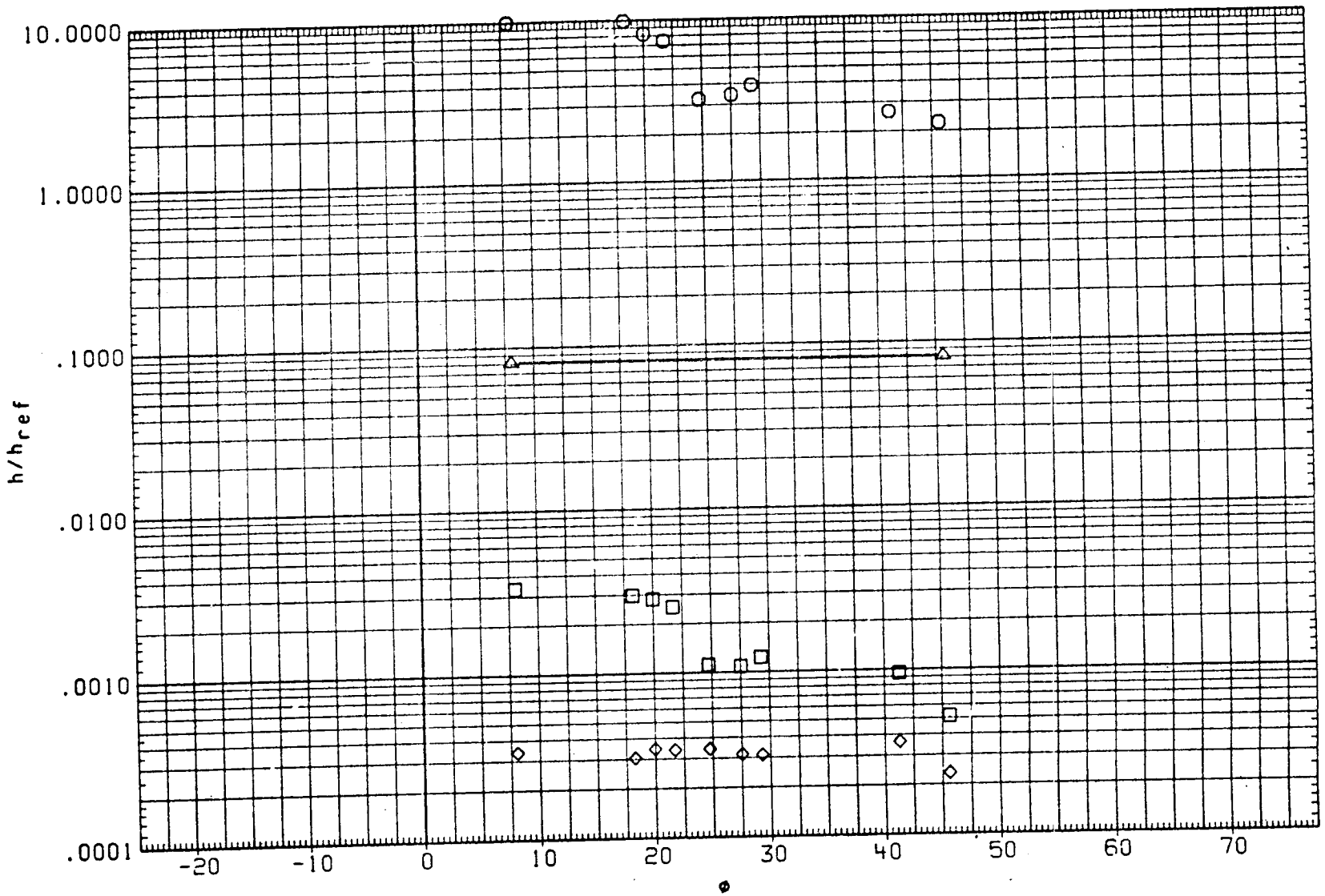

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 536

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

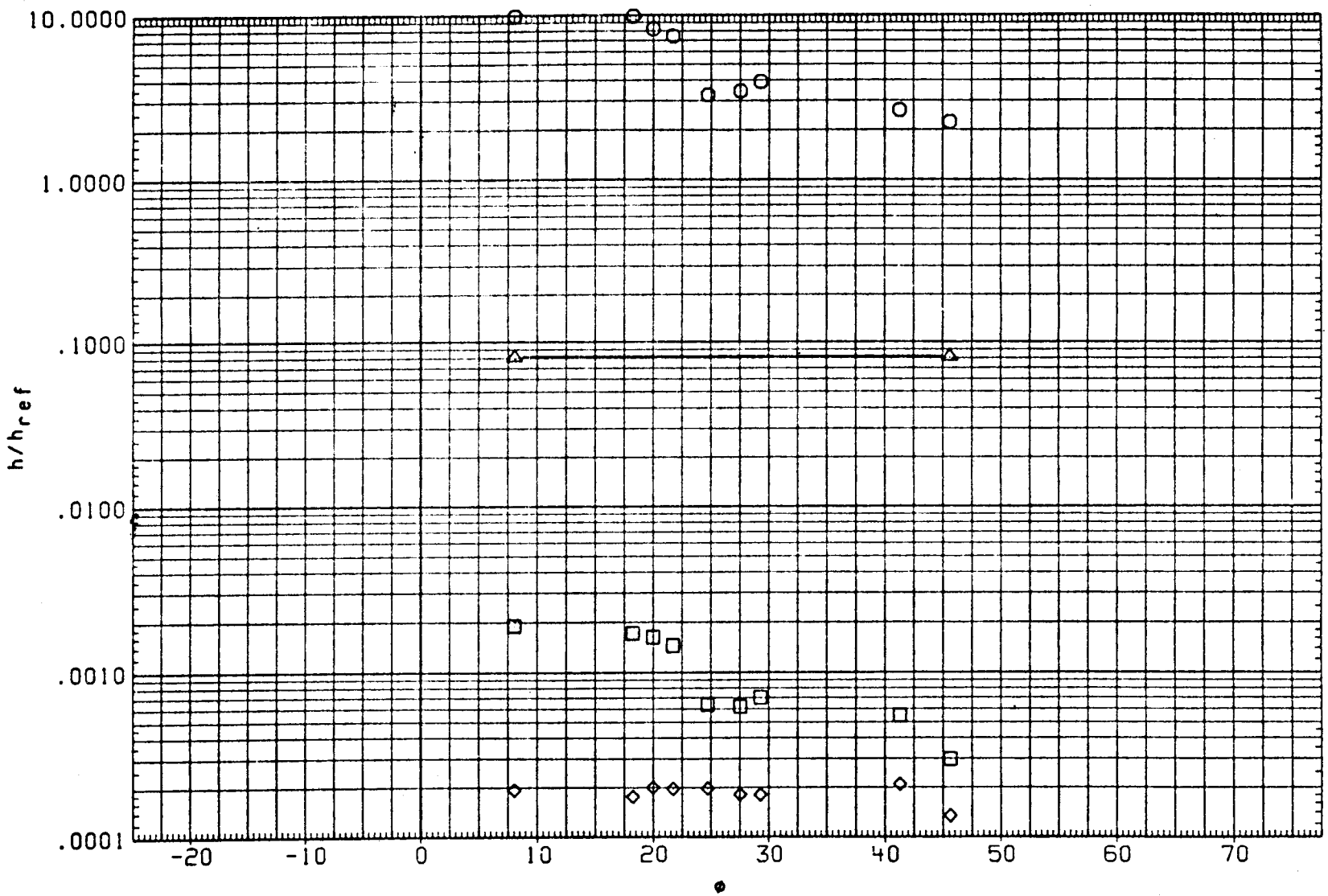

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 537

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

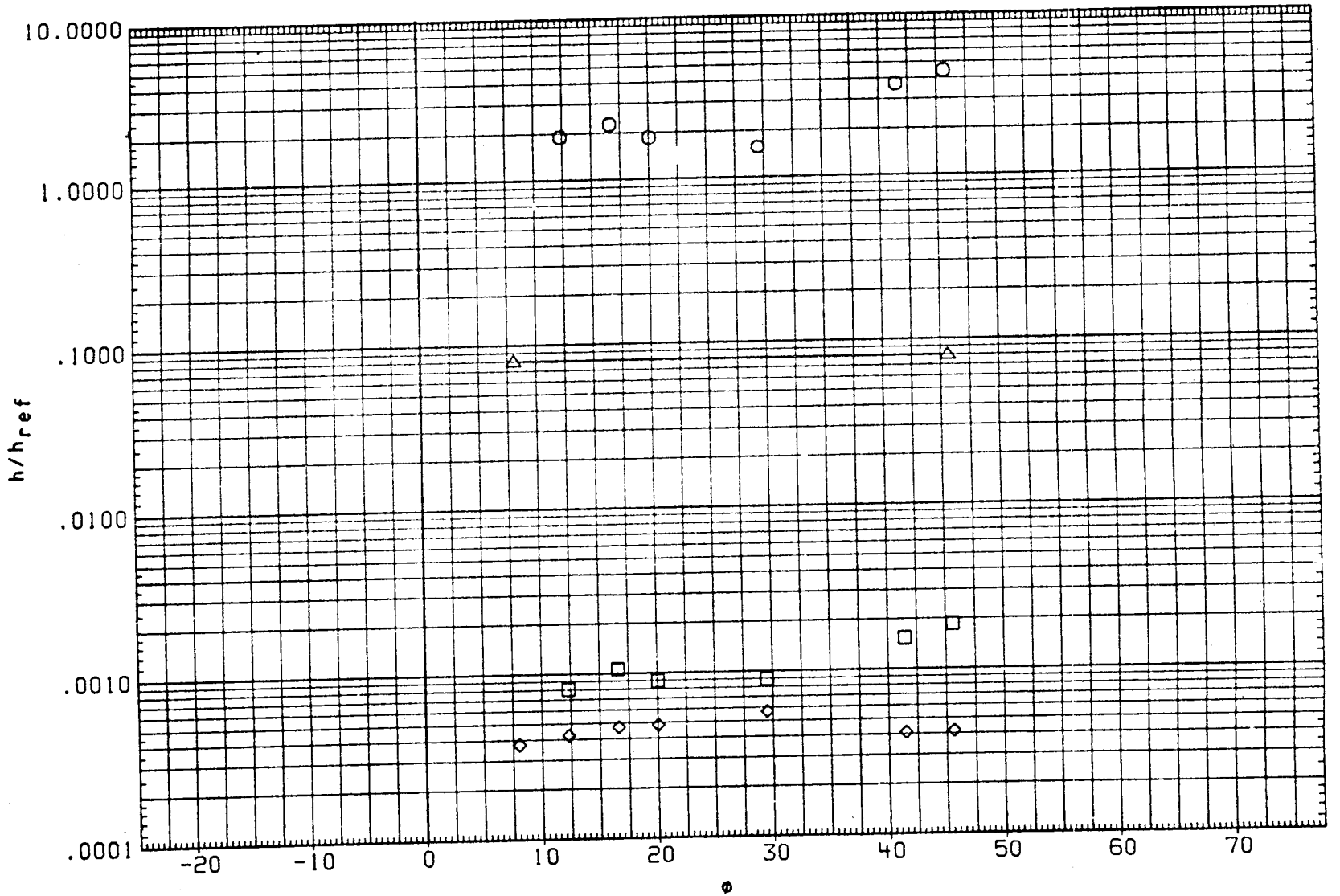

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 538

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

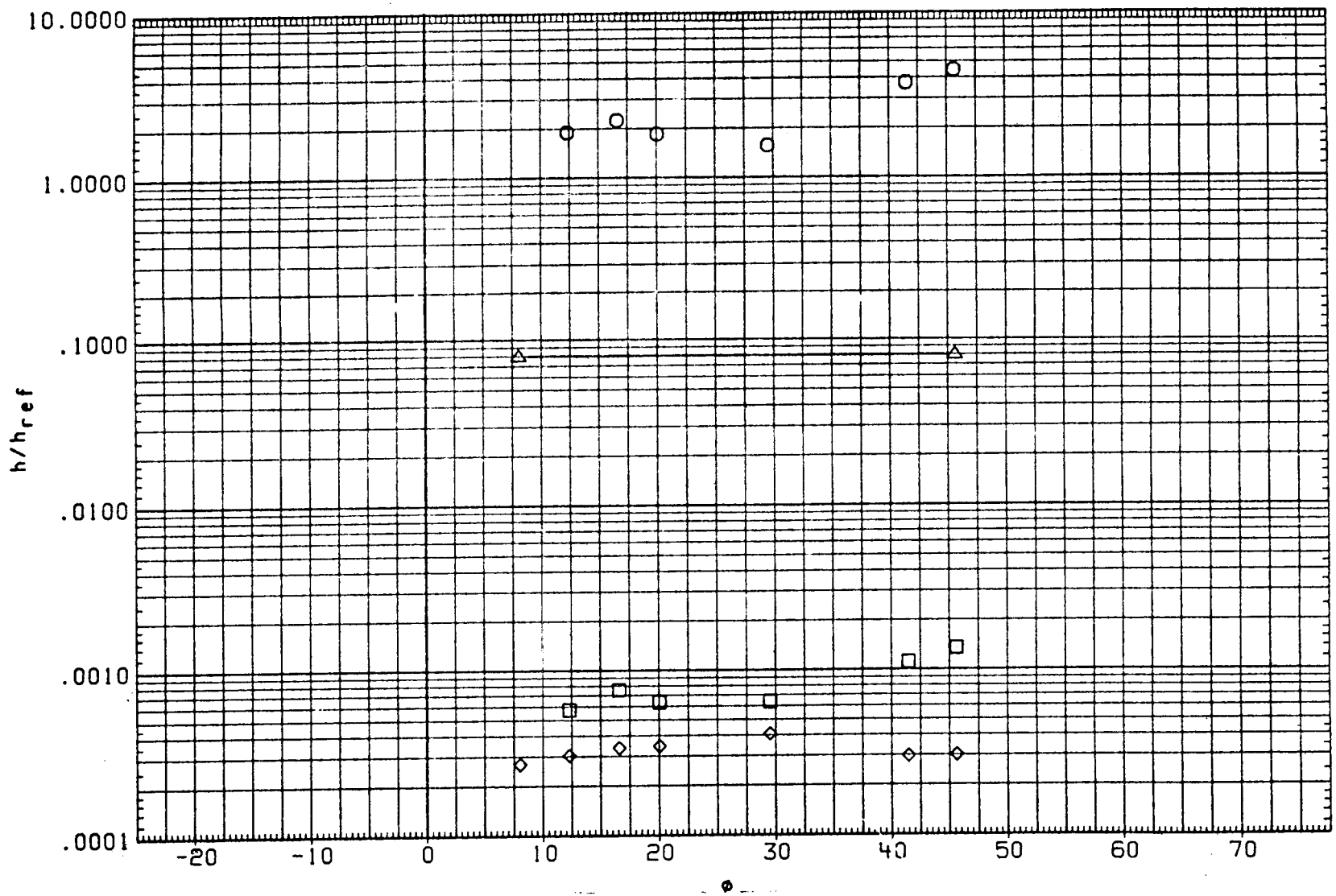

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .578 DATE 22 APR 78 PAGE 539

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

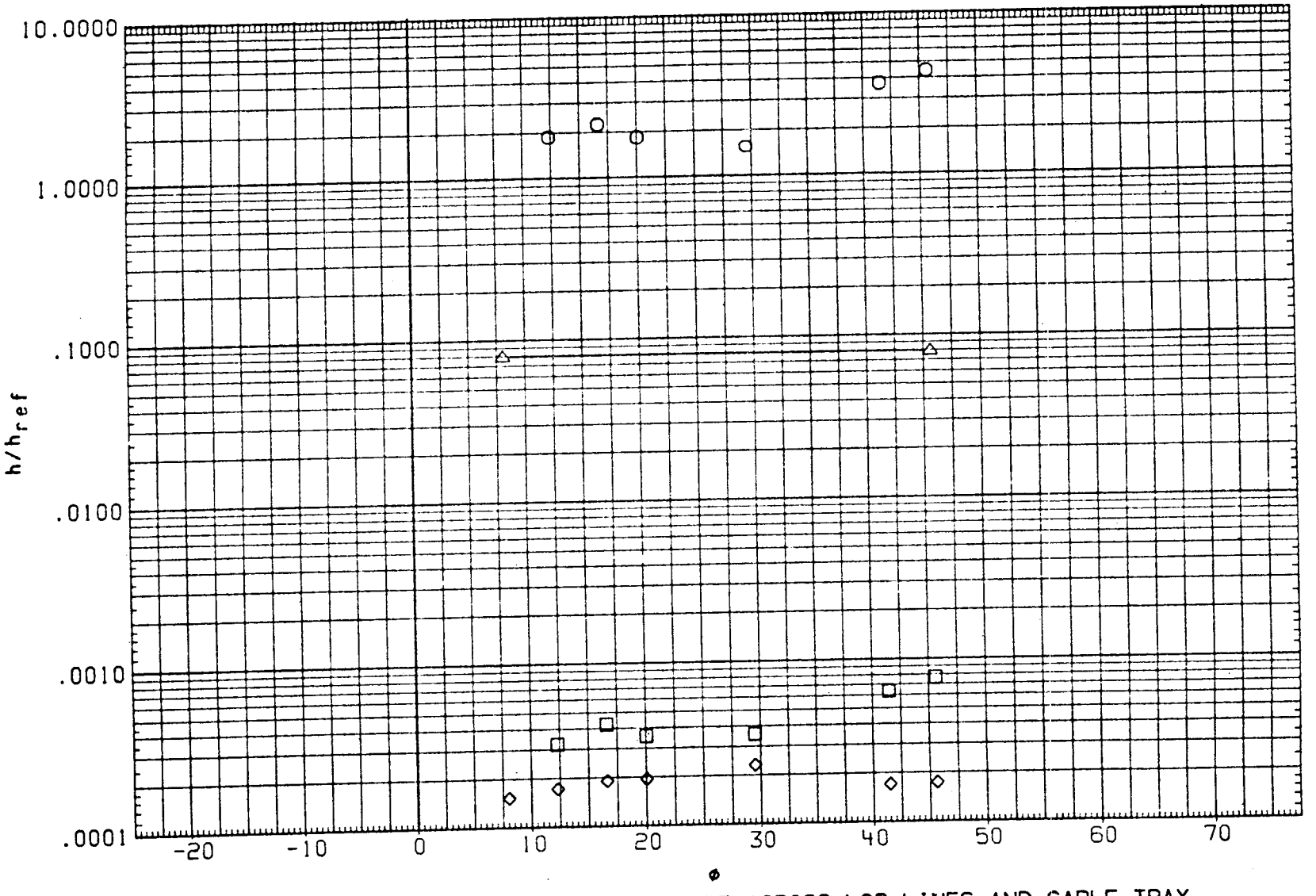

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 540

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

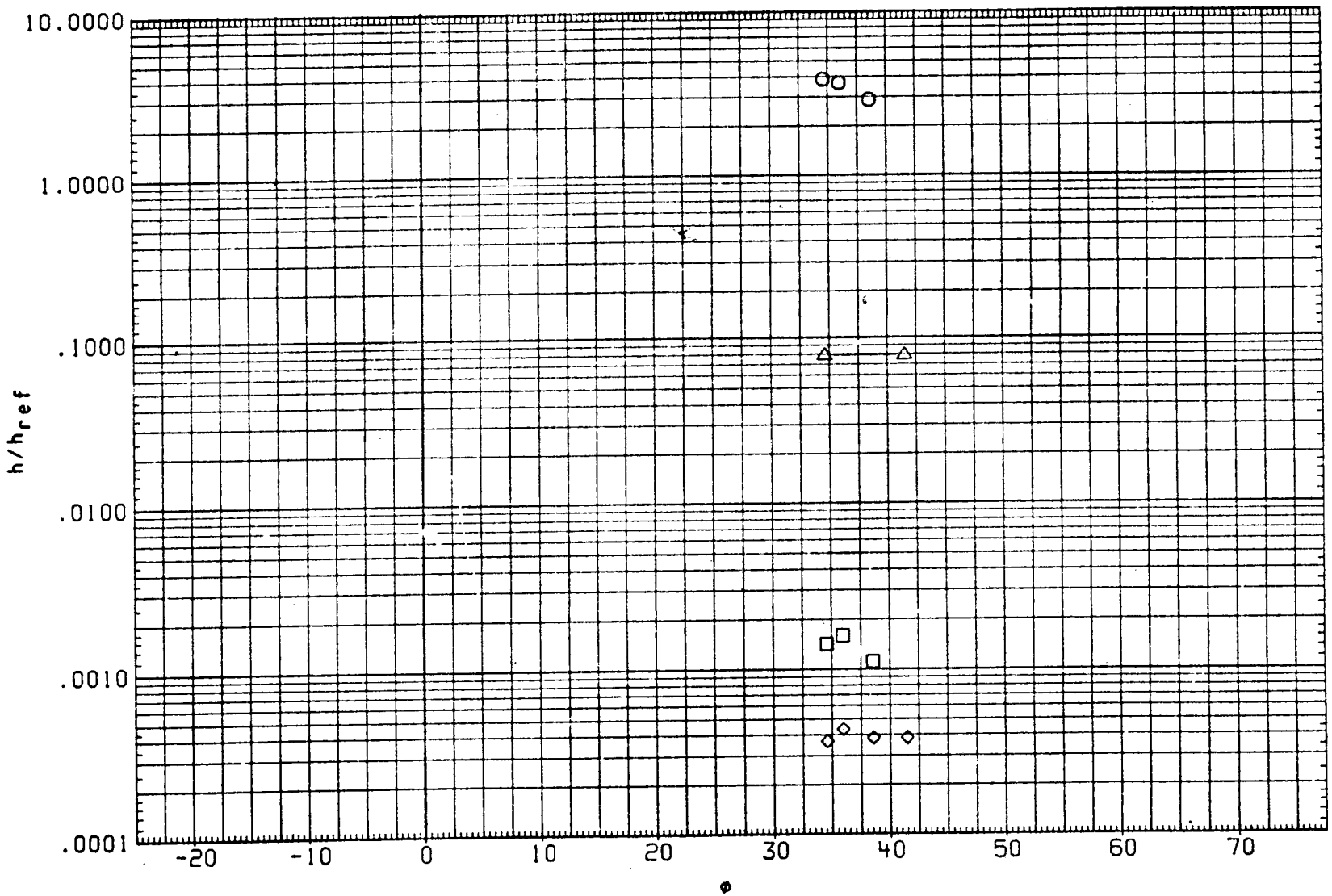

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 541

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

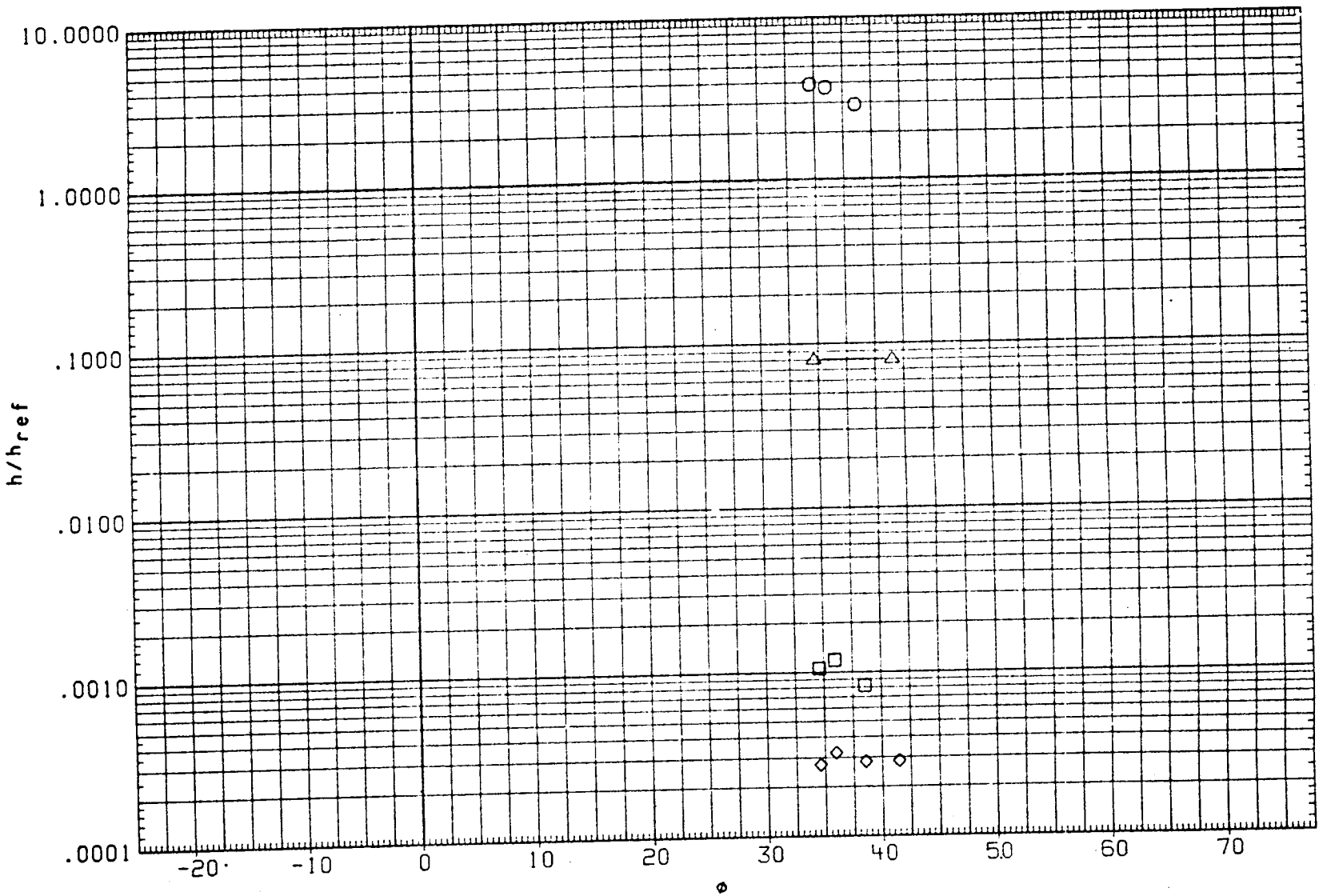

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 542

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

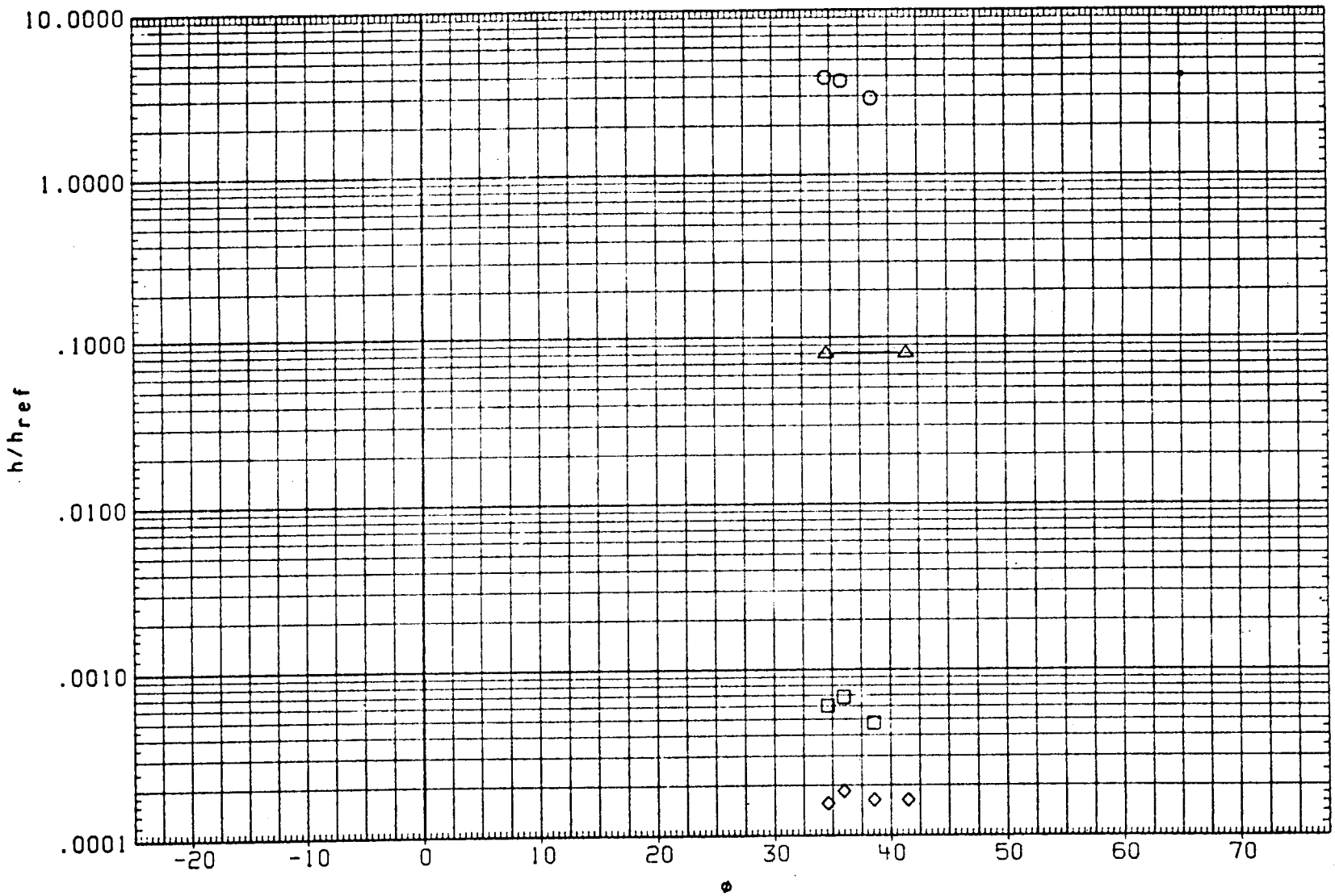

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 543

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

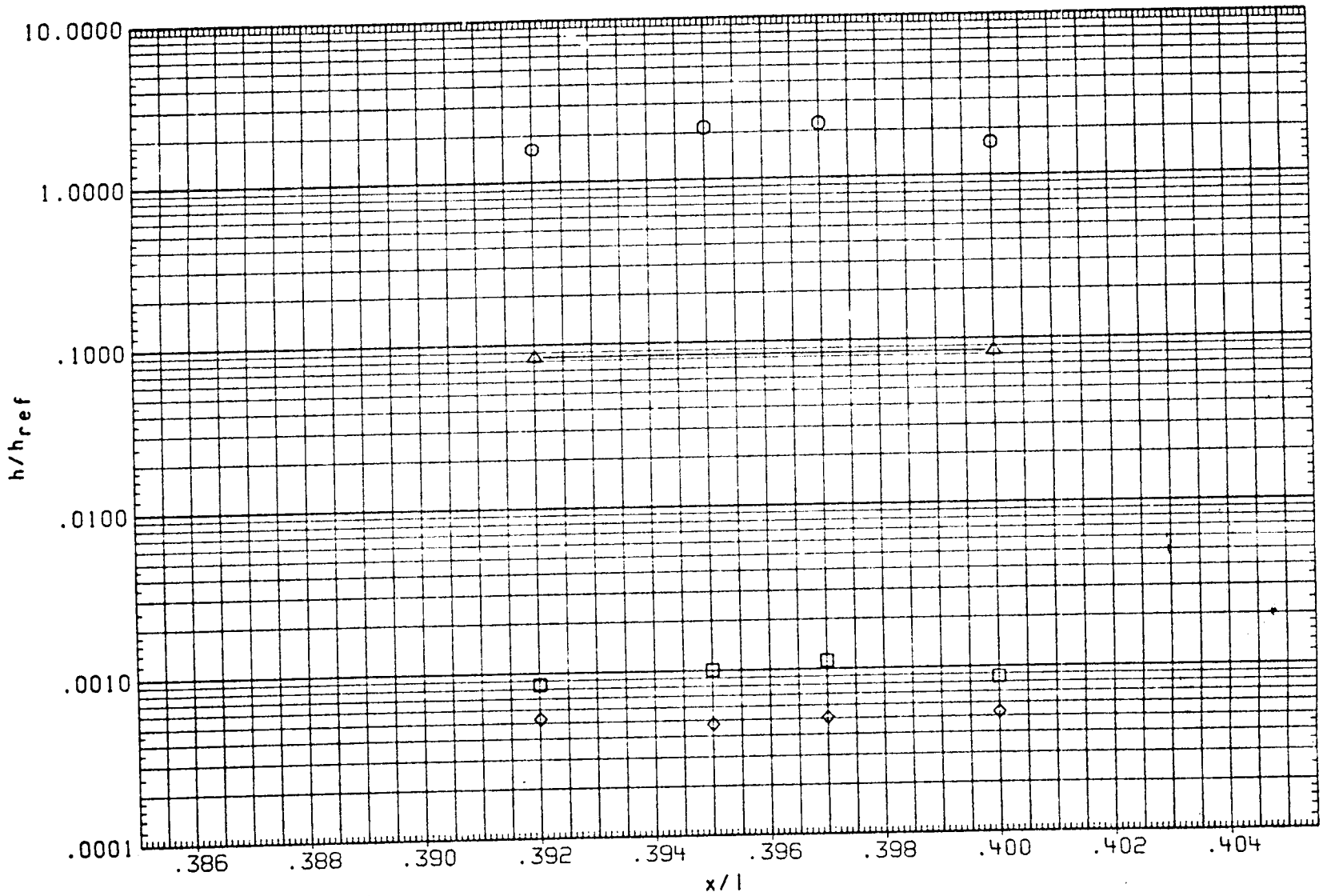

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

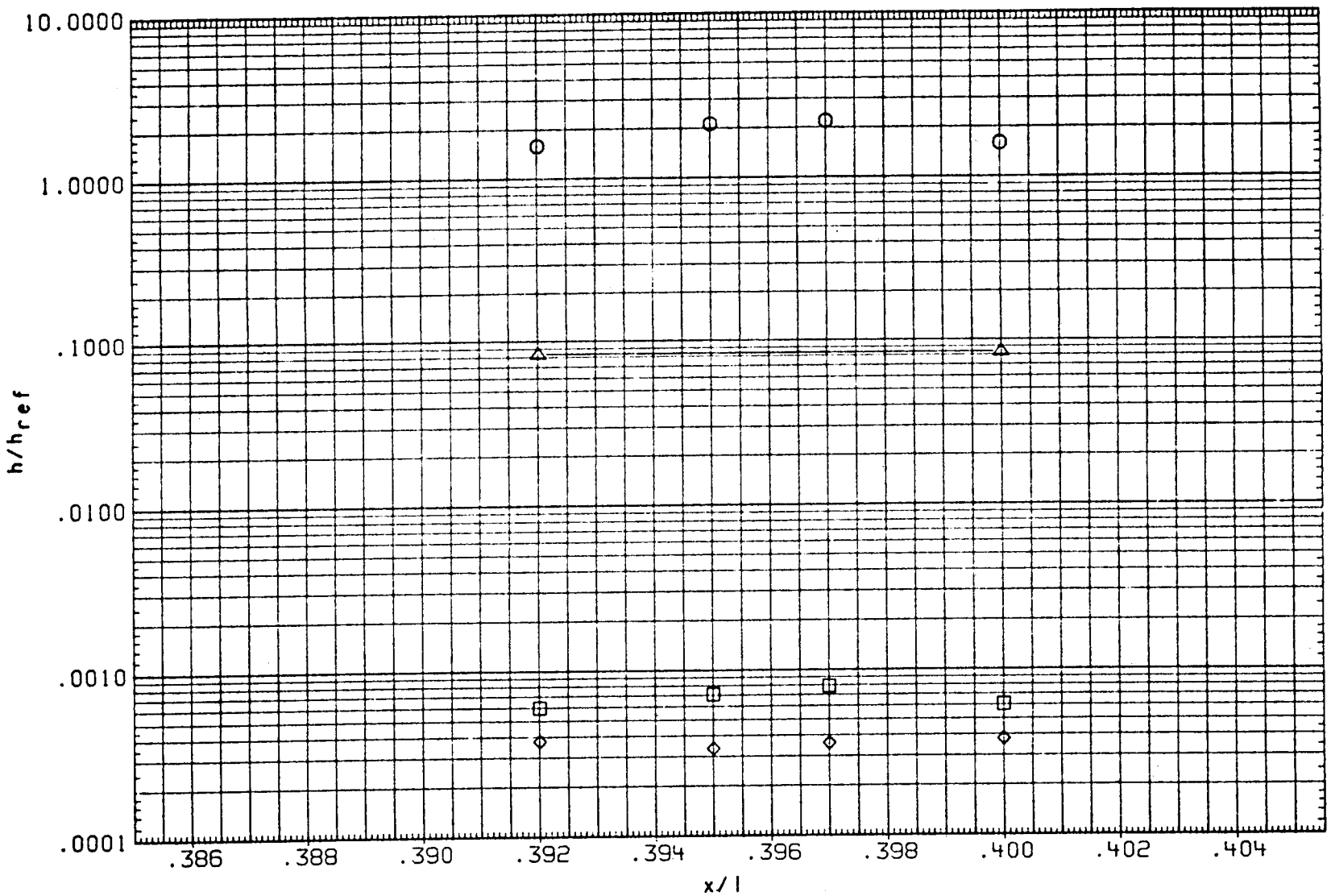

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 545

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

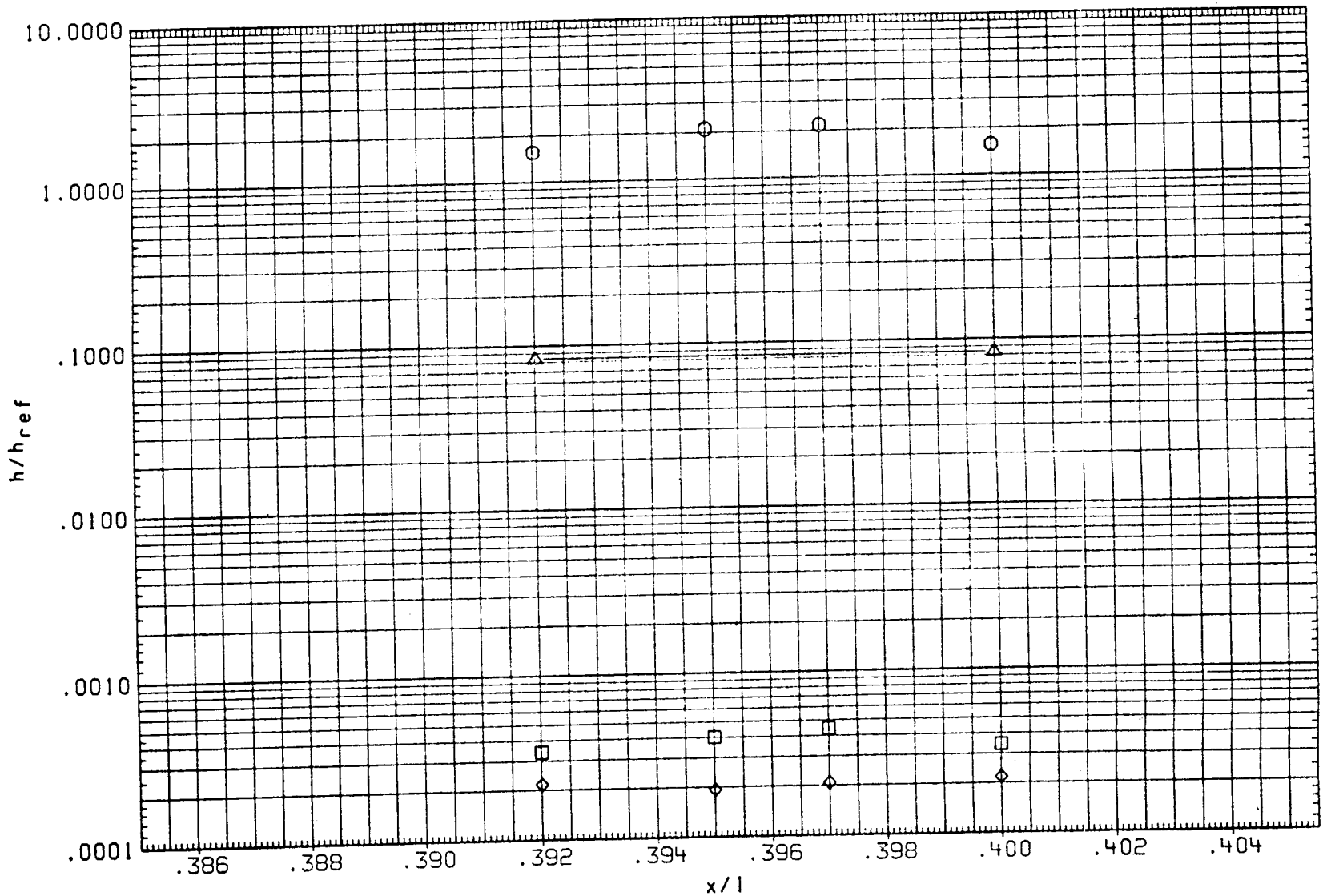

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78 PAGE 546

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

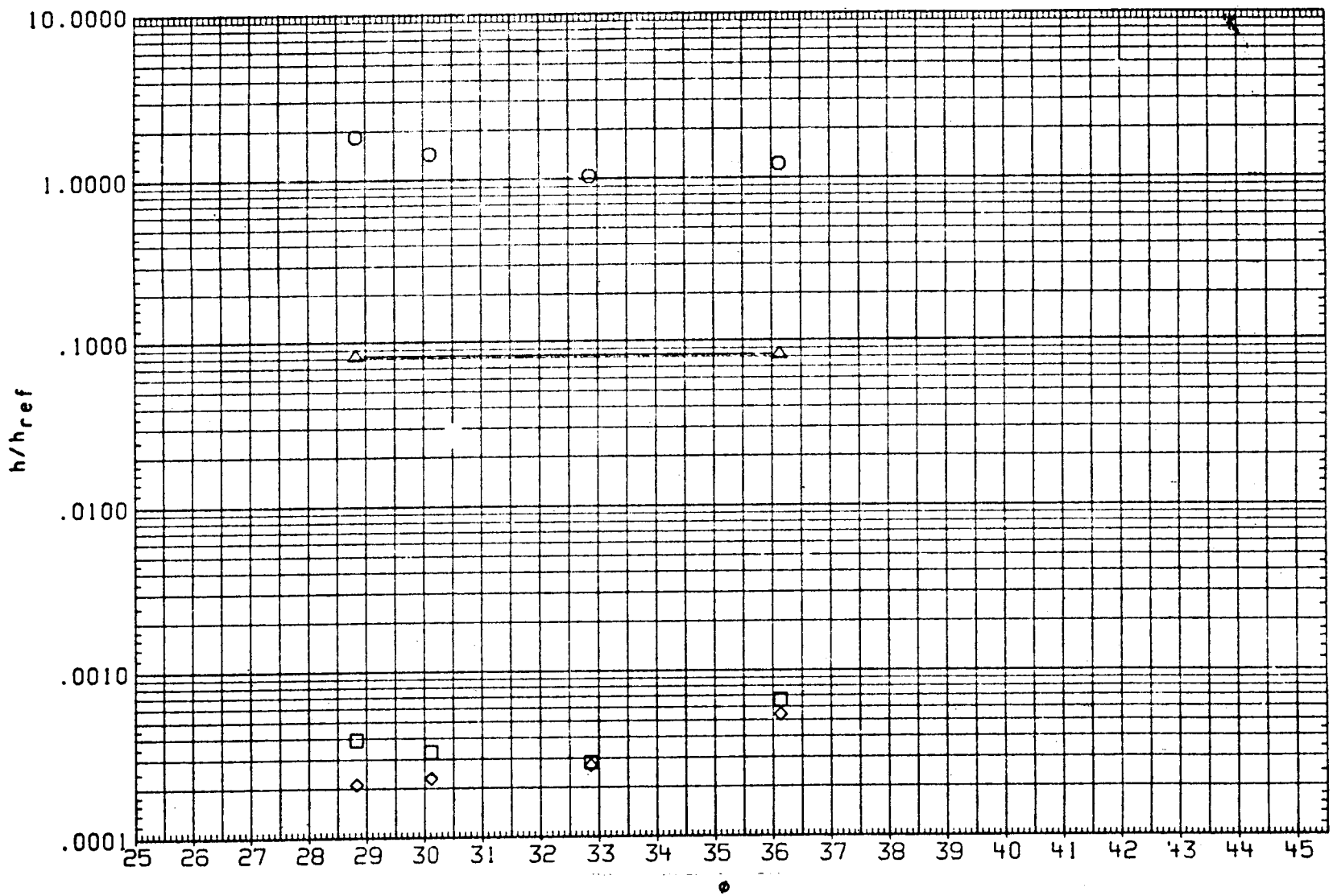

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .403 DATE 22 APR 78 PAGE 547

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

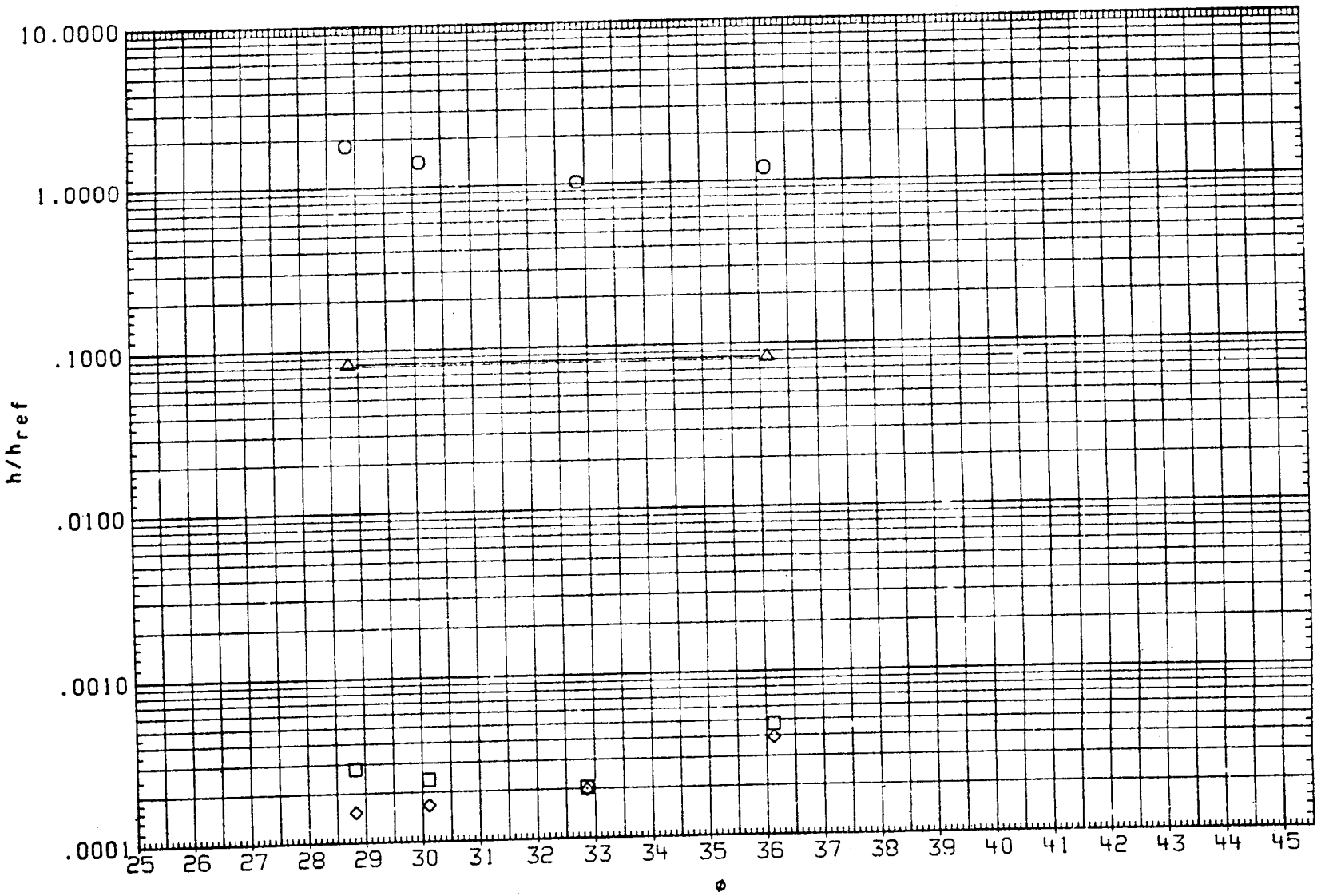

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 548

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

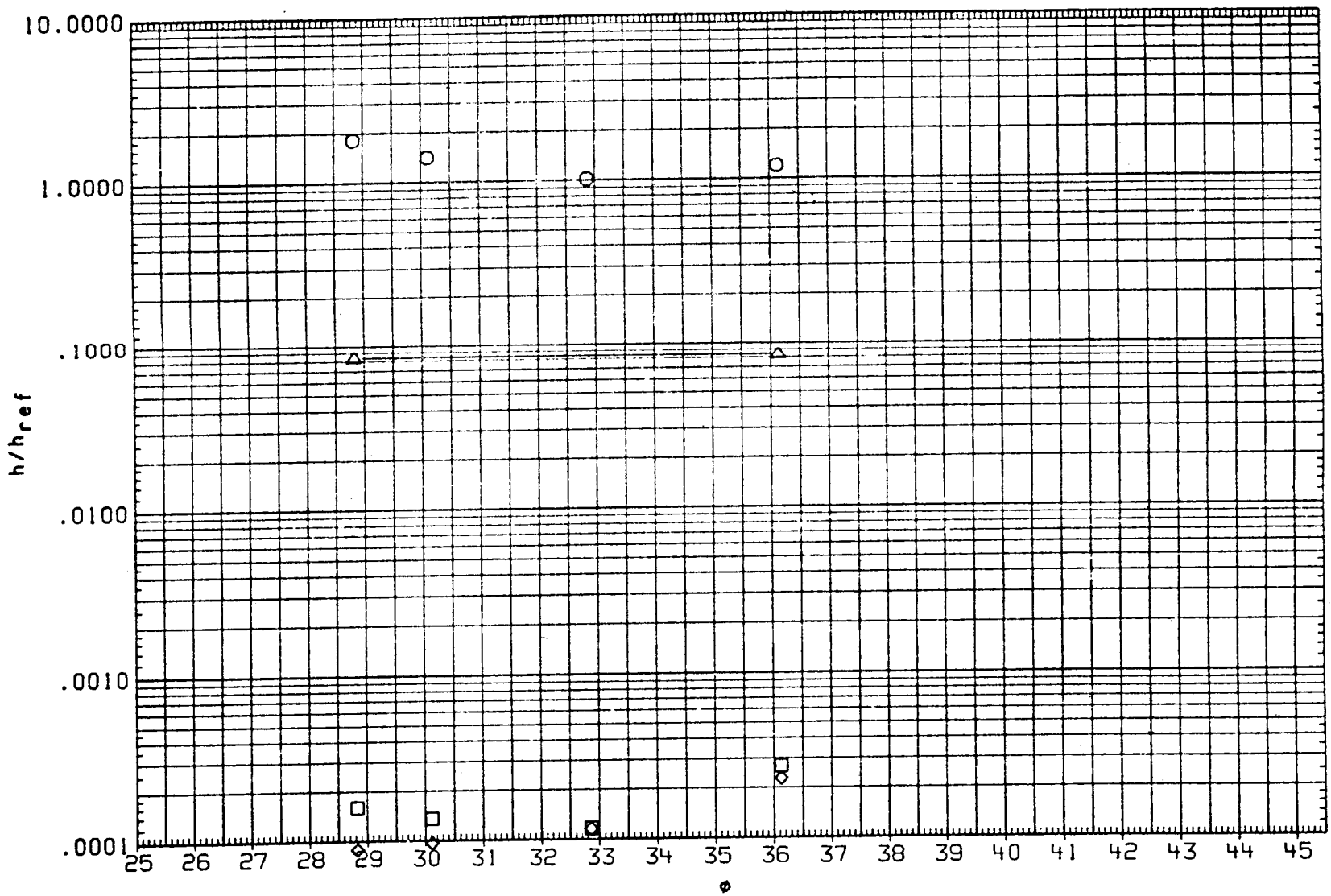

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 549

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

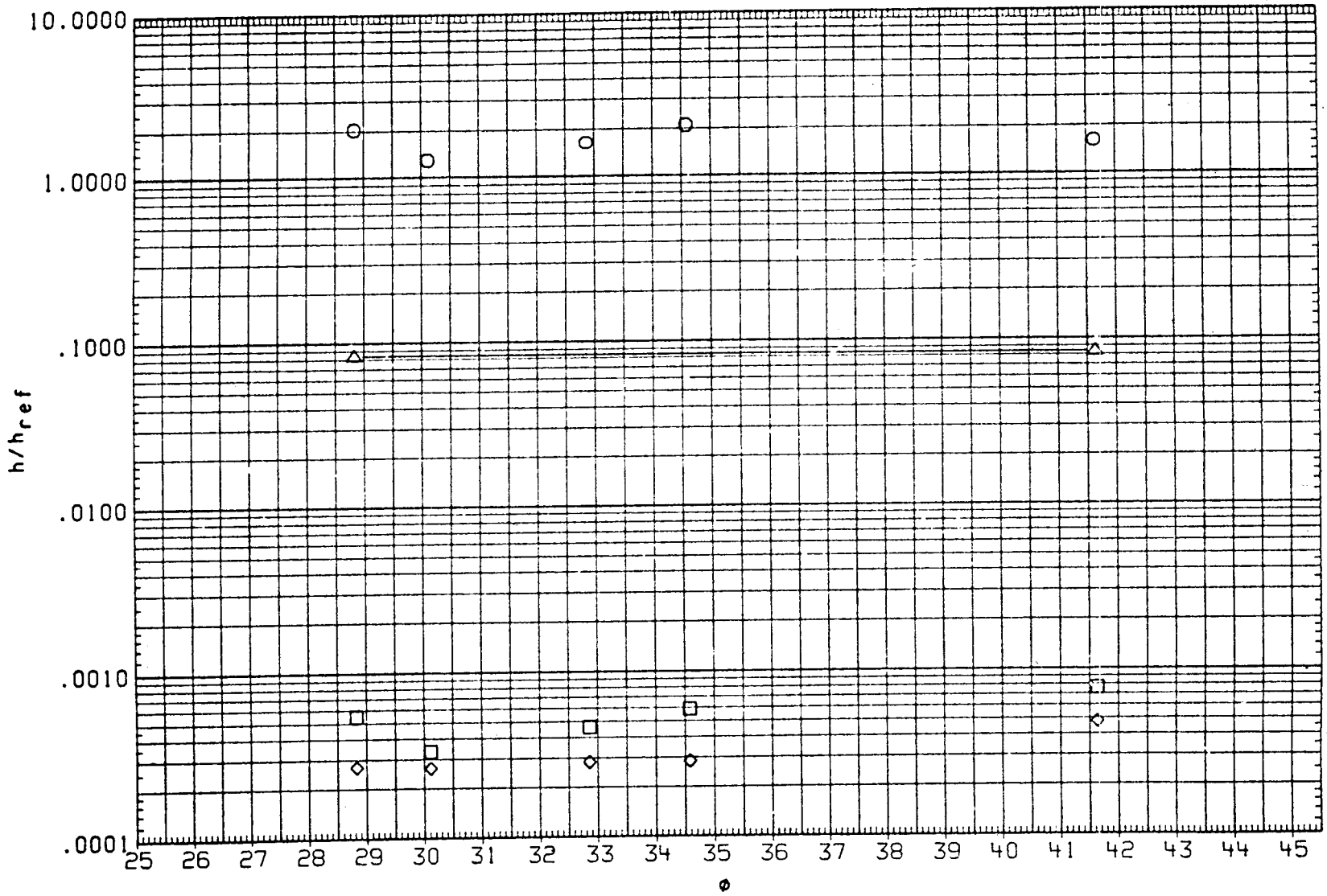

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 550

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

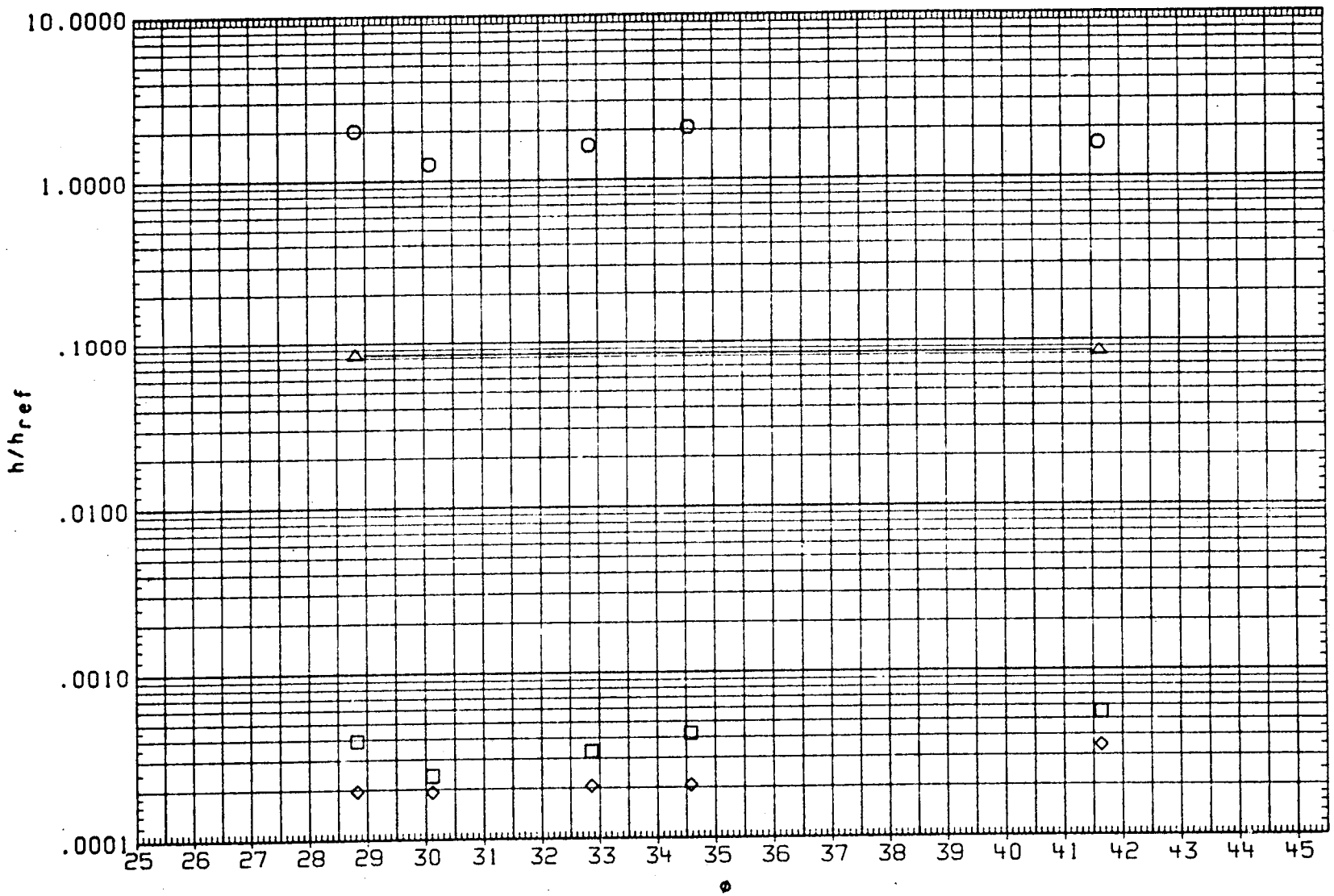

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 551

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

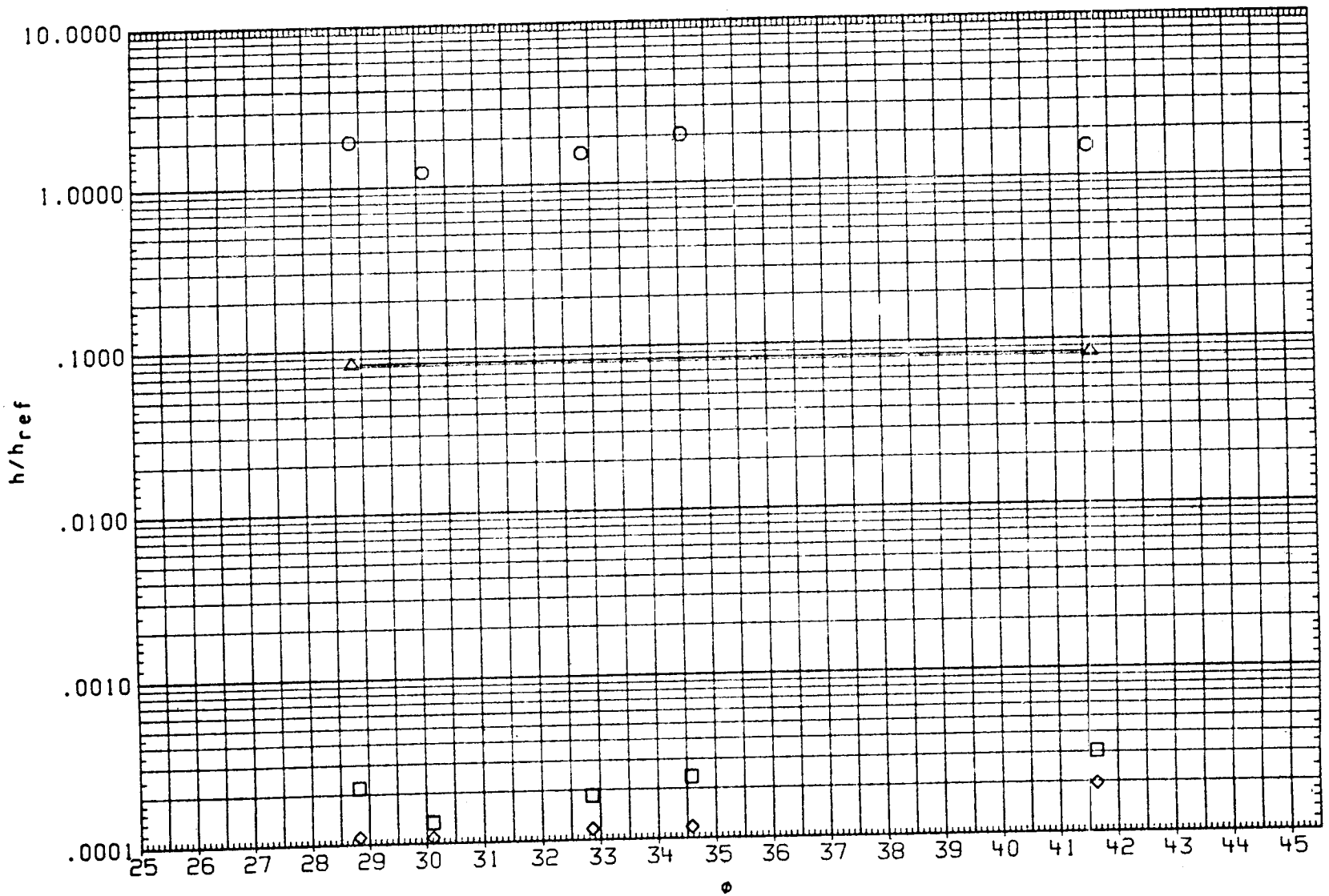

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 552

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

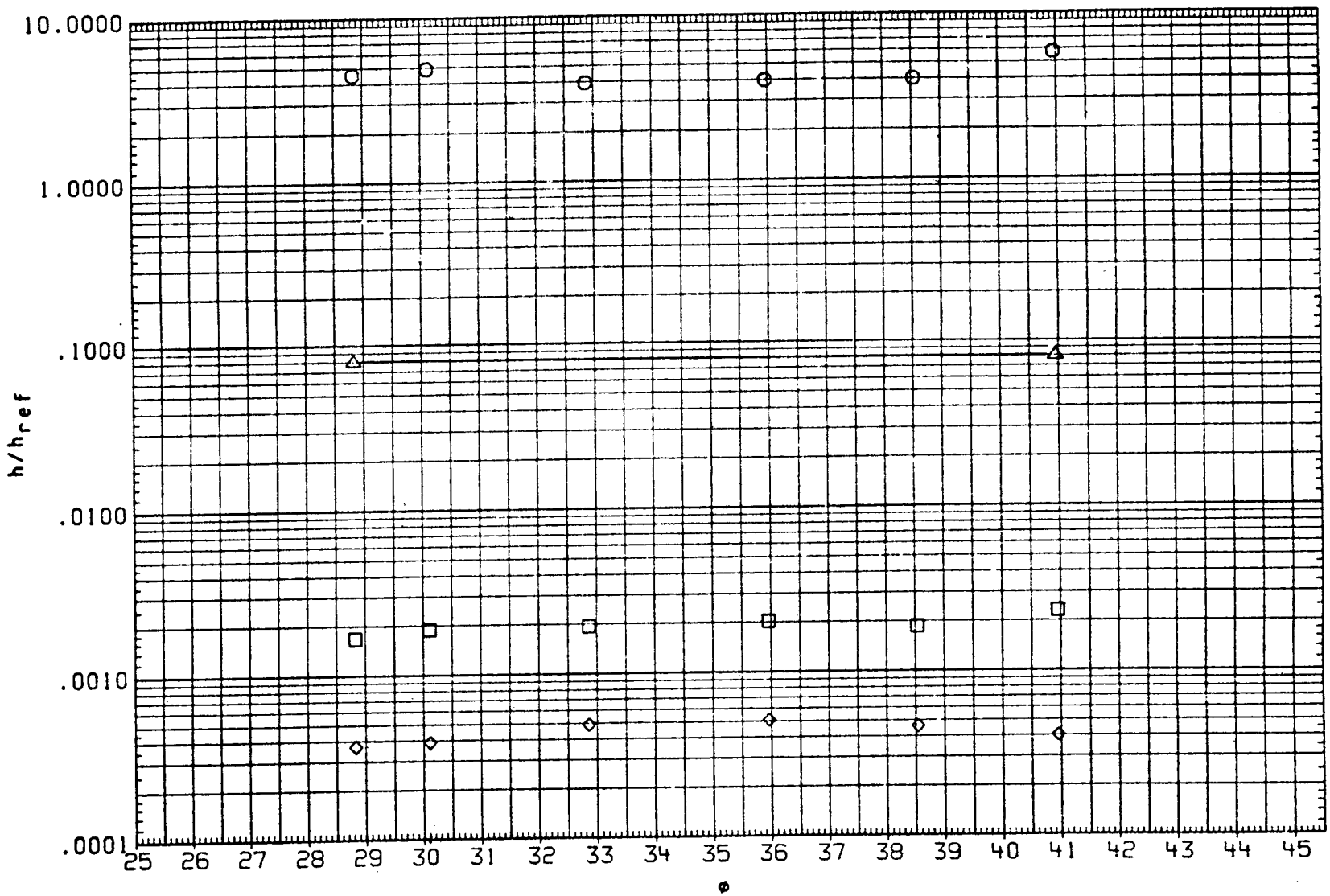

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .540 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

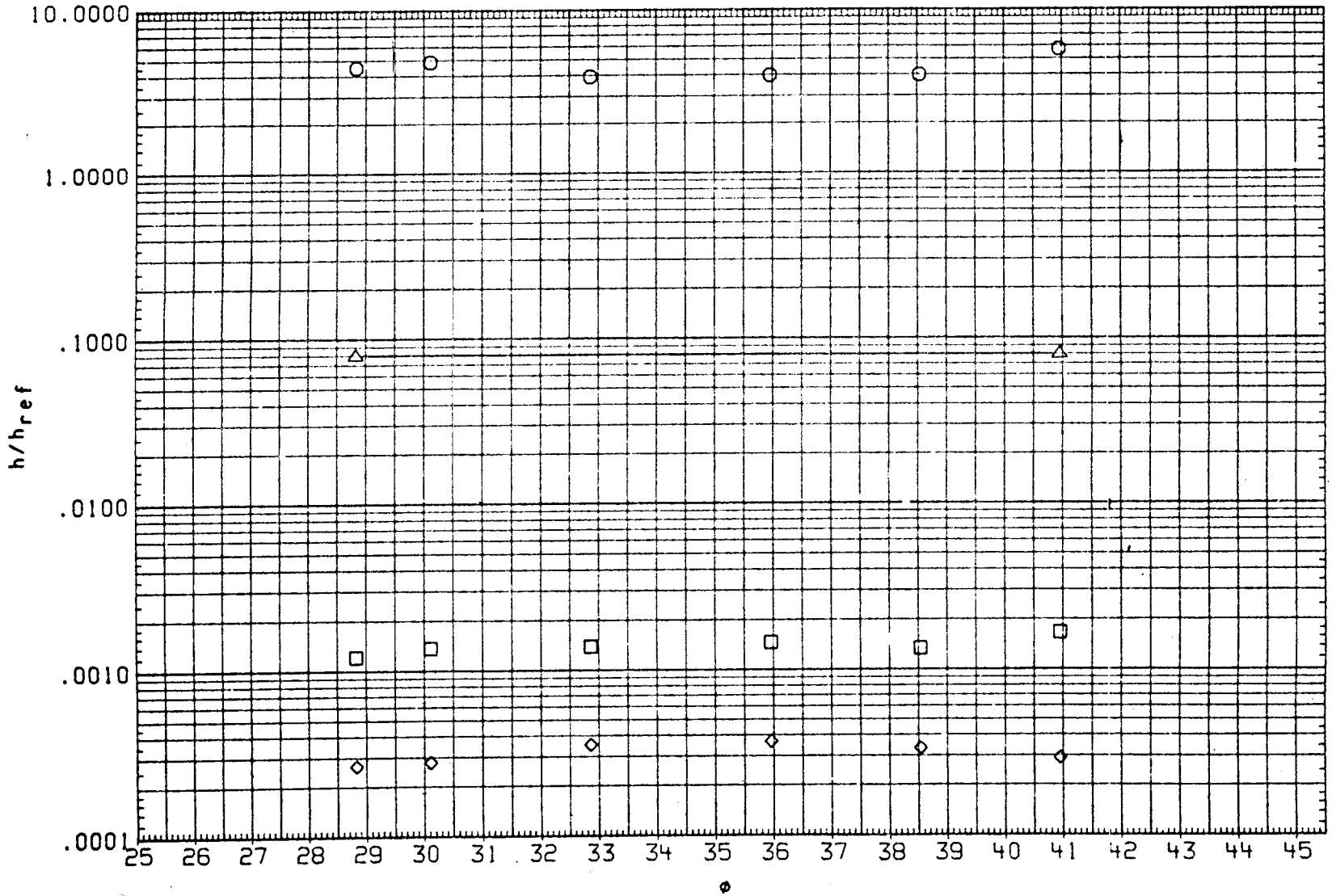

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .540 DATE 22 APR 78 PAGE 554

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALFHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(42/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

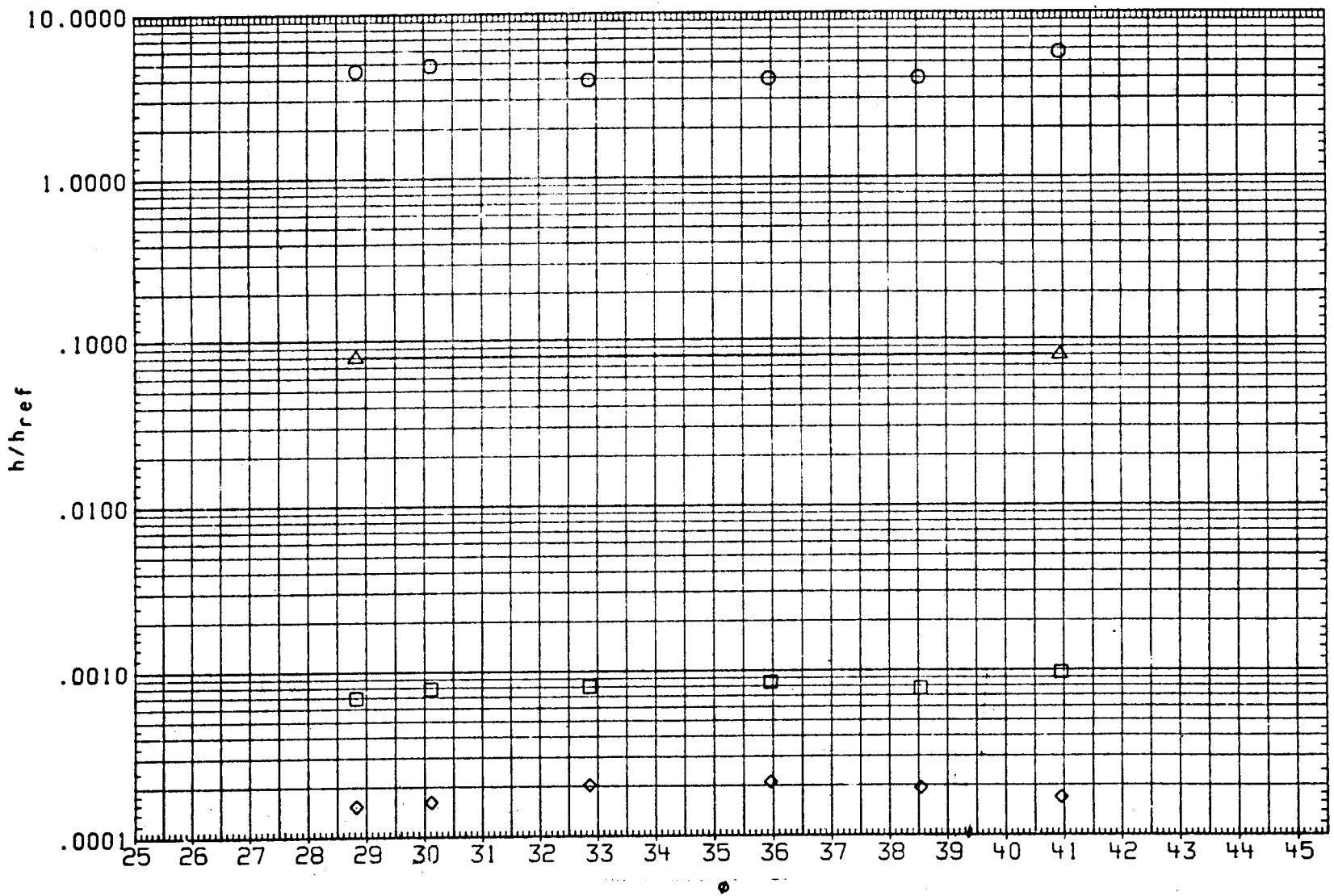

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 555

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

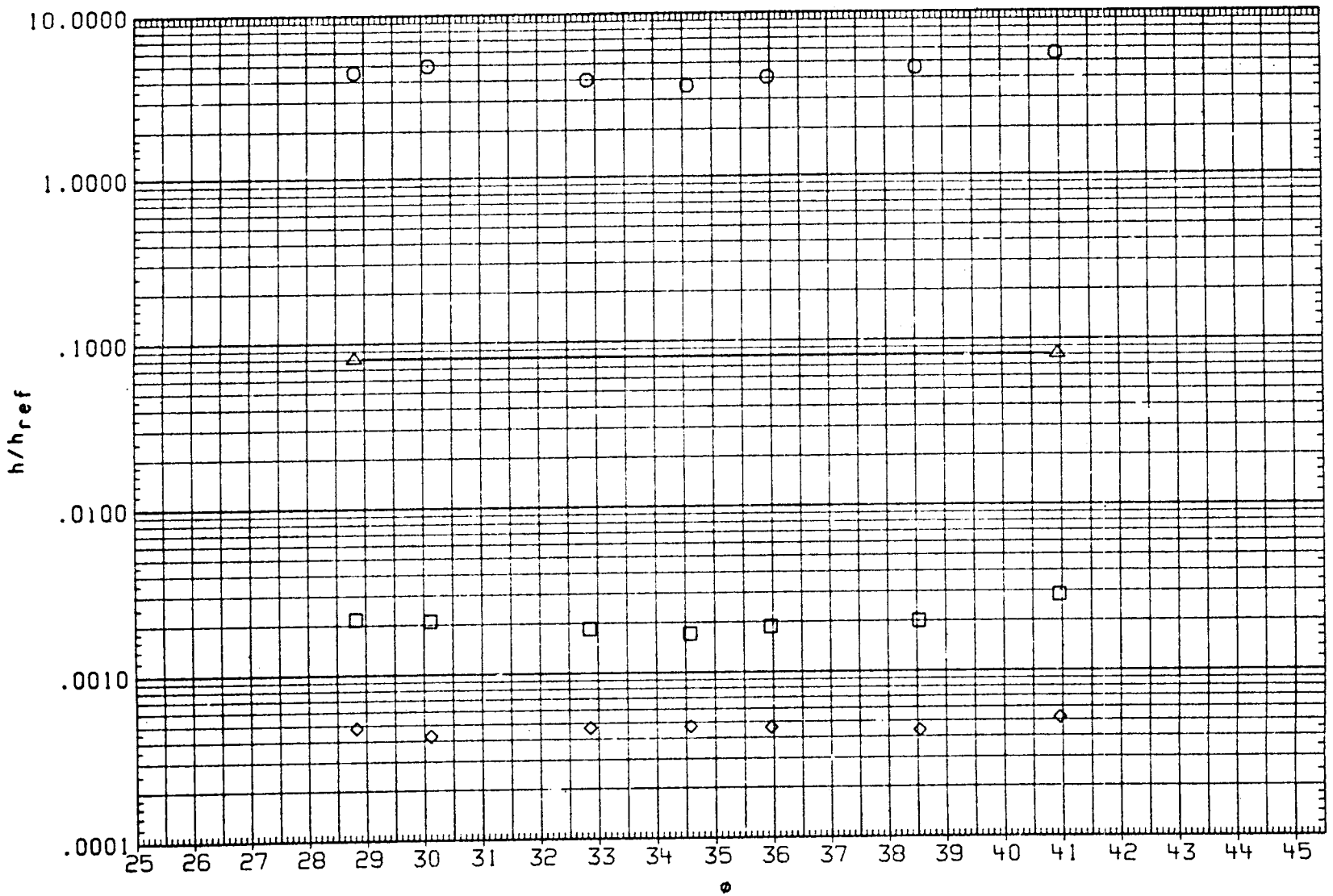

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 556

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

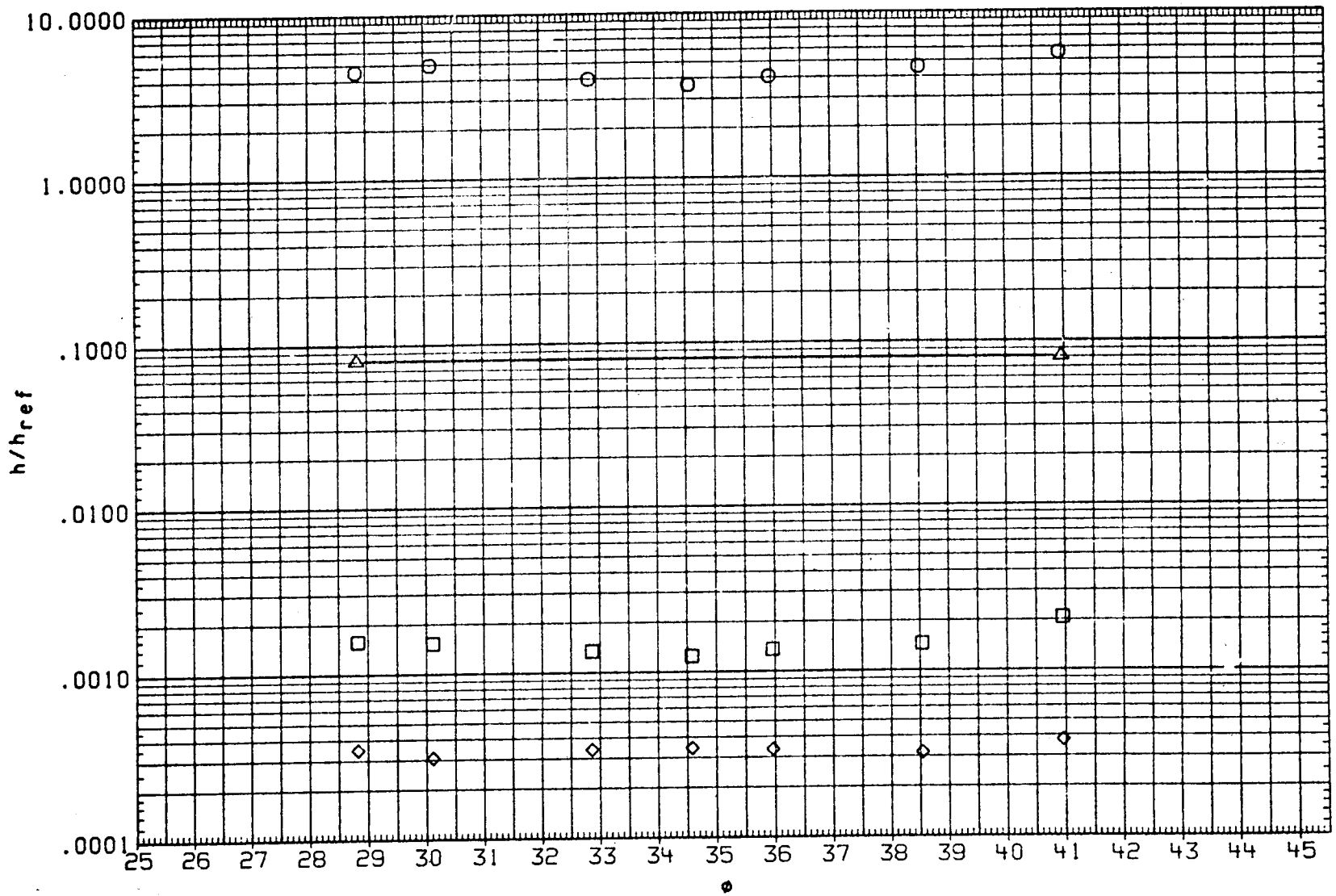

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .542 DATE 22 APR 78 PAGE 557

SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

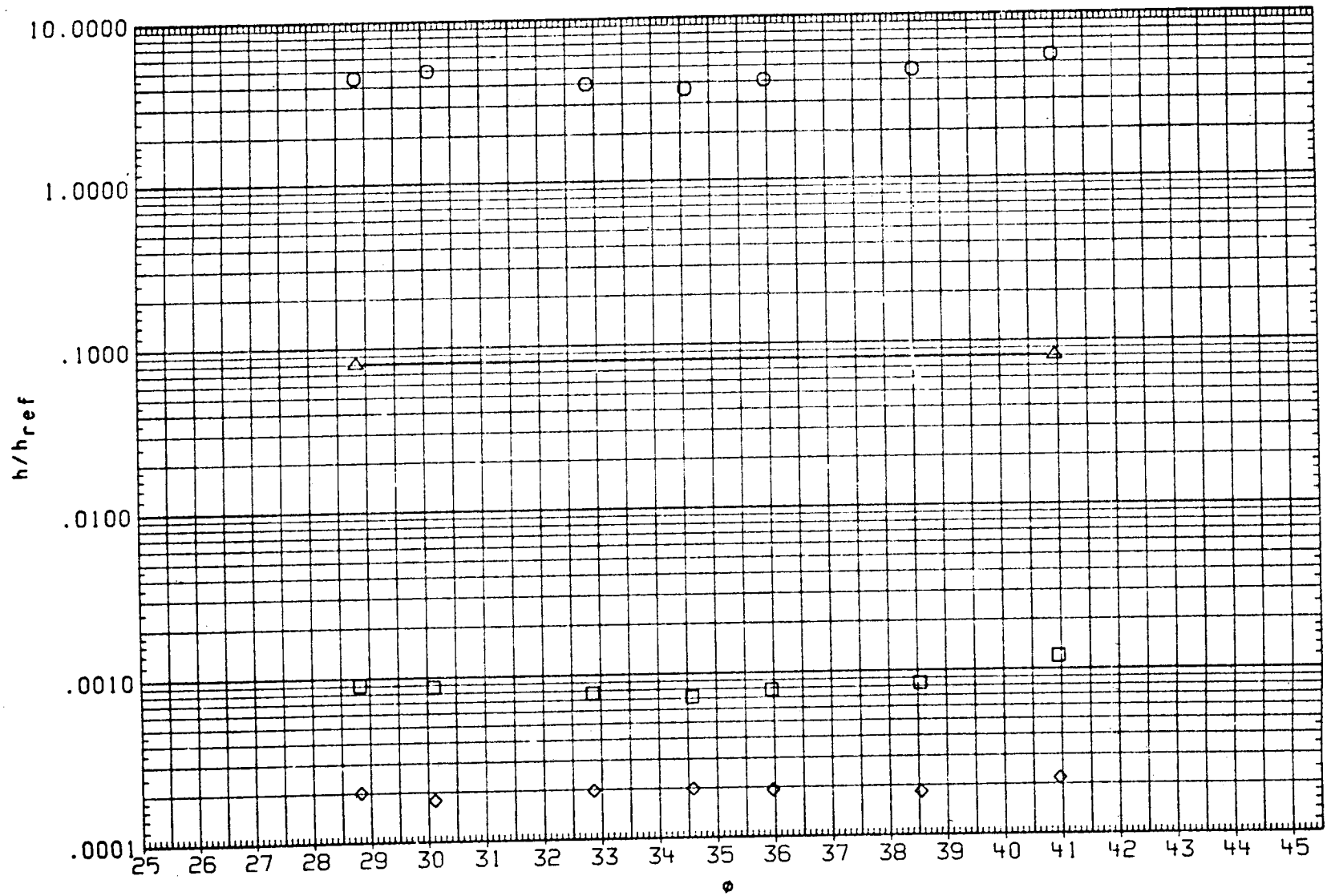

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 558

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (28/58)(38/58)(48/58)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (28)(38)(48)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (58)(50)(58)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 58 ET SURFACE	HU/HREF	.000	.000	5.000	5.300

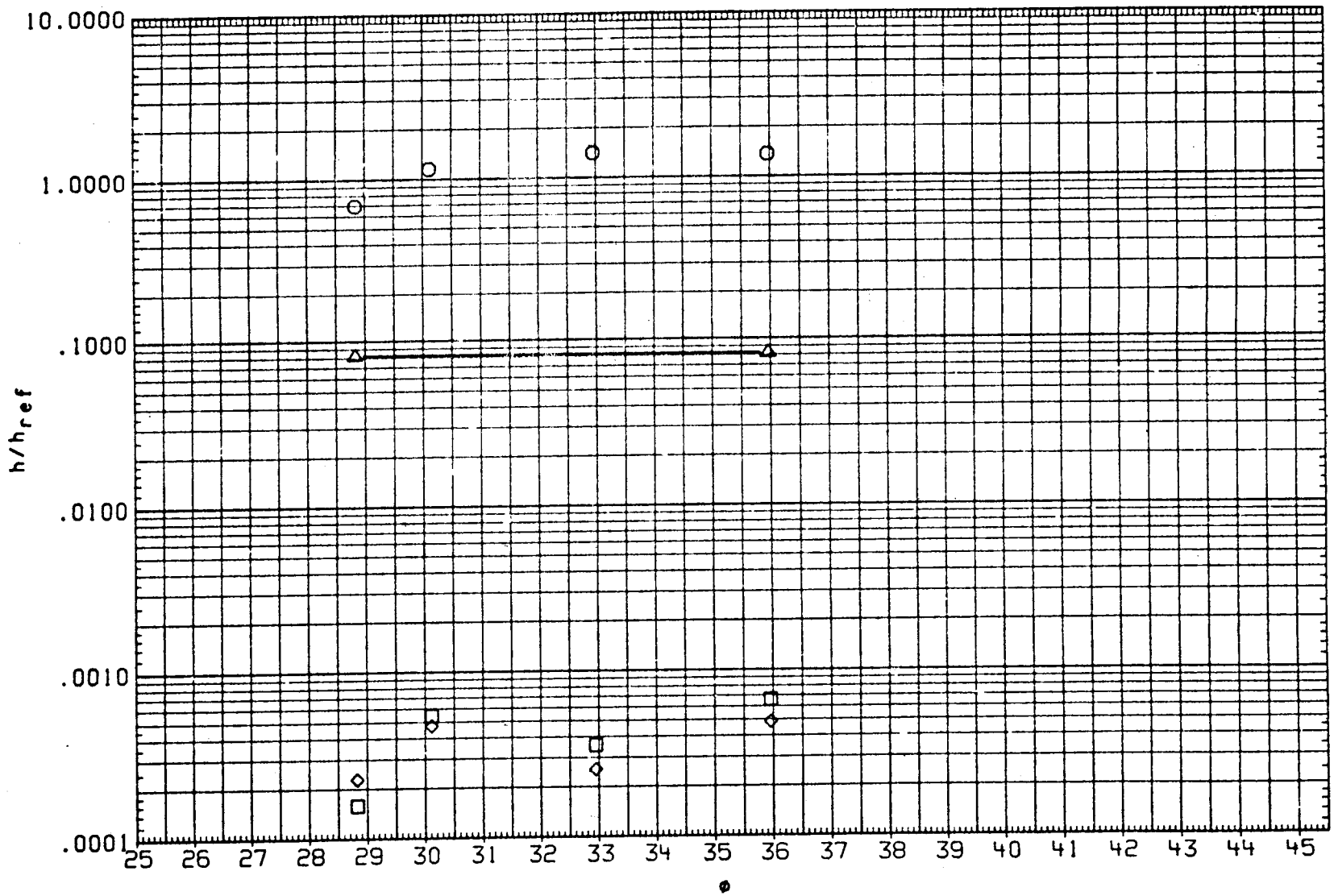

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .441 DATE 22 APR 78 PAGE 559

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

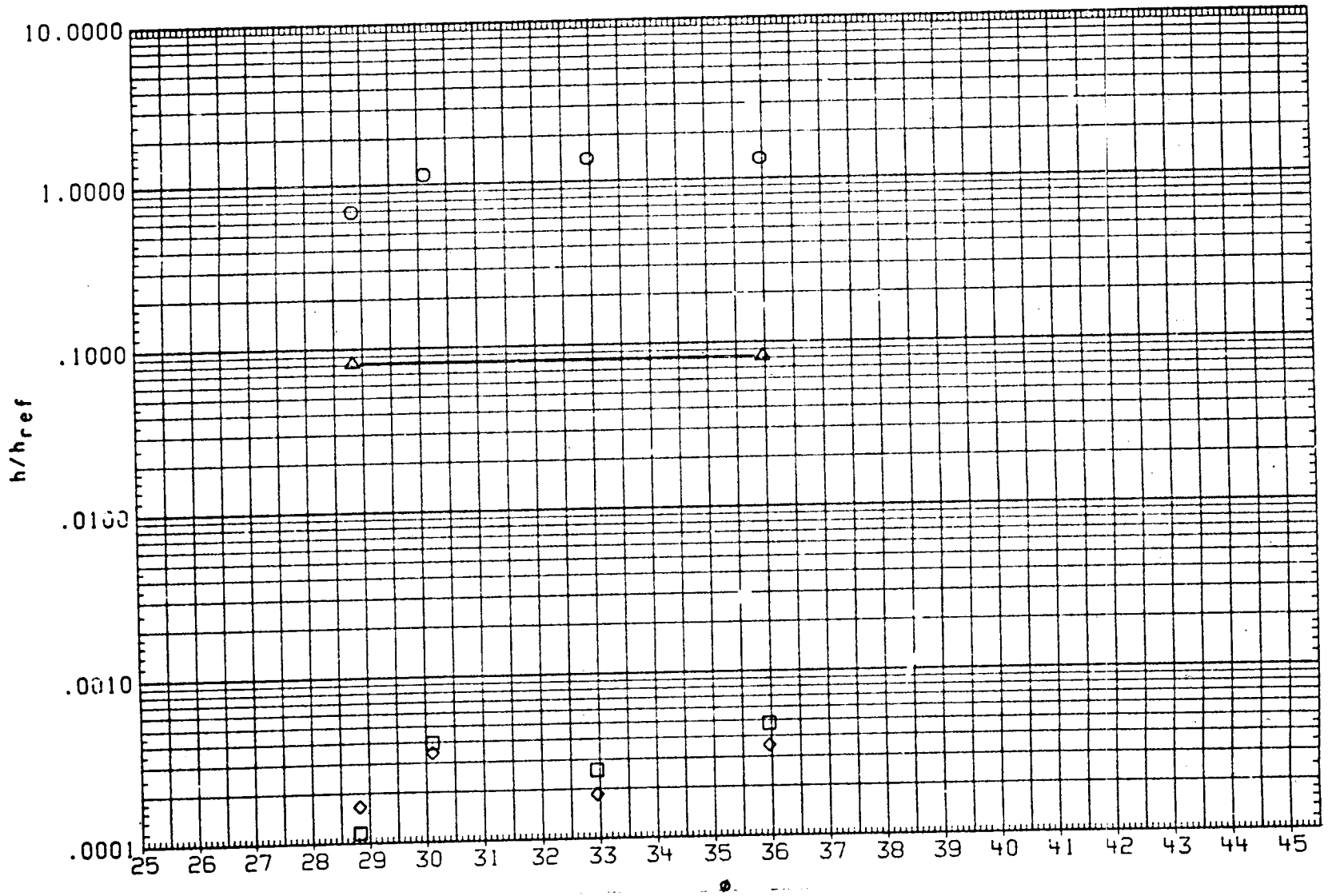

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .441 DATE 22 APR 78 PAGE 560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HW/HREF	.000	.000	5.000	5.300

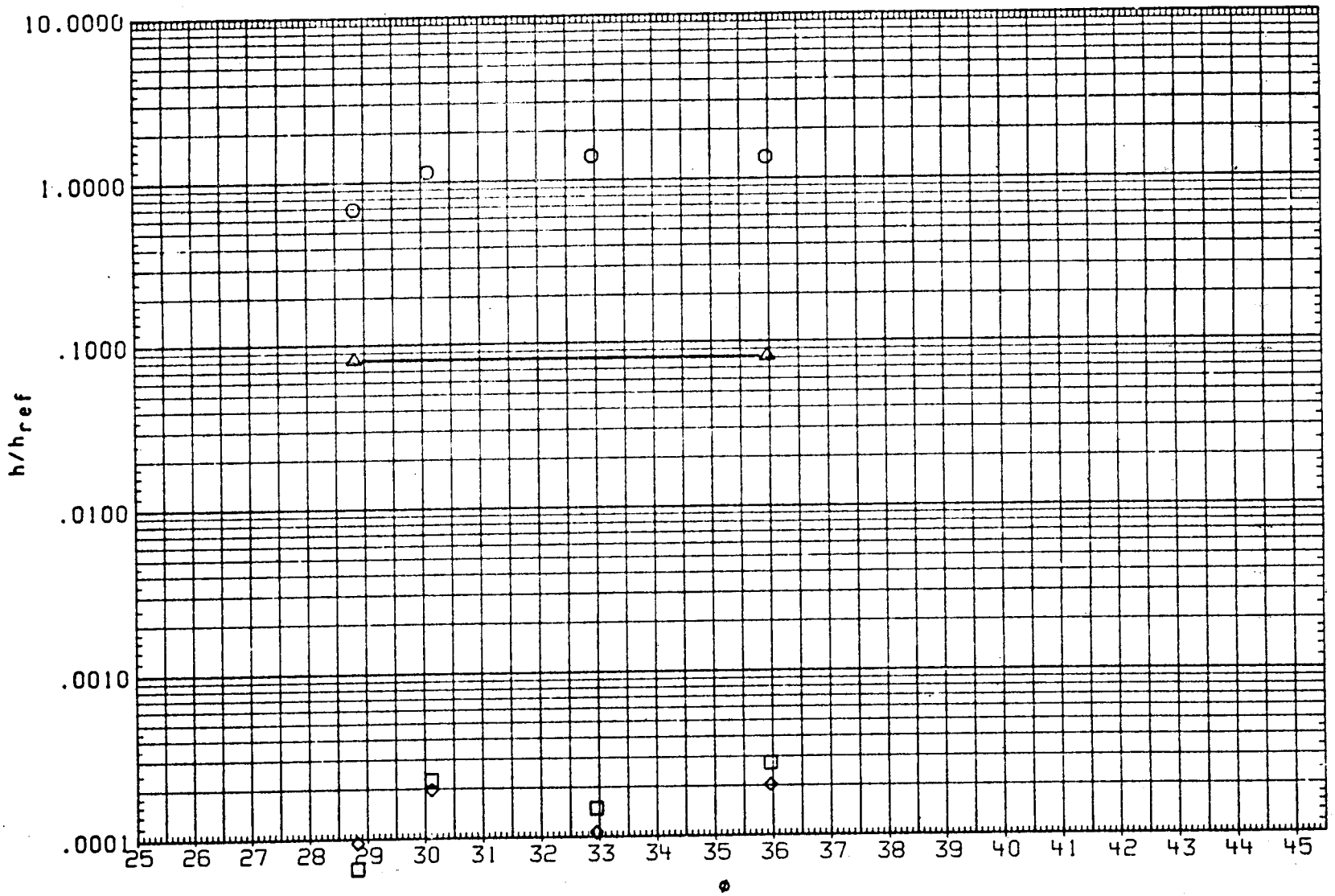

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .441 DATE 22 APR 78 PAGE 561

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

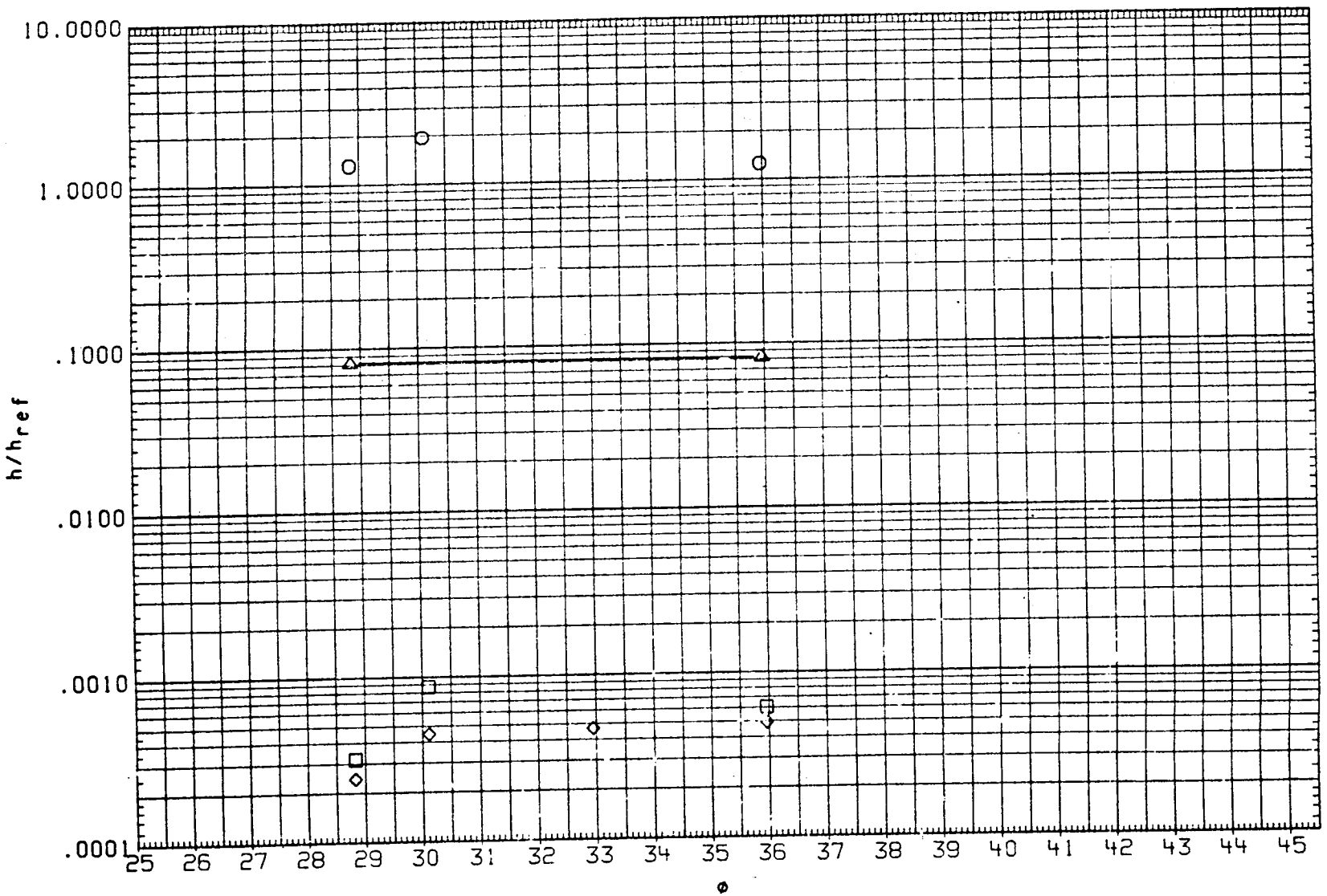

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 562

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

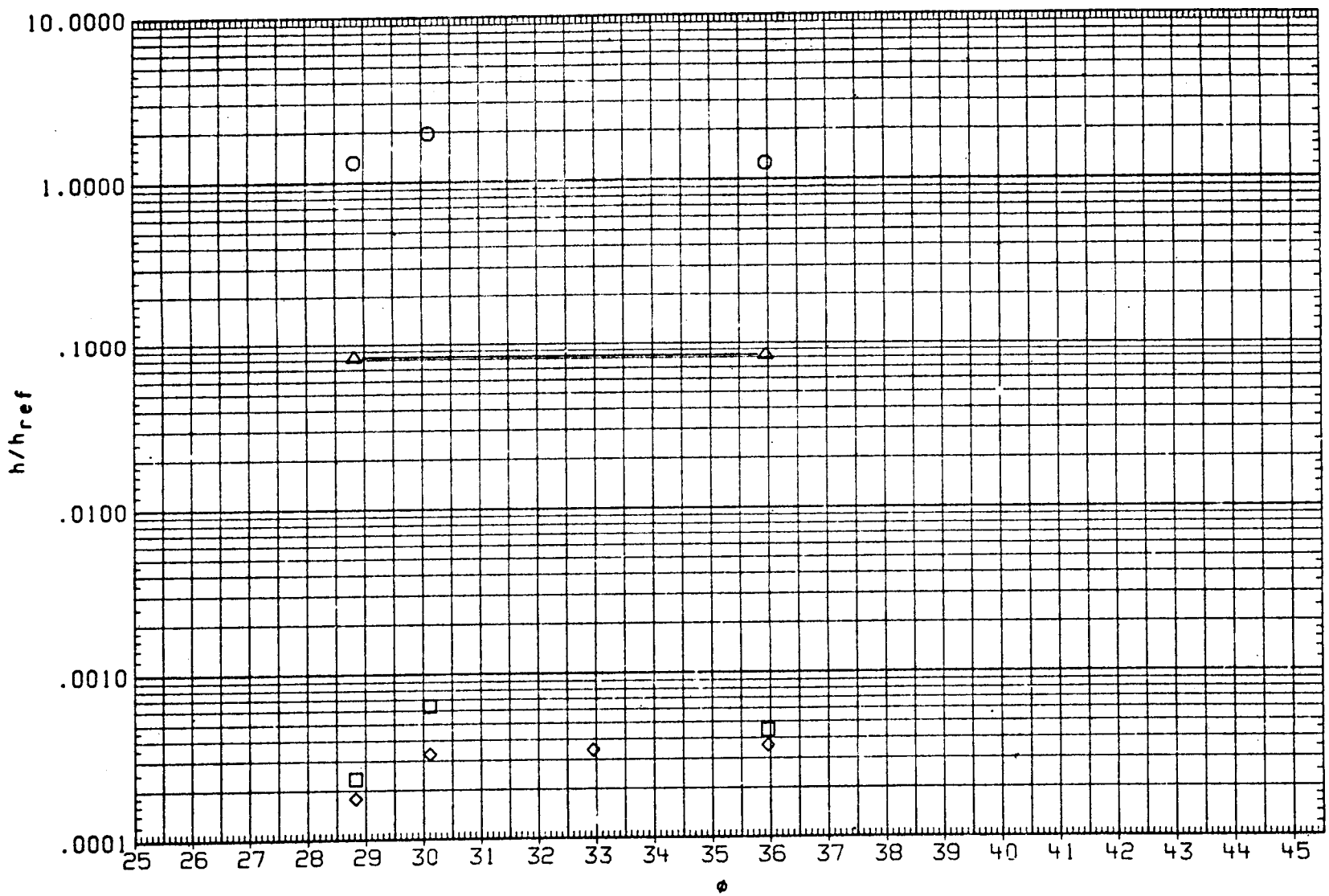

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .443 DATE 22 APR 78 PAGE 563

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

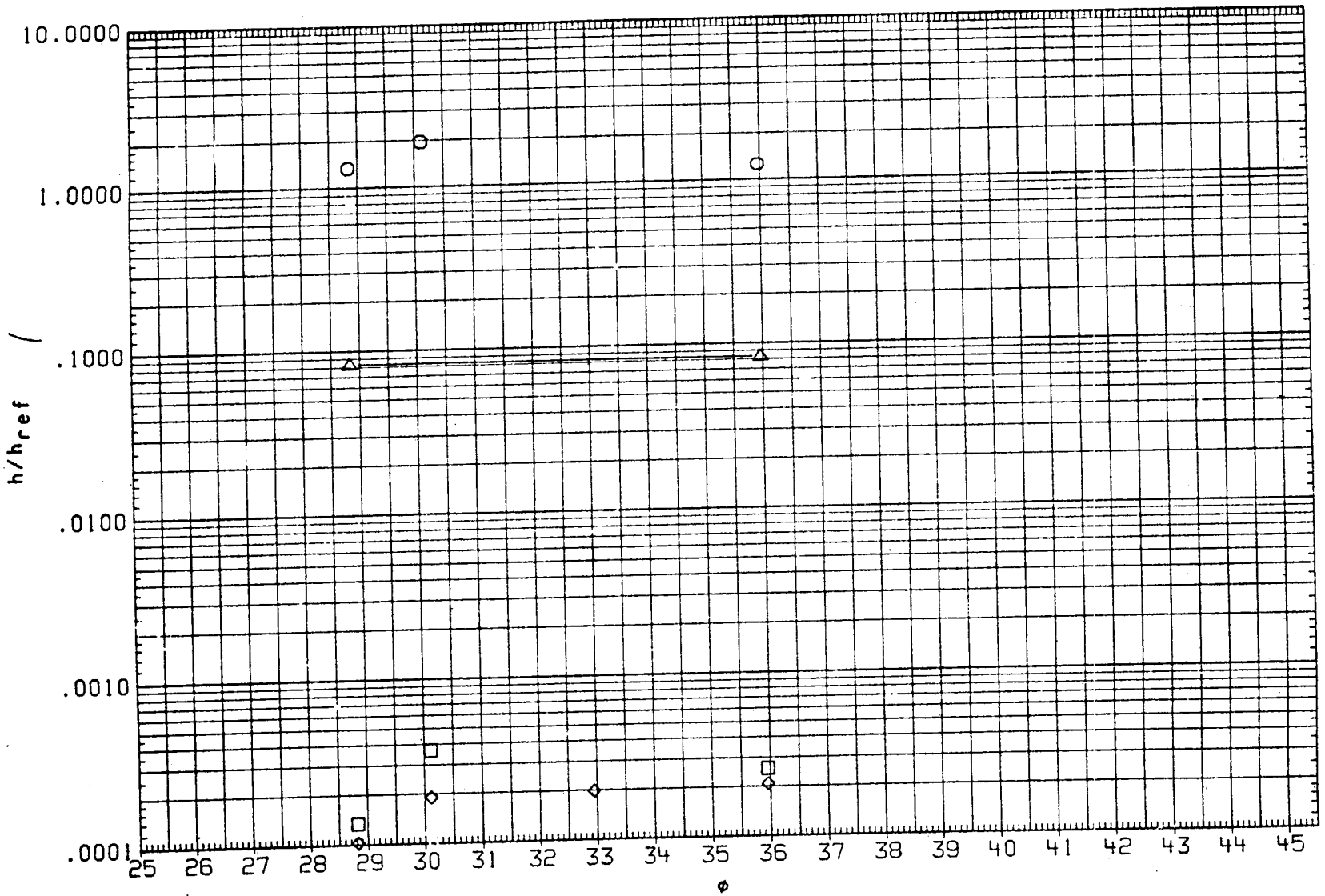

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .443 DATE 22 APR 78 PAGE 564

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

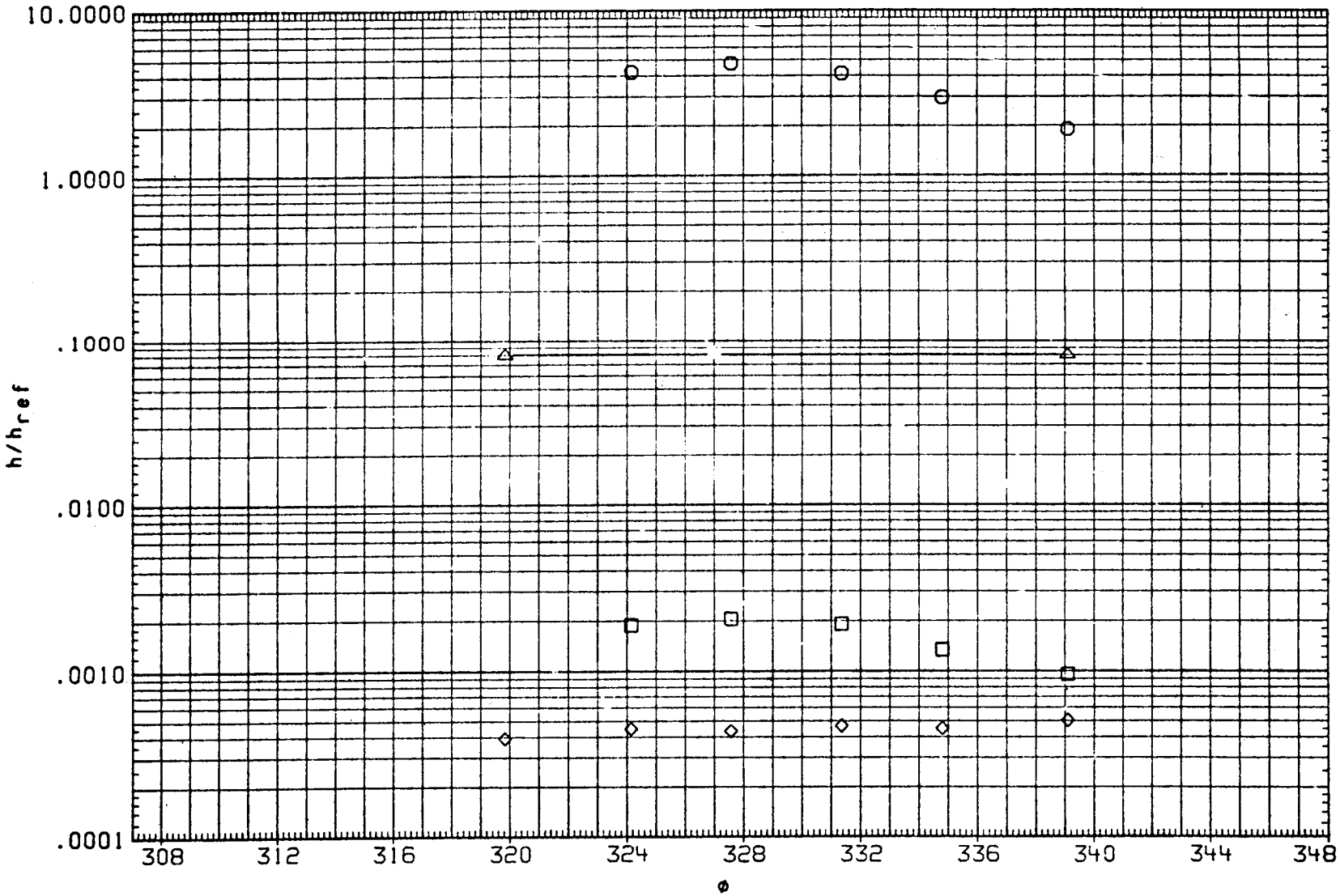

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .571 DATE 22 APR 78 PAGE 565

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

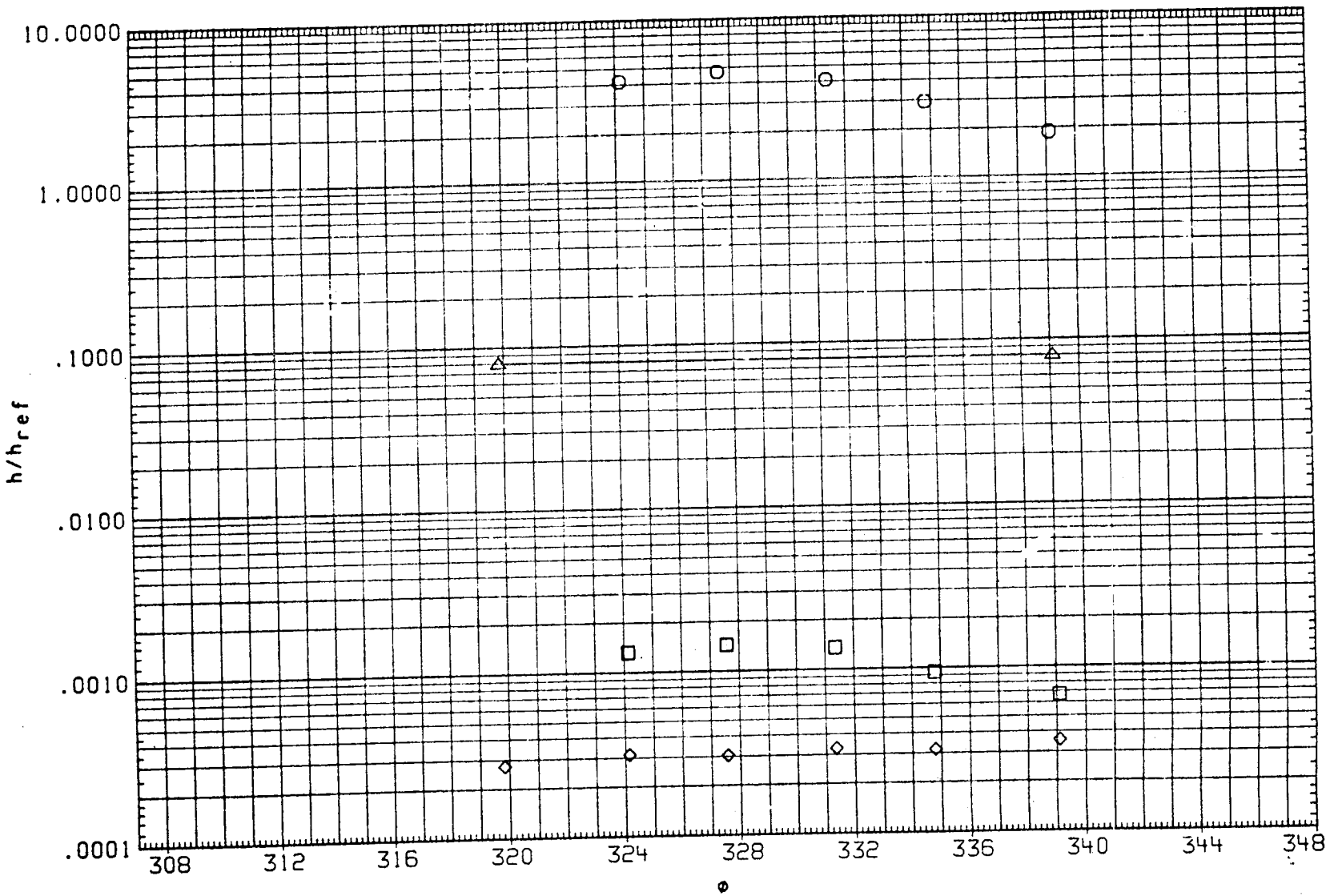

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 566

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

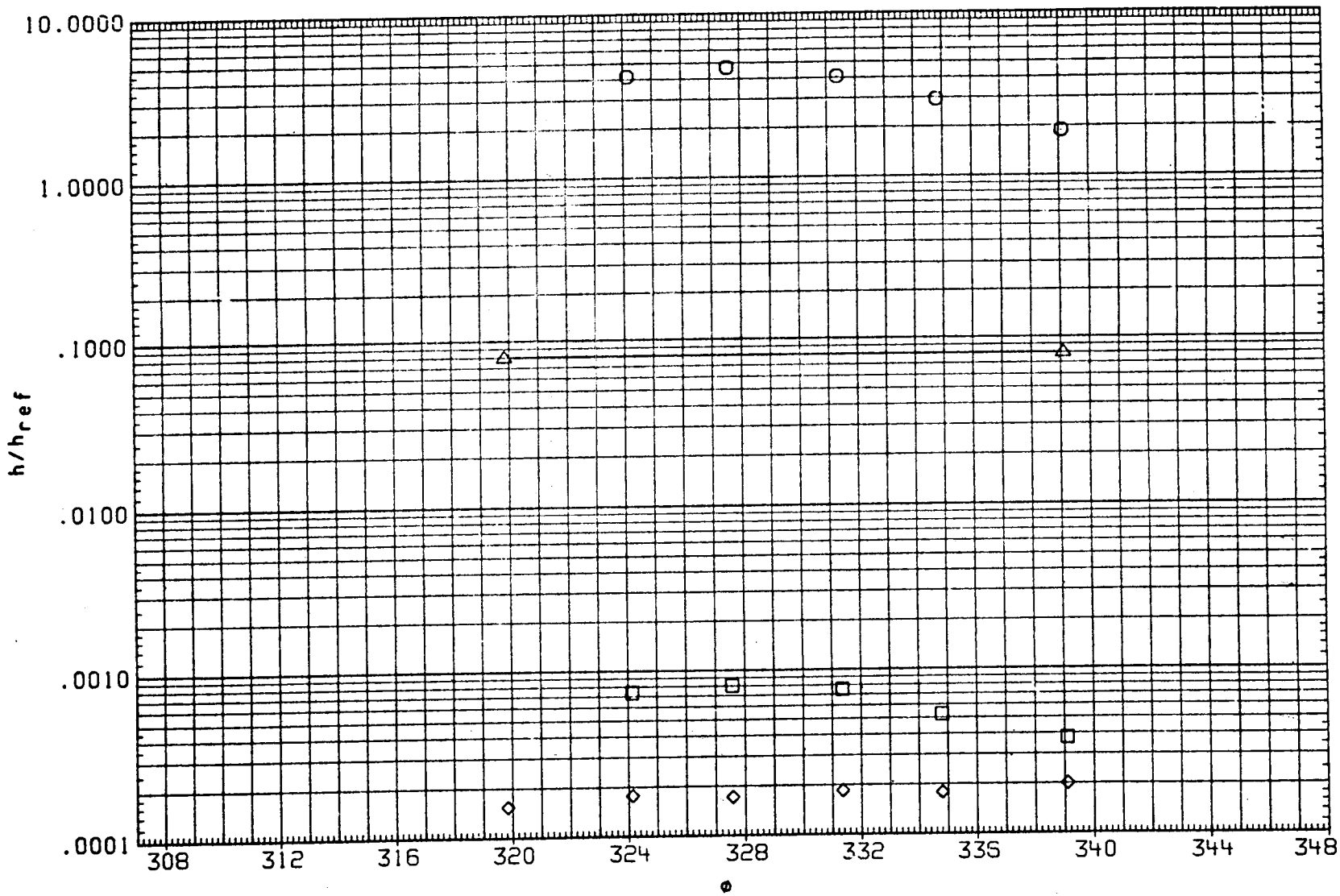

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78 PAGE 567

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

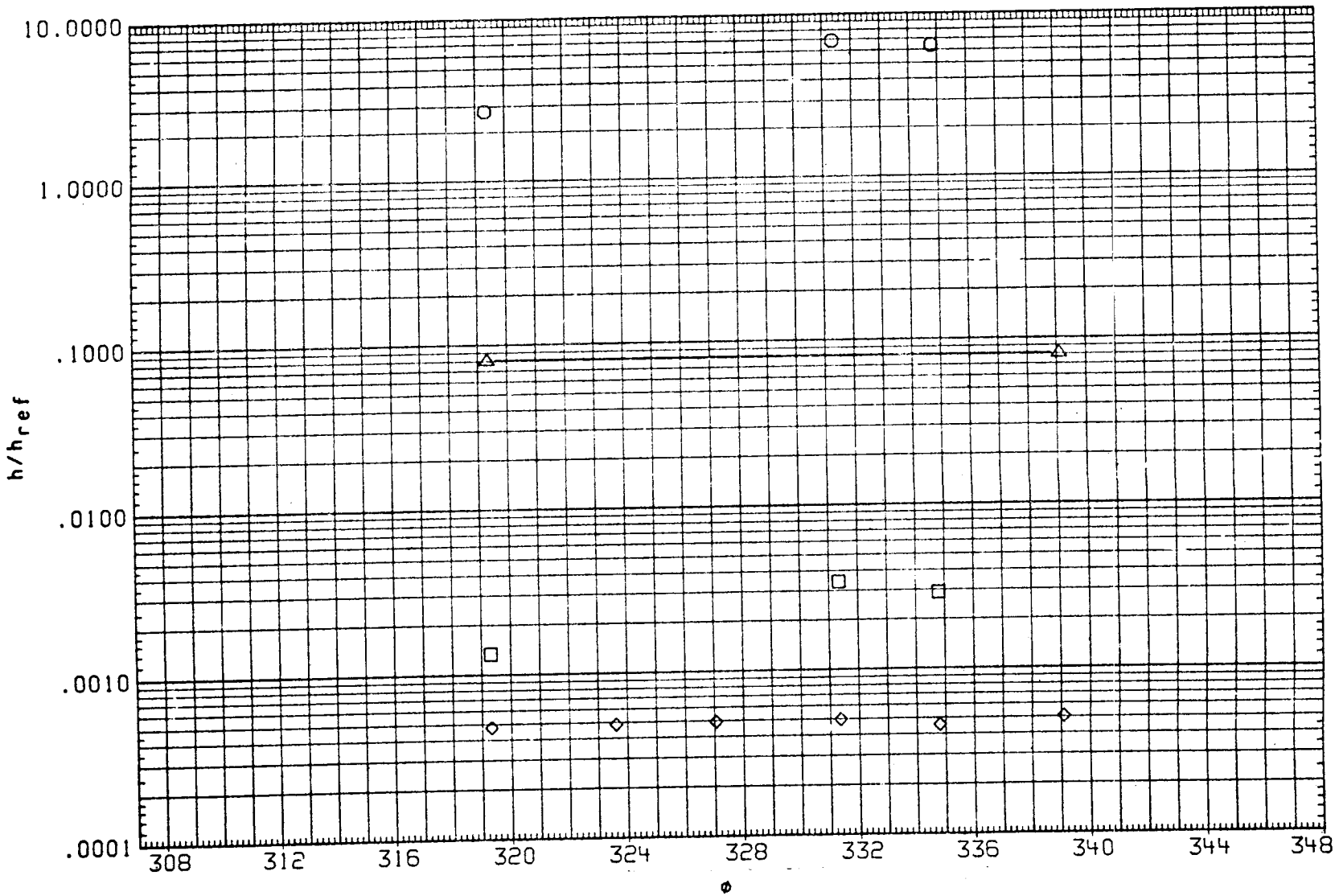

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 568

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

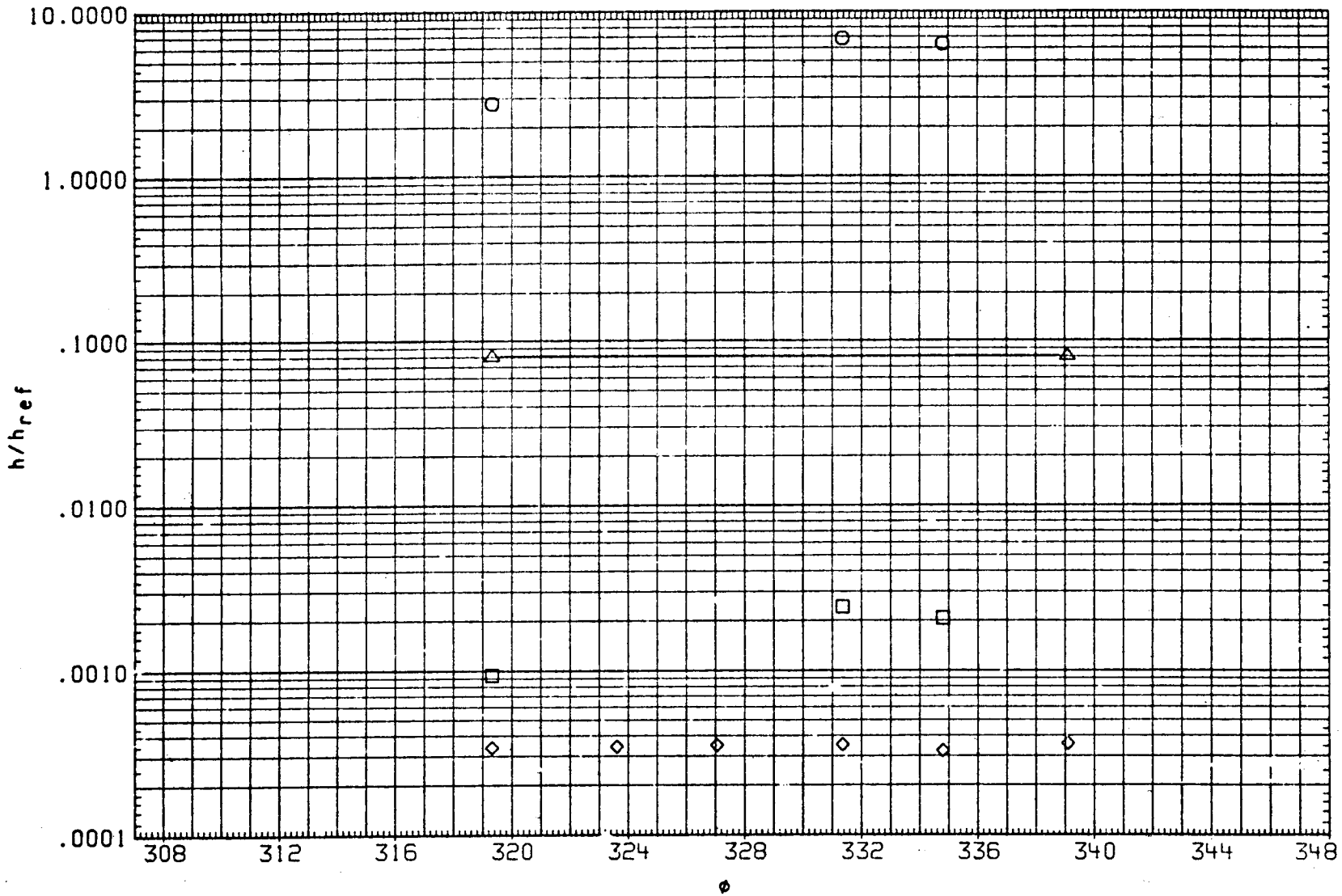

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 569

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(ᵛ3)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

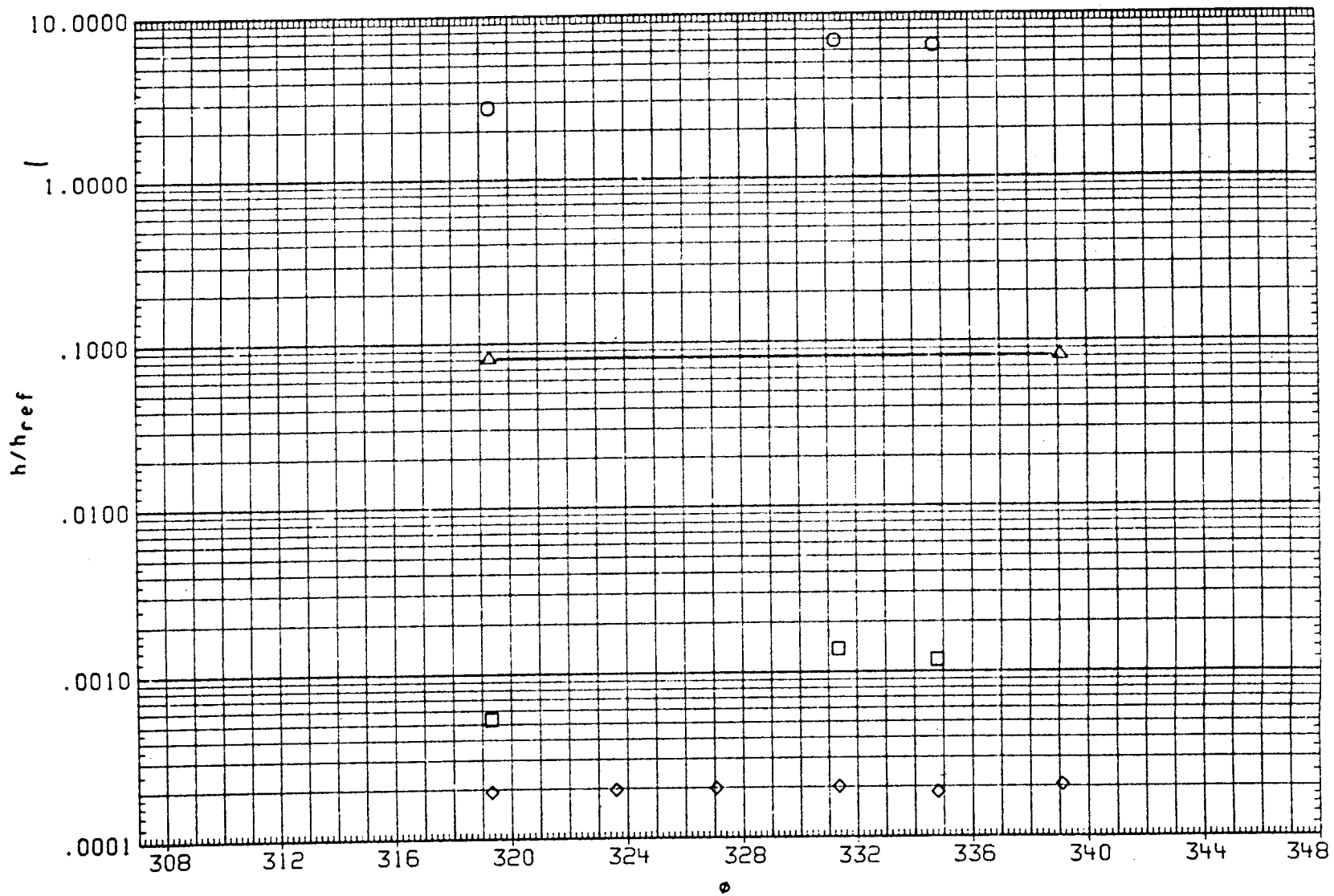

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

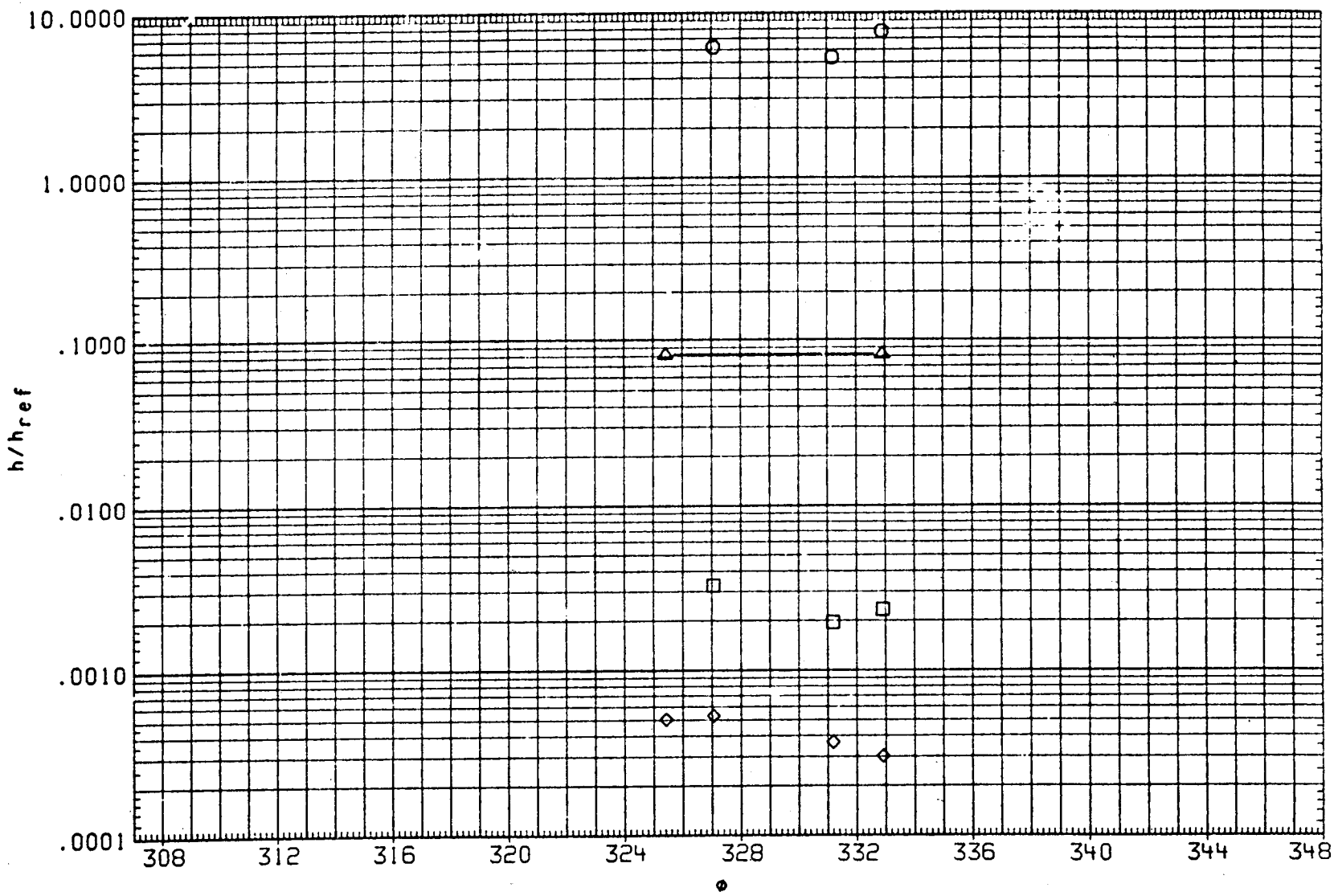

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .482 DATE 22 APR 78 PAGE 571

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

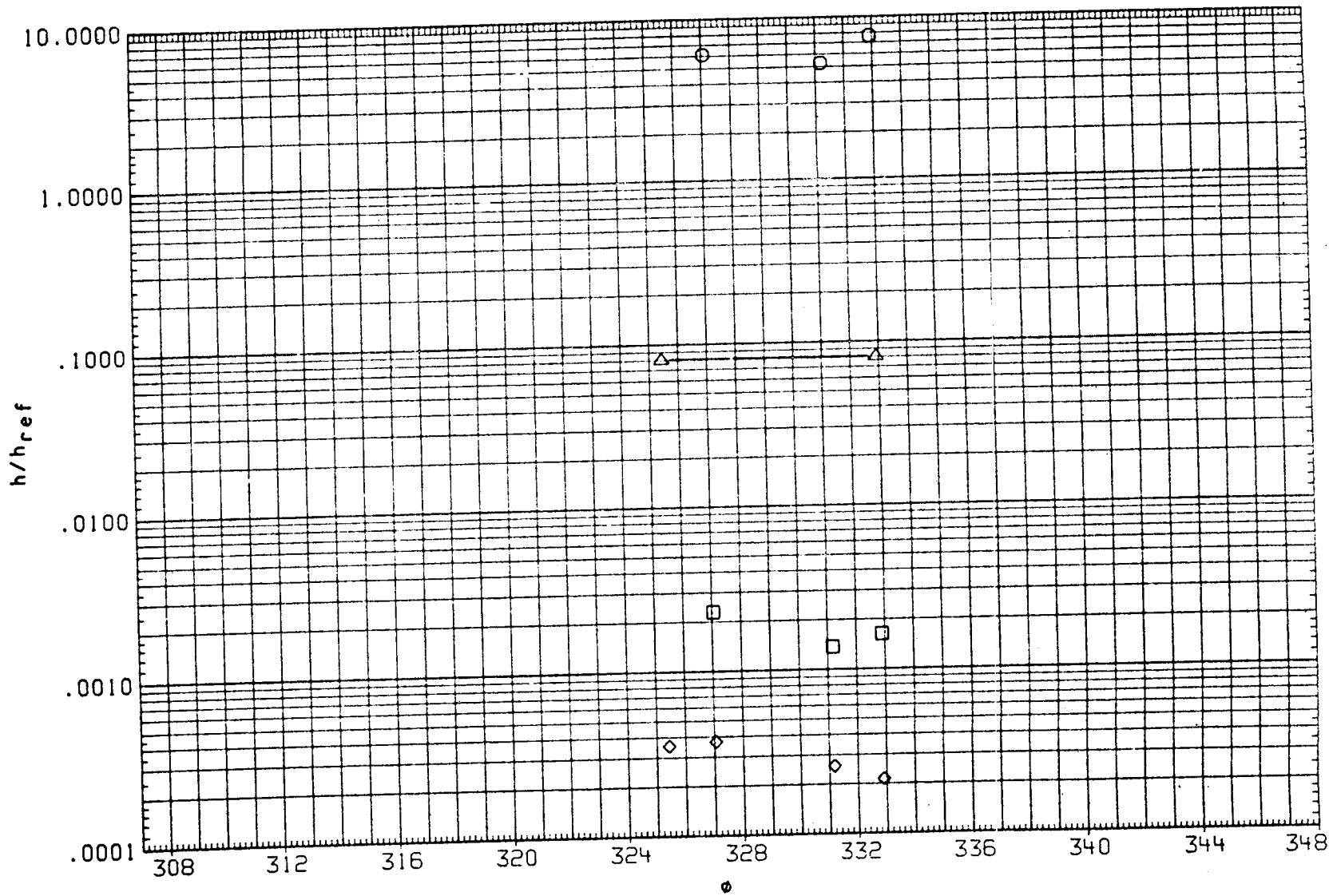

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 572

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

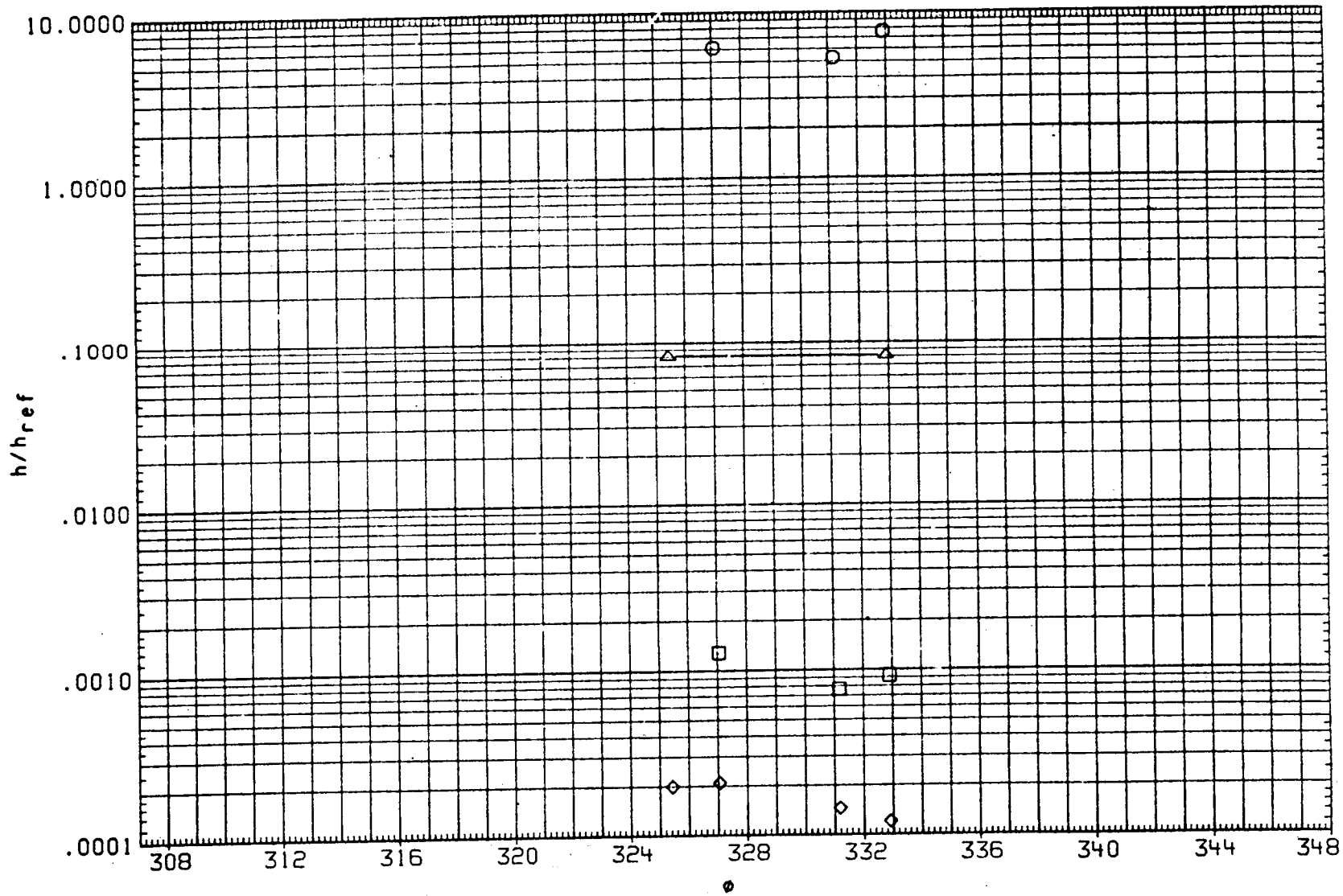

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78 PAGE 573

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

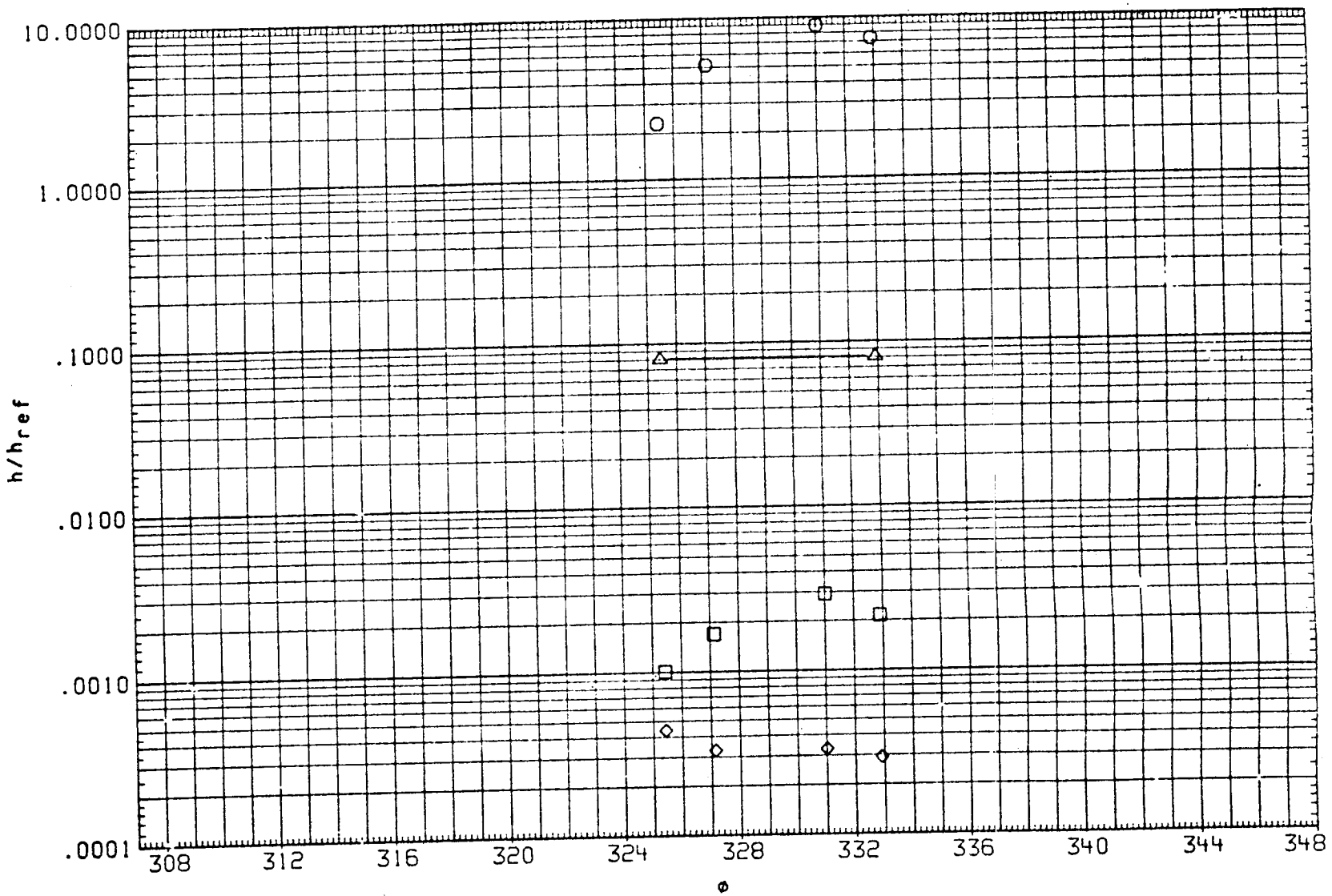

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 574

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N2000B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J2000B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K2000B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

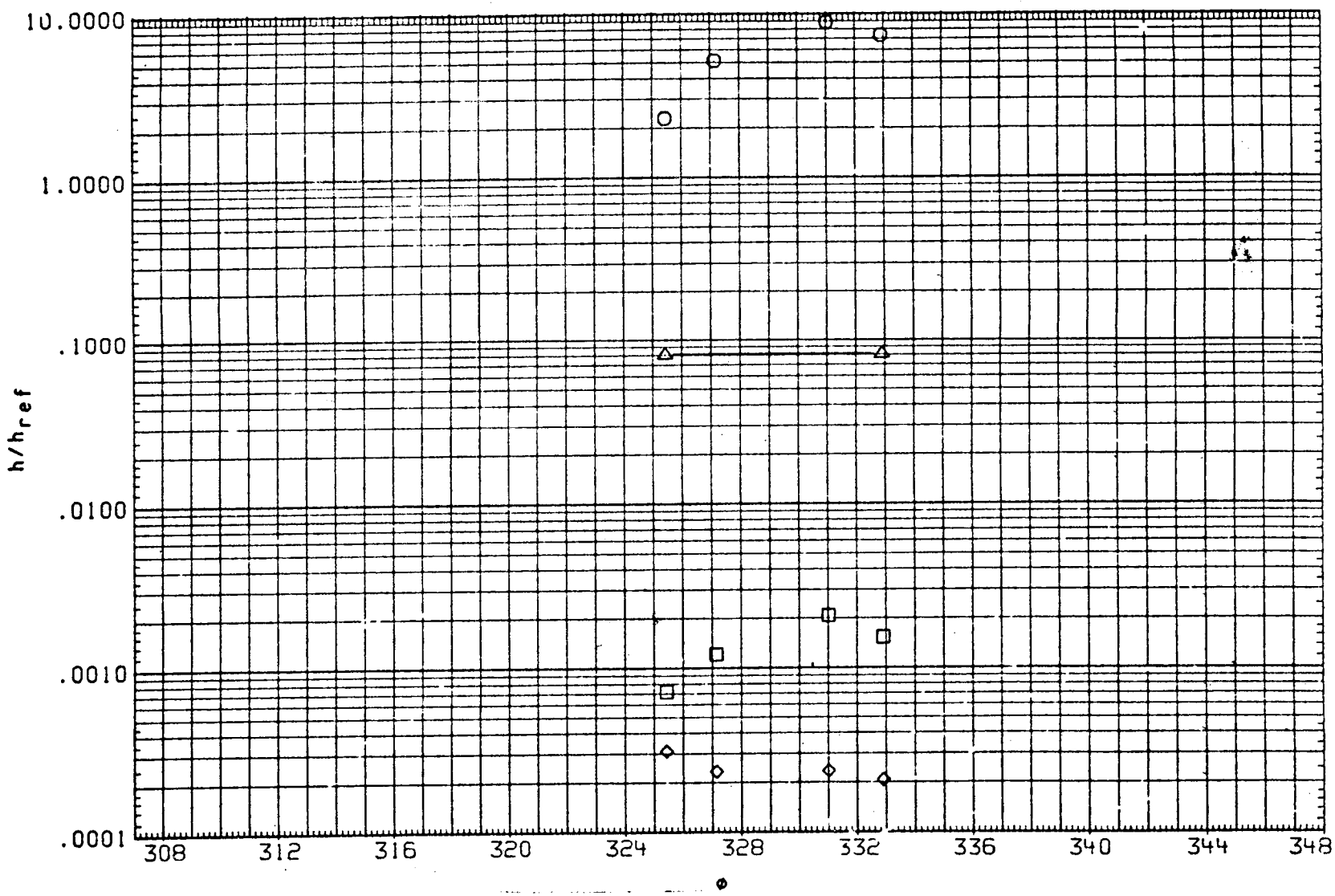

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .473 DATE 22 APR 78 PAGE 5.75

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT	MACH
(N20Q0B)	○	IH51A (2B/5B)(3B/5B)(4B/5B)	ET SURFACE	.000	.000	5.000	5.300
(J20Q0B)	□	IH51A (2B)(3B)(4B)	ET SURFACE	.000	.000	5.000	5.300
(K20Q0B)	◇	IH51A (5B)(5B)(5B)	ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE	HU/HREF	.000	.000	5.000	5.300

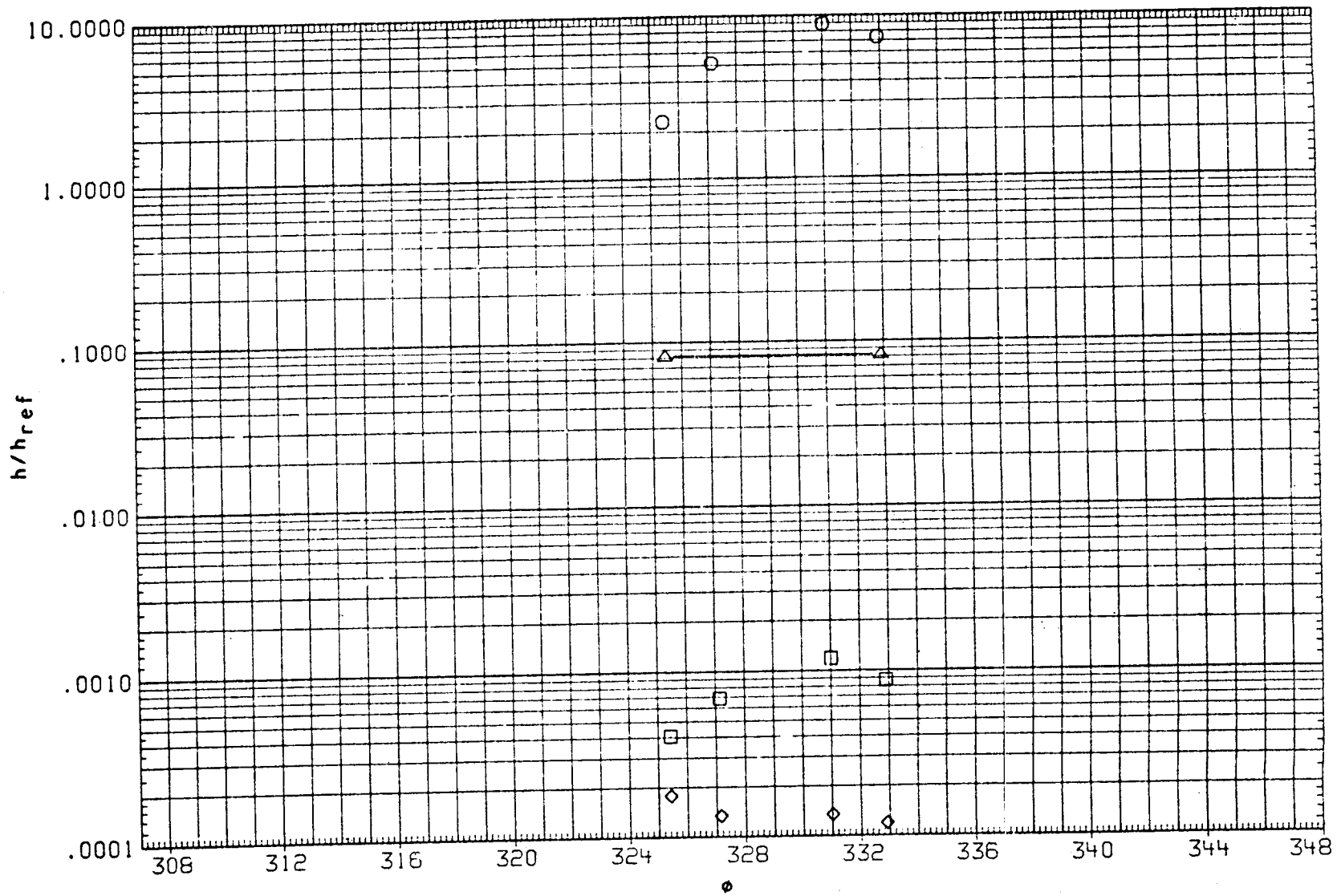

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 576

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

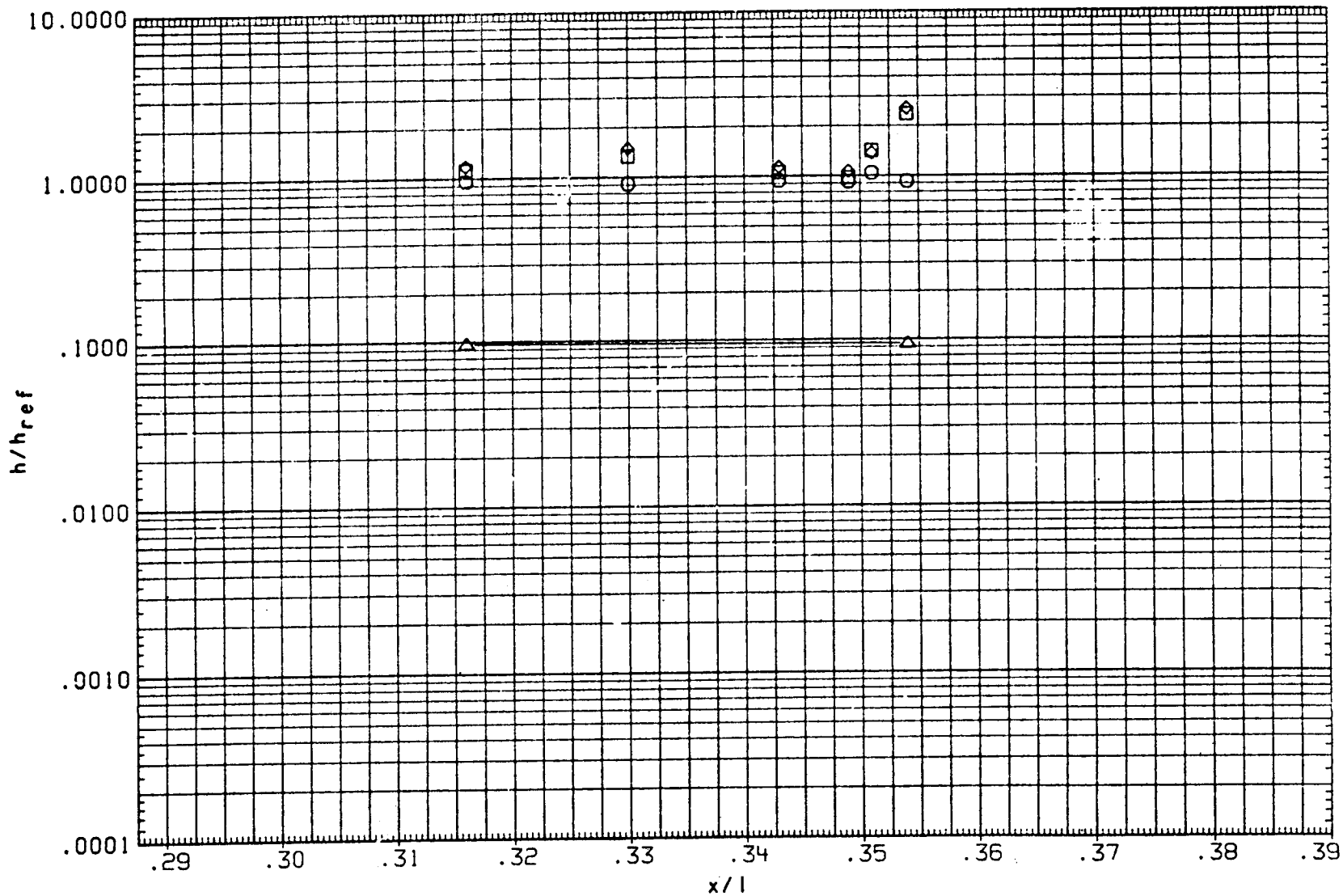

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78 PAGE 577

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

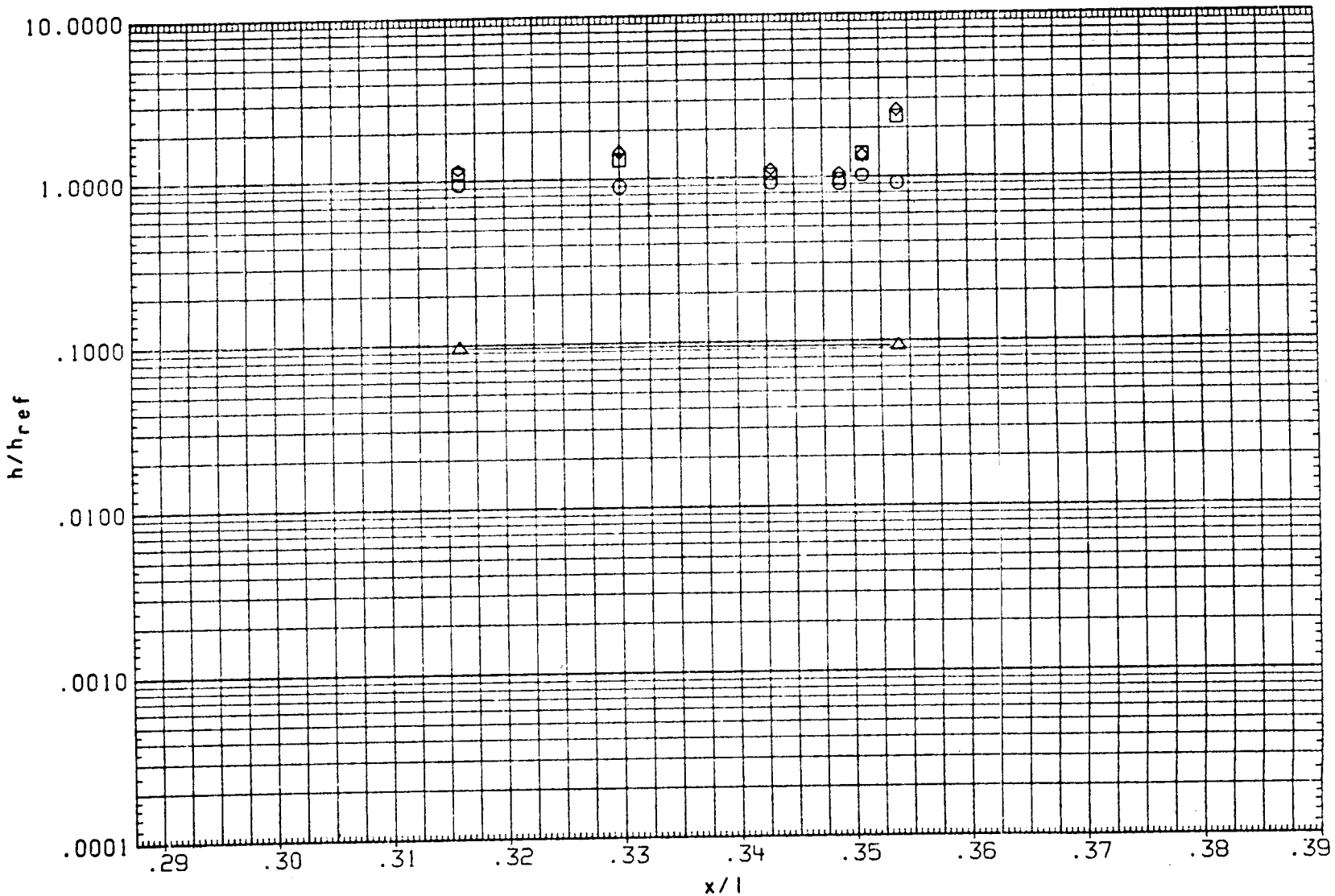

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 PHI = 24.690 DATE 22 APR 78 PAGE 578

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

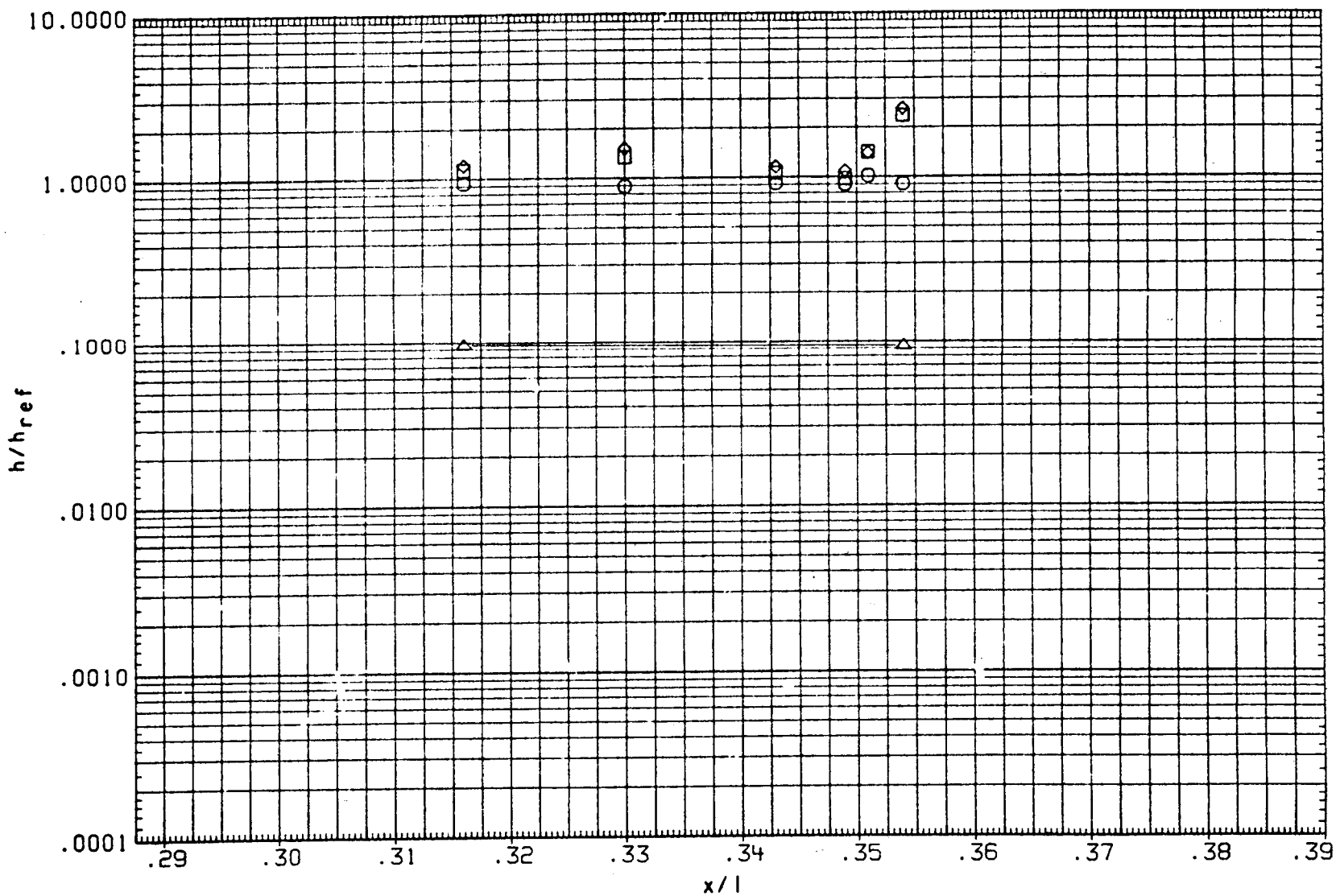

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78 PAGE 579

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L02)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20L0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

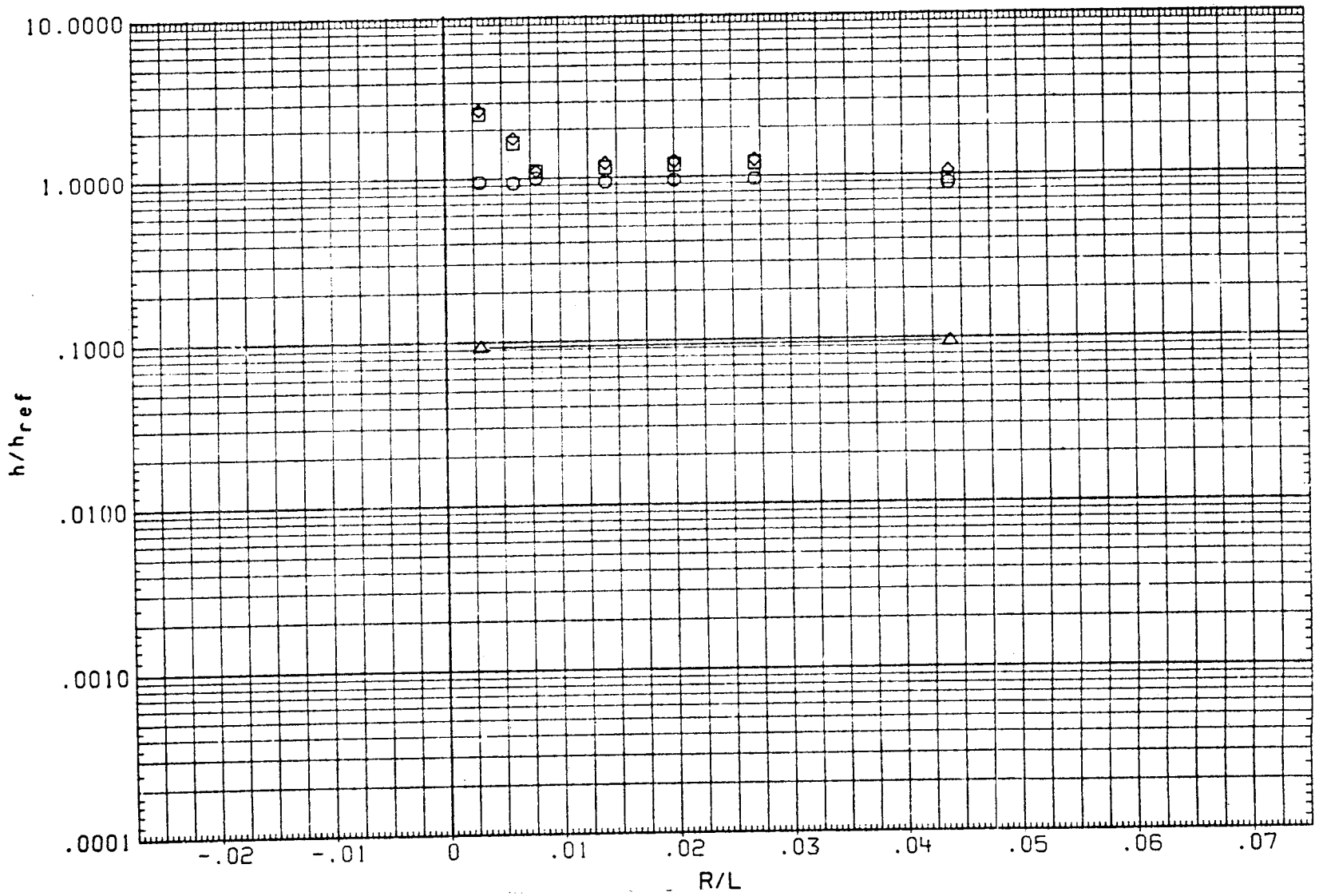

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L02)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20L0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

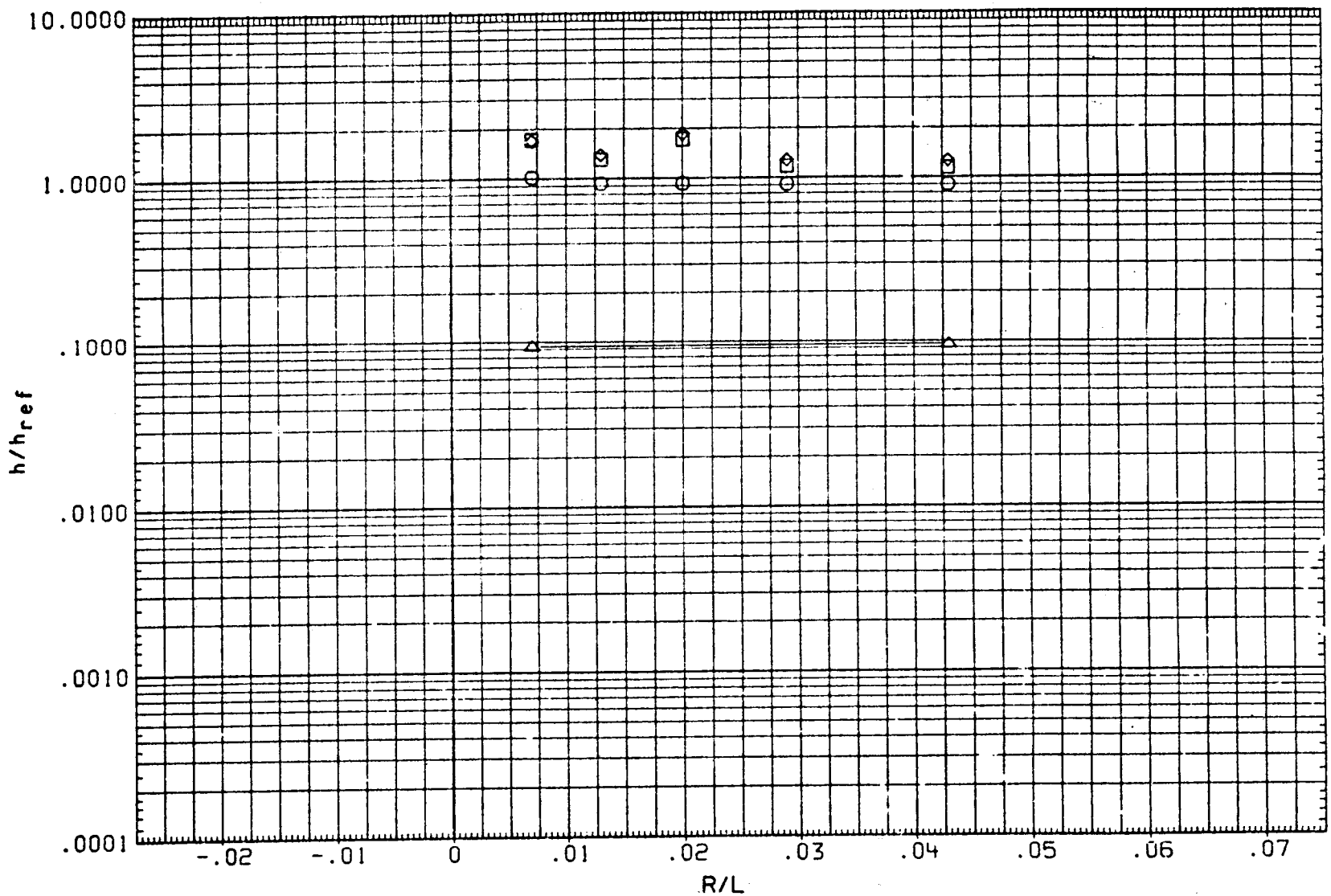

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 521

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L02)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20L0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

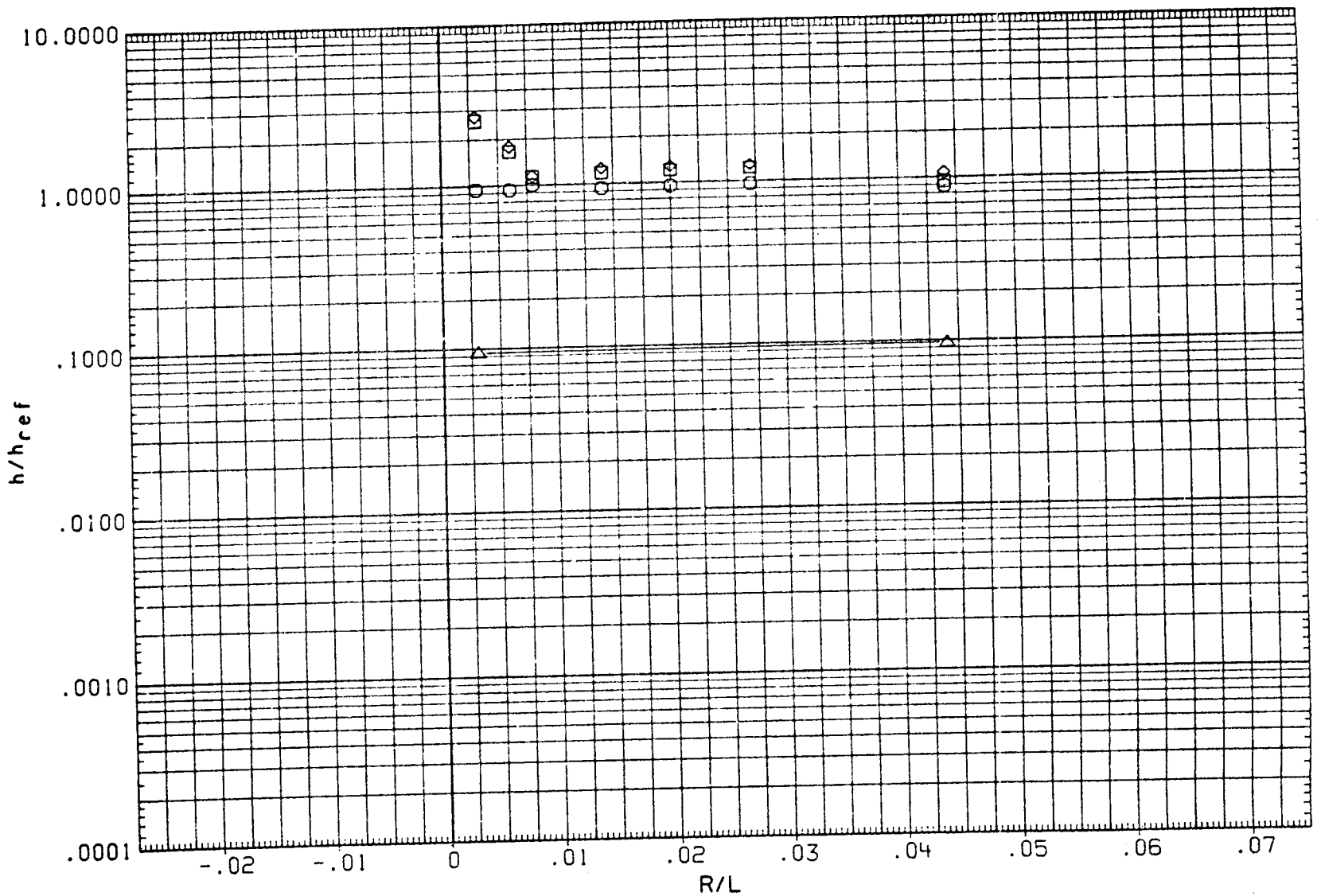

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 582

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L02)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20L0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

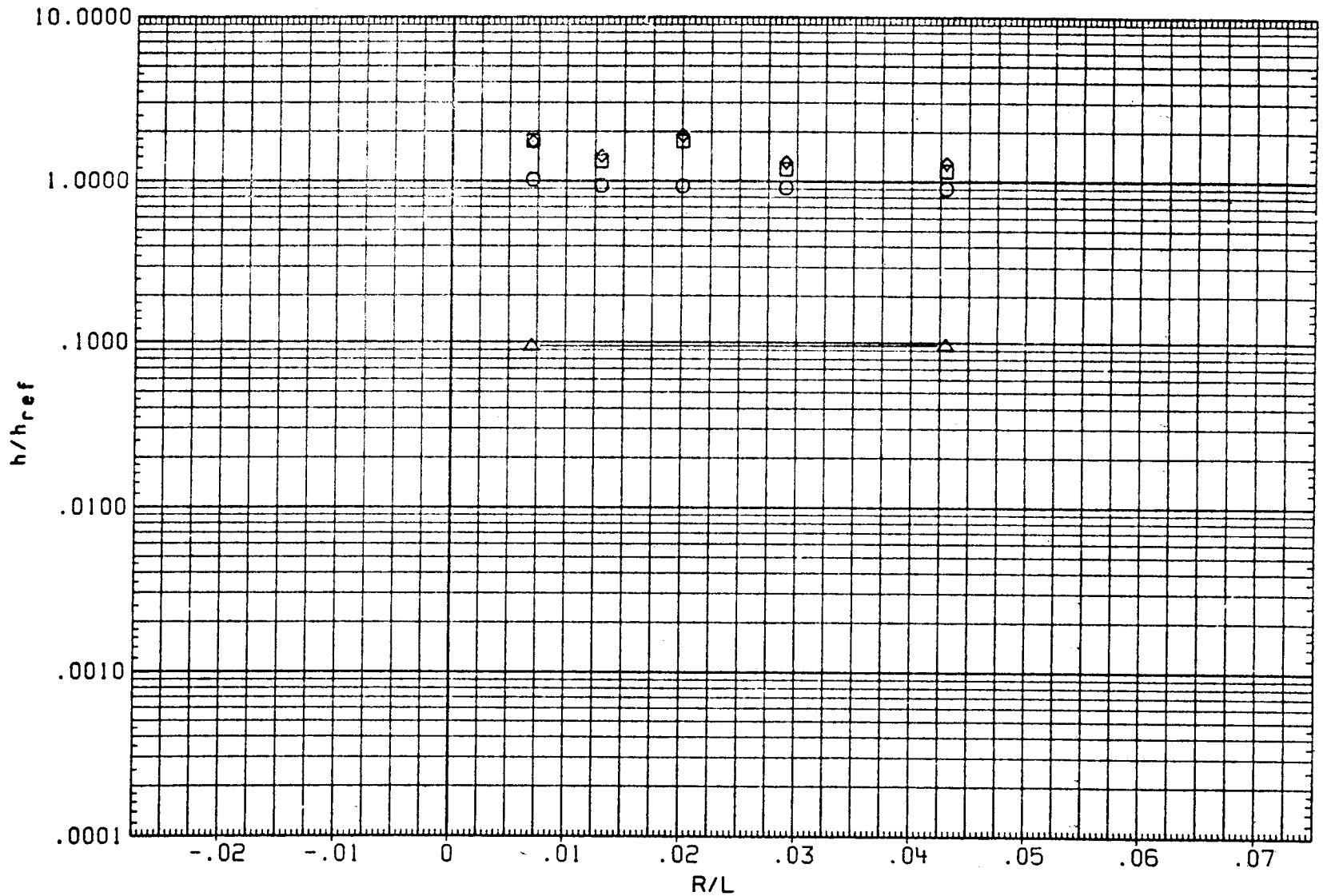

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L02)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20L0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

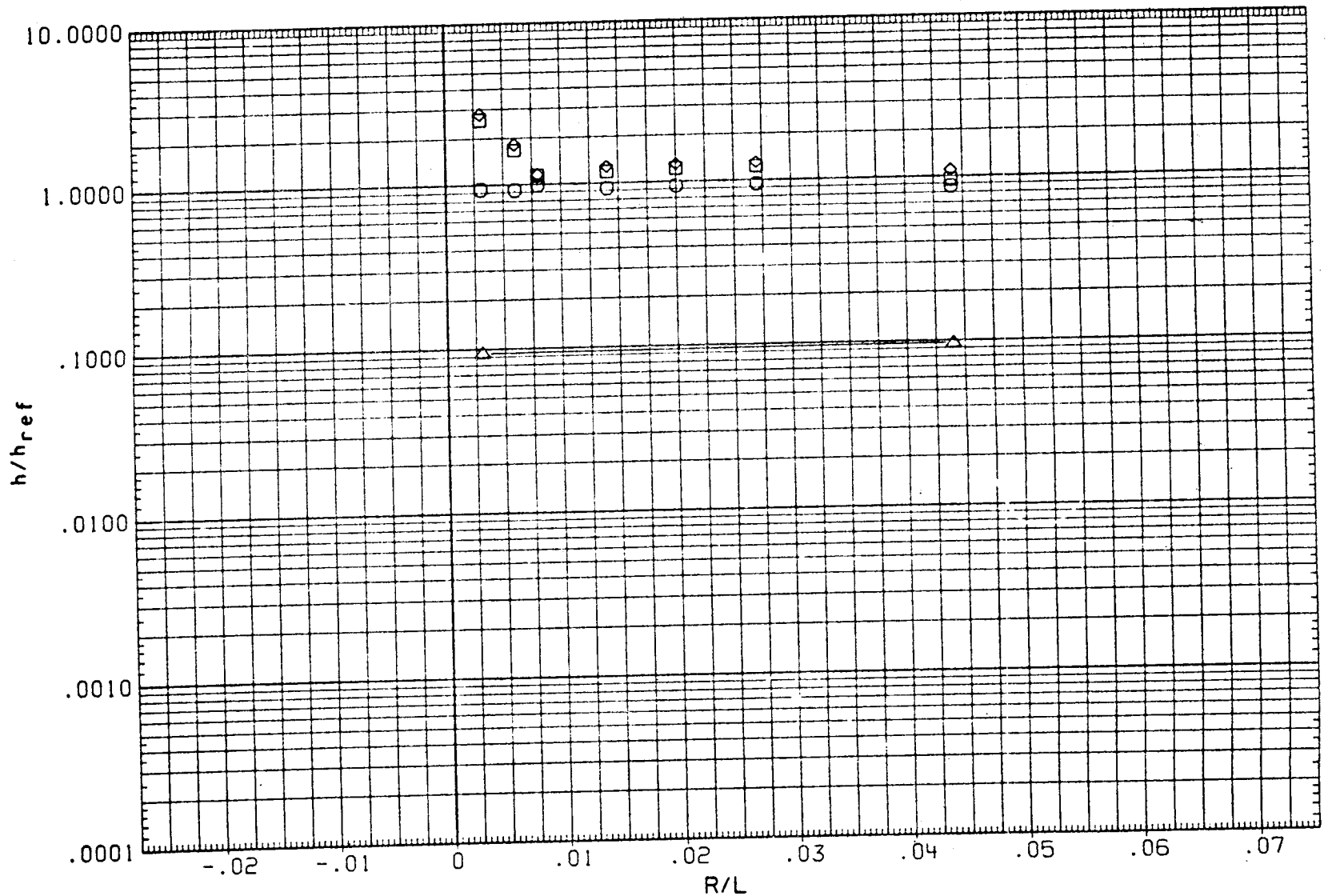

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L02)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20L0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5A)	△	IH51A THEORY CONF 5A LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

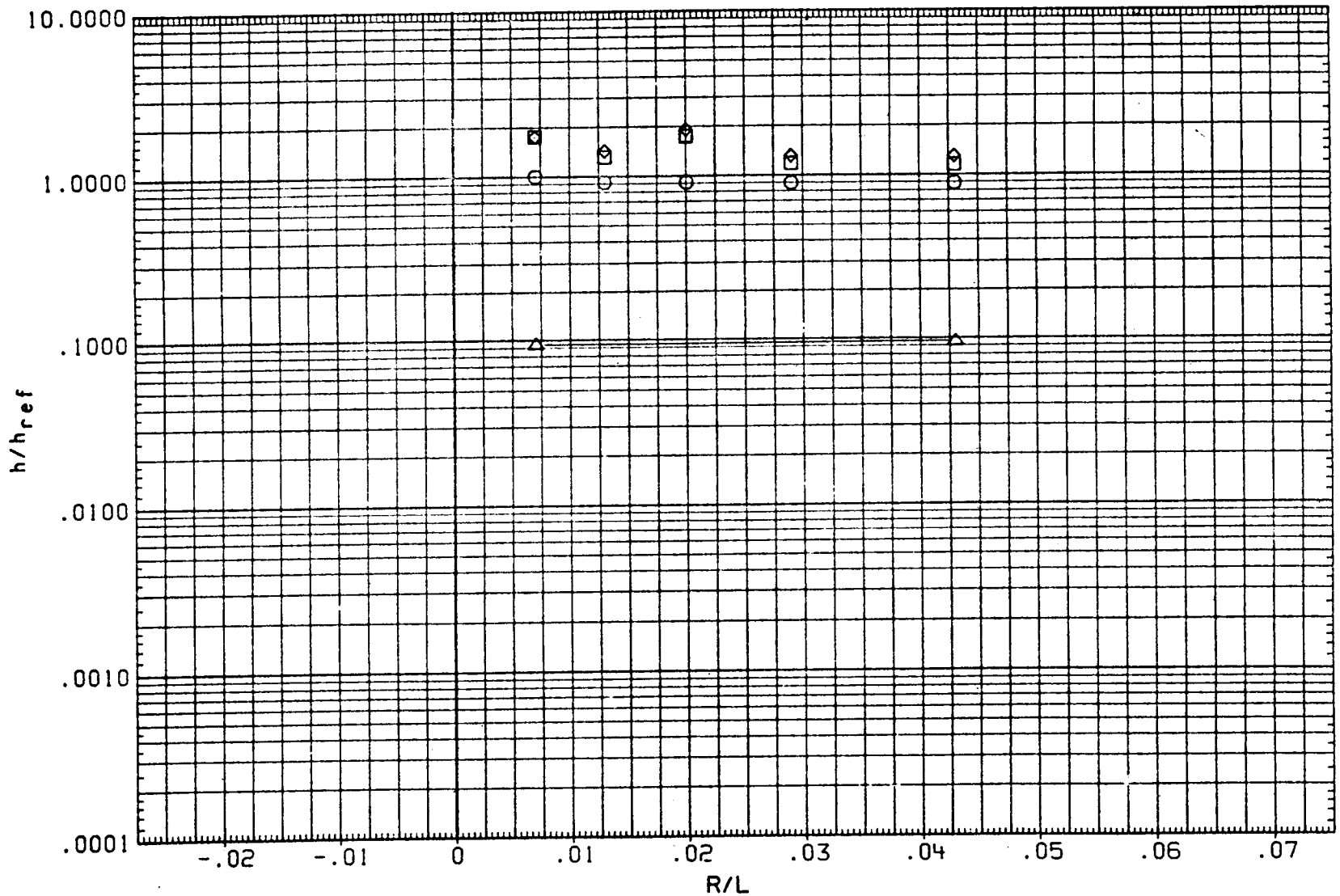

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 585

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

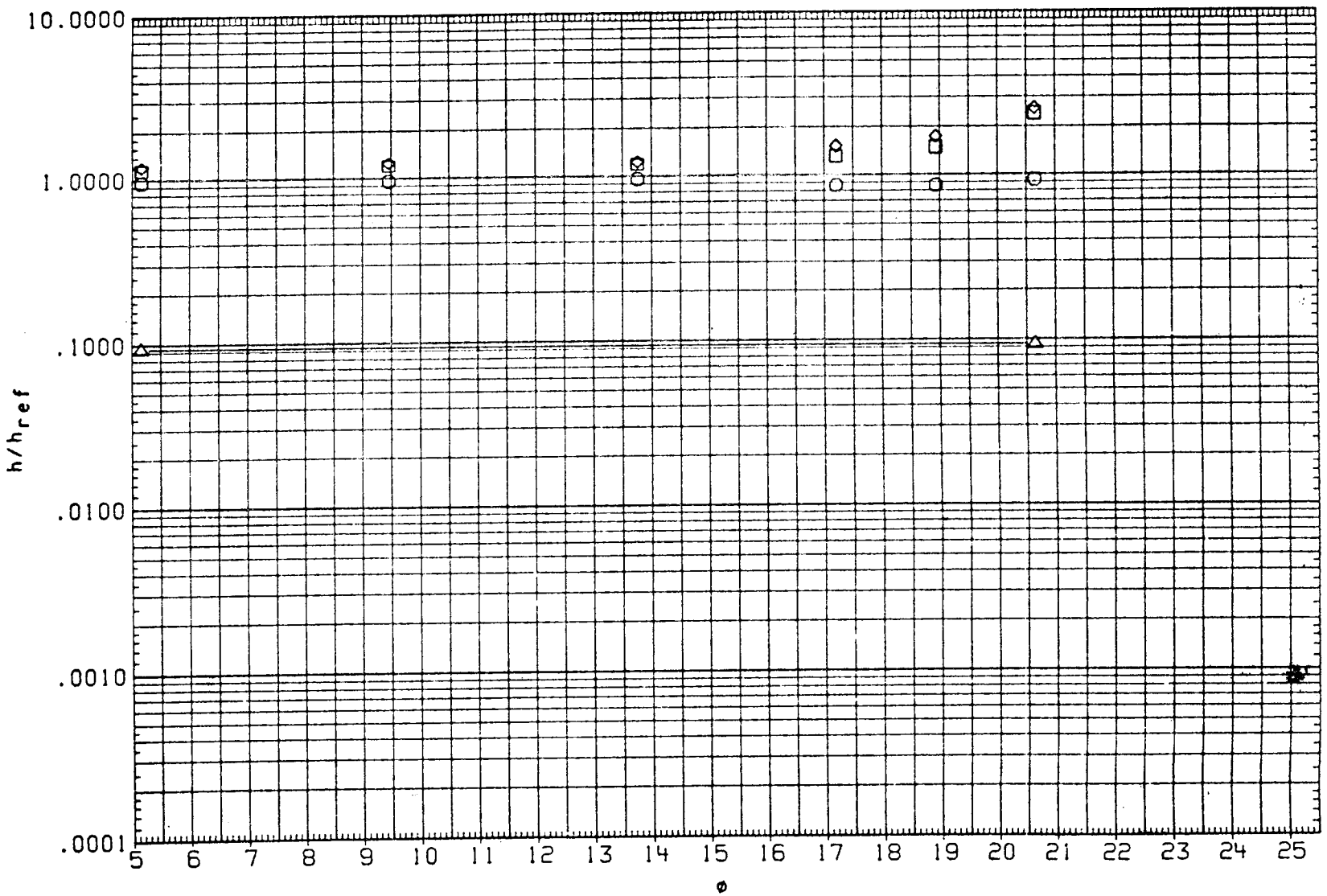

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .850 X/L = .357 DATE 22 APR 78 PAGE 586

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

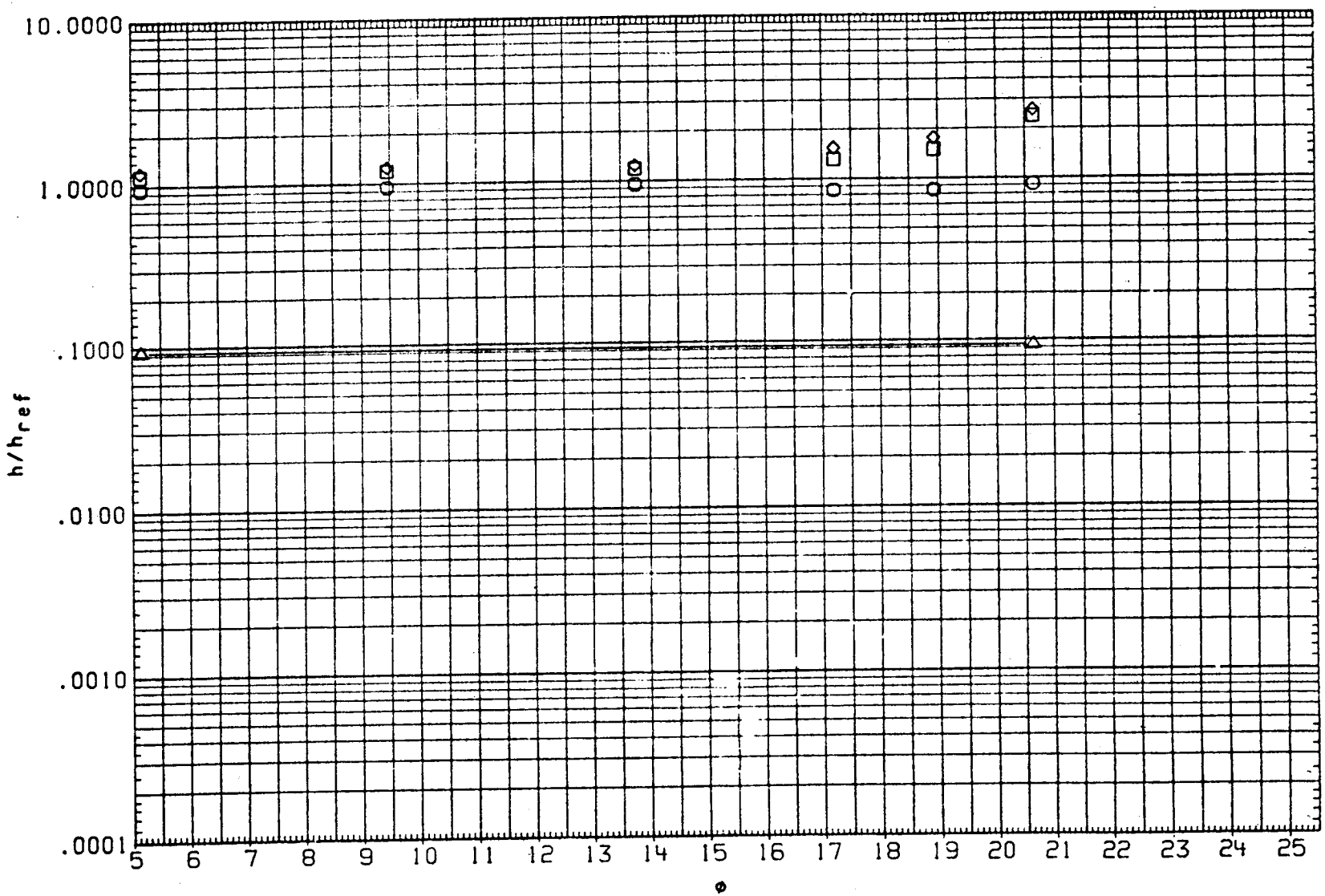

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = .900 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

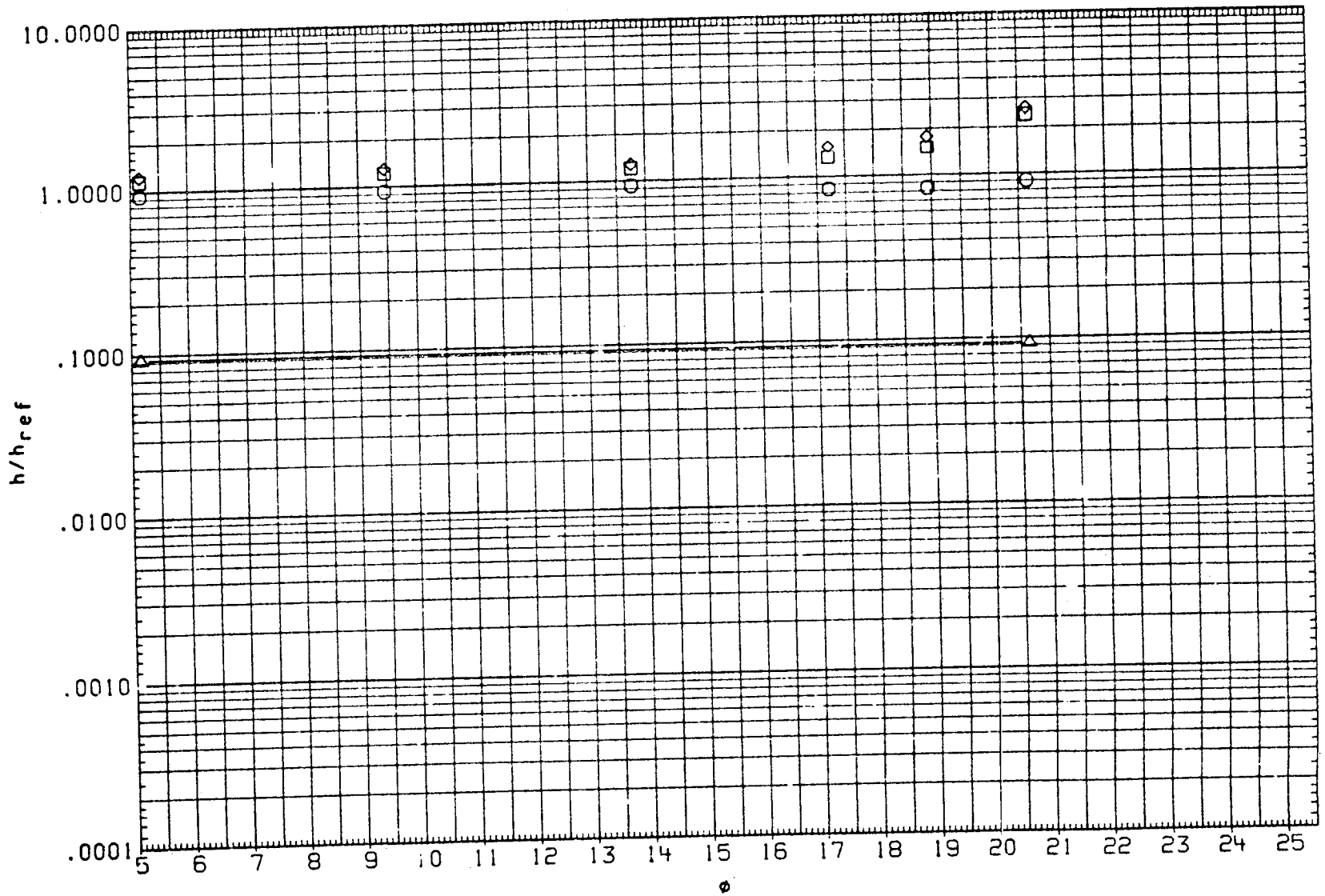

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.300 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

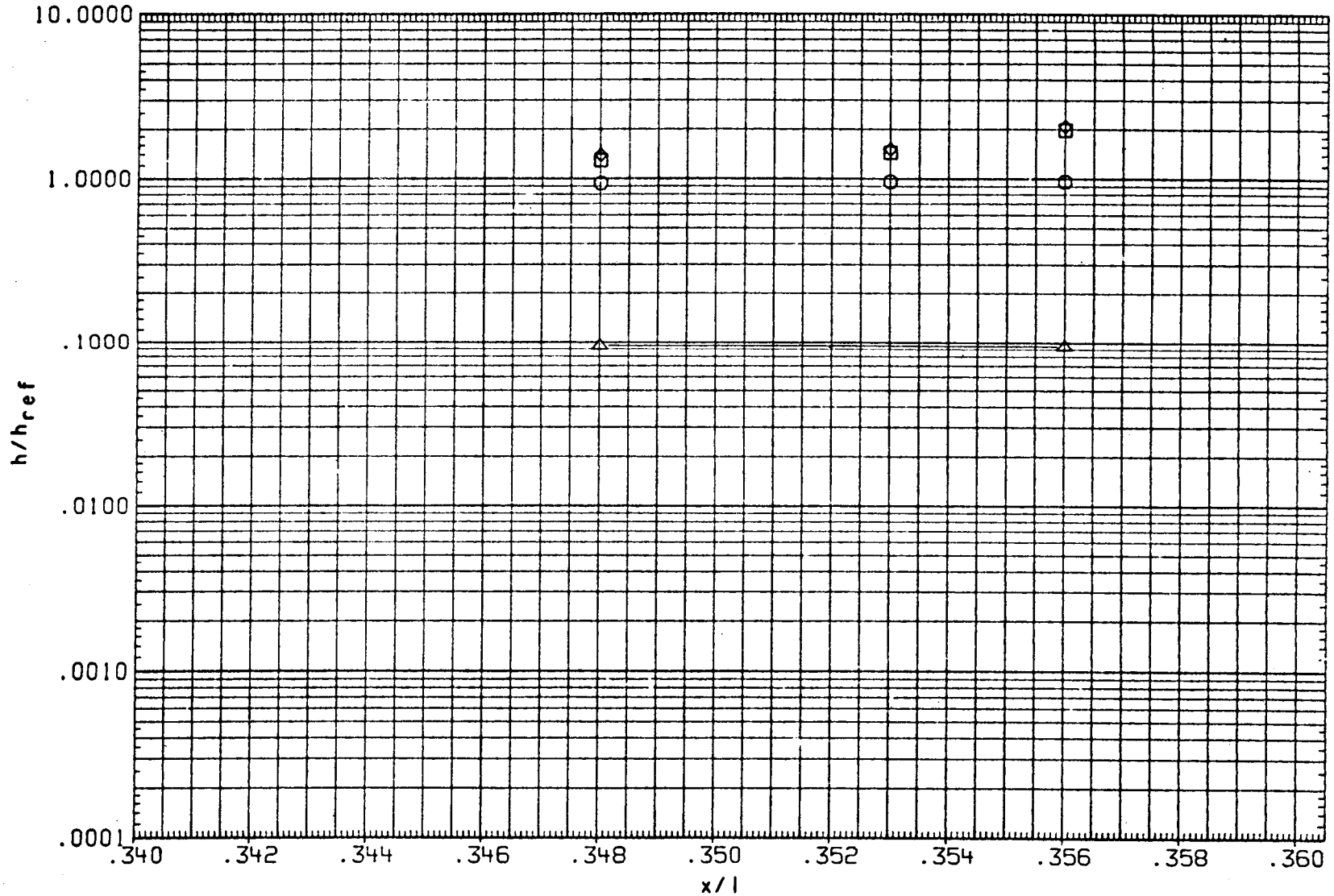

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 589

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

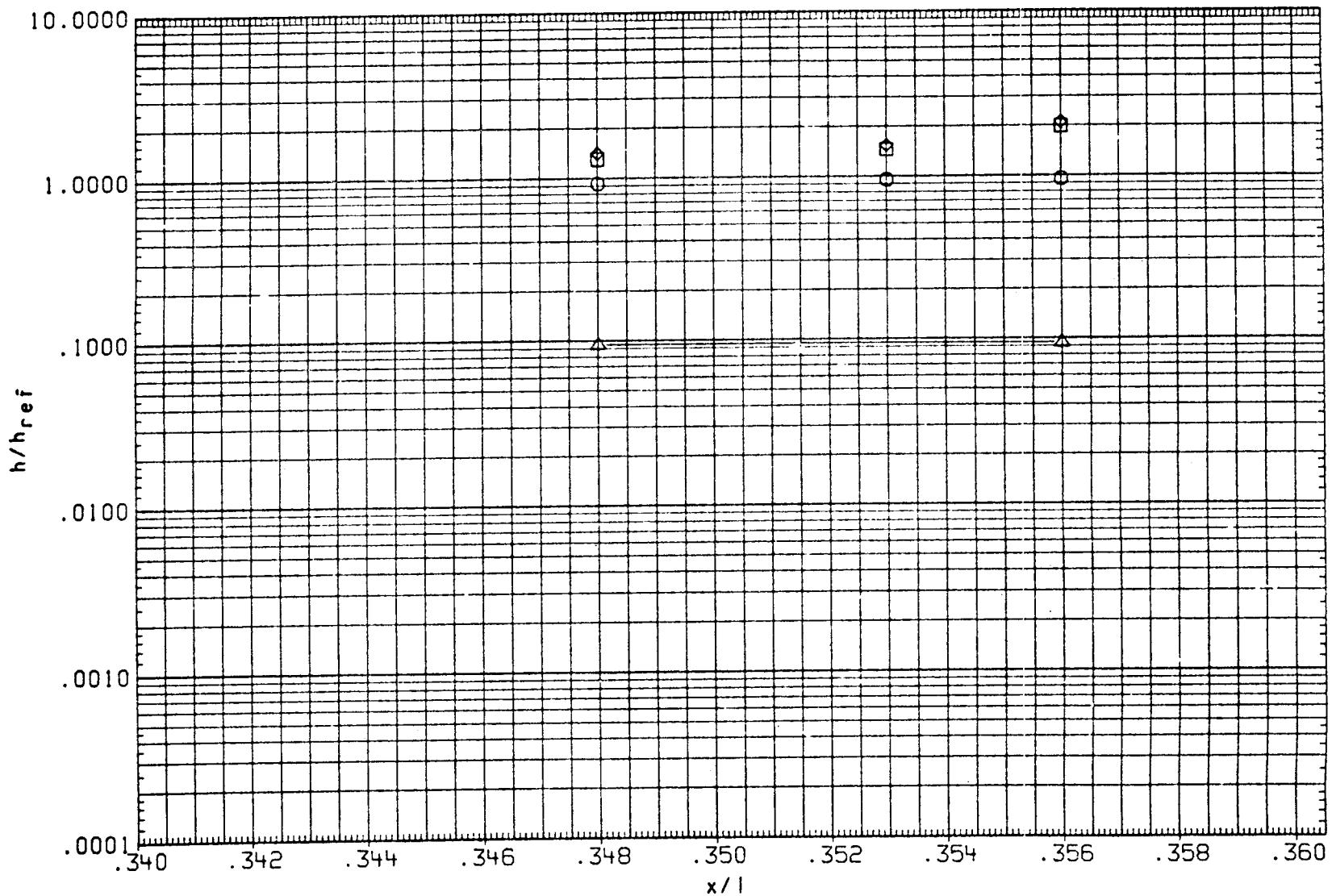

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 590

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

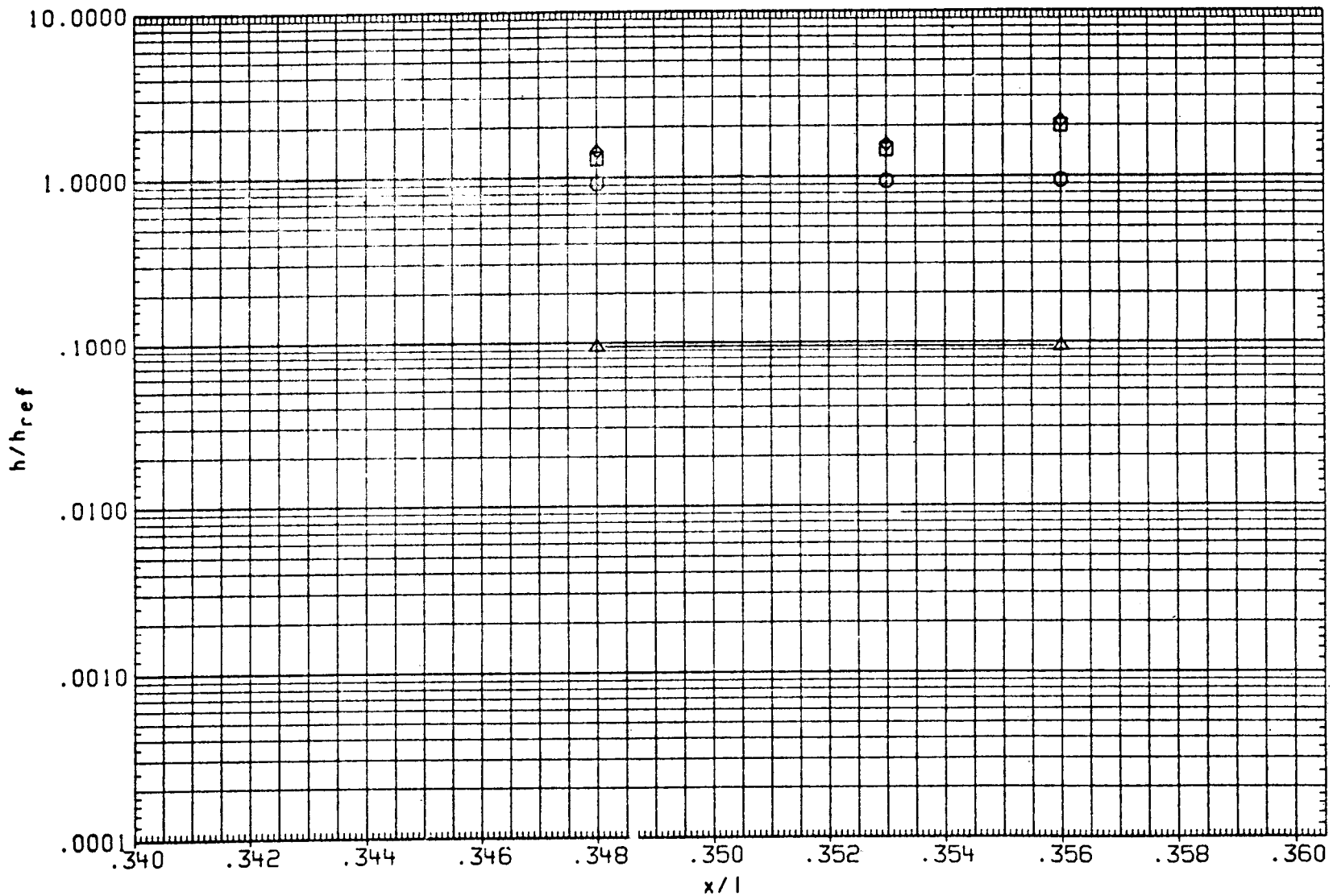

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 591

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20M0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(A20M02)	□	IH51A HI/HU T/TEST LO2 A.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20M0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

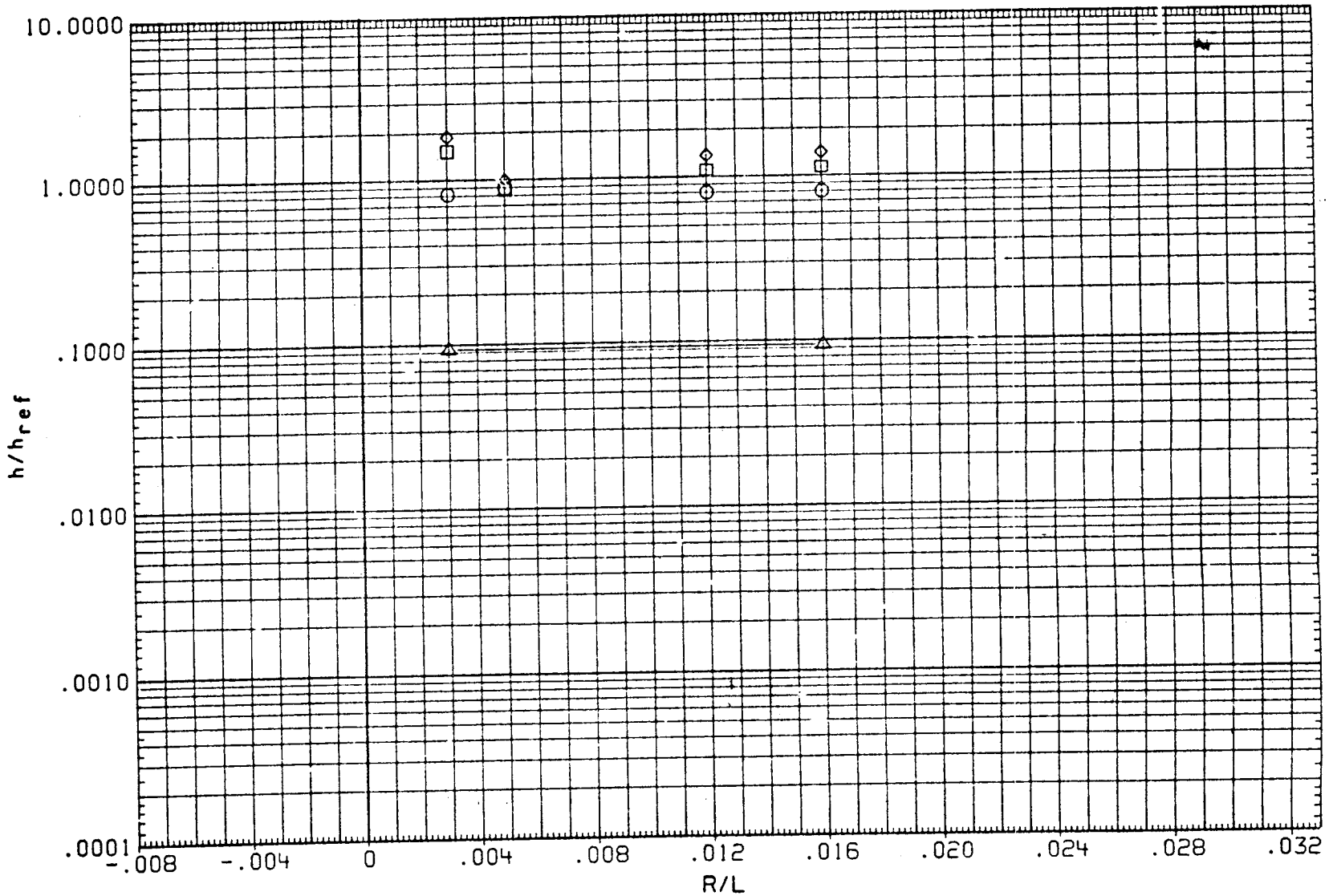

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 592

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20M0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(A20M02)	□	IH51A HI/HU T/TEST LO2 A.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20M0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

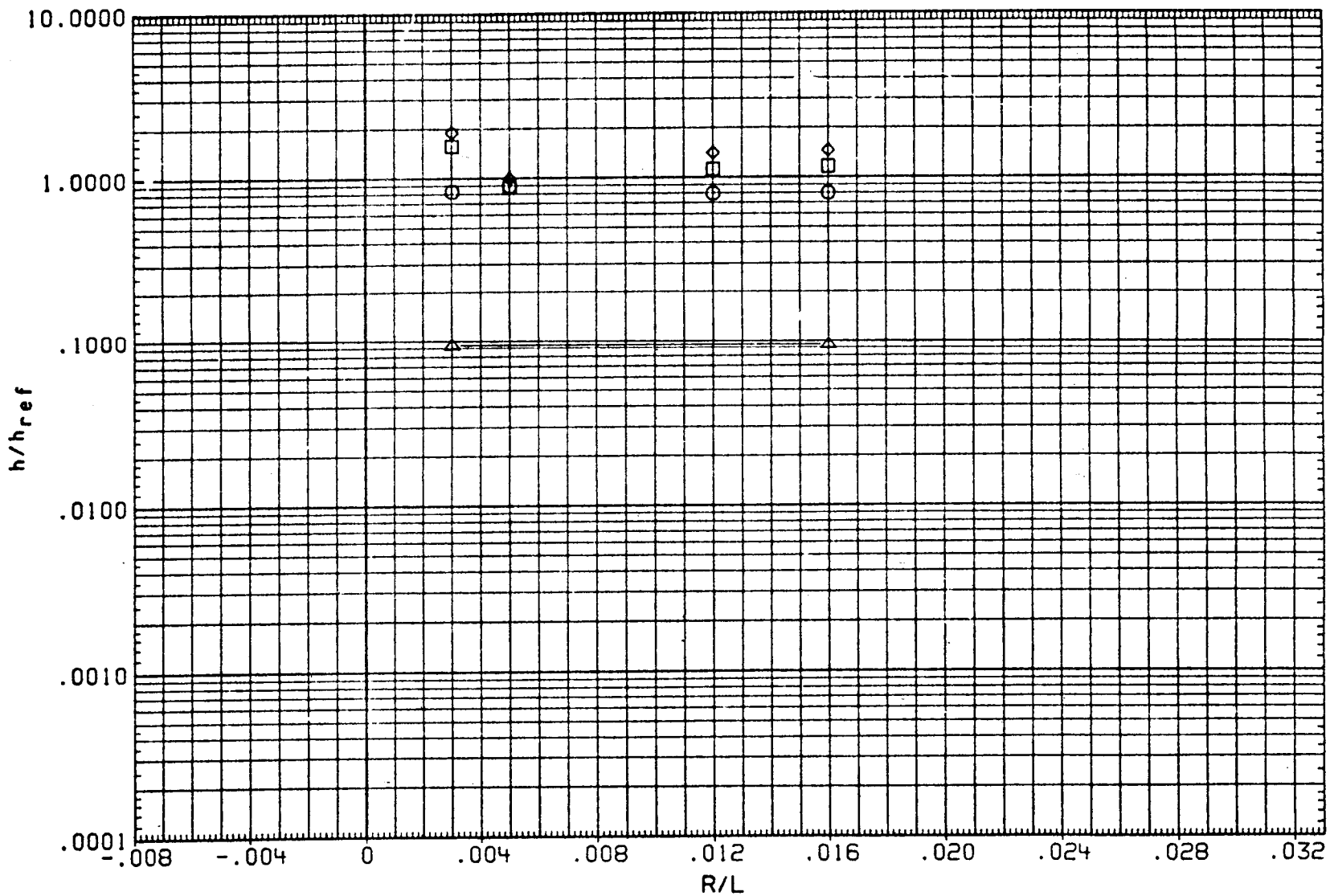

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 593

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20M0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(A20M02)	□	IH51A HI/HU T/TEST LO2 A.L.DIAG 1A/5A	.000	.000	5.000	5.300
(N20M0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5A)	△	IH51A THEORY CONF 5A LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

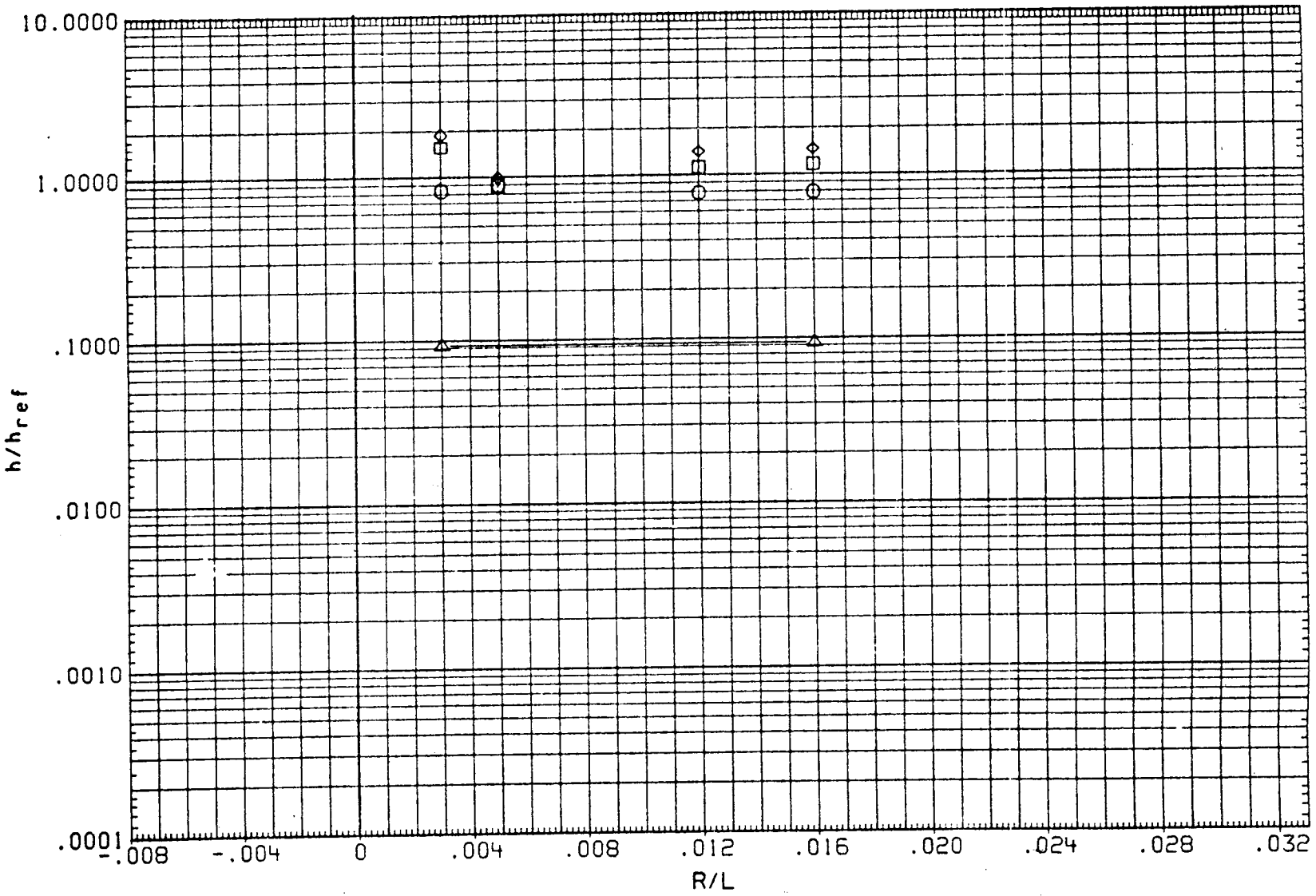

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 594

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

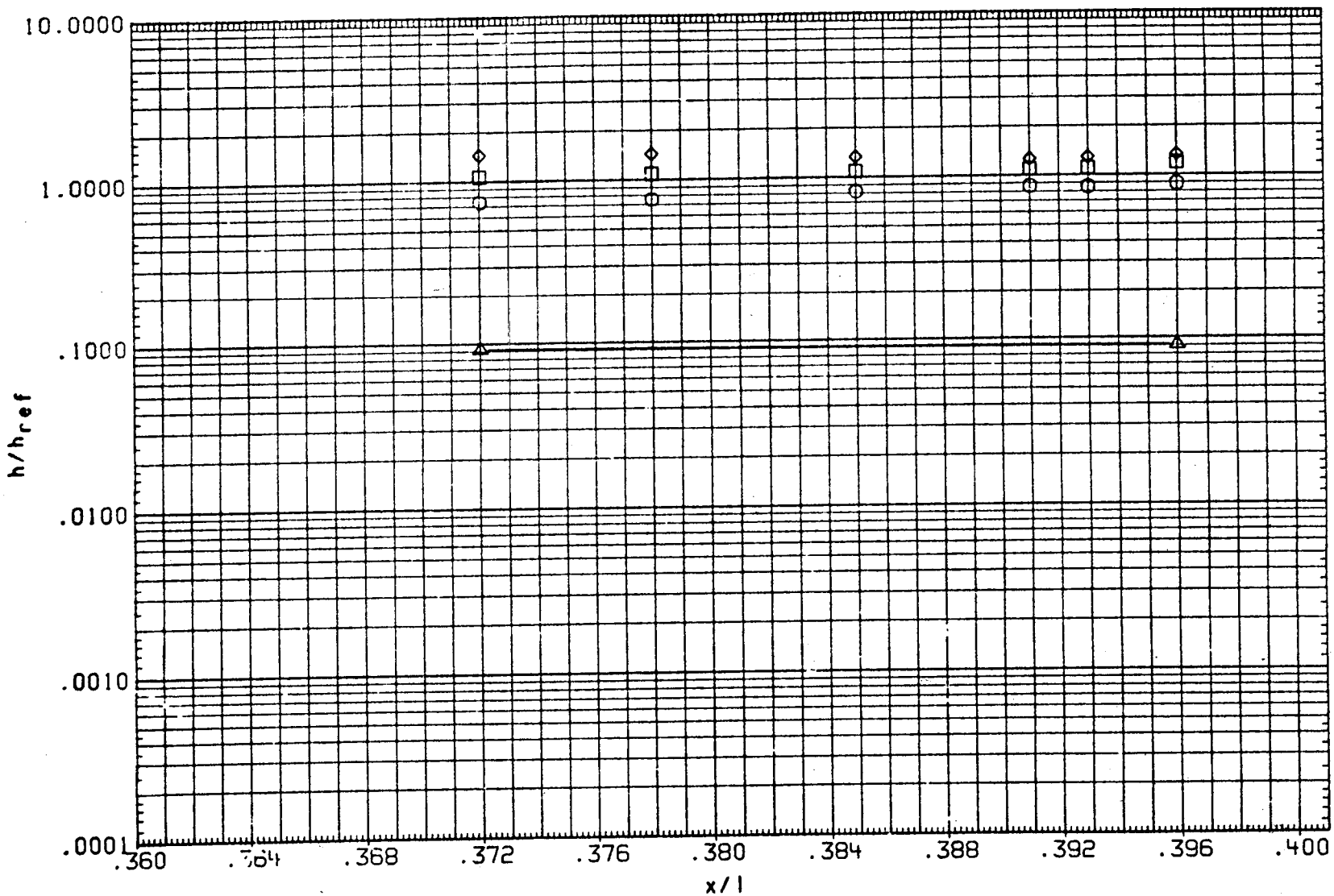

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78 PAGE 595

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

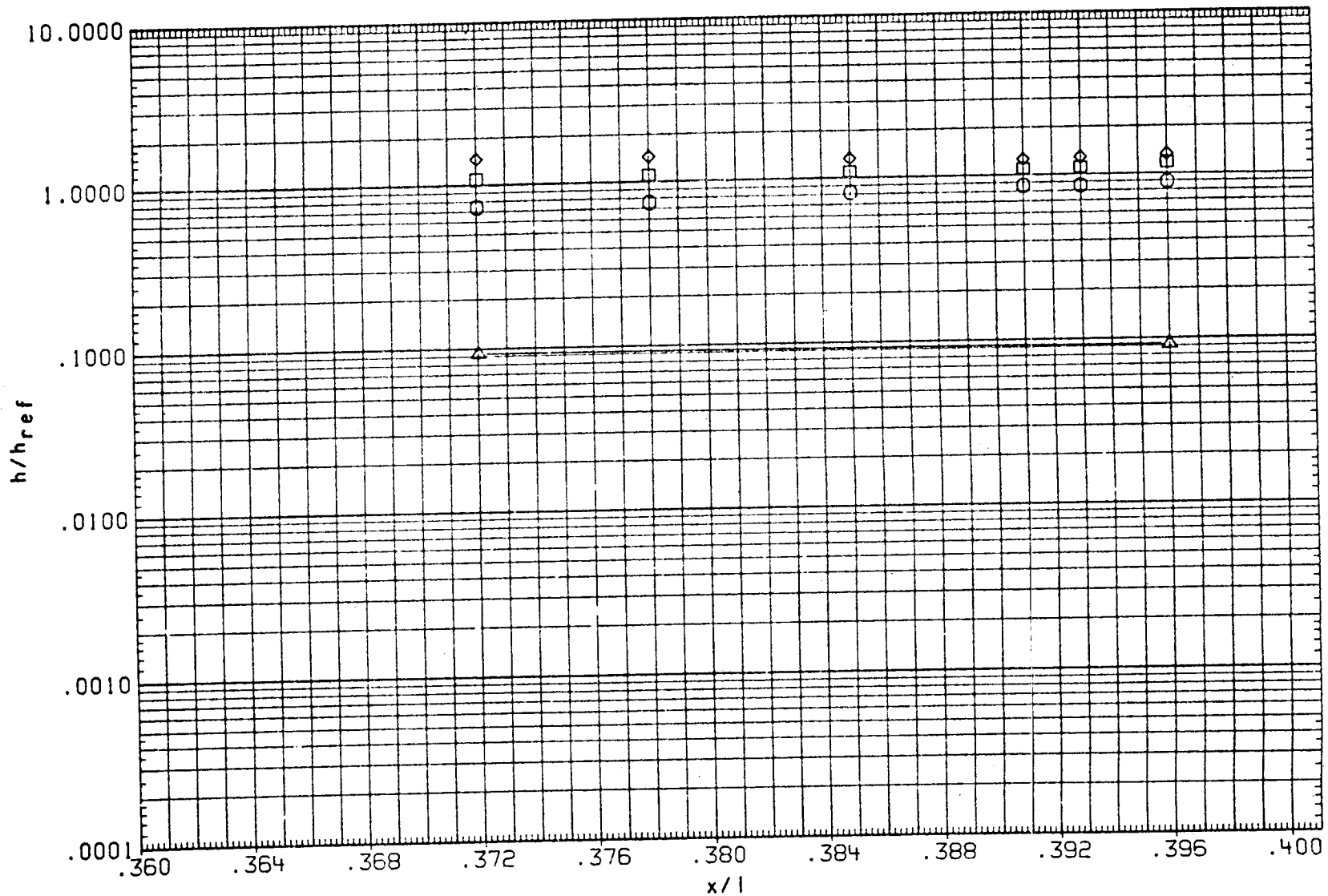

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 596

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

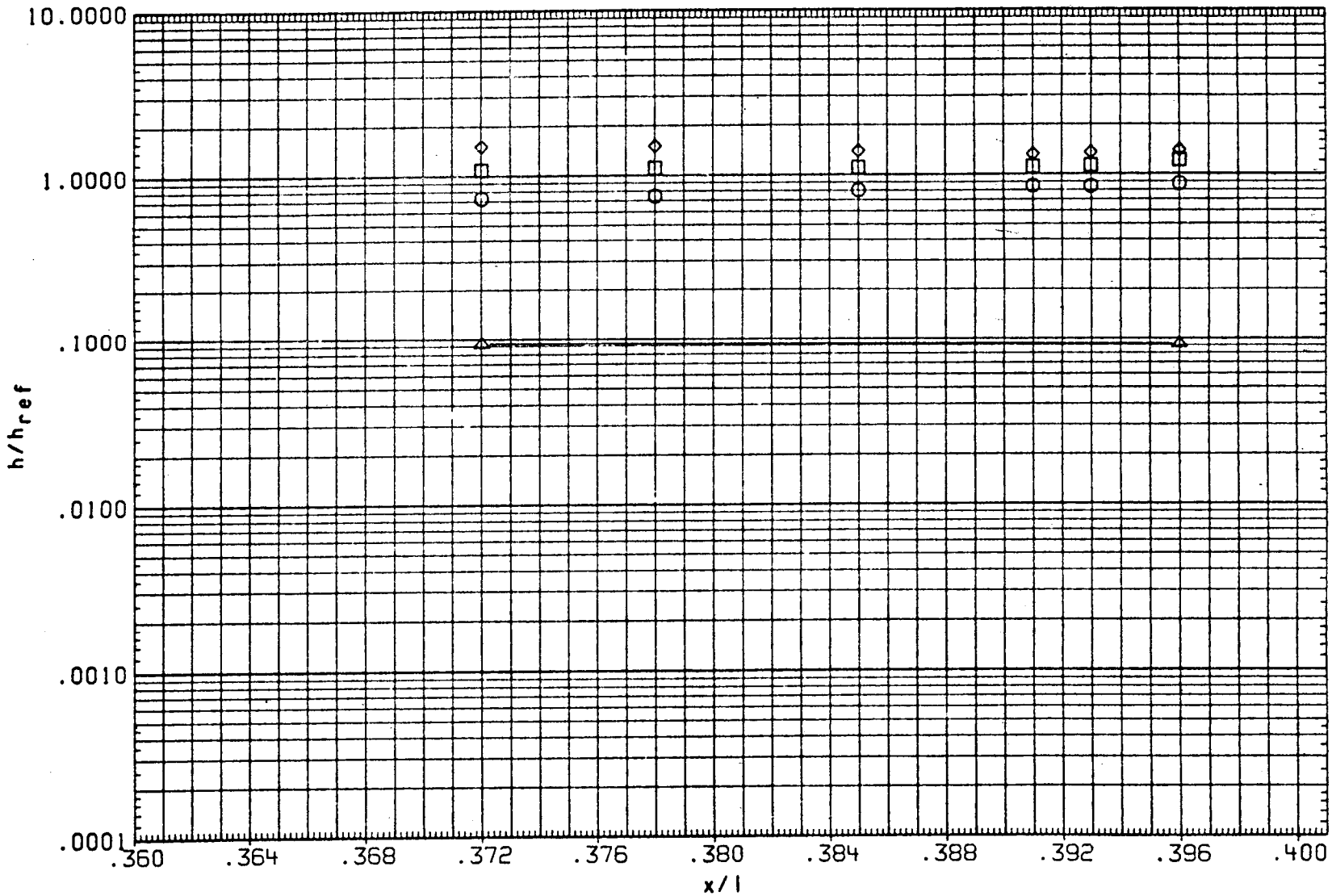

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78 PAGE 597

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20N0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH2 LINE DIA	.000	.000	5.000	5.300
(A20N02)	□	IH51A HI/HU T/TEST LH2 LINE DIAG 1A/5A	.000	.000	5.000	5.300
(N20N0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL HU/HREF	.000	.000	5.000	5.300

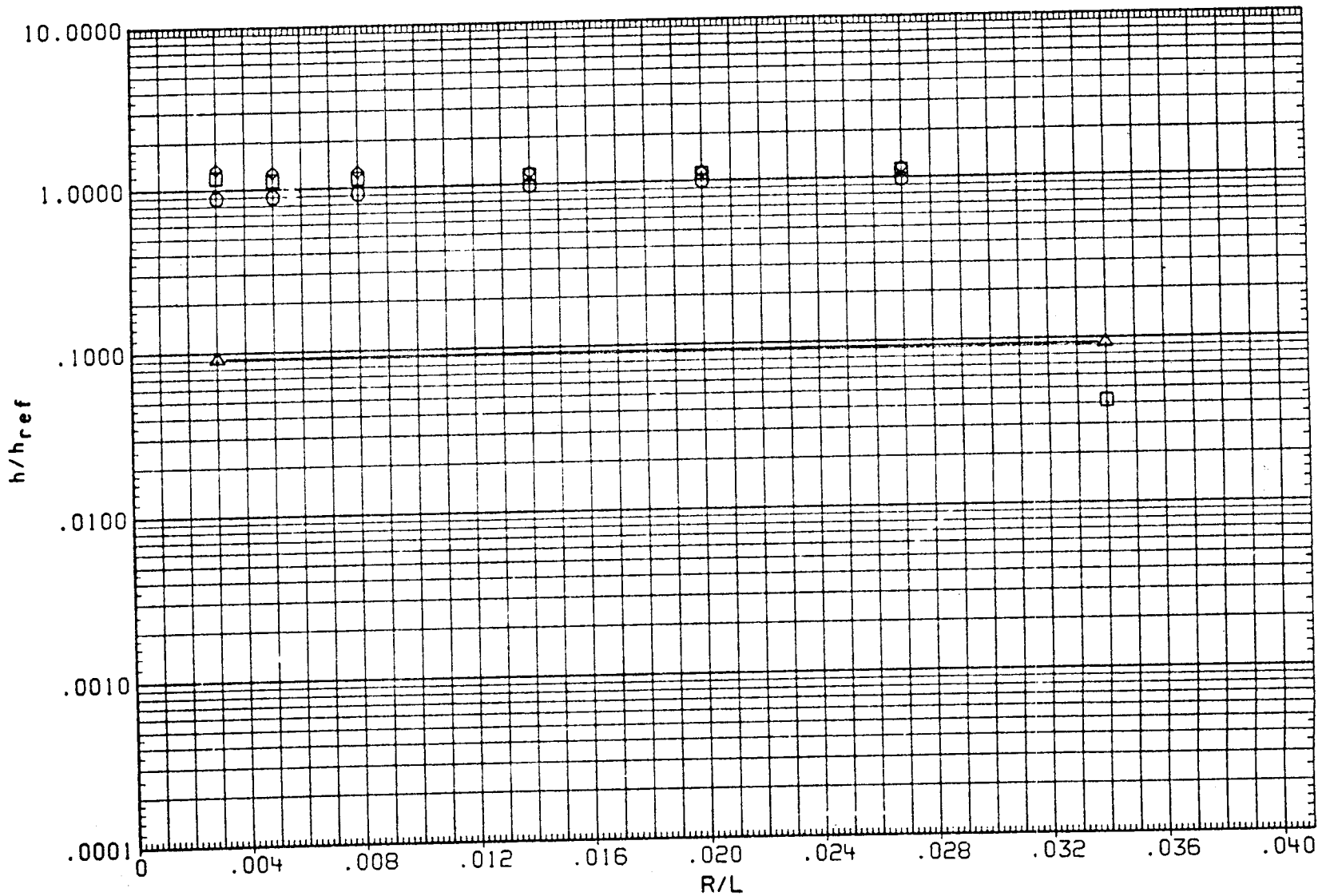

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 598

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20N0A)	○	IH51. (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH2 LINE DIA	.000	.000	5.000	5.300
(A20N02)	□	IH51A H1/HU T/TEST LH2 LINE DIAG 1A/5A	.000	.000	5.000	5.300
(N20N0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL HU/HREF	.000	.000	5.000	5.300

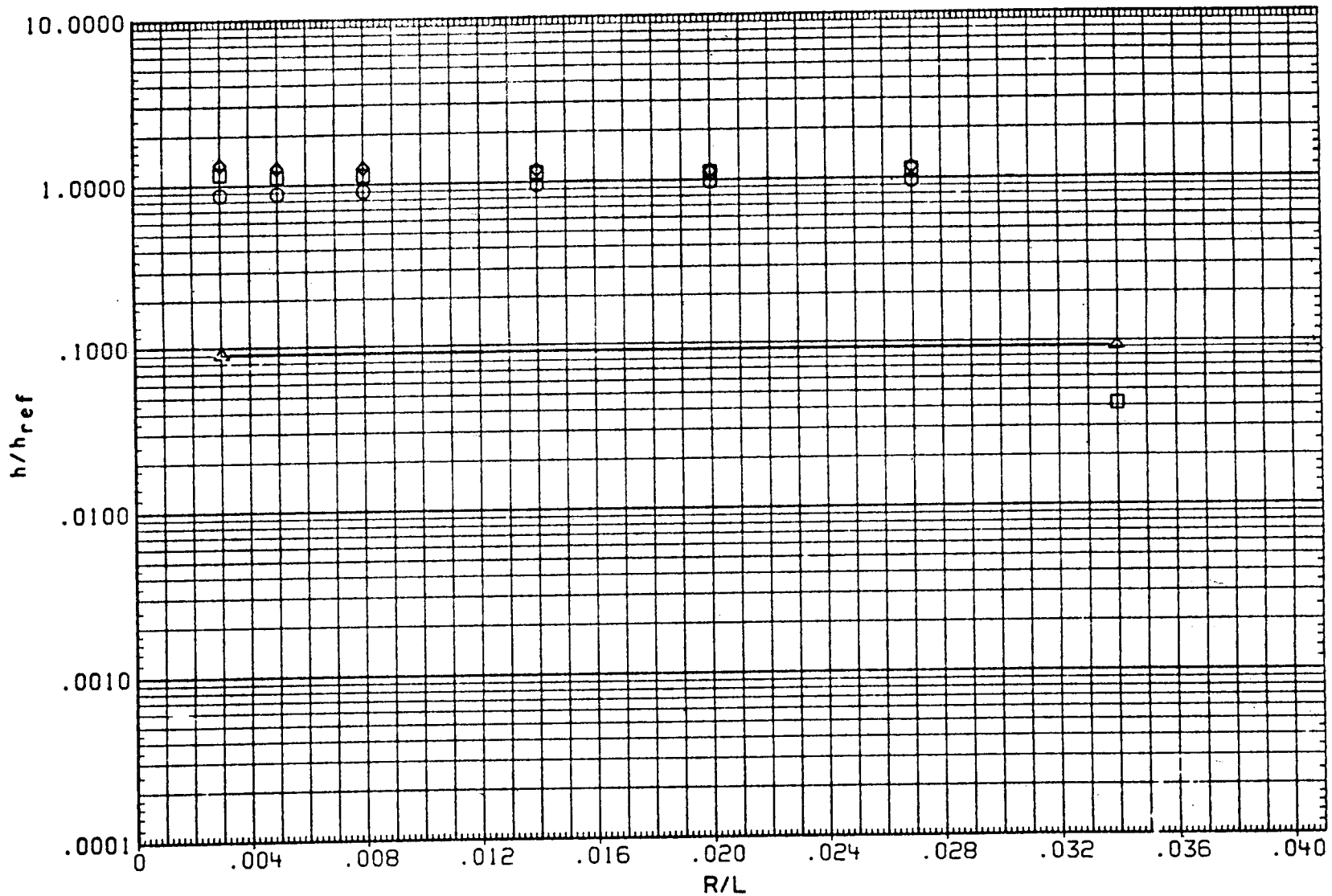

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 599

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20N0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH2 LINE DIA	.000	.000	5.000	5.300
(A20N02)	□	IH51A HI/HU T/TEST LH2 LINE DIAG 1A/5A	.000	.000	5.000	5.300
(N20N0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5A)	△	IH51A THEORY CONF 5A LH2 LINE DIAGONAL HU/HREF	.000	.000	5.000	5.300

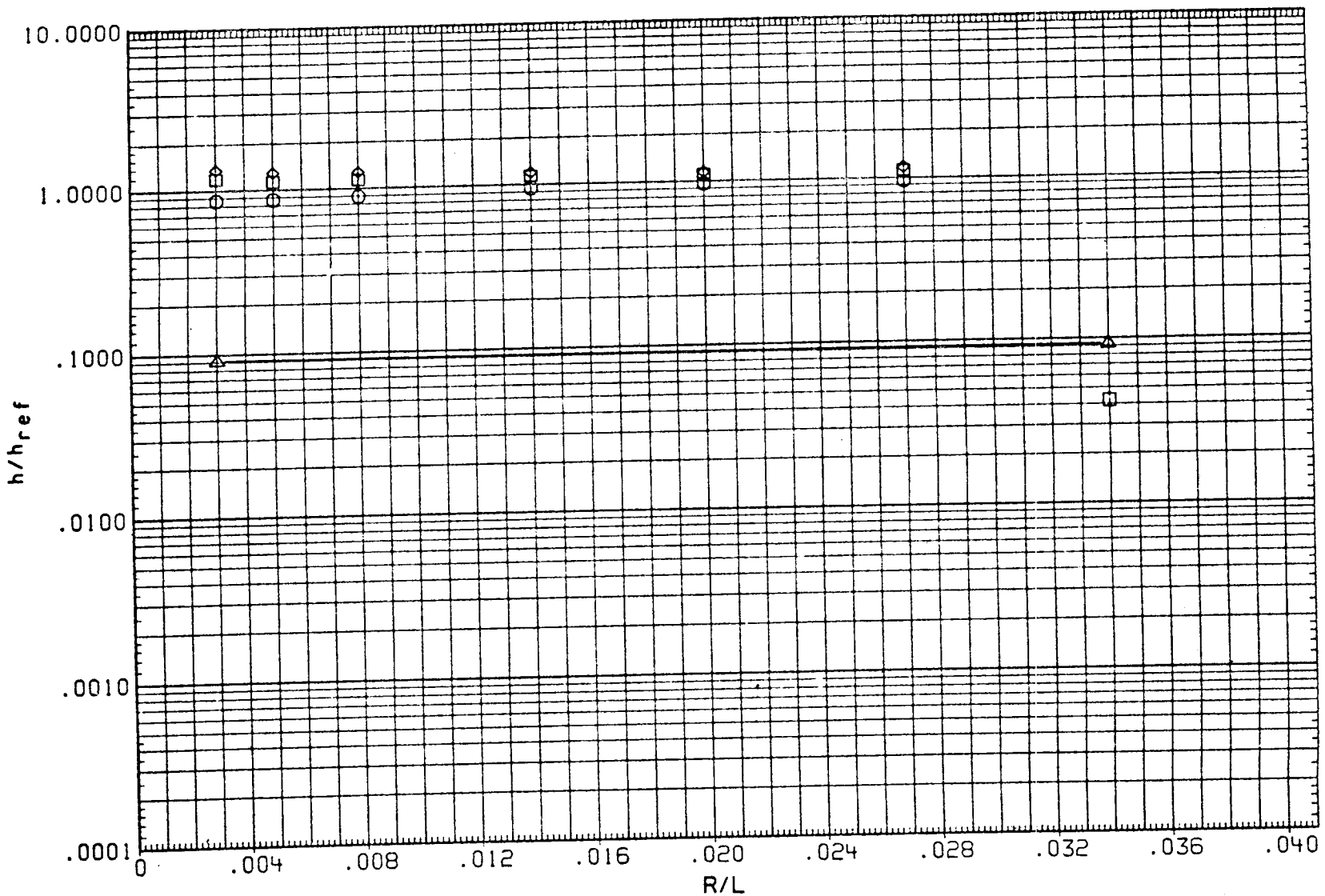

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 600

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

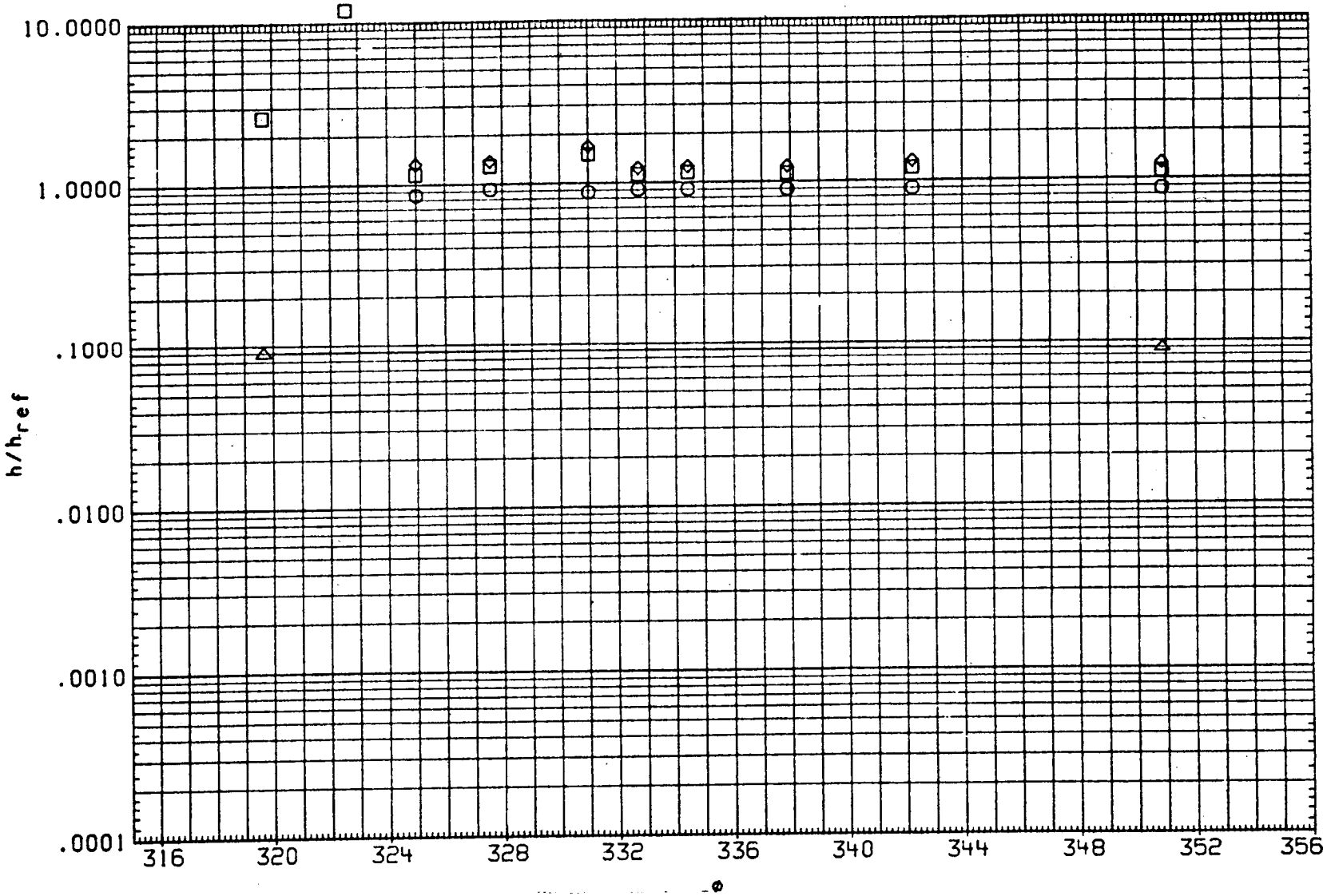

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .399 DATE 22 APR 78 PAGE 601

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

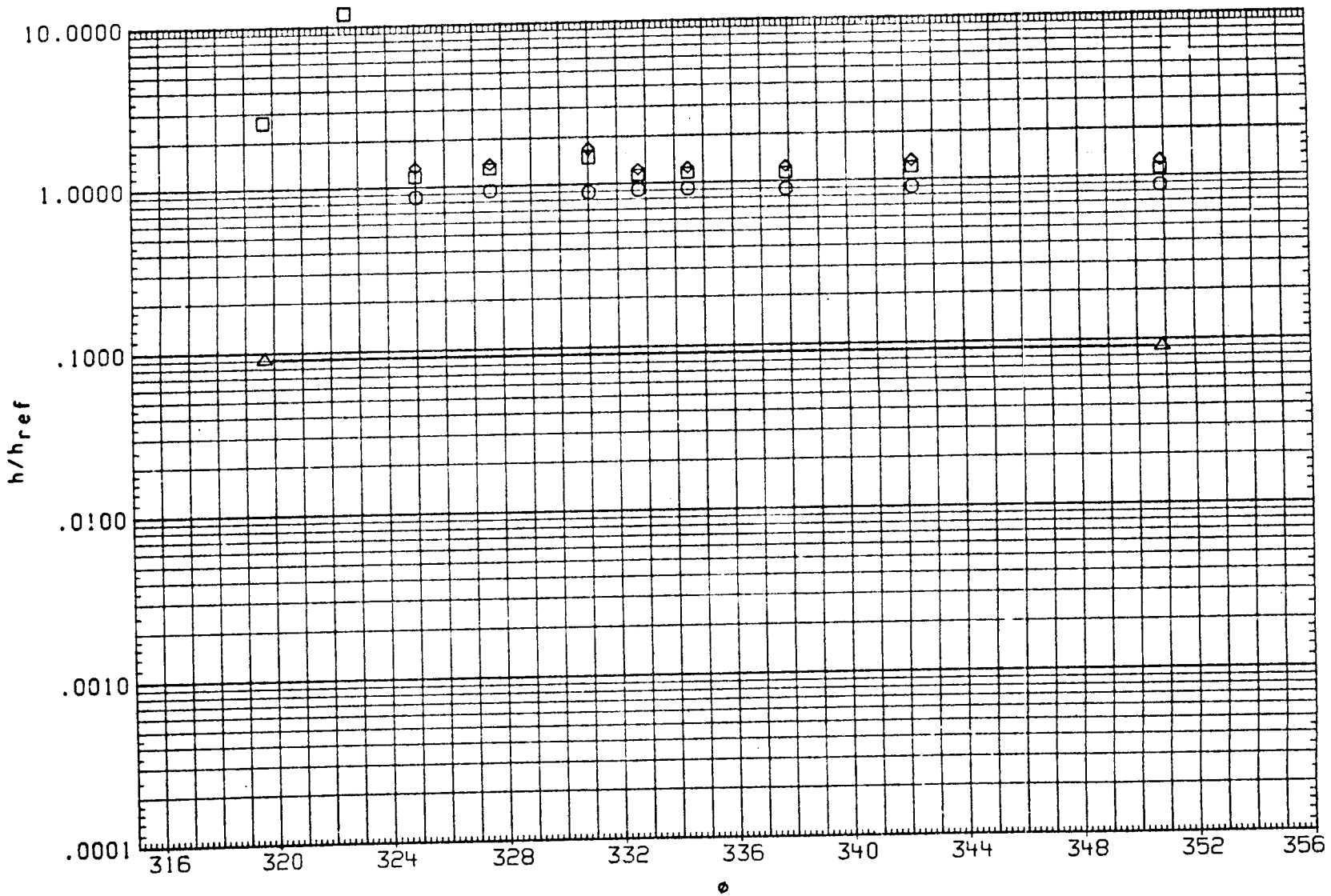

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .399 DATE 22 APR 78 PAGE 602

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

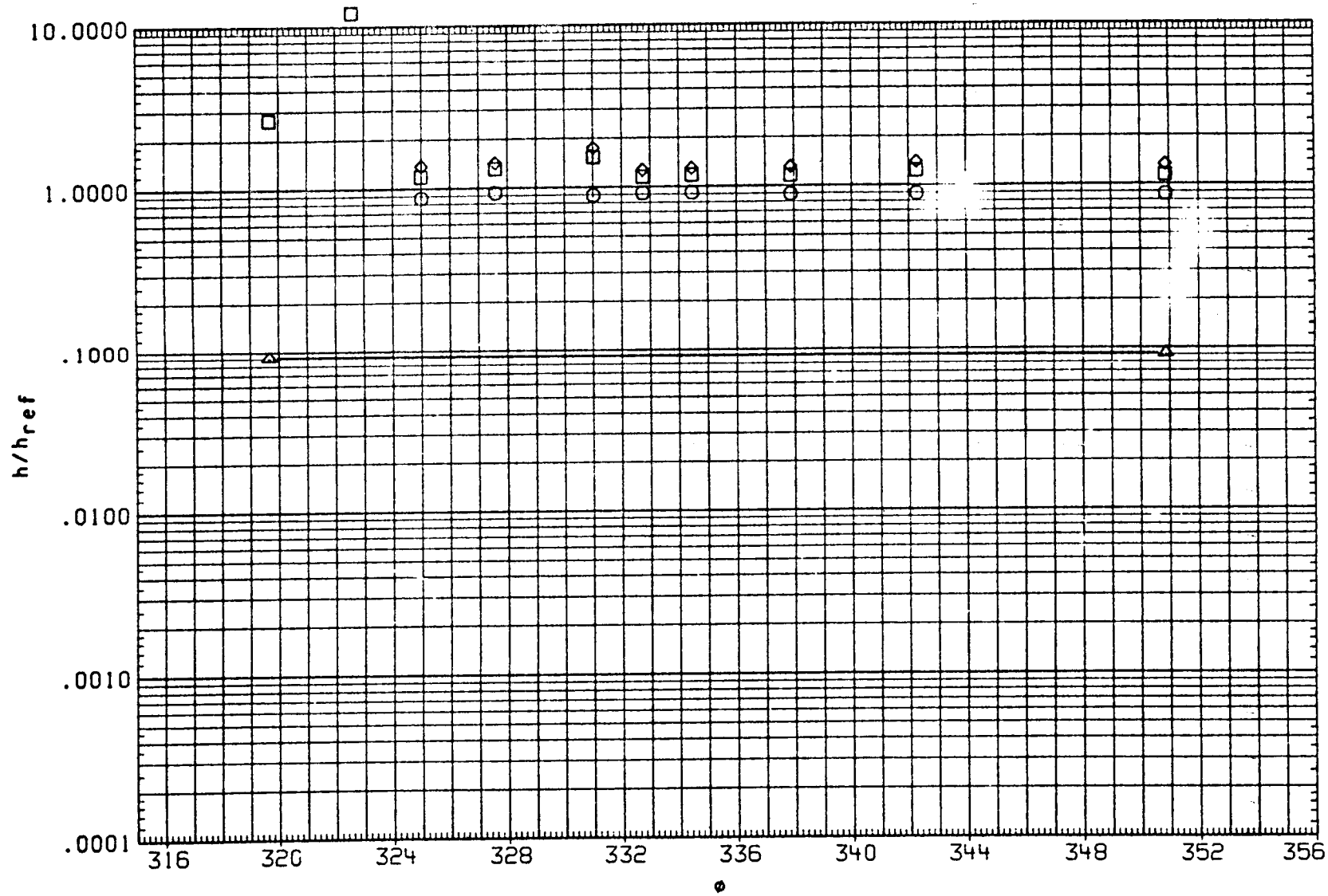

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .399 DATE 22 APR 78 PAGE 603

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000D2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

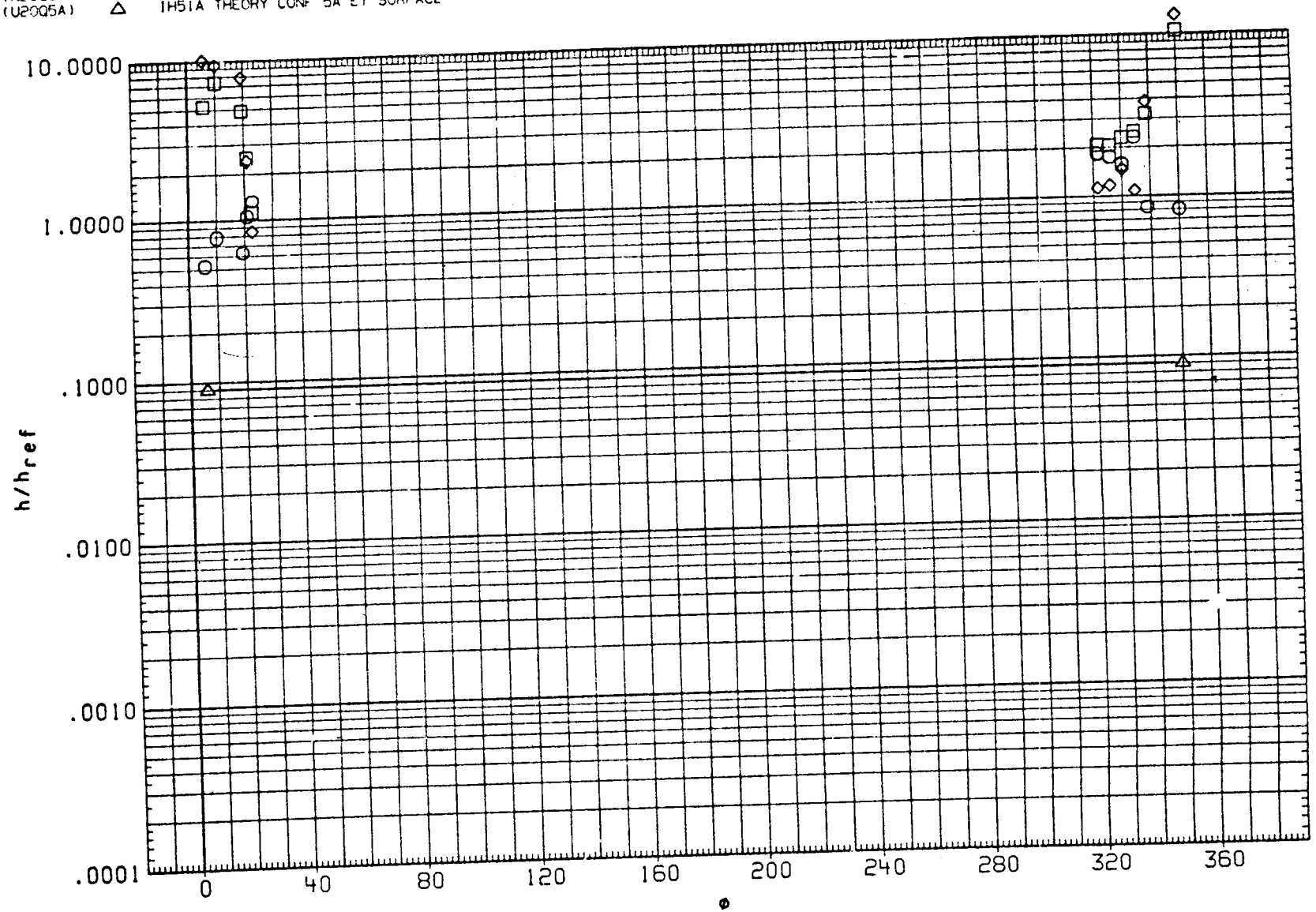

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .850 X/L = .437 DATE 22 APR 78 PAGE 604

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

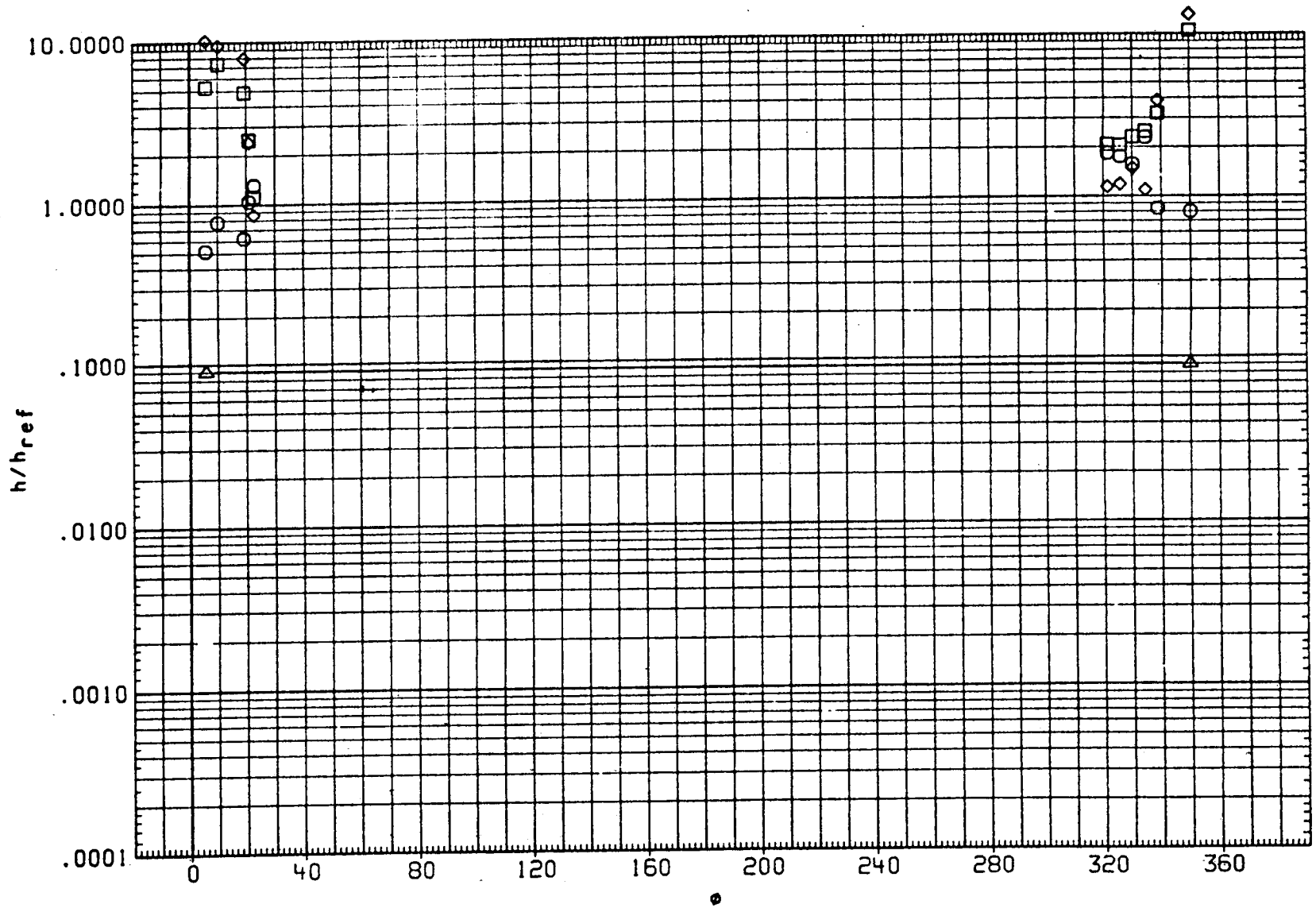

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = .900 X/L = .437 DATE 22 APR 78 PAGE 605

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

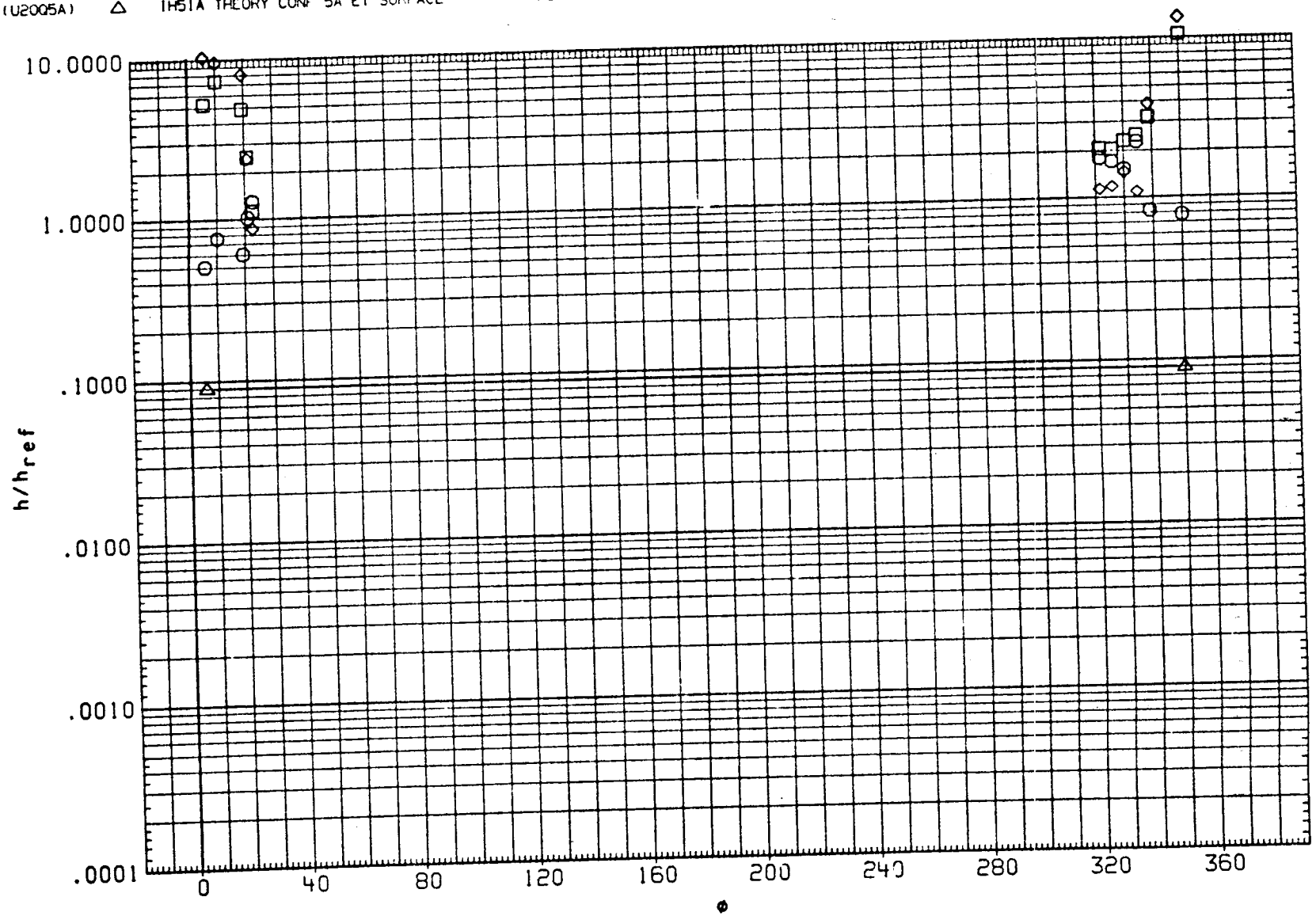

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.300 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78 PAGE 606

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

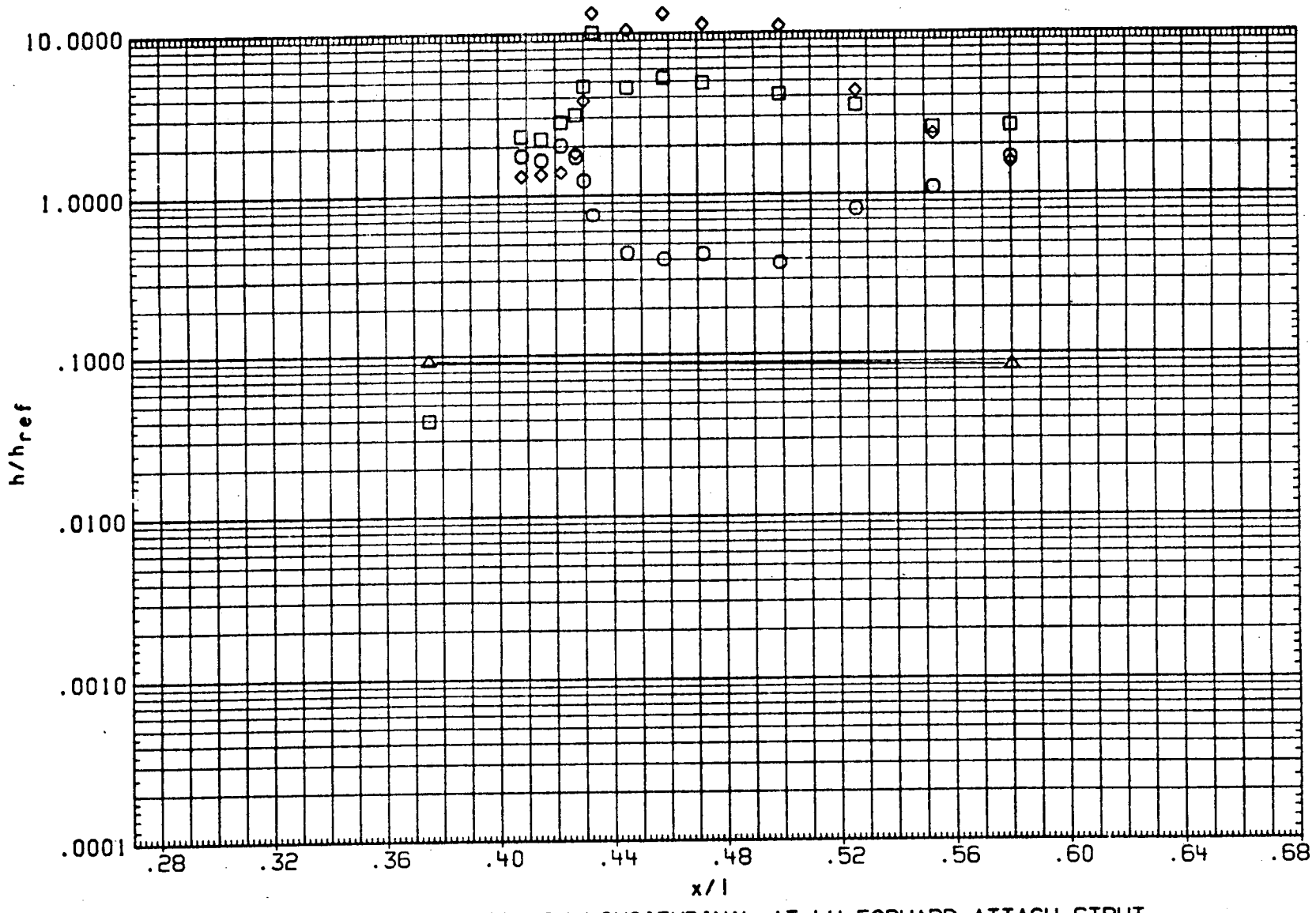

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 607

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

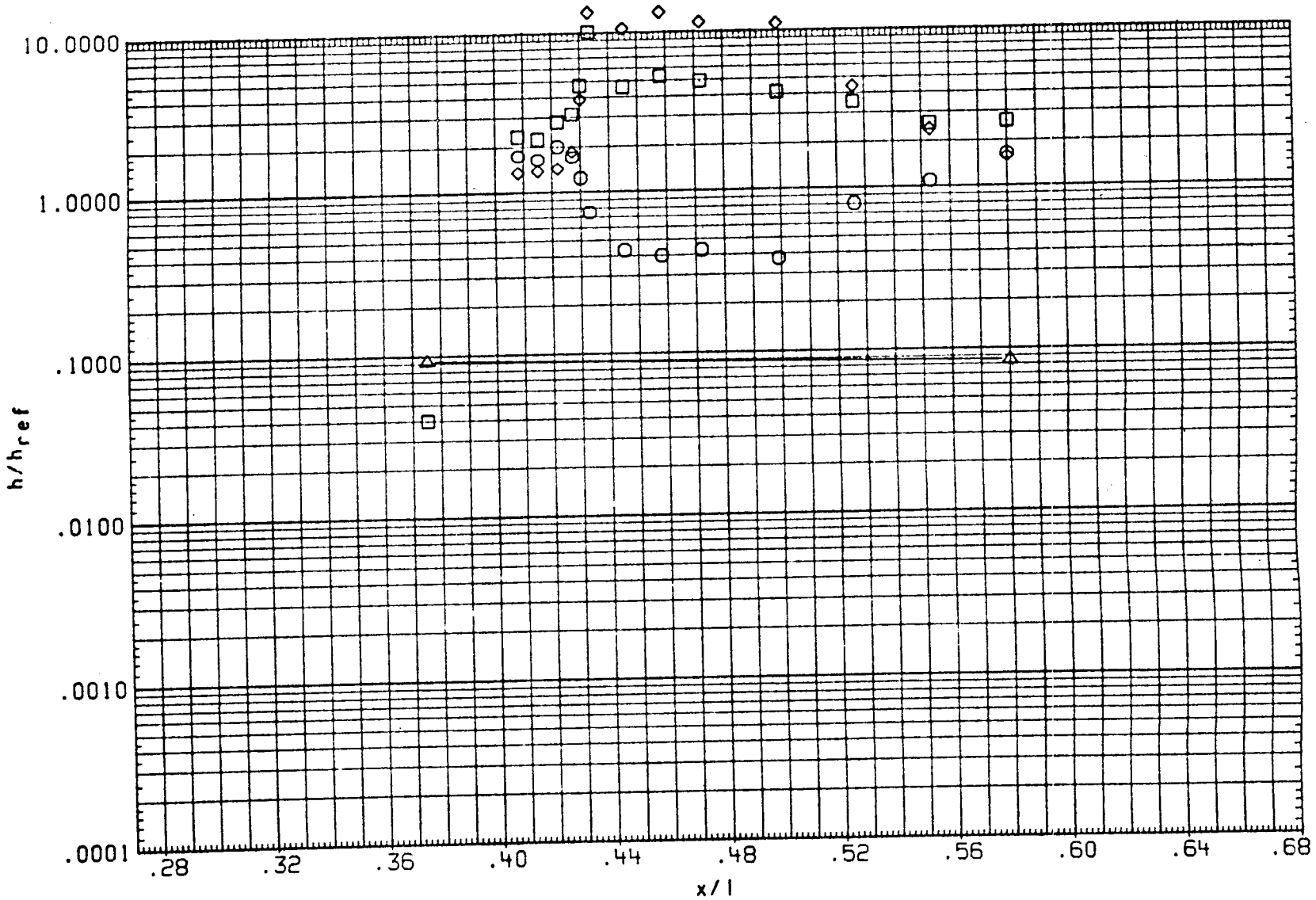

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 608

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

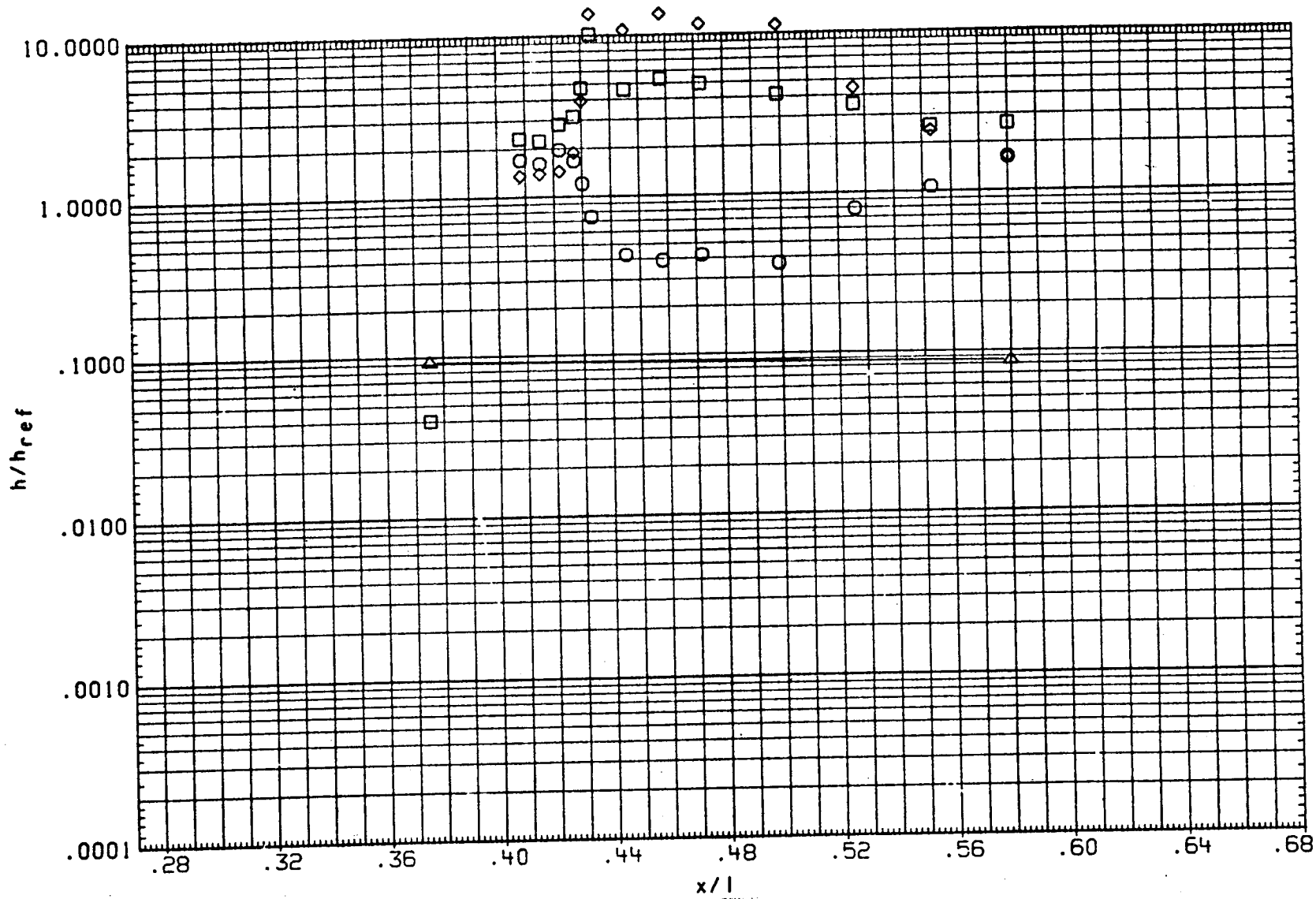

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 609

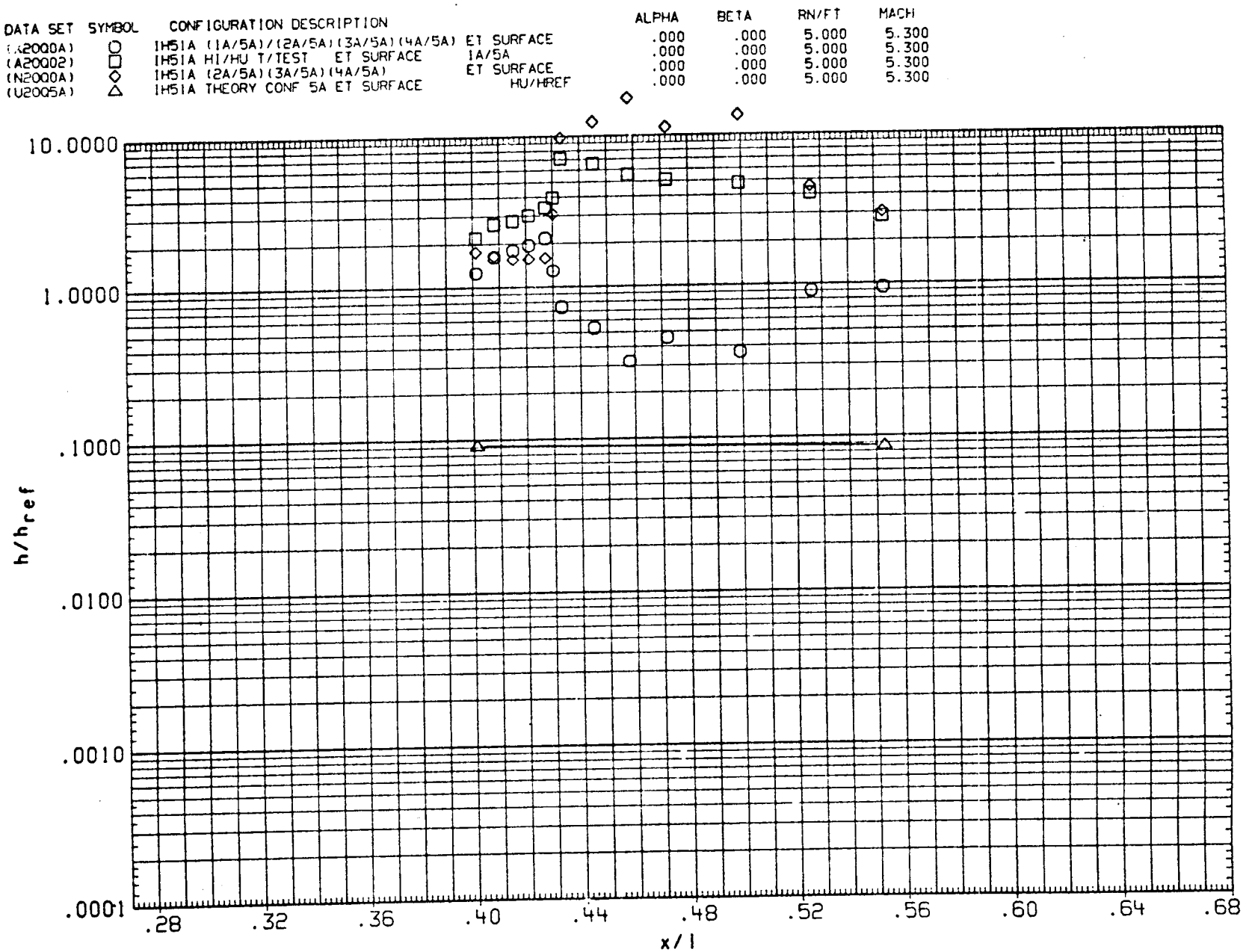

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 610

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

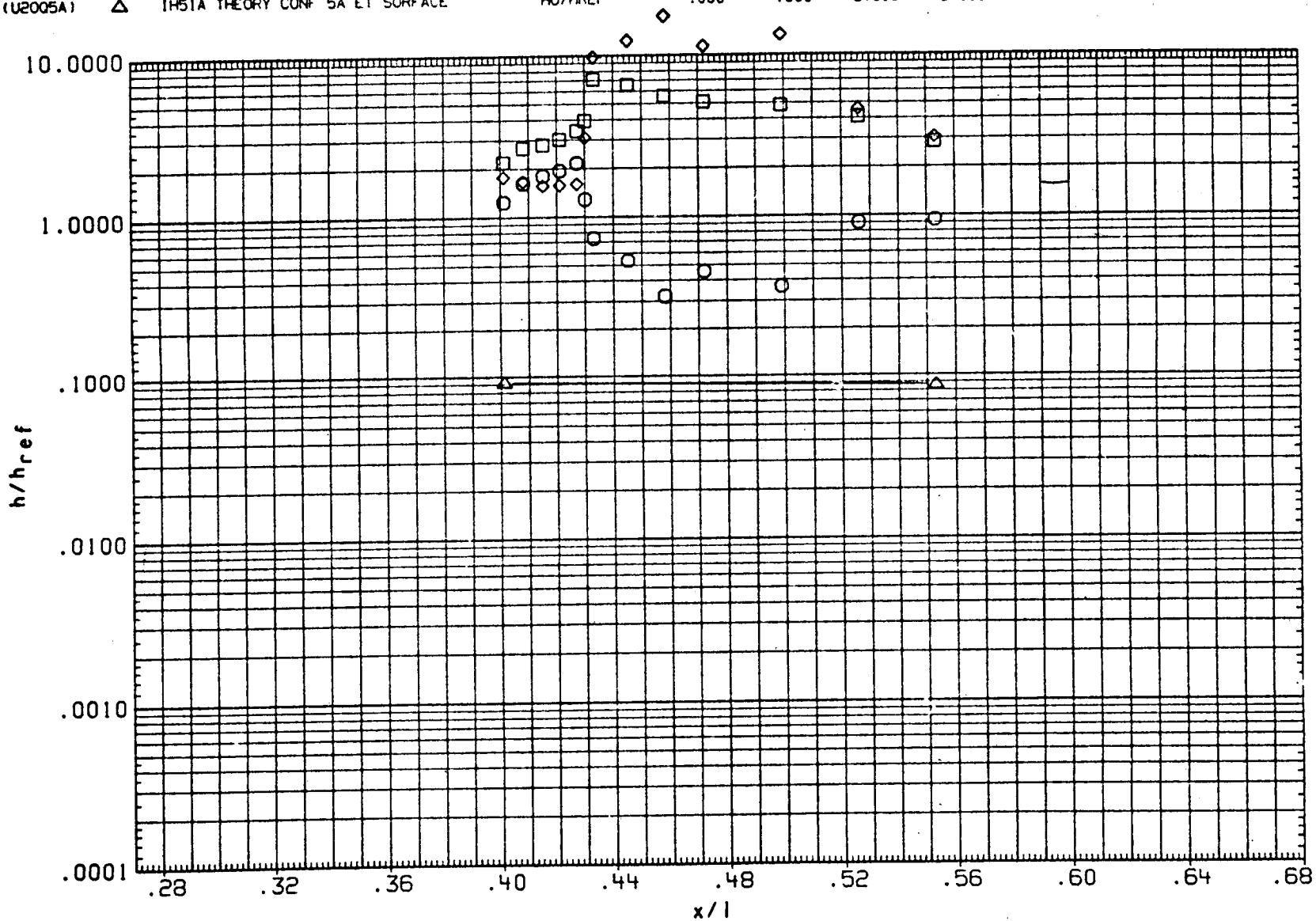

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78 PAGE 611

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

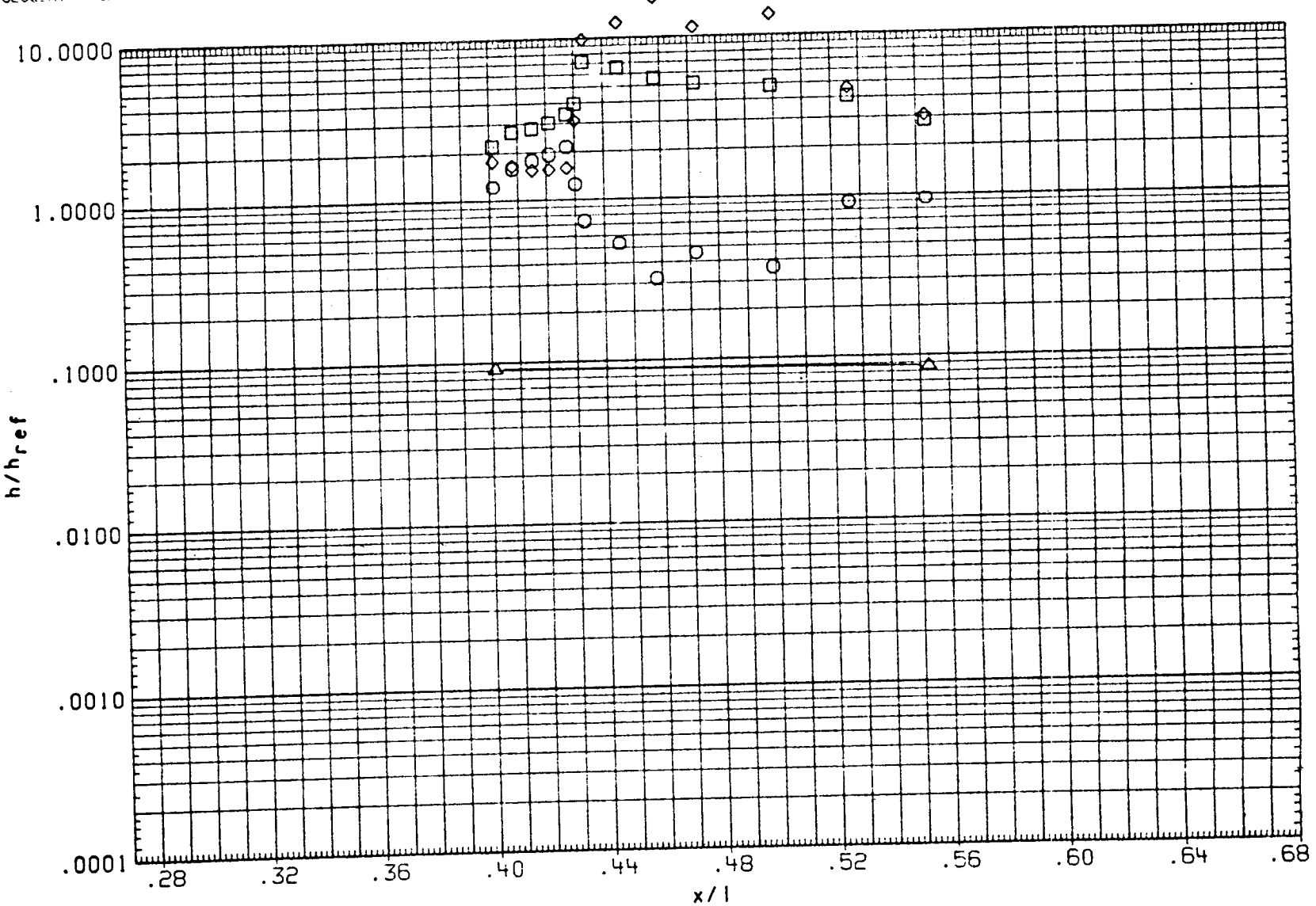

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78 PAGE 612

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG. HU/H.?EF	.000	.000	5.000	5.300

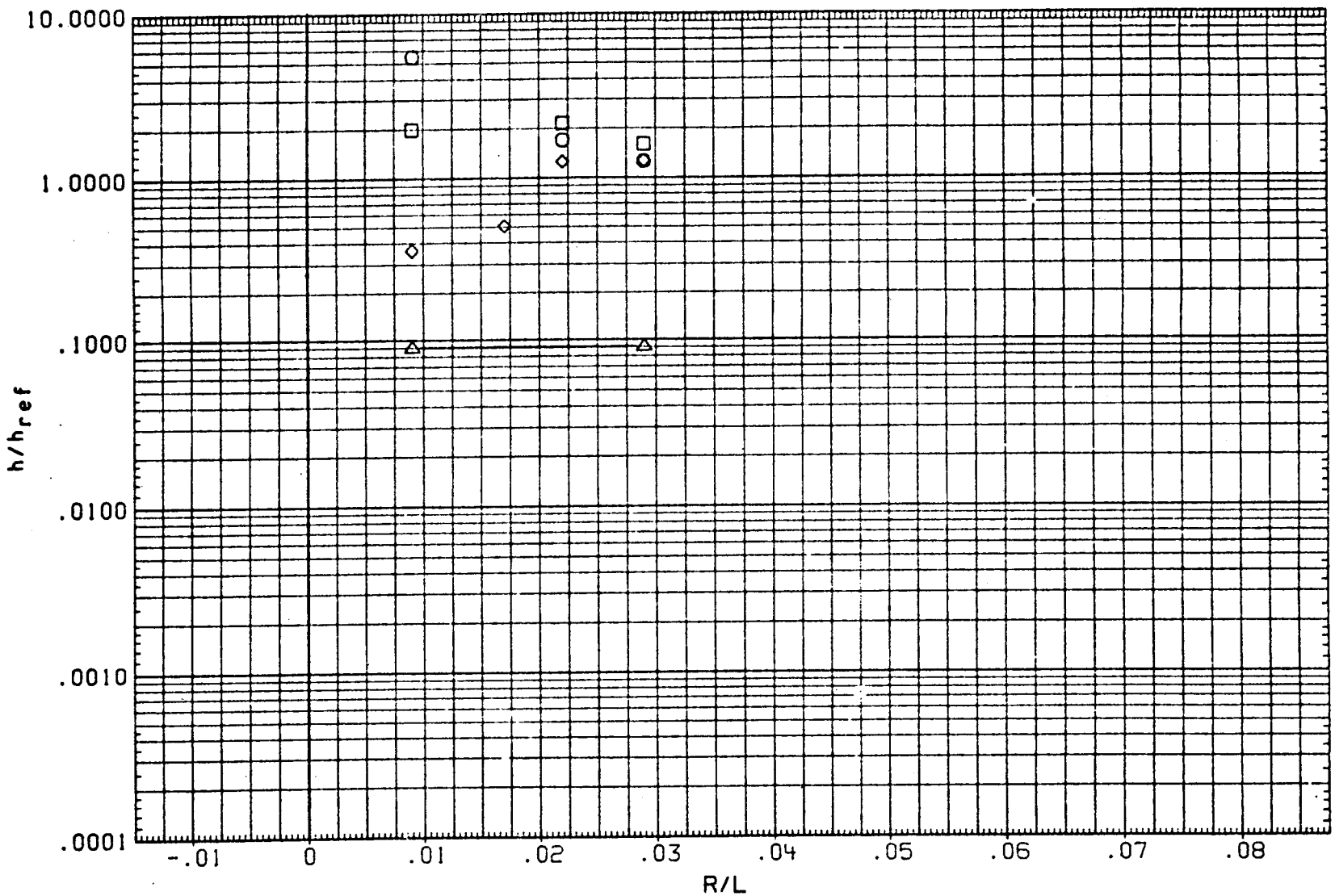

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 613

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

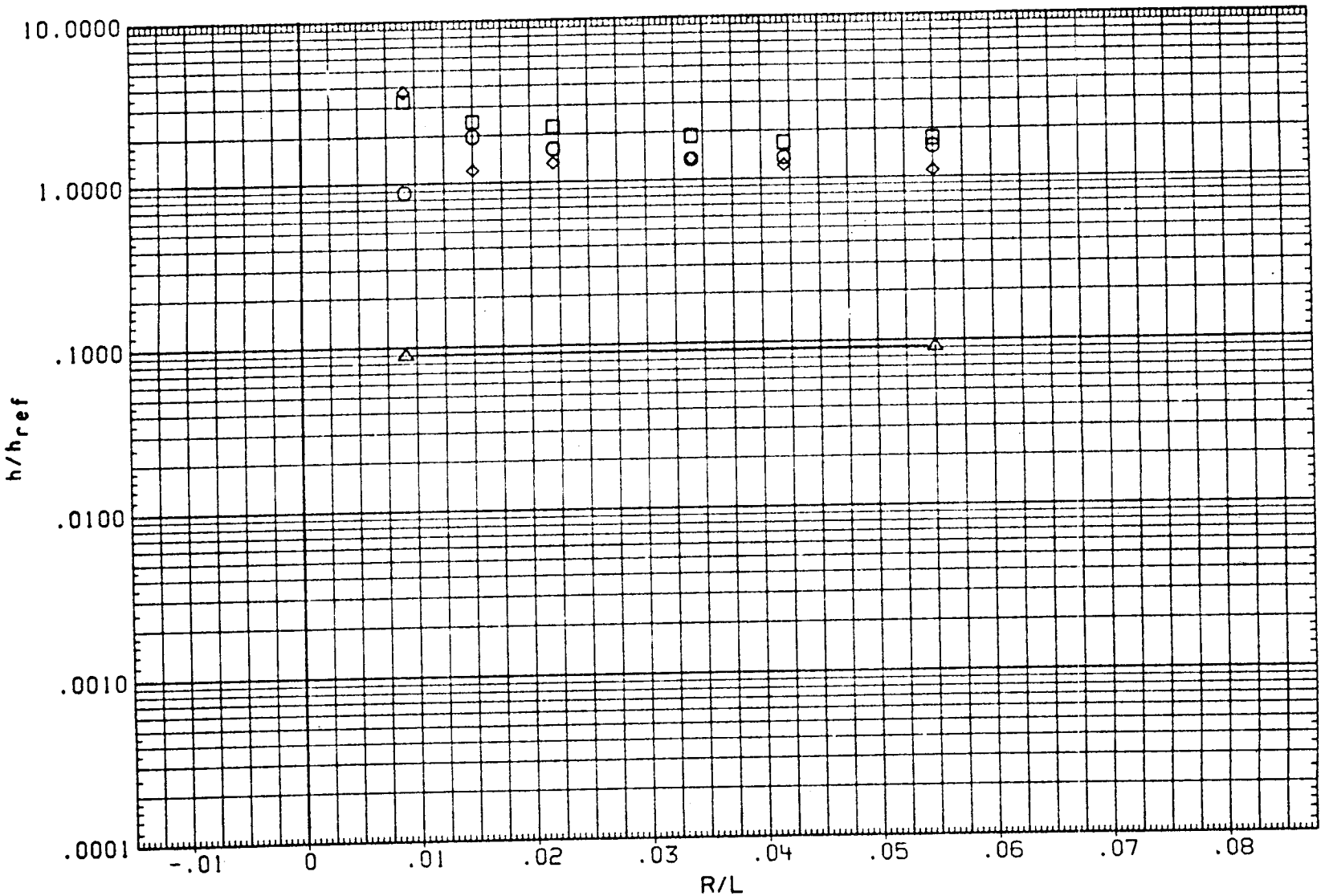

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 614

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

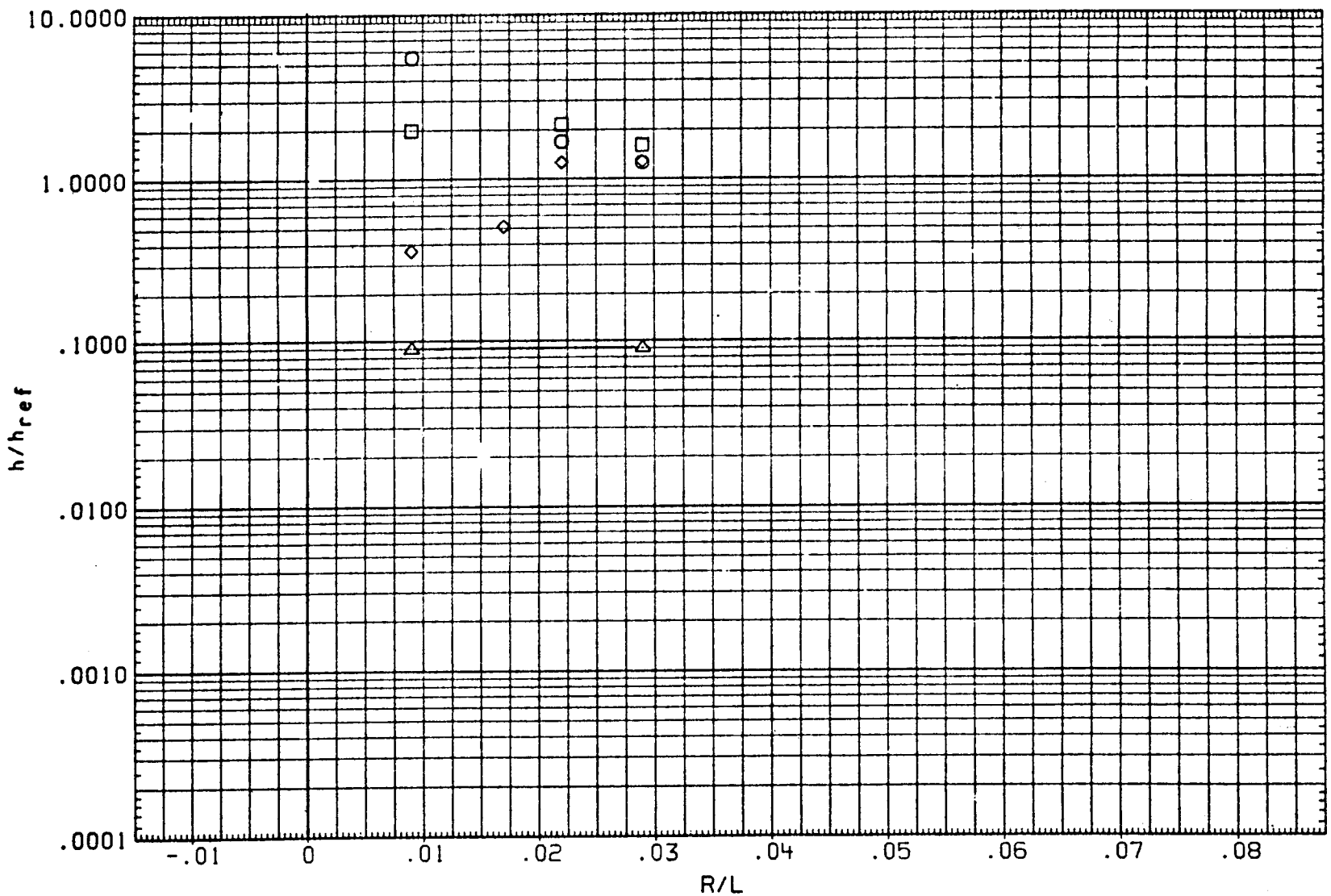

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

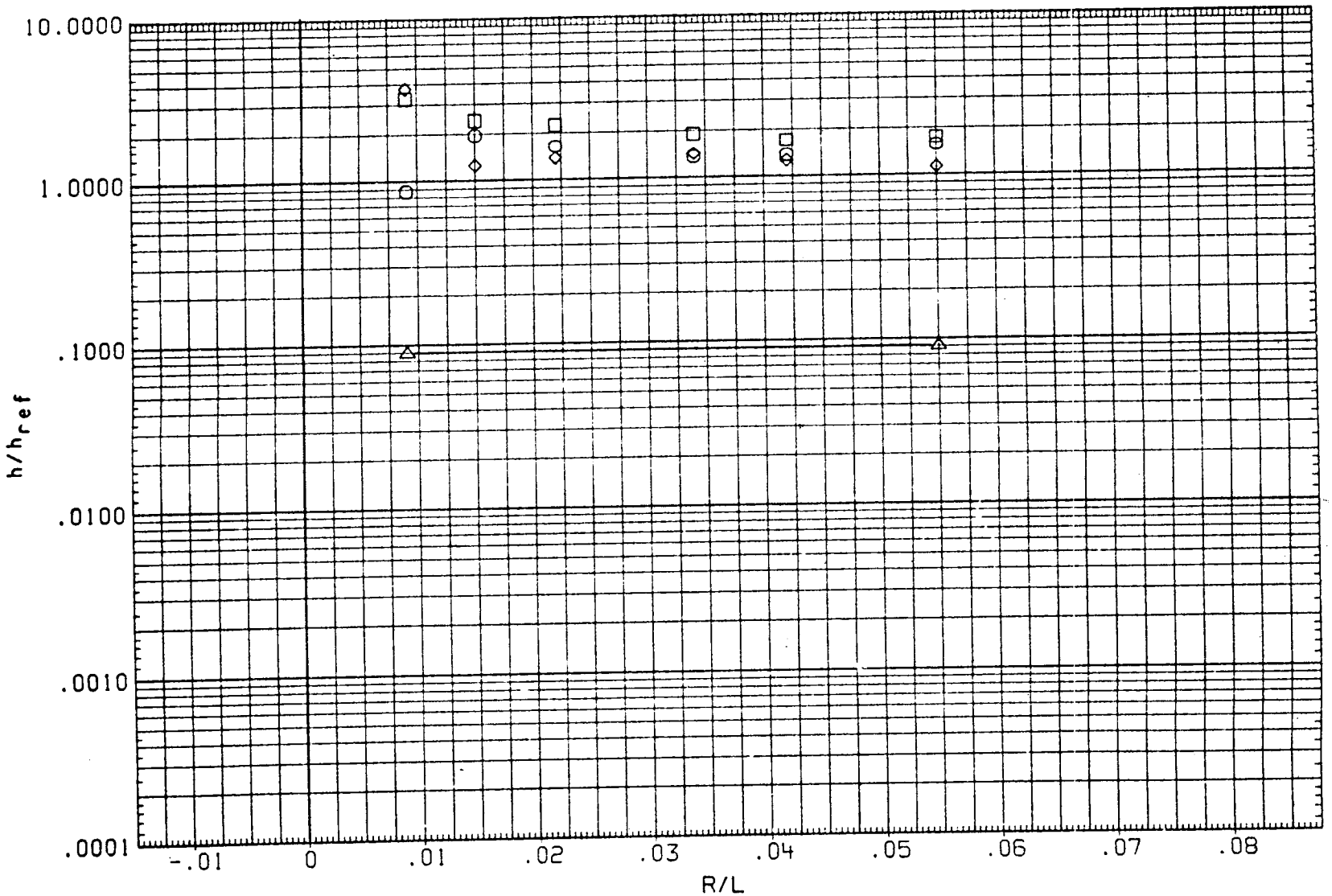

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 616

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

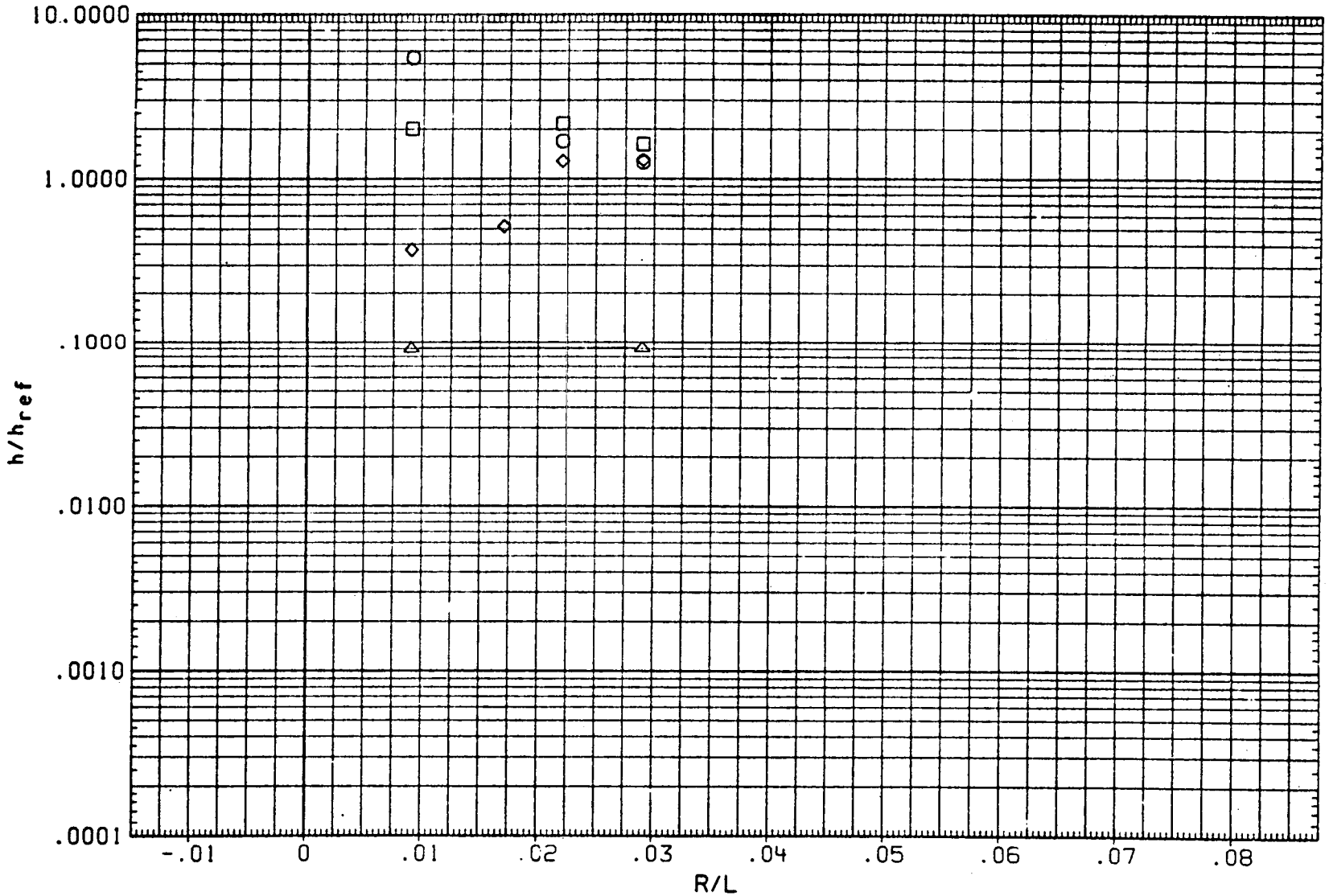

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 617

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) LH STRUT DIA	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

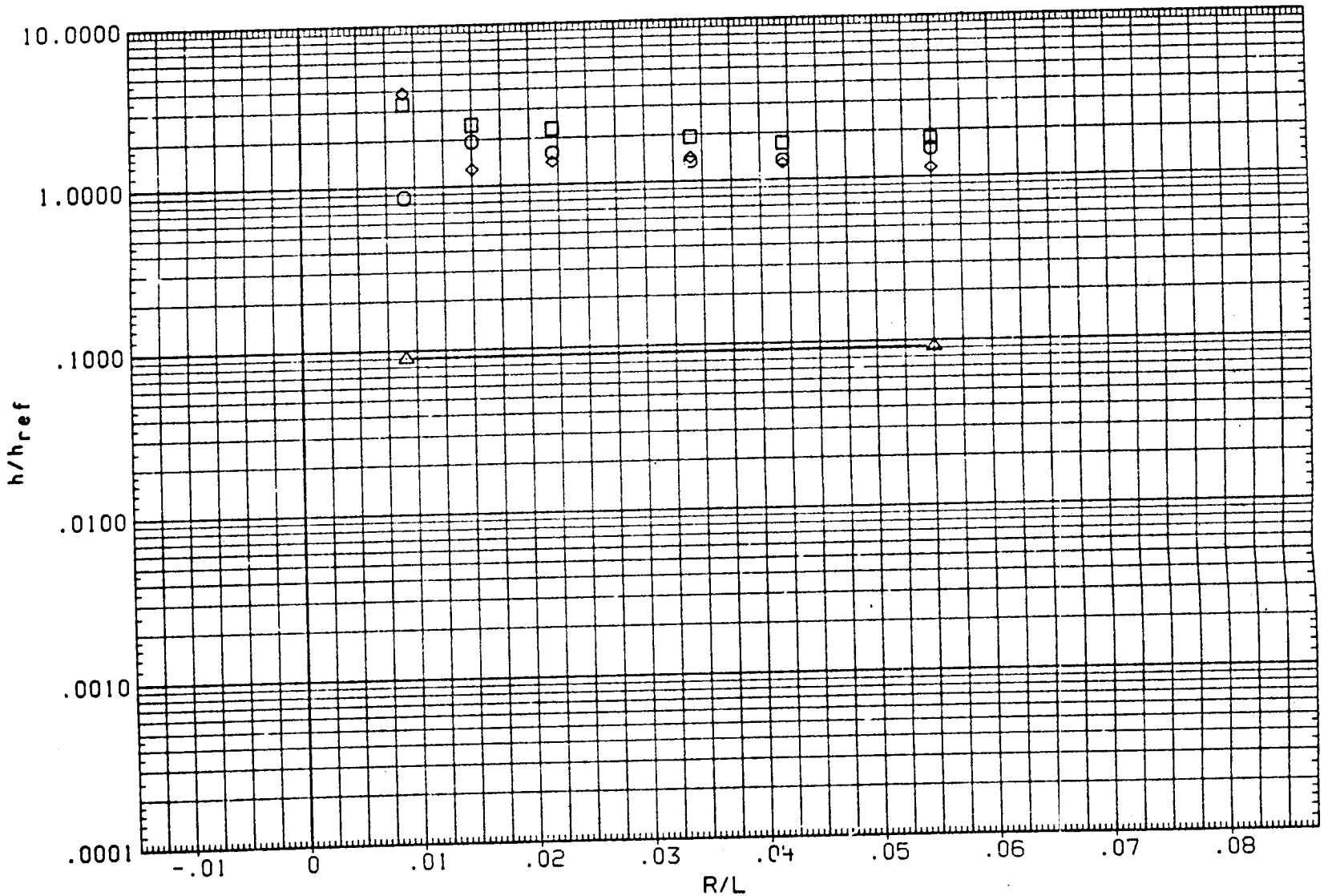

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 618

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(A20P02)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N20P0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

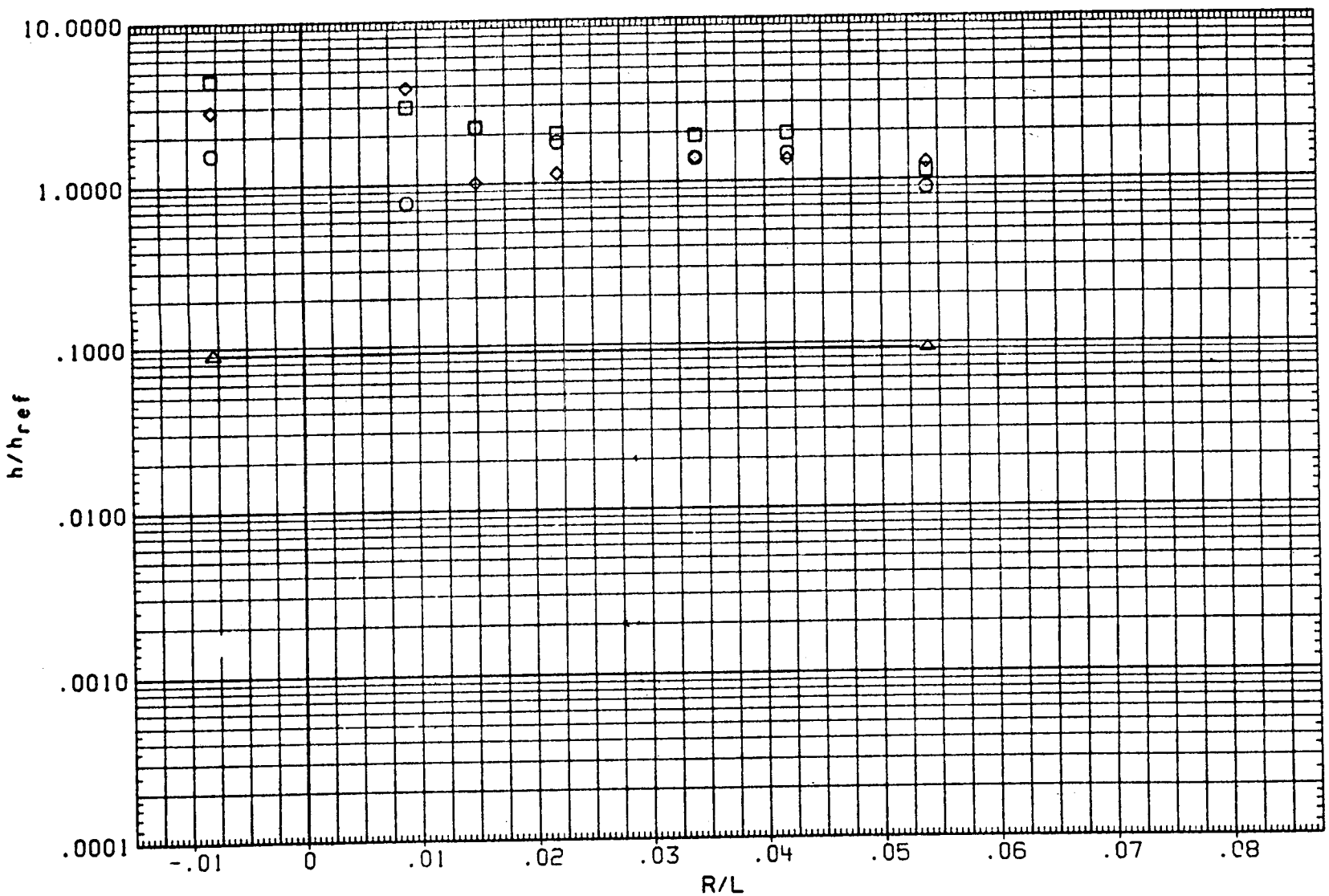

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 619

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(A20P02)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N20P0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

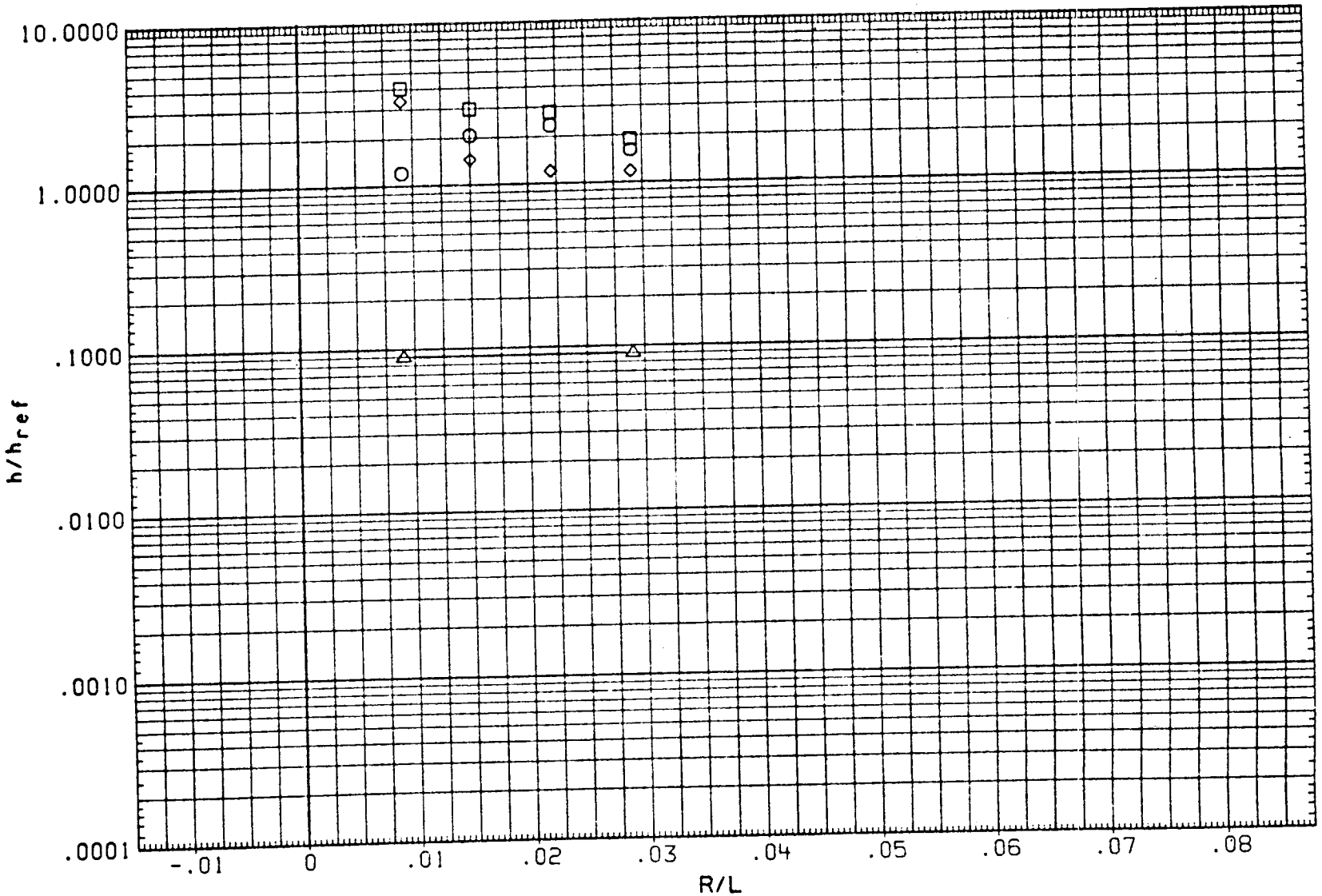

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 620

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(A20P02)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N20P0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

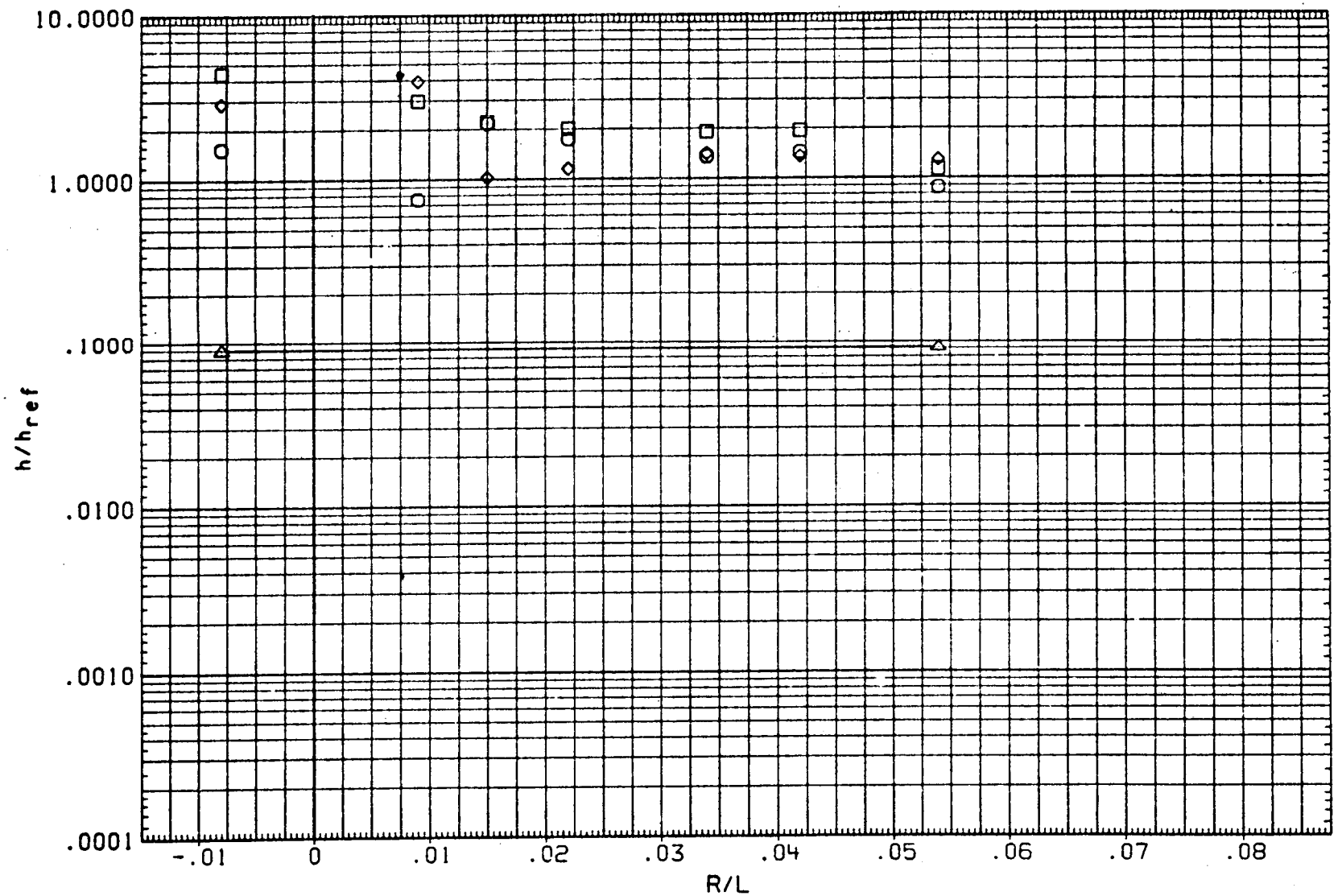

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 621

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(A20P02)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N20P0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

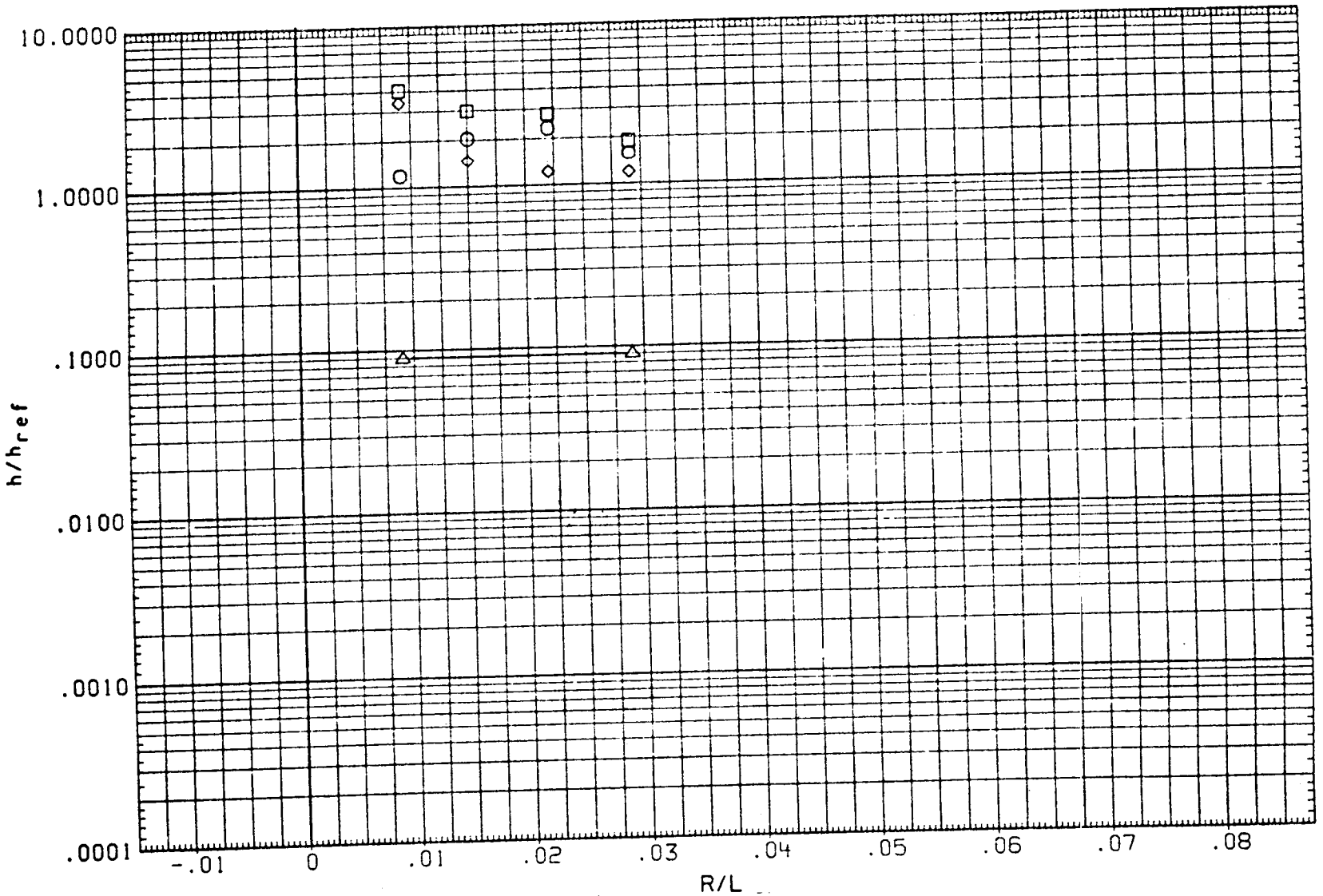

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 622

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(A20P02)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N20P0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

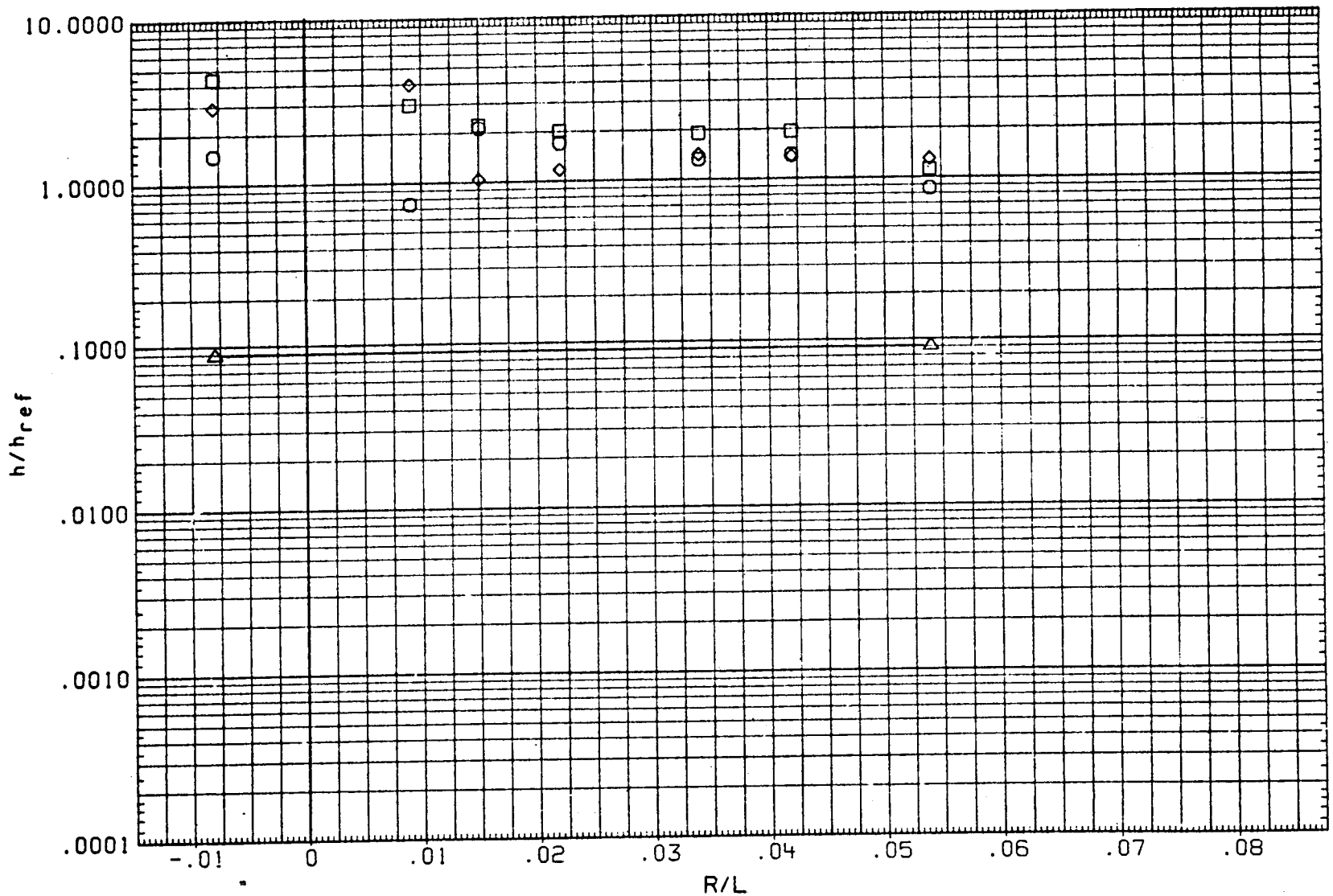

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 623

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(A20P02)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1A/5A	.000	.000	5.000	5.300
(N20P0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5A)	△	IH51A THEORY CONF 5A RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

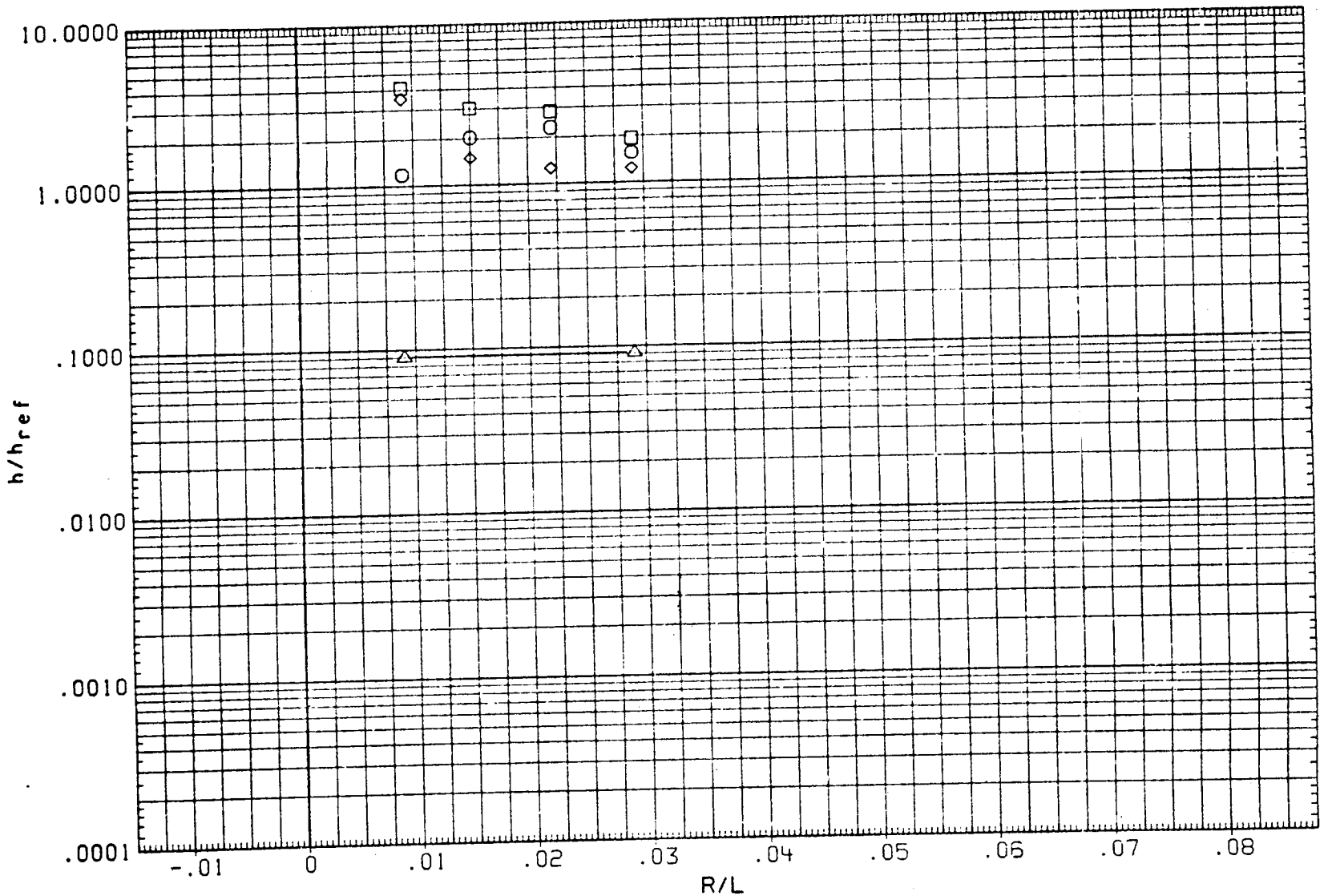

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.300 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 624

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

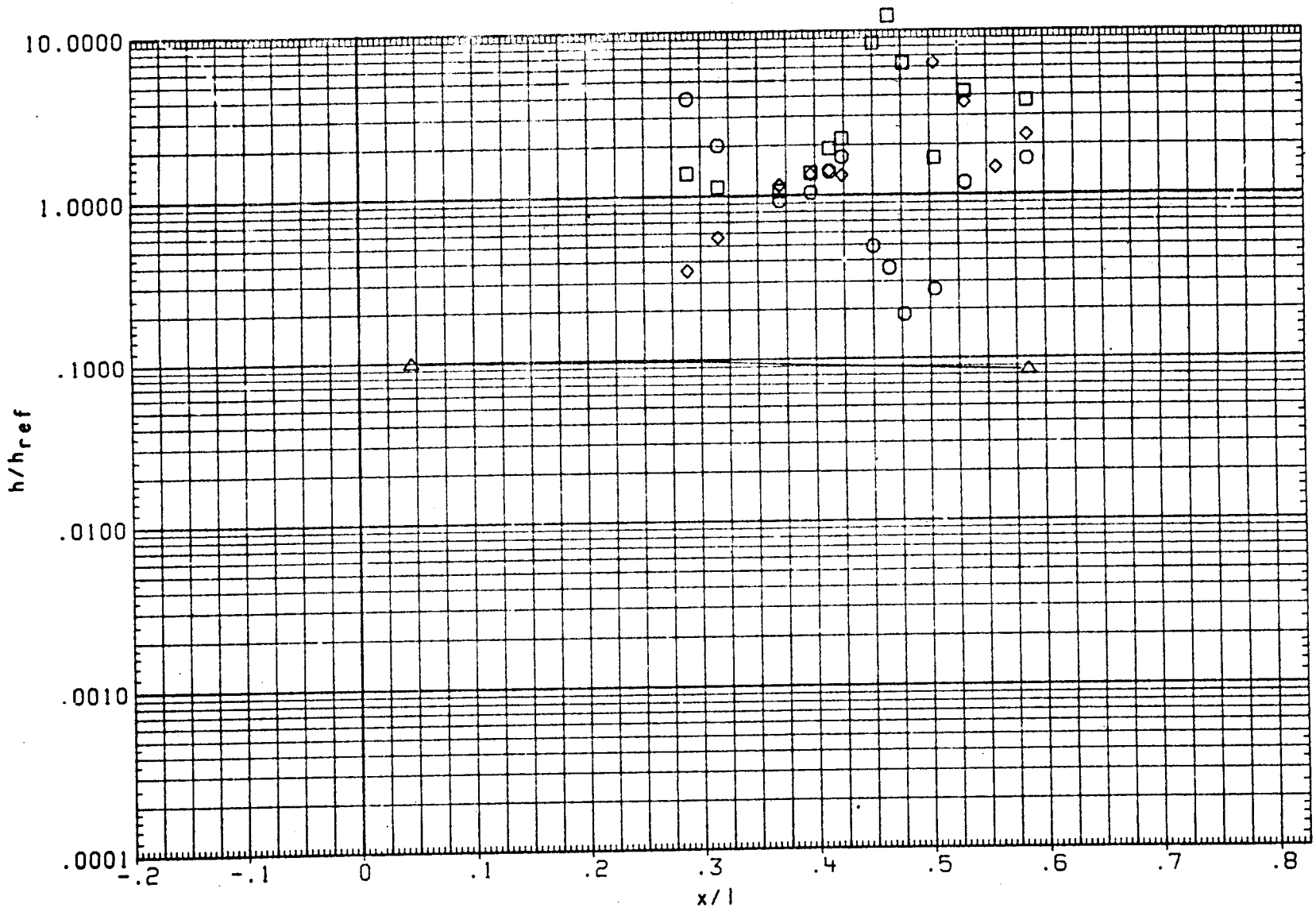

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = .850 PHI = .000 DATE 22 APR 78 PAGE 625

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20..A	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q0c)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

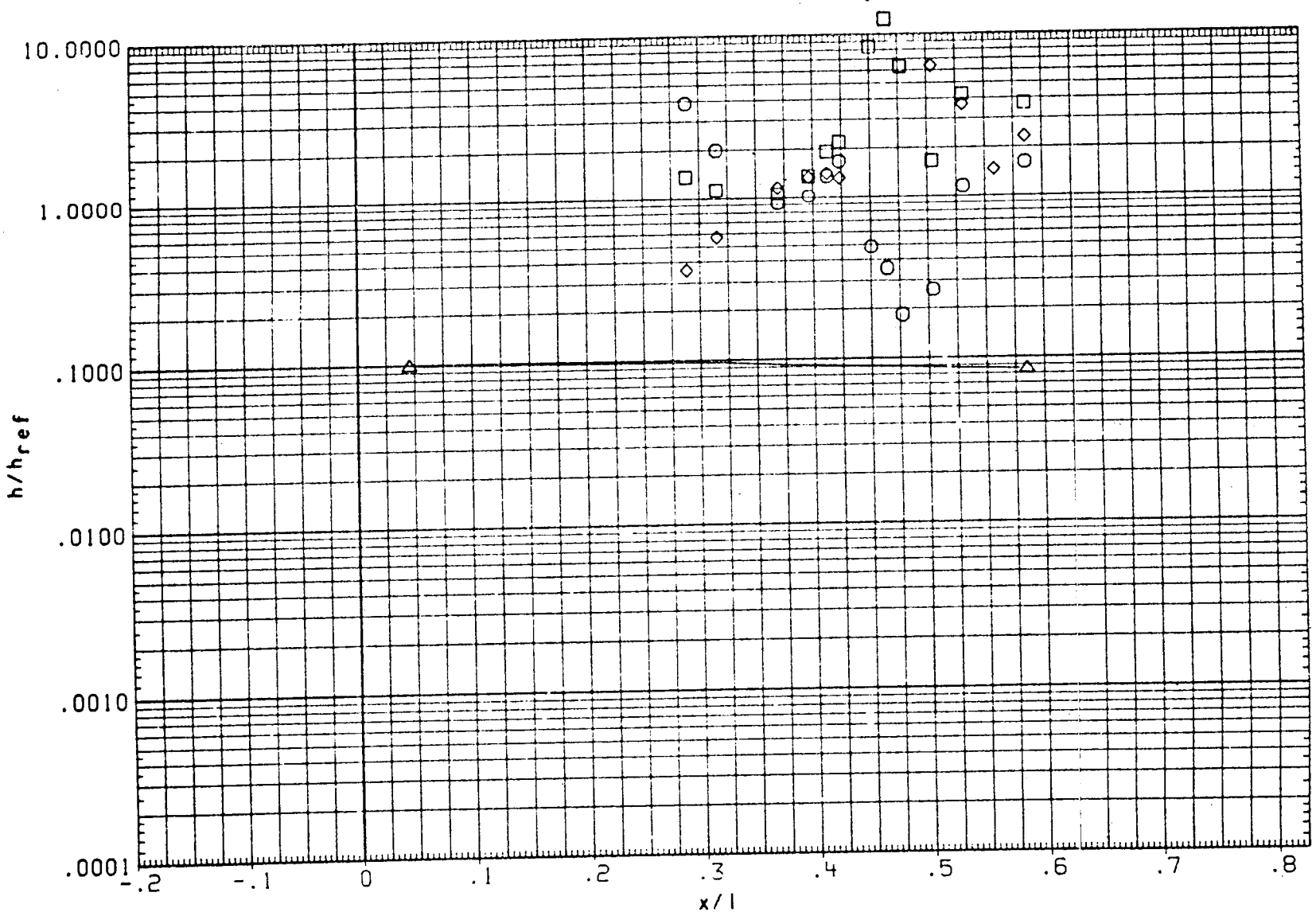

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = .900 PHI = .000 DATE 22 APR 78 PAGE 626

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

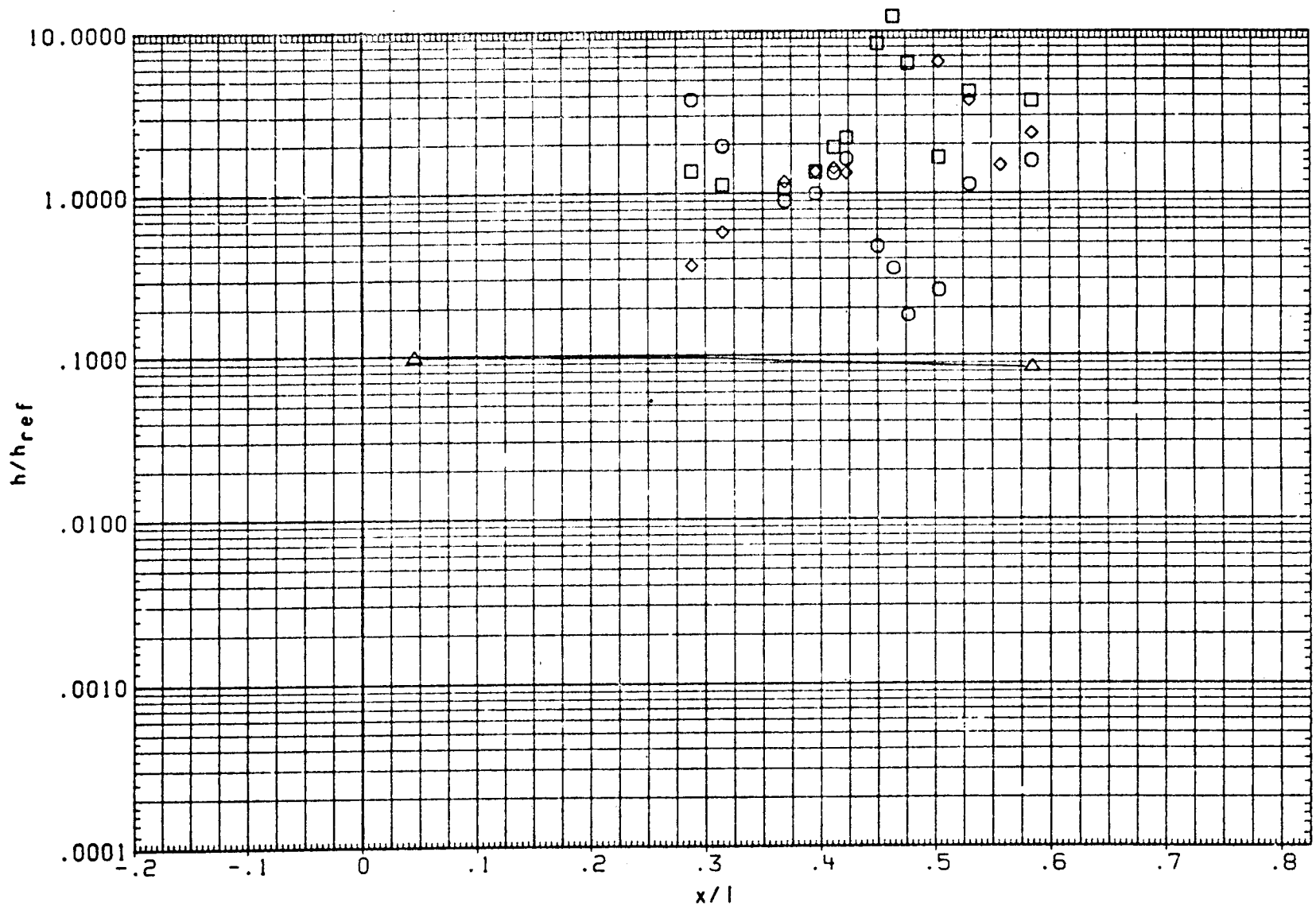

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.300 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 627

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000B)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

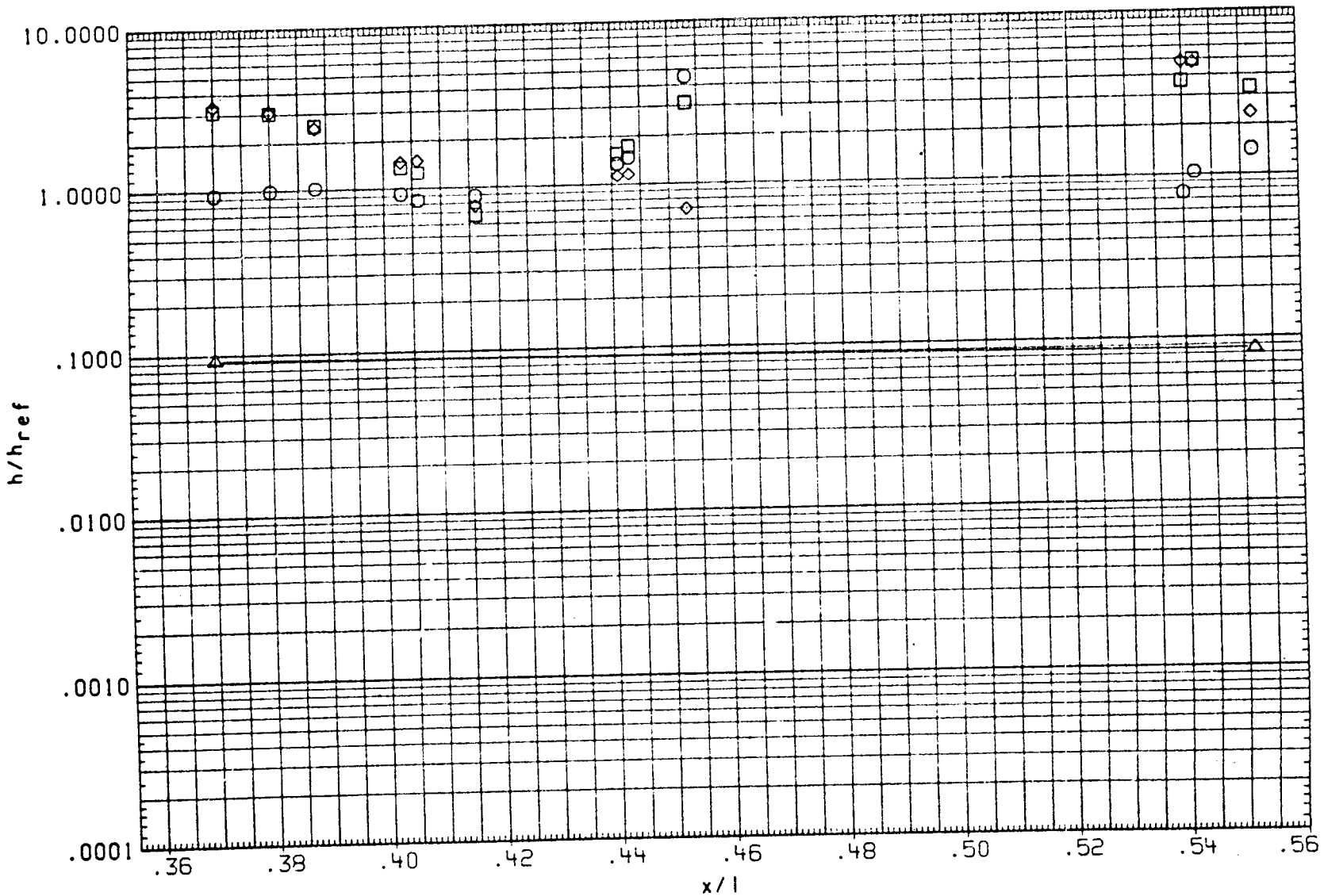

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 628

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

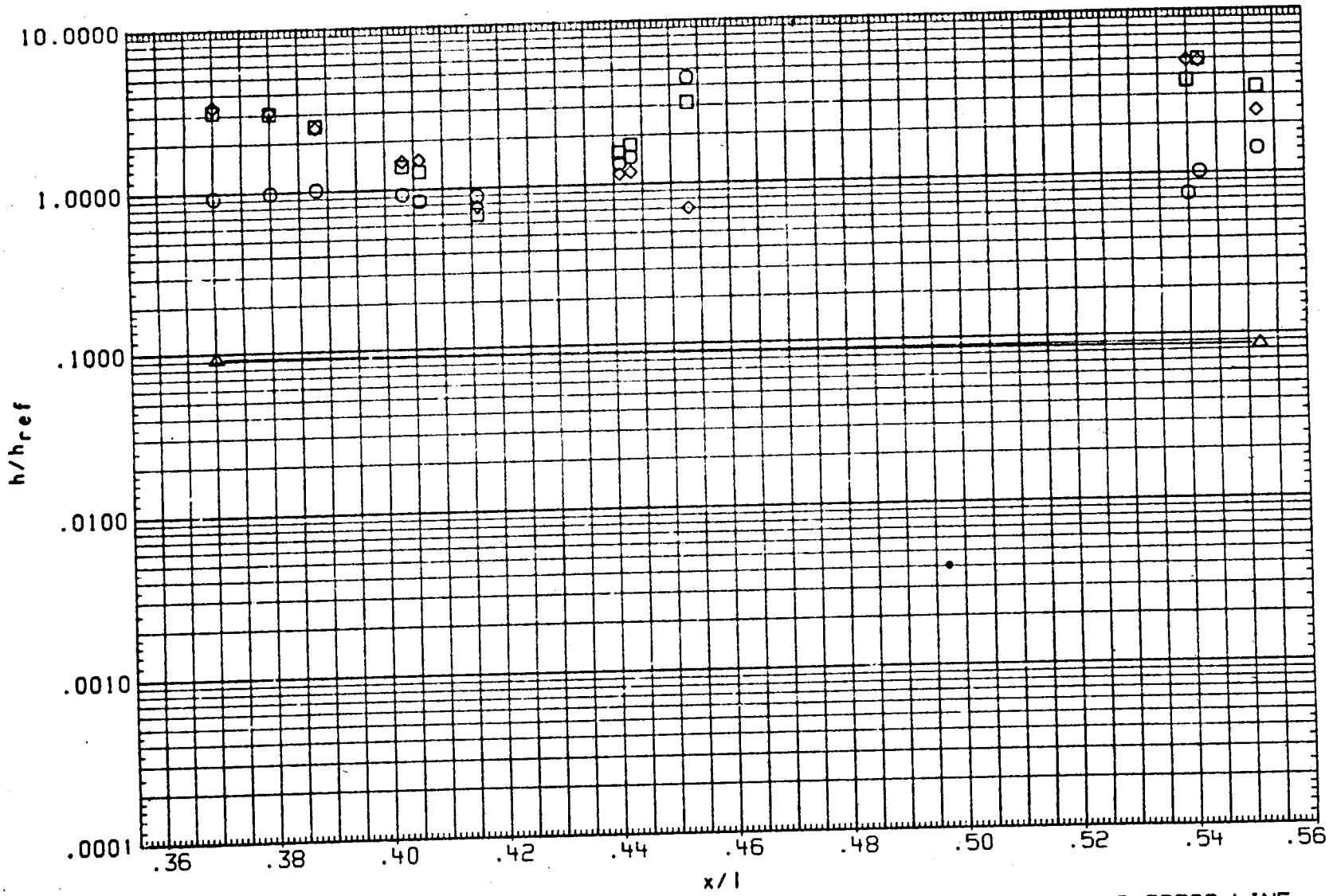

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 629

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (IA/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE IA/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

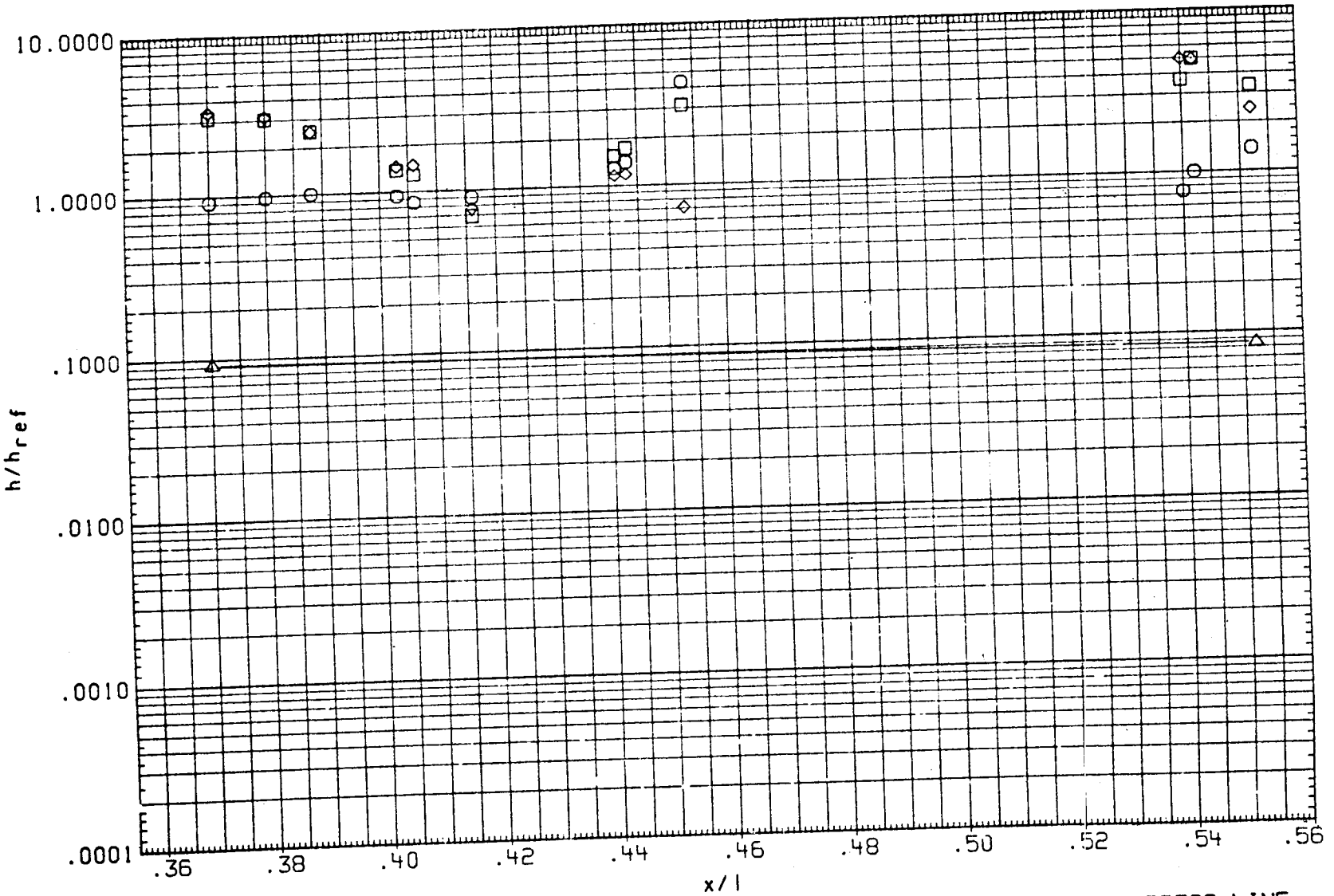

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.300 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

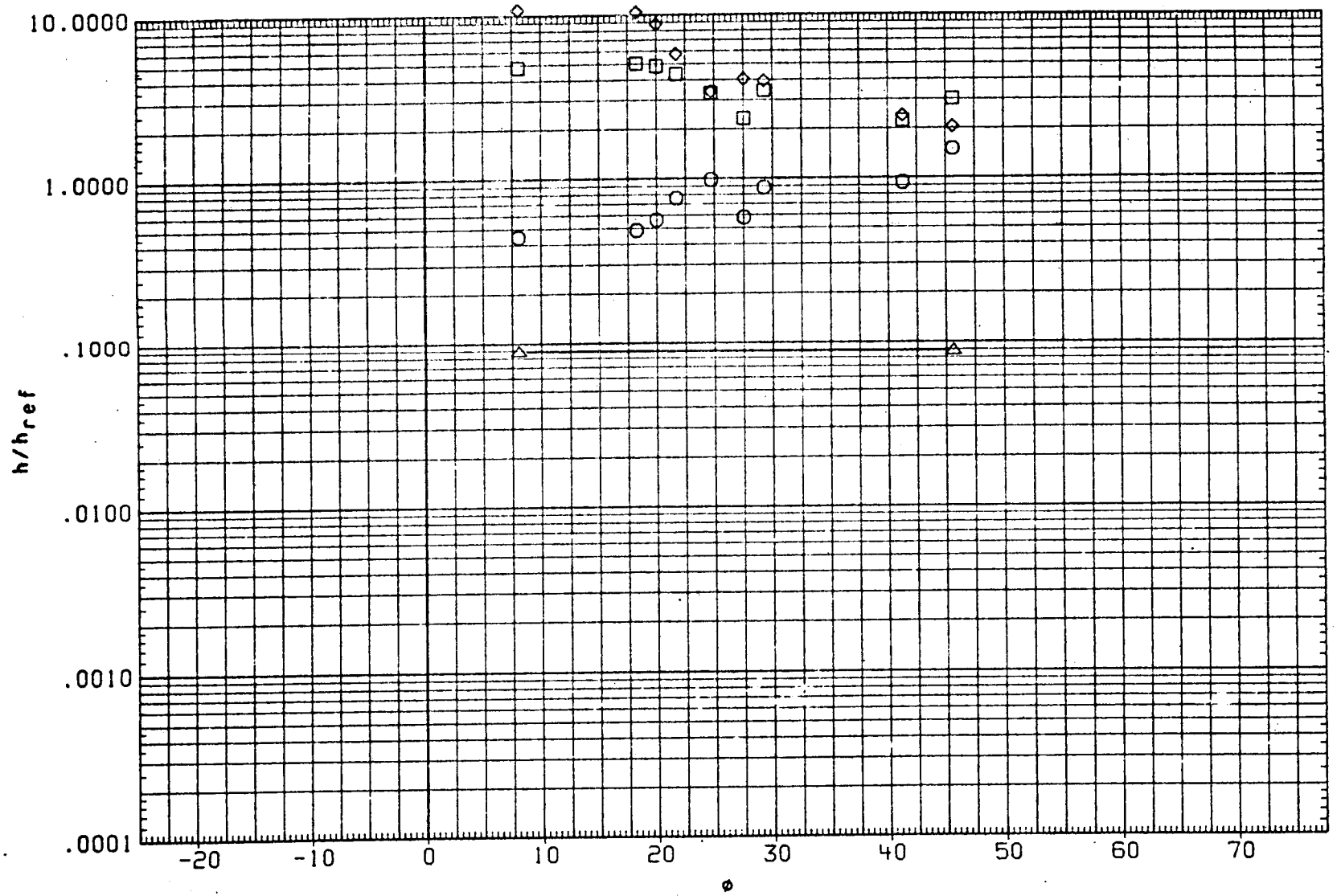

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 631

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

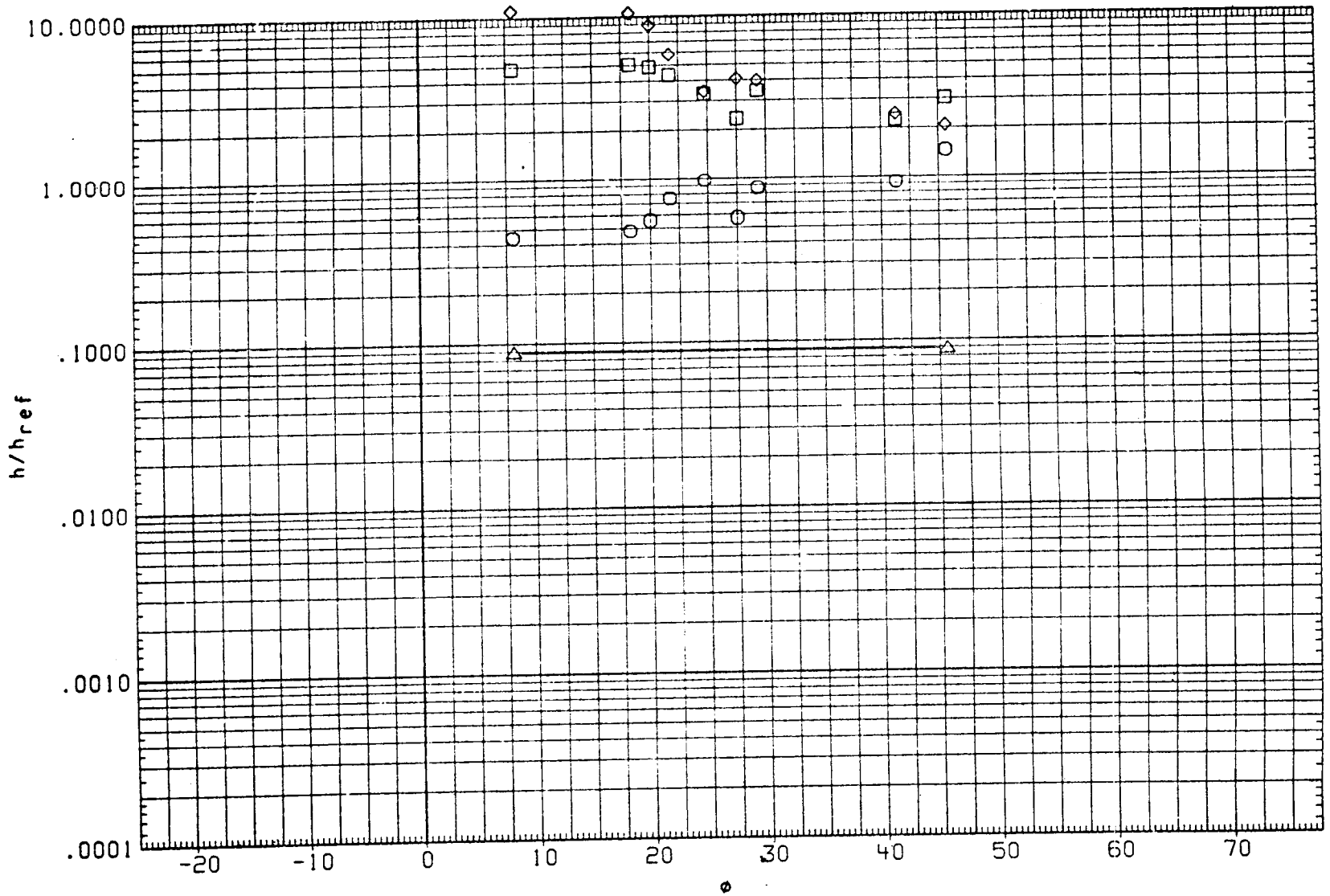

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 632

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

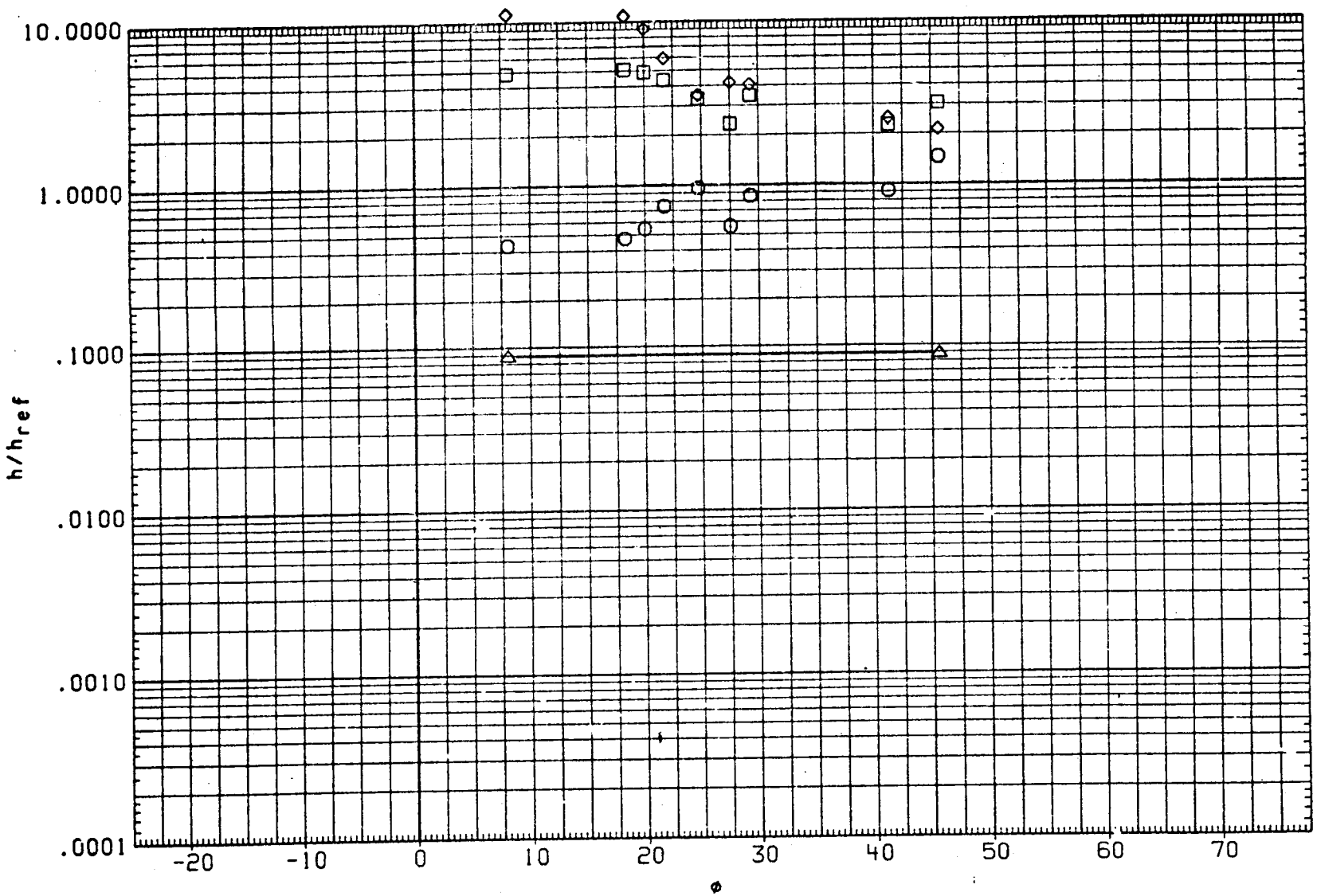

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 633

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

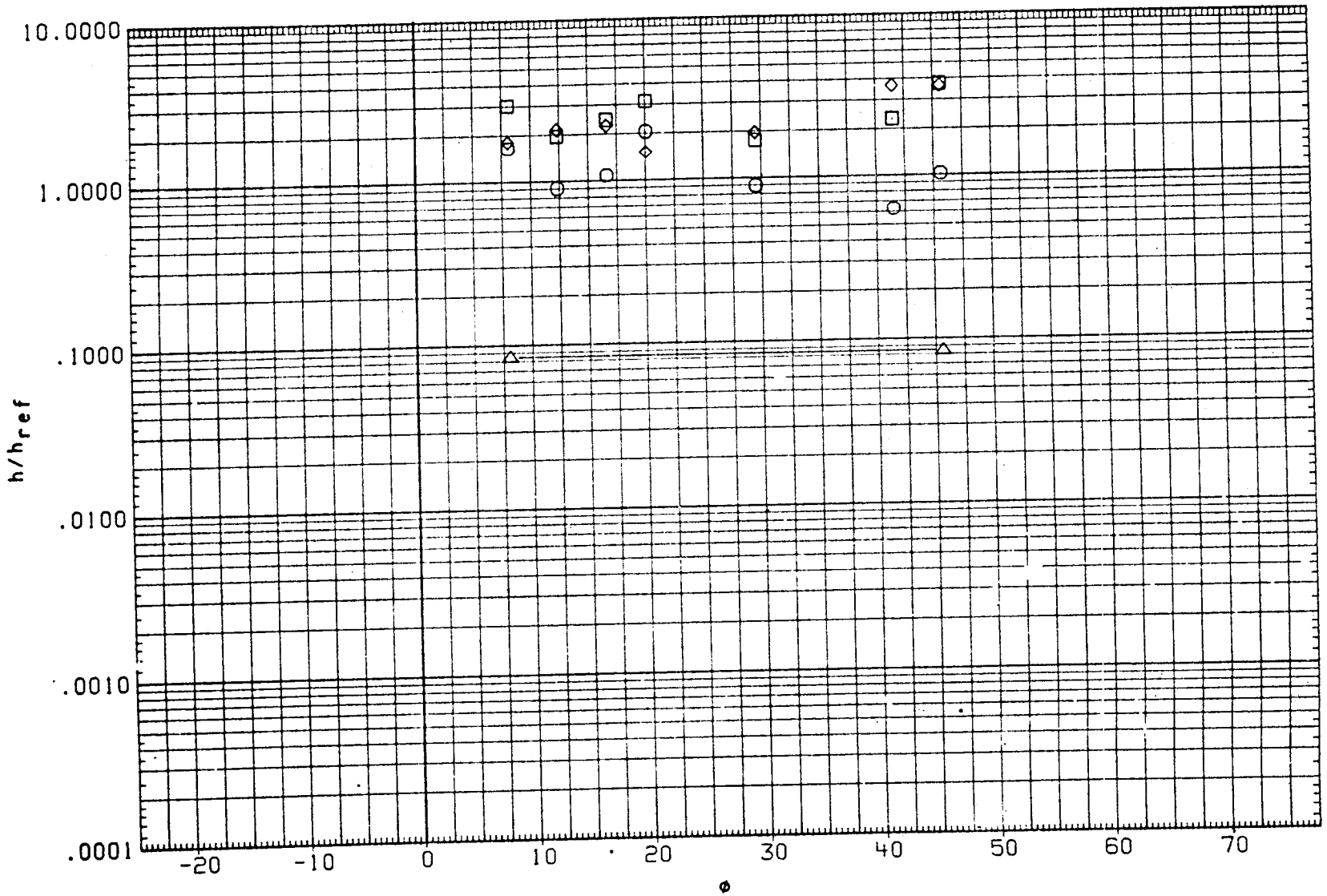

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 634

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2030A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

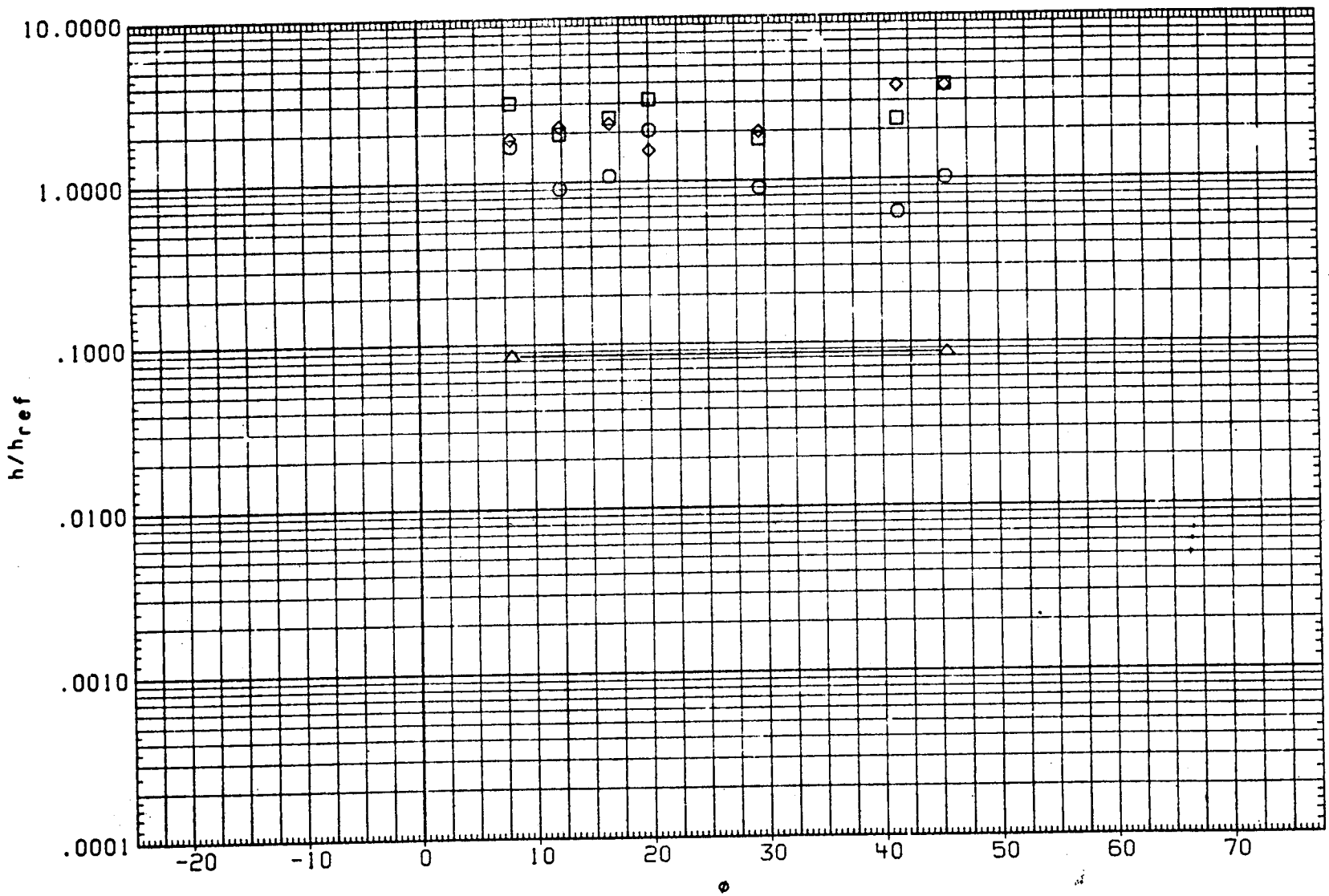

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .578 DATE 22 APR 78 PAGE 635

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

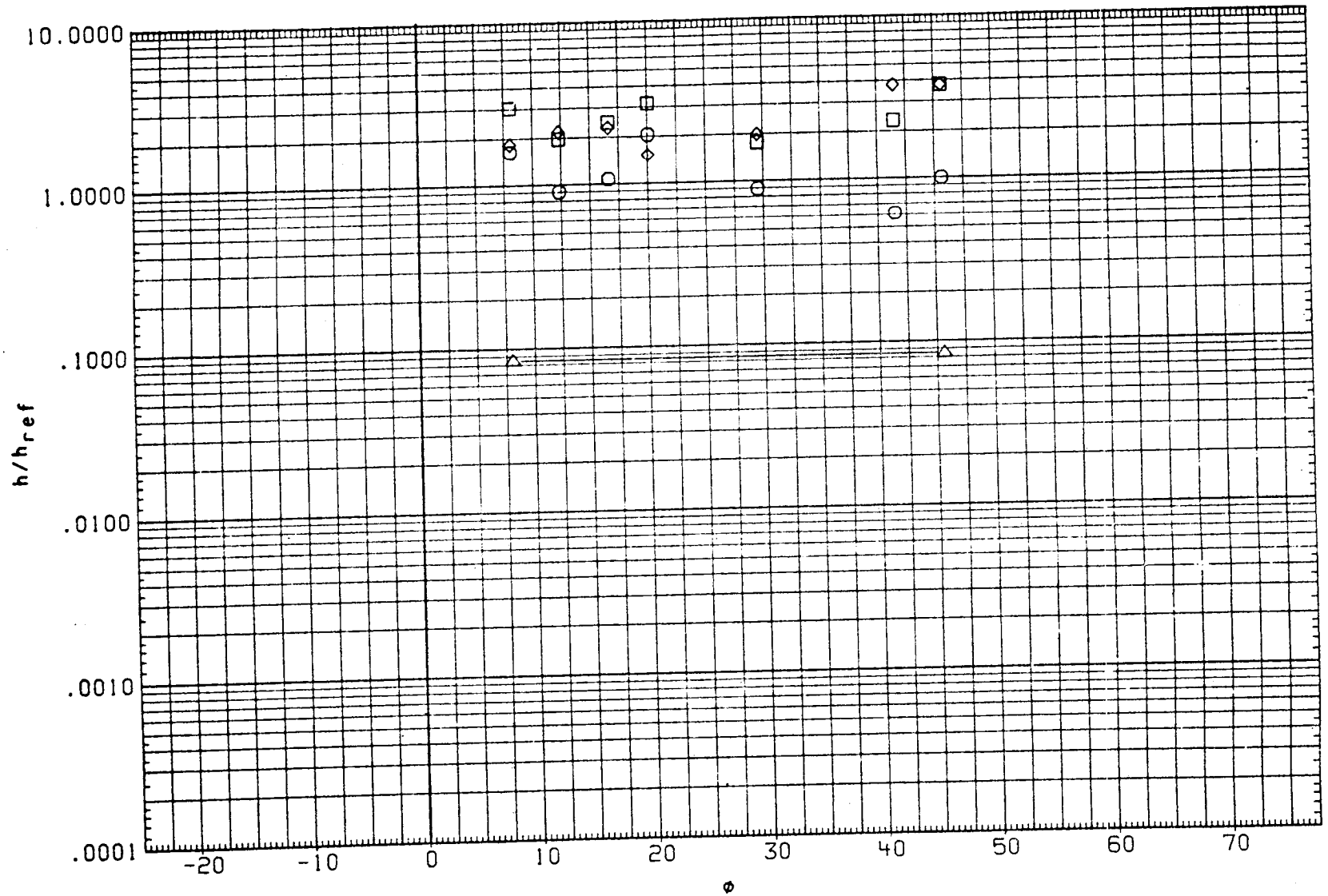

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 636

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

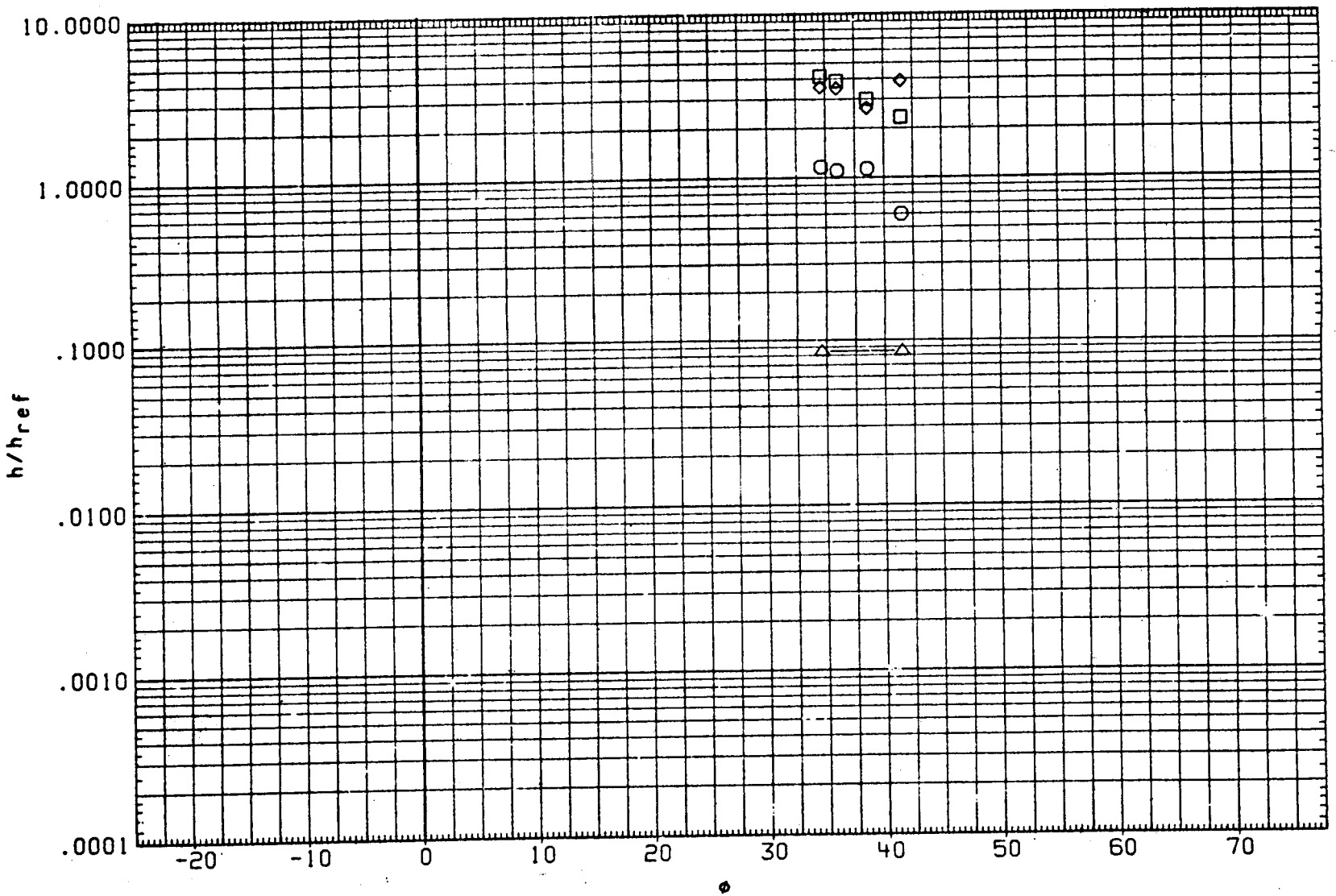

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 637

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

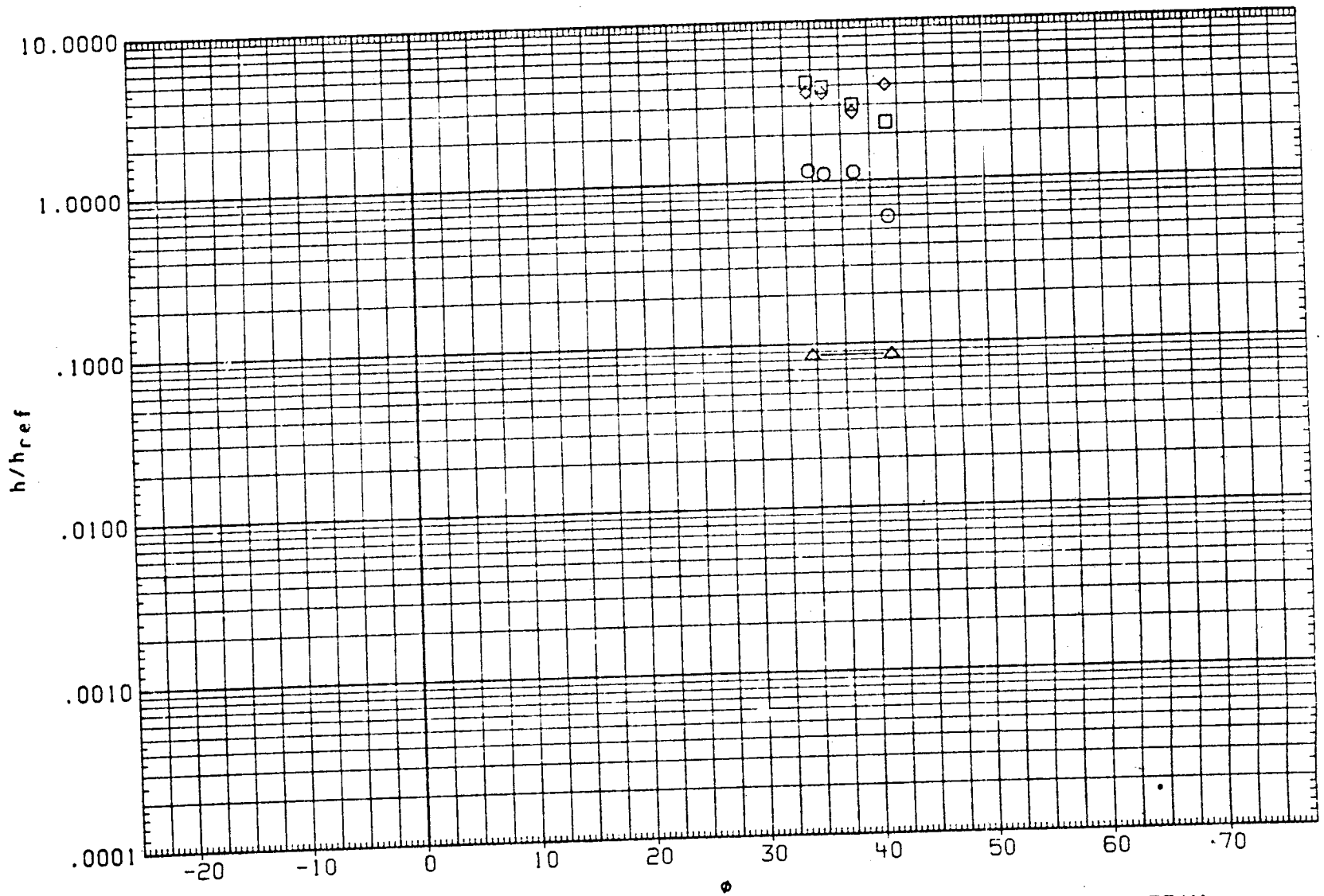

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 638

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2003A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

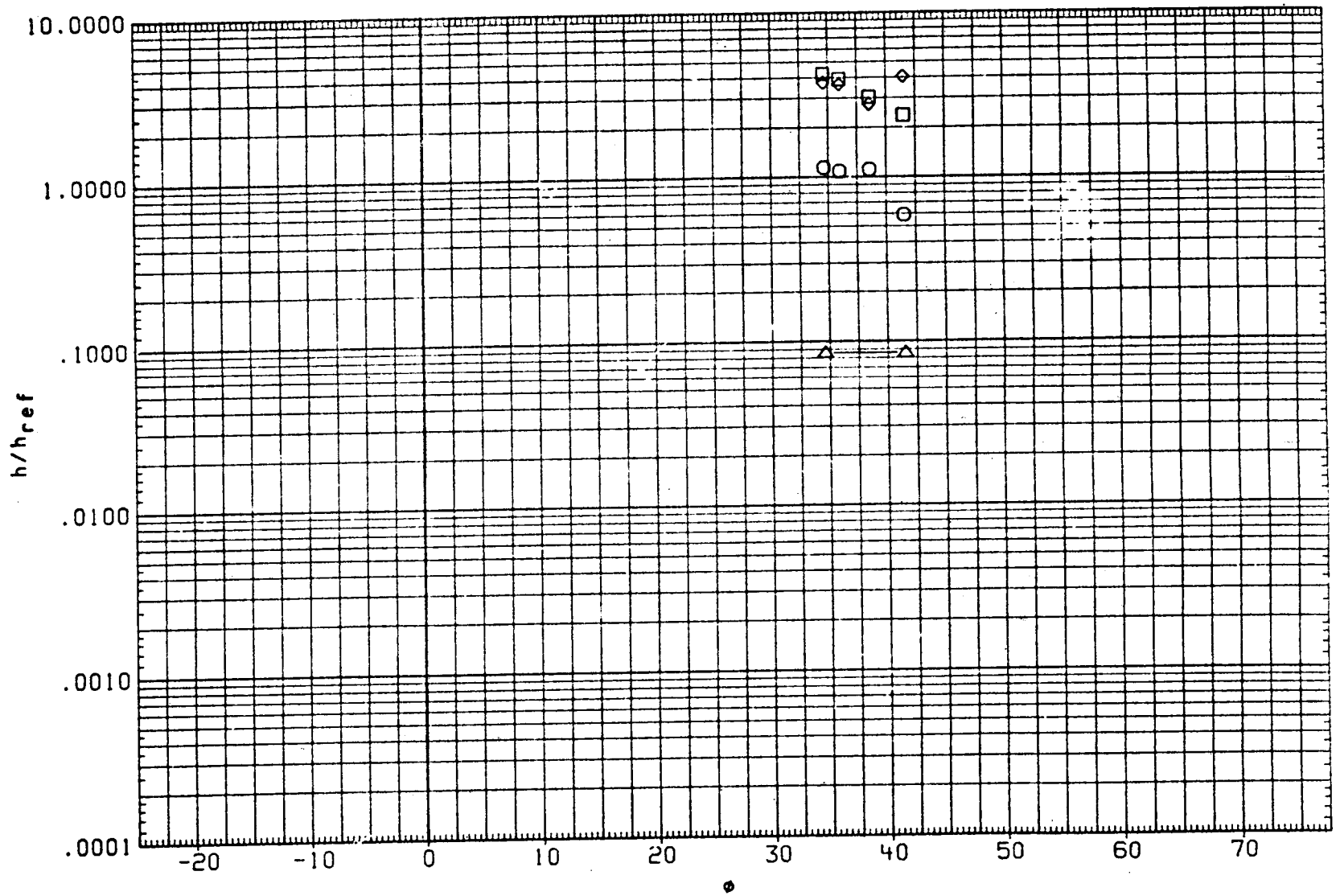

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 639

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

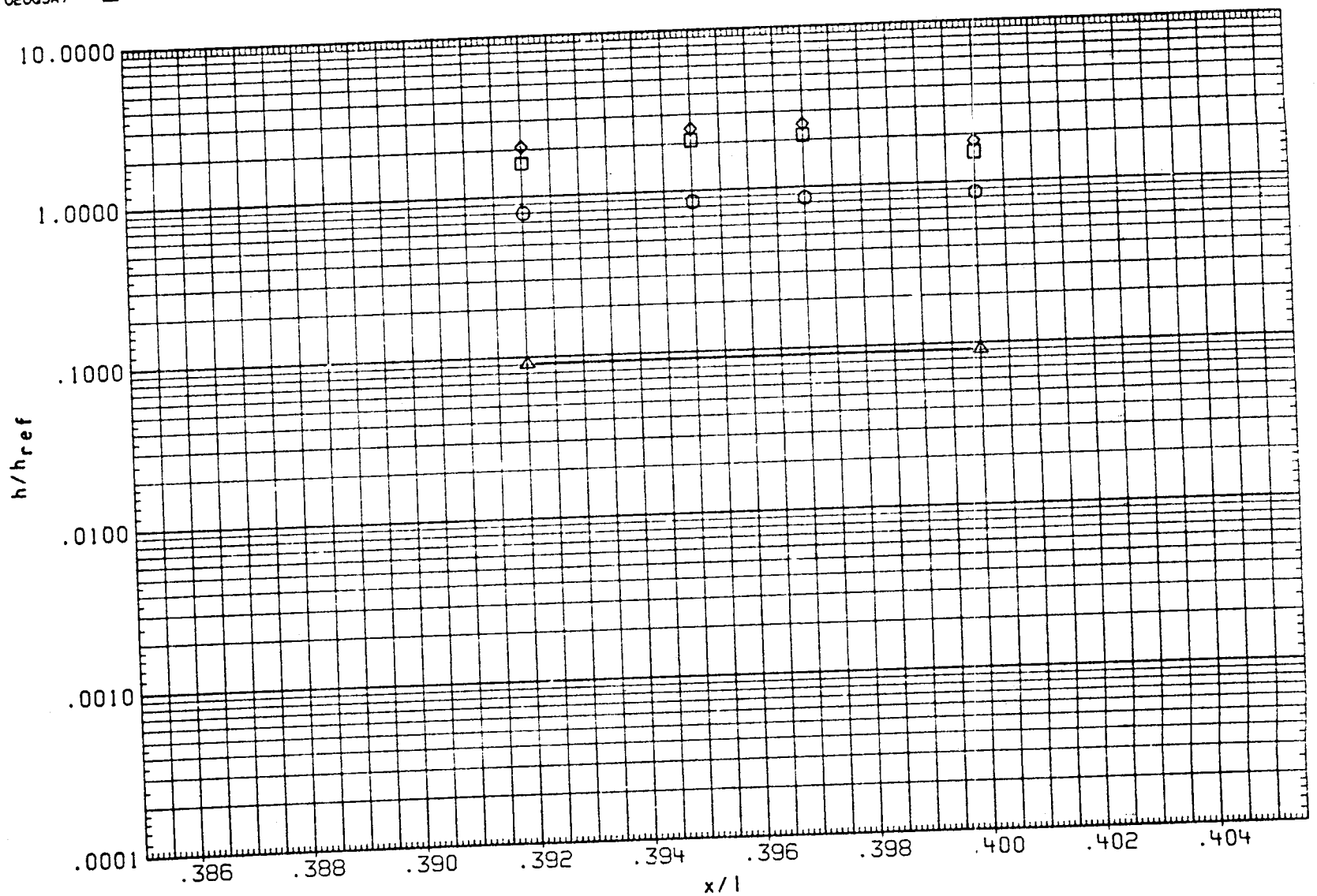

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78 PAGE 640

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	000	.000	5.000	5.300

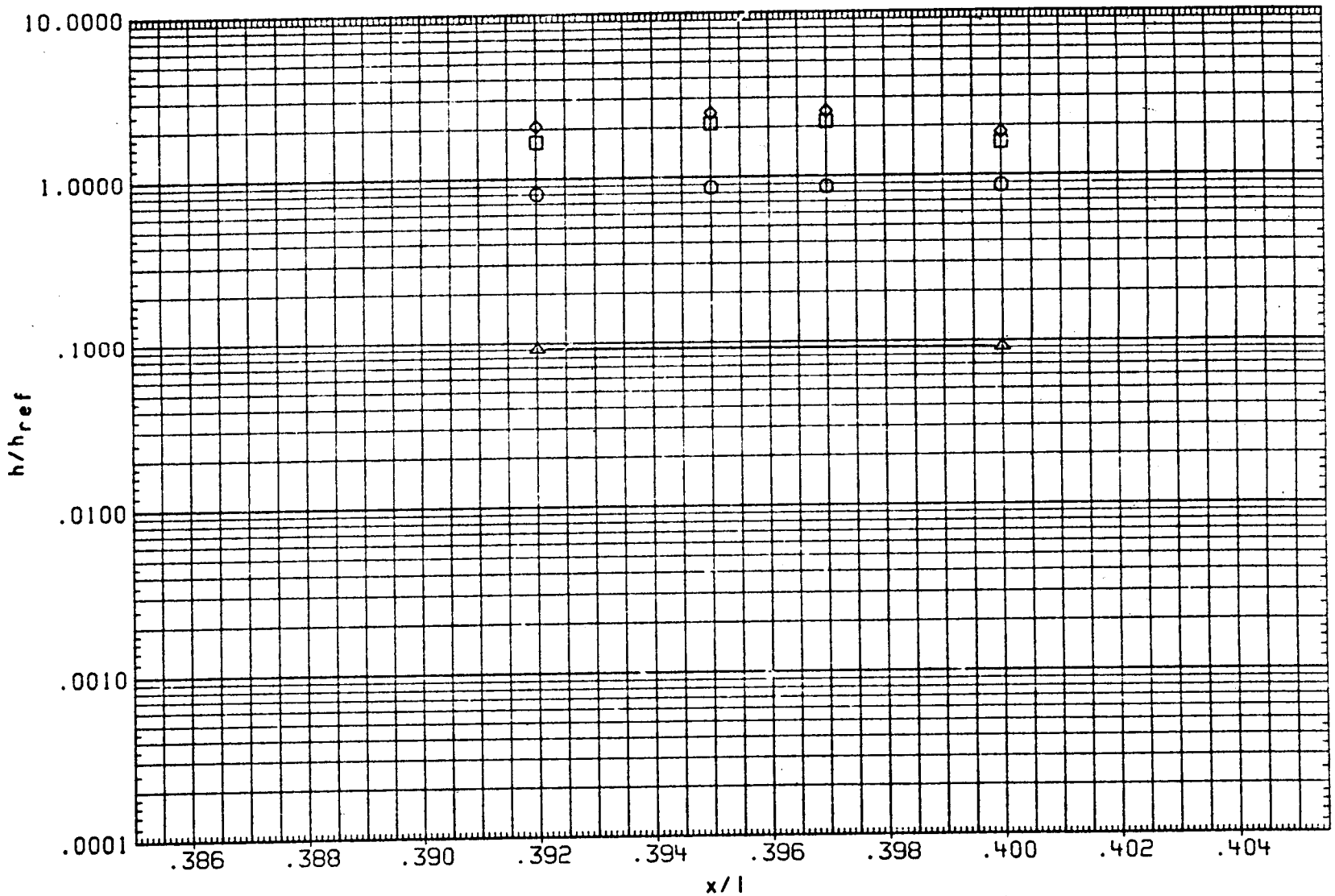

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 641

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

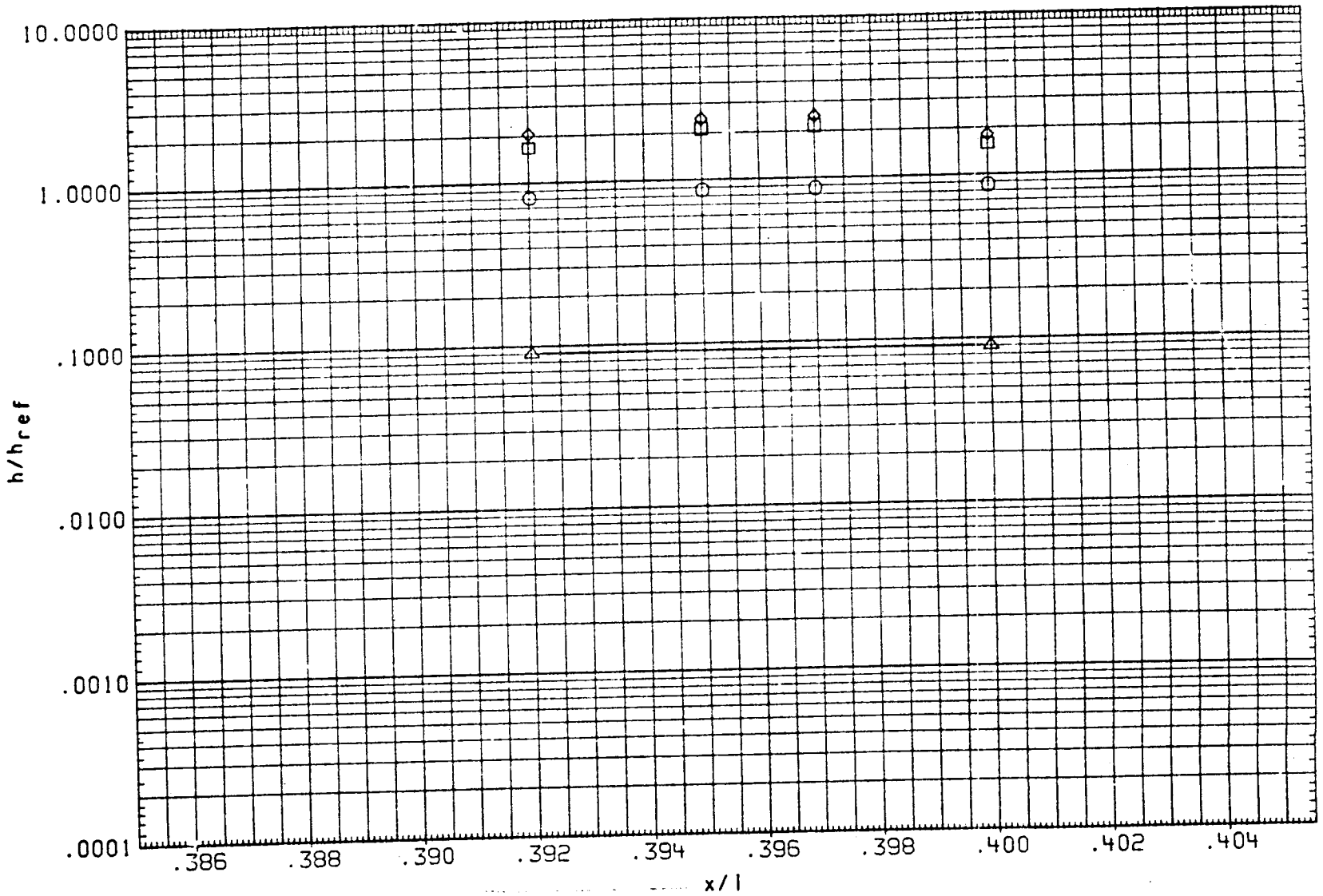

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78 PAGE 642

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

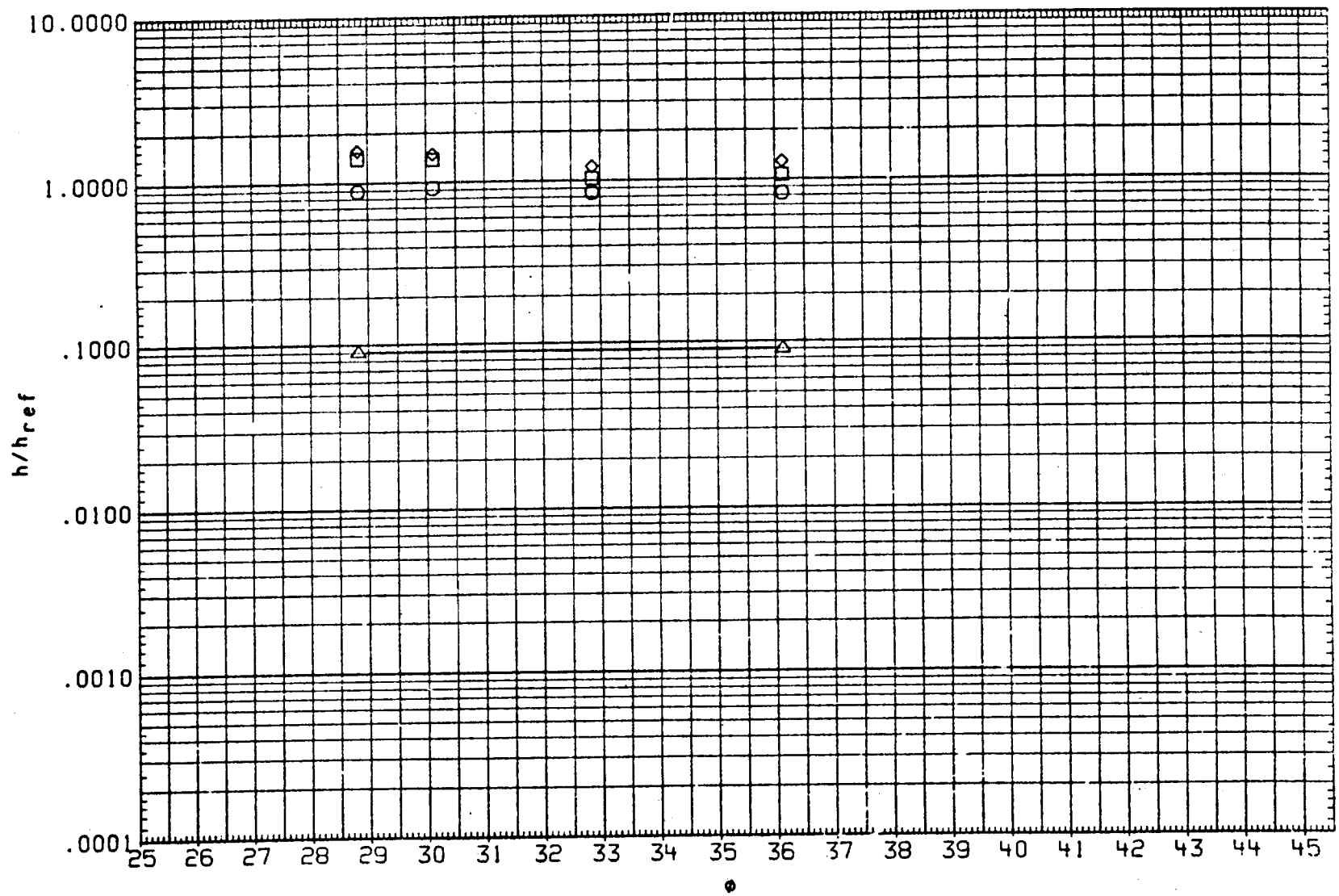

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .403 DATE 22 APR 78 PAGE 643

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

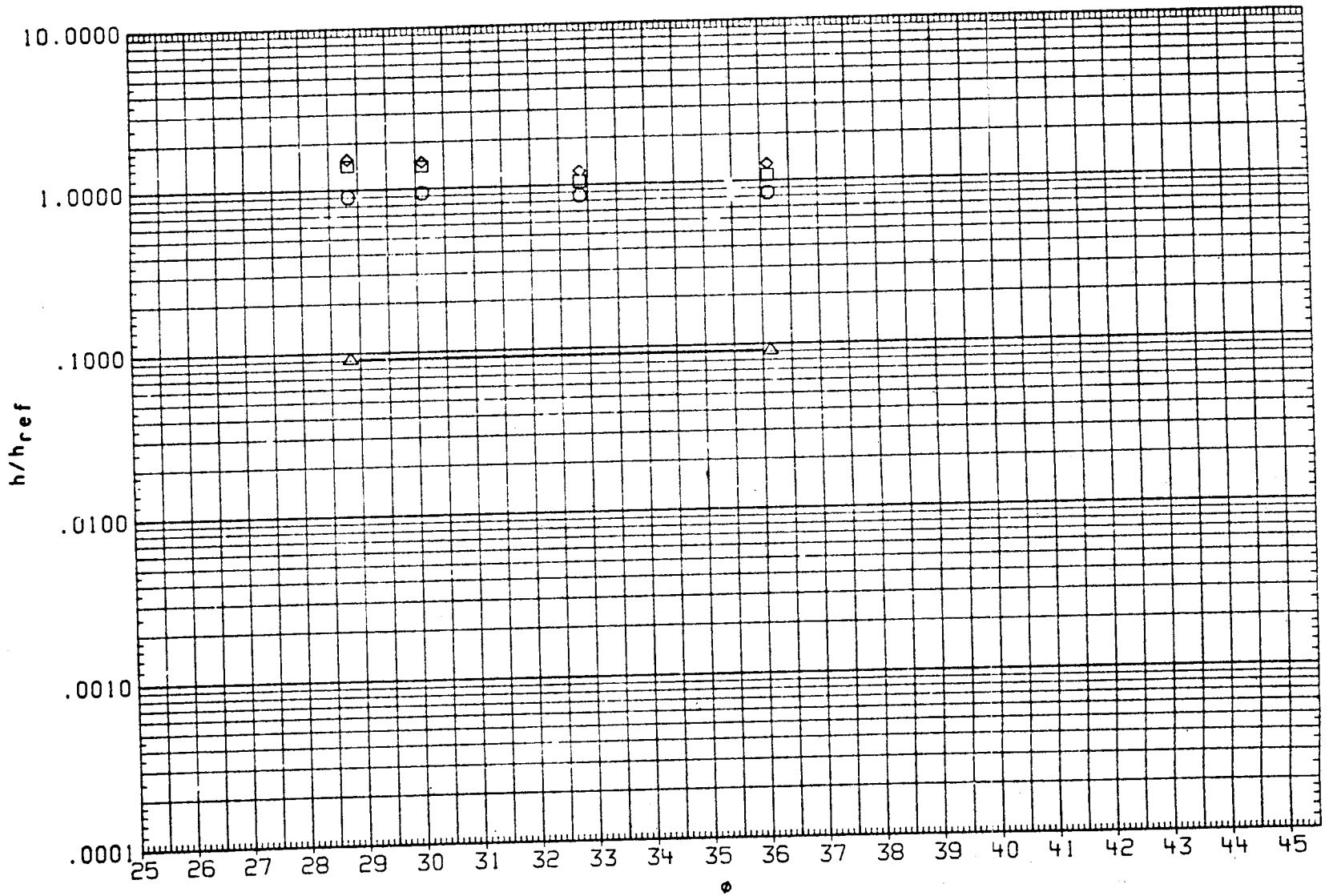

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 644

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

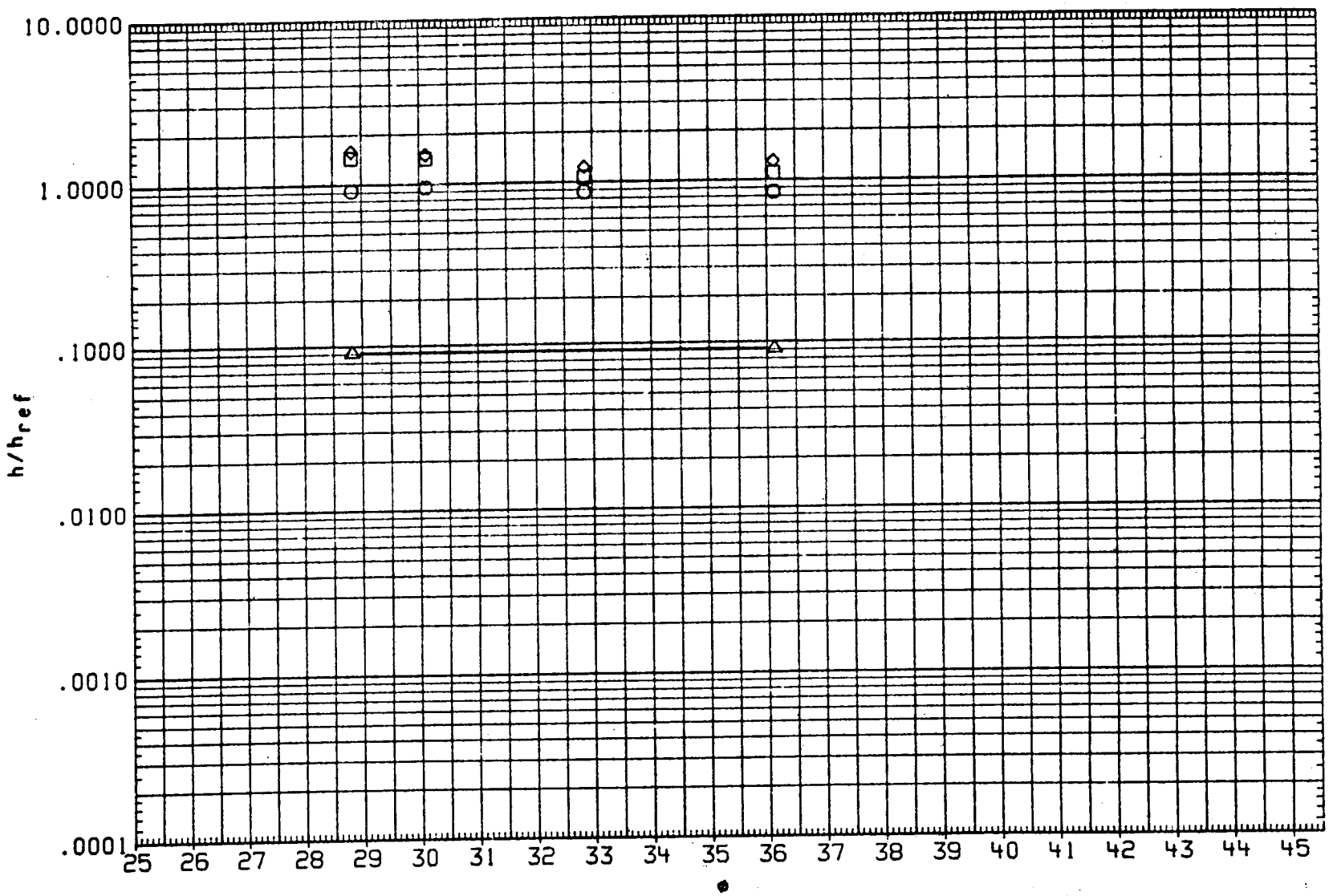

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 645

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

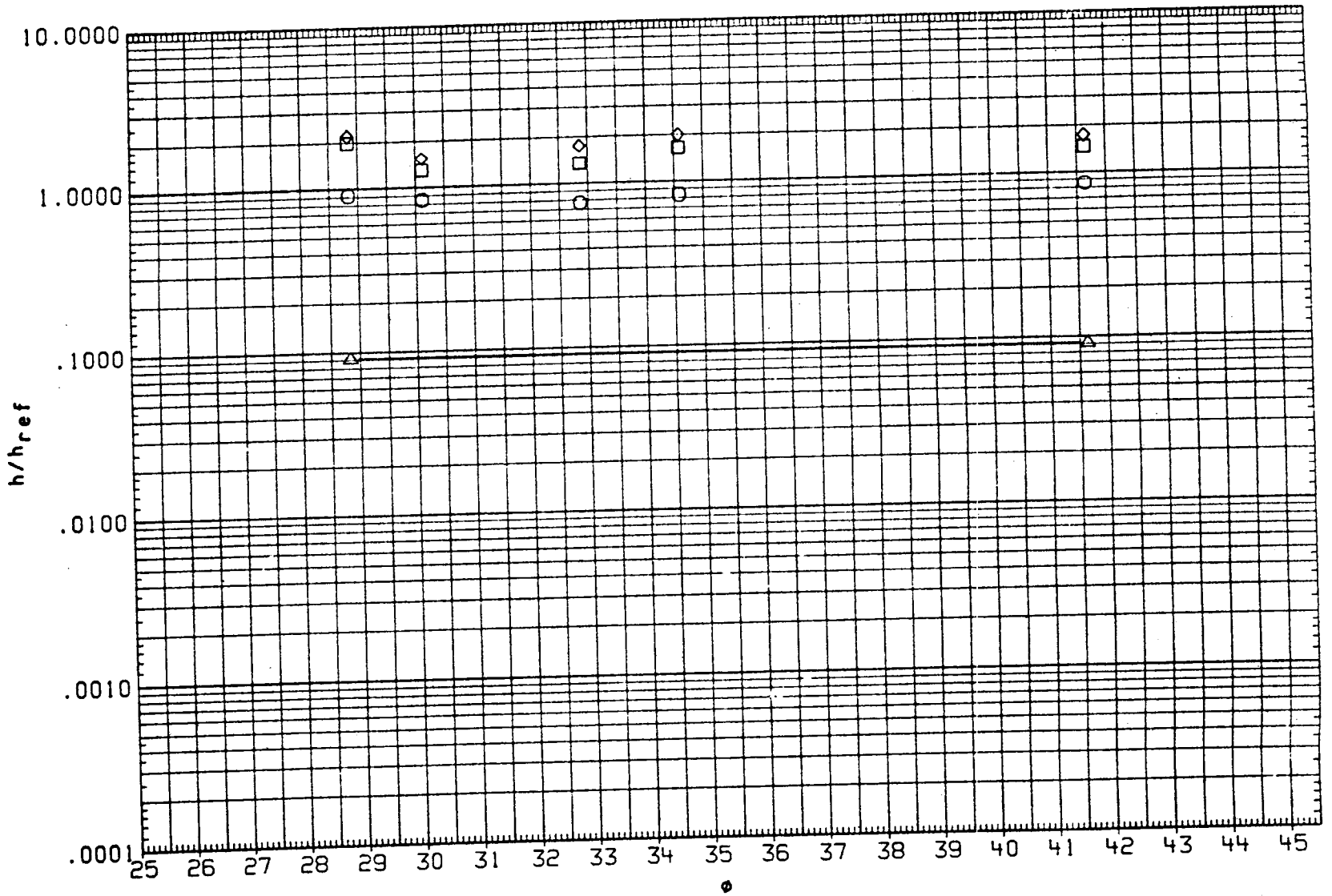

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 646

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

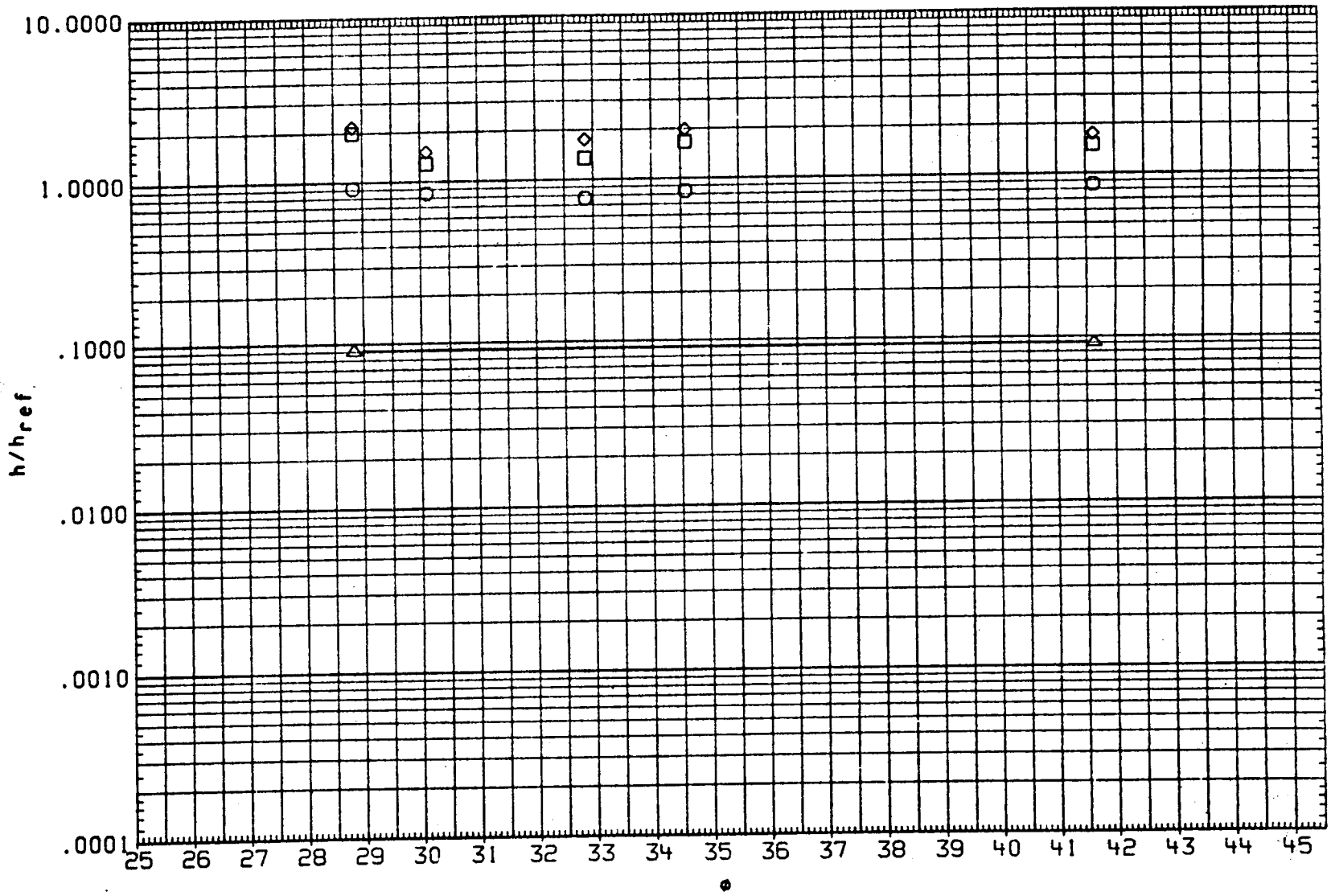

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 647

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

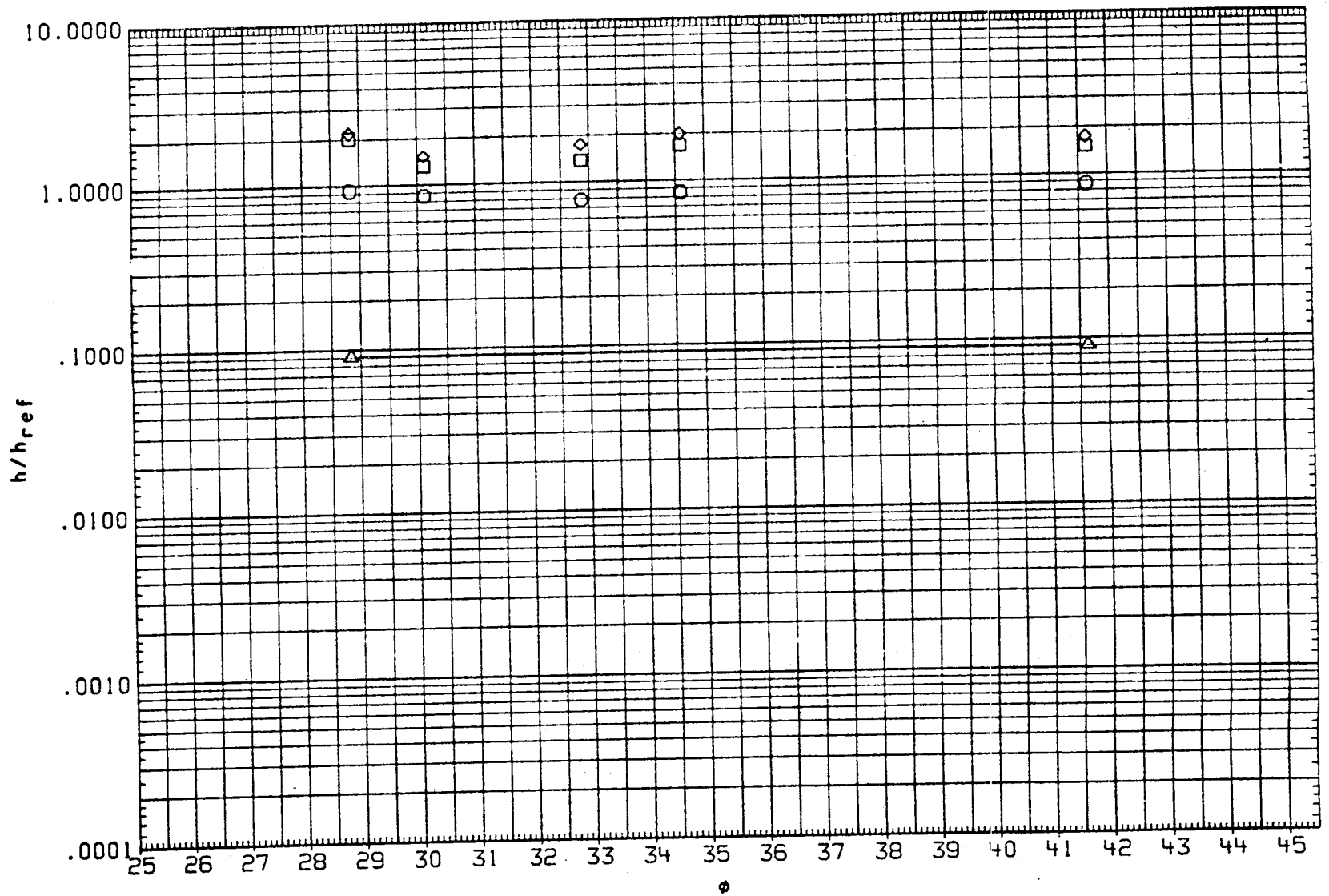

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 648

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

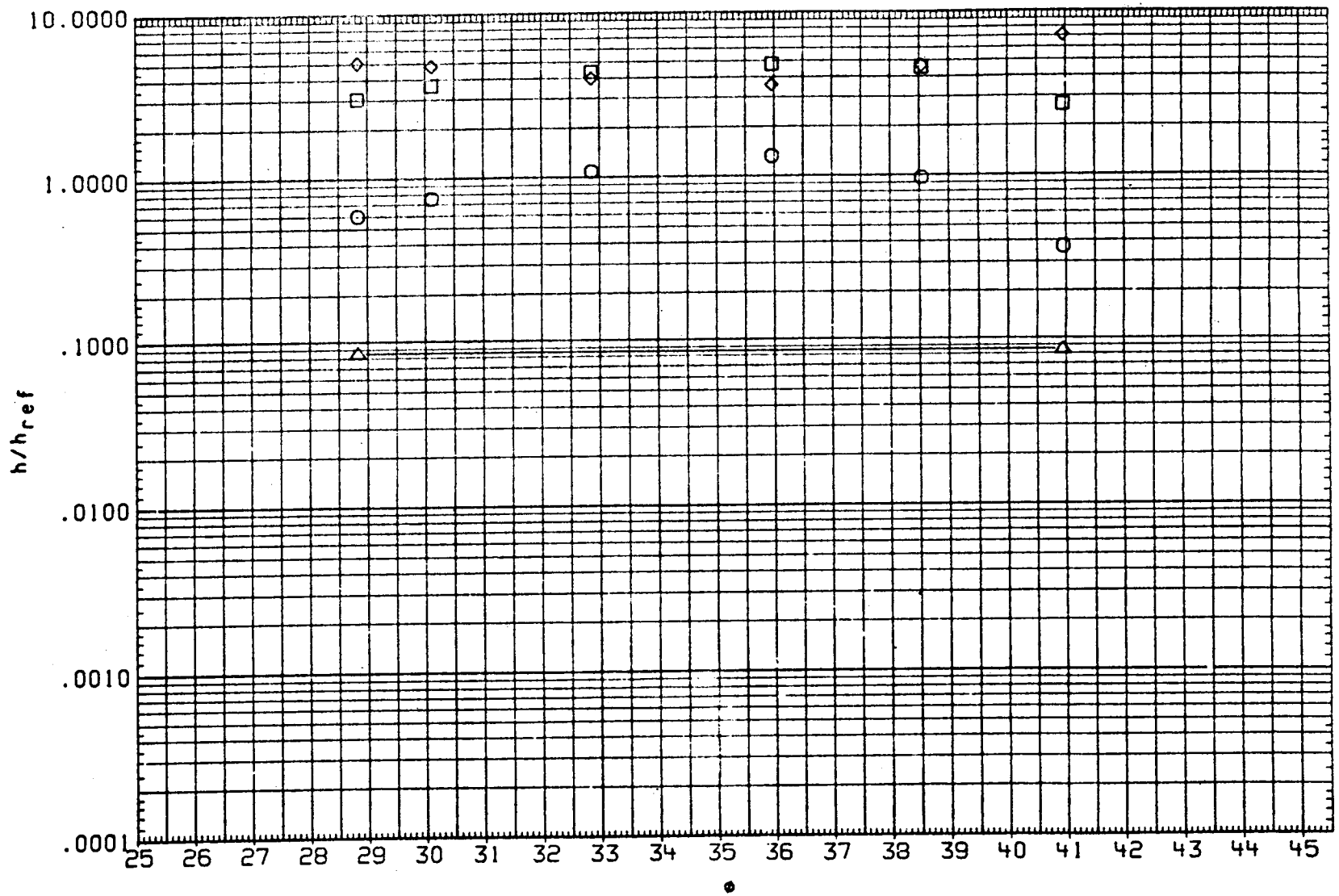

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .540 DATE 22 APR 78 PAGE 649

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000B)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

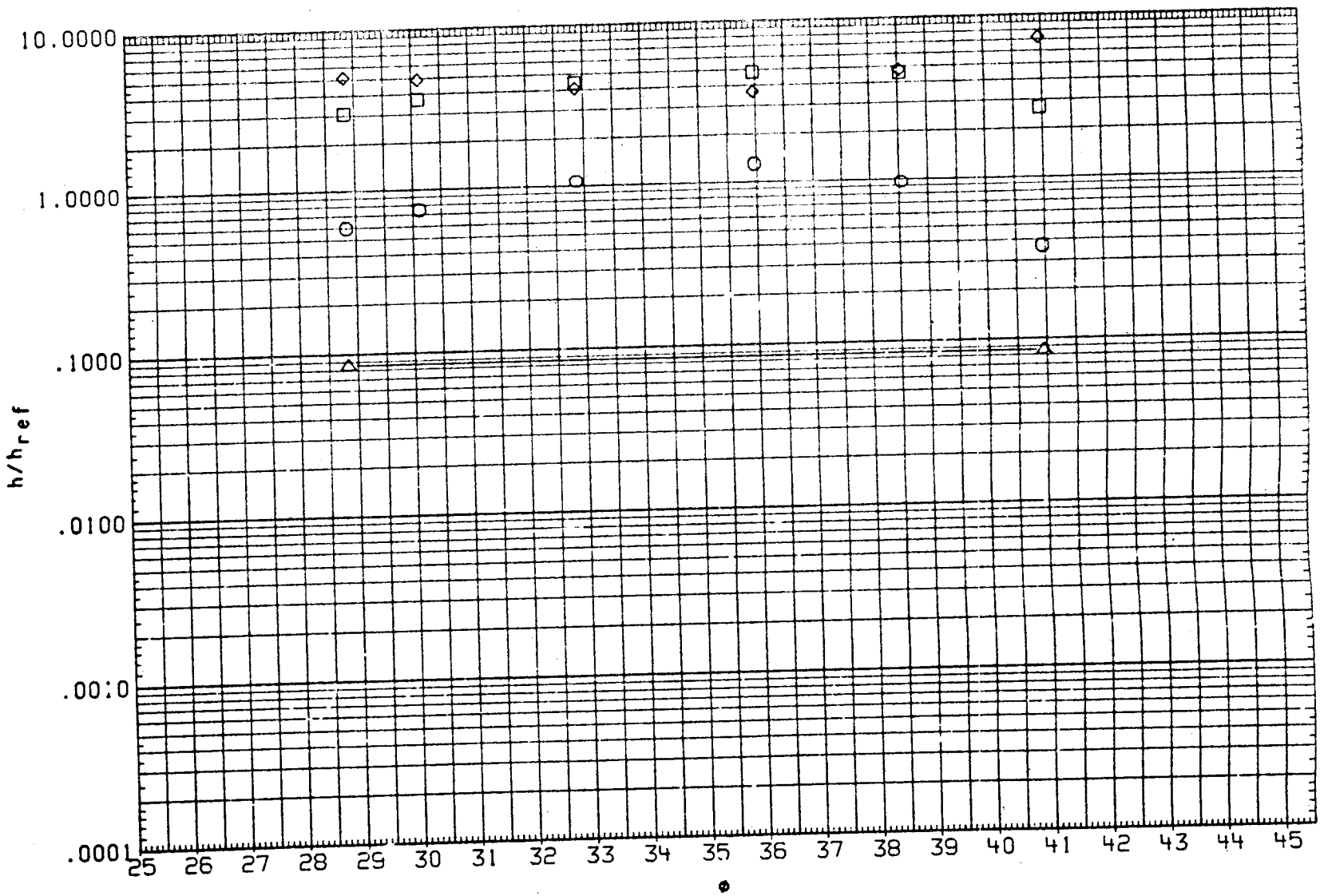

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .540 DATE 22 APR 78 PAGE 650

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

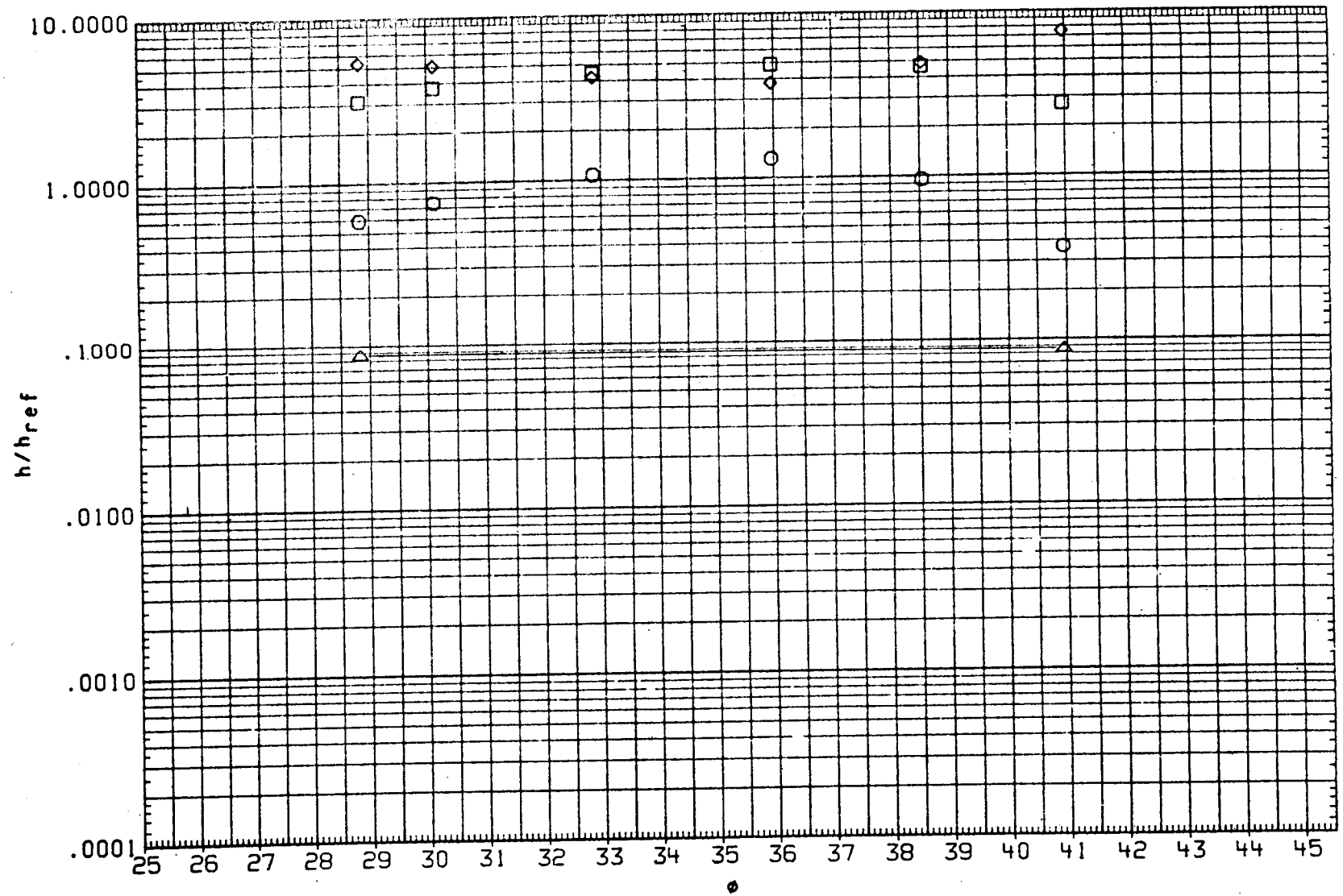

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 651

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

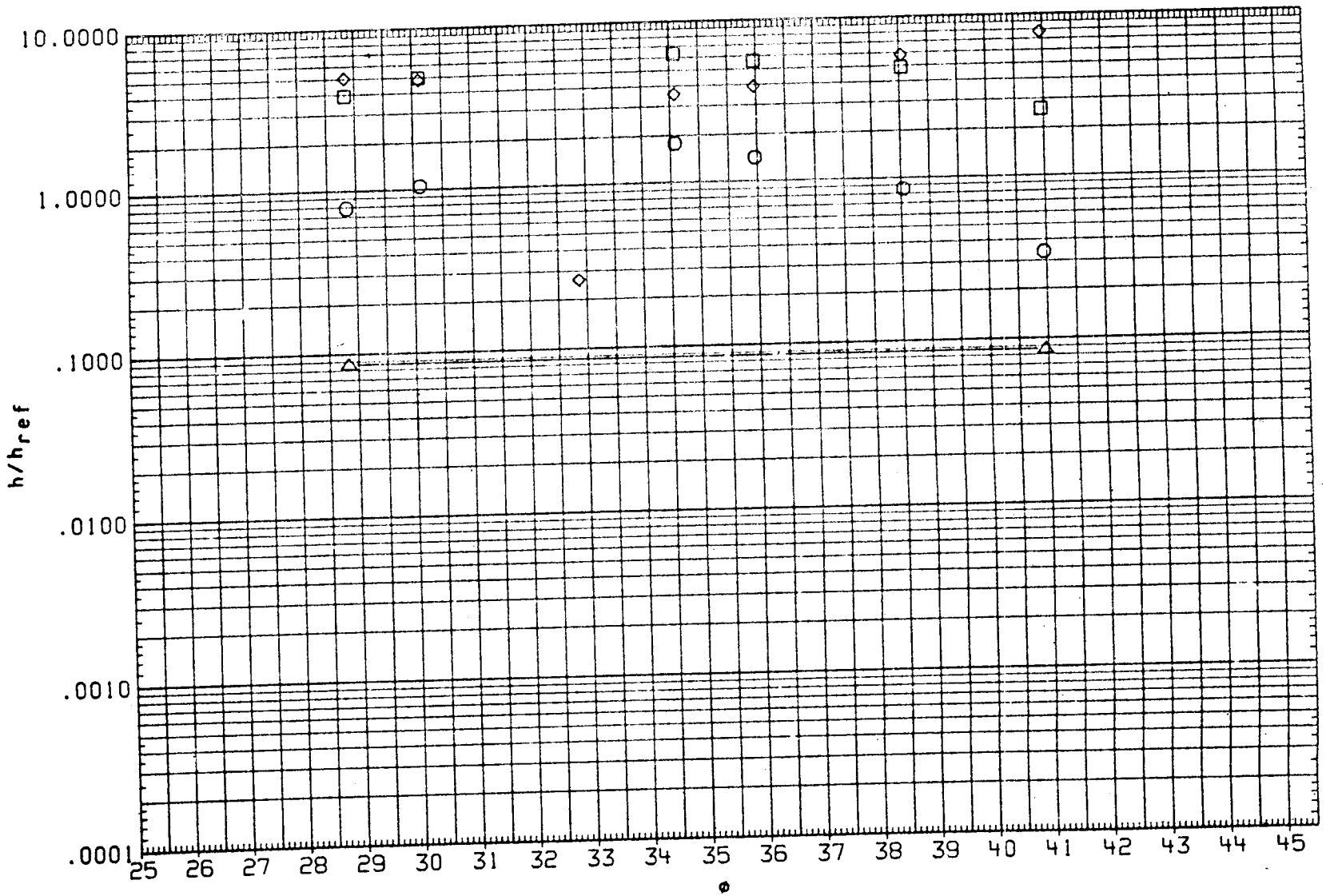

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 652

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

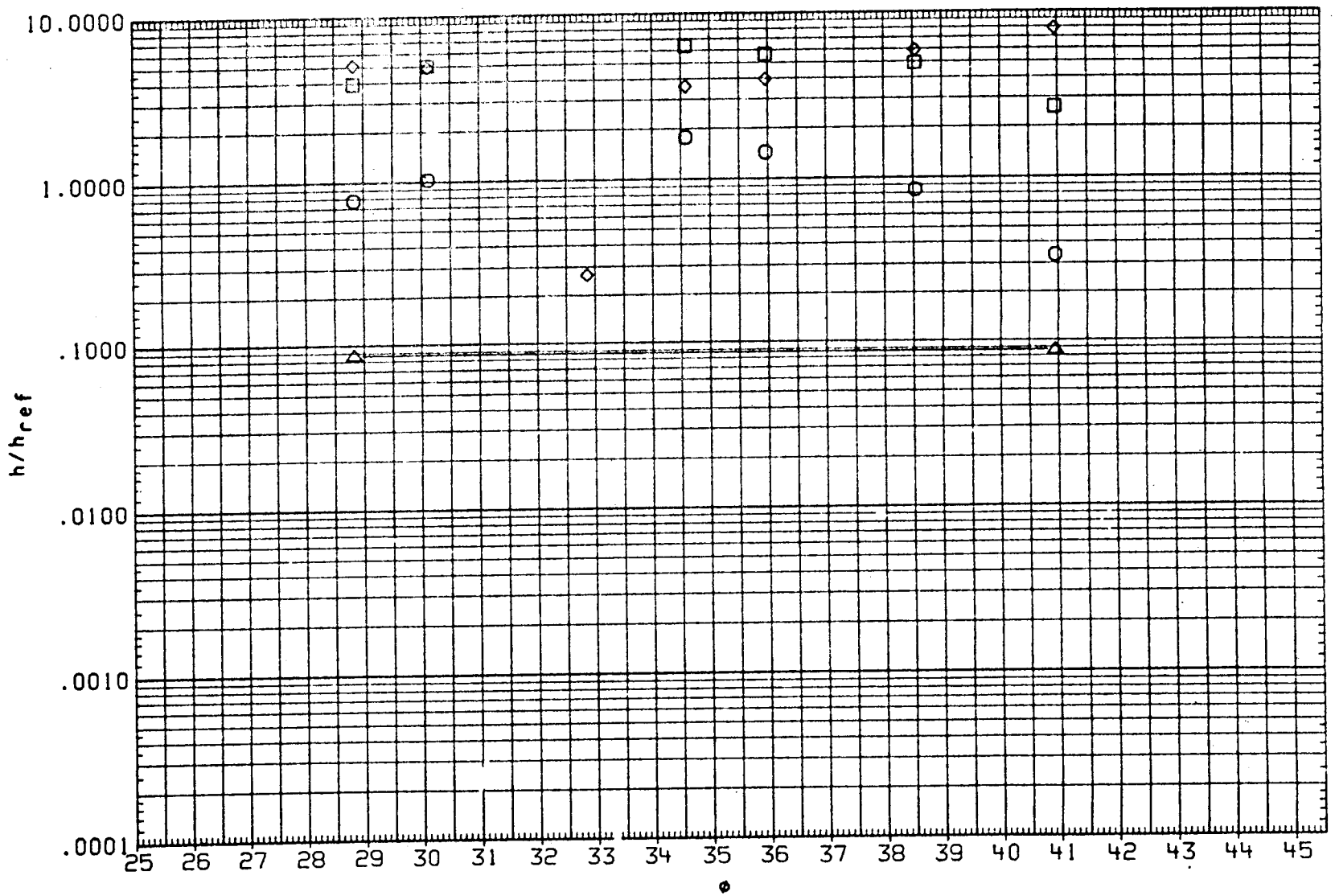

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = .900 X/L = .542 DATE 22 APR 78 PAGE 653

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

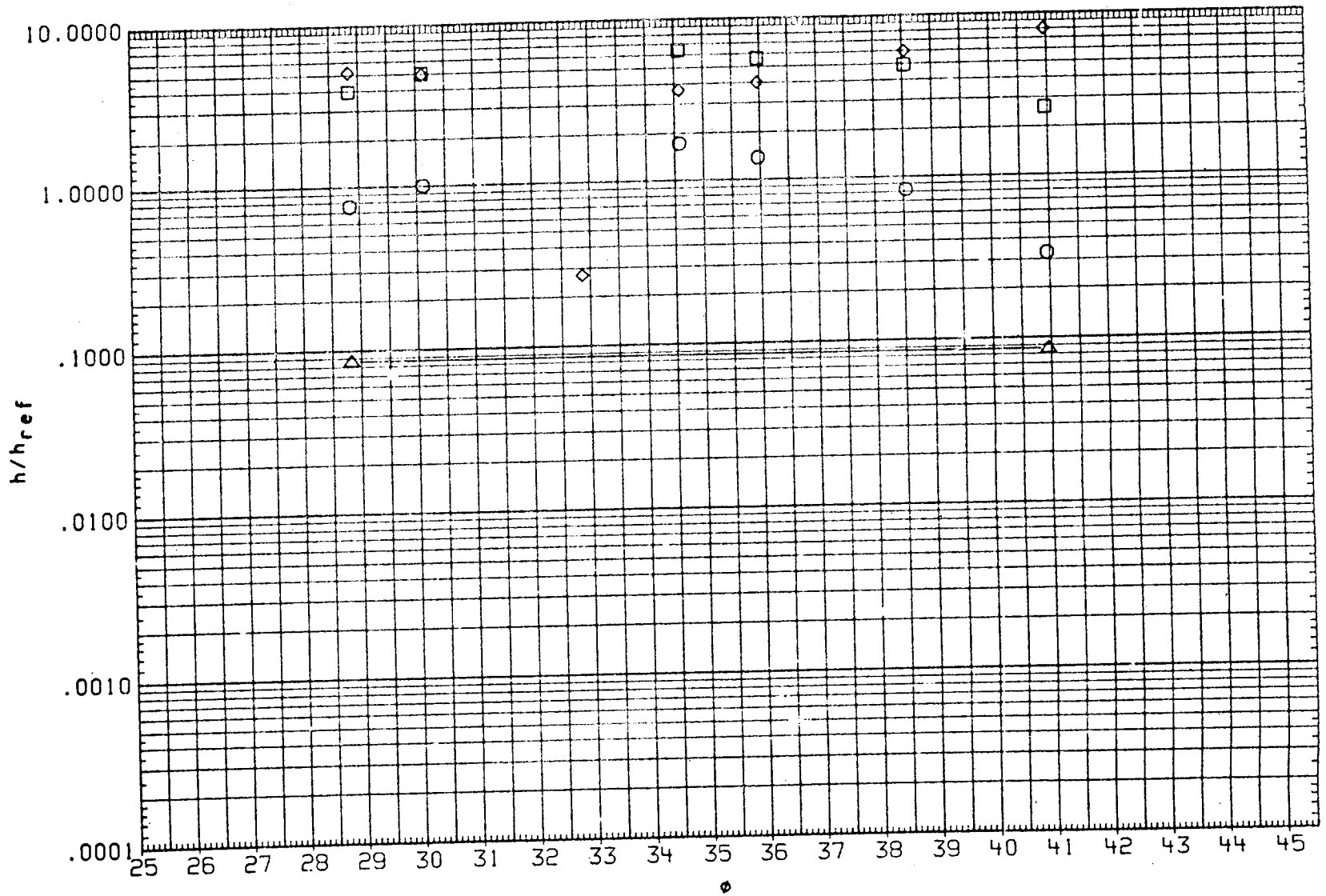

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.300 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 654

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

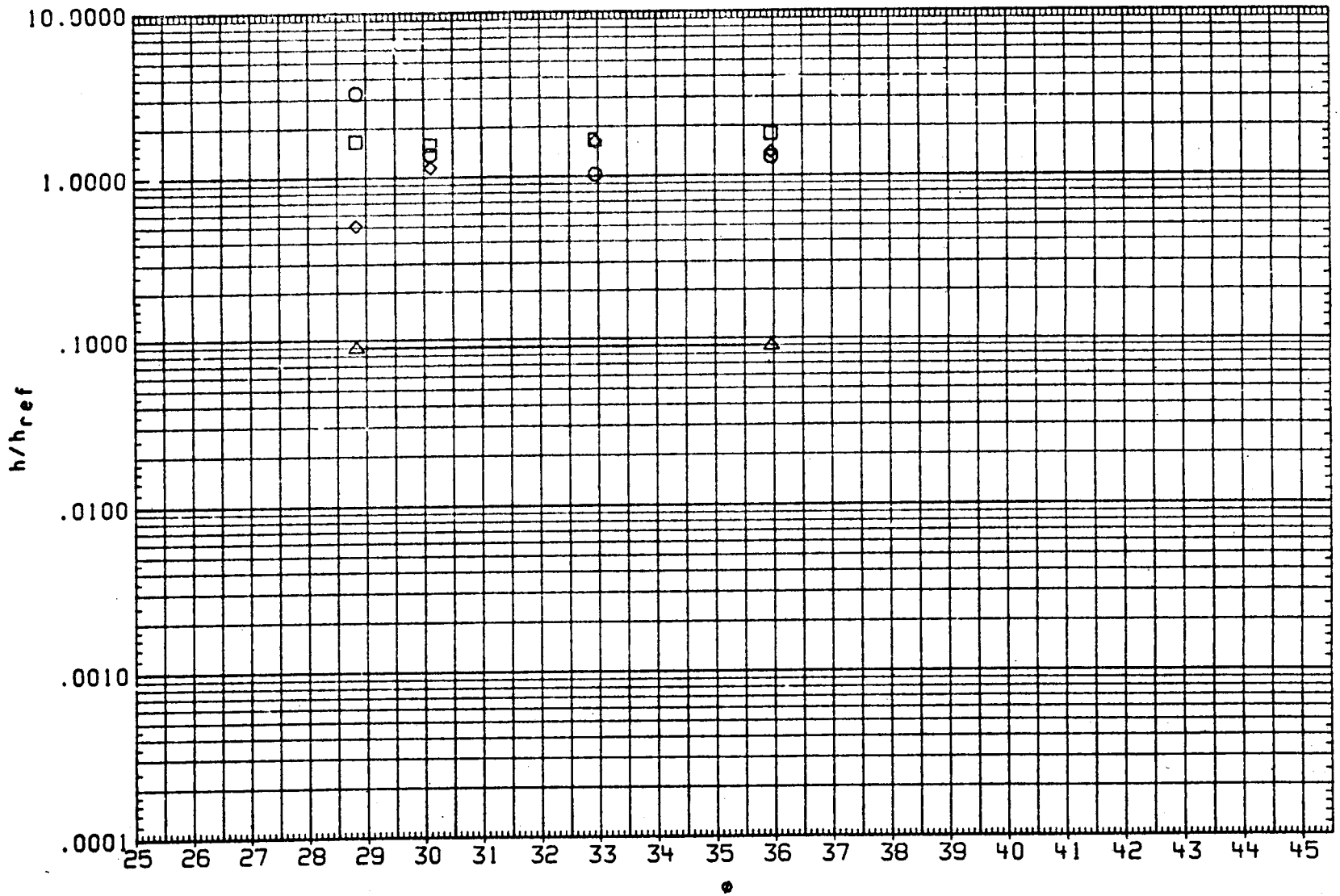

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .441 DATE 22 APR 78 PAGE 655

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

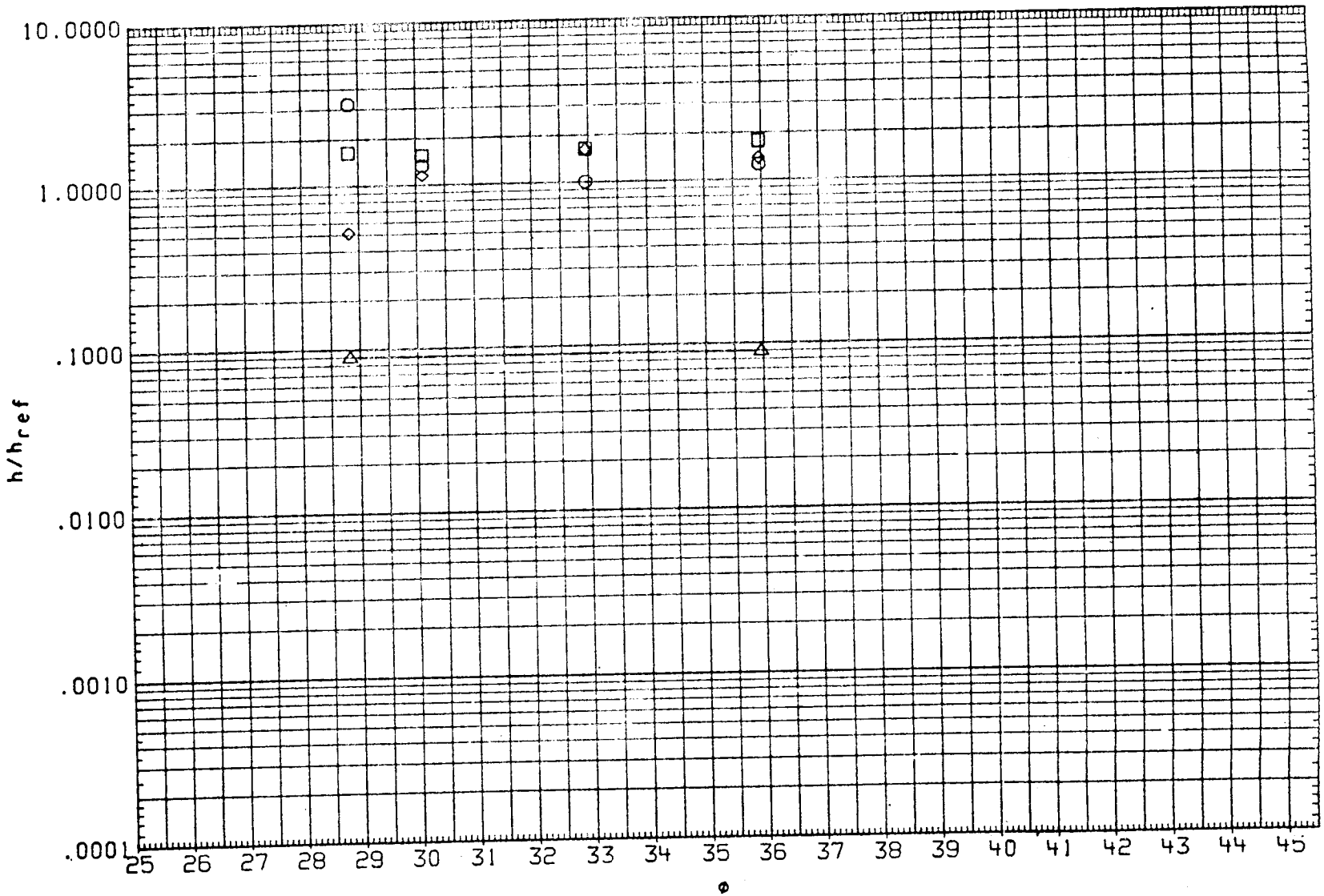

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .441 DATE 22 APR 78 PAGE 656

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

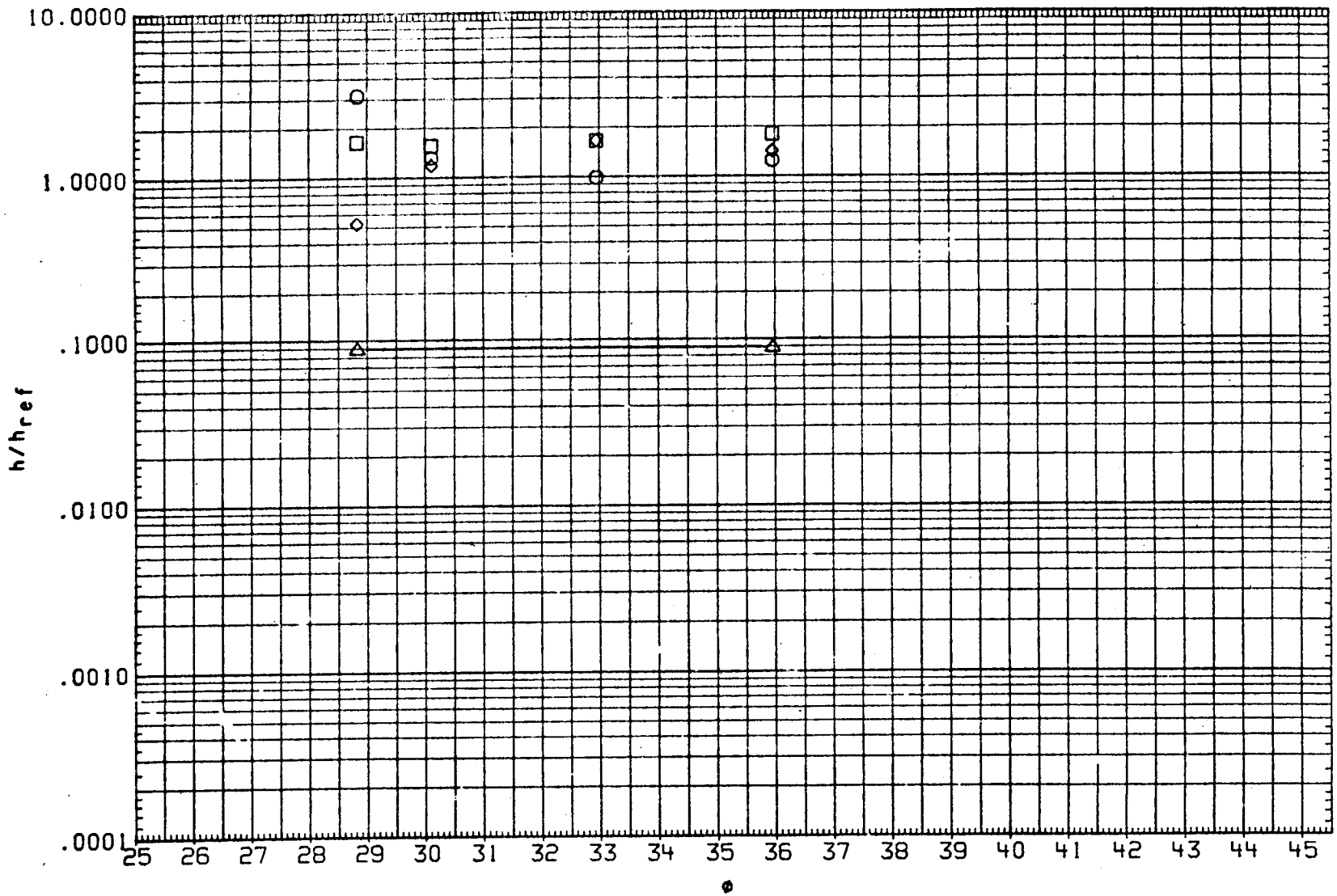

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = 1.000 X/L = .441 DATE 22 APR 78 PAGE 657

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

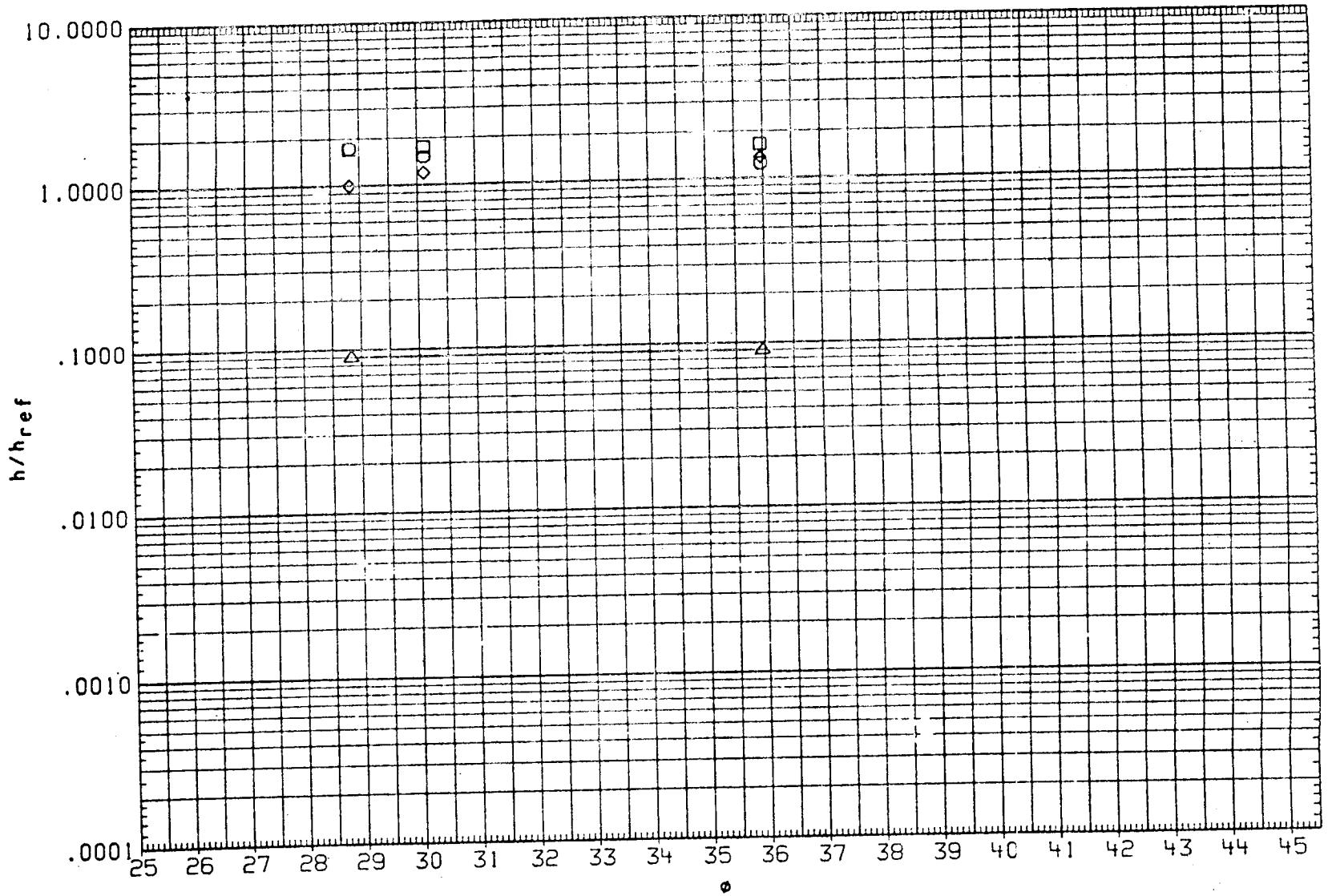

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 658

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

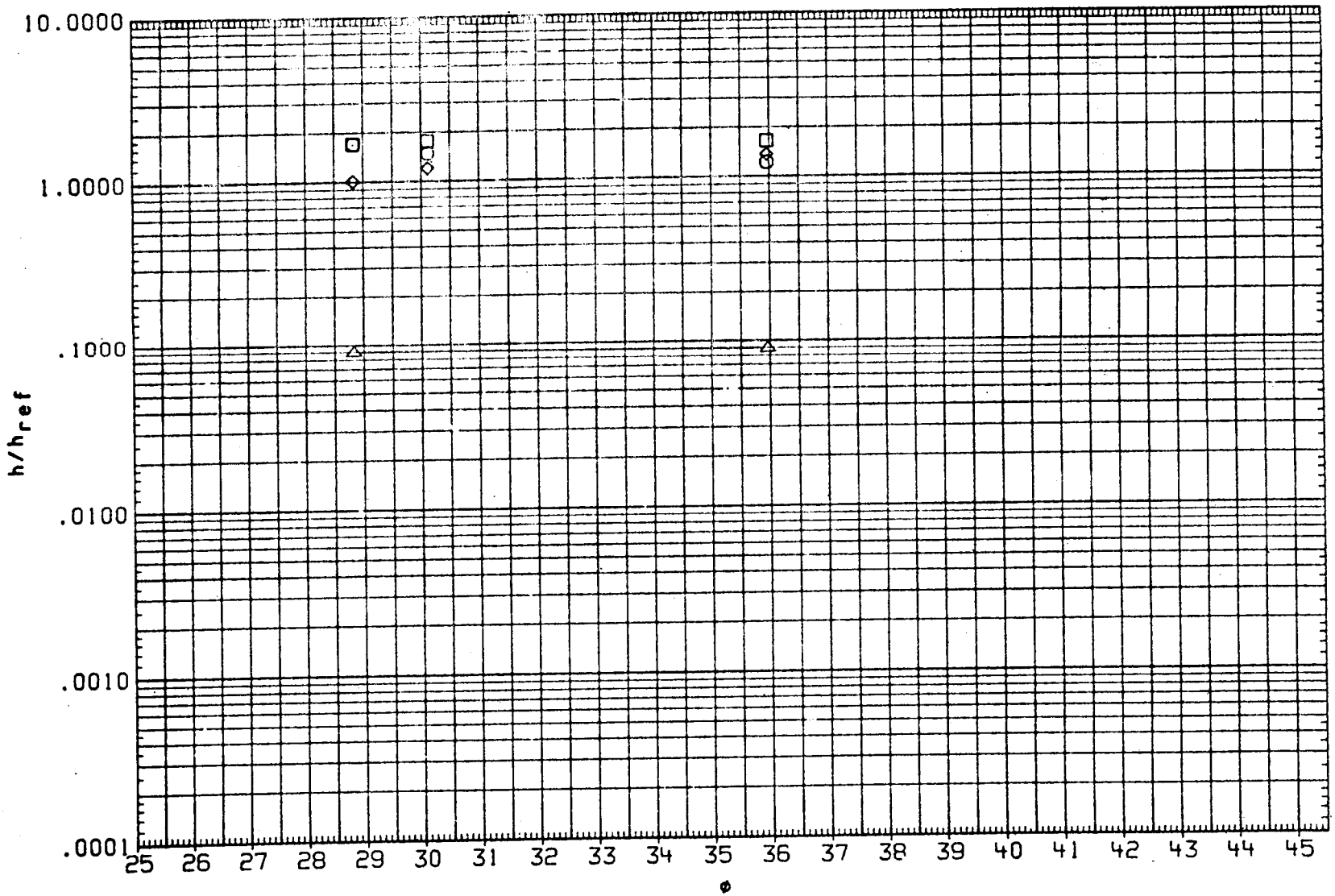

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = .900 X/L = .443 DATE 22 APR 78 PAGE 659

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

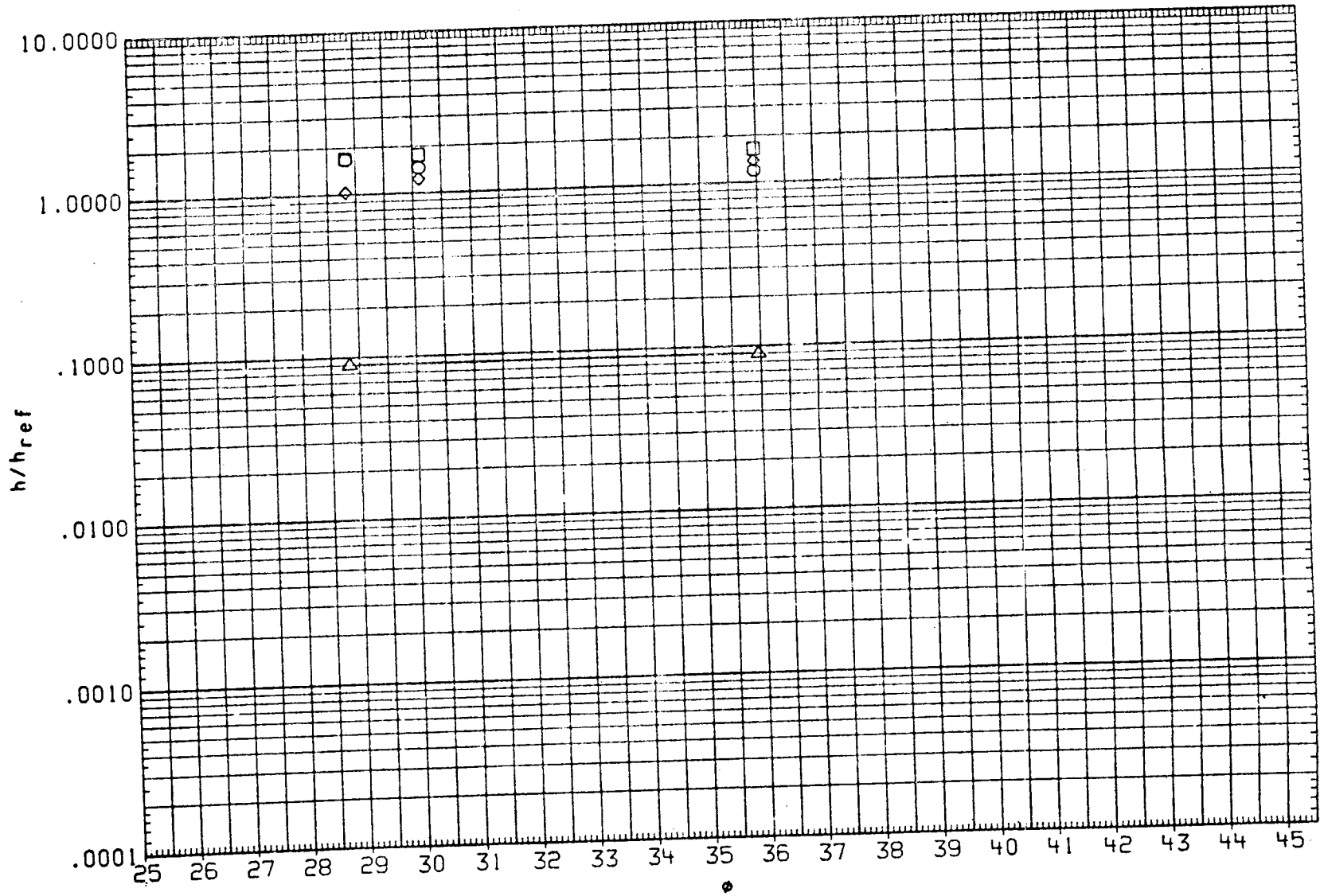

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.300 HAW/HT = 1.000 X/L = .443 DATE 22 APR 78 PAGE 660

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

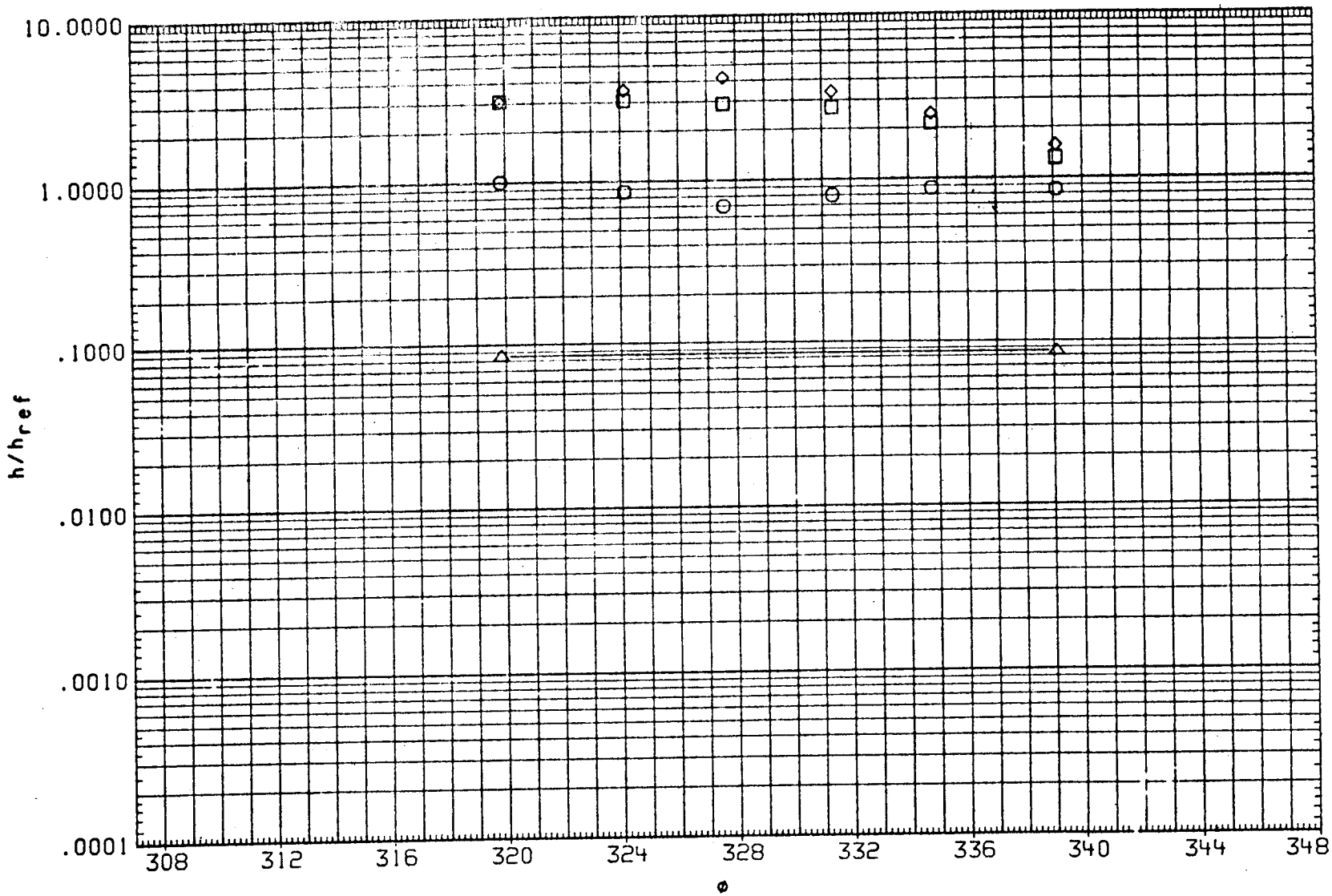

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .571 DATE 22 APR 78 PAGE 661

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2003A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

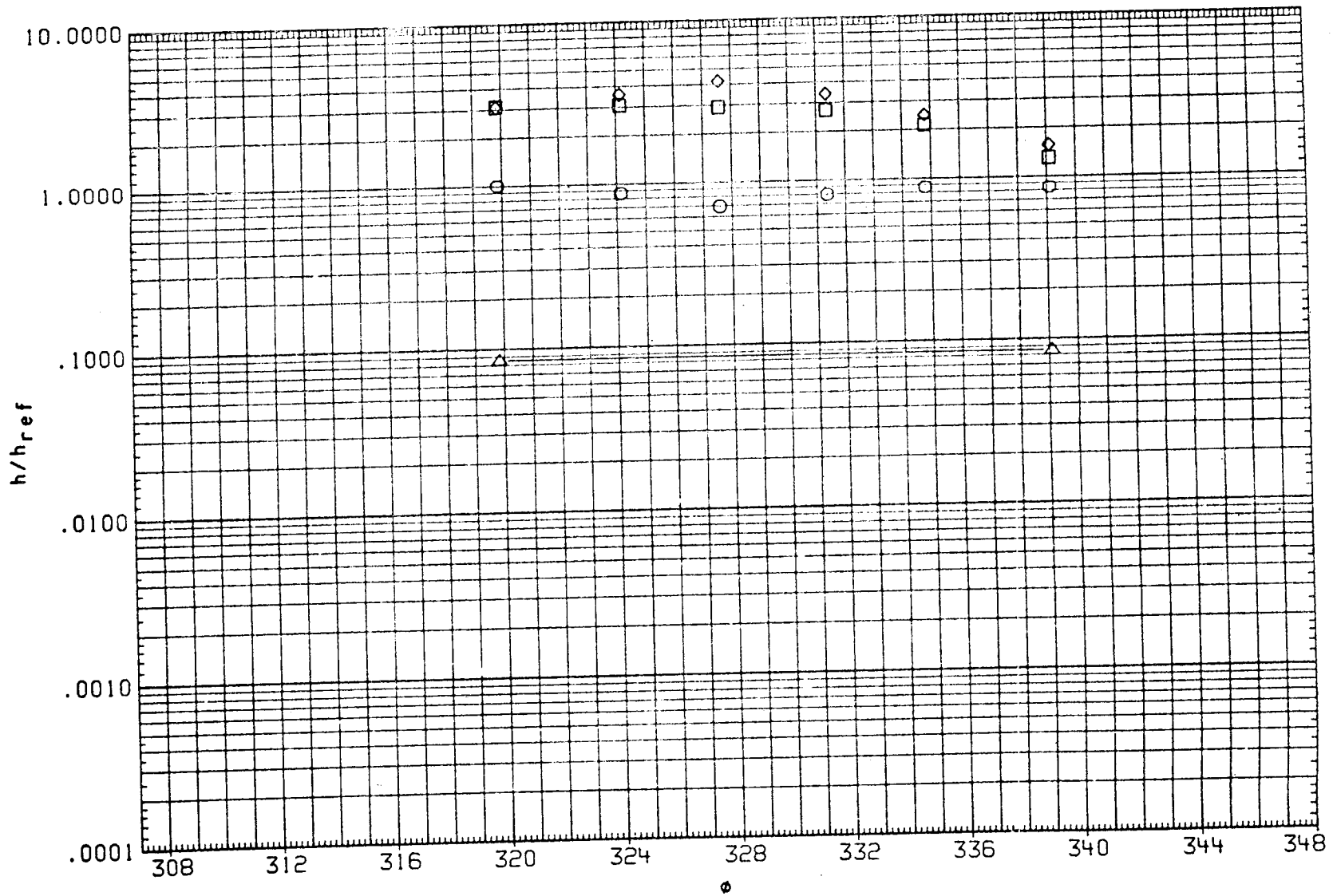

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 662

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

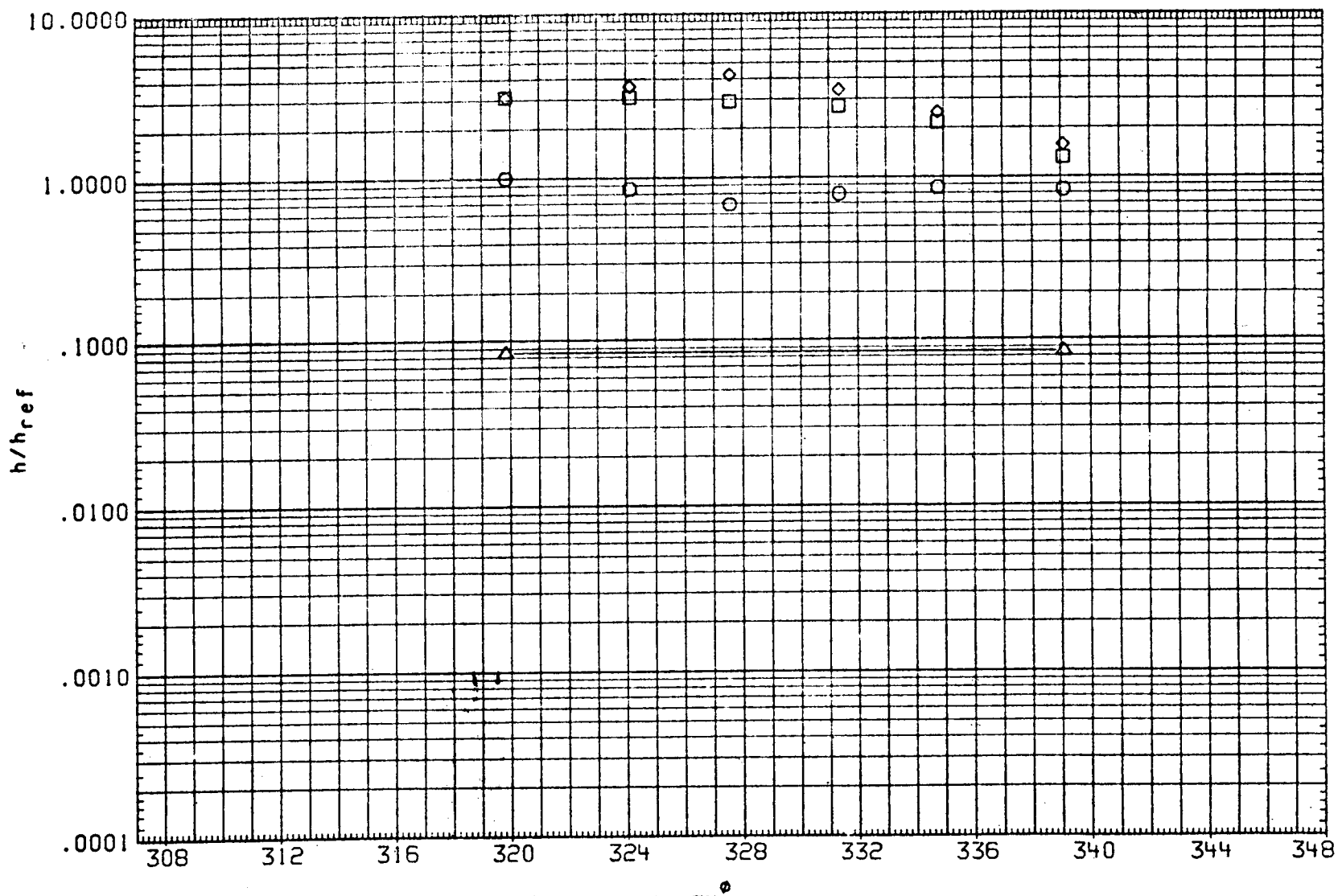

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

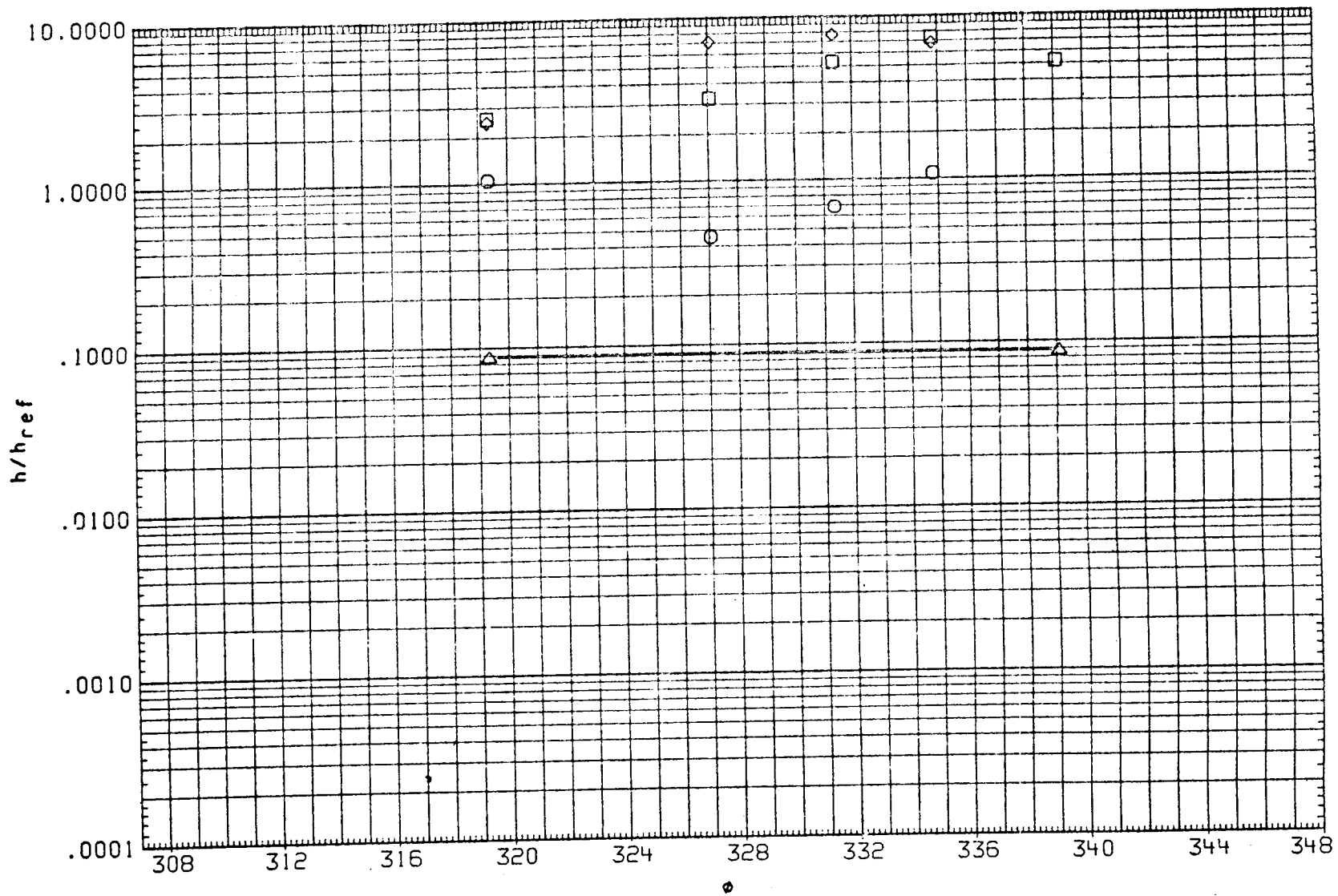

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 664

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

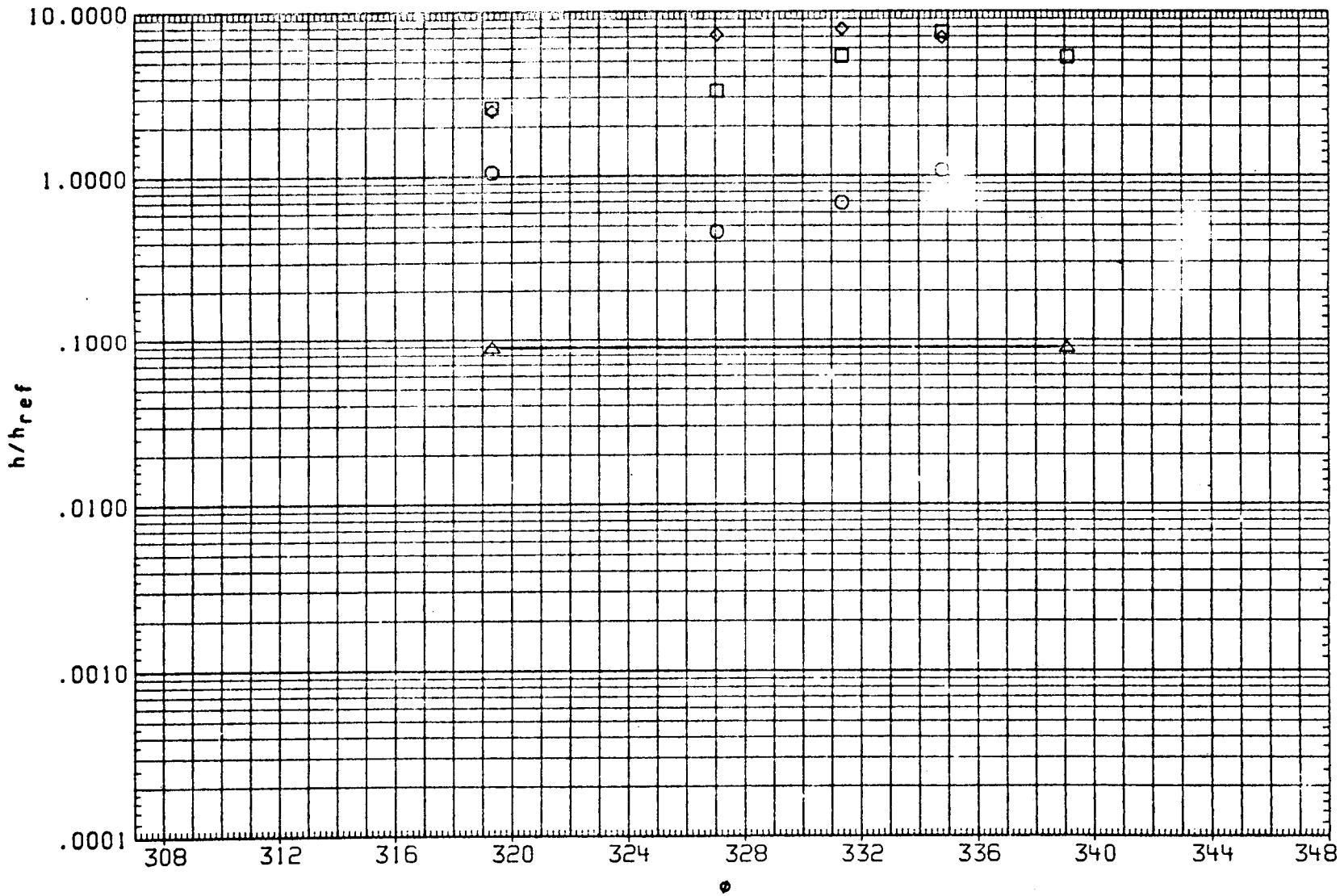

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 665

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

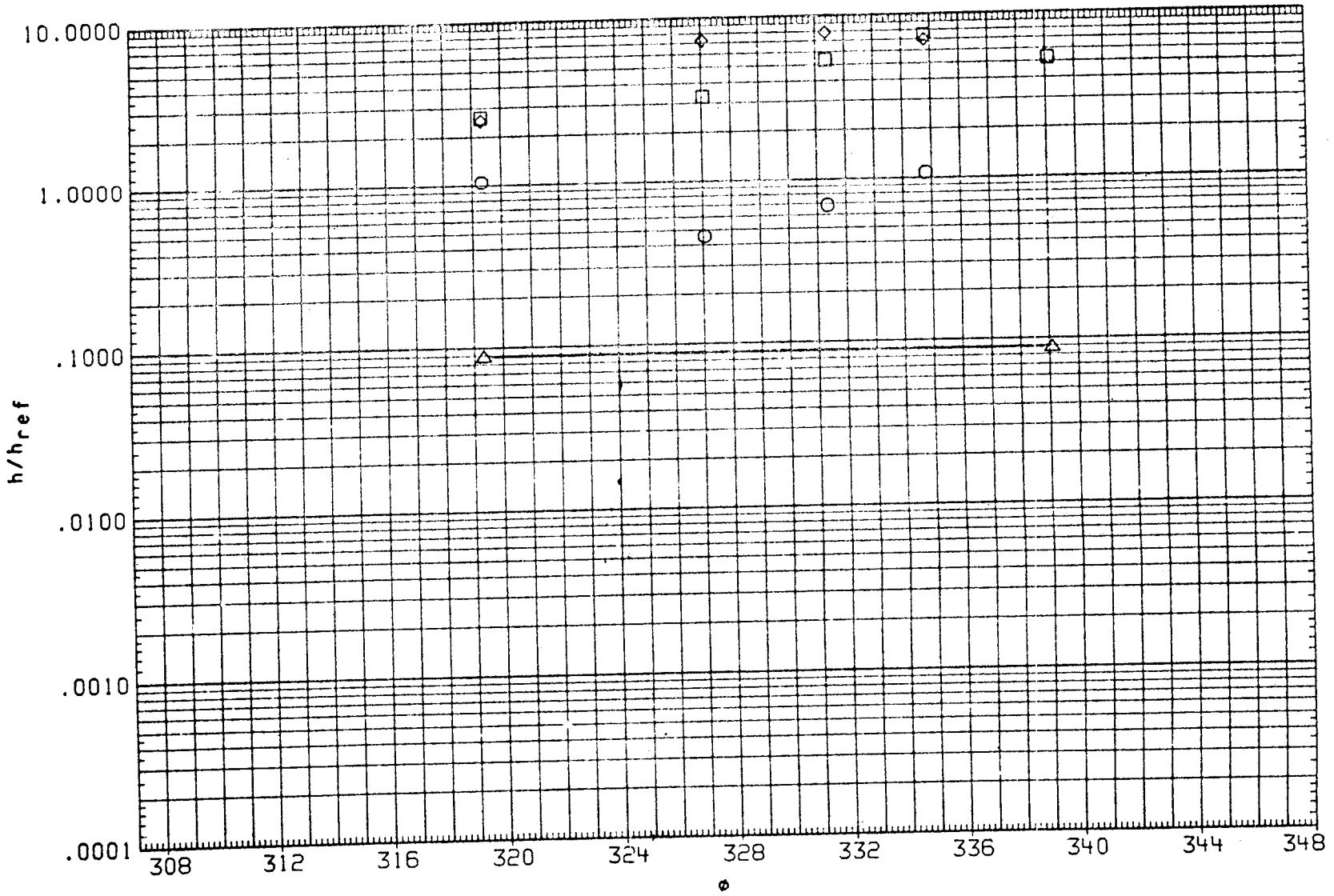

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 666

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

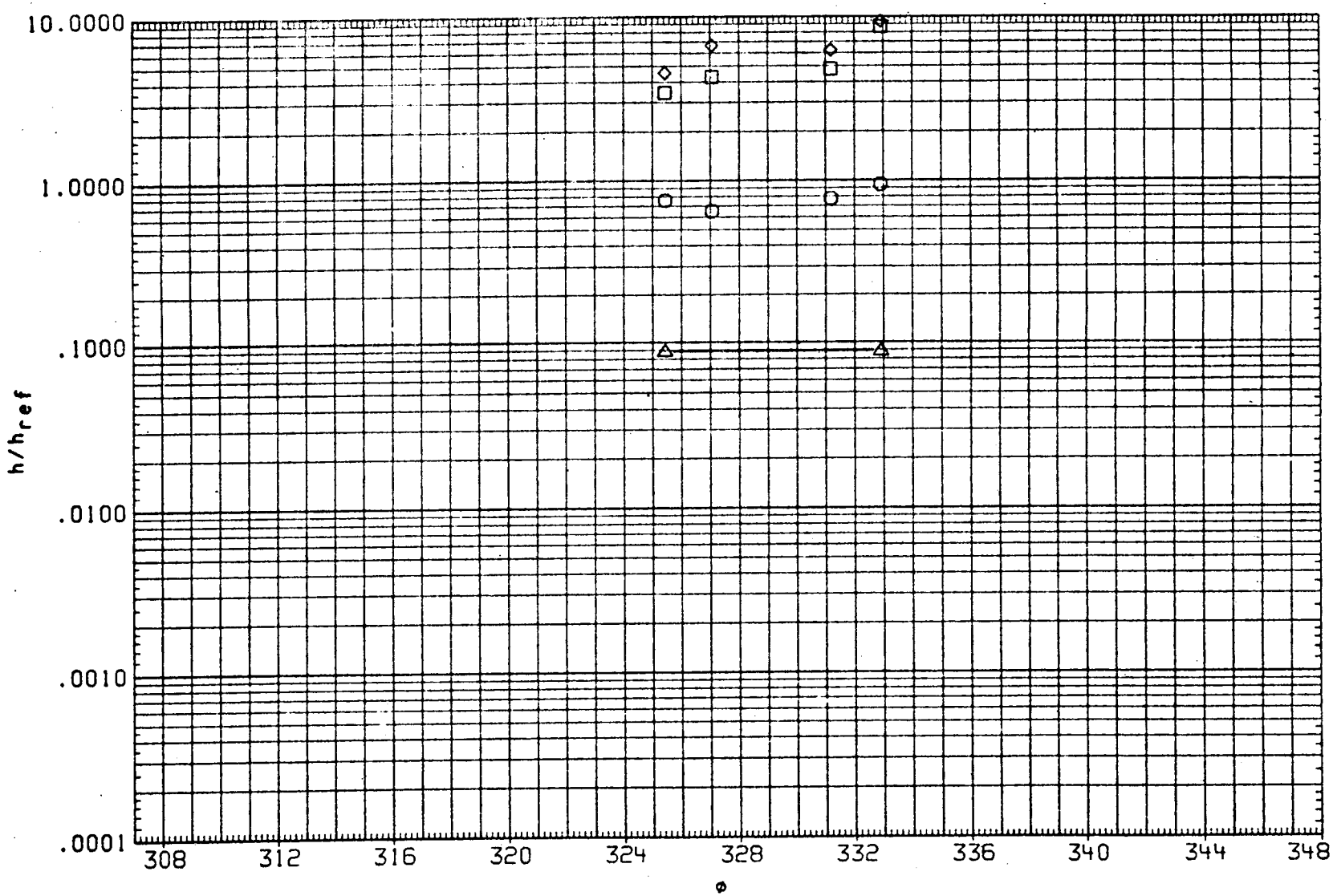

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .482 DATE 22 APR 78 PAGE 667

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20Q02)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N20Q0A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U20Q5A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

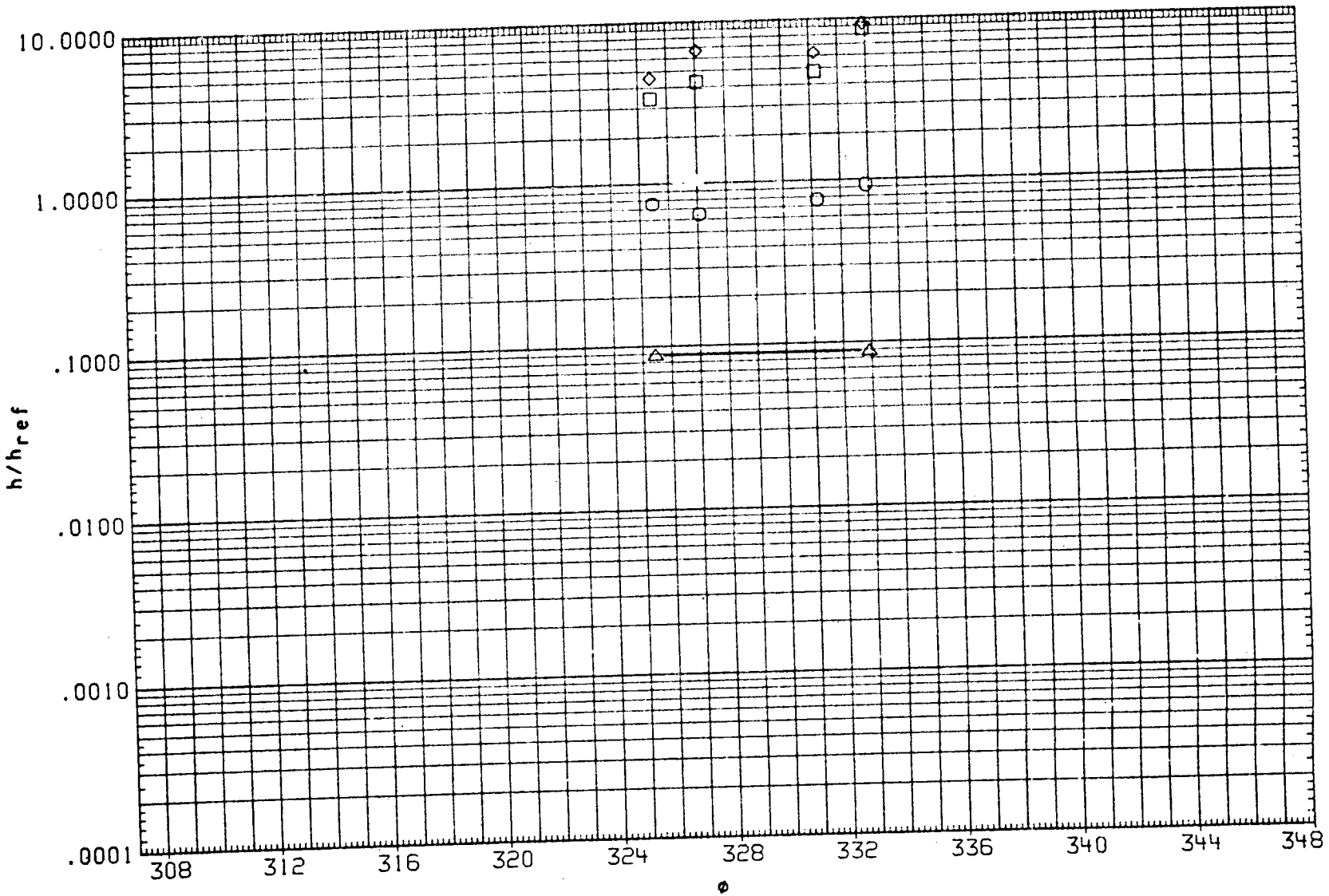

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 668

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

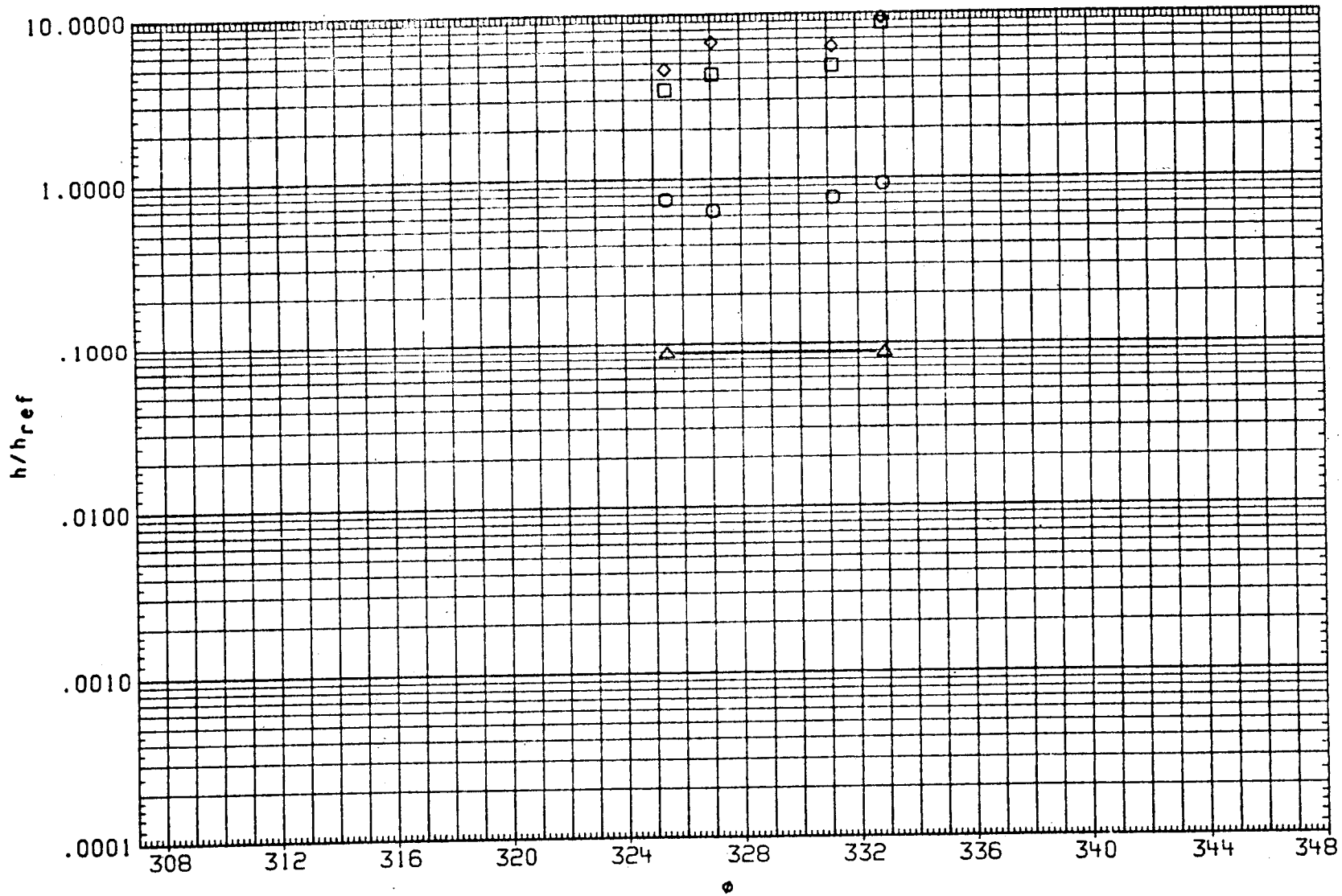

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78 PAGE 669

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A20002)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

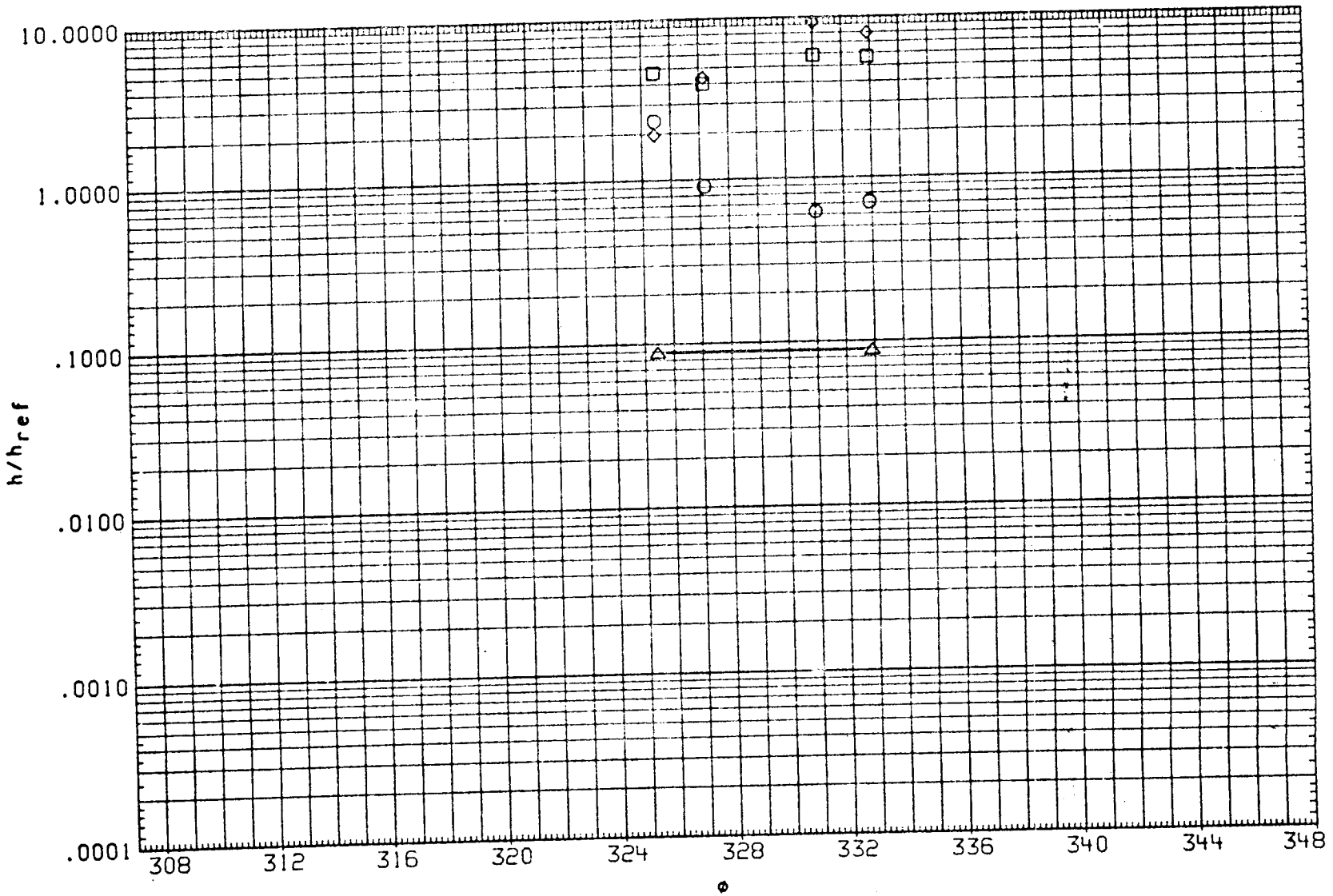

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 670

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Z)	□	IH51A HI/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

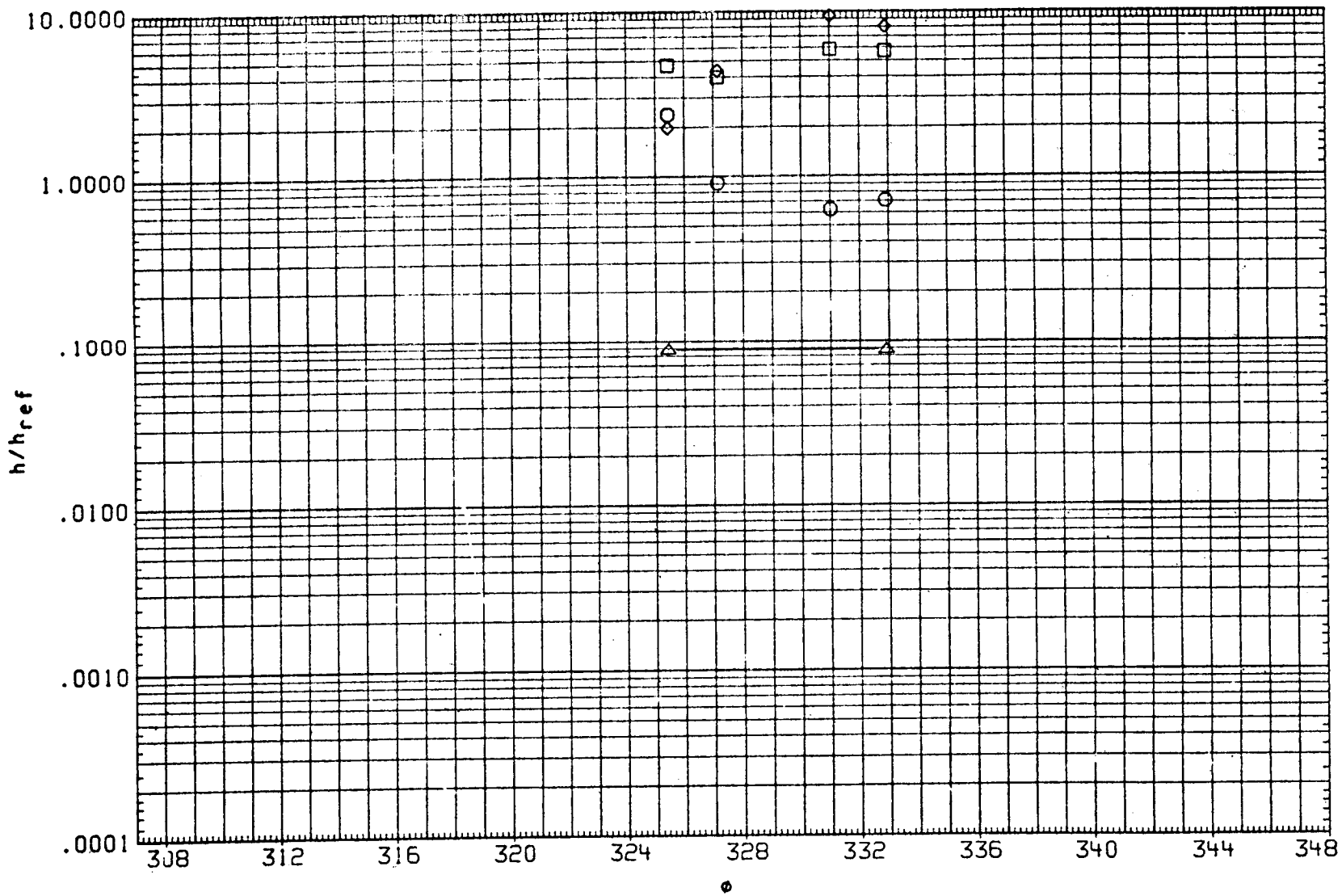

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = .900 X/L = .473 DATE 22 APR 78 PAGE 671

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000A)	○	IH51A (1A/5A)/(2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(A2000Q2)	□	IH51A H1/HU T/TEST ET SURFACE 1A/5A	.000	.000	5.000	5.300
(N2000A)	◇	IH51A (2A/5A)(3A/5A)(4A/5A) ET SURFACE	.000	.000	5.000	5.300
(U2005A)	△	IH51A THEORY CONF 5A ET SURFACE HU/HREF	.000	.000	5.000	5.300

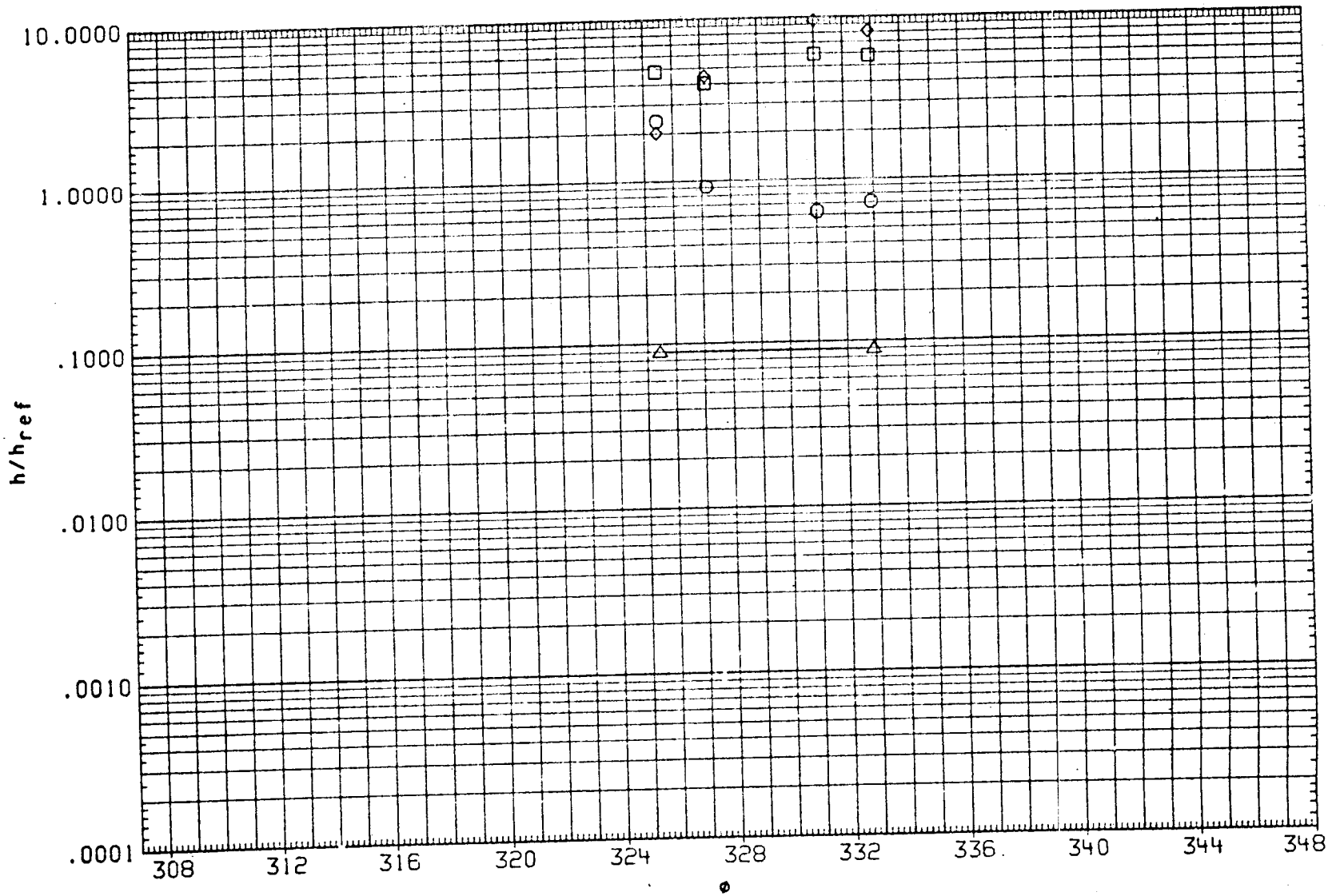

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.300 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 672

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4B/5B ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

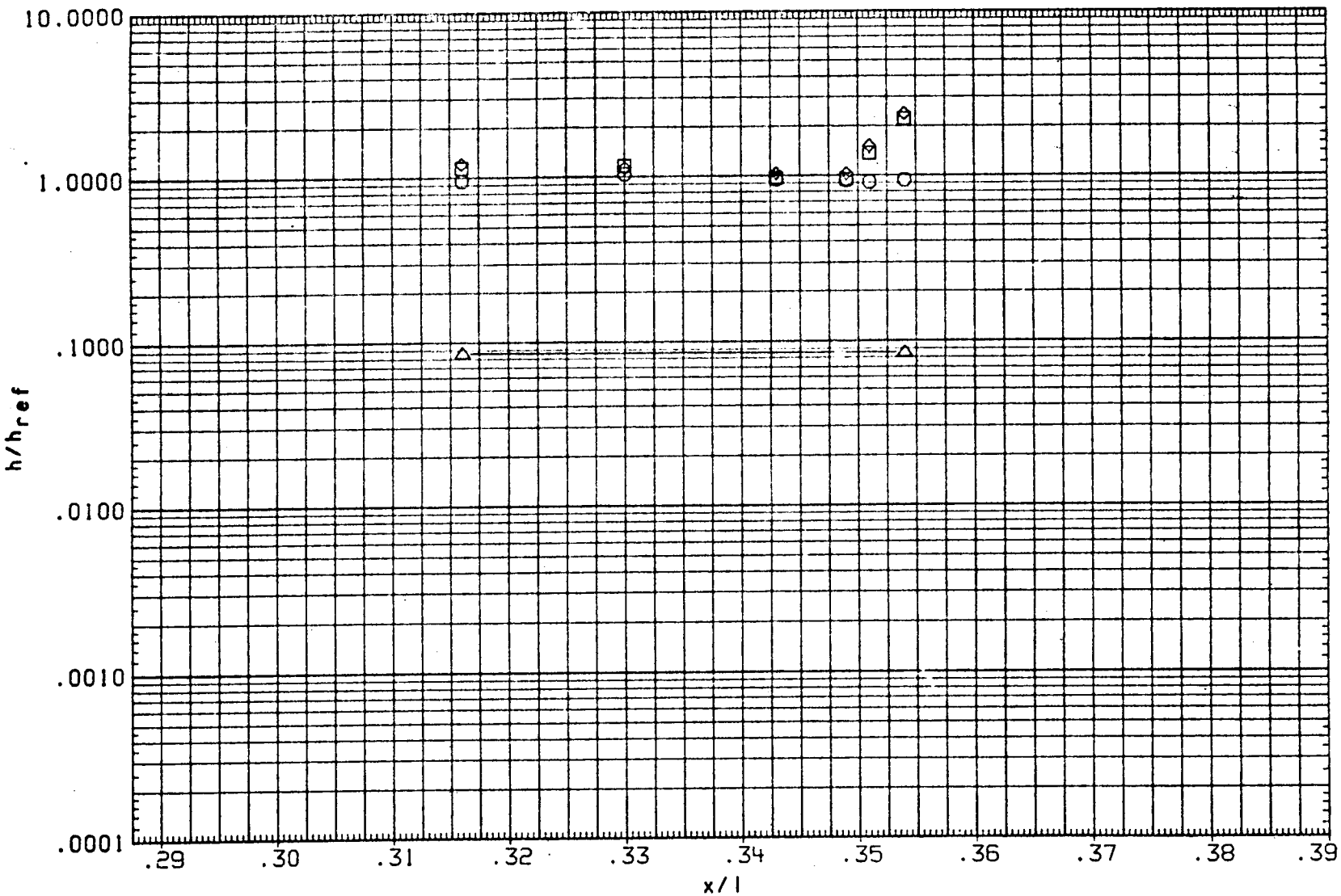

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 PHI = 24.690 DATE 22 APR 78 PAGE 673

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

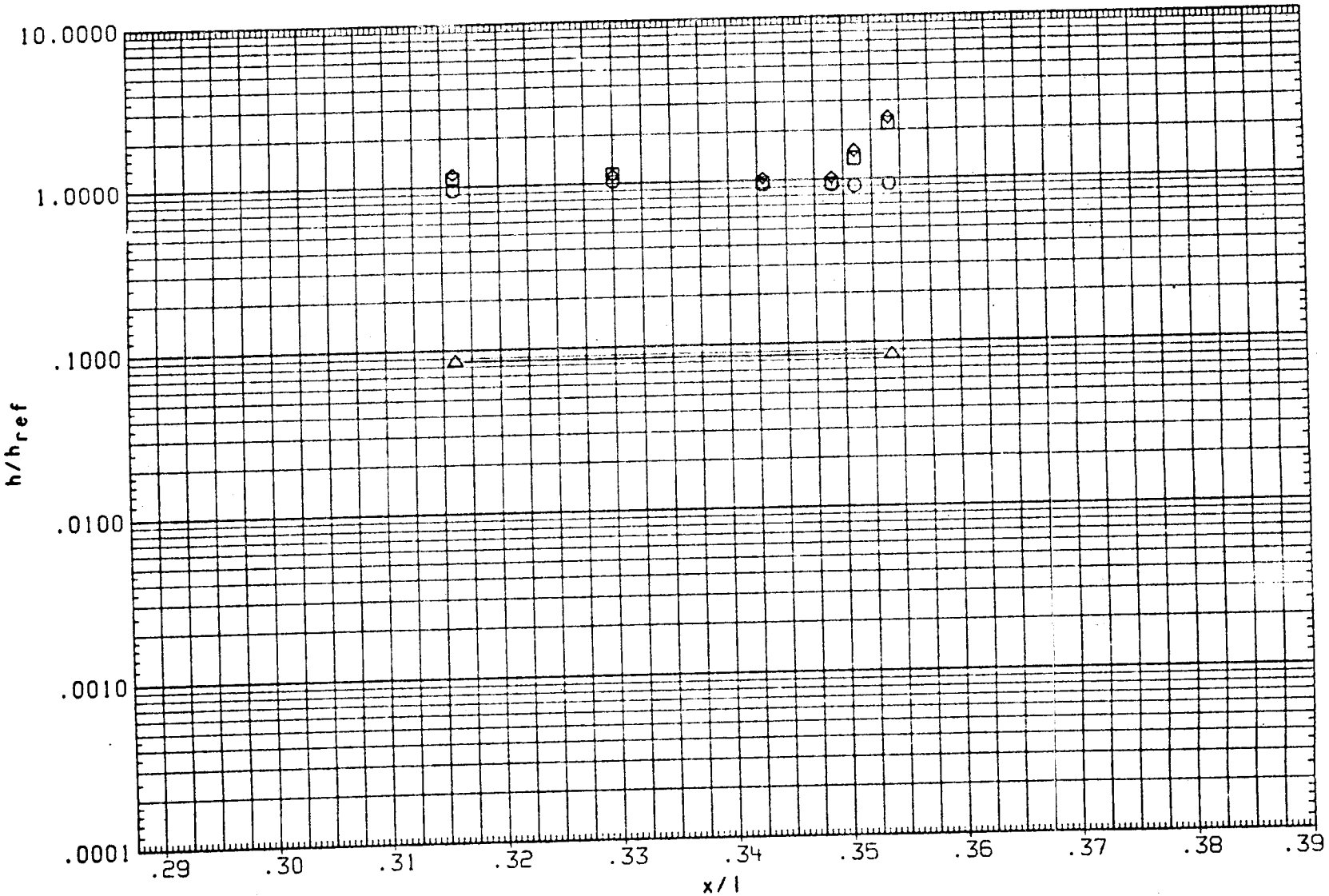

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 PHI = 24.690 DATE 22 APR 78 PAGE 674

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5D ET SURFACE HU/HREF	.000	.000	5.000	5.300

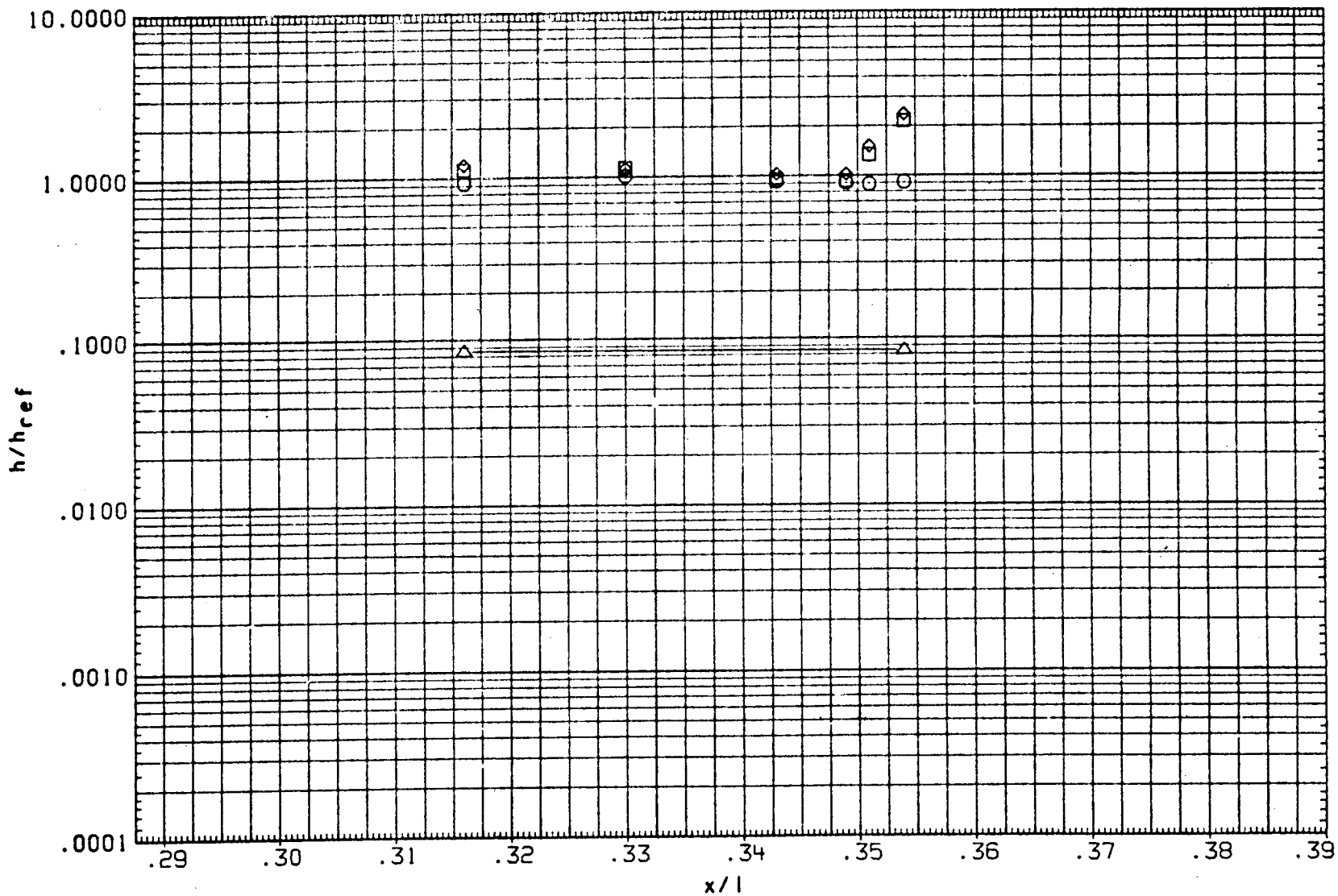

FIG. 15 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 PHI = 24.690 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L01)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20L0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

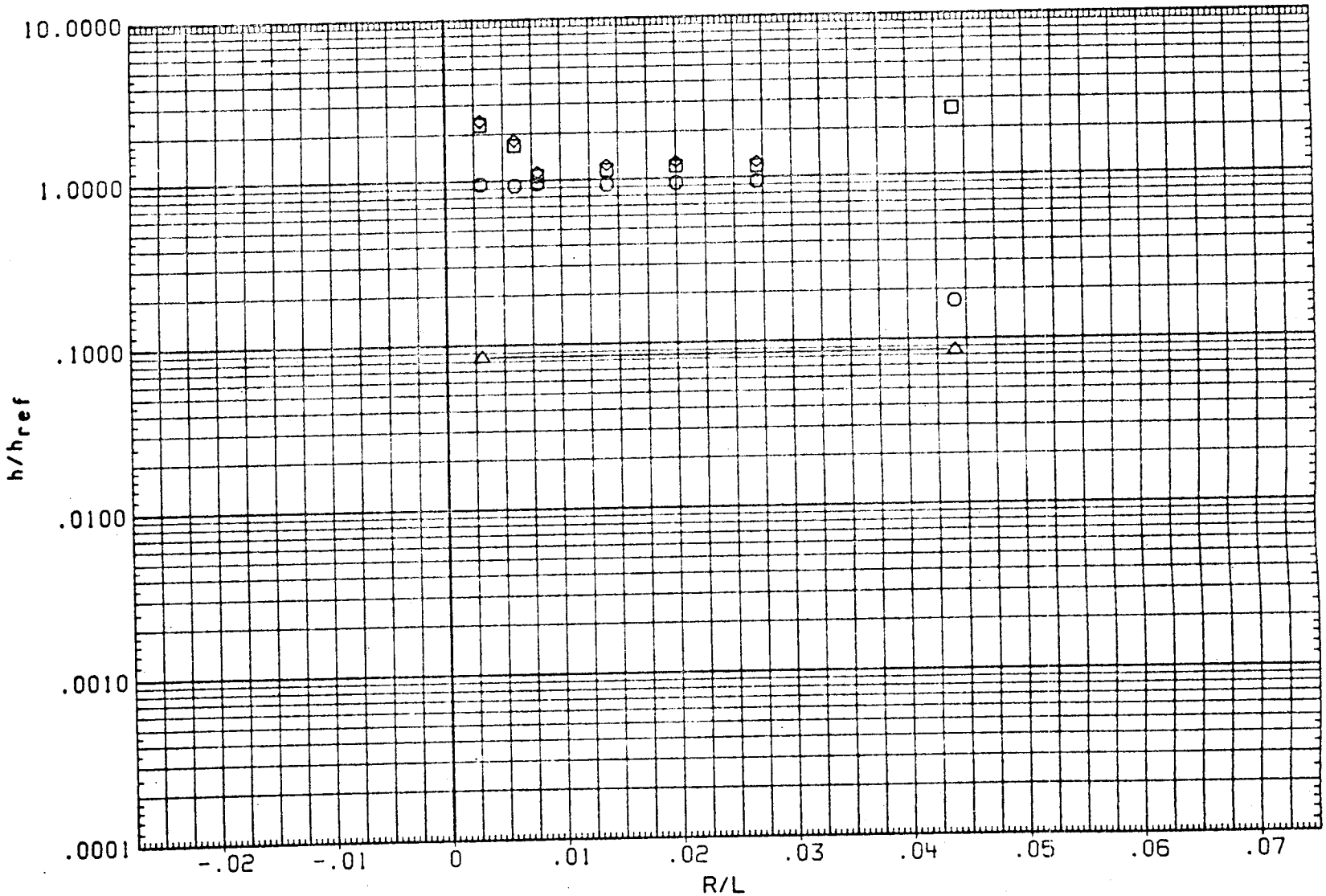

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 676

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L01)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20L0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

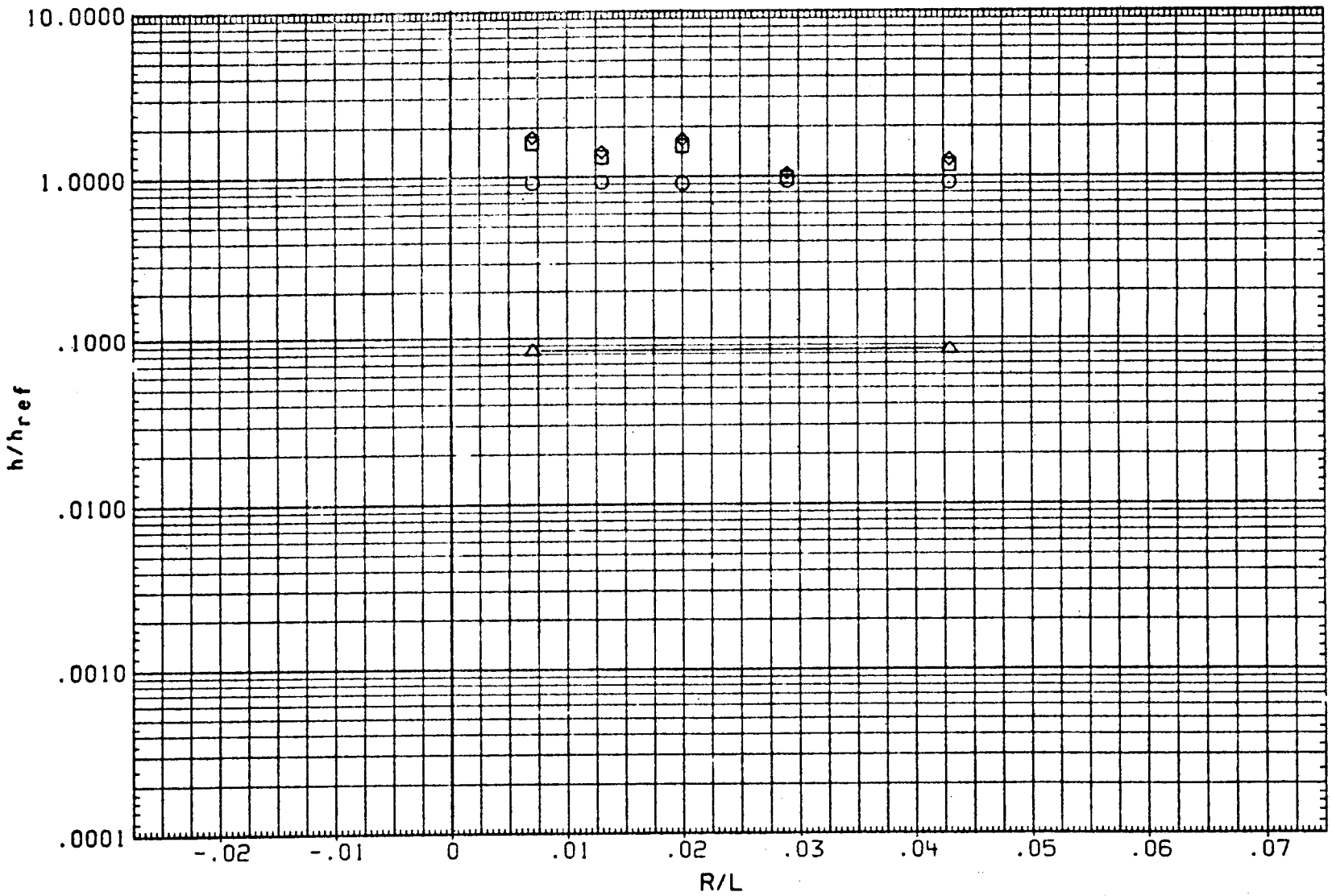

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 677

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L01)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20L0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

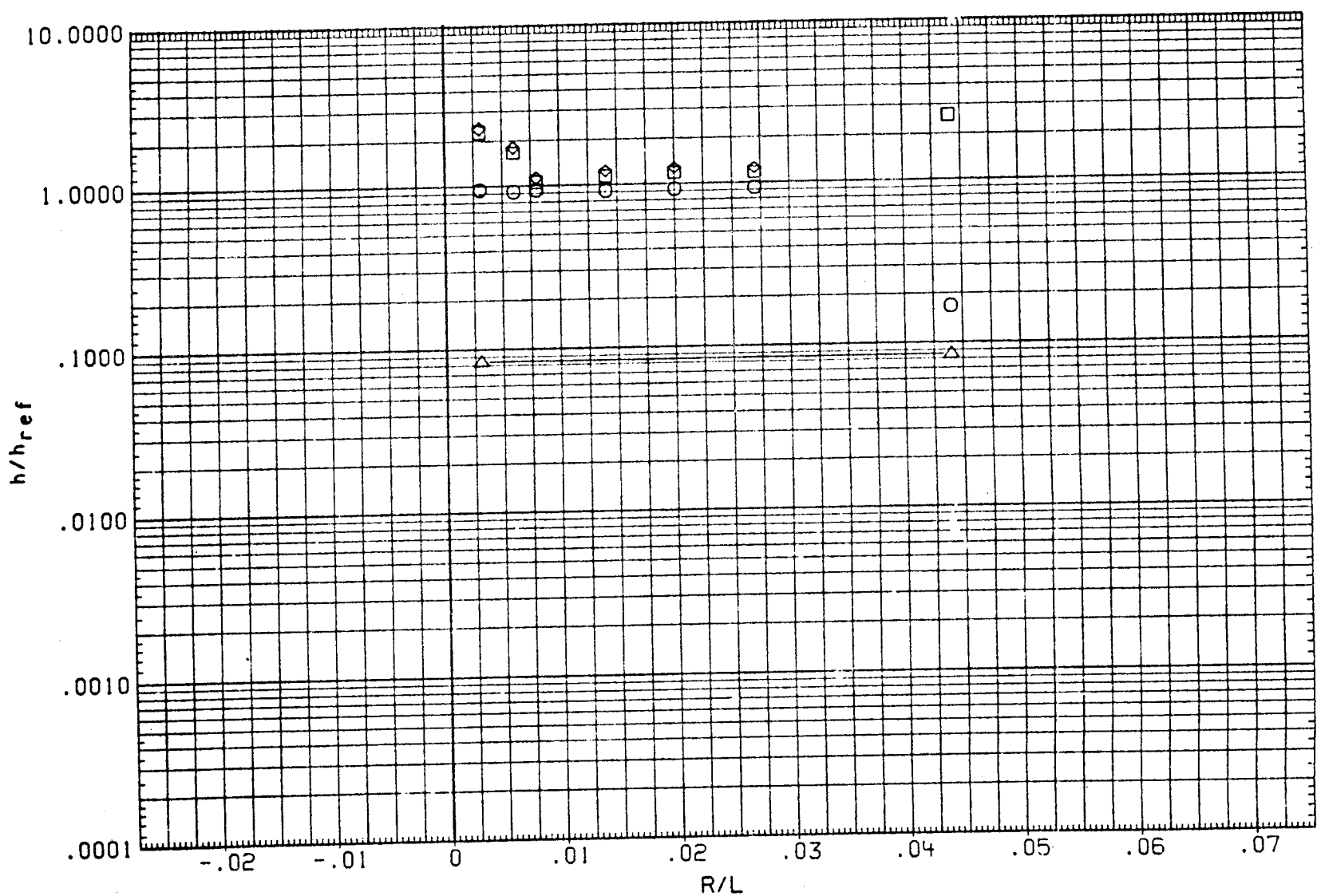

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 678

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L01)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20L0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

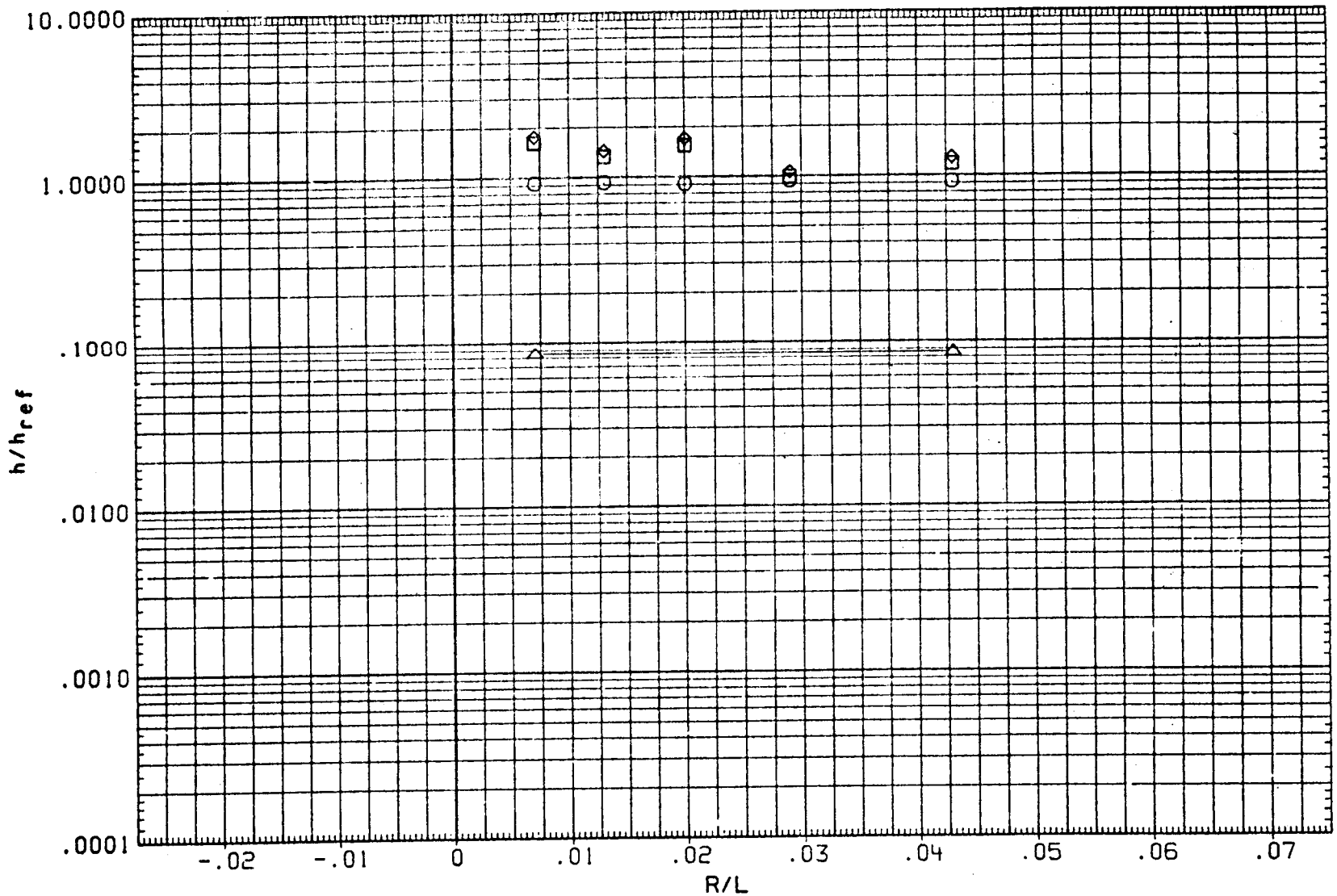

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 679

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L01)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20L0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

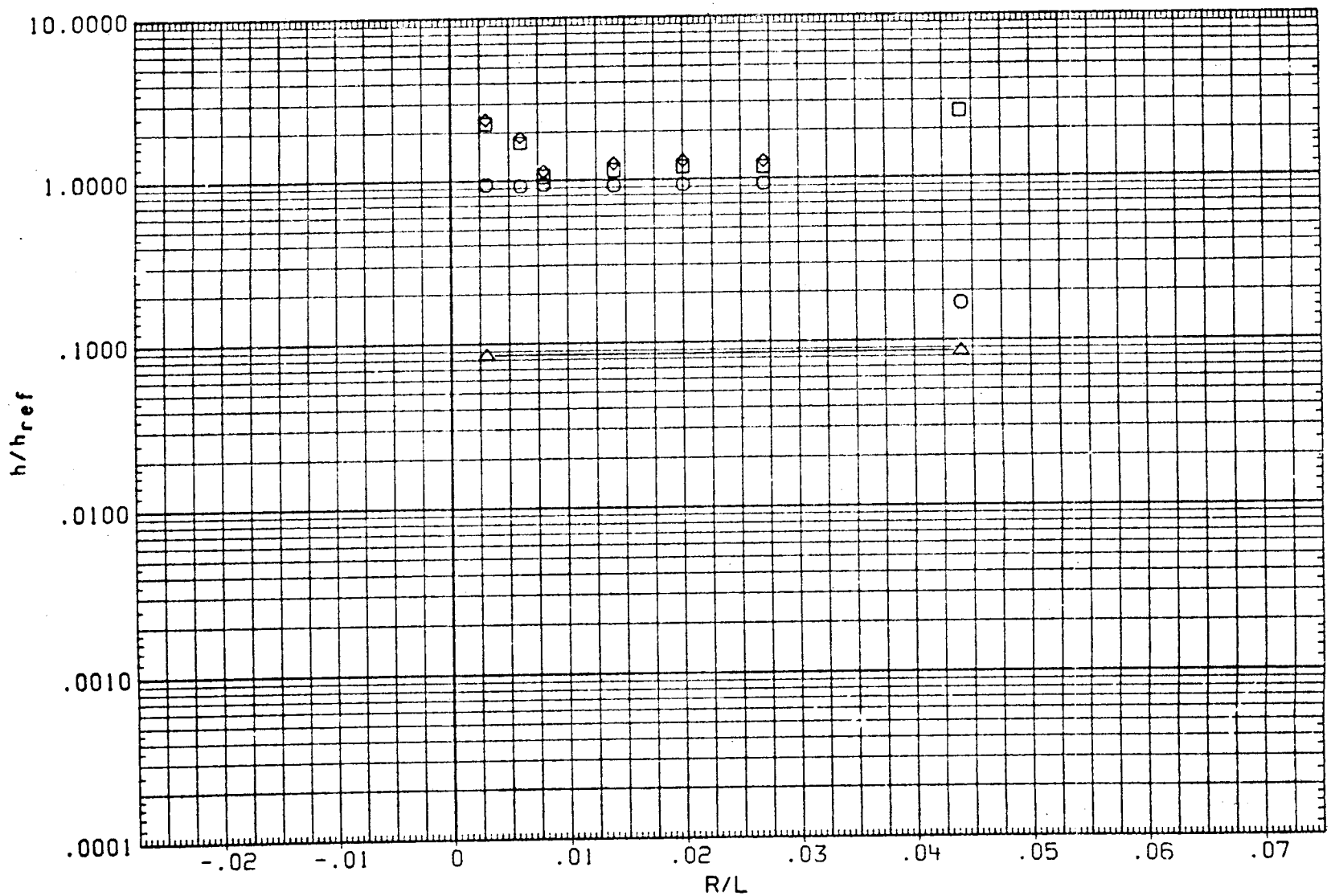

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 680

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20L0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(A20L01)	□	IH51A HI/HU T/TEST LO2 F.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20L0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 F.L.DIAG	.000	.000	5.000	5.300
(U20L5B)	△	IH51A THEORY CONF 5B LO2 FEED LINE DIAG. HU/HREF	.000	.000	5.000	5.300

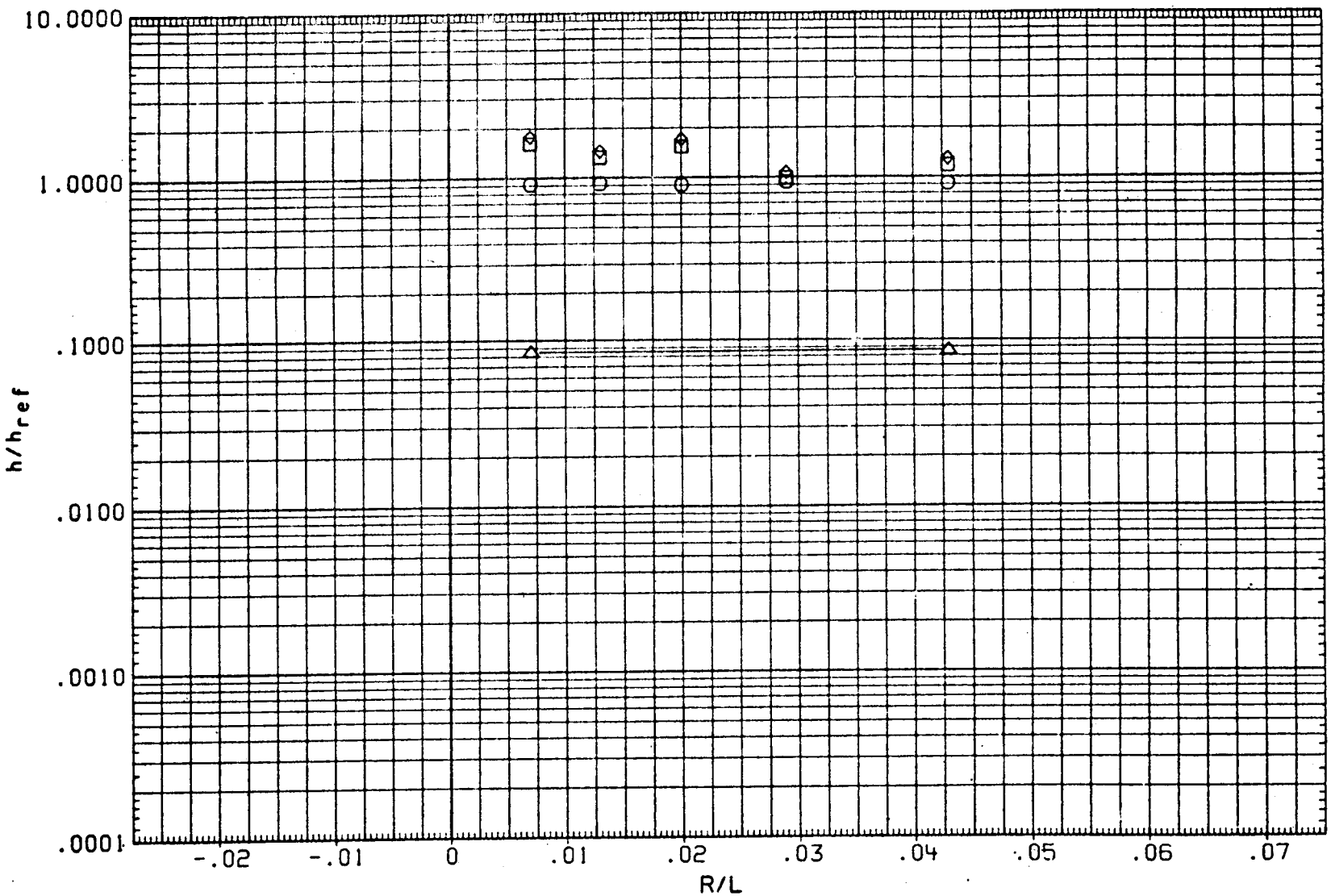

FIG. 16 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 681

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

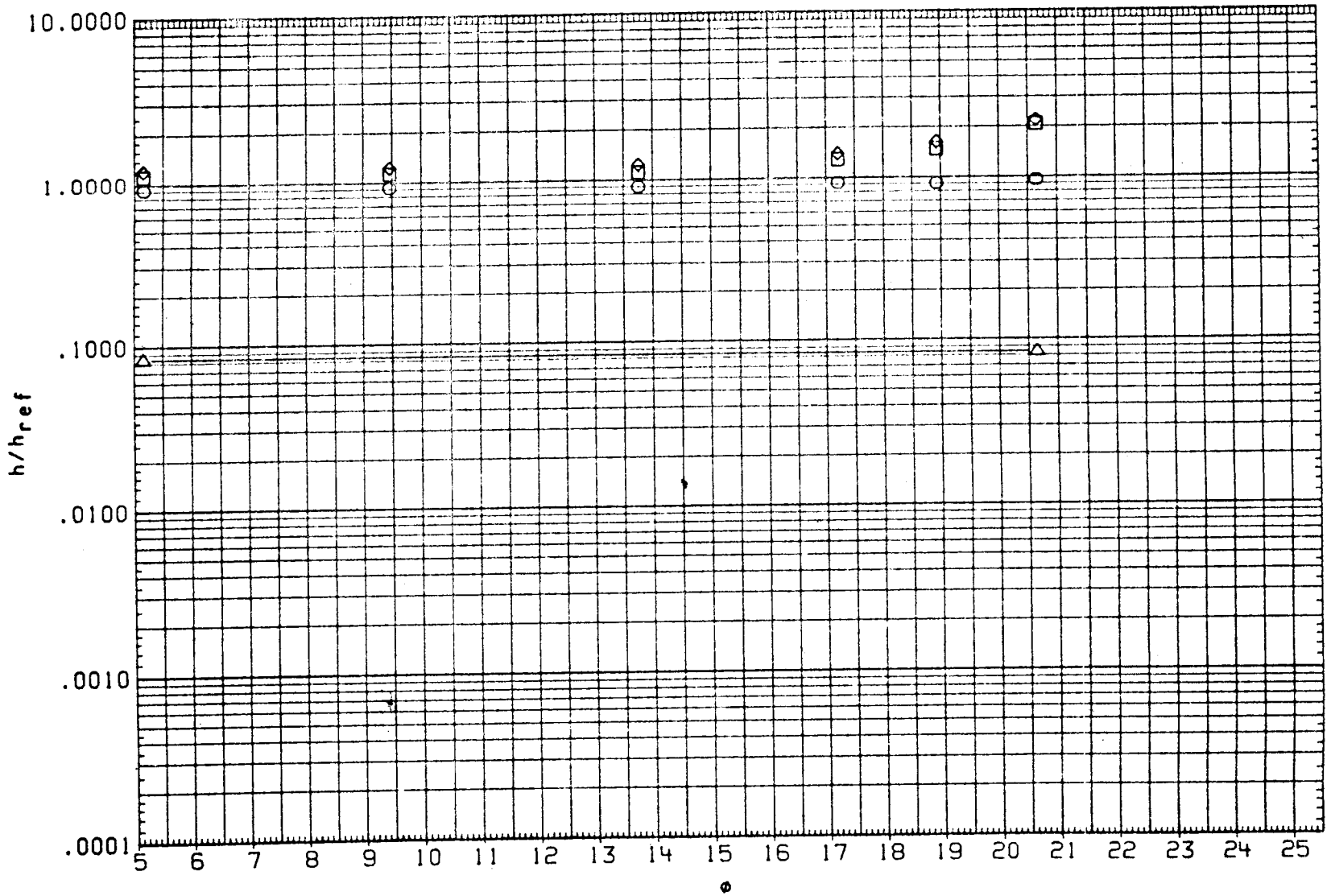

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .850 X/L = .357 DATE 22 APR 78 PAGE 682

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

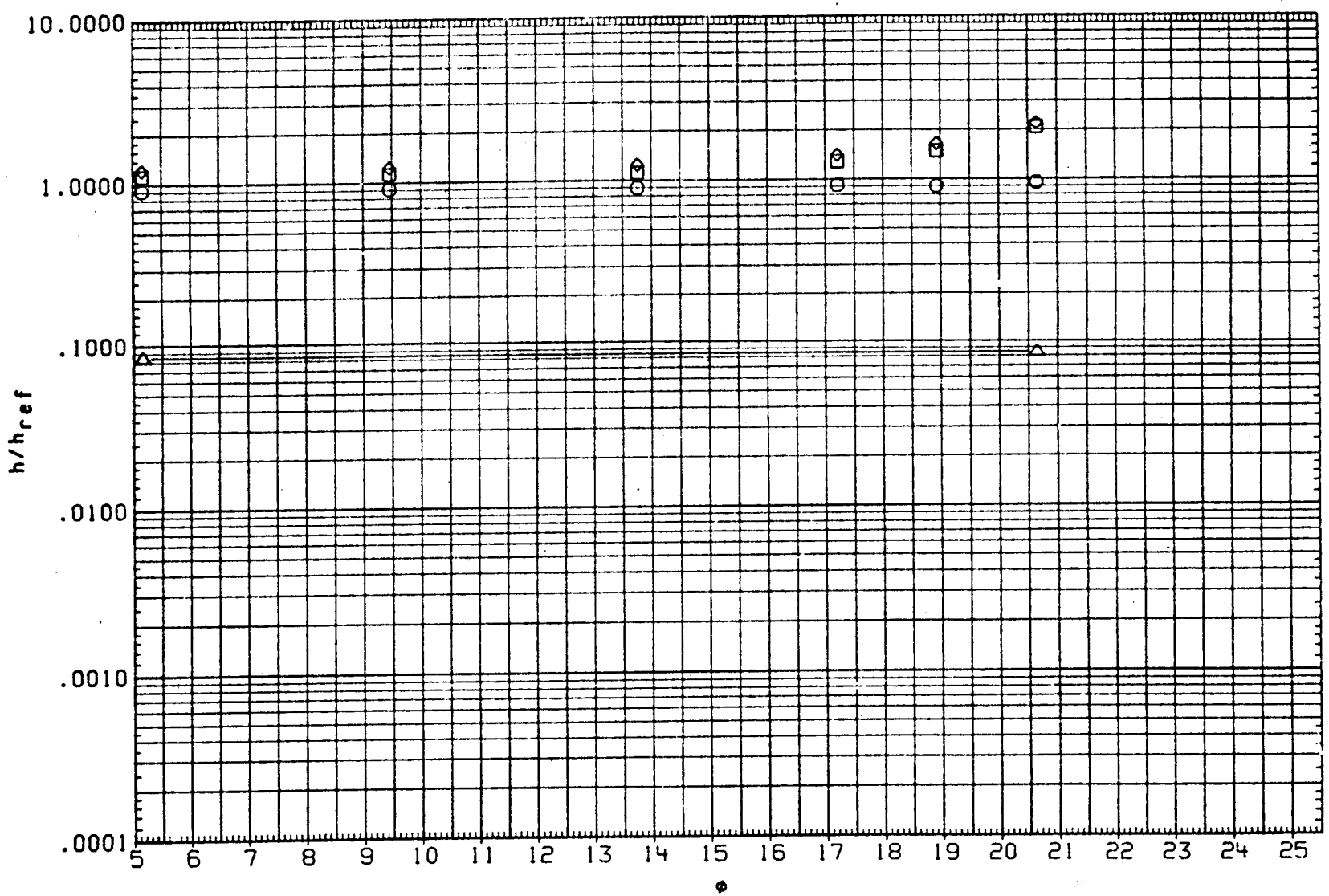

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = .900 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

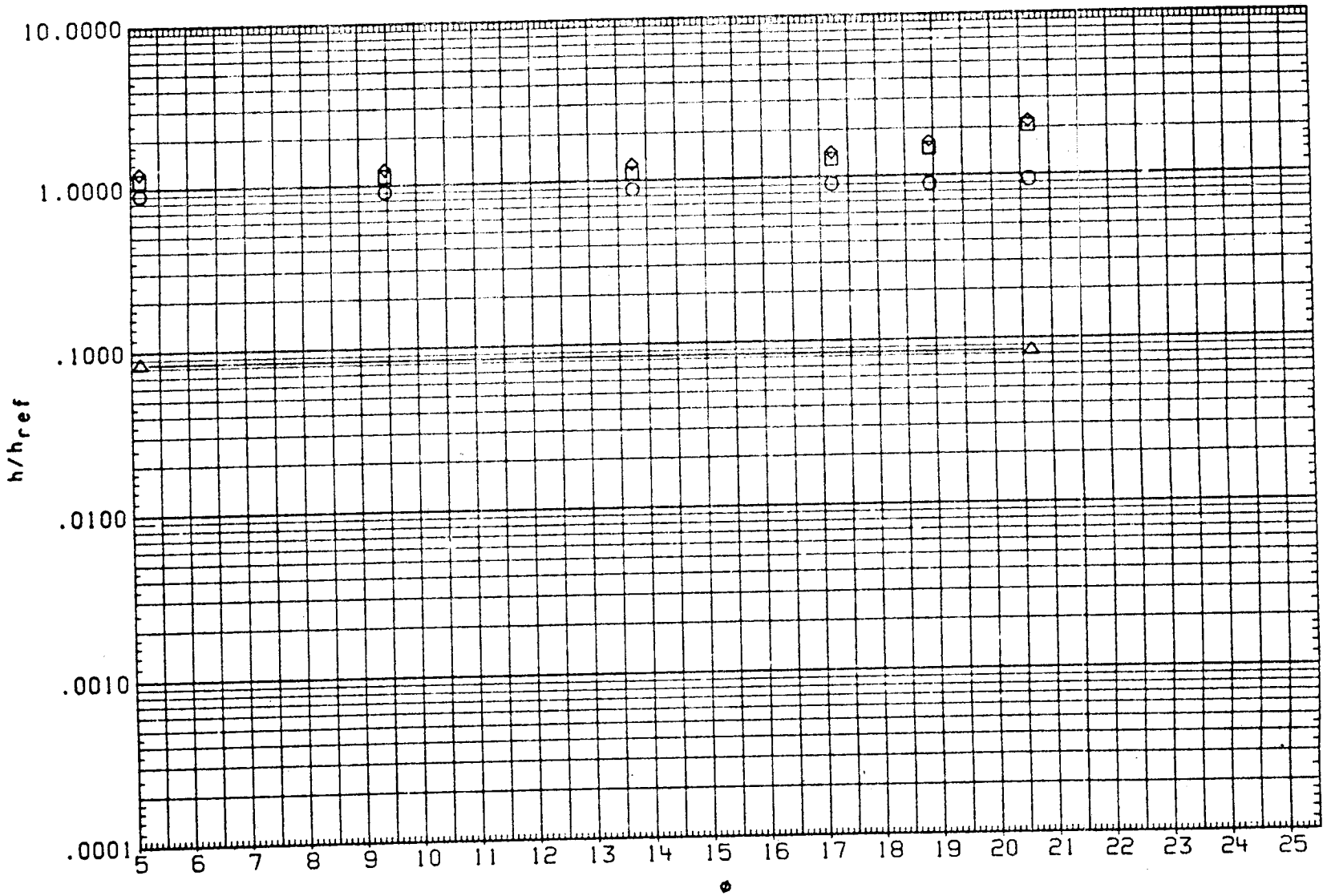

FIG. 17 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LO2 FEEDLINE

MACH = 5.250 HAW/HT = 1.000 X/L = .357 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

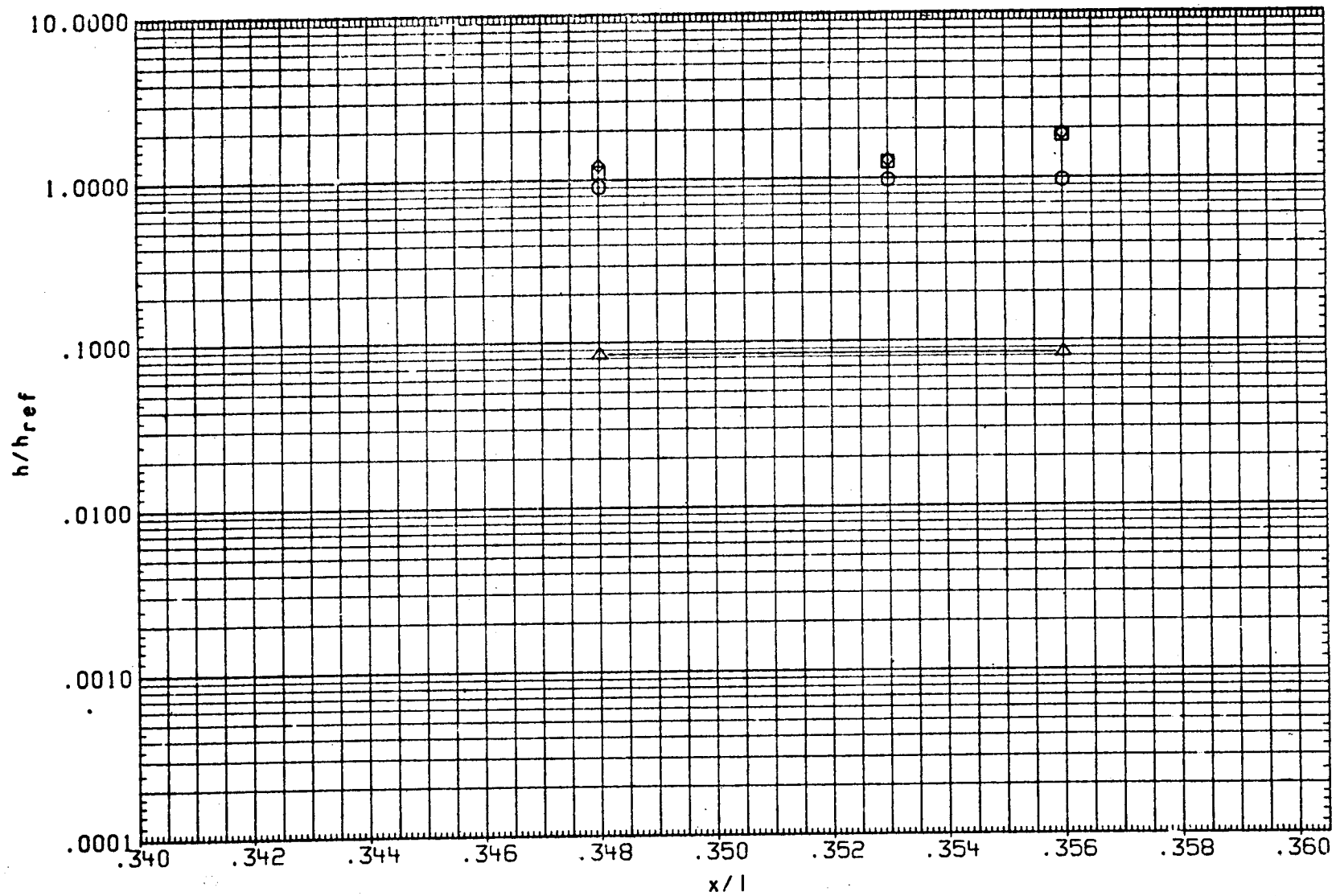

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 PHI = 34.580 DATE 22 APR 78 PAGE 685

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000F)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

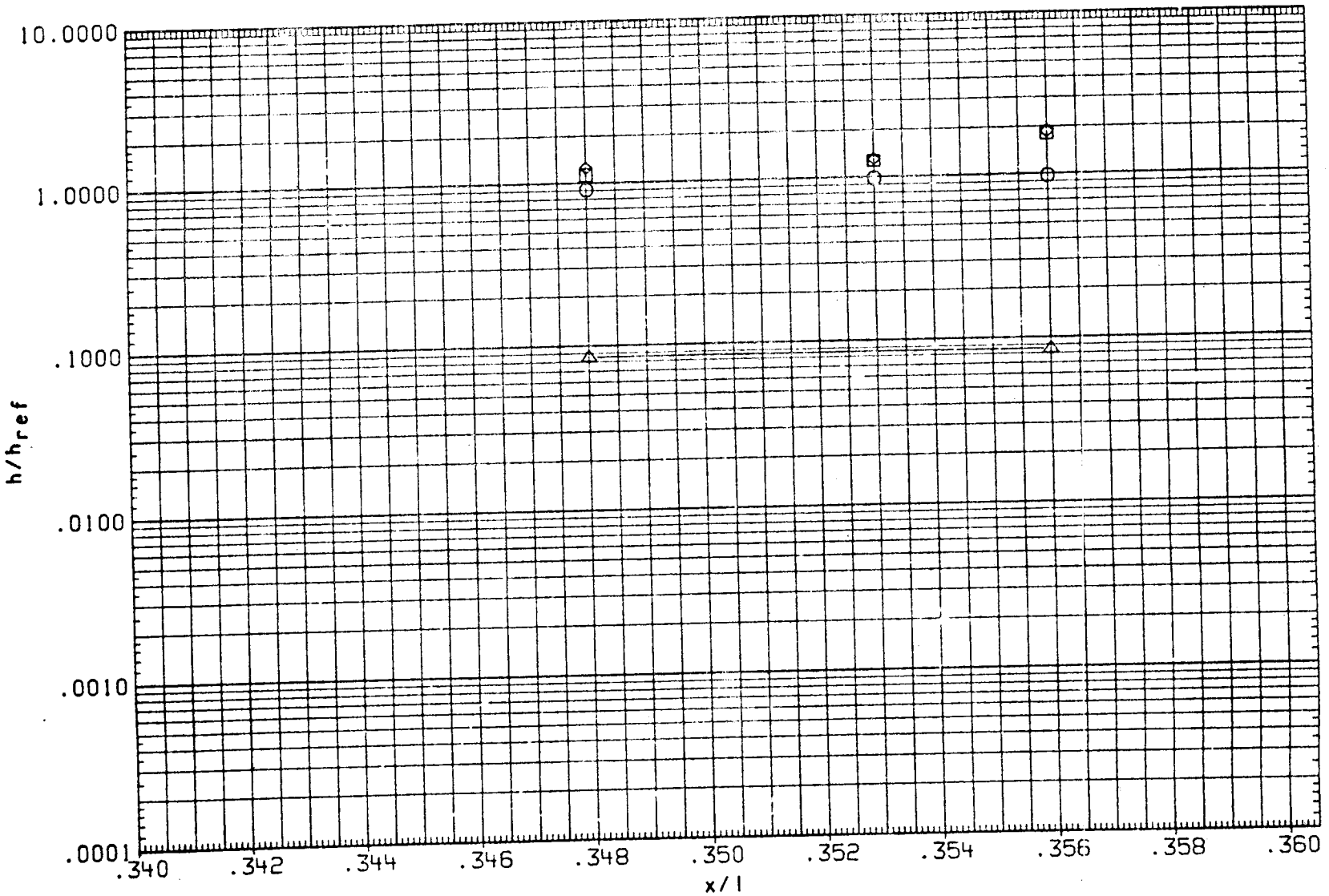

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 PHI = 34.580 DATE 22 APR 78 PAGE 686

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

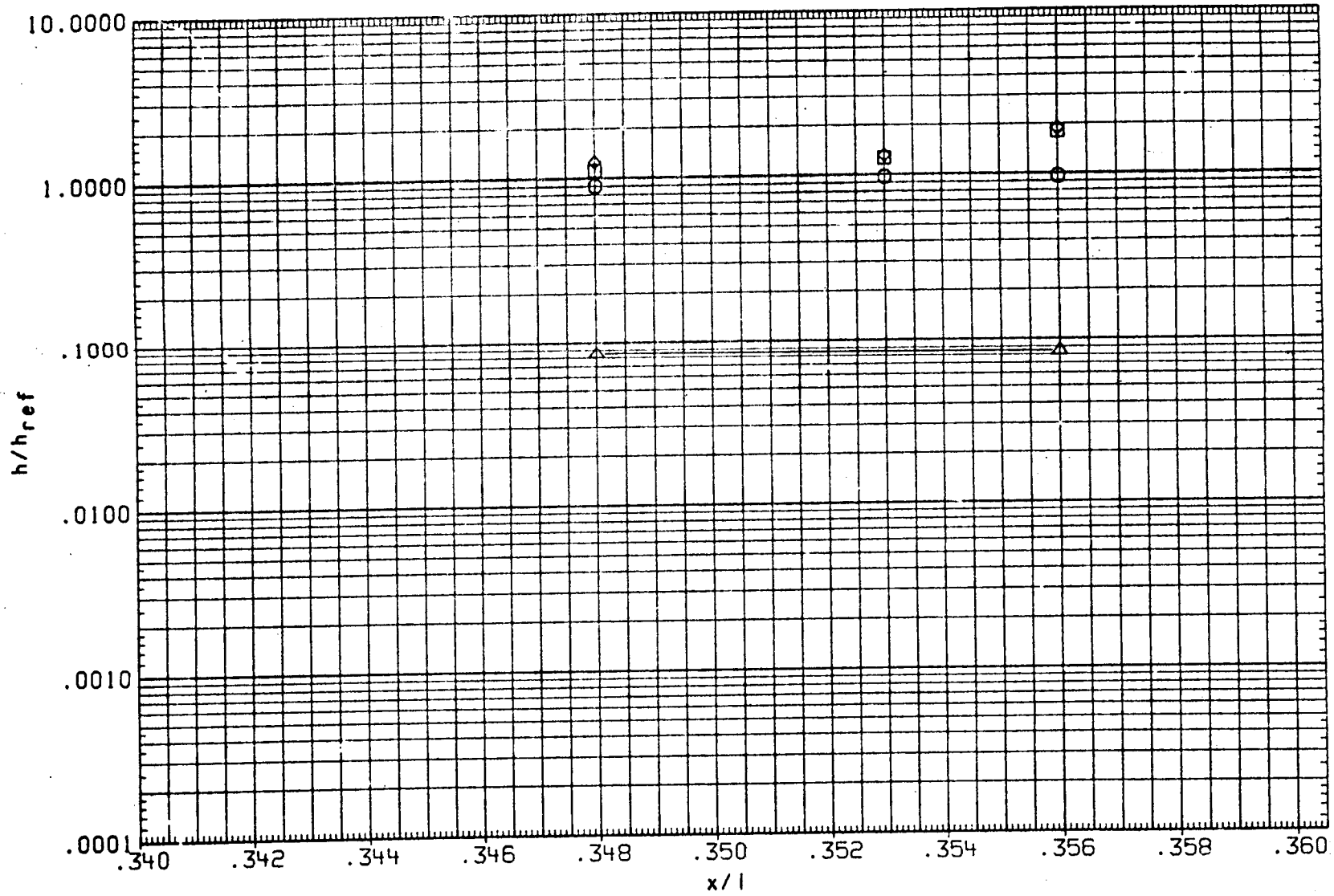

FIG. 18 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 34.580 DATE 22 APR 78 PAGE 687

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(XE[illegible])	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(A20M[illegible])	□	IH51A HI/HU T/TEST LO2 A.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20M0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M[illegible]B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

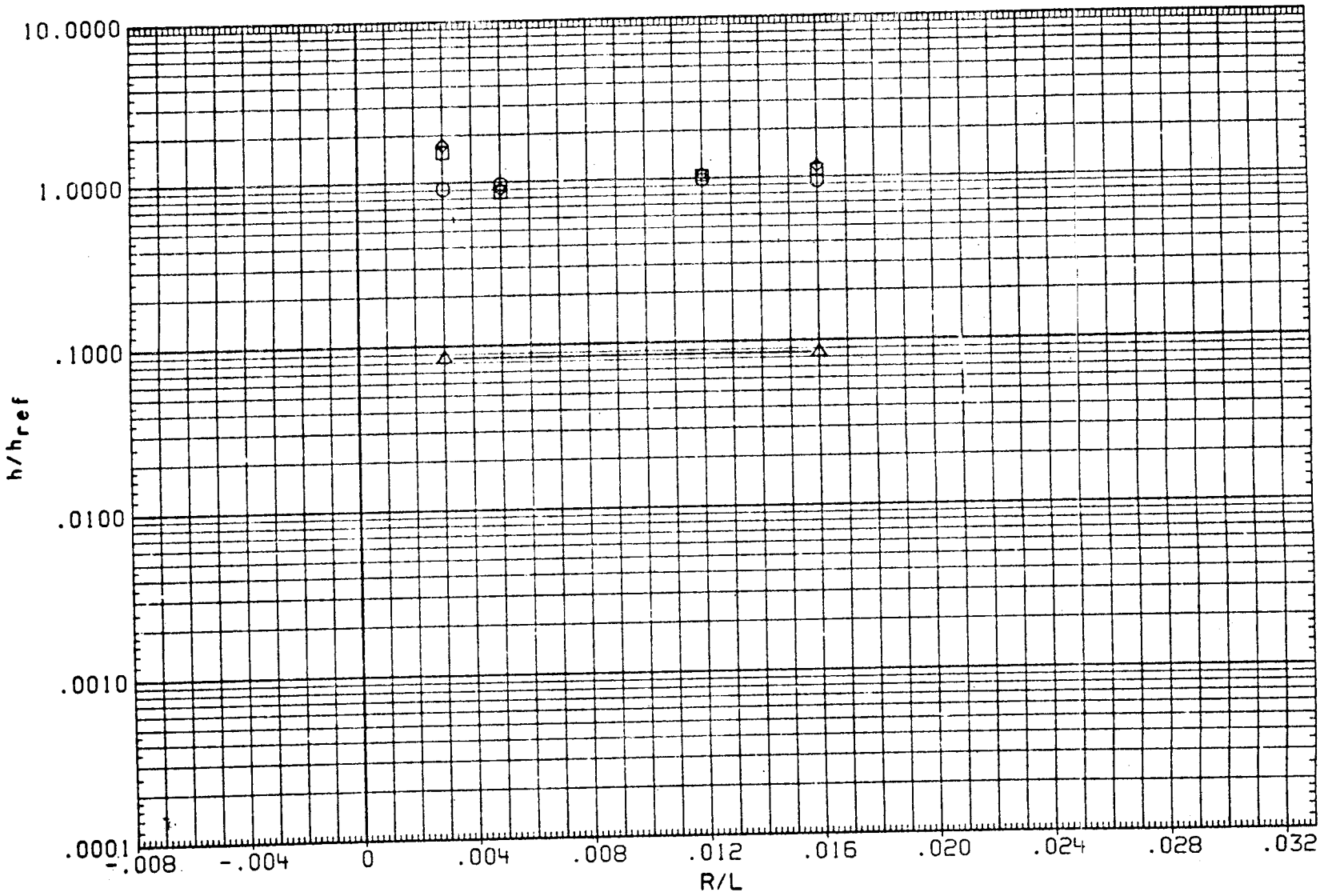

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 688

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20M0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(A20M01)	□	IH51A HI/HU T/TEST LO2 A.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20M0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

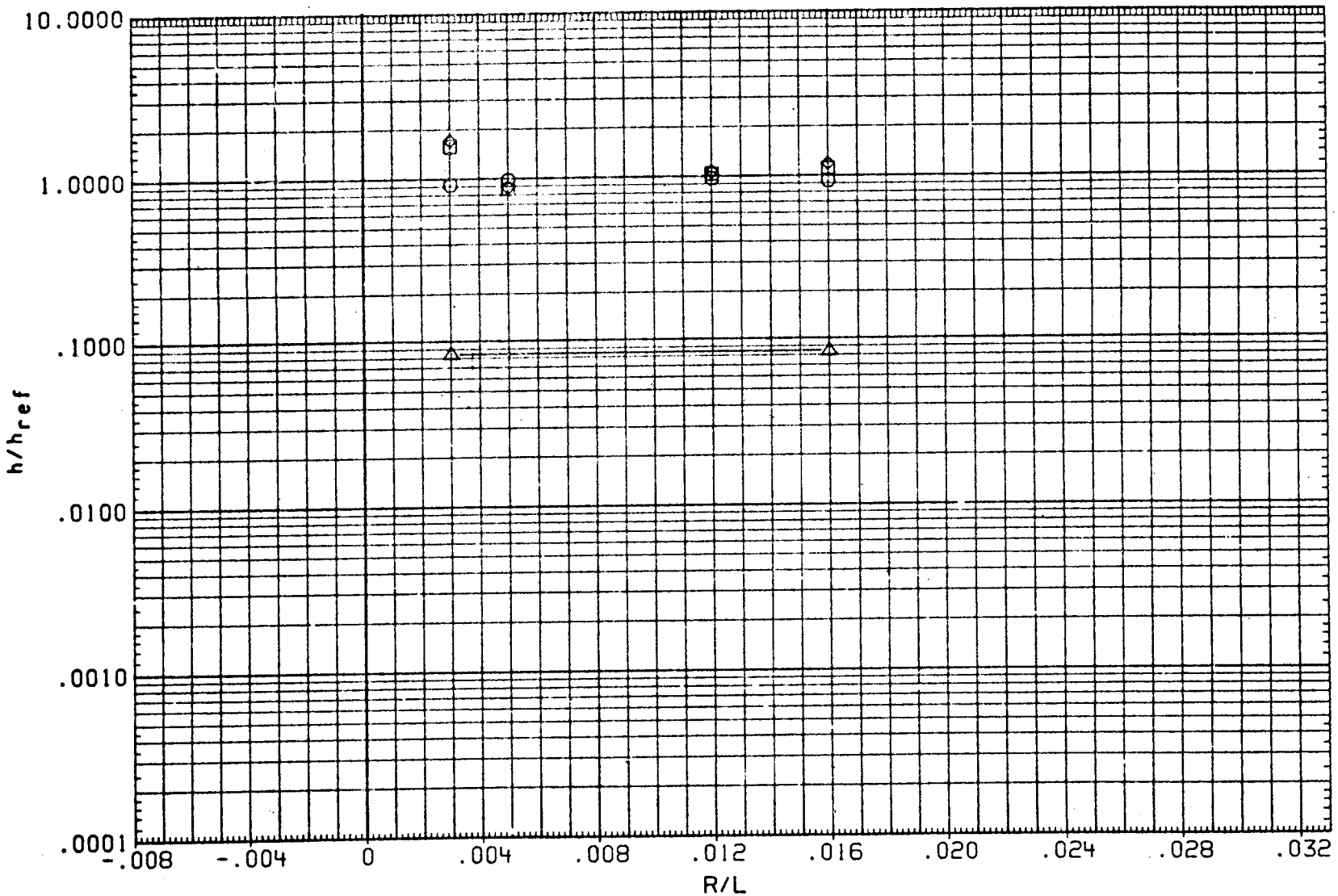

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 689

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20M0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(A20M01)	□	IH51A HI/HU T/TEST LO2 A.L.DIAG 1B/5B	.000	.000	5.000	5.300
(N20M0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LO2 A.L. DIA	.000	.000	5.000	5.300
(U20M5B)	△	IH51A THEORY CONF 5B LO2 A.G. LINE DIAG. HU/HREF	.000	.000	5.000	5.300

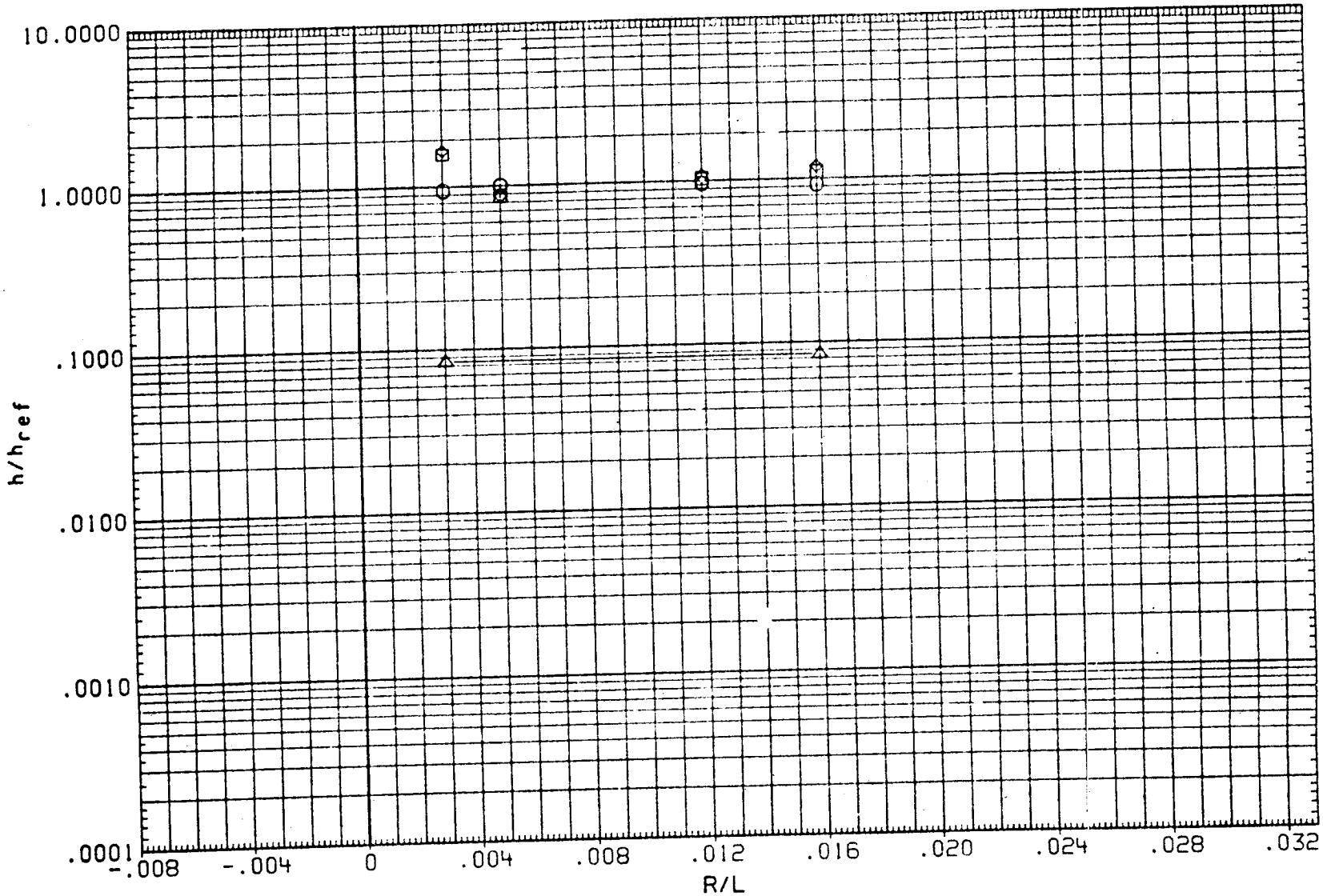

FIG. 19 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LO2 ANTIGEYSER LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 690

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

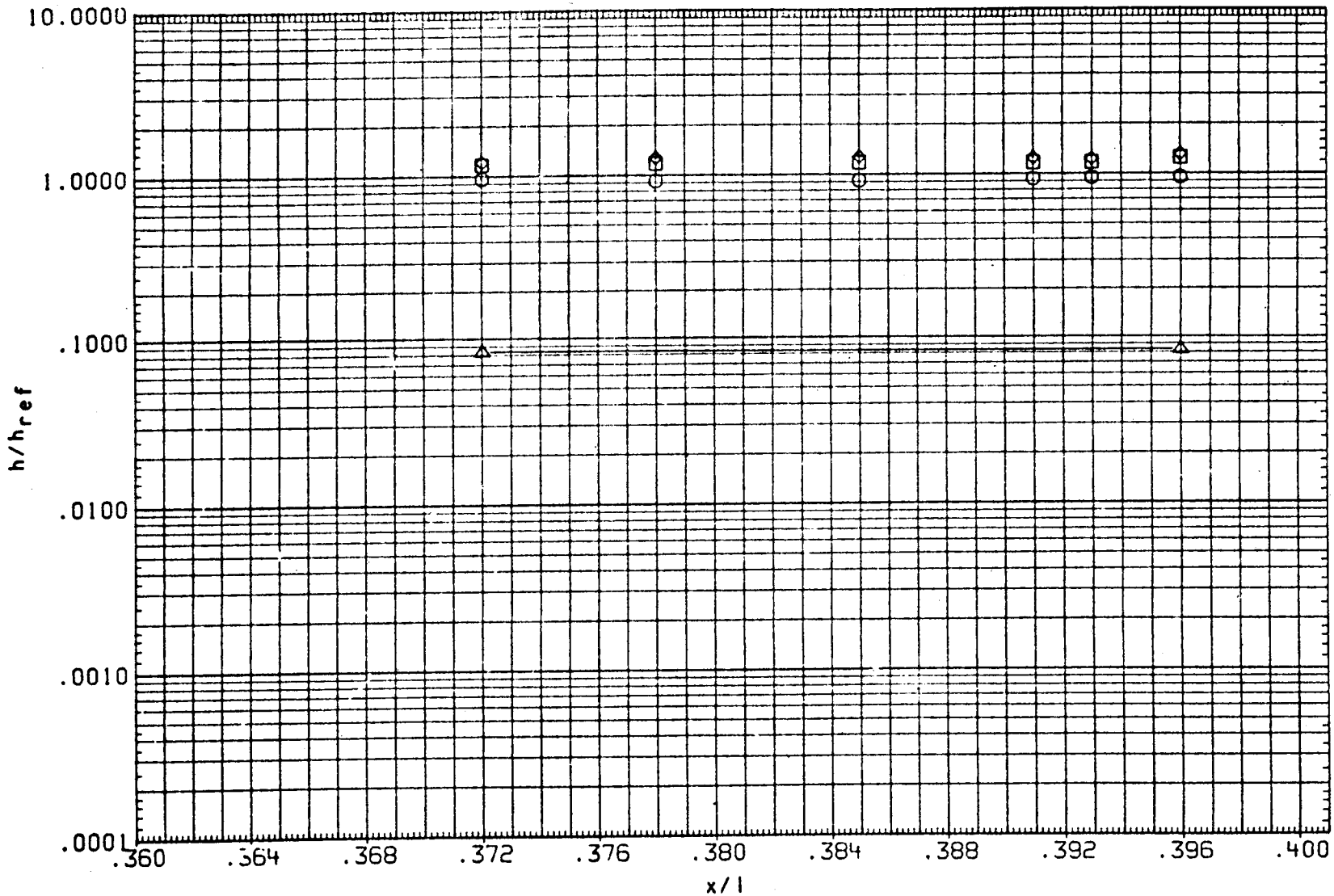

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 PHI = 329.290 DATE 22 APR 78 PAGE 691

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

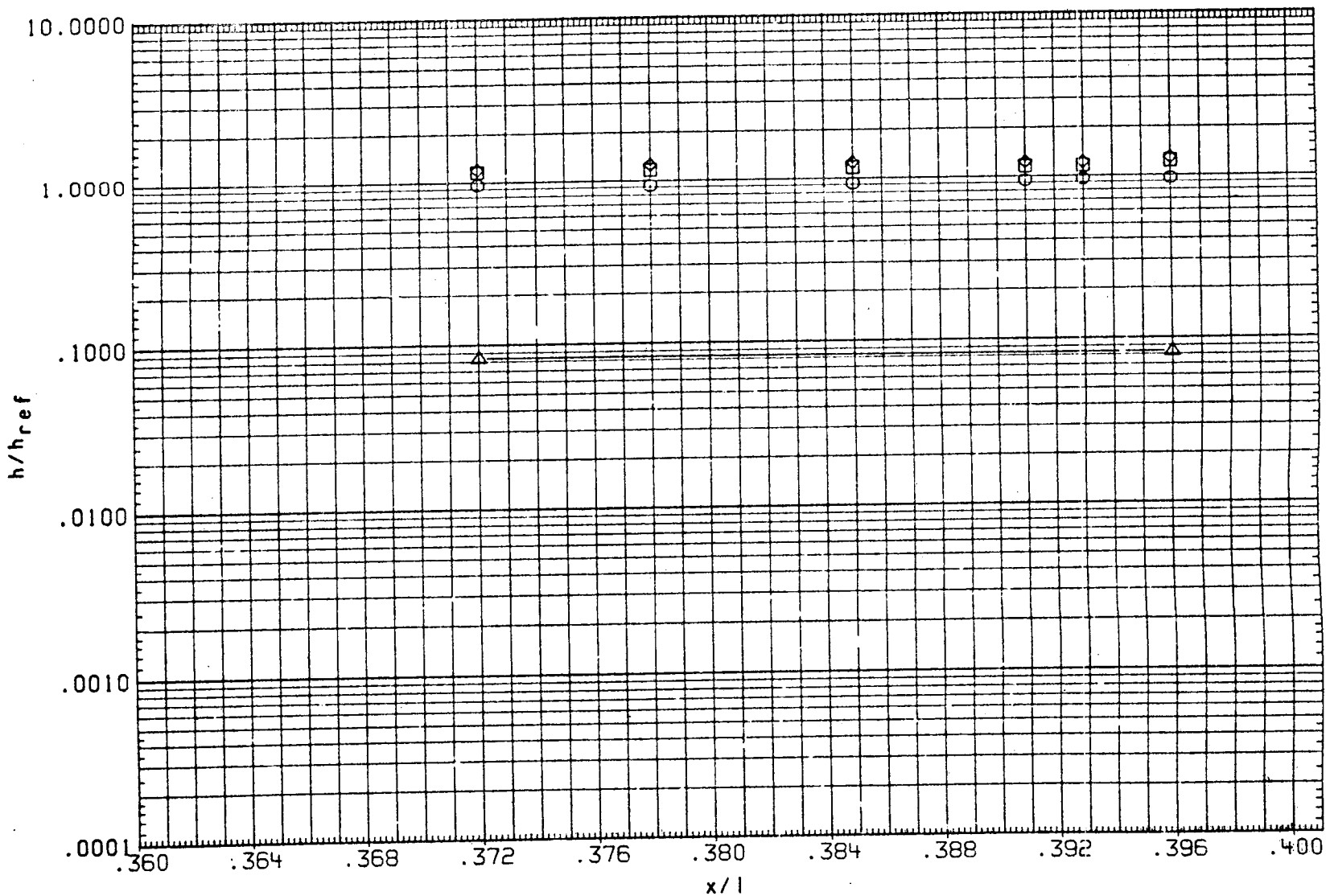

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 PHI = 329.290 DATE 22 APR 78 PAGE 692

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

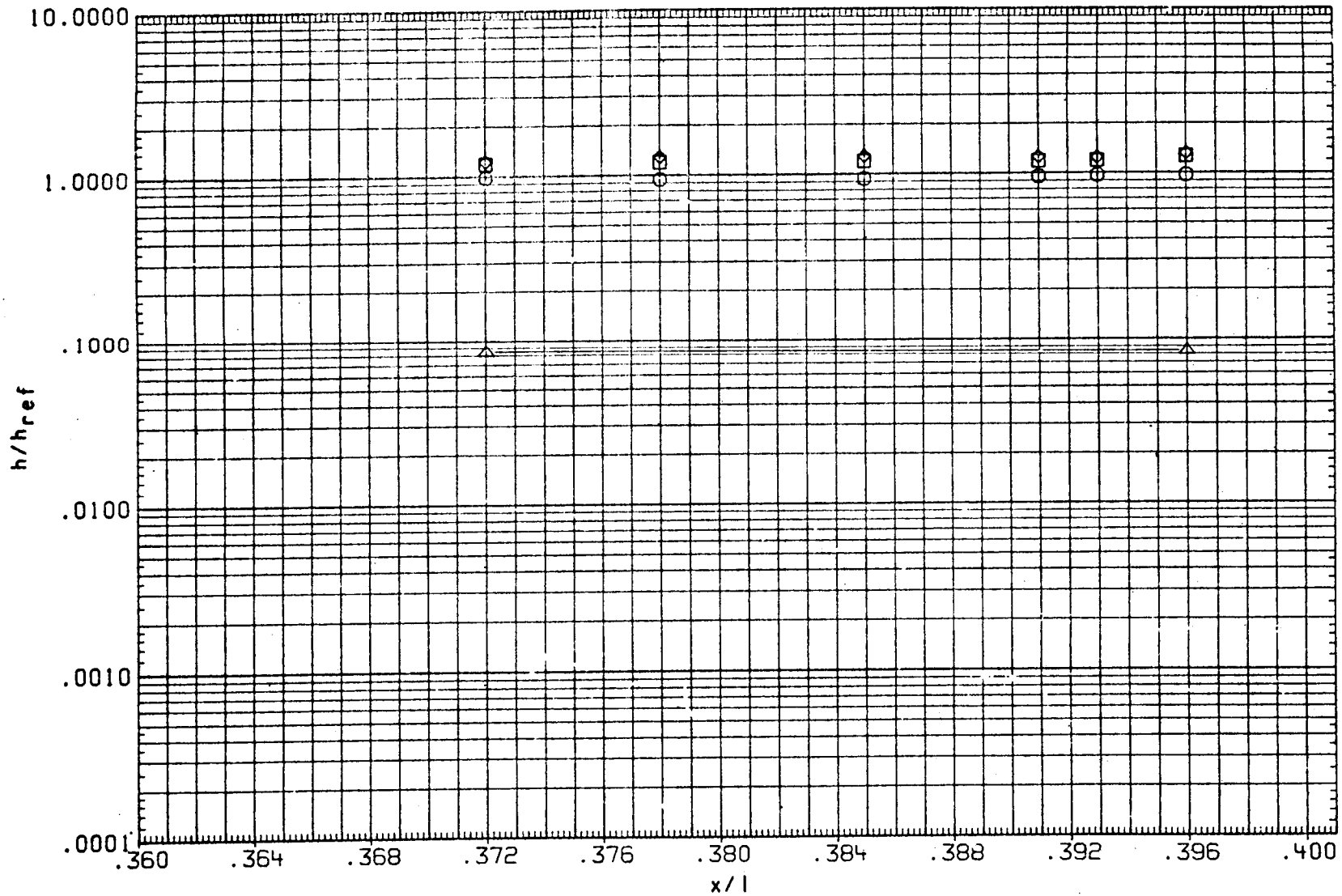

FIG. 20 HEATING DISTRIBUTION ON LONGITUDINAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 329.290 DATE 22 APR 78 PAGE 693

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20N0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LH2 LINE DIA	.000	.000	5.000	5.300
(A20N01)	□	IH51A HI/HU T/TEST LH2 LINE DIAG 1B/5B	.000	.000	5.000	5.300
(N20N0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL HU/HREF	.000	.000	5.000	5.300

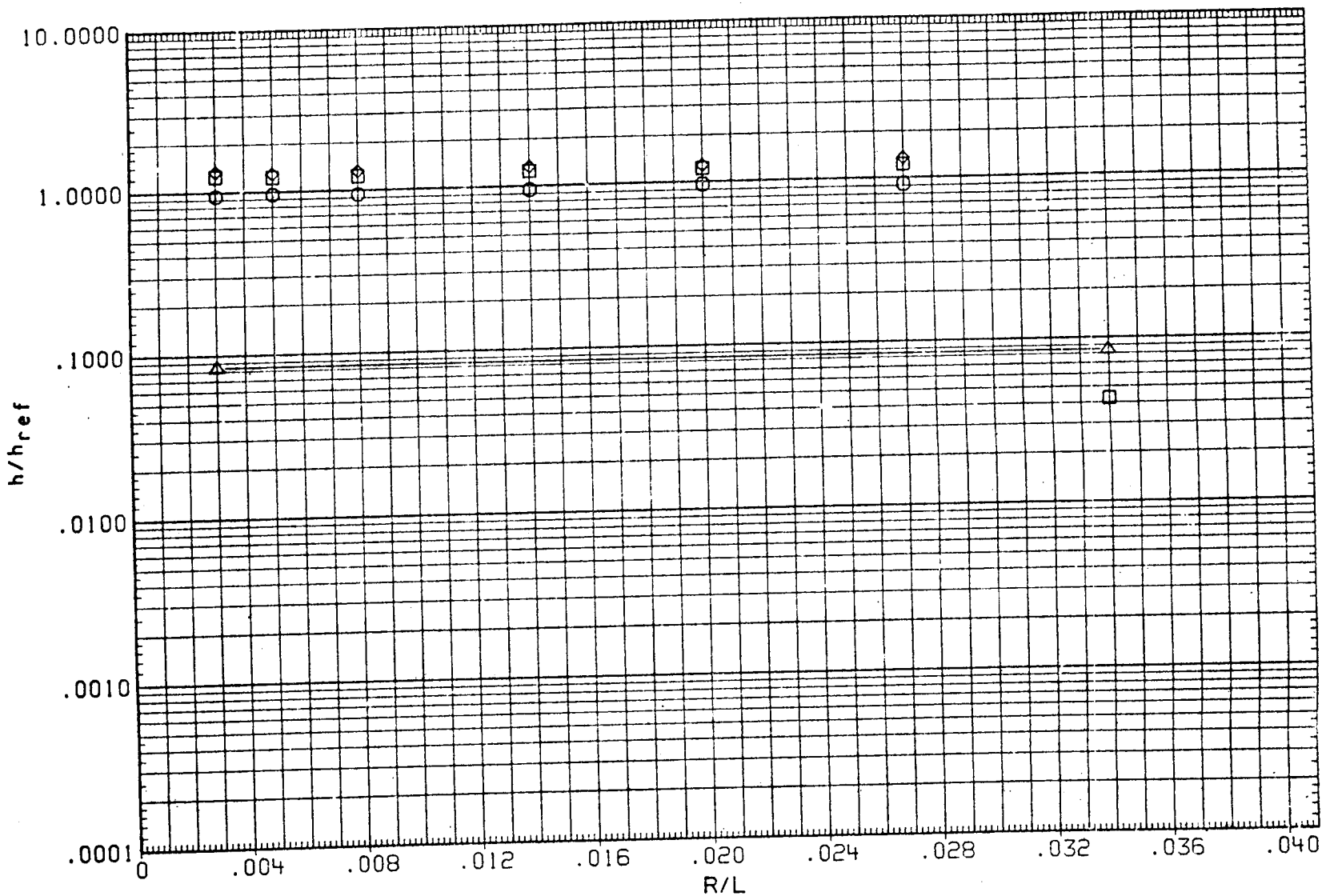

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 694

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20N08)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LH2 LINE DIA	.000	.000	5.000	5.300
(A20N01)	□	IH51A HI/HU T/TEST LH2 LINE DIAG 1B/5B	.000	.000	5.000	5.300
(N20N08)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL HU/HREF	.000	.000	5.000	5.300

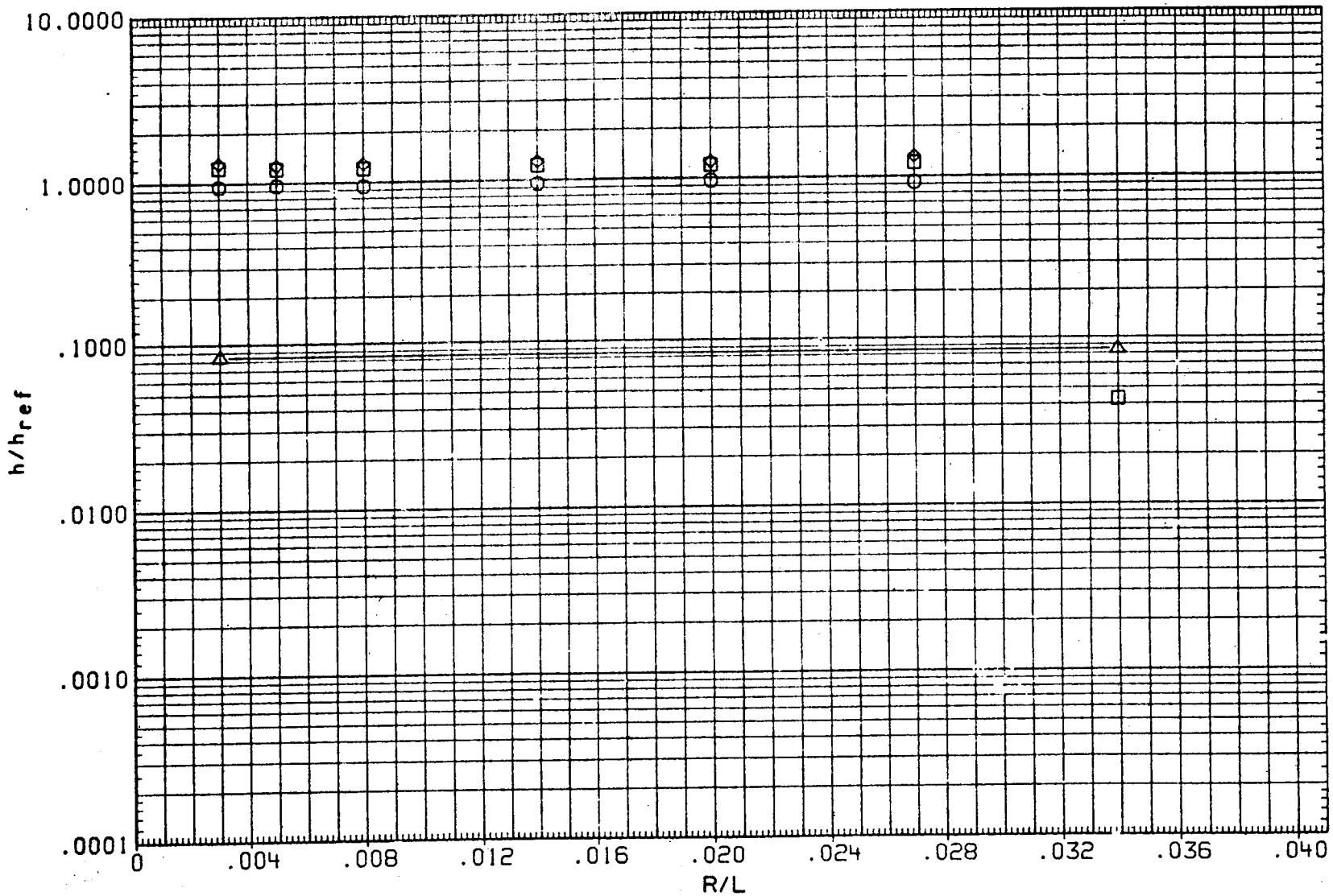

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 695

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20N0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LH2 LINE DIA	.000	.000	5.000	5.300
(A20N01)	□	IH51A HI/HU T/TEST LH2 LINE DIAG 1B/5B	.000	.000	5.000	5.300
(N20N0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH2 LINE DIA	.000	.000	5.000	5.300
(U20N5B)	△	IH51A THEORY CONF 5B LH2 LINE DIAGONAL HU/HREF	.000	.000	5.000	5.300

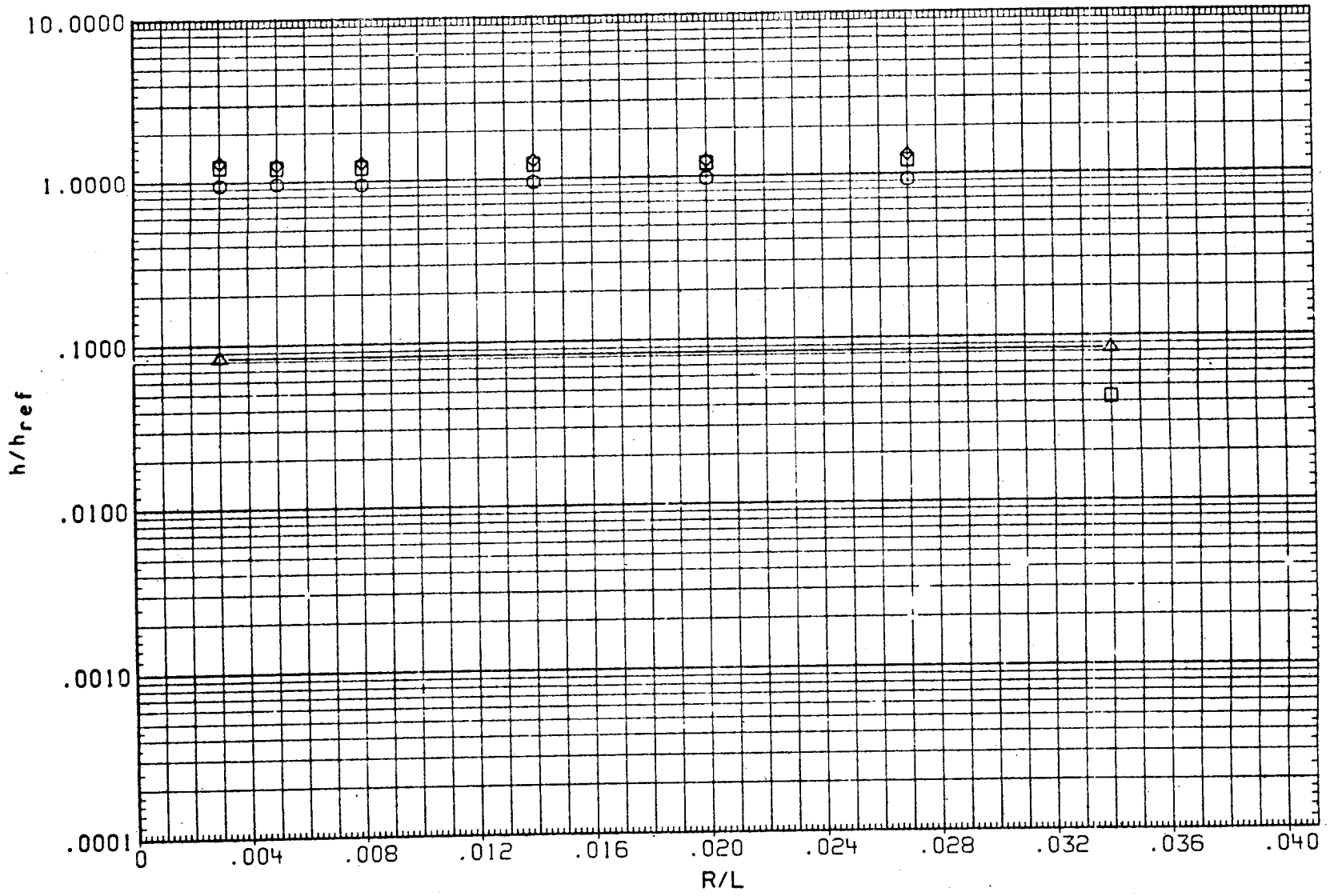

FIG. 21 HEATING DISTRIBUTION ON DIAGONAL UPSTREAM OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 696

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X0000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

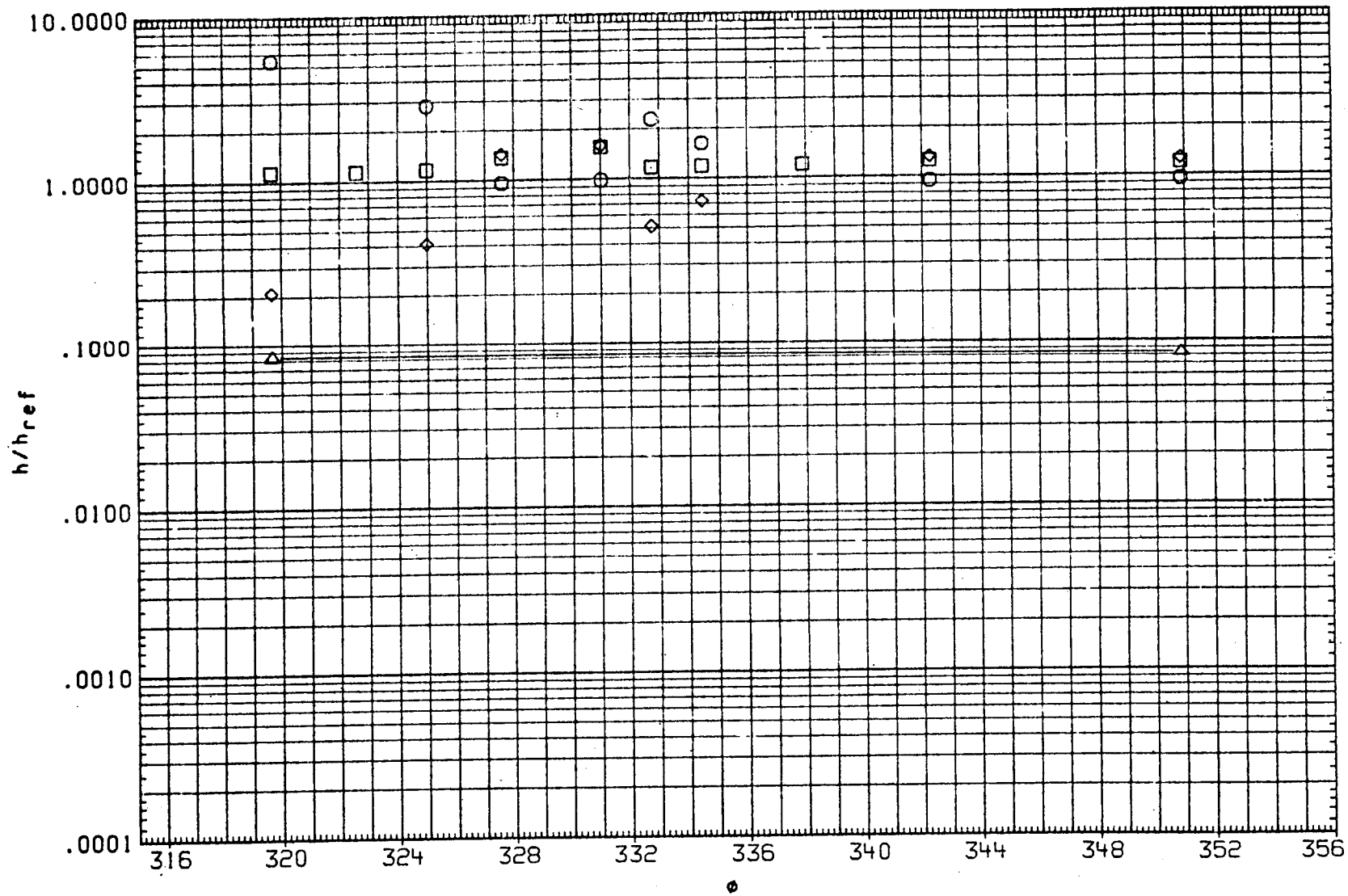

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .399 DATE 22 APR 78 PAGE 697

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

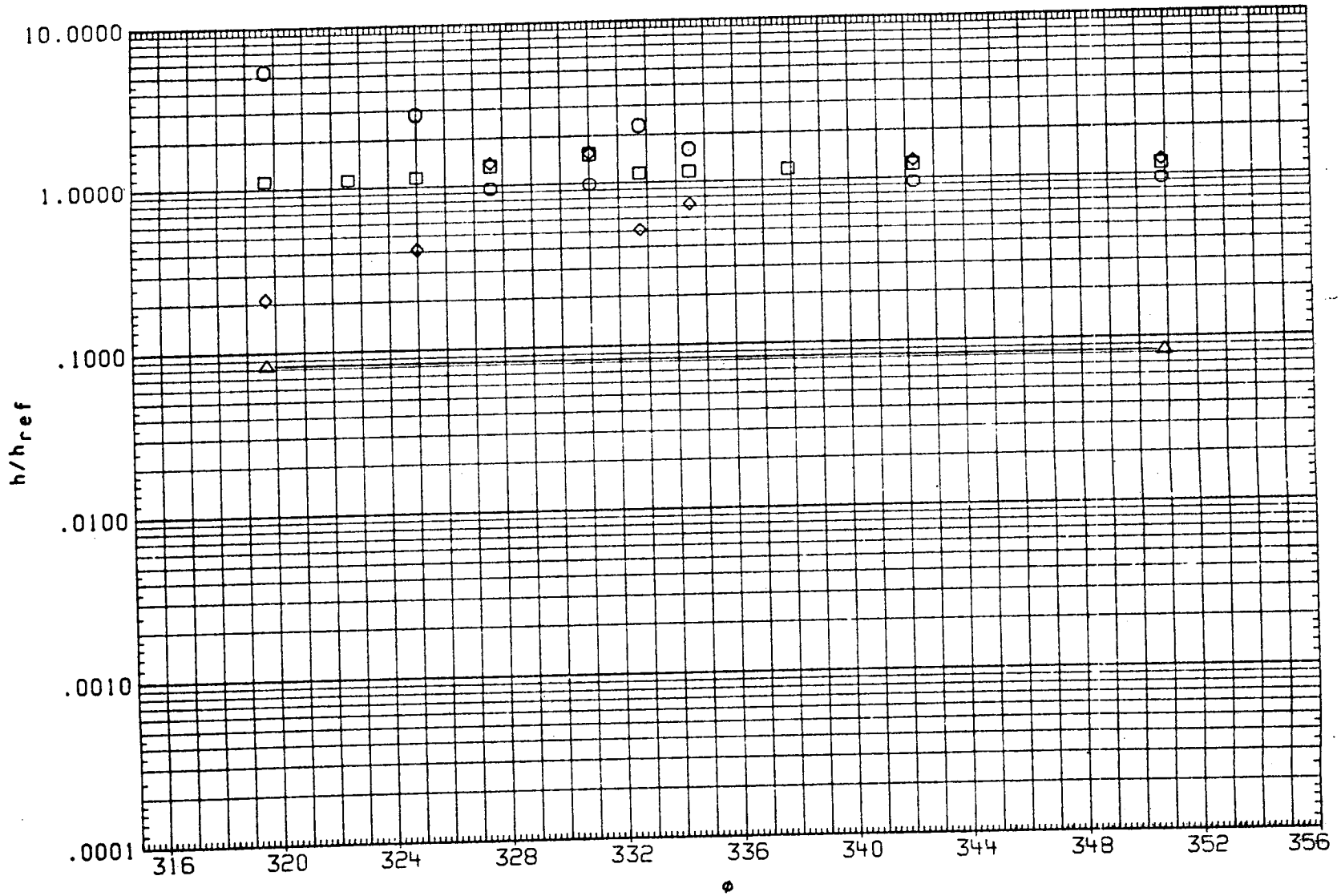

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .399 DATE 22 APR 78 PAGE 698

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

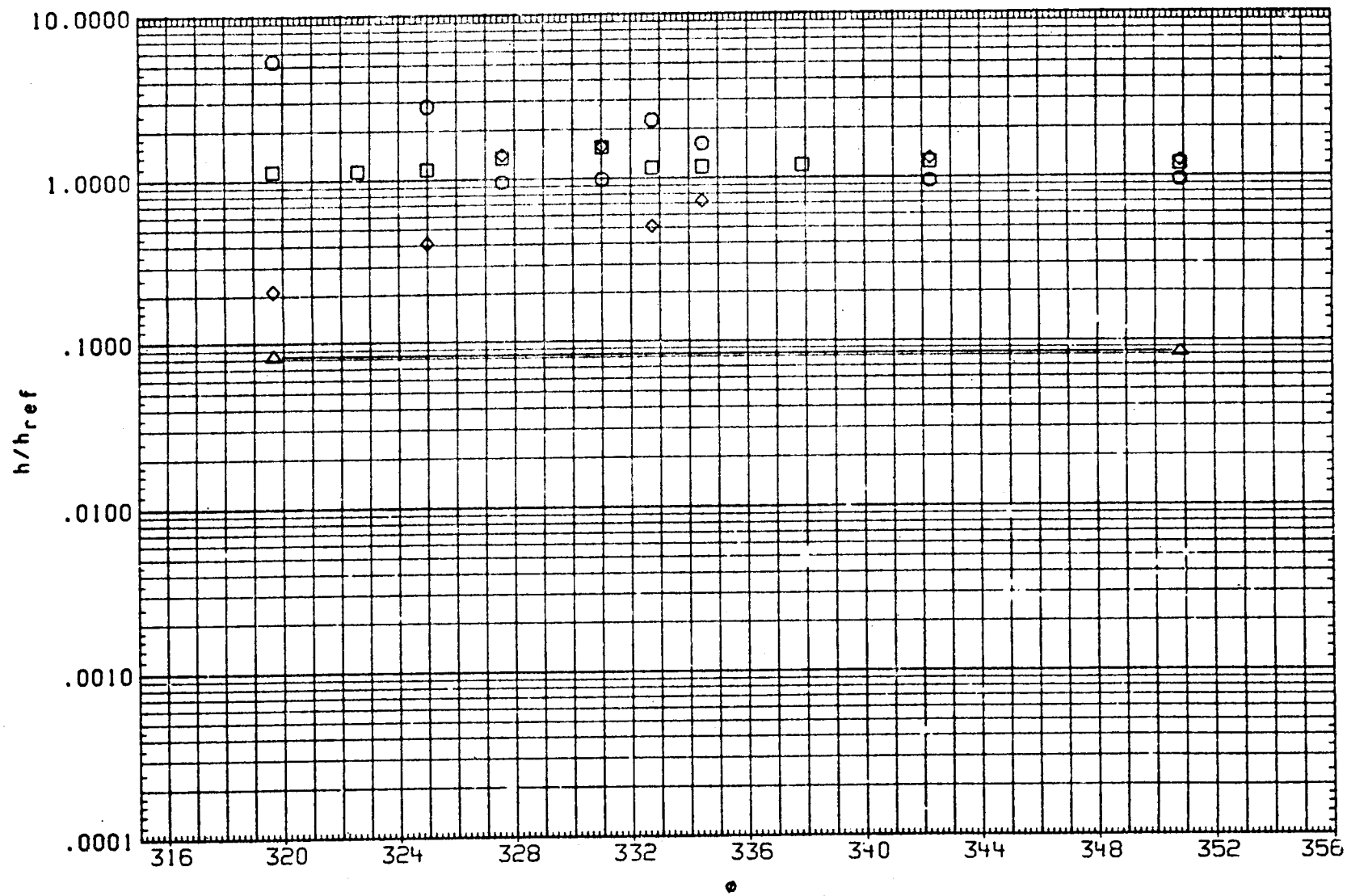

FIG. 22 HEATING DISTRIBUTION ON TRANSVERSE AT NOSE OF LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .399 DATE 22 APR 78 PAGE 699

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

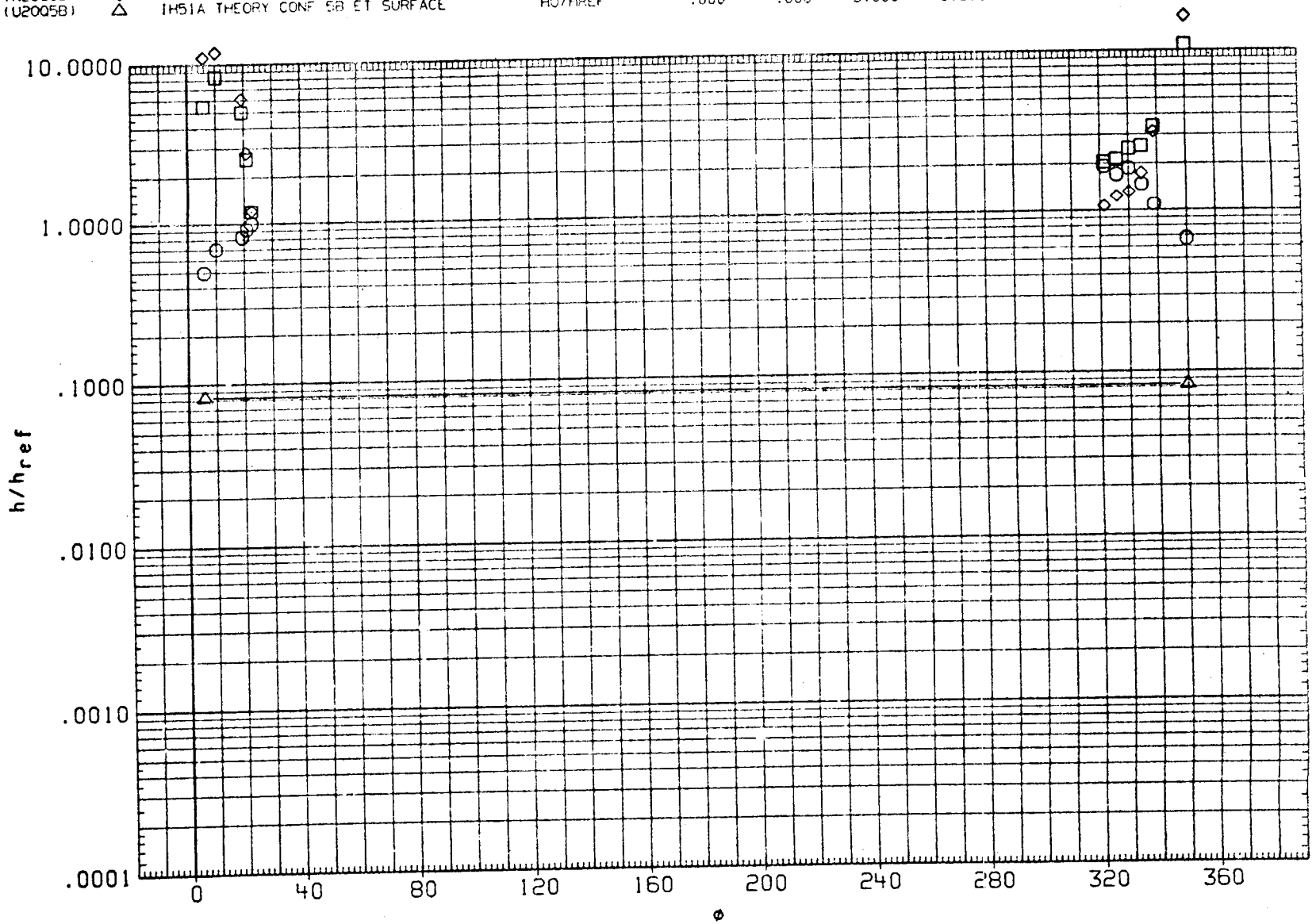

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .850 X/L = .437 DATE 22 APR 78 PAGE 700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

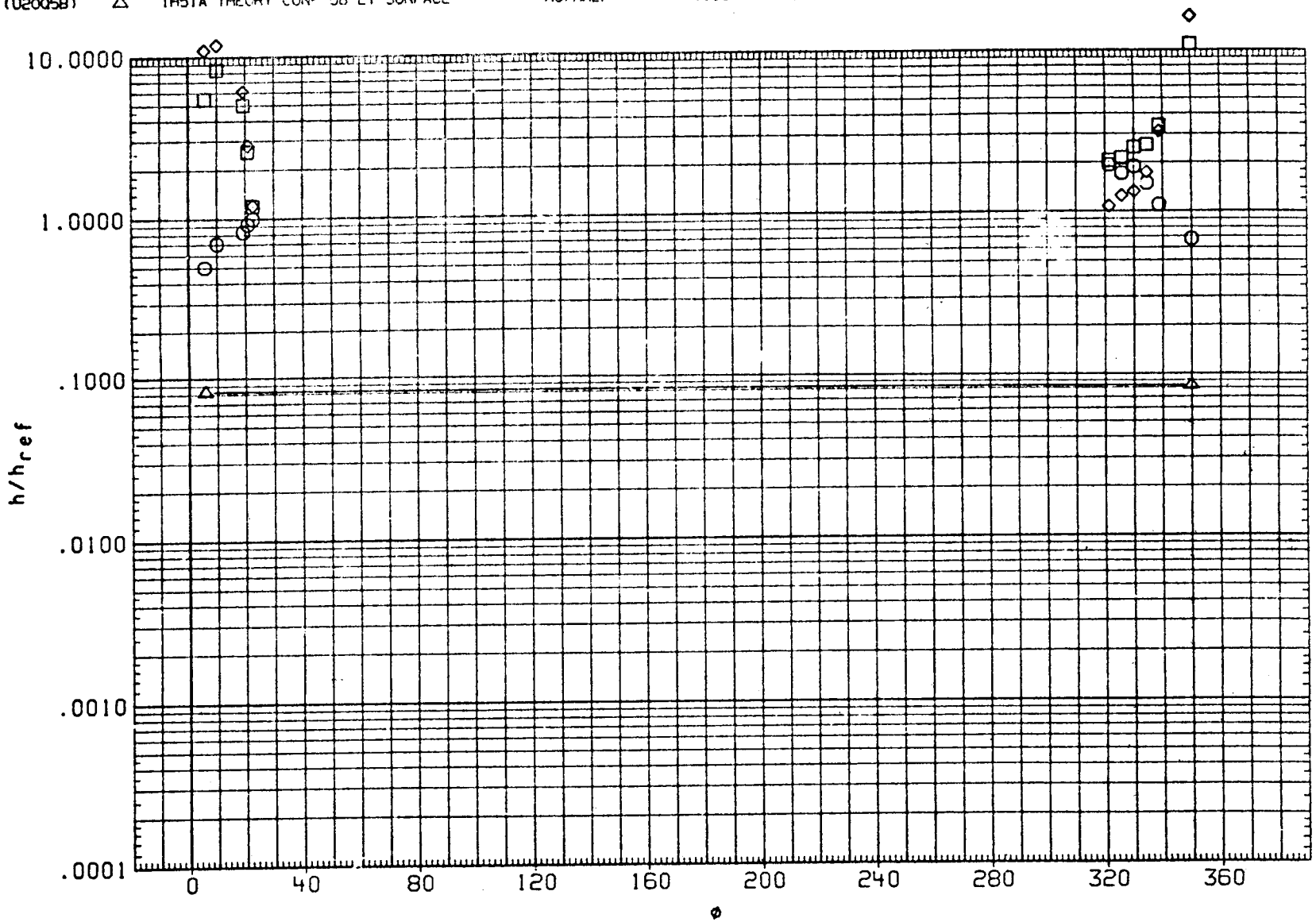

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = .900 X/L = .437 DATE 22 APR 78 PAGE 701

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

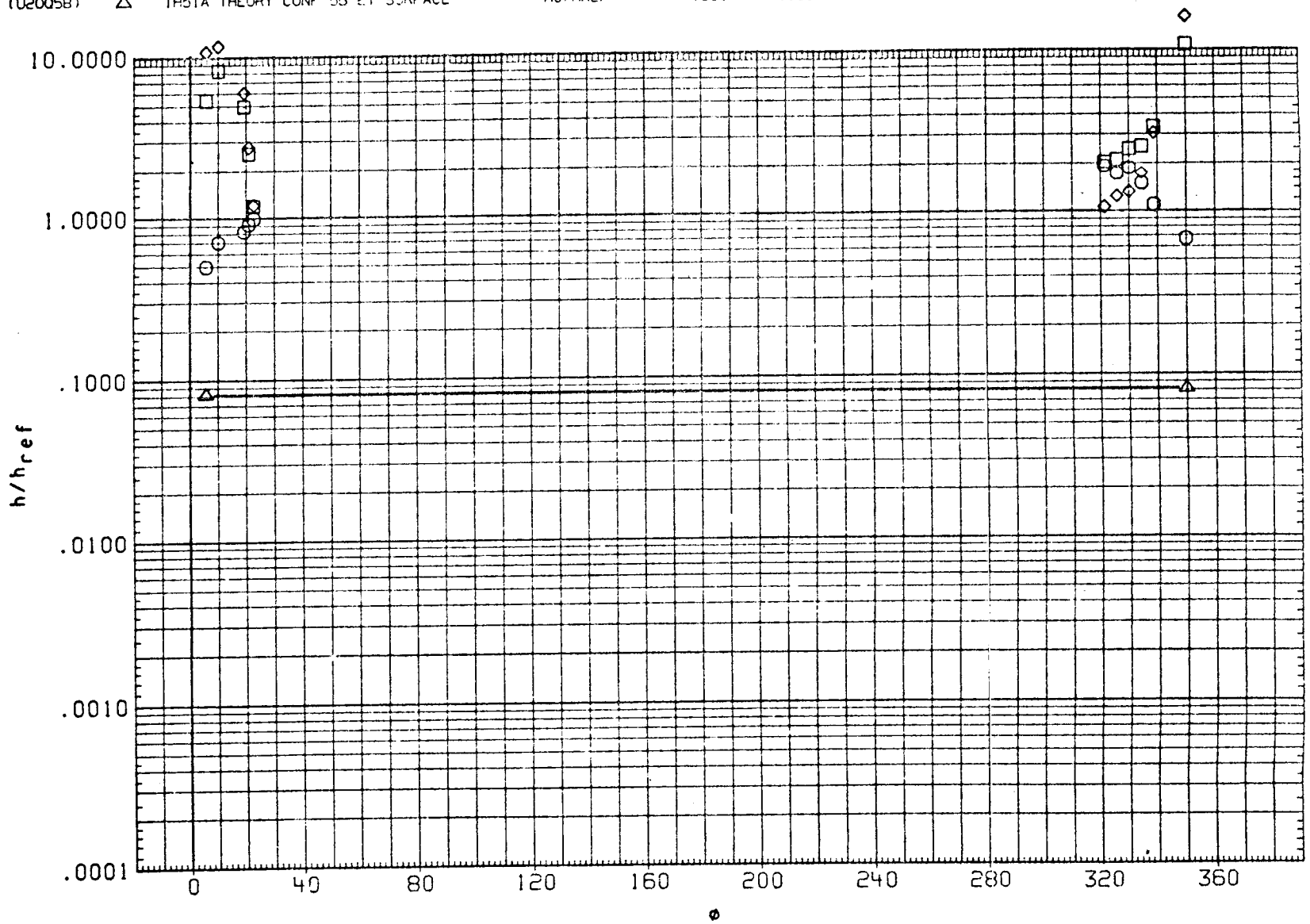

FIG. 23 HEATING DISTRIBUTION ON TRANSVERSE AT FOWARD ATTACH STRUTS

MACH = 5.250 HAW/HT = 1.000 X/L = .437 DATE 22 APR 78 PAGE 702

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

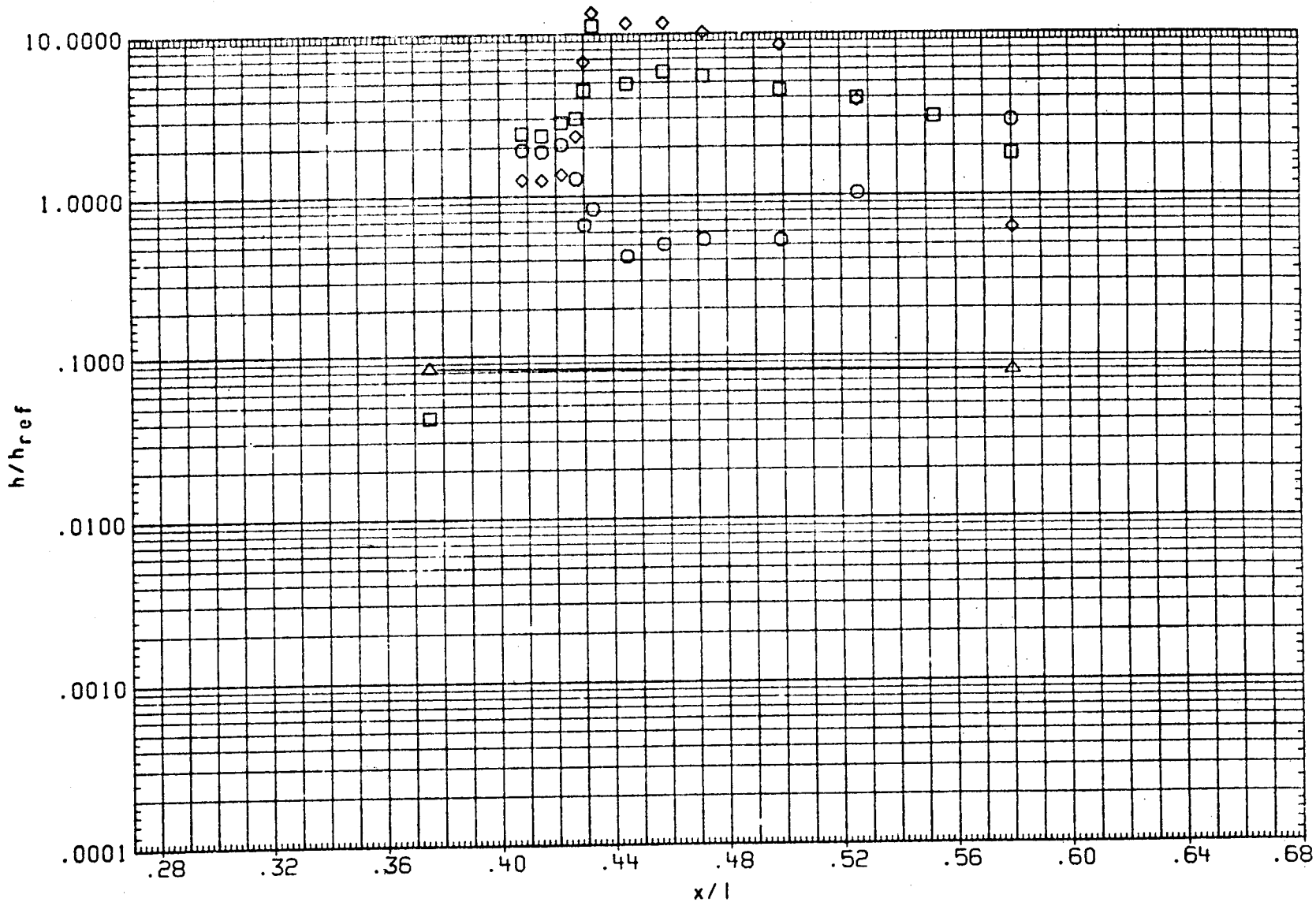

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 344.510 DATE 22 APR 78 PAGE 703

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

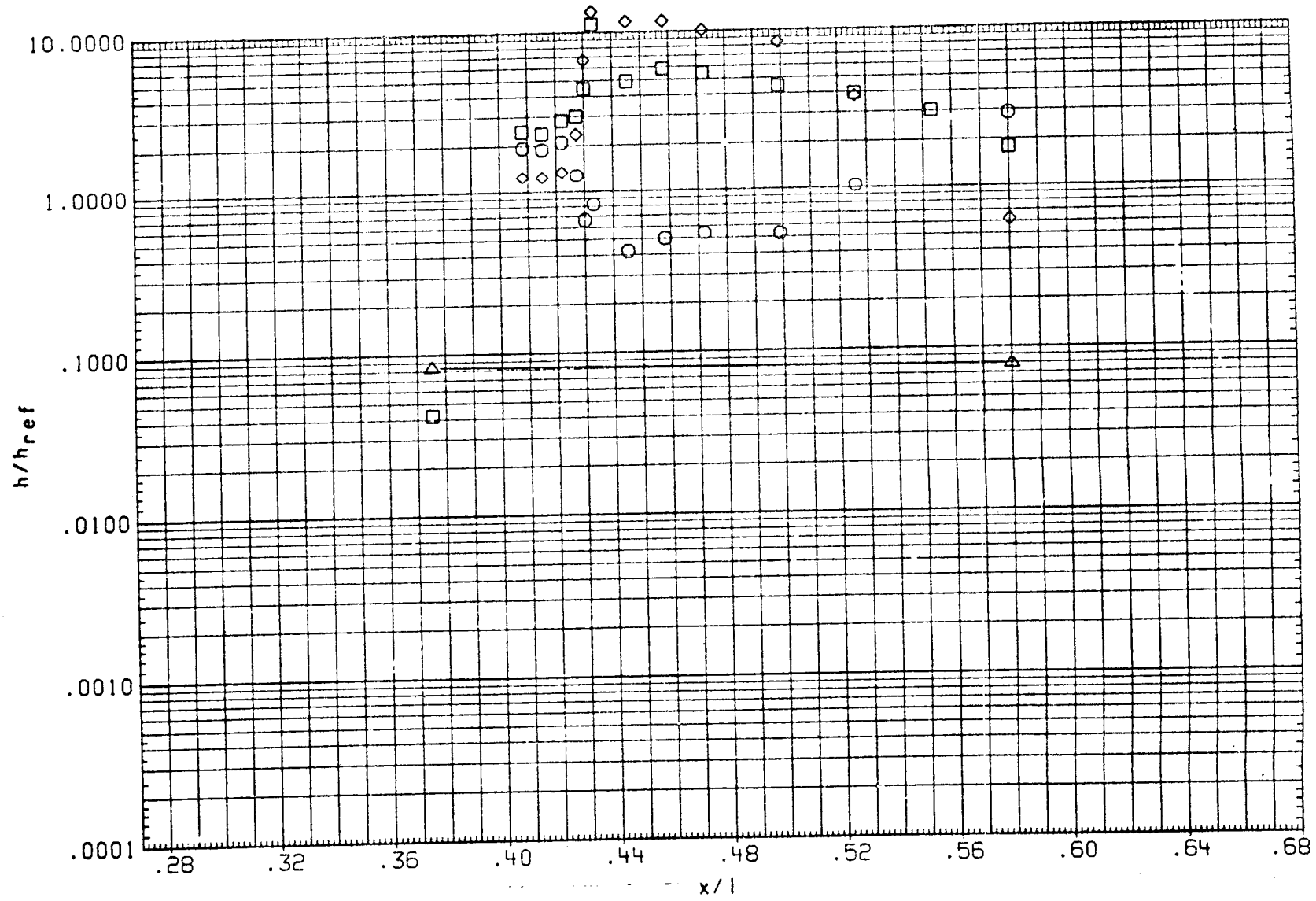

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 344.510 DATE 22 APR 78 PAGE 704

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

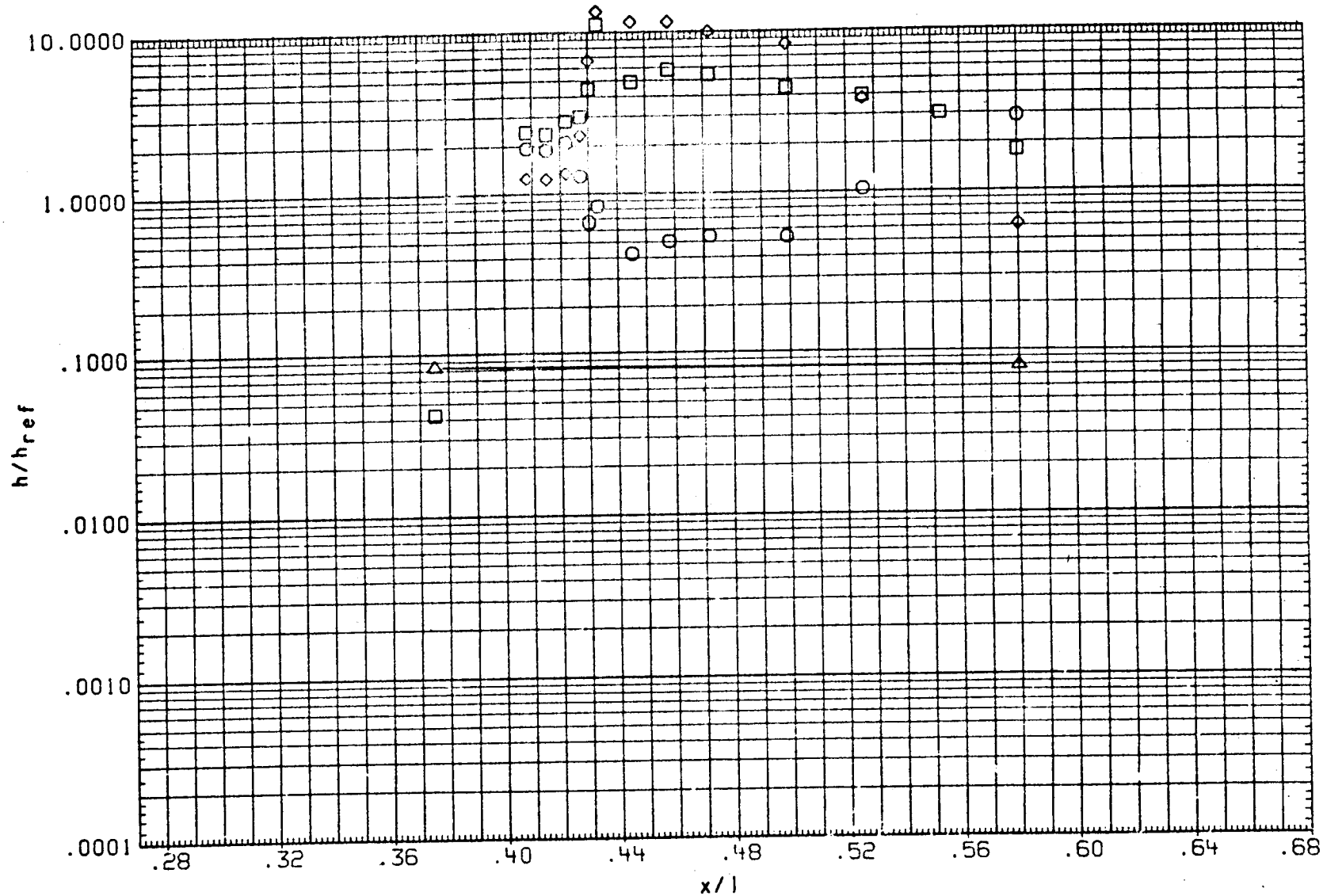

FIG. 24 HEATING DISTRIBUTION ON LONGITUDINAL AT LH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 344.510 DATE 22 APR 78 PAGE 705

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

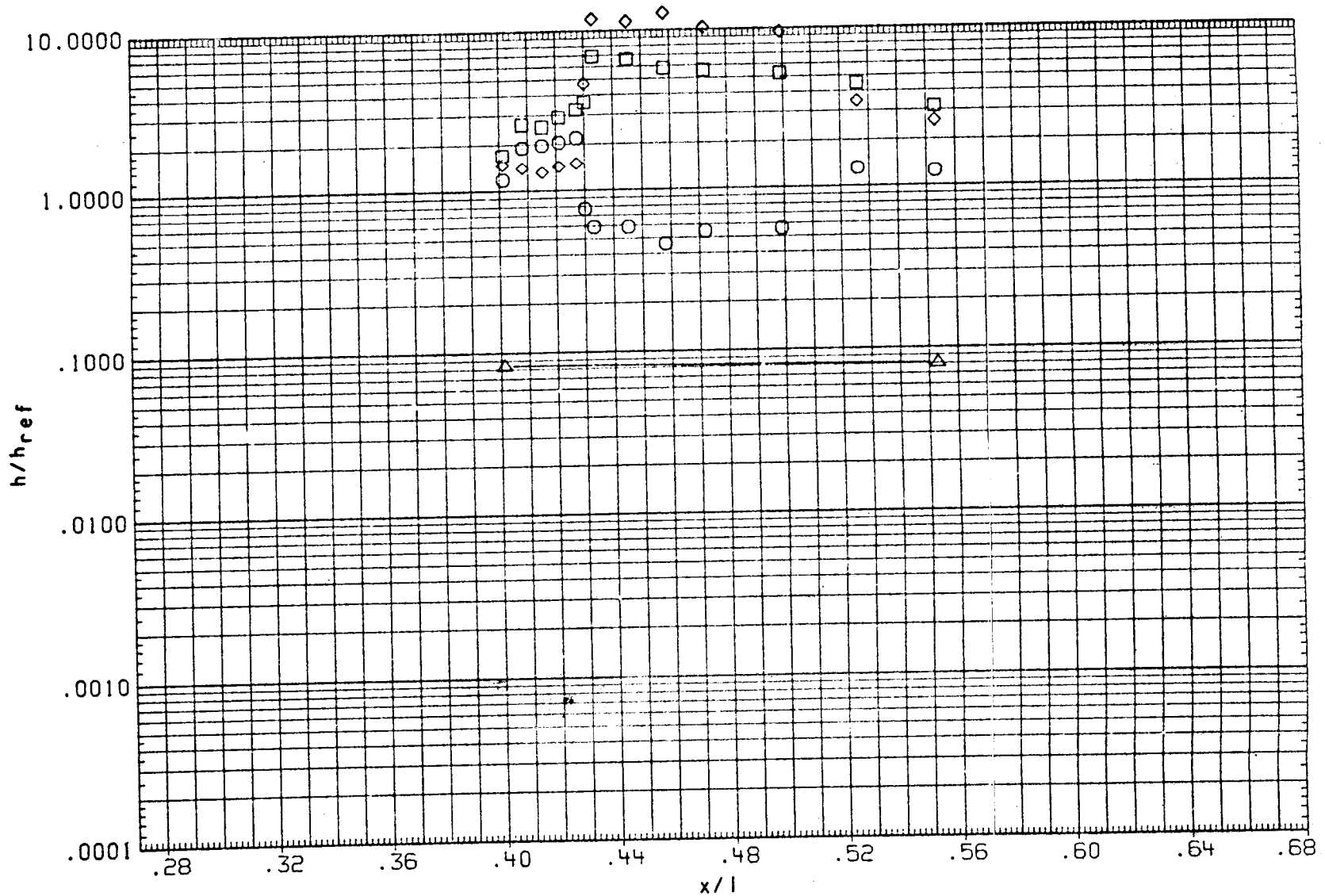

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 PHI = 15.490 DATE 22 APR 78 PAGE 706

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

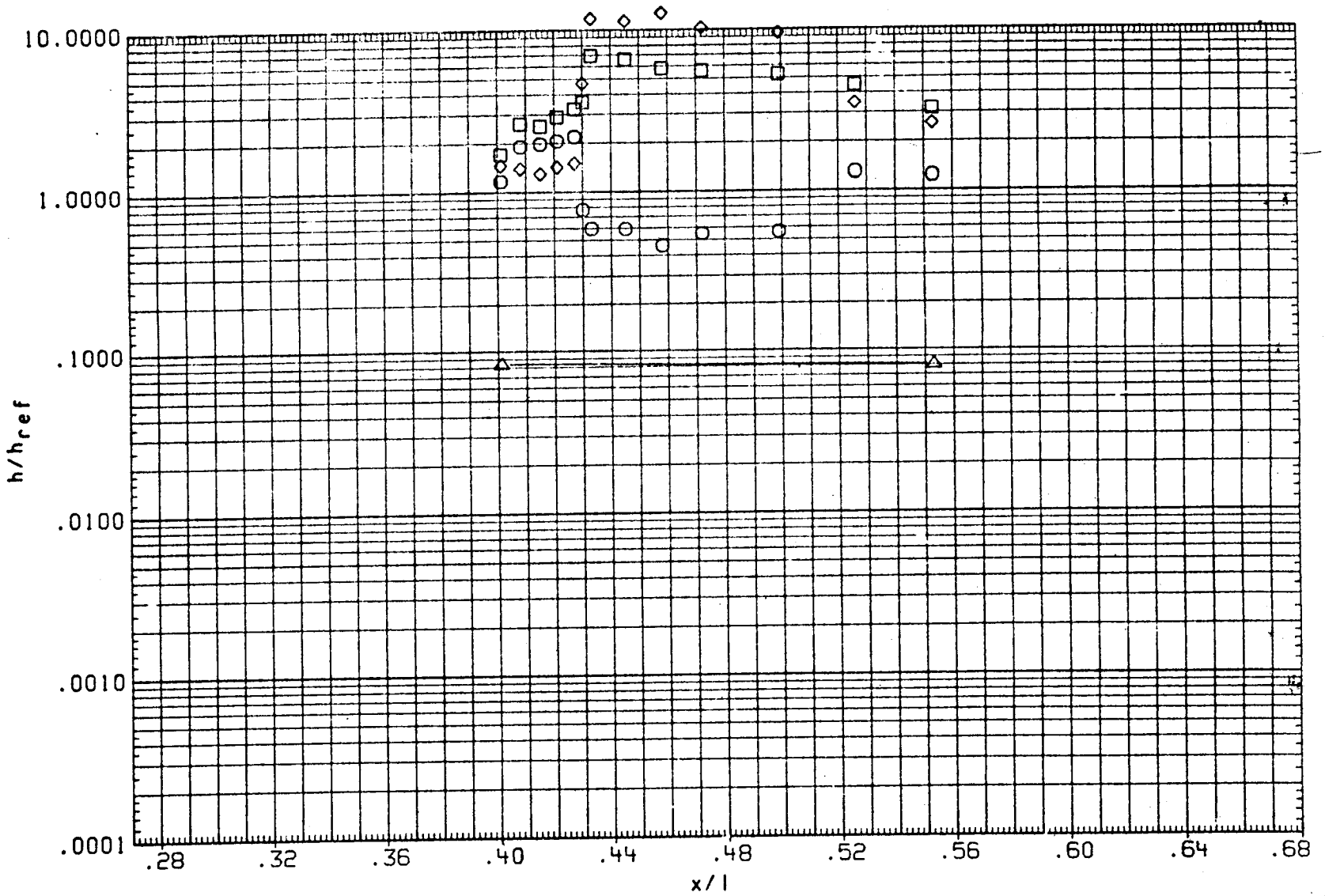

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 PHI = 15.490 DATE 22 APR 78 PAGE 707

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

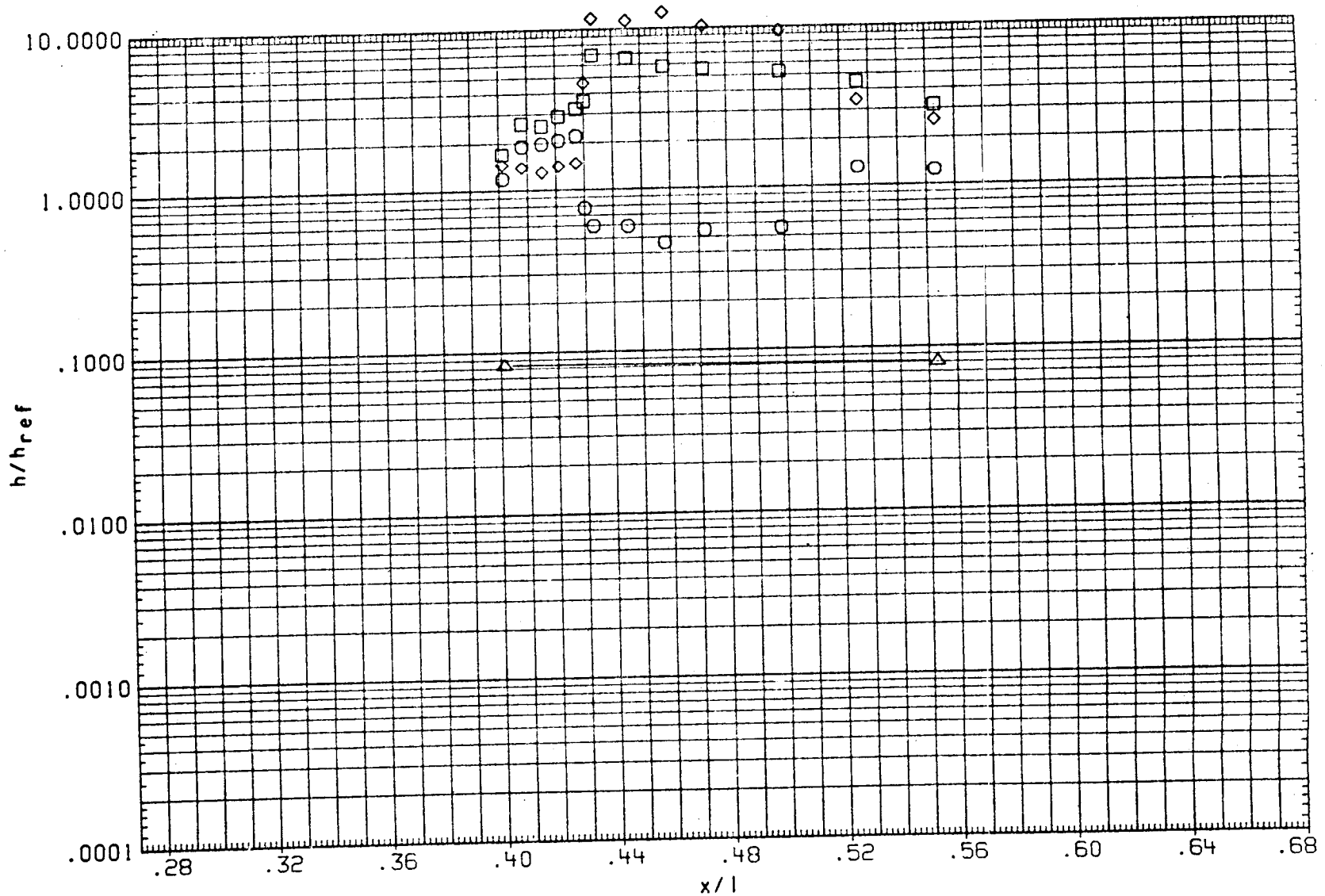

FIG. 25 HEATING DISTRIBUTION ON LONGITUDINAL AT RH FORWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 PHI = 15.490 DATE 22 APR 78 PAGE 708

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

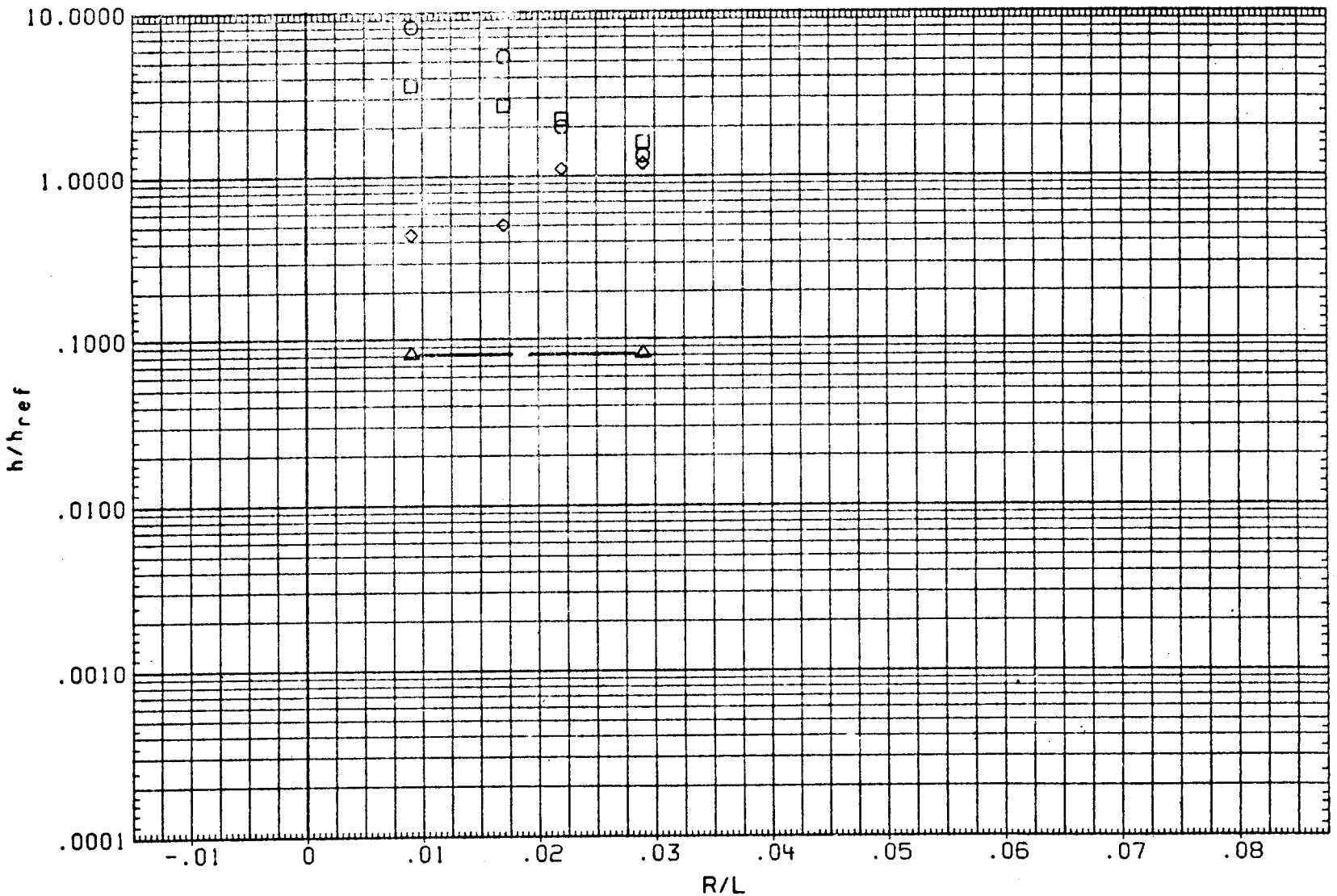

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 709

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

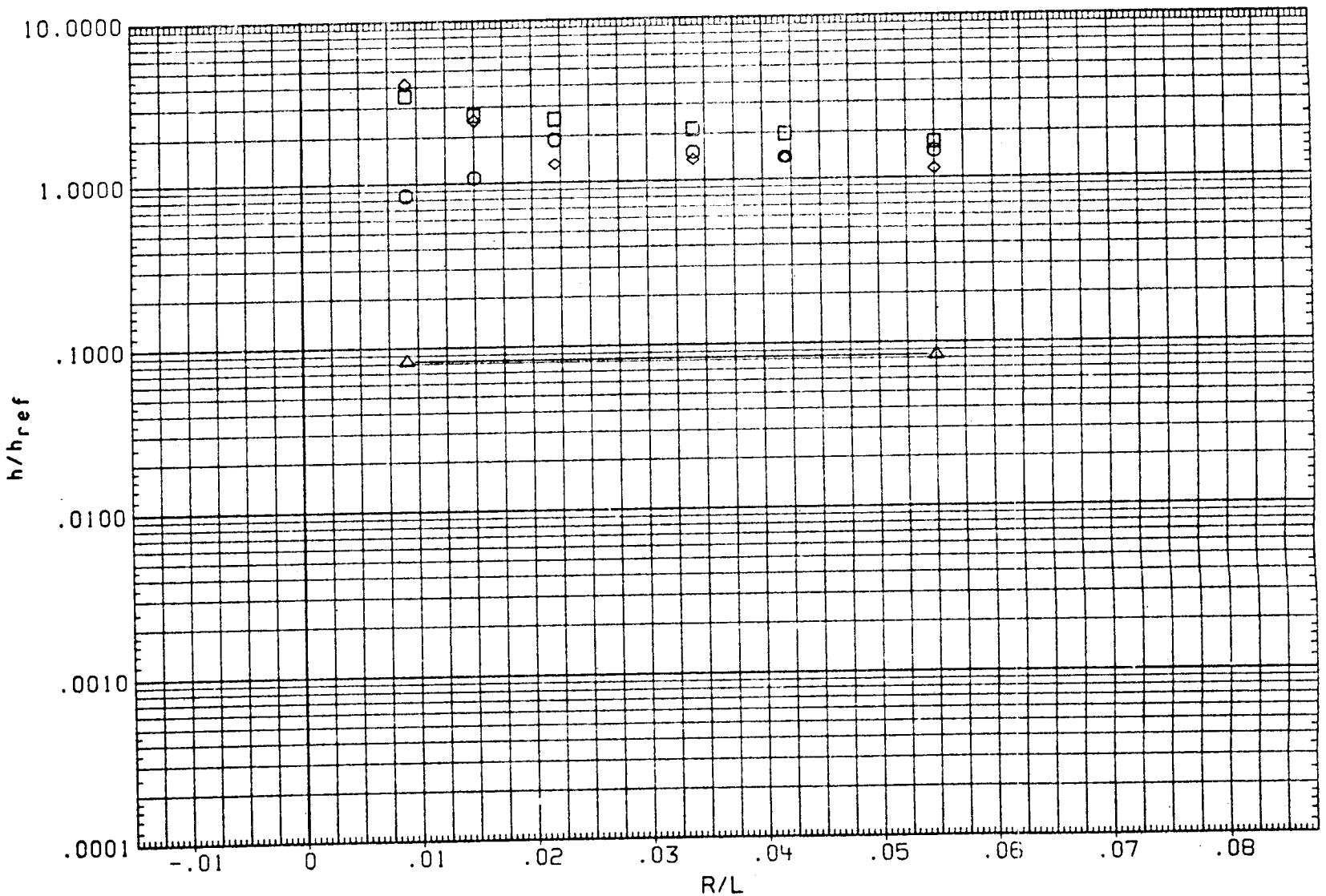

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 710

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)(2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

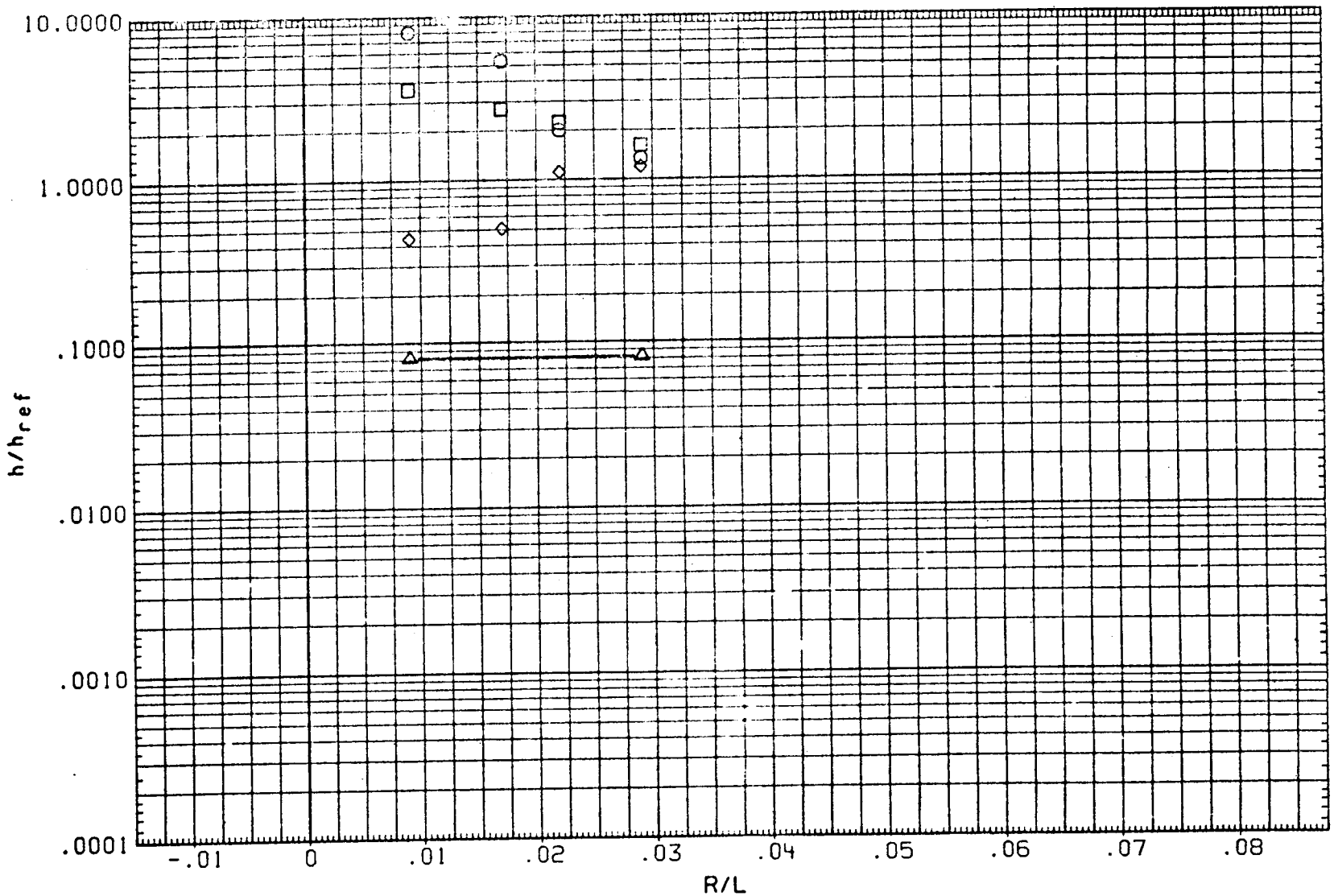

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 711

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

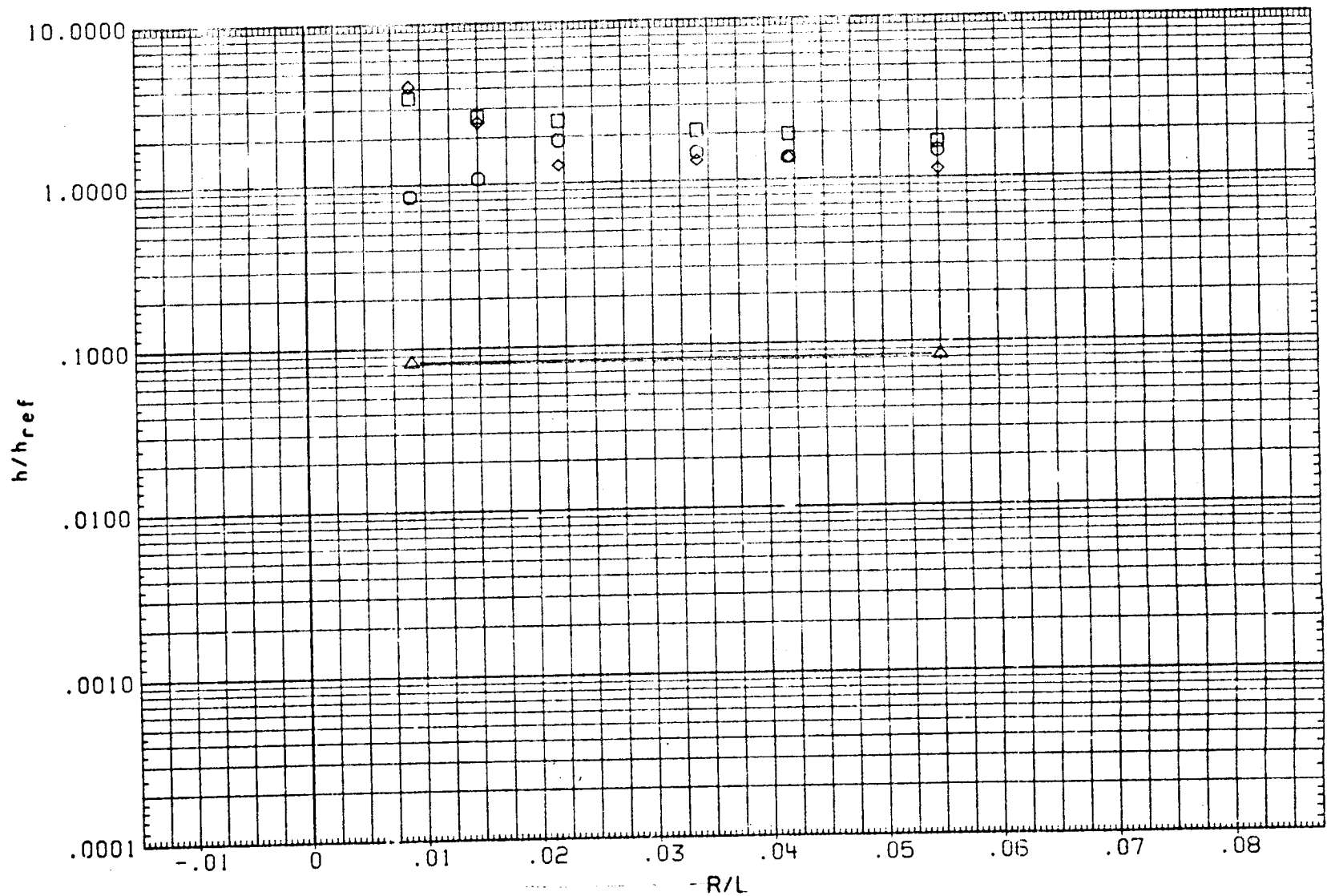

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 712

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)(2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

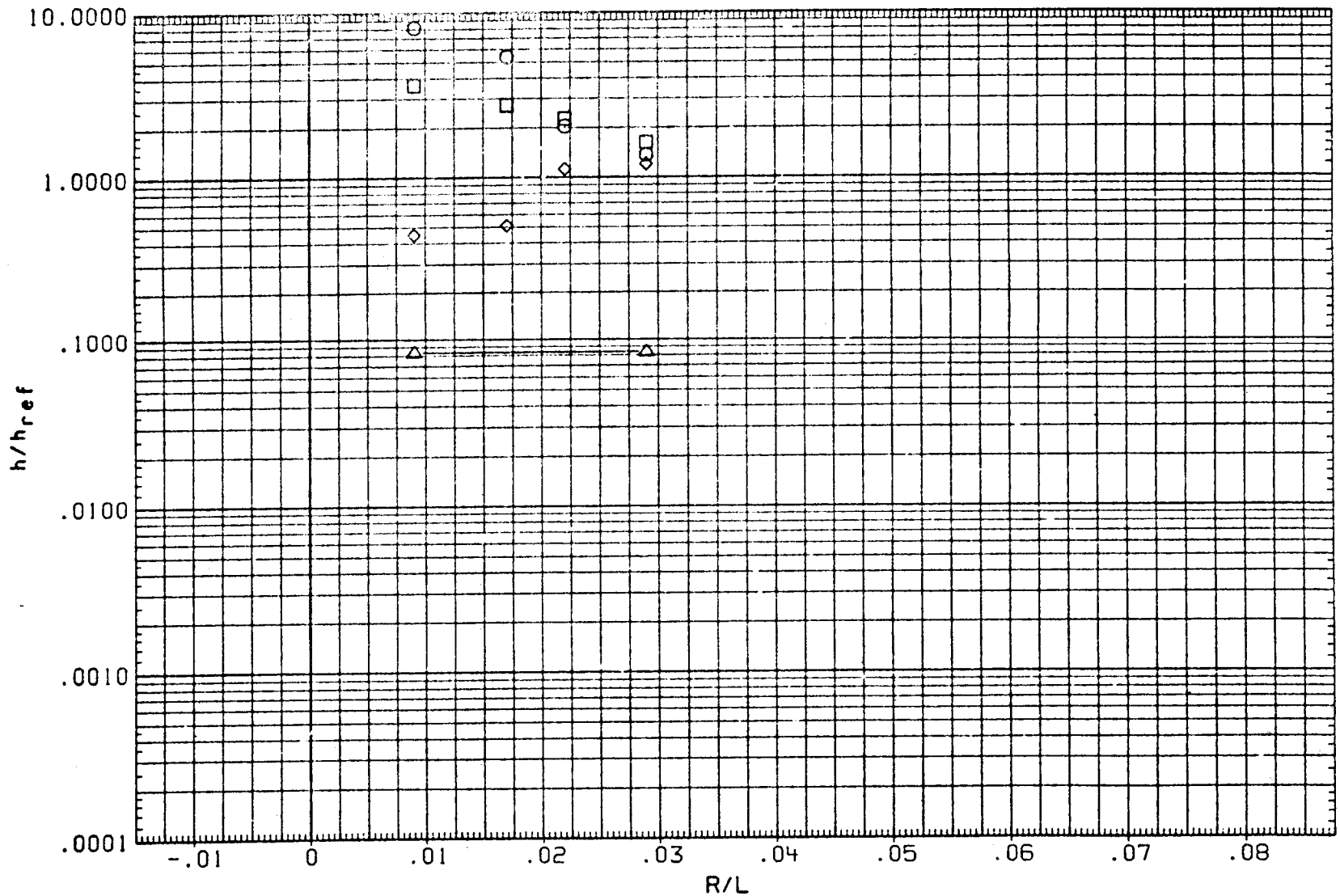

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 713

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST LH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) LH STRUT DIA	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B LH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

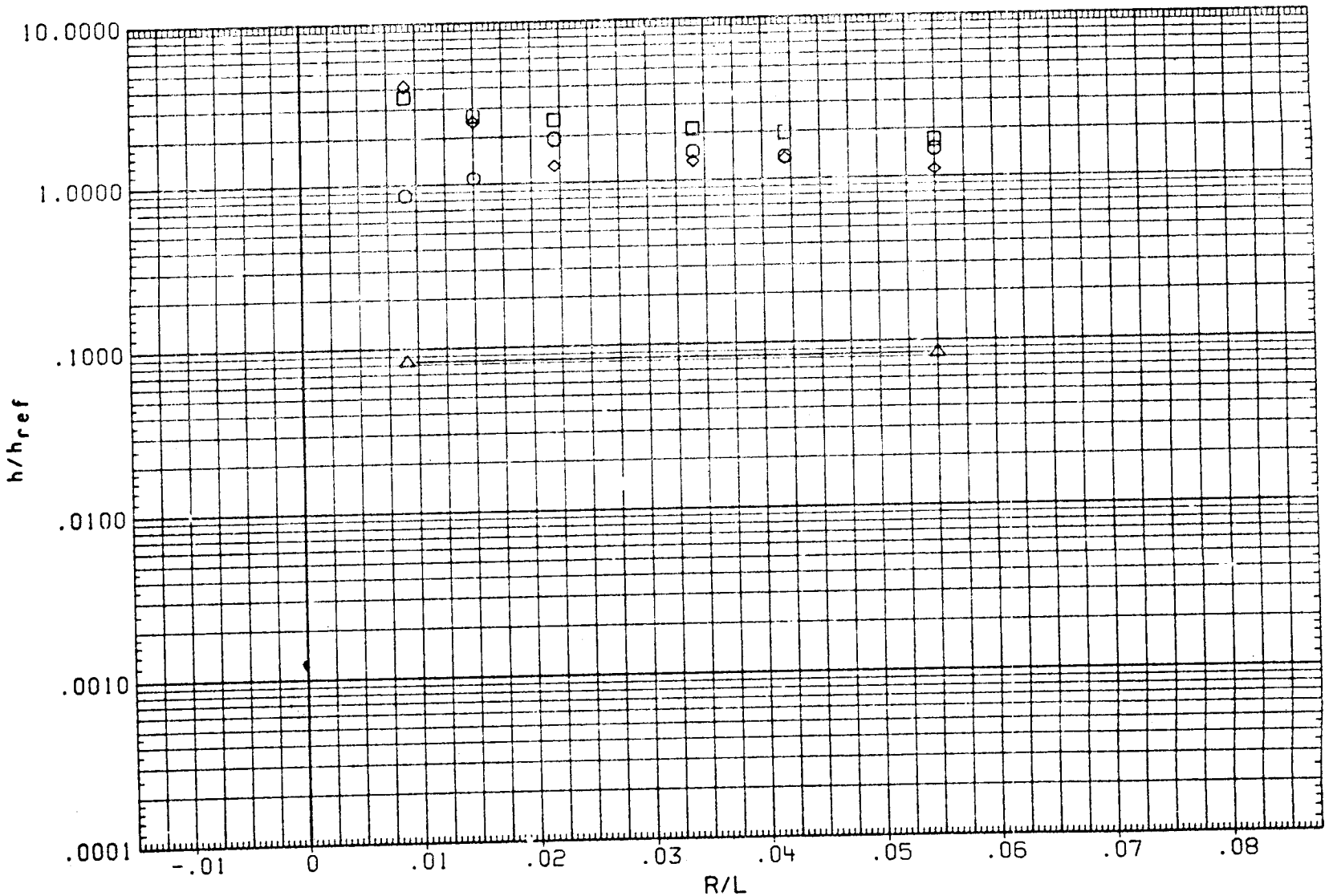

FIG. 26 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF LH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 714

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P08)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(A20P01)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N20P08)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(U20P58)	△	IH51A THEORY CONF 5B RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

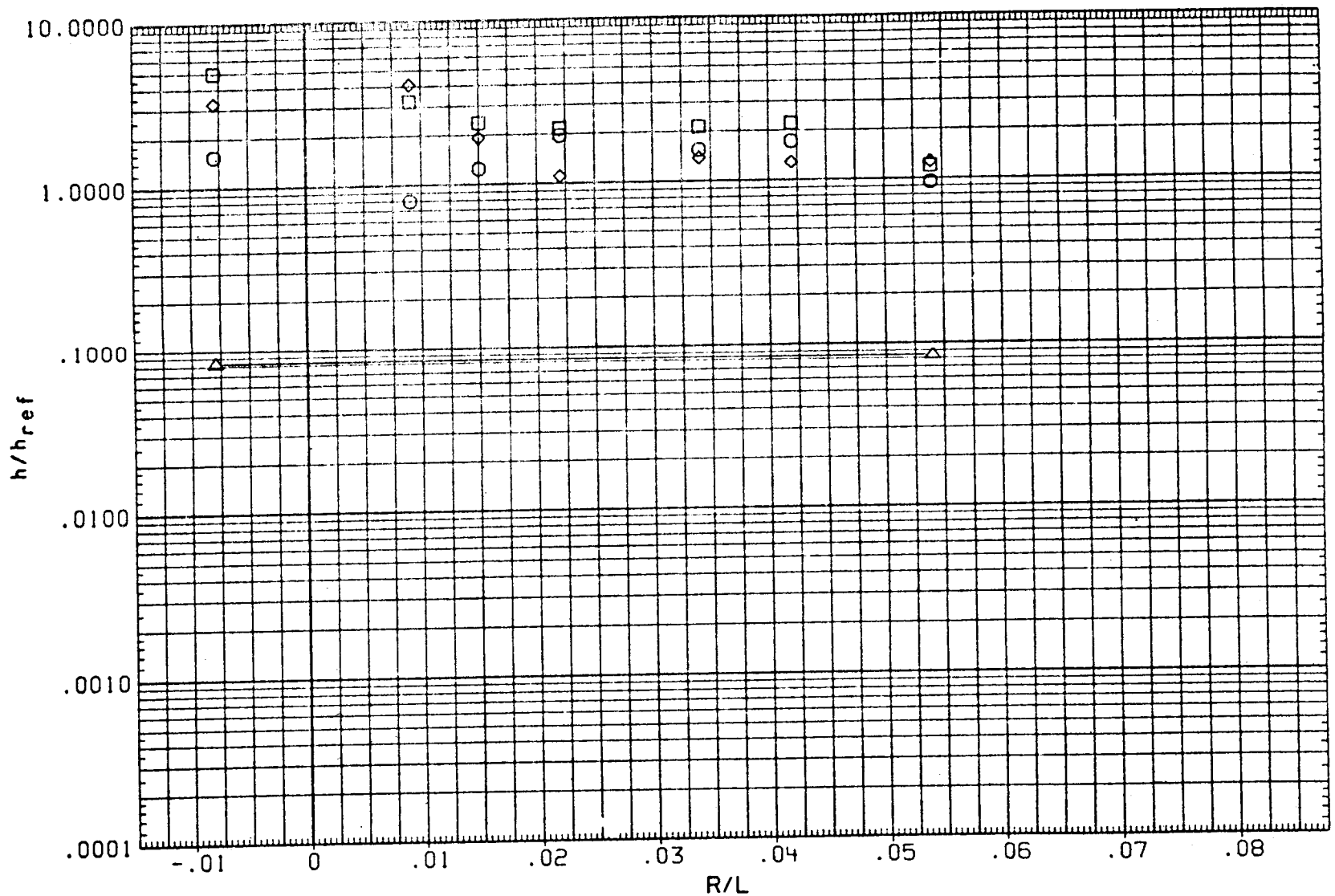

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = -45.000 DATE 22 APR 78 PAGE 715

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(A20P01)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N20P0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

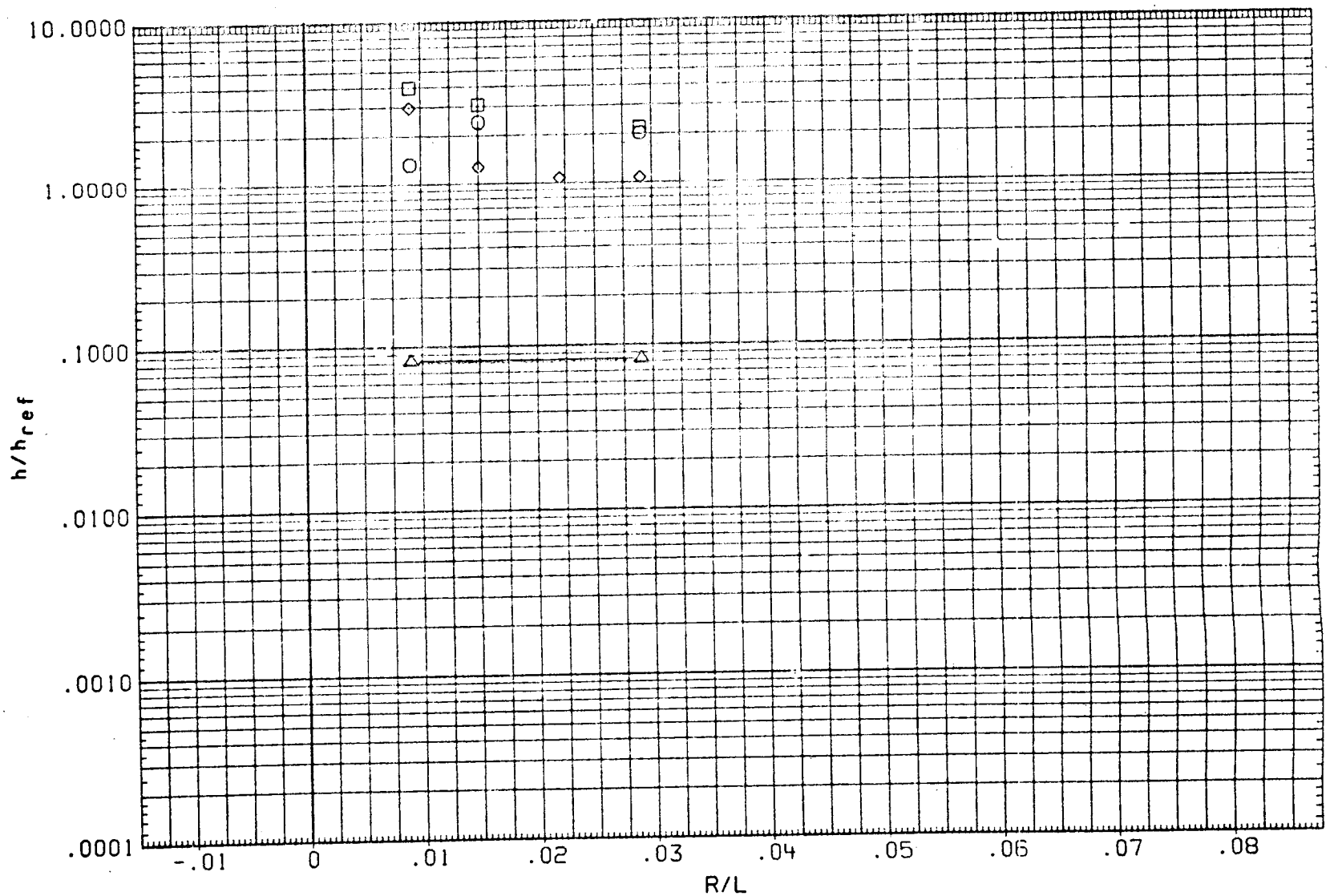

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .850 GAMMA = 45.000 DATE 22 APR 78 PAGE 716

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P08)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(A20P01)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N20P08)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(U20P58)	△	IH51A THEORY CONF 5B RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

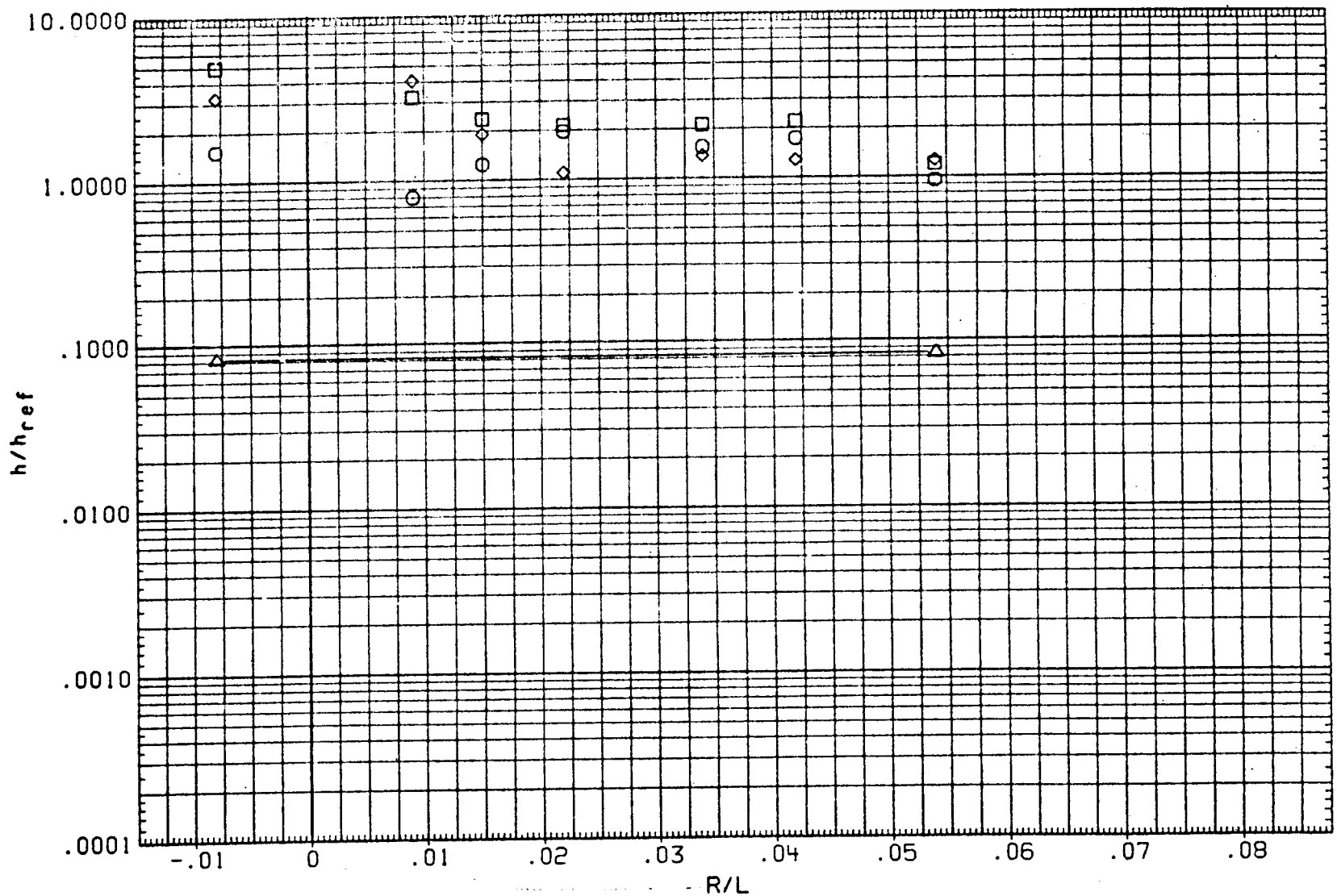

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = -45.000 DATE 22 APR 78 PAGE 717

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(A20P01)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N20P0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

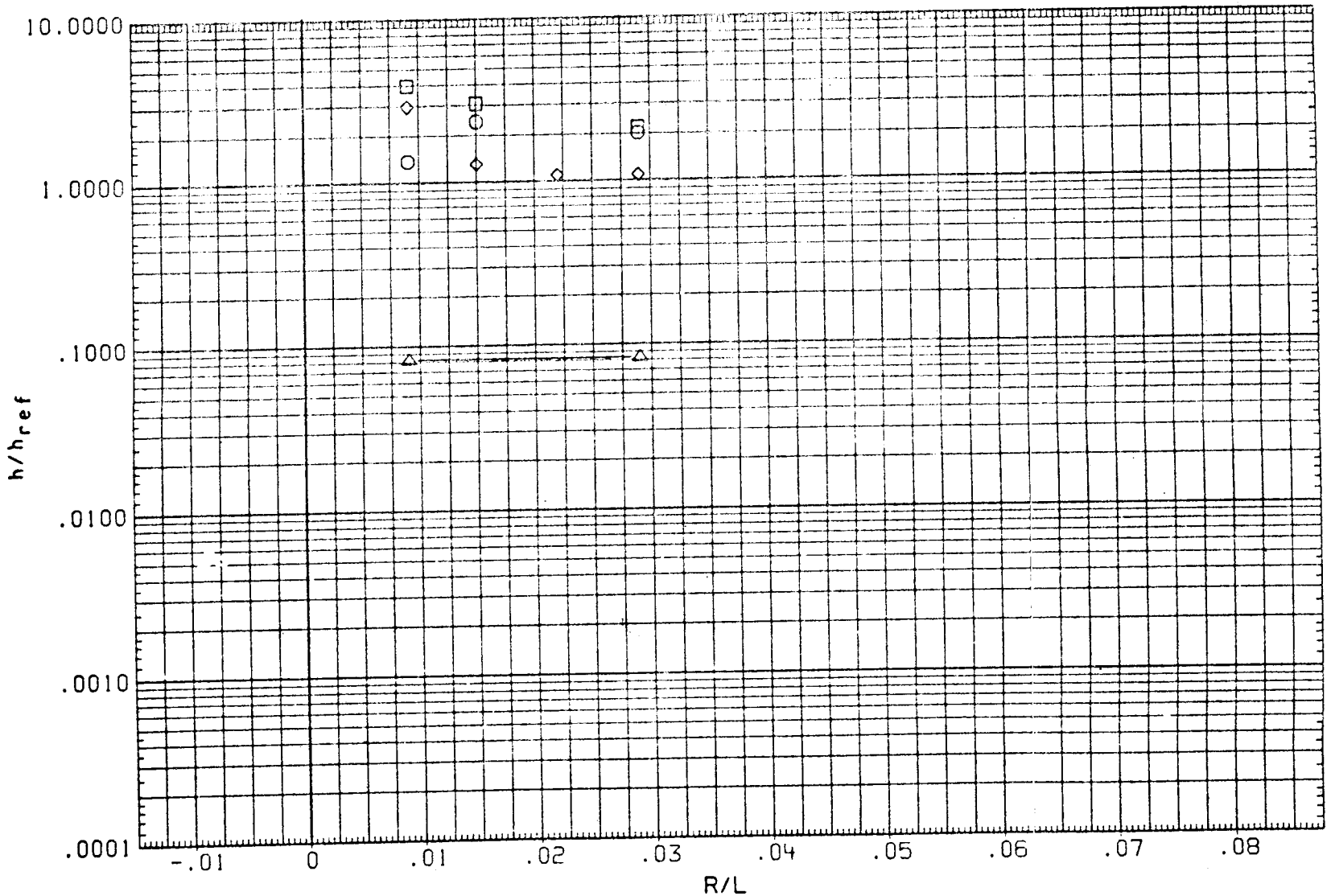

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = .900 GAMMA = 45.000 DATE 22 APR 78 PAGE 718

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(A20P01)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1B/5P	.000	.000	5.000	5.300
(N20P0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

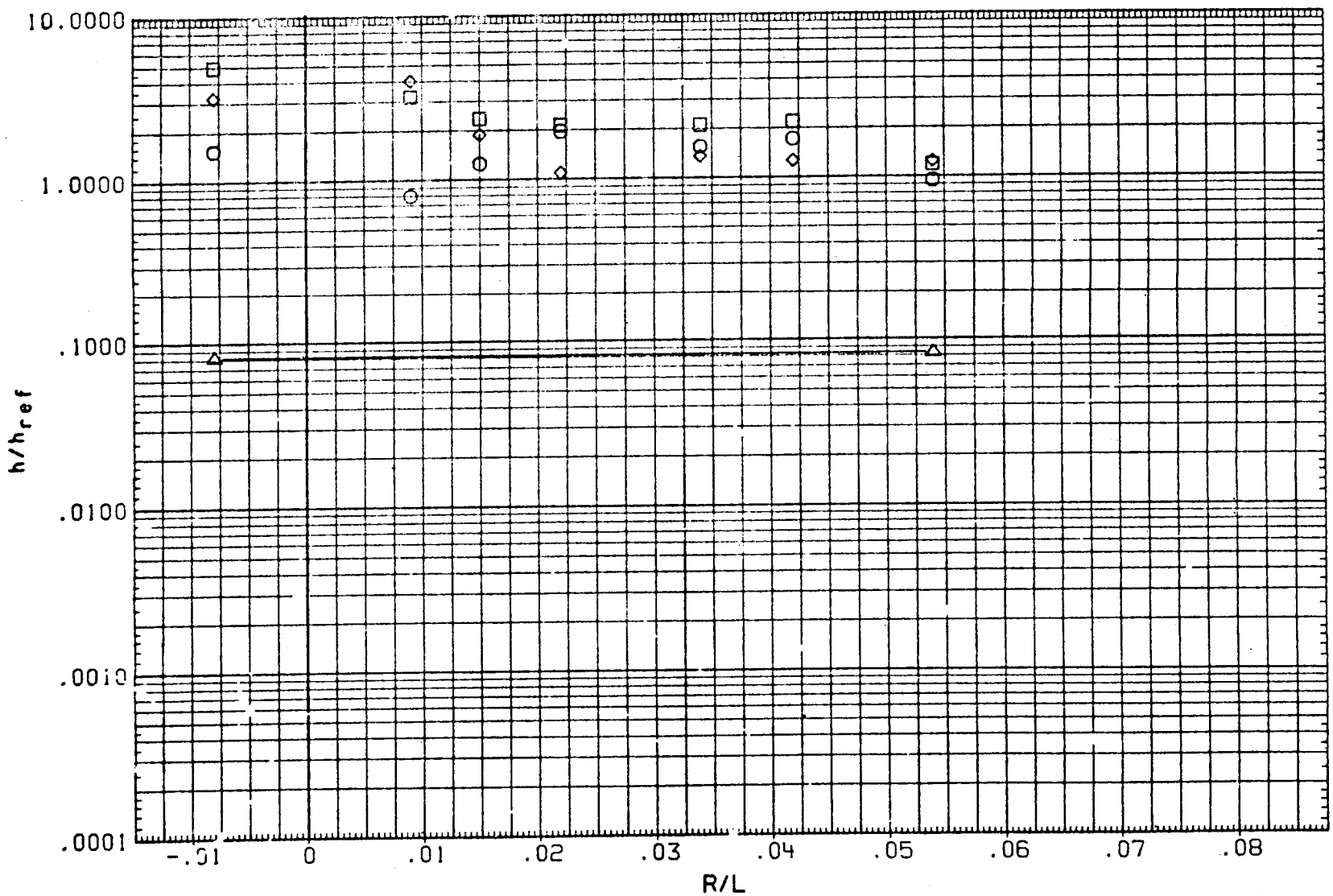

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HI = 1.000 GAMMA = -45.000 DATE 22 APR 78 PAGE 719

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20P0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) RH STRUT DIA	.000	.000	5.000	5.300
(A20P01)	□	IH51A HI/HU T/TEST RH ATTACH DIAG 1B/5B	.000	.000	5.000	5.300
(N20P0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) RH STRUT DIA.	.000	.000	5.000	5.300
(U20P5B)	△	IH51A THEORY CONF 5B RH ATTACH DIAG. HU/HREF	.000	.000	5.000	5.300

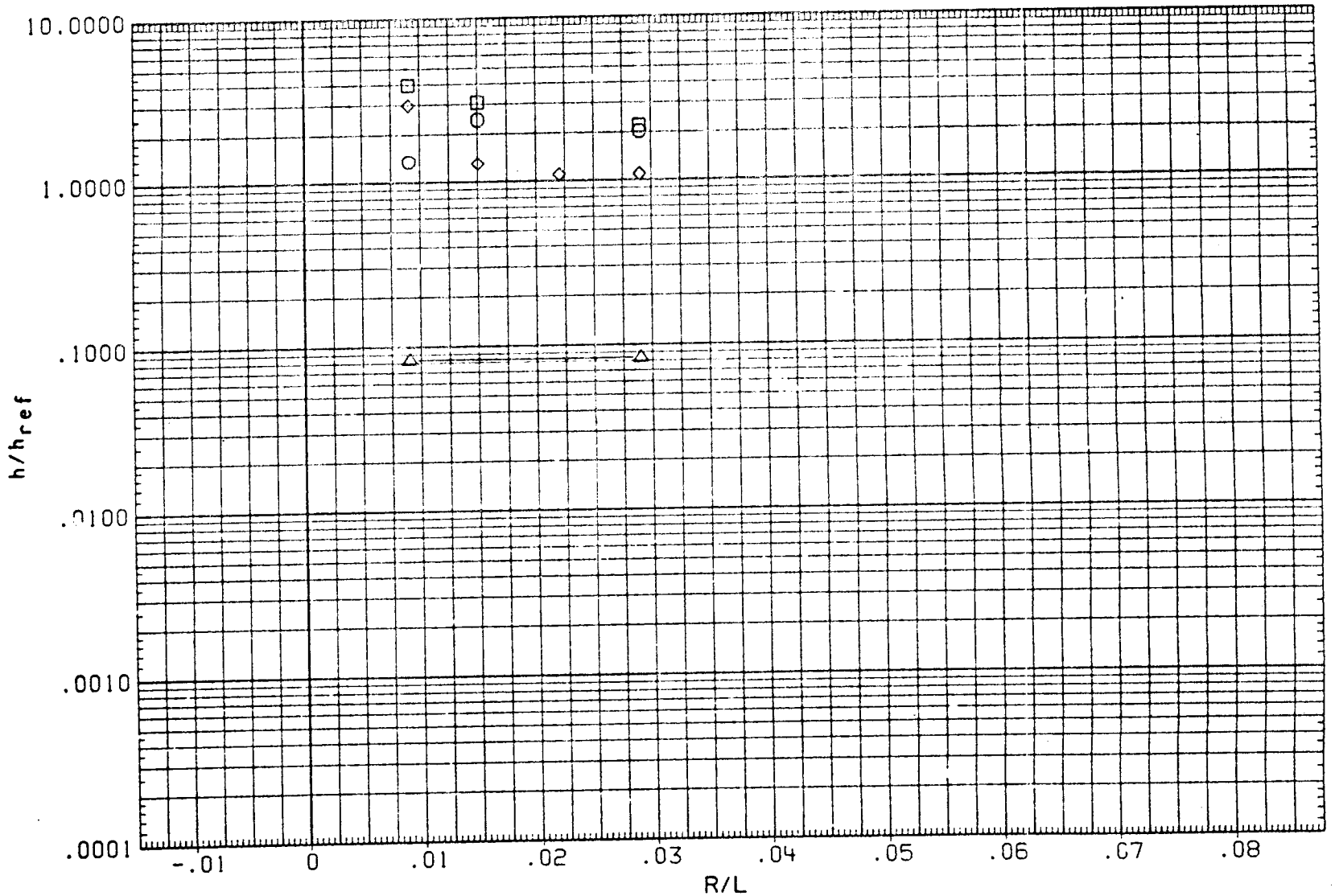

FIG. 27 HEATING DISTRIBUTION ON DIAGONALS UPSTREAM OF RH FOWARD ATTACH STRUT

MACH = 5.250 HAW/HT = 1.000 GAMMA = 45.000 DATE 22 APR 78 PAGE 720

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

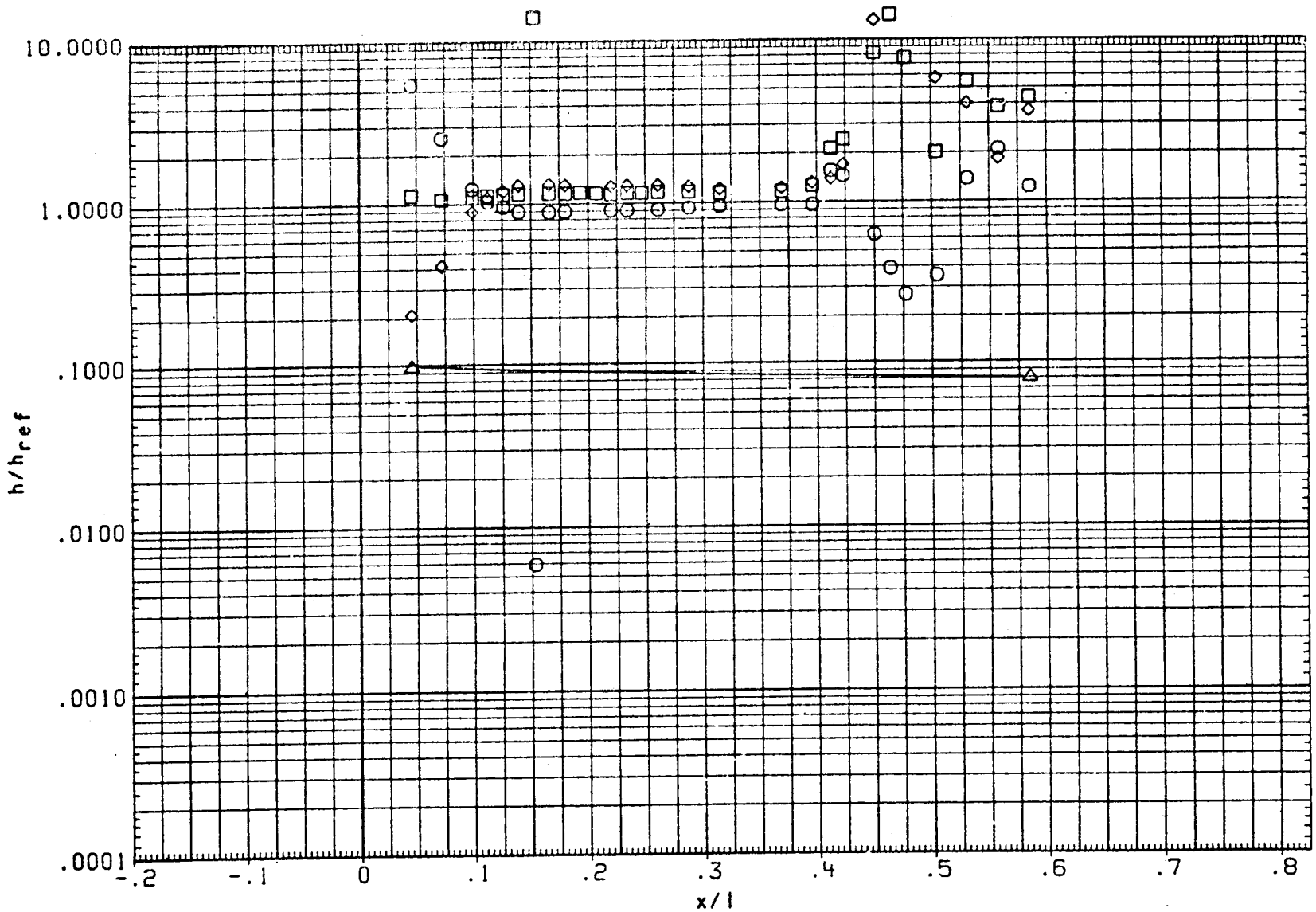

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .850 PHI = .000 DATE 22 APR 78 PAGE 721

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q08)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q06)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

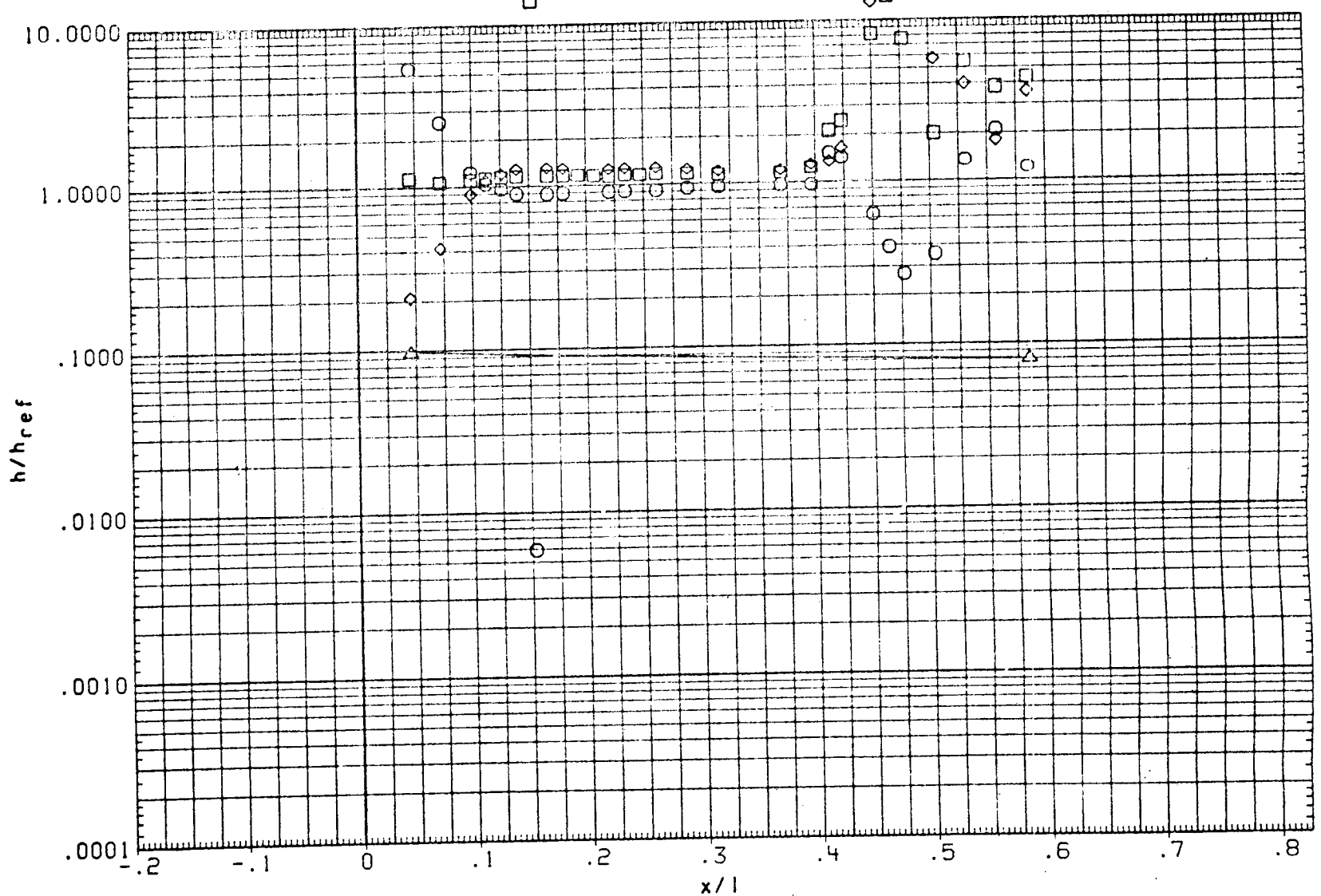

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = .900 PHI = .000 DATE 22 APR 78 PAGE 722

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

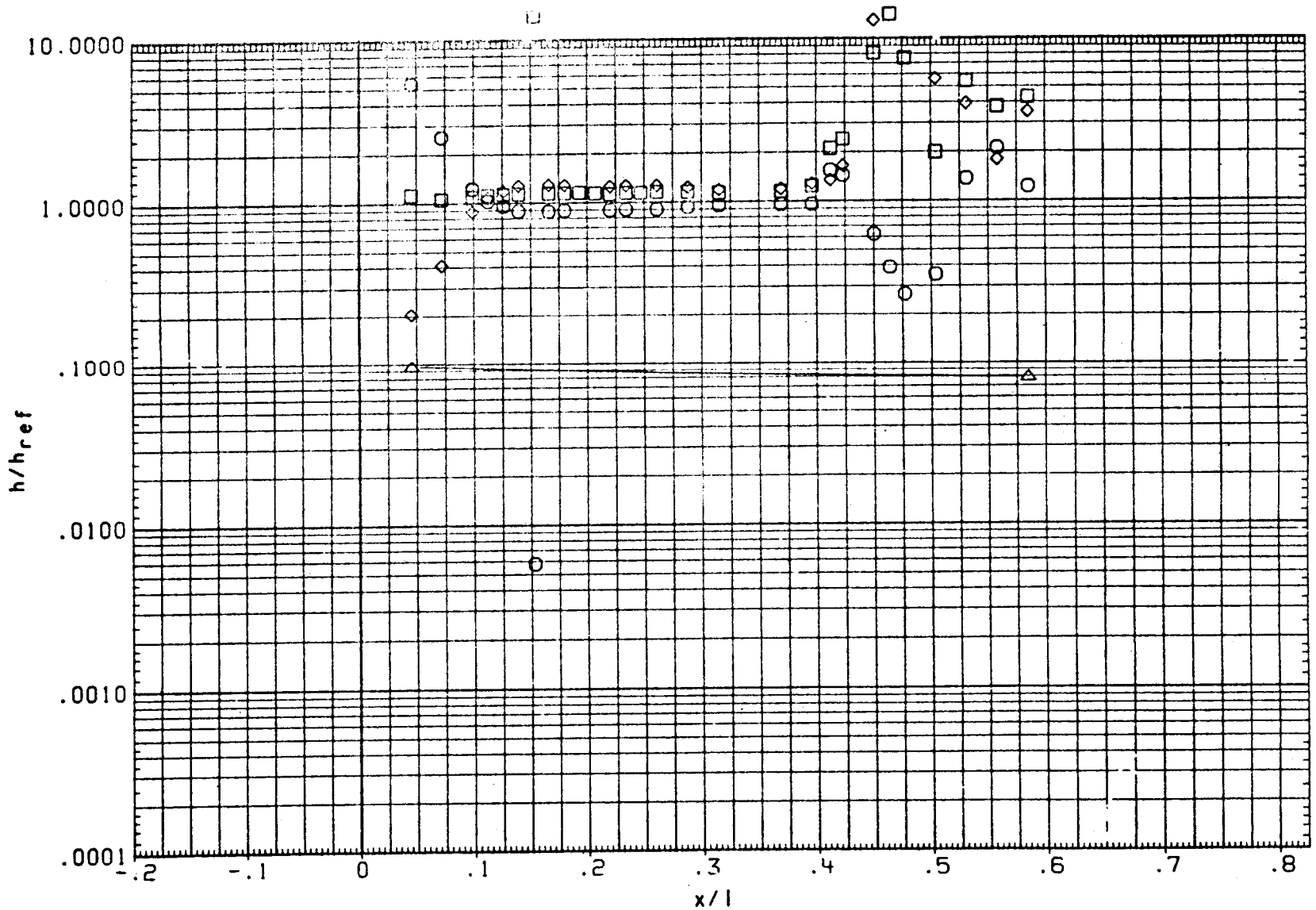

FIG. 28 HEATING DISTRIBUTION ON TOP CENTERLINE OF TANK

MACH = 5.250 HAW/HT = 1.000 PHI = .000 DATE 22 APR 78 PAGE 723

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

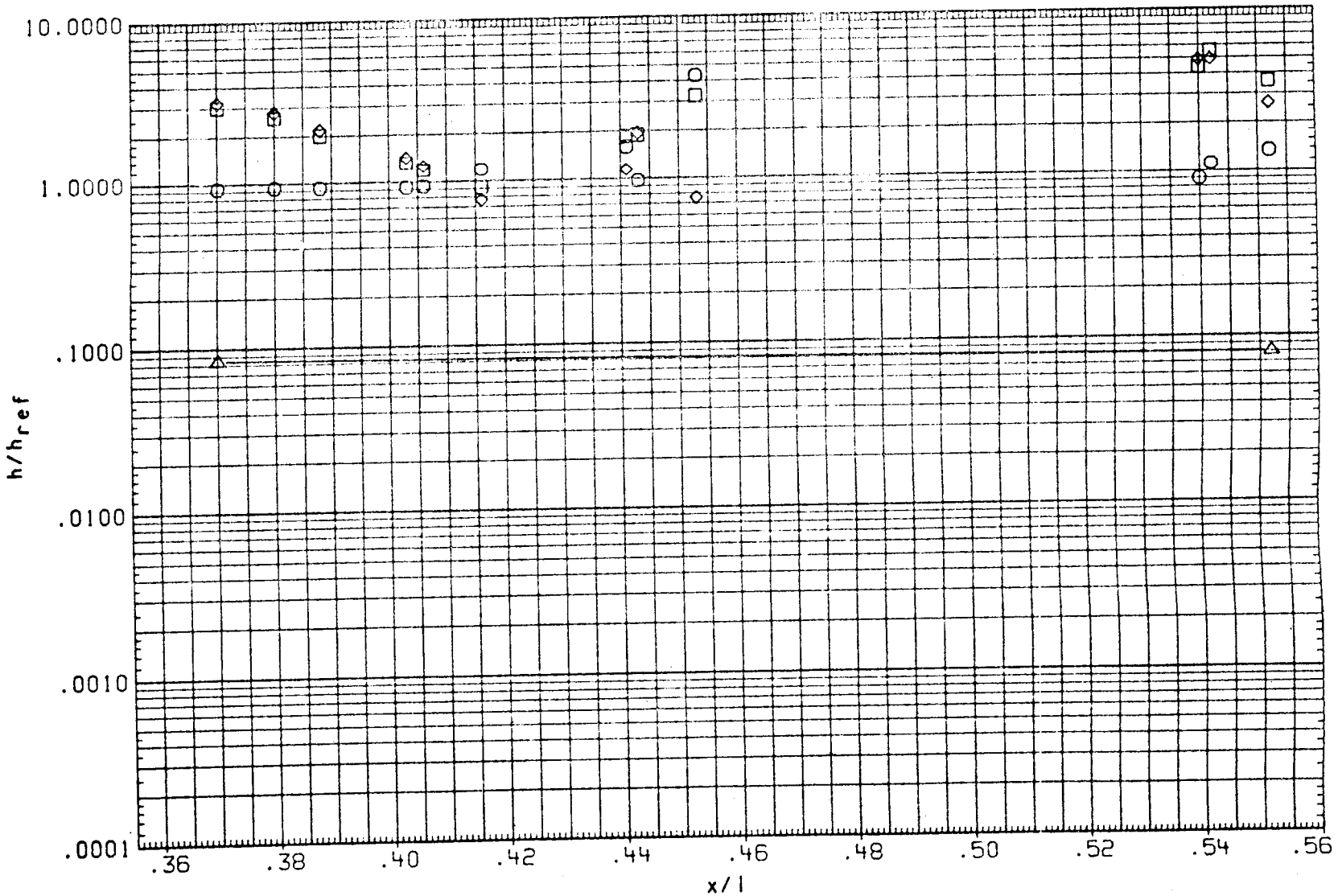

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .850 PHI = 30.110 DATE 22 APR 78 PAGE 724

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

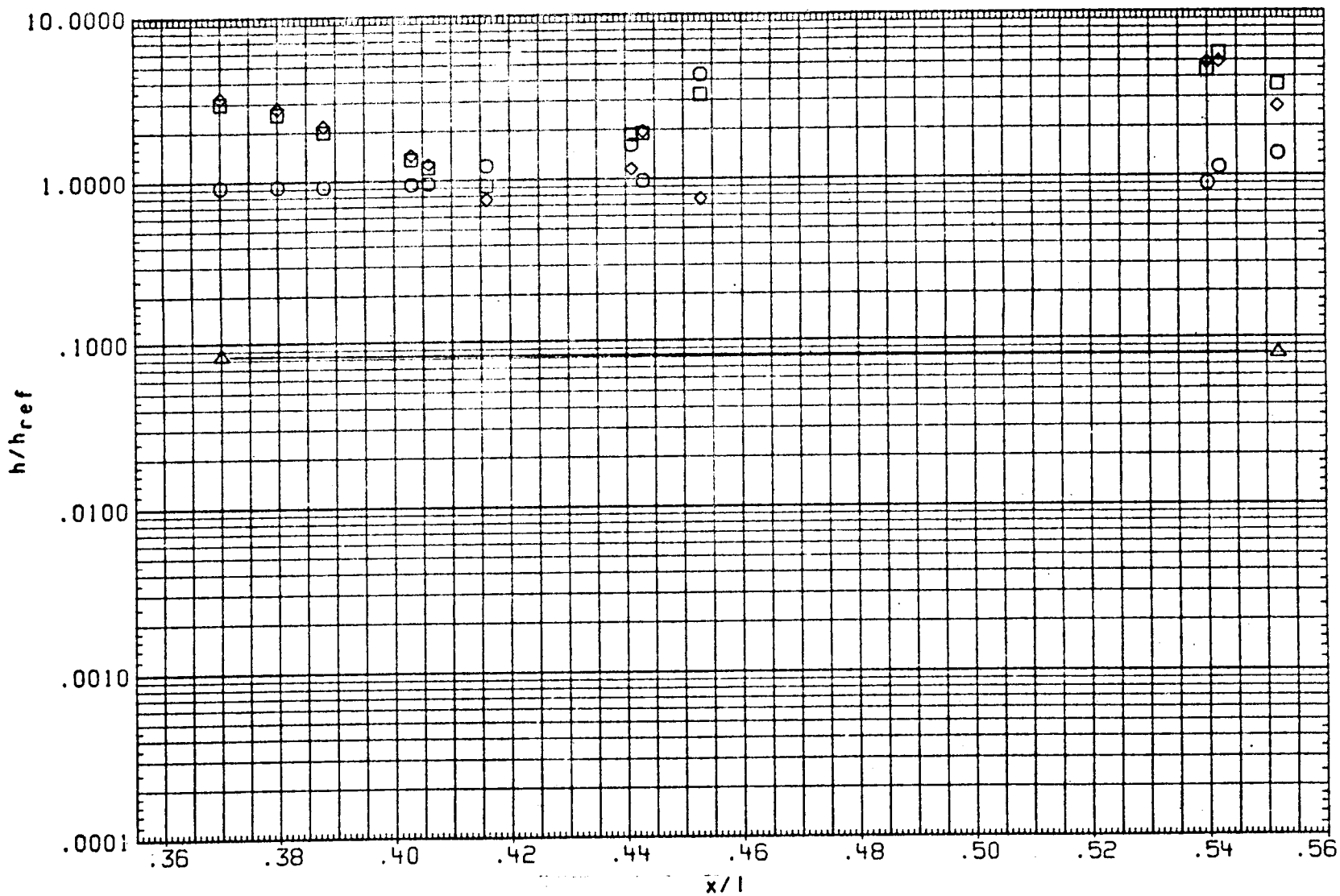

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = .900 PHI = 30.110 DATE 22 APR 78 PAGE 725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

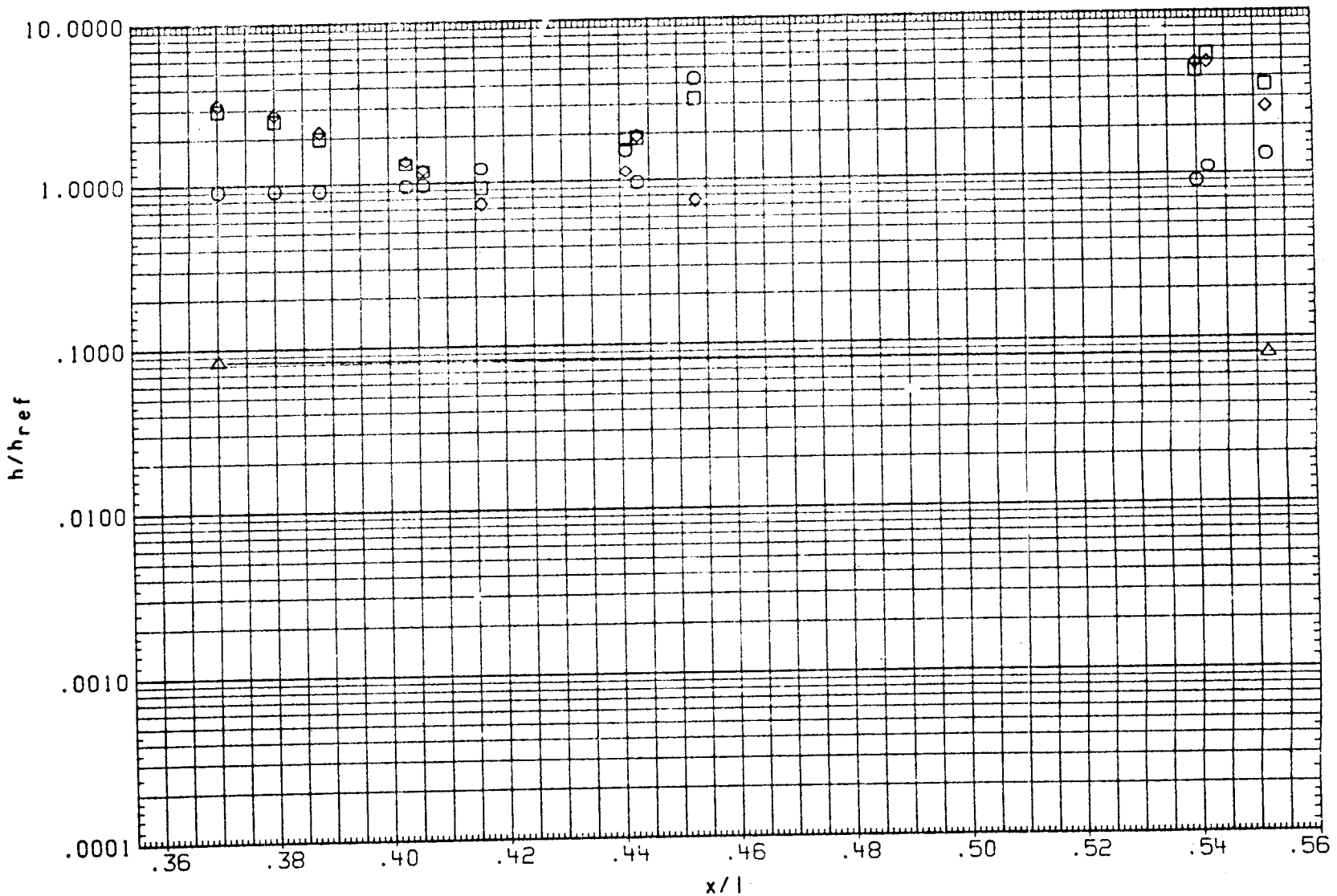

FIG. 29 HEATING DISTRIBUTION ON LONGITUDINAL BETWEEN LO2 FEEDLINE AND PRESS LINE

MACH = 5.250 HAW/HT = 1.000 PHI = 30.110 DATE 22 APR 78 PAGE 726

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q08)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HT/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q08)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q58)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

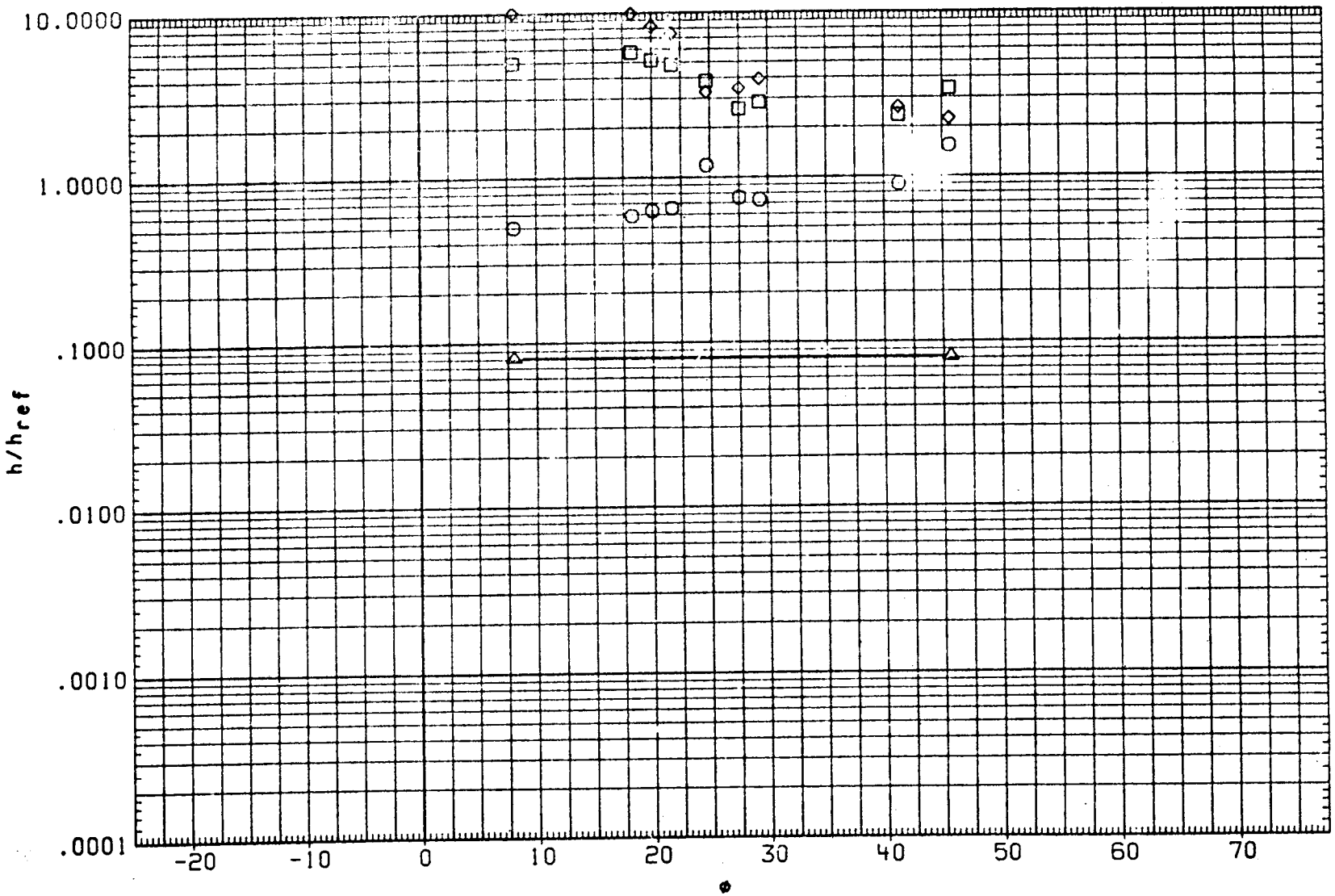

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 727

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 58 ET SURFACE HU/HREF	.000	.000	5.000	5.300

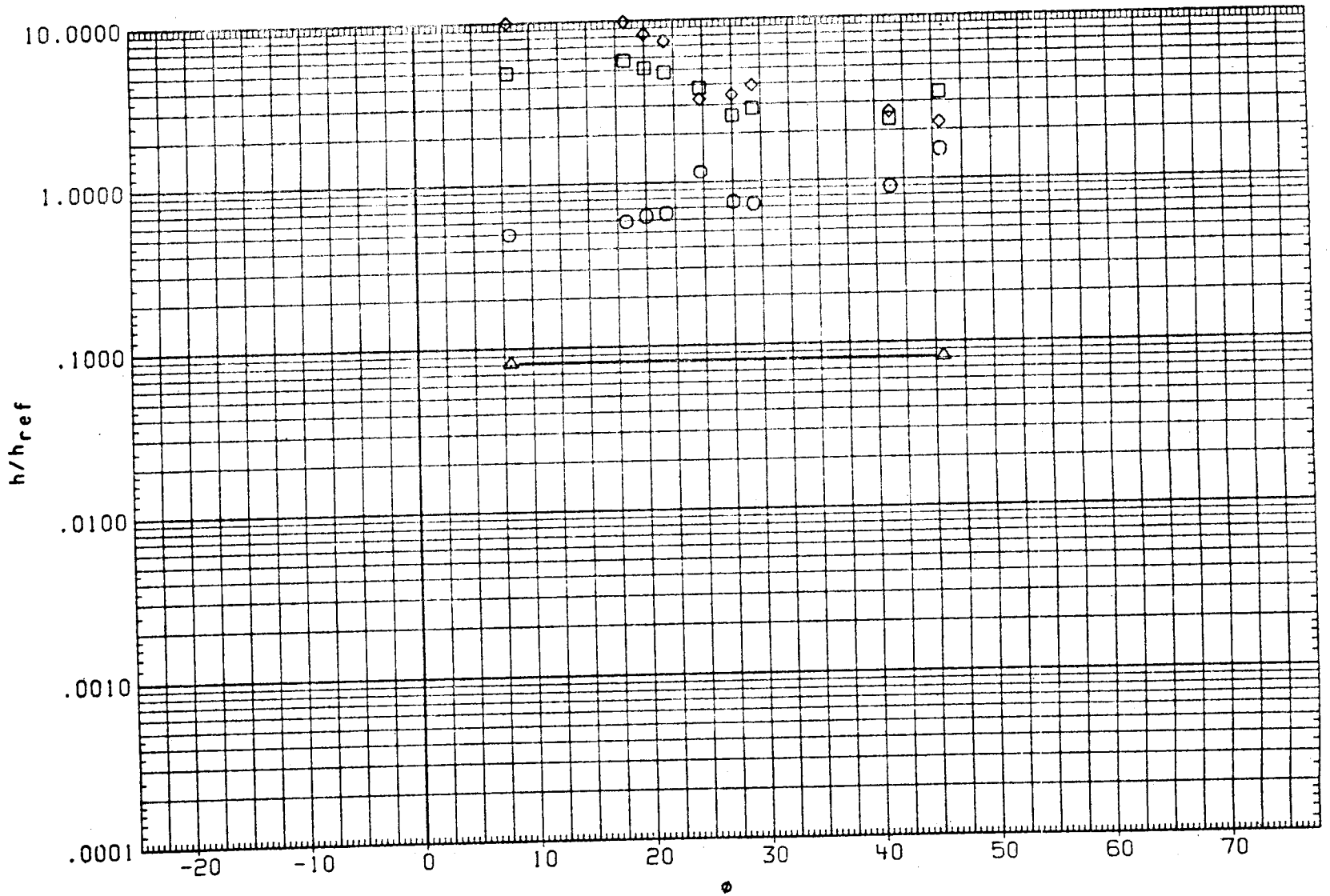

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 728

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

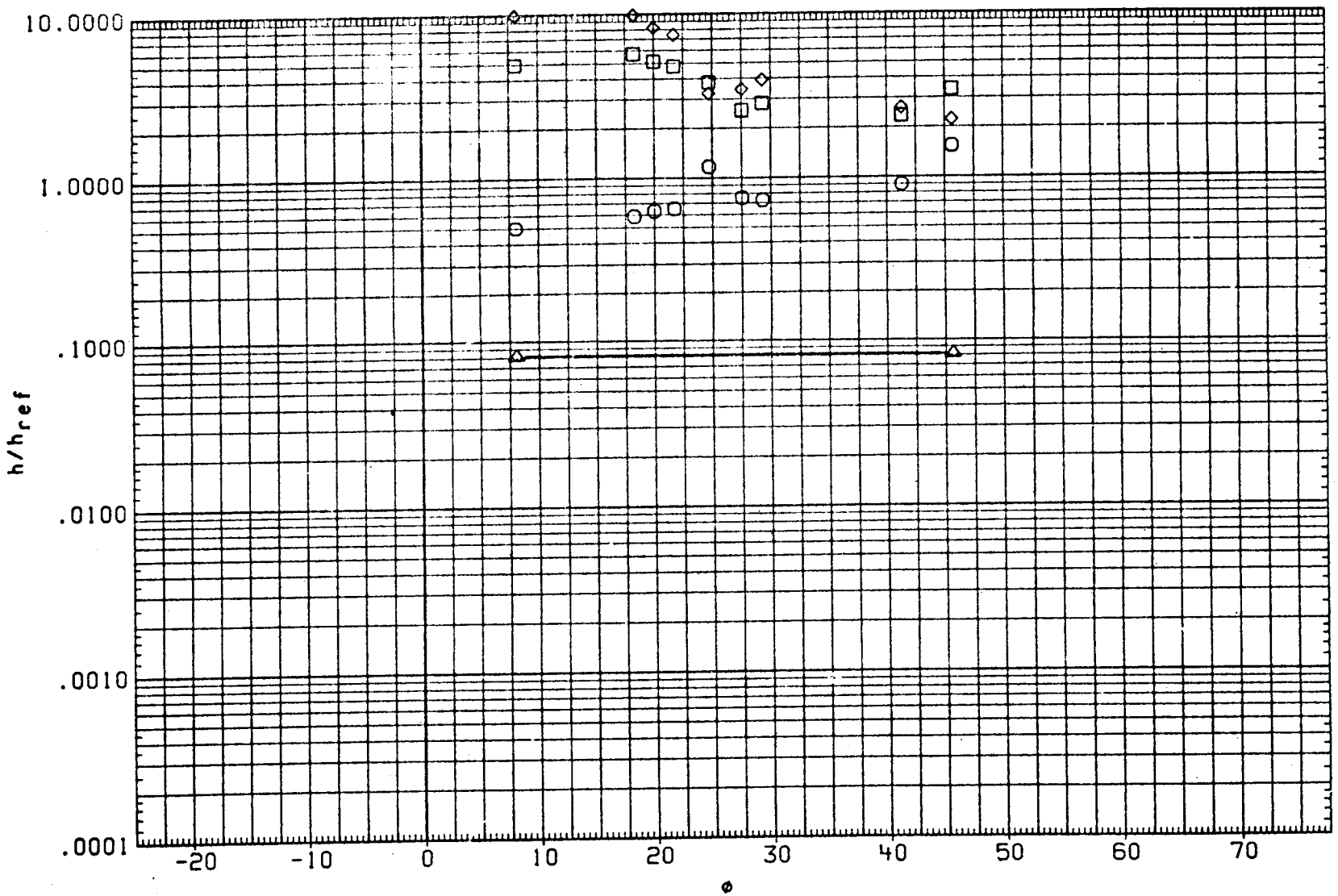

FIG. 30 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 729

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A H1/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

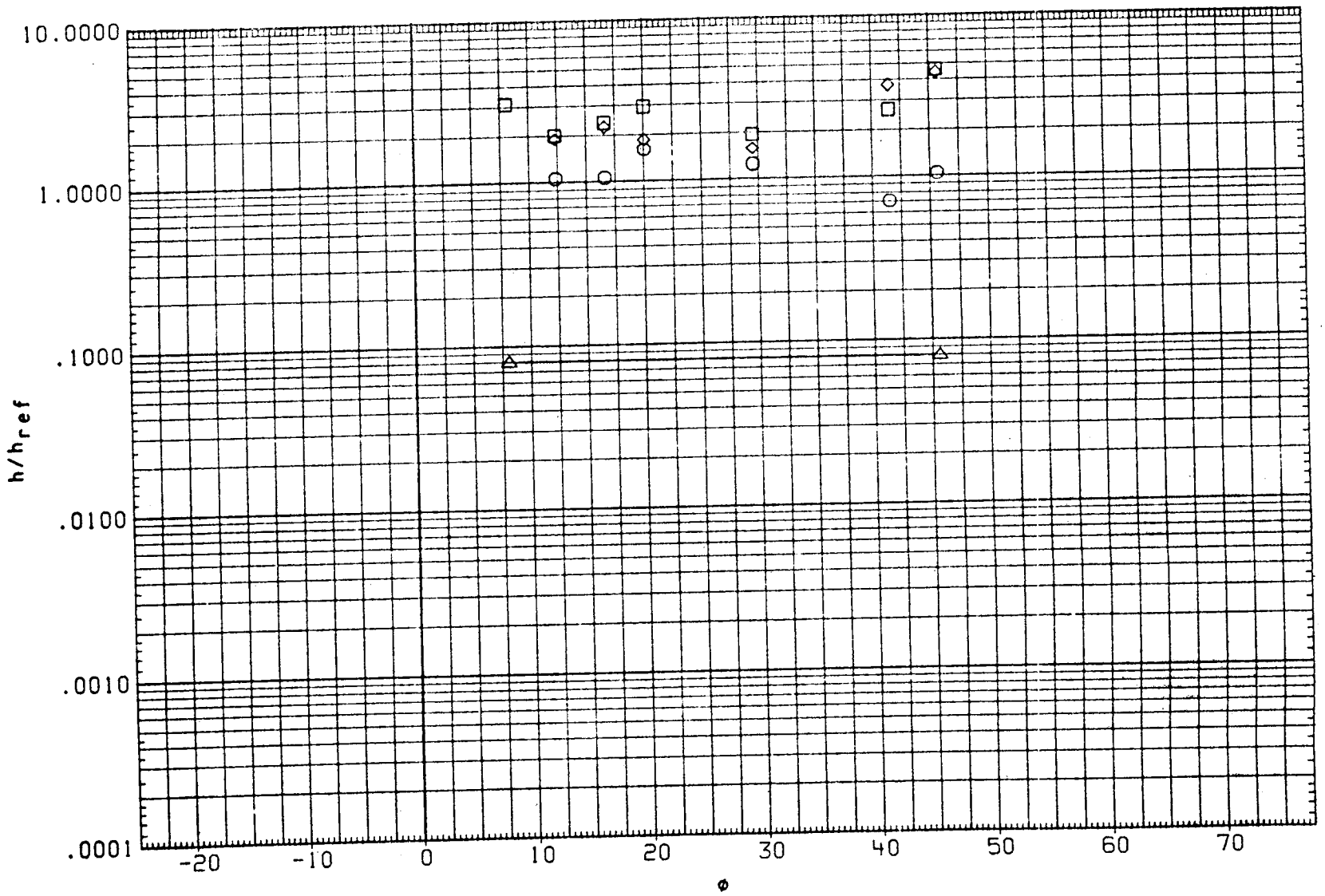

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .578 DATE 22 APR 78 PAGE 730

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

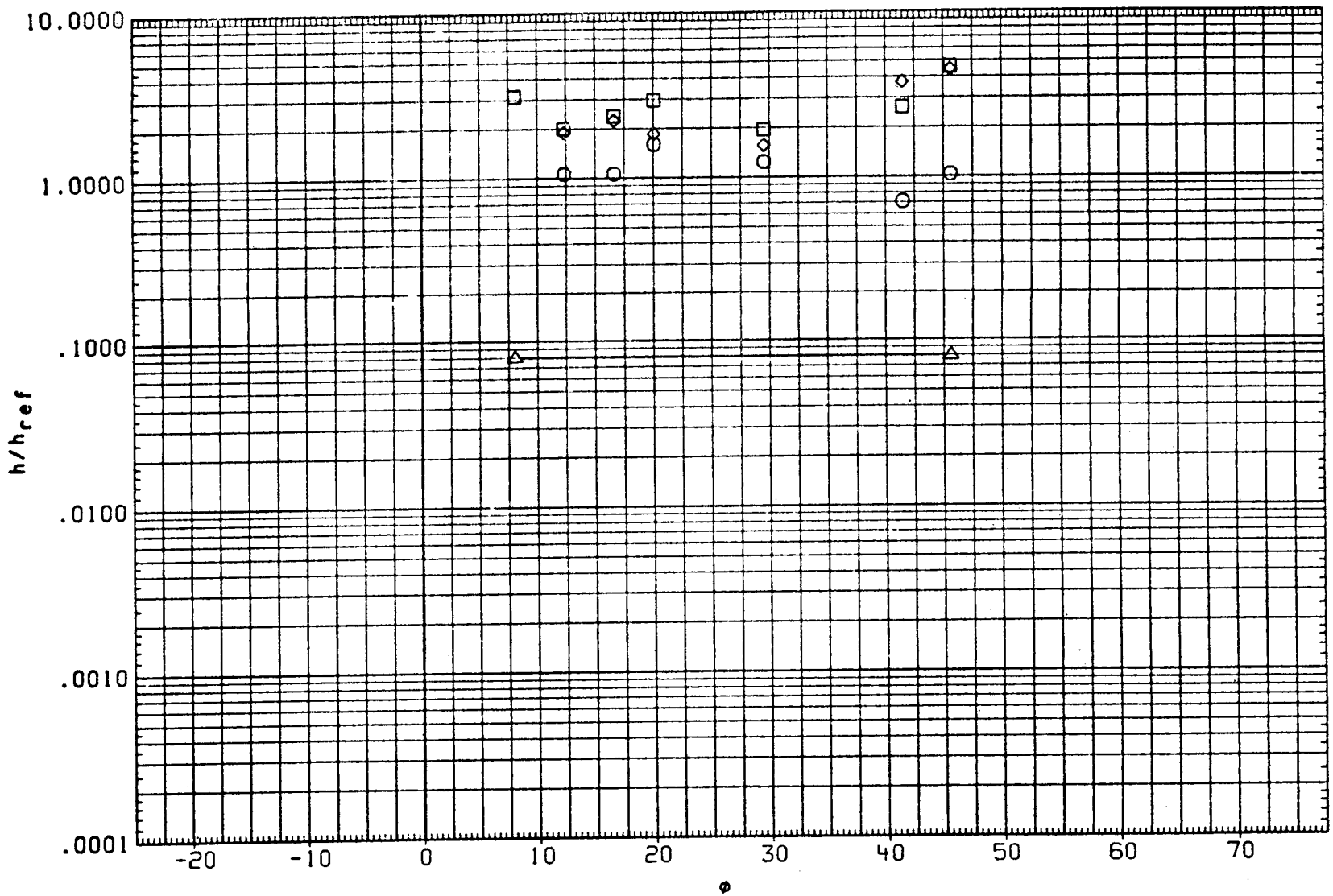

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .578 DATE 22 APR 78 PAGE 731

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

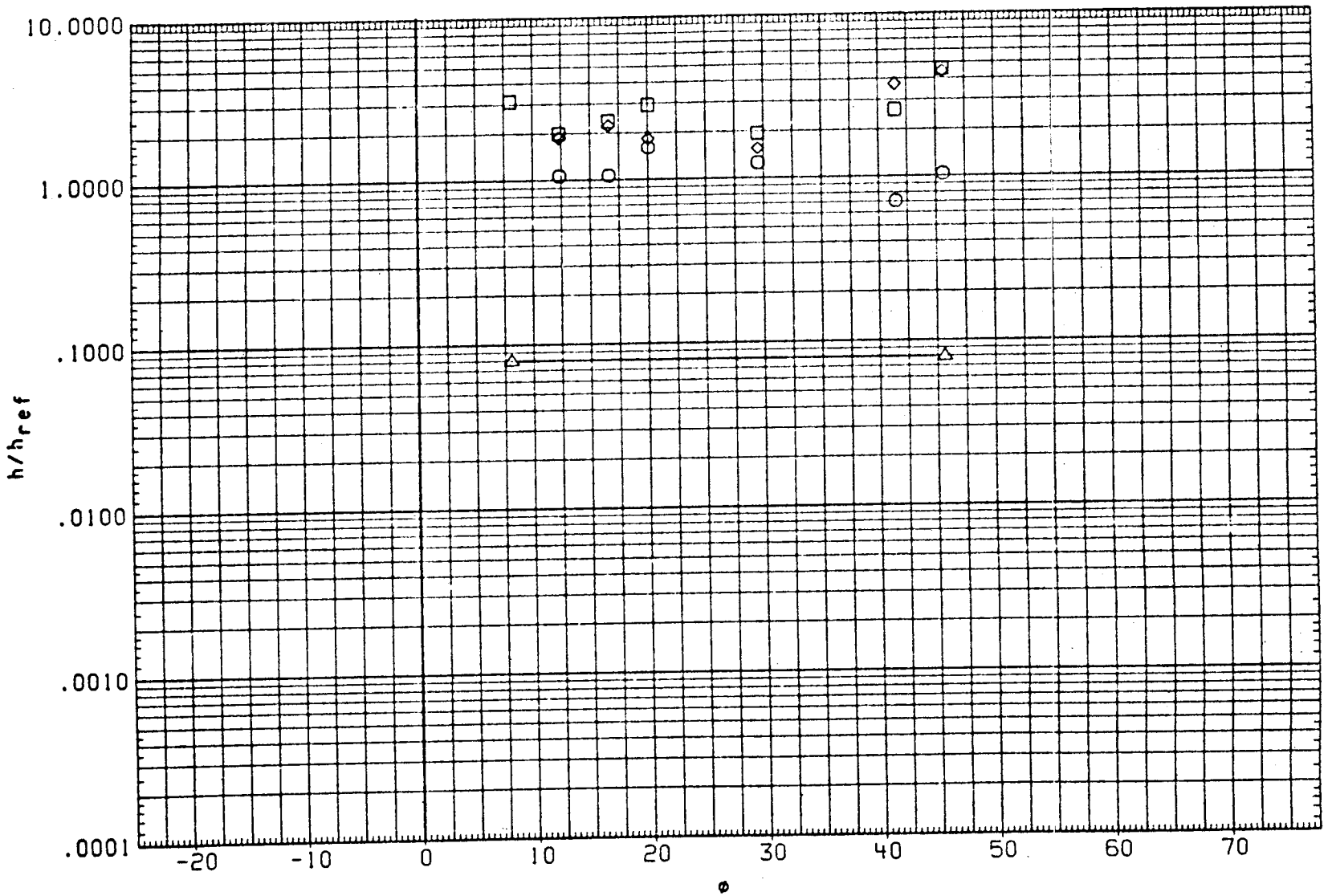

FIG. 31 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .578 DATE 22 APR 78 PAGE 732

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

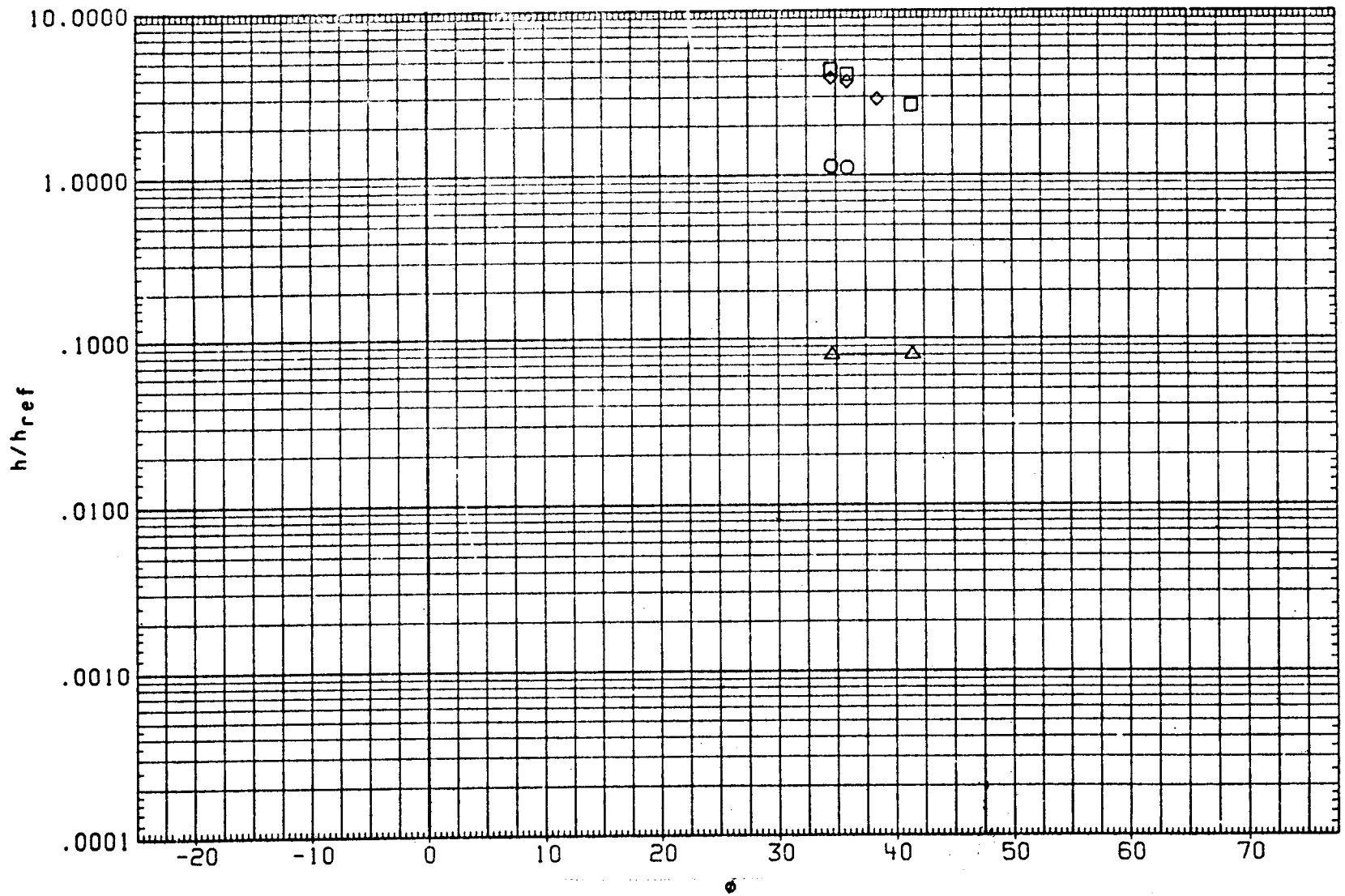

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .580 DATE 22 APR 78 PAGE 733

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q08)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q08)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

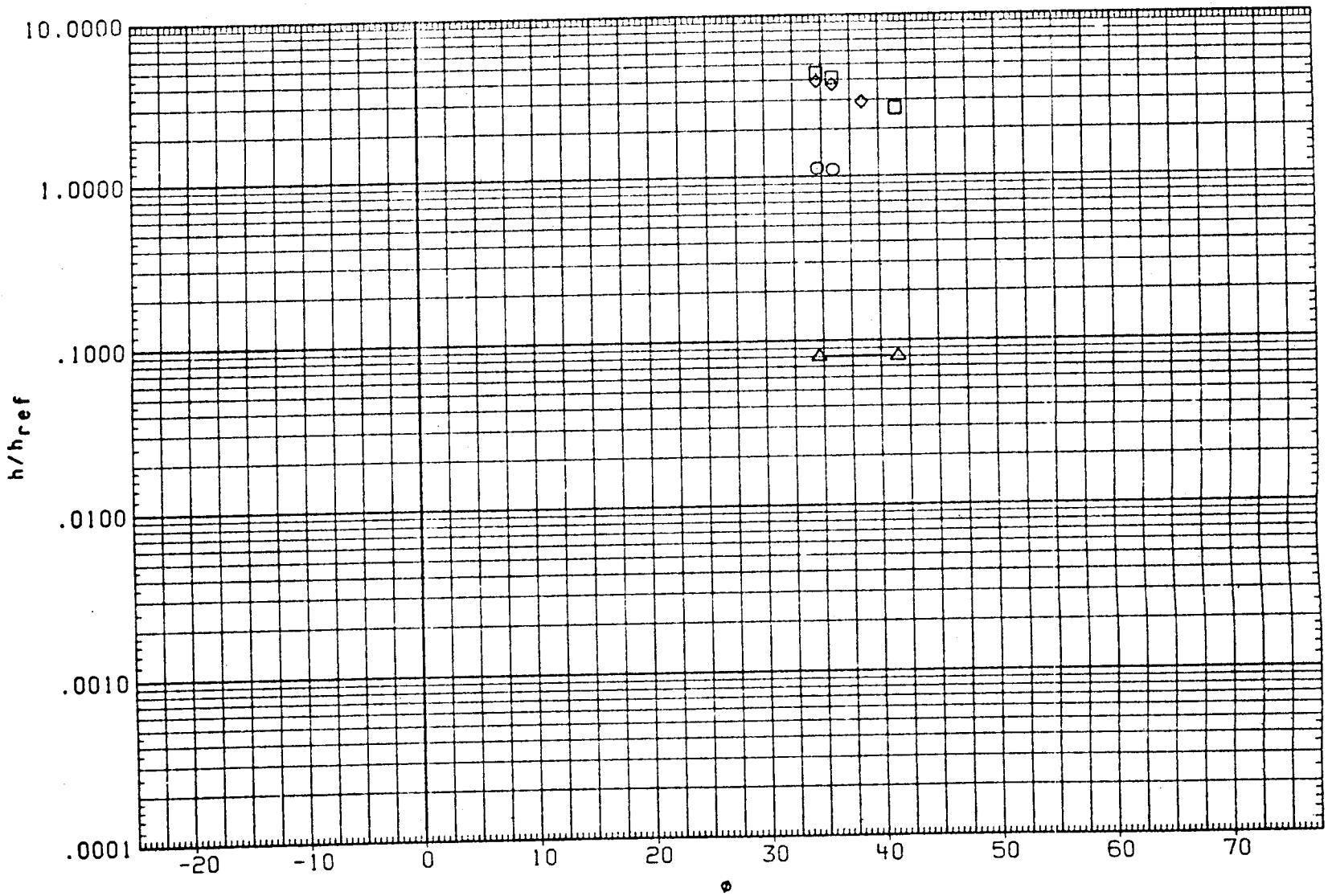

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .580 DATE 22 APR 78 PAGE 734

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

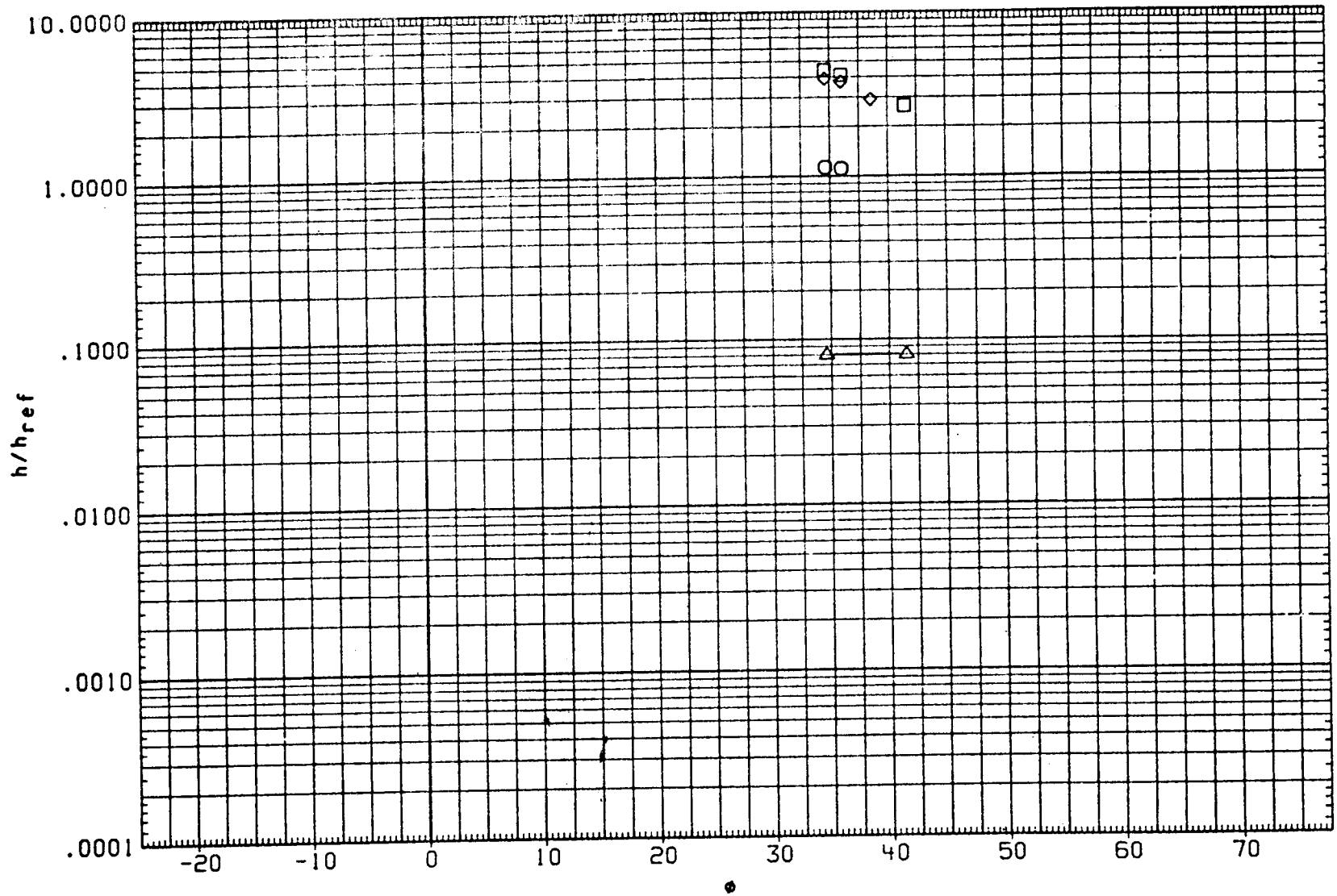

FIG. 32 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .580 DATE 22 APR 78 PAGE 735

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q3B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

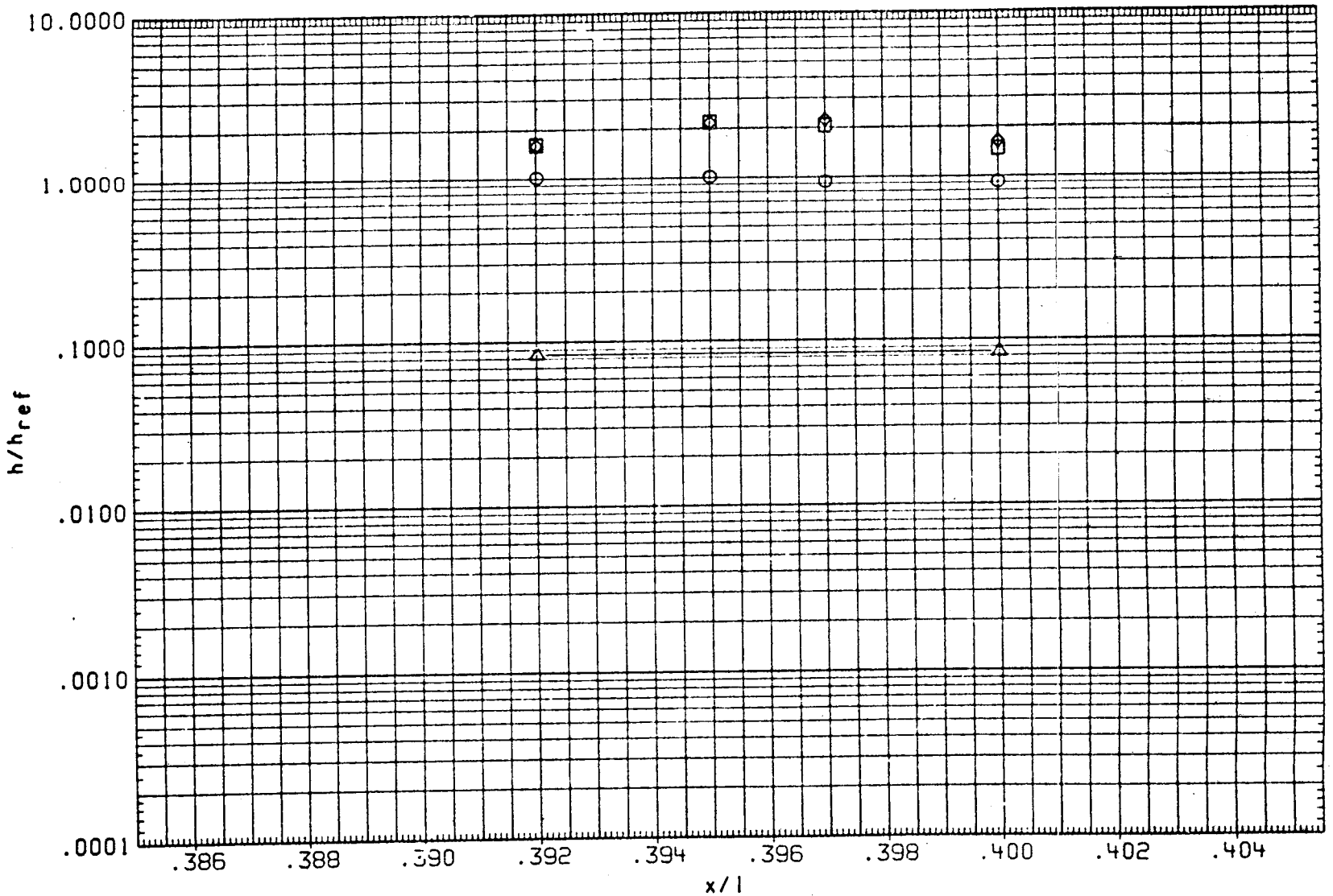

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .850 PHI = 38.540 DATE 22 APR 78 PAGE 736

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

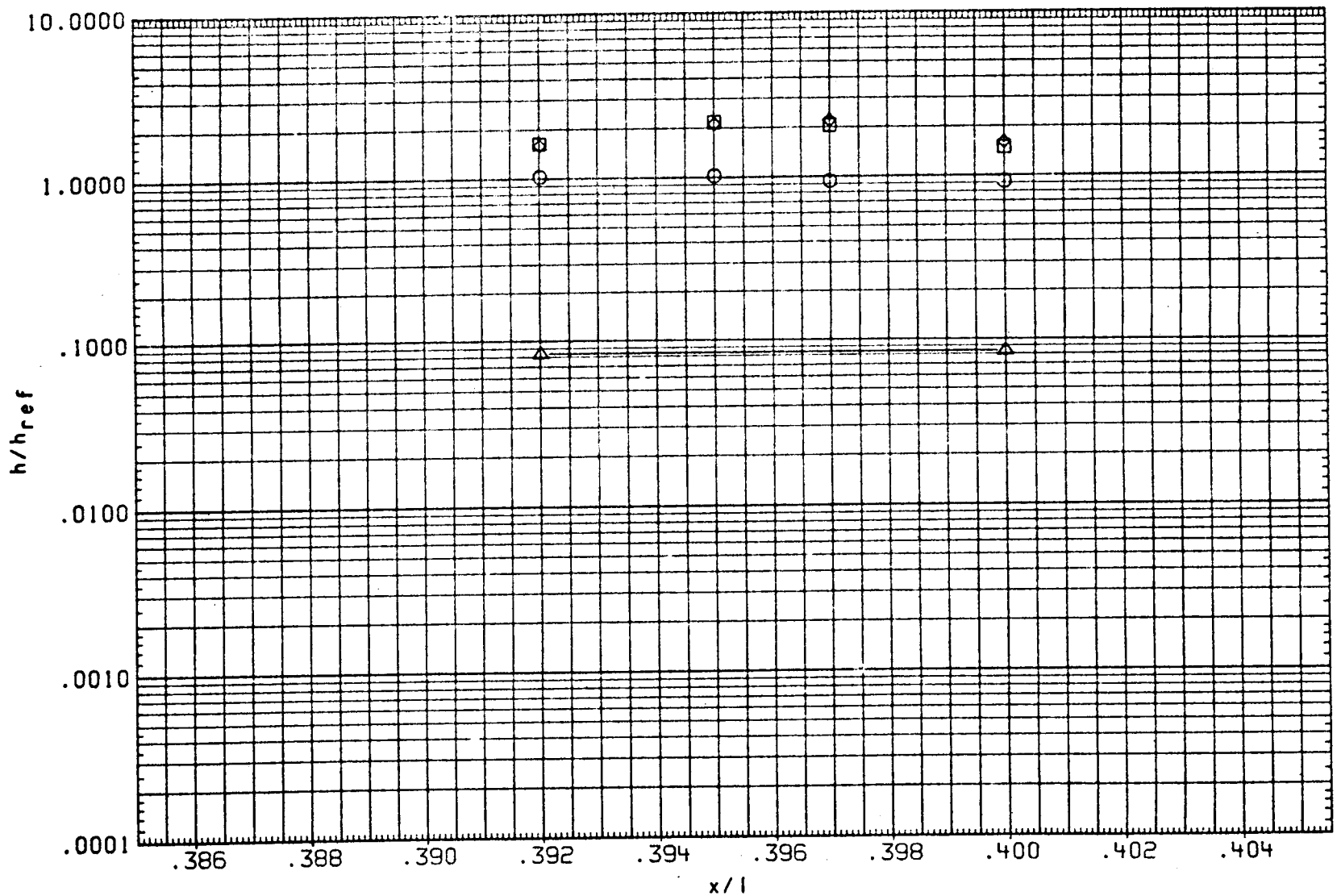

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = .900 PHI = 38.540 DATE 22 APR 78 PAGE 737

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

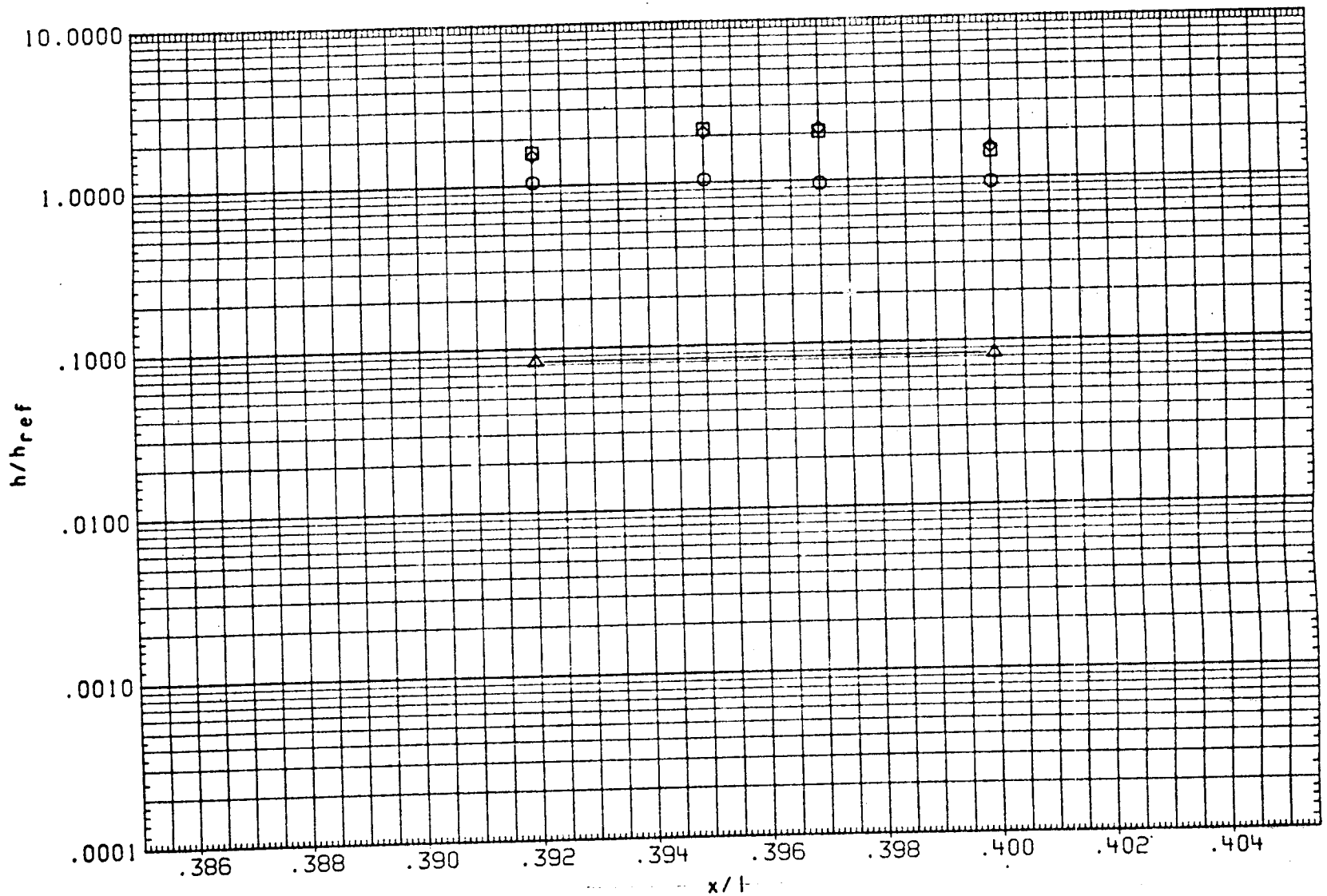

FIG. 33 HEATING DISTRIBUTION ON LONGITUDINAL FORWARD OF CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 PHI = 38.540 DATE 22 APR 78 PAGE 738

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

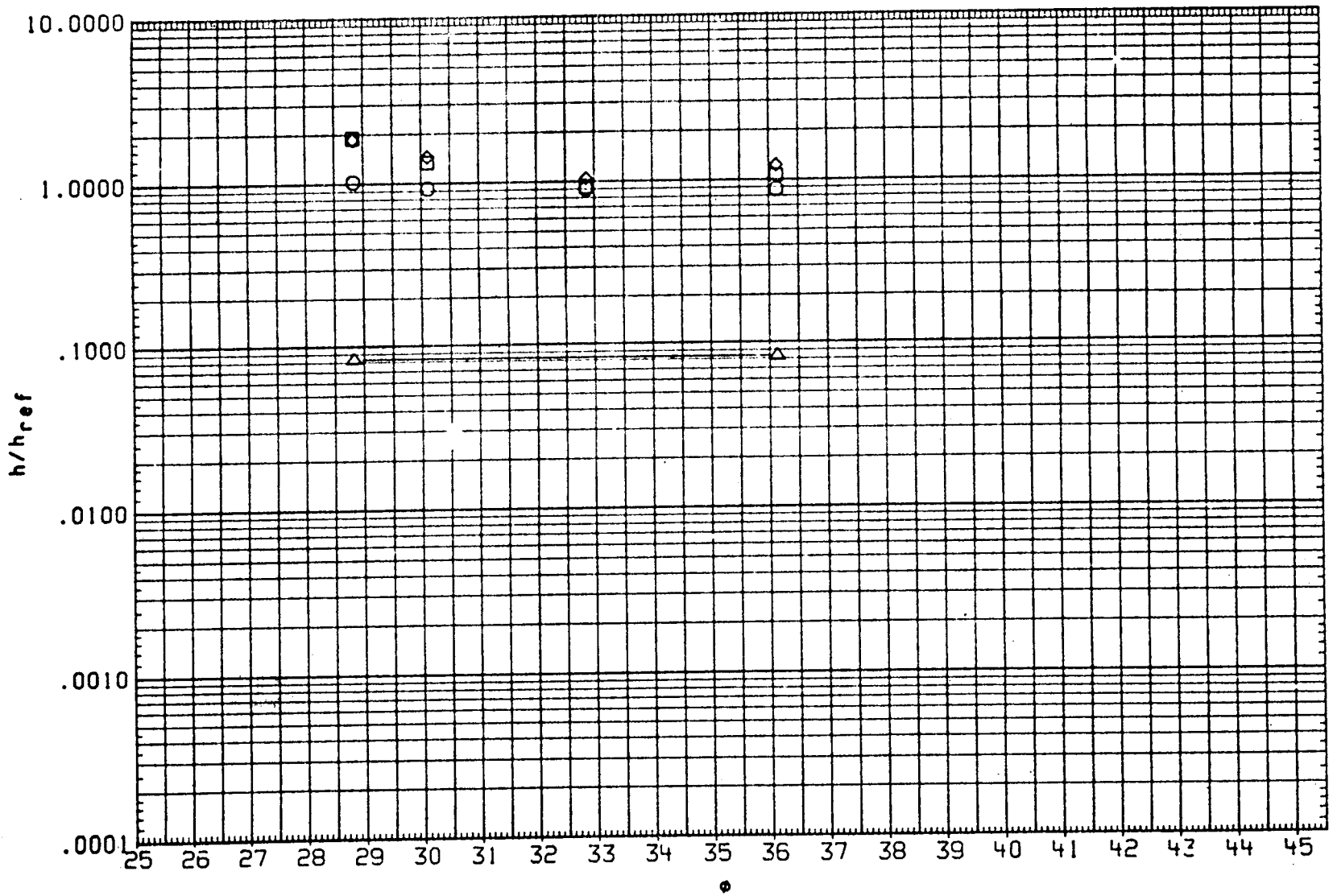

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .403 DATE 22 APR 78

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

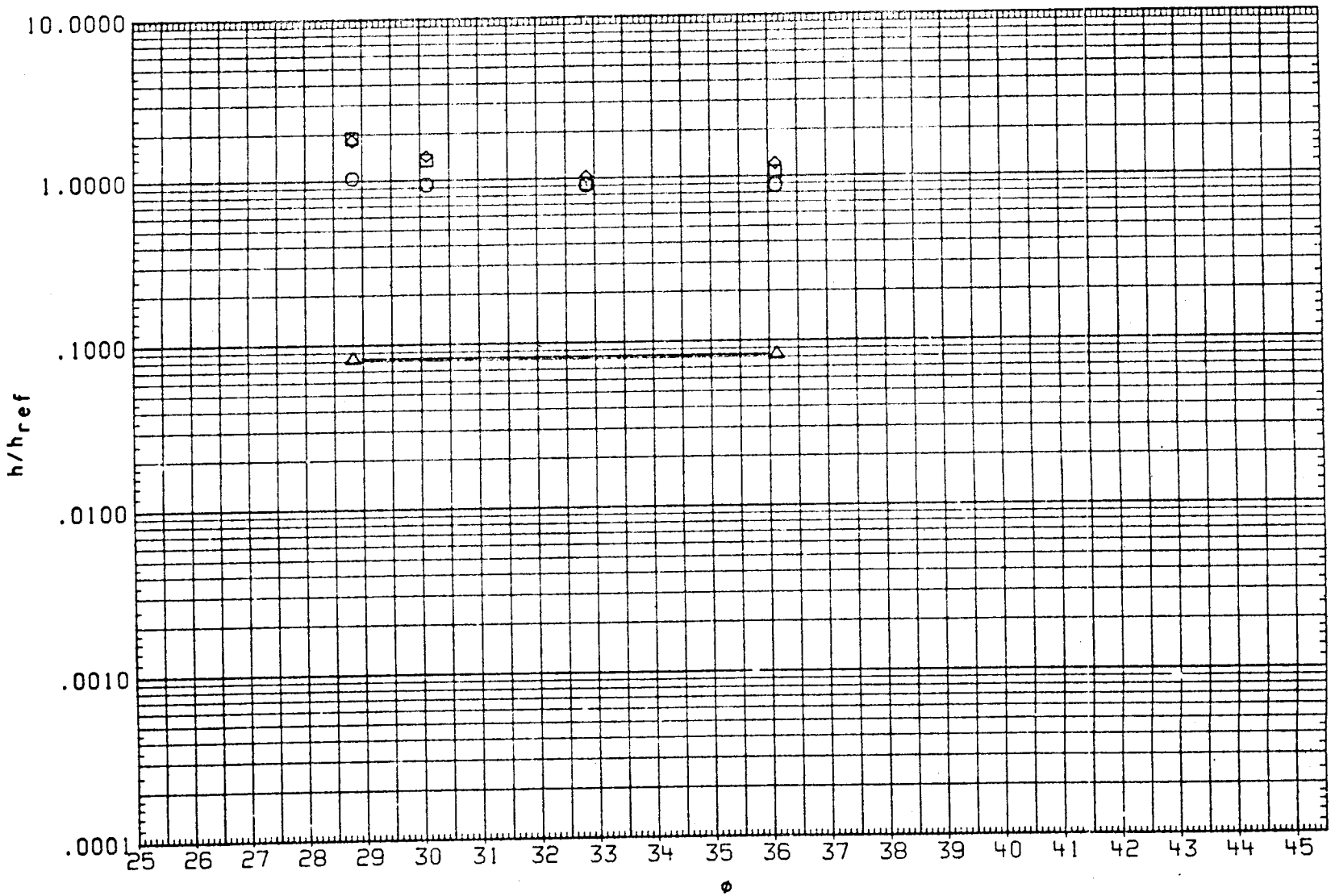

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .403 DATE 22 APR 78 PAGE 740

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

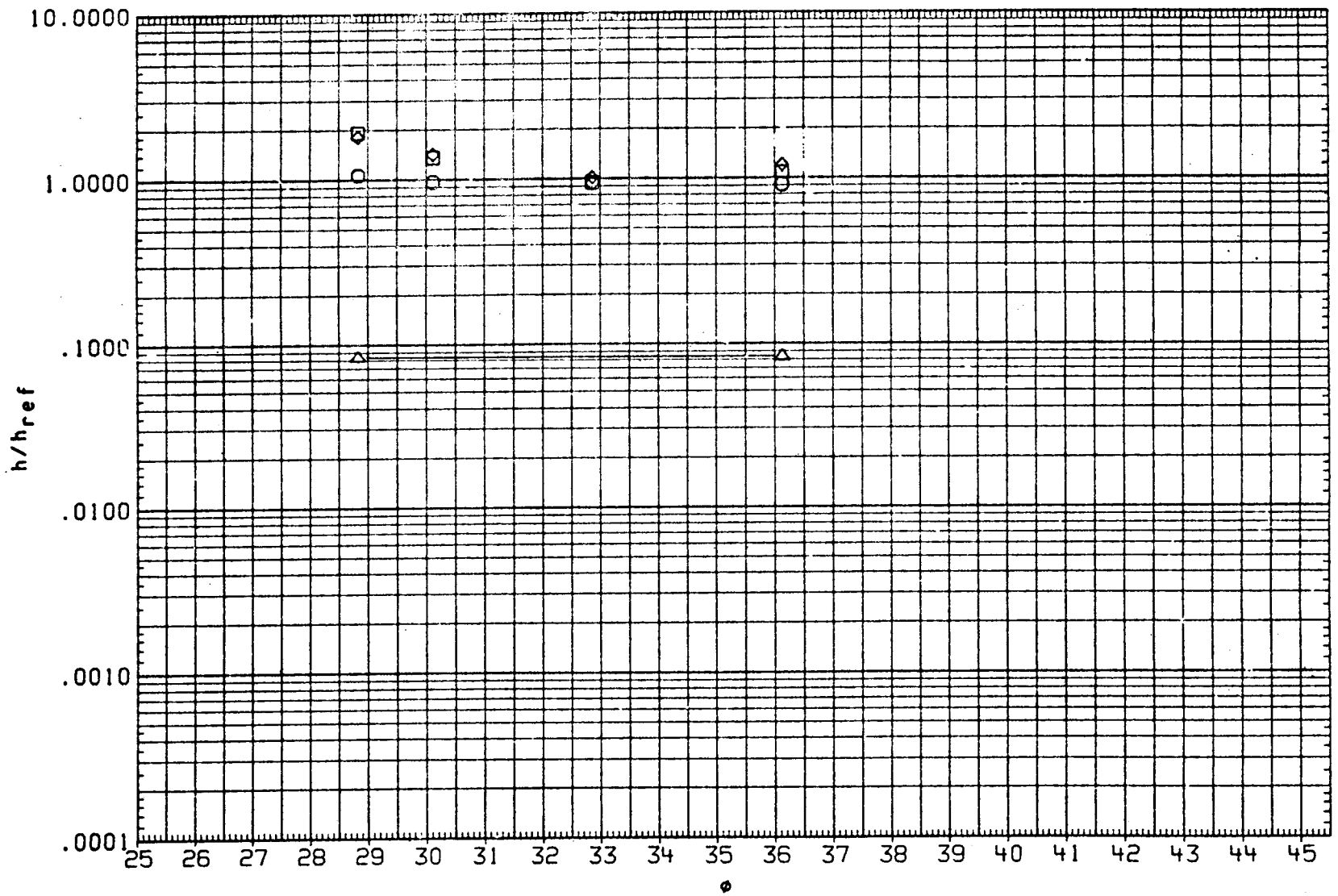

FIG. 34 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .403 DATE 22 APR 78 PAGE 741

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2[illegible]0B)	○	IH51A (1B/5B)(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20[illegible]1)	□	IH51A H1/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N200[illegible]B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20[illegible]5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

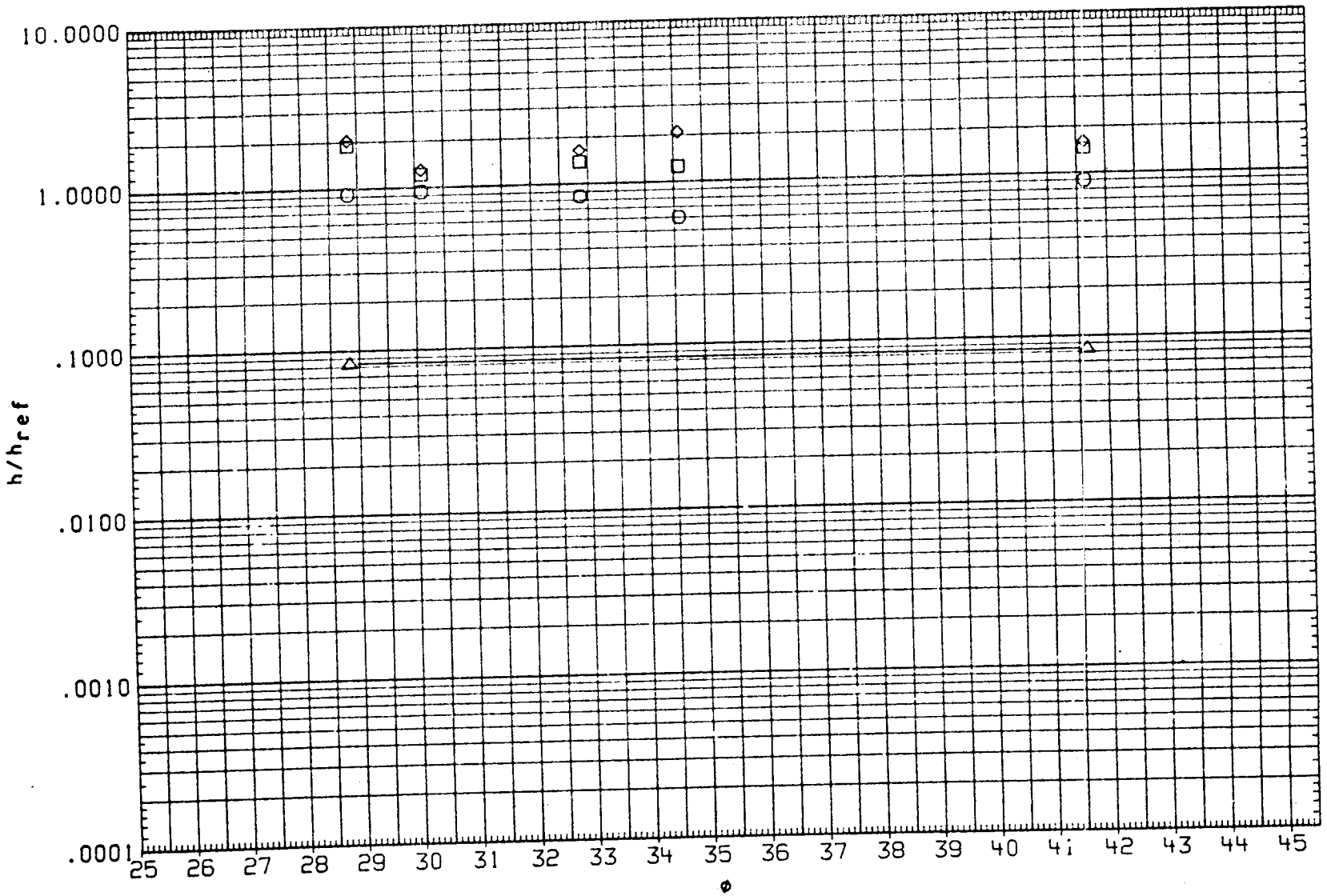

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .406 DATE 22 APR 78 PAGE 742

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

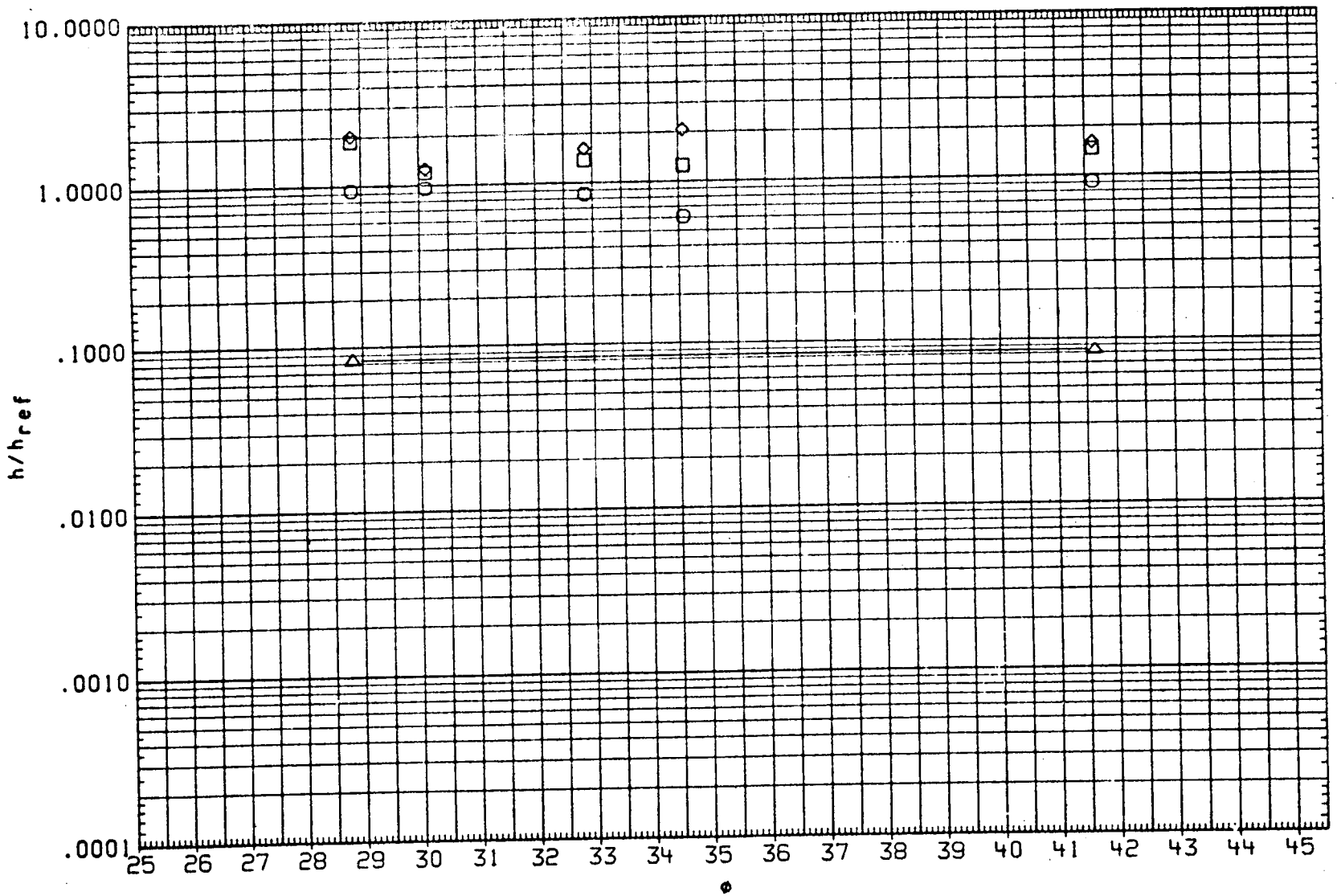

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .406 DATE 22 APR 78 PAGE 743

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

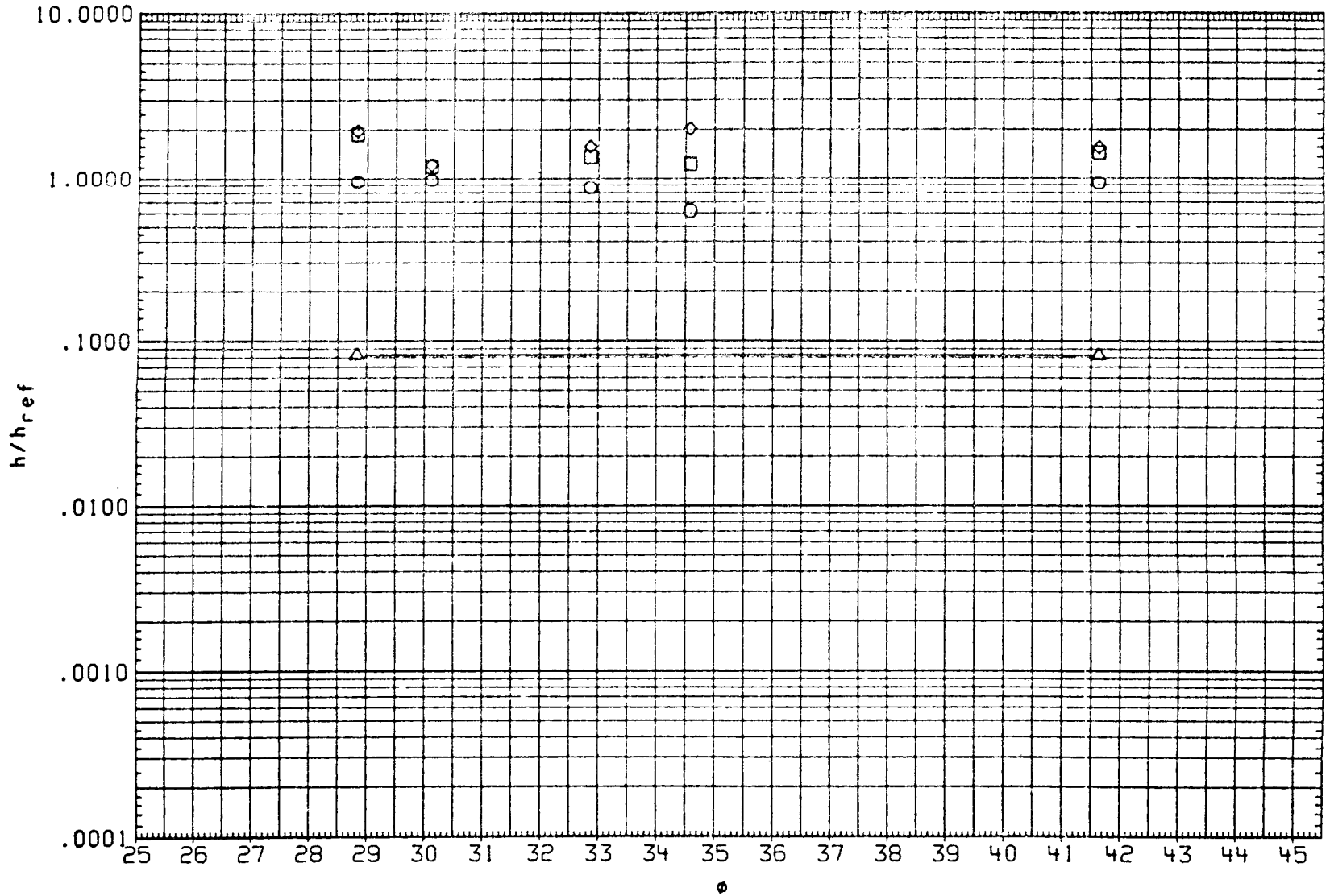

FIG. 35 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .406 DATE 22 APR 78 PAGE 744

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

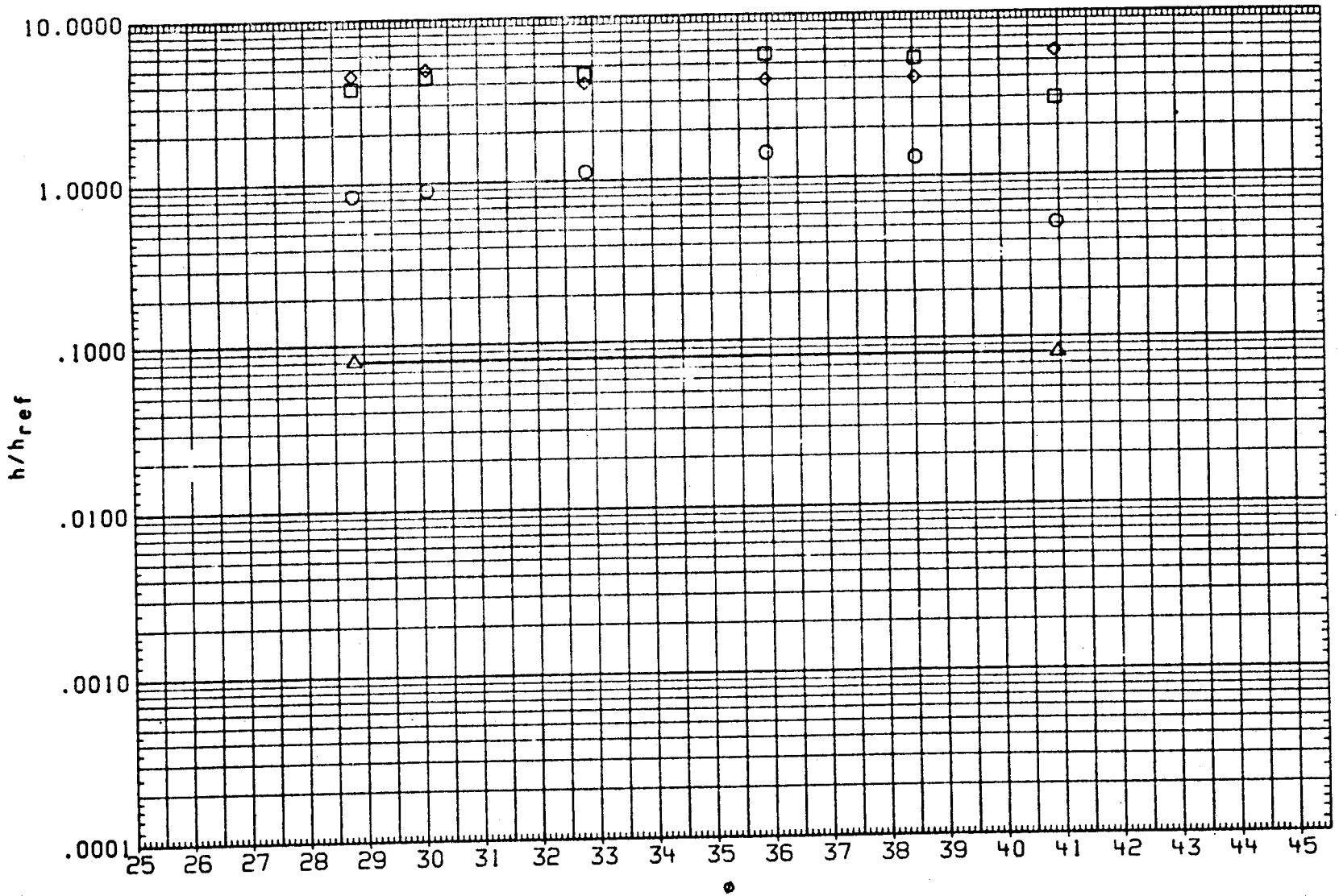

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .540 DATE 22 APR 78 PAGE 745

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

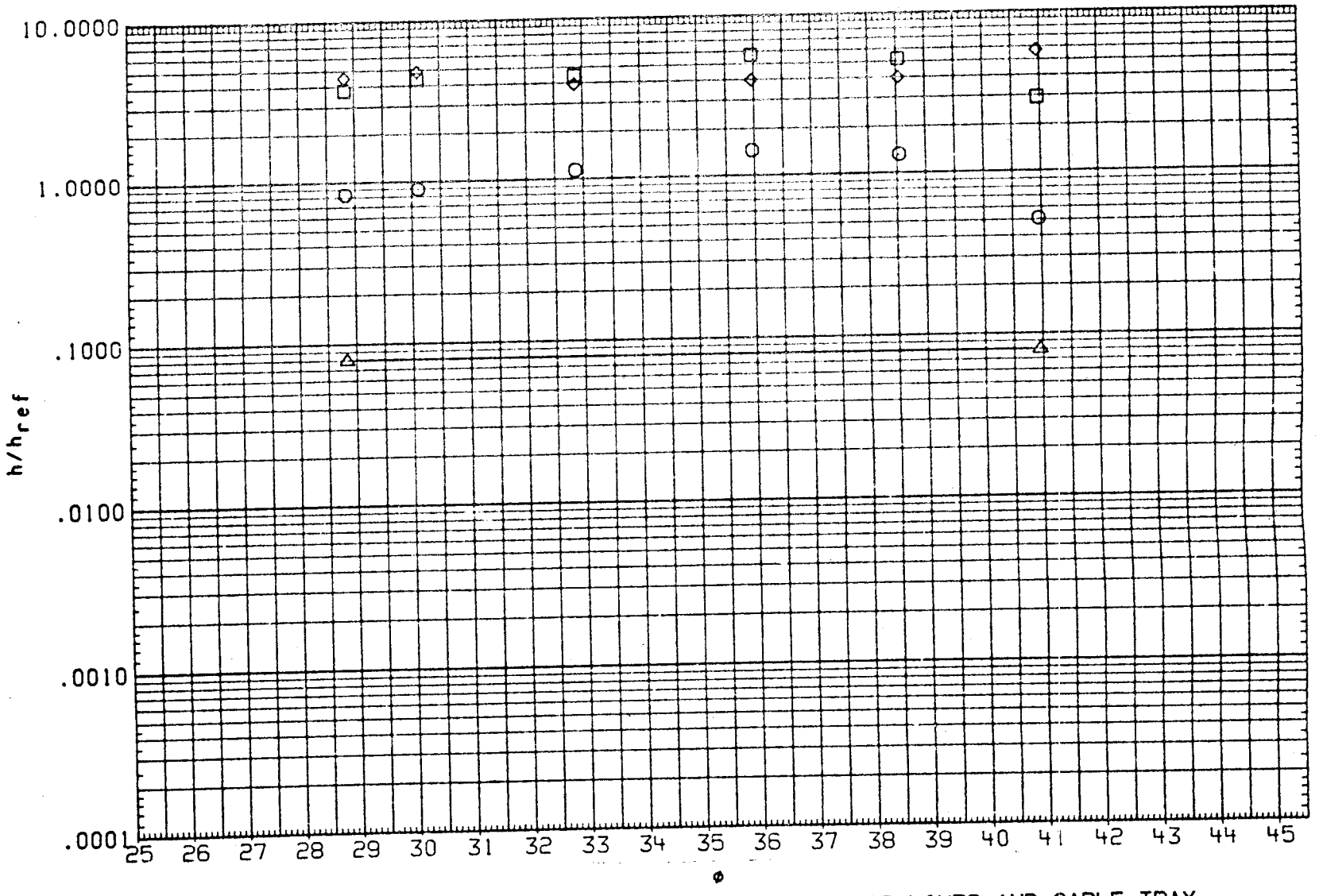

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .540 DATE 22 APR 78 PAGE 746

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

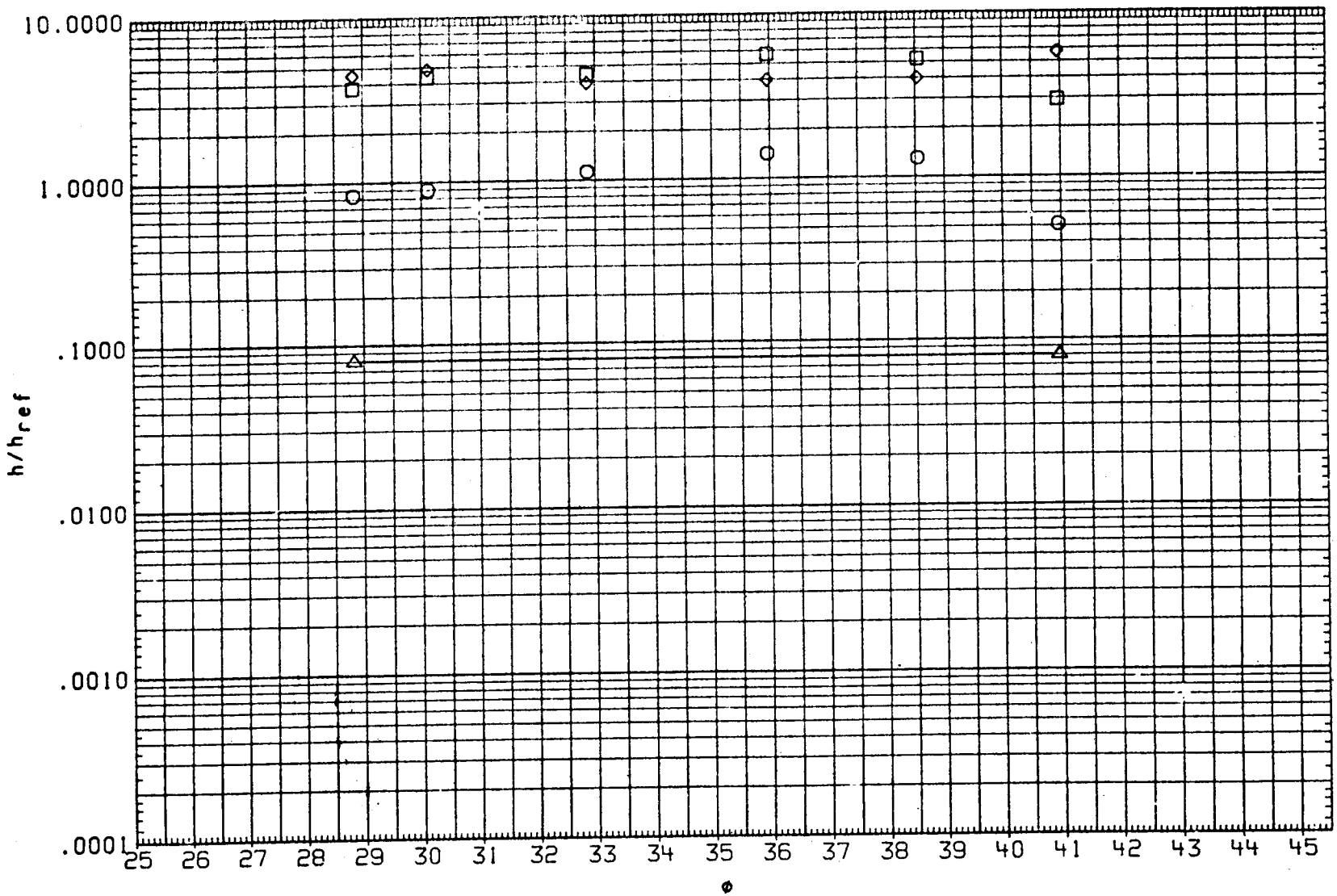

FIG. 36 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .540 DATE 22 APR 78 PAGE 747

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

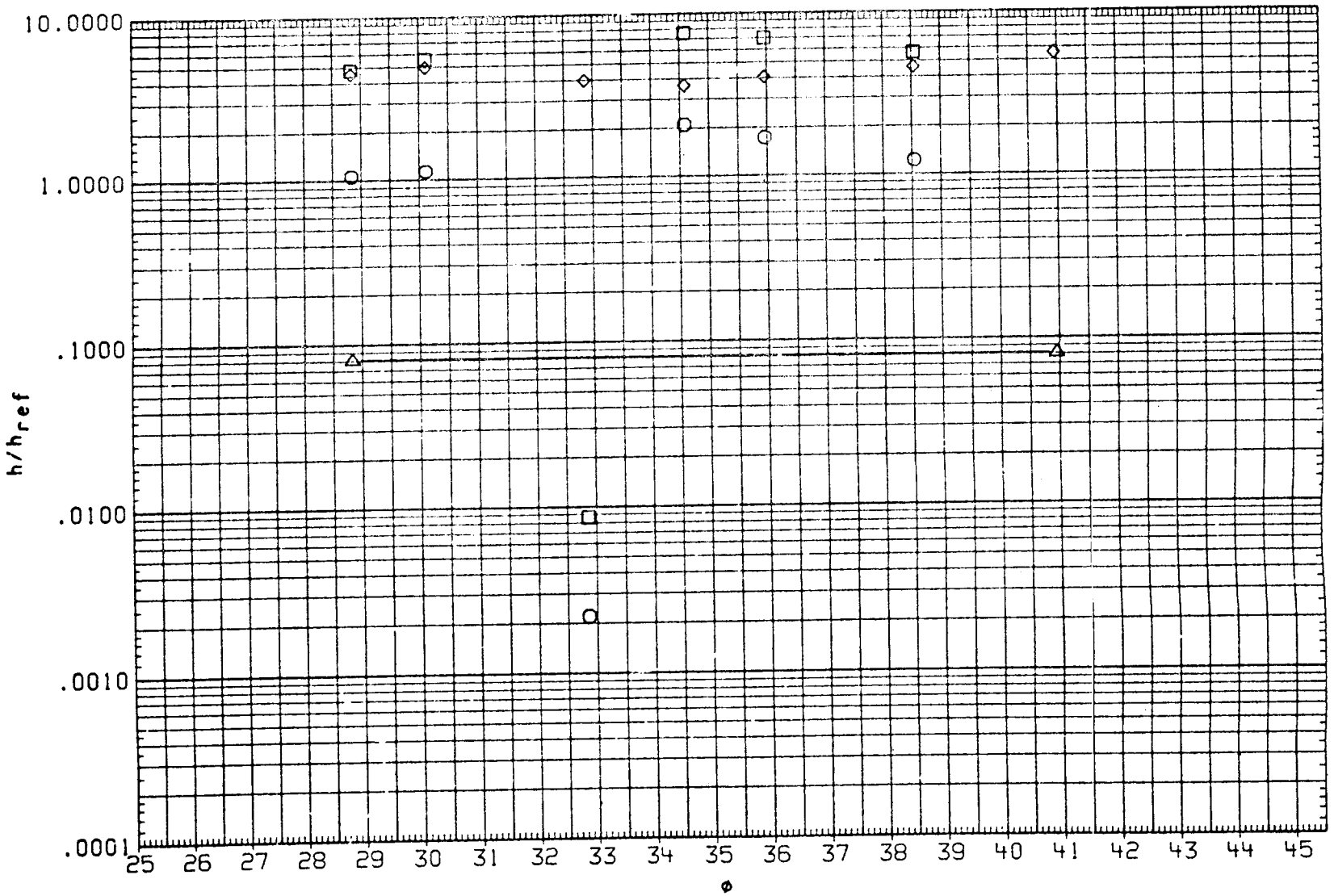

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .850 X/L = .542 DATE 22 APR 78 PAGE 748

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

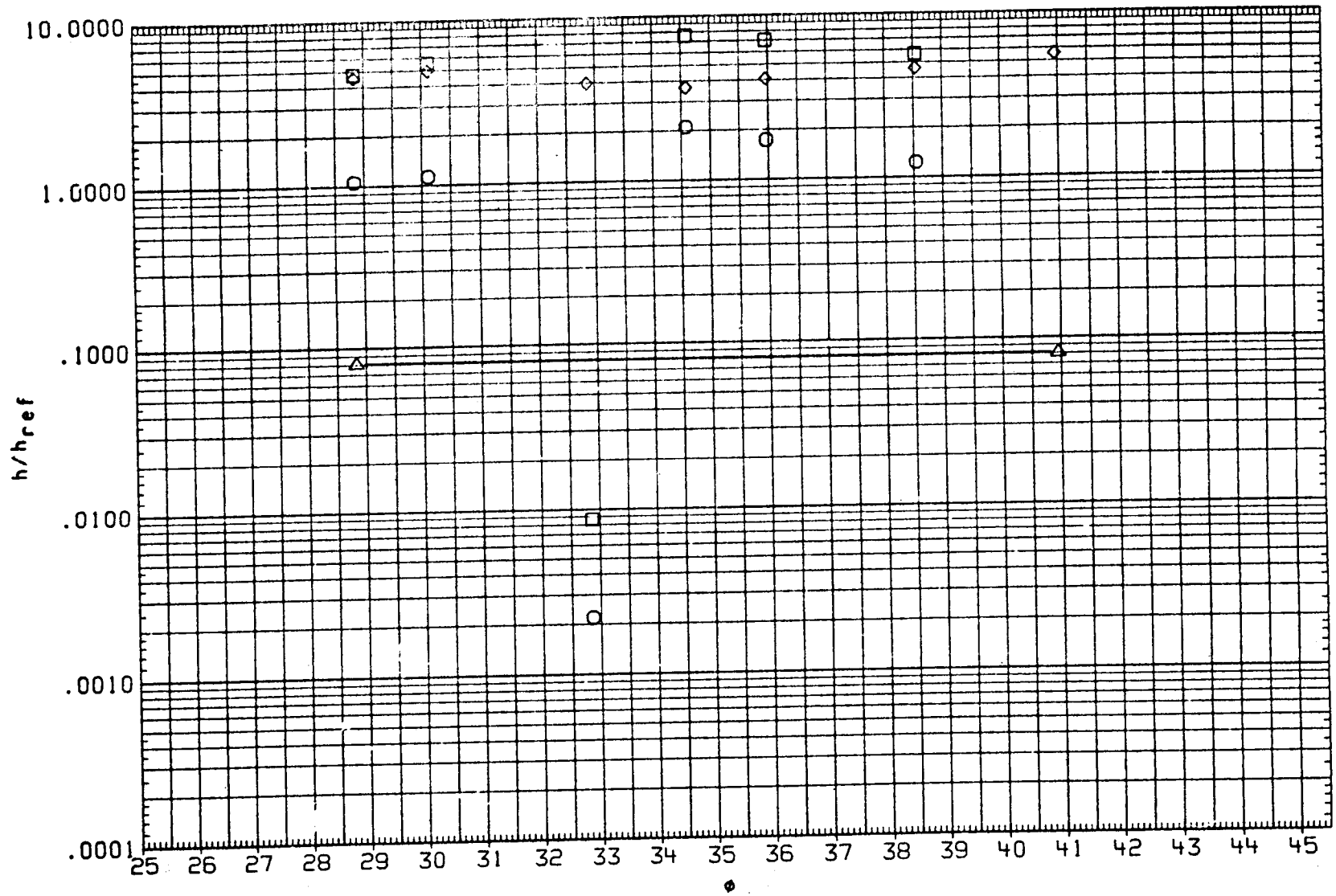

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = .900 X/L = .542 DATE 22 APR 78 PAGE 749

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE 1B/5B	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

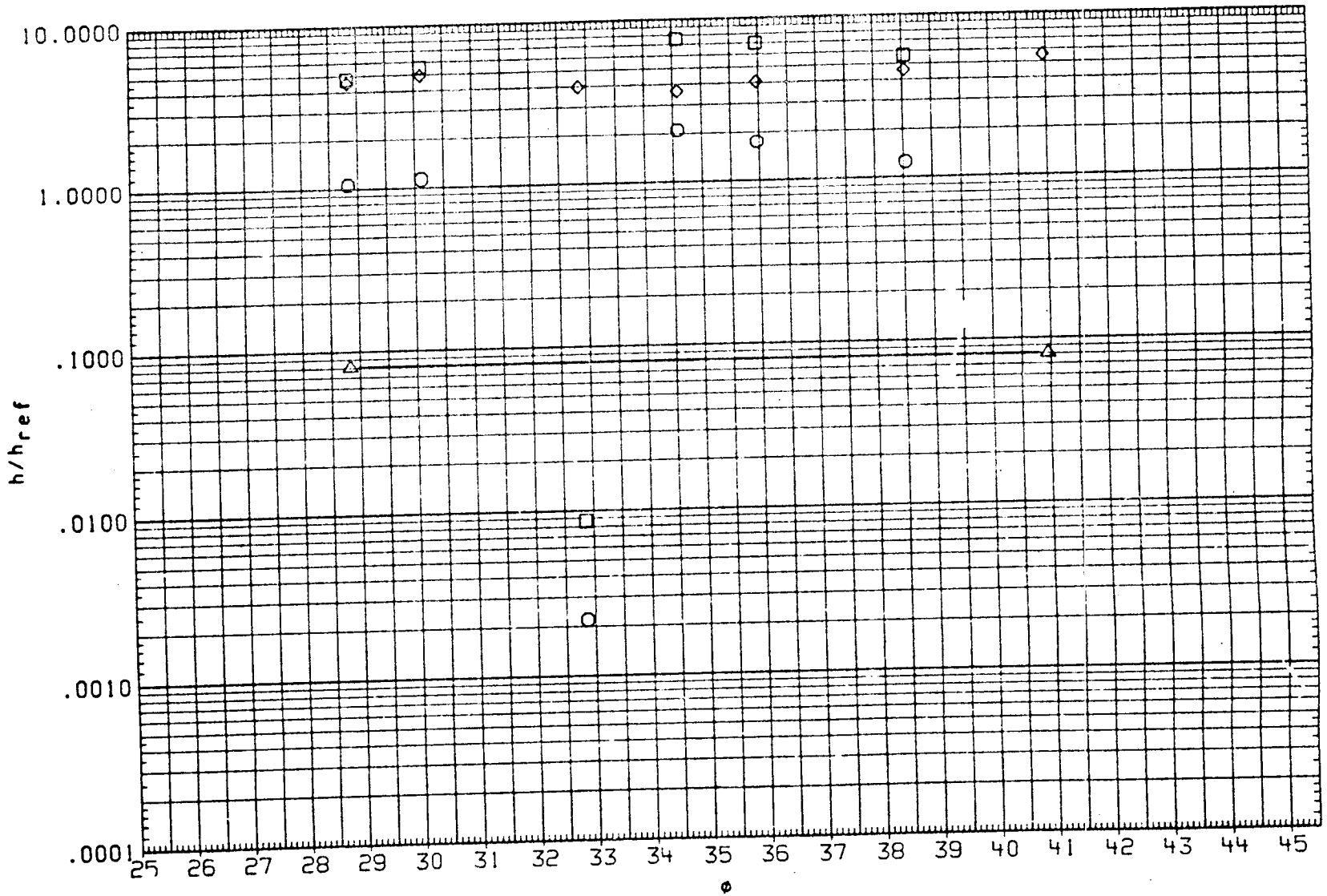

FIG. 37 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES AND CABLE TRAY

MACH = 5.250 HAW/HT = 1.000 X/L = .542 DATE 22 APR 78 PAGE 750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

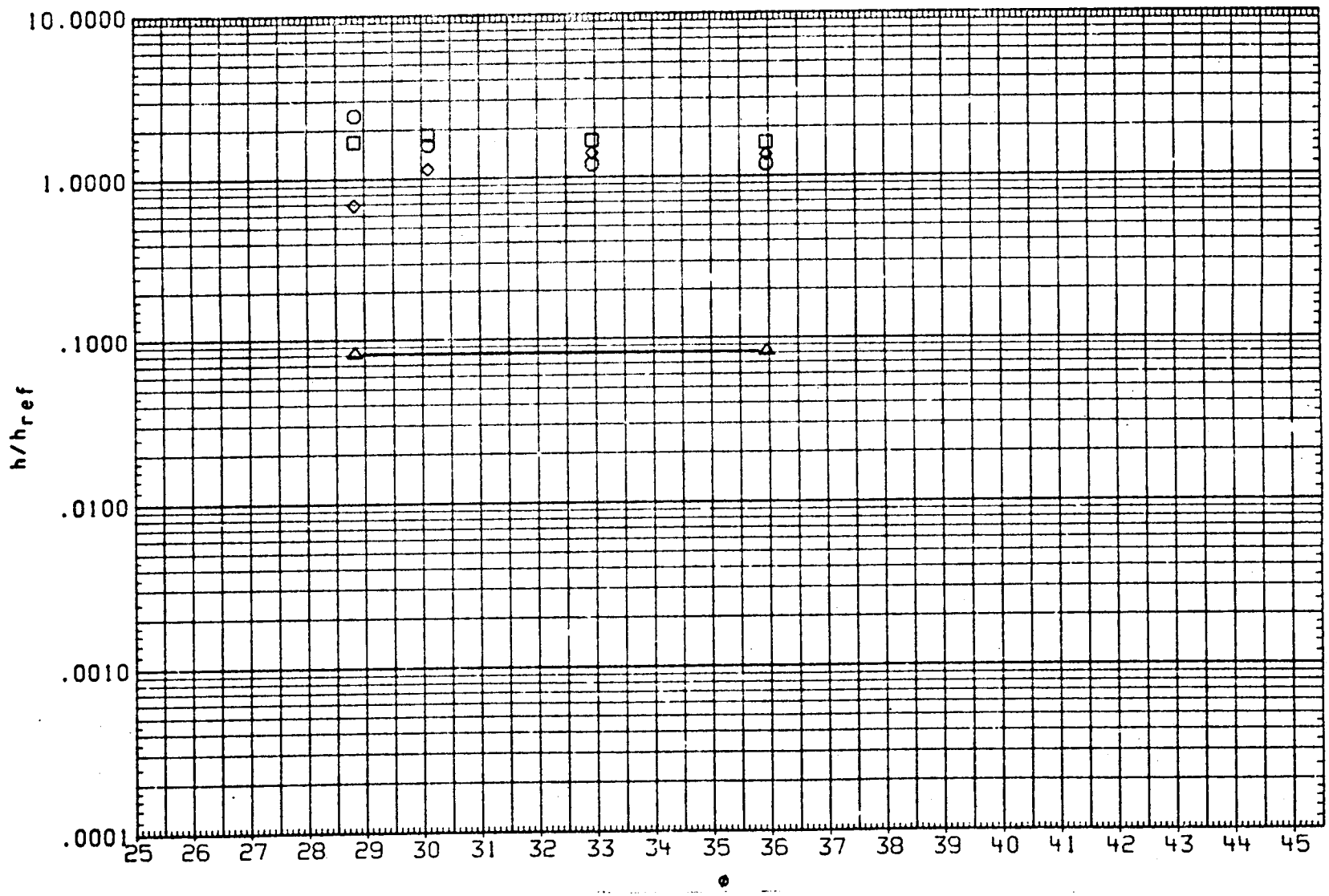

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .441 DATE 22 APR 78 PAGE 751

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

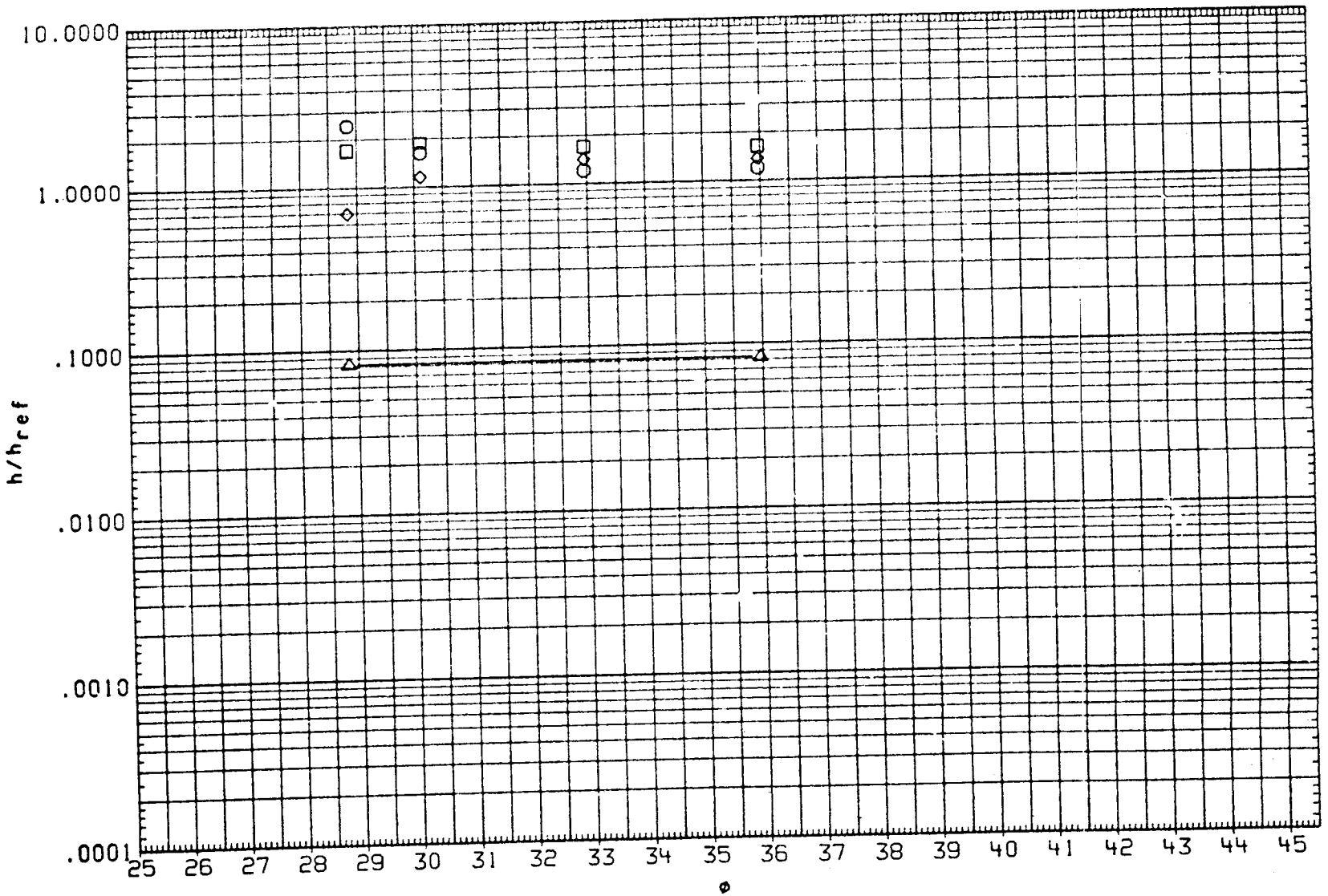

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .441 DATE 22 APR 78 PAGE 752

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

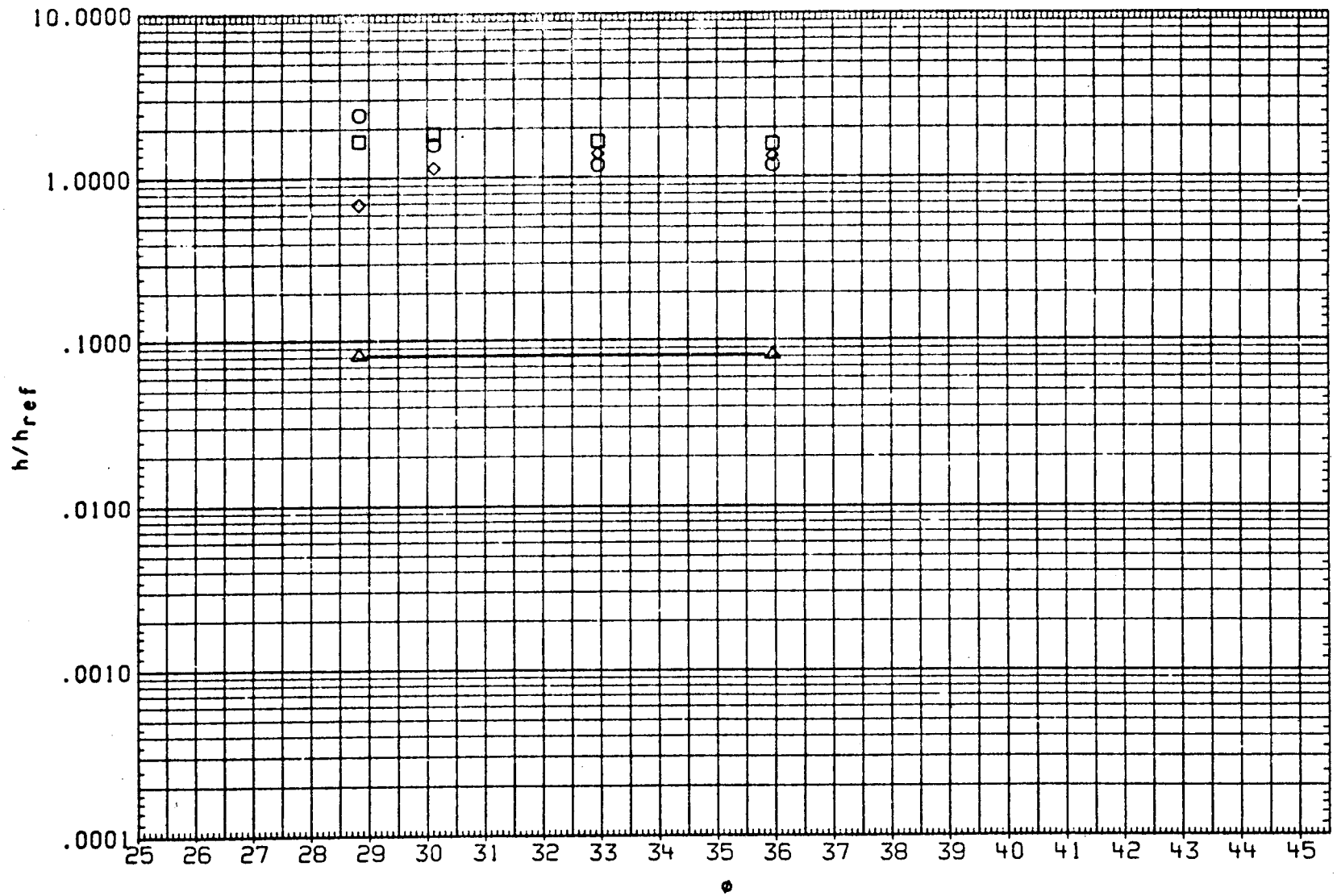

FIG. 38 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .441 DATE 22 APR 78 PAGE 753

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

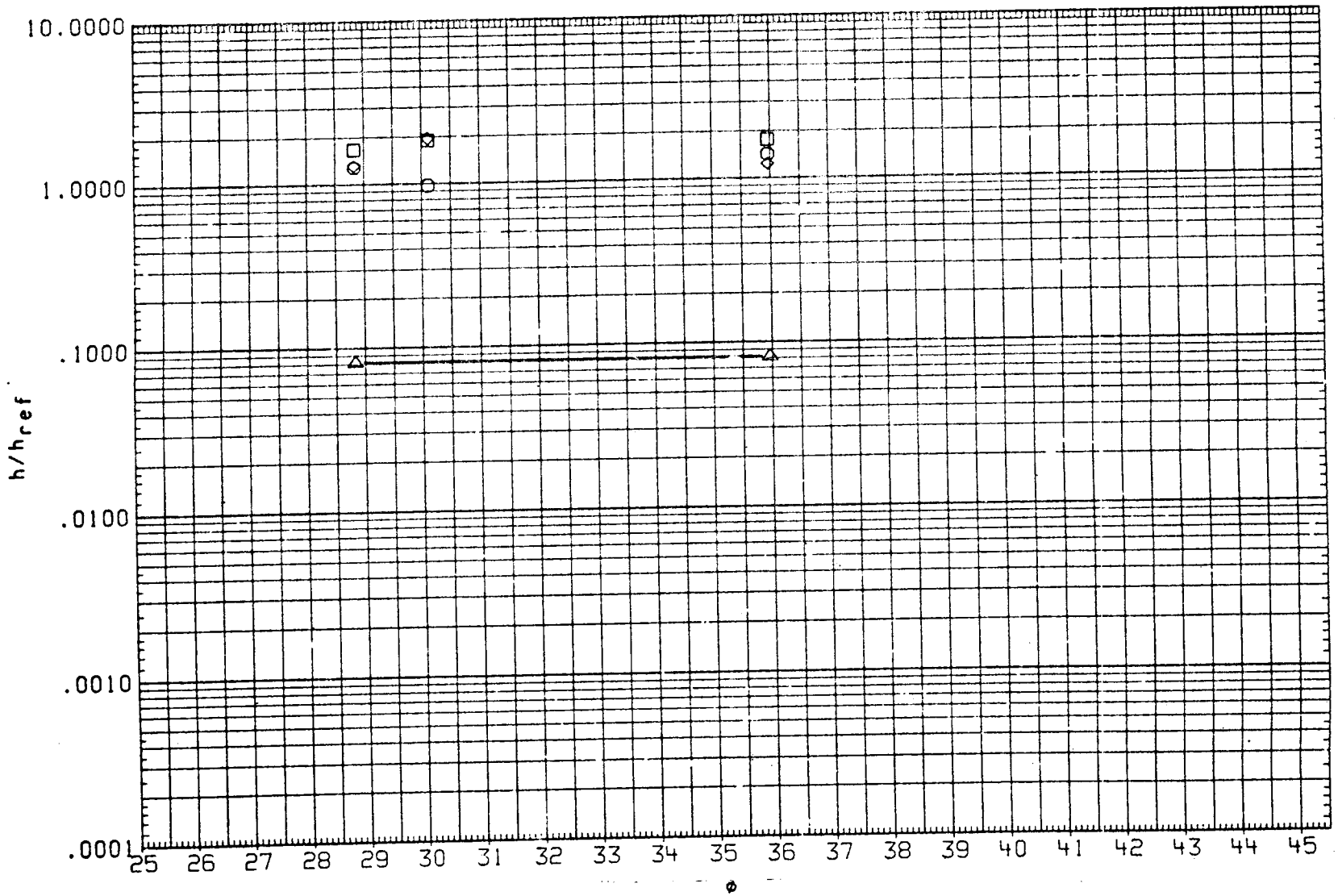

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .850 X/L = .443 DATE 22 APR 78 PAGE 754

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

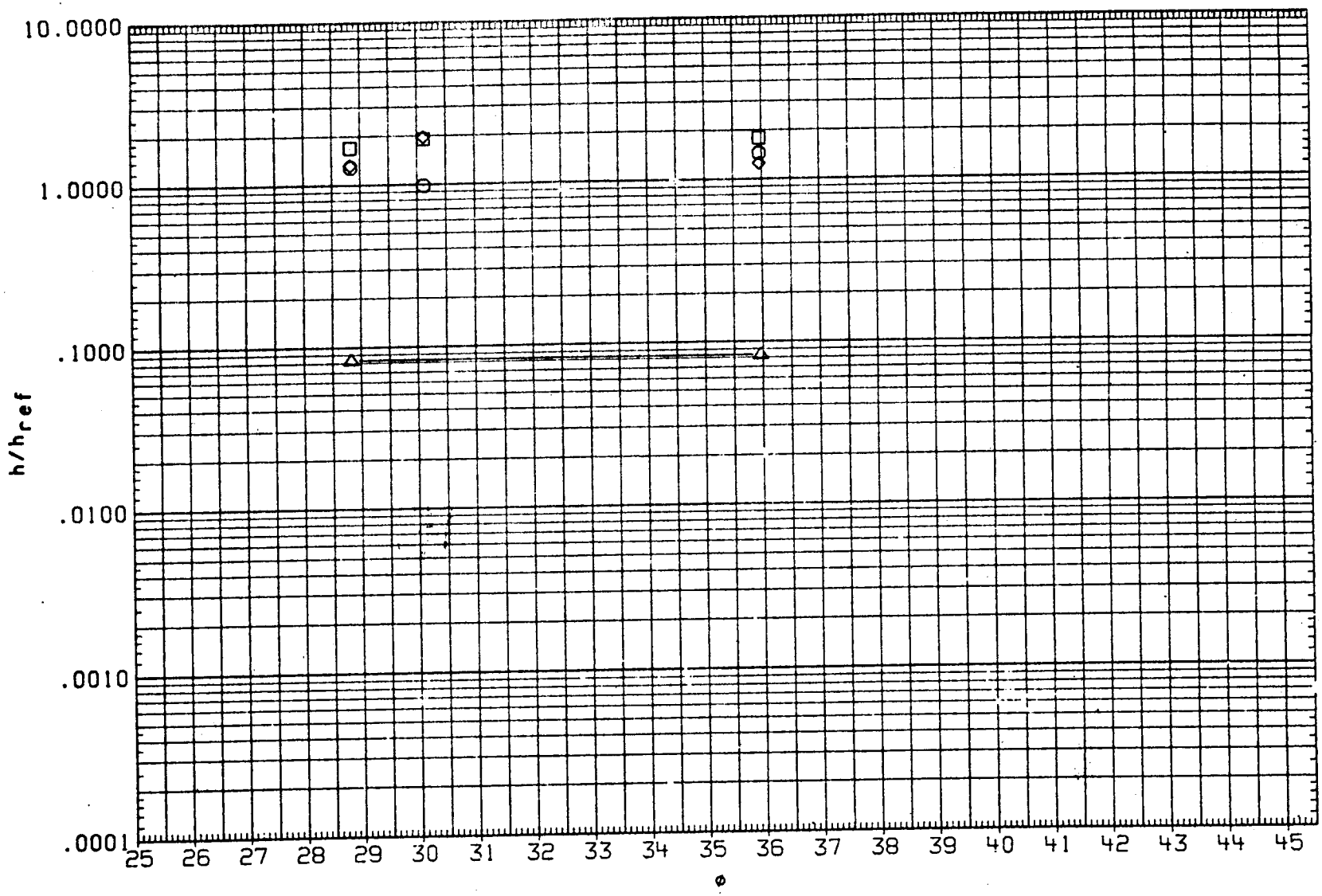

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = .900 X/L = .443 DATE 22 APR 78 PAGE 755

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

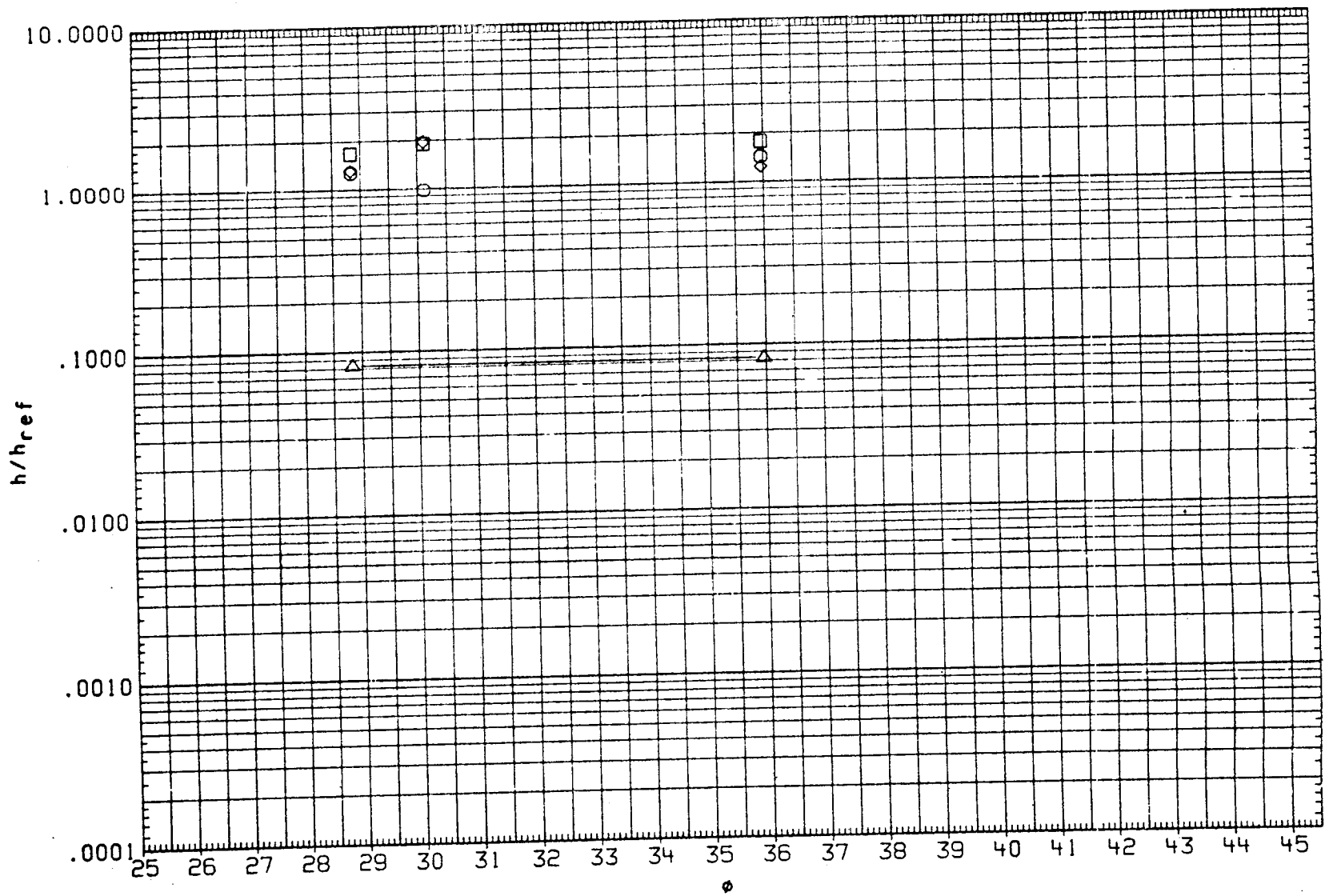

FIG. 39 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LO2 LINES

MACH = 5.250 HAW/HT = 1.000 X/L = .443 DATE 22 APR 78 PAGE 756

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

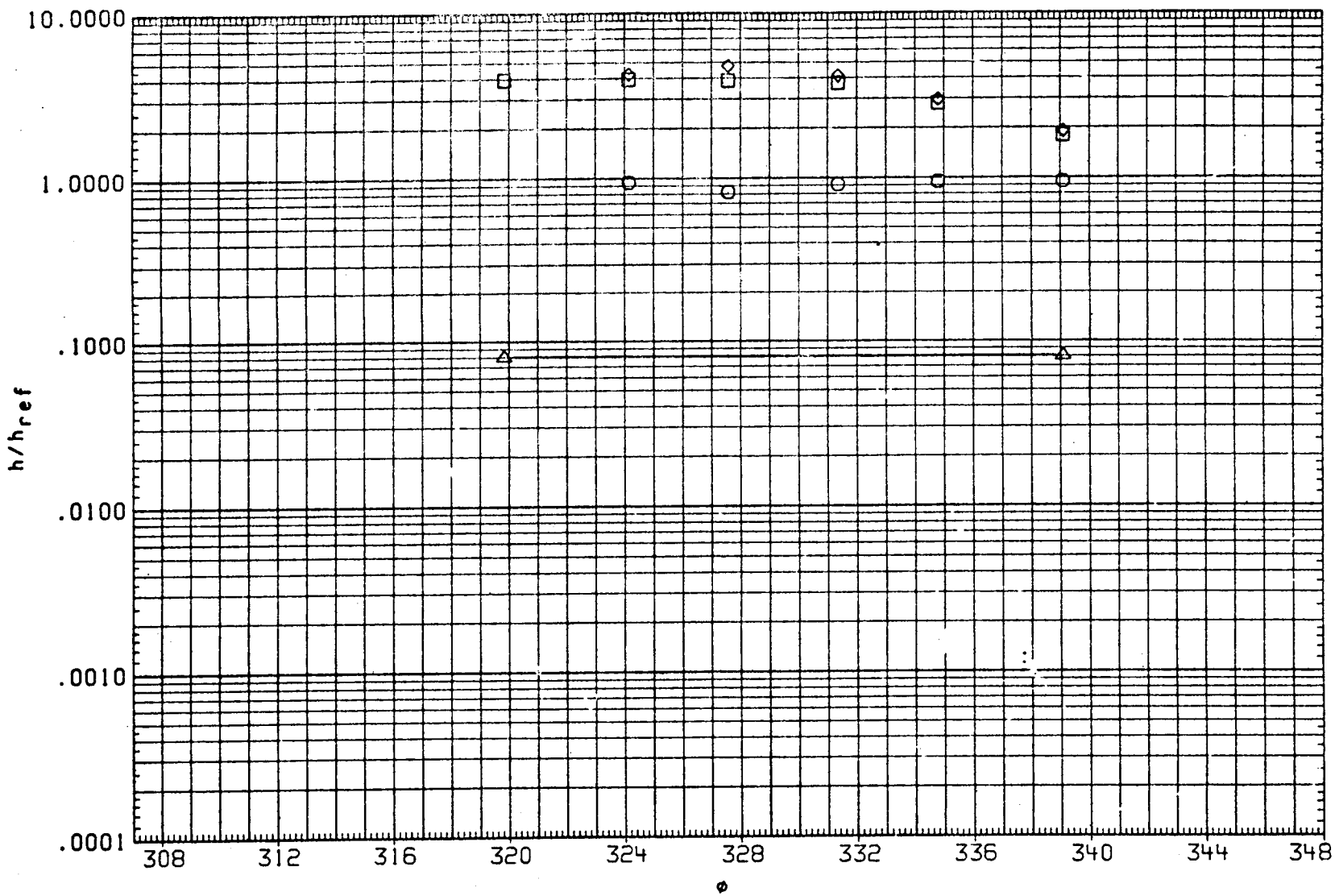

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .571 DATE 22 APR 78 PAGE 757

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

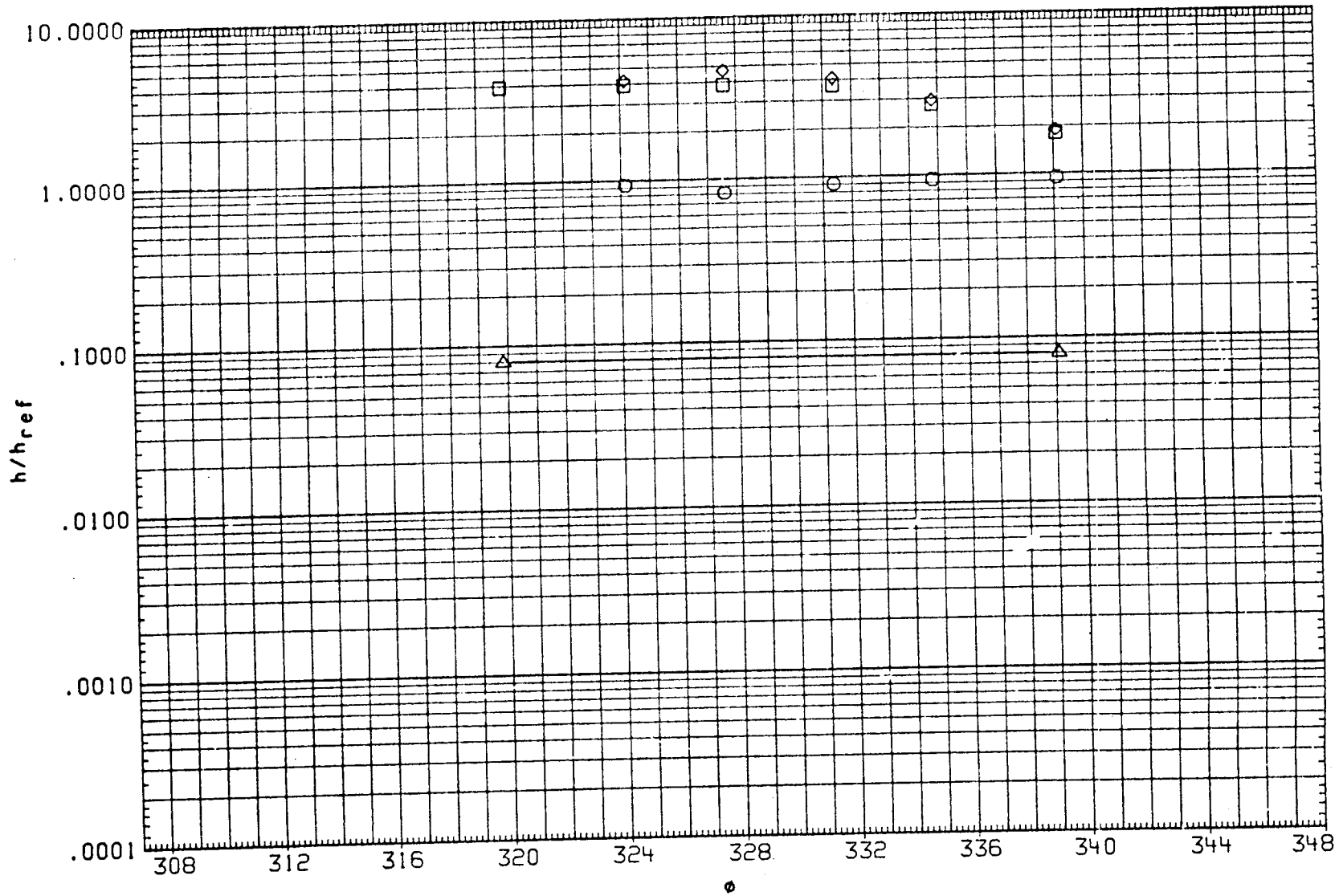

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .571 DATE 22 APR 78 PAGE 758

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

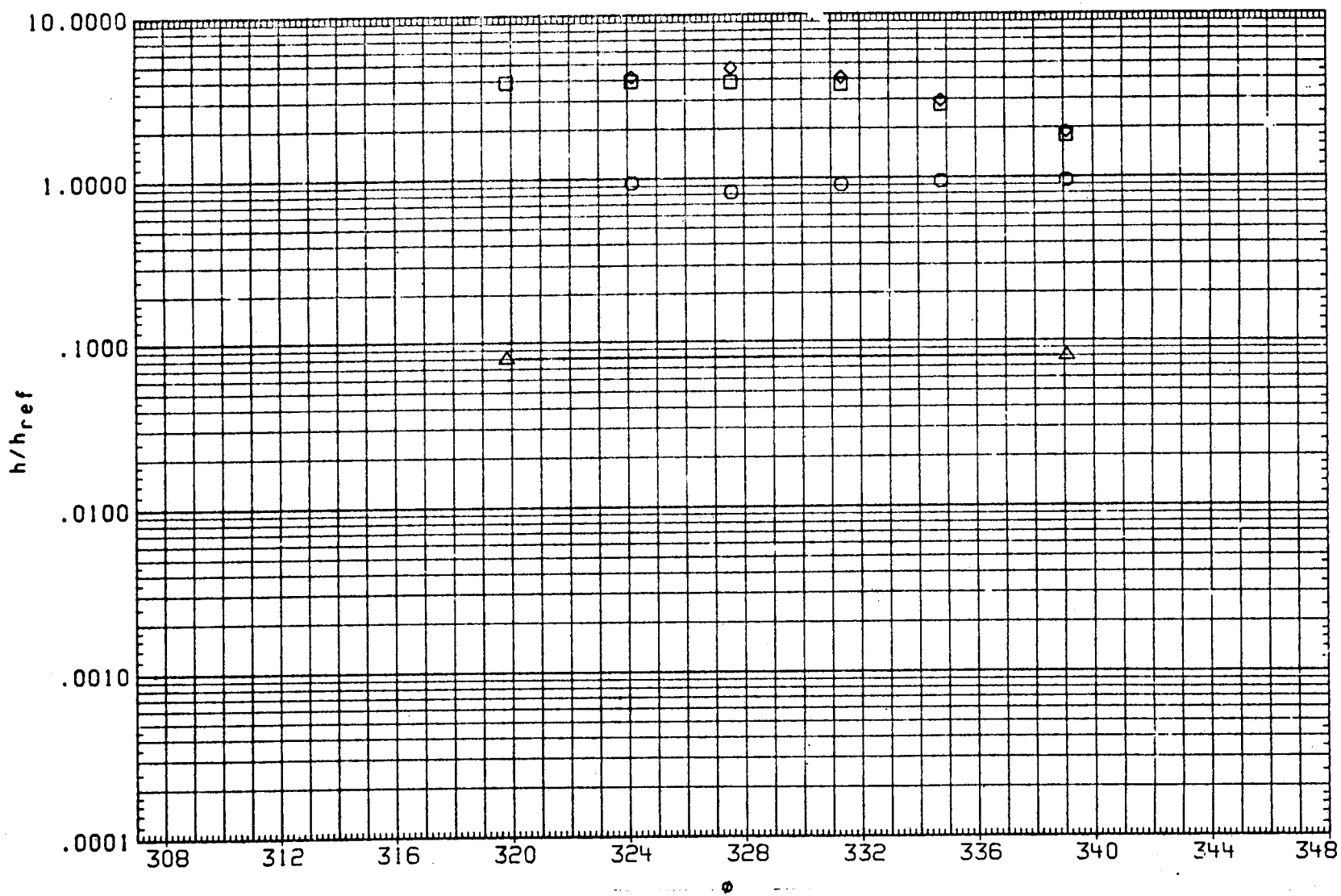

FIG. 40 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .571 DATE 22 APR 78 PAGE 759

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

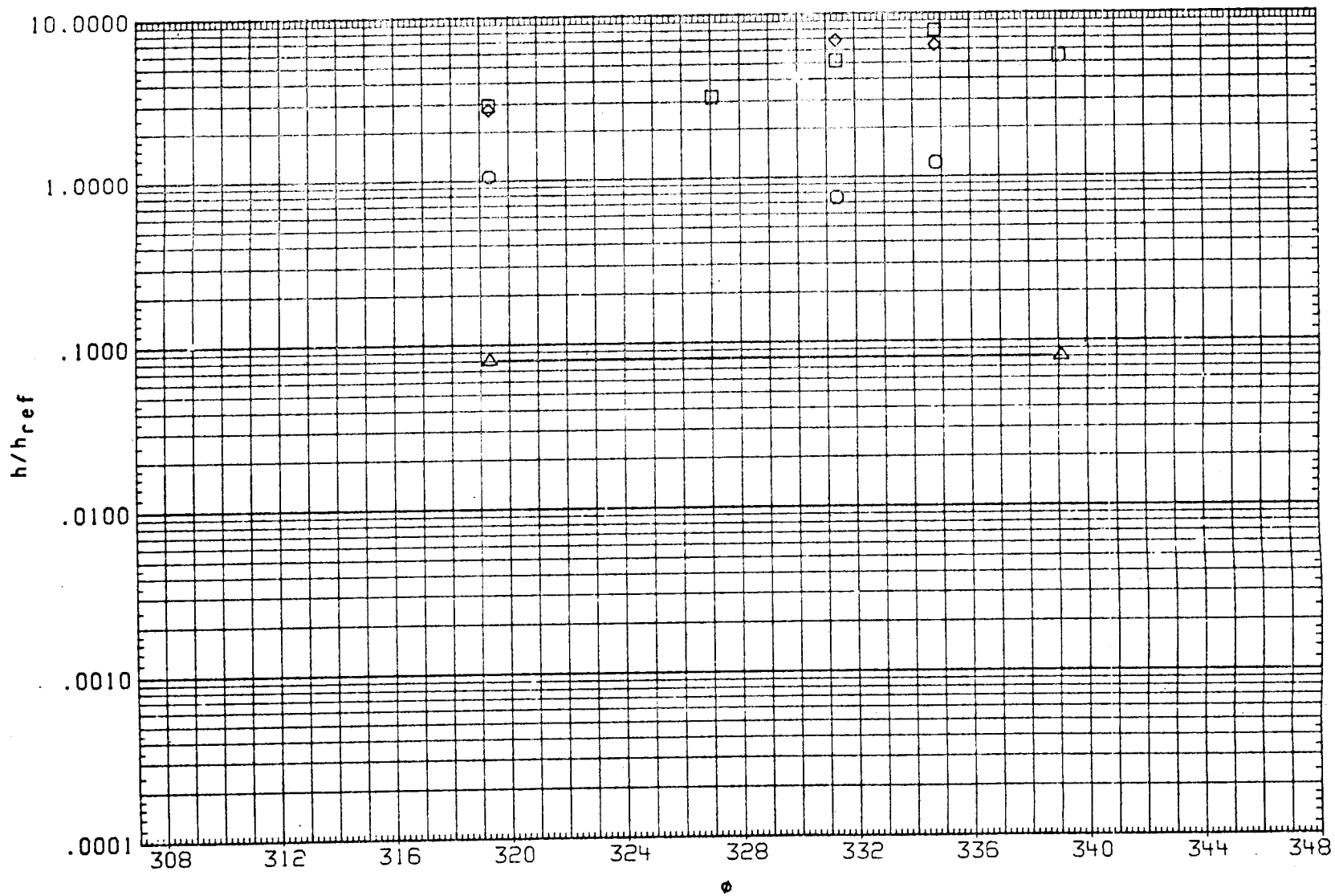

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .491 DATE 22 APR 78 PAGE 760

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

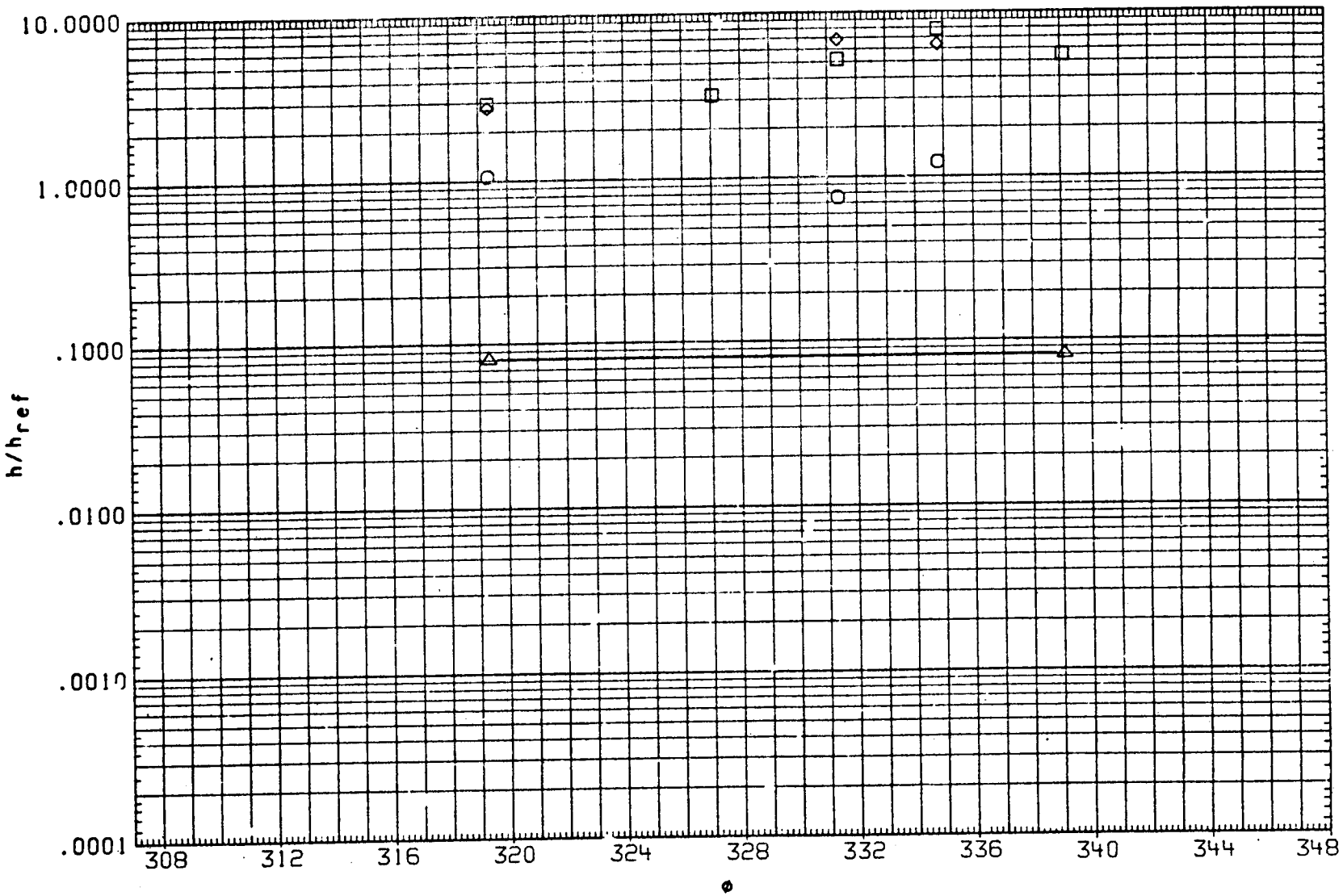

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .491 DATE 22 APR 78 PAGE 761

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

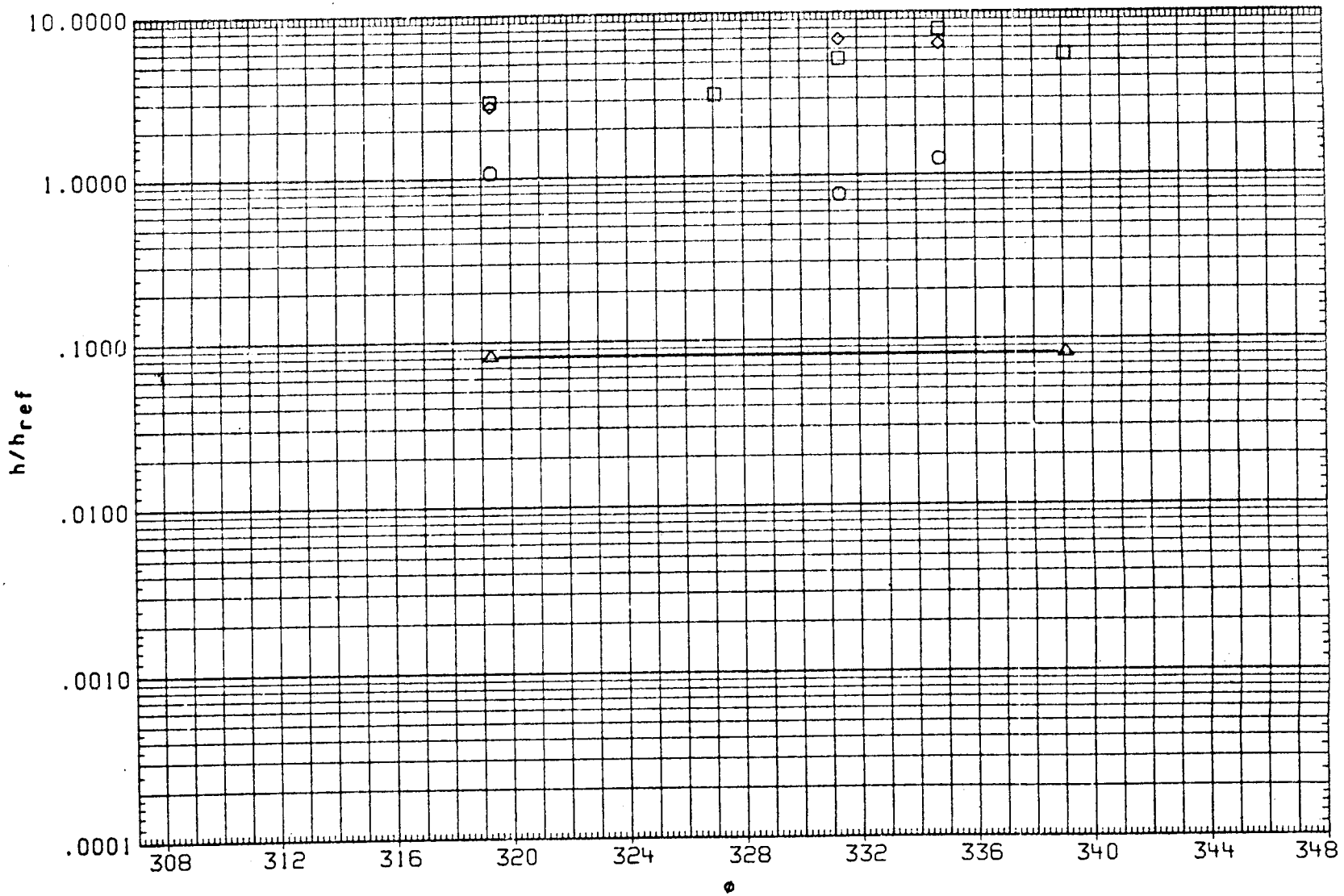

FIG. 41 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .491 DATE 22 APR 78 PAGE 762

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

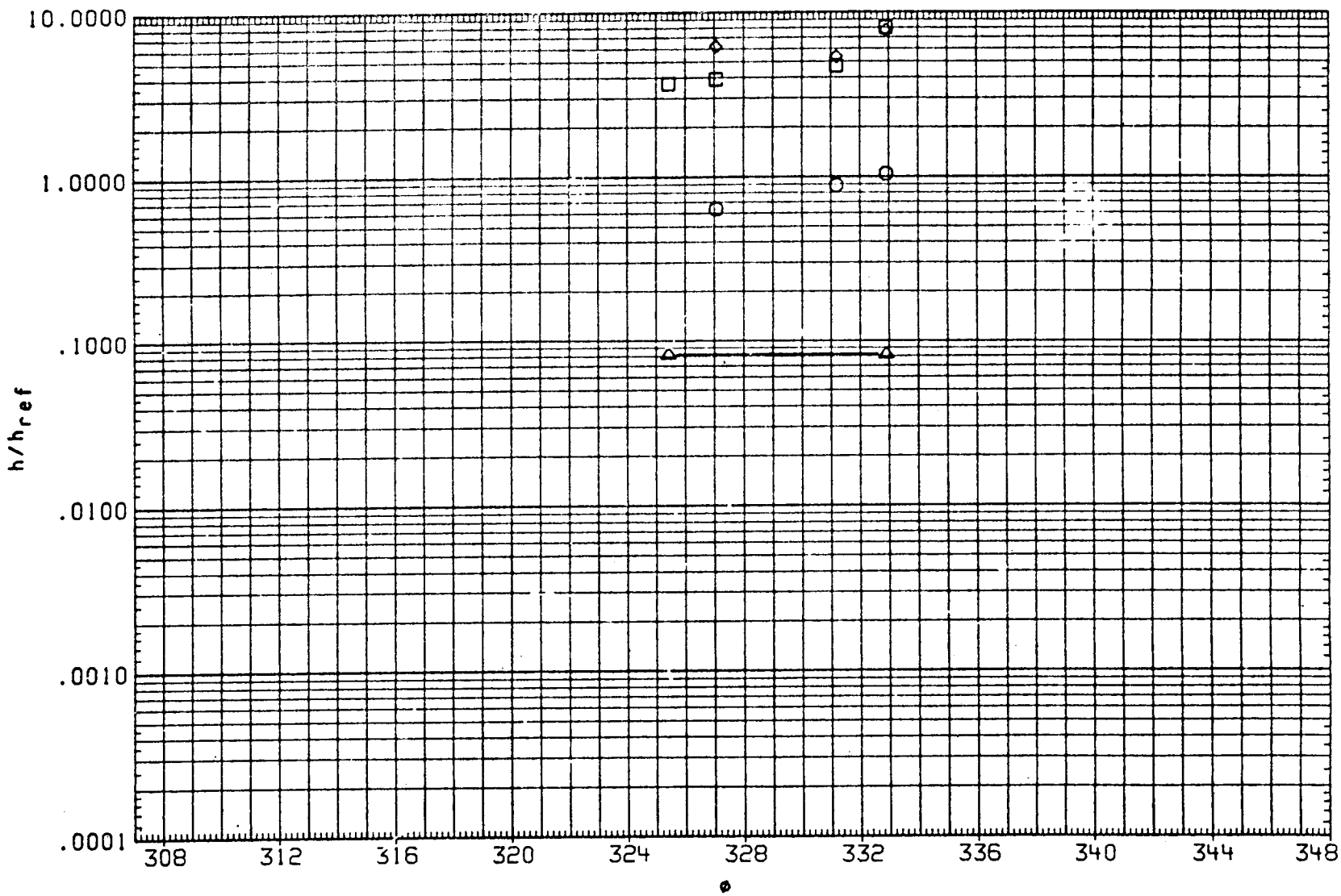

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .482 DATE 22 APR 78 PAGE 763

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20008)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A H1/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20008)	◇	IH51A (2B/5B)(3B/5B)(4D/5B) ET SURFACE	.000	.000	5.000	5.300
(U20058)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

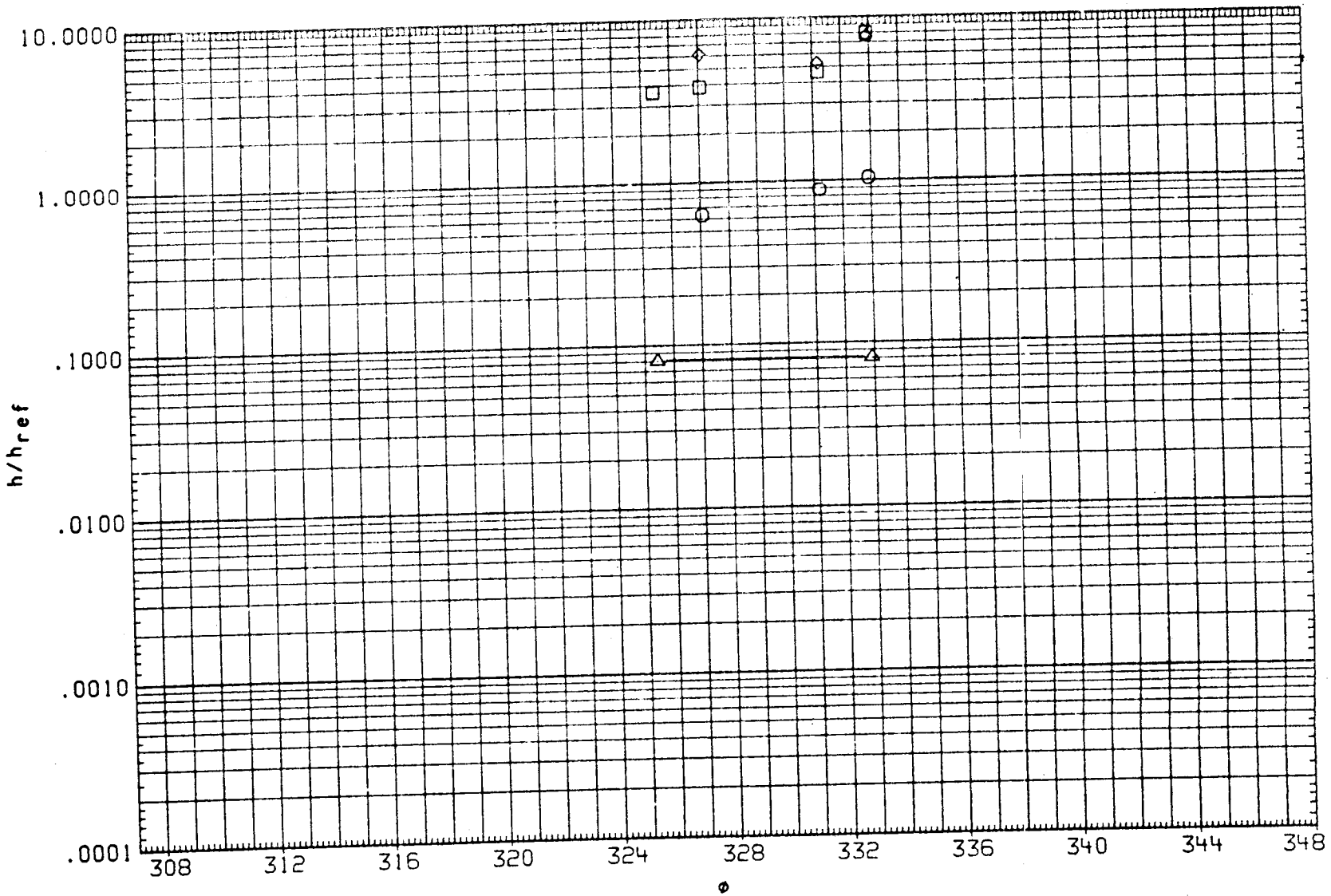

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .482 DATE 22 APR 78 PAGE 764

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(V2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

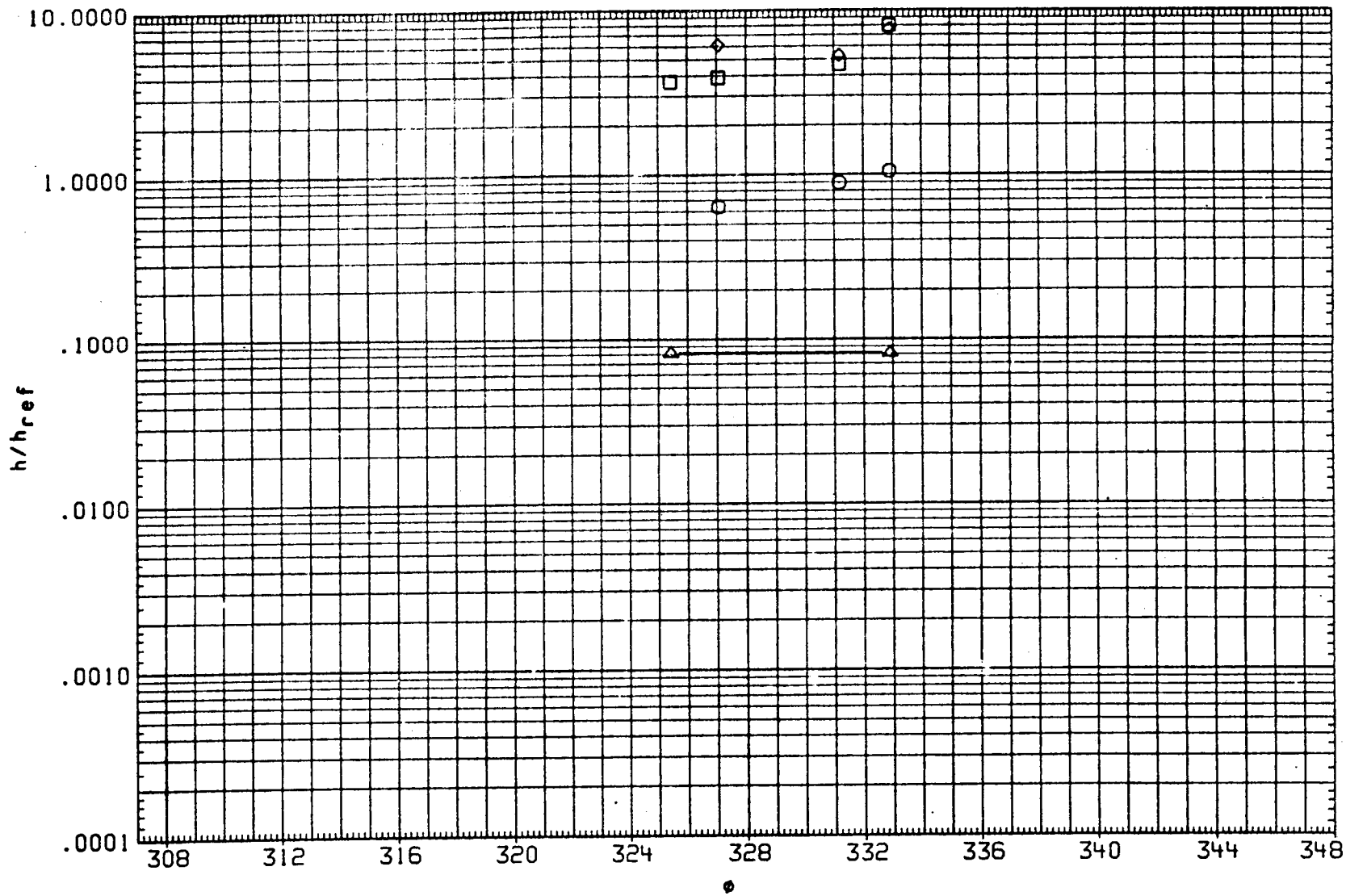

FIG. 42 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .482 DATE 22 APR 78 PAGE 765

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X20Q0B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20Q01)	□	IH51A H1/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N20Q0B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U20Q5B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

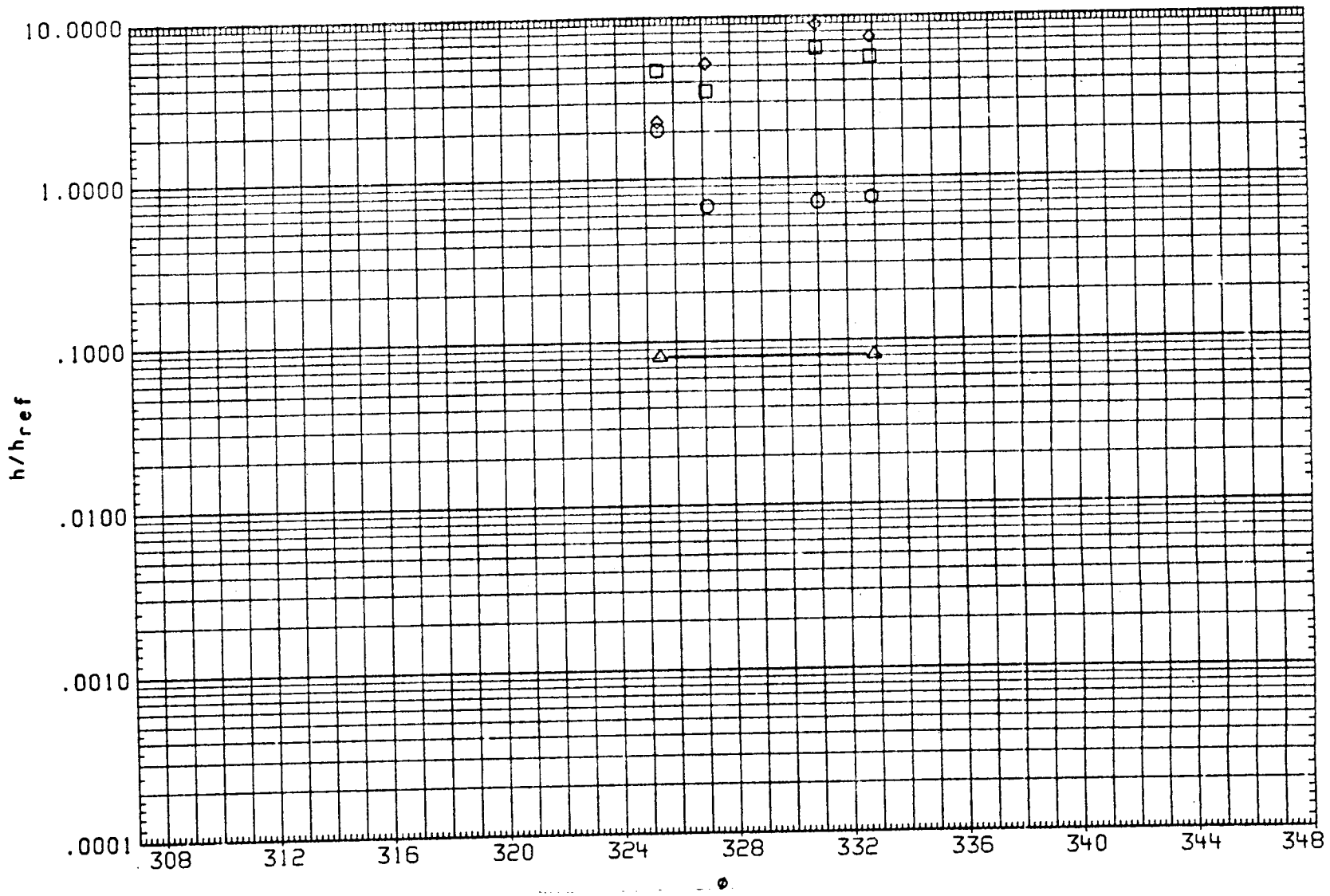

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .850 X/L = .473 DATE 22 APR 78 PAGE 766

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A20001)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

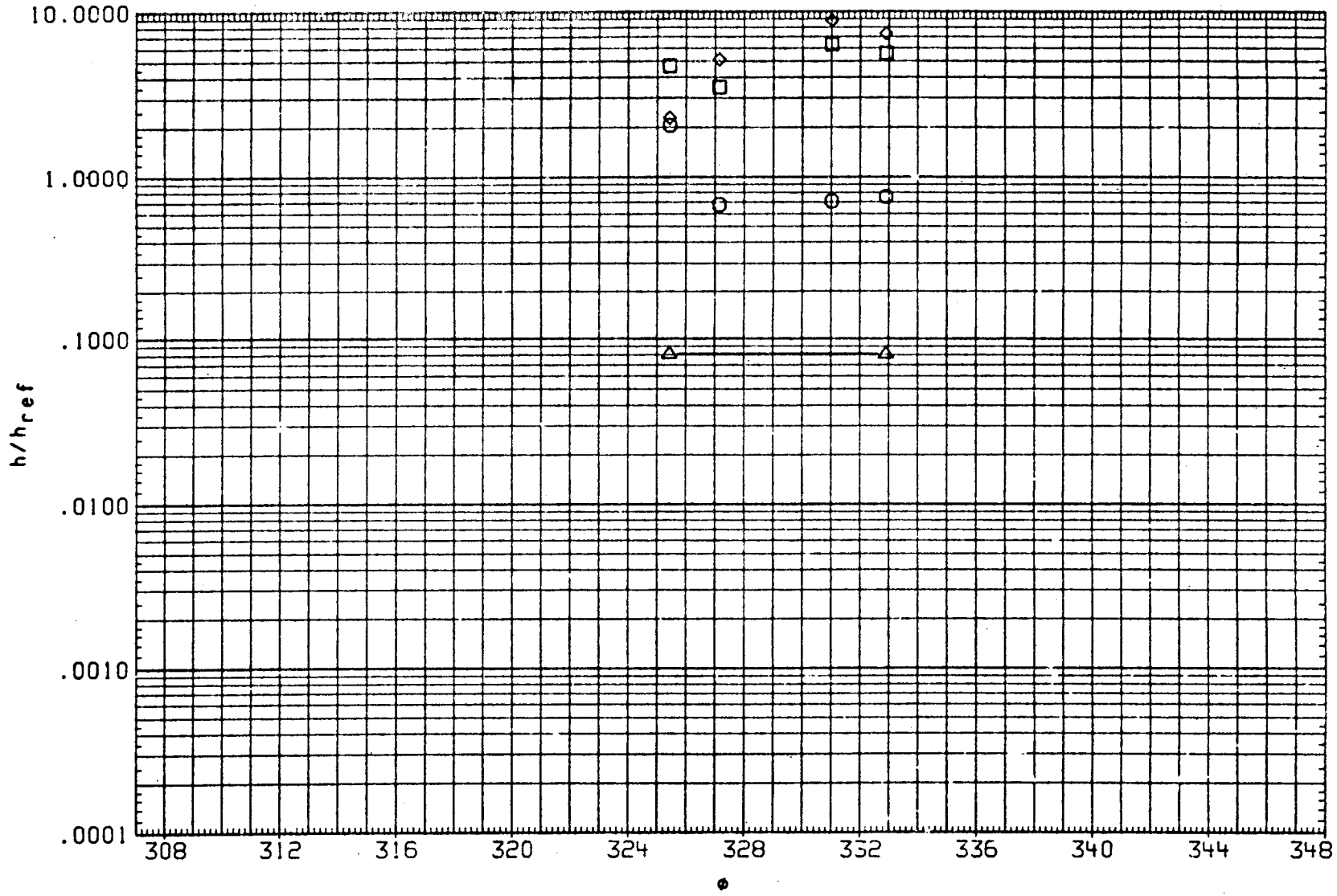

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = .900 X/L = .473 DATE 22 APR 78 PAGE 767

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA	RN/FT	MACH
(X2000B)	○	IH51A (1B/5B)/(2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(A2000I)	□	IH51A HI/HU T/TEST ET SURFACE 1B/5B	.000	.000	5.000	5.300
(N2000B)	◇	IH51A (2B/5B)(3B/5B)(4B/5B) ET SURFACE	.000	.000	5.000	5.300
(U2005B)	△	IH51A THEORY CONF 5B ET SURFACE HU/HREF	.000	.000	5.000	5.300

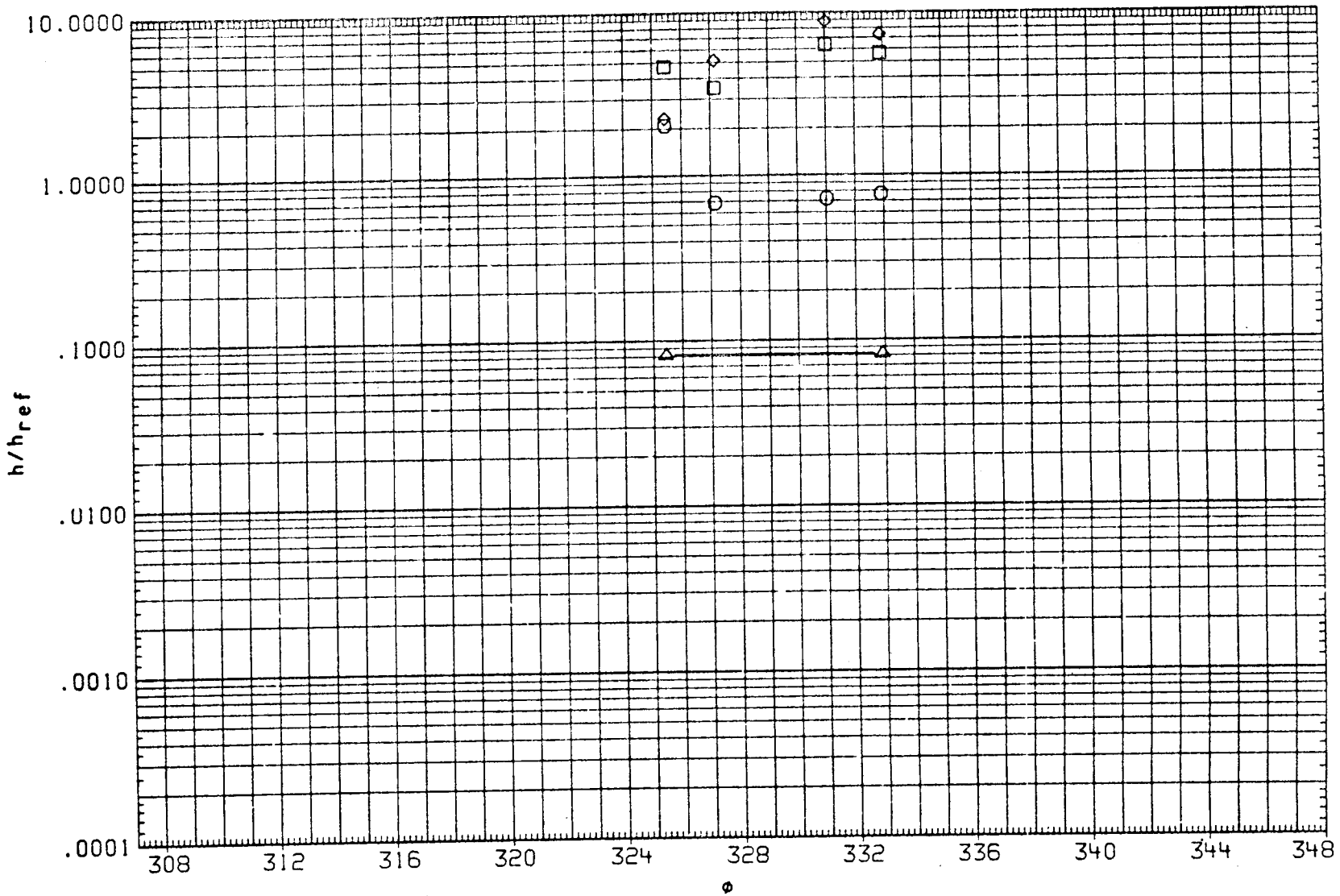

FIG. 43 HEATING DISTRIBUTION ON TRANSVERSE ACROSS LH2 LINE

MACH = 5.250 HAW/HT = 1.000 X/L = .473 DATE 22 APR 78 PAGE 768