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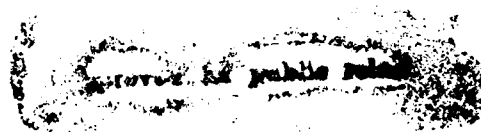


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MEASUREMENTS IN THE TURBULENT BOUNDARY LAYER AT CONSTANT PRESSURE IN SUBSONIC AND SUPERSONIC FLOW

Part I. Mean Flow

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The present Part I of this report is limited to a description of the mean flow as observed using Pitot-tube, Preston-tube, and floating-element instrumentation. Emphasis is on the use of similarity laws with Van Driest scaling and on the inference of the shearing-stress profile and the normal velocity component from the equations of mean motion. The experimental data are tabulated.

Part II of this work, published separately, is a description of the mean flow and Reynolds-stress field as observed in the same flows using a single-particle laser-Doppler velocimeter.

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Summary

Experiments have been carried out to test the accuracy of laser-Doppler instrumentation for measurement of Reynolds stresses in turbulent boundary layers in supersonic flow. Two facilities were used to study flow at constant pressure. In one facility, data were obtained on a flat plate at $M_e = 0.1$, with Re_θ up to 8,000. In the other, data were obtained on an adiabatic nozzle wall at $M_e = 0.6, 0.8, 1.0, 1.3$, and 2.2 , with $Re_\theta = 23,000$ and $40,000$. The present Part I of this report is limited to a description of the mean flow as observed using Pitot-tube, Preston-tube, and floating-element instrumentation. Emphasis is on the use of similarity laws with Van Driest scaling and on the inference of the shearing-stress profile and the normal velocity component from the equations of mean motion. The experimental data are tabulated.

Part II of this report, published separately, is a description of the mean flow and Reynolds-stress field as observed in the same flows using a single-particle laser-Doppler velocimeter.

Preface

This report represents the results of one phase of research carried out at the Jet Propulsion Laboratory of the California Institute of Technology, under Contract NAS 7-100. The work described in this report was supported by the United States Air Force, Office of Scientific Research, under Contract F 44620-75-C-0007; by the Arnold Engineering Development Center, under MIPR EY 7483-76-0003 and EY 7483-76-0009; and by the California Institute of Technology, President's Fund, under Grant PF-075. The Program Element No. was 65807F.

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Contents

Part I. Mean Flow

	Page
I. Introduction	7
II. Flow Facilities	
A. High-Speed Flow	9
B. Low-Speed Flow	10
III. Pitot-Pressure Data	
A. Instrumentation	11
B. Data Reduction	12
C. Results for the Mean Flow	13
D. Van Driest Scaling	14
E. Inferred Data for v/u and τ/τ_w	19
IV. Surface-Friction Data	
A. Floating-Element Balance	25
B. Preston Tube	28
C. Friction-Law Scaling	31
V. Discussion and Conclusions	33
References	35
Tables	40
Figures	44
Appendix: Compilation of Experimental Data.....	57
Nomenclature.....	216

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I. Introduction

The turbulent boundary layer at constant pressure has been studied experimentally and theoretically for many years. Collected experimental mean-velocity data for low-speed flow have been carefully reviewed by Coles (1962, Appendix A), who recommends taking the measurements by Wieghardt (1943) as the best available standard. A catalog and a comparable review of mean-velocity data for high-speed flow (including flow with pressure gradient) are presently being prepared for AGARD by Fernholz and Finley (1977). One method being used by Fernholz (1976) to organize the information in this AGARD catalog is recasting of the compressible-flow results into a form appropriate for incompressible flow. For this purpose, the wall-wake model for the mean-velocity profile (a model which has been thoroughly exercised for incompressible flow by Coles (1968)) and the mixing-length scaling proposed for compressible flow by Van Driest (1951) appear to be quite useful.

Measurements of Reynolds stresses in high-speed turbulent boundary layers are rare. For incompressible flow, the turbulent shearing stress can be measured directly, or it can be calculated from the distribution of mean velocity with the aid of well-established similarity laws. Good agreement between measured and calculated values, as in the case of the hot-wire measurements by Klebanoff (1954), helps to establish confidence in the extension of hot-wire methods to more complicated flows. Recent measurements by Johnson and Rose (1973), Yanta and Lee (1974), and Abbiss (1976) have attempted to extend this process to the use of laser-Doppler instrumentation in supersonic flow at Mach numbers in the range 1.5 to 3.0. However, a serious anomaly appears in the case of the turbulent shearing stress, defined as $-\rho u'v'$. The maximum value occurs much further from the wall than is reasonable for flow at constant

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pressure. The anomaly has been discussed by Sandborn (1974), who supports the conjecture by some of the authors cited that density fluctuations may contribute substantially to the turbulent stresses near the wall. This conjecture is in direct opposition to the conclusion by Morkovin (1961) that effects of density fluctuations should be small compared to effects of variations in mean density for Mach numbers up to 4 or 5.

The purpose of the present experiments is to obtain redundant data over a substantial range of Mach numbers ($M_e = 0.1$ to 2.2), in an effort to resolve the anomaly in turbulent shearing stress. Essentially the same range of Mach numbers has also been studied by Winter and Gaudet (1970), who used a Pitot tube to determine mean velocity and a floating-element balance to determine surface friction. However, no measurements were made of turbulent stresses.

The present measurements have sufficient redundancy to permit a realistic assessment of their accuracy. The primary instrumentation is a Pitot tube which traverses the boundary layer. In addition, surface-friction measurements are made using both a floating-element balance and a Preston tube. The mean-flow scaling suggested by Van Driest is applied to the data, to test the adequacy of a single similarity formulation for both compressible and incompressible flow, and the shearing-stress distribution is calculated as part of the analysis.

The results are discussed in Part I of this work. An Appendix contains a complete record of the experimental data in tabular and graphic form.

A laser-Doppler velocimeter has also been used to measure mean velocity and three components of Reynolds stress in the same flow. The results of the LDV studies will be reported by P. E. Dimotakis, D. J. Collins, and D. B. Lang in Part II of this work.

II. Flow Facilities

A. High-Speed Flow

Measurements were made in the ceiling boundary layer of the 20-inch wind tunnel at the Jet Propulsion Laboratory, at nominal free-stream Mach numbers M_e of 0.6, 0.8, 1.0, 1.3, and 2.2, at nominal Reynolds numbers Re_θ of 23,000 and 40,000. The JPL facility is a continuously operating, variable-density tunnel, with a test section 45.7 cm wide by 50.8 cm high. The top and bottom walls of the tunnel diverge slightly to compensate for boundary-layer growth.

For the present experiments, the region of uniform flow in the test section was extended approximately 150 cm beyond the end of the flexible nozzle, or 60 cm beyond the center of the schlieren windows, by installation of a pair of instrumented flat plates on the floor and ceiling of the tunnel. Particular care was taken to obtain a smooth junction between the plates and the nozzle wall.

From the experience, for example, of Liepmann and Ashkenas (1947), it has long been known that the experimental treatment of the downstream boundary condition is important at transonic speeds. The unsteady behavior often observed in transonic shock-wave boundary-layer interactions may be partly a consequence of unsteady flows generated in the diffuser. For the present experiments, stable flow at high subsonic free-stream Mach numbers was achieved by introducing a variable-thickness double-diamond airfoil choke in the diffuser.* The choke was oriented vertically in the diffuser, normal to the test plate, with the leading edge of the choke located 70 cm downstream from the balance station.

*The advice of H. Ashkenas during this development is much appreciated.

The point of maximum thickness was located 15 cm further downstream. Flow past the choke was relieved by expanding the diffuser doors by 7.3° on each side in order to maintain constant area at the minimum thickness setting. High-speed schlieren movies showed that this arrangement eliminated the upstream-running waves observed in previous experiments and provided a quiet environment in which to perform transonic boundary-layer experiments.

Local static pressure was measured at 82 static-pressure orifices located throughout the test section and diffuser. The measurements used the JPL multiport measuring system, which simultaneously recorded the stagnation temperature and pressure, the free-stream static pressure, and the pressure from two 0-15 psia Statham pressure transducers, each of which sequentially sampled 50 orifices.

Typical free-stream Mach-number distributions for the present experiments are shown in Fig. 1. There is no substantial pressure gradient over a distance of about 140 cm upstream and about 40 cm downstream from the balance station.

B. Low-Speed Flow

Additional measurements were made in the Merrill wind tunnel of the Graduate Aeronautical Laboratories at the California Institute of Technology, at a free-stream velocity of 37 m/sec. This tunnel is a continuously operating closed-return facility with the downstream end of the test section vented to ambient pressure. The test section is 115 cm wide by 82 cm high and has diverging walls to account for boundary-layer growth.

The test plate for these experiments was made from 1.9-cm thick plywood, surfaced on both sides with 1-mm thick formica to provide a smooth finish. The leading edge was elliptical, with a transition strip located immediately

downstream from the elliptical section. The horizontal plate spanned the test section and extended 244 cm downstream from the beginning of the test section. The plate was supported from the ceiling of the tunnel, and all measurements were made on the lower surface.

Twenty static pressure taps were provided on the surface of the plate. A Scanivalve was used to select the pressure to be read by a Barocel digital manometer. The resulting free-stream Mach-number distribution, shown in Fig. 2, indicates that pressure-gradient effects should be small.

III. Pitot-Pressure Data

A. Instrumentation

For the experiments at JPL, a Pitot-pressure probe could be introduced into the boundary layer through the ceiling of the tunnel at any one of the five axial stations listed in Table 1. The origin for the x-coordinate is the center of the floating-element friction balance, 11.3 cm downstream from the junction between the nozzle wall and the test plate. During the probe measurements, the balance was replaced by a blank port which was instrumented with static-pressure taps.

The Pitot-pressure probe was constructed from stainless steel hypodermic tubing. The probe tip was formed by flattening 0.127-cm diameter tubing to an oval measuring 0.0127 cm inside (in the direction normal to the plate), with the lip thickness honed to 0.003 cm. The center of the support stem was 5.08 cm downstream from the probe tip. The probe position, the Pitot pressure, the tunnel stagnation temperature, and the tunnel stagnation and static pressures were recorded by the data system.

For the experiments at CIT, two techniques were employed. Within the first 100 cm from the leading edge of the plate, Pitot measurements were made

using a seven-tube rake. Further downstream, Pitot measurements were made by traversing a small probe through the boundary layer, as in the high-speed experiments. The probe tip was flattened to an oval measuring 0.0203 cm inside (in the direction normal to the plate), with a lip thickness of 0.020 cm. Boundary-layer measurements were made at the stations listed in Table 2.

B. Data Reduction

For each Pitot-pressure profile, a change of slope in the pressure data was used to define the point of contact of the probe with the wall. No displacement correction was made. The free-stream static pressure for each profile was taken as the average static pressure in the tr section in the vicinity of the probe. The flow properties at the edge of the boundary layer were then computed using the average Pitot pressure well outside the boundary layer. Assuming constant static pressure, the local Mach number was computed either directly or through the normal shock relations, as appropriate.

The local stagnation temperature in the boundary layer was not measured. However, for the JPL experiments, the temperature measured by a thermocouple embedded in the surface-friction balance structure indicated that the flow was essentially adiabatic. Hence the temperature may be estimated from a variant of the adiabatic Crocco relation,*

*Equation (1) is often used in the reduction of experimental data, despite the fact that it does not conserve energy in adiabatic flow. The present data analysis assumes that p and M are measured exactly. Hence so are $T_o/T = 1 + (\gamma-1)M^2/2$, $u/(\gamma RT)^{1/2} = M$, and $\rho u^2 = \gamma p M^2$. If use of Eq. (1) introduces a local relative error of ϵ in T_o , the relative errors in T , u , ρ , and ρu are ϵ , $\epsilon/2$, $-\epsilon$, and $-\epsilon/2$, respectively.

$$\frac{T}{T_e} = \frac{\rho_e}{\rho} = 1 + r \left(\frac{\gamma-1}{2} \right) M_e^2 \left[1 - \left(\frac{u}{u_e} \right)^2 \right] = \frac{1 + r \left(\frac{\gamma-1}{2} \right) M_e^2}{1 + r \left(\frac{\gamma-1}{2} \right) M^2} \quad (1)$$

where the recovery factor r is defined by

$$r = \frac{T_w - T_e}{T_{o_e} - T_e} \quad (2)$$

and is assigned the constant value $r = 0.885$.

C. Results for the Mean Flow

Typical mean-velocity profiles measured at the balance station (JPL-4) for nominal Reynolds numbers Re_θ of 23,000 and 40,000 are presented in Figs. 3 and 4. Values for viscosity are obtained from the Sutherland viscosity law,

$$\frac{\mu}{\mu_r} = \left(\frac{T_r + S}{T + S} \right) \left(\frac{T}{T_r} \right)^{3/2} \quad (3)$$

where $T_r = 291.75^\circ\text{K}$, $S = 110^\circ\text{K}$, and $\mu_r = 1.827 \times 10^{-4}$ gm/cm-sec. One profile at $Re_\theta = 8000$ from the low-speed experiments (CIT-9) is also included in the figures for comparison. A complete data tabulation appears in the Appendix.

Integral thicknesses for the boundary layer are computed from

$$\delta^* = \int_0^\delta \left(1 - \frac{\rho u}{\rho_e u_e} \right) dy \quad (4)$$

and

$$\theta = \int_0^\delta \frac{\rho u}{\rho_e u_e} \left(1 - \frac{u}{u_e} \right) dy \quad (5)$$

The boundary-layer form parameter H is defined as

$$H = \frac{\delta^*}{\theta} \quad (6)$$

For two-dimensional mean flow, the surface friction can be obtained from von Kármán's momentum-integral equation,

$$C_f = 2 \frac{d\theta}{dx} - 2 \left(2 + H - M_e^2 \right) \frac{\rho}{\sqrt{M_e}^2} \frac{1}{P} \frac{dP}{dx} \quad (7)$$

The accuracy of Eq. (7) is expected to be low, primarily because of difficulty in differentiating experimental data for $\theta(x)$ and $u_e(x)$ (see Table A3 of the Appendix). For the present measurements, the second term in Eq. (7) is at most 3 percent of the first term, and is uncertain by a comparable amount. Hence this term has been discarded. Values for $C_f = 2 d\theta/dx$ are listed in Table 3, which compares values obtained for C_f by this and several other methods.

D. Van Driest Scaling

The compressibility transformation proposed by Van Driest (1951) uses the mixing-length expression

$$\tau = \tau_w = \rho l^2 \left(\frac{du}{dy} \right)^2 \quad (8)$$

together with Prandtl's hypothesis

$$l = \kappa y \quad (9)$$

to obtain

$$\rho^{1/2} \frac{du}{dy} = \frac{\tau_w^{1/2}}{\kappa y} \quad (10)$$

The appearance of the combination $(\rho^{1/2} du)$ suggests that the velocity u should be replaced by an effective velocity u^* defined by

$$u^* = \int_0^u \left(\frac{\rho}{\rho^*} \right)^{1/2} du \quad (11)$$

where ρ^* is a constant reference density included for dimensional reasons.

Integration of the mixing-length equation (8) then gives

$$u^* = \frac{1}{\kappa} \left(\frac{\tau_w}{\rho^*} \right)^{1/2} \ln \left(\frac{y}{y^*} \right) + \text{constant} \quad (12)$$

where y^* is a constant reference length also included for dimensional reasons.

Equation (12) is typical of mixing-length formulas in that it is at best an unclear description of a small fragment of the mean-velocity profile. The choice for ρ^* and y^* and the value of the constant in Eq. (12) are customarily resolved by emphasizing quantities evaluated at the wall. For example, the definition (11) is readily integrated in closed form for the energy integral (1). The result is the Van Driest scaling for velocity in the case of adiabatic flow,

$$\kappa \left(\frac{\rho^*}{\rho_w} \right)^{1/2} \frac{u^*}{u_e} = \sin^{-1} \left(\kappa \frac{u}{u_e} \right) \quad (13)$$

where m , defined by

$$m^2 = \frac{T_w - T_e}{T_w} = \frac{r \left(\frac{\gamma-1}{2} \right) M_e^2}{1 + r \left(\frac{\gamma-1}{2} \right) M_e^2} \quad (14)$$

obviously cannot exceed unity.

The form of Eqs. (12) and (13) suggests, but does not require, choosing $\rho^* = \rho_w$ and $y^* = v_w/u_\tau$, where

$$u_\tau = \left(\frac{\tau_w}{\rho_w} \right)^{1/2} \quad (15)$$

is the friction velocity. The choice $y^* = v_w/u_\tau$, in particular, is necessary if the functional dependence of u on y in Eq. (12) is to hold at the wall. Such reasoning, however, is not part of the mixing-length argument, which applies only outside the sublayer. Given these choices, then in a usual notation Eq. (12) becomes

$$u^+ = \frac{1}{\kappa} \ln y^+ + c \quad (16)$$

where

$$u^+ = \frac{u^*}{u_\tau}, \quad y^+ = \frac{y u_\tau}{v_w} \quad (17)$$

and

$$m \frac{u^*}{u_e} = \sin^{-1} \left(m \frac{u}{u_e} \right) \quad (18)$$

The choice for ρ^* , u_τ^* , and y^* is important because it controls the dependence of κ and c on M_e and γ . What is wanted is the particular choice which minimizes this dependence. There is substantial evidence, for example, in papers by Fenter and Stalmach (1957), Rotta (1960), Moore and Harkness (1964), Maise and McDonald (1968), Michel, Quemart, and Elena (1969), Danberg (1971), Squire (1971), and Fernholz (1976), that use of wall quantities as in Eqs. (16)-(18) is very nearly optimum from this point of view, at least for adiabatic flow at constant pressure at Mach numbers up to 5.

Most of these authors have also gone beyond the mixing-length argument to consider a more general fit to a defect law or to a combined wall-wake formulation of the mean profile, in the manner adopted by Coles (1968) for low-speed flow; i.e., a fit to

$$u^+ = \frac{1}{\kappa} \ln y^+ + c + 2 \frac{\Pi}{\kappa} \sin^2 Y, \quad (19)$$

where

$$Y = \frac{\Pi}{2} \frac{y}{\delta}. \quad (20)$$

Such a fit has been carried out for the present measurements, with quite satisfactory results. The constants κ and c are given their incompressible values, $\kappa = 0.41$ and $c = 5.0$. The parameters u_τ , Π , and δ are then determined by a two-parameter least-squares fit of the experimental data to Eq. (19), taking as a third condition the constraint imposed by the local friction law,

$$u_e^+ = \frac{1}{\kappa} \ln \delta^+ + c + 2 \frac{\Pi}{\kappa}. \quad (21)$$

As proposed by Coles (1968), data near the wall and near the free stream are excluded. For the JPL experiments, data are retained for $y^+ \geq 200$ and $y/\delta \leq 0.95$. For the CIT experiments, data are retained for $y^+ \geq 80$ and $y/\delta \leq 0.95$. Typical examples of the resulting fit are shown in Fig. 5. The values obtained for δ are indicated by tick marks in Figs. 3 and 4; they correspond to values for u/u_e of 0.996 to 0.998.

The quality of Van Driest scaling, when universal constant values are assumed for κ and c , can be tested in different ways. One test is to compare values inferred for the local friction coefficient

$$C_f = 2 \frac{\rho_w}{\rho_e} \left(\frac{u_\tau}{u_e} \right)^2, \quad (22)$$

with values obtained by other means. Table 3 makes this comparison. If the floating-element data are taken as a standard, the conclusion for the present experiments is that the profile fit gives values for C_f which are slightly high. The discrepancy is small at subsonic speeds, but increases to about 6 percent at $M_e = 2.2$.

A second test is to compare values obtained for the profile parameter Π with corresponding values for low-speed flow, as defined by the low-speed data of Wieghardt (1943). This comparison is made in Fig. 6.* The main conclusion is that there is very little effect of compressibility on the shape of the mean-velocity profile in Van Driest coordinates, at least for

* The particular choice of $C_f Re_\theta$ for the abscissa in Fig. 6 (Coles 1962) is not important for these data, although it might become important if the figure included data at higher Mach numbers and lower Reynolds numbers.

Mach numbers up to 2.2. This conclusion is supported by the inclusion of a few representative points from the work by Winter and Gaudet (1970). There may be a tendency for Π to decrease slightly at large Reynolds numbers, as noted for low-speed flow by Coles (1962, Appendix A).

E. Inferred Data for v/u and τ/τ_w

The distributions of normal velocity and shearing stress through the boundary layer are of central interest in these experiments because of the direct comparison with LDV measurements to be made in Part II of this report. From the equation of continuity,

$$\rho v = - \int_0^y \frac{\partial \rho u}{\partial x} dy, \quad (23)$$

and from the equation for conservation of momentum in flow at constant pressure,

$$\tau - \tau_w = \rho uv + \int_0^y \frac{\partial \rho u^2}{\partial x} dy. \quad (24)$$

It is desired to evaluate the integrals in Eqs. (23) and (24) for the Van Driest description of the mean velocity profile with similarity, Eq. (19). A useful first step is a change of variable. Put

$$m \frac{u^*}{u_e} = U, \quad (25)$$

so that Eq. (18) becomes

$$m \frac{u}{u_e} = \sin U. \quad (26)$$

The corresponding form of Eq. (1) is

$$\frac{\rho_e}{\rho} = \frac{T_w}{T_e} \cos^2 U \quad (27)$$

These may be substituted in Eqs. (23) and (24) to obtain

$$\rho v = \rho_e u_e \frac{T_e}{T_w} \frac{d\delta}{dx} P \quad (28)$$

and

$$\tau = \tau_w - \rho_e u_e^2 \frac{T_e}{T_w} \frac{d\delta}{dx} \left(2Q - \frac{u}{u_e} P \right) \quad (29)$$

where the quantities denoted by P and Q are the definite integrals

$$\frac{d\delta}{dx} P = - \frac{1}{m} \int_0^y \frac{(1 + \sin^2 U)}{\cos^3 U} \frac{\partial U}{\partial x} dy \quad (30)$$

and

$$\frac{d\delta}{dx} Q = - \frac{1}{m^2} \int_0^y \frac{\sin U}{\cos^3 U} \frac{\partial U}{\partial x} dy \quad (31)$$

Note that $d\delta/dx$ is a phantom factor in these expressions. If Eqs. (28)

and (29) are evaluated at the edge of the boundary layer, where $\tau = 0$,

$\rho = \rho_e$, $u = u_e$, and $v = v_e$, the result is

$$\frac{v_e}{u_e} = \frac{T_e}{T_w} \frac{d\delta}{dx} P_e = \frac{d\delta^*}{dx} \quad (32)$$

and

$$\frac{\tau_w}{\rho_e u_e^2} = \frac{T_e}{T_w} \frac{d\delta}{dx} (2 Q_e - P_e) = \frac{d\theta}{dx} \quad (33)$$

It follows that

$$\frac{d\delta}{dx} P_e = \frac{T_w}{T_e} \frac{d\delta^*}{dx} \quad (34)$$

and that

$$\frac{d\delta}{dx} Q_e = \frac{1}{2} \frac{T_w}{T_e} \frac{d}{dx} (\delta^* + \theta) \quad (35)$$

Given $U(x,y)$, the most convenient form for calculation is probably the normalized form

$$\frac{v}{v_e} = \frac{\rho_e}{\rho} \frac{P}{P_e} \quad (36)$$

and

$$\frac{\tau}{\tau_w} = 1 - \frac{(2 Q - \frac{u}{u_e} P)}{(2 Q_e - P_e)} \quad (37)$$

To undo the normalization in Eq. (37), a value must be specified for $\tau_w/\rho_e u_e^2$; i.e., for C_f . The derivative $d\delta/dx$ may then be calculated from Eq. (33) and inserted in Eq. (32) to obtain a value for v_e/u_e . This value can be used in turn to undo the normalization in Eq. (36), with the result

$$\frac{v}{u} = \frac{\tau_w}{\rho_e u_e^2} \frac{\rho_e u_e}{\rho u} \frac{P}{(2 Q_e - P_e)} \quad (38)$$

The analysis so far involves only the formalism of Van Driest scaling, inasmuch as the function $U(x, y)$ has not been specified. For purposes of curve fitting, this function is defined by Eq. (19) outside the sublayer. Other authors, notably Maise and McDonald (1968) have also made calculations equivalent to using Eq. (19) in Eq. (29) to obtain the distribution of τ/τ_w . However, for accurate evaluation of the integrals P and Q near the wall, both U and $\partial U/\partial x$ need to be more accurately defined in the sublayer. We therefore revise Eq. (19) to read

$$u^+ = \frac{1}{m} \frac{u_e}{u_\tau} U = f(y^+) + 2 \frac{\Pi}{\kappa} \sin^2 Y, \quad (39)$$

and we describe the flow near the wall by an implicit formula for $f(y^+)$ proposed by Spalding (1961) and independently by Kleinstein (1967),

$$y^+ = f + e^{-\kappa f} \left[e^{\kappa f} - 1 - (\kappa f) - \frac{(\kappa f)^2}{2} - \frac{(\kappa f)^3}{6} \right] \quad (40)$$

This formula has the proper behavior near the wall, where $f = y^+ + O(y^+)^4$, and also outside the sublayer, because for $(\kappa f) \gg 1$ Eq. (40) reduces to Eq. (16). It is Eq. (40) which is plotted in the sublayer region in Fig. 5.

For Π , u_e and m constant, differentiation of Eq. (39) gives

$$\frac{1}{m} \frac{u_e}{u_\tau} \frac{\partial U}{\partial x} = \left[u^+ + y^+ f'(y^+) \right] \frac{1}{u_\tau} \frac{du_\tau}{dx} - 2 \frac{\Pi}{\kappa} Y \sin(2Y) \frac{1}{\delta} \frac{d\delta}{dx} \quad (41)$$

where, from Eq. (40),

$$\frac{1}{f'(y^+)} = 1 + \kappa e^{-\kappa c} \left[e^{\kappa f} - 1 - (\kappa f) - \frac{(\kappa f)^2}{2} \right] . \quad (42)$$

The derivative du_τ/dx in Eq. (41) can be eliminated by noting from Eq. (21) that

$$\frac{1}{\delta} \frac{d\delta}{dx} = - (1 + \kappa u_e^+) \frac{1}{u_\tau} \frac{du_\tau}{dx} . \quad (43)$$

Consequently, the integrals P and Q may be written

$$P = \frac{1}{\delta} \frac{u_\tau}{u_e} \int_0^y \left(\frac{1 + \sin^2 U}{\cos^3 U} \right) \left[\frac{(u^+ + y^+ f')}{(\kappa u_e^+ + 1)} + 2 \Pi Y \sin(2Y) \right] dy , \quad (44)$$

and

$$Q = \frac{1}{m\delta} \frac{u_\tau}{u_e} \int_0^y \left(\frac{\sin U}{\cos^3 U} \right) \left[\frac{(u^+ + y^+ f')}{(\kappa u_e^+ + 1)} + 2 \Pi Y \sin(2Y) \right] dy . \quad (45)$$

The integrals P and Q are readily determined for a given profile once the parameters u_τ , Π , and δ are specified. For convenience of tabulation, we use experimental values for y and we determine y^+ from (17), Y from (20), U from (25), u^+ from (39), and f and f' by interpolation in (40) and (42), respectively. Thus the measured data influence the calculations only indirectly, through the fit which determines u_τ , Π , and δ .

Figures 7 and 8 show typical distributions for v/u and τ/τ_w calculated by this method, using profile parameters taken from the fit described in Section III-D. From these figures it is clear that both

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quantities scale with outer variables, and that in normalized form they are relatively insensitive to changes in Mach number and Reynolds number.

Several authors, including Meier and Rotta (1970), Bushnell and Morris (1971), Horstman and Owen (1972), and Sturek (1973), have used a different and less structured method for calculating τ/τ_w in flow at constant pressure. Instead of wall-wake similarity with Van Driest scaling, the basic assumption is that u/u_e and ρ/ρ_e are functions only of y/δ or y/θ . In the former case, the problem of defining δ must be faced at the outset. In the latter case, this problem can be postponed. For generality, we take the independent variable as y/L . Then Eq. (28) is replaced by

$$v = u \frac{dL}{dx} \left(\frac{y}{L} - \frac{\rho_e u_e}{\rho u} \int_0^{y/L} \frac{\rho u}{\rho_e u_e} d \frac{y}{L} \right), \quad (46)$$

and Eq. (29) is replaced by

$$\tau = \tau_w - \rho_e u_e^2 \frac{dL}{dx} \left(\frac{u}{u_e} \int_0^{y/L} \frac{\rho u}{\rho_e u_e} d \frac{y}{L} - \int_0^{y/L} \frac{\rho u^2}{\rho_e u_e^2} d \frac{y}{L} \right). \quad (47)$$

When the integrals extend to the free stream, these become

$$v_e = u_e \frac{\delta^*}{L} \frac{dL}{dx}, \quad (48)$$

and

$$\tau_w = \rho_e u_e^2 \frac{\theta}{L} \frac{dL}{dx}. \quad (49)$$

The last two equations are clearly not compatible if L is the same for both. To satisfy the condition $v_e/u_e = d\delta^*/dx$, it is necessary to take $L = \delta^*$. To satisfy the condition $\tau_w/\rho_e u_e^2 = d\theta/dx$, it is necessary to take $L = \theta$. In neither case is $L = \delta$ a satisfactory choice.

To illustrate the problem, some typical results according to these equations, with $L = \theta$, are compared in Figs. 9 and 10 to earlier results based on Eqs. (44) and (45). Experimental points now have a direct influence on the calculation, because they define the functions to be integrated. The distributions in the figures are therefore properly rounded in the vicinity of the boundary-layer edge, avoiding the corner which is present in the earlier results. There is a slight problem with Eqs. (46) and (47) at small values of y/θ , where the experimental values of M/M_e , u/u_e , and ρ/ρ_e are all larger (perhaps because of probe interference) than the values associated with the profile fit. The integrals thus become permanently biased during the passage through small values of y . However, the main source of the discrepancy in v/u outside the boundary layer is the fact that Eq. (48) requires $v_e/u_e = (\delta^*/\theta)d\theta/dx$, rather than the correct value $d\delta^*/dx$. When the difference $\theta d\theta/dx$ is estimated independently, using the tabulated material of the Appendix, the discrepancies in Fig. 9 are quite well accounted for. Because of these discrepancies, and because the wall-wake fit provides an unambiguous definition for δ , we consider the calculation based on Eqs. (44) and (45) to be superior.

IV. Surface-Friction Data

A. Floating-Element Balance

A floating-element balance used by Coles (1953) was recommissioned for use in the present experiments.* The only important design change was

*The expert assistance of George Tennant in preparing the balance is gratefully acknowledged.

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in the method of achieving the null position for the element. The balance, shown in Figs. 11 and 12, is a sealed unit mounted in a 23.5 cm-diameter port flush with the ceiling plate in the 20-inch wind tunnel. The original element occupies a 10-cm diameter circle which is located 5.08 cm upstream of the port centerline, as indicated in Fig. 12.

The balance is a null device with the floating element supported by a four-flexure linkage. The total force on the element is inferred from the displacement required at the supporting beam to return the element to null. In the present configuration, the supporting beam is driven by a differential micrometer powered by a small variable-speed motor. Two independent measurements were made of the beam motion. The counter shown in Fig. 11 measured the rotation of the micrometer drive shaft and counted in units of 10^{-6} inches of axial displacement. In addition, a Schaevitz coil was mechanically linked to the beam through the drive wire. The null position of the element was monitored by a second Schaevitz coil, as in the original design. The demodulated output from the Schaevitz coils was low-pass filtered with a time constant of 0.25 sec. The dashpots shown in Fig. 11 were filled with Dow Corning 710 silicone oil having a viscosity $\nu = 5.0 \text{ cm}^2/\text{sec}$. A thermocouple measured the temperature of the balance chamber.

The rectangular floating element, shown in Fig. 12, is 0.622 cm in the streamwise direction and 3.785 cm in the cross-stream direction. The area of the element is thus $A = 2.356 \text{ cm}^2$. The gap is 0.007 cm upstream and downstream when the element is nulled, and 0.010 cm on each side. The element was flush with the surrounding surface within 0.0001 cm. No correction was made to account for the effect of the gap on the measured force.

The balance was calibrated using the technique described by Coles (1953). The beam displacement required to return the element to null was measured with the balance tilted at various angles with respect to the horizontal. These measurements were repeated after adding various small weights to the element, and the results were analyzed to yield the mass of the unweighted element and the spring constant for the flexures. Four angles were used between 0.0° and 0.6° , with weights of 0, 5, 10 and 20 grams. The spring constant was measured to be 73.98 gm/cm, with a maximum deviation of 2 parts in 1000.

The JPL 20-inch tunnel is a variable-density facility. The balance was located on the tunnel ceiling, which flexes with changes in free-stream static pressure. To compensate for the resulting zero offset in the surface-friction balance, the element was covered by a thin gasket-sealed plate, which was held in place by evacuating the balance chamber, and flow was established at the desired Mach number and Reynolds number. When the balance achieved thermal equilibrium the null position of the element was measured. The flow was then bypassed, the element cover was removed, and flow was re-established at the same free-stream conditions. When thermal equilibrium was again achieved, the null position of the element was again measured. The difference between the beam positions required for null, with and without applied shearing stress, is a direct measure of the force on the element.

The measurement just described is not quite correct, because any differential pressure between the sealed balance chamber and the test section causes additional bending of the balance port. The resulting zero offset was determined with the tunnel off and with the test-section pressure set at appropriate values. The maximum correction applied to the data was 6.5 percent.

Finally, because the equilibrium temperature may not be the same for the various null measurements, effects of thermal distortion must also be considered. The zero offset from this source was measured separately; the maximum correction applied to the data was 0.4 percent. The streamwise force on the element due to free-stream pressure gradient is negligible.

Measurements using the balance were made at only one station, as indicated in Table 1. The data, together with the free-stream static and stagnation conditions, were recorded by the data-acquisition system. The surface-friction balance yields a direct measurement of the tangential stress on the floating element,

$$\tau_w = \frac{F}{A} \quad (50)$$

The associated friction coefficients,

$$C_f = 2 \frac{\tau_w}{\rho_e u_e^2} \quad (51)$$

are listed in Table 3.

B. Preston Tube

An independent estimate of surface friction was obtained from measurements with a Preston tube, a flat-faced circular cylinder in contact with the wall. For the JPL experiments, three probes were used, having outer diameters D of 0.082 cm, 0.162 cm, and 0.317 cm, with a ratio of inner to outer diameter of 0.60. The largest probe was tested only at station JPL-2. The probes were positioned at the wall by the traverse mechanism.

ORIGINAL PAGE 2
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For the CIT experiments, a single Preston tube was used, having an outer diameter of 0.210 cm, with a ratio of inner to outer diameter of 0.76.

There is no consensus on the question of proper interpretation of Preston-tube data at supersonic speeds. For example, Hopkins and Keener (1966) took as the geometric parameter

$$Re_D = \frac{\rho_e u_e D}{\mu_e}, \quad (52)$$

and as the response parameter, the Mach number M_p implied by the ratio of Preston-tube pressure to local static pressure. They proposed, as a correlation between this parameter M_p and the surface friction coefficient C_f , the expression

$$f_2(T') Re_D^2 \left(\frac{M_p}{M_e} \right)^2 = 32.885 \left[f_2(T') Re_D^2 C_f \right]^{1.132}, \quad (53)$$

where

$$f_2(T') = \left(\frac{\mu_e}{\mu'} \right)^2 \frac{\rho'}{\rho_e}, \quad (54)$$

with μ' and ρ' evaluated at the reference temperature T' proposed by Sommer and Short (1955),

$$\frac{T'}{T_e} = 1 + 0.035 M_e^2 + 0.45 \left(\frac{T_w}{T_e} - 1 \right). \quad (55)$$

Values of local friction coefficient C_f calculated from these equations are included in Table 3 and are listed in more detail in Table A2 of the Appendix.

Bradshaw and Unsworth (1974) have taken the position that only wall quantities should appear in any Preston-tube correlation and that it is unrealistic to insist on an explicit formula for C_f . They took as a point of departure a recent survey by Allen (1973). Using Allen's own calibration data (but not other data considered by Allen), they proposed a formula representing Patel's low-speed calibration (1965), with an additive term to account for compressibility. The formula applies for adiabatic flow and for $50 < D^+ < 1000$, where

$$D^+ = \frac{D u_\tau}{\nu_w} \quad (56)$$

and $\tau_w = \rho_w u_\tau^2$ as before.

Unfortunately, Allen has recently reported (1977) that his published friction measurements are incorrect, because of a defective or poorly calibrated balance. He did not repeat his experiment, but simply replaced the original measured values of surface friction by computed ones. He also made the corresponding revision in the Bradshaw-Unsworth formula (again using only his own revised calibration), with the final result

$$\begin{aligned} \frac{C_p}{C_f} = & 96 + 60 \log_{10} \left(\frac{D^+}{50} \right) + 23.7 \left[\log_{10} \left(\frac{D^+}{50} \right) \right]^2 \\ & + 10^4 M_\tau^2 \left[\left(D^+ \right)^{0.30} - 2.38 \right] \quad (57) \end{aligned}$$

where

$$M_\tau^2 = \frac{u_\tau^2}{\gamma R T_w} \quad (58)$$

and

$$C_p = 2 \frac{(p_p - p_s)}{\gamma p_s M_\infty^2} \quad (59)$$

Here p_p is the pressure measured by the Preston tube and p_s is the ambient static pressure.

The present Preston-tube data have also been processed in terms of Eq. (57) to obtain the values of local friction coefficient C_f which are listed in Table 3 and in Table A2 of the Appendix*.

C. Friction-Law Scaling

It has been pointed out by Spalding and Chi (1964) and others that most analytical formulations for compressible turbulent boundary layers are reducible to a description of the surface friction in terms of the surface friction for an equivalent incompressible boundary layer at a different Reynolds number. The equivalence is usually expressed by two semi-empirical scaling functions F_f and F_θ , thus:

$$C_f^i = F_f C_f \quad (60)$$

and

$$Re_\theta^i = F_\theta Re_\theta \quad (61)$$

* The experiments described in the present report should eventually be viewed as a producer rather than as a consumer of Preston-tube calibration data. However, a full-scale critique of the Preston-tube technique for supersonic flow is outside the scope of this research, and the present measurements have therefore been interpreted as if no friction-balance data were available.

For the particular case of adiabatic flow, the scaling functions

$$F_f = \frac{\left(\frac{T_w}{T_e} - 1\right)}{\left[\sin^{-1}\left(1 - \frac{T_e}{T_w}\right)^{1/2}\right]^2} = \frac{1}{(1 - m^2)} \left(\frac{m}{\sin^{-1} m}\right)^2, \quad (62)$$

and

$$F_\theta = \frac{\mu_e}{\mu_w}, \quad (63)$$

were first proposed by Wilson (1949). Use of Eq. (63) for flow with heat transfer was later recommended by Van Driest (1955) and is sometimes referred to as Van Driest II. For adiabatic flow, given M_e and r (and hence F_f and F_θ), and given also Re_θ , the surface friction is determined by computing Re_θ^i from Eq. (61) by looking up the associated value for C_f^i , using some convenient low-speed friction law; and finally by computing C_f from Eq. (60). That is,

$$C_f = \frac{1}{F_f} C_f^i \left(Re_\theta^i\right) = \frac{1}{F_f} C_f^i \left(F_\theta Re_\theta\right). \quad (64)$$

A "convenient low-speed friction law" is implicit in the survey by Coles (1968), who recommends the value $\Pi = 0.62$ for flow at constant pressure when $Re_\theta^i > 5000$. For lower Reynolds numbers, we multiply $\Pi(\delta u_\tau/\nu)$ from Table 2 of Coles (1962, Appendix A) by $0.62/0.55$. With $\delta u_\tau/\nu$ as independent variable, the quantities u_e/u_τ and $C_f^i = 2 \left(u_\tau/u_e\right)^2$ follow immediately from the local friction law (21) above. Finally, we compute $Re_{\delta^*}^i$ and Re_θ^i from Eqs. (7) and (8) of Coles (1968), after replacing Re_{δ^*} by $Re_{\delta^*} - 65$ to take account of the real profile in the sublayer. The

result of these calculations is recorded in Table 4.

Values calculated for C_f from Eq. (64), using interpolation in Table 4 to define the function $C_f^1(Re_\rho^1)$, are included in Table 3.

V. Discussion and Conclusions

According to Table 3, five different methods have been used to measure or to estimate the local friction coefficient C_f for the present experiments. Three of these methods (Van Driest scaling, Preston tube, friction-law scaling) depend on some empirical means for taking account of compressibility. In particular, the friction-law scaling of Section IV-C replaces the measured Re_ρ by Re_ρ^1 and the measured or estimated C_f by C_f^1 . When the data of Table 3 are subjected to this same scaling, they appear as shown in Fig. 13. The solid curves represent low-speed experience according to Table 4. Any discrepancy between the data and the solid curves should not be interpreted as error, because the friction-law scaling itself would then have to be viewed as error-free. This scaling is in fact of uncertain accuracy, and is used primarily to remove most of the effects of Mach number in the data, so that one technique for evaluating C_f can be readily compared with another. The required displacements from (C_f, Re_ρ) to (C_f^1, Re_ρ^1) are indicated by the line segments next to the lowest curve in Fig. 13. These displacements are not very substantial, because the Mach numbers for the present experiments are relatively low.

We consider the floating-element friction data to be the most reliable data in the figure. For the estimates of C_f from dP/dx , the scatter is large, as expected. The largest scatter, however, is in the Preston-tube data, indicating that this technique needs further development.

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Of the two Preston-tube correlations, the one by Bradshaw and Unsworth (as revised by Allen; see Section IV B) underestimates C_f slightly, especially at $M_e = 2.2$. The correlation by Hopkins and Keener is satisfactory except at $M_e = 2.2$, where it overestimates C_f by a large amount. The profile fit gives values for C_f which are systematically a little high (except for the CIT measurements), with a maximum discrepancy of about 6 percent at $M_e = 2.2$.

In general, scaling of the measured mean-velocity profiles according to the Van Driest version of the mixing-length theory (Eq. (18)) seems to be quite successful. The scaled profiles can be well represented by conventional low-speed wall-wake similarity laws. Except for discontinuities in slope at the edge of the boundary layer, the inferred profiles for v/u and τ/τ_w provide a quite acceptable standard for interpretation of the LDV measurements reported in Part II of this work. Estimates for v/u and τ/τ_w based on the assumption of similarity in y/δ or y/θ are less satisfactory.

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Station	Location (cm from floating- element balance)	Pitot Tube	Preston Tube	Balance	LDV
JPL-1	-48.4	x			
JPL-2	-26.2	x	x		x
JPL-3	- 7.6	x			
JPL-4	0.0	x	x	x	x
JPL-5	7.6	x			

Table 1. High-Speed Flow Measurements
JPL 20-Inch Wind Tunnel

Station	Location (cm from leading edge)	Pitot Tube	Pitot Rake	Preston Tube	LDV
CIT-1	30.4		x	x	
CIT-2	60.9		x	x	
CIT-3	91.4		x	x	
CIT-4	152.4	x		x	
CIT-5	167.6	x		x	
CIT-6	182.8	x		x	x
CIT-7	198.1	x		x	
CIT-8	213.3	x		x	
CIT-9	228.6	x		x	

Table 2. Low-Speed Flow Measurements
CIT Merrill Wind Tunnel

TABLE 3.
SKIN FRICTION SUMMARY

STATION	ME	RE-THETA	[2*010X	FIT	CF		
					PRESTON (H/K)	PRESTON (B/U)	BALANCE COMPUTED
CIT-1	.1050	1029.			.004057	.003911	.004410
CIT-2	.1050	1875.			.003458	.003331	.003703
CIT-3	.1050	2798.			.003087	.002982	.003321
CIT-4	.1058	5932.		.002787	.002630	.002715	.002826
CIT-5	.1072	6209.		.002786	.002553	.002637	.002808
CIT-6	.1031	6604.	.002768	.002756	.002683	.002772	.002782
CIT-7	.1036	7270.		.002689	.002736	.002825	.002739
CIT-8	.1052	7475.		.002689	.002611	.002700	.002725
CIT-9	.1070	8068.		.002676	.002493	.002575	.002687
JPL-1	.5927	18870.		.002179			.002249
JPL-2	.5927	20180.		.002201	.002173	.002169	.002227
JPL-3	.5986	22190.		.002196			.002194
JPL-4	.6018	22400.	.002096	.002198	.002109	.002106	.002165
JPL-5	.5962	22300.		.002195			.002192
JPL-1	.5973	31460.		.002090			.002072
JPL-2	.5964	34330.		.002057	.002012	.002115	.002048
JPL-3	.5952	37280.		.002056			.002025
JPL-4	.5931	36470.	.001992	.002065	.001983	.001985	.002032
JPL-5	.5935	37930.		.002041			.002020
JPL-1	.7958	19770.		.002136			.002177
JPL-2	.7882	21850.		.002109	.002139	.002090	.002148
JPL-3	.8049	23540.		.002132			.002117
JPL-4	.8016	23710.	.002042	.002120	.002066	.002127	.002116
JPL-5	.7995	24570.		.002105			.002103
JPL-1	.7980	33940.		.002005			.001998
JPL-2	.7943	37360.		.001993	.001971	.001935	.001974
JPL-3	.7940	40190.		.001987			.001953
JPL-4	.7921	41090.	.001942	.001978	.001920	.001884	.001947
JPL-5	.7919	42600.		.001953			.001936

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TABLE 3. (CONT.)

STATION	ME	RE-THETA	FIT	CF		
				PRESTON (H/K)	PRESTON (R/U)	BALANCE COMPUTED
JPL-1	.9664	18650.	.002108			.002144
JPL-2	.9669	20890.	.002065	.002118	.002024	.002103
JPL-3	.9719	22720.	.002097			.002076
JPL-4	.9672	22840.	.002081	.002081	.002008	.002076
JPL-5	.9651	23850.	.002067			.002062
JPL-1	.9648	32330.	.001970			.001963
JPL-2	.9676	36250.	.001940	.001932	.001863	.001930
JPL-3	.9613	38500.	.001953			.001915
JPL-4	.9637	39900.	.001925	.001870	.001810	.001905
JPL-5	.9606	41550.	.001911			.001894
JPL-2	1.3141	19780.	.002000	.001906	.001793	.001994
JPL-3	1.3215	21880.	.001983			.001958
JPL-4	1.3197	21900.	.001983	.001913	.001808	.001958
JPL-5	1.3151	24190.	.001959			.001931
JPL-2	1.3082	37230.	.001844	.001778	.001701	.001802
JPL-3	1.3173	37550.	.001858			.001795
JPL-4	1.3125	37900.	.001860	.001802	.001697	.001795
JPL-5	1.3130	40210.	.001832			.001782
JPL-2	2.1722	23070.	.001656	.001740	.001478	.001607
JPL-3	2.1666	23520.	.001649			.001603
JPL-4	2.1642	24490.	.001633	.001683	.001497	.001590
JPL-5	2.1722	25060.	.001624			.001583
JPL-2	2.1812	38050.	.001534	.001613	.001385	.001476
JPL-3	2.1737	40570.	.001530			.001462
JPL-4	2.1820	41600.	.001527	.001573	.001378	.001454
JPL-5	2.1797	43060.	.001507			.001447

Table 4.

LOW-SPEED FRICTION LAW

DELTA-PLUS	PI	UE/UT	CF	RE-DSIAR	RE-THEA
240.	.000	18.37	.005928	450.	430.
300.	.135	19.57	.005221	896.	607.
400.	.259	20.88	.004588	1294.	896.
500.	.338	21.81	.004206	1697.	1189.
600.	.406	22.58	.003922	2122.	1498.
800.	.485	23.67	.003570	2962.	2114.
1000.	.541	24.49	.003335	3824.	2749.
1500.	.598	25.75	.003016	5910.	4308.
2000.	.620	26.56	.002834	7967.	5865.
3000.	.620	27.55	.002635	11920.	8908.
4000.	.620	28.25	.002505	15870.	11980.
5000.	.620	28.80	.002412	19820.	15060.
6000.	.620	29.24	.002339	23770.	18160.
8000.	.620	29.94	.002230	31680.	24380.
10000.	.620	30.49	.002152	39580.	30640.
15000.	.620	31.48	.002018	59330.	46380.
20000.	.620	32.18	.001931	79090.	62210.
30000.	.620	33.17	.001818	118600.	94070.

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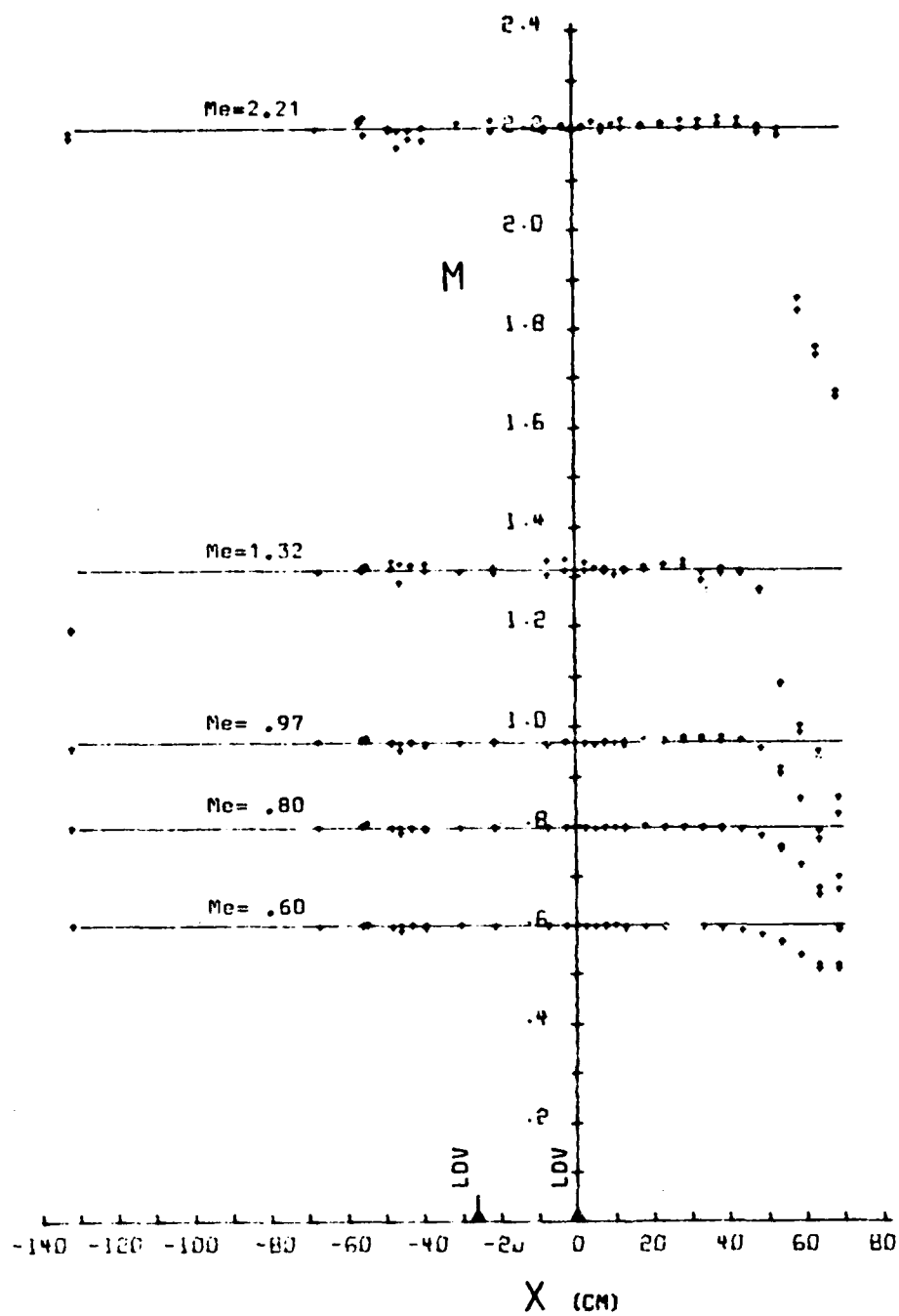


Figure 1. Free-stream Mach-Number Distribution, $Re_\rho = 40,000$.
JPL 20-inch Wind Tunnel

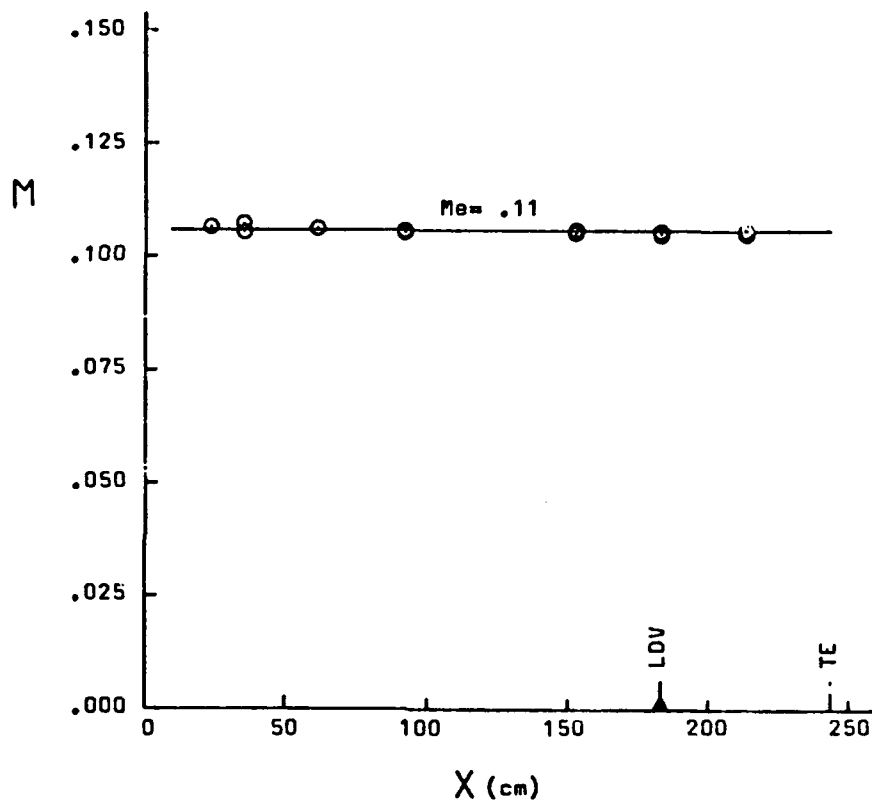


Figure 2. Free-stream Mach Number Distribution.
CIT Merrill Wind Tunnel

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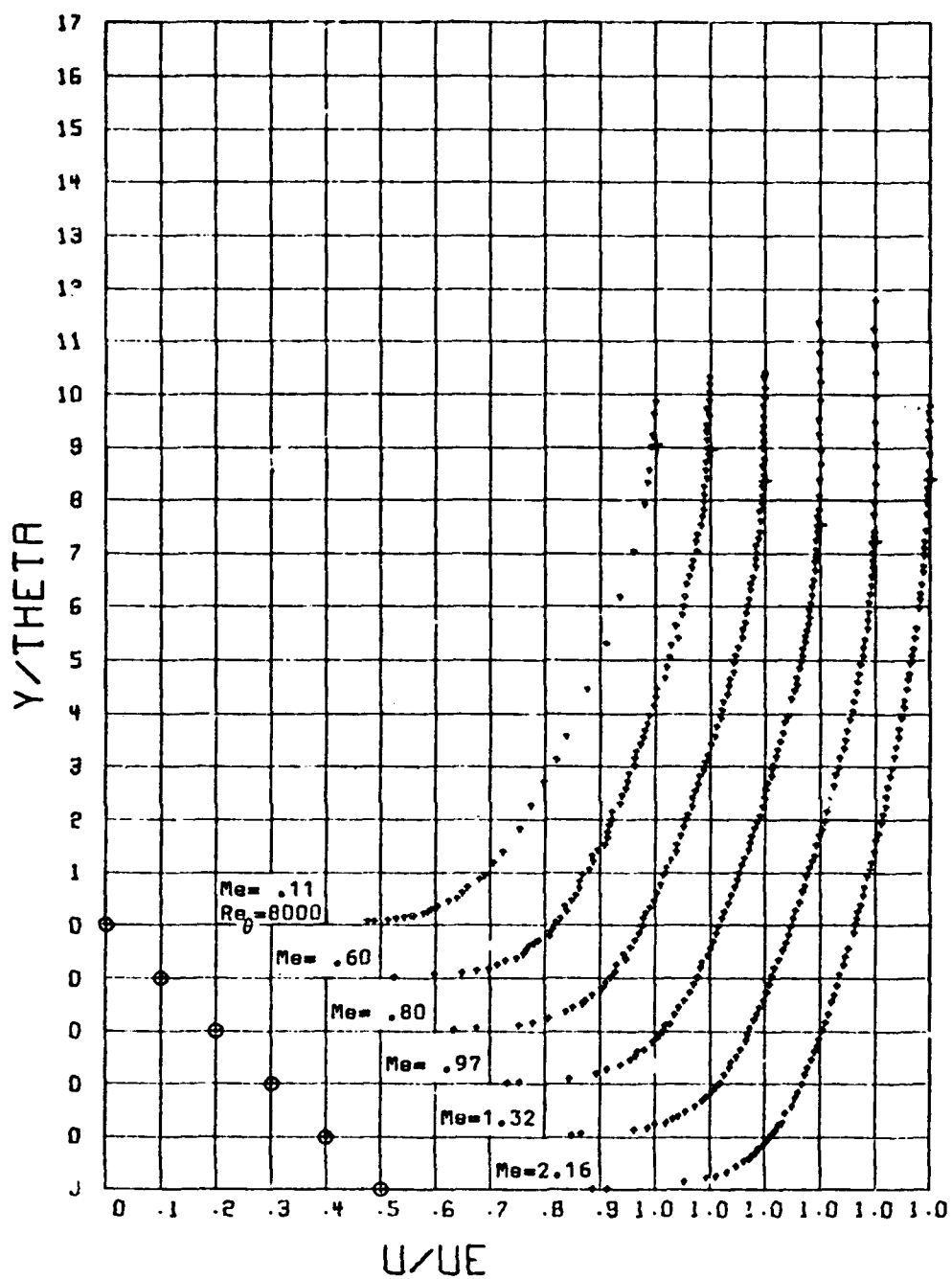
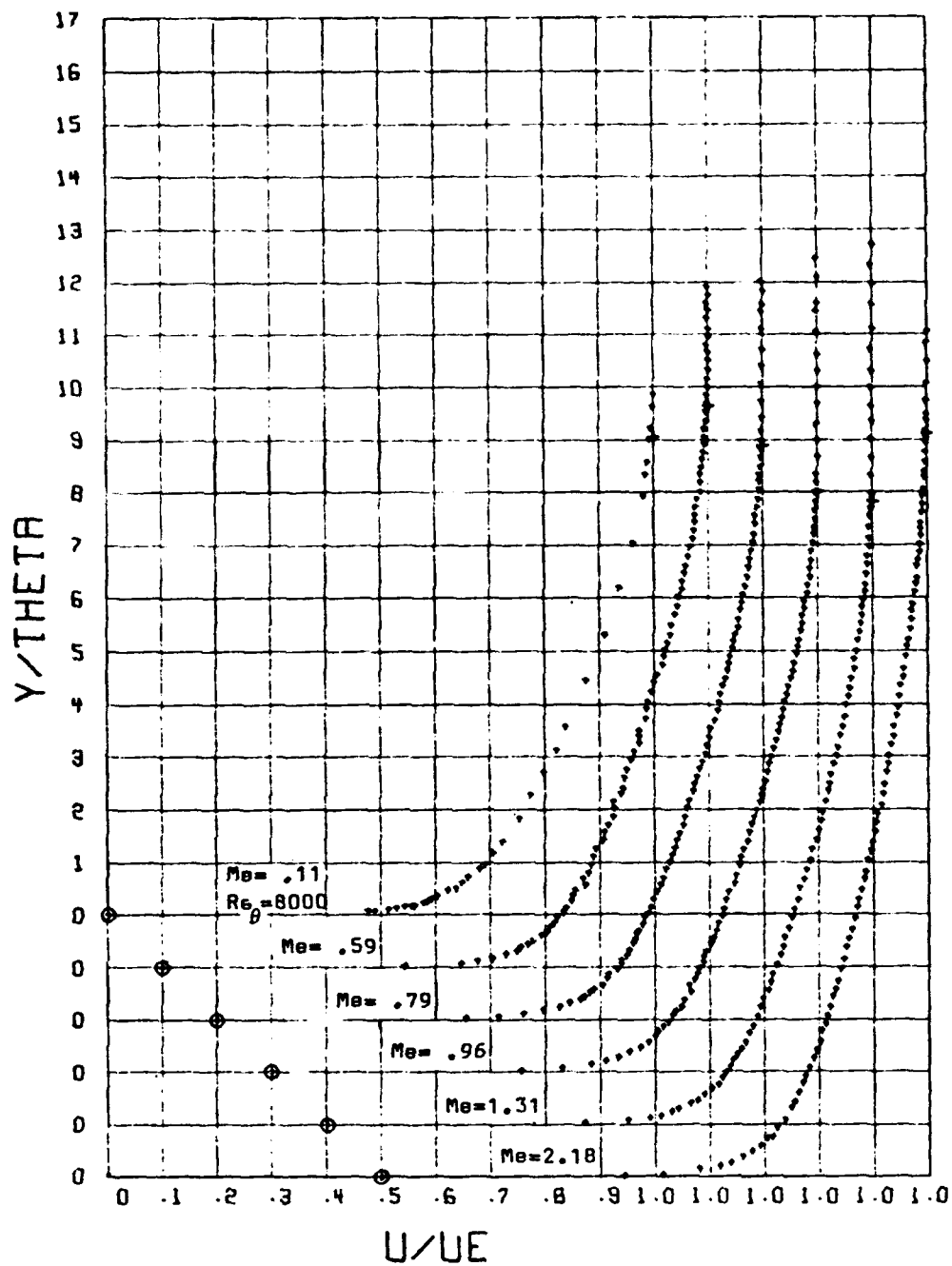


Figure 3. Mean Velocity Profiles. $Re_{\theta} = 23,000$

Figure 4. Mean Velocity Profiles. $Re_\theta = 40,000$

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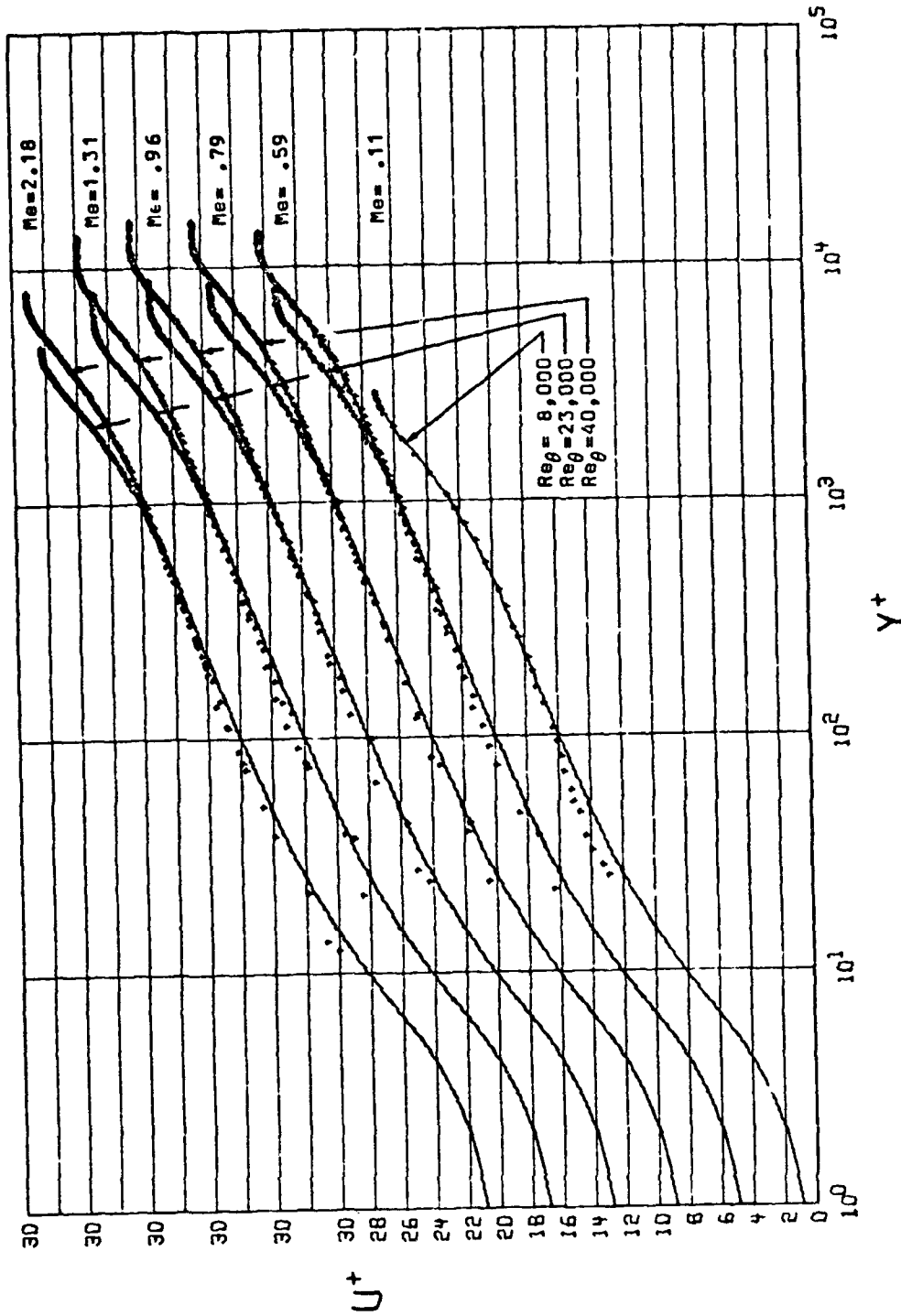


Figure 5. Mean Velocity Profiles with Van Driest Scaling.

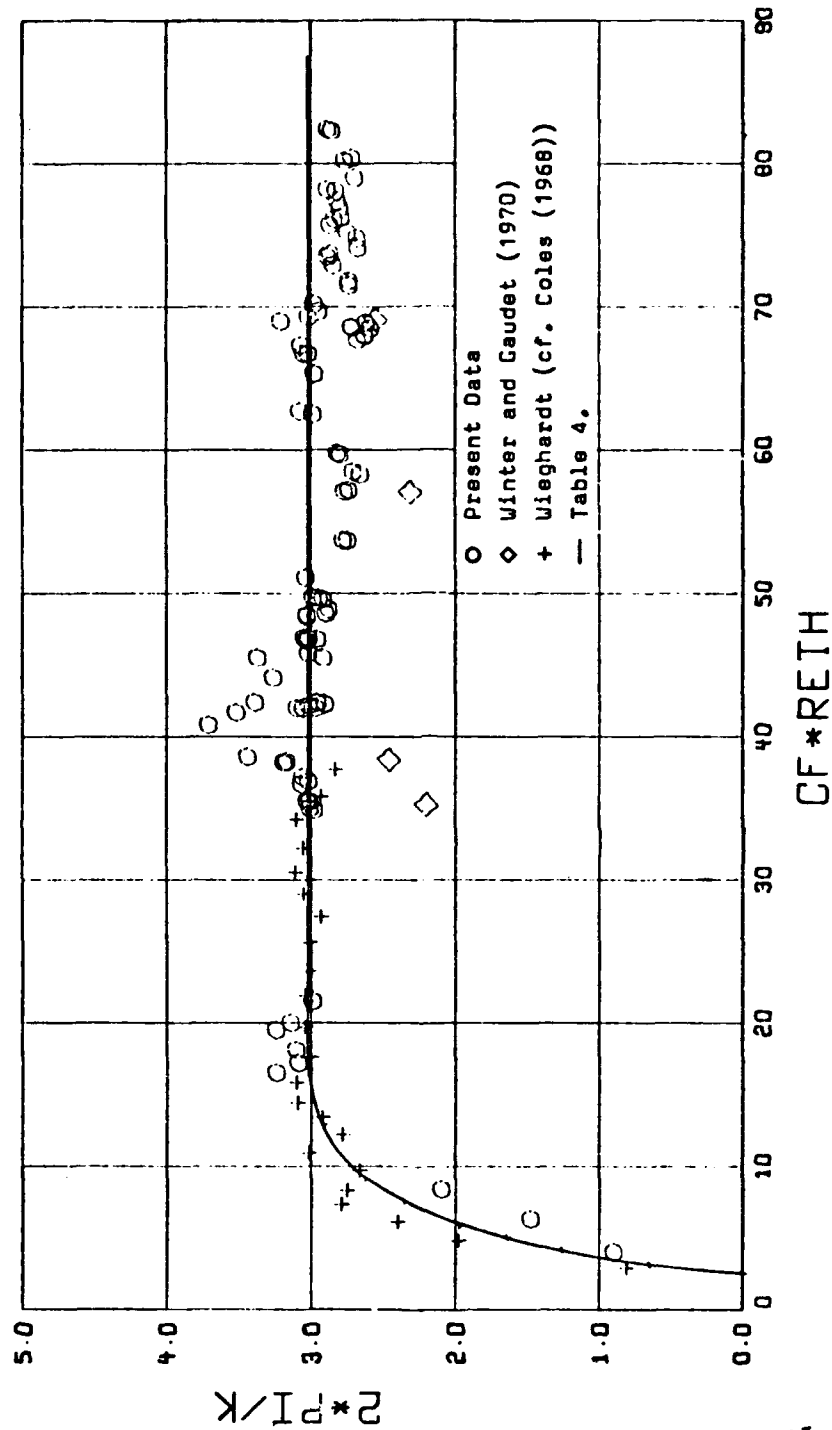


Figure 6. The Magnitude of the Wake Component with Van Driest Scaling.

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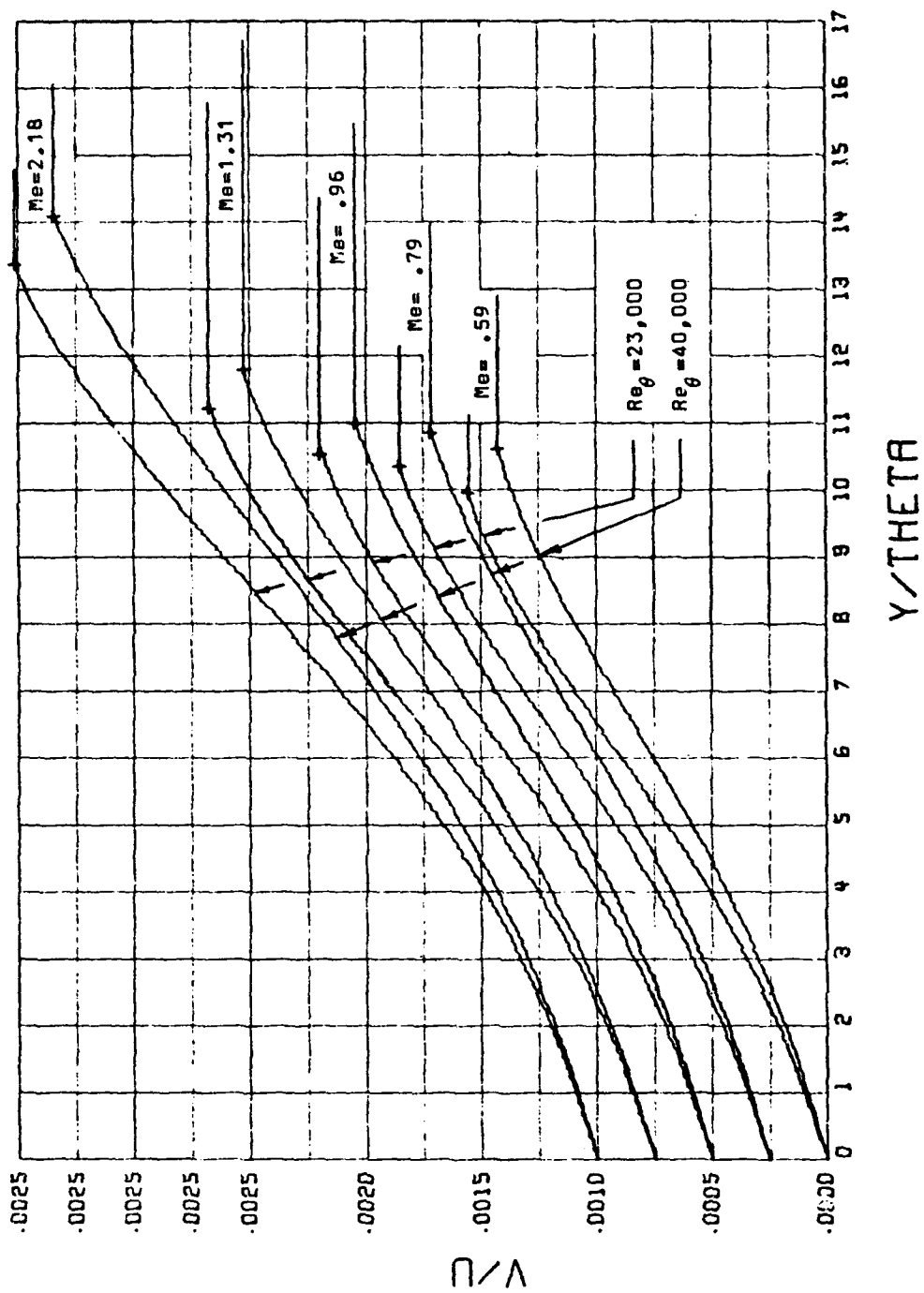


Figure 7. Distribution of Normal Velocity
According to Equation (38).

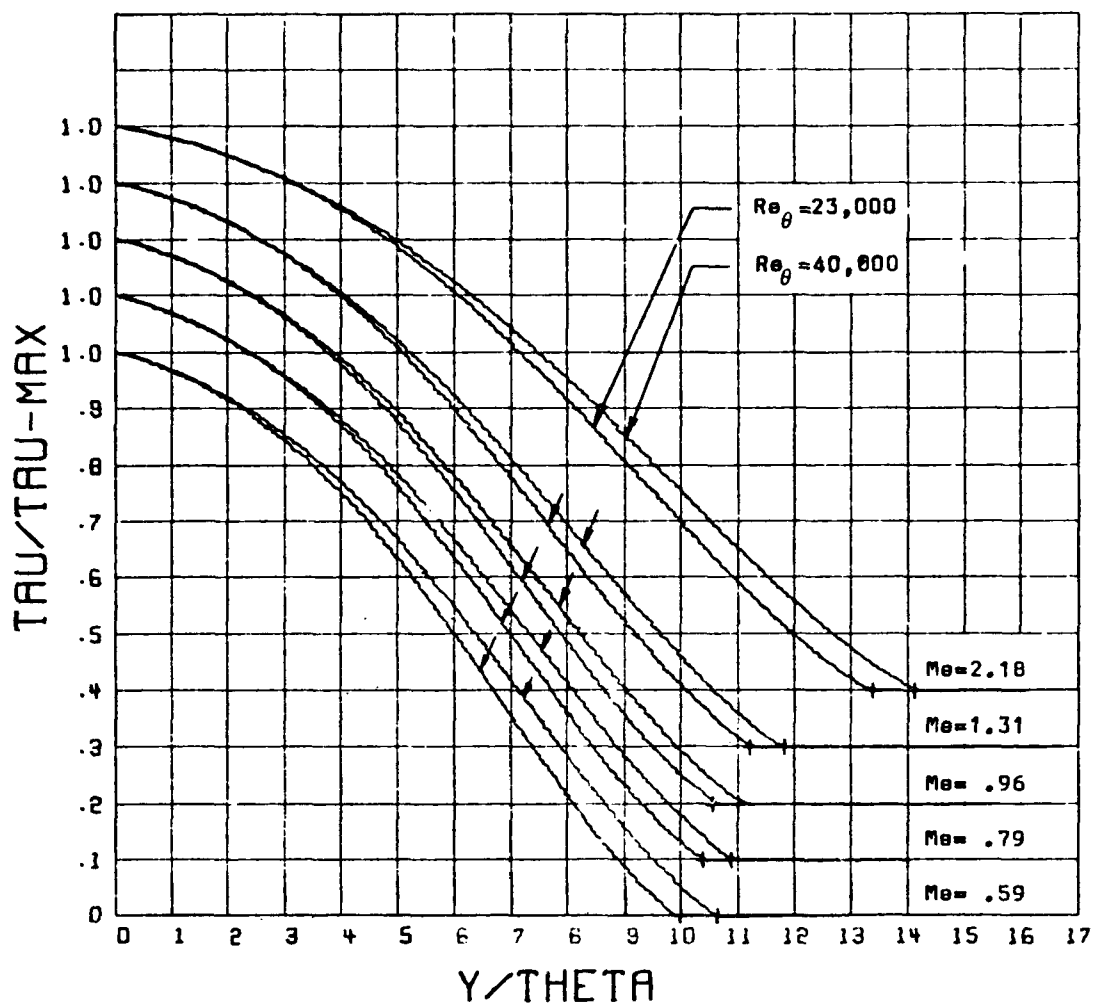


Figure 8. Distribution of Shearing Stress
According to Equation (37).

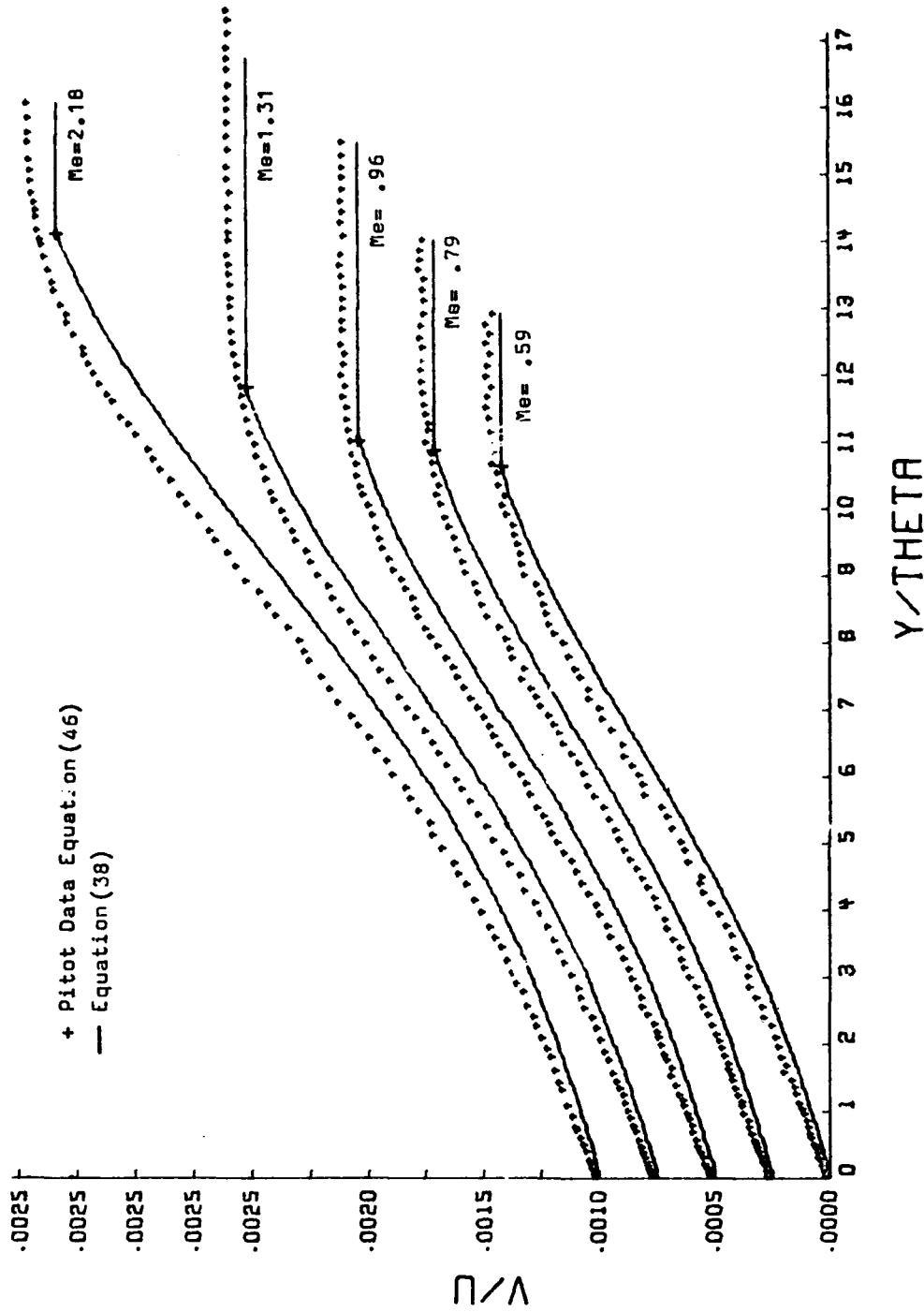


Figure 9. Comparison Between Direct Integration of Pitot Data and Integration Using the Fitted Profile. $Re_\theta = 40,000$

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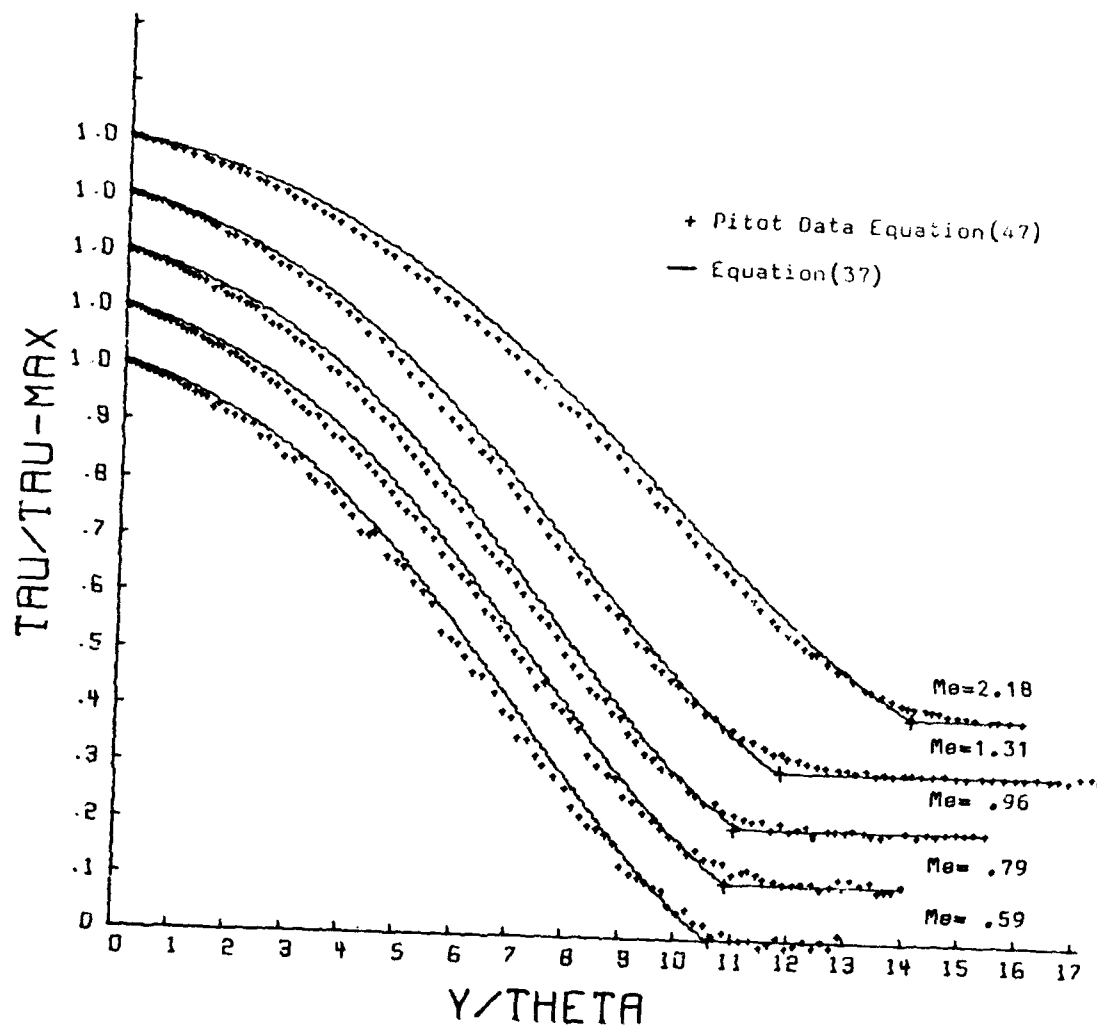


Figure 10. Comparison Between Direct Integration of Pitot Data and Integration Using the Fitted Profile.
 $Re_\theta = 40,000$

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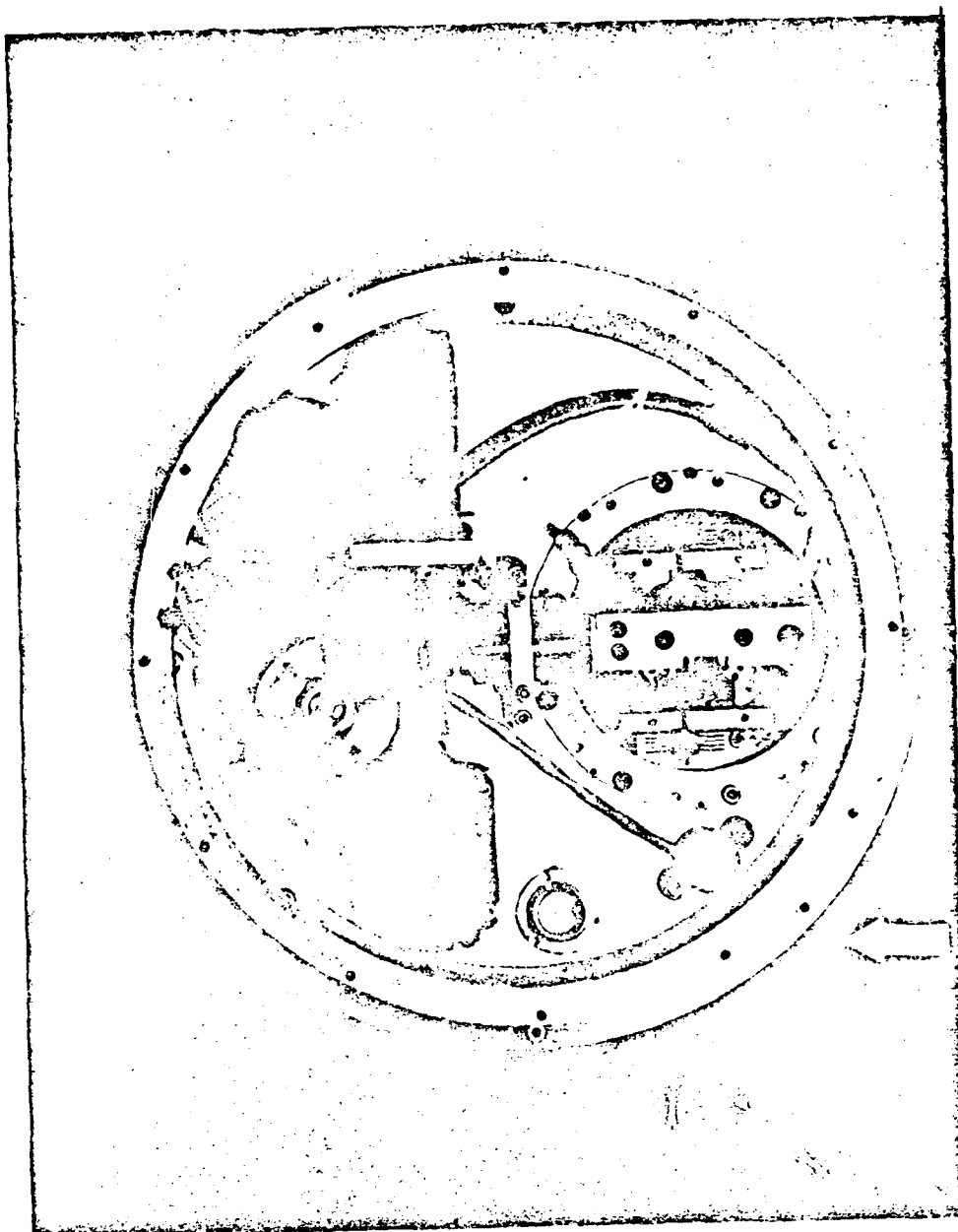


Figure 11. Floating-Element Balance.

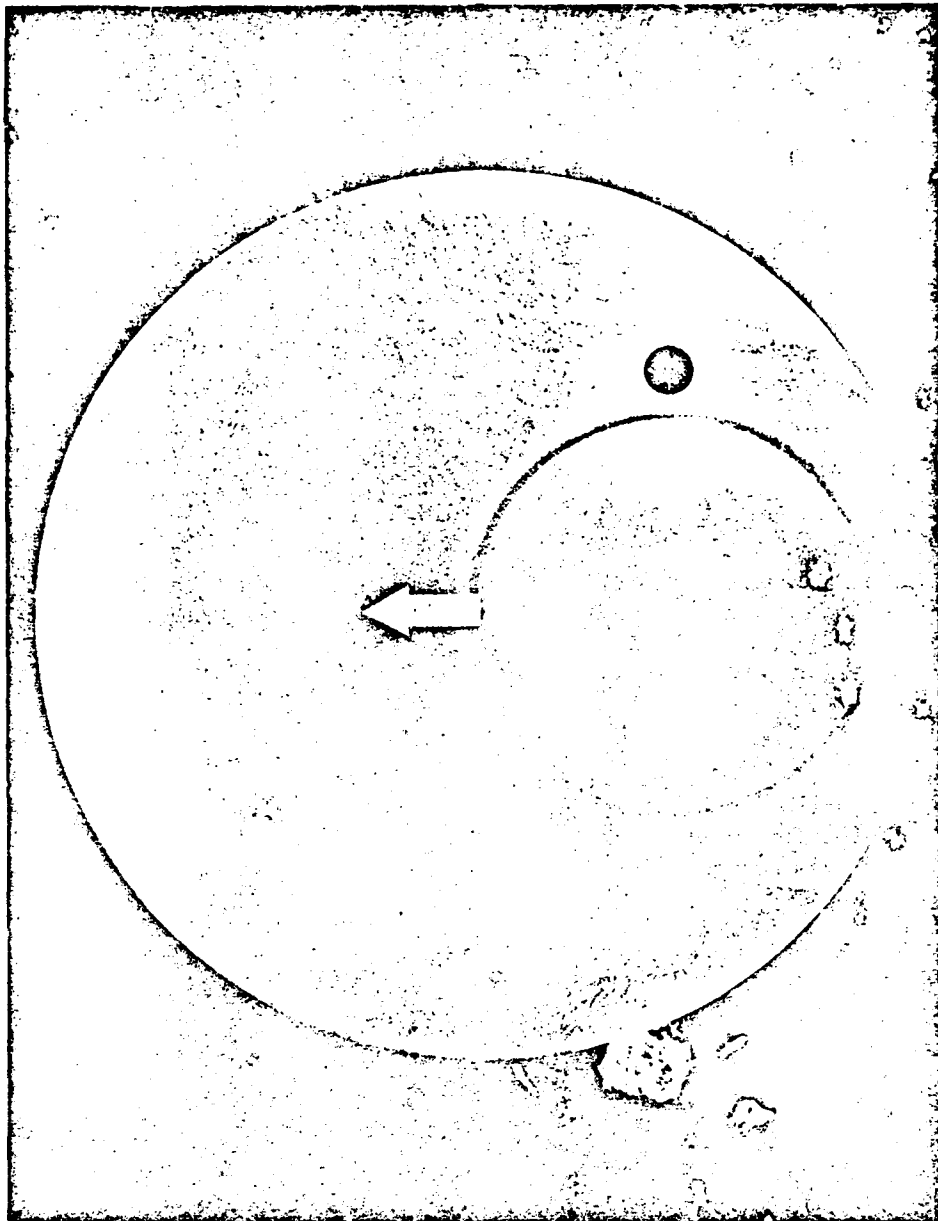


Figure 12. Floating-Element Balance.

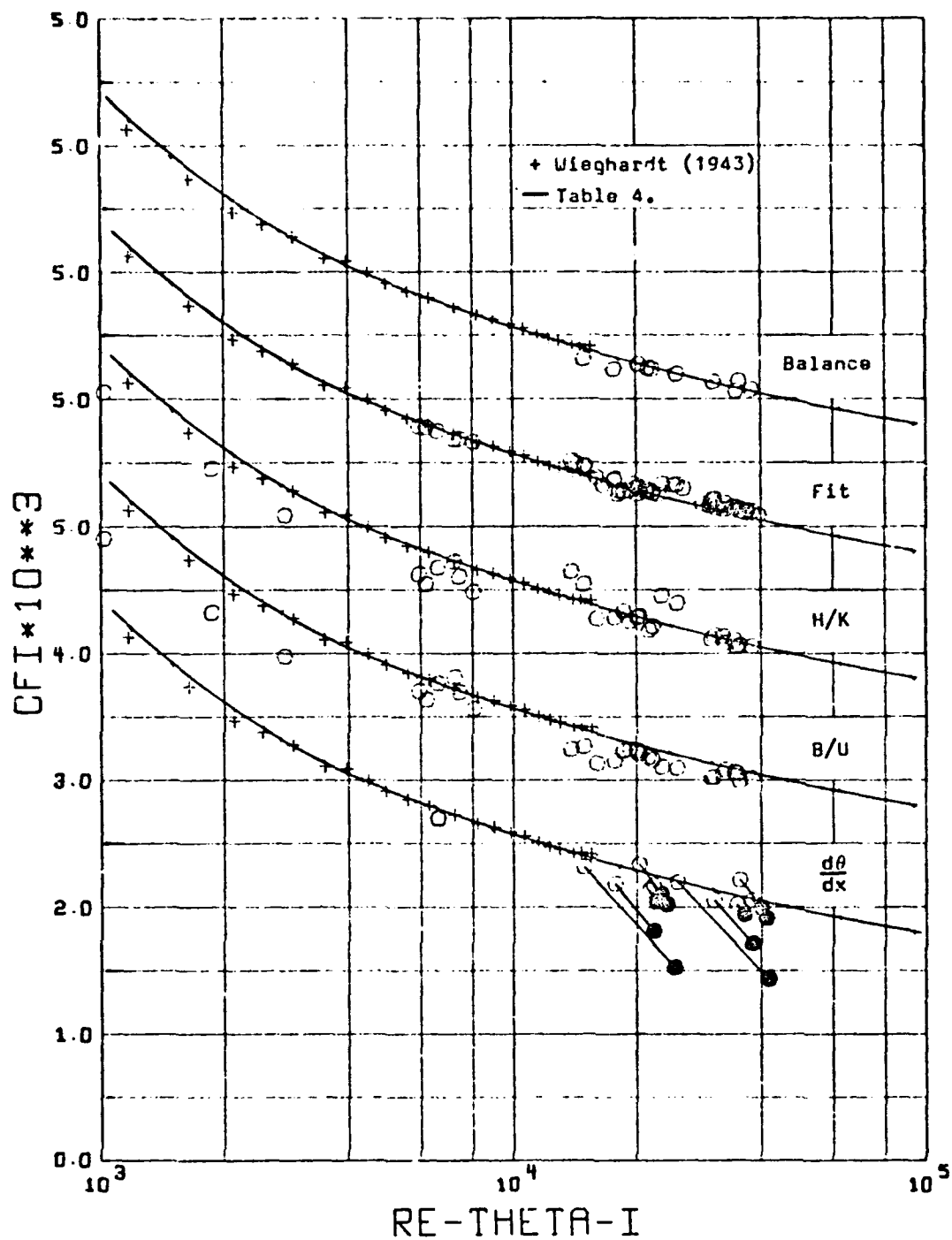


Figure 13. The Surface Friction as a Function of Reynolds Number.

Appendix
Tabulation of Experimental Data

Table A1

Table A1 summarizes various parameters for the profiles obtained from Pitot-tube surveys at the stations listed in Tables 1 and 2 of the main text. The quantities u_r , Π , and δ are derived from the least-squares fit of each profile to the wall-wake formula,

$$\frac{u^*}{u_r} = \frac{1}{\kappa} \ln \frac{yu_r}{v_w} + c + 2 \frac{\Pi}{\kappa} \sin^2 \left(\frac{\pi y}{2 \delta} \right) , \quad (19)$$

where u^* is velocity scaled according to Van Driest,

$$u^* = \int_0^u \left(\frac{\rho}{\rho_w} \right)^{1/2} du . \quad (11)$$

The two integral thicknesses δ^* and θ are defined by

$$\delta^* = \int_0^\delta \left(1 - \frac{\rho u}{\rho_e u_e} \right) dy , \quad (4)$$

and by

$$\theta = \int_0^\delta \frac{\rho u}{\rho_e u_e} \left(1 - \frac{u}{u_e} \right) dy . \quad (5)$$

The quantity H is the ratio δ^*/θ .

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Table A2

Table A2 contains Preston-tube data, including probe diameter D , pressure coefficient

$$C_p = 2 \frac{(p_p - p_s)}{\gamma p_s M_e^2} \quad (59)$$

as friction coefficient, as inferred by two different correlation methods.

The method of Hopkins and Keener (1966), denoted by H/K, uses the formula

$$f_2(T') \text{Re}_D^2 \left(\frac{M_p}{M_e} \right)^2 = 32.885 \left[f_2(T') \text{Re}_D^2 C_f \right]^{1.132} \quad (53)$$

which is explicitly soluble for C_f . The quantity M_p is the Mach number implied by C_p , and the quantities Re_D and $f_2(T')$ are defined by Eqs. (52) and (54) of the main text. The method of Bradshaw and Unsworth (1974) as revised by Allen (1977), denoted by B/U, uses the formula

$$\begin{aligned} \frac{C_p}{C_f} = & 96 + 60 \log_{10} \left(\frac{D^+}{50} \right) + 23.7 \left[\log_{10} \left(\frac{D^+}{50} \right) \right]^2 \\ & + 10^4 M_\tau^2 \left[(D^+)^{0.30} - 2.38 \right] \quad (57) \end{aligned}$$

This formula is soluble for C_f only by iteration, since the quantities D^+ and M_τ both depend on C_f . These quantities are defined by Eqs. (56) and (58) of the main text.

Table A3

Table A3 includes estimates of the pressure-gradient parameter

$$\text{BETA} = \frac{\theta}{\gamma M_e^2} \frac{1}{P} \frac{dP}{dx} \quad , \quad (\text{A1})$$

and the momentum-thickness derivative

$$\text{DTDx} = \frac{d\theta}{dx} \quad . \quad (\text{A2})$$

These are assigned to stations CIT-6 or JPL-4 as appropriate. The quantity

$$\text{MOMB} = \frac{2}{C_f} \frac{d\theta}{dx} \quad , \quad (\text{A3})$$

where C_f is the value measured using the floating-element balance, should equal unity if the experiment is free of error.

Tables A4-A14

Tables A4-A14 and the associated Figs. A1-A44 are a detailed record of data obtained from the Pitot-tube surveys. Each table heading includes the integral properties δ^* and θ for the profile, together with the friction coefficient C_f measured using the floating-element balance, where applicable (i.e., station JPL-4). Listed next are the profile parameters u_τ , u_i , δ , from the profile fit, with the associated friction coefficient

$$C_f = 2 \frac{\rho_w}{\rho_e} \left(\frac{u_\tau}{u_e} \right)^2 \quad . \quad (22)$$

The range of y used in the fit is specified as Y_{MIN} , Y_{MAX} . The mean square deviation of the fitted data from the wall-wake formula is given as $CHISQR$. The variable for this calculation is the Van Driest velocity u^*/u_e .

The body of the tables lists the distance from the wall as y , as y/θ , and as

$$Y-PLUS = \frac{yu_\tau}{v_w} \quad (A4)$$

Also listed are the local Mach number M , density ρ , and velocity u (all normalized by the corresponding free-stream values), and the Van Driest velocity

$$U-PLUS = \frac{u^*}{u_\tau} \quad (A5)$$

Finally, the tables give the shearing stress τ/τ_w and the normal velocity v/u computed from

$$\frac{\tau}{\tau_w} = 1 - \left(\frac{2n - \frac{u}{u_e} P}{2Q_e - P_e} \right) \quad (37)$$

and

$$\frac{v}{u} = \frac{\tau_w}{\rho_e u_e^2} \frac{\rho_e u_e}{\rho u} \frac{P}{(2Q_e - P_e)} \quad (38)$$

where P and Q are definite integrals defined by Eqs. (44) and (45) of the main text.

Table A1.
INTEGRAL PROPERTIES OF THE BOUNDARY LAYER

STATION	MF	RF-THETA	U/F (M/SEC)	U/TAU (M/SEC)	PI	DELTA (CM)	DELTA-STAR (CM)	TWETA (CM)	H
CIT-4	.1058	5932.	37.25	1.392	.6642	2.402	.3572	.7683	1.331
CIT-5	.1072	6209.	38.01	1.470	.6346	2.584	.3759	.7843	1.322
CIT-6	.1031	6604.	37.34	1.387	.6374	2.454	.3860	.7924	1.320
CIT-7	.1036	7270.	35.91	1.318	.6643	3.018	.4404	.8328	1.323
CIT-8	.1052	7475.	37.42	1.373	.6453	3.149	.4545	.8439	1.321
CIT-9	.1070	8068.	37.79	1.393	.6139	3.404	.4814	.8659	1.315
JPL-1	.5927	18870.	201.05	6.840	.7613	2.482	.3794	.7604	1.457
JPL-2	.5927	20180.	202.47	6.922	.6684	2.853	.4179	.7932	1.439
JPL-3	.5986	22190.	202.13	6.907	.6224	3.044	.4333	.8028	1.430
JPL-4	.6018	22400.	204.91	7.007	.5908	3.147	.4531	.8177	1.426
JPL-5	.5962	22300.	203.19	6.941	.5944	3.264	.4552	.8201	1.422
JPL-1	.5973	31460.	205.88	6.863	.6124	2.412	.3325	.7344	1.418
JPL-2	.5964	34330.	208.25	6.886	.6124	2.748	.3803	.7689	1.414
JPL-3	.5952	37280.	205.97	6.809	.5733	2.924	.3948	.7801	1.409
JPL-4	.5931	36470.	207.02	6.857	.5509	3.054	.4039	.7876	1.404
JPL-5	.5935	37930.	207.38	6.828	.5760	3.161	.4218	.8003	1.404
JPL-1	.7958	19770.	244.47	9.115	.7221	2.305	.3655	.7238	1.562
JPL-2	.7882	21850.	243.34	9.111	.6917	2.640	.4124	.7656	1.544
JPL-3	.8049	23540.	244.29	9.180	.5994	2.880	.4221	.7748	1.535
JPL-4	.8016	23710.	247.51	9.192	.6145	2.961	.4395	.7857	1.538
JPL-5	.7995	24570.	246.60	9.125	.6243	3.053	.4564	.7964	1.539
JPL-1	.7980	33940.	271.81	9.080	.6304	2.214	.3225	.7108	1.529
JPL-2	.7943	37360.	272.19	9.040	.5901	2.553	.3610	.7393	1.514
JPL-3	.7940	40190.	270.59	8.994	.5552	2.749	.3812	.7524	1.509
JPL-4	.7921	41090.	271.52	9.002	.5579	2.860	.3979	.7637	1.508
JPL-5	.7914	42600.	271.55	8.944	.5847	2.945	.4155	.7747	1.512

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Table A1. (Cont.)

STATION	ME	RF-TMETHA	U/F (M/SEC)	ITAIL (M/SEC)	PI	DELTA (CM)	DELTA-STAR (CM)	TMFTA (CM)	H
JPL-1	.9664	18650.	313.76	10.997	.7057	2.104	.3487	.2079	1.677
JPL-2	.9669	20890.	314.63	10.916	.6968	2.430	.3983	.2385	1.670
JPL-3	.9719	22720.	314.66	11.007	.6076	2.609	.4084	.2466	1.656
JPL-4	.9672	22840.	315.09	10.974	.6222	2.696	.4228	.2556	1.653
JPL-5	.9651	23850.	314.15	10.902	.6222	2.816	.4407	.2665	1.653
JPL-1	.9648	32330.	321.78	10.901	.6331	2.015	.3113	.1898	1.639
JPL-2	.9626	36250.	322.24	10.829	.6210	2.345	.3559	.2175	1.636
JPL-3	.9613	38500.	321.05	10.822	.5501	2.551	.3667	.2273	1.613
JPL-4	.9637	39900.	322.66	10.804	.5887	2.628	.3894	.2386	1.631
JPL-5	.9606	41550.	322.04	10.738	.5925	2.750	.4076	.2505	1.627
JPL-2	1.3141	19780.	401.96	14.526	.6503	2.325	.4184	.2121	1.973
JPL-3	1.3215	21880.	402.38	14.498	.6356	2.504	.4474	.2262	1.978
JPL-4	1.3197	21900.	401.99	14.478	.6090	2.619	.4601	.2335	1.970
JPL-5	1.3151	24190.	396.85	14.197	.6205	2.713	.4777	.2433	1.963
JPL-2	1.3082	37230.	408.33	14.154	.6272	2.214	.3783	.1945	1.944
JPL-3	1.3173	37550.	409.20	14.260	.5508	2.402	.3969	.2047	1.938
JPL-4	1.3125	37900.	408.71	14.239	.5314	2.486	.4061	.2104	1.929
JPL-5	1.3130	40210.	406.36	14.052	.5630	2.566	.4242	.2189	1.937
JPL-2	2.1722	23070.	549.35	21.418	.6109	3.170	.7410	.2368	3.129
JPL-3	2.1666	23520.	550.76	21.404	.6175	3.253	.7595	.2435	3.119
JPL-4	2.1642	24690.	549.37	21.234	.6194	3.419	.7967	.2555	3.117
JPL-5	2.1722	25060.	552.35	21.325	.6275	3.489	.8137	.2601	3.127
JPL-2	2.1817	38050.	564.19	21.210	.5705	3.080	.6873	.2208	3.112
JPL-3	2.1737	40570.	560.66	21.016	.5692	3.125	.6942	.2240	3.098
JPL-4	2.1820	41600.	561.76	21.077	.5463	3.262	.7178	.2312	3.104
JPL-5	2.1797	43060.	562.73	20.963	.5751	3.381	.7507	.2415	3.107

Table A2.

PRESTON TIME DATA SUMMARY

STATION	WC	RF-TWETA	N	CD	CF(14/17)	CF(19/11)	CF(24/1)
CIT-1	.1050	1024.	.210	.540257	.004057	.003911	
CIT-2	.1050	1875.	.210	.664842	.003658	.003331	
CIT-3	.1050	2708.	.210	.407586	.003087	.002082	
CIT-4	.1058	5932.	.210	.367129	.002630	.002715	
CIT-5	.1072	6209.	.210	.353816	.002553	.002637	
CIT-6	.1031	6504.	.210	.377610	.002633	.002772	
CIT-7	.1036	7270.	.210	.382737	.002736	.002825	
CIT-8	.1052	7675.	.210	.362560	.002611	.002700	
CIT-9	.1070	8068.	.210	.365333	.002603	.002575	
JPL-2	.5927	20180.	.082	.316356	.002173	.002187	
JPL-2	.5927	20180.	.162	.379667	.002167	.002157	
JPL-2	.5927	20180.	.317	.658710	.002170	.002165	
JPL-4	.5018	22600.	.082	.303770	.002001	.002008	.002165
JPL-4	.6018	22600.	.162	.373014	.002178	.002115	
JPL-2	.5966	34330.	.082	.335341	.001982	.001902	
JPL-2	.5966	34330.	.162	.608831	.002004	.002006	
JPL-2	.5966	34330.	.162	.421421	.002056	.002053	
JPL-2	.5966	34330.	.162	.418002	.002062	.002060	
JPL-2	.5966	34330.	.317	.684368	.001970	.001960	
JPL-4	.5931	36670.	.082	.332706	.001972	.001979	.001996
JPL-4	.5931	36670.	.162	.605812	.001905	.001902	
JPL-2	.7882	21850.	.082	.328065	.002137	.002106	
JPL-2	.7882	21850.	.162	.398451	.002148	.002093	
JPL-2	.7882	21850.	.317	.677383	.002133	.002072	
JPL-4	.8016	23710.	.082	.315878	.002063	.002036	.002186
JPL-4	.8016	23710.	.162	.385220	.002070	.002010	

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Table A2. (Cont.)

STATION	ME	RE-THEFA	n	CP	CF(W/K)	CE(R/U)	CF(BAL)
JPL-2	.7943	37360.	.082	.348449	.001032	.001902	
JPL-2	.7943	37360.	.162	.425013	.001046	.001910	
JPL-2	.7943	37360.	.162	.430066	.002000	.001957	
JPL-2	.7943	37360.	.162	.435555	.001006	.001945	
JPL-2	.7943	37360.	.317	.524374	.001002	.001941	
JPL-4	.7921	41000.	.082	.344329	.001016	.001884	
JPL-4	.7921	41000.	.162	.418386	.001026	.001884	.001942
JPL-2	.9669	20490.	.082	.332483	.002108	.002037	
JPL-2	.9669	20490.	.162	.404747	.002112	.002012	
JPL-2	.9669	20490.	.317	.497931	.002135	.002026	
JPL-4	.9672	22840.	.082	.330050	.002084	.002027	
JPL-4	.9672	22840.	.162	.398954	.002078	.001900	.002057
JPL-2	.9626	36250.	.082	.350932	.001804	.001837	
JPL-2	.9626	36250.	.162	.430063	.001910	.001841	
JPL-2	.9626	36250.	.162	.450468	.001083	.001005	
JPL-2	.9626	36250.	.162	.447305	.001072	.001806	
JPL-2	.9626	36250.	.317	.520053	.001003	.001841	
JPL-4	.9637	39900.	.082	.344744	.001867	.001812	
JPL-4	.9637	39900.	.162	.420335	.001873	.001408	.001947
JPL-2	1.3141	10780.	.082	.304857	.001805	.001812	
JPL-2	1.3141	10780.	.162	.379365	.001020	.001801	
JPL-2	1.3141	10780.	.162	.379134	.001010	.001801	
JPL-2	1.3141	10780.	.162	.366049	.001072	.001743	
JPL-2	1.3141	10780.	.317	.465244	.001020	.001700	
JPL-4	1.3107	21900.	.082	.309447	.001015	.001827	
JPL-4	1.3107	21900.	.162	.378005	.001011	.001749	.001447

Table A2. (Cont.)

STATION	ME	RE-THTA	n	CP	CF(H/K)	CF(R/H)	CF(R/L)
JPL-2	1.3082	37230.	.082	.346058	.001775	.001707	
JPL-2	1.3082	37230.	.162	.431352	.001703	.001710	
JPL-2	1.3082	37230.	.162	.426238	.001776	.001696	
JPL-2	1.3082	37230.	.162	.423388	.001767	.001680	
JPL-2	1.3032	37230.	.317	.526062	.001782	.001707	
JPL-4	1.3125	37900.	.082	.347334	.001801	.001703	
JPL-4	1.3125	37900.	.162	.427147	.001806	.001692	.001748
JPL-2	2.1722	23070.	.082	.268505	.001628	.001552	
JPL-2	2.1722	23070.	.162	.322846	.001721	.001457	
JPL-2	2.1722	23070.	.162	.324205	.001716	.001453	
JPL-2	2.1722	23070.	.162	.317184	.001742	.001442	
JPL-2	2.1722	23070.	.317	.426345	.001896	.001470	
JPL-4	2.1642	24690.	.082	.265705	.001620	.001560	
JPL-4	2.1642	24690.	.162	.321750	.001747	.001455	.001532
JPL-2	2.1812	38050.	.082	.296806	.001570	.001414	
JPL-2	2.1812	38050.	.162	.368118	.001587	.001376	
JPL-2	2.1812	38050.	.162	.370214	.001581	.001378	
JPL-2	2.1812	38050.	.162	.361308	.001607	.001358	
JPL-2	2.1812	38050.	.317	.482045	.001723	.001402	
JPL-4	2.1820	41600.	.082	.293865	.001566	.001300	
JPL-4	2.1820	41600.	.162	.363573	.001583	.001350	.001465

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Table A3.

STREAM-WISE VARIATION OF FLOW PROPERTIES

ME	RE-THETA	BETA	OTDX	MOMR
.1031	6604.	.883E-05	.001384	
.6018	22400.	.651E-05	.001048	.968
.5931	36470.	.650E-05	.000996	.999
.8016	23710.	.144E-05	.001021	.979
.7921	41090.	.366E-05	.000971	1.000
.9672	22840.	-.115E-04	.001027	.998
.9637	39900.	.871E-06	.001007	1.035
1.3197	21900.	.606E-05	.000927	.993
1.3125	37900.	.666E-05	.000875	.979
2.1642	24690.	.228E-06	.000766	1.000
2.1820	41600.	-.252E-05	.000722	.999

TABLE A 4. DATA SUMMARY
PROFILE - CIT-4 - - - PITOT PRESSURE DATAEDGE MACH NO. = .1058
X = 152.40 CM
TOTAL PRESSURE = .1005E+06 N/M**2
TOTAL TEMPERATURE = 377.05 DEG-KUE = 37.25 M/SEC RE-DELTA-STAR = 7899. DELTA STAR = .3572 CM THETA = .2683 CM M = 1.331
RE-DELTA-STAR = 7899. RE-THETA = 5937. MUWALL = .1685 CM**2/SECLEAST SQUARE FIT PARAMETERS
UTAU = 1.3923 M/SEC
CHISQR = .4833E-04CF = .00787
YMAX = 2.175 CMPI = .0062
YMIN = .091 CM

DELTA = 2.4020 CM

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RH0E	U/UF	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	1.0000	0.0000	0.00	1.0000	0.000000
.031	.114	26.	.4941	1.0000	.4941	13.27	1.0000	0.000000
.035	.133	79.	.5080	1.0000	.5080	13.59	.9996	.000102
.040	.150	33.	.5212	1.0000	.5212	13.94	.9992	.000004
.047	.177	39.	.5403	1.0000	.5403	14.26	.9985	.000008
.055	.207	45.	.5543	1.0000	.5543	14.63	.9977	.000013
.071	.264	58.	.5738	1.0000	.5738	15.35	.9961	.000021
.091	.330	75.	.5927	1.0000	.5927	15.84	.9938	.000030
.111	.414	91.	.6055	1.0000	.6055	16.20	.9914	.000040
.142	.532	118.	.6248	1.0000	.6248	16.72	.9873	.000054
.176	.656	145.	.6423	1.0000	.6423	17.14	.9827	.000073
.187	.698	154.	.6469	1.0000	.6469	17.84	.9810	.000078
.204	.769	170.	.6586	1.0000	.6586	17.57	.9781	.000084
.271	1.012	224.	.6782	1.0000	.6782	18.15	.9674	.000121
.350	1.307	289.	.7028	1.0000	.7028	18.80	.9526	.000164
.470	1.603	355.	.7243	1.0000	.7243	19.34	.9357	.000207
.587	2.189	485.	.7619	1.0000	.7619	20.39	.8947	.000319
.749	2.792	619.	.7944	1.0000	.7944	21.24	.8446	.000425
.906	3.378	749.	.8210	1.0000	.8230	22.02	.7944	.000522
1.045	3.970	880.	.8444	1.0000	.8444	22.86	.7444	.000643
1.222	4.554	1010.	.8760	1.0000	.8760	23.64	.6923	.000743
1.540	5.739	1272.	.9231	1.0000	.9231	24.70	.6481	.001159
1.859	6.928	1536.	.9654	1.0000	.9654	25.83	.5933	.001465
2.016	7.514	1666.	.9794	1.0000	.9794	26.20	.5427	.001601
2.175	8.106	1797.	.9837	1.0000	.9837	26.48	.4910	.001719
2.333	8.698	1928.	.9865	1.0000	.9865	26.66	.4382	.001814
2.419	9.017	1999.	.9882	1.0000	.9882	26.71	.3859	.001834
2.490	9.283	2058.	.9887	1.0000	.9887	26.73	.3336	.001834
2.573	9.591	2126.	.9991	1.0000	.9991	26.73	.2813	.001834
2.649	9.875	2189.	.9991	1.0000	.9991	26.73	.2290	.001834
2.732	10.182	2257.	.9991	1.0000	.9991	26.73	.1767	.001834
2.811	10.479	2323.	1.0000	1.0000	1.0000	26.76	.1244	.001834
2.890	10.774	2388.	1.0000	1.0000	1.0000	26.76	.0721	.001834

TABLE A 4. (CONT.)
PROFILE - C11-5 -- - P1111 PRESSURE DATA

EDGE MACH NO.= .1072		TOTAL PRESSURE= .1001E+06 N/M ² ?		TOTAL TEMPERATURE= 312.75 DEG-K		M= 1.322		
X= 167.64 CM		DELTA STAR= .3759 CM		THETA= .2843 CM		M WALL= .1740 CM**2/SEC		
RE-DELTA-STAR= .8210.		RE-THETA= 6209.		PI= .4346		DELTA= 2.5844 CM		
LEAST SQUARE FIT PARAMETERS		CF= .002786		Y-IN= .097 CM				
UTAU= 1.42E-04 M/SEC		YMAX= 2.383 CM						
CHISQR= .9702E-05								
Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHDE	U/U	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	1.0000	0.0000	0.00	1.0000	0.000007
.031	.111	25.	.4877	1.0000	.4877	13.05	1.0000	0.000100
.032	.114	26.	.4942	1.0000	.4942	13.28	.9999	0.000300
.035	.125	28.	.5078	1.0000	.5078	13.59	.9994	0.000302
.040	.142	32.	.5255	1.0000	.5255	14.06	.9992	.000004
.043	.152	35.	.5319	1.0000	.5319	14.73	.9990	.000006
.051	.181	42.	.5487	1.0000	.5487	16.68	.9983	.000010
.057	.203	47.	.5562	1.0000	.5562	16.84	.9977	.000013
.067	.234	54.	.5695	1.0000	.5695	15.24	.9968	.000017
.081	.284	66.	.5840	1.0000	.5840	15.43	.9954	.000023
.097	.343	79.	.5925	1.0000	.5925	15.45	.4937	.000031
.114	.401	93.	.6036	1.0000	.6036	16.15	.9919	.000038
.120	.454	105.	.6131	1.0000	.6131	16.41	.9901	.000045
.145	.510	118.	.6279	1.0000	.6279	16.80	.9882	.000052
.161	.565	131.	.6359	1.0000	.6359	17.01	.9862	.000059
.192	.678	157.	.6487	1.0000	.6487	17.36	.9820	.000074
.226	.795	184.	.6627	1.0000	.6627	17.73	.9773	.000089
.256	.901	209.	.6752	1.0000	.6752	18.07	.9728	.000103
.288	1.015	235.	.6837	1.0000	.6837	18.30	.9677	.000119
.319	1.124	261.	.6982	1.0000	.6982	18.58	.9674	.000134
.339	1.403	325.	.7193	1.0000	.7193	19.25	.9484	.000173
.470	1.683	390.	.7376	1.0000	.7376	19.74	.9324	.000215
.637	2.241	520.	.7674	1.0000	.7674	20.54	.8949	.000304
.796	2.800	649.	.8003	1.0000	.8003	21.42	.8493	.000400
.954	3.359	779.	.8299	1.0000	.8299	22.21	.7949	.000523
1.113	3.916	909.	.8556	1.0000	.8556	22.89	.7317	.000648
1.273	4.480	1039.	.8729	1.0000	.8729	23.36	.6594	.000784
1.509	5.592	1297.	.9165	1.0000	.9165	24.53	.4973	.001064
1.909	6.716	1558.	.9557	1.0000	.9557	25.57	.3299	.001344
2.048	7.275	1688.	.9695	1.0000	.9695	25.94	.2348	.001474
2.224	7.825	1816.	.9831	1.0000	.9831	26.31	.1598	.001593
2.383	8.383	1945.	.9891	1.0000	.9891	26.47	.0853	.001644
2.545	8.953	2077.	.9958	1.0000	.9958	26.65	.0244	.001777
2.704	9.511	2207.	.9983	1.0000	.9983	26.71	0.0000	.001815
2.862	10.069	2337.	1.0000	1.0000	1.0000	26.76	0.0000	.001815
2.942	10.349	2402.	1.0000	1.0000	1.0000	26.76	0.0000	.001815

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TABLE A 4. (CONT.)
PROFILE - CIT-6 - - - PITOT PRESSURE DATAEDGE MACH NO. = .1031
X = 182.88 CM
TOTAL PRESSURE = .1275E+06 N/m²
TOTAL TEMPERATURE = 303.75 DEG-K

Y (CM)	Y-THETA	Y-PLUS	M/ME	RHO/RHOE	U/U _∞	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	1.0000	0.0700	0.07	1.0000	0.000000
.031	.108	26.	.4991	1.0000	.4991	13.43	1.0000	0.000000
.034	.119	29.	.5156	1.0000	.5156	13.87	.9997	.000001
.038	.130	31.	.5252	1.0000	.5252	14.13	.9994	.000003
.041	.140	34.	.5331	1.0000	.5331	14.34	.9992	.000004
.045	.154	37.	.5408	1.0000	.5408	14.55	.9988	.000006
.049	.165	40.	.5486	1.0000	.5486	14.76	.9985	.000008
.052	.178	43.	.5531	1.0000	.5531	14.88	.9982	.000010
.058	.200	49.	.5591	1.0000	.5591	15.04	.9976	.000013
.065	.222	56.	.5651	1.0000	.5651	15.20	.9971	.000015
.070	.241	59.	.5725	1.0000	.5725	15.40	.9965	.000018
.074	.254	62.	.5782	1.0000	.5782	15.56	.9961	.000020
.091	.314	77.	.5911	1.0000	.5911	15.91	.9944	.000027
.104	.363	89.	.6009	1.0000	.6009	16.17	.9928	.000034
.122	.417	102.	.6133	1.0000	.6133	16.50	.9911	.000041
.138	.474	116.	.6227	1.0000	.6227	16.76	.9891	.000048
.154	.529	129.	.6295	1.0000	.6295	16.94	.9872	.000055
.170	.582	143.	.6361	1.0000	.6361	17.12	.9852	.000062
.195	.669	164.	.6477	1.0000	.6477	17.43	.9818	.000073
.241	.825	202.	.6668	1.0000	.6668	17.94	.9754	.000094
.288	.987	242.	.6805	1.0000	.6805	18.31	.9682	.000116
.352	1.204	295.	.6987	1.0000	.6987	18.80	.9577	.000146
.431	1.474	362.	.7199	1.0000	.7199	19.37	.9432	.000185
.511	1.747	428.	.7382	1.0000	.7382	19.86	.9270	.000224
.649	2.200	562.	.7748	1.0000	.7748	20.45	.8890	.000317
.828	2.833	695.	.8075	1.0000	.8075	21.73	.8432	.000418
.987	3.376	828.	.8320	1.0000	.8320	22.39	.7898	.000530
1.304	4.462	1095.	.8741	1.0000	.8741	23.52	.6553	.000743
1.622	5.543	1361.	.9207	1.0000	.9207	24.77	.4945	.001059
1.939	6.634	1628.	.9546	1.0000	.9546	25.69	.3209	.001334
2.257	7.719	1894.	.9762	1.0000	.9762	26.27	.1562	.001579
2.574	8.805	2161.	.9907	1.0000	.9907	26.66	.0265	.001763
2.733	9.348	2296.	.9974	1.0000	.9974	26.84	0.0000	.001400
2.892	9.891	2427.	.9983	1.0000	.9983	26.86	0.0000	.001400
2.971	10.143	2494.	1.0000	1.0000	1.0000	26.91	0.0000	.001400

PI = .5374
YMIN = .091 CM
DELTA = 2.6563 CMUE = 37.34 M/SEC
RE-DELTA-STAR = 8718.
DELTA STAR = .3860 CM
RE-THETA = 6604.
THETA = .2924 CM
NIMALL = .1653 CM**2/.EC
M = 1.320LEAST SQUARE FIT PARAMETERS
UTAU = 1.3875 M/SEC
CHISQR = .308E-04
CF = .002756
YMAX = 2.257 CM

TABLE A 6. (CONT.)
PROFILE - C11-7 - - - PITOT PRESSURE DATA

ENGINE MACH NO. = .1036 TOTAL PRESSURE = .9870E+05 N/M²
X = 198.12 CM INITIAL TEMPERATURE = 377.75 DEG-K

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOE	U/UIE	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	1.0000	0.0000	0.00	1.0000	0.000000
.031	.095	25.	.5024	1.0000	.5124	13.69	1.0000	0.000000
.031	.095	25.	.5063	1.0000	.5063	13.79	.9999	0.000000
.040	.120	32.	.5237	1.0000	.5237	14.26	.9994	0.000003
.047	.144	38.	.5406	1.0000	.5406	14.73	.9989	0.000004
.057	.171	45.	.5574	1.0000	.5574	14.91	.9982	0.000010
.071	.215	57.	.5819	1.0000	.5819	15.31	.9971	0.000014
.087	.263	70.	.5794	1.0000	.5794	15.78	.9958	0.000021
.103	.311	83.	.5894	1.0000	.5894	16.03	.9944	0.000027
.127	.362	94.	.6008	1.0000	.6008	16.34	.9929	0.000033
.151	.453	121.	.6171	1.0000	.6171	16.81	.9900	0.000044
.182	.549	146.	.6286	1.0000	.6286	17.12	.9847	0.000054
.214	.644	172.	.6454	1.0000	.6454	17.59	.9832	0.000067
.247	.743	198.	.6581	1.0000	.6581	17.93	.9794	0.000074
.278	.835	223.	.6663	1.0000	.6663	18.15	.9757	0.000091
.309	.930	248.	.6744	1.0000	.6744	18.37	.9714	0.000103
.349	1.149	312.	.6993	1.0000	.6993	19.05	.9607	0.000134
.448	1.407	375.	.7171	1.0000	.7171	19.53	.9454	0.000164
.628	1.944	544.	.7480	1.0000	.7480	20.37	.92	0.000234
.746	2.162	630.	.7741	1.0000	.7741	21.09	.89	0.000313
.944	2.839	757.	.7993	1.0000	.7993	21.77	.86	0.000349
1.173	3.314	885.	.8249	1.0000	.8249	22.47	.80	0.000493
1.263	3.704	1013.	.8481	1.0000	.8481	23.12	.74	0.000595
1.541	4.750	1249.	.8841	1.0000	.8841	24.19	.67	0.000817
1.848	5.704	1523.	.9279	1.0000	.9279	25.28	.64	0.001353
2.216	6.644	1777.	.9519	1.0000	.9519	25.93	.324	0.001245
2.533	7.412	2032.	.9753	1.0000	.9753	26.57	.1841	0.001443
2.844	7.654	2064.	.9782	1.0000	.9780	26.64	.1796	0.001502
2.844	7.704	2064.	.9794	1.0000	.9708	26.64	.1732	0.001511
2.847	7.752	2069.	.9817	1.0000	.9817	26.74	.1664	0.001520
2.840	7.994	2134.	.9845	1.0000	.9845	26.82	.1341	0.001566
2.841	8.567	2287.	.9914	1.0000	.9914	27.12	.0444	0.001654
3.404	9.040	2413.	.9943	1.0000	.9943	27.14	0.0000	0.001719
3.148	9.521	2541.	.9981	1.0000	.9981	27.19	0.0000	0.001749
3.484	10.475	2764.	1.0000	1.0000	1.0000	27.24	0.0000	0.0000
3.643	10.948	2922.	1.0000	1.0000	1.0000	27.24	0.0000	0.0000

LEAST SQUARE FIT PARAMETERS

UTAU = 1.3180 M/SEC CF = .002089
CHISQR = .2505E-04 VMAX = 2.831 CM

UE = 35.91 M/SEC
RE-DELTA-STAR = 9421.
RE-THETA = 7270.

THETA = .328 CM
MINALL = .1643 CM/SEC

M = 1.323

PI = .4443
VMAX = .087 CM

DC-TAU = 3.0184 CM

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TABLE A-6 (CONT.)

PROFILE - C-17A - 1052
 FUSE WACH M9.0 - 1052
 No 213.36 CM

Y (CM)	V/TWETA	V-PLUS	M/VE	BM/BHRE	U/VE	H-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0	0.0000	1.0000	0.0000	0.00	1.0000	0.000000
0.010	0.000	25	0.0000	1.0000	0.0000	13.14	1.0000	0.000000
0.020	0.000	30	0.0000	1.0000	0.0000	13.22	1.0000	0.000000
0.030	0.000	34	0.0000	1.0000	0.0000	13.59	1.0000	0.000000
0.040	0.000	41	0.0000	1.0000	0.0000	14.26	1.0000	0.000000
0.050	0.000	48	0.0000	1.0000	0.0000	14.73	1.0000	0.000000
0.060	0.000	54	0.0000	1.0000	0.0000	15.32	1.0000	0.000000
0.070	0.000	61	0.0000	1.0000	0.0000	15.77	1.0000	0.000000
0.080	0.000	70	0.0000	1.0000	0.0000	16.59	1.0000	0.000000
0.090	0.000	77	0.0000	1.0000	0.0000	16.87	1.0000	0.000000
0.100	0.000	103	0.0000	1.0000	0.0000	16.83	1.0000	0.000000
0.110	0.000	124	0.0000	1.0000	0.0000	16.74	1.0000	0.000000
0.120	0.000	157	0.0000	1.0000	0.0000	17.32	1.0000	0.000000
0.130	0.000	172	0.0000	1.0000	0.0000	17.16	1.0000	0.000000
0.140	0.000	225	0.0000	1.0000	0.0000	18.74	1.0000	0.000000
0.150	0.000	322	0.0000	1.0000	0.0000	19.23	1.0000	0.000000
0.160	0.000	400	0.0000	1.0000	0.0000	19.70	1.0000	0.000000
0.170	0.000	536	0.0000	1.0000	0.0000	20.57	1.0000	0.000000
0.180	0.000	658	0.0000	1.0000	0.0000	21.26	1.0000	0.000000
0.190	0.000	745	0.0000	1.0000	0.0000	21.91	1.0000	0.000000
0.200	0.000	820	0.0000	1.0000	0.0000	22.59	1.0000	0.000000
0.210	0.000	879	0.0000	1.0000	0.0000	23.34	1.0000	0.000000
0.220	0.000	920	0.0000	1.0000	0.0000	23.73	1.0000	0.000000
0.230	0.000	945	0.0000	1.0000	0.0000	24.12	1.0000	0.000000
0.240	0.000	958	0.0000	1.0000	0.0000	24.54	1.0000	0.000000
0.250	0.000	963	0.0000	1.0000	0.0000	24.94	1.0000	0.000000
0.260	0.000	963	0.0000	1.0000	0.0000	25.34	1.0000	0.000000
0.270	0.000	963	0.0000	1.0000	0.0000	25.74	1.0000	0.000000
0.280	0.000	963	0.0000	1.0000	0.0000	26.14	1.0000	0.000000
0.290	0.000	963	0.0000	1.0000	0.0000	26.54	1.0000	0.000000
0.300	0.000	963	0.0000	1.0000	0.0000	26.94	1.0000	0.000000
0.310	0.000	963	0.0000	1.0000	0.0000	27.34	1.0000	0.000000
0.320	0.000	963	0.0000	1.0000	0.0000	27.74	1.0000	0.000000
0.330	0.000	963	0.0000	1.0000	0.0000	28.14	1.0000	0.000000
0.340	0.000	963	0.0000	1.0000	0.0000	28.54	1.0000	0.000000
0.350	0.000	963	0.0000	1.0000	0.0000	28.94	1.0000	0.000000
0.360	0.000	963	0.0000	1.0000	0.0000	29.34	1.0000	0.000000
0.370	0.000	963	0.0000	1.0000	0.0000	29.74	1.0000	0.000000
0.380	0.000	963	0.0000	1.0000	0.0000	30.14	1.0000	0.000000
0.390	0.000	963	0.0000	1.0000	0.0000	30.54	1.0000	0.000000
0.400	0.000	963	0.0000	1.0000	0.0000	30.94	1.0000	0.000000
0.410	0.000	963	0.0000	1.0000	0.0000	31.34	1.0000	0.000000
0.420	0.000	963	0.0000	1.0000	0.0000	31.74	1.0000	0.000000
0.430	0.000	963	0.0000	1.0000	0.0000	32.14	1.0000	0.000000
0.440	0.000	963	0.0000	1.0000	0.0000	32.54	1.0000	0.000000
0.450	0.000	963	0.0000	1.0000	0.0000	32.94	1.0000	0.000000
0.460	0.000	963	0.0000	1.0000	0.0000	33.34	1.0000	0.000000
0.470	0.000	963	0.0000	1.0000	0.0000	33.74	1.0000	0.000000
0.480	0.000	963	0.0000	1.0000	0.0000	34.14	1.0000	0.000000
0.490	0.000	963	0.0000	1.0000	0.0000	34.54	1.0000	0.000000
0.500	0.000	963	0.0000	1.0000	0.0000	34.94	1.0000	0.000000
0.510	0.000	963	0.0000	1.0000	0.0000	35.34	1.0000	0.000000
0.520	0.000	963	0.0000	1.0000	0.0000	35.74	1.0000	0.000000
0.530	0.000	963	0.0000	1.0000	0.0000	36.14	1.0000	0.000000
0.540	0.000	963	0.0000	1.0000	0.0000	36.54	1.0000	0.000000
0.550	0.000	963	0.0000	1.0000	0.0000	36.94	1.0000	0.000000
0.560	0.000	963	0.0000	1.0000	0.0000	37.34	1.0000	0.000000
0.570	0.000	963	0.0000	1.0000	0.0000	37.74	1.0000	0.000000
0.580	0.000	963	0.0000	1.0000	0.0000	38.14	1.0000	0.000000
0.590	0.000	963	0.0000	1.0000	0.0000	38.54	1.0000	0.000000
0.600	0.000	963	0.0000	1.0000	0.0000	38.94	1.0000	0.000000
0.610	0.000	963	0.0000	1.0000	0.0000	39.34	1.0000	0.000000
0.620	0.000	963	0.0000	1.0000	0.0000	39.74	1.0000	0.000000
0.630	0.000	963	0.0000	1.0000	0.0000	40.14	1.0000	0.000000
0.640	0.000	963	0.0000	1.0000	0.0000	40.54	1.0000	0.000000
0.650	0.000	963	0.0000	1.0000	0.0000	40.94	1.0000	0.000000
0.660	0.000	963	0.0000	1.0000	0.0000	41.34	1.0000	0.000000
0.670	0.000	963	0.0000	1.0000	0.0000	41.74	1.0000	0.000000
0.680	0.000	963	0.0000	1.0000	0.0000	42.14	1.0000	0.000000
0.690	0.000	963	0.0000	1.0000	0.0000	42.54	1.0000	0.000000
0.700	0.000	963	0.0000	1.0000	0.0000	42.94	1.0000	0.000000
0.710	0.000	963	0.0000	1.0000	0.0000	43.34	1.0000	0.000000
0.720	0.000	963	0.0000	1.0000	0.0000	43.74	1.0000	0.000000
0.730	0.000	963	0.0000	1.0000	0.0000	44.14	1.0000	0.000000
0.740	0.000	963	0.0000	1.0000	0.0000	44.54	1.0000	0.000000
0.750	0.000	963	0.0000	1.0000	0.0000	44.94	1.0000	0.000000
0.760	0.000	963	0.0000	1.0000	0.0000	45.34	1.0000	0.000000
0.770	0.000	963	0.0000	1.0000	0.0000	45.74	1.0000	0.000000
0.780	0.000	963	0.0000	1.0000	0.0000	46.14	1.0000	0.000000
0.790	0.000	963	0.0000	1.0000	0.0000	46.54	1.0000	0.000000
0.800	0.000	963	0.0000	1.0000	0.0000	46.94	1.0000	0.000000
0.810	0.000	963	0.0000	1.0000	0.0000	47.34	1.0000	0.000000
0.820	0.000	963	0.0000	1.0000	0.0000	47.74	1.0000	0.000000
0.830	0.000	963	0.0000	1.0000	0.0000	48.14	1.0000	0.000000
0.840	0.000	963	0.0000	1.0000	0.0000	48.54	1.0000	0.000000
0.850	0.000	963	0.0000	1.0000	0.0000	48.94	1.0000	0.000000
0.860	0.000	963	0.0000	1.0000	0.0000	49.34	1.0000	0.000000
0.870	0.000	963	0.0000	1.0000	0.0000	49.74	1.0000	0.000000
0.880	0.000	963	0.0000	1.0000	0.0000	50.14	1.0000	0.000000
0.890	0.000	963	0.0000	1.0000	0.0000	50.54	1.0000	0.000000
0.900	0.000	963	0.0000	1.0000	0.0000	50.94	1.0000	0.000000
0.910	0.000	963	0.0000	1.0000	0.0000	51.34	1.0000	0.000000
0.920	0.000	963	0.0000	1.0000	0.0000	51.74	1.0000	0.000000
0.930	0.000	963	0.0000	1.0000	0.0000	52.14	1.0000	0.000000
0.940	0.000	963	0.0000	1.0000	0.0000	52.54	1.0000	0.000000
0.950	0.000	963	0.0000	1.0000	0.0000	52.94	1.0000	0.000000
0.960	0.000	963	0.0000	1.0000	0.0000	53.34	1.0000	0.000000
0.970	0.000	963	0.0000	1.0000	0.0000	53.74	1.0000	0.000000
0.980	0.000	963	0.0000	1.0000	0.0000	54.14	1.0000	0.000000
0.990	0.000	963	0.0000	1.0000	0.0000	54.54	1.0000	0.000000
1.000	0.000	963	0.0000	1.0000	0.0000	54.94	1.0000	0.000000

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TABLE A 4. (CONT.)
PROFILE - CIT-9 - - - PITOT PRESSURE DATA

EDGE MACH NO.= .1070		TOTAL PRESSURE= .1001E+06 N/m ²		TOTAL TEMPERATURE= 310.05 DEG-K		M= 1.315		
X= 228.60 IN		DELTA STAR= .4914 CM		THETA= .3459 CM		MULL= .1714 CM/SEC		
RE-DELTA-STAR= 10A10.		RE-THETA= 8088.						
LEAST SQUARE FIT PARAMETERS								
UTIME= 1.3837 M/SEC		CF= .002676		PI= .6139		DELTA= 3.4060 CM		
CMISQR= .2107E-04		YMAX= 3.138 CM		YMIN= .084 CM				
Y (CM)	Y/THETA	Y-PLUS	M/E	RM/RMRF	U/IF	I-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	1.0000	0.0000	0.00	1.0000	0.000000
.031	.084	25.	.4774	1.0000	.4774	13.03	1.0000	0.000000
.035	.095	28.	.4894	1.0000	.4894	13.36	.9998	.0000001
.040	.110	32.	.5127	1.0000	.5127	14.00	.9994	.0000003
.046	.127	37.	.5287	1.0000	.5287	14.43	.9990	.0000005
.054	.147	47.	.5626	1.0000	.5626	14.81	.9983	.0000009
.065	.177	57.	.5512	1.0000	.5512	15.19	.9978	.0000011
.073	.199	59.	.5622	1.0000	.5622	15.35	.9972	.0000014
.086	.216	69.	.5783	1.0000	.5783	15.79	.9967	.0000019
.101	.277	82.	.5854	1.0000	.5854	15.98	.9951	.0000044
.117	.321	94.	.5938	1.0000	.5938	16.21	.9938	.0000029
.133	.366	107.	.6036	1.0000	.6036	16.44	.9924	.0000034
.150	.442	135.	.6274	1.0000	.6274	17.00	.9892	.0000044
.166	.517	158.	.6384	1.0000	.6384	17.43	.9864	.0000055
.231	.673	187.	.6488	1.0000	.6488	17.71	.9830	.0000066
.263	.720	212.	.6589	1.0000	.6589	17.91	.9797	.0000077
.323	.884	261.	.6800	1.0000	.6800	18.57	.9729	.0000077
.355	.911	247.	.6910	1.0000	.6910	18.87	.9690	.0000104
.435	1.188	351.	.7065	1.0000	.7065	19.29	.9659	.0000134
.514	1.405	415.	.7239	1.0000	.7239	19.77	.9628	.0000165
.677	1.852	547.	.7532	1.0000	.7532	20.57	.9578	.0000220
.813	2.277	672.	.7769	1.0000	.7769	21.14	.9510	.0000253
.905	2.719	803.	.7983	1.0000	.7983	21.80	.9482	.0000368
1.149	3.247	927.	.8218	1.0000	.8218	22.44	.9455	.0000445
1.308	3.574	1056.	.8389	1.0000	.8389	22.91	.9427	.0000530
1.627	4.467	1314.	.8757	1.0000	.8757	23.91	.9375	.0000718
1.943	5.300	1568.	.9102	1.0000	.9102	24.85	.9349	.0000918
2.263	6.195	1827.	.9373	1.0000	.9373	25.59	.9279	.0001127
2.578	7.044	2081.	.9609	1.0000	.9609	26.24	.9212	.0001324
2.897	7.915	2318.	.9815	1.0000	.9815	26.80	.9140	.0001503
3.054	8.345	2465.	.9857	1.0000	.9857	27.03	.9104	.0001550
3.138	8.575	2433.	.9909	1.0000	.9909	27.03	.9035	.0001617
3.295	9.004	2660.	.9941	1.0000	.9941	27.14	.9036	.0001678
3.376	9.226	2726.	.9958	1.0000	.9958	27.19	.9018	.0001705
3.525	9.633	2844.	.9983	1.0000	.9983	27.26	0.0000	.0001731
3.611	9.888	2915.	1.0000	1.0000	1.0000	27.30	0.0000	.0001731

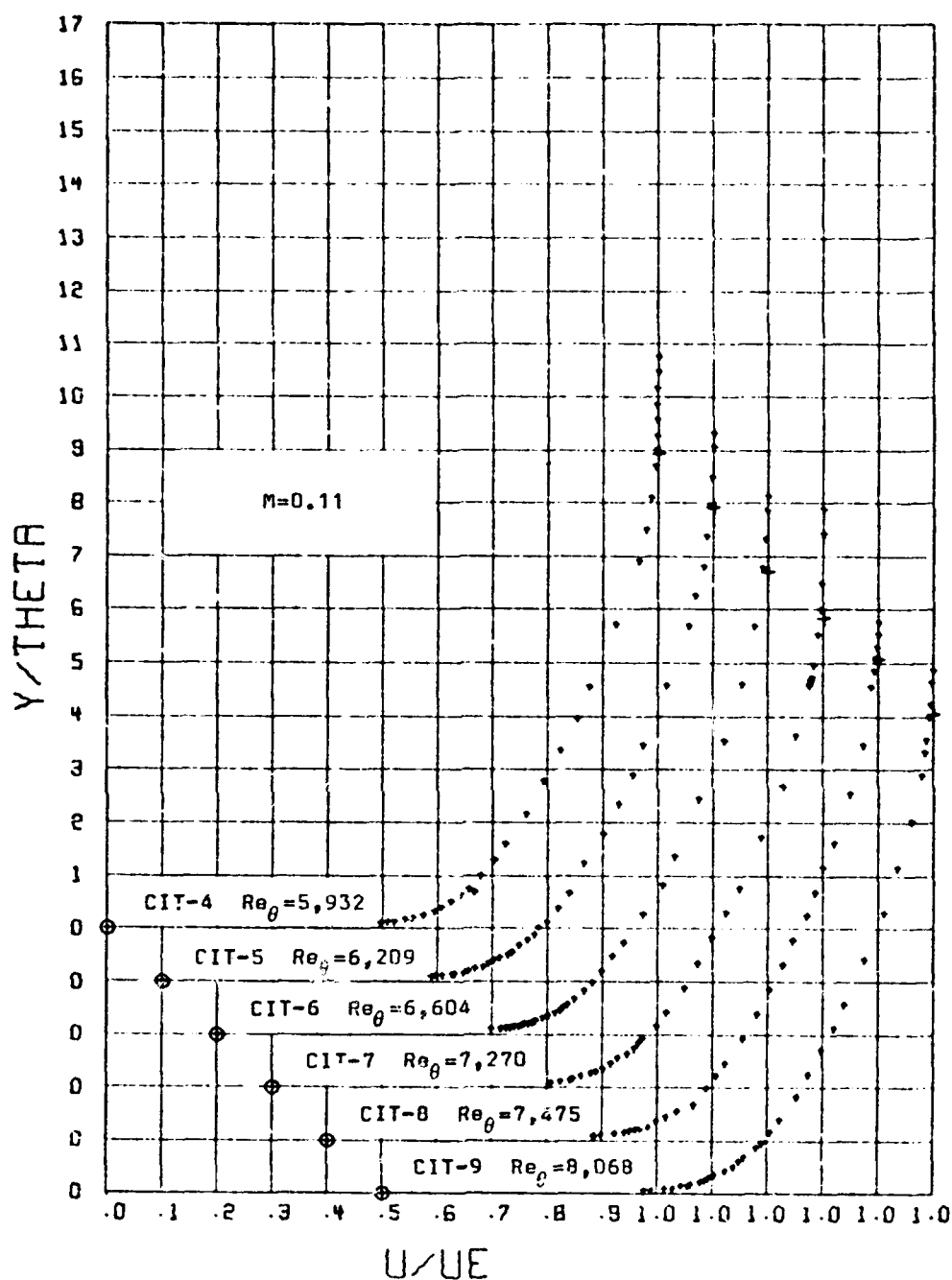


Figure A1. Mean Velocity Profiles.

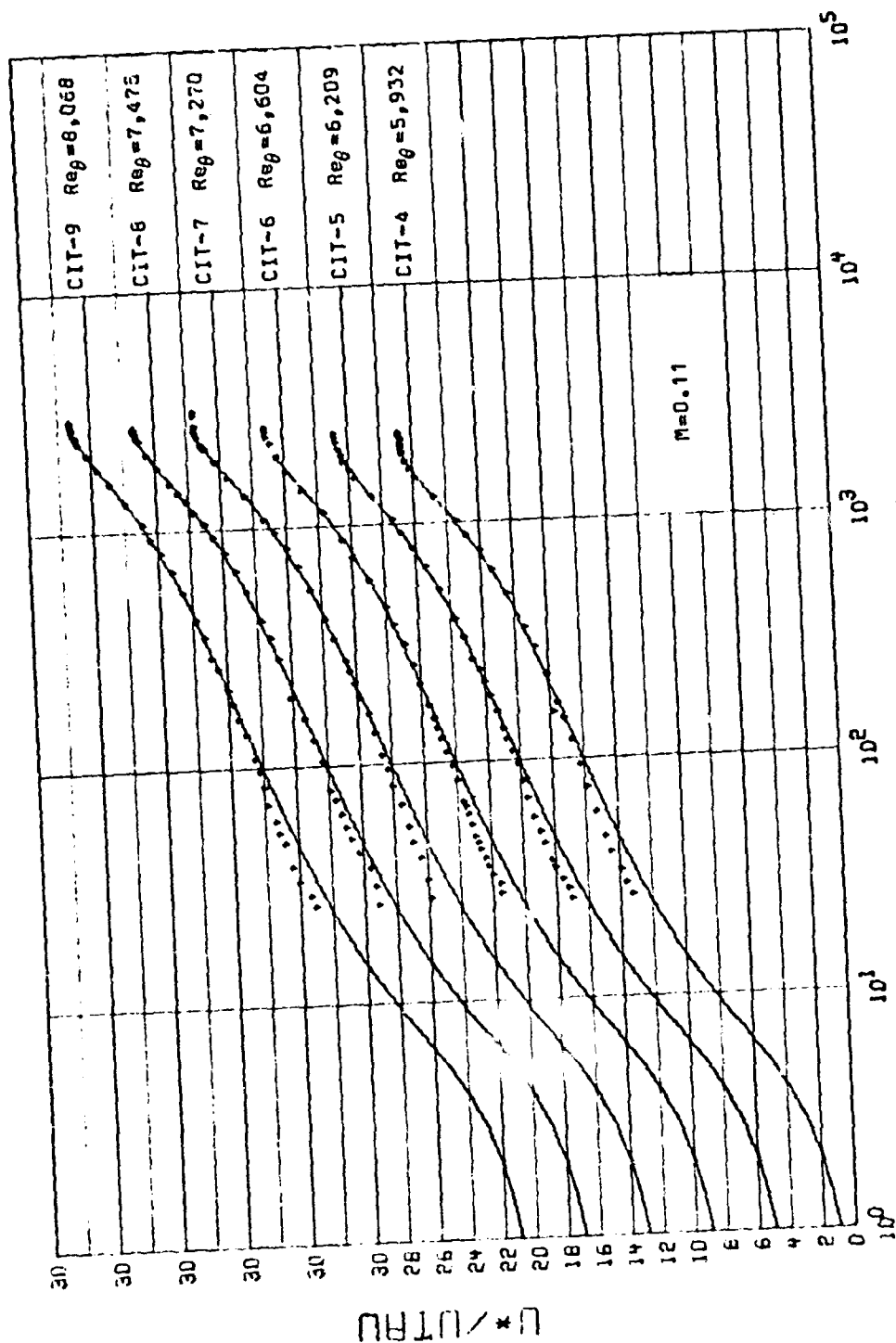


Figure A2. Van Driest Scaled Mean Velocity Profiles.

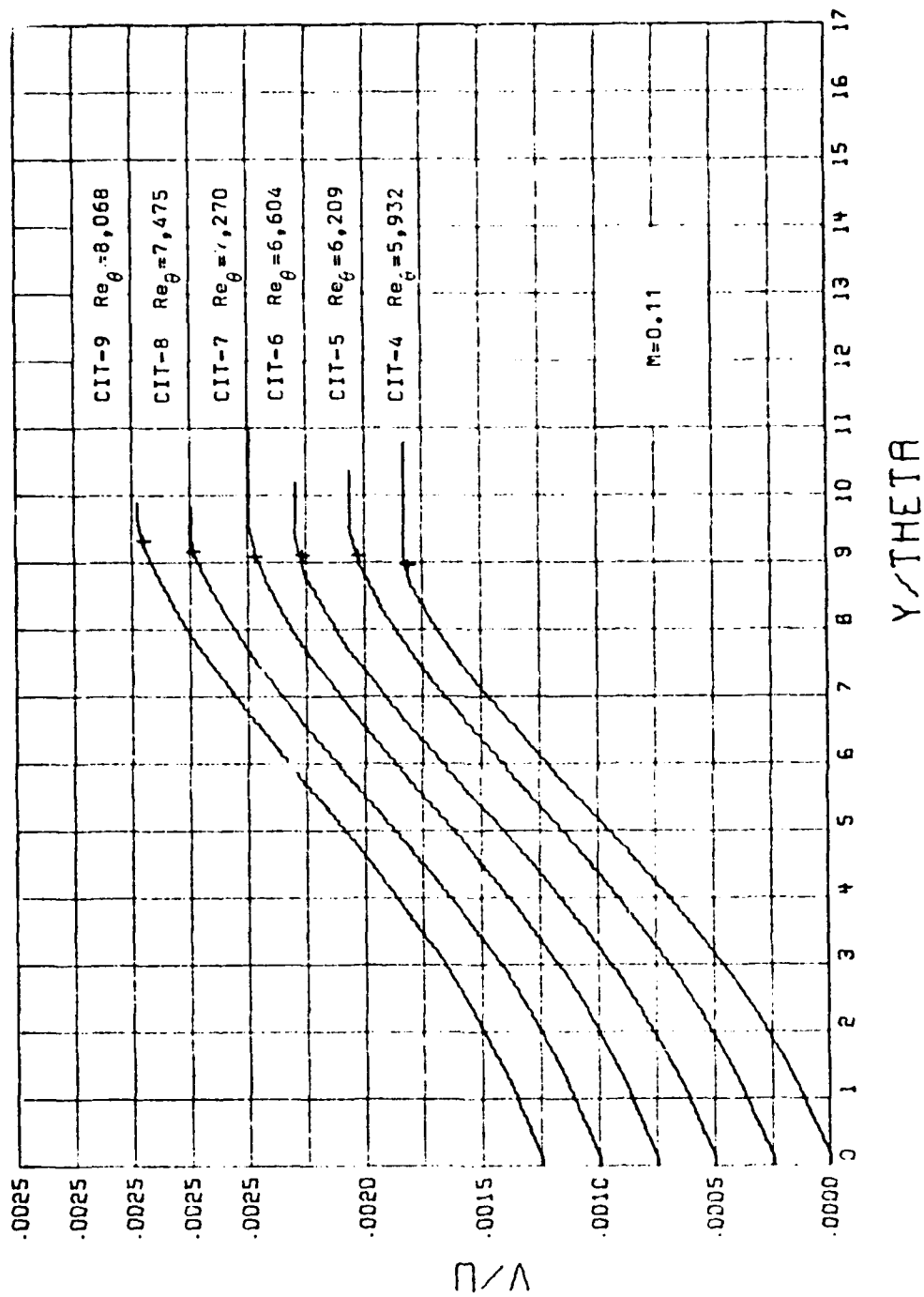


Figure A3. Normal Velocity Distribution.

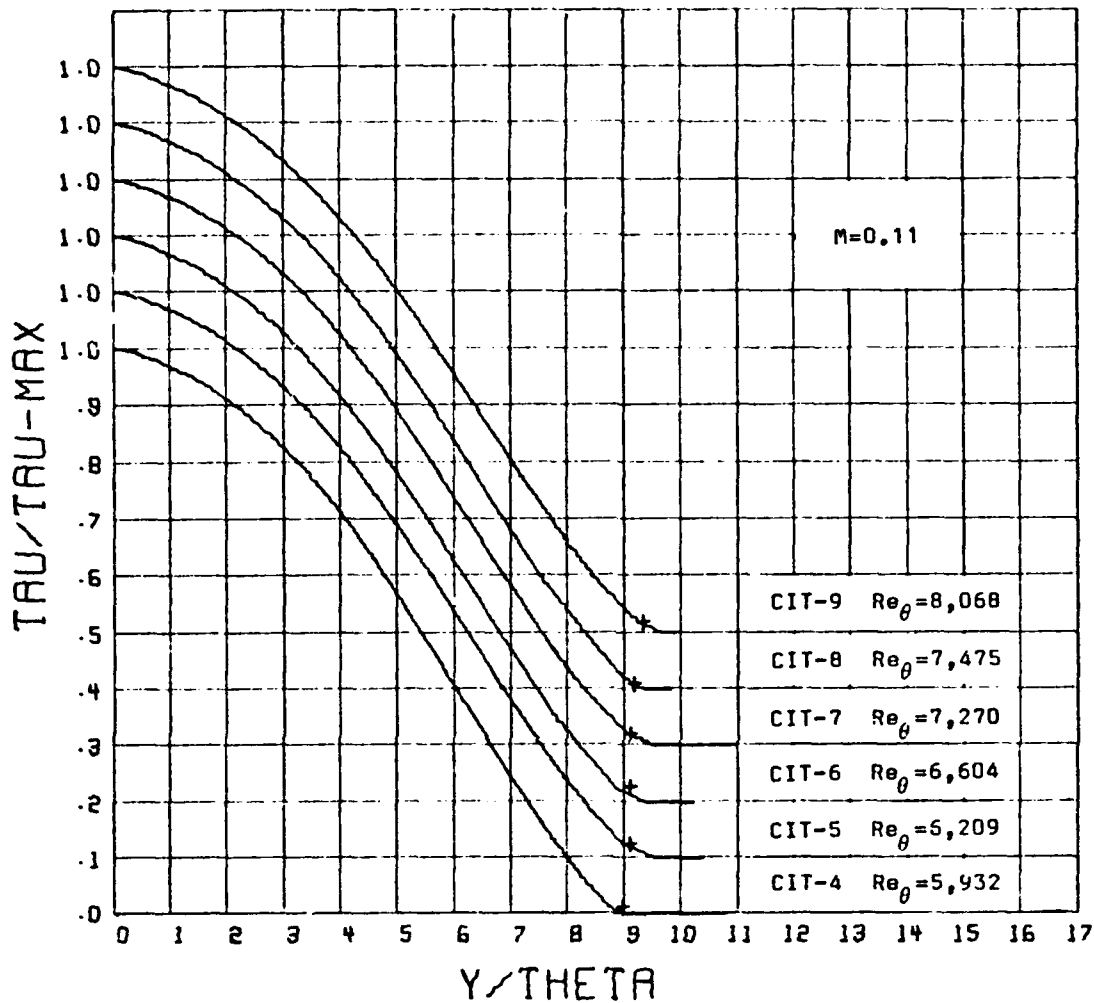


Figure A4. Shear Stress Distribution.

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TABLE A 5. DATA SUMMARY
PROFILE - JPL-1 - - - PITOT PRESSURE DATA

EDGE MACH NO. = .5927 TOTAL PRESSURE = .6665E+05 N/Inch²
X = -48.43 CM TOTAL TEMPERATURE = 315.73 DEG-K

UE = 201.05 M/SEC RE-DELTA-STAR = 27510.		DELTA STAR = .3796 CM RE-THETA = 18870.		THETA = .2604 CM NUWALL = .3128 CM=2/SEC		M = 1.457		
LEAST SQUARE FIT PARAMETERS UTAIL= 6.8401 M/SEC CHISQR=.1455E-04		CF = .002179 YMAX = 2.340 CM		PI = .7613 YMIN = .049 CM		DELTA = 2.4827 CM		
Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHREF	U/UIF	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.9414	0.0000	0.00	1.0000	0.000000
.010	.030	22.	.3695	.9494	.3702	11.16	1.0000	0.000000
.019	.073	41.	.4757	.9547	.4848	14.34	.9994	.000003
.035	.136	77.	.5252	.9576	.5367	15.82	.9982	.000009
.069	.268	152.	.5845	.9616	.5941	17.58	.9950	.000021
.101	.390	222.	.6045	.9620	.6180	18.23	.9917	.000032
.130	.502	286.	.6218	.9640	.6333	18.69	.9882	.000042
.157	.604	346.	.6304	.9653	.6508	19.20	.9849	.000052
.182	.702	399.	.6379	.9658	.6691	19.75	.9815	.000061
.213	.819	445.	.6440	.9672	.6781	19.93	.9772	.000073
.226	.867	464.	.6491	.9684	.6891	20.38	.9753	.000077
.261	1.004	572.	.6901	.9693	.7009	20.70	.9698	.000091
.294	1.131	644.	.6876	.9691	.6984	20.62	.9645	.000104
.316	1.213	691.	.7043	.9704	.7149	21.12	.9608	.000113
.345	1.326	755.	.7161	.9713	.7265	21.40	.9557	.000125
.388	1.491	849.	.7185	.9714	.7289	21.53	.9476	.000143
.425	1.633	930.	.7314	.9727	.7416	21.91	.9402	.000159
.449	1.725	983.	.7358	.9731	.7459	22.04	.9352	.000170
.505	1.940	1105.	.7543	.9747	.7640	22.59	.9278	.000194
.542	2.106	1199.	.7587	.9751	.7674	22.70	.9175	.000217
.577	2.218	1263.	.7666	.9754	.7720	22.88	.9052	.000232
.617	2.369	1349.	.7764	.9767	.7856	23.23	.8948	.000252
.651	2.501	1426.	.7740	.9767	.7852	23.22	.8853	.000271
.685	2.632	1499.	.7853	.9775	.7943	23.49	.8754	.000290
.741	2.847	1621.	.7957	.9785	.8064	23.79	.8582	.000322
.787	3.022	1721.	.799	.9788	.8075	23.49	.8433	.000349
.830	3.222	1836.	.8143	.9802	.8256	24.33	.8252	.000382
.874	3.471	1977.	.8249	.9812	.8377	24.64	.8011	.000424
.924	3.627	2068.	.8330	.9820	.8405	24.98	.7852	.000452
.969	3.797	2163.	.8342	.9822	.8417	24.91	.7670	.000483
1.049	4.027	2293.	.8450	.9832	.8521	25.23	.7412	.000524
1.103	4.231	2410.	.8590	.9846	.8656	25.63	.7170	.000566
1.158	4.444	2532.	.8567	.9844	.8635	25.57	.6904	.000599
1.206	4.631	2638.	.8721	.9850	.8733	26.01	.6667	.000644
1.248	4.792	2729.	.8792	.9867	.8851	26.72	.6453	.000679
1.308	5.021	2860.	.8786	.9864	.8865	26.40	.6189	.000724
1.343	5.234	2982.	.8924	.9880	.8978	26.40	.5836	.000774
1.422	5.460	3110.	.9057	.9895	.9115	27.01	.5409	.000822
1.480	5.694	3238.	.9092	.9898	.9188	27.04	.5175	.000871
1.540	5.913	3368.	.9091	.9901	.9201	27.54	.4876	.000921
1.602	6.152	3504.	.9285	.9919	.9323	27.64	.4457	.000973

Y (CM)	Y/TMETHA	Y-PLUS	TABLE A 5. (CONT.) W/ME	RHO/RHPE	U/UE	II-PLUS	TAU/TAI-MAX	V/U
1.653	6.386	3638.	.9360	.9927	.9304	27.85	.4092	.001024
1.779	6.640	3782.	.9420	.9934	.9451	28.02	.3696	.001079
1.744	6.849	3901.	.9457	.9937	.9482	28.12	.3369	.001123
1.832	7.035	4007.	.9522	.9945	.9568	28.37	.3087	.001161
1.877	7.205	4104.	.9550	.9948	.9574	28.40	.2870	.001194
1.929	7.405	4218.	.9647	.9959	.9647	28.68	.2518	.001236
1.982	7.610	4335.	.9650	.9959	.9670	28.69	.2215	.001275
2.039	7.829	4460.	.9763	.9972	.9777	29.01	.1909	.001314
2.092	8.034	4576.	.9775	.9974	.9788	29.04	.1617	.001352
2.164	8.307	4732.	.9885	.9986	.9892	29.36	.1258	.001398
2.227	8.551	4871.	.9864	.9984	.9872	29.30	.0957	.001436
2.282	8.761	4980.	.9924	.9991	.9929	29.47	.0720	.001465
2.340	8.985	5118.	.9915	.9990	.9920	29.44	.0484	.001495
2.397	9.204	5243.	.9952	.9994	.9954	29.55	.0277	.001520
2.441	9.448	5382.	.9931	.9991	.9935	29.49	.0074	.001545
2.509	9.633	5487.	.9970	.9996	.9972	29.50	0.0000	.001554
2.562	9.838	5674.	1.0014	1.0001	1.0013	29.72	0.0000	.001554
2.670	10.253	5840.	1.0032	1.0003	1.0030	29.78	0.0000	.001554
2.748	10.706	6098.	1.0092	1.0009	1.0092	29.69	0.0000	.001554
2.803	11.145	6348.	1.0045	1.0005	1.0043	29.81	0.0000	.001554
3.002	11.525	6565.	1.0006	1.0000	1.0006	29.70	0.0000	.001554
3.094	11.881	6767.	1.0004	1.0000	1.0006	29.70	0.0000	.001554
3.191	12.251	6978.	1.0041	1.0004	1.0039	29.80	0.0000	.001554
3.288	12.622	7190.	.9977	.9997	.9978	29.62	0.0000	.001554
3.376	12.963	7384.	.9981	.9997	.9982	29.63	0.0000	.001554
3.455	13.266	7556.	1.0025	1.0007	1.0023	29.76	0.0000	.001554
3.535	13.573	7731.	.9990	.9998	.9991	29.66	0.0000	.001554

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TABLE A 5. (CONT.)
PROFILE - JPL-2 - - - PITOT PRESSURE DATA

EDGE MACH NO.= .5927		TOTAL PRESSURE=.6665E+05 N/M ⁰⁰²		TOTAL TEMPERATURE= 310.10 DEG-K				
X=26.21 CM		DELTA STAR= .4179 CM		THETA=.2902 CM		M= 1.439		
		RE-THETA= 20180.		NIMALL= .3209 CM		DELTA= 2.4530 CM		
UE= 202.47 M/SEC				PI= .4484				
RE-DELTA-STAR= 29060.				YMIN= .085 CM				
LEAST SQUARE FIT PARAMETERS		CF= .002201						
UTAU= 6.9226 M/SEC		YMAX= 2.672 CM						
CHISQR= .1125E-04								
Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOF	U/UF	I-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.9414	0.0000	0.00	1.0000	0.000000
.010	.035	21.	.3894	.9503	.3995	11.70	1.0000	0.000000
.020	.070	43.	.4825	.9550	.4937	14.47	.9994	.000003
.033	.113	71.	.5135	.9568	.5250	15.39	.9985	.000007
.048	.166	104.	.5482	.9590	.5588	16.42	.9973	.000012
.064	.223	139.	.5781	.9610	.5897	17.30	.9959	.000018
.085	.293	183.	.5945	.9621	.6041	17.79	.9940	.000024
.104	.358	224.	.6079	.9630	.6195	18.18	.9920	.000030
.120	.415	260.	.6275	.9645	.6389	18.76	.9903	.000034
.149	.514	323.	.6440	.9657	.6554	19.25	.9870	.000045
.170	.586	367.	.6563	.9666	.6674	19.61	.9846	.000052
.201	.695	435.	.6669	.9674	.6780	19.92	.9806	.000063
.224	.774	484.	.6812	.9684	.6922	20.34	.9777	.000070
.243	.840	524.	.6863	.9690	.7022	20.49	.9751	.000077
.265	.914	572.	.6914	.9694	.7072	20.63	.9721	.000084
.290	1.001	627.	.6975	.9695	.7133	20.67	.9685	.000093
.316	1.099	682.	.7097	.9709	.7203	21.17	.9647	.000102
.341	1.174	736.	.7111	.9710	.7216	21.21	.9608	.000111
.372	1.241	802.	.7180	.9714	.7284	21.41	.9559	.000122
.400	1.270	820.	.7224	.9720	.7328	21.54	.9487	.000143
.426	1.285	835.	.7246	.9734	.7516	22.10	.9371	.000164
.453	1.294	846.	.7284	.9742	.7583	22.33	.9263	.000186
.480	1.304	854.	.7364	.9754	.7719	22.71	.9150	.000209
.500	1.301	862.	.7494	.9761	.7749	22.91	.9030	.000233
.523	1.301	867.	.7597	.9770	.7890	23.49	.8908	.000240
.553	1.304	874.	.7664	.9777	.7958	23.49	.8893	.000244
.573	1.304	874.	.7664	.9777	.7958	23.49	.8870	.000244
.607	1.304	874.	.7664	.9777	.7958	23.49	.8847	.000244
.652	1.304	874.	.7664	.9777	.7958	23.49	.8824	.000244
.703	1.304	874.	.7664	.9777	.7958	23.49	.8801	.000244
.753	1.304	874.	.7664	.9777	.7958	23.49	.8778	.000244
.807	1.304	874.	.7664	.9777	.7958	23.49	.8755	.000244
.852	1.304	874.	.7664	.9777	.7958	23.49	.8732	.000244
.909	1.304	874.	.7664	.9777	.7958	23.49	.8709	.000244
.951	1.304	874.	.7664	.9777	.7958	23.49	.8686	.000244
.995	1.304	874.	.7664	.9777	.7958	23.49	.8663	.000244
1.038	1.304	874.	.7664	.9777	.7958	23.49	.8640	.000244
1.087	1.304	874.	.7664	.9777	.7958	23.49	.8617	.000244
1.141	1.304	874.	.7664	.9777	.7958	23.49	.8594	.000244
1.195	1.304	874.	.7664	.9777	.7958	23.49	.8571	.000244
1.245	1.304	874.	.7664	.9777	.7958	23.49	.8548	.000244
1.296	1.304	874.	.7664	.9777	.7958	23.49	.8525	.000244
1.347	1.304	874.	.7664	.9777	.7958	23.49	.8502	.000244
1.424	1.304	874.	.7664	.9777	.7958	23.49	.8479	.000244
1.471	1.304	874.	.7664	.9777	.7958	23.49	.8456	.000244
1.520	1.304	874.	.7664	.9777	.7958	23.49	.8433	.000244

TABLE A 5. (CONT.)
H/ME

Y (CM)	Y/THEA	Y-PLUS	H/ME	RND/R/ME	U/UE	II-PLUS	TAU/TAU-MAX	V/U
1.567	5.399	3380.	.9005	.9889	.9056	26.70	.5747	.000783
1.619	5.578	3493.	.9078	.9897	.9125	26.91	.5496	.0007820
1.668	5.748	3600.	.9109	.9900	.9155	27.00	.5254	.000855
1.718	5.919	3706.	.9181	.9908	.9223	27.20	.5007	.000991
1.771	6.103	3821.	.9216	.9914	.9276	27.36	.4738	.000930
1.832	6.313	3953.	.9292	.9920	.9329	27.52	.4427	.000974
1.893	6.523	4084.	.9358	.9927	.9392	27.71	.4114	.001018
1.944	6.698	4194.	.9442	.9936	.9472	27.95	.3852	.001054
2.005	6.908	4326.	.9466	.9936	.9476	27.96	.3537	.001097
2.053	7.074	4430.	.9530	.9946	.9556	28.20	.3288	.001131
2.117	7.293	4567.	.9543	.9948	.9573	28.25	.2963	.001175
2.165	7.459	4671.	.9632	.9957	.9652	28.49	.2715	.001204
2.241	7.722	4835.	.9673	.9962	.9691	28.61	.2439	.001259
2.270	7.822	4898.	.9703	.9965	.9720	28.70	.2196	.001276
2.325	8.010	5016.	.9755	.9971	.9769	28.84	.1934	.001311
2.378	8.194	5131.	.9784	.9975	.9796	28.92	.1685	.001343
2.432	8.378	5246.	.9777	.9976	.9790	28.90	.1444	.001374
2.479	8.540	5347.	.9831	.9980	.9840	29.06	.1239	.001400
2.527	8.706	5452.	.9868	.9984	.9876	29.16	.1036	.001426
2.578	8.881	5561.	.9907	.9989	.9913	29.28	.0832	.001452
2.626	9.047	5655.	.9946	.9994	.9952	29.39	.0644	.001475
2.672	9.205	5764.	.9949	.9994	.9952	29.39	.0483	.001498
2.711	9.340	5849.	.9923	.9991	.9928	29.32	.0349	.001512
2.764	9.524	5944.	.9923	.9991	.9928	29.32	.0179	.001533
2.805	9.664	6052.	.9963	.9995	.9965	29.43	.0060	.001548
2.853	9.830	6156.	.9967	.9996	.9969	29.45	0.0000	.001554
2.894	9.970	6263.	.9976	.9997	.9978	29.47	0.0000	.001556
2.980	10.268	6430.	.9986	.9998	.9987	29.50	0.0000	.001556
3.055	10.526	6591.	.9987	.9998	.9987	29.50	0.0000	.001556
3.145	10.807	6764.	.9986	.9998	.9987	29.50	0.0000	.001556
3.204	11.038	6912.	.9986	.9998	.9987	29.50	0.0000	.001556
3.295	11.353	7109.	1.0004	1.0000	1.0004	29.55	0.0000	.001556
3.387	11.668	7306.	1.0006	1.0000	1.0006	29.56	0.0000	.001556
3.465	11.939	7476.	.9999	.9999	.9999	29.56	0.0000	.001554
3.544	12.210	7646.	1.0008	1.0001	1.0008	29.56	0.0000	.001556

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TABLE A 5. (CONT.)
PROFILE - JPL-3 - -- PITOT PRESSURE DATAEDGE MACH NO. = .5986
X = -7.62 CM
TOTAL PRESSURE = .6665E+05 N/M²
TOTAL TEMPERATURE = 373.31 DEG-K

UE = 202.13 M/SEC
RE-DELTA-STAR = 31750.
DELTA STAR = .4333 CM
RE-THETA = 22190.
THETA = .3028 CM
M = 1.430
NUMALL = .3090 CM²/SEC
DELTA = 3.0444 CM

LEAST SQUARE FIT PARAMETERS
CF = .002196
YMAX = 2.858 CM
PI = .6224
YMIN = .082 CM

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOF	U/UF	IP-PLUS	TAU/TAU-MAX	V/VU
0.000	0.000	0.	0.0000	.9403	0.0000	0.00	1.0000	0.000000
.010	.033	27.	.4107	.9504	.4213	12.35	1.0000	0.000000
.017	.058	39.	.4796	.9560	.4910	15.40	.9995	0.000102
.030	.100	68.	.5306	.9571	.5424	15.91	.9987	.000006
.041	.138	93.	.5556	.9587	.5674	16.65	.9979	.000310
.047	.222	150.	.5811	.9604	.5929	17.41	.9958	.000017
.082	.712	184.	.6038	.9620	.6156	18.08	.9945	.000122
.089	.327	271.	.6127	.9627	.6245	18.34	.9929	.000027
.107	.354	241.	.6271	.9638	.6388	18.77	.9920	.000030
.132	.436	295.	.6372	.9645	.6489	19.06	.9895	.000037
.148	.490	332.	.6533	.9658	.6647	19.53	.9877	.000142
.172	.570	386.	.6570	.9660	.6684	19.66	.9850	.000050
.218	.721	488.	.6811	.9680	.6923	20.35	.9795	.000064
.251	.830	577.	.6867	.9683	.6958	20.66	.9754	.000075
.275	.909	616.	.6981	.9694	.7090	20.85	.9722	.000083
.299	.989	670.	.7027	.9697	.7131	20.97	.9689	.000091
.332	1.098	743.	.7050	.9699	.7158	21.05	.9642	.000102
.361	1.194	809.	.7109	.9712	.7305	21.49	.9599	.000111
.392	1.295	877.	.7266	.9718	.7371	21.68	.9552	.000122
.414	1.366	925.	.7293	.9720	.7397	21.76	.9519	.000129
.438	1.446	979.	.7332	.9724	.7435	21.84	.9480	.000138
.471	1.555	1053.	.7358	.9726	.7451	21.85	.9425	.000150
.501	1.656	1121.	.7443	.9733	.7546	22.20	.9372	.000161
.534	1.765	1195.	.7539	.9742	.7638	22.48	.9313	.000173
.577	1.907	1291.	.7657	.9745	.7753	22.59	.9232	.000190
.614	2.029	1374.	.7714	.9753	.7753	22.82	.9141	.000204
.642	2.121	1436.	.7793	.9758	.7809	22.99	.9105	.000214
.683	2.255	1527.	.7849	.9770	.7866	23.22	.9020	.000232
.741	2.448	1658.	.7881	.9772	.7940	23.58	.8891	.000257
.799	2.578	1736.	.7957	.9781	.7952	23.41	.8801	.000274
.892	2.737	1853.	.7967	.9781	.8046	23.69	.8665	.000295
.942	2.914	1973.	.8063	.9781	.8149	24.00	.8550	.000320
1.007	3.111	2106.	.8155	.9800	.8377	24.27	.8391	.000348
1.057	3.325	2251.	.8247	.9809	.8371	24.54	.8209	.000381
1.113	3.492	2364.	.8282	.9812	.8361	24.64	.8057	.000407
1.162	3.677	2489.	.8317	.9826	.8401	25.03	.7884	.000434
1.192	3.836	2587.	.8459	.9829	.8423	25.12	.7731	.000462
1.220	4.029	2728.	.8527	.9837	.8507	25.34	.7535	.000495
1.247	4.194	2833.	.8582	.9847	.8547	25.50	.7372	.000527
1.310	4.327	2929.	.8609	.9845	.8676	25.48	.7217	.000547
1.344	4.470	3094.	.8684	.9853	.8749	25.79	.6943	.000590

TABLE A 5. (CONT.)

Y (CM)	Y/THETA	V-PLUS	WAVE	RHO/RHODE	U/UF	II-PLUS	TAU/TAU-MAX	V/U
1.433	4.733	3205.	.8779	.9863	.8820	26.07	.6751	.000621
3335.	4.926	3335.	.8827	.9863	.8885	26.21	.6519	.000657
1.1402	5.102	3455.	.8874	.9873	.8931	26.34	.6300	.000690
1.1565	5.278	3574.	.8947	.9883	.9020	26.61	.6076	.000724
1.1598	5.458	3687.	.8982	.9884	.9036	26.65	.5869	.000755
1.1647	5.614	3801.	.9004	.9884	.9047	26.90	.5635	.000790
1.1700	5.811	3935.	.9014	.9889	.9160	27.03	.5368	.000829
1.1760	5.966	4040.	.9084	.9904	.9277	27.23	.5155	.000860
1.1807	6.109	4136.	.9209	.9909	.9371	27.30	.4956	.000884
1.1850	6.256	4306.	.9283	.9917	.9439	27.51	.4604	.000933
1.1925	6.455	4431.	.9302	.9919	.9469	27.57	.4339	.000974
1.2039	6.733	4559.	.9385	.9924	.9519	27.81	.4069	.001013
2.104	6.947	4704.	.9438	.9934	.9569	27.96	.3762	.001054
2.169	7.161	4849.	.9569	.9949	.9693	28.33	.3455	.001097
2.223	7.341	4971.	.9562	.9944	.9681	28.51	.3196	.001132
2.242	7.568	5124.	.9633	.9957	.9653	28.55	.2877	.001175
2.354	7.773	5263.	.9647	.9965	.9667	28.83	.2590	.001213
2.451	7.966	5374.	.9702	.9965	.9719	28.71	.2326	.001244
8.113	8.113	5493.	.9744	.9969	.9759	28.83	.2128	.001273
2.526	8.319	5644.	.9774	.9973	.9789	28.92	.1830	.001312
8.455	8.455	5732.	.9813	.9977	.9804	29.03	.1649	.001333
8.437	8.437	5848.	.9813	.9977	.9824	29.03	.1455	.001360
2.614	8.794	5954.	.9848	.9983	.9847	29.16	.1243	.001385
2.720	8.981	6081.	.9857	.9984	.9875	29.18	.1047	.001412
2.771	9.148	6194.	.9899	.9984	.9905	29.27	.0864	.001435
2.811	9.283	6283.	.9954	.9994	.9958	29.43	.0722	.001453
2.858	9.438	6390.	.9974	.9991	.9930	29.35	.0543	.001473
2.924	9.649	6544.	.9984	.9993	.9952	29.41	.0349	.001500
2.972	9.815	6646.	.9991	.9999	.9982	29.53	.0222	.001514
3.035	10.021	6785.	.9966	.9994	.9984	29.46	.0057	.001538
3.077	10.159	6878.	.9975	.9997	.9977	29.49	0.0000	.001543
3.129	10.331	6995.	.9984	.9999	.9985	29.51	0.0000	.001543
3.171	10.449	7086.	1.0014	1.0001	1.0013	29.60	0.0000	.001543
3.201	10.572	7157.	.9993	.9999	.9994	29.54	0.0000	.001543
3.249	10.792	7307.	.9993	.9999	.9994	29.54	0.0000	.001543
3.315	10.947	7412.	1.0002	1.0000	1.0002	29.56	0.0000	.001543
3.362	11.107	7512.	1.0002	1.0000	1.0012	29.56	0.0000	.001543
3.420	11.291	7645.	.9993	.9999	.9994	29.54	0.0000	.001543
3.482	11.445	7744.	1.0007	1.0000	1.0006	29.53	0.0000	.001543
3.539	11.685	7912.	.9993	.9999	.9994	29.54	0.0000	.001543
3.585	11.836	8016.	1.0002	1.0000	1.0002	29.56	0.0000	.001543
3.615	11.937	8042.	1.0002	1.0000	1.0002	29.56	0.0000	.001543

TABLE A 5. (CONT.)
PROFILE - JPL-4 -- - PITOT PRESSURE DATA

EDGE MACH NO. = .6018		TOTAL PRESSURE = .6665E+05 N/M ²		TOTAL TEMPERATURE = 308.85 DEG-K		M = 1.426		CF = .002165	
X = 0.00 CM		DELTA STAR = .4531 CM		RE-THETA = 22400.		THETA = .3177 CM		MIN WALL = .3185 CM = 2/SEC	
UE = 204.91 M/SEC		RE-THETA = 22400.		CF = .002198		PI = .5908		DELTA = 3.1670 CM	
WE-DELTA-STAR = 31940.		Y-PLUS		YMAX = 2.095 CM		YMIN = .080 CM			
LEAST SQUARE FIT PARAMETERS		Y-THETA		M/NE		RHO/RHME		U/U _E	
UTAU = 7.0079 M/SEC		Y-PLUS		M/NE		RHO/RHME		U/U _E	
CHISON = .2022E-04		Y-THETA		M/NE		RHO/RHME		U/U _E	
Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHME	U/U _E	II-PLUS	TAU/TAU-MAX	V/U	
0.000	1.000	0.	0.0000	.9397	0.0700	0.00	1.0000	0.000000	
0.010	.001	22.	.4144	.9500	.4752	12.45	1.0000	0.000000	
0.021	.007	47.	.4862	.9539	.4978	14.59	.9983	0.000003	
0.034	.017	75.	.5360	.9570	.5279	16.07	.9945	0.000007	
0.050	.030	111.	.5640	.9589	.5769	17.89	.9973	0.000012	
0.069	.047	131.	.5843	.9604	.5942	19.55	.9965	0.000015	
0.090	.071	176.	.6012	.9615	.6131	21.99	.9948	0.000021	
0.115	.091	231.	.6170	.9626	.6289	24.46	.9924	0.000029	
0.134	.114	273.	.6315	.9642	.6402	26.06	.9905	0.000035	
0.148	.127	304.	.6448	.9651	.6605	27.30	.9878	0.000042	
0.170	.153	374.	.6604	.9655	.6719	29.57	.9845	0.000049	
0.194	.181	427.	.6706	.9660	.6790	30.73	.9827	0.000056	
0.219	.210	463.	.6795	.9668	.6874	30.93	.9809	0.000061	
0.233	.235	513.	.6880	.9673	.6981	30.20	.9780	0.000069	
0.257	.257	547.	.6974	.9680	.7000	29.83	.9749	0.000074	
0.279	.279	614.	.7024	.9688	.7087	29.02	.9721	0.000083	
0.295	.291	651.	.7085	.9694	.7134	29.06	.9699	0.000089	
0.314	.314	734.	.7143	.9699	.7194	21.14	.9644	0.000101	
0.334	.334	801.	.7204	.9708	.7240	21.43	.9593	0.000111	
0.352	.352	895.	.7269	.9719	.7313	21.79	.9546	0.000124	
0.371	.371	952.	.7345	.9724	.7373	21.61	.9500	0.000134	
0.372	.372	1039.	.7450	.9733	.7468	22.22	.9434	0.000149	
0.403	.403	1048.	.7528	.9738	.7571	22.24	.9380	0.000157	
0.441	.441	1187.	.7578	.9738	.7579	22.43	.9320	0.000172	
0.472	.472	1279.	.7587	.9744	.7595	22.42	.9244	0.000184	
0.500	.500	1369.	.7587	.9754	.7604	22.40	.9168	0.000203	
0.532	.532	1453.	.7581	.9762	.7616	22.79	.9093	0.000218	
0.560	.560	1550.	.7581	.9760	.7625	23.17	.9003	0.000234	
0.594	.594	1624.	.7589	.9760	.7653	23.11	.8922	0.000251	
0.622	.622	1704.	.7589	.9771	.7670	23.45	.8852	0.000264	
0.654	.654	1764.	.7604	.9782	.7682	23.79	.8764	0.000277	
0.687	.687	1841.	.7604	.9788	.7688	23.92	.8674	0.000294	
0.719	.719	1934.	.7604	.9794	.7694	23.97	.8577	0.000310	
0.750	.750	2029.	.7604	.9794	.7694	23.90	.8477	0.000324	
0.781	.781	2104.	.7604	.9794	.7694	24.21	.8377	0.000339	
0.810	.810	2154.	.7604	.9794	.7694	24.18	.8277	0.000354	
0.837	.837	2214.	.7604	.9794	.7694	24.49	.8155	0.000369	
0.861	.861	2274.	.7604	.9794	.7694	24.78	.8017	0.000384	
0.884	.884	2334.	.7604	.9794	.7694	25.03	.7861	0.000399	
0.907	.907	2394.	.7604	.9794	.7694	25.25	.7764	0.000414	
0.929	.929	2454.	.7604	.9794	.7694	25.47	.7617	0.000429	
0.950	.950	2514.	.7604	.9794	.7694	25.18	.7412	0.000443	

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TABLE A.5. (CONT.)
M/PE BWO/BNDE

Y (CM)	V/INETA	V-PLUS	M/PE	BWO/BNDE	U/IF	IM-PLUS	TAU/TAU-WAZ	V/U
1.278	4.024	2813.	.8541	.9819	.8431	25.43	.2644	.007510
1.375	4.172	2917.	.8554	.9818	.8476	25.41	.2704	.007534
1.467	4.303	3009.	.8551	.9842	.8662	25.52	.2710	.007559
1.555	4.423	3093.	.8554	.9851	.8749	25.74	.2712	.007581
1.643	4.543	3174.	.871.	.9854	.8794	25.91	.273	.007603
1.731	4.671	3264.	.8708	.9857	.8806	25.96	.2731	.007627
1.817	4.823	3372.	.8708	.9863	.8849	26.11	.2817	.007654
1.904	4.975	3499.	.8879	.9867	.8849	26.23	.2818	.007685
1.991	5.147	3603.	.8878	.9874	.8902	26.51	.2819	.007719
2.078	5.295	3702.	.8848	.9882	.8921	26.63	.2834	.007748
2.164	5.459	3817.	.8847	.9884	.8949	26.85	.2834	.007780
2.251	5.642	3950.	.9115	.9900	.9149	27.37	.2842	.007841
2.337	5.844	4114.	.9158	.9907	.9293	27.36	.2832	.007867
2.424	6.064	4278.	.9217	.9909	.9349	27.31	.2845	.007902
2.511	6.278	4464.	.9215	.9911	.9376	27.34	.2878	.007946
2.598	6.493	4649.	.9169	.9924	.9413	27.76	.2830	.007977
2.685	6.699	4849.	.9132	.9927	.9452	27.64	.2842	.008011
2.772	6.894	5071.	.9462	.9937	.9492	28.01	.2844	.008041
2.859	7.099	5302.	.9472	.9944	.9501	28.36	.2819	.008074
2.946	7.297	5536.	.9508	.9962	.9536	28.36	.2847	.0081131
3.033	7.490	5794.	.9545	.9964	.9571	28.24	.2916	.0081374
3.120	7.677	6049.	.9531	.9967	.9634	28.43	.2703	.0081604
3.207	7.874	6304.	.9531	.9967	.9634	28.43	.2849	.008183
3.294	8.064	6572.	.9544	.9969	.9676	28.56	.2795	.008204
3.381	8.257	6849.	.9736	.9984	.9676	28.79	.2844	.008234
3.468	8.450	7134.	.9729	.9987	.9745	28.77	.2708	.008253
3.555	8.642	7429.	.9757	.9987	.9771	28.64	.2846	.008287
3.642	8.834	7724.	.9816	.9990	.9844	28.37	.2821	.0083172
3.729	9.024	8024.	.9836	.9991	.9844	28.37	.2821	.0083470
3.816	9.219	8324.	.9847	.9994	.9876	29.16	.2844	.0083717
3.903	9.411	8624.	.9847	.9994	.9876	29.16	.2844	.0083964
3.990	9.604	8924.	.9847	.9994	.9876	29.16	.2844	.0084211
4.077	9.797	9224.	.9847	.9994	.9876	29.16	.2844	.0084458
4.164	9.990	9524.	.9847	.9994	.9876	29.16	.2844	.0084705
4.251	10.183	9824.	.9847	.9994	.9876	29.16	.2844	.0084952
4.338	10.376	10124.	.9847	.9994	.9876	29.16	.2844	.0085199
4.425	10.569	10424.	.9847	.9994	.9876	29.16	.2844	.0085446
4.512	10.762	10724.	.9847	.9994	.9876	29.16	.2844	.0085693
4.599	10.955	11024.	.9847	.9994	.9876	29.16	.2844	.0085940
4.686	11.148	11324.	.9847	.9994	.9876	29.16	.2844	.0086187
4.773	11.341	11624.	.9847	.9994	.9876	29.16	.2844	.0086434
4.860	11.534	11924.	.9847	.9994	.9876	29.16	.2844	.0086681
4.947	11.727	12224.	.9847	.9994	.9876	29.16	.2844	.0086928
5.034	11.920	12524.	.9847	.9994	.9876	29.16	.2844	.0087175
5.121	12.113	12824.	.9847	.9994	.9876	29.16	.2844	.0087422
5.208	12.306	13124.	.9847	.9994	.9876	29.16	.2844	.0087669
5.295	12.499	13424.	.9847	.9994	.9876	29.16	.2844	.0087916
5.382	12.692	13724.	.9847	.9994	.9876	29.16	.2844	.0088163
5.469	12.885	14024.	.9847	.9994	.9876	29.16	.2844	.0088410
5.556	13.078	14324.	.9847	.9994	.9876	29.16	.2844	.0088657
5.643	13.271	14624.	.9847	.9994	.9876	29.16	.2844	.0088904
5.730	13.464	14924.	.9847	.9994	.9876	29.16	.2844	.0089151
5.817	13.657	15224.	.9847	.9994	.9876	29.16	.2844	.0089398
5.904	13.850	15524.	.9847	.9994	.9876	29.16	.2844	.0089645
5.991	14.043	15824.	.9847	.9994	.9876	29.16	.2844	.0089892
6.078	14.236	16124.	.9847	.9994	.9876	29.16	.2844	.0090139
6.165	14.429	16424.	.9847	.9994	.9876	29.16	.2844	.0090386
6.252	14.622	16724.	.9847	.9994	.9876	29.16	.2844	.0090633
6.339	14.815	17024.	.9847	.9994	.9876	29.16	.2844	.0090880
6.426	15.008	17324.	.9847	.9994	.9876	29.16	.2844	.0091127
6.513	15.201	17624.	.9847	.9994	.9876	29.16	.2844	.0091374
6.600	15.394	17924.	.9847	.9994	.9876	29.16	.2844	.0091621
6.687	15.587	18224.	.9847	.9994	.9876	29.16	.2844	.0091868
6.774	15.780	18524.	.9847	.9994	.9876	29.16	.2844	.0092115
6.861	15.973	18824.	.9847	.9994	.9876	29.16	.2844	.0092362
6.948	16.166	19124.	.9847	.9994	.9876	29.16	.2844	.0092609
7.035	16.359	19424.	.9847	.9994	.9876	29.16	.2844	.0092856
7.122	16.552	19724.	.9847	.9994	.9876	29.16	.2844	.0093103
7.209	16.745	20024.	.9847	.9994	.9876	29.16	.2844	.0093350
7.296	16.938	20324.	.9847	.9994	.9876	29.16	.2844	.0093597
7.383	17.131	20624.	.9847	.9994	.9876	29.16	.2844	.0093844
7.470	17.324	20924.	.9847	.9994	.9876	29.16	.2844	.0094091
7.557	17.517	21224.	.9847	.9994	.9876	29.16	.2844	.0094338
7.644	17.710	21524.	.9847	.9994	.9876	29.16	.2844	.0094585
7.731	17.903	21824.	.9847	.9994	.9876	29.16	.2844	.0094832
7.818	18.096	22124.	.9847	.9994	.9876	29.16	.2844	.0095079
7.905	18.289	22424.	.9847	.9994	.9876	29.16	.2844	.0095326
7.992	18.482	22724.	.9847	.9994	.9876	29.16	.2844	.0095573
8.079	18.675	23024.	.9847	.9994	.9876	29.16	.2844	.0095820
8.166	18.868	23324.	.9847	.9994	.9876	29.16	.2844	.0096067
8.253	19.061	23624.	.9847	.9994	.9876	29.16	.2844	.0096314
8.340	19.254	23924.	.9847	.9994	.9876	29.16	.2844	.0096561
8.427	19.447	24224.	.9847	.9994	.9876	29.16	.2844	.0096808
8.514	19.640	24524.	.9847	.9994	.9876	29.16	.2844	.0097055
8.601	19.833	24824.	.9847	.9994	.9876	29.16	.2844	.0097302
8.688	20.026	25124.	.9847	.9994	.9876	29.16	.2844	.0097549
8.775	20.219	25424.	.9847	.9994	.9876	29.16	.2844	.0097796
8.862	20.412	25724.	.9847	.9994	.9876	29.16	.2844	.0098043
8.949	20.605	26024.	.9847	.9994	.9876	29.16	.2844	.0098290
9.036	20.798	26324.	.9847	.9994	.9876	29.16	.2844	.0098537
9.123	20.991	26624.	.9847	.9994	.9876	29.16	.2844	.0098784
9.210	21.184	26924.	.9847	.9994	.9876	29.16	.2844	.0099031
9.297	21.377	27224.	.9847	.9994	.9876	29.16	.2844	.0099278
9.384	21.570	27524.	.9847	.9994	.9876	29.16	.2844	.0099525
9.471	21.763	27824.	.9847	.9994	.9876	29.16	.2844	.0099772
9.558	21.956	28124.	.9847	.9994	.9876	29.16	.2844	.0099999
9.645	22.149	28424.	.9847	.9994	.9876	29.16	.2844	.0100246
9.732	22.342	28724.	.9847	.9994	.9876	29.16	.2844	.0100493
9.819	22.535	29024.	.9847	.9994	.9876	29.16	.2844	.0100740
9.906	22.728	29324.	.9847	.9994	.9876	29.16	.2844	.0100987
9.993	22.921	29624.	.9847	.9994	.9876	29.16	.2844	.0101234
10.080	23.114	29924.	.9847	.9994	.9876	29.16	.2844	.0101481
10.167	23.307	30224.	.9847	.9994	.9876	29.16	.2844	.0101728
10.254	23.500	30524.	.9847	.9994	.9876	29.16	.2844	.0101975
10.341	23.693	30824.	.9847	.9994	.9876	29.16	.2844	.0102222
10.428	23.886	31124.	.9847	.9994	.9876	29.16	.2844	.0102469
10.515	24.079	31424.	.9847	.9994	.9876	29.16	.2844	.0102716
10.602	24.272	31724.	.9847	.9994	.9876	29.16	.2844	.0102963
10.689	24.465	32024.	.9847	.9994	.9876	29.16	.2844	.0103210
10.776	24.658	32324.	.9847	.9994	.9876	29.16	.2844	.0103457
10.863	24.851	32624.	.9847	.9994	.9876	29.16	.2844	.0103704
10.950	25.044	32924.	.9847	.9994	.9876	29.16	.2844	.0103951
11.037	25.237	33224.	.9847	.9994	.9876	29.16	.2844	.0104198
11.124	25.430	33524.	.9847	.9994	.9876	29.16	.2844	.0104445
11.211	25.623	33824.	.9847	.9994	.9876	29.16	.2844	.0104692
11.298	25.816	34124.	.9847	.9994	.9876	29.16	.2844	.0104939
11.385	26.009	34424.	.9847	.9994	.9876	29.16	.2844	.0105186
11.472	26.202	34724.	.9847	.9994	.9876	29.16	.2844	.0105433
11.559	26.395	35024.	.9847	.9994	.9876	29.16	.2844	.0105680
11.646	26.588	35324.	.9847	.9994	.9876	29.16	.2844	.0105927
11.733	26.781	35624.	.9847	.9994	.9876	29.16	.2844	.0106174
11.820	26.974	35924.	.9847	.9994	.9876	29.16	.2844	.0106421
11.907	27.167	36224.	.9847	.9994	.9876	29.16	.2844	.0106668
11.994	27.360	36524.	.9847	.9994	.9876	29.16	.2844	.0106915
12.081	27.553	36824.	.9847	.9994	.9876	29.16	.2844	.0107162
12.168	27.746	37124.	.9847	.9994	.9876	29.16	.2844	.0107409
12.255	27.939	37424.	.9847	.9994	.9876	29.16	.2844	.0107656
12.342	28.132	37724.	.9847	.9994	.9876	29.16	.2844	.0107903
12.429	28.325	38024.	.9847	.9994	.9876	29.16	.2844	.0108150
12.516	28.518	38324.	.9847	.9994	.9876	29.16	.2844	.0108397
12.603	28.711	3862						

TABLE A 9. (CONT.)
PROFILE - JPL-3 -- PLINY PRESSURE DATAEDGE MACH NO. = .9062
X = 7.67 CM
TOTAL PRESSURE = .6771E+05 N/M²
TOTAL TEMPERATURE = 104.00 DEG-C

U = 203.19 M/SEC RE-REFLECTANCE = 1171C	DELTA STAR = .4853 CM RE-REFLECTANCE = 22300.	DELTA STAR = .3211 CM RE-REFLECTANCE = 3136 (2002/SEC)	DELTA = 1.427					
LEAST SQUARE FIT PARAMETERS UTIME = 6.5610 M/SEC CHISQR = 0.118E-04	CE = .000104 VMAX = 3.066 CM	DELTA = .4906 VMIN = .079 CM	DELTA = 1.2462 CM					
V (CM)	V/UTIME	V-PLUS	M/REF	W/UTIME	U/UE	U-PLUS	TAU/UTIME	V/U
0.000	1.000	0.	0.0000	0.000	0.000	0.000	1.000	0.0000
0.010	0.01	22.	0.0007	0.000	0.000	0.0000	1.000	0.0000
0.012	0.012	24.	0.0008	0.000	0.000	0.0000	0.999	0.0000
0.021	0.021	47.	0.0010	0.000	0.000	0.0000	0.998	0.0000
0.041	0.041	92.	0.0011	0.000	0.000	0.0000	0.996	0.0000
0.069	0.069	137.	0.0010	0.000	0.000	0.0000	0.994	0.0000
0.094	0.094	174.	0.0008	0.000	0.000	0.0000	0.991	0.0000
0.109	0.109	203.	0.0007	0.000	0.000	0.0000	0.987	0.0000
0.124	0.124	229.	0.0006	0.000	0.000	0.0000	0.983	0.0000
0.146	0.146	257.	0.0005	0.000	0.000	0.0000	0.979	0.0000
0.167	0.167	278.	0.0004	0.000	0.000	0.0000	0.974	0.0000
0.191	0.191	298.	0.0003	0.000	0.000	0.0000	0.969	0.0000
0.217	0.217	316.	0.0002	0.000	0.000	0.0000	0.964	0.0000
0.249	0.249	332.	0.0001	0.000	0.000	0.0000	0.959	0.0000
0.280	0.280	347.	0.0000	0.000	0.000	0.0000	0.954	0.0000
0.310	0.310	360.	0.0000	0.000	0.000	0.0000	0.949	0.0000
0.336	0.336	372.	0.0000	0.000	0.000	0.0000	0.944	0.0000
0.356	0.356	382.	0.0000	0.000	0.000	0.0000	0.939	0.0000
0.377	0.377	391.	0.0000	0.000	0.000	0.0000	0.934	0.0000
0.395	0.395	399.	0.0000	0.000	0.000	0.0000	0.929	0.0000
0.415	0.415	406.	0.0000	0.000	0.000	0.0000	0.924	0.0000
0.434	0.434	412.	0.0000	0.000	0.000	0.0000	0.919	0.0000
0.452	0.452	418.	0.0000	0.000	0.000	0.0000	0.914	0.0000
0.470	0.470	424.	0.0000	0.000	0.000	0.0000	0.909	0.0000
0.487	0.487	429.	0.0000	0.000	0.000	0.0000	0.904	0.0000
0.504	0.504	434.	0.0000	0.000	0.000	0.0000	0.899	0.0000
0.521	0.521	439.	0.0000	0.000	0.000	0.0000	0.894	0.0000
0.537	0.537	444.	0.0000	0.000	0.000	0.0000	0.889	0.0000
0.553	0.553	449.	0.0000	0.000	0.000	0.0000	0.884	0.0000
0.569	0.569	454.	0.0000	0.000	0.000	0.0000	0.879	0.0000
0.585	0.585	459.	0.0000	0.000	0.000	0.0000	0.874	0.0000
0.601	0.601	464.	0.0000	0.000	0.000	0.0000	0.869	0.0000
0.617	0.617	469.	0.0000	0.000	0.000	0.0000	0.864	0.0000
0.633	0.633	474.	0.0000	0.000	0.000	0.0000	0.859	0.0000
0.649	0.649	479.	0.0000	0.000	0.000	0.0000	0.854	0.0000
0.665	0.665	484.	0.0000	0.000	0.000	0.0000	0.849	0.0000
0.681	0.681	489.	0.0000	0.000	0.000	0.0000	0.844	0.0000
0.697	0.697	494.	0.0000	0.000	0.000	0.0000	0.839	0.0000
0.713	0.713	499.	0.0000	0.000	0.000	0.0000	0.834	0.0000
0.729	0.729	504.	0.0000	0.000	0.000	0.0000	0.829	0.0000
0.745	0.745	509.	0.0000	0.000	0.000	0.0000	0.824	0.0000
0.761	0.761	514.	0.0000	0.000	0.000	0.0000	0.819	0.0000
0.777	0.777	519.	0.0000	0.000	0.000	0.0000	0.814	0.0000
0.793	0.793	524.	0.0000	0.000	0.000	0.0000	0.809	0.0000
0.809	0.809	529.	0.0000	0.000	0.000	0.0000	0.804	0.0000
0.825	0.825	534.	0.0000	0.000	0.000	0.0000	0.799	0.0000
0.841	0.841	539.	0.0000	0.000	0.000	0.0000	0.794	0.0000
0.857	0.857	544.	0.0000	0.000	0.000	0.0000	0.789	0.0000
0.873	0.873	549.	0.0000	0.000	0.000	0.0000	0.784	0.0000
0.889	0.889	554.	0.0000	0.000	0.000	0.0000	0.779	0.0000
0.905	0.905	559.	0.0000	0.000	0.000	0.0000	0.774	0.0000
0.921	0.921	564.	0.0000	0.000	0.000	0.0000	0.769	0.0000
0.937	0.937	569.	0.0000	0.000	0.000	0.0000	0.764	0.0000
0.953	0.953	574.	0.0000	0.000	0.000	0.0000	0.759	0.0000
0.969	0.969	579.	0.0000	0.000	0.000	0.0000	0.754	0.0000
0.985	0.985	584.	0.0000	0.000	0.000	0.0000	0.749	0.0000
1.001	1.001	589.	0.0000	0.000	0.000	0.0000	0.744	0.0000
1.017	1.017	594.	0.0000	0.000	0.000	0.0000	0.739	0.0000
1.033	1.033	599.	0.0000	0.000	0.000	0.0000	0.734	0.0000
1.049	1.049	604.	0.0000	0.000	0.000	0.0000	0.729	0.0000
1.065	1.065	609.	0.0000	0.000	0.000	0.0000	0.724	0.0000
1.081	1.081	614.	0.0000	0.000	0.000	0.0000	0.719	0.0000
1.097	1.097	619.	0.0000	0.000	0.000	0.0000	0.714	0.0000
1.113	1.113	624.	0.0000	0.000	0.000	0.0000	0.709	0.0000
1.129	1.129	629.	0.0000	0.000	0.000	0.0000	0.704	0.0000
1.145	1.145	634.	0.0000	0.000	0.000	0.0000	0.699	0.0000
1.161	1.161	639.	0.0000	0.000	0.000	0.0000	0.694	0.0000
1.177	1.177	644.	0.0000	0.000	0.000	0.0000	0.689	0.0000
1.193	1.193	649.	0.0000	0.000	0.000	0.0000	0.684	0.0000
1.209	1.209	654.	0.0000	0.000	0.000	0.0000	0.679	0.0000
1.225	1.225	659.	0.0000	0.000	0.000	0.0000	0.674	0.0000
1.241	1.241	664.	0.0000	0.000	0.000	0.0000	0.669	0.0000
1.257	1.257	669.	0.0000	0.000	0.000	0.0000	0.664	0.0000
1.273	1.273	674.	0.0000	0.000	0.000	0.0000	0.659	0.0000
1.289	1.289	679.	0.0000	0.000	0.000	0.0000	0.654	0.0000
1.305	1.305	684.	0.0000	0.000	0.000	0.0000	0.649	0.0000
1.321	1.321	689.	0.0000	0.000	0.000	0.0000	0.644	0.0000
1.337	1.337	694.	0.0000	0.000	0.000	0.0000	0.639	0.0000
1.353	1.353	699.	0.0000	0.000	0.000	0.0000	0.634	0.0000
1.369	1.369	704.	0.0000	0.000	0.000	0.0000	0.629	0.0000
1.385	1.385	709.	0.0000	0.000	0.000	0.0000	0.624	0.0000
1.401	1.401	714.	0.0000	0.000	0.000	0.0000	0.619	0.0000
1.417	1.417	719.	0.0000	0.000	0.000	0.0000	0.614	0.0000
1.433	1.433	724.	0.0000	0.000	0.000	0.0000	0.609	0.0000
1.449	1.449	729.	0.0000	0.000	0.000	0.0000	0.604	0.0000
1.465	1.465	734.	0.0000	0.000	0.000	0.0000	0.599	0.0000
1.481	1.481	739.	0.0000	0.000	0.000	0.0000	0.594	0.0000
1.497	1.497	744.	0.0000	0.000	0.000	0.0000	0.589	0.0000
1.513	1.513	749.	0.0000	0.000	0.000	0.0000	0.584	0.0000
1.529	1.529	754.	0.0000	0.000	0.000	0.0000	0.579	0.0000
1.545	1.545	759.	0.0000	0.000	0.000	0.0000	0.574	0.0000
1.561	1.561	764.	0.0000	0.000	0.000	0.0000	0.569	0.0000
1.577	1.577	769.	0.0000	0.000	0.000	0.0000	0.564	0.0000
1.593	1.593	774.	0.0000	0.000	0.000	0.0000	0.559	0.0000
1.609	1.609	779.	0.0000	0.000	0.000	0.0000	0.554	0.0000
1.625	1.625	784.	0.0000	0.000	0.000	0.0000	0.549	0.0000
1.641	1.641	789.	0.0000	0.000	0.000	0.0000	0.544	0.0000
1.657	1.657	794.	0.0000	0.000	0.000	0.0000	0.539	0.0000
1.673	1.673	799.	0.0000	0.000	0.000	0.0000	0.534	0.0000
1.689	1.689	804.	0.0000	0.000	0.000	0.0000	0.529	0.0000
1.705	1.705	809.	0.0000	0.000	0.000	0.0000	0.524	0.0000
1.721	1.721	814.	0.0000	0.000	0.000	0.0000	0.519	0.0000
1.737	1.737	819.	0.0000	0.000	0.000	0.0000	0.514	0.0000
1.753	1.753	824.	0.0000	0.000	0.000	0.0000	0.509	0.0000
1.769	1.769	829.	0.0000	0.000	0.000	0.0000	0.504	0.0000
1.785	1.785	834.	0.0000	0.000	0.000	0.0000	0.499	0.0000
1.801	1.801	839.	0.0000	0.000	0.000	0.0000	0.494	0.0000
1.817	1.817	844.	0.0000	0.000	0.000	0.0000	0.489	0.0000
1.833	1.833	849.	0.0000	0.000	0.000	0.0000	0.484	0.0000
1.849	1.849	854.	0.0000	0.000	0.000	0.0000	0.479	0.0000
1.865	1.865	859.	0.0000	0.000	0.000	0.0000	0.474	0.0000
1.881	1.881	864.	0.0000	0.000	0.000	0.0000	0.469	0.0000
1.897	1.897	869.	0.0000	0.000	0.000	0.0000	0.464	0.0000
1.913	1.913	874.	0.0000	0.000	0.000	0.0000	0.459	0.0000
1.929	1.929	879.	0.0000	0.000	0.000	0.0000	0.454	0.0000
1.945	1.945	884.	0.0000	0.000	0.000	0.0000	0.449	0.0000
1.961	1.961	889.	0.0000	0.000	0.000	0.0000	0.444	0.0000
1.977	1.977	894.	0.0000	0.000	0.000	0.0000	0.439	0.0000
1.993	1.993	899.	0.0000	0.000	0.000	0.0000	0.434	0.0000
2.009	2.009	904.	0.0000	0.000	0.000	0.0000	0.429	0.0000
2.025	2.025	909.	0.0000	0.000	0.000	0.0000	0.424	0.0000
2.041	2.041	914.	0.0000	0.000	0.000	0.0000	0.419	0.0000
2.057	2.057	919.	0.0000	0.000	0.000	0.0000	0.414	0.0000
2.073	2.073	924.	0.0000	0.000	0.000	0.000		

✓ (: 4) ✓ 1967A

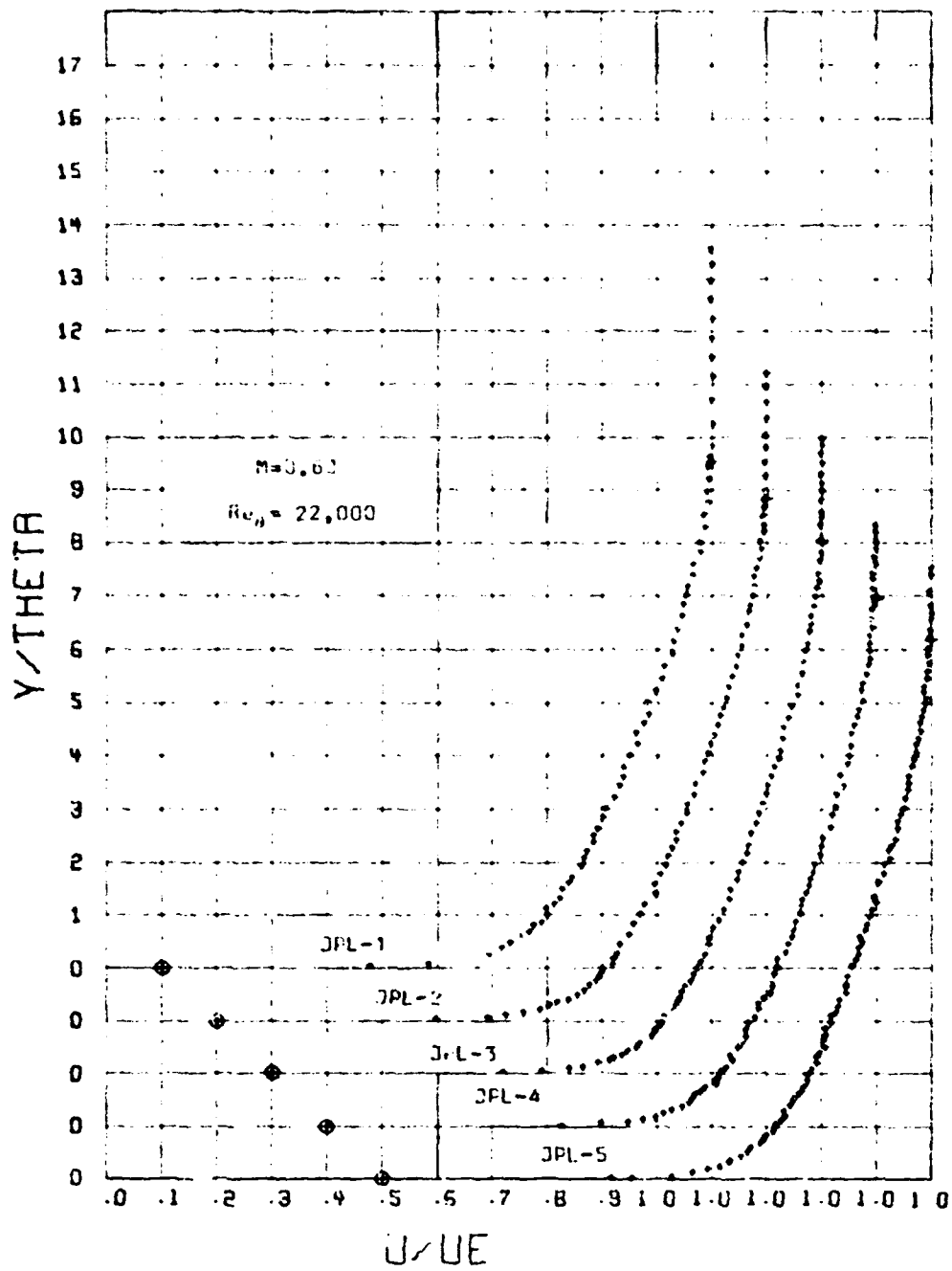


Figure A5. Mean Velocity Profiles.

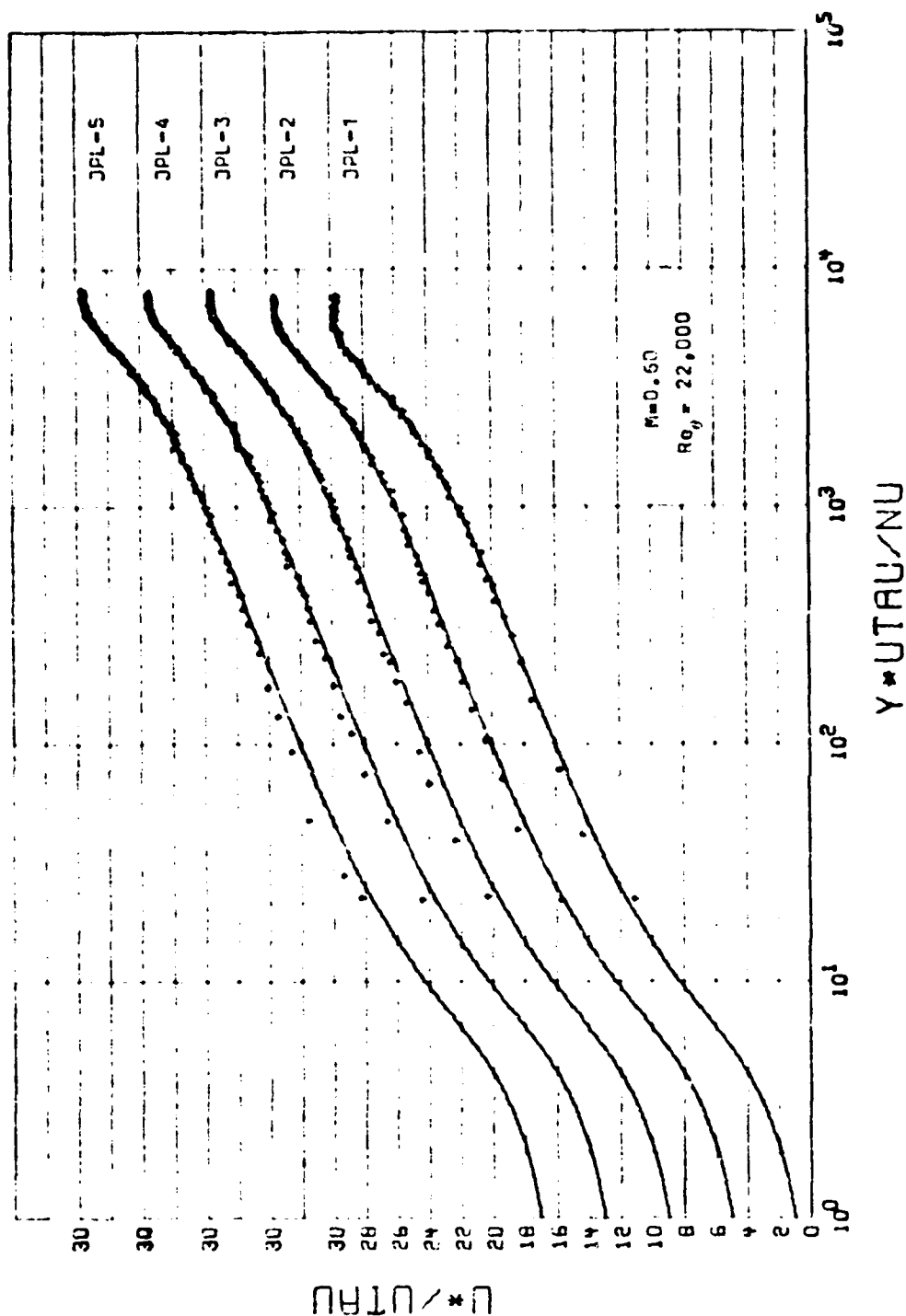
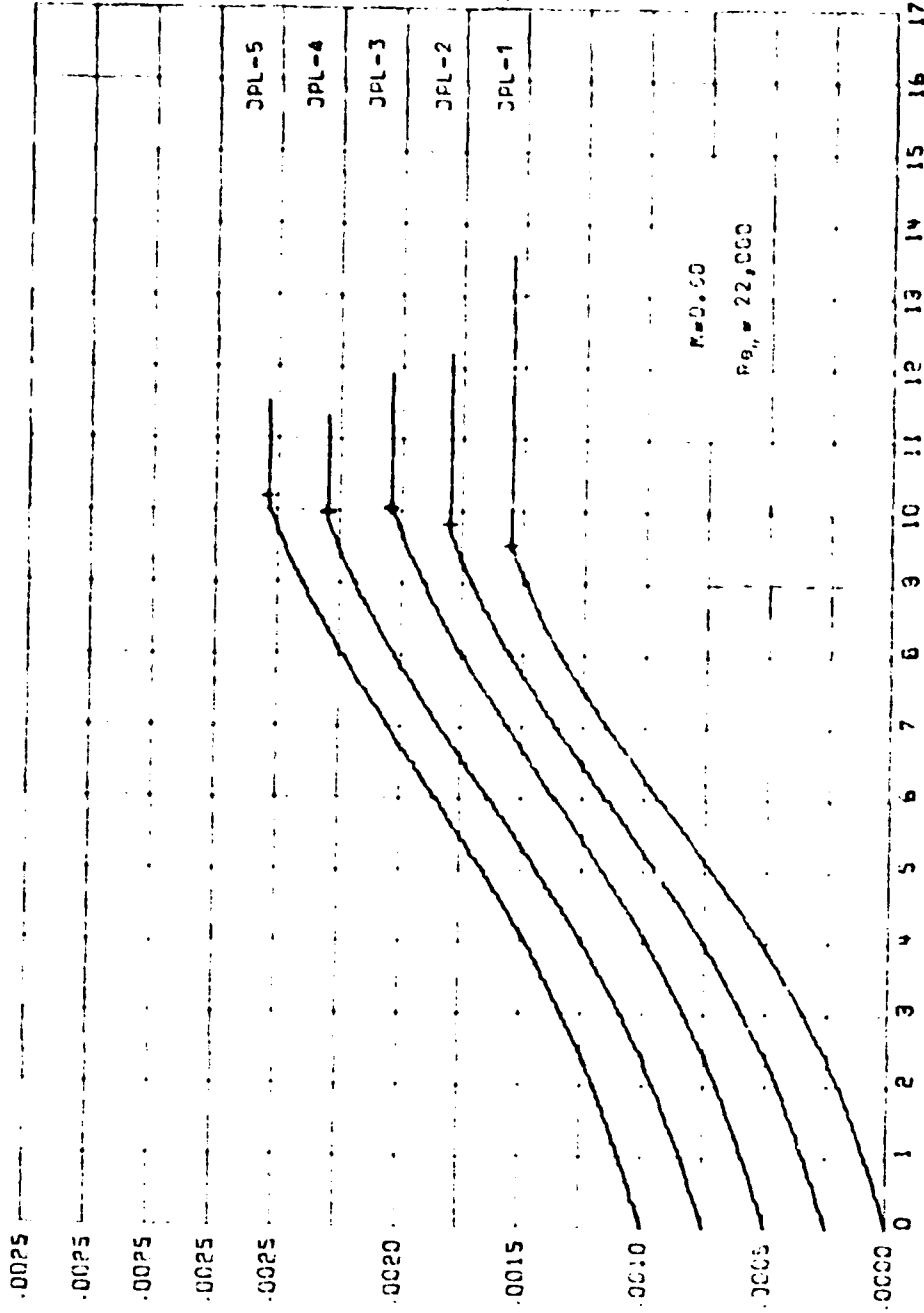


Figure A6. Van Orst Scaled Mean Velocity Profiles.



Y/THETA

Figure A7. Normal Velocity Distribution.

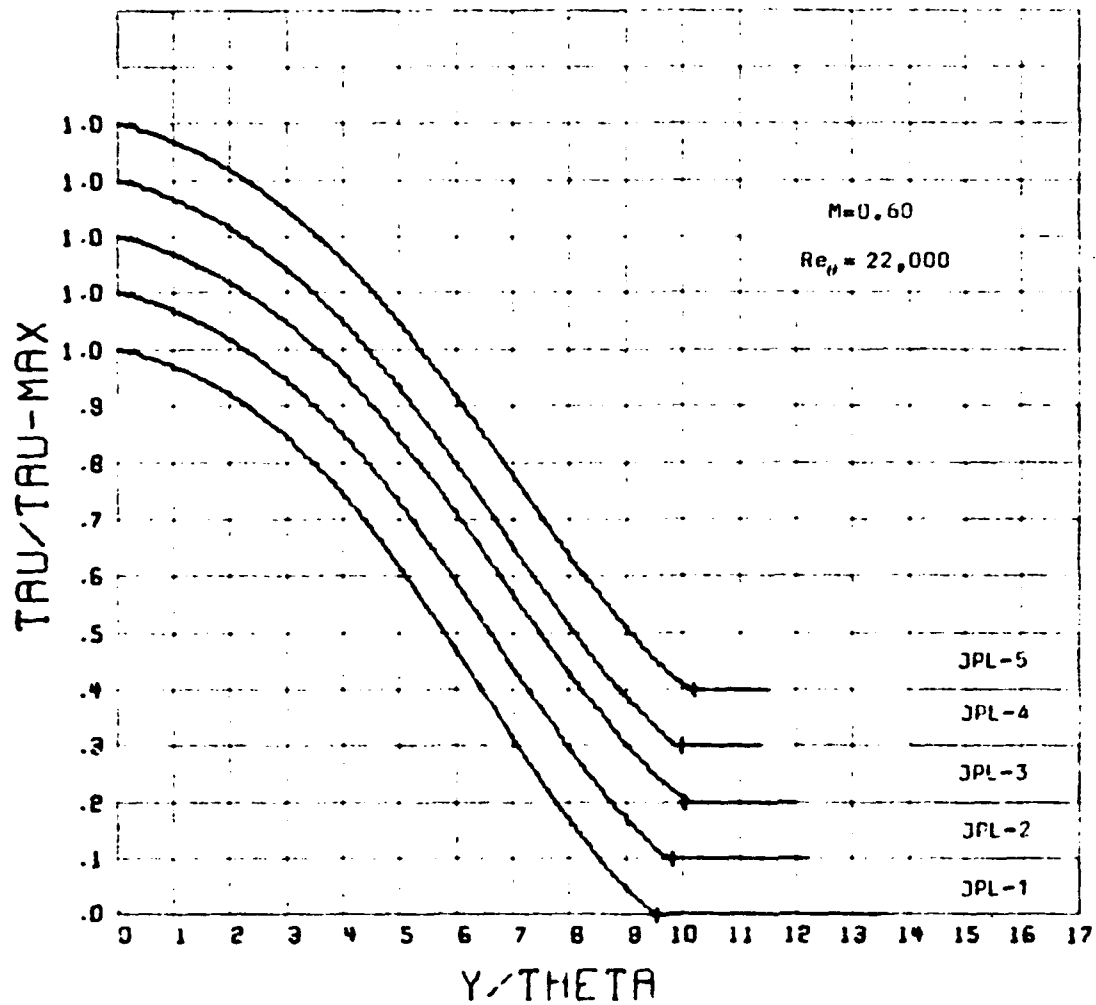


Figure A8. Shear Stress Distribution.

TABLE A 6. DATA SUMMARY

PROFILE - JPL-1 - - - PIVOT PRESSURE DATA

ENGINE MACH NO. 0.973 TOTAL PRESSURE = 1243F-04 M/M002
X = 48.43 CM TOTAL TEMPERATURE = 315.93 DEG-K

UE = 205.88 M/SEC		DELTA STAR = 3325 CM		TMFAT = .2344 CM		Mo 1.418	
RE-DELTA-STAR = 44830.		RE-TMFTAT = 31465.		NUMALLO = .1741 CM002/SEC		DELTA = 2.4128 CM	
LEAST SQUARE FIT PARAMETERS		CS = .002090		PI = .4124			
UTALLO = 0.0000 M/SEC		VMAS = 2.276 CM		VMIN = .034 CM			
CHISQR = .1054E-04							
V (CM)	V/TMFTA	V-PLUS	M/ME	RM/RMFE	U/UF	U-PLUS	TAU/TAU-MAX
0.000	0.000	0.	0.0000	.9405	0.0000	0.00	0.00000
.010	.043	10.	.4400	.9524	.4439	13.85	1.0000
.020	.097	40.	.5206	.9572	.5413	16.24	.000000
.030	.162	90.	.5663	.9576	.5781	17.40	.000005
.040	.222	140.	.5820	.9576	.6018	18.17	.000010
.050	.277	200.	.5906	.9576	.6213	19.04	.000016
.060	.319	260.	.5969	.9576	.6375	19.35	.000024
.070	.350	320.	.6003	.9576	.6514	19.92	.000030
.080	.374	380.	.6010	.9576	.6632	20.32	.000044
.090	.391	440.	.6003	.9576	.6743	20.44	.000053
.100	.400	500.	.6003	.9576	.6846	20.44	.000053
.110	.414	560.	.6003	.9576	.6946	20.44	.000053
.120	.424	620.	.6003	.9576	.7046	20.44	.000053
.130	.430	680.	.6003	.9576	.7146	20.44	.000053
.140	.436	740.	.6003	.9576	.7246	20.44	.000053
.150	.440	800.	.6003	.9576	.7346	20.44	.000053
.160	.444	860.	.6003	.9576	.7446	20.44	.000053
.170	.448	920.	.6003	.9576	.7546	20.44	.000053
.180	.452	980.	.6003	.9576	.7646	20.44	.000053
.190	.456	1040.	.6003	.9576	.7746	20.44	.000053
.200	.460	1100.	.6003	.9576	.7846	20.44	.000053
.210	.464	1160.	.6003	.9576	.7946	20.44	.000053
.220	.468	1220.	.6003	.9576	.8046	20.44	.000053
.230	.472	1280.	.6003	.9576	.8146	20.44	.000053
.240	.476	1340.	.6003	.9576	.8246	20.44	.000053
.250	.480	1400.	.6003	.9576	.8346	20.44	.000053
.260	.484	1460.	.6003	.9576	.8446	20.44	.000053
.270	.488	1520.	.6003	.9576	.8546	20.44	.000053
.280	.492	1580.	.6003	.9576	.8646	20.44	.000053
.290	.496	1640.	.6003	.9576	.8746	20.44	.000053
.300	.500	1700.	.6003	.9576	.8846	20.44	.000053
.310	.504	1760.	.6003	.9576	.8946	20.44	.000053
.320	.508	1820.	.6003	.9576	.9046	20.44	.000053
.330	.512	1880.	.6003	.9576	.9146	20.44	.000053
.340	.516	1940.	.6003	.9576	.9246	20.44	.000053
.350	.520	2000.	.6003	.9576	.9346	20.44	.000053
.360	.524	2060.	.6003	.9576	.9446	20.44	.000053
.370	.528	2120.	.6003	.9576	.9546	20.44	.000053
.380	.532	2180.	.6003	.9576	.9646	20.44	.000053
.390	.536	2240.	.6003	.9576	.9746	20.44	.000053
.400	.540	2300.	.6003	.9576	.9846	20.44	.000053
.410	.544	2360.	.6003	.9576	.9946	20.44	.000053
.420	.548	2420.	.6003	.9576	.0046	20.44	.000053
.430	.552	2480.	.6003	.9576	.0146	20.44	.000053
.440	.556	2540.	.6003	.9576	.0246	20.44	.000053
.450	.560	2600.	.6003	.9576	.0346	20.44	.000053
.460	.564	2660.	.6003	.9576	.0446	20.44	.000053
.470	.568	2720.	.6003	.9576	.0546	20.44	.000053
.480	.572	2780.	.6003	.9576	.0646	20.44	.000053
.490	.576	2840.	.6003	.9576	.0746	20.44	.000053
.500	.580	2900.	.6003	.9576	.0846	20.44	.000053
.510	.584	2960.	.6003	.9576	.0946	20.44	.000053
.520	.588	3020.	.6003	.9576	.1046	20.44	.000053
.530	.592	3080.	.6003	.9576	.1146	20.44	.000053
.540	.596	3140.	.6003	.9576	.1246	20.44	.000053
.550	.600	3200.	.6003	.9576	.1346	20.44	.000053
.560	.604	3260.	.6003	.9576	.1446	20.44	.000053
.570	.608	3320.	.6003	.9576	.1546	20.44	.000053
.580	.612	3380.	.6003	.9576	.1646	20.44	.000053
.590	.616	3440.	.6003	.9576	.1746	20.44	.000053
.600	.620	3500.	.6003	.9576	.1846	20.44	.000053
.610	.624	3560.	.6003	.9576	.1946	20.44	.000053
.620	.628	3620.	.6003	.9576	.2046	20.44	.000053
.630	.632	3680.	.6003	.9576	.2146	20.44	.000053
.640	.636	3740.	.6003	.9576	.2246	20.44	.000053
.650	.640	3800.	.6003	.9576	.2346	20.44	.000053
.660	.644	3860.	.6003	.9576	.2446	20.44	.000053
.670	.648	3920.	.6003	.9576	.2546	20.44	.000053
.680	.652	3980.	.6003	.9576	.2646	20.44	.000053
.690	.656	4040.	.6003	.9576	.2746	20.44	.000053
.700	.660	4100.	.6003	.9576	.2846	20.44	.000053
.710	.664	4160.	.6003	.9576	.2946	20.44	.000053
.720	.668	4220.	.6003	.9576	.3046	20.44	.000053
.730	.672	4280.	.6003	.9576	.3146	20.44	.000053
.740	.676	4340.	.6003	.9576	.3246	20.44	.000053
.750	.680	4400.	.6003	.9576	.3346	20.44	.000053
.760	.684	4460.	.6003	.9576	.3446	20.44	.000053
.770	.688	4520.	.6003	.9576	.3546	20.44	.000053
.780	.692	4580.	.6003	.9576	.3646	20.44	.000053
.790	.696	4640.	.6003	.9576	.3746	20.44	.000053
.800	.700	4700.	.6003	.9576	.3846	20.44	.000053
.810	.704	4760.	.6003	.9576	.3946	20.44	.000053
.820	.708	4820.	.6003	.9576	.4046	20.44	.000053
.830	.712	4880.	.6003	.9576	.4146	20.44	.000053
.840	.716	4940.	.6003	.9576	.4246	20.44	.000053
.850	.720	5000.	.6003	.9576	.4346	20.44	.000053
.860	.724	5060.	.6003	.9576	.4446	20.44	.000053
.870	.728	5120.	.6003	.9576	.4546	20.44	.000053
.880	.732	5180.	.6003	.9576	.4646	20.44	.000053
.890	.736	5240.	.6003	.9576	.4746	20.44	.000053
.900	.740	5300.	.6003	.9576	.4846	20.44	.000053
.910	.744	5360.	.6003	.9576	.4946	20.44	.000053
.920	.748	5420.	.6003	.9576	.5046	20.44	.000053
.930	.752	5480.	.6003	.9576	.5146	20.44	.000053
.940	.756	5540.	.6003	.9576	.5246	20.44	.000053
.950	.760	5600.	.6003	.9576	.5346	20.44	.000053
.960	.764	5660.	.6003	.9576	.5446	20.44	.000053
.970	.768	5720.	.6003	.9576	.5546	20.44	.000053
.980	.772	5780.	.6003	.9576	.5646	20.44	.000053
.990	.776	5840.	.6003	.9576	.5746	20.44	.000053
1.000	.780	5900.	.6003	.9576	.5846	20.44	.000053

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OF POOR QUALITY

Y (CM)	V/TWETA	V-PLUS	TABLE A. RMC/RMCG	U/UE	U-PLUS	TAU/TAU-MAX	V/U
1.147	4.978	4549.	.8450	.8907	24.93	.6539	.000615
1.205	5.140	4697.	.8484	.8941	27.03	.6342	.000643
1.240	5.293	4836.	.8570	.9023	27.24	.6154	.000670
1.280	5.440	4989.	.8610	.9060	27.46	.5963	.000700
1.324	5.590	5162.	.8647	.9115	27.57	.5808	.000735
1.365	5.723	5321.	.8684	.9167	27.73	.5670	.000767
1.410	5.878	5490.	.8721	.9220	27.84	.5507	.000803
1.457	6.032	5603.	.8777	.9270	28.07	.5355	.000842
1.507	6.191	5746.	.8844	.9344	28.03	.5205	.000883
1.552	6.346	5936.	.8913	.9436	28.13	.5055	.000941
1.591	6.494	6162.	.8972	.9502	28.42	.4907	.000939
1.631	6.644	6371.	.9032	.9548	28.59	.4763	.000970
1.677	6.794	6578.	.9082	.9554	28.79	.4627	.001014
1.718	6.944	6784.	.9132	.9584	28.93	.4497	.001061
1.763	7.094	6989.	.9182	.9644	29.31	.4367	.001104
1.807	7.244	7202.	.9232	.9704	29.34	.4246	.001143
1.851	7.394	7429.	.9282	.9764	29.56	.4126	.001184
1.897	7.544	7667.	.9332	.9824	29.60	.4013	.001227
1.947	7.694	7915.	.9382	.9884	29.71	.3904	.001274
2.015	7.844	8168.	.9432	.9944	29.79	.3804	.001324
2.070	8.004	8429.	.9482	.9994	30.07	.3704	.001374
2.112	8.154	8691.	.9532	.0004	30.14	.3604	.001424
2.160	8.314	8954.	.9582	.0014	30.23	.3504	.001474
2.205	8.464	9216.	.9632	.0024	30.33	.3404	.001524
2.253	8.624	9478.	.9682	.0034	30.45	.3304	.001574
2.274	8.774	9743.	.9732	.0044	30.57	.3204	.001624
2.320	8.924	10004.	.9782	.0054	30.74	.3104	.001674
2.362	9.074	10264.	.9832	.0064	30.87	.3004	.001724
2.421	9.224	10524.	.9882	.0074	30.97	.2904	.001774
2.459	9.374	10784.	.9932	.0084	31.04	.2804	.001824
2.506	9.524	11044.	.9982	.0094	31.14	.2704	.001874
2.554	9.674	11304.	.0004	.0104	31.24	.2604	.001924
2.607	9.824	11564.	.0014	.0114	31.33	.2504	.001974
2.656	9.974	11824.	.0024	.0124	31.45	.2404	.002024
2.704	10.124	12084.	.0034	.0134	31.57	.2304	.002074
2.752	10.274	12344.	.0044	.0144	31.71	.2204	.002124
2.800	10.424	12604.	.0054	.0154	31.84	.2104	.002174
2.847	10.574	12864.	.0064	.0164	31.97	.2004	.002224
2.895	10.724	13124.	.0074	.0174	32.14	.1904	.002274
2.943	10.874	13384.	.0084	.0184	32.29	.1804	.002324
2.991	11.024	13644.	.0094	.0194	32.45	.1704	.002374
3.039	11.174	13904.	.0104	.0204	32.60	.1604	.002424
3.087	11.324	14164.	.0114	.0214	32.79	.1504	.002474
3.134	11.474	14424.	.0124	.0224	32.93	.1404	.002524
3.182	11.624	14684.	.0134	.0234	33.07	.1304	.002574
3.229	11.774	14944.	.0144	.0244	33.24	.1204	.002624
3.276	11.924	15204.	.0154	.0254	33.41	.1104	.002674
3.324	12.074	15464.	.0164	.0264	33.57	.1004	.002724
3.371	12.224	15724.	.0174	.0274	33.71	.0904	.002774
3.419	12.374	15984.	.0184	.0284	33.87	.0804	.002824
3.467	12.524	16244.	.0194	.0294	34.04	.0704	.002874
3.514	12.674	16504.	.0204	.0304	34.29	.0604	.002924
3.562	12.824	16764.	.0214	.0314	34.45	.0504	.002974
3.609	12.974	17024.	.0224	.0324	34.60	.0404	.003024
3.657	13.124	17284.	.0234	.0334	34.79	.0304	.003074
3.704	13.274	17544.	.0244	.0344	34.93	.0204	.003124

TABLE A-6. (CONT.)
WIND TUNNEL - JPL-2 - - - P-T-T PRESSURE DATA

EDGE MACH NO. = .5064		TOTAL PRESSURE = .1270506 W/SEC		TOTAL TEMPERATURE = 314.18 DEG-K		M = 1.616	
Re = 24,215 CM		DELTA STAR = .3803 CM		THERM = .2680 CM		M = 1.616	
Re = 24,215 CM		DE-THETA = 36335		MINIMUM = .1832 CM		DELTA = 2.7480 CM	
LEAST SQUARE FIT PARAMETERS		CF = .002057		DIP = .0124		V/MIN = .075 CM	
CF = .002057		VMIN = 2.402 CM					
CF = .002057							
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TABLE A-6. (CONT.)

V (CM)	V/TMSTA	V-PLUS	-W/F	RM/RMSE	II/IE	II-PLUS	TAU/TMII-MAX	V/U
1.136	4.274	4272	8593	.9845	.8660	26.38	.7410	.000473
1.158	4.346	4302	8652	.9851	.8717	26.56	.7287	.000492
1.196	4.448	4497	8705	.9856	.8768	26.72	.7177	.000504
1.251	4.543	4592	8766	.9860	.8805	26.83	.7076	.000523
1.256	4.566	4616	8778	.9864	.8820	26.79	.6938	.000543
1.262	4.576	4621	8780	.9866	.8824	26.94	.6821	.000561
1.313	4.683	4716	8871	.9871	.8924	27.21	.6651	.000580
1.343	4.804	4804	8940	.9874	.8937	27.18	.6558	.000599
1.374	4.910	4874	8980	.9877	.8937	27.24	.6412	.000620
1.400	5.017	4966	9052	.9882	.8965	27.45	.6269	.000640
1.445	5.139	5037	9070	.9888	.8981	27.62	.6094	.000664
1.476	5.248	5107	9070	.9894	.8981	27.80	.5866	.000683
1.510	5.355	5176	9071	.9895	.8981	27.80	.5706	.000704
1.546	5.474	5246	9078	.9896	.8981	27.83	.5480	.000722
1.574	5.574	5316	9120	.9901	.8975	27.94	.5233	.000742
1.600	5.661	5381	9120	.9901	.8975	28.11	.5059	.000766
1.630	5.746	5450	9176	.9906	.8975	28.12	.4709	.000786
1.661	5.837	5519	9224	.9911	.8975	28.26	.4506	.000806
1.691	5.922	5588	9264	.9916	.8975	28.43	.4264	.000832
1.720	6.009	5657	9264	.9916	.8975	28.43	.4064	.000852
1.750	6.094	5726	9264	.9916	.8975	28.43	.3864	.000872
1.780	6.179	5795	9264	.9916	.8975	28.43	.3664	.000892
1.810	6.264	5864	9264	.9916	.8975	28.43	.3464	.000912
1.840	6.349	5933	9264	.9916	.8975	28.43	.3264	.000932
1.870	6.434	6002	9264	.9916	.8975	28.43	.3064	.000952
1.900	6.519	6071	9264	.9916	.8975	28.43	.2864	.000972
1.930	6.604	6140	9264	.9916	.8975	28.43	.2664	.000992
1.960	6.689	6209	9264	.9916	.8975	28.43	.2464	.001012
1.990	6.774	6278	9264	.9916	.8975	28.43	.2264	.001032
2.020	6.859	6347	9264	.9916	.8975	28.43	.2064	.001052
2.050	6.944	6416	9264	.9916	.8975	28.43	.1864	.001072
2.080	7.029	6485	9264	.9916	.8975	28.43	.1664	.001092
2.110	7.114	6554	9264	.9916	.8975	28.43	.1464	.001112
2.140	7.199	6623	9264	.9916	.8975	28.43	.1264	.001132
2.170	7.284	6692	9264	.9916	.8975	28.43	.1064	.001152
2.200	7.369	6761	9264	.9916	.8975	28.43	.0864	.001172
2.230	7.454	6830	9264	.9916	.8975	28.43	.0664	.001192
2.260	7.539	6899	9264	.9916	.8975	28.43	.0464	.001212
2.290	7.624	6968	9264	.9916	.8975	28.43	.0264	.001232
2.320	7.709	7037	9264	.9916	.8975	28.43	.0064	.001252
2.350	7.794	7106	9264	.9916	.8975	28.43	.0000	.001272
2.380	7.879	7175	9264	.9916	.8975	28.43	.0000	.001292
2.410	7.964	7244	9264	.9916	.8975	28.43	.0000	.001312
2.440	8.049	7313	9264	.9916	.8975	28.43	.0000	.001332
2.470	8.134	7382	9264	.9916	.8975	28.43	.0000	.001352
2.500	8.219	7451	9264	.9916	.8975	28.43	.0000	.001372
2.530	8.304	7520	9264	.9916	.8975	28.43	.0000	.001392
2.560	8.389	7589	9264	.9916	.8975	28.43	.0000	.001412
2.590	8.474	7658	9264	.9916	.8975	28.43	.0000	.001432
2.620	8.559	7727	9264	.9916	.8975	28.43	.0000	.001452
2.650	8.644	7796	9264	.9916	.8975	28.43	.0000	.001472
2.680	8.729	7865	9264	.9916	.8975	28.43	.0000	.001492
2.710	8.814	7934	9264	.9916	.8975	28.43	.0000	.001512
2.740	8.899	8003	9264	.9916	.8975	28.43	.0000	.001532
2.770	8.984	8072	9264	.9916	.8975	28.43	.0000	.001552
2.800	9.069	8141	9264	.9916	.8975	28.43	.0000	.001572
2.830	9.154	8210	9264	.9916	.8975	28.43	.0000	.001592
2.860	9.239	8279	9264	.9916	.8975	28.43	.0000	.001612
2.890	9.324	8348	9264	.9916	.8975	28.43	.0000	.001632
2.920	9.409	8417	9264	.9916	.8975	28.43	.0000	.001652
2.950	9.494	8486	9264	.9916	.8975	28.43	.0000	.001672
2.980	9.579	8555	9264	.9916	.8975	28.43	.0000	.001692
3.010	9.664	8624	9264	.9916	.8975	28.43	.0000	.001712
3.040	9.749	8693	9264	.9916	.8975	28.43	.0000	.001732
3.070	9.834	8762	9264	.9916	.8975	28.43	.0000	.001752
3.100	9.919	8831	9264	.9916	.8975	28.43	.0000	.001772
3.130	10.004	8900	9264	.9916	.8975	28.43	.0000	.001792
3.160	10.089	8969	9264	.9916	.8975	28.43	.0000	.001812
3.190	10.174	9038	9264	.9916	.8975	28.43	.0000	.001832
3.220	10.259	9107	9264	.9916	.8975	28.43	.0000	.001852
3.250	10.344	9176	9264	.9916	.8975	28.43	.0000	.001872
3.280	10.429	9245	9264	.9916	.8975	28.43	.0000	.001892
3.310	10.514	9314	9264	.9916	.8975	28.43	.0000	.001912
3.340	10.599	9383	9264	.9916	.8975	28.43	.0000	.001932
3.370	10.684	9452	9264	.9916	.8975	28.43	.0000	.001952
3.400	10.769	9521	9264	.9916	.8975	28.43	.0000	.001972
3.430	10.854	9590	9264	.9916	.8975	28.43	.0000	.001992
3.460	10.939	9659	9264	.9916	.8975	28.43	.0000	.002012
3.490	11.024	9728	9264	.9916	.8975	28.43	.0000	.002032
3.520	11.109	9797	9264	.9916	.8975	28.43	.0000	.002052
3.550	11.194	9866	9264	.9916	.8975	28.43	.0000	.002072
3.580	11.279	9935	9264	.9916	.8975	28.43	.0000	.002092
3.610	11.364	10004	9264	.9916	.8975	28.43	.0000	.002112
3.640	11.449	10073	9264	.9916	.8975	28.43	.0000	.002132
3.670	11.534	10142	9264	.9916	.8975	28.43	.0000	.002152
3.700	11.619	10211	9264	.9916	.8975	28.43	.0000	.002172
3.730	11.704	10280	9264	.9916	.8975	28.43	.0000	.002192
3.760	11.789	10349	9264	.9916	.8975	28.43	.0000	.002212
3.790	11.874	10418	9264	.9916	.8975	28.43	.0000	.002232
3.820	11.959	10487	9264	.9916	.8975	28.43	.0000	.002252
3.850	12.044	10556	9264	.9916	.8975	28.43	.0000	.002272
3.880	12.129	10625	9264	.9916	.8975	28.43	.0000	.002292
3.910	12.214	10694	9264	.9916	.8975	28.43	.0000	.002312
3.940	12.299	10763	9264	.9916	.8975	28.43	.0000	.002332
3.970	12.384	10832	9264	.9916	.8975	28.43	.0000	.002352
4.000	12.469	10901	9264	.9916	.8975	28.43	.0000	.002372
4.030	12.554	10970	9264	.9916	.8975	28.43	.0000	.002392
4.060	12.639	11039	9264	.9916	.8975	28.43	.0000	.002412
4.090	12.724	11108	9264	.9916	.8975	28.43	.0000	.002432
4.120	12.809	11177	9264	.9916	.8975	28.43	.0000	.002452
4.150	12.894	11246	9264	.9916	.8975	28.43	.0000	.002472
4.180	12.979	11315	9264	.9916	.8975	28.43	.0000	.002492
4.210	13.064	11384	9264	.9916	.8975	28.43	.0000	.002512
4.240	13.149	11453	9264	.9916	.8975	28.43	.0000	.002532
4.270	13.234	11522	9264	.9916	.8975	28.43	.0000	.002552
4.300	13.319	11591	9264	.9916	.8975	28.43	.0000	.002572
4.330	13.404	11660	9264	.9916	.8975	28.43	.0000	.002592
4.360	13.489	11729	9264	.9916	.8975	28.43	.0000	.002612
4.390	13.574	11798	9264	.9916	.8975	28.43	.0000	.002632
4.420	13.659	11867	9264	.9916	.8975	28.43	.0000	.002652
4.450	13.744	11936	9264	.9916	.8975	28.43	.0000	.002672
4.480	13.829	12005	9264	.9916	.8975	28.43	.0000	.002692
4.510	13.914	12074	9264	.9916	.8975	28.43	.0000	.002712
4.540	14.000	12143	9264	.9916	.8975	28.43	.0000	.002732
4.570	14.085	12212	9264	.9916	.8975	28.43	.0000	.002752
4.600	14.170	12281	9264	.9916	.8975	28.43	.0000	.002772
4.630	14.255	12350	9264	.9916	.8975	28.43	.0000	.002792
4.660	14.340	12419	9264	.9916	.8975	28.43	.0000	.002812
4.690	14.425	12488	9264	.9916	.8975	28.43	.0000	.002832
4.720	14.510	12557	9264	.9916	.8975	28.43	.0000	.002852
4.750	14.595	12626	9264	.9916	.8975	28.43	.0000	.002872
4.780	14.680	12695	9264	.9916	.8975	28.43	.0000	.002892
4.810	14.765	12764	9264	.9916	.8975	28.43	.0000	.002912
4.840	14.850	12833	9264	.9916	.8975	28.43	.0000	.002932
4.870	14.935	12902	9264	.9916	.8975	28.43	.0000	.002952
4.900	15.020	12971	9264	.9916	.8975	28.43	.0000	.002972
4.930	15.105	13040	9264	.9916	.8975	28.43	.0000	.002992
4.960	15.190	13109	9264	.9916	.8975	28.43	.0000	.003012
4.990	15.275	13178	9264	.9916	.8975	28.43	.0000	.003032
5.020	15.360	13247	9264	.9916	.8975	28.43	.0000	.003052
5.050	15.445	13316	9264	.9916	.8975	28.43	.0000	.003072
5.080	15.530	13385	9264	.9916	.8975	28.43	.0000	.003092
5.110	15.615	13454	9264	.9916	.8975	28.43		

TABLE A. (CONT.)
PROFILE - JPL-3 - - - PITOT PRESSURE DATA

ENGINE MACH NO. = 5952		TOTAL PRESSURE = 1288E+06 N/M ²		TOTAL TEMPERATURE = 318.36 DEG-K	
X = -7.62 CM		DELTA STAR = 3948 CM		DELTA = 2.9440 CM	
U = 205.97 M/SEC		RE-TUETA = 37260.		M = 1.409	
PE=DELTA-STAR= 57840.		CE = .002056		PI = .5733	
LEAST SQUARE FIT PARAMETERS		YMAX = 2.759 CM		VMIN = .033 CM	
STAR = 6.0001 M/SEC					
CHISQ = .0078E-05					
Y (CM)	Y/TUETA	Y-PLUS	M/PE	MMQ/RMDE	U/U
0.000	1.000	0.	0.0000	.0400	0.0000
0.010	.994	39.	.4287	.0414	13.22
0.020	.984	67.	.4683	.0430	1.0000
0.030	.971	126.	.5104	.0481	.9405
0.040	.954	209.	.5474	.0513	.000002
0.050	.934	287.	.5812	.0533	.000007
0.060	.910	364.	.6127	.0545	.000013
0.070	.884	440.	.6427	.0557	.000020
0.080	.855	513.	.6708	.0565	.000027
0.090	.824	584.	.6968	.0571	.000030
0.100	.791	653.	.7206	.0577	.000033
0.110	.756	720.	.7427	.0582	.000034
0.120	.719	785.	.7628	.0588	.000044
0.130	.680	849.	.7807	.0594	.000054
0.140	.640	911.	.7967	.0599	.000064
0.150	.600	971.	.8110	.0603	.000074
0.160	.559	1029.	.8239	.0607	.000084
0.170	.517	1085.	.8357	.0611	.000094
0.180	.474	1139.	.8464	.0615	.000104
0.190	.430	1191.	.8561	.0619	.000114
0.200	.385	1241.	.8648	.0623	.000124
0.210	.340	1289.	.8726	.0627	.000134
0.220	.294	1335.	.8795	.0631	.000144
0.230	.250	1379.	.8856	.0635	.000154
0.240	.205	1421.	.8909	.0639	.000164
0.250	.160	1461.	.8963	.0643	.000174
0.260	.115	1500.	.9008	.0647	.000184
0.270	.070	1537.	.9054	.0651	.000194
0.280	.025	1573.	.9099	.0655	.000204
0.290	.000	1608.	.9145	.0659	.000214
0.300	.000	1642.	.9191	.0663	.000224
0.310	.000	1675.	.9237	.0667	.000234
0.320	.000	1708.	.9283	.0671	.000244
0.330	.000	1740.	.9329	.0675	.000254
0.340	.000	1771.	.9375	.0679	.000264
0.350	.000	1802.	.9421	.0683	.000274
0.360	.000	1832.	.9467	.0687	.000284
0.370	.000	1862.	.9513	.0691	.000294
0.380	.000	1891.	.9559	.0695	.000304
0.390	.000	1920.	.9605	.0699	.000314
0.400	.000	1949.	.9651	.0703	.000324
0.410	.000	1977.	.9697	.0707	.000334
0.420	.000	2005.	.9743	.0711	.000344
0.430	.000	2033.	.9789	.0715	.000354
0.440	.000	2060.	.9835	.0719	.000364
0.450	.000	2087.	.9881	.0723	.000374
0.460	.000	2114.	.9927	.0727	.000384
0.470	.000	2141.	.9973	.0731	.000394
0.480	.000	2167.	.1000	.0735	.000404
0.490	.000	2193.	.1027	.0739	.000414
0.500	.000	2219.	.1054	.0743	.000424
0.510	.000	2245.	.1081	.0747	.000434
0.520	.000	2270.	.1108	.0751	.000444
0.530	.000	2296.	.1135	.0755	.000454
0.540	.000	2321.	.1162	.0759	.000464
0.550	.000	2346.	.1189	.0763	.000474
0.560	.000	2371.	.1216	.0767	.000484
0.570	.000	2396.	.1243	.0771	.000494
0.580	.000	2421.	.1270	.0775	.000504
0.590	.000	2445.	.1297	.0779	.000514
0.600	.000	2470.	.1324	.0783	.000524
0.610	.000	2494.	.1351	.0787	.000534
0.620	.000	2519.	.1378	.0791	.000544
0.630	.000	2543.	.1405	.0795	.000554
0.640	.000	2567.	.1432	.0799	.000564
0.650	.000	2591.	.1459	.0803	.000574
0.660	.000	2615.	.1486	.0807	.000584
0.670	.000	2639.	.1513	.0811	.000594
0.680	.000	2663.	.1540	.0815	.000604
0.690	.000	2687.	.1567	.0819	.000614
0.700	.000	2711.	.1594	.0823	.000624
0.710	.000	2735.	.1621	.0827	.000634
0.720	.000	2759.	.1648	.0831	.000644
0.730	.000	2783.	.1675	.0835	.000654
0.740	.000	2807.	.1702	.0839	.000664
0.750	.000	2831.	.1729	.0843	.000674
0.760	.000	2855.	.1756	.0847	.000684
0.770	.000	2879.	.1783	.0851	.000694
0.780	.000	2903.	.1810	.0855	.000704
0.790	.000	2927.	.1837	.0859	.000714
0.800	.000	2951.	.1864	.0863	.000724
0.810	.000	2975.	.1891	.0867	.000734
0.820	.000	2999.	.1918	.0871	.000744
0.830	.000	3023.	.1945	.0875	.000754
0.840	.000	3047.	.1972	.0879	.000764
0.850	.000	3071.	.2000	.0883	.000774
0.860	.000	3095.	.2027	.0887	.000784
0.870	.000	3119.	.2054	.0891	.000794
0.880	.000	3143.	.2081	.0895	.000804
0.890	.000	3167.	.2108	.0899	.000814
0.900	.000	3191.	.2135	.0903	.000824
0.910	.000	3215.	.2162	.0907	.000834
0.920	.000	3239.	.2189	.0911	.000844
0.930	.000	3263.	.2216	.0915	.000854
0.940	.000	3287.	.2243	.0919	.000864
0.950	.000	3311.	.2270	.0923	.000874
0.960	.000	3335.	.2297	.0927	.000884
0.970	.000	3359.	.2324	.0931	.000894
0.980	.000	3383.	.2351	.0935	.000904
0.990	.000	3407.	.2378	.0939	.000914
1.000	.000	3431.	.2405	.0943	.000924

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
1.159	1.179	1.199	1.219	1.239	1.259	1.279	1.299	1.319	1.339	1.359	1.379	1.399	1.419	1.439	1.459	1.479	1.499	1.519	1.539	1.559	1.579	1.599	1.619	1.639	1.659	1.679	1.699	1.719	1.739	1.759	1.779	1.799	1.819	1.839	1.859	1.879	1.899	1.919	1.939	1.959	1.979	1.999	2.019	2.039	2.059	2.079	2.099	2.119	2.139	2.159	2.179	2.199	2.219	2.239	2.259	2.279	2.299	2.319	2.339	2.359	2.379	2.399	2.419	2.439	2.459	2.479	2.499	2.519	2.539	2.559	2.579	2.599	2.619	2.639	2.659	2.679	2.699	2.719	2.739	2.759	2.779	2.799	2.819	2.839	2.859	2.879	2.899	2.919	2.939	2.959	2.979	2.999	3.019	3.039	3.059	3.079	3.099	3.119	3.139	3.159	3.179	3.199	3.219	3.239	3.259	3.279	3.299	3.319	3.339	3.359	3.379	3.399	3.419	3.439	3.459	3.479	3.499	3.519	3.539	3.559	3.579	3.599	3.619	3.639	3.659	3.679	3.699	3.719	3.739	3.759	3.779	3.799	3.819	3.839	3.859	3.879	3.899	3.919	3.939	3.959	3.979	3.999	4.019	4.039	4.059	4.079	4.099	4.119	4.139	4.159	4.179	4.199	4.219	4.239	4.259	4.279	4.299	4.319	4.339	4.359	4.379	4.399	4.419	4.439	4.459	4.479	4.499	4.519	4.539	4.559	4.579	4.599	4.619	4.639	4.659	4.679	4.699	4.719	4.739	4.759	4.779	4.799	4.819	4.839	4.859	4.879	4.899	4.919	4.939	4.959	4.979	4.999	5.019	5.039	5.059	5.079	5.099	5.119	5.139	5.159	5.179	5.199	5.219	5.239	5.259	5.279	5.299	5.319	5.339	5.359	5.379	5.399	5.419	5.439	5.459	5.479	5.499	5.519	5.539	5.559	5.579	5.599	5.619	5.639	5.659	5.679	5.699	5.719	5.739	5.759	5.779	5.799	5.819	5.839	5.859	5.879	5.899	5.919	5.939	5.959	5.979	5.999	6.019	6.039	6.059	6.079	6.099	6.119	6.139	6.159	6.179	6.199	6.219	6.239	6.259	6.279	6.299	6.319	6.339	6.359	6.379	6.399	6.419	6.439	6.459	6.479	6.499	6.519	6.539	6.559	6.579	6.599	6.619	6.639	6.659	6.679	6.699	6.719	6.739	6.759	6.779	6.799	6.819	6.839	6.859	6.879	6.899	6.919	6.939	6.959	6.979	6.999	7.019	7.039	7.059	7.079	7.099	7.119	7.139	7.159	7.179	7.199	7.219	7.239	7.259	7.279	7.299	7.319	7.339	7.359	7.379	7.399	7.419	7.439	7.459	7.479	7.499	7.519	7.539	7.559	7.579	7.599	7.619	7.639	7.659	7.679	7.699	7.719	7.739	7.759	7.779	7.799	7.819	7.839	7.859	7.879	7.899	7.919	7.939	7.959	7.979	7.999	8.019	8.039	8.059	8.079	8.099	8.119	8.139	8.159	8.179	8.199	8.219	8.239	8.259	8.279	8.299	8.319	8.339	8.359	8.379	8.399	8.419	8.439	8.459	8.479	8.499	8.519	8.539	8.559	8.579	8.599	8.619	8.639	8.659	8.679	8.699	8.719	8.739	8.759	8.779	8.799	8.819	8.839	8.859	8.879	8.899	8.919	8.939	8.959	8.979	8.999	9.019	9.039	9.059	9.079	9.099	9.119	9.139	9.159	9.179	9.199	9.219	9.239	9.259	9.279	9.299	9.319	9.339	9.359	9.379	9.399	9.419	9.439	9.459	9.479	9.499	9.519	9.539	9.559	9.579	9.599	9.619	9.639	9.659	9.679	9.699	9.719	9.739	9.759	9.779	9.799	9.819	9.839	9.859	9.879	9.899	9.919	9.939	9.959	9.979	9.999	10.019	10.039	10.059	10.079	10.099	10.119	10.139	10.159	10.179	10.199	10.219	10.239	10.259	10.279	10.299	10.319	10.339	10.359	10.379	10.399	10.419	10.439	10.459	10.479	10.499	10.519	10.539	10.559	10.579	10.599	10.619	10.639	10.659	10.679	10.699	10.719	10.739	10.759	10.779	10.799	10.819	10.839	10.859	10.879	10.899	10.919	10.939	10.959	10.979	10.999	11.019	11.039	11.059	11.079	11.099	11.119	11.139	11.159	11.179	11.199	11.219	11.239	11.259	11.279	11.299	11.319	11.339	11.359	11.379	11.399	11.419	11.439	11.459	11.479	11.499	11.519	11.539	11.559	11.579	11.599	11.619	11.639	11.659	11.679	11.699	11.719	11.739	11.759	11.779	11.799	11.819	11.839	11.859	11.879	11.899	11.919	11.939	11.959	11.979	11.999	12.019	12.039	12.059	12.079	12.099	12.119	12.139	12.159	12.179	12.199	12.219	12.239	12.259	12.279	12.299	12.319	12.339	12.359	12.379	12.399	12.419	12.439	12.459	12.479	12.499	12.519	12.539	12.559	12.579	12.599	12.619	12.639	12.659	12.679	12.699	12.719	12.739	12.759	12.779	12.799	12.819	12.839	12.859	12.879	12.899	12.919	12.939	12.959	12.979	12.999	13.019	13.039	13.059	13.079	13.099	13.119	13.139	13.159	13.179	13.199	13.219	13.239	13.259	13.279	13.299	13.319	13.339	13.359	13.379	13.399	13.419	13.439	13.459	13.479	13.499	13.519	13.539	13.559	13.579	13.599	13.619	13.639	13.659	13.679	13.699	13.719	13.739	13.759	13.779	13.799	13.819	13.839	13.859	13.879	13.899	13.919	13.939	13.959	13.979	13.999	14.019	14.039	14.059	14.079	14.099	14.119	14.139	14.159	14.179	14.199	14.219	14.239	14.259	14.279	14.299	14.319	14.339	14.359	14.379	14.399	14.419	14.439	14.459	14.479	14.499	14.519	14.539	14.559	14.579	14.599	14.619	14.639	14.659	14.679	14.699	14.719	14.739	14.759	14.779	14.799	14.819	14.839	14.859	14.879	14.899	14.919	14.939	14.959	14.979	14.999	15.019	15.039	15.059	15.079	15.099	15.119	15.139	15.159	15.179	15.199	15.219	15.239	15.259	15.279	15.299	15.319	15.339	15.359	15.379	15.399	15.419	15.439	15.459	15.479	15.499	15.519	15.539	15.559	15.579	15.599	15.619	15.639	15.659	15.679	15.699	15.719	15.739	15.759	15.779	15.799	15.819	15.839	15.859	15.879	15.899	15.919	15.939	15.959	15.979	15.999	16.019	16.039	16.059	16.079	16.099	16.119	16.139	16.159	16.179	16.199	16.219	16.239	16.259	16.279	16.299	16.319	16.339	16.359	16.379	16.399	16.419	16.439	16.459	16.479	16.499	16.519	16.539	16.559	16.579	16.599	16.619	16.639	16.659	16.679	16.699	16.719	16.739	16.759	16.779	16.799	16.819	16.839	16.859	16.879	16.899	16.919	16.939	16.959	16.979	16.999	17.019	17.039	17.059	17.079	17.099	17.119	17.139	17.159	17.179	17.199	17.219	17.239	17.259	17.279	17.299	17.319	17.339	17.359	17.379	17.399	17.419	17.439	17.459	17.479	17.499	17.519	17.539	17.559	17.579	17.599	17.619	17.639	17.659	17.679	17.699	17.719	17.739	17.759	17.779	17.799	17.819	17.839	17.859	17.879	17.899	17.919	17.939	17.959	17.979	17.999	18.019	18.039	18.059	18.079	18.099	18.119	18.139	18.159	18.179	18.199	18.219	18.239	18.259	18.279	18.299	18.319	18.339	18.359	18.379	18.399	18.419	18.439	18.459	18.479	18.499	18.519	18.539	18.559	18.579	18.599	18.619	18.639	18.659	18.679	18.699	18.719	18.739	18.759	18.779	18.799	18.819	18.839	18.859	18.879	18.899	18.919	18.939	18.959	18.979	18.999	19.019	19.039	19.059	19.079	19.099	19.119	19.139	19.159	19.179	19.199	19.219	19.239	19.259	19.279	19.299	19.319	19.339	19.359	19.379	19.399	19.419	19.439	19.459	19.479	19.499	19.519	19.539	19.559	19.579	19.599	19.619	19.639	19.659	19.679	19.699	19.719	19.739	19.759	19.779	19.799	19.819	19.839	19.859	19.879	19.899	19.919	19.939	19.959	19.979	19.999	20.019	20.039	20.059	20.079	20.099	20.119	20.139	20.159	20.179	20.199	20.219	20.239	20.259	20.279	20.299	20.319	20.339	20.359	20.379	20.399	20.419	20.439	20.459	20.479	20.499	20.519	20.539	20.559	20.579	20.599	20.619	20.639	20.659	20.679	20.699	20.719	20.739	20.759	20.779	20.799	20.819	20.839	20.859	20.879	20.899	20.919	20.939	20.959	20.979	20.999	21.019	21.039	21.059	21.079	21.099	21.119	21.139	21.159	21.179	21.199	21.219	21.239	21.259	21.279	21.299	21.319	21.339	21.359	21.379	21.399	21.419	21.439	21.459	21.479	21.499	21.519	21.539	21.559	21.579	21.599	21.619	21.639	21.659	21.679	21.699	21.719	21.739	21.759	21.779	21.799	21.819	21.839	21.859	21.879	21.899	21.919	21.939	21.959	21.979	21.999	22.019	22.039	22.059	22.079	22.099	22.119	22.139	22.159	22.179	22.199	22.219	22.239	22.259	22.279	22.299	22.319	22.339	22.359	22.379	22.399	22.419	22.439	22.459	22.479	22.499	22.519	22.539	22.559	22.579	22.599	22.619	22.639	22.659	22.679	22.699	22.719	22.739	22.759	22.779	22.799	22.819	22.839	22.859	22.879	22.899	22.919	22.939	22.959	22.979	22.999	23.019	23.039	23.0

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ORIGINAL, PAGE IS
OF POOR QUALITY

V (CM)	V/INCH	V-MPH	TABLE 4.4. (Cont.)	W/F	U-PLUS	TAU/TAU-MAX	V/U
1.340	6.328	511.0	.0191	.4850	26.92	.4949	.000536
1.347	6.345	511.5	.0012	.4837	26.99	.4947	.000534
1.353	6.353	512.0	.0009	.4824	27.07	.4945	.000532
1.359	6.361	512.5	.0007	.4811	27.14	.4943	.000530
1.365	6.369	513.0	.0005	.4798	27.22	.4941	.000528
1.371	6.377	513.5	.0004	.4785	27.30	.4939	.000526
1.377	6.385	514.0	.0003	.4772	27.38	.4937	.000524
1.383	6.393	514.5	.0002	.4759	27.46	.4935	.000522
1.389	6.401	515.0	.0001	.4746	27.54	.4933	.000520
1.395	6.409	515.5	.0000	.4733	27.62	.4931	.000518
1.401	6.417	516.0	.0000	.4720	27.70	.4929	.000516
1.407	6.425	516.5	.0000	.4707	27.78	.4927	.000514
1.413	6.433	517.0	.0000	.4694	27.86	.4925	.000512
1.419	6.441	517.5	.0000	.4681	27.94	.4923	.000510
1.425	6.449	518.0	.0000	.4668	28.02	.4921	.000508
1.431	6.457	518.5	.0000	.4655	28.10	.4919	.000506
1.437	6.465	519.0	.0000	.4642	28.18	.4917	.000504
1.443	6.473	519.5	.0000	.4629	28.26	.4915	.000502
1.449	6.481	520.0	.0000	.4616	28.34	.4913	.000500
1.455	6.489	520.5	.0000	.4603	28.42	.4911	.000498
1.461	6.497	521.0	.0000	.4590	28.50	.4909	.000496
1.467	6.505	521.5	.0000	.4577	28.58	.4907	.000494
1.473	6.513	522.0	.0000	.4564	28.66	.4905	.000492
1.479	6.521	522.5	.0000	.4551	28.74	.4903	.000490
1.485	6.529	523.0	.0000	.4538	28.82	.4901	.000488
1.491	6.537	523.5	.0000	.4525	28.90	.4899	.000486
1.497	6.545	524.0	.0000	.4512	28.98	.4897	.000484
1.503	6.553	524.5	.0000	.4499	29.06	.4895	.000482
1.509	6.561	525.0	.0000	.4486	29.14	.4893	.000480
1.515	6.569	525.5	.0000	.4473	29.22	.4891	.000478
1.521	6.577	526.0	.0000	.4460	29.30	.4889	.000476
1.527	6.585	526.5	.0000	.4447	29.38	.4887	.000474
1.533	6.593	527.0	.0000	.4434	29.46	.4885	.000472
1.539	6.601	527.5	.0000	.4421	29.54	.4883	.000470
1.545	6.609	528.0	.0000	.4408	29.62	.4881	.000468
1.551	6.617	528.5	.0000	.4395	29.70	.4879	.000466
1.557	6.625	529.0	.0000	.4382	29.78	.4877	.000464
1.563	6.633	529.5	.0000	.4369	29.86	.4875	.000462
1.569	6.641	530.0	.0000	.4356	29.94	.4873	.000460
1.575	6.649	530.5	.0000	.4343	30.02	.4871	.000458
1.581	6.657	531.0	.0000	.4330	30.10	.4869	.000456
1.587	6.665	531.5	.0000	.4317	30.18	.4867	.000454
1.593	6.673	532.0	.0000	.4304	30.26	.4865	.000452
1.599	6.681	532.5	.0000	.4291	30.34	.4863	.000450
1.605	6.689	533.0	.0000	.4278	30.42	.4861	.000448
1.611	6.697	533.5	.0000	.4265	30.50	.4859	.000446
1.617	6.705	534.0	.0000	.4252	30.58	.4857	.000444
1.623	6.713	534.5	.0000	.4239	30.66	.4855	.000442
1.629	6.721	535.0	.0000	.4226	30.74	.4853	.000440
1.635	6.729	535.5	.0000	.4213	30.82	.4851	.000438
1.641	6.737	536.0	.0000	.4200	30.90	.4849	.000436
1.647	6.745	536.5	.0000	.4187	30.98	.4847	.000434
1.653	6.753	537.0	.0000	.4174	31.06	.4845	.000432
1.659	6.761	537.5	.0000	.4161	31.14	.4843	.000430
1.665	6.769	538.0	.0000	.4148	31.22	.4841	.000428
1.671	6.777	538.5	.0000	.4135	31.30	.4839	.000426
1.677	6.785	539.0	.0000	.4122	31.38	.4837	.000424
1.683	6.793	539.5	.0000	.4109	31.46	.4835	.000422
1.689	6.801	540.0	.0000	.4096	31.54	.4833	.000420
1.695	6.809	540.5	.0000	.4083	31.62	.4831	.000418
1.701	6.817	541.0	.0000	.4070	31.70	.4829	.000416
1.707	6.825	541.5	.0000	.4057	31.78	.4827	.000414
1.713	6.833	542.0	.0000	.4044	31.86	.4825	.000412
1.719	6.841	542.5	.0000	.4031	31.94	.4823	.000410
1.725	6.849	543.0	.0000	.4018	32.02	.4821	.000408
1.731	6.857	543.5	.0000	.4005	32.10	.4819	.000406
1.737	6.865	544.0	.0000	.3992	32.18	.4817	.000404
1.743	6.873	544.5	.0000	.3979	32.26	.4815	.000402
1.749	6.881	545.0	.0000	.3966	32.34	.4813	.000400
1.755	6.889	545.5	.0000	.3953	32.42	.4811	.000398
1.761	6.897	546.0	.0000	.3940	32.50	.4809	.000396
1.767	6.905	546.5	.0000	.3927	32.58	.4807	.000394
1.773	6.913	547.0	.0000	.3914	32.66	.4805	.000392
1.779	6.921	547.5	.0000	.3901	32.74	.4803	.000390
1.785	6.929	548.0	.0000	.3888	32.82	.4801	.000388
1.791	6.937	548.5	.0000	.3875	32.90	.4799	.000386
1.797	6.945	549.0	.0000	.3862	32.98	.4797	.000384
1.803	6.953	549.5	.0000	.3849	33.06	.4795	.000382
1.809	6.961	550.0	.0000	.3836	33.14	.4793	.000380
1.815	6.969	550.5	.0000	.3823	33.22	.4791	.000378
1.821	6.977	551.0	.0000	.3810	33.30	.4789	.000376
1.827	6.985	551.5	.0000	.3797	33.38	.4787	.000374
1.833	6.993	552.0	.0000	.3784	33.46	.4785	.000372
1.839	6.999	552.5	.0000	.3771	33.54	.4783	.000370
1.845	7.007	553.0	.0000	.3758	33.62	.4781	.000368
1.851	7.015	553.5	.0000	.3745	33.70	.4779	.000366
1.857	7.023	554.0	.0000	.3732	33.78	.4777	.000364
1.863	7.031	554.5	.0000	.3719	33.86	.4775	.000362
1.869	7.039	555.0	.0000	.3706	33.94	.4773	.000360
1.875	7.047	555.5	.0000	.3693	34.02	.4771	.000358
1.881	7.055	556.0	.0000	.3680	34.10	.4769	.000356
1.887	7.063	556.5	.0000	.3667	34.18	.4767	.000354
1.893	7.071	557.0	.0000	.3654	34.26	.4765	.000352
1.899	7.079	557.5	.0000	.3641	34.34	.4763	.000350
1.905	7.087	558.0	.0000	.3628	34.42	.4761	.000348
1.911	7.095	558.5	.0000	.3615	34.50	.4759	.000346
1.917	7.103	559.0	.0000	.3602	34.58	.4757	.000344
1.923	7.111	559.5	.0000	.3589	34.66	.4755	.000342
1.929	7.119	560.0	.0000	.3576	34.74	.4753	.000340
1.935	7.127	560.5	.0000	.3563	34.82	.4751	.000338
1.941	7.135	561.0	.0000	.3550	34.90	.4749	.000336
1.947	7.143	561.5	.0000	.3537	34.98	.4747	.000334
1.953	7.151	562.0	.0000	.3524	35.06	.4745	.000332
1.959	7.159	562.5	.0000	.3511	35.14	.4743	.000330
1.965	7.167	563.0	.0000	.3498	35.22	.4741	.000328
1.971	7.175	563.5	.0000	.3485	35.30	.4739	.000326
1.977	7.183	564.0	.0000	.3472	35.38	.4737	.000324
1.983	7.191	564.5	.0000	.3459	35.46	.4735	.000322
1.989	7.199	565.0	.0000	.3446	35.54	.4733	.000320
1.995	7.207	565.5	.0000	.3433	35.62	.4731	.000318
2.001	7.215	566.0	.0000	.3420	35.70	.4729	.000316
2.007	7.223	566.5	.0000	.3407	35.78	.4727	.000314
2.013	7.231	567.0	.0000	.3394	35.86	.4725	.000312
2.019	7.239	567.5	.0000	.3381	35.94	.4723	.000310
2.025	7.247	568.0	.0000	.3368	36.02	.4721	.000308
2.031	7.255	568.5	.0000	.3355	36.10	.4719	.000306
2.037	7.263	569.0	.0000	.3342	36.18	.4717	.000304
2.043	7.271	569.5	.0000	.3329	36.26	.4715	.000302
2.049	7.279	570.0	.0000	.3316	36.34	.4713	.000300
2.055	7.287	570.5	.0000	.3303	36.42	.4711	.000298
2.061	7.295	571.0	.0000	.3290	36.50	.4709	.000296
2.067	7.303	571.5	.0000	.3277	36.58	.4707	.000294
2.073	7.311	572.0	.0000	.3264	36.66	.4705	.000292
2.079	7.319	572.5	.0000	.3251	36.74	.4703	.000290
2.085	7.327	573.0	.0000	.3238	36.82	.4701	.000288
2.091	7.335	573.5	.0000	.3225	36.90	.4699	.000286
2.097	7.343	574.0	.0000	.3212	36.98	.4697	.000284
2.103	7.351	574.5	.0000	.3199	37.06	.4695	.000282
2.109	7.359	575.0	.0000	.3186	37.14	.4693	.000280
2.115	7.367	575.5	.0000	.3173	37.22	.4691	.000278
2.121	7.375	576.0	.0000	.3160	37.30	.4689	.000276
2.127	7.383	576.5	.0000	.3147	37.38	.4687	.000274
2.133	7.391	577.0	.0000	.3134	37.46	.4685	.000272
2.139	7.399	577.5	.0000	.3121	37.54	.4683	.000270
2.145	7.407	578.0	.0000	.3108	37.62	.4681	.000268
2.151	7.415	578.5	.0000	.3095	37.70	.4679	.000266
2.157	7.423	579.0	.0000	.3082	37.78	.4677	.000264
2.163	7.431	579.5	.0000	.3069	37.86	.4675	.000262
2.169	7.439	580.0	.0000	.3056	37.94	.4673	.000260
2.175	7.447	580.5	.0000	.3043	38.02	.4671	.000258
2.181	7.455	581.0	.0000	.3030	38.10	.4669	.000256
2.187	7.463	581.5	.0000	.3017	38.18	.4667	.000254
2.193	7.471	582.0	.0000	.3004	38.26	.4665	.000252
2.199	7.479	582.5	.0000	.2991	38.34	.4663	.000250
2.205	7.487	583.0	.0000	.2978	38.42	.4661	.000248
2.211	7.495	583.5	.0000	.2965	38.50	.4659	.000246
2.217	7.503	584.0	.0000	.2952	38.58	.4657	.000244
2.223	7.511	584.5	.0000				

TABLE A. 6. (Cont.)
R/mg

Y (cm)	V/mg	U-PLUS	U/mg	U-PLUS	TAU/TAU-MAX	V/U
1.375	0.579	51.77	.0319	26.87	.7005	.005511
1.425	0.563	51.11	.0376	27.03	.6918	.005537
1.475	0.555	50.60	.0455	27.27	.6843	.005571
1.525	0.547	50.10	.0551	27.61	.6785	.005614
1.575	0.539	49.60	.0664	27.97	.6742	.005667
1.625	0.531	49.10	.0794	28.37	.6715	.005729
1.675	0.523	48.60	.0941	28.77	.6698	.005799
1.725	0.515	48.10	.1104	29.17	.6686	.005876
1.775	0.507	47.60	.1284	29.57	.6679	.005960
1.825	0.500	47.10	.1480	29.97	.6676	.006051
1.875	0.492	46.60	.1693	30.37	.6673	.006149
1.925	0.484	46.10	.1924	30.77	.6670	.006253
1.975	0.476	45.60	.2174	31.17	.6667	.006364
2.025	0.468	45.10	.2444	31.57	.6664	.006481
2.075	0.460	44.60	.2734	31.97	.6661	.006604
2.125	0.452	44.10	.3044	32.37	.6658	.006734
2.175	0.444	43.60	.3374	32.77	.6655	.006870
2.225	0.436	43.10	.3724	33.17	.6652	.007012
2.275	0.428	42.60	.4094	33.57	.6649	.007160
2.325	0.420	42.10	.4484	33.97	.6646	.007314
2.375	0.412	41.60	.4894	34.37	.6643	.007474
2.425	0.404	41.10	.5324	34.77	.6640	.007640
2.475	0.396	40.60	.5774	35.17	.6637	.007812
2.525	0.388	40.10	.6244	35.57	.6634	.007990
2.575	0.380	39.60	.6734	35.97	.6631	.008174
2.625	0.372	39.10	.7244	36.37	.6628	.008364
2.675	0.364	38.60	.7774	36.77	.6625	.008560
2.725	0.356	38.10	.8324	37.17	.6622	.008762
2.775	0.348	37.60	.8894	37.57	.6619	.008970
2.825	0.340	37.10	.9484	37.97	.6616	.009184
2.875	0.332	36.60	1.0094	38.37	.6613	.009404
2.925	0.324	36.10	1.0724	38.77	.6610	.009630
2.975	0.316	35.60	1.1374	39.17	.6607	.009862
3.025	0.308	35.10	1.2044	39.57	.6604	.010100
3.075	0.300	34.60	1.2734	39.97	.6601	.010344
3.125	0.292	34.10	1.3444	40.37	.6598	.010594
3.175	0.284	33.60	1.4174	40.77	.6595	.010850
3.225	0.276	33.10	1.4924	41.17	.6592	.011112
3.275	0.268	32.60	1.5694	41.57	.6589	.011380
3.325	0.260	32.10	1.6484	41.97	.6586	.011654
3.375	0.252	31.60	1.7294	42.37	.6583	.011934
3.425	0.244	31.10	1.8124	42.77	.6580	.012220
3.475	0.236	30.60	1.8974	43.17	.6577	.012512
3.525	0.228	30.10	1.9844	43.57	.6574	.012810
3.575	0.220	29.60	2.0734	43.97	.6571	.013114
3.625	0.212	29.10	2.1644	44.37	.6568	.013424
3.675	0.204	28.60	2.2574	44.77	.6565	.013740
3.725	0.196	28.10	2.3524	45.17	.6562	.014062
3.775	0.188	27.60	2.4494	45.57	.6559	.014390
3.825	0.180	27.10	2.5484	45.97	.6556	.014724
3.875	0.172	26.60	2.6494	46.37	.6553	.015064
3.925	0.164	26.10	2.7524	46.77	.6550	.015410
3.975	0.156	25.60	2.8574	47.17	.6547	.015762
4.025	0.148	25.10	2.9644	47.57	.6544	.016120
4.075	0.140	24.60	3.0734	47.97	.6541	.016484
4.125	0.132	24.10	3.1844	48.37	.6538	.016854
4.175	0.124	23.60	3.2974	48.77	.6535	.017230
4.225	0.116	23.10	3.4124	49.17	.6532	.017612
4.275	0.108	22.60	3.5294	49.57	.6529	.018000
4.325	0.100	22.10	3.6484	49.97	.6526	.018394
4.375	0.092	21.60	3.7694	50.37	.6523	.018794
4.425	0.084	21.10	3.8924	50.77	.6520	.019200
4.475	0.076	20.60	4.0174	51.17	.6517	.019612
4.525	0.068	20.10	4.1444	51.57	.6514	.020030
4.575	0.060	19.60	4.2734	51.97	.6511	.020454
4.625	0.052	19.10	4.4044	52.37	.6508	.020884
4.675	0.044	18.60	4.5374	52.77	.6505	.021320
4.725	0.036	18.10	4.6724	53.17	.6502	.021762
4.775	0.028	17.60	4.8094	53.57	.6499	.022210
4.825	0.020	17.10	4.9484	53.97	.6496	.022664
4.875	0.012	16.60	5.0894	54.37	.6493	.023124
4.925	0.004	16.10	5.2324	54.77	.6490	.023590
4.975	0.000	15.60	5.3774	55.17	.6487	.024062
5.025	0.000	15.10	5.5244	55.57	.6484	.024540
5.075	0.000	14.60	5.6734	55.97	.6481	.025024
5.125	0.000	14.10	5.8244	56.37	.6478	.025514
5.175	0.000	13.60	5.9774	56.77	.6475	.026010
5.225	0.000	13.10	6.1324	57.17	.6472	.026512
5.275	0.000	12.60	6.2894	57.57	.6469	.027020
5.325	0.000	12.10	6.4484	57.97	.6466	.027534
5.375	0.000	11.60	6.6094	58.37	.6463	.028054
5.425	0.000	11.10	6.7724	58.77	.6460	.028580
5.475	0.000	10.60	6.9374	59.17	.6457	.029112
5.525	0.000	10.10	7.1044	59.57	.6454	.029650
5.575	0.000	9.60	7.2734	59.97	.6451	.030194
5.625	0.000	9.10	7.4444	60.37	.6448	.030744
5.675	0.000	8.60	7.6174	60.77	.6445	.031300
5.725	0.000	8.10	7.7924	61.17	.6442	.031862
5.775	0.000	7.60	7.9694	61.57	.6439	.032430
5.825	0.000	7.10	8.1484	61.97	.6436	.033004
5.875	0.000	6.60	8.3294	62.37	.6433	.033584
5.925	0.000	6.10	8.5124	62.77	.6430	.034170
5.975	0.000	5.60	8.6974	63.17	.6427	.034762
6.025	0.000	5.10	8.8844	63.57	.6424	.035360
6.075	0.000	4.60	9.0734	63.97	.6421	.035964
6.125	0.000	4.10	9.2644	64.37	.6418	.036574
6.175	0.000	3.60	9.4574	64.77	.6415	.037190
6.225	0.000	3.10	9.6524	65.17	.6412	.037812
6.275	0.000	2.60	9.8494	65.57	.6409	.038440
6.325	0.000	2.10	10.0484	65.97	.6406	.039074
6.375	0.000	1.60	10.2494	66.37	.6403	.039714
6.425	0.000	1.10	10.4524	66.77	.6400	.040360
6.475	0.000	0.60	10.6574	67.17	.6397	.041012
6.525	0.000	0.10	10.8644	67.57	.6394	.041670
6.575	0.000	0.00	11.0734	67.97	.6391	.042334
6.625	0.000	0.00	11.2844	68.37	.6388	.043004
6.675	0.000	0.00	11.4974	68.77	.6385	.043680
6.725	0.000	0.00	11.7124	69.17	.6382	.044362
6.775	0.000	0.00	11.9294	69.57	.6379	.045050
6.825	0.000	0.00	12.1484	69.97	.6376	.045744
6.875	0.000	0.00	12.3694	70.37	.6373	.046444
6.925	0.000	0.00	12.5924	70.77	.6370	.047150
6.975	0.000	0.00	12.8174	71.17	.6367	.047862
7.025	0.000	0.00	13.0444	71.57	.6364	.048580
7.075	0.000	0.00	13.2734	71.97	.6361	.049304
7.125	0.000	0.00	13.5044	72.37	.6358	.050034
7.175	0.000	0.00	13.7374	72.77	.6355	.050770
7.225	0.000	0.00	13.9724	73.17	.6352	.051512
7.275	0.000	0.00	14.2094	73.57	.6349	.052260
7.325	0.000	0.00	14.4484	73.97	.6346	.053014
7.375	0.000	0.00	14.6894	74.37	.6343	.053774
7.425	0.000	0.00	14.9324	74.77	.6340	.054540
7.475	0.000	0.00	15.1774	75.17	.6337	.055312
7.525	0.000	0.00	15.4244	75.57	.6334	.056090
7.575	0.000	0.00	15.6734	75.97	.6331	.056874
7.625	0.000	0.00	15.9244	76.37	.6328	.057664
7.675	0.000	0.00	16.1774	76.77	.6325	.058460
7.725	0.000	0.00	16.4324	77.17	.6322	.059262
7.775	0.000	0.00	16.6894	77.57	.6319	.060070
7.825	0.000	0.00	16.9484	77.97	.6316	.060884
7.875	0.000	0.00	17.2094	78.37	.6313	.061704
7.925	0.000	0.00	17.4724	78.77	.6310	.062530
7.975	0.000	0.00	17.7374	79.17	.6307	.063362
8.025	0.000	0.00	18.0044	79.57	.6304	.064200
8.075	0.000	0.00	18.2734	79.97	.6301	.065044
8.125	0.000	0.00	18.5444	80.37	.6298	.065894
8.175	0.000	0.00	18.8174	80.77	.6295	.066750
8.225	0.000	0.00	19.0924	81.17	.6292	.067612
8.275	0.000	0.00	19.3694	81.57	.6289	.068480
8.325	0.000	0.00	19.6484	81.97	.6286	.069354
8.375	0.000	0.00	19.9294	82.37	.6283	.070234
8.425	0.000	0.00	20.2124	82.77	.6280	.071120
8.475	0.000	0.00	20.4974	83.17	.6277	.072012
8.525	0.000	0.00	20.7844	83.57	.6274	.072910
8.575	0.000	0.00	21.0734	83.97	.6271	.073814
8.625	0.000	0.00	21.3644	84.37	.6268	.074724
8.675	0.000	0.00	21.6574	84.77	.6265	.075640
8.725	0.000	0.00	21.9524	85.17	.6262	.076562
8.775	0.000	0.00	22.2494	85.57	.6259	.077490
8.825	0.000	0.00	22.5484	85.97	.6256	.078424
8.875	0.000	0.00	22.8494	86.37	.6253	.079364
8.925	0.000	0.00	23.1524	86.77	.6250	.080310
8.975	0.000	0.00	23.4574	87.17	.6247	.081262
9.025	0.000	0.00	23.7644	87.57	.6244	.082220
9.075	0.000	0.00	24.0734	87.97	.6241	.083184
9.125	0.000	0.00	24.3844	88.37	.6238	.084154
9.175	0.000	0.00	24.6974	88.77	.6235	.085130
9.225	0.000	0.00	25.0124	89.17	.6232	.086112
9.275	0.000	0.00	25.3294	89.57	.6229	.087100
9.325	0.000	0.00	25.6484	89.97	.6226	.088094
9.375	0.000	0.00	25.9694	90.37	.6223	.089094
9.425	0.000	0.00	26.2924			

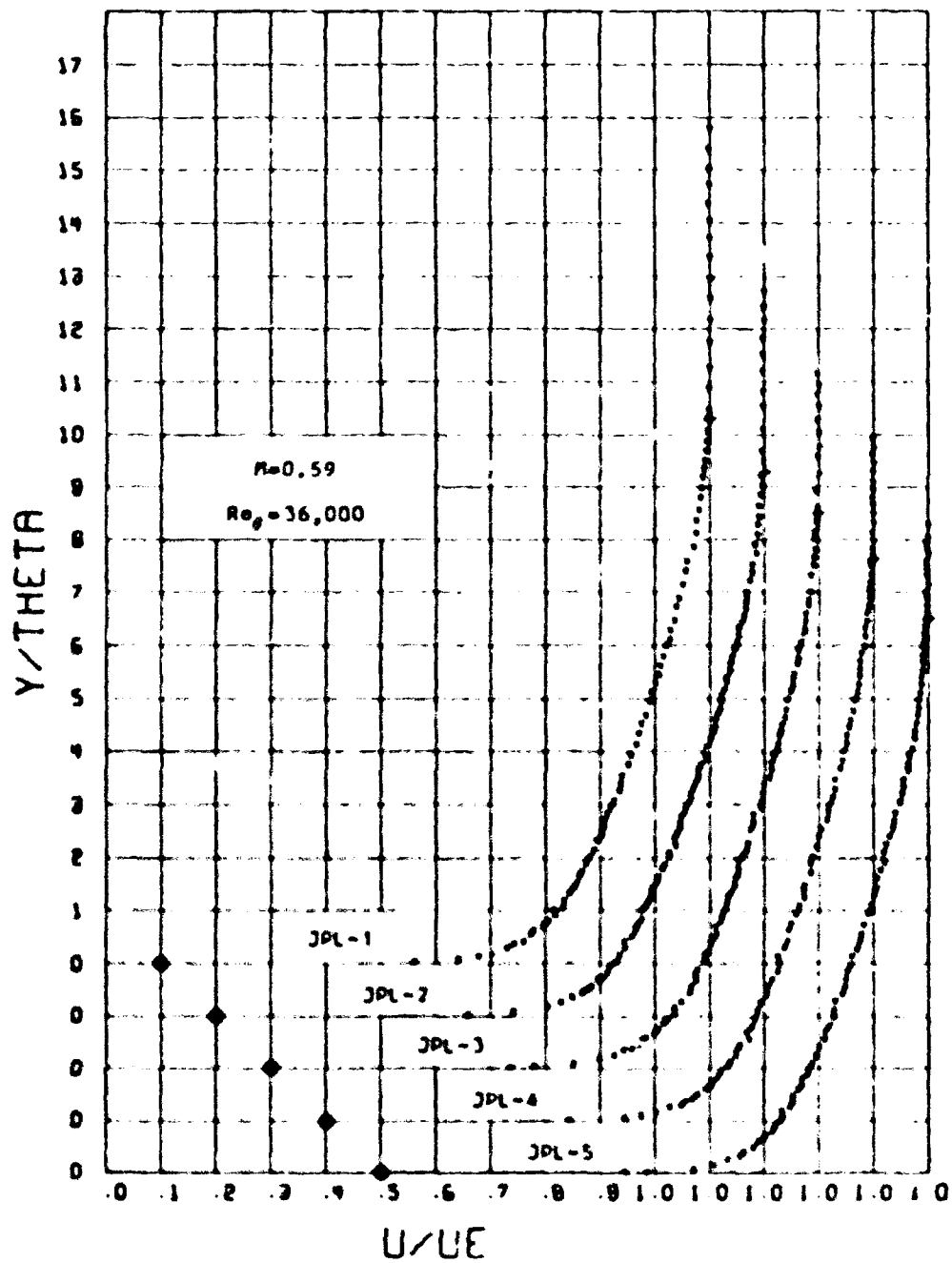
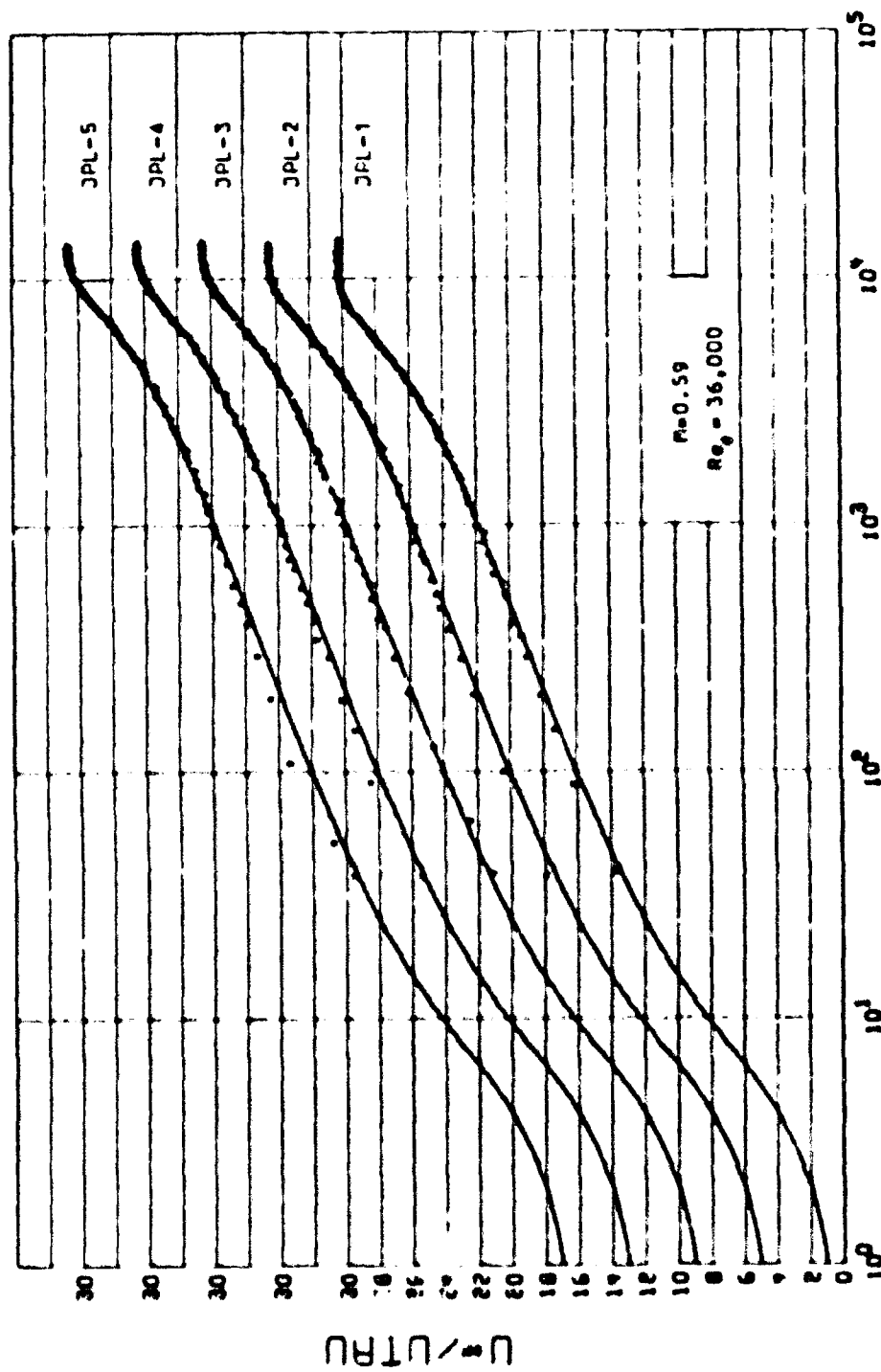


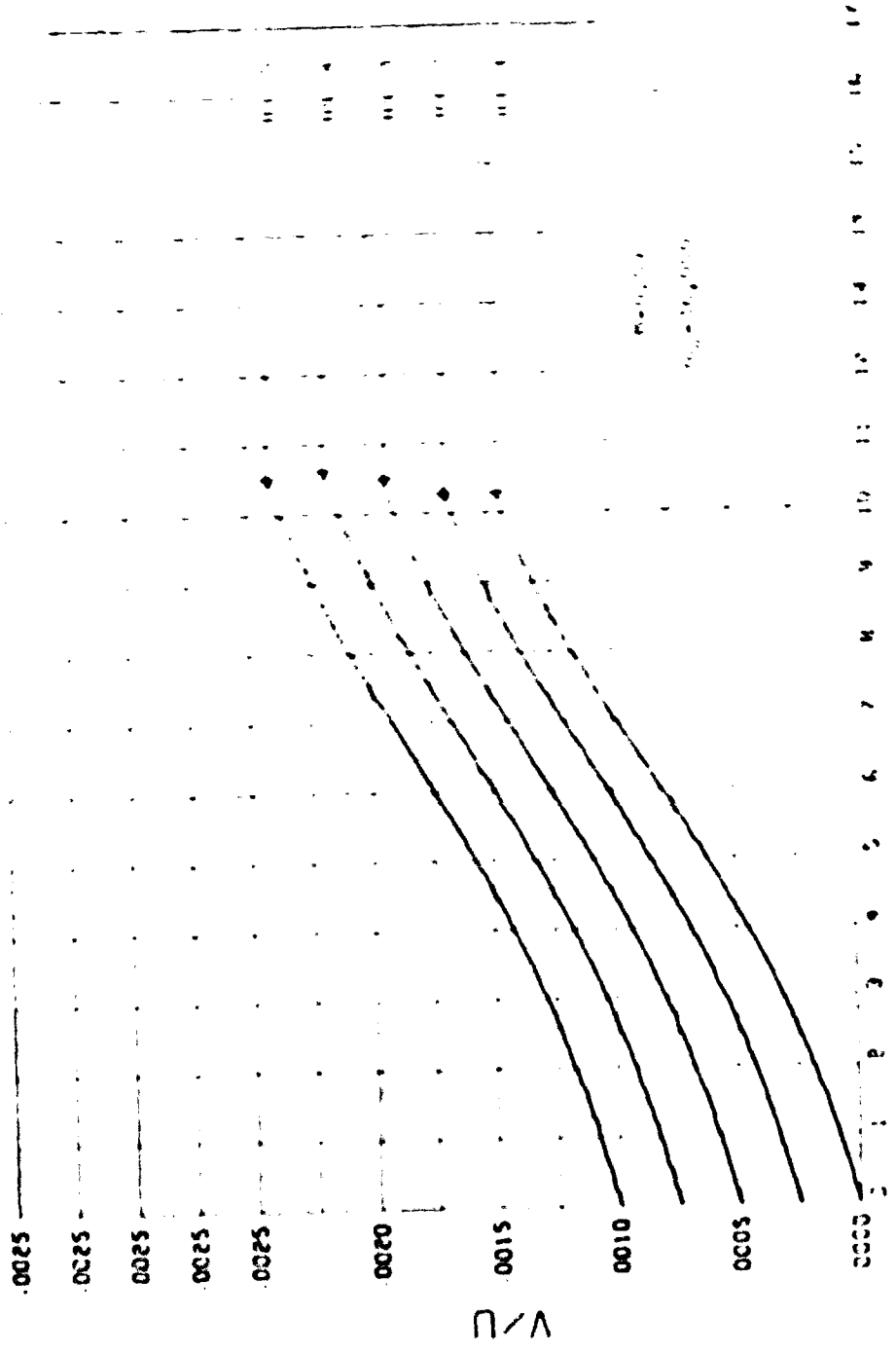
Figure A9. Mean Velocity Profiles.



$$Y=UTAU/NU$$

Figure A10. Van Orist Scaled Mean Velocity Profiles.

ALL DATA



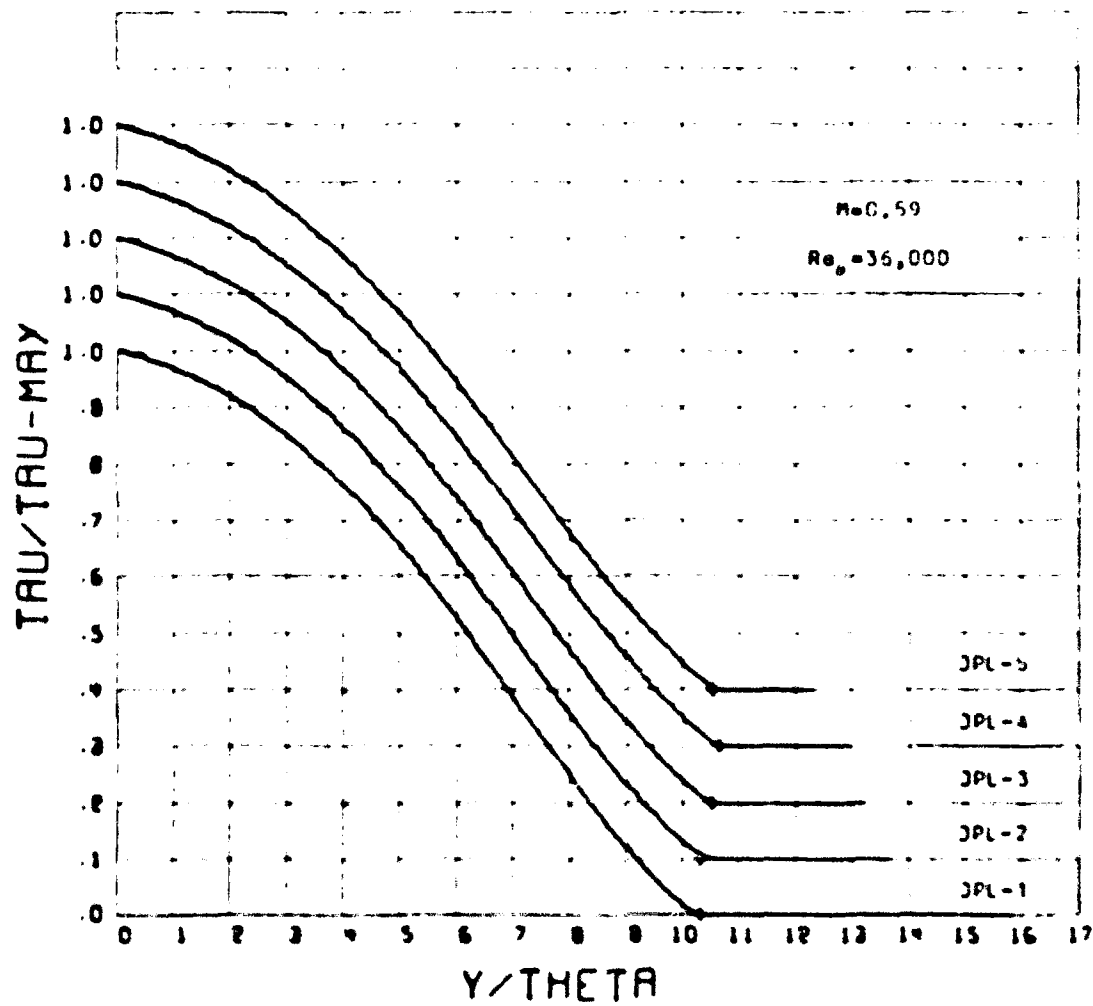


Figure A12. Shear Stress Distribution.

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0-930 60°W 60°E + 0.1117820001 10101
1000/m 500+1165° + 0.1117820001 10101

0561. ° 0.20 = 2000 2000

[illegible]

TABLE 6.7. (Cont.)					
W/F	W-PLUS	U/WE	U-PLUS	TAU/TAU-MAX	V/U
1.326	0.537	0.903	27.59	.4231	.001049
1.346	0.582	.9371	27.78	.3450	.001105
1.361	0.634	.9642	28.03	.3558	.001147
1.373	1.146	.9846	28.12	.3251	.001191
1.380	1.316	.9956	28.29	.3058	.001214
1.388	1.446	.9972	28.37	.2886	.001260
1.396	1.616	.9987	28.64	.2550	.001320
1.405	0.736	.9979	28.77	.2051	.001358
1.415	0.716	.9966	28.86	.1788	.001394
1.421	0.716	.9952	28.86	.1788	.001394
1.426	0.736	.9940	29.04	.1461	.001425
1.432	0.736	.9930	29.11	.1350	.001444
1.438	0.736	.9920	29.17	.1048	.001494
1.445	0.736	.9913	29.20	.0839	.001527
1.452	0.736	.9906	29.21	.0695	.001541
1.459	0.736	.9913	29.28	.0474	.001571
1.466	0.736	.9913	29.38	.0289	.001595
1.473	0.736	.9906	29.40	.0107	.001619
1.480	0.736	.9906	29.41	0.0000	.001633
1.486	0.736	.9906	29.49	0.0000	.001633
1.493	0.736	.9906	29.50	0.0000	.001633
1.499	0.736	1.0017	29.57	0.0000	.001633
1.505	0.736	.9997	29.48	0.0000	.001633
1.511	0.736	1.0007	29.55	0.0000	.001633
1.517	0.736	.9996	29.50	0.0000	.001633
1.523	0.736	.9992	29.50	0.0000	.001633
1.529	0.736	1.0012	29.55	0.0000	.001633
1.535	0.736	1.0005	29.53	0.0000	.001633
1.541	0.736	1.0002	29.56	0.0000	.001633
1.547	0.736	1.0016	29.47	0.0000	.001633
1.553	0.736	.9994	29.47	0.0000	.001633
1.559	0.736	1.0012	29.45	0.0000	.001633

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TABLE A 7. (CONT.)

V (°M)	V/14670	V-PLUS	M/ME	REQ/RMFE	U/UE	U-PLUS	TAU/TAI-MAX	V/U
1.350	6.491	2972.	.8671	.9756	.8779	25.99	.6836	.000428
1.311	6.929	3117.	.8802	.9776	.8992	26.36	.6595	.000073
1.362	5.111	3236.	.8848	.9786	.8945	26.49	.6316	.000712
1.416	5.320	3371.	.8922	.9794	.9014	26.70	.6042	.000754
1.477	5.539	3510.	.8977	.9807	.9045	26.86	.5749	.000700
1.500	5.738	3636.	.9063	.9823	.9126	27.10	.5475	.000642
1.581	5.910	3787.	.9106	.9830	.9184	27.22	.5209	.000642
1.666	6.166	3908.	.9193	.9856	.9256	27.67	.4871	.000622
1.703	6.387	4067.	.9236	.9856	.9306	27.59	.4556	.000379
1.752	6.573	4165.	.9310	.9871	.9390	27.85	.4284	.001014
1.808	6.766	4284.	.9369	.9878	.9426	27.96	.3949	.001049
1.852	6.969	4431.	.9426	.9880	.9474	28.12	.3716	.001097
1.901	7.181	4519.	.9479	.9885	.9524	28.33	.3449	.001155
1.950	7.316	4636.	.9560	.9910	.9565	28.46	.3166	.001173
2.021	7.583	4756.	.9592	.9910	.9630	28.59	.2815	.001274
2.077	7.792	4937.	.9639	.9920	.9672	28.72	.2518	.001267
2.162	8.036	5091.	.9712	.9939	.9719	28.92	.2182	.001312
2.197	8.260	5221.	.9731	.9947	.9747	29.09	.1907	.001349
2.266	8.619	5385.	.9779	.9956	.9800	29.11	.1652	.001364
2.335	8.866	5672.	.9821	.9966	.9816	29.23	.1393	.001418
2.366	9.076	5822.	.9860	.9972	.9873	29.36	.1117	.001454
2.426	9.192	5967.	.9885	.9977	.9896	29.40	.0860	.001468
2.501	9.355	6026.	.9939	.9982	.9919	29.67	.0673	.001522
2.550	9.524	6136.	.9973	.9986	.9931	29.71	.0474	.001544
2.586	9.731	6186.	.9990	.9990	.9945	29.59	.0243	.001577
2.655	9.960	6117.	.9961	.9988	.9917	29.26	.0073	.001561
2.703	10.161	6025.	.9983	.9986	.9964	28.68	0.0000	.001567
2.757	10.361	6552.	.9993	.9986	.9985	28.68	0.0000	.001600
2.807	10.755	6816.	.9973	.9986	.9916	29.45	0.0000	.001600
2.856	11.079	7070.	.9976	.9995	.9979	29.60	0.0000	.001600
2.906	11.627	7260.	.9990	.9999	.9999	29.72	0.0000	.001600
3.006	11.889	7606.	.9996	.9996	.9996	29.71	0.0000	.001600
3.116	11.965	7841.	1.0000	1.0000	1.0000	29.74	0.0000	.001600
3.261	12.156	7702.	1.0000	1.0000	1.0000	29.73	0.0000	.001600
3.295	12.322	7807.	.9975	.9995	.9977	29.65	0.0000	.001600
3.376	12.671	7901.	1.0015	1.0002	1.0009	29.75	0.0000	.001600
3.366	12.819	7995.	1.0015	1.0000	1.0014	29.77	0.0000	.001600
3.437	12.780	8092.	1.0000	1.0000	1.0000	29.73	0.0000	.001600
3.481	12.966	8203.	.9980	.9986	.9982	29.67	0.0000	.001600

TABLE 4.7. ICNWT.1
PROFILE - JPL-3 -- PLINI PRESSURE DATA

ENGINE MACH NO. = 8049 TOTAL PRESSURE = 6001E+05 N/M²
 IN = 7.02 CM TOTAL TEMPERATURE = 306.95 DEG-K

U = 204.79 M/SEC	DELTA STAG = 0.221 CM	INLET = 2748 CM	NO = 1.935					
IN-DELTA STAG = 3010.	EG-DELTA STAG = 23560.	WALL = .3737 CM/SEC						
LEAST SQUARE FIT PARAMETERS								
U = 0.1007 M/SEC	C _{FO} = .002132	PLO = .5000	DELTA = 2.840E CM					
C = 100.1455E-04	VMAS = 2.319 CM	VMIN = .080 CM						
V (CM)	V/INLET	V-PLUS	M/ME	EXP/ME	U/M	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.0001	0.0000	0.00	1.0000	0.000000
.010	.034	26.	.0203	.0152	.4393	12.70	1.0000	0.000000
.020	.068	61.	.0408	.0312	.8951	16.71	.0000	.000012
.030	.102	67.	.0624	.0527	.8433	14.84	.0000	.000065
.040	.136	66.	.0840	.0743	.8137	16.77	.0000	.000010
.050	.170	100.	.1057	.0961	.8070	17.15	.0000	.000012
.060	.204	100.	.1274	.1177	.8153	16.76	.0000	.000014
.070	.238	252.	.1491	.1394	.8463	18.84	.0017	.000011
.080	.272	296.	.1708	.1611	.8545	9.72	.0007	.000017
.090	.306	326.	.1925	.1828	.8627	.44	.0053	.000011
.100	.340	394.	.2142	.2046	.8710	2.47	.0053	.000010
.110	.374	433.	.2359	.2252	.8792	25.73	.0052	.000010
.120	.408	508.	.2576	.2469	.8874	20.33	.0051	.000017
.130	.442	576.	.2793	.2686	.8957	20.42	.0051	.000017
.140	.476	648.	.3010	.2903	.9039	20.44	.0050	.000018
.150	.510	717.	.3227	.3120	.9121	21.10	.0045	.000014
.160	.544	801.	.3444	.3337	.9203	21.31	.0047	.000011
.170	.578	873.	.3661	.3554	.9285	21.55	.0046	.000011
.180	.612	945.	.3878	.3777	.9367	21.84	.0046	.000014
.190	.646	1000.	.4095	.3994	.9449	22.75	.0043	.000018
.200	.680	1060.	.4312	.4211	.9531	22.15	.0043	.000019
.210	.714	1132.	.4529	.4428	.9613	22.34	.0042	.000019
.220	.748	1204.	.4746	.4645	.9695	22.42	.0040	.000014
.230	.782	1276.	.4963	.4862	.9777	22.76	.0040	.000014
.240	.816	1348.	.5180	.5079	.9859	22.84	.0040	.000010
.250	.850	1420.	.5397	.5296	.9941	23.04	.0040	.000014
.260	.884	1492.	.5614	.5513	.9997	23.10	.0039	.000014
.270	.918	1564.	.5831	.5730	.9997	23.44	.0039	.000014
.280	.952	1636.	.6048	.5947	.9997	23.44	.0039	.000014
.290	.986	1708.	.6265	.6164	.9997	23.44	.0039	.000014
.300	1.020	1780.	.6482	.6381	.9997	23.44	.0039	.000014
.310	1.054	1852.	.6699	.6598	.9997	23.44	.0039	.000014
.320	1.088	1924.	.6916	.6815	.9997	23.44	.0039	.000014
.330	1.122	2000.	.7133	.7032	.9997	23.44	.0039	.000014
.340	1.156	2072.	.7350	.7249	.9997	23.44	.0039	.000014
.350	1.190	2144.	.7567	.7466	.9997	23.44	.0039	.000014
.360	1.224	2216.	.7784	.7683	.9997	23.44	.0039	.000014
.370	1.258	2288.	.8001	.7900	.9997	23.44	.0039	.000014
.380	1.292	2360.	.8218	.8117	.9997	23.44	.0039	.000014
.390	1.326	2432.	.8435	.8334	.9997	23.44	.0039	.000014
.400	1.360	2504.	.8652	.8551	.9997	23.44	.0039	.000014
.410	1.394	2576.	.8869	.8768	.9997	23.44	.0039	.000014
.420	1.428	2648.	.9086	.8985	.9997	23.44	.0039	.000014
.430	1.462	2720.	.9303	.9202	.9997	23.44	.0039	.000014
.440	1.496	2792.	.9520	.9419	.9997	23.44	.0039	.000014
.450	1.530	2864.	.9737	.9636	.9997	23.44	.0039	.000014
.460	1.564	2936.	.9954	.9853	.9997	23.44	.0039	.000014
.470	1.598	3008.	.1017	.1016	.9997	23.44	.0039	.000014
.480	1.632	3080.	.1034	.1033	.9997	23.44	.0039	.000014
.490	1.666	3152.	.1051	.1050	.9997	23.44	.0039	.000014
.500	1.700	3224.	.1068	.1067	.9997	23.44	.0039	.000014
.510	1.734	3296.	.1085	.1084	.9997	23.44	.0039	.000014
.520	1.768	3368.	.1102	.1101	.9997	23.44	.0039	.000014
.530	1.802	3440.	.1119	.1118	.9997	23.44	.0039	.000014
.540	1.836	3512.	.1136	.1135	.9997	23.44	.0039	.000014
.550	1.870	3584.	.1153	.1152	.9997	23.44	.0039	.000014
.560	1.904	3656.	.1170	.1169	.9997	23.44	.0039	.000014
.570	1.938	3728.	.1187	.1186	.9997	23.44	.0039	.000014
.580	1.972	3800.	.1204	.1203	.9997	23.44	.0039	.000014
.590	2.006	3872.	.1221	.1220	.9997	23.44	.0039	.000014
.600	2.040	3944.	.1238	.1237	.9997	23.44	.0039	.000014
.610	2.074	4016.	.1255	.1254	.9997	23.44	.0039	.000014
.620	2.108	4088.	.1272	.1271	.9997	23.44	.0039	.000014
.630	2.142	4160.	.1289	.1288	.9997	23.44	.0039	.000014
.640	2.176	4232.	.1306	.1305	.9997	23.44	.0039	.000014
.650	2.210	4304.	.1323	.1322	.9997	23.44	.0039	.000014
.660	2.244	4376.	.1340	.1339	.9997	23.44	.0039	.000014
.670	2.278	4448.	.1357	.1356	.9997	23.44	.0039	.000014
.680	2.312	4520.	.1374	.1373	.9997	23.44	.0039	.000014
.690	2.346	4592.	.1391	.1390	.9997	23.44	.0039	.000014
.700	2.380	4664.	.1408	.1407	.9997	23.44	.0039	.000014
.710	2.414	4736.	.1425	.1424	.9997	23.44	.0039	.000014
.720	2.448	4808.	.1442	.1441	.9997	23.44	.0039	.000014
.730	2.482	4880.	.1459	.1458	.9997	23.44	.0039	.000014
.740	2.516	4952.	.1476	.1475	.9997	23.44	.0039	.000014
.750	2.550	5024.	.1493	.1492	.9997	23.44	.0039	.000014
.760	2.584	5096.	.1510	.1509	.9997	23.44	.0039	.000014
.770	2.618	5168.	.1527	.1526	.9997	23.44	.0039	.000014
.780	2.652	5240.	.1544	.1543	.9997	23.44	.0039	.000014
.790	2.686	5312.	.1561	.1560	.9997	23.44	.0039	.000014
.800	2.720	5384.	.1578	.1577	.9997	23.44	.0039	.000014
.810	2.754	5456.	.1595	.1594	.9997	23.44	.0039	.000014
.820	2.788	5528.	.1612	.1611	.9997	23.44	.0039	.000014
.830	2.822	5600.	.1629	.1628	.9997	23.44	.0039	.000014
.840	2.856	5672.	.1646	.1645	.9997	23.44	.0039	.000014
.850	2.890	5744.	.1663	.1662	.9997	23.44	.0039	.000014
.860	2.924	5816.	.1680	.1679	.9997	23.44	.0039	.000014
.870	2.958	5888.	.1697	.1696	.9997	23.44	.0039	.000014
.880	3.000	5960.	.1714	.1713	.9997	23.44	.0039	.000014
.890	3.034	6032.	.1731	.1730	.9997	23.44	.0039	.000014
.900	3.068	6104.	.1748	.1747	.9997	23.44	.0039	.000014
.910	3.102	6176.	.1765	.1764	.9997	23.44	.0039	.000014
.920	3.136	6248.	.1782	.1781	.9997	23.44	.0039	.000014
.930	3.170	6320.	.1799	.1798	.9997	23.44	.0039	.000014
.940	3.204	6392.	.1816	.1815	.9997	23.44	.0039	.000014
.950	3.238	6464.	.1833	.1832	.9997	23.44	.0039	.000014
.960	3.272	6536.	.1850	.1849	.9997	23.44	.0039	.000014
.970	3.306	6608.	.1867	.1866	.9997	23.44	.0039	.000014
.980	3.340	6680.	.1884	.1883	.9997	23.44	.0039	.000014
.990	3.374	6752.	.1901	.1900	.9997	23.44	.0039	.000014
1.000	3.408	6824.	.1918	.1917	.9997	23.44	.0039	.000014
1.010	3.442	6896.	.1935	.1934	.9997	23.44	.0039	.000014
1.020	3.476	6968.	.1952	.1951	.9997	23.44	.0039	.000014
1.030	3.510	7040.	.1969	.1968	.9997	23.44	.0039	.000014
1.040	3.544	7112.	.1986	.1985	.9997	23.44	.0039	.000014
1.050	3.578	7184.	.2003	.2002	.9997	23.44	.0039	.000014
1.060	3.612	7256.	.2020	.2019	.9997	23.44	.0039	.000014
1.070	3.646	7328.	.2037	.2036	.9997	23.44	.0039	.000014
1.080	3.680	7400.	.2054	.2053	.9997	23.44	.0039	.000014
1.090	3.714	7472.	.2071	.2070	.9997	23.44	.0039	.000014
1.100	3.748	7544.	.2088	.2087	.9997	23.44	.0039	.000014
1.110	3.782	7616.	.2105	.2104	.9997	23.44	.0039	.000014
1.120	3.816	7688.	.2122	.2121	.9997	23.44	.0039	.000014
1.130	3.850	7760.	.2139	.2138	.9997	23.44	.0039	.000014
1.140	3.884	7832.	.2156	.2155	.9997	23.44	.0039	.000014
1.150	3.918	7904.	.2173	.2172	.9997	23.44	.0039	.000014
1.160	3.952	7976.	.2190	.2189	.9997	23.44	.0039	.000014
1.170	3.986	8048.	.2207	.2206	.9997	23.44	.0039	.000014
1.180	4.020	8120.	.2224	.2223	.9997	23.44	.0039	.000014
1.190	4.054	8192.	.2241	.2240	.9997	23.44	.0039	.000014
1.200	4.088	8264.	.2258	.2257	.9997	23.44	.0039	.000014
1.210	4.122	8336.	.2275	.2274	.9997	23.44	.0039	.000014
1.220	4.156	8408.	.2292	.2291	.9997	23.44	.0039	.000014
1.230	4.190	8480.	.2309	.2308	.9997	23.44	.0039	.000014
1.240	4.224	8552.	.2326	.2325	.9997	23.44	.0039	.000014
1.250	4.258	8624.	.2343	.2342	.9997	23.44	.0039	.000014
1.260	4.292	8696.	.2360	.2359	.9997	23.44	.0039	.000014
1.270	4.326	8768.	.2377	.2376	.9997	23.44	.0039	.000014
1.280	4.360	8840.	.2394	.2393	.9997	23.44	.0039	.000014
1.290	4.394	8912.	.2411	.2410	.9997	23.44	.0039	.000014
1.300	4.428	8984.	.2428	.2427	.9997	23.44	.0039	.000014
1.310	4.462	9056.	.2445	.2444	.9997	23.44	.0039	.000014
1.320	4.496	9128.	.2462	.2461	.9997	23.44		

TABLE A 7. ICENT.1
M/M

V (CM)	V/MPH	V-PLUS	M/M	ICENT.1 M/M	U/UF	U-PLUS	TAU/TAI-MAX	V/II
1.223	6.449	3006.	.8593	.9730	.8711	25.41	.7215	.000564
1.241	6.588	3098.	.8638	.9738	.8753	25.73	.7066	.000591
1.256	6.717	3185.	.8695	.9749	.8806	25.89	.6923	.000614
1.267	6.846	3297.	.8753	.9759	.8860	26.06	.6735	.000645
1.279	6.974	3388.	.8797	.9767	.8901	26.18	.6519	.000670
1.291	7.102	3475.	.8822	.9771	.8925	26.25	.6276	.000695
1.302	7.229	3569.	.8860	.9778	.8949	26.36	.6029	.000722
1.313	7.356	3691.	.8900	.9783	.8973	26.58	.6037	.000757
1.324	7.483	3772.	.8940	.9789	.8992	26.67	.5886	.000781
1.335	7.610	3858.	.8981	.9794	.9013	26.79	.5703	.000809
1.346	7.737	3944.	.9013	.9798	.9033	26.90	.5439	.000830
1.357	7.864	4030.	.9045	.9802	.9053	27.00	.5218	.000851
1.368	7.991	4109.	.9077	.9806	.9073	27.11	.5090	.000873
1.379	8.118	4183.	.9110	.9810	.9093	27.25	.4814	.000895
1.390	8.245	4260.	.9142	.9814	.9113	27.36	.4590	.000916
1.401	8.372	4343.	.9174	.9818	.9133	27.47	.4390	.000937
1.412	8.500	4424.	.9206	.9822	.9153	27.60	.4194	.000958
1.423	8.627	4508.	.9238	.9826	.9173	27.71	.4000	.000979
1.434	8.754	4594.	.9270	.9830	.9193	27.84	.3806	.001000
1.445	8.881	4683.	.9302	.9834	.9213	27.92	.3612	.001021
1.456	9.008	4770.	.9334	.9838	.9233	28.11	.3418	.001042
1.467	9.135	4858.	.9366	.9842	.9253	28.22	.3224	.001063
1.478	9.262	4944.	.9398	.9846	.9273	28.30	.3030	.001084
1.489	9.389	5030.	.9430	.9850	.9293	28.49	.2836	.001105
1.500	9.516	5116.	.9462	.9854	.9313	28.57	.2642	.001126
1.511	9.643	5202.	.9494	.9858	.9333	28.70	.2448	.001147
1.522	9.770	5288.	.9526	.9862	.9353	28.85	.2254	.001168
1.533	9.897	5374.	.9558	.9866	.9373	28.92	.2060	.001189
1.544	10.024	5459.	.9590	.9870	.9393	29.04	.1866	.001210
1.555	10.151	5545.	.9622	.9874	.9413	29.11	.1672	.001231
1.566	10.278	5630.	.9654	.9878	.9433	29.22	.1478	.001252
1.577	10.405	5716.	.9686	.9882	.9453	29.27	.1284	.001273
1.588	10.532	5801.	.9718	.9886	.9473	29.33	.1090	.001294
1.599	10.659	5887.	.9750	.9890	.9493	29.37	.0896	.001315
1.610	10.786	5972.	.9782	.9894	.9513	29.40	.0702	.001336
1.621	10.913	6058.	.9814	.9898	.9533	29.45	.0508	.001357
1.632	11.040	6143.	.9846	.9902	.9553	29.46	.0314	.001378
1.643	11.167	6229.	.9878	.9906	.9573	29.49	.0120	.001399
1.654	11.294	6314.	.9910	.9910	.9593	29.50	.0000	.001420
1.665	11.421	6399.	.9942	.9914	.9613	29.53	.0000	.001441
1.676	11.548	6485.	.9974	.9918	.9633	29.55	.0000	.001462
1.687	11.675	6570.	.9994	.9922	.9653	29.58	.0000	.001483
1.698	11.802	6656.	.9994	.9926	.9673	29.60	.0000	.001504
1.709	11.929	6741.	.9994	.9930	.9693	29.63	.0000	.001525
1.720	12.056	6827.	.9994	.9934	.9713	29.65	.0000	.001546
1.731	12.183	6912.	.9994	.9938	.9733	29.68	.0000	.001567
1.742	12.310	7000.	.9994	.9942	.9753	29.70	.0000	.001588
1.753	12.437	7085.	.9994	.9946	.9773	29.72	.0000	.001609
1.764	12.564	7171.	.9994	.9950	.9793	29.75	.0000	.001630
1.775	12.691	7256.	.9994	.9954	.9813	29.78	.0000	.001651
1.786	12.818	7342.	.9994	.9958	.9833	29.80	.0000	.001672
1.797	12.945	7427.	.9994	.9962	.9853	29.83	.0000	.001693
1.808	13.072	7513.	.9994	.9966	.9873	29.85	.0000	.001714
1.819	13.199	7598.	.9994	.9970	.9893	29.88	.0000	.001735
1.830	13.326	7684.	.9994	.9974	.9913	29.90	.0000	.001756
1.841	13.453	7769.	.9994	.9978	.9933	29.93	.0000	.001777
1.852	13.580	7855.	.9994	.9982	.9953	29.95	.0000	.001798
1.863	13.707	7940.	.9994	.9986	.9973	29.98	.0000	.001819
1.874	13.834	8026.	.9994	.9990	.9993	30.00	.0000	.001840
1.885	13.961	8111.	.9994	.9994	.9993	30.03	.0000	.001861
1.896	14.088	8197.	.9994	.9998	.9993	30.05	.0000	.001882
1.907	14.215	8282.	.9994	.9998	.9993	30.08	.0000	.001903
1.918	14.342	8368.	.9994	.9998	.9993	30.10	.0000	.001924
1.929	14.469	8453.	.9994	.9998	.9993	30.13	.0000	.001945
1.940	14.596	8539.	.9994	.9998	.9993	30.15	.0000	.001966
1.951	14.723	8624.	.9994	.9998	.9993	30.18	.0000	.001987
1.962	14.850	8710.	.9994	.9998	.9993	30.20	.0000	.002008
1.973	14.977	8795.	.9994	.9998	.9993	30.23	.0000	.002029
1.984	15.104	8881.	.9994	.9998	.9993	30.25	.0000	.002050
1.995	15.231	8966.	.9994	.9998	.9993	30.28	.0000	.002071
2.006	15.358	9052.	.9994	.9998	.9993	30.30	.0000	.002092
2.017	15.485	9137.	.9994	.9998	.9993	30.33	.0000	.002113
2.028	15.612	9223.	.9994	.9998	.9993	30.35	.0000	.002134
2.039	15.739	9308.	.9994	.9998	.9993	30.38	.0000	.002155
2.050	15.866	9394.	.9994	.9998	.9993	30.40	.0000	.002176
2.061	15.993	9479.	.9994	.9998	.9993	30.43	.0000	.002197
2.072	16.120	9565.	.9994	.9998	.9993	30.45	.0000	.002218
2.083	16.247	9650.	.9994	.9998	.9993	30.48	.0000	.002239
2.094	16.374	9736.	.9994	.9998	.9993	30.50	.0000	.002260
2.105	16.501	9821.	.9994	.9998	.9993	30.53	.0000	.002281
2.116	16.628	9907.	.9994	.9998	.9993	30.55	.0000	.002302
2.127	16.755	9992.	.9994	.9998	.9993	30.58	.0000	.002323
2.138	16.882	10078.	.9994	.9998	.9993	30.60	.0000	.002344
2.149	17.009	10163.	.9994	.9998	.9993	30.63	.0000	.002365
2.160	17.136	10249.	.9994	.9998	.9993	30.65	.0000	.002386
2.171	17.263	10334.	.9994	.9998	.9993	30.68	.0000	.002407
2.182	17.390	10420.	.9994	.9998	.9993	30.70	.0000	.002428
2.193	17.517	10505.	.9994	.9998	.9993	30.73	.0000	.002449
2.204	17.644	10591.	.9994	.9998	.9993	30.75	.0000	.002470
2.215	17.771	10676.	.9994	.9998	.9993	30.78	.0000	.002491
2.226	17.898	10762.	.9994	.9998	.9993	30.80	.0000	.002512
2.237	18.025	10847.	.9994	.9998	.9993	30.83	.0000	.002533
2.248	18.152	10933.	.9994	.9998	.9993	30.85	.0000	.002554
2.259	18.279	11018.	.9994	.9998	.9993	30.88	.0000	.002575
2.270	18.406	11104.	.9994	.9998	.9993	30.90	.0000	.002596
2.281	18.533	11189.	.9994	.9998	.9993	30.93	.0000	.002617
2.292	18.660	11275.	.9994	.9998	.9993	30.95	.0000	.002638
2.303	18.787	11360.	.9994	.9998	.9993	30.98	.0000	.002659
2.314	18.914	11446.	.9994	.9998	.9993	31.00	.0000	.002680
2.325	19.041	11531.	.9994	.9998	.9993	31.03	.0000	.002701
2.336	19.168	11617.	.9994	.9998	.9993	31.05	.0000	.002722
2.347	19.295	11702.	.9994	.9998	.9993	31.08	.0000	.002743
2.358	19.422	11788.	.9994	.9998	.9993	31.10	.0000	.002764
2.369	19.549	11873.	.9994	.9998	.9993	31.13	.0000	.002785
2.380	19.676	11959.	.9994	.9998	.9993	31.15	.0000	.002806
2.391	19.803	12044.	.9994	.9998	.9993	31.18	.0000	.002827
2.402	19.930	12130.	.9994	.9998	.9993	31.20	.0000	.002848
2.413	20.057	12215.	.9994	.9998	.9993	31.23	.0000	.002869
2.424	20.184	12301.	.9994	.9998	.9993	31.25	.0000	.002890
2.435	20.311	12386.	.9994	.9998	.9993	31.28	.0000	.002911
2.446	20.438	12472.	.9994	.9998	.9993	31.30	.0000	.002932
2.457	20.565	12557.	.9994	.9998	.9993	31.33	.0000	.002953
2.468	20.692	12643.	.9994	.9998	.9993	31.35	.0000	.002974
2.479	20.819	12728.	.9994	.9998	.9993	31.38	.0000	.002995
2.490	20.946	12814.	.9994	.9998	.9993	31.40	.0000	.003016
2.501	21.073	12900.	.9994	.9998	.9993	31.43	.0000	.003037
2.512	21.200	12985.	.9994	.9998	.9993	31.45	.0000	.003058
2.523	21.327	13071.	.9994	.9998	.9993	31.48	.0000	.003079
2.534	21.454	13156.	.9994	.9998	.9993	31.50	.0000	.003100
2.545	21.581	13242.	.9994	.9998	.9993	31.53	.0000	.003121
2.556	21.708	13327.	.9994	.9998	.9993	31.55	.0000	.003142
2.567	21.835	13413.	.9994	.9998	.9993	31.58	.0000	.003163
2.578	21.962	13498.	.9994	.9998	.9993	31.60	.0000	.003184
2.589	22.089	13584.	.9994	.9998	.9993	31.63	.0000	.003205
2.600	22.216	13669.	.9994	.9998	.9993	31.65	.0000	.003226
2.611	22.343	13755.	.9994	.9998	.9993	31.68	.0000	.003247
2.622	22.470	13840.	.9994	.9998	.9993	31.70	.0000	.003268
2.633	22.597	13926.	.9994	.9998	.9993	31.73	.0000	.003289
2.644	22.724	14011.	.9994	.9998	.9993	31.75	.0000	.003310
2.655	22.851	14097.	.9994	.9998	.9993	31.78	.0000	.003331
2.666	22.978	14182.	.9994	.9998	.9993	31.80	.0000	.003352
2.677	23.105	14268.	.9994	.9998	.9993	31.83	.0000	.003373
2.688	23.232							

TABLE A 7. (CONT.)
 PROFILE - JPL-4 - - - PITOT PRESSURE DATA
 PING MACM NO. = .8016
 X = 0.00 CM

UEN 267.51 M/SEC. RE-DELTA-STAR = 36680.				DELTA STAR = .4395 CM RE-TMFTAU = 23710.		THETA = .2857 CM MINALLE = .3845 CM/SEC		Mo 1.53R Cp = .0020R6	
LEAST SQUARE FIT PARAMETERS UTAU = 9.1924 M/SEC. CHIKO = .0257E-05				Cp = .002120 VMAR = 2.709 CM		PLO .A145 VMINO .071 CM		DELTA = 2.9611 CM	
V (CM)	V/THETA	V-PLUS	M/ME	BM/ME	U/IE	I-PLUS	TAU/TAU-MAX	V/U	
0.000	0.000	0.	0.0000	.8978	0.0000	0.00	1.0000	0.000000	
.010	.036	26.	.8144	.9156	.6333	12.55	1.0000	0.000000	
.020	.072	30.	.6571	.9197	.4764	17.92		.000007	
.030	.108	31.	.5321	.9248	.4537	16.17		.000038	
.040	.144	126.	.5502	.9288	.4709	16.07		.000013	
.050	.180	170.	.5453	.9324	.4800	17.74		.000018	
.060	.216	248.	.5187	.9340	.4801	18.73		.000031	
.070	.252	336.	.4872	.9386	.4805	19.07		.000038	
.080	.288	370.	.4676	.9407	.4877	19.54		.000047	
.090	.324	426.	.4533	.9416	.4873	19.74		.000052	
.100	.360	473.	.4433	.9433	.4870	20.15		.000061	
.110	.396	541.	.4374	.9454	.4873	20.63		.000073	
.120	.432	636.	.4328	.9469	.4870	21.90		.000074	
.130	.468	696.	.4281	.9480	.4870	21.14		.000085	
.140	.504	774.	.4202	.9487	.4870	21.34		.000094	
.150	.540	854.	.4130	.9488	.4870	21.51		.000104	
.160	.576	934.	.4064	.9494	.4870	22.03		.000120	
.170	.612	1005.	.4010	.9514	.4870	21.91		.000139	
.180	.648	1065.	.3978	.9534	.4870	22.20		.000151	
.190	.684	1146.	.3976	.9549	.4870	22.44		.000168	
.200	.720	1246.	.3929	.9557	.4870	22.64		.000182	
.210	.756	1348.	.3884	.9564	.4870	22.80		.000195	
.220	.792	1449.	.3847	.9569	.4870	22.84		.000205	
.230	.828	1513.	.3816	.9576	.4870	23.04		.000228	
.240	.864	1574.	.3784	.9581	.4870	23.24		.000240	
.250	.900	1601.	.3744	.9581	.4870	23.42		.000257	
.260	.936	1607.	.3704	.9581	.4870	23.67		.000274	
.270	.972	1671.	.3652	.9576	.4870	23.86		.000289	
.280	1.008	1716.	.3603	.9572	.4870	24.00		.000302	
.290	1.044	2110.	.3544	.9567	.4870	24.19		.000314	
.300	1.080	2213.	.3484	.9567	.4870	24.33		.000324	
.310	1.116	2316.	.3424	.9567	.4870	24.44		.000334	
.320	1.152	2413.	.3364	.9567	.4870	24.64		.000341	
.330	1.188	2511.	.3304	.9567	.4870	24.73		.000350	
.340	1.224	2614.	.3244	.9567	.4870	24.91		.000367	
.350	1.260	2714.	.3184	.9567	.4870	25.11		.000384	
.360	1.296	2814.	.3124	.9567	.4870	25.31		.000394	
.370	1.332	2914.	.3064	.9567	.4870	25.51		.000407	
.380	1.368	3014.	.3004	.9567	.4870	25.71		.000424	
.390	1.404	3100.	.2944	.9567	.4870	25.91		.000437	
.400	1.440	3184.	.2884	.9567	.4870	26.04		.000454	

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TABLE A 7. (CONT.)

V (CM)	V/TMSTA	V-PLUS	M/ME	ICONT.1 RMD/RMPC	U/ME	II-PLUS	TAU/TAU-MAX	V/U
1.37A	4.814	3791.	.8704	.9732	.AR13	24.00	.AR07	.000A30
1.410	4.934	3773.	.8771	.9744	.AR74	24.18	.AAAA	.000A53
1.454	5.049	3474.	.8812	.9771	.AR14	24.30	.A401	.000A41
1.497	5.222	3547.	.8854	.9779	.AR55	24.42	.A330	.000A07
1.550	5.427	3707.	.8927	.9792	.AR21	24.43	.A074	.000344
1.596	5.547	3814.	.8990	.9803	.AR78	24.90	.5A7A	.000778
1.647	5.744	3718.	.9024	.9810	.9112	24.90	.5A67	.000A13
1.692	5.925	4047.	.9114	.9827	.9194	27.16	.4238	.000A55
1.733	6.067	4144.	.9143	.9833	.9220	27.23	.4249	.000A74
1.779	6.227	4253.	.9141	.9835	.9237	27.28	.5034	.000A04
1.817	6.350	4344.	.9235	.9840	.9255	27.49	.4843	.000913
1.860	6.512	4448.	.9274	.9857	.9363	27.40	.4144	.000344
1.909	6.649	4562.	.9305	.9863	.9370	27.49	.4654	.000442
1.936	6.778	4630.	.9340	.9874	.9428	27.47	.4277	.001014
1.985	6.947	4745.	.9384	.9874	.9442	27.91	.4034	.001053
2.021	7.074	4833.	.9403	.9881	.9450	27.96	.3843	.001014
2.062	7.234	4943.	.9442	.9891	.9473	28.10	.3639	.001110
2.122	7.427	5073.	.9540	.9910	.9592	28.37	.3373	.001146
2.162	7.569	5174.	.9551	.9908	.9591	28.36	.3174	.001174
2.203	7.712	5248.	.9594	.9918	.9635	28.50	.2990	.001273
2.249	7.872	5377.	.9615	.9922	.9652	28.55	.2754	.001234
2.291	8.014	5477.	.9654	.9931	.9680	28.47	.2442	.001211
2.327	8.147	5545.	.9678	.9935	.9710	28.73	.2399	.001245
2.374	8.314	5647.	.9717	.9943	.9745	28.43	.2142	.001314
2.407	8.427	5744.	.9722	.9944	.9749	28.45	.2073	.001345
2.444	8.554	5844.	.9744	.9952	.9780	28.97	.1840	.001347
2.473	8.741	5944.	.9818	.9953	.9834	29.11	.1474	.001342
2.517	8.881	6044.	.9820	.9953	.9834	29.11	.1459	.001342
2.549	8.992	6142.	.9833	.9954	.9857	28.15	.1374	.001449
2.617	9.141	6247.	.9829	.9954	.9844	29.14	.1133	.001455
2.656	9.290	6344.	.9880	.9954	.9874	29.24	.0949	.001474
2.689	9.414	6437.	.9897	.9959	.9897	29.33	.0854	.001474
2.744	9.619	6573.	.9927	.9963	.9914	29.47	.0444	.001460
2.799	9.794	6652.	.9948	.9970	.9944	29.34	.0474	.001462
2.834	9.934	6744.	.9944	.9999	.9954	29.49	.0349	.001459
2.844	10.000	6842.	.9942	.9992	.9944	29.51	.0214	.001454
2.943	10.244	7113.	.9970	.9993	.9973	29.53	.0074	.001454
2.988	10.459	7144.	.9974	.9994	.9980	29.54	.0000	.001454
3.044	10.643	7184.	.9971	.9994	.9974	29.54	.0000	.001454
3.079	10.779	7143.	.9984	.9997	.9989	29.54	.0000	.001454
3.139	10.948	7484.	.9971	.9994	.9974	29.54	.0000	.001454
3.177	11.121	7504.	.9993	.9994	.9984	29.57	.0000	.001454
3.219	11.249	7497.	.9994	.9994	.9999	29.41	.0000	.001454
3.269	11.410	7794.	.9993	.9994	.9994	29.40	.0000	.001454
3.304	11.570	7907.	.9994	.9994	.9994	29.40	.0000	.001454
3.344	11.779	8044.	.9994	.9994	.9999	29.41	.0000	.001454
3.412	11.942	8144.	1.0001	1.0000	1.0001	29.42	.0000	.001454
3.462	12.117	8277.	1.0001	1.0000	1.0001	29.42	.0000	.001454
3.521	12.374	8419.	1.0001	1.0000	.9994	29.40	.0000	.001454
3.545	12.410	8477.	1.0004	1.0000	1.0003	29.43	.0000	.001454

TABLE A 7a (CONT.)
PROFILE - JPL-5 -- - PITOT PRESSURE DATA

ENGINE MACH NO. = .7995			TOTAL PRESSURE = .6439E+05 N/M ²			TOTAL TEMPERATURE = 311.32 DEG-K		
X = 7.62 CM			DELTA STAR = .4564 CM			T-META = .2944 CM		
U = 244.60 M/SEC			RE-TMETA = 24570.			M = 1.539		
LEAST SQUARE FIT PARAMETERS			CF = .002105			DELTA = 3.0634 CM		
UTAR = 0.1744 M/SEC			VMAX = 2.470 CM			PIT = .4243		
CMISQ = .0003E-05						VMIN = .064 CM		
V (CM)	V/TMETA	Y-PLUS	M/ME	RND/RMSE	U/UE	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.0000	0.0000	0.00	1.0000	0.000000
.010	.016	24.	.4000	.0153	.4275	12.5	1.0000	0.000000
.020	.032	39.	.4531	.0192	.4776	13.96	.9999	.000002
.030	.048	47.	.5166	.0254	.5300	15.02	.9993	.000010
.040	.064	57.	.5382	.0277	.5497	16.41	.9974	.000012
.050	.080	67.	.5700	.0314	.5915	17.34	.9947	.000010
.060	.096	74.	.5953	.0343	.6140	18.11	.9917	.000024
.070	.112	77.	.6206	.0374	.6410	18.96	.9889	.000037
.080	.128	82.	.6322	.0394	.6574	19.36	.9866	.000044
.090	.144	87.	.6501	.0413	.6701	19.77	.9845	.000051
.100	.160	91.	.6543	.0418	.6742	19.45	.9844	.000051
.110	.176	94.	.6630	.0427	.6827	20.10	.9820	.000054
.120	.192	97.	.6807	.0453	.6926	20.40	.9778	.000054
.130	.208	99.	.6934	.0472	.7124	20.90	.9718	.000054
.140	.224	100.	.7055	.0489	.7243	21.34	.9681	.000051
.150	.240	101.	.7051	.0484	.7230	21.34	.9648	.000049
.160	.256	102.	.7120	.0491	.7305	21.53	.9605	.000031
.170	.272	103.	.7186	.0504	.7370	21.73	.9563	.000021
.180	.288	103.	.7224	.0516	.7437	21.86	.9524	.000019
.190	.304	103.	.7331	.0529	.7510	22.15	.9484	.000031
.200	.320	111.	.7349	.0532	.7526	22.29	.9474	.000031
.210	.336	117.	.7417	.0542	.7592	22.60	.9382	.000041
.220	.352	122.	.7465	.0549	.7639	22.64	.9344	.000069
.230	.368	126.	.7461	.0549	.7636	22.53	.9300	.000074
.240	.384	127.	.7457	.0541	.7727	22.80	.9240	.000064
.250	.400	130.	.7423	.0572	.7791	23.00	.9200	.000097
.260	.416	140.	.7412	.0572	.7780	22.97	.9152	.000090
.270	.432	147.	.7443	.0580	.7829	23.11	.9120	.000093
.280	.448	148.	.7443	.0591	.7865	23.31	.9097	.000094
.290	.464	148.	.7412	.0601	.7892	23.44	.9019	.000095
.300	.480	151.	.7443	.0604	.7901	23.63	.8944	.000099
.310	.496	151.	.7473	.0613	.7920	23.77	.8866	.000092
.320	.512	155.	.7931	.0623	.8085	23.99	.8791	.000094
.330	.528	162.	.8012	.0634	.8142	24.22	.8664	.000091
.340	.544	163.	.8083	.0644	.8211	24.37	.8521	.000093
.350	.560	175.	.8083	.0644	.8232	24.33	.8371	.000094
.360	.576	177.	.8084	.0644	.8232	24.34	.8284	.000094
.370	.592	180.	.8157	.0650	.8306	24.54	.8185	.000097
.380	.608	181.	.8164	.0651	.8306	24.54	.8087	.000096
.390	.624	182.	.8202	.0657	.8376	24.77	.7940	.000092
.400	.640	182.	.8340	.0662	.8481	24.94	.7841	.000094
.410	.656	183.	.8390	.0669	.8570	25.20	.7841	.000094
.420	.672	186.	.8390	.0669				

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TABLE A 7. (CONT.)
M/NE BMD/RMFE

V (M)	V/TWETA	V-PLUS	M/NE	BMD/RMFE	U/UE	1+PLUS	TAU/TAU-MAX	V/U
1.154	3.493	2739.	.8438	.9707	.8544	25.34	.7743	.000464
1.174	3.942	2788.	.8394	.9699	.8523	25.21	.7696	.000476
1.212	4.099	2878.	.8425	.9715	.8408	25.57	.7549	.000499
1.249	4.202	2946.	.8481	.9714	.8475	25.66	.7494	.000514
1.304	4.407	3101.	.8561	.9729	.8483	25.70	.7240	.000525
1.344	4.534	3192.	.8624	.9739	.8439	25.87	.7099	.000576
1.343	4.644	3282.	.8717	.9754	.8476	26.13	.6958	.000601
1.348	4.750	3342.	.8761	.9753	.8411	26.09	.6861	.000617
1.442	4.845	3424.	.8753	.9762	.8439	26.23	.6724	.000639
1.444	5.007	3484.	.8814	.9773	.8418	26.41	.6561	.000665
1.517	5.118	3602.	.8841	.9774	.8418	26.48	.6474	.000666
1.544	5.221	3674.	.8845	.9785	.8401	26.61	.6402	.000704
1.593	5.375	3782.	.8910	.9790	.8405	26.68	.6111	.000736
1.639	5.429	3891.	.8948	.9797	.8409	26.78	.6016	.000767
1.696	5.722	4072.	.9041	.9814	.8436	27.08	.5846	.000805
1.741	5.873	4132.	.9085	.9822	.8467	27.17	.5649	.000835
1.774	5.983	4210.	.9103	.9825	.8484	27.22	.5320	.000857
1.807	6.095	4289.	.9157	.9834	.8434	27.34	.5170	.000889
1.817	6.143	4337.	.9191	.9842	.8464	27.47	.5077	.000944
1.849	6.305	4434.	.9223	.9848	.8494	27.56	.4884	.000922
1.901	6.412	4512.	.9253	.9843	.8437	27.65	.4737	.000944
1.931	6.515	4544.	.9301	.9842	.8465	27.74	.4594	.000965
2.014	6.793	4780.	.9377	.9872	.8435	27.99	.4204	.001022
2.044	6.936	4841.	.9379	.9877	.8437	28.00	.4043	.001044
2.084	7.029	4944.	.9370	.9874	.8439	27.97	.3874	.001049
2.127	7.174	5044.	.9439	.9889	.8492	28.17	.3649	.001094
2.157	7.277	5121.	.9445	.9890	.8497	28.18	.3524	.001119
2.194	7.349	5193.	.9502	.9901	.8549	28.34	.3340	.001139
2.235	7.434	5304.	.9544	.9913	.8406	28.32	.3154	.001170
2.279	7.484	5410.	.9576	.9915	.8433	28.55	.2950	.001149
2.344	7.920	5573.	.9614	.9923	.8453	28.66	.2631	.001243
2.374	8.082	5647.	.9662	.9934	.8433	28.65	.2411	.001273
2.409	8.194	5744.	.9694	.9939	.8476	28.89	.2261	.001294
2.443	8.309	5832.	.9740	.9947	.8455	29.01	.2104	.001314
2.413	8.474	5945.	.9734	.9947	.8463	29.00	.1891	.001344
2.442	8.444	6082.	.9747	.9957	.8408	29.14	.1674	.001372
2.457	8.777	6173.	.9797	.9959	.8417	29.17	.1420	.001394
2.457	8.939	6290.	.9829	.9964	.8444	29.26	.1314	.001420
2.449	9.072	6384.	.9856	.9971	.8470	29.33	.1143	.001441
2.711	9.217	6484.	.9893	.9978	.8404	29.43	.0994	.001443
2.781	9.340	6601.	.9892	.9974	.8403	29.43	.0821	.001444
2.771	9.417	6697.	.9893	.9974	.8404	29.43	.0677	.001505
2.770	9.490	6812.	.9916	.9983	.8424	29.50	.0435	.001526
2.904	9.809	6902.	.9941	.9984	.8467	29.56	.0393	.001542
2.947	9.841	6994.	.9954	.9990	.8458	29.60	.0274	.001554
2.925	10.104	7110.	.9949	.9989	.8454	29.59	.0136	.001574
3.231	10.224	7194.	.9959	.9991	.8483	29.62	.0041	.001594
3.047	10.344	7279.	.9976	.9995	.8479	29.65	0.0000	.001593
3.110	10.459	7381.	.9954	.9991	.8461	29.61	0.0000	.001593
3.173	10.729	7502.	.9974	.9994	.8474	29.66	0.0000	.001593
3.242	11.072	7791.	.9991	.9994	.8492	29.70	0.0000	.001593
3.349	11.329	7972.	.9980	.9994	.8482	29.77	0.0000	.001593
3.442	11.412	8171.	.9995	.9999	.8484	29.72	0.0000	.001593
3.549	11.945	8403.	.9994	.9994	.8484	29.71	0.0000	.001593
3.613	12.194	8575.	1.0004	1.0001	1.0005	29.75	0.0000	.001593
3.695	12.444	8771.	1.0015	1.0003	1.0014	29.77	0.0000	.001593

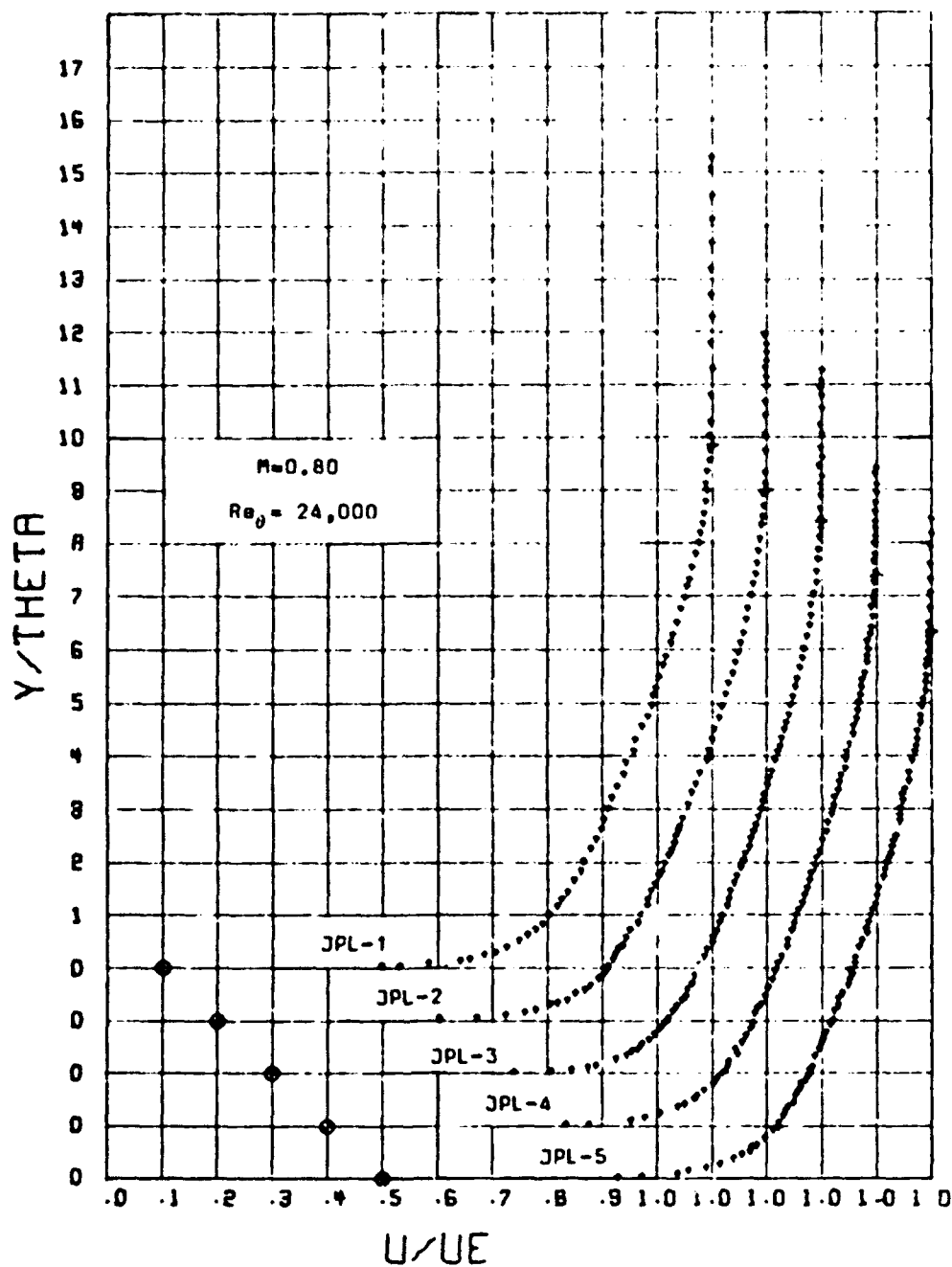


Figure A13 Mean Velocity Profiles.

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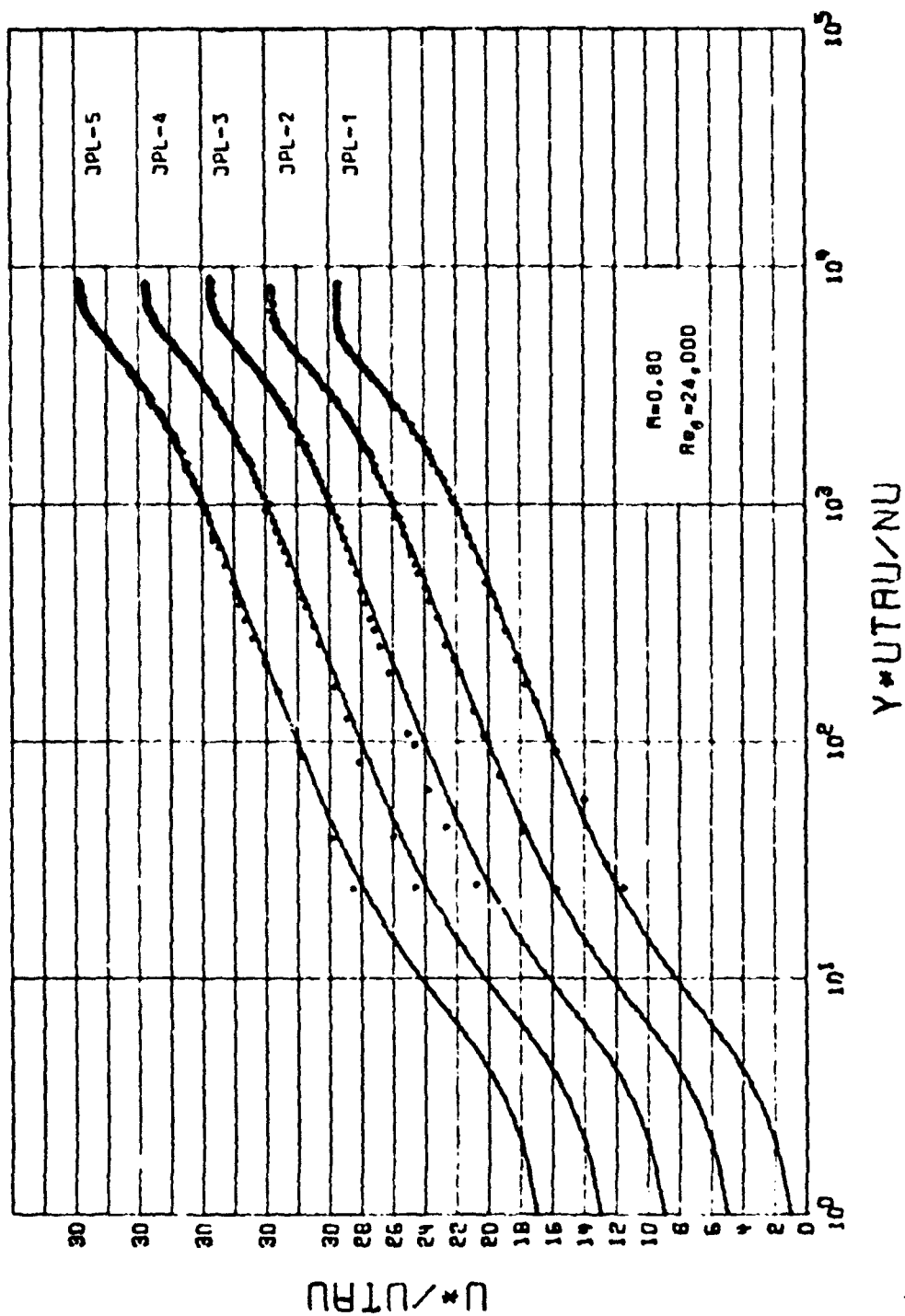


Figure M4. Van Driest Scaled Mean Velocity Profiles.

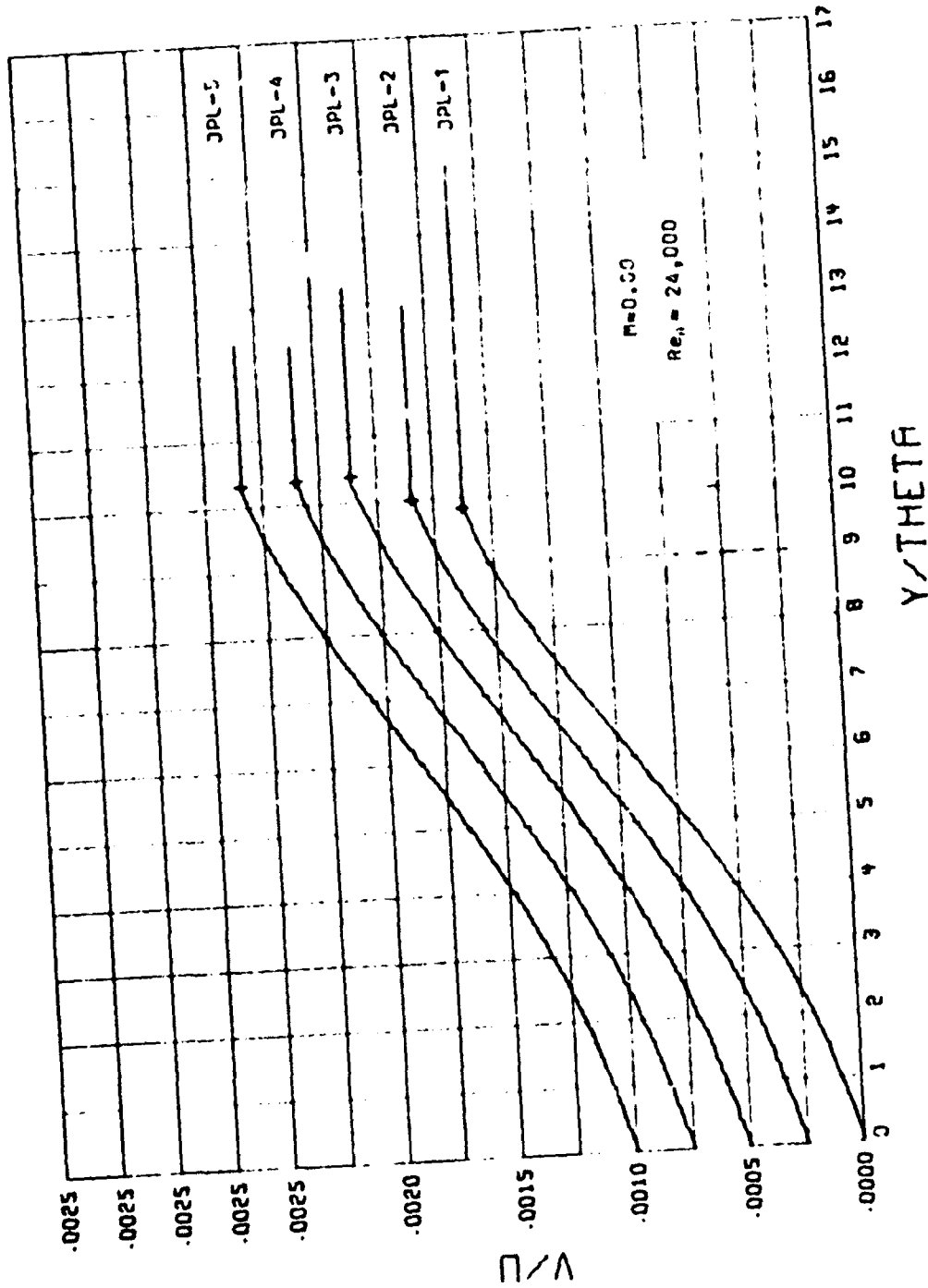


Figure A15. Normal Velocity Distribution.

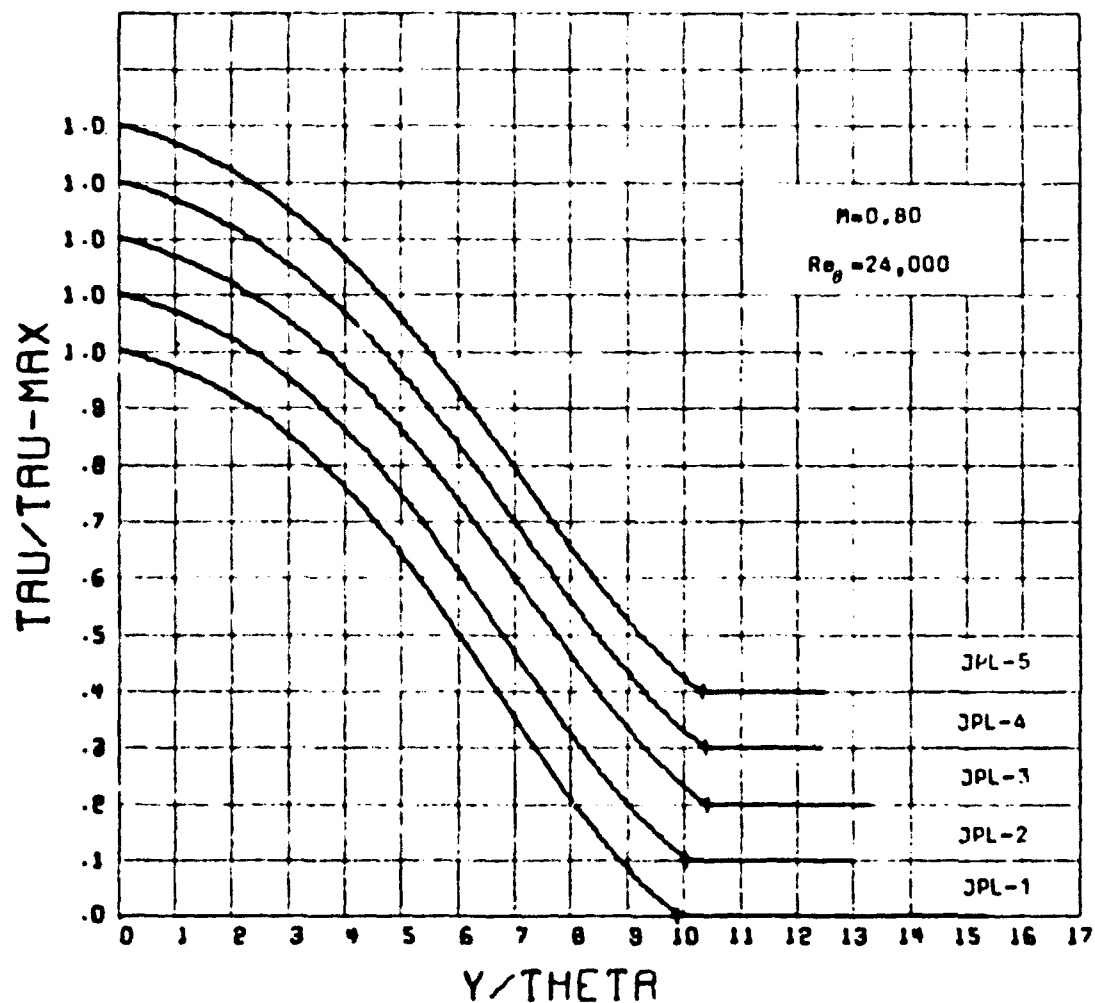


Figure A16. Shear Stress Distribution.

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TABLE A. DATA SUMMARY
PREFILF - JPL-1 - - - PITOT PRESSURE DATA

USC 271.81 M/SEC
RE-DELTA-STAR 51910.
DELTA STAR 3225 CM
RE-DELTA 33660.
TOTAL PRESSURE 1333F-06 M/MO-2
TOTAL TEMPERATURE 324.67 DEG-K

V (CM)	V/TWETA	V-PLUS	M/RE	RND/RMRE	U/US	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	0.000	0.0000	0.00	1.0000	0.000000
0.011	0.054	4.	0.0007	0.004	0.0001	14.24	1.0000	0.000000
0.031	0.150	13.	0.0020	0.010	0.0004	14.50	0.9990	0.000000
0.044	0.210	19.	0.0028	0.016	0.0006	17.65	0.9945	0.000013
0.055	0.266	24.	0.0034	0.020	0.0008	18.31	0.9941	0.000018
0.069	0.331	30.	0.0044	0.026	0.0010	19.13	0.9932	0.000023
0.082	0.391	37.	0.0050	0.030	0.0012	19.46	0.9914	0.000028
0.110	0.503	48.	0.0062	0.038	0.0015	20.28	0.9873	0.000040
0.136	0.622	61.	0.0073	0.047	0.0018	20.72	0.9824	0.000052
0.163	0.774	77.	0.0088	0.056	0.0022	21.10	0.9765	0.000062
0.176	0.821	86.	0.0093	0.060	0.0024	21.48	0.9730	0.000074
0.223	1.053	114.	0.0116	0.080	0.0027	21.81	0.9677	0.000087
0.259	1.304	140.	0.0140	0.098	0.0031	22.02	0.9622	0.000100
0.282	1.424	156.	0.0154	0.106	0.0034	22.24	0.9604	0.000105
0.286	1.434	158.	0.0156	0.107	0.0034	22.24	0.9604	0.000105
0.300	1.469	164.	0.0160	0.110	0.0035	22.24	0.9604	0.000105
0.310	1.485	168.	0.0163	0.112	0.0035	22.24	0.9604	0.000105
0.351	1.644	187.	0.0184	0.124	0.0037	22.81	0.9549	0.000116
0.367	1.720	197.	0.0194	0.130	0.0038	23.14	0.9508	0.000124
0.374	1.740	200.	0.0197	0.132	0.0038	23.21	0.9502	0.000125
0.377	1.744	201.	0.0198	0.133	0.0038	23.21	0.9502	0.000125
0.414	1.974	221.	0.0219	0.143	0.0040	23.59	0.9437	0.000138
0.457	2.164	240.	0.0240	0.153	0.0042	23.78	0.9378	0.000150
0.491	2.383	260.	0.0261	0.163	0.0044	24.03	0.9312	0.000162
0.505	2.463	270.	0.0270	0.167	0.0045	24.12	0.9277	0.000167
0.524	2.605	284.	0.0284	0.174	0.0046	24.41	0.9200	0.000179
0.544	2.782	302.	0.0302	0.182	0.0047	24.58	0.9131	0.000192
0.570	3.059	327.	0.0327	0.194	0.0049	24.90	0.9042	0.000204
0.594	3.296	350.	0.0350	0.206	0.0051	25.09	0.8972	0.000216
0.606	3.423	363.	0.0363	0.210	0.0052	25.22	0.8934	0.000220
0.731	3.571	377.	0.0377	0.218	0.0054	25.32	0.8866	0.000233
0.753	3.745	394.	0.0394	0.226	0.0056	25.46	0.8799	0.000246
0.780	4.022	419.	0.0419	0.238	0.0058	25.65	0.8723	0.000260
0.800	4.277	440.	0.0440	0.247	0.0060	25.83	0.8647	0.000274
0.849	4.622	479.	0.0479	0.260	0.0062	26.07	0.8567	0.000288
0.871	4.811	498.	0.0498	0.267	0.0063	26.17	0.8532	0.000293
0.900	5.094	527.	0.0527	0.277	0.0064	26.37	0.8465	0.000308
0.920	5.292	547.	0.0547	0.284	0.0065	26.53	0.8403	0.000314
0.948	5.544	570.	0.0570	0.293	0.0066	26.71	0.8333	0.000320
0.970	5.744	590.	0.0590	0.300	0.0067	26.84	0.8264	0.000326
1.000	6.024	619.	0.0619	0.310	0.0068	26.97	0.8195	0.000333
1.000	6.173	626.	0.0626	0.313	0.0068	27.20	0.8161	0.000338

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TABLE 4. B. (CONT.)
W/RE

V (C4)	V/TWETA	V-PLUS	W/RE	ICONT.1	U/M	U-PLUS	TAU/TAU-MAX	V/U
1.115	9.297	6376.	.899	.9789	.8994	27.30	.4344	.000459
1.153	9.448	5641.	.8968	.9831	.8958	27.50	.4127	.000491
1.189	9.616	5156.	.8967	.9875	.8976	27.56	.5018	.000722
1.231	9.811	4385.	.9023	.9811	.9109	27.46	.5656	.000760
1.262	9.944	5518.	.9087	.9827	.9144	27.83	.5673	.000784
1.295	9.167	5443.	.9131	.9831	.9209	27.97	.5269	.000814
1.318	6.291	5763.	.9164	.9843	.9247	28.16	.5176	.000836
1.353	6.419	5918.	.9209	.9844	.9281	28.20	.4901	.000868
1.386	6.526	6763.	.9264	.9840	.9350	28.47	.4490	.000897
1.416	6.798	6165.	.9316	.9844	.9350	28.51	.4511	.000922
1.453	6.901	6367.	.9367	.9877	.9407	28.40	.4244	.000954
1.482	7.076	6273.	.9397	.9841	.9453	28.74	.4608	.000991
1.516	7.277	6718.	.9464	.9854	.9515	28.93	.3319	.001030
1.556	7.467	6866.	.9520	.9855	.9546	29.09	.3472	.001063
1.590	7.647	7566.	.9540	.9817	.9602	29.21	.3174	.001103
1.621	7.835	7544.	.9601	.9829	.9639	29.32	.2950	.001144
1.657	8.031	7673.	.9683	.9829	.9676	29.46	.2681	.001184
1.696	8.236	7628.	.9697	.9829	.9726	29.60	.2387	.001204
1.736	8.461	7726.	.9722	.9844	.9749	29.67	.2104	.001242
1.777	8.716	8516.	.9756	.9851	.9781	29.77	.1829	.001278
1.811	8.914	8184.	.9817	.9848	.9835	29.94	.1470	.001303
1.845	9.091	8372.	.9829	.9844	.9842	29.94	.1199	.001334
1.883	9.299	8578.	.9841	.9870	.9864	30.04	.1197	.001354
1.927	9.473	8733.	.9886	.9877	.9897	30.14	.0845	.001384
1.969	9.723	8711.	.9919	.9881	.9919	30.29	.0376	.001420
2.015	9.956	9181.	.9928	.9845	.9935	30.26	.0498	.001444
2.073	10.298	9186.	.9943	.9885	.9955	30.24	.0370	.001461
2.131	10.474	9441.	.9943	.9884	.9949	30.30	.0192	.001483
2.179	10.623	9766.	.9946	.9891	.9963	30.34	.0057	.001500
2.240	10.873	9919.	.9946	.9894	.9970	30.37	0.0000	.001527
2.273	10.996	9727.	.9974	.9894	.9976	30.39	0.0000	.001507
2.317	11.379	10492.	.9977	.9894	.9980	30.40	0.0000	.001507
2.376	11.909	10492.	1.0001	1.0000	1.0001	30.44	0.0000	.001507
2.439	12.231	11215.	.9999	1.0002	1.0004	30.49	0.0000	.001507
2.491	12.493	11274.	.9999	.9999	.9999	30.46	0.0000	.001507
2.541	12.793	11887.	.9994	.9997	.9998	30.42	0.0000	.001507
2.591	13.096	12416.	.9993	.9998	.9999	30.46	0.0000	.001507
2.641	13.454	12416.	1.0001	1.0000	1.0001	30.46	0.0000	.001507
2.691	13.816	12792.	1.0001	1.0000	1.0001	30.46	0.0000	.001507
2.741	14.139	13119.	.9997	.9999	.9998	30.45	0.0000	.001507
2.791	14.473	13450.	.9998	.9997	.9999	30.43	0.0000	.001507
2.841	14.817	13450.	1.0004	1.0003	1.0007	30.40	0.0000	.001507
2.891	15.074	14591.	1.0004	1.0003	1.0004	30.45	0.0000	.001507
2.941	15.294	14591.	1.0004	1.0003	1.0004	30.47	0.0000	.001507
2.991	15.474	14591.	1.0001	1.0003	1.0004	30.47	0.0000	.001507
3.041	15.744	14591.	1.0001	1.0003	1.0001	30.46	0.0000	.001507

TABLE A.8. (CONT.)
PROFILE - JPL-2 -- - PINT PRESSURE DATA

EDGE MACM NO. 0.7943 TOTAL PRESSURE = 1334.06 N/mm²
Re-20.21 CM TOTAL TEMPERATURE = 328.31 DEG-K

U _E = 272.19 M/SEC. RE-DELTA-STAR = 4400.	DELTA STAR = 3410 CM RE-DELTA = 37960.	DELTA = .2343 CM M = 1.314	DELTA = 2.5533 CM					
LEAST SQUARE FIT PARAMETERS U _{STAR} = 9.0444 M/SEC. C = 0.01993 V _{STAR} = 2.419 CM	P ₀ = .5901 V _{MIN} = .039 CM							
Y (CM)	V (M/SEC)	V-PLUS	M/SEC	RHO/RHO _E	U/U _E	U-PLUS	TAU/TAU-MAN	V/U
0.000	2.000	0.	0.000	.0000	0.0000	0.00	1.0000	0.000000
.012	.053	50.	.0001	.0213	.0000	14.06	1.0000	0.000000
.032	.104	100.	.0001	.0213	.0000	14.06	1.0000	0.000000
.050	.144	149.	.0001	.0213	.0000	14.06	1.0000	0.000000
.069	.184	198.	.0001	.0213	.0000	14.06	1.0000	0.000000
.087	.223	247.	.0001	.0213	.0000	14.06	1.0000	0.000000
.105	.263	296.	.0001	.0213	.0000	14.06	1.0000	0.000000
.123	.302	345.	.0001	.0213	.0000	14.06	1.0000	0.000000
.141	.342	394.	.0001	.0213	.0000	14.06	1.0000	0.000000
.159	.381	443.	.0001	.0213	.0000	14.06	1.0000	0.000000
.177	.421	492.	.0001	.0213	.0000	14.06	1.0000	0.000000
.195	.460	541.	.0001	.0213	.0000	14.06	1.0000	0.000000
.213	.500	590.	.0001	.0213	.0000	14.06	1.0000	0.000000
.231	.539	639.	.0001	.0213	.0000	14.06	1.0000	0.000000
.249	.579	688.	.0001	.0213	.0000	14.06	1.0000	0.000000
.267	.618	737.	.0001	.0213	.0000	14.06	1.0000	0.000000
.285	.658	786.	.0001	.0213	.0000	14.06	1.0000	0.000000
.303	.697	835.	.0001	.0213	.0000	14.06	1.0000	0.000000
.321	.737	884.	.0001	.0213	.0000	14.06	1.0000	0.000000
.339	.776	933.	.0001	.0213	.0000	14.06	1.0000	0.000000
.357	.816	982.	.0001	.0213	.0000	14.06	1.0000	0.000000
.375	.855	1031.	.0001	.0213	.0000	14.06	1.0000	0.000000
.393	.895	1080.	.0001	.0213	.0000	14.06	1.0000	0.000000
.411	.934	1129.	.0001	.0213	.0000	14.06	1.0000	0.000000
.429	.974	1178.	.0001	.0213	.0000	14.06	1.0000	0.000000
.447	1.013	1227.	.0001	.0213	.0000	14.06	1.0000	0.000000
.465	1.053	1276.	.0001	.0213	.0000	14.06	1.0000	0.000000
.483	1.092	1325.	.0001	.0213	.0000	14.06	1.0000	0.000000
.501	1.132	1374.	.0001	.0213	.0000	14.06	1.0000	0.000000
.519	1.171	1423.	.0001	.0213	.0000	14.06	1.0000	0.000000
.537	1.211	1472.	.0001	.0213	.0000	14.06	1.0000	0.000000
.555	1.250	1521.	.0001	.0213	.0000	14.06	1.0000	0.000000
.573	1.290	1570.	.0001	.0213	.0000	14.06	1.0000	0.000000
.591	1.329	1619.	.0001	.0213	.0000	14.06	1.0000	0.000000
.609	1.369	1668.	.0001	.0213	.0000	14.06	1.0000	0.000000
.627	1.408	1717.	.0001	.0213	.0000	14.06	1.0000	0.000000
.645	1.448	1766.	.0001	.0213	.0000	14.06	1.0000	0.000000
.663	1.487	1815.	.0001	.0213	.0000	14.06	1.0000	0.000000
.681	1.527	1864.	.0001	.0213	.0000	14.06	1.0000	0.000000
.699	1.566	1913.	.0001	.0213	.0000	14.06	1.0000	0.000000
.717	1.606	1962.	.0001	.0213	.0000	14.06	1.0000	0.000000
.735	1.645	2011.	.0001	.0213	.0000	14.06	1.0000	0.000000
.753	1.685	2060.	.0001	.0213	.0000	14.06	1.0000	0.000000
.771	1.724	2109.	.0001	.0213	.0000	14.06	1.0000	0.000000
.789	1.764	2158.	.0001	.0213	.0000	14.06	1.0000	0.000000
.807	1.803	2207.	.0001	.0213	.0000	14.06	1.0000	0.000000
.825	1.843	2256.	.0001	.0213	.0000	14.06	1.0000	0.000000
.843	1.882	2305.	.0001	.0213	.0000	14.06	1.0000	0.000000
.861	1.922	2354.	.0001	.0213	.0000	14.06	1.0000	0.000000
.879	1.961	2403.	.0001	.0213	.0000	14.06	1.0000	0.000000
.897	2.001	2452.	.0001	.0213	.0000	14.06	1.0000	0.000000
.915	2.040	2501.	.0001	.0213	.0000	14.06	1.0000	0.000000
.933	2.080	2550.	.0001	.0213	.0000	14.06	1.0000	0.000000
.951	2.119	2599.	.0001	.0213	.0000	14.06	1.0000	0.000000
.969	2.159	2648.	.0001	.0213	.0000	14.06	1.0000	0.000000
.987	2.198	2697.	.0001	.0213	.0000	14.06	1.0000	0.000000
1.005	2.238	2746.	.0001	.0213	.0000	14.06	1.0000	0.000000
1.023	2.277	2795.	.0001	.0213	.0000	14.06	1.0000	0.000000
1.041	2.317	2844.	.0001	.0213	.0000	14.06	1.0000	0.000000
1.059	2.356	2893.	.0001	.0213	.0000	14.06	1.0000	0.000000

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TABLE A.8. (CONT.)

V (CM)	V/T*FT	V-PLUS	P/RE	MM/HR/ME	U/H	U-PLUS	TAU/TAU-MAX	V/U
1.104	4.616	47.80	.8668	.9750	.8778	26.72	.7170	.000531
1.146	4.801	49.18	.8711	.9757	.8818	26.85	.6945	.000558
1.174	4.916	50.54	.8760	.9764	.8848	26.99	.6800	.000580
1.203	5.073	51.96	.8814	.9774	.8916	27.15	.6646	.000604
1.238	5.195	53.22	.8867	.9781	.8969	27.26	.6507	.000624
1.277	5.340	54.91	.8905	.9792	.8999	27.41	.6316	.000653
1.305	5.478	56.11	.8970	.9803	.9054	27.63	.6178	.000700
1.342	5.632	57.69	.8964	.9802	.9054	27.58	.5993	.000722
1.371	5.755	58.95	.9011	.9811	.9097	27.72	.5844	.000744
1.407	5.904	60.68	.9043	.9820	.9146	27.87	.5659	.000768
1.437	6.037	61.79	.9103	.9827	.9182	27.99	.5499	.000771
1.476	6.194	63.37	.9145	.9834	.9221	28.11	.5302	.000749
1.508	6.330	64.84	.9186	.9842	.9257	28.22	.5117	.000825
1.553	6.517	66.76	.9232	.9851	.9302	28.36	.4874	.000859
1.596	6.698	68.61	.9275	.9859	.9341	28.49	.4634	.000892
1.625	6.821	69.87	.9329	.9869	.9390	28.64	.4474	.000914
1.654	6.958	71.28	.9383	.9874	.9422	28.74	.4289	.000939
1.716	7.274	74.61	.9440	.9890	.9469	28.96	.3853	.000994
1.770	7.628	76.09	.9504	.9902	.9531	29.15	.3660	.001024
1.814	7.831	77.16	.9517	.9905	.9562	29.19	.3499	.001060
1.840	7.944	78.47	.9550	.9911	.9593	29.28	.3215	.001083
1.879	8.078	80.78	.9595	.9920	.9634	29.41	.3047	.001105
1.913	8.190	82.24	.9618	.9928	.9673	29.53	.2857	.001130
1.946	8.344	83.57	.9647	.9934	.9689	29.61	.2669	.001152
1.981	8.433	85.15	.9656	.9931	.9684	29.68	.2448	.001178
2.004	8.619	86.24	.9704	.9941	.9733	29.72	.2351	.001195
2.037	8.755	87.54	.9729	.9944	.9755	29.79	.2188	.001214
2.070	8.886	89.07	.9754	.9951	.9778	29.86	.2014	.001238
2.101	9.019	90.16	.9760	.9952	.9783	29.88	.1850	.001259
2.136	9.041	91.61	.9787	.9959	.9817	29.99	.1676	.001281
2.169	9.101	93.23	.9814	.9963	.9833	30.04	.1511	.001302
2.204	9.204	94.32	.9837	.9967	.9853	30.10	.1348	.001318
2.230	9.357	95.85	.9853	.9968	.9858	30.12	.1218	.001339
2.256	9.458	96.84	.9874	.9975	.9888	30.21	.1107	.001353
2.289	9.602	98.58	.9898	.9982	.9909	30.28	.0952	.001372
2.324	9.870	101.20	.9912	.9989	.9920	30.31	.0869	.001407
2.378	9.941	102.73	.9919	.9983	.9927	30.33	.0871	.001419
2.419	10.151	103.94	.9934	.9986	.9945	30.36	.0814	.001439
2.453	10.294	105.66	.9941	.9988	.9947	30.40	.0787	.001454
2.489	10.444	106.98	.9967	.9993	.9970	30.47	.0684	.001469
2.519	10.577	108.20	.9981	.9992	.9985	30.46	.0054	.001481
2.561	10.764	111.00	.9967	.9993	.9970	30.47	0.0000	.001489
2.597	10.807	111.62	.9967	.9993	.9970	30.47	0.0000	.001489
2.684	11.245	115.39	.9984	.9994	.9985	30.52	0.0000	.001489
2.746	11.604	118.88	.9989	.9997	.9985	30.53	0.0000	.001489
2.843	11.931	122.21	.9995	.9999	.9995	30.55	0.0000	.001489
2.907	12.398	124.94	1.0004	1.0000	1.0003	30.58	0.0000	.001489
2.995	12.571	128.74	1.0000	1.0000	1.0000	30.57	0.0000	.001489
3.073	12.804	132.09	1.0004	1.0000	1.0003	30.58	0.0000	.001489
3.141	13.143	135.04	1.0002	1.0000	1.0002	30.57	0.0000	.001489
3.235	13.578	138.08	1.0006	1.0001	1.0005	30.58	0.0000	.001489
3.319	13.929	142.88	1.0000	1.0000	1.0000	30.57	0.0000	.001489
3.412	14.314	146.17	.9996	.9999	.9997	30.56	0.0000	.001489
3.499	14.644	150.03	1.0007	1.0001	1.0007	30.59	0.0000	.001489
3.553	14.910	152.73	1.0002	1.0001	1.0002	30.57	0.0000	.001489
3.657	15.347	157.00	.9995	.9999	.9995	30.55	0.0000	.001489

TABLE A.8. (CONT.)
PROFILE - JPL-3 - - - PITOT PRESSURE DATAEDGE MACH NO. = .7940
X = -7.62 CM
TOTAL PRESSURE = .1335E+04 N/M²
TOTAL TEMPERATURE = 324.67 DEG-K

U = 270.59 M/SEC RE-DELTA-STAR = 60480.		DELTA STAR = .3812 CM RE-THETA = 40190.		THETA = .2524 CM MUMALL = .2045 CM/SEC		M = 1.509		
LEAST SQUARE FIT PARAMETERS								
UTANG = 8.9945 M/SEC CHISQR = .1032E-04		CP = .001987 YMAI = 2.580 CM		91 = .5552 YMIN = .744 CM		NFLTA = 2.7494 CM		
Y (CM)	Y/THETA	Y-PLUS	M/E	RND/RMSE	U/UF	U-PLUS	TAU/TAU-MAX	V/V
0.000	0.000	0.	0.0000	.8994	0.0000	0.00	1.0000	0.000000
.010	.040	44.	.4335	.9184	.4524	13.65	1.0000	0.000000
.015	.045	5.	.4675	.9215	.4470	14.71	.9997	.000000
.020	.115	127.	.540	.9289	.5607	16.95	.9994	.000004
.044	.174	193.	.5760	.9329	.5963	18.04	.9970	.000111
.044	.271	294.	.6124	.9373	.6329	19.17	.9944	.000019
.047	.347	381.	.6310	.9394	.6570	19.78	.9923	.000025
.111	.442	484.	.6446	.9415	.6644	20.20	.9893	.000033
.110	.518	564.	.6630	.9437	.6824	20.49	.9868	.000040
.154	.613	674.	.6744	.9452	.6939	21.04	.9816	.000044
.174	.699	748.	.6883	.9471	.7072	21.46	.9805	.000055
.200	.794	874.	.6973	.9484	.7167	21.73	.9770	.000063
.224	.895	954.	.7053	.9495	.7238	21.97	.9727	.000073
.274	1.084	1154.	.7183	.9514	.7345	22.36	.9654	.000089
.295	1.171	1244.	.7240	.9524	.7448	22.65	.9617	.000097
.335	1.327	1460.	.7340	.9544	.7545	22.94	.9549	.000111
.345	1.444	1593.	.7459	.9554	.7630	23.18	.9494	.000123
.348	1.539	1692.	.7500	.9567	.7671	23.31	.9451	.000131
.416	1.649	1814.	.7517	.9563	.7647	23.36	.9397	.000142
.440	1.740	1944.	.7597	.9575	.7744	23.49	.9331	.000155
.477	1.891	2074.	.7641	.9583	.7815	23.75	.9273	.000164
.539	2.014	2218.	.7710	.9592	.7872	24.03	.9205	.000179
.533	2.062	2301.	.7721	.9594	.7893	24.06	.9163	.000184
.547	2.244	2472.	.7811	.9604	.7969	24.23	.9074	.000203
.594	2.344	2569.	.7953	.9615	.8009	24.36	.9004	.000215
.642	2.445	2799.	.7934	.9624	.8084	24.40	.8993	.000234
.675	2.675	2942.	.7995	.9637	.8144	24.78	.8910	.000241
.717	2.922	3213.	.8041	.9651	.8225	25.03	.8843	.000260
.772	3.054	3363.	.8130	.9659	.8272	25.14	.8847	.000264
.812	3.219	3541.	.8194	.9669	.8327	25.35	.8829	.000274
.835	3.309	3639.	.8241	.9678	.8374	25.51	.8811	.000280
.874	3.440	3827.	.8280	.9684	.8414	25.67	.8781	.000280
.910	3.606	3964.	.8333	.9691	.8444	25.78	.8744	.000287
.934	3.717	4087.	.8381	.9701	.8470	25.92	.8715	.000287
.970	3.847	4224.	.8405	.9705	.8532	26.09	.8674	.000289
1.005	3.944	4381.	.8467	.9715	.8590	26.17	.8605	.000289
1.037	4.109	4519.	.8508	.9727	.8629	26.29	.8592	.000287
1.070	4.240	4612.	.8555	.9730	.8672	26.43	.8572	.000284
1.107	4.345	4801.	.8613	.9740	.8727	26.60	.8543	.000274
1.135	4.494	4945.	.8634	.9744	.8766	26.66	.8527	.000244
1.170	4.637	5103.	.8692	.9754	.8801	26.83	.8487	.000215

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TABLE A.8. (CONT.)
W/P E RHO/RHME

Y (CM)	Y/TIETA	Y-OLUS	W/P E	RHO/RHME	U/HIF	U-PLUS	TAU/TAU-MAX	V/U
1.196	4.738	5210.	.8724	.9760	.AR30	26.92	.7086	.000531
1.229	4.868	5354.	.8715	.9758	.AR22	26.89	.6951	.000551
1.244	5.009	5509.	.8777	.9769	.AR80	27.08	.AF02	.000574
1.262	5.120	5631.	.8822	.9785	.P922	27.21	.NAR4	.000591
1.319	5.274	5767.	.8847	.9785	.R964	27.34	.5565	.000599
1.346	5.482	6040.	.8928	.9794	.R971	27.52	.4270	.000552
1.419	5.623	6184.	.8966	.9802	.9054	27.62	.6120	.000674
1.447	5.734	6306.	.9020	.9812	.9106	27.78	.5591	.000643
1.473	5.834	6416.	.9051	.9818	.9134	27.88	.5872	.000710
1.504	5.945	6560.	.9102	.9827	.9182	28.02	.5116	.000732
1.546	6.124	6737.	.9139	.9834	.9216	28.13	.5521	.000760
1.582	6.267	6892.	.9187	.9843	.9260	28.27	.5349	.000744
1.623	6.428	7069.	.9221	.9849	.9291	28.37	.5148	.000812
1.653	6.548	7202.	.9251	.9855	.9317	28.45	.4897	.000833
1.673	6.627	7290.	.9251	.9857	.9329	28.49	.4895	.000847
1.705	6.755	7429.	.9251	.9861	.9351	28.56	.4735	.000869
1.732	6.860	7545.	.9251	.9872	.9351	28.72	.4400	.000889
1.770	7.011	7711.	.9311	.9880	.9441	28.84	.4006	.000914
1.808	7.162	7877.	.9413	.9884	.9467	28.92	.4212	.000940
1.835	7.268	7993.	.9423	.9887	.9477	28.95	.4075	.000957
1.873	7.415	8159.	.9477	.9897	.9526	29.11	.3875	.000946
1.935	7.665	8630.	.9501	.9902	.9548	29.18	.3560	.001027
1.945	7.784	8563.	.9501	.9911	.9591	29.31	.3403	.001049
2.001	7.927	8718.	.9568	.9915	.9609	29.37	.3221	.001072
2.032	8.047	8850.	.9603	.9921	.9641	29.47	.3066	.001092
2.062	8.158	8953.	.9642	.9929	.9676	29.58	.2912	.001112
2.073	8.314	9144.	.9652	.9931	.9686	29.61	.2727	.001136
2.125	8.420	9260.	.9689	.9938	.9719	29.72	.2593	.001153
2.149	8.591	9448.	.9716	.9944	.9745	29.80	.2381	.001180
2.202	8.721	9592.	.9712	.9943	.9740	29.78	.2271	.001201
2.230	8.832	9713.	.9767	.9953	.9790	29.94	.2085	.001218
2.270	8.993	9820.	.9775	.9955	.9797	29.96	.1894	.001242
2.308	9.144	10054.	.9818	.9963	.9836	30.07	.1716	.001264
2.374	9.405	10344.	.9854	.9970	.9868	30.19	.1422	.001302
2.415	9.544	10521.	.9843	.9968	.9859	30.16	.1244	.001324
2.443	9.697	10665.	.9875	.9975	.9887	30.25	.1107	.001341
2.480	9.863	10847.	.9912	.9982	.9920	30.36	.0937	.001352
2.537	10.049	11052.	.9901	.9980	.9911	30.32	.0754	.001365
2.580	10.220	11405.	.9932	.9984	.9949	30.42	.0595	.001404
2.618	10.371	11406.	.9936	.9987	.9942	30.43	.0440	.001421
2.661	10.542	11594.	.9949	.9989	.9954	30.46	.0316	.001438
2.705	10.713	11782.	.9958	.9991	.9962	30.49	.0181	.001455
2.745	10.874	11959.	.9966	.9993	.9969	30.51	.0063	.001469
2.795	11.030	12131.	.9973	.9994	.9976	30.53	0.0000	.001477
2.821	11.174	12291.	.9973	.9993	.9971	30.52	0.0000	.001477
2.890	11.488	12434.	.9991	.9998	.9992	30.50	0.0000	.001477
2.971	11.749	12944.	.9988	.9997	.9989	30.57	0.0000	.001477
3.055	12.101	13309.	.9995	.9999	.9996	30.57	0.0000	.001477
3.144	12.454	13696.	.9991	.9998	.9992	30.58	0.0000	.001477
3.218	12.745	14017.	1.0004	1.0000	1.0004	30.62	0.0000	.001477
3.305	13.092	14394.	1.0004	1.0000	1.0004	30.62	0.0000	.001477
3.384	13.404	14742.	1.0002	1.0000	1.0002	30.61	0.0000	.001477
3.454	13.641	15046.	1.0002	1.0000	1.0002	30.61	0.0000	.001477
3.536	14.008	15406.	1.0000	.9999	.9996	30.59	0.0000	.001477
3.619	14.335	15765.	1.0004	1.0000	1.0000	30.62	0.0000	.001477
3.698	14.647	16104.	.9997	.9999	.9997	30.60	0.0000	.001477

TABLE A 8. (CONT.)
 PROFILE - JPL-4 -- - PITOT PRESSURE DATA
 EDGE MACH NO. = .7921 TOTAL PRESSURE = .1335E+06 N/M²
 X = 0.00 CM TOTAL TEMPERATURE = 328.31 DEG-K

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOE	U/U	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.9000	0.0000	0.00	1.0000	0.000000
.010	.038	43.	.4370	.9191	.4549	13.79	1.0000	0.000100
.017	.067	76.	.4966	.9266	.5166	15.66	.9596	.000002
.027	.105	119.	.5618	.9393	.5670	17.04	.4986	.000004
.049	.187	212.	.5760	.9332	.5953	18.09	.0967	.000012
.068	.250	293.	.6055	.9366	.6754	18.09	.0967	.000018
.077	.337	375.	.6241	.9380	.6661	10.56	.0026	.000024
.106	.404	457.	.6658	.9416	.6665	20.19	.0006	.000039
.121	.467	22.	.6516	.9438	.6712	20.47	.9886	.000035
.140	.534	606.	.6521	.9438	.6816	20.72	.0002	.000041
.152	.577	452.	.6703	.9469	.6895	20.96	.0467	.000045
.177	.674	781.	.6868	.9471	.7057	21.64	.6513	.000053
.210	.770	881.	.6945	.9472	.7132	21.70	.9774	.000067
.231	.876	609.	.6942	.9497	.71	21.81	.9737	.000070
.264	.972	1099.	.7133	.9590	.7315	22.74	.0009	.000079
.287	1.068	1229.	.7210	.9520	.7300	22.49	.0657	.000083
.306	1.155	1306.	.7210	.9520	.7300	22.49	.9633	.000084
.327	1.242	1401.	.7208	.9542	.7675	22.75	.0635	.000093
.355	1.364	1523.	.7370	.9583	.7646	25.07	.0638	.000104
.387	1.468	1650.	.7460	.9583	.7612	25.18	.9482	.000113
.406	1.563	1761.	.7601	.9601	.7661	25.36	.0043	.000121
.431	1.634	1859.	.7529	.9607	.7716	25.51	.0631	.000126
.451	1.700	1931.	.7549	.9673	.7701	23.74	.0009	.000127
.470	1.768	2178.	.7624	.9681	.7701	23.74	.000100	.000130
.485	1.824	2339.	.7661	.9687	.7824	23.84	.9234	.000132
.512	1.946	2307.	.7721	.9596	.7681	26.27	.0169	.000141
.534	2.041	2307.	.7721	.9596	.7681	26.27	.0179	.000152
.566	2.167	2436.	.7768	.9606	.7627	26.16	.0001	.000164
.601	2.282	2579.	.7807	.9613	.7600	26.36	.0001	.000174
.626	2.380	2760.	.7807	.9613	.7600	26.65	.0001	.000184
.678	2.570	2856.	.7832	.9635	.7131	26.27	.0074	.000198
.718	2.715	3029.	.7804	.9661	.7165	26.64	.0009	.000206
.750	2.879	3264.	.7804	.9660	.8204	25.73	.0009	.000214
.795	3.013	3436.	.8164	.9659	.8204	25.31	.6476	.000219
.831	3.153	3666.	.8203	.9673	.8141	26.36	.0627	.000217
.863	3.278	3730.	.8248	.9680	.8383	26.59	.0001	.000227
.903	3.462	3790.	.8267	.9683	.8601	25.64	.0001	.000234
.933	3.653	4026.	.8335	.9696	.8665	27.85	.0009	.000240
.967	3.826	4211.	.8407	.9704	.8633	26.04	.0009	.000252
1.001	4.073	4376.	.8424	.9710	.8651	26.11	.7064	.000257
1.041	4.283	4591.	.8497	.9722	.8638	26.32	.7734	.000262
1.084	4.514	4736.	.8527	.9727	.8644	26.41	.7611	.000267

LEAST SQUARE FIT PARAMETERS
 U/M = 0.0022 M/SEC
 CHICOR = .8750E-05

U = 271.52 M/SEC
 RE-DELTA-STAR = A1990.

DELTA STAR = .3979 CM
 RE-THETA = 41090.

THETA = .2637 CM
 MINALL = .2101 CM=2/SEC

M = 1.508
 CP = .001942

CF = .001978
 YMAX = 2.729 CM

PI = .5579
 YMIN = .027 CM

DELTA = 2.8406 CM

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TABLE A.8. (CONT.)
M/ME RND/RNDF

Y (CM)	Y/TWETA	Y-PLUS	M/ME	RND/RNDF	U/UE	I1-PLUS	TAU/TAU-MAX	V/U
1.148	4.352	4919.	.8587	.9737	.8702	26.59	.7457	.000471
1.149	4.487	5071.	.8631	.9745	.8723	26.72	.7326	.000491
1.151	4.631	5234.	.8677	.9753	.8747	26.85	.7183	.000513
1.159	4.775	5398.	.8736	.9763	.8782	27.03	.7035	.000534
1.169	4.915	5555.	.8784	.9772	.8804	27.17	.6884	.000554
1.174	5.046	5724.	.8830	.9779	.8842	27.30	.6731	.000574
1.174	5.209	5887.	.8861	.9785	.8857	27.39	.6573	.000595
1.177	5.372	6072.	.8912	.9794	.8906	27.54	.6391	.000631
1.183	5.544	6248.	.8954	.9801	.8944	27.66	.6193	.000660
1.193	5.700	6442.	.9023	.9816	.8988	27.86	.6014	.000686
1.199	5.978	6644.	.9071	.9823	.8953	28.00	.5863	.000714
1.205	6.044	6834.	.9102	.9838	.8981	28.09	.5599	.000745
1.233	6.210	7019.	.9135	.9836	.9212	28.19	.5399	.000773
1.273	6.345	7172.	.9180	.9847	.9253	28.32	.5231	.000796
1.713	6.404	7340.	.9239	.9853	.9307	28.49	.5044	.000822
1.745	6.463	7509.	.9287	.9858	.9333	28.57	.4845	.000848
1.748	6.778	7681.	.9300	.9864	.9363	28.67	.4683	.000872
1.771	6.903	7803.	.9335	.9871	.9384	28.77	.4522	.000894
1.850	7.048	7956.	.9381	.9880	.9438	28.90	.4333	.000919
1.894	7.187	8124.	.9408	.9885	.9463	29.04	.4154	.000943
1.940	7.317	8271.	.9441	.9891	.9493	29.08	.3965	.000966
1.945	7.457	8423.	.9494	.9901	.9541	29.23	.3810	.000989
2.006	7.604	8597.	.9547	.9909	.9579	29.10	.3609	.001014
2.004	7.770	8792.	.9581	.9911	.9590	29.34	.3396	.001043
2.125	7.914	8966.	.9566	.9915	.9630	29.44	.3209	.001068
2.125	8.050	9109.	.9592	.9920	.9673	29.51	.3073	.001092
2.140	8.223	9294.	.9623	.9924	.9699	29.60	.2913	.001110
2.213	8.391	9484.	.9694	.9930	.9723	29.81	.2599	.001144
2.263	8.579	9686.	.9721	.9945	.9748	29.89	.2345	.001174
2.337	8.747	9887.	.9745	.9949	.9759	29.95	.2157	.001203
2.443	8.882	10039.	.9755	.9951	.9778	29.98	.1984	.001223
2.345	9.041	10219.	.9803	.9961	.9823	30.12	.1805	.001247
2.429	9.210	10409.	.9815	.9963	.9833	30.16	.1609	.001272
2.470	9.387	10597.	.9842	.9968	.9857	30.23	.1397	.001298
2.522	9.541	10787.	.9850	.9972	.9873	30.24	.1218	.001320
2.564	9.729	10986.	.9881	.9974	.9893	30.35	.1044	.001341
2.573	9.869	11155.	.9900	.9976	.9910	30.40	.0897	.001360
2.574	10.042	11372.	.9920	.9984	.9924	30.46	.0794	.001383
2.621	10.201	11570.	.9937	.9987	.9943	30.51	.0674	.001399
2.729	10.344	11796.	.9928	.9985	.9935	30.49	.0448	.001415
2.771	10.504	11973.	.9948	.9989	.9954	30.54	.0313	.001431
2.857	10.644	12143.	.9952	.9990	.9957	30.55	.0148	.001449
2.857	10.837	12433.	.9958	.9991	.9962	30.56	.0000	.001462
2.899	10.984	12617.	.9980	.9994	.9982	30.63	0.0000	.001469
2.947	11.174	12829.	.9974	.9994	.9982	30.61	0.0000	.001469
3.012	11.419	12997.	.9987	.9994	.9982	30.63	0.0000	.001469
3.006	11.737	13266.	.9991	.9994	.9982	30.64	0.0000	.001469
3.114	12.049	13642.	.9994	.9994	.9982	30.69	0.0000	.001469
3.271	12.401	14017.	.9995	.9999	.9985	30.67	0.0000	.001469
3.377	12.729	14387.	1.0000	1.0000	1.0000	30.69	0.0000	.001469
3.444	13.104	14812.	.9987	.9997	.9989	30.65	0.0000	.001469
3.544	13.437	15187.	.9989	.9997	.9990	30.65	0.0000	.001469
3.581	13.674	15144.	1.0004	1.0001	1.0005	30.70	0.0000	.001469
3.651	13.841	15444.	1.0004	1.0001	1.0003	30.70	0.0000	.001469
3.695	14.010	15835.	.9995	.9999	.9995	30.67	0.0000	.001469

TABLE A B. (CONT.)
PROFILE - JPL-5 - - - PITOT PRESSURE DATA

EDGE MACH NO.= .7919		TOTAL PRESSURE=.1377F-06 N/Mm ²		TOTAL TEMPERATURE= 328.55 DEG-K		M= 1.512		
X= 7.62 CM		DELTA STAR=.4155 CM		TMETA=.2747 CM		MINALL=.2105 CM		
RE-DELTA-STAR= 64440.		RE-THETA= 42600.		P1=.5867		DELTA= 2.9659 CM		
LEAST SQUARE FIT PARAMETERS		CF=.001953		YMIN=.024 CM				
UTAU= 8.9444 M/SEC		YMAX= 2.806 CM						
CMISOR=.1002E-04								
Y (CM)	Y/THETA	Y-PLUS	M/NE	RND/RMSE	U/U1E	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.9000	0.0000	0.00	1.0000	0.000000
.010	.036	43.	.4350	.9190	.4538	13.42	1.0090	0.000000
.024	.087	102.	.5023	.9253	.5222	15.92	.9990	.000004
.050	.184	215.	.5700	.9325	.5903	18.12	.9968	.000312
.066	.240	280.	.6018	.9362	.6220	19.00	.9953	.000014
.088	.323	377.	.6191	.9383	.6391	19.53	.9930	.000023
.116	.425	496.	.6434	.9414	.6443	20.29	.9899	.000031
.132	.480	561.	.6625	.9439	.6819	20.96	.9881	.000034
.147	.519	723.	.6727	.9452	.6914	21.16	.9834	.000048
.167	.684	798.	.6835	.9467	.7025	21.50	.9811	.000053
.217	.790	922.	.6938	.9481	.7125	21.81	.9772	.000062
.246	.895	1044.	.7059	.9497	.7234	22.16	.9732	.000071
.273	.993	1160.	.7122	.9507	.7334	22.57	.9693	.000079
.302	1.100	1284.	.7186	.9514	.7347	22.57	.9649	.000149
.334	1.215	1419.	.7225	.9522	.7434	22.08	.9600	.000169
.361	1.317	1537.	.7354	.9541	.7529	23.04	.9555	.000104
.395	1.405	1640.	.7427	.9552	.7607	23.30	.9515	.000114
.411	1.497	1748.	.7467	.9555	.7619	23.34	.9472	.000124
.442	1.647	1864.	.7509	.9564	.7678	23.54	.9402	.000143
.445	1.765	2061.	.7615	.9580	.7700	23.96	.9340	.000151
.515	1.876	2190.	.7626	.9581	.7791	23.89	.9282	.000162
.546	2.024	2363.	.7701	.9593	.7843	24.12	.9202	.000177
.594	2.163	2525.	.7789	.9607	.7867	24.38	.9174	.000141
.626	2.279	2660.	.7800	.9609	.7857	24.42	.9256	.000203
.657	2.394	2795.	.7849	.9615	.8014	24.56	.9094	.000114
.685	2.496	2914.	.7901	.9624	.8056	24.72	.9023	.000227
.715	2.607	3043.	.7963	.9634	.8112	24.90	.8952	.000240
.755	2.755	3216.	.8036	.9644	.8182	25.12	.8854	.000157
.797	2.864	3345.	.8064	.9647	.8189	25.15	.8778	.000220
.828	3.014	3518.	.8109	.9657	.8252	25.34	.8673	.000248
.855	3.115	3637.	.8154	.9665	.8294	25.44	.8499	.000300
.892	3.249	3793.	.8188	.9670	.8327	25.58	.8398	.000317
.922	3.354	3917.	.8262	.9682	.8364	25.80	.8304	.000331
.947	3.452	4112.	.8344	.9694	.8433	26.04	.8187	.000352
1.003	3.652	4263.	.8358	.9698	.8487	26.08	.8174	.000330
1.028	3.744	4371.	.8411	.9707	.8537	26.24	.8094	.000352
1.049	3.934	4592.	.8425	.9719	.8550	26.28	.8028	.000308
1.112	4.049	4727.	.8491	.9721	.8432	26.48	.7725	.000424
1.143	4.143	4856.	.8512	.9724	.8432	26.56	.7622	.000441
1.177	4.245	4902.	.8532	.9728	.8451	26.67	.7503	.000450
1.214	4.419	5154.	.8506	.9749	.8720	26.82	.7372	.000450

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TABLE A.8. (CONT.)
W/ME

Y (%)	V/TMSTA	V-PLUS	W/ME	(CONT.) RMG/RMSE	U/%	U-PLUS	TAU/TAI-MAX	V/U
1.247	4.576	5342.	.8645	.9751	.8775	26.99	.7215	.009504
1.247	4.647	5471.	.8704	.9757	.8811	27.11	.7101	.009501
1.310	4.744	5655.	.8733	.9762	.8819	27.19	.6934	.009544
1.343	4.844	5795.	.8776	.9770	.8877	27.31	.6807	.009565
1.393	5.071	5919.	.8839	.9781	.8937	27.50	.6691	.009582
1.470	5.353	6249.	.8897	.9791	.8991	27.48	.6373	.009649
1.501	5.444	6378.	.8940	.9799	.9031	27.80	.6242	.009647
1.549	5.407	6545.	.8990	.9809	.9078	27.95	.6076	.009671
1.579	5.750	6713.	.9027	.9811	.9084	28.00	.5905	.009695
1.611	5.866	6948.	.9060	.9817	.9123	28.09	.5764	.009715
1.621	6.009	7015.	.9106	.9829	.9184	28.29	.5598	.009749
1.649	6.148	7177.	.9140	.9835	.9216	28.39	.5415	.009764
1.719	6.259	7306.	.9190	.9846	.9262	28.53	.5275	.009743
1.740	6.407	7479.	.9217	.9849	.9287	28.61	.5087	.009733
1.795	6.534	7630.	.9240	.9857	.9327	28.74	.4920	.009731
1.833	6.675	7792.	.9275	.9860	.9360	28.78	.4741	.009754
1.866	6.795	7932.	.9322	.9869	.9384	28.92	.4584	.009777
1.894	6.911	8087.	.9347	.9873	.9406	28.99	.4432	.009797
1.935	7.045	8224.	.9381	.9880	.9438	29.09	.4255	.009821
1.948	7.145	8364.	.9409	.9885	.9464	29.14	.4094	.009842
2.000	7.281	8499.	.9428	.9888	.9480	29.23	.3943	.009842
2.033	7.431	8639.	.9472	.9897	.9521	29.36	.3784	.009863
2.075	7.553	8817.	.9500	.9902	.9544	29.44	.3581	.009863
2.110	7.693	8948.	.9544	.9911	.9587	29.57	.3410	.009831
2.139	7.789	9092.	.9567	.9911	.9590	29.58	.3270	.009857
2.147	7.891	9211.	.9596	.9920	.9634	29.72	.3134	.009857
2.218	8.039	9384.	.9611	.9933	.9648	29.74	.2942	.009852
2.247	8.182	9551.	.9650	.9931	.9684	29.88	.2755	.009815
2.273	8.274	9593.	.9662	.9933	.9694	29.91	.2636	.009830
2.310	8.409	9946.	.9702	.9931	.9704	29.94	.2444	.009852
2.330	8.515	9940.	.9738	.9941	.9731	30.03	.2328	.009852
2.373	8.640	10085.	.9754	.9948	.9743	30.13	.2173	.009859
2.411	8.778	10247.	.9769	.9951	.9740	30.14	.2092	.009859
2.433	8.844	10350.	.9789	.9954	.9791	30.22	.1895	.009823
2.433	9.185	10722.	.9820	.9964	.9842	30.37	.1518	.009827
2.506	9.305	10862.	.9825	.9965	.9849	30.38	.1380	.009847
2.533	9.439	11019.	.9856	.9971	.9870	30.47	.1231	.009835
2.593	9.540	11159.	.9863	.9973	.9877	30.49	.1099	.009841
2.624	9.649	11343.	.9890	.9978	.9901	30.57	.0934	.009841
2.649	9.717	11553.	.9909	.9981	.9919	30.62	.0752	.009843
2.714	9.897	11744.	.9916	.9983	.9924	30.64	.0579	.009844
2.748	10.077	11926.	.9925	.9985	.9933	30.67	.0452	.009849
2.804	10.214	12177.	.9937	.9987	.9943	30.70	.0338	.009813
2.842	10.344	12271.	.9957	.9991	.9961	30.76	.0202	.009830
2.887	10.512	12422.	.9961	.9992	.9965	30.77	.0101	.009842
2.923	10.641	12735.	.9976	.9995	.9978	30.82	0.0000	.009842
2.947	10.910	12929.	.9974	.9994	.9977	30.81	0.0000	.009844
3.042	11.074	13237.	.9976	.9995	.9978	30.82	0.0000	.009844
3.115	11.339	13545.	.9989	.9997	.9980	30.85	0.0000	.009844
3.147	11.603	13911.	.9981	.9996	.9983	30.83	0.0000	.009844
3.274	11.917	14241.	.9992	.9999	.9993	30.84	0.0000	.009844
3.351	12.199	14597.	1.0007	1.0001	1.0006	30.91	0.0000	.009844
3.439	12.504	14880.	1.0005	1.0001	1.0005	30.90	0.0000	.009844
3.525	12.833	15315.	.9991	.9999	.9992	30.86	0.0000	.009844
3.614	13.119	15509.	1.0000	1.0000	1.0000	30.89	0.0000	.009844
3.649	13.226	15649.	.9995	.9999	.9997	30.84	0.0000	.009844
3.683	13.404							

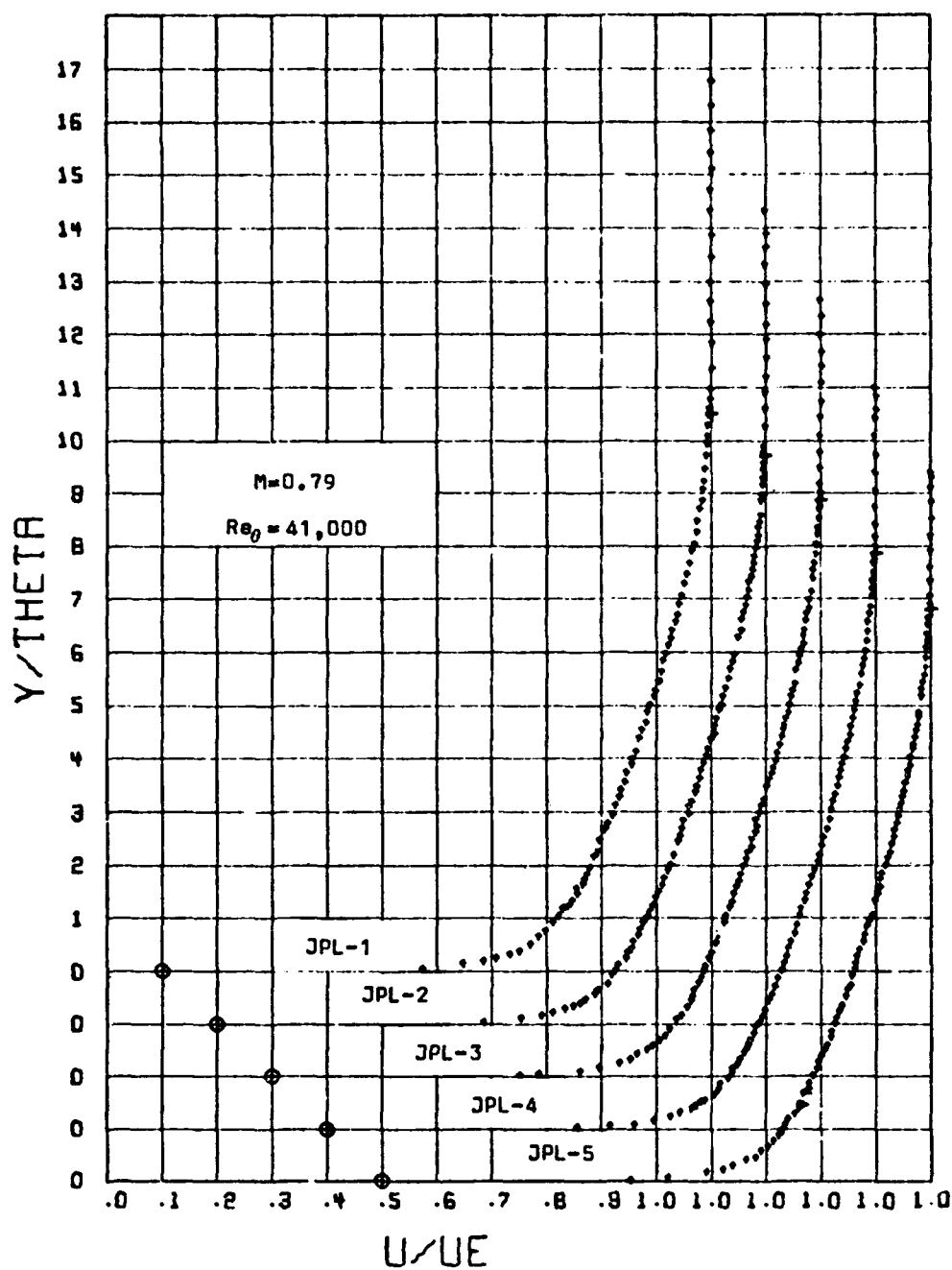


Figure A17. Mean Velocity Profiles.

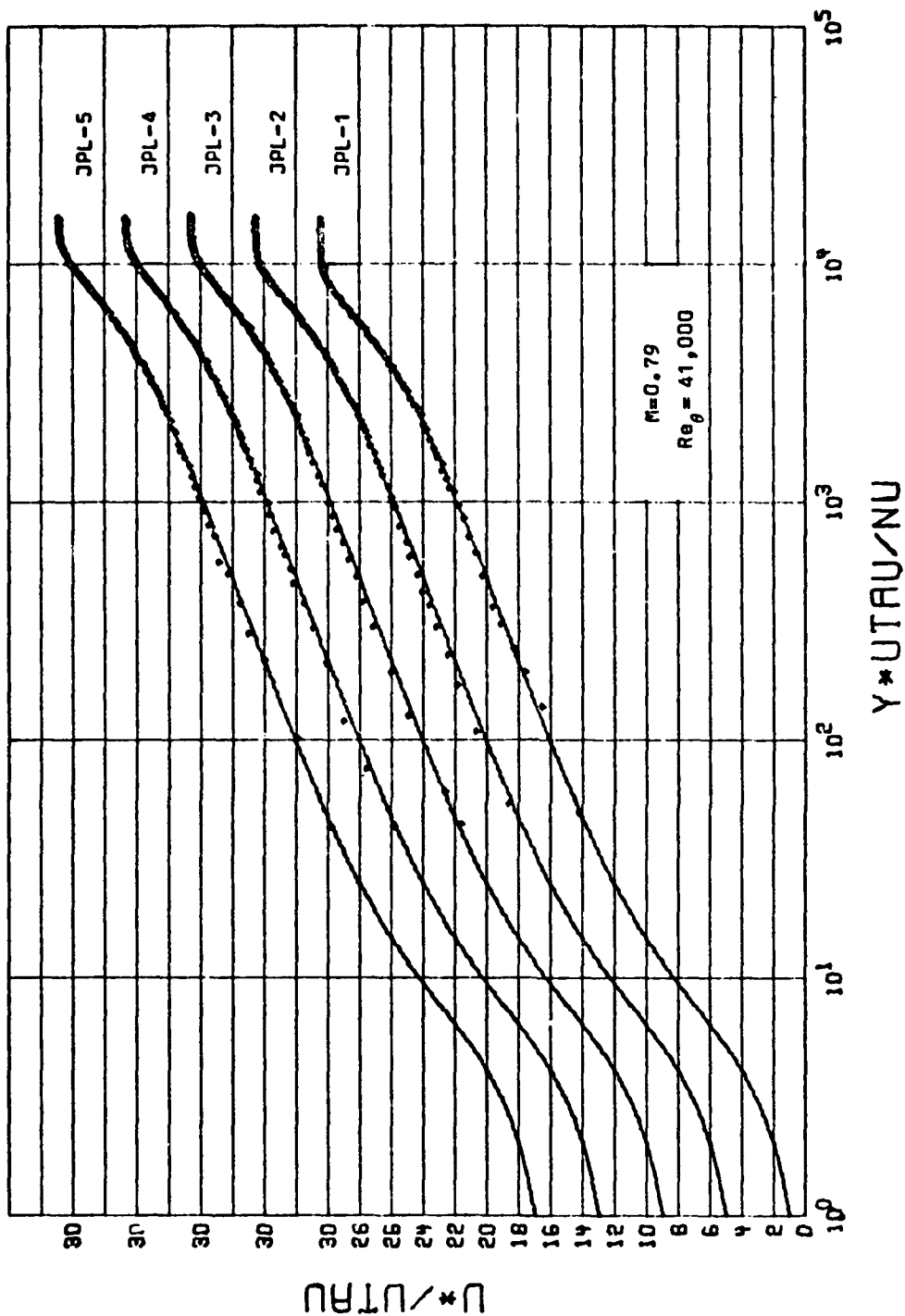


Figure A 18. Van Driest Scaled Mean Velocity Profiles.

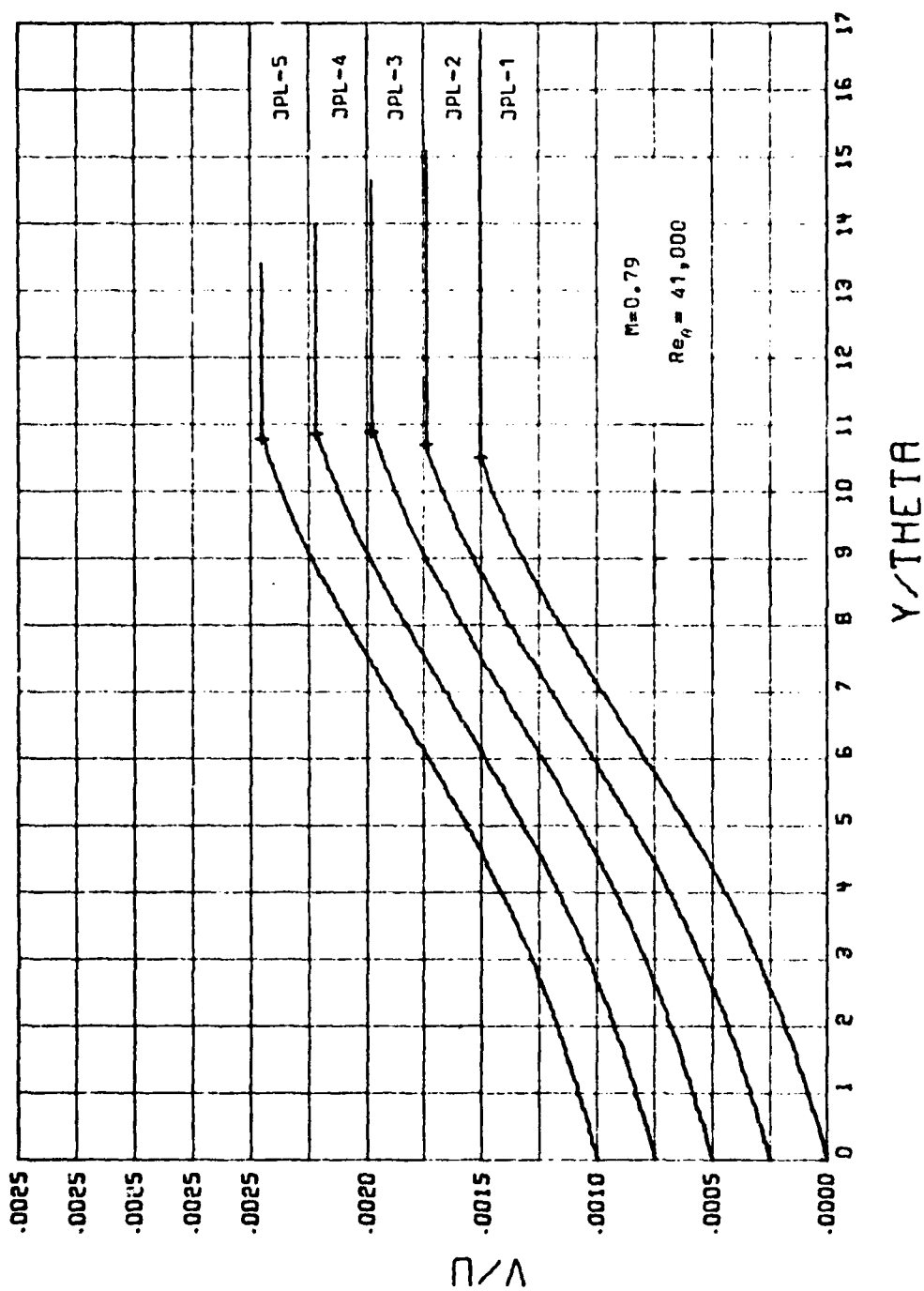


Figure A19. Normal Velocity Distribution.

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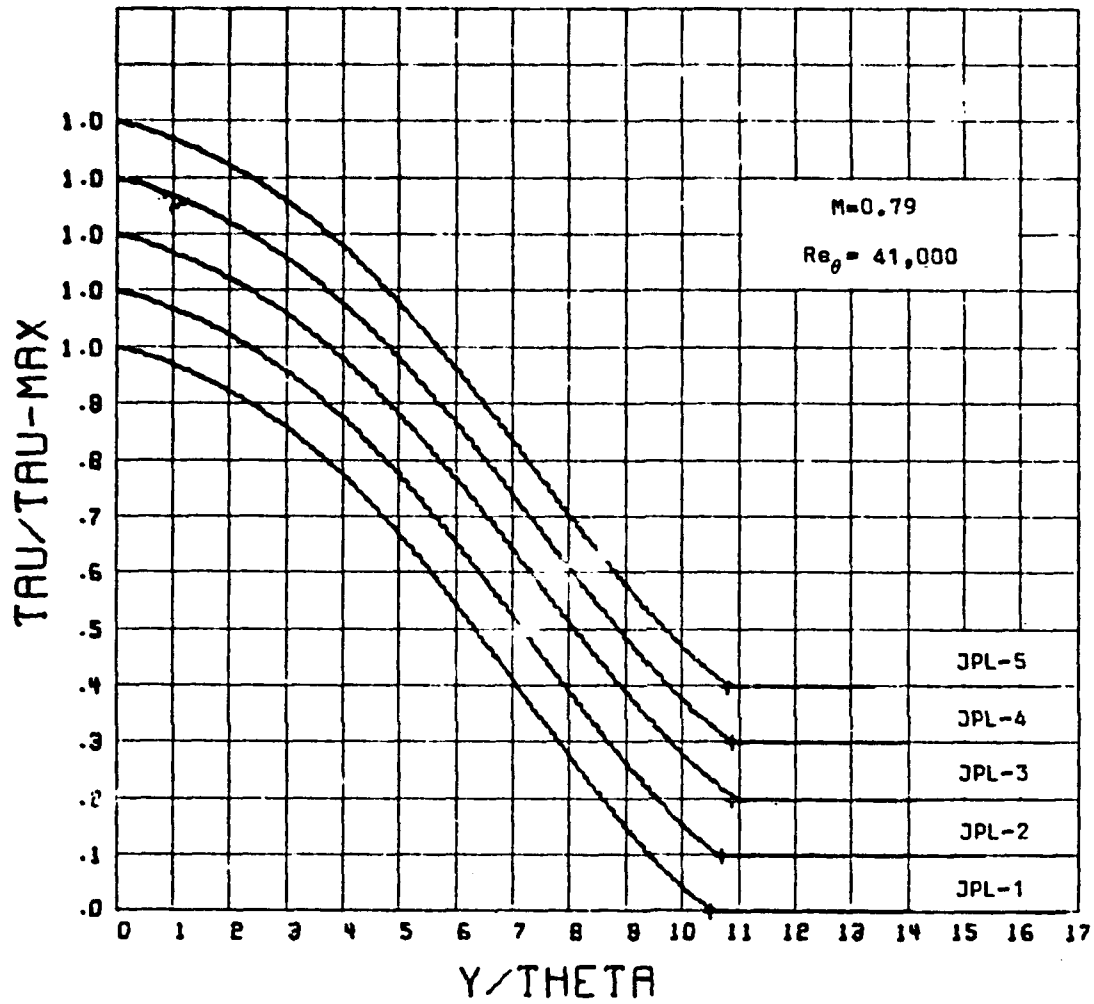


Figure A20. Shear Stress Distribution.

TABLE A 9. DATA SUMMARY
PROFILE - JPL-1 - - - PITOT PRESSURE DATA

EDGE MACH NO.= .9664		TOTAL PRESSURE=.6611E+05 N/MO. 2		TOTAL TEMPERATURE= 310.59 DEG-K		M= 1.677		
X=-48.43 CM		DELTA STAR= .3487 CM		THETA=.2079 CM		DELTA= 2.1042 CM		
UF= 313.76 M/SEC		RE-THETA= 18650.		MUALL= .4546 CM/OZ/SEC				
KF-DELTA-STAR= 31290.		CF= .002108		PI= .7057				
LEAST SQUARE FIT PARAMETERS		YMAX= 1.991 CM		YMIN= .081 CM				
UTAU= 10.9979 M/SEC								
CHISOR= .2873E-05								
Y (CM)	Y/THETA	Y-PLUS	M/ME	RMQ/RHDE	U/UE	I-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	3.	0.0000	.8581	0.0000	0.00	1.0000	0.000000
.010	.048	24.	.3807	.8787	.4041	11.63	1.0000	0.000000
.016	.091	45.	.4635	.8884	.4917	14.11	.9992	0.000304
.045	.210	110.	.5480	.9007	.5774	16.60	.9966	0.000104
.062	.299	149.	.5696	.9041	.5980	17.23	.9946	0.000323
.081	.390	195.	.5903	.9075	.6197	17.84	.9922	0.000337
.092	.445	223.	.6072	.9104	.6344	18.33	.9904	0.000337
.118	.567	284.	.6248	.9135	.6537	18.84	.9869	0.000349
.143	.690	345.	.6433	.9148	.6718	19.37	.9829	0.000341
.161	.775	389.	.6527	.9185	.6810	19.84	.9789	0.000370
.195	.940	471.	.6687	.9214	.6946	20.10	.9739	0.000384
.227	1.093	547.	.6839	.9244	.7112	20.54	.9680	0.0003102
.269	1.294	648.	.6985	.9273	.7254	20.96	.9595	0.000124
.293	1.410	706.	.7047	.9285	.7312	21.13	.9543	0.000137
.327	1.575	789.	.7151	.9306	.7413	21.43	.9466	0.000156
.346	1.714	850.	.7265	.9330	.7521	21.75	.9396	0.000172
.348	1.844	914.	.7346	.9347	.7598	21.98	.9314	0.000191
.414	2.002	1003.	.7390	.9354	.7660	22.11	.9242	0.000204
.455	2.192	1094.	.7516	.9382	.7749	22.46	.9132	0.000237
.481	2.314	1159.	.7547	.9393	.7807	22.40	.9057	0.000249
.521	2.509	1257.	.7617	.9408	.7873	22.80	.8930	0.000274
.547	2.641	1343.	.7648	.9433	.7917	23.11	.8813	0.000301
.549	2.833	1419.	.7805	.9445	.8031	23.27	.8702	0.000324
.623	2.998	1503.	.7871	.9460	.8082	23.44	.8577	0.000350
.655	3.151	1579.	.7952	.9474	.8148	23.48	.8455	0.000375
.697	3.352	1680.	.8013	.9492	.8224	23.85	.8284	0.000438
.732	3.523	1745.	.8151	.9523	.8352	24.24	.8136	0.000438
.741	3.755	1881.	.8233	.9543	.8424	24.56	.7920	0.000479
.811	3.902	1954.	.8275	.9552	.8447	24.58	.7776	0.000507
.844	4.041	2035.	.8345	.9569	.8531	24.77	.7616	0.000537
.847	4.269	2139.	.8429	.9589	.8608	25.01	.7397	0.000577
.903	4.537	2273.	.8539	.9615	.8708	25.31	.7098	0.000621
.901	4.749	2360.	.8609	.9632	.8771	25.50	.6878	0.000679
1.043	4.920	2515.	.8713	.9667	.8871	25.69	.6523	0.000733
1.098	5.282	2647.	.8828	.9687	.8970	26.10	.6190	0.000790
1.147	5.417	2812.	.8925	.9711	.9046	26.35	.6755	0.000843
1.207	5.817	2910.	.9002	.9731	.9126	26.57	.6449	0.000908
1.214	6.040	3026.	.9089	.9753	.9204	26.81	.6146	0.000940
1.318	6.339	3170.	.9194	.9781	.9300	27.10	.5742	0.001029
1.343	6.450	3332.	.9248	.9800	.9342	27.29	.5293	0.001107
1.446	6.907	3461.	.9352	.9822	.9436	27.52	.3920	0.001154

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TABLE 4. 9. (CONT.)

V (CM)	V/THETA	V-PLUS	M/ME	RHO/RHME	U/ME	U-PLUS	TAU/TAU-MAX	V/U
1.445	7.145	3580.	.9432	.9843	.9507	27.75	.3573	.001212
1.517	7.395	3705.	.9511	.9844	.9576	27.95	.3211	.001267
1.543	7.615	3816.	.9576	.9842	.9633	28.12	.2896	.001315
1.64.	7.909	3963.	.9606	.9890	.9659	28.20	.2443	.001377
1.688	8.123	4070.	.9699	.9916	.9740	28.45	.2189	.001420
1.739	8.367	4192.	.9736	.9926	.9773	28.55	.1946	.001468
1.799	8.553	4336.	.9797	.994.	.9825	28.71	.1.98	.001541
1.842	8.861	4447.	.9833	.9953	.9856	28.81	.1246	.001557
1.899	9.136	4578.	.9867	.9962	.9884	28.90	.0933	.001602
1.945	9.354	4688.	.9901	.9972	.9915	28.98	.0700	.001636
1.991	9.574	4798.	.9928	.9979	.9934	29.06	.0484	.001668
2.043	9.824	4924.	.9929	.9980	.9939	29.06	.0742	.001698
2.091	10.058	5040.	.9962	.9989	.9947	29.15	.0091	.001723
2.133	10.240	5141.	.9955	.9987	.9942	29.13	0.0000	.001734
2.194	10.543	5288.	.9975	.9993	.9979	29.18	0.0000	.001734
2.274	10.840	5431.	.9973	.9992	.9977	29.18	0.0000	.001734
2.340	11.353	5689.	.9987	.9994	.9989	29.21	0.0000	.001734
2.471	11.885	5955.	.9991	.9997	.9992	29.22	0.0000	.001734
2.553	12.281	6154.	.9992	.9994	.9994	29.23	0.0000	.001734
2.640	12.497	6342.	1.0007	1.0002	1.0004	29.27	0.0000	.001734
2.778	12.860	6454.	.9998	.9999	.9998	29.24	0.0000	.001734
2.772	13.332	6480.	1.0001	1.0000	1.0001	29.25	0.0000	.001734
2.868	13.794	6913.	.9997	.9999	.9998	29.24	0.0000	.001734
2.955	14.309	7170.	.9987	.9995	.9985	29.20	0.0000	.001734
3.074	14.785	7408.	.9993	.9994	.9994	29.23	0.0000	.001734
3.122	15.018	7525.	1.0016	1.0004	1.0014	29.24	0.0000	.001734
3.146	15.224	7629.	.9994	.9998	.9995	29.23	0.0000	.001734
3.221	15.494	7763.	1.0004	1.0001	1.0004	29.26	0.0000	.001734
3.243	15.695	7865.	.9995	.9994	.9994	29.23	0.0000	.001734
3.375	15.897	7966.	.9989	.9997	.9991	29.22	0.0000	.001734
3.354	16.142	8088.	.9985	.9995	.9987	29.21	0.0000	.001734
3.398	16.343	8189.	1.0008	1.0002	1.0007	29.27	0.0000	.001734
3.458	16.810	8333.	1.0001	1.0000	1.0001	29.25	0.0000	.001734

TABLE A 9. (CONT.)
PROFILE - JPL-2 - - - PITOT PRESSURE DATAEDGE MACH NO. = .9669 TOTAL PRESSURE = .6691E-05 N/MOO2
X = 26.21 CM TOTAL TEMPERATURE = 312.05 DEG-K

Y (CM)	Y/THETA	Y-PLUS	M/ME	RND/RHDE	U/UF	U-PLUS	TAU/TAU-MAX	V/VI
0.000	0.000	0.	0.0000	.8580	0.0000	0.00	1.0000	0.000000
.010	.043	24.	.3734	.8778	.3986	11.53	1.0000	0.000000
.011	.047	27.	.3881	.8795	.4149	12.00	.9999	0.000000
.013	.054	33.	.4342	.8847	.4616	13.37	.9997	0.000001
.024	.101	57.	.4788	.8905	.5074	14.71	.9999	0.000005
.043	.181	103.	.5340	.8945	.5633	16.36	.9973	0.000013
.058	.264	140.	.5817	.9028	.6312	17.18	.9958	.000019
.074	.319	172.	.5847	.9044	.6156	17.90	.9939	.000025
.087	.410	234.	.6033	.9096	.6325	18.40	.9813	.000034
.111	.669	268.	.6128	.9133	.6470	18.68	.9896	.000039
.124	.821	298.	.6160	.9134	.6549	19.07	.9880	.000044
.142	.994	341.	.6333	.9149	.6631	19.28	.9856	.000051
.172	.174	414.	.6514	.9182	.6788	19.51	.9813	.000064
.199	.284	478.	.6605	.9199	.6887	20.07	.9773	.000074
.223	.437	536.	.6741	.9225	.7018	20.47	.9736	.000085
.241	.644	603.	.6842	.9244	.7124	20.79	.9690	.000096
.267	.1203	689.	.6961	.9268	.7231	21.10	.9629	.000112
.284	.192	743.	.6981	.9266	.7221	21.07	.9628	.000112
.308	.1293	741.	.6985	.9272	.7253	21.17	.9590	.000121
.330	.1384	792.	.7068	.9285	.7314	21.35	.9549	.000131
.360	.1517	844.	.7143	.9304	.7405	21.52	.9460	.000145
.393	.1650	945.	.7201	.9314	.7460	21.79	.9423	.000151
.424	.1778	1018.	.7309	.9339	.7563	22.10	.9358	.000174
.452	.1938	1110.	.7396	.9356	.7646	22.35	.9272	.000185
.480	.2064	1177.	.7443	.9371	.7709	22.54	.9206	.000210
.516	.2167	1241.	.7536	.9386	.7774	22.74	.9141	.000224
.556	.2332	1336.	.7568	.9393	.7809	23.06	.9039	.000244
.589	.2444	1399.	.7647	.9410	.7863	23.76	.8968	.000261
.629	.2513	1439.	.7711	.9424	.7963	23.25	.8922	.000270
.679	.2635	1503.	.7735	.9429	.7966	23.31	.8846	.000274
.741	.2774	1588.	.7837	.9452	.8061	23.40	.8741	.000308
.833	.2864	1640.	.7821	.9464	.8064	23.56	.8674	.000321
.924	.3056	1750.	.7938	.9475	.8155	23.89	.8577	.000350
.948	.3134	1794.	.7967	.9481	.8192	23.97	.8464	.000363
.970	.3269	1872.	.8018	.9493	.8230	24.11	.8354	.000374
.998	.3471	1998.	.8127	.9518	.8300	24.42	.8180	.000418
.964	.3547	2044.	.8214	.9538	.8411	24.66	.8074	.000447
.935	.3704	2174.	.8251	.9544	.8445	24.77	.7881	.000474
.909	.3984	2281.	.8549	.9559	.8605	24.92	.7697	.000504
.849	.4144	2376.	.8370	.9575	.8564	25.10	.7529	.000539
.804	.4345	2488.	.8487	.9602	.8441	25.42	.7319	.000576

UE = 314.03 M/SEC DELTA STAR = .3983 CM T/MTA = .2385 CM M = 1.070
 RE-THETA-STAR = 34900. RE-THETA = 20890. MULL = .4546 CM/SEC

LEAST SQUARE FIT PARAMETERS
 UTATIO IN.9180 M/SEC CP = .002065 DELTA = 2.4307 CM
 CHISQ = .4746E-05 YHAR = 2.758 CM P/D = .6968 V/HAR = .07 CM

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TABLE A 9. (CONT.)

Y (CM)	Y/THETA	Y-PLUS	M/ME	Q. RMO/RMFE	U/U*	U-PLUS	TAU/TAU-MAX	V/U
1.049	4.568	2416.	.8544	.9421	.8731	25.64	.7070	.000620
1.176	4.723	2705.	.8590	.9628	.8755	25.71	.6892	.000651
1.173	4.920	2818.	.8678	.9640	.8834	25.95	.6857	.000692
1.200	5.069	2903.	.8751	.9667	.8901	26.16	.6744	.000723
1.252	5.250	3007.	.8803	.9680	.8967	26.30	.6747	.000761
1.297	5.442	3116.	.8871	.9697	.9008	26.48	.5999	.000802
1.336	5.601	3208.	.8929	.9712	.9060	26.64	.5787	.000837
1.367	5.734	3284.	.9008	.9732	.9131	26.86	.5609	.000868
1.474	5.809	3373.	.9034	.9739	.9156	26.93	.5399	.000900
1.470	5.995	3454.	.9061	.9745	.9178	27.01	.5252	.000924
1.465	6.164	3519.	.9132	.9764	.9241	27.20	.5044	.000957
1.494	6.267	3549.	.9165	.9772	.9271	27.29	.4871	.000984
1.510	6.414	3676.	.9203	.9787	.9304	27.39	.4659	.001017
1.573	6.624	3793.	.9290	.9805	.9382	27.63	.4361	.001063
1.633	6.847	3922.	.9348	.9821	.9433	27.79	.4038	.001113
1.685	7.064	4047.	.9414	.9838	.9491	27.97	.3722	.001161
1.744	7.316	4190.	.9450	.9848	.9522	28.07	.3360	.001216
1.774	7.502	4297.	.9445	.9874	.9506	28.33	.3092	.001255
1.849	7.743	4440.	.9576	.9882	.9633	28.41	.2732	.001308
1.892	7.936	4544.	.9621	.9854	.9672	28.53	.2484	.001345
1.944	8.148	4678.	.9708	.9919	.9748	28.76	.2163	.001391
2.010	8.386	4803.	.9709	.9918	.9768	28.76	.1872	.001433
2.041	8.462	4949.	.9761	.9938	.9810	28.96	.1545	.001480
2.115	8.871	5081.	.9821	.9949	.9864	29.07	.1264	.001520
2.264	9.086	5202.	.9834	.9954	.9859	29.11	.1017	.001554
2.212	9.276	5312.	.9882	.9966	.9898	29.23	.0806	.001584
2.258	9.447	5422.	.9898	.9971	.9913	29.28	.0607	.001612
2.311	9.691	5550.	.9898	.9971	.9912	29.27	.0353	.001642
2.359	9.888	5643.	.9943	.9983	.9951	29.39	.0220	.001665
2.402	10.074	5770.	.9936	.9981	.9963	29.37	.0072	.001686
2.448	10.244	5880.	.9944	.9994	.9983	29.40	0.0000	.001686
2.443	10.442	5984.	.9965	.9990	.9970	29.45	0.0000	.001594
2.539	10.852	6215.	.9978	.9993	.9991	29.49	0.0000	.001696
2.560	11.193	6410.	.9984	.9996	.9989	29.51	0.0000	.001594
2.700	11.571	6627.	1.0003	1.0000	1.0002	29.55	0.0000	.001696
2.844	11.927	6831.	.9980	.9994	.9983	29.59	0.0000	.001696
2.931	12.249	7038.	.9985	.9996	.9987	29.51	0.0000	.001696
3.011	12.625	7231.	.9986	.9994	.9984	29.51	0.0000	.001696
3.043	12.979	7404.	.9986	.9994	.9984	29.51	0.0000	.001696
3.154	13.227	7575.	.9986	.9994	.9984	29.51	0.0000	.001696
3.219	13.593	7780.	1.0011	1.0000	1.0000	29.55	0.0000	.001696
3.309	13.874	7947.	.9993	.9998	.9994	29.53	0.0000	.001696
3.350	14.047	8045.	1.0001	1.0000	1.0000	29.55	0.0000	.001696
3.389	14.212	8139.	.9999	.9999	.9999	29.54	0.0000	.001594
3.427	14.372	8231.	1.0001	1.0000	1.0000	29.55	0.0000	.001696
3.455	14.489	8298.	.9997	.9999	.9997	29.54	0.0000	.001594
3.548	14.877	8521.	1.0001	1.0000	1.0000	29.55	0.0000	.001696

TABLE A 9. (CONT.)
PROFILE - JPL-3 - - - PITOT PRESSURE DATA

EDGE MACH NO. = .9719		TOTAL PRESSURE = .6638E+05 N/M ²		TOTAL TEMPERATURE = 300.36 DEG-K		M = 1.656		
X = -7.62 CM		DELTA STAR = .4084 CM		THETA = .2466 CM		MUMALL = .4531 CM ² /SEC		
RE-DELTA-STAR = 37630.		RE-THETA = 22720.				DELTA = 2.6090 CM		
LEAST SQUARE FIT PARAMETERS				PI = .4076				
UTAU = 11.0079 M/SEC		CF = .002097		YMIN = .077 CM				
CHISQ = .7695E-05		VMAX = 2.454 CM						
Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHME	U/UF	I-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.8567	0.0000	0.0%	1.0000	0.000000
.010	.041	24.	.4100	.8808	.4369	12.74	1.0000	0.000000
.012	.051	30.	.4158	.8815	.4429	12.72	.9959	.000001
.016	.066	40.	.4736	.8888	.5023	14.46	.9995	.000002
.027	.113	67.	.5165	.8949	.5460	15.72	.9986	.000007
.038	.154	92.	.5444	.8992	.5741	16.54	.9978	.000011
.053	.216	129.	.5602	.9017	.5900	17.00	.9963	.000016
.063	.257	154.	.5752	.9041	.6049	17.44	.9953	.000020
.077	.314	188.	.5930	.9071	.6227	17.96	.9937	.000026
.089	.360	215.	.6078	.9096	.6373	18.39	.9924	.000030
.104	.422	253.	.6170	.9112	.6463	18.66	.9906	.000034
.125	.499	305.	.6283	.9133	.6574	18.99	.9879	.000044
.144	.587	351.	.6443	.9162	.6732	19.45	.9854	.000052
.166	.674	404.	.6561	.9184	.6846	19.79	.9824	.000060
.186	.757	453.	.6647	.9200	.6930	20.04	.9795	.000068
.207	.839	502.	.6742	.9218	.7022	20.31	.9765	.000077
.220	.906	536.	.6818	.9233	.7095	20.53	.9743	.000082
.245	.993	595.	.6855	.9260	.7131	20.64	.9705	.000092
.257	1.045	626.	.6899	.9269	.7174	20.76	.9685	.000098
.293	1.189	712.	.7012	.9271	.7282	21.09	.9625	.000113
.327	1.328	766.	.714	.9299	.7411	21.47	.9564	.000127
.360	1.462	876.	.7221	.9314	.7482	21.68	.9503	.000142
.388	1.575	944.	.7295	.9329	.7553	21.89	.9449	.000155
.417	1.684	1015.	.7354	.9342	.7608	22.06	.9391	.000168
.449	1.823	1092.	.7469	.9368	.7639	22.15	.9324	.000183
.476	1.931	1157.	.7647	.9361	.7696	22.32	.9267	.000196
.501	2.034	1218.	.7541	.9382	.7706	22.59	.9210	.000209
.539	2.188	1311.	.7577	.9389	.7819	22.69	.9122	.000224
.577	2.343	1403.	.7637	.9403	.7876	22.86	.9079	.000248
.610	2.477	1484.	.7763	.9430	.7894	23.21	.8945	.000265
.650	2.636	1579.	.7802	.9439	.8031	23.32	.8841	.000287
.679	2.755	1650.	.7856	.9451	.8081	23.47	.8740	.000303
.718	2.914	1744.	.7898	.9461	.8120	23.59	.8648	.000326
.755	3.064	1835.	.7975	.9478	.8191	23.80	.8538	.000348
.783	3.177	1903.	.7992	.9482	.8207	23.85	.8451	.000365
.829	3.342	2014.	.8108	.9509	.8314	24.17	.8305	.000384
.867	3.517	2107.	.8169	.9523	.8371	24.34	.8177	.000419
.899	3.646	2184.	.8237	.9530	.8433	24.53	.8067	.000440
.941	3.816	2284.	.8285	.9551	.8478	24.67	.7916	.000468
.979	3.970	2378.	.8344	.9564	.8532	24.83	.7774	.000494
1.017	4.125	2471.	.8395	.9577	.8578	24.97	.7627	.000521

ORIGINAL PAGE IS
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TABLE A 9. (CONT.)

Y (CM)	Y/THETA	Y-PLUS	M/ME	RND/RHME	U/UE	U-PLUS	TAU/TAU-MAX	V/U
1.041	4.395	2579.	.8465	.9594	.8643	25.16	.7449	.000554
1.103	4.475	2481.	.8538	.9611	.8709	25.36	.7275	.000585
1.130	4.583	2466.	.8570	.9619	.8737	25.45	.7162	.000605
1.165	4.727	2432.	.8609	.9629	.8773	25.56	.7007	.000632
1.194	4.841	2412.	.8670	.9644	.8829	25.73	.6860	.000658
1.240	5.031	3014.	.8710	.9654	.8845	25.84	.6669	.000691
1.268	5.164	3082.	.8783	.9672	.8930	26.04	.6537	.000714
1.316	5.314	3184.	.8785	.9673	.8932	26.04	.6337	.000748
1.341	5.438	3248.	.8874	.9695	.9012	26.29	.6189	.000773
1.377	5.587	3347.	.8898	.9701	.9034	26.35	.6006	.000804
1.410	5.721	3427.	.8951	.9715	.9091	26.50	.5839	.000832
1.456	5.907	3538.	.9035	.9736	.9156	26.72	.5604	.000870
1.497	6.071	3637.	.9072	.9746	.9189	26.83	.5392	.000905
1.527	6.195	3711.	.9118	.9758	.9230	26.95	.5230	.000931
1.560	6.329	3791.	.9157	.9768	.9285	27.06	.5053	.000971
1.611	6.535	3915.	.9202	.9780	.9304	27.18	.4778	.001003
1.647	6.679	4001.	.9258	.9795	.9355	27.33	.4584	.001034
1.675	6.792	4069.	.9284	.9802	.9377	27.40	.4430	.001058
1.714	6.952	4165.	.9353	.9820	.9438	27.58	.4212	.001092
1.751	7.101	4254.	.9370	.9825	.9453	27.63	.4007	.001124
1.781	7.225	4328.	.9395	.9832	.9475	27.70	.3838	.001150
1.817	7.369	4415.	.9441	.9844	.9516	27.82	.3640	.001181
1.859	7.539	4517.	.9485	.9856	.9544	27.94	.3407	.001216
1.903	7.719	4625.	.9534	.9869	.9597	28.07	.3161	.001253
1.934	7.843	4699.	.9554	.9875	.9614	28.13	.2993	.001279
1.972	7.998	4791.	.9580	.9882	.9637	28.20	.2784	.001310
2.028	8.224	4977.	.9683	.9905	.9709	28.42	.2683	.001355
2.065	8.379	5019.	.9690	.9912	.9733	28.49	.2280	.001364
2.104	8.569	5121.	.9726	.9922	.9764	28.58	.2061	.001417
2.147	8.688	5205.	.9743	.9927	.9779	28.63	.1885	.001442
2.190	8.842	5297.	.9752	.9930	.9784	28.65	.1603	.001470
2.212	8.971	5374.	.9813	.9947	.9839	28.82	.1537	.001493
2.256	9.151	5482.	.9826	.9950	.9850	28.85	.1324	.001523
2.294	9.311	5578.	.9841	.9955	.9853	28.89	.1141	.001550
2.334	9.445	5671.	.9860	.9960	.9879	28.94	.0967	.001575
2.381	9.656	5785.	.9870	.9963	.9888	28.97	.0768	.001603
2.413	9.785	5862.	.9910	.9974	.9923	29.07	.0639	.001621
2.454	9.955	5964.	.9925	.9978	.9936	29.11	.0475	.001644
2.499	10.120	6069.	.9931	.9980	.9940	29.13	.0315	.001667
2.538	10.294	6167.	.9952	.9986	.9958	29.18	.0175	.001687
2.574	10.439	6254.	.9952	.9984	.9958	29.18	.0060	.001703
2.616	10.609	6355.	.9960	.9984	.9966	29.21	0.0000	.001711
2.645	10.809	6476.	.9965	.9990	.9970	29.22	0.0000	.001711
2.685	11.093	6645.	.9994	.9998	.9995	29.30	0.0000	.001711
2.735	11.438	6852.	.9989	.9996	.9990	29.28	0.0000	.001711
2.817	11.829	7087.	.9989	.9994	.9990	29.28	0.0000	.001711
3.011	12.210	7315.	.9996	.9998	.9997	29.30	0.0000	.001711
3.097	12.560	7525.	1.0009	1.0002	1.0008	29.34	0.0000	.001711
3.191	12.942	7753.	1.0014	1.0004	1.0012	29.35	0.0000	.001711
3.296	13.359	8003.	.9998	.9999	.9998	29.31	0.0000	.001711
3.372	13.755	8241.	.9990	.9997	.9991	29.28	0.0000	.001711
3.442	13.961	8364.	1.0006	1.0001	1.0005	29.33	0.0000	.001711
3.498	14.188	8500.	1.0011	1.0003	1.0019	29.34	0.0000	.001711
3.552	14.404	8627.	.9980	.9997	.9991	29.28	0.0000	.001711
3.589	14.554	8719.	1.0001	1.0000	1.0001	29.31	0.0000	.001711
3.641	14.765	8845.	.9997	.9999	.9998	29.30	0.0000	.001711

TABLE A 9. (CONT.)
PROFILE - JPL-4 - - - PITOT PRESSURE DATA

EDGE MACH NO. = .9672		TOTAL PRESSURE = .6605E+05 N/M ²		TOTAL TEMPERATURE = 312.77 DEG-K		H = 1.653		CF = .002057	
X = 0.00 CM		DELTA STAR = .4228 CM		THETA = .2556 CM		MINALL = .4571 CM		DELTA = 2.6964 CM	
RE-DELTA-STAR = 37790.		RE-THETA = 22840.		P = .6222		YMIN = .074 CM			
LEAST SQUARE FIT PARAMETERS		CF = .002081		YMAX = 2.538 CM					
CHISQR = .6317E-05									
Y (CM)	Y/THETA	Y-PLUS	M/E	RHO/RHOE	U/UE	U-PLUS	TAU/TAU-MAX	V/U	
0.000	0.000	0.	0.0000	.8579	0.0000	0.00	1.0000	0.000000	
.010	.039	24.	.4037	.8810	.4300	12.40	1.0000	0.000300	
.011	.044	27.	.4269	.8838	.4561	13.10	.9949	0.000000	
.026	.104	64.	.5148	.8955	.5460	15.73	.9988	0.000304	
.022	.093	125.	.5643	.9031	.5938	17.19	.9867	.000015	
.074	.293	179.	.5847	.9065	.6162	17.79	.9944	.000723	
.092	.362	222.	.6092	.9104	.6383	18.51	.9925	.000030	
.118	.442	283.	.6266	.9137	.6555	19.01	.9896	.000039	
.140	.551	338.	.6365	.9155	.6653	19.30	.9868	.000047	
.158	.620	381.	.6396	.9160	.6682	19.39	.9845	.000054	
.170	.665	408.	.6526	.9184	.6810	19.77	.9830	.000059	
.207	.809	497.	.6588	.9214	.6948	20.24	.9780	.000072	
.224	.879	539.	.6748	.9226	.7026	20.41	.9754	.000079	
.240	.938	576.	.6801	.9234	.7076	20.56	.9731	.000085	
.260	1.018	625.	.6887	.9253	.7159	20.81	.9701	.000093	
.293	1.107	679.	.6921	.9259	.7192	20.91	.9665	.000102	
.341	1.167	704.	.7011	.9277	.7279	21.17	.9648	.000104	
.370	1.336	820.	.7100	.9295	.7344	21.62	.9568	.000125	
.406	1.450	890.	.7165	.9308	.7426	21.81	.9516	.000138	
.443	1.589	975.	.7286	.9333	.7562	21.95	.9451	.000153	
.485	1.733	1064.	.7398	.9354	.7648	22.27	.9380	.000169	
.519	1.897	1164.	.7453	.9368	.7700	22.43	.9295	.000184	
.561	2.091	1247.	.7540	.9389	.7791	22.70	.923	.000204	
.590	2.195	1347.	.7585	.9396	.7825	22.80	.9130	.000224	
.624	2.310	1417.	.7632	.9407	.7869	22.94	.9062	.000234	
.654	2.444	1500.	.7725	.9427	.7937	23.20	.8980	.000254	
.678	2.548	1570.	.7774	.9437	.8000	23.33	.8907	.000271	
.727	2.692	1652.	.7848	.9454	.8071	23.56	.8818	.000289	
.744	2.844	1747.	.7901	.9466	.8121	23.69	.8712	.000310	
.802	2.990	1835.	.7921	.9470	.8139	23.75	.8609	.000331	
.833	3.139	1927.	.7987	.9485	.8201	23.93	.8498	.000353	
.877	3.258	2000.	.8052	.9500	.8261	24.12	.8406	.000371	
.915	3.432	2106.	.8136	.9519	.8338	24.35	.8266	.000398	
.948	3.581	2198.	.8178	.9529	.8378	24.47	.8141	.000421	
1.023	3.770	2283.	.8262	.9549	.8455	24.70	.8021	.000444	
1.061	3.865	2372.	.8314	.9561	.8502	24.85	.7897	.000468	
1.094	4.004	2457.	.8340	.9567	.8526	24.92	.7763	.000492	
1.134	4.153	2549.	.8408	.9583	.8589	25.11	.7621	.000518	
1.164	4.287	2631.	.8459	.9595	.8635	25.25	.7489	.000541	
	4.436	2722.	.8531	.9613	.8701	25.45	.7338	.000568	
	4.555	2796.	.8570	.9622	.8737	25.56	.7214	.000590	

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TABLE A 9. (CONT.)

Y (CM)	Y/THETA	Y-PLUS	N/MF	RHO/RHOE	U/U	U-PLUS	TAU/TAU-MAX	V/U
1.200	4.494	2881.	.8610	.9632	.8772	25.87	.7066	.000616
1.240	4.853	2979.	.8653	.9643	.8812	25.73	.6893	.000646
1.266	4.953	3039.	.8706	.9656	.8860	25.93	.6782	.000665
1.299	5.082	3119.	.8758	.9669	.8907	26.03	.6635	.000691
1.347	5.270	3235.	.8817	.9683	.8940	26.24	.6414	.000728
1.325	5.420	3326.	.8866	.9696	.8974	26.37	.6236	.000754
1.423	5.560	3418.	.8909	.9704	.9033	26.45	.6054	.000784
1.424	5.688	3491.	.8943	.9714	.9073	26.58	.5907	.000812
1.453	5.842	3585.	.8989	.9732	.9132	26.76	.5713	.000844
1.522	5.956	3655.	.9024	.9734	.9166	26.81	.5568	.000864
1.545	6.045	3710.	.9047	.9742	.9186	26.87	.5452	.000884
1.581	6.185	3766.	.9112	.9758	.9224	27.04	.5271	.000915
1.619	6.334	3827.	.9132	.9764	.9241	27.10	.5075	.000947
1.656	6.473	3873.	.9176	.9775	.9279	27.22	.4890	.000976
1.685	6.632	4070.	.9276	.9784	.9325	27.35	.4676	.001009
1.745	6.839	4192.	.9280	.9802	.9373	27.50	.4404	.001051
1.776	6.950	4265.	.9331	.9816	.9418	27.66	.4245	.001076
1.853	7.273	4463.	.9412	.9837	.9449	27.86	.3803	.001144
1.971	7.436	4564.	.9458	.9850	.9530	27.98	.3580	.001178
1.925	7.531	4622.	.9520	.9867	.9584	28.15	.3450	.001197
1.960	7.670	4707.	.9526	.9884	.9590	28.17	.3262	.001224
2.007	7.856	4820.	.9580	.9893	.9636	28.31	.3023	.001253
2.034	7.973	4893.	.9603	.9899	.9646	28.37	.2853	.001284
2.055	8.077	4957.	.9670	.9897	.9680	28.45	.2714	.001307
2.099	8.211	5040.	.9636	.9894	.9686	28.46	.2533	.001333
2.132	8.341	5119.	.9693	.9914	.9735	28.61	.2368	.001357
2.157	8.440	5180.	.9697	.9915	.9739	28.63	.2240	.001374
2.194	8.553	5252.	.9733	.9925	.9769	28.72	.2084	.001396
2.218	8.678	5324.	.9756	.9931	.9788	28.78	.1938	.001420
2.241	8.804	5404.	.9780	.9934	.9810	28.85	.1779	.001443
2.287	8.947	5491.	.9786	.9942	.9826	28.89	.1611	.001467
2.317	9.084	5564.	.9803	.9944	.9831	28.91	.1470	.001487
2.348	9.235	5662.	.9831	.9952	.9854	28.94	.1284	.001513
2.397	9.379	5756.	.9852	.9950	.9873	29.04	.1113	.001534
2.432	9.513	5839.	.9864	.9951	.9883	29.07	.0972	.001554
2.475	9.642	5922.	.9880	.9949	.9905	29.14	.0798	.001542
2.513	9.831	6036.	.9897	.9970	.9911	29.16	.0652	.001503
2.538	9.930	6104.	.9914	.9974	.9926	29.21	.0554	.001516
2.574	10.069	6180.	.9931	.9980	.9941	29.25	.0432	.001533
2.623	10.263	6299.	.9937	.9982	.9946	29.27	.0268	.001526
2.659	10.402	6346.	.9952	.9984	.9959	29.31	.0159	.001571
2.691	10.527	6441.	.9967	.9989	.9967	29.33	.0088	.001544
2.733	10.600	6541.	.9966	.9990	.9971	29.36	0.0000	.001543
2.769	10.835	6650.	.9949	.9994	.9974	29.38	0.0000	.001593
2.800	11.073	6704.	.9987	.9994	.9984	29.40	0.0000	.001543
2.893	11.381	6945.	.9990	.9997	.9982	29.41	0.0000	.001543
2.914	11.689	7174.	1.0000	1.0000	1.0000	29.43	0.0000	.001593
2.954	11.967	7333.	1.0002	1.0000	1.0001	29.44	0.0000	.001593
3.013	12.246	7527.	.9991	.9997	.9992	29.45	0.0000	.001593
3.073	12.510	7696.	.9994	.9999	.9997	29.42	0.0000	.001593
3.204	12.846	7909.	1.0000	1.0000	1.0000	29.43	0.0000	.001543
3.300	13.224	8114.	1.0004	1.0001	1.0003	29.44	0.0000	.001543
3.406	13.482	8274.	.9994	.9999	.9997	29.42	0.0000	.001593
3.526	13.794	8447.	.9998	.9999	.9998	29.43	0.0000	.001593
3.643	14.019	8604.	1.0000	1.0000	1.0000	29.43	0.0000	.001593
3.674	14.312	8821.	.9996	.9999	.9997	29.42	0.0000	.001693

TABLE A 9. (CONT.)

PROFILE - JPL-5 - - - PITOT PRESSURE DATA

EDGE MACH NO. = .9651
X = 7.62 CM
TOTAL PRESSURE = .6665E+05 N/m²
TOTAL TEMPERATURE = 312.05 DEG-K

UE = 314.15 M/SEC RE-DELTA-STAR = 30440.	DELTA STAR = .4407 CM RE-THETA = 23850.	THETA = .2645 CM MINALL = .4549 CM=2/SEC	M = 1.653					
LEAST SQUARE FIT PARAMETERS								
UTIME = 10.9025 M/SEC	CF = .002047	PI = .6722	DELTA = 2.8165 CM					
CHISQ = .7261E-05	YMAX = 2.663 CM	YMIN = .074 CM						
Y (")	V/THETA	V-PLUS	M/ME	RMT/RMGE	U/UF	I-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.8584	0.0000	0.00	1.0000	0.000000
.010	.038	24.	.3929	.8803	.6188	12.11	1.0000	0.000000
.011	.042	27.	.4000	.8871	.6356	12.60	.9999	0.000000
.012	.046	30.	.4062	.8939	.6520	13.34	.9999	0.000000
.013	.050	33.	.4125	.8974	.6681	14.11	.9994	0.000005
.014	.054	36.	.4187	.9014	.6840	14.90	.9984	0.000018
.015	.058	39.	.4250	.9054	.6999	15.69	.9967	0.000031
.016	.062	42.	.4312	.9094	.7158	16.49	.9947	0.000044
.017	.066	45.	.4375	.9134	.7317	17.27	.9922	0.000057
.018	.070	48.	.4437	.9174	.7476	18.08	.9895	0.000070
.019	.074	51.	.4500	.9213	.7635	18.89	.9867	0.000083
.020	.078	54.	.4562	.9253	.7794	19.70	.9838	0.000096
.021	.082	57.	.4625	.9293	.7953	20.51	.9809	0.000109
.022	.086	60.	.4687	.9333	.8112	21.32	.9779	0.000122
.023	.090	63.	.4750	.9372	.8271	22.13	.9749	0.000135
.024	.094	66.	.4812	.9412	.8430	22.94	.9719	0.000148
.025	.098	69.	.4875	.9451	.8589	23.75	.9689	0.000161
.026	.102	72.	.4937	.9491	.8748	24.56	.9659	0.000174
.027	.106	75.	.5000	.9530	.8907	25.37	.9629	0.000187
.028	.110	78.	.5062	.9569	.9066	26.18	.9599	0.000200
.029	.114	81.	.5125	.9609	.9225	26.99	.9569	0.000213
.030	.118	84.	.5187	.9648	.9384	27.80	.9539	0.000226
.031	.122	87.	.5250	.9688	.9543	28.61	.9509	0.000239
.032	.126	90.	.5312	.9727	.9702	29.42	.9479	0.000252
.033	.130	93.	.5375	.9767	.9861	30.23	.9449	0.000265
.034	.134	96.	.5437	.9806	.1000	31.04	.9419	0.000278
.035	.138	99.	.5500	.9846	.0000	31.85	.9389	0.000291
.036	.142	102.	.5562	.9885	.0000	32.66	.9359	0.000304
.037	.146	105.	.5625	.9925	.0000	33.47	.9329	0.000317
.038	.150	108.	.5687	.9964	.0000	34.28	.9299	0.000330
.039	.154	111.	.5750	.9999	.0000	35.09	.9269	0.000343
.040	.158	114.	.5812	.0000	.0000	35.90	.9239	0.000356
.041	.162	117.	.5875	.0000	.0000	36.71	.9209	0.000369
.042	.166	120.	.5937	.0000	.0000	37.52	.9179	0.000382
.043	.170	123.	.6000	.0000	.0000	38.33	.9149	0.000395
.044	.174	126.	.6062	.0000	.0000	39.14	.9119	0.000408
.045	.178	129.	.6125	.0000	.0000	40.95	.9089	0.000421
.046	.182	132.	.6187	.0000	.0000	41.76	.9059	0.000434
.047	.186	135.	.6250	.0000	.0000	42.57	.9029	0.000447
.048	.190	138.	.6312	.0000	.0000	43.38	.8999	0.000460
.049	.194	141.	.6375	.0000	.0000	44.19	.8969	0.000473
.050	.198	144.	.6437	.0000	.0000	45.00	.8939	0.000486
.051	.202	147.	.6500	.0000	.0000	45.81	.8909	0.000499
.052	.206	150.	.6562	.0000	.0000	46.62	.8879	0.000512
.053	.210	153.	.6625	.0000	.0000	47.43	.8849	0.000525
.054	.214	156.	.6687	.0000	.0000	48.24	.8819	0.000538
.055	.218	159.	.6750	.0000	.0000	49.05	.8789	0.000551
.056	.222	162.	.6812	.0000	.0000	49.86	.8759	0.000564
.057	.226	165.	.6875	.0000	.0000	50.67	.8729	0.000577
.058	.230	168.	.6937	.0000	.0000	51.48	.8699	0.000590
.059	.234	171.	.7000	.0000	.0000	52.29	.8669	0.000603
.060	.238	174.	.7062	.0000	.0000	53.10	.8639	0.000616
.061	.242	177.	.7125	.0000	.0000	53.91	.8609	0.000629
.062	.246	180.	.7187	.0000	.0000	54.72	.8579	0.000642
.063	.250	183.	.7250	.0000	.0000	55.53	.8549	0.000655
.064	.254	186.	.7312	.0000	.0000	56.34	.8519	0.000668
.065	.258	189.	.7375	.0000	.0000	57.15	.8489	0.000681
.066	.262	192.	.7437	.0000	.0000	57.96	.8459	0.000694
.067	.266	195.	.7500	.0000	.0000	58.77	.8429	0.000707
.068	.270	198.	.7562	.0000	.0000	59.58	.8399	0.000720
.069	.274	201.	.7625	.0000	.0000	60.39	.8369	0.000733
.070	.278	204.	.7687	.0000	.0000	61.20	.8339	0.000746
.071	.282	207.	.7750	.0000	.0000	62.01	.8309	0.000759
.072	.286	210.	.7812	.0000	.0000	62.82	.8279	0.000772
.073	.290	213.	.7875	.0000	.0000	63.63	.8249	0.000785
.074	.294	216.	.7937	.0000	.0000	64.44	.8219	0.000798
.075	.298	219.	.8000	.0000	.0000	65.25	.8189	0.000811
.076	.302	222.	.8062	.0000	.0000	66.06	.8159	0.000824
.077	.306	225.	.8125	.0000	.0000	66.87	.8129	0.000837
.078	.310	228.	.8187	.0000	.0000	67.68	.8099	0.000850
.079	.314	231.	.8250	.0000	.0000	68.49	.8069	0.000863
.080	.318	234.	.8312	.0000	.0000	69.30	.8039	0.000876
.081	.322	237.	.8375	.0000	.0000	70.11	.8009	0.000889
.082	.326	240.	.8437	.0000	.0000	70.92	.7979	0.000902
.083	.330	243.	.8500	.0000	.0000	71.73	.7949	0.000915
.084	.334	246.	.8562	.0000	.0000	72.54	.7919	0.000928
.085	.338	249.	.8625	.0000	.0000	73.35	.7889	0.000941
.086	.342	252.	.8687	.0000	.0000	74.16	.7859	0.000954
.087	.346	255.	.8750	.0000	.0000	74.97	.7829	0.000967
.088	.350	258.	.8812	.0000	.0000	75.78	.7799	0.000980
.089	.354	261.	.8875	.0000	.0000	76.59	.7769	0.000993
.090	.358	264.	.8937	.0000	.0000	77.40	.7739	0.001006
.091	.362	267.	.9000	.0000	.0000	78.21	.7709	0.001019
.092	.366	270.	.9062	.0000	.0000	79.02	.7679	0.001032
.093	.370	273.	.9125	.0000	.0000	79.83	.7649	0.001045
.094	.374	276.	.9187	.0000	.0000	80.64	.7619	0.001058
.095	.378	279.	.9250	.0000	.0000	81.45	.7589	0.001071
.096	.382	282.	.9312	.0000	.0000	82.26	.7559	0.001084
.097	.386	285.	.9375	.0000	.0000	83.07	.7529	0.001097
.098	.390	288.	.9437	.0000	.0000	83.88	.7499	0.001110
.099	.394	291.	.9500	.0000	.0000	84.69	.7469	0.001123
.100	.398	294.	.9562	.0000	.0000	85.50	.7439	0.001136
.101	.402	297.	.9625	.0000	.0000	86.31	.7409	0.001149
.102	.406	300.	.9687	.0000	.0000	87.12	.7379	0.001162
.103	.410	303.	.9750	.0000	.0000	87.93	.7349	0.001175
.104	.414	306.	.9812	.0000	.0000	88.74	.7319	0.001188
.105	.418	309.	.9875	.0000	.0000	89.55	.7289	0.001201
.106	.422	312.	.9937	.0000	.0000	90.36	.7259	0.001214
.107	.426	315.	.1000	.0000	.0000	91.17	.7229	0.001227
.108	.430	318.	.0000	.0000	.0000	91.98	.7199	0.001240
.109	.434	321.	.0000	.0000	.0000	92.79	.7169	0.001253
.110	.438	324.	.0000	.0000	.0000	93.60	.7139	0.001266
.111	.442	327.	.0000	.0000	.0000	94.41	.7109	0.001279
.112	.446	330.	.0000	.0000	.0000	95.22	.7079	0.001292
.113	.450	333.	.0000	.0000	.0000	96.03	.7049	0.001305
.114	.454	336.	.0000	.0000	.0000	96.84	.7019	0.001318
.115	.458	339.	.0000	.0000	.0000	97.65	.6989	0.001331
.116	.462	342.	.0000	.0000	.0000	98.46	.6959	0.001344
.117	.466	345.	.0000	.0000	.0000	99.27	.6929	0.001357
.118	.470	348.	.0000	.0000	.0000	100.08	.6899	0.001370
.119	.474	351.	.0000	.0000	.0000	100.89	.6869	0.001383
.120	.478	354.	.0000	.0000	.0000	101.70	.6839	0.001396
.121	.482	357.	.0000	.0000	.0000	102.51	.6809	0.001409
.122	.486	360.	.0000	.0000	.0000	103.32	.6779	0.001422
.123	.490	363.	.0000	.0000	.0000	104.13	.6749	0.001435
.124	.494	366.	.0000	.0000	.0000	104.94	.6719	0.001448
.125	.498	369.	.0000	.0000	.0000	105.75	.6689	0.001461
.126	.502	372.	.0000	.0000	.0000	106.56	.6659	0.001474
.127	.506	375.	.0000	.0000	.0000	107.37	.6629	0.001487
.128	.510	378.	.0000	.0000	.0000	108.18	.6599	0.001500
.129	.514	381.	.0000	.0000	.0000	108.99	.6569	0.001513
.130	.518	384.	.0000	.0000	.0000	109.80	.6539	0.001526
.131	.522	387.	.0000	.0000	.0000	110.61	.6509	0.001539
.132	.526	390.	.0000	.0000	.0000	111.42	.6479	0.001552
.133	.530	393.	.0000	.0000	.0000	112.23	.6449	0.001565
.134	.534	396.	.0000	.0000	.0000	113.04	.6419	0.001578
.135	.538	399.	.0000	.0000	.0000	113.85	.6389	0.001591
.136	.542	402.	.0000	.0000	.0000	114.66	.6359	0.001604
.137	.546	405.	.0000	.0000	.0000	115.47	.6329	0.001617
.138	.550	408.	.0000	.0000	.0000	116.28	.6299	0.001630
.139	.554	411.	.0000	.0000	.0000	117.09	.6269	0.001643
.140	.558	414.	.0000	.0000	.0000	117.90	.6239	0.001656
.141	.562	417.	.0000	.0000	.0000	118.71	.6209	0.001669
.142	.566	420.	.0000	.0000	.0000	119.52	.6179	

TABLE A 9. (CONT.)

Y (CM)	Y/THETA	V-F-US	M/ME	RHO/RHIE	U/HF	U-PLUS	TAU/TAU-MAX	V/U
1.139	4.274	2730.	.8452	.9595	.6628	25.32	.7512	.000532
1.147	4.379	2797.	.8512	.9610	.6683	25.48	.7407	.000531
1.150	4.541	2900.	.8545	.9623	.6732	25.63	.7241	.000530
1.253	4.703	3004.	.8648	.9643	.6807	25.89	.7070	.000510
1.278	4.798	3055.	.8660	.9646	.6817	25.89	.6966	.000624
1.316	4.941	3156.	.8730	.9653	.6881	26.09	.6809	.000655
1.352	5.075	3241.	.8743	.9671	.6911	26.18	.6658	.000650
1.389	5.213	3329.	.8811	.9683	.6954	26.31	.6498	.000707
1.424	5.456	3485.	.8887	.9702	.6922	26.52	.6210	.000755
1.467	5.618	3588.	.8882	.9701	.6918	26.51	.6012	.000788
1.523	5.723	3655.	.8954	.9719	.6983	26.71	.5803	.000809
1.548	5.808	3710.	.8973	.9724	.6989	26.76	.5775	.000827
1.568	5.947	3798.	.9042	.9761	.6916	26.95	.5600	.000855
1.620	6.080	3883.	.9049	.9743	.6947	26.96	.5429	.000852
1.642	6.161	3935.	.9090	.9754	.6973	27.08	.5324	.000849
1.673	6.280	4011.	.9139	.9766	.6927	27.21	.5168	.000824
1.713	6.424	4106.	.9183	.9778	.6927	27.33	.4973	.000854
1.741	6.571	4197.	.9221	.9788	.6920	27.43	.4783	.000844
1.775	6.661	4255.	.9260	.9798	.6955	27.54	.4662	.001003
1.808	6.785	4334.	.9270	.9800	.6962	27.57	.4495	.001029
1.850	6.943	4434.	.9334	.9817	.6920	27.74	.4282	.001051
1.875	7.074	4520.	.9366	.9824	.6949	27.83	.4101	.001149
1.904	7.187	4588.	.9394	.9836	.6975	27.91	.3957	.001105
1.940	7.281	4650.	.9415	.9839	.6982	27.96	.3871	.001131
1.980	7.467	4769.	.9480	.9854	.6949	28.14	.3568	.001169
2.000	7.877	5031.	.9575	.9882	.6832	28.40	.3012	.001252
2.133	8.005	5113.	.9606	.9890	.6849	28.49	.2843	.001277
2.167	8.134	5195.	.9648	.9902	.6806	28.59	.2673	.001302
2.203	8.267	5281.	.9635	.9898	.6885	28.56	.2498	.001327
2.226	8.467	5408.	.9694	.9914	.6736	28.72	.2240	.001364
2.292	8.601	5494.	.9718	.9921	.6756	28.78	.2071	.001399
2.338	8.772	5603.	.9766	.9934	.6708	28.91	.1858	.001419
2.341	8.934	5707.	.9793	.9942	.6821	29.04	.1682	.001447
2.410	9.044	5777.	.9802	.9944	.6830	29.01	.1532	.001465
2.442	9.163	5853.	.9819	.9949	.6844	29.05	.1394	.001485
2.460	9.304	5944.	.9862	.9961	.6881	29.17	.1233	.001508
2.486	9.511	6075.	.9849	.9963	.6887	29.19	.1011	.001519
2.541	9.640	6188.	.9848	.9968	.6904	29.24	.0828	.001544
2.622	9.860	6285.	.9923	.9974	.6934	29.33	.0680	.001555
2.683	9.992	6382.	.9936	.9982	.6945	29.37	.0517	.001565
2.694	10.176	6468.	.9943	.9984	.6951	29.39	.0419	.001621
2.741	10.248	6571.	.9946	.9981	.6943	29.34	.0283	.001640
2.774	10.412	6650.	.9950	.9984	.6957	29.43	.0184	.001653
2.815	10.566	6748.	.9951	.9984	.6958	29.41	.0075	.001669
2.842	10.740	6840.	.9973	.9987	.6977	29.47	0.0000	.001678
2.894	10.860	6936.	.9976	.9989	.6980	29.47	0.0000	.001678
2.970	11.144	7119.	.9987	.9994	.6989	29.50	0.0000	.001679
3.045	11.427	7299.	.9993	.9998	.6994	29.52	0.0000	.001679
3.117	11.604	7472.	.9998	.9996	.6998	29.50	0.0000	.001679
3.191	11.937	7674.	1.0001	1.0000	1.0001	29.54	0.0000	.001679
3.272	12.280	7843.	1.0007	1.0002	1.0006	29.55	0.0000	.001679
3.347	12.561	8023.	1.0002	1.0002	1.0002	29.54	0.0000	.001679
3.439	12.904	8247.	1.0009	1.0000	1.0000	29.54	0.0000	.001679
3.514	13.271	8477.	.9991	.9997	.9992	29.51	0.0000	.001679
3.613	13.557	8659.	.9997	.9999	.9997	29.53	0.0000	.001679
3.846	13.824	8840.	1.0008	1.0002	1.0007	29.54	0.0000	.001679

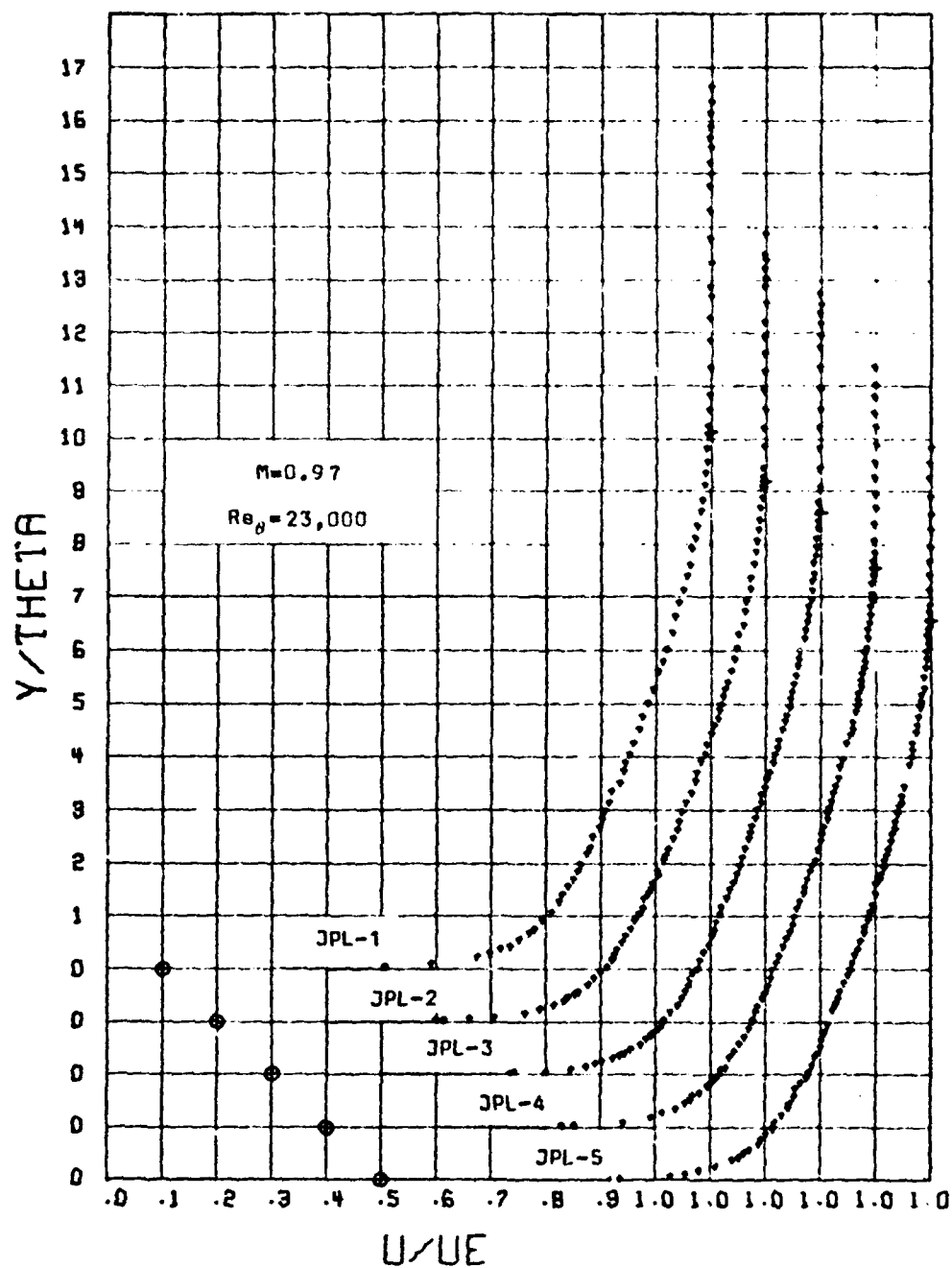


Figure A21. Mean Velocity Profiles.

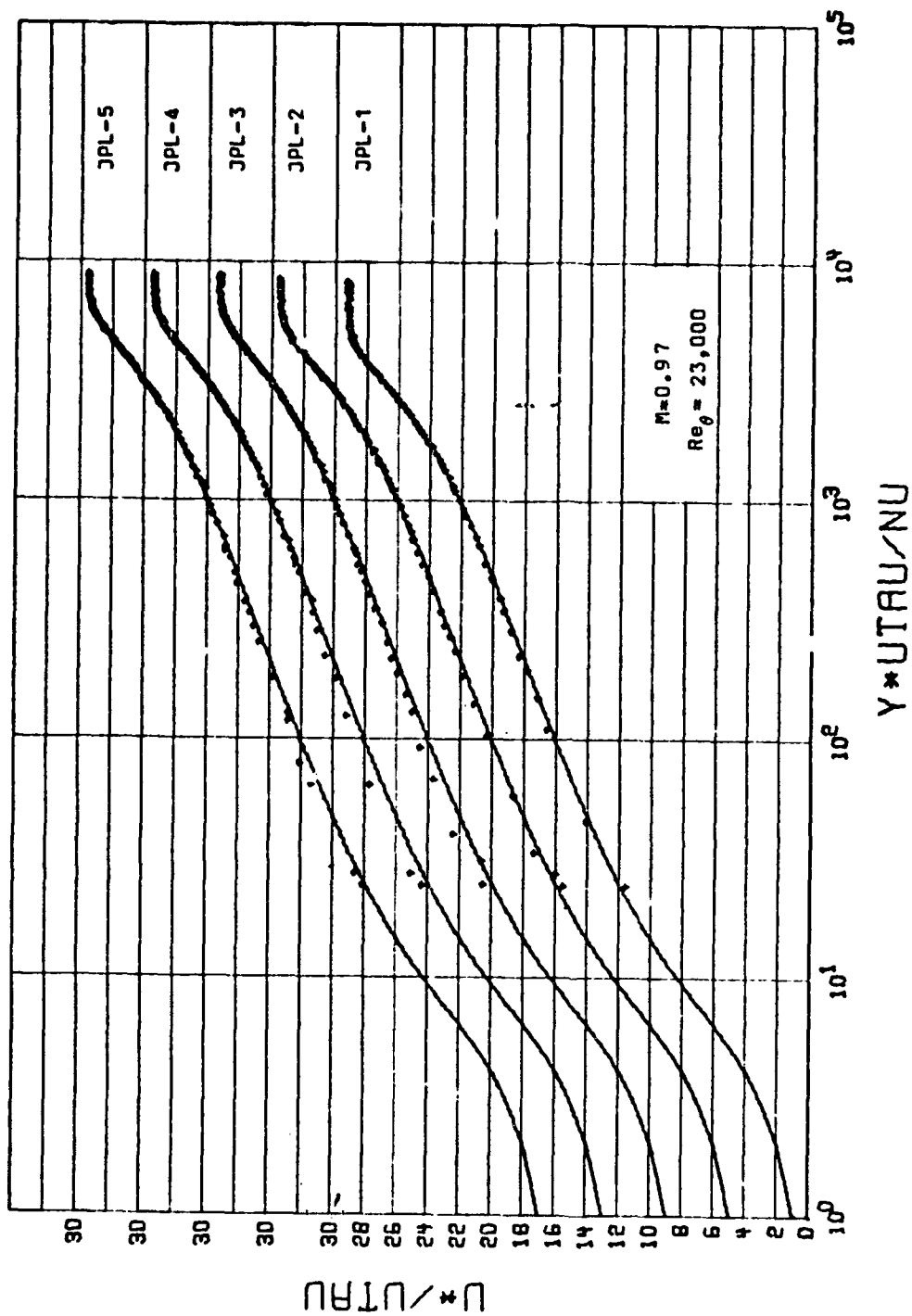


Figure A22. Van Driest Scaled Mean Velocity Profiles.

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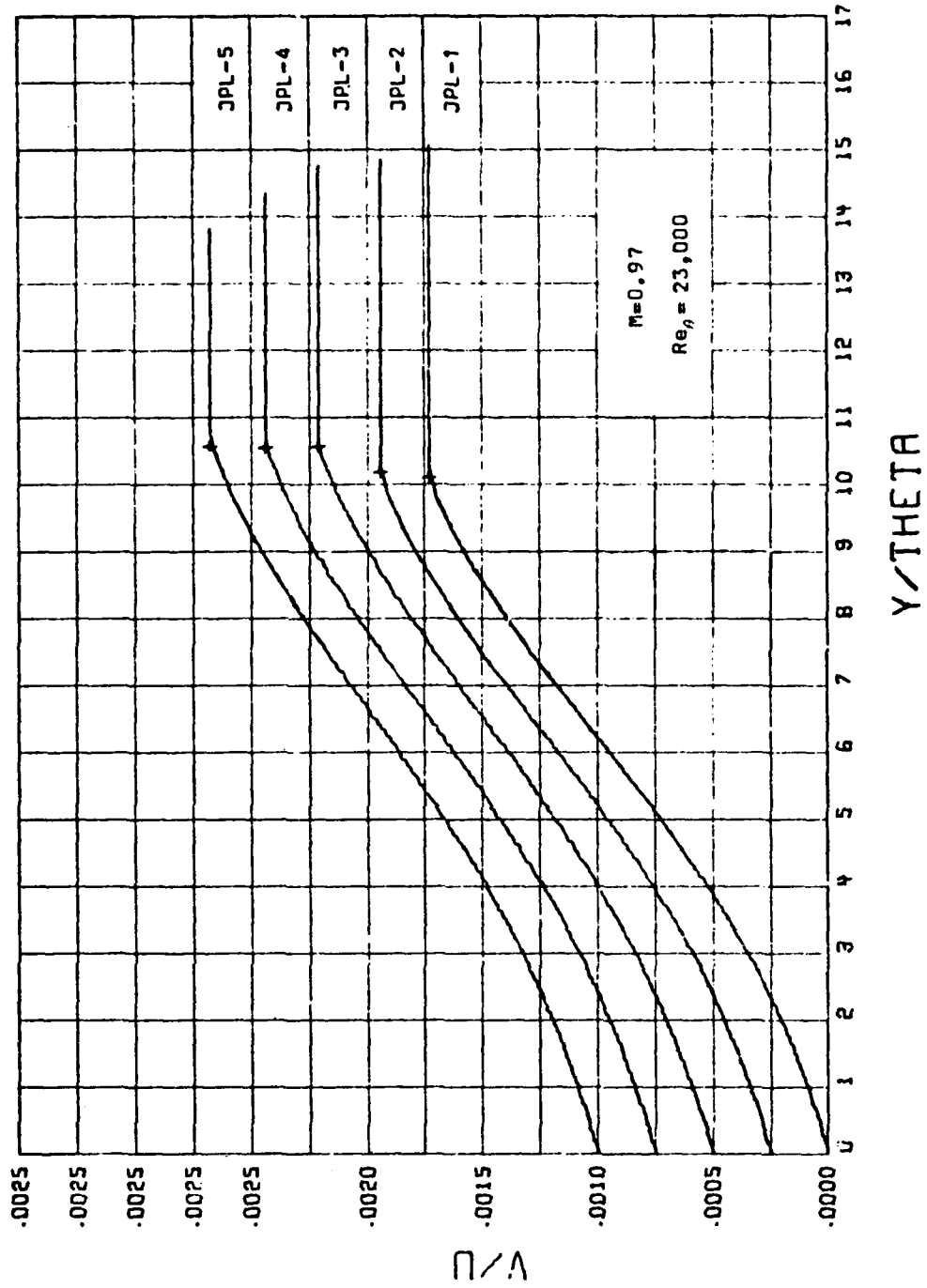


Figure A23. Normal Velocity Distribution.

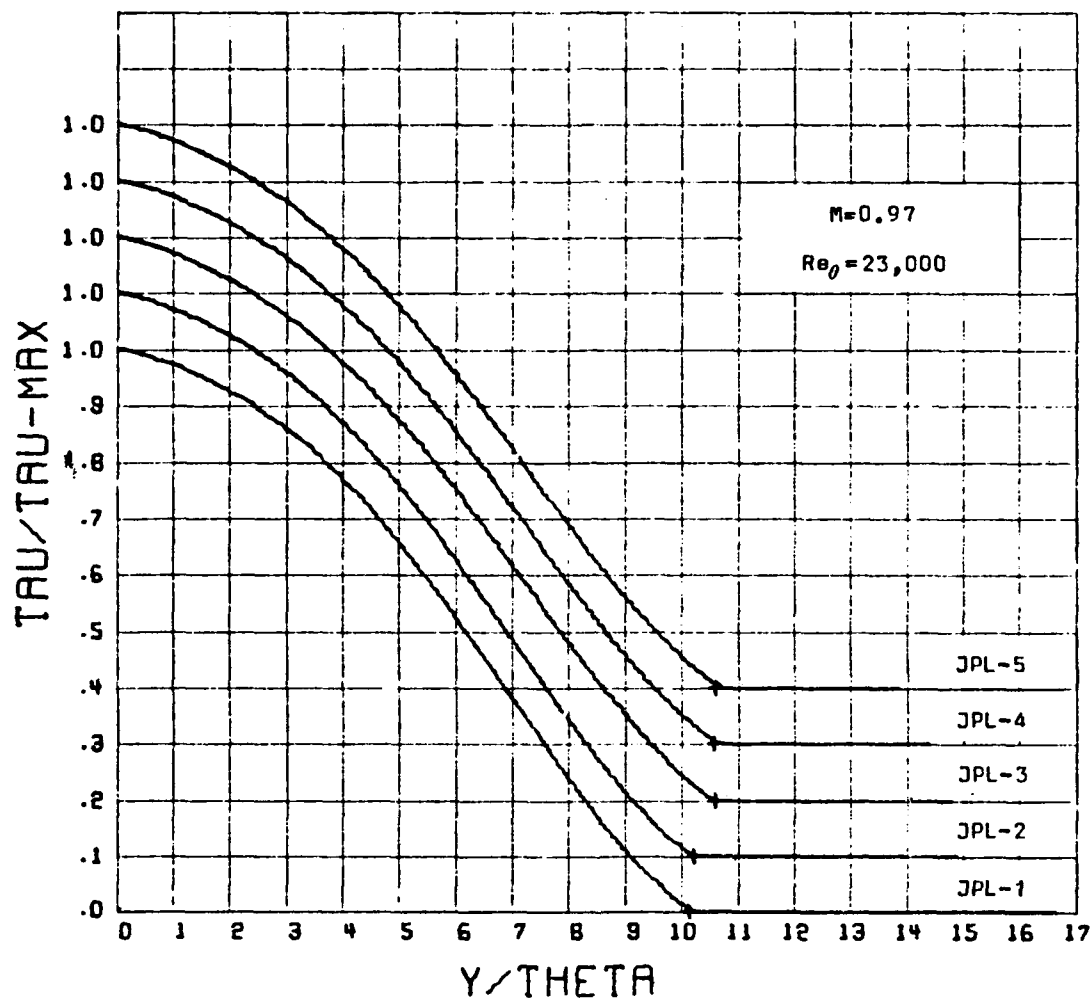


Figure A24. Shear Stress Distribution.

TABLE A10. DATA SUMMARY
PROFILE - JPL-1 - - - PITOT PRESSURE DATA

EDGE MACH NO. = .9648 TOTAL PRESSURE = .1336E+06 N/m²
X = -48.43 CM TOTAL TEMPERATURE = 327.58 DEG-K

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOF	U/UF	II-PLUS	TAU/TAU-MAX	V/VI
0.000	0.000	0.	0.0000	.8585	0.0000	0.00	1.0000	0.000000
.011	.060	50.	.4543	.8877	.4822	14.31	1.0000	0.000000
.021	.113	94.	.5297	.8982	.5589	16.62	.9989	.000004
.030	.160	133.	.5556	.9022	.5849	17.40	.9978	.000009
.052	.274	227.	.5922	.9081	.6214	18.51	.9950	.000018
.069	.367	305.	.6139	.9118	.6429	19.17	.9924	.000026
.087	.461	383.	.6337	.9153	.6623	19.76	.9896	.000035
.121	.642	533.	.6578	.9197	.6857	20.47	.9868	.000051
.143	.755	628.	.6704	.9221	.6981	20.85	.9848	.000061
.172	.909	755.	.6861	.9251	.7133	21.31	.9742	.000075
.203	1.070	889.	.6956	.9270	.7225	21.60	.9679	.000090
.231	1.217	1011.	.7049	.9292	.7334	21.93	.9619	.000104
.264	1.391	1156.	.7172	.9313	.7432	22.23	.9543	.000121
.279	1.471	1222.	.7226	.9324	.7486	22.39	.9507	.000129
.312	1.645	1367.	.7344	.9348	.7596	22.73	.9424	.000147
.337	1.779	1478.	.7404	.9360	.7652	22.91	.9358	.000161
.351	1.852	1539.	.7430	.9366	.7677	22.99	.9320	.000169
.372	1.959	1628.	.7504	.9381	.7747	23.20	.9263	.000181
.403	2.126	1767.	.7574	.9397	.7813	23.41	.9171	.000199
.430	2.267	1884.	.7663	.9416	.7897	23.66	.9080	.000216
.458	2.414	2006.	.7733	.9431	.7963	23.87	.9001	.000235
.494	2.601	2161.	.7786	.9443	.8012	24.02	.8983	.000254
.528	2.782	2312.	.7920	.9472	.8137	24.41	.8743	.000279
.568	2.996	2489.	.8003	.9491	.8215	24.65	.8611	.000304
.607	3.146	2654.	.8054	.9503	.8282	24.79	.8462	.000335
.647	3.410	2834.	.8131	.9520	.8333	25.02	.8294	.000354
.678	3.571	2967.	.8217	.9540	.8413	25.26	.8161	.000360
.703	3.705	3079.	.8230	.9543	.8424	25.30	.8047	.0003610
.728	3.834	3190.	.8304	.9567	.8497	25.53	.7929	.0003431
.749	4.006	3329.	.8368	.9574	.8551	25.70	.7776	.0003457
.789	4.159	3456.	.8416	.9587	.8596	25.83	.7631	.0003482
.819	4.313	3584.	.8466	.9590	.8641	25.94	.7481	.0003504
.844	4.447	3695.	.8533	.9615	.8702	26.17	.7346	.0003530
.881	4.641	3957.	.8607	.9633	.8769	26.38	.7145	.0003564
.916	4.828	4012.	.8648	.9643	.8807	26.49	.6944	.0003597
.944	4.975	4134.	.8713	.9659	.8845	26.68	.6781	.0003623
.970	5.109	4246.	.8773	.9674	.8900	26.85	.6629	.0003648
.996	5.250	4362.	.8826	.9687	.8948	27.00	.6467	.0003674
1.024	5.417	4501.	.8852	.9693	.8990	27.27	.6270	.0003705
1.043	5.497	4568.	.8887	.9702	.9027	27.17	.6173	.0003720
1.075	5.664	4707.	.8937	.9715	.9067	27.31	.6069	.0003752

UE = 321.78 M/SEC DELTA STAR = .3113 CM THETA = .1898 CM M = 1.639
RE-DELTA-STAR = 53010. RE-THETA = 32330. MUWALL = .2491 CM#2/SEC

LEAST SQUARE FIT PARAMETERS
UTAH = 10.9011 M/SEC CF = .001970
CHISQR = .1104E-04 YMAX = 1.892 CM

PI = .6331 DELTA = 2.0158 CM
YMIN = .030 CM

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Y (CM)	Y/TMFTA	Y-PLUS	TABLE ALD. W/NE	(CONT.) RMO/RHDE	U/UE	I-PLUS	TAU/TAU-MAX	V/U
1.115	5.872	4879.	.9003	.9732	.9126	27.49	.5711	.001792
1.137	5.992	4979.	.9042	.9741	.9151	27.60	.5558	.000816
1.167	6.144	5107.	.9092	.9754	.9206	27.75	.5361	.000446
1.195	6.293	5229.	.9145	.9768	.9253	27.89	.5169	.0001875
1.216	6.407	5324.	.9176	.9774	.9280	27.98	.5020	.0000921
1.239	6.527	5429.	.9209	.9785	.9309	28.07	.4860	.000947
1.264	6.661	5535.	.9255	.9797	.9350	28.20	.4662	.000987
1.303	6.861	5702.	.9281	.9803	.9373	28.27	.4612	.000916
1.339	7.009	5824.	.9334	.9817	.9420	28.42	.4213	.001013
1.352	7.122	5919.	.9392	.9833	.9471	28.58	.4058	.001071
1.384	7.290	6057.	.9410	.9834	.9487	28.63	.3831	.001105
1.417	7.463	.202.	.9477	.9856	.9546	28.82	.3595	.001124
1.437	7.570	6291.	.9495	.9860	.9561	28.87	.3450	.001154
1.465	7.718	6413.	.9533	.9871	.9595	28.97	.3251	.001145
1.497	7.885	6557.	.9555	.9877	.9614	29.03	.3024	.001221
1.534	8.073	6713.	.9613	.9892	.9665	29.20	.2768	.001250
1.563	8.279	6841.	.9648	.9902	.9695	29.29	.2566	.001268
1.582	8.333	6924.	.9663	.9906	.9709	29.37	.2435	.001304
1.625	8.560	7113.	.9713	.9920	.9752	29.67	.2145	.001341
1.662	8.754	7275.	.9743	.9928	.9778	29.55	.1903	.001360
1.684	8.848	7369.	.9776	.9937	.9807	29.65	.1764	.001417
1.727	9.095	7558.	.9789	.9949	.9818	29.68	.1494	.001447
1.752	9.229	7669.	.9819	.9957	.9844	29.76	.1340	.001468
1.780	9.430	7836.	.9849	.9957	.9870	29.84	.1118	.001493
1.818	9.577	7958.	.9877	.9965	.9894	29.92	.0962	.001514
1.854	9.754	8114.	.9899	.9971	.9913	29.98	.0772	.001537
1.882	9.965	8281.	.9915	.9976	.9927	30.03	.0580	.001571
1.922	10.125	8414.	.9921	.9978	.9932	30.04	.0436	.001586
1.95	10.299	8558.	.9935	.9981	.9944	30.08	.0289	.001595
1.981	10.433	8670.	.9948	.9985	.9955	30.12	.0184	.001595
2.011	10.593	8803.	.9956	.9987	.9962	30.14	.0067	.001595
2.047	10.781	8959.	.9969	.9991	.9973	30.17	.0000	.001595
2.067	10.888	9048.	.9969	.9991	.9973	30.17	.0000	.001595
2.082	11.021	9159.	.9969	.9991	.9973	30.17	.0000	.001595
2.172	11.443	9509.	.9984	.9995	.9986	30.22	.0000	.001595
2.237	11.784	9792.	.9984	.9995	.9986	30.22	.0000	.001595
2.321	12.225	10159.	.9992	.9997	.9993	30.24	.0000	.001595
2.401	12.647	10509.	1.0000	1.0000	1.0000	30.24	.0000	.001595
2.504	13.188	10959.	.0001	.9994	.9990	30.23	.0000	.001595
2.599	13.690	11376.	.0001	1.0000	1.0001	30.26	.0000	.001595
2.692	14.178	11782.	.0000	.9999	.9998	30.25	.0000	.001595
2.771	14.593	12127.	1.0000	1.0000	1.0000	30.26	.0000	.001595
2.860	15.061	12516.	.9997	.9999	.9998	30.25	.0000	.001595
2.947	15.521	12899.	.9997	1.0000	1.0002	30.27	.0000	.001595

TABLE A10. (CONT.)
PROFILE - JPL-2 - - - PITOT PRESSURE DATA

EDGE MACH NO. = .9626 TOTAL PRESSURE = 1327E+06 N/M²
X = 26.21 CM TOTAL TEMPERATURE = 329.76 DEG-K

UF = 322.24 M/SEC RE-DELTA-STAR = 59320.				DELTA STAR = .3559 CM RE-THETA = 36250.				THETA = .2175 CM M = 1.636 MUTUAL = .2531 CM#02/SEC				DELTA = 2.3454 CM			
LEAST SQUARE FIT PARAMETERS				CF = .001940 YMAX = 2.221 CM				PI = .4210 YMIN = .044 CM							
V (CM)	Y/THETA	Y-PLUS	M/ME	RM/RMDE	U/UE	I-PLUS	TAU/TAI-MAX	V/U							
0.000	0.000	0.	0.0000	.8590	0.0000	0.00	1.0000	0.000000							
.010	.044	43.	.4443	.8869	.4717	14.11	1.0000	0.000000							
.016	.075	70.	.4724	.8905	.5006	14.98	.9994	0.000002							
.025	.114	108.	.5376	.8908	.5667	17.99	.9994	0.000016							
.044	.204	189.	.5719	.9051	.6011	18.04	.9966	0.000113							
.074	.350	233.	.5957	.9090	.6264	18.76	.9994	0.00017							
.074	.344	320.	.6118	.9118	.6407	19.25	.9979	0.00024							
.077	.402	374.	.6257	.9147	.6544	19.67	.9912	0.00030							
.100	.461	429.	.6383	.9165	.6667	20.05	.9894	0.00035							
.119	.544	510.	.6492	.9184	.6774	20.38	.9867	0.00042							
.139	.642	597.	.6671	.9218	.6949	20.91	.9836	0.00050							
.157	.723	673.	.6740	.9231	.7015	21.12	.9808	0.00057							
.175	.805	749.	.6813	.9245	.7086	21.34	.9779	0.00064							
.203	.914	849.	.6896	.9261	.7166	21.58	.9721	0.00076							
.217	.997	928.	.6969	.9274	.7236	21.80	.9707	0.00082							
.244	1.109	1032.	.7054	.9295	.7318	22.05	.9663	0.00092							
.274	1.260	1173.	.7147	.9310	.7407	22.33	.9600	0.00104							
.302	1.380	1293.	.7212	.9323	.7469	22.52	.9544	0.00118							
.327	1.505	1401.	.7289	.9330	.7542	22.75	.9491	0.00129							
.353	1.622	1510.	.7363	.9355	.7613	22.97	.9437	0.00141							
.378	1.739	1614.	.7427	.9367	.7688	23.14	.9380	0.00153							
.416	1.914	1782.	.7501	.9383	.7763	23.37	.9281	0.00171							
.453	2.083	1939.	.7570	.9398	.7809	23.58	.9200	0.00189							
.477	2.194	2043.	.7617	.9412	.7872	23.77	.9138	0.00201							
.508	2.316	2173.	.7690	.9424	.7921	23.93	.9067	0.00217							
.533	2.451	2282.	.7734	.9433	.7963	24.06	.8987	0.00231							
.572	2.632	2450.	.7852	.9459	.8073	24.40	.8874	0.00252							
.604	2.778	2584.	.7873	.9464	.8093	24.66	.8778	0.00270							
.628	2.889	2689.	.7893	.9479	.8136	24.85	.8703	0.00284							
.668	3.070	2858.	.8022	.9498	.8231	24.90	.8575	0.00304							
.685	3.152	2934.	.8071	.9509	.8277	25.04	.8415	0.00314							
.731	3.362	3130.	.8116	.9519	.8319	25.17	.8154	0.00347							
.759	3.490	3249.	.8145	.9525	.8346	25.25	.8254	0.00365							
.789	3.630	3379.	.8208	.9540	.8404	25.44	.8140	0.00385							
.812	3.734	3477.	.8254	.9551	.8446	25.57	.8061	0.00400							
.843	3.875	3607.	.8313	.9564	.8500	25.74	.7930	0.00441							
.874	4.022	3744.	.8363	.9574	.8546	25.88	.7798	0.00443							
.914	4.154	3888.	.8414	.9588	.8593	26.03	.7676	0.00464							
.934	4.294	3999.	.8475	.9603	.8649	26.21	.7543	0.00484							
.954	4.456	4146.	.8524	.9614	.8693	26.35	.7489	0.00512							
.995	4.574	4260.	.8572	.9624	.8737	26.48	.7266	0.00532							

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TABLE A10. (CONT.)

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RMFE	U/Ue	U-PLUS	TAU/TAU-MAX	V/U
1.036	4.763	4434.	.6623	.9438	.8783	26.63	.7073	.00563
1.069	4.915	4575.	.8707	.9559	.8859	26.87	.6912	.00589
1.102	5.066	4716.	.8745	.9668	.8894	26.98	.6747	.00615
1.134	5.253	4890.	.8792	.9800	.8936	27.11	.6537	.00648
1.176	5.495	5031.	.8861	.9997	.9099	27.31	.6263	.00675
1.219	5.604	5216.	.8895	.9705	.9078	27.40	.6130	.00712
1.249	5.743	5346.	.8945	.9718	.9074	27.55	.5959	.00738
1.285	5.907	5499.	.9040	.9742	.9158	27.81	.5742	.00768
1.323	6.082	5682.	.9066	.9767	.9164	27.83	.5565	.00800
1.361	6.210	5781.	.9100	.9757	.9212	27.98	.5383	.00825
1.399	6.346	5944.	.9157	.9772	.9263	28.15	.5160	.00850
1.429	6.567	6115.	.9228	.9790	.9326	28.35	.4975	.00882
1.468	6.748	6281.	.9250	.9796	.9346	28.41	.4889	.00926
1.497	6.882	6406.	.9311	.9812	.9400	28.58	.4512	.00952
1.526	7.016	6531.	.9334	.9818	.9420	28.64	.4334	.00978
1.563	7.185	6689.	.9371	.9828	.9453	28.75	.4109	.01010
1.602	7.357	6857.	.9416	.9840	.9493	28.88	.3866	.01044
1.640	7.542	7020.	.9475	.9856	.9544	29.04	.3634	.01077
1.672	7.627	7156.	.9503	.9863	.9568	29.12	.3440	.01104
1.709	7.857	7314.	.9535	.9872	.9597	29.21	.3215	.01135
1.743	8.015	7461.	.9578	.9883	.9634	29.33	.3007	.01164
1.780	8.184	7618.	.9627	.9896	.9677	29.46	.2785	.01194
1.809	8.312	7737.	.9667	.9907	.9712	29.59	.2670	.01217
1.846	8.487	7900.	.9685	.9912	.9728	29.63	.2395	.01248
1.884	8.586	7995.	.9701	.9917	.9742	29.67	.2270	.01264
1.905	8.756	8131.	.9735	.9926	.9771	29.77	.2059	.01293
1.938	8.903	8292.	.9775	.9937	.9806	29.98	.1874	.01318
1.971	9.059	8433.	.9789	.9941	.9818	29.92	.1694	.01342
2.001	9.200	8564.	.9816	.9948	.9842	29.99	.1530	.01364
2.029	9.328	8683.	.9838	.9954	.9840	30.05	.1384	.01383
2.067	9.503	8866.	.9857	.9960	.9877	30.10	.1191	.01408
2.099	9.649	8982.	.9876	.9965	.9893	30.16	.1035	.01429
2.123	9.760	9085.	.9892	.9969	.9907	30.20	.0821	.01444
2.160	9.929	9243.	.9897	.9971	.9911	30.21	.0753	.01466
2.182	10.075	9379.	.9920	.9977	.9931	30.28	.0615	.01484
2.221	10.270	9504.	.9932	.9980	.9941	30.31	.0493	.01500
2.245	10.320	9607.	.9948	.9985	.9955	30.35	.0397	.01512
2.277	10.443	9721.	.9963	.9984	.9951	30.34	.0296	.01525
2.310	10.618	9884.	.9955	.9987	.9961	30.37	.0158	.01543
2.341	10.744	10020.	.9965	.9990	.9970	30.40	.0055	.01554
2.371	10.898	10165.	.9973	.9992	.9977	30.42	0.0000	.01564
2.397	11.021	10259.	.9982	.9995	.9985	30.45	0.0000	.01564
2.473	11.371	10585.	.9986	.9996	.9988	30.46	0.0000	.01564
2.537	11.663	10957.	.9995	.9998	.9994	30.49	0.0000	.01564
2.600	11.955	11128.	.9999	.9997	.9990	30.47	0.0000	.01564
2.654	12.200	11357.	.9995	.9998	.9996	30.49	0.0000	.01564
2.724	12.521	11656.	.9995	.9998	.9996	30.49	0.0000	.01564
2.745	12.854	11955.	.9993	.9998	.9996	30.49	0.0000	.01564
2.862	13.157	12248.	.9993	.9998	.9994	30.49	0.0000	.01564
2.933	13.485	12552.	1.0011	1.0003	1.0010	30.53	0.0000	.01564
2.999	13.788	12835.	.9993	.9998	.9994	30.48	0.0000	.01564
3.063	14.080	13107.	.9997	.9999	.9997	30.49	0.0000	.01564
3.124	14.360	13368.	.9992	.9997	.9993	30.48	0.0000	.01564
3.147	14.465	13465.	1.0005	1.0001	1.0004	30.51	0.0000	.01564
3.187	14.652	13639.	.9994	.9998	.9995	30.49	0.0000	.01564
3.235	14.874	13866.	1.0001	1.0000	1.0001	30.50	0.0000	.01564

TABLE A10. (CONT.)
PROFILE - JPL-3 -- - PITOT PRESSURE DATAEDGE MACH NO. = .9613
X = -7.62 CM
TOTAL PRESSURE = .1339E+06 N/M²
TOTAL TEMPERATURE = 328.06 DEG-K

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOF	U/UE	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.8594	0.0000	0.00	1.0000	0.000000
.010	.044	44.	.4647	.8897	.4927	14.70	1.0000	0.000000
.021	.094	94.	.5254	.8982	.5544	16.56	.9990	.000004
.030	.134	132.	.5568	.9029	.5859	17.52	.9982	.000007
.048	.167	166.	.5808	.9068	.6089	18.25	.9974	.000010
.060	.223	221.	.5991	.9088	.6280	18.80	.9960	.000015
.066	.280	277.	.6135	.9123	.6424	19.24	.9942	.000020
.085	.374	370.	.6295	.9151	.6581	19.72	.9918	.000027
.104	.458	453.	.6444	.9178	.6727	20.17	.9893	.000034
.110	.486	481.	.6465	.9181	.6747	20.23	.9884	.000037
.123	.541	536.	.6601	.9206	.6800	20.64	.9847	.000042
.142	.625	619.	.6628	.9211	.6904	20.72	.9839	.000049
.152	.670	664.	.6799	.9243	.7071	21.23	.9874	.000053
.172	.804	797.	.6857	.9255	.7179	21.40	.9776	.000064
.209	.921	913.	.6950	.9273	.7217	21.68	.9733	.000075
.237	1.044	1035.	.7045	.9292	.7309	21.96	.9685	.000086
.249	1.126	1173.	.7158	.9314	.7417	22.29	.9629	.000098
.264	1.264	1284.	.7255	.9328	.7441	22.49	.9582	.000109
.325	1.437	1417.	.7283	.9339	.7536	22.66	.9523	.000121
.354	1.558	1544.	.7389	.9361	.7636	22.97	.9465	.000134
.403	1.731	1716.	.7479	.9380	.7722	23.24	.9383	.000151
.415	1.824	1810.	.7578	.9393	.7778	23.41	.9337	.000160
.440	2.111	2092.	.7646	.9416	.7880	23.73	.9190	.000189
.504	2.228	2209.	.7731	.9434	.7960	23.97	.9126	.000202
.541	2.379	2358.	.7746	.9437	.7974	24.02	.9040	.000218
.543	2.480	2457.	.7841	.9458	.8082	24.29	.8982	.000230
.564	2.614	2500.	.7860	.9462	.8089	24.35	.8901	.000245
.617	2.714	2600.	.7910	.9473	.8127	24.49	.8839	.000254
.645	2.837	2612.	.7950	.9482	.8164	24.61	.8761	.000271
.671	2.955	2628.	.8002	.9494	.8212	24.76	.8684	.000285
.707	3.111	3083.	.8043	.9512	.8267	24.99	.8578	.000304
.719	3.251	3221.	.8100	.9516	.8303	25.04	.8480	.000322
.745	3.368	3337.	.8155	.9529	.8354	25.20	.8395	.000337
.800	3.519	3487.	.8208	.9541	.8403	25.36	.8282	.000357
.833	3.664	3631.	.8263	.9554	.8454	25.52	.8170	.000376
.869	3.781	3747.	.8302	.9563	.8490	25.63	.8077	.000392
.899	3.910	3874.	.8331	.9570	.8516	25.71	.7973	.000410
.949	4.044	4107.	.8408	.9588	.8547	25.93	.7860	.000429
.984	4.184	4118.	.8421	.9591	.8500	25.97	.7745	.000444
.970	4.247	4229.	.8459	.9600	.8433	26.08	.7667	.000457
.975	4.370	4310.	.8502	.9610	.8473	26.20	.7566	.000479

H = 1.613

THETA = .2273 CM
NUHALL = .2483 CM²/SECDELTA STA = .3667 CM
RE-THETA = .38500.UE = 321.05 M/SEC
RE-DELTA-STAR = .62110.

LEAST SQUARE FIT PARAMETERS

UTAH = 10.227 M/SEC
CMISOR = .2048E-04PI = .5501
VMIN = .038 CM

DELTA = 2.5515 CM

TABLE A10. (CONT.)
M/NE

Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHNE	U/U/E	U-PLUS	TAU/TAU-MAX	V/U
1.033	4.547	4505.	.8557	.9623	.8722	26.36	.7412	.000504
1.045	4.684	4646.	.8597	.9633	.8759	26.47	.7280	.000526
1.064	4.815	4771.	.8676	.9652	.8831	26.70	.7156	.000546
1.132	4.937	4937.	.8720	.9663	.8871	26.82	.6990	.000573
1.149	5.139	5092.	.8740	.9668	.8889	26.88	.6831	.000594
1.161	5.239	5192.	.8796	.9681	.8939	27.04	.6727	.000614
1.224	5.401	5352.	.8847	.9694	.8985	27.18	.6556	.000641
1.264	5.564	5513.	.8857	.9697	.8995	27.21	.6381	.000669
1.297	5.709	5657.	.8908	.9709	.9040	27.36	.6221	.000693
1.324	5.826	5773.	.8953	.9721	.9080	27.48	.6090	.000713
1.356	5.944	5912.	.8979	.9727	.9104	27.56	.5931	.000738
1.393	6.128	6077.	.9056	.9747	.9172	27.77	.5745	.000766
1.435	6.307	6243.	.9139	.9768	.9246	28.01	.5422	.000814
1.484	6.530	6471.	.9214	.9774	.9268	28.01	.5269	.000837
1.521	6.692	6631.	.9214	.9787	.9313	28.22	.5073	.000866
1.544	6.837	6775.	.9214	.9793	.9332	28.28	.4895	.000892
1.581	6.955	6891.	.9278	.9804	.9370	28.40	.4751	.000913
1.617	7.117	7052.	.9310	.9812	.9398	28.49	.4550	.000942
1.647	7.245	7179.	.9350	.9823	.9433	28.60	.4390	.000965
1.681	7.396	7329.	.9386	.9832	.9466	28.70	.4198	.000993
1.706	7.508	7439.	.9412	.9839	.9488	28.77	.4041	.001012
1.737	7.642	7572.	.9447	.9848	.9519	28.87	.3892	.001036
1.770	7.787	7716.	.9468	.9854	.9538	28.93	.3709	.001062
1.805	7.943	7871.	.9517	.9867	.9580	29.07	.3513	.001090
1.841	8.100	8026.	.9552	.9877	.9612	29.16	.3316	.001117
1.869	8.223	8148.	.9574	.9883	.9631	29.23	.3163	.001138
1.889	8.312	8236.	.9605	.9891	.9658	29.31	.3052	.001154
1.917	8.435	8358.	.9625	.9896	.9675	29.37	.2899	.001175
1.945	8.531	8452.	.9653	.9913	.9730	29.54	.2537	.001225
2.012	8.854	8773.	.9717	.9921	.9756	29.62	.2389	.001245
2.045	9.099	8917.	.9727	.9924	.9764	29.65	.2216	.001268
2.073	9.272	9039.	.9765	.9934	.9797	29.75	.2072	.001284
2.103	9.466	9166.	.9778	.9938	.9809	29.79	.1923	.001308
2.132	9.672	9294.	.9787	.9940	.9816	29.82	.1776	.001327
2.160	9.886	9416.	.9814	.9948	.9839	29.89	.1639	.001346
2.184	10.106	9532.	.9843	.9956	.9845	29.97	.1510	.001363
2.221	10.370	9681.	.9860	.9960	.9879	30.02	.1347	.001385
2.255	10.621	9831.	.9862	.9961	.9881	30.02	.1190	.001406
2.298	10.864	9975.	.9873	.9964	.9891	30.05	.1042	.001425
2.313	11.078	10085.	.9903	.9973	.9917	30.14	.0922	.001440
2.349	11.334	10240.	.9913	.9975	.9925	30.16	.0782	.001459
2.392	11.524	10429.	.9927	.9979	.9938	30.20	.0609	.001482
2.418	11.686	10530.	.9935	.9982	.9944	30.23	.0511	.001495
2.452	11.847	10686.	.9947	.9985	.9955	30.26	.0344	.001511
2.481	12.015	10814.	.9954	.9987	.9962	30.28	.0282	.001525
2.520	12.217	11008.	.9963	.9989	.9968	30.30	.0151	.001542
2.550	12.417	11115.	.9963	.9989	.9968	30.30	.0060	.001554
2.584	12.648	11264.	.9972	.9992	.9976	30.33	.0000	.001561
2.694	13.854	11766.	.9991	.9997	.9992	30.38	.0000	.001561
2.921	15.082	12984.	.9996	.9998	.9996	30.39	.0000	.001561
3.027	16.317	14198.	1.0004	1.0001	1.0003	30.41	.0000	.001561
3.378	18.859	17244.	1.0002	1.0000	1.0002	30.41	.0000	.001561
3.418	19.038	17901.	.9994	.9998	.9995	30.39	.0000	.001561
3.487	19.351	18211.	.9987	.9996	.9999	30.37	.0000	.001561

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TABLE A10. (CONT.)

PROFILE - JPL-4 - - - PITOT PRESSURE DATA									
EDGE MACH NO. = .9637 TOTAL PRESSURE = .1330E+06 N/M ² TOTAL TEMPERATURE = 330.01 DEG-K									
X = 0.00 CM THETA = .2386 CM MUWALL = .2528 CM*2/SEC H = 1.631 DELTA = 2.6280 CM									
RE-DELTA-STAR = .65100. DELTA STAR = .3894 CM PI = .5887 YMIN = .036 CM									
LEAST SQUARE FIT PARAMETERS CF = .001925 YMAX = 2.465 CM									
UTAU = 10.6043 M/SEC CHISQR = .9616E-05									
Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOE	U/U _F	I-PLUS	TAU/TAU-MAX	V/U	
0.000	0.000	0.	0.0000	.8588	0.0000	0.00	1.0000	0.000000	
.010	.042	43.	.4390	.8849	.4571	13.72	1.0000	0.000000	
.020	.085	97.	.5027	.8944	.5315	15.98		.000000	
.030	.128	157.	.5549	.9022	.5842	17.59	.9977	.000009	
.040	.171	204.	.5823	.9067	.6116	18.43	.9966	.000013	
.050	.214	309.	.6044	.9101	.6334	19.10	.9939	.000021	
.060	.257	401.	.6250	.9130	.6518	19.72	.9913	.000029	
.070	.300	488.	.6443	.9174	.6724	20.30	.9888	.000034	
.080	.343	591.	.6595	.9202	.6875	20.76	.9855	.000044	
.090	.386	700.	.6739	.9229	.7014	21.19	.9820	.000053	
.100	.429	808.	.6889	.9252	.7146	21.55	.9782	.000062	
.110	.472	911.	.6995	.9278	.7241	21.87	.9745	.000071	
.120	.515	1011.	.7072	.9294	.7334	22.19	.9713	.000079	
.130	.558	1118.	.7115	.9302	.7377	22.52	.9679	.000088	
.140	.601	1220.	.7222	.9334	.7526	22.83	.9601	.000096	
.150	.644	1316.	.7272	.9363	.7657	23.19	.9544	.000104	
.160	.687	1408.	.7306	.9380	.7727	23.51	.9479	.000111	
.170	.730	1496.	.7483	.9378	.7777	23.81	.9371	.000117	
.180	.773	1584.	.7538	.9400	.7770	24.15	.9323	.000122	
.190	.816	1672.	.7586	.9413	.7824	24.57	.9258	.000128	
.200	.859	1754.	.7645	.9437	.7899	24.89	.9189	.000134	
.210	.902	1831.	.7664	.9417	.7899	25.05	.9143	.000140	
.220	.945	1909.	.7664	.9425	.7932	25.10	.9080	.000147	
.230	.988	1982.	.7801	.9447	.8076	25.26	.9004	.000153	
.240	1.031	2051.	.7878	.9464	.8098	25.42	.8925	.000159	
.250	1.074	2124.	.7909	.9471	.8127	25.68	.8838	.000165	
.260	1.117	2194.	.7952	.9481	.8147	25.79	.8748	.000171	
.270	1.160	2264.	.8038	.9498	.8245	25.91	.8655	.000177	
.280	1.203	2334.	.8058	.9505	.8245	26.02	.8558	.000183	
.290	1.246	2404.	.8114	.9518	.8319	26.10	.8435	.000189	
.300	1.289	2474.	.8148	.9530	.8367	26.27	.8323	.000195	
.310	1.332	2544.	.8240	.9551	.8428	26.42	.8190	.000201	
.320	1.375	2614.	.8289	.9558	.8478	26.56	.8065	.000207	
.330	1.418	2684.	.8377	.9579	.8559	26.70	.7912	.000213	
.340	1.461	2754.	.8405	.9595	.8585	26.84	.7787	.000219	
.350	1.504	2824.	.8475	.9602	.8649	26.99	.7644	.000225	
.360	1.547	2894.	.8513	.9616	.8702	27.13	.7495	.000231	
.370	1.590	2964.	.8585	.9628	.8749	27.27	.7316	.000237	
.380	1.633	3034.	.8623	.9638	.8784	27.41	.7143	.000243	

TABLE A10. (CONT.)
RMO/RMDC
M/N

Y (CM)	Y/TWETA	Y-PLUS	WAVE	TABLE A10. (CONT.) RMO/RMDC M/N	U/UIE	U-PLUS	TAU/TAU-MAX	V/U
1.144	4.879	4.977	.8689	.9656	.8843	26.92	.7035	.00561
1.166	5.017	5.112	.8738	.9666	.8888	27.06	.6897	.00562
1.230	5.155	5.259	.8787	.9678	.8932	27.20	.6745	.00563
1.243	5.294	5.400	.8817	.9685	.8959	27.28	.6595	.00563
1.289	5.400	5.508	.8855	.9695	.8971	27.39	.6478	.00564
1.322	5.539	5.650	.8908	.9708	.9041	27.55	.6323	.00567
1.364	5.735	5.851	.8954	.9720	.9082	27.68	.6198	.00575
1.405	5.890	6.008	.8992	.9729	.9116	27.87	.6014	.00575
1.437	6.023	6.144	.9023	.9737	.9146	27.87	.5760	.00574
1.474	6.177	6.301	.9084	.9753	.9195	28.05	.5575	.00561
1.511	6.331	6.459	.9128	.9764	.9236	28.17	.5383	.00561
1.553	6.484	6.594	.9174	.9775	.9279	28.30	.5222	.00563
1.576	6.603	6.735	.9206	.9784	.9307	28.39	.5050	.00561
1.599	6.741	6.877	.9238	.9793	.9337	28.48	.4874	.00567
1.644	6.890	7.028	.9264	.9800	.9360	28.56	.4687	.00564
1.670	7.039	7.180	.9310	.9811	.9398	28.68	.4496	.00561
1.713	7.177	7.322	.9348	.9822	.9432	28.79	.4319	.00566
1.751	7.337	7.486	.9392	.9833	.9472	28.92	.4113	.00565
1.786	7.496	7.646	.9430	.9843	.9506	29.02	.3921	.00562
1.819	7.624	7.778	.9453	.9849	.9525	29.09	.3742	.00567
1.852	7.773	7.930	.9491	.9860	.9559	29.20	.3553	.00567
1.896	7.944	8.103	.9544	.9874	.9596	29.34	.3330	.00564
1.929	8.082	8.244	.9582	.9884	.9638	29.45	.3153	.00569
1.960	8.215	8.380	.9612	.9892	.9666	29.53	.2983	.00562
2.002	8.391	8.559	.9652	.9903	.9699	29.65	.2761	.00563
2.032	8.513	8.684	.9686	.9907	.9711	29.68	.2508	.00563
2.068	8.657	8.841	.9716	.9911	.9723	29.72	.2247	.00569
2.101	8.806	8.983	.9732	.9925	.9754	29.82	.2081	.00561
2.134	8.944	9.124	.9732	.9925	.9754	29.87	.1901	.00567
2.171	9.093	9.281	.9773	.9936	.9806	29.98	.1798	.00569
2.208	9.243	9.438	.9792	.9942	.9821	30.04	.1719	.00562
2.244	9.402	9.590	.9827	.9951	.9851	30.13	.1550	.00566
2.280	9.554	9.742	.9838	.9954	.9860	30.16	.1380	.00566
2.317	9.710	9.905	.9862	.9961	.9881	30.23	.1215	.00568
2.353	9.872	10.101	.9874	.9964	.9891	30.26	.1077	.00564
2.386	10.040	10.242	.9890	.9969	.9906	30.31	.0873	.00562
2.434	10.200	10.405	.9916	.9976	.9927	30.38	.0727	.00561
2.465	10.377	10.535	.9926	.9979	.9937	30.41	.0607	.00566
2.503	10.487	10.698	.9945	.9984	.9952	30.46	.0471	.00564
2.546	10.668	10.982	.9964	.9984	.9951	30.46	.0322	.00564
2.581	10.817	11.034	.9963	.9989	.9958	30.51	.0207	.00561
2.627	11.009	11.210	.9970	.9991	.9974	30.53	.0070	.00563
2.668	11.179	11.403	.9979	.9994	.9982	30.55	0.0000	.00565
2.705	11.333	11.561	.9984	.9995	.9984	30.57	0.0000	.00565
2.747	11.679	11.914	1.0000	1.0000	1.0000	30.61	0.0000	.00565
2.843	11.998	12.239	1.0002	1.0000	1.0002	30.62	0.0000	.00565
2.977	12.307	12.554	.9991	.9997	.9992	30.59	0.0000	.00565
3.024	12.679	12.914	1.0000	1.0000	1.0000	30.61	0.0000	.00565
3.102	12.999	13.240	1.0001	1.0000	1.0001	30.62	0.0000	.00565
3.174	13.318	13.564	1.0000	1.0000	1.0000	30.61	0.0000	.00565
3.252	13.626	13.900	1.0000	1.0002	1.0006	30.63	0.0000	.00565
3.356	14.063	14.345	.9997	.9999	.9997	30.60	0.0000	.00565
3.443	14.435	14.726	.9999	.9999	.9999	30.61	0.0000	.00565
3.543	14.595	14.889	1.0001	1.0001	1.0004	30.63	0.0000	.00565
3.602	15.095	15.398	1.0001	1.0002	1.0001	30.61	0.0000	.00565
3.691	15.467	15.778	.9999	.9999	.9999	30.61	0.0000	.00565

TABLE A10. (CONT.)
PROFILE - JPL-5 - - - PITOT PRESSURE DATA

EDGE MACH NO. = .9606			TOTAL PRESSURE = .1331E+06 N/M ²			TOTAL TEMPERATURE = 330.49 DEG-K			H = 1.627		
X = 7.62 CM			DELTA STAR = .4076 CM			THETA = .2515 CM			MINALL = .2521 CM ² /SEC		
RE-DELTA-STAR = 67630.			RE-THETA = 41550.			PI = .5925			DELTA = 2.7502 CM		
LEAST SQUARE FIT PARAMETERS			CF = .001911			YMIN = .038 CM					
UTAU = 10.7382 M/SEC			YMAX = 2.603 CM								
CHISO = .1221E-04											
Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHOE	U/UE	U-PLUS	TAU/TAU-MAX	V/U			
0.000	0.000	0.	0.0000	.8595	0.0000	0.00	1.0000	0.000000			
.010	.040	43.	.4301	.8855	.4571	13.77	1.0000	0.000000			
.011	.045	48.	.4526	.8883	.4803	14.48	.9999	0.000000			
.021	.086	91.	.9081	.8958	.5348	16.21	.9991	0.000003			
.038	.152	162.	.1541	.9017	.5772	17.44	.9977	0.000009			
.052	.207	221.	.2084	.9065	.6075	18.38	.9963	0.000013			
.069	.273	292.	.2784	.9100	.6241	19.01	.9946	0.000019			
.081	.324	346.	.3218	.9138	.6505	19.70	.9932	0.000123			
.104	.415	443.	.4342	.9160	.6766	20.08	.9906	0.000031			
.127	.506	540.	.5003	.9189	.6784	20.57	.9877	0.000038			
.144	.577	616.	.6600	.9207	.6788	20.86	.9854	0.000044			
.162	.730	778.	.8734	.9232	.7008	21.26	.9802	0.000057			
.213	.851	908.	.6918	.9264	.7196	21.82	.9758	0.000068			
.234	.942	1008.	.7016	.9287	.7241	22.11	.9724	0.000075			
.266	1.044	1136.	.7092	.9302	.7353	22.34	.9676	0.000086			
.292	1.166	1246.	.7157	.9315	.7416	22.53	.9635	0.000095			
.332	1.328	1417.	.7223	.9328	.7479	22.73	.9566	0.000110			
.365	1.460	1557.	.7324	.9349	.7575	23.03	.9507	0.000123			
.398	1.591	1698.	.7404	.9365	.7651	23.27	.9446	0.000135			
.434	1.733	1850.	.7448	.9374	.7693	23.40	.9378	0.000149			
.471	1.890	2006.	.7554	.9397	.7764	23.72	.9304	0.000164			
.509	2.032	2169.	.7578	.9402	.7815	23.78	.9224	0.000180			
.546	2.179	2326.	.7704	.9429	.7934	24.16	.9144	0.000195			
.581	2.321	2477.	.7734	.9435	.7962	24.24	.9063	0.000211			
.612	2.463	2607.	.7765	.9442	.7981	24.33	.8991	0.000226			
.644	2.580	2753.	.7868	.9454	.8087	24.64	.8907	0.000240			
.674	2.707	2888.	.7917	.9476	.8133	24.78	.8827	0.000254			
.714	2.859	3050.	.7944	.9487	.8158	24.86	.8727	0.000273			
.754	3.024	3229.	.8050	.9505	.8256	25.17	.8612	0.000293			
.791	3.158	3370.	.8068	.9510	.8274	25.23	.8518	0.000310			
.835	3.335	3559.	.8129	.9523	.8330	25.40	.8397	0.000331			
.871	3.477	3710.	.8213	.9543	.8407	25.65	.8278	0.000352			
.906	3.619	3862.	.8253	.9552	.8444	25.76	.8165	0.000371			
.937	3.741	3992.	.8314	.9568	.8501	25.94	.8065	0.000388			
.971	3.878	4138.	.8359	.9577	.8542	26.07	.7950	0.000407			
1.000	3.964	4262.	.8386	.9583	.8566	26.15	.7849	0.000424			
1.033	4.125	4403.	.8424	.9592	.8601	26.26	.7732	0.000444			
1.074	4.304	4592.	.8473	.9604	.8646	26.40	.7649	0.000470			
1.121	4.476	4776.	.8563	.9625	.8728	26.66	.7405	0.000497			
1.165	4.654	4965.	.8597	.9633	.8759	26.76	.7231	0.000525			
1.206	4.816	5139.	.8668	.9650	.8823	26.97	.7067	0.000551			

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Y (CH)	Y/TWETA	Y-PLUS	TABLE A10. (CONT.) W/ME RHO/RHDE	U/UIE	I-PLUS	TAU/TAU-MAX	V/U
1.253	5.003	5339.	.8711	.9661	27.09	.6872	.0055-2
1.297	5.181	5528.	.8751	.9671	27.20	.6681	.000611
1.339	5.348	5707.	.8840	.9693	27.46	.6497	.000639
1.383	5.520	5891.	.8888	.9705	27.60	.6303	.000660
1.419	5.667	6047.	.8936	.9717	27.74	.6134	.000685
1.466	5.855	6248.	.9003	.9736	27.93	.5913	.000724
1.511	6.032	6437.	.9052	.9744	28.07	.5701	.000759
1.550	6.190	6605.	.9092	.9754	28.18	.5509	.000784
1.602	6.397	6876.	.9142	.9769	28.32	.5250	.000825
1.635	6.529	6967.	.9173	.9777	28.41	.5087	.000849
1.671	6.671	7118.	.9223	.9790	28.55	.4907	.000874
1.724	6.844	7346.	.9286	.9806	28.73	.4635	.000914
1.771	7.072	7546.	.9321	.9815	28.83	.4393	.000948
1.808	7.219	7703.	.9372	.9829	28.98	.4198	.000975
1.854	7.491	7897.	.9412	.9839	29.09	.3944	.001004
1.879	7.503	8006.	.9433	.9845	29.15	.3732	.001027
1.917	7.655	8169.	.9468	.9854	29.25	.3433	.001054
1.960	7.827	8352.	.9540	.9874	29.45	.3409	.001085
2.006	8.010	8547.	.9549	.9874	29.47	.3172	.001117
2.048	8.177	8725.	.9603	.9890	29.63	.2953	.001147
2.082	8.314	8871.	.9637	.9899	29.72	.2781	.001170
2.128	8.496	9066.	.9665	.9907	29.80	.2550	.001201
2.166	8.648	9228.	.9714	.9911	29.84	.2360	.001224
2.202	8.790	9380.	.9751	.9931	29.94	.2185	.001250
2.239	8.937	9537.	.9784	.9940	30.04	.2003	.001274
2.280	9.105	9715.	.9806	.9944	30.13	.1807	.001300
2.308	9.216	9891.	.9818	.9949	30.20	.1677	.001317
2.345	9.363	9994.	.9845	.9954	30.23	.1508	.001330
2.382	9.510	10148.	.9863	.9961	30.31	.1344	.001360
2.418	9.652	10299.	.9879	.9964	30.35	.1190	.001380
2.468	9.855	10516.	.9899	.9971	30.40	.0976	.001409
2.515	10.042	10716.	.9922	.9978	30.46	.0790	.001432
2.555	10.200	10884.	.9927	.9979	30.52	.0640	.001451
2.603	10.392	11089.	.9946	.9984	30.53	.0466	.001473
2.654	10.595	11305.	.9962	.9989	30.59	.0295	.001494
2.692	10.747	11468.	.9964	.9987	30.63	.0175	.001510
2.734	10.914	11646.	.9970	.9991	30.61	.0051	.001524
2.788	11.051	11792.	.9970	.9991	30.65	0.0000	.001533
2.804	11.193	11946.	.9970	.9991	30.65	0.0000	.001533
2.835	11.558	12333.	.9991	.9994	30.70	0.0000	.001533
2.947	11.923	12723.	.9991	.9997	30.71	0.0000	.001533
3.070	12.258	13080.	.9991	.9997	30.71	0.0000	.001533
3.154	12.593	13437.	.9999	.9999	30.73	0.0000	.001533
3.235	12.917	13793.	.9993	.9997	30.72	0.0000	.001533
3.329	13.202	14183.	1.0001	1.0000	30.73	0.0000	.001533
3.404	13.596	14508.	1.0001	1.0000	30.74	0.0000	.001533
3.486	13.914	14849.	1.0003	1.0000	30.74	0.0000	.001533
3.581	14.215	15168.	.9996	.9999	30.73	0.0000	.001533
3.632	14.499	15471.	1.0001	1.0000	30.74	0.0000	.001533
3.698	14.762	15752.	1.0000	1.0000	30.74	0.0000	.001533

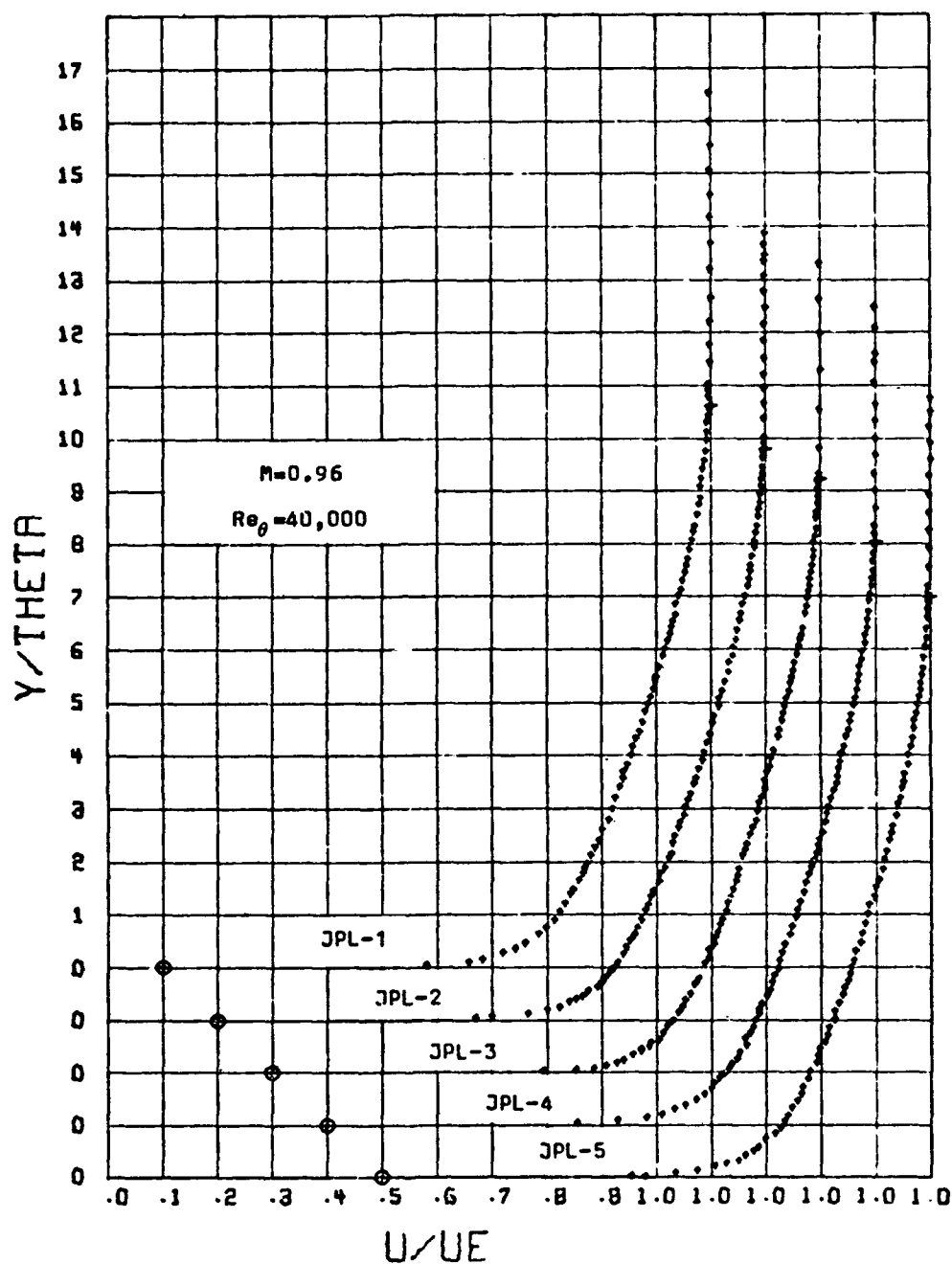


Figure A25. Mean Velocity Profiles.

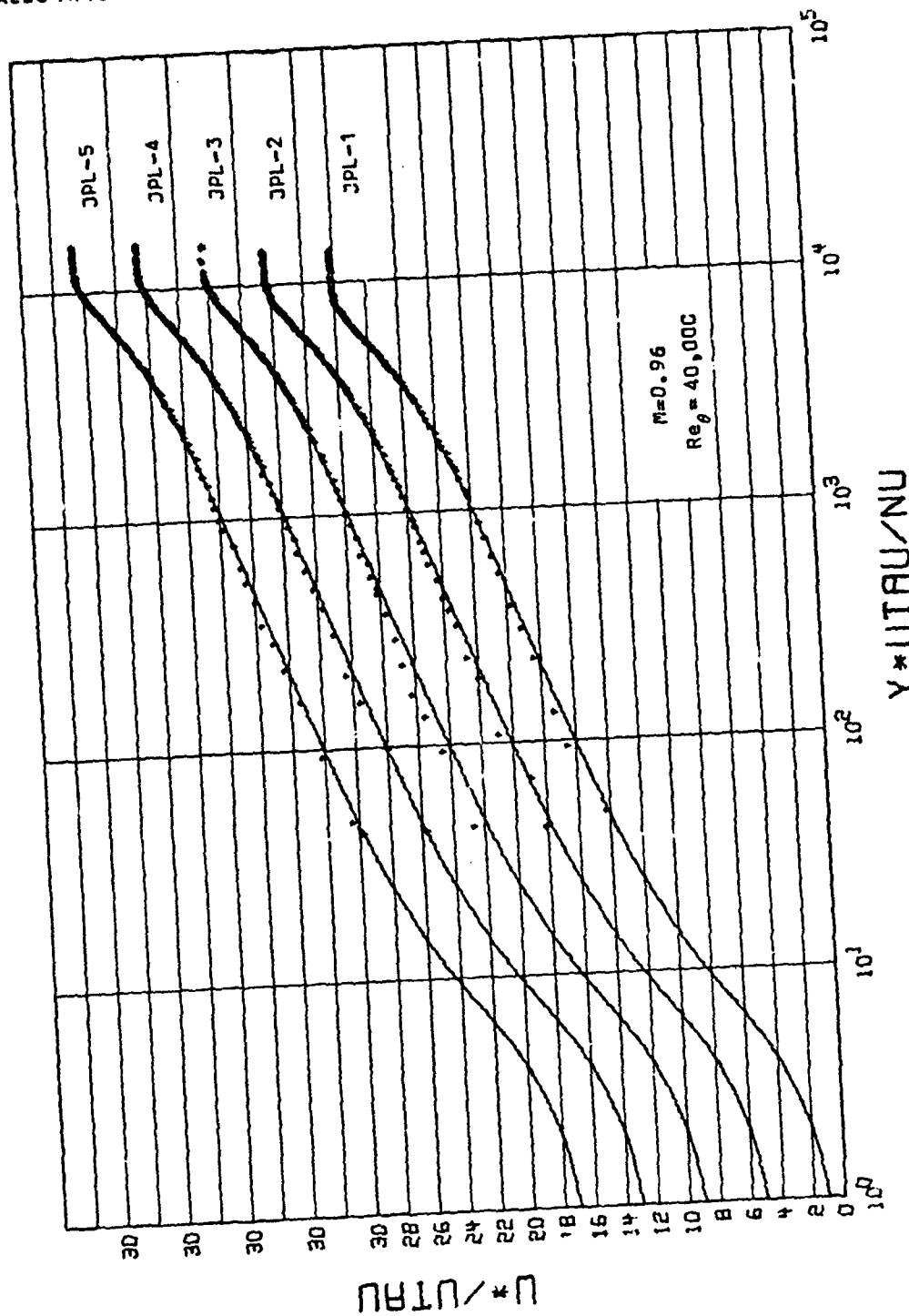
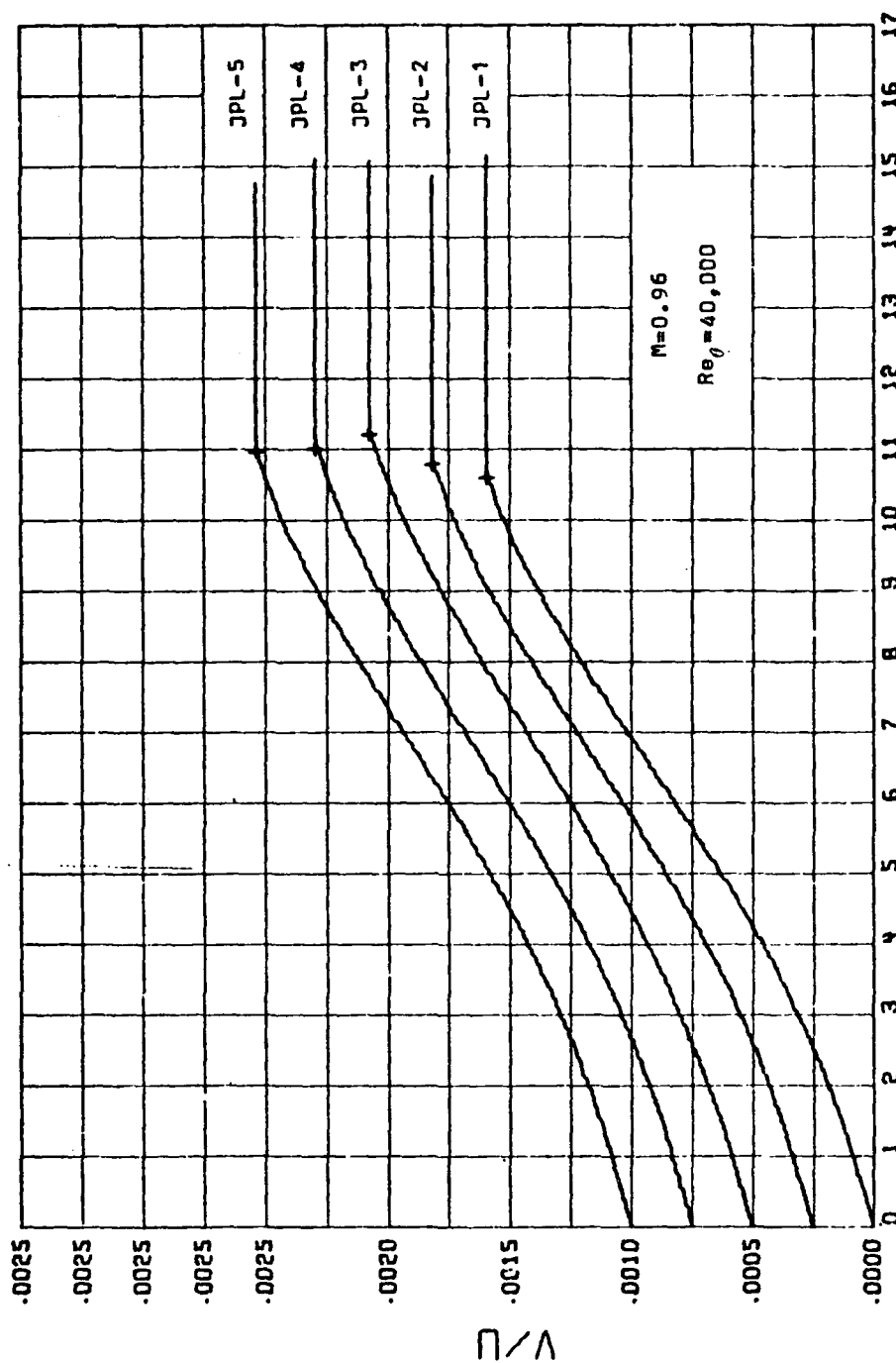


Figure A26. Van Orist Scaled Mean Velocity Profiles.



Y/THETA

Figure A27. Normal Velocity Distribution.

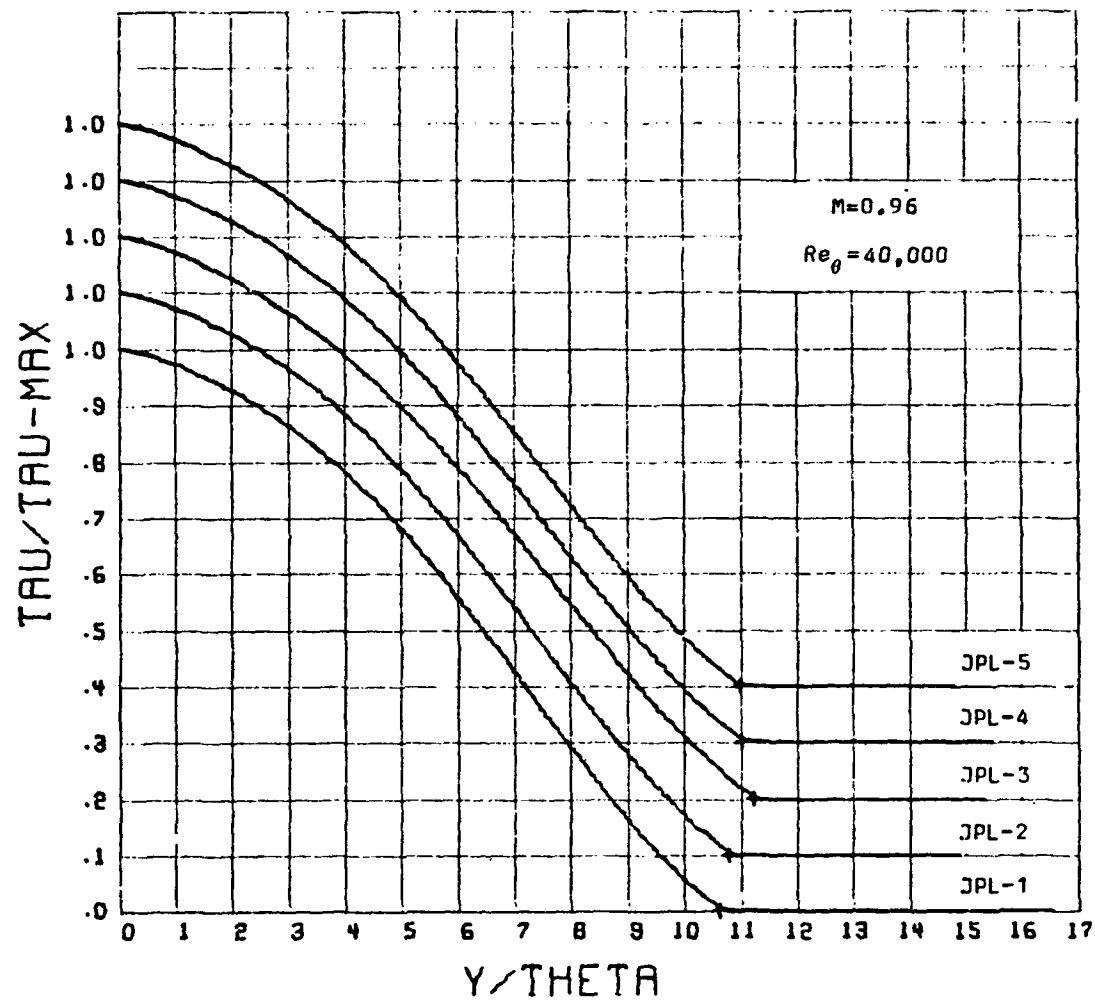


Figure A28. Shear Stress Distribution.

TABLE A11. DATA SUMMARY
PROFILE - JPL-2 - - - PITOT PRESSURE DATA

EDGE MACH NO. = 1.3141
X = 26.21 CM
TOTAL PRESSURE = .6691E+05 N/M²
TOTAL TEMPERATURE = 312.53 DEG-K

Y (CM)	Y/THETA	Y-PLUS	W/ME	RHO/RHOF	U/UE	U-PLUS	TAU/TAU-MAX	V/UV
0.000	0.000	0.	0.0000	.7658	0.0000	0.00	1.0000	0.000000
.010	.047	21.	.3998	.8033	.4460	12.44	1.0000	0.000000
.017	.083	37.	.4543	.8142	.5035	14.57	.9994	.000203
.034	.161	71.	.5052	.8254	.5560	15.37	.9980	.000011
.043	.203	90.	.5363	.8332	.5875	16.48	.9971	.000015
.066	.311	138.	.5679	.8414	.6192	17.40	.9947	.000025
.100	.473	210.	.5932	.8442	.6440	18.12	.9904	.000040
.119	.562	250.	.6096	.8529	.6601	18.59	.9879	.000049
.148	.700	311.	.6312	.8591	.6810	19.20	.9837	.000063
.171	.808	359.	.6406	.8619	.6900	19.46	.9802	.000074
.213	1.005	447.	.6571	.8669	.7057	19.92	.9733	.000094
.243	1.155	513.	.6694	.8708	.7173	20.27	.9679	.000110
.285	1.347	598.	.6840	.8754	.7311	20.67	.9602	.000131
.323	1.524	678.	.6956	.8791	.7418	20.99	.9527	.000152
.370	1.748	777.	.7071	.8829	.7525	21.31	.9477	.000178
.405	1.914	851.	.7207	.8875	.7650	21.68	.9344	.000199
.430	2.071	920.	.7232	.8883	.7673	21.75	.9268	.000218
.466	2.293	1019.	.7343	.8921	.7774	22.05	.9149	.000248
.523	2.466	1096.	.7460	.8961	.7880	22.37	.9050	.000272
.561	2.646	1176.	.7534	.8987	.7947	22.57	.8942	.000297
.593	2.794	1243.	.7612	.9015	.8017	22.78	.8848	.000319
.622	2.933	1304.	.7709	.9050	.8103	23.04	.8758	.000340
.678	3.197	1421.	.7805	.9085	.8189	23.29	.8575	.000342
.715	3.371	1498.	.7861	.9105	.8238	23.44	.8448	.000410
.750	3.538	1573.	.7950	.9138	.8316	23.48	.8319	.000438
.748	3.718	1652.	.8049	.9175	.8403	23.94	.8175	.000470
.828	3.904	1725.	.8094	.9192	.8442	24.06	.8019	.000503
.871	4.107	1825.	.8176	.9224	.8513	24.28	.7841	.000541
.901	4.251	1889.	.8231	.9245	.8561	24.42	.7710	.000559
.940	4.474	1972.	.8314	.9278	.8633	24.44	.7534	.000605
.980	4.622	2054.	.8389	.9304	.8694	24.83	.7350	.000643
1.018	4.802	2134.	.8473	.9339	.8748	25.05	.7170	.000679
1.059	4.993	2219.	.8510	.9354	.8799	25.15	.6969	.000719
1.089	5.137	2283.	.8563	.9375	.8844	25.28	.6814	.000750
1.121	5.287	2350.	.8670	.9398	.8892	25.33	.6646	.000783
1.154	5.440	2427.	.8678	.9422	.8941	25.58	.6451	.000821
1.200	5.658	2515.	.8752	.9452	.9002	25.77	.6271	.000865
1.229	5.794	2576.	.8816	.9478	.9055	26.93	.6057	.000897
1.250	5.930	2640.	.8853	.9494	.9086	26.03	.5883	.000920
1.285	6.107	2714.	.8910	.9517	.9096	26.17	.5677	.000949
1.325	6.251	2778.	.8959	.9538	.9133	26.30	.5497	.001002

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Y	Y/META	Y-PLUS	TABLE ALL. M/ME	(CONT.) RHO/RHFE	U/IE	II-PLUS	TAU/TAII-MAX	V/U
1.363	6.430	2.858	.9000	.9555	.9207	26.40	.6269	.001044
1.404	6.622	2.943	.9068	.9584	.9263	26.58	.6022	.001190
1.447	6.824	3034	.9135	.9618	.9318	26.74	.4757	.001138
1.493	7.041	3130	.9182	.9632	.9355	26.86	.4672	.001149
1.524	7.197	3190	.9256	.9666	.9415	27.05	.4265	.001224
1.562	7.364	3273	.9287	.9682	.9448	27.27	.4047	.001264
1.600	7.544	3353	.9330	.9703	.9474	27.50	.3801	.001308
1.637	7.718	3430	.9381	.9719	.9515	27.69	.3569	.001349
1.674	7.867	3497	.9435	.9743	.9558	27.93	.3369	.001394
1.709	8.059	3582	.9496	.9770	.9607	27.45	.3114	.001428
1.752	8.263	3673	.9539	.9789	.9641	27.75	.2845	.001474
1.793	8.454	3758	.9578	.9807	.9672	27.85	.2597	.001514
1.833	8.645	3843	.9643	.9836	.9723	28.01	.2351	.001558
1.879	8.861	3938	.9677	.9851	.9750	28.09	.2075	.001605
1.922	9.065	4029	.9706	.9864	.9772	28.16	.1820	.001644
1.973	9.304	4136	.9756	.9887	.9811	28.29	.1545	.001593
2.010	9.478	4213	.9794	.9904	.9841	28.38	.1346	.001724
2.067	9.652	4290	.9840	.9926	.9877	28.49	.1154	.001754
2.098	9.891	4397	.9852	.9931	.9886	28.52	.0900	.001799
2.131	10.047	4466	.9884	.9944	.9910	28.60	.0744	.001825
2.160	10.227	4546	.9896	.9951	.9920	28.63	.0571	.001853
2.200	10.376	4612	.9916	.9961	.9936	28.68	.0434	.001875
2.240	10.562	4695	.9928	.9966	.9944	28.70	.0277	.001901
2.271	10.644	4740	.9930	.9967	.9946	28.71	.0195	.001914
2.312	10.855	4825	.9938	.9971	.9952	28.73	.0051	.001938
2.334	11.005	4892	.9962	.9982	.9971	28.79	0.0000	.001944
2.364	11.149	4956	.9969	.9985	.9976	28.81	0.0000	.001944
2.433	11.472	5099	.9988	.9994	.9991	28.85	0.0000	.001946
2.513	11.949	5267	.9997	.9998	.9998	28.87	0.0000	.001946
2.594	12.738	5440	.9988	.9994	.9981	28.85	0.0000	.001944
2.672	12.598	5600	.9987	.9993	.9980	28.85	0.0000	.001944
2.759	13.011	5783	.9996	.9998	.9997	28.87	0.0000	.001944
2.854	13.460	5983	1.0005	1.0002	1.0004	28.89	0.0000	.001944
2.934	13.843	6153	.9996	.9998	.9997	28.87	0.0000	.001946
3.017	14.226	6326	1.0007	1.0003	1.0005	28.87	0.0000	.001944
3.103	14.634	6505	.9997	.9999	.9998	28.87	0.0000	.001944
3.143	15.011	6672	1.0007	1.0003	1.0005	28.90	0.0000	.001944
3.249	15.372	6811	.9994	.9997	.9995	28.90	0.0000	.001944
3.343	15.705	6981	.9992	.9996	.9994	28.86	0.0000	.001944
3.431	16.101	7157	1.0001	1.0000	1.0001	28.88	0.0000	.001944
3.513	16.520	7343	1.0001	1.0000	1.0001	28.88	0.0000	.001944

TABLE A11. (CONT.)

PROFILE - JPL-3 - - - PITOT PRESSURE DATA
 EDGE MACH NO. = 1.3215 TOTAL PRESSURE = .6651E+05 N/M²
 X = -7.62 CM TOTAL TEMPERATURE = 310.59 DEG-K

U_E = 402.38 M/SEC DELTA STAR = .4474 CM H = 1.978
 RE-DELTA-STAR = .43290. RE-THETA = 21880.
 MUWALL = .6952 CM²/SEC
 LEAST SQUARE FIT PARAMETERS CF = .001983 DELTA = 2.5047 CM
 UTAU = 14.4985 M/SEC YMAX = 2.358 CM
 CHISQR = .5243E-05
 PI = .6356
 YMIN = .095 CM

Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHOF	U/UE	U-PLUS	TAU/TAU-MAX	V/VU
0.000	0.000	0.	0.0000	.7638	0.0000	0.00	1.0000	0.000000
.010	.044	21.	.4047	.8025	.4518	12.64	1.0000	0.000000
.031	.140	64.	.5071	.8245	.5584	15.69	.9985	.000009
.053	.235	111.	.5388	.8374	.5805	16.62	.9965	.000017
.066	.291	137.	.5610	.8382	.6128	17.26	.9951	.000023
.077	.321	158.	.5759	.8458	.6960	13.87	.9947	.000025
.076	.336	158.	.5759	.8421	.6275	17.49	.9941	.000027
.093	.421	198.	.5914	.8464	.6428	18.14	.9919	.000035
.113	.499	235.	.6060	.8506	.6571	18.56	.9897	.000042
.134	.595	280.	.6180	.8540	.6687	18.90	.9870	.000052
.141	.713	336.	.6332	.8585	.6833	19.33	.9833	.000063
.154	.814	384.	.6385	.8601	.6884	19.48	.9801	.000073
.174	.887	418.	.6521	.8643	.7014	19.86	.9776	.000081
.229	1.016	479.	.6621	.8674	.7110	20.14	.9731	.000094
.275	1.218	574.	.6795	.8729	.7273	20.63	.9656	.000115
.312	1.341	651.	.6912	.8767	.7382	20.95	.9591	.000133
.330	1.504	709.	.6948	.8785	.7434	21.11	.9539	.000147
.373	1.650	778.	.7083	.8823	.7540	21.42	.9476	.000163
.415	1.835	866.	.7195	.8861	.7644	21.73	.9391	.000185
.443	1.959	924.	.7215	.8868	.7662	21.79	.9331	.000200
.470	2.122	1001.	.7315	.8902	.7753	22.06	.9249	.000220
.514	2.290	1080.	.7397	.8931	.7878	22.28	.9160	.000242
.549	2.430	1145.	.7470	.8955	.7893	22.48	.9082	.000261
.591	2.616	1234.	.7580	.8995	.7992	22.78	.8974	.000286
.631	2.790	1316.	.7636	.9015	.8042	22.93	.8867	.000311
.669	2.953	1395.	.7707	.9041	.8105	23.12	.8759	.000336
.698	3.087	1456.	.7753	.9058	.8146	23.24	.8672	.000355
.726	3.211	1515.	.7793	.9073	.8182	23.35	.8587	.000375
.763	3.374	1591.	.7885	.9106	.8263	23.59	.8470	.000400
.803	3.553	1674.	.7940	.9127	.8310	23.74	.8335	.000430
.835	3.694	1742.	.8029	.9161	.8388	23.98	.8225	.000454
.872	3.856	1819.	.8052	.9169	.8408	24.04	.8093	.000482
.908	4.014	1893.	.8132	.9200	.8478	24.25	.7961	.000510
.958	4.278	1999.	.8212	.9231	.8548	24.46	.7764	.000551
.998	4.412	2081.	.8288	.9260	.8612	24.66	.7605	.000584
1.031	4.556	2150.	.8330	.9277	.8649	24.77	.7467	.000612
1.076	4.760	2246.	.8430	.9314	.8734	25.03	.7289	.000652
1.113	4.923	2322.	.8488	.9340	.8783	25.18	.7105	.000685
1.150	5.034	2399.	.8564	.9367	.8830	25.32	.6935	.000714
1.192	5.271	2487.	.8617	.9392	.8891	25.51	.6737	.000757
1.238	5.473	2582.	.8683	.9419	.8946	25.68	.6514	.000800

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TABLE A11. (CONT.)
H/NE RMO/RHNE

Y (CM)	Y/THETA	Y-PLUS	H/NE	RMO/RHNE	U/U _E	U-PLUS	TAU/TAU-MAX	V/U
1.282	5.670	2675.	.8746	.9445	.8999	25.85	.6292	.006843
1.336	5.906	2786.	.8839	.9483	.9076	26.08	.6017	.009895
1.371	6.063	2860.	.8870	.9496	.9102	26.16	.5830	.009030
1.407	6.220	2934.	.8939	.9525	.9159	26.34	.5639	.009066
1.449	6.405	3022.	.9004	.9553	.9212	26.50	.5411	.001008
1.497	6.619	3122.	.9046	.9571	.9247	26.61	.5143	.001057
1.541	6.815	3215.	.9128	.9606	.9314	26.82	.4894	.001102
1.579	6.984	3280.	.9179	.9624	.9354	26.95	.4677	.001141
1.612	7.130	3363.	.9222	.9647	.9389	27.06	.4486	.901175
1.643	7.287	3437.	.9272	.9668	.9429	27.18	.4284	.001211
1.697	7.506	3541.	.9312	.9684	.9462	27.28	.3998	.001262
1.724	7.624	3596.	.9349	.9702	.9491	27.37	.3844	.001249
1.742	7.732	3633.	.9393	.9722	.9526	27.48	.3741	.001307
1.775	7.848	3702.	.9411	.9750	.9541	27.53	.3550	.001340
1.812	8.011	3779.	.9461	.9752	.9581	27.65	.3333	.001377
1.838	8.129	3835.	.9498	.9769	.9609	27.74	.3185	.001403
1.874	8.266	3909.	.9521	.9779	.9628	27.80	.2992	.001437
1.902	8.410	3967.	.9560	.9797	.9659	27.90	.2823	.001464
1.940	8.578	4047.	.9600	.9815	.9690	28.00	.2610	.001501
1.971	8.713	4110.	.9644	.9834	.9724	28.11	.2440	.001529
2.014	8.904	4200.	.9673	.9868	.9747	28.18	.2205	.001569
2.052	9.072	4280.	.9687	.9854	.9758	28.21	.2031	.001603
2.094	9.257	4367.	.9750	.9893	.9807	28.37	.1782	.001639
2.128	9.409	4439.	.9765	.9920	.9819	28.40	.1607	.001668
2.166	9.577	4518.	.9798	.9904	.9845	28.49	.1418	.001659
2.207	9.757	4603.	.9825	.9918	.9865	28.55	.1223	.001731
2.244	9.920	4680.	.9853	.9931	.9887	28.62	.1050	.001750
2.268	10.077	4730.	.9876	.9942	.9905	28.68	.0945	.001777
2.321	10.262	4841.	.9899	.9952	.9923	28.73	.0717	.001814
2.358	10.425	4918.	.9910	.9958	.9931	28.76	.0549	.001828
2.387	10.554	4978.	.9914	.9959	.9934	28.77	.0453	.001856
2.425	10.723	5058.	.9929	.9967	.9946	28.81	.0320	.001878
2.470	10.919	5151.	.9944	.9974	.9957	28.84	.0171	.001902
2.504	11.071	5223.	.9961	.9981	.9970	28.88	.0045	.001919
2.560	11.228	5297.	.9959	.9991	.9969	28.86	0.0000	.001930
2.593	11.454	5408.	.9980	.9990	.9984	28.93	0.0000	.001930
2.662	11.784	5559.	.9996	.9998	.9997	28.97	0.0000	.001930
2.750	12.160	5736.	.9998	.9999	.9998	28.97	0.0000	.001930
2.832	12.519	5906.	1.0008	1.0003	1.0006	29.00	0.0000	.001930
2.921	12.912	6091.	1.0000	1.0000	1.0000	28.98	0.0000	.001930
3.012	13.317	6282.	1.0004	1.0002	1.0003	28.99	0.0000	.001930
3.105	13.726	6475.	1.0004	1.0002	1.0003	28.99	0.0000	.001930
3.191	14.063	6634.	1.0002	1.0001	1.0001	28.98	0.0000	.001930
3.260	14.411	6784.	.9994	.9997	.9994	28.96	0.0000	.001930
3.346	14.838	7000.	1.0005	1.0002	1.0004	28.98	0.0000	.001930
3.431	15.169	7156.	1.0000	1.0000	1.0000	28.98	0.0000	.001930
3.524	15.579	7345.	1.0011	1.0005	1.0008	29.00	0.0000	.001930
3.604	15.933	7516.	.9998	.9999	.9994	28.97	0.0000	.001930

TABLE A11. (CONT.)
PROFILE - JPL-4 - - PITOT PRESSURE DATA

EDGE MACH NO. = 1.3197		TOTAL PRESSURE = .6665E+05 N/M ²		TOTAL TEMPERATURE = 310.59 DEG-K		M = 1.970		CF = .001867	
X = 0.00 CM		DELTA STAR = .4601 CM		THETA = .2335 CM		N/WALL = .4862 CM**2/SEC		CF = .001867	
RE-DELTA-STAR = .43170.		RE-THETA = 21900.		PI = .6090		DELTA = 2.6199 CM			
LEAST SQUARE FIT PARAMETERS		CF = .001983		YMIN = .082 CM					
UTAU = 14.4789 M/SEC		YMAX = 2.470 CM							
CHISQR = .1029E-04									
Y (CM)	Y/THETA	Y-PLUS	M/E	RHO/RHOE	U/E	U-PLUS	TAU/TAU-MAX	V/U	
0.000	0.000	0.	0.0000	.7643	0.0000	0.00	1.0000	0.000000	
.010	.043	21.	.4022	.8024	.4490	12.56	1.0000	0.000000	
.017	.076	7.	.4190	.8057	.6668	13.07	.9995	0.000003	
.035	.152	75.	.5119	.8261	.5632	15.84	.9981	.000010	
.043	.184	91.	.5362	.8321	.5878	16.55	.9974	.000013	
.049	.261	128.	.5487	.8353	.6203	16.91	.9957	.000020	
.047	.284	142.	.5685	.8405	.6201	17.48	.9951	.000023	
.042	.353	174.	.5821	.8442	.6336	17.48	.9935	.000029	
.036	.413	203.	.5936	.8474	.6449	18.21	.9919	.000034	
.111	.478	235.	.6057	.8508	.6567	18.55	.9901	.000041	
.139	.598	294.	.6231	.8558	.6736	19.05	.9886	.000052	
.167	.685	337.	.6369	.8599	.6868	19.44	.9839	.000061	
.180	.772	380.	.6451	.8624	.6944	19.67	.9811	.000059	
.205	.881	434.	.6556	.8656	.7047	19.96	.9774	.000070	
.274	.967	474.	.6627	.8678	.7114	20.16	.9746	.000049	
.241	1.033	509.	.6707	.8703	.7189	20.39	.9721	.000096	
.274	1.174	578.	.6796	.8732	.7273	20.63	.9684	.000111	
.307	1.316	648.	.6893	.8763	.7363	20.90	.9612	.000124	
.328	1.408	694.	.6922	.8772	.7391	20.98	.9575	.000136	
.343	1.512	744.	.7038	.8810	.7408	21.30	.9531	.000148	
.374	1.653	814.	.7114	.8834	.7548	21.51	.9469	.000164	
.425	1.822	897.	.722.	.8873	.7669	21.81	.9392	.000183	
.453	1.941	956.	.7249	.8981	.7692	21.88	.9334	.000198	
.472	2.066	1018.	.7303	.8900	.7741	22.03	.9272	.000213	
.518	2.219	1093.	.7388	.8929	.7819	22.26	.9193	.000232	
.546	2.338	1152.	.7432	.8945	.7858	22.39	.9129	.000248	
.574	2.453	1211.	.7503	.8970	.7892	22.57	.9042	.000264	
.604	2.588	1276.	.7573	.8995	.7985	22.76	.8987	.000281	
.637	2.730	1345.	.7621	.9012	.8078	22.89	.8901	.000301	
.673	2.882	1420.	.7681	.9033	.8081	23.05	.8807	.000323	
.713	3.056	1506.	.7751	.9059	.8144	23.24	.8693	.000348	
.746	3.195	1575.	.7802	.9077	.8188	23.38	.8596	.000370	
.786	3.355	1658.	.7896	.9112	.8271	23.63	.8478	.000396	
.829	3.551	1749.	.7973	.9141	.8339	23.83	.8341	.000426	
.874	3.676	1811.	.8039	.9166	.8397	24.01	.8245	.000444	
.854	3.830	1891.	.8074	.9180	.8427	24.10	.8114	.000474	
.912	3.932	1966.	.8103	.9193	.8468	24.19	.7991	.000500	
.945	4.133	2036.	.8183	.9221	.8521	24.39	.7871	.000524	
.979	4.280	2108.	.8237	.9247	.8568	24.53	.7742	.000552	
1.033	4.449	2192.	.8312	.9271	.8632	24.73	.7590	.000583	
1.074	4.644	2288.	.8378	.9297	.8689	24.90	.7406	.000621	

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Y (CM)	Y/THETA	Y-PLUS	TABLE ALL. W/NE	(CONT.) RHO/RHNE	U/U	U-PLUS	TAU/TAU-MAX	V/U
1.113	4.769	2350.	.8428	.9317	.8731	25.03	.7286	.000645
1.153	4.938	2433.	.8460	.9330	.8759	25.11	.7119	.000678
1.192	5.107	2516.	.8530	.9358	.8818	25.30	.6947	.000712
1.219	5.221	2572.	.8588	.9381	.8866	25.44	.6827	.000735
1.247	5.341	2631.	.8633	.9399	.8904	25.56	.6700	.000760
1.270	5.525	2722.	.8685	.9421	.8948	25.70	.6499	.000749
1.333	5.710	2913.	.8745	.9446	.8998	25.85	.6291	.000839
1.338	5.819	2967.	.8779	.9459	.9026	25.94	.6170	.000862
1.394	5.971	2942.	.8841	.9485	.9077	26.10	.5994	.000895
1.436	6.151	3030.	.8876	.9500	.9106	26.18	.5783	.000934
1.473	6.309	3108.	.8945	.9529	.9163	26.36	.5594	.000969
1.506	6.450	3178.	.8988	.9547	.9199	26.47	.5423	.001001
1.549	6.635	3269.	.9056	.9576	.9255	26.64	.5195	.001043
1.602	6.863	3381.	.9107	.9598	.9296	26.77	.4910	.001094
1.631	6.989	3443.	.9166	.9623	.9344	26.92	.4752	.001123
1.714	7.262	3617.	.9287	.9676	.9441	27.23	.4299	.001203
1.671	7.157	3526.	.9204	.9640	.9374	27.02	.4268	.001209
1.751	7.500	3695.	.9300	.9681	.9451	27.26	.4099	.001238
1.795	7.690	3789.	.9346	.9702	.9489	27.37	.3854	.001281
1.841	7.884	3885.	.9405	.9728	.9536	27.52	.3602	.001325
1.875	8.033	3957.	.9454	.9750	.9575	27.64	.3413	.001358
1.921	8.229	4054.	.9498	.9769	.9609	27.75	.3162	.001401
1.962	8.403	4140.	.9563	.9798	.9661	27.91	.2940	.001430
2.022	8.577	4225.	.9590	.9816	.9682	27.98	.2721	.001476
2.039	8.734	4303.	.9642	.9834	.9723	28.11	.2521	.001509
2.042	8.819	4394.	.9661	.9842	.9737	28.15	.2297	.001547
2.119	9.077	4475.	.9708	.9864	.9775	28.27	.2106	.001579
2.153	9.224	4544.	.9717	.9868	.9782	28.29	.1931	.001608
2.194	9.398	4630.	.9763	.9889	.9817	28.41	.1729	.001647
2.240	9.594	4727.	.9807	.9910	.9851	28.51	.1503	.001679
2.275	9.746	4802.	.9826	.9918	.9866	28.56	.1339	.001706
2.315	9.915	4885.	.9853	.9931	.9877	28.63	.1160	.001736
2.357	10.094	4973.	.9860	.9934	.9882	28.64	.0975	.001766
2.397	10.267	5048.	.9894	.9950	.9897	28.73	.0825	.001796
2.426	10.393	5120.	.9918	.9961	.9919	28.79	.0685	.001833
2.470	10.574	5212.	.9921	.9963	.9939	28.79	.0518	.001863
2.508	10.741	5292.	.9940	.9971	.9954	28.84	.0379	.001893
2.534	10.854	5348.	.9964	.9983	.9972	28.90	.0284	.001923
2.575	11.030	5434.	.9959	.9980	.9968	28.88	.0153	.001949
2.607	11.165	5501.	.9962	.9982	.9971	28.89	.0050	.001974
2.641	11.313	5573.	.9975	.9988	.9981	28.93	0.0000	.001993
2.667	11.421	5627.	.9972	.9986	.9978	28.92	0.0000	.001993
2.763	11.748	5788.	.9994	.9997	.9995	28.97	0.0000	.001993
2.795	11.971	5898.	.9999	.9999	.9999	28.98	0.0000	.001993
2.875	12.313	6064.	1.0001	1.0000	1.0001	28.99	0.0000	.001993
2.954	12.651	6233.	1.0001	1.0000	1.0011	28.99	0.0000	.001993
3.054	13.090	6444.	1.0005	1.0002	1.0004	29.00	0.0000	.001993
3.150	13.494	6648.	1.0005	1.0002	1.0004	29.00	0.0000	.001993
3.253	13.978	6884.	1.0003	1.0001	1.0002	28.99	0.0000	.001993
3.344	14.407	7098.	1.0007	1.0003	1.0005	29.00	0.0000	.001993
3.484	14.924	7353.	.9998	.9999	.9998	28.98	0.0000	.001993
3.561	15.250	7513.	.9999	.9998	.9999	28.98	0.0000	.001993
3.596	15.789	7779.	1.0001	1.0000	1.0001	28.99	0.0000	.001993

TABLE A11. (CONT.)
PROFILE - JOL-5 - - - PITOT PRESSURE DATA

EDGE MACH NO.= 1.3151			TOTAL PRESSURE=.6678E+05 N/M ²			M= 1.963			DELTA= 2.7131 CM		
X= 7.62 CM			TOTAL TEMPERATURE= 304.28 DEG-K								
UE= 394.85 M/SEC			DELTA STAR= .4777 CM			THETA= .2433 CM					
WE-DELTA-STAR= 47510.			RE-THETA= 24190.			MUMALL= .6598 CM/SEC					
LEAST SQUARE FIT PARAMETERS			CF= .001953			PI= .4205					
UTAU= 14.1076 M/SEC			YMAX= 2.571 CM			YMIN= .092 CM					
CMISOR= .0072E-04											
Y (CM)	Y/THETA	Y-PLUS	M/NE	RM/RMPE	U/UE	U-PLUS	TAU/TAU-MAX	V/U			
0.000	0.000	0.	0.0000	.7656	0.0000	0.00	1.0000	0.000000			
.010	.041	21.	.3944	.8024	.4428	12.47	1.0000	0.000000			
.020	.081	49.	.4758	.8186	.5258	16.86		0.000005			
.031	.130	6P.	.5081	.8261	.5601	15.82		0.000208			
.042	.204	100.	.5303	.8315	.5914	16.49		0.000015			
.054	.274	117.	.5473	.8358	.5987	16.97		0.000117			
.067	.347	145.	.5647	.8409	.6180	17.54		0.000024			
.082	.411	169.	.5845	.8462	.6376	18.11		0.000131			
.100	.465	204.	.6113	.8532	.6619	18.83		0.000067			
.120	.520	249.	.6267	.8599	.6781	19.10		0.000027			
.141	.571	310.	.6439	.8670	.6747	19.27		0.000005			
.164	.624	371.	.6599	.8744	.6845	19.56		0.000063			
.190	.679	401.	.6751	.8823	.6941	19.81		0.000090			
.218	.736	439.	.6904	.8907	.7007	19.08		0.000078			
.250	.794	508.	.6962	.8996	.7125	20.33		0.000040			
.293	.853	557.	.6725	.8716	.7203	20.54		0.000070			
.343	.914	631.	.6813	.8744	.7284	20.81		0.000116			
.401	.977	676.	.6870	.8762	.7339	20.97		0.000123			
.468	1.042	720.	.6988	.8764	.7431	21.24		0.000134			
.544	1.116	770.	.7058	.8823	.7514	21.49		0.000154			
.639	1.194	827.	.7131	.8844	.7581	21.69		0.000172			
.754	1.276	951.	.7176	.8843	.7623	21.82		0.000182			
.890	1.360	1056.	.7300	.8915	.7743	22.24		0.000204			
.1.048	1.447	1158.	.7391	.8936	.7819	22.41		0.000261			
.1.229	1.537	1267.	.7447	.8963	.7887	22.62		0.000295			
.1.434	1.632	1360.	.7452	.8993	.7947	22.85		0.000342			
.1.664	1.729	1462.	.7647	.9026	.8024	23.05		0.000300			
.1.919	1.827	1523.	.7708	.9048	.8074	23.27		0.000300			
.2.199	1.923	1598.	.7789	.9078	.8127	23.48		0.000300			
.2.414	2.014	1702.	.7821	.9080	.8150	23.58		0.000300			
.2.614	2.113	1770.	.7870	.9111	.8164	23.73		0.000300			
.2.814	2.213	1847.	.7944	.9142	.8190	23.84		0.000300			
.3.014	2.314	1923.	.8021	.9172	.8200	24.02		0.000300			
.3.214	2.414	2014.	.8036	.9192	.8244	24.31		0.000300			
.3.414	2.514	2100.	.8113	.9216	.8294	24.61		0.000300			
.3.614	2.614	2180.	.8163	.9246	.8334	24.64		0.000300			
.3.814	2.713	2262.	.8207	.9264	.8354	24.63		0.000300			
.4.014	2.814	2347.	.8237	.9264	.8369	24.62		0.000300			
.4.214	2.914	2427.	.8261	.9264	.8379	24.61		0.000300			
.4.414	3.014	2500.	.8274	.9264	.8384	24.61		0.000300			
.4.614	3.114	2560.	.8274	.9264	.8384	24.61		0.000300			
.4.814	3.214	2614.	.8274	.9264	.8384	24.61		0.000300			
.5.014	3.314	2660.	.8274	.9264	.8384	24.61		0.000300			
.5.214	3.414	2694.	.8274	.9264	.8384	24.61		0.000300			

Y (CM)	Y/TMETH	V-PLUS	TABLE A11. W/WE	(CONT.) RHO/RHOE	U/UE	I1-PLUS	TAU/TAU-MAX	V/U
1.262	5.185	2716.	.600	.9389	.8875	25.64	.6807	.002730
1.372	5.431	2844.	.654	.9411	.8921	25.78	.6540	.000781
1.371	5.637	2951.	.8724	.9440	.8979	25.96	.6311	.000824
1.417	5.825	3049.	.8796	.9460	.9039	26.15	.6004	.000865
1.456	5.996	3134.	.8846	.9479	.9079	26.27	.5903	.000700
1.517	6.237	3245.	.8936	.9528	.9155	26.51	.5601	.000956
1.545	6.435	3369.	.8988	.9549	.9197	26.64	.5357	.001300
1.607	6.808	3450.	.9074	.9569	.9244	26.86	.5151	.001039
1.677	6.895	3510.	.9135	.9584	.9277	27.02	.4776	.001104
1.720	7.072	3702.	.9188	.9614	.9300	27.15	.4547	.001144
1.771	7.281	3812.	.9254	.9644	.9327	27.32	.4276	.001192
1.809	7.438	3894.	.9308	.9677	.9347	27.46	.4072	.001227
1.845	7.594	3970.	.9337	.9707	.9361	27.53	.3840	.001260
1.879	7.725	4044.	.9368	.9731	.9375	27.61	.3696	.001297
1.937	7.944	4159.	.9433	.9741	.9387	27.77	.3409	.001341
1.937	8.142	4263.	.9475	.9760	.9391	27.88	.3145	.001366
2.014	8.278	4334.	.9528	.9784	.9433	28.01	.2974	.001415
2.041	8.471	4435.	.9570	.9802	.9466	28.11	.2726	.001456
2.107	8.433	4520.	.9611	.9821	.9498	28.21	.2520	.001490
2.139	8.795	4604.	.9652	.9839	.9530	28.32	.2317	.001524
2.176	8.944	4683.	.9687	.985	.9558	28.40	.2130	.001555
2.209	9.082	4755.	.9704	.9864	.9573	28.45	.1964	.001582
2.244	9.223	4828.	.9752	.9885	.9609	28.57	.1795	.001610
2.269	9.411	4927.	.9754	.9895	.9610	28.57	.1575	.001644
2.307	9.484	4945.	.9792	.9903	.9639	28.66	.1492	.001600
2.332	9.589	5020.	.9806	.9910	.9650	28.70	.1374	.001679
2.363	9.713	5085.	.9818	.9915	.9660	28.73	.1235	.001701
2.377	9.854	5159.	.9858	.9934	.9681	28.83	.1193	.001726
2.452	10.079	5277.	.9868	.9938	.9698	28.85	.0850	.001763
2.431	10.199	5339.	.9887	.9947	.9693	28.90	.0731	.001782
2.520	10.361	5424.	.9906	.9954	.9698	28.94	.0537	.001927
2.571	10.449	5533.	.9918	.9961	.9697	28.97	.0399	.001837
2.607	10.714	5610.	.9937	.9970	.9691	29.02	.0285	.001857
2.637	10.820	5665.	.9956	.9975	.9695	29.04	.0181	.001870
2.670	10.974	5747.	.9954	.9978	.9665	29.06	.0061	.001869
2.716	11.144	5845.	.9967	.9984	.9675	29.09	0.0000	.001899
2.764	11.363	5949.	.9971	.9984	.9678	29.10	0.0000	.001899
2.840	11.674	6113.	.9980	.9995	.9692	29.15	0.0000	.001899
2.937	12.073	6370.	.9984	.9993	.9698	29.14	0.0000	.001899
3.039	12.407	6539.	.9992	.9994	.9694	29.16	0.0000	.001899
3.135	12.687	6747.	.9996	.9998	.9697	29.16	0.0000	.001899
3.243	13.351	6990.	.9996	.9995	.9693	29.15	0.0000	.001899
3.364	13.924	7219.	.9990	.9995	.9693	29.15	0.0000	.001899
3.443	14.223	7444.	.9998	.9999	.9698	29.17	0.0000	.001899
3.567	14.641	7665.	.9998	.9999	.9698	29.17	0.0000	.001899
3.681	14.893	7750.	1.0002	1.0001	1.0001	29.18	0.0000	.001899
3.834	15.643	7924.	1.0002	1.0001	1.0003	29.18	0.0000	.001899
3.971	15.993	7900.	.9996	.9998	.9997	29.17	0.0000	.001899

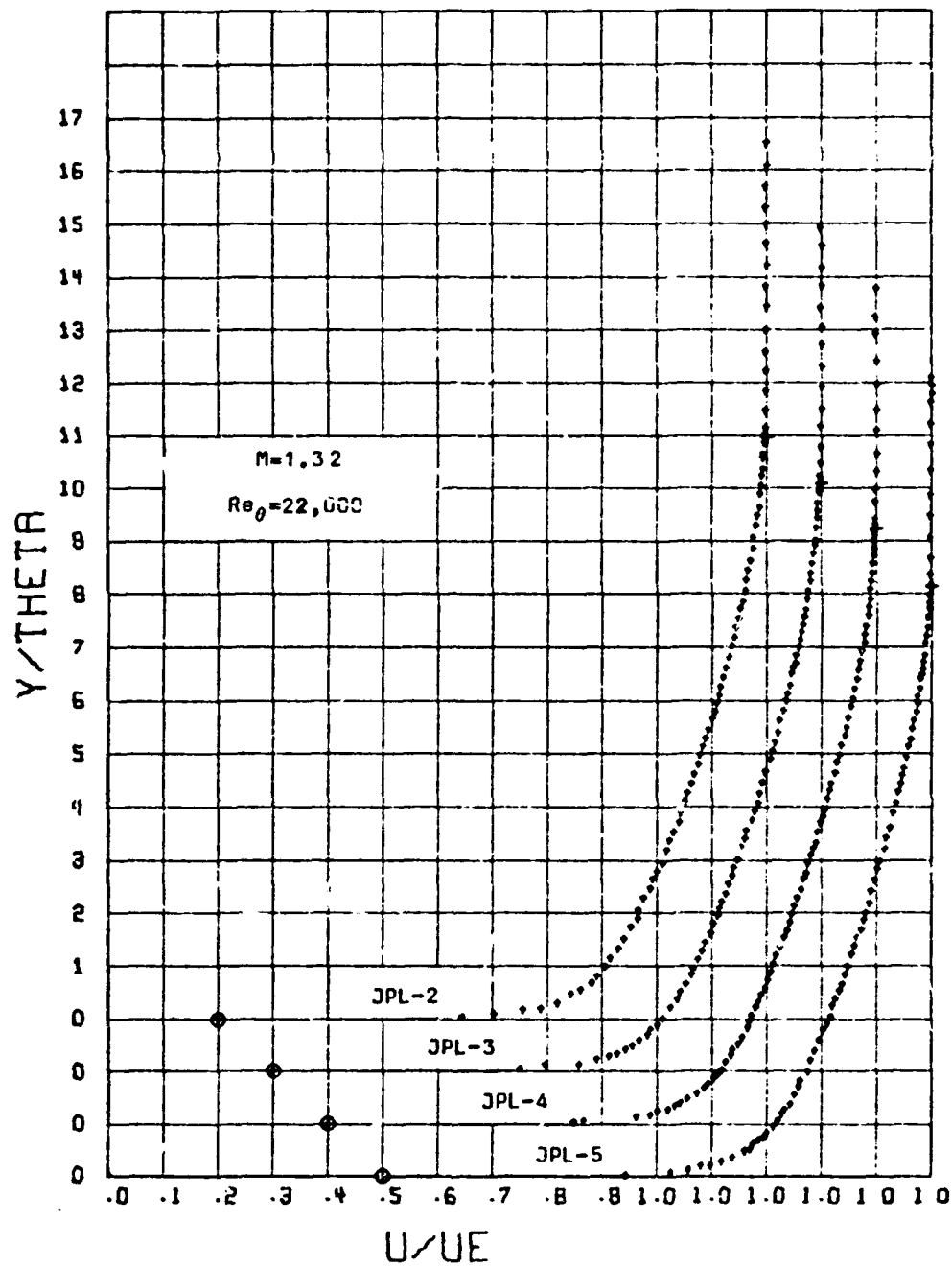
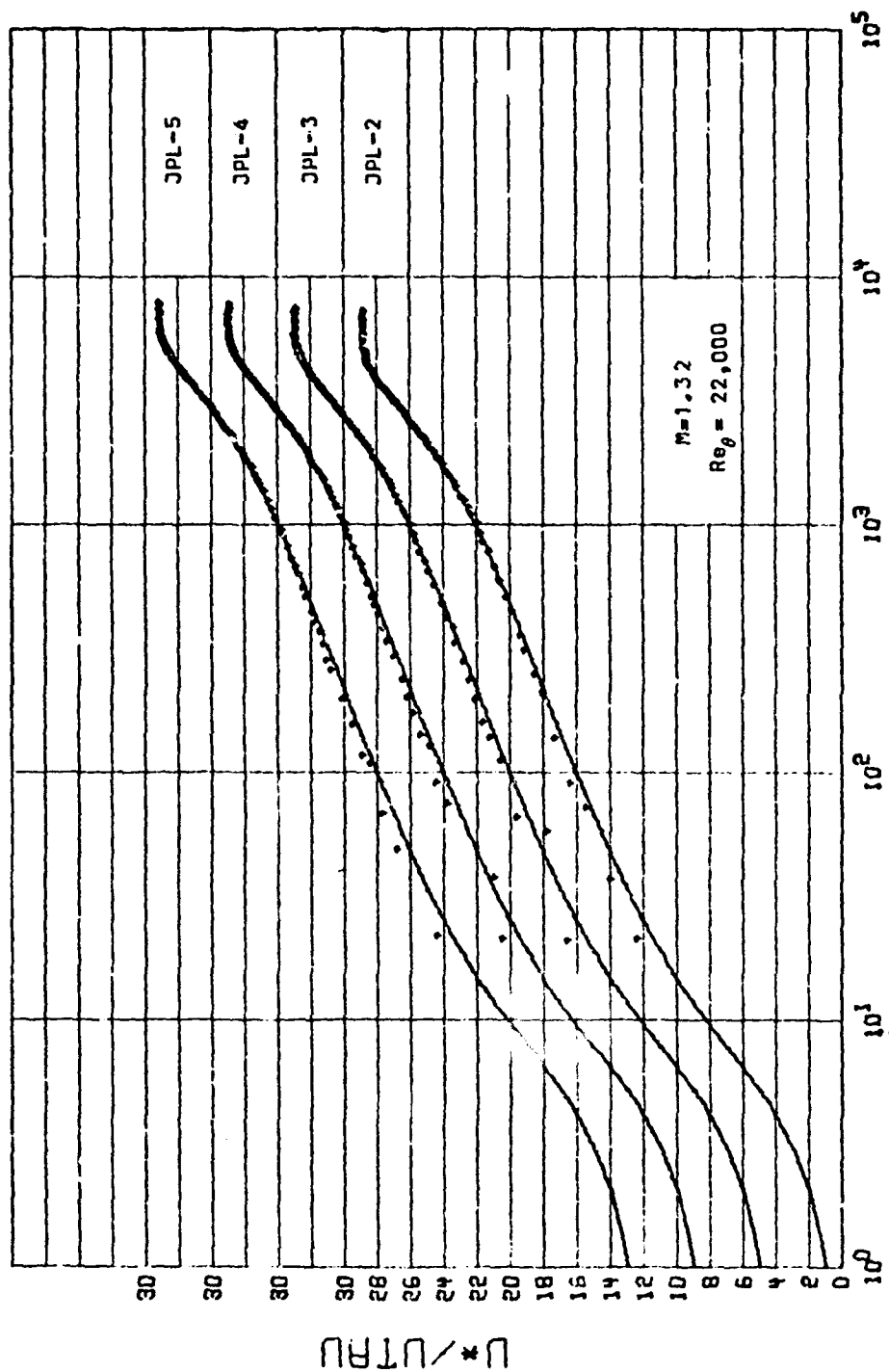


Figure A29. Mean Velocity Profiles.

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Figure A30. Van Driest Scaled Mean Velocity Profiles.

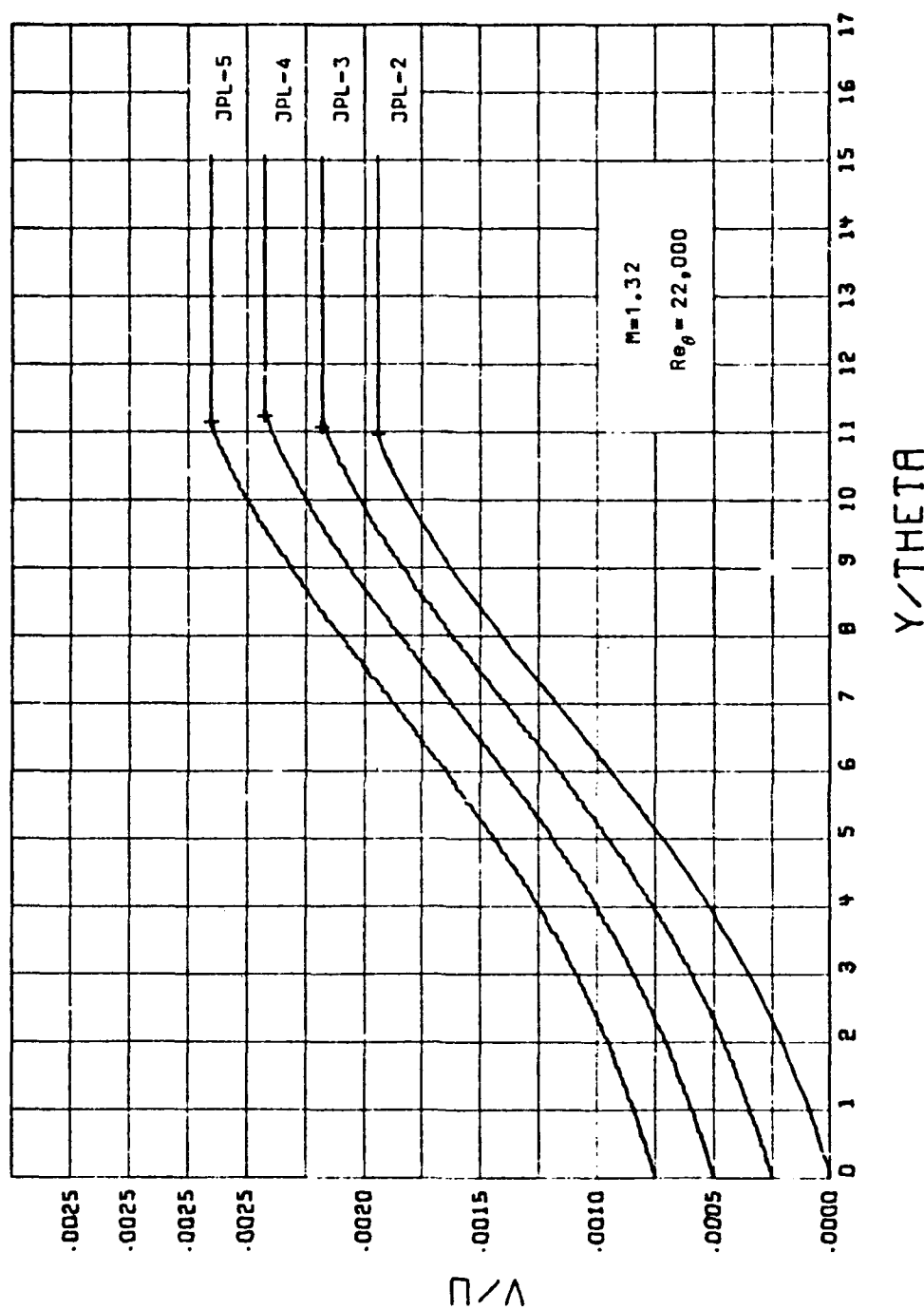


Figure A31. Normal Velocity Distribution.

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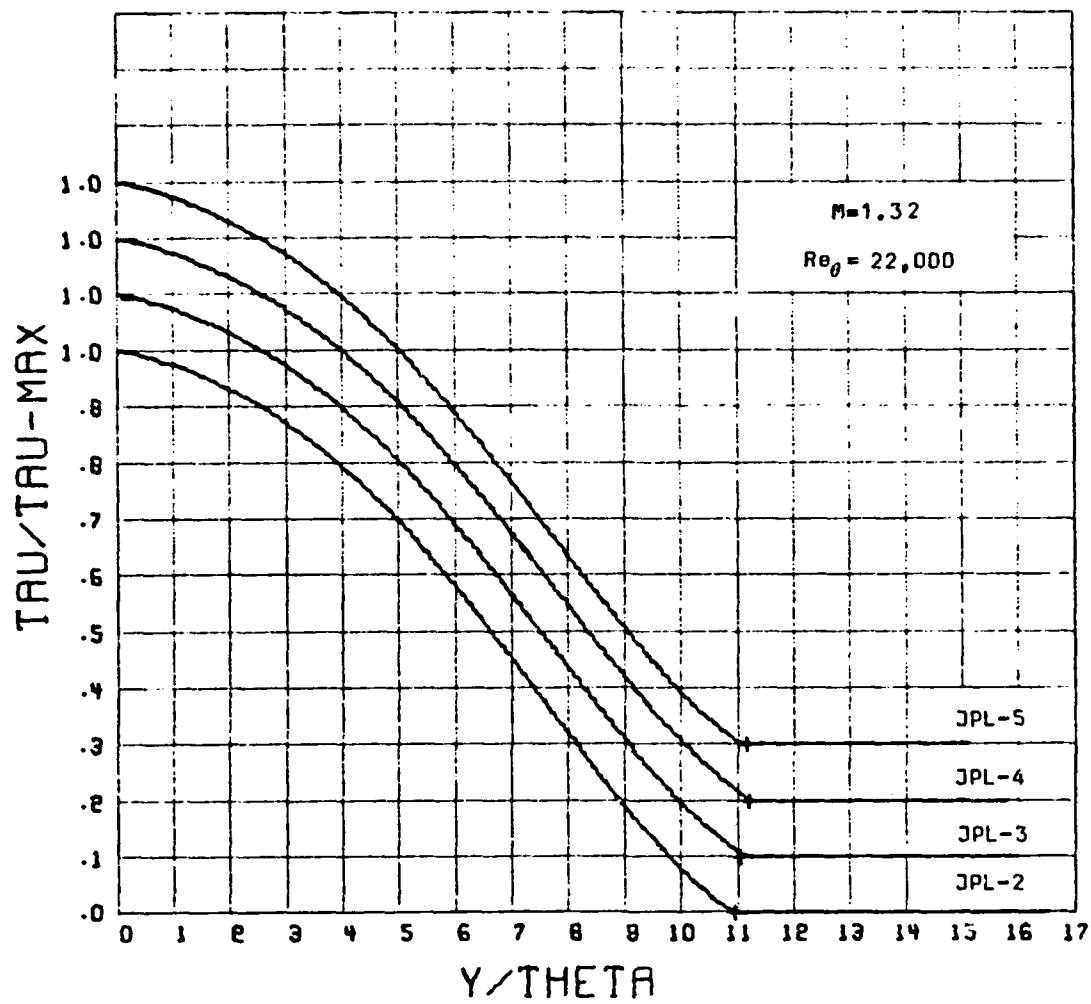


Figure A 32. Shear Stress Distribution.

TABLE A12. DATA SUMMARY
PROFILE - JPL-2 - - - PITOT PRESSURE DATA

EDGE MACH NO. = 1.3082
X = 26.21 CM
TOTAL PRESSURE = .1333E+06 N/m²
TOTAL TEMPERATURE = 324.67 DEG-K

LEAST SQUARE FIT PARAMETERS									
CF = .001844									
YMAX = 2.076 CM									
RE-DELTA-STAR = 72400.									
DELTA STAR = .3783 CM									
THETA = .1945 CM									
M = 1.944									
NUHALL = .3710 CM=2/SEC									
DELTA = 2.2149 CM									
Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHDE	U/UE	U-PLUS	TAU/TAU-MAX	V/U	
0.000	0.000	0.	0.0000	.7674	0.0000	0.00	1.0000	0.000000	
.011	.058	43.	.4300	.8104	.5476	13.90	1.0000	0.000009	
.022	.117	87.	.4953	.8245	.5455	15.92	.9989	.000105	
.033	.176	131.	.5510	.8381	.6019	17.61	.9989	.000017	
.044	.235	193.	.5803	.8458	.6310	18.49	.9939	.000123	
.078	.404	300.	.6073	.8518	.6524	19.15	.9921	.000020	
.100	.515	382.	.6170	.8560	.6649	19.48	.9840	.000139	
.111	.574	426.	.6257	.8585	.6753	19.84	.9873	.000044	
.129	.645	494.	.6365	.8617	.6857	20.14	.9845	.000152	
.142	.731	562.	.6479	.8651	.6946	20.49	.9825	.000094	
.172	.897	658.	.6582	.8676	.7045	20.73	.9773	.000072	
.193	.992	736.	.6701	.8719	.7176	21.13	.9737	.000041	
.223	1.148	852.	.6828	.8759	.7296	21.50	.9679	.000143	
.245	1.269	935.	.6912	.8785	.7374	21.75	.9637	.000107	
.275	1.416	1051.	.7041	.8791	.7494	22.11	.9575	.000122	
.302	1.553	1153.	.7096	.8845	.7544	22.27	.9517	.000136	
.317	1.631	1211.	.7152	.8864	.7597	22.43	.9483	.000144	
.341	1.756	1301.	.7225	.8888	.7664	22.64	.9429	.000157	
.365	1.880	1395.	.7315	.8919	.7746	22.90	.9371	.000170	
.388	1.997	1482.	.7339	.8927	.7768	22.96	.9315	.000182	
.429	2.204	1637.	.7451	.8966	.7849	23.28	.9210	.000204	
.457	2.350	1744.	.7519	.8989	.7931	23.47	.9135	.000223	
.490	2.519	1870.	.7580	.9011	.7986	23.64	.9041	.000243	
.518	2.663	1976.	.7657	.9038	.8055	23.86	.8959	.000260	
.540	2.878	2136.	.7751	.9071	.8138	24.12	.8878	.000288	
.569	3.091	2287.	.7841	.9104	.8217	24.37	.8809	.000315	
.637	3.276	2432.	.7880	.9119	.8252	24.49	.8757	.000342	
.670	3.446	2558.	.7959	.9147	.8321	24.70	.8694	.000366	
.703	3.614	2684.	.8049	.9181	.8400	24.95	.8624	.000390	
.719	3.799	2820.	.8128	.9211	.8469	25.16	.8548	.000418	
.749	3.955	2936.	.8171	.9227	.8504	25.28	.8490	.000442	
.787	4.099	3042.	.8235	.9251	.8542	25.46	.8432	.000465	
.829	4.254	3159.	.8279	.9268	.8599	25.58	.8389	.000490	
.865	4.452	3304.	.8376	.9306	.8682	25.84	.8337	.000523	
.899	4.569	3391.	.8407	.9318	.8709	25.92	.8281	.000543	
.918	4.719	3503.	.8466	.9341	.8759	26.08	.8224	.000569	
.947	4.922	3653.	.8514	.9360	.8800	26.21	.8167	.000604	
.983	5.104	3789.	.8601	.9395	.8874	26.45	.8110	.000637	
1.027	5.281	3920.	.8647	.9413	.8913	26.57	.8053	.000670	
1.061	5.457	4050.	.8704	.9434	.8960	26.73	.8000	.000703	
1.097	5.640	4186.	.8754	.9456	.9002	26.86	.7948	.000738	

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TABLE A12. (CONT.)
M/NE RHO/RHFE

Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHFE	U/UE	U-PLUS	TAU/TAU-MAX	V/U
1.132	5.822	4322.	.8823	.9485	.9059	27.04	.6252	.000773
1.158	5.953	4419.	.8860	.9500	.9090	27.14	.6105	.000799
1.181	6.173	4545.	.8913	.9522	.9134	27.28	.5910	.000832
1.209	6.318	4690.	.8983	.9551	.9192	27.47	.5682	.000872
1.241	6.492	4811.	.9020	.9566	.9222	27.56	.5488	.000905
1.292	6.645	4932.	.9079	.9591	.9271	27.72	.5290	.000938
1.325	6.815	5059.	.9125	.9611	.9308	27.84	.5084	.000973
1.356	6.971	5174.	.9172	.9630	.9346	27.96	.4890	.001005
1.388	7.134	5286.	.9216	.9650	.9382	28.08	.4687	.001038
1.432	7.363	5445.	.9256	.9667	.9414	28.19	.4400	.001085
1.457	7.494	5562.	.9305	.9688	.9453	28.31	.4236	.001112
1.496	7.689	5707.	.9349	.9707	.9489	28.43	.3987	.001153
1.529	7.859	5833.	.9403	.9730	.9532	28.57	.3772	.001187
1.569	8.068	5989.	.9436	.9745	.9559	28.65	.3507	.001230
1.607	8.264	6134.	.9495	.9771	.9606	28.81	.3259	.001269
1.637	8.414	6245.	.9579	.9786	.9632	28.89	.3071	.001299
1.681	8.642	6415.	.9574	.9804	.9668	29.01	.2784	.001343
1.711	8.799	6531.	.9601	.9818	.9690	29.08	.2593	.001373
1.742	9.008	6686.	.9656	.9843	.9733	29.22	.2339	.001413
1.785	9.178	6812.	.9692	.9859	.9761	29.31	.2137	.001444
1.826	9.387	6967.	.9719	.9871	.9782	29.38	.1893	.001442
1.856	9.543	7084.	.9750	.9885	.9806	29.46	.1712	.001509
1.897	9.752	7239.	.9783	.9900	.9832	29.55	.1483	.001544
1.925	9.896	7345.	.9800	.9908	.9846	29.59	.1329	.001568
1.953	10.039	7452.	.9833	.9923	.9871	29.67	.1179	.001590
1.993	10.248	7607.	.9844	.9928	.9880	29.70	.0965	.001623
2.024	10.405	7723.	.9868	.9939	.9898	29.76	.0817	.001645
2.051	10.542	7825.	.9885	.9947	.9911	29.81	.0680	.001664
2.076	10.673	7922.	.9902	.9954	.9924	29.85	.0570	.001682
2.115	10.875	8072.	.9912	.9959	.9932	29.87	.0403	.001707
2.147	11.038	8193.	.9927	.9964	.9944	29.91	.0275	.001726
2.176	11.189	8305.	.9936	.9970	.9951	29.94	.0163	.001742
2.207	11.345	8421.	.9939	.9972	.9953	29.94	.0055	.001758
2.237	11.476	8518.	.9945	.9974	.9958	29.96	0.0000	.001766
2.269	11.665	8658.	.9953	.9978	.9964	29.98	0.0000	.001766
2.341	12.037	8935.	.9969	.9985	.9976	30.02	0.0000	.001766
2.423	12.455	9245.	.9989	.9995	.9991	30.07	0.0000	.001766
2.514	12.925	9594.	.9994	.9997	.9995	30.08	0.0000	.001766
2.599	13.342	9919.	.9995	.9997	.9995	30.08	0.0000	.001766
2.679	13.773	10224.	.9990	.9995	.9992	30.07	0.0000	.001766
2.764	14.211	10548.	.9991	.9996	.9993	30.07	0.0000	.001766
2.840	14.607	10839.	.9998	.9999	.9999	30.09	0.0000	.001766
2.913	15.001	11134.	.9998	.9999	.9998	30.09	0.0000	.001766
2.989	15.366	11406.	.9998	.9999	.9998	30.09	0.0000	.001766
3.063	15.745	11687.	1.0004	1.0002	1.0003	30.11	0.0000	.001766
3.135	16.117	11983.	1.0005	1.0002	1.0004	30.11	0.0000	.001766
3.198	16.443	12205.	1.0007	1.0003	1.0005	30.12	0.0000	.001766

TABLE A12. (CONT.)
PROFILE - JPL-3 - - - PITOT PRESSURE DATA

FDGE MACH NO.= 1.3173			TOTAL PRESSURE= .1335E+06 N/M**2			TOTAL TEMPERATURE= 322.72 DEG-K		
X= -7.62 CM			DELTA STAR= .3969 CM			THETA= .2047 CM		
M= 1.938			RE-THETA= 37550.			MUWALL= .3709 CM**2/SEC		
LEAST SQUARE FIT PARAMETERS			CF= .001858			PI= .550R		
UTAU= 14.2605 M/SEC			YMAX= 2.244 CM			YMIN= .036 CM		
CHISQR= .2328E-04			DELTA= 2.4022 CM					
Y (CM)	Y/THETA	Y-PLUS	M/WE	RHO/RH0E	U/U0	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.7650	0.0000	0.00	1.0000	0.000000
.010	.049	39.	.4324	.8089	.4807	13.92	1.0000	0.000000
.021	.105	83.	.5072	.8356	.5582	16.22	.9900	.000305
.036	.179	141.	.5494	.8539	.6009	17.49	.9974	.000011
.052	.254	200.	.5795	.8639	.6304	18.39	.9957	.000017
.063	.310	244.	.6007	.8694	.6516	19.02	.9942	.000022
.070	.340	266.	.6142	.8736	.6648	19.42	.9907	.000034
.079	.366	281.	.6300	.8792	.6829	19.97	.9885	.000040
.089	.389	295.	.6460	.8824	.6934	20.29	.9875	.000049
.100	.413	308.	.6658	.8861	.7047	20.63	.9815	.000060
.113	.437	319.	.6856	.8891	.7140	20.92	.9777	.000071
.127	.461	329.	.7054	.8919	.7252	21.26	.9742	.000080
.143	.484	338.	.7252	.8947	.7319	21.47	.9692	.000093
.160	.507	346.	.7450	.8974	.7395	21.70	.9647	.000105
.178	.529	354.	.7648	.8999	.7471	21.93	.9603	.000115
.197	.551	361.	.7846	.9024	.7541	22.15	.9572	.000122
.217	.573	368.	.8044	.9049	.7606	22.35	.9518	.000135
.238	.595	375.	.8242	.9074	.7668	22.54	.9469	.000147
.260	.617	382.	.8440	.9099	.7742	22.77	.9385	.000166
.283	.639	389.	.8638	.9124	.7796	22.94	.9324	.000180
.307	.661	396.	.8836	.9149	.7876	23.19	.9248	.000197
.332	.683	403.	.9034	.9174	.7927	23.34	.9174	.000213
.358	.705	410.	.9232	.9199	.7975	23.49	.9104	.000229
.385	.727	417.	.9430	.9227	.8059	23.75	.9011	.000249
.413	.749	424.	.9628	.9252	.8156	24.06	.8971	.000274
.442	.771	431.	.9826	.9277	.8184	24.14	.8941	.000299
.472	.793	438.	.1000	.9304	.8261	24.39	.8871	.000320
.503	.815	445.	.1000	.9334	.8313	24.55	.8817	.000348
.535	.837	452.	.1000	.9365	.8367	24.72	.8766	.000370
.568	.859	459.	.1000	.9396	.8417	24.88	.8715	.000400
.602	.881	466.	.1000	.9427	.8469	25.11	.8651	.000424
.637	.903	473.	.1000	.9458	.8521	25.20	.8593	.000447
.673	.925	480.	.1000	.9489	.8571	25.41	.8534	.000470
.710	.947	487.	.1000	.9520	.8620	25.64	.8474	.000493
.748	.969	494.	.1000	.9551	.8669	25.76	.8415	.000512
.787	.991	501.	.1000	.9582	.8718	25.99	.8356	.000534
.827	.1013	508.	.1000	.9613	.8767	26.17	.8297	.000557
.868	.1026	515.	.1000	.9644	.8816	26.31	.8238	.000580
.910	.1039	522.	.1000	.9675	.8865	26.53	.8179	.000603
.953	.1052	529.	.1000	.9706	.8914	26.71	.8120	.000626
1.00	.1065	536.	.1000	.9737	.8963	26.92	.8061	.000649
				.9764	.9017	27.12	.8003	.000674
				.9795	.9047	27.31	.7945	.000699
				.9826	.9077	27.50	.7887	.000724
				.9857	.9107	27.69	.7829	.000749
				.9888	.9137	27.88	.7771	.000774
				.9919	.9167	28.07	.7713	.000799
				.9950	.9197	28.26	.7655	.000824
				.9981	.9227	28.45	.7597	.000849
				1.0012	.9257	28.64	.7539	.000874
				1.0043	.9287	28.83	.7481	.000899
				1.0074	.9317	29.02	.7423	.000924
				1.0105	.9347	29.21	.7365	.000949
				1.0136	.9377	29.40	.7307	.000974
				1.0167	.9407	29.59	.7249	.000999
				1.0198	.9437	29.78	.7191	.001024
				1.0229	.9467	29.97	.7133	.001049
				1.0260	.9497	30.16	.7075	.001074
				1.0291	.9527	30.35	.7017	.001099
				1.0322	.9557	30.54	.6959	.001124
				1.0353	.9587	30.73	.6901	.001149
				1.0384	.9617	30.92	.6843	.001174
				1.0415	.9647	31.11	.6785	.001199
				1.0446	.9677	31.30	.6727	.001224
				1.0477	.9707	31.49	.6669	.001249
				1.0508	.9737	31.68	.6611	.001274
				1.0539	.9767	31.87	.6553	.001299
				1.0570	.9797	32.06	.6495	.001324
				1.0601	.9827	32.25	.6437	.001349
				1.0632	.9857	32.44	.6379	.001374
				1.0663	.9887	32.63	.6321	.001399
				1.0694	.9917	32.82	.6263	.001424
				1.0725	.9947	33.01	.6205	.001449
				1.0756	.9977	33.20	.6147	.001474
				1.0787	.1007	33.39	.6089	.001499
				1.0818	.1037	33.58	.6031	.001524
				1.0849	.1067	33.77	.5973	.001549
				1.0880	.1097	33.96	.5915	.001574
				1.0911	.1127	34.15	.5857	.001599
				1.0942	.1157	34.34	.5799	.001624
				1.0973	.1187	34.53	.5741	.001649
				1.1004	.1217	34.72	.5683	.001674
				1.1035	.1247	34.91	.5625	.001699
				1.1066	.1277	35.10	.5567	.001724
				1.1097	.1307	35.29	.5509	.001749
				1.1128	.1337	35.48	.5451	.001774
				1.1159	.1367	35.67	.5393	.001799
				1.1190	.1397	35.86	.5335	.001824
				1.1221	.1427	36.05	.5277	.001849
				1.1252	.1457	36.24	.5219	.001874
				1.1283	.1487	36.43	.5161	.001899
				1.1314	.1517	36.62	.5103	.001924
				1.1345	.1547	36.81	.5045	.001949
				1.1376	.1577	37.00	.4987	.001974
				1.1407	.1607	37.19	.4929	.001999
				1.1438	.1637	37.38	.4871	.002024
				1.1469	.1667	37.57	.4813	.002049
				1.1500	.1697	37.76	.4755	.002074
				1.1531	.1727	37.95	.4697	.002099
				1.1562	.1757	38.14	.4639	.002124
				1.1593	.1787	38.33	.4581	.002149
				1.1624	.1817	38.52	.4523	.002174
				1.1655	.1847	38.71	.4465	.002199
				1.1686	.1877	38.90	.4407	.002224
				1.1717	.1907	39.09	.4349	.002249
				1.1748	.1937	39.28	.4291	.002274
				1.1779	.1967	39.47	.4233	.002299
				1.1810	.1997	39.66	.4175	.002324
				1.1841	.2027	39.85	.4117	.002349
				1.1872	.2057	40.04	.4059	.002374
				1.1903	.2087	40.23	.4001	.002399
				1.1934	.2117	40.42	.3943	.002424
				1.1965	.2147	40.61	.3885	.002449
				1.1996	.2177	40.80	.3827	.002474
				1.2027	.2207	40.99	.3769	.002499
				1.2058	.2237	41.18	.3711	.002524
				1.2089	.2267	41.37	.3653	.002549
				1.2120	.2297	41.56	.3595	.002574
				1.2151	.2327	41.75	.3537	.002599
				1.2182	.2357	41.94	.3479	.002624
				1.2213	.2387	42.13	.3421	.002649
				1.2244	.2417	42.32	.3363	.002674
				1.2275	.2447	42.51	.3305	.002699
				1.2306	.2477	42.70	.3247	.002724
				1.2337	.2507	42.89	.3189	.002749
				1.2368	.2537	43.08	.3131	.002774
				1.2399	.2567	43.27	.3073	.002799
				1.2430	.2597	43.46	.3015	.002824
				1.2461	.2627	43.65	.2957	.002849
				1.2492	.2657	43.84	.2899	.002874
				1.2523	.2687	44.03	.2841	.002899
				1.2554	.2717	44.22	.2783	.002924
				1.2585	.2747	44.41	.2725	.002949
				1.2616	.2777	44.60	.2667	.002974
				1.2647	.2807	44.79	.2609	.002999
				1.2678	.2837	44.98	.2551	.003024
				1.2709	.2867	45.17	.2493	.003049
				1.2740	.2897	45.36	.2435	.003074
				1.2771	.2927	45.55	.2377	.003099
				1.2802	.2957	45.74	.2319	.003124
				1.2833	.2987	45.93	.2261	.003149
				1.2864	.3017	46.12	.2203	.003174
				1.2895	.3047	46.31	.2145	.003199
				1.2926	.3077	46.50	.2087	.003224
				1.2957	.3107	46.69	.2029	.003249
				1.2988	.3137	46.88	.2071	.003274
				1.3019	.3167	47.07	.1993	.003299
				1.3050	.3197	47.26	.1935	.003324
				1.3081	.3227	47.45	.1877	.003349
				1.3112	.3257	47.64	.1819	.003374
				1.3143	.3287	47.83	.1761	.003399
				1.3174	.3317	48.02	.1703	.003424
				1.3205	.3347	48.21	.1645	.003449
				1.3236	.3377	48.40	.1587	.003474
				1.3267	.3407	48.59	.1529	.003499
				1.3298	.3437	48.78	.1471	.003524
				1.3329	.3467	48.97	.1413	.003549
				1.3360	.3497	49.16	.1355	.003574
				1.3391	.3527	49.35	.1297	.003599
				1.3422	.3557	49.54	.1239	.003624
				1.3453	.3587	49.73	.1181	.003649
				1.3484	.3617	49.92	.1123	.003674

TABLE A17. (CONT.)
M/NE

Y (C-4)	Y/THETA	Y-PLUS	M/NE	RHO/RWFE	U/UE	U-PLUS	TAU/TAU-MAX	V/U
1.217	5.947	4.682.	.8829	.9482	.9047	26.93	.6228	.000779
1.250	6.108	4.809.	.8874	.9500	.9104	27.05	.6054	.0007410
1.283	6.249	4.936.	.8936	.9526	.9155	27.22	.5877	.000840
1.310	6.443	5.073.	.8993	.9550	.9202	27.37	.5683	.0009874
1.340	6.641	5.229.	.9041	.9571	.9241	27.49	.5457	.0009312
1.395	6.815	5.366.	.9094	.9593	.9285	27.63	.5257	.0009347
1.423	6.951	5.473.	.9148	.9616	.9329	27.77	.5098	.0009873
1.443	7.144	5.625.	.9188	.9634	.9361	27.88	.4871	.001012
1.494	7.299	5.747.	.9238	.9655	.9401	28.01	.4684	.001042
1.534	7.491	5.896.	.9285	.9676	.9439	28.13	.4455	.001081
1.545	7.646	6.020.	.9321	.9692	.9468	28.22	.4268	.001111
1.601	7.820	6.157.	.9360	.9709	.9499	28.32	.4058	.001146
1.639	8.004	6.303.	.9409	.9730	.9538	28.45	.3831	.001183
1.680	8.204	6.460.	.9448	.9747	.9569	28.55	.3590	.001222
1.720	8.402	6.616.	.9488	.9765	.9601	28.65	.3349	.001261
1.748	8.539	6.723.	.9506	.9773	.9615	28.70	.3184	.001267
1.797	8.775	6.909.	.9578	.9805	.9672	28.88	.2900	.001332
1.835	8.941	7.055.	.9617	.9823	.9703	28.98	.2678	.001367
1.843	9.087	7.163.	.9637	.9832	.9718	29.03	.2517	.001393
1.905	9.302	7.374.	.9673	.9849	.9747	29.13	.2279	.001430
1.969	9.519	7.495.	.9720	.9870	.9784	29.25	.2030	.001469
1.993	9.736	7.666.	.9750	.9884	.9807	29.32	.1787	.001507
2.023	9.871	7.778.	.9789	.9902	.9837	29.42	.1631	.001531
2.043	10.077	7.934.	.9809	.9911	.9853	29.47	.1419	.001563
2.056	10.238	8.061.	.9838	.9924	.9875	29.55	.1252	.001569
2.177	10.387	8.178.	.9852	.9931	.9886	29.58	.1101	.001612
2.177	10.585	8.335.	.9875	.9941	.9904	29.64	.0908	.001642
2.217	10.827	8.525.	.9900	.9953	.9923	29.70	.0683	.001676
2.244	10.958	8.628.	.9907	.9956	.9929	29.72	.0567	.001693
2.286	11.162	8.789.	.9920	.9962	.9938	29.75	.0394	.001720
2.327	11.367	8.950.	.9951	.9977	.9962	29.83	.0231	.001744
2.343	11.441	9.099.	.9947	.9975	.9959	29.82	.0175	.001753
2.373	11.590	9.126.	.9954	.9978	.9965	29.84	.0066	.001769
2.413	11.782	9.277.	.9984	.9984	.9974	29.87	0.0000	.001779
2.459	12.012	9.458.	.9970	.9984	.9977	29.88	0.0000	.001779
2.526	12.334	9.712.	.9980	.9980	.9985	29.90	0.0000	.001779
2.600	12.709	10.000.	.9991	.9994	.9993	29.93	0.0000	.001779
2.643	13.004	10.239.	.9984	.9997	.9993	29.94	0.0000	.001779
2.743	13.395	10.547.	.9993	.9997	.9995	29.94	0.0000	.001779
2.835	13.847	10.903.	.9995	.9998	.9996	29.94	0.0000	.001779
2.932	14.319	11.274.	1.0004	1.0001	1.0003	29.96	0.0000	.001779
3.036	14.827	11.675.	1.0006	1.0003	1.0005	29.97	0.0000	.001779
3.110	15.187	11.958.	1.0003	1.0001	1.0002	29.96	0.0000	.001779
3.196	15.559	12.251.	.9998	.9999	.9998	29.95	0.0000	.001779
3.242	16.030	12.622.	.9999	.9999	.9999	29.95	0.0000	.001779
3.371	16.464	12.964.	.9998	.9999	.9998	29.95	0.0000	.001779

TABLE A12. (CONT.)
PROFILE - JPL-4 - - - PITOT PRESSURE DATAENGINE MACH NO.= 1.3125
X= 0.00 CM
TOTAL PRESSURE= .1339E+06 N/M²
TOTAL TEMPERATURE= 323.70 DEG-KUE= 408.71 M/SEC
RE-DELTA-STAR= 73130.
DELTA STAR= .4081 CM
RE-THETA= 37900.
THETA= .2174 CM
MINALL= .3685 CM**2/SEC
M= 1.929
CF= .001788LEAST SQUARE FIT PARAMETERS
CF= .001860
YMAX= 2.341 CM
PI= .5314
YMIN= .038 CM
DELTA= 2.4868 CM

Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHOE	U/UE	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.7663	0.0000	0.00	1.0000	0.000000
.010	.048	39.	.4237	.8082	.4712	13.64	1.0000	0.000700
.020	.096	78.	.5008	.8249	.5514	16.02	.9991	.000034
.030	.138	112.	.5395	.8343	.5906	17.19	.9982	.000008
.040	.181	147.	.5611	.8399	.6123	17.84	.9973	.000011
.050	.227	201.	.5812	.8452	.6322	18.44	.9957	.000017
.060	.274	255.	.5919	.8481	.6427	18.75	.9940	.000023
.070	.313	308.	.6167	.8582	.6469	19.49	.9917	.000030
.080	.358	373.	.6292	.8589	.6789	19.85	.9897	.000037
.090	.400	471.	.6422	.8627	.6914	20.23	.9864	.000046
.100	.448	574.	.6551	.8666	.7038	20.61	.9823	.000058
.110	.494	637.	.6686	.8707	.7165	21.00	.9787	.000065
.120	.539	736.	.6764	.8752	.7238	21.22	.9745	.000076
.130	.583	824.	.6846	.8788	.7315	21.46	.9715	.000087
.140	.626	912.	.6923	.8828	.7387	21.68	.9674	.000097
.150	.668	1015.	.6985	.8878	.7445	21.86	.9625	.000109
.160	.709	1094.	.7060	.8878	.7514	22.07	.9586	.000118
.170	.748	1177.	.7136	.8853	.7584	22.29	.9543	.000129
.180	.786	1275.	.7223	.8882	.7644	22.53	.9492	.000141
.190	.823	1432.	.7315	.8913	.7748	22.79	.9406	.000161
.200	.859	1536.	.7373	.8933	.7800	22.95	.9346	.000174
.210	.894	1688.	.7461	.8964	.7841	23.20	.9256	.000195
.220	.928	1830.	.7515	.8983	.7879	23.35	.9167	.000212
.230	.961	1953.	.7574	.9003	.7922	23.52	.9087	.000237
.240	.993	2076.	.7684	.9043	.8080	23.82	.9004	.000260
.250	1.025	2208.	.7742	.9063	.8132	23.94	.8911	.000289
.260	1.057	2326.	.7778	.9077	.8164	24.09	.8826	.000297
.270	1.089	2478.	.7849	.9103	.8277	24.28	.8710	.000311
.280	1.121	2620.	.7935	.9155	.8303	24.52	.8597	.000334
.290	1.153	2757.	.7991	.9155	.8352	24.67	.8485	.000356
.300	1.185	2895.	.8045	.9175	.8398	24.82	.8368	.000380
.310	1.217	3047.	.8113	.9201	.8458	25.01	.8233	.000404
.320	1.249	3209.	.8177	.9236	.8514	25.18	.8084	.000435
.330	1.281	3341.	.8233	.9247	.8561	25.33	.7937	.000460
.340	1.313	3484.	.8280	.9281	.8637	25.57	.7817	.000487
.350	1.345	3580.	.8320	.9298	.8674	25.69	.7615	.000525
.360	1.377	3684.	.8344	.9329	.8742	25.90	.7479	.000550
.370	1.409	3785.	.8444	.9348	.8783	26.03	.7307	.000582
.380	1.441	3865.	.8492	.9362	.8855	26.26	.7144	.000612
.390	1.473	4107.	.8577	.9377	.8953	26.57	.6981	.000678
.400	1.505	4414.	.8594	.9401	.8994	26.39	.6760	.000661

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Y (CM)	Y/THETA	Y-PLUS	TABLE A12. (CONT.) M/WE	RM/RHDE	U/UE	I-PLUS	TAU/TAU-MAX	V/U
1.133	5.423	4573.	.8758	.9455	.9006	26.74	.6588	.00712
1.221	5.804	4720.	.8813	.9478	.9052	26.89	.6403	.00745
1.252	5.949	4838.	.8850	.9493	.9083	26.99	.6249	.00772
1.297	6.146	5015.	.8909	.9518	.9132	27.14	.6019	.00812
1.338	6.359	5172.	.8966	.9542	.9179	27.30	.5809	.00848
1.369	6.504	5290.	.8999	.9555	.9206	27.39	.5648	.00874
1.407	6.685	5437.	.9046	.9575	.9245	27.51	.5444	.00891
1.449	6.844	5598.	.9106	.9601	.9294	27.66	.5217	.00949
1.480	7.035	5722.	.9148	.9619	.9328	27.77	.5042	.00979
1.513	7.191	5849.	.9202	.9641	.9371	27.91	.4807	.01009
1.542	7.421	6036.	.9250	.9662	.9410	28.04	.4507	.01034
1.597	7.540	6173.	.9305	.9684	.9454	28.18	.4388	.01087
1.634	7.745	6315.	.9343	.9703	.9485	28.28	.4179	.01127
1.640	7.982	6492.	.9385	.9721	.9519	28.39	.3918	.01164
1.714	8.145	6624.	.9440	.9745	.9542	28.53	.3722	.01166
1.747	8.302	6752.	.9464	.9756	.9542	28.59	.3533	.01226
1.785	8.483	6899.	.9515	.9779	.9622	28.72	.3316	.01261
1.826	8.674	7056.	.9553	.9794	.9652	28.82	.3095	.01268
1.841	8.846	7104.	.9575	.9805	.9670	28.89	.2884	.01330
1.884	9.002	7321.	.9623	.9827	.9707	29.00	.2699	.01329
1.924	9.207	7483.	.9640	.9844	.9736	29.09	.2460	.0147
1.973	9.374	7626.	.9679	.9852	.9751	29.14	.2265	.01427
2.006	9.532	7753.	.9726	.9874	.9783	29.26	.2084	.01455
2.034	9.665	7861.	.9742	.9880	.9800	29.30	.1938	.01478
2.070	9.834	7999.	.9769	.9893	.9822	29.37	.1752	.01517
2.094	9.967	8104.	.9785	.9900	.9834	29.41	.1608	.01529
2.131	10.124	8234.	.9820	.9914	.9841	29.50	.1442	.01555
2.159	10.257	8342.	.9834	.9923	.9872	29.54	.1304	.01576
2.199	10.450	8499.	.9859	.9934	.9891	29.60	.1110	.01605
2.246	10.625	8641.	.9870	.9939	.9900	29.63	.0937	.01632
2.270	10.757	8774.	.9896	.9951	.9920	29.69	.0786	.01655
2.304	10.968	8921.	.9902	.9954	.9925	29.71	.0620	.01680
2.341	11.125	9049.	.9922	.9963	.9940	29.76	.0486	.01700
2.375	11.300	9214.	.9932	.9968	.9947	29.78	.0317	.01716
2.407	11.436	9382.	.9943	.9973	.9957	29.81	.0158	.01749
2.449	11.646	9505.	.9957	.9980	.9967	29.85	.0049	.01773
2.491	11.837	9628.	.9967	.9980	.9975	29.87	0.0000	.01773
2.515	11.952	9721.	.9978	.9985	.9975	29.87	0.0000	.01773
2.590	12.309	10011.	.9978	.9990	.9983	29.90	0.0000	.01773
2.661	12.645	10285.	.9987	.9994	.9990	29.92	0.0000	.01773
2.740	13.020	10590.	.9991	.9995	.9993	29.93	0.0000	.01773
2.817	13.340	10850.	.9991	.9995	.9993	29.93	0.0000	.01773
2.871	13.641	11095.	.9997	.9998	.9997	29.95	0.0000	.01773
2.944	14.054	11394.	.9996	.9998	.9997	29.95	0.0000	.01773
3.017	14.311	11640.	.9999	.9999	.9999	29.95	0.0000	.01773
3.093	14.721	11974.	.9995	.9998	.9996	29.94	0.0000	.01773
3.150	15.107	12283.	1.0001	1.0000	1.0001	29.96	0.0000	.01773
3.276	15.544	12651.	1.0000	1.0000	1.0000	29.96	0.0000	.01773
3.360	15.944	13060.	1.0000	1.0000	1.0000	29.96	0.0000	.01773
3.433	16.334	13489.	.9998	.9999	.9998	29.95	0.0000	.01773
3.520	16.724	13603.	1.0000	1.0000	1.0000	29.96	0.0000	.01773

TABLE A12. (CONT.)

PROFILE - JPL-5 -- - PITOT PRESSURE DATA
 EDGE MACH NO. = 1.3130
 X = 7.62 CM
 TOTAL PRESSURE = .1330E+06 N/M²
 TOTAL TEMPERATURE = 319.81 DEG-K

UF = 406.36 M/SEC
 RE-DELTA-STAR = 77910.
 DELTA STAR = .4242 CM
 RE-THETA = .40210.
 THETA = .2199 CM
 NUWALL = .3649 CM**2/SEC
 M = 1.937

LEAST SQUARE FIT PARAMETERS
 UTAU = 14.0527 M/SEC
 CHISQR = .7885E-05
 CF = .001832
 YMAX = 2.439 CM

PI = .5630
 YMIN = .043 CM
 DELTA = 2.5667 CM

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHOF	U/UF	U-PLUS	TAU/TAU-MAX	V/VO
0.070	0.000	0.	0.0000	.7661	0.0040	0.00	1.0000	0.000000
.010	.046	38.	.4244	.8093	.4721	13.77	1.0000	0.000300
.022	.104	87.	.4553	.8146	.5044	14.73	.9989	.000005
.031	.144	172.	.5179	.8289	.5689	16.66	.9981	.000003
.043	.194	165.	.5501	.8369	.6013	17.54	.9970	.000012
.054	.249	210.	.5683	.8417	.6184	18.19	.9957	.000017
.061	.370	312.	.5988	.8500	.6494	19.10	.9926	.000027
.082	.423	356.	.6108	.8534	.6612	19.46	.9911	.000032
.109	.498	420.	.6224	.8567	.6724	19.80	.9890	.000038
.119	.544	459.	.6383	.8614	.6877	20.27	.9876	.000042
.144	.640	557.	.6484	.8645	.6974	20.57	.9840	.000052
.157	.718	606.	.6588	.8670	.7054	20.81	.9821	.000058
.173	.784	649.	.6654	.8697	.7135	21.06	.9796	.000064
.194	.887	748.	.6711	.8715	.7188	21.23	.9764	.000073
.214	.947	826.	.6814	.8747	.7286	21.53	.9731	.000091
.238	1.000	919.	.6870	.8765	.7338	21.69	.9691	.000141
.240	1.189	1002.	.7001	.8808	.7460	22.06	.9653	.000101
.249	1.322	1114.	.7042	.8828	.7516	22.24	.9600	.000114
.264	1.392	1173.	.7074	.8831	.7527	22.27	.9572	.000120
.330	1.508	1271.	.7145	.8862	.7611	22.54	.9524	.000132
.344	1.644	1403.	.7232	.8884	.7672	22.73	.9456	.000147
.347	1.769	1491.	.7307	.8910	.7741	22.94	.9409	.000158
.410	1.873	1579.	.7346	.8930	.7794	23.11	.9360	.000169
.443	2.035	1716.	.7430	.8952	.7853	23.29	.9283	.000186
.449	2.144	1809.	.7499	.8976	.7915	23.48	.9228	.000199
.513	2.343	1875.	.7562	.8999	.7972	23.66	.9126	.000221
.542	2.474	2088.	.7613	.9017	.8017	23.90	.9054	.000236
.546	2.587	2181.	.7679	.9040	.8076	23.99	.8997	.000249
.601	2.769	2317.	.7728	.9058	.8120	24.13	.8899	.000269
.641	2.929	2469.	.7851	.9103	.8229	24.47	.8790	.000291
.671	3.047	2611.	.7866	.9108	.8242	24.51	.8685	.000312
.715	3.266	2753.	.7915	.9124	.8285	24.55	.8575	.000334
.750	3.424	2890.	.7959	.9154	.8359	24.88	.8465	.000346
.784	3.602	3077.	.8039	.9173	.8384	24.99	.8342	.000361
.811	3.776	3125.	.8112	.9200	.8457	25.19	.8266	.000394
.844	3.810	3212.	.8143	.9212	.8484	25.28	.8189	.000419
.875	3.904	3369.	.8201	.9234	.8534	25.43	.8046	.000438
.905	4.134	3487.	.8260	.9257	.8585	25.60	.7936	.000459
.930	4.252	3565.	.8296	.9271	.8616	25.70	.7841	.000477
.951	4.364	3663.	.8315	.9278	.8632	25.75	.7764	.000491
.959	4.453	3819.	.8411	.9316	.8715	26.01	.7586	.000524

Y (CM)	Y/THETA	Y-PLUS	TABLE A12. (CONT.) H/ME	RHO/RHOF	U/VE	U-PLUS	TAU/TAU-MAX	V/U
1.024	4.698	3961.	8450	.9327	.8739	26.09	.7458	.000548
1.062	4.855	4093.	8509	.9354	.8797	26.27	.7316	.000574
1.131	5.148	4357.	8587	.9386	.8863	26.49	.7021	.000627
1.149	5.242	4504.	8658	.9414	.8923	26.68	.6850	.000659
1.205	5.505	4641.	8709	.9435	.8966	26.81	.6687	.000686
1.228	5.609	4729.	8744	.9449	.8995	26.91	.6581	.000705
1.276	5.829	4915.	8813	.9478	.9053	27.09	.6351	.000745
1.304	5.957	5022.	8847	.9492	.9081	27.18	.6214	.000769
1.334	6.096	5140.	8884	.9507	.9111	27.28	.6063	.000795
1.377	6.294	5306.	8932	.9527	.9151	27.41	.5846	.000832
1.410	6.444	5433.	8988	.9550	.9197	27.56	.5676	.000861
1.450	6.624	5585.	9025	.9566	.9227	27.65	.5471	.000896
1.489	6.804	5737.	9090	.9593	.9280	27.82	.5262	.000931
1.532	7.001	5903.	9147	.9618	.9327	27.98	.5031	.000969
1.577	7.204	6074.	9202	.9642	.9371	28.12	.4780	.001009
1.609	7.340	6196.	9225	.9651	.9390	28.18	.4616	.001037
1.657	7.570	6382.	9288	.9678	.9440	28.35	.4349	.001081
1.689	7.744	6529.	9339	.9701	.9482	28.48	.4138	.001115
1.725	7.883	6646.	9381	.9719	.9515	28.59	.3968	.001142
1.776	8.115	6842.	9421	.9737	.9547	28.69	.3683	.001188
1.814	8.289	6989.	9468	.9757	.9585	28.81	.3472	.001221
1.841	8.457	7130.	9517	.9779	.9623	28.94	.3267	.001254
1.896	8.661	7302.	9548	.9793	.9648	29.02	.3021	.001292
1.941	8.869	7478.	9593	.9816	.9692	29.16	.2770	.001331
1.974	9.020	7605.	9635	.9832	.9717	29.25	.2590	.001359
2.013	9.217	7771.	9668	.9847	.9743	29.33	.2358	.001395
2.056	9.392	7918.	9699	.9861	.9767	29.41	.2157	.001426
2.091	9.554	8055.	9731	.9875	.9781	29.49	.1972	.001455
2.127	9.714	8192.	9750	.9884	.9807	29.54	.1790	.001482
2.162	9.879	8329.	9783	.9900	.9833	29.63	.1608	.001510
2.186	9.939	8422.	9801	.9908	.9847	29.67	.1493	.001528
2.223	10.157	8563.	9825	.9916	.9865	29.73	.1314	.001555
2.250	10.320	8702.	9844	.9927	.9879	29.78	.1149	.001579
2.283	10.474	8832.	9860	.9935	.9892	29.82	.0993	.001603
2.327	10.633	8965.	9884	.9946	.9910	29.88	.0843	.001625
2.364	10.707	9111.	9907	.9952	.9921	29.92	.0681	.001649
2.400	10.966	9243.	9907	.9954	.9928	29.94	.0542	.001670
2.434	11.143	9395.	9916	.9961	.9936	29.97	.0391	.001693
2.462	11.244	9483.	9932	.9968	.9947	30.01	.0306	.001705
2.496	11.495	9615.	9943	.9973	.9956	30.03	.0184	.001723
2.537	11.590	9771.	9947	.9975	.9959	30.04	.0050	.001743
2.571	11.747	9903.	9959	.9981	.9969	30.08	0.0000	.001751
2.602	11.896	10021.	9973	.9987	.9979	30.11	0.0000	.001751
2.633	12.211	10295.	9979	.9990	.9984	30.13	0.0000	.001751
2.747	12.527	10579.	9986	.9993	.9989	30.14	0.0000	.001751
2.824	12.801	10877.	9990	.9995	.9992	30.15	0.0000	.001751
2.912	13.202	11214.	9995	.9997	.9996	30.17	0.0000	.001751
2.980	13.645	11512.	1.0004	1.0002	1.0003	30.19	0.0000	.001751
3.074	14.044	11840.	1.0004	1.0002	1.0003	30.19	0.0000	.001751
3.148	14.381	12124.	1.0001	1.0000	1.0001	30.18	0.0000	.001751
3.230	14.757	12427.	.9998	.9999	.9998	30.17	0.0000	.001751
3.313	15.138	12779.	.9998	.9999	.9998	30.17	0.0000	.001751
3.394	15.459	13034.	1.0000	1.0000	1.0000	30.18	0.0000	.001751
3.477	15.983	13391.	.9999	.9999	.9998	30.17	0.0000	.001751
3.567	16.295	13736.	.9997	.9999	.9998	30.17	0.0000	.001751
3.641	16.631	14021.	.9997	.9999	.9998	30.17	0.0000	.001751

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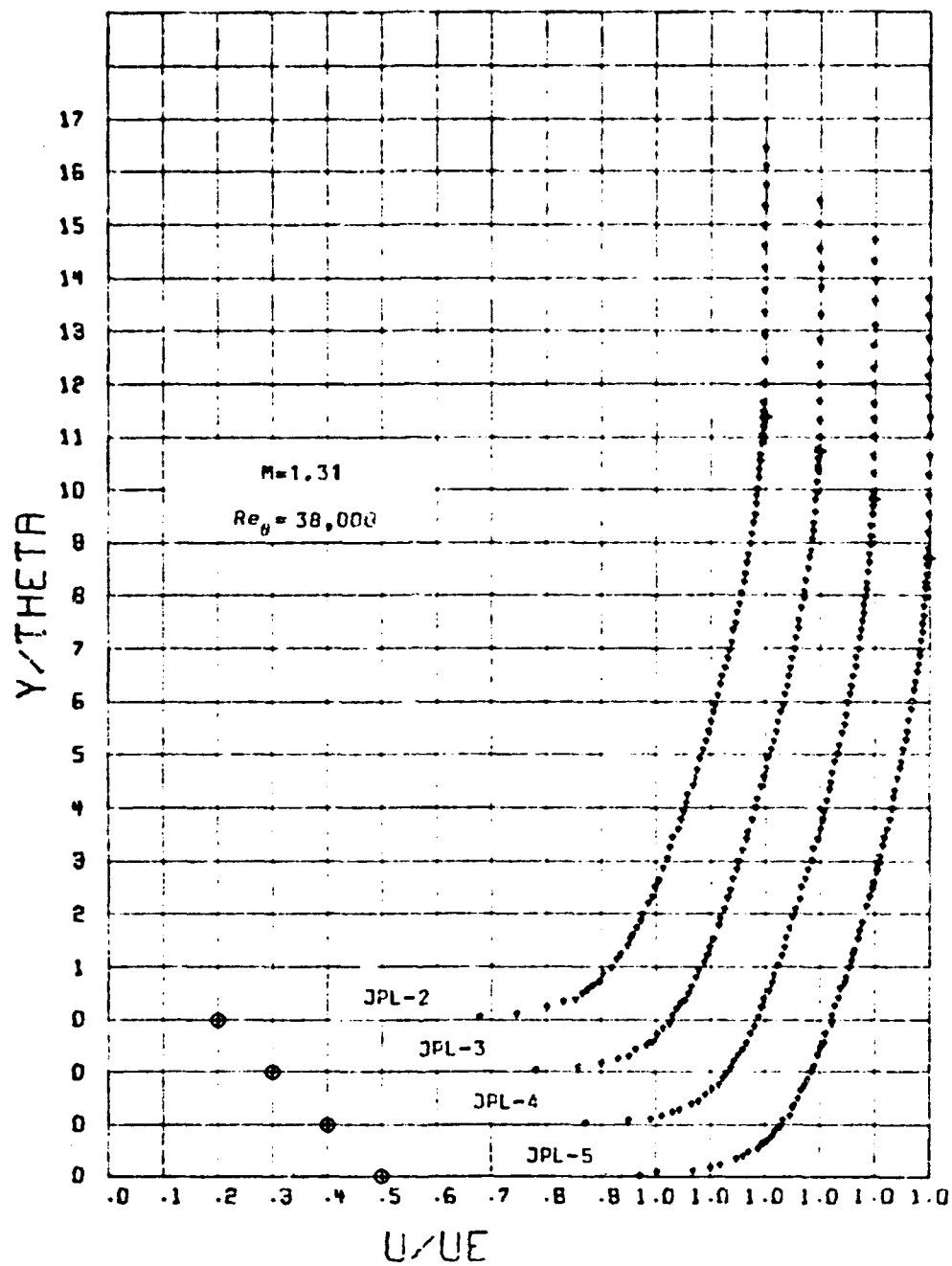


Figure A33. Mean Velocity Profiles.

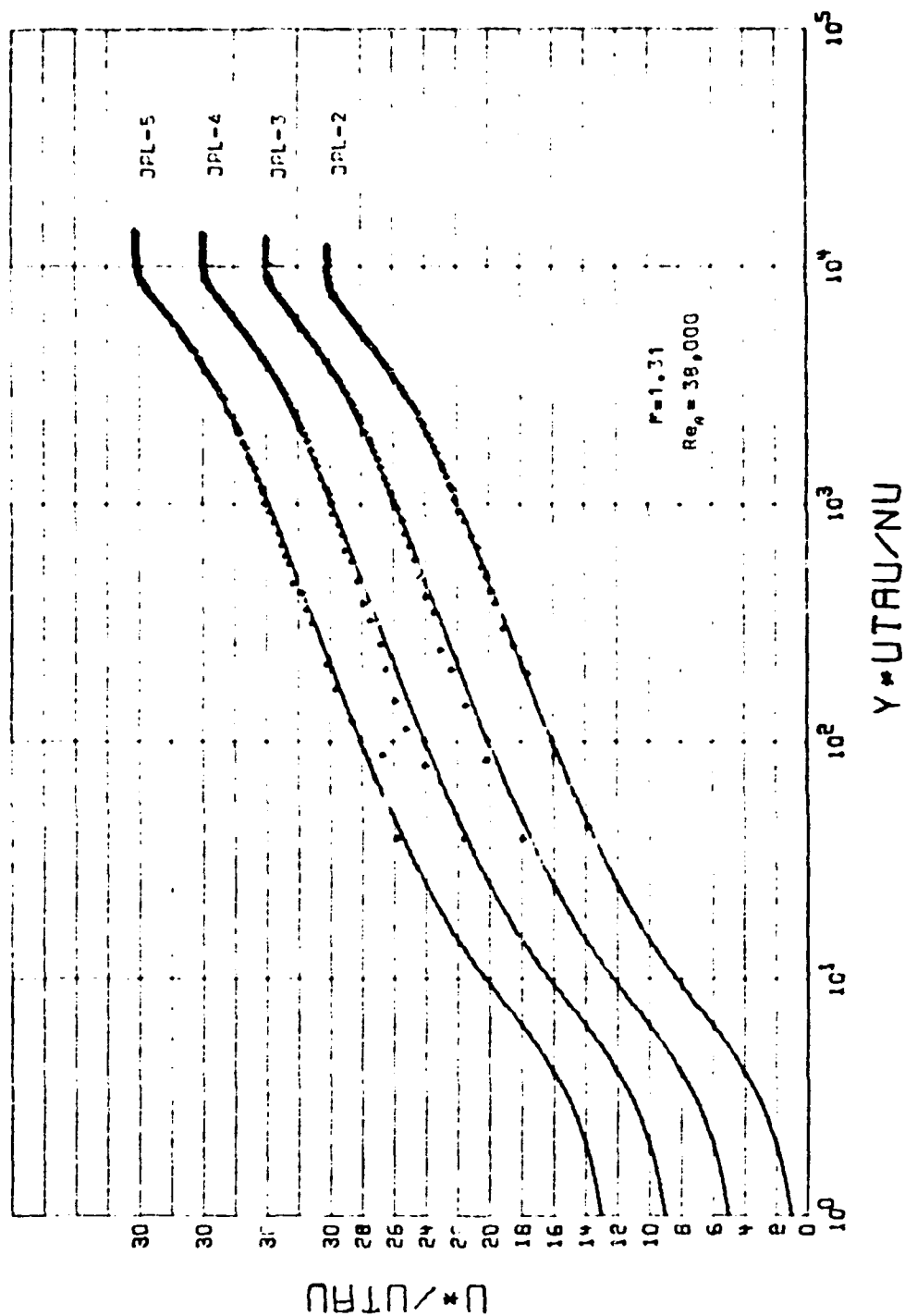


Figure A34. Van Orist Scaled Mean Velocity Profiles.

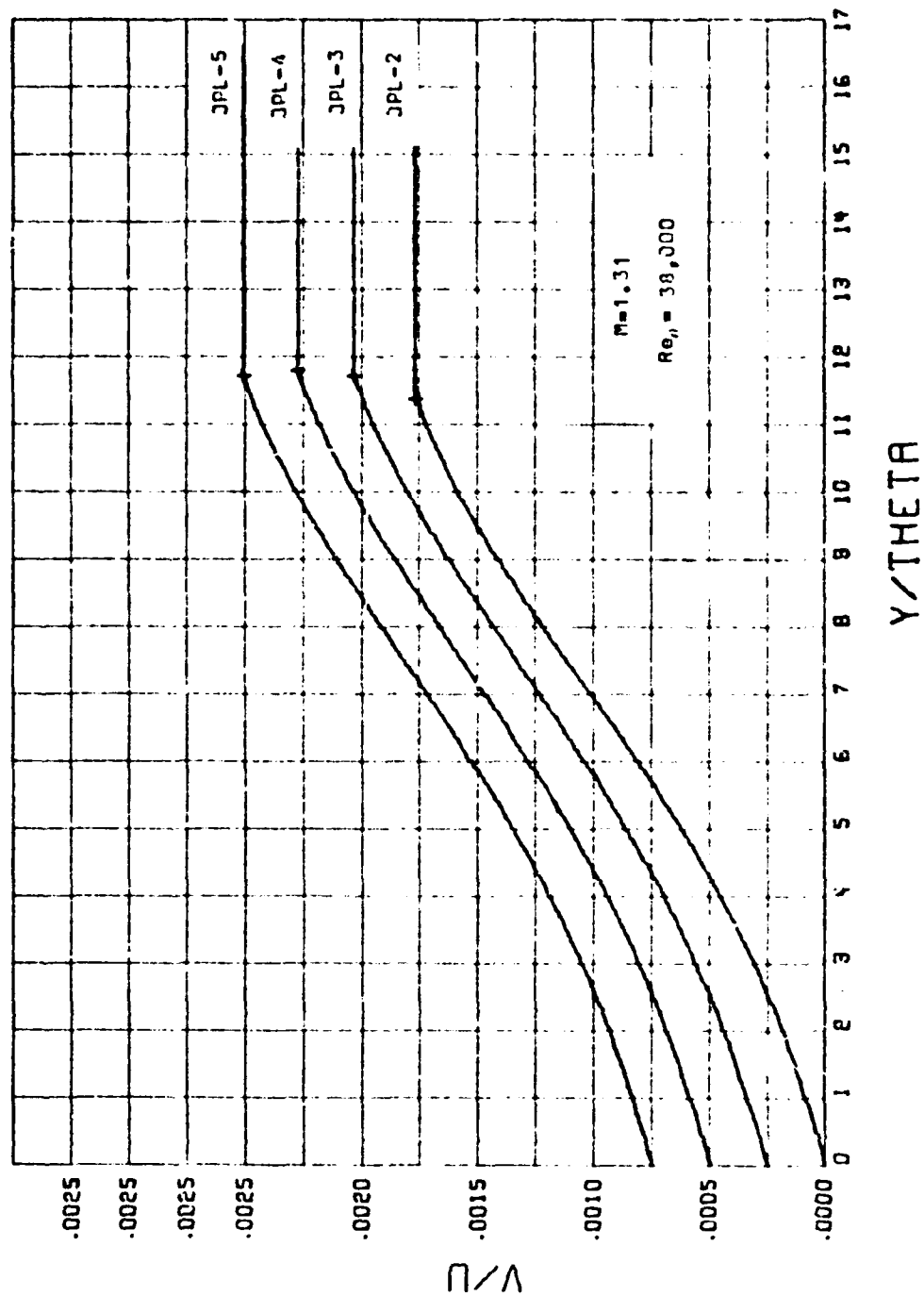


Figure A35. Normal Velocity Distribution.

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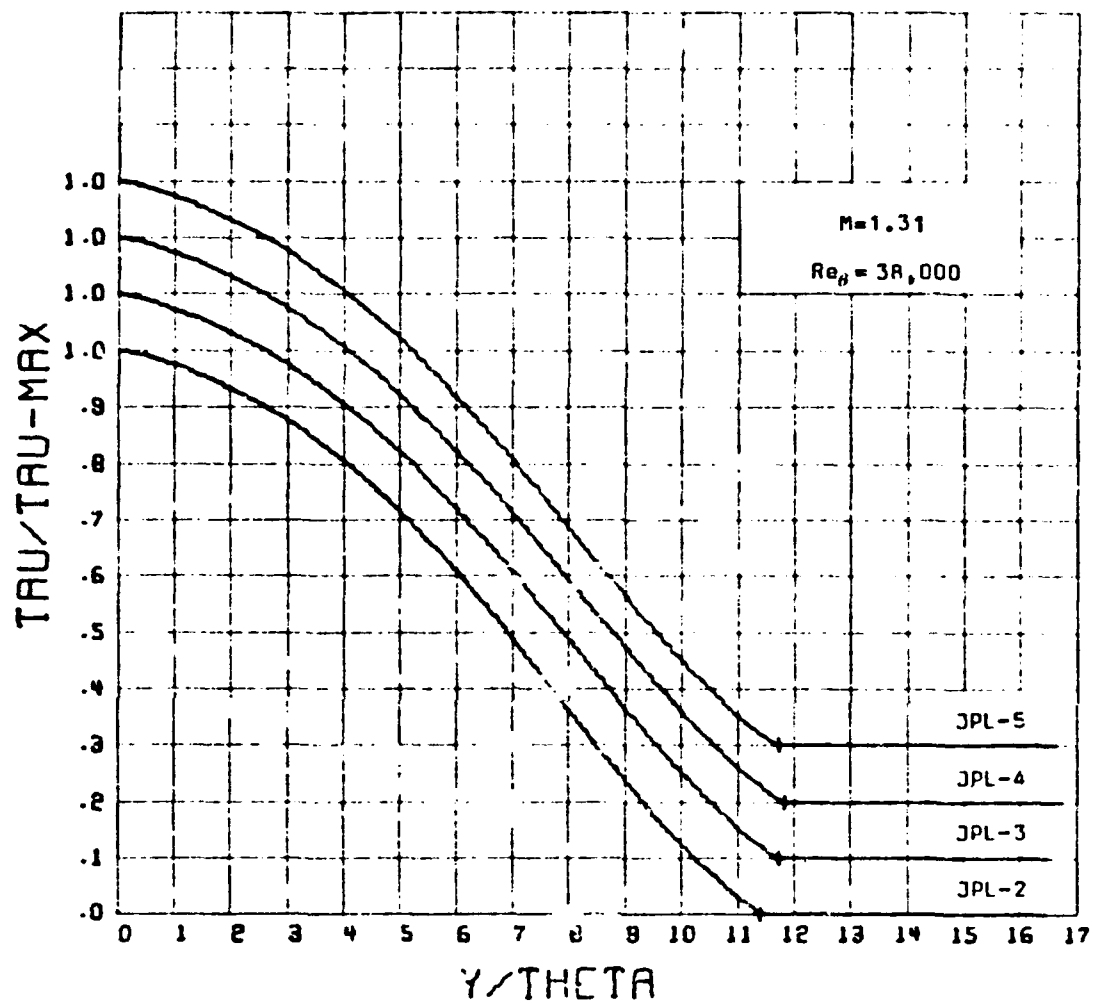


Figure A36. Shear Stress Distribution.

TABLE A13. DATA SUMMARY

PROFILE - JPL-2 - - - PITOT PRESSURE DATA
 FDGE MACH NO. = 2.1722
 X = 26.21 CM

TOTAL PRESSURE = 9331E-05 N/MOO2
 TOTAL TEMPERATURE = 378.65 DEG-K

U/E = 549.35 M/SEC
 RE-DELTA-STAR = 72210.

DELTA STAR = 7410 CM
 RE-THETA = 23070.

U/E = 549.35 M/SEC
 RE-DELTA-STAR = 72210.

LEAST SQUARE FIT PARAMETERS
 U/LINE = 21.4185 M/SEC
 C/HISURE = 7262E-05

C/F = .001654
 Y/MAX = 2.998 CM

P/E = .6109
 V/MIN = .151 CM

DELTA = 3.1706 CM

Y (CM)	V/THETA	Y-PLUS	Y-ME	RND/RHOF	U/HF	U-PLUS	TAU/TAU-MAX	V/H
0.000	0.000	0.	0.0000	.5449	0.0000	0.70	1.0000	0.00000
.010	.042	12.	.2908	.5816	.3888	9.47	1.0000	0.00000
.013	.058	17.	.3564	.6027	.4501	11.97	.9999	0.00001
.027	.117	34.	.4178	.6243	.5267	13.44	.9999	0.00006
.044	.187	64.	.4583	.6406	.5777	14.74	.9997	0.00012
.052	.219	84.	.4809	.6501	.6045	15.74	.9977	0.00015
.071	.300	176.	.4972	.6574	.6132	16.71	.9973	0.00022
.082	.348	271.	.5095	.6639	.6257	16.56	.9954	0.00027
.092	.390	371.	.5167	.6684	.6329	16.77	.9944	0.00029
.094	.417	419.	.5262	.6724	.6415	17.91	.9943	0.00032
.113	.477	539.	.5361	.6757	.6522	17.32	.9929	0.00034
.139	.547	680.	.5418	.6785	.6578	17.49	.9916	0.00036
.140	.565	713.	.5491	.6831	.6649	17.63	.9903	0.00036
.141	.583	746.	.5591	.6871	.6744	17.96	.9893	0.00037
.170	.718	203.	.5688	.6921	.6837	18.32	.9874	0.00041
.187	.793	231.	.5744	.6950	.6920	18.37	.9854	0.00044
.201	.852	246.	.5844	.7004	.6992	18.57	.9841	0.00046
.217	.913	261.	.5904	.7035	.7030	18.81	.9830	0.00046
.230	.963	294.	.5993	.7083	.7120	19.24	.9814	0.00047
.259	1.033	327.	.6091	.7137	.7219	19.31	.9789	0.00047
.290	1.120	368.	.6183	.7179	.7274	19.50	.9737	0.00049
.334	1.378	402.	.6235	.7218	.7319	19.49	.9693	0.00049
.354	1.401	439.	.6311	.7262	.7404	19.49	.9654	0.00049
.382	1.416	471.	.6416	.7329	.7498	20.16	.9618	0.00049
.423	1.745	525.	.6507	.7374	.7574	20.19	.9580	0.00049
.468	1.893	553.	.6540	.7404	.7615	20.49	.9572	0.00049
.506	2.167	615.	.6557	.7444	.7635	20.78	.9543	0.00049
.546	2.214	644.	.6709	.7497	.7744	20.91	.9492	0.00049
.587	2.311	674.	.6740	.7532	.7783	21.31	.9364	0.00049
.629	2.434	724.	.6847	.7592	.7843	21.25	.9292	0.00049
.674	2.654	774.	.6914	.7626	.7900	21.44	.9221	0.00049
.719	2.843	836.	.7007	.7684	.7959	21.44	.9128	0.00049
.774	3.015	885.	.7097	.7734	.8009	21.45	.9027	0.00049
.831	3.203	941.	.7189	.7801	.8060	22.10	.8934	0.00049
.891	3.415	1041.	.7319	.7847	.8241	22.41	.8739	0.00049
.953	3.602	1109.	.7375	.7924	.8385	22.54	.8645	0.00049
.994	3.905	1146.	.7484	.7998	.8460	22.61	.8539	0.00049
1.040	4.147	1204.	.7574	.8026	.8490	22.61	.8444	0.00049
1.094	4.385	1300.	.7654	.8069	.8494	22.64	.8344	0.00049
1.154	4.642	1392.	.7741	.8127	.8539	23.24	.8244	0.00049
1.214	4.842	1454.	.7774	.8151	.8545	23.17	.8115	0.00049

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TABLE A13. (CONT.)

Y (CH)	V/THEA	V-PLUS	M/ME	ICONT.1	U/UE	II-PLUS	TAU/TAU-MAX	V/U
1.131	4.778	1394.	.7778	.8202	.8588	23.49	.8027	.000429
1.177	4.950	1444.	.7813	.8277	.8614	23.57	.7906	.000467
1.220	5.154	1504.	.7905	.8391	.8691	23.78	.7756	.000570
1.264	5.314	1581.	.7955	.8529	.8717	23.90	.7635	.000735
1.316	5.518	1610.	.8009	.8688	.8756	24.02	.7476	.000778
1.341	5.663	1652.	.8070	.8843	.8799	24.14	.7360	.000908
1.373	5.840	1704.	.8119	.8999	.8833	24.27	.7215	.000947
1.416	5.979	1748.	.8199	.9164	.8888	24.44	.7097	.000987
1.459	6.147	1798.	.8254	.9349	.8977	24.57	.6960	.000919
1.502	6.291	1845.	.8304	.9547	.8941	24.68	.6826	.000944
1.532	6.473	1899.	.8367	.9746	.8904	24.91	.6686	.000990
1.573	6.664	1934.	.8418	.9946	.8939	24.93	.6506	.001030
1.612	6.811	1987.	.8469	.713	.8971	25.04	.6349	.001070
1.650	7.009	2045.	.8528	.8759	.9112	25.17	.6162	.001118
1.697	7.170	2092.	.8599	.9372	.9145	25.34	.6005	.001157
1.739	7.304	2131.	.8642	.9568	.9187	25.41	.5873	.001190
1.779	7.513	2192.	.8702	.9995	.9227	25.54	.5664	.001242
1.845	7.978	2299.	.8820	.9930	.9303	25.79	.5291	.001334
1.911	8.071	2355.	.8878	.9034	.9340	25.91	.5090	.001383
1.958	8.270	2413.	.8925	.9074	.9369	26.01	.4981	.001434
1.998	8.430	2460.	.8973	.9113	.9399	26.11	.4710	.001475
2.028	8.564	2499.	.9016	.9148	.9426	26.20	.4567	.001504
2.113	8.924	2604.	.9122	.9236	.9492	26.42	.4177	.001603
2.160	9.122	2662.	.9193	.9287	.9529	26.54	.3945	.001653
2.213	9.348	2727.	.9238	.9332	.9542	26.65	.3721	.001710
2.260	9.460	2760.	.9269	.9359	.9561	26.72	.3599	.001739
2.294	9.553	2817.	.9319	.9401	.9611	26.82	.3390	.001788
2.335	9.649	2875.	.9375	.9448	.9644	26.93	.3177	.001838
2.371	10.013	2922.	.9434	.9499	.9679	27.05	.3004	.001878
2.440	10.345	3015.	.9605	.9652	.9715	27.17	.2852	.001959
2.493	10.527	3072.	.9640	.9591	.9741	27.26	.2662	.002003
2.542	10.694	3121.	.9677	.9623	.9763	27.33	.2290	.002042
2.584	10.954	3197.	.9626	.9644	.9761	27.43	.2024	.002103
2.616	11.148	3244.	.9645	.9670	.9813	27.50	.1929	.002125
2.659	11.339	3277.	.9700	.9731	.9813	27.57	.1755	.002164
2.712	11.612	3330.	.9728	.9754	.9849	27.63	.1580	.002204
2.767	11.600	3385.	.9763	.9787	.9868	27.69	.1404	.002244
2.773	11.739	3424.	.9792	.9813	.9885	27.75	.1277	.002272
2.808	12.072	3523.	.9833	.9849	.9908	27.83	.0547	.002337
2.830	12.261	3560.	.9851	.9865	.9918	27.86	.0879	.002362
2.977	12.435	3620.	.9873	.9885	.9930	27.90	.0712	.002399
2.970	12.544	3663.	.9898	.9908	.9944	27.95	.0606	.002422
2.938	12.662	3705.	.9907	.9909	.9945	27.96	.0518	.002447
3.030	12.834	3745.	.9923	.9931	.9958	28.00	.0395	.002470
3.072	13.016	3798.	.9936	.9942	.9965	28.03	.0271	.002497
3.121	13.182	3847.	.9941	.9944	.9967	28.03	.0184	.002521
3.161	13.343	3895.	.9949	.9943	.9978	28.07	.0062	.002543
3.201	13.539	3945.	.9957	.9970	.9982	28.08	0.0000	.002577
3.253	13.692	3994.	.9970	.9973	.9984	28.09	0.0000	.002597
3.303	13.971	4077.	.9977	.9979	.9987	28.10	0.0000	.002597
3.359	14.319	4178.	.9984	.9987	.9992	28.12	0.0000	.002597
3.442	14.705	4291.	.9994	.9996	.9996	28.14	0.0000	.002597
3.554	15.077	4445.	.9995	.9994	.9997	28.14	0.0000	.002597
3.584	15.183	4510.	1.0001	1.0001	1.0000	28.15	0.0000	.002597
3.625	15.311	4548.	1.0003	1.0007	1.0001	28.15	0.0000	.002597
3.654	15.440	4595.	.9999	.9999	.9999	28.15	0.0000	.002597

TABLE A13. (CONT.)
PROFILE - JPL-3 -- - PITOT PRESSURE DATA

FOUR MACH NO. = 2.1646 TOTAL PRESSURE = .9331E+05 N/MOO2
X = -7.62 CM TOTAL TEMPERATURE = 311.07 DEG-K

Y (CM)	Y/THETA	Y-PLUS	M/NE	RMR/RMFE	U/UE	U-PLUS	TAU/TAU-MAX	V/UV
0.010	0.000	0.	0.0000	.5461	0.0700	0.00	1.0000	0.00000
0.010	.041	12.	.3137	.5908	.4081	10.44	1.0000	0.00000
0.010	.042	18.	.3085	.5978	.4727	12.34	.9999	0.00002
0.010	.114	36.	.4194	.6440	.5701	13.94	.9997	0.00016
0.010	.144	48.	.4409	.6760	.6433	14.86	.9995	0.00011
0.010	.239	110.	.4805	.6809	.6845	15.76	.9973	0.00011
0.010	.304	104.	.5078	.6832	.6237	16.54	.9863	0.00027
0.010	.304	118.	.5188	.6683	.6364	16.87	.9845	0.00033
0.010	.420	144.	.5345	.6748	.6521	17.37	.9825	0.00034
0.010	.674	172.	.5474	.6731	.6434	17.67	.9806	0.00036
0.010	.806	180.	.5444	.6864	.6605	17.77	.9807	0.00036
0.010	.704	210.	.5637	.6904	.6745	18.13	.9877	0.00036
0.010	.777	231.	.5756	.6945	.6907	18.45	.9859	0.00037
0.010	.807	247.	.5847	.7013	.6902	18.70	.9829	0.00039
0.010	.900	293.	.5951	.7040	.7074	18.94	.9807	0.00037
0.010	1.369	325.	.6140	.7128	.7177	19.27	.9774	0.00034
0.010	1.344	340.	.6130	.7147	.7241	19.44	.9744	0.00030
0.010	1.307	417.	.6230	.7257	.7341	19.44	.9694	0.00030
0.010	1.640	471.	.6369	.7312	.7454	20.34	.9627	0.00030
0.010	1.724	515.	.6492	.7474	.7540	20.41	.9578	0.00027
0.010	1.972	568.	.6547	.7419	.7624	20.40	.9577	0.00034
0.010	2.030	604.	.6523	.7452	.7624	20.74	.9467	0.00034
0.010	2.140	647.	.6714	.7509	.7751	20.98	.9417	0.00020
0.010	2.364	700.	.6744	.7638	.7751	21.10	.9347	0.00042
0.010	2.404	745.	.6744	.7638	.7867	21.33	.9384	0.00041
0.010	2.405	801.	.6873	.7641	.7867	21.33	.9273	0.00027
0.010	2.405	843.	.7027	.7702	.8004	21.76	.9140	0.00036
0.010	3.075	905.	.7112	.7757	.8074	21.66	.9042	0.00036
0.010	3.174	947.	.7154	.7797	.8111	21.66	.8973	0.00036
0.010	3.243	1001.	.7249	.7844	.8143	22.30	.8877	0.00044
0.010	3.504	1074.	.7308	.7884	.8230	22.44	.8772	0.00041
0.010	3.704	1174.	.7375	.7930	.8222	22.60	.8644	0.00044
0.010	3.973	1184.	.7451	.7941	.8303	22.74	.8537	0.00043
0.010	4.130	1231.	.7518	.8040	.8406	22.89	.8447	0.00030
0.010	4.274	1275.	.7547	.8057	.8424	23.05	.8350	0.00034
0.010	4.574	1350.	.7671	.8132	.8504	23.30	.8154	0.00041
0.010	4.642	1391.	.7725	.8170	.8564	23.43	.8044	0.00044
0.010	4.838	1436.	.7749	.8201	.8579	23.53	.7993	0.00044
0.010	4.903	1486.	.7852	.8240	.8667	23.71	.7841	0.00075
0.010	5.004	1553.	.7945	.8319	.8630	23.61	.7702	0.00071
0.010	5.397	1610.	.8005	.8370	.8753	24.07	.7453	0.00075

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TABLE A13. (CONT.)
H/RE RND/PHNF

Y (°)	Y/THETA	Y-PLUS	H/RE	RND/PHNF	U/HF	I-PLUS	TAU/TAU-MAX	V/U
1.375	5.668	1.85	.808	.816	.8705	26.22	.7392	.00106
1.417	5.820	1.736	.8150	.824	.8892	26.40	.7210	.000843
1.463	6.007	1.702	.8205	.8317	.891	26.52	.7051	.00084
1.510	6.200	1.650	.8275	.8570	.8939	26.43	.6882	.00084
1.566	6.362	1.595	.8332	.8812	.8978	26.81	.6747	.000843
1.565	6.550	1.554	.8379	.9068	.9010	26.91	.6566	.00100
1.645	6.764	2.016	.8450	.8702	.9058	25.07	.6371	.001058
1.676	6.804	2.053	.8500	.8761	.9002	25.14	.6252	.00108
1.723	7.076	2.111	.8548	.8703	.9137	25.32	.6044	.001135
1.771	7.275	2.170	.8606	.8873	.9162	25.40	.5848	.001154
1.806	7.410	2.211	.8661	.8866	.9108	25.52	.5737	.001218
1.859	7.635	2.278	.8730	.8920	.9243	25.67	.5504	.001274
1.899	7.801	2.327	.8784	.8963	.9278	25.78	.5331	.001316
1.928	7.950	2.374	.8818	.9000	.9209	25.84	.5168	.001356
1.984	8.164	2.431	.8886	.9065	.9209	26.00	.504	.001407
2.036	8.354	2.492	.8958	.9103	.9388	26.15	.4747	.00157
2.070	8.500	2.536	.9002	.9139	.9416	26.24	.4589	.001545
2.113	8.678	2.589	.9067	.9193	.9457	26.38	.4395	.001541
2.166	8.884	2.651	.9098	.9218	.9476	26.44	.4171	.001594
2.222	9.043	2.698	.913	.9233	.9516	26.58	.4000	.001635
2.280	9.283	2.759	.9236	.9333	.9540	26.72	.3738	.001696
2.302	9.455	2.821	.9279	.9369	.9586	26.81	.3550	.001740
2.338	9.601	2.864	.9323	.9404	.9612	26.90	.3300	.001777
2.404	9.872	2.945	.9392	.9465	.9654	27.04	.3096	.001845
2.447	10.049	2.998	.9437	.9499	.9677	27.12	.2905	.001849
2.494	10.242	3.056	.9487	.9566	.9710	27.23	.2699	.001937
2.543	10.446	3.116	.9532	.9584	.9736	27.32	.2483	.001964
2.583	10.607	3.164	.9589	.9636	.9769	27.43	.2315	.002024
2.629	10.852	3.238	.9627	.9688	.9788	27.50	.2063	.002041
2.678	11.082	3.306	.9661	.9698	.9810	27.57	.1833	.002123
2.741	11.259	3.359	.9717	.9767	.9842	27.68	.1650	.002173
2.788	11.452	3.417	.9748	.9774	.9860	27.74	.1476	.002214
2.832	11.620	3.469	.9777	.9800	.9876	27.80	.1308	.002251
2.879	11.828	3.520	.9816	.9836	.9898	27.88	.1129	.002291
2.931	12.076	3.591	.9845	.9862	.9903	27.89	.0947	.002332
2.964	12.172	3.631	.9860	.9873	.9922	27.96	.0833	.002357
3.004	12.339	3.681	.9887	.9880	.9926	27.97	.0697	.002387
3.043	12.516	3.734	.9884	.9894	.9934	28.01	.0558	.002418
3.073	12.630	3.765	.9894	.9904	.9942	28.03	.0474	.002456
3.126	12.836	3.829	.9919	.9927	.9954	28.07	.0321	.002475
3.169	13.017	3.883	.9930	.9937	.9962	28.10	.0201	.002507
3.210	13.142	3.921	.9936	.9942	.9965	28.11	.0121	.002514
3.233	13.267	3.958	.9937	.9943	.9965	28.11	.0044	.002531
3.264	13.413	4.002	.9942	.9948	.9964	28.12	0.0000	.002541
3.306	13.560	4.048	.9947	.9946	.9979	28.16	0.0000	.002541
3.369	13.724	4.095	.9971	.9974	.9984	28.17	0.0000	.002541
3.401	13.866	4.147	.9973	.9975	.9985	28.18	0.0000	.002541
3.437	14.117	4.212	.9984	.9984	.9991	28.20	0.0000	.002541
3.470	14.253	4.262	.9988	.9989	.9993	28.21	0.0000	.002541
3.516	14.447	4.308	.9995	.9995	.9997	28.22	0.0000	.002541
3.556	14.597	4.356	.9999	.9999	.9999	28.23	0.0000	.002541
3.589	14.738	4.407	.9999	.9999	.9999	28.23	0.0000	.002541
3.627	14.894	4.464	.9998	.9998	.9999	28.22	0.0000	.002541
3.659	15.051	4.490	1.0002	1.0002	1.0001	28.23	0.0000	.002541
3.718	15.270	4.556	1.0004	1.0007	1.0004	28.24	0.0000	.002541

TABLE A13. (CONT.)
PROFILE - JPL-4 -- - PITOT PRESSURE DATA

EDGE MACH NO.= 2.1642		TOTAL PRESSURE=.9331E+05 N/M ²		TOTAL TEMPERATURE= 309.86 DEG-K		DELTA STAR=.7967 CM		T-META=.2555 CM		M= 3.117		CF=.001532	
X= 0.00 CM		RE-DELTA-STAR= 77000.		RE-TMETA= 24690.		DELTA STAR= 7967 CM		T-META=.2555 CM		M= 3.117		CF=.001532	
LEAST SQUARE FIT PARAMETERS													
U-TAU= 21.2347 M/SEC:		CF=.001433		YMAX= 3.226 CM		PI=.6194		DELTA= 3.4195 CM					
CHICKS=.0723E-05						YMIN=.152 CM							
Y (CM)	Y/TMETA	Y-PLUS	M/ME	RMY/RMDE	U/U	U-PLUS	TAU/TAU-MAX	V/U					
0.000	0.000	0.	0.0000	.5467	0.0000	0.00	1.0000	0.000000					
.010	.039	12.	.2958	.5864	.3864	10.11	1.0000	0.000000					
.011	.043	13.	.3181	.5924	.4132	10.83	.9990	0.000000					
.041	.161	50.	.4409	.6368	.5536	14.67	.9986	.000010					
.051	.235	74.	.4782	.6508	.5940	15.81	.9975	.000016					
.071	.290	89.	.4984	.6580	.6108	16.28	.9967	.000120					
.090	.354	111.	.5165	.6676	.6321	16.89	.9953	.000027					
.114	.454	143.	.5342	.6760	.6497	17.39	.9933	.000336					
.144	.543	177.	.5475	.6824	.6627	17.77	.9910	.000046					
.157	.568	188.	.5587	.6882	.6735	18.08	.9902	.000349					
.171	.647	210.	.5654	.6914	.6788	18.27	.9886	.000056					
.183	.717	226.	.5700	.6950	.6861	18.45	.9874	.000060					
.198	.777	245.	.5781	.6982	.6919	18.62	.9859	.000066					
.213	.854	270.	.5874	.7031	.7005	18.87	.9839	.000074					
.229	.975	307.	.5955	.7075	.7040	19.09	.9808	.000085					
.244	1.035	346.	.6024	.7113	.7145	19.28	.9791	.000091					
.255	1.115	351.	.6108	.7158	.7219	19.50	.9769	.000099					
.265	1.115	387.	.6154	.7185	.7263	19.63	.9736	.000111					
.274	1.229	405.	.6241	.7219	.7347	19.84	.9720	.000117					
.284	1.284	458.	.6291	.7249	.7394	20.02	.9689	.000135					
.291	1.443	458.	.6303	.7249	.7514	20.34	.9619	.000151					
.299	1.602	505.	.6441	.7349	.7563	20.53	.9549	.000168					
.307	1.751	552.	.6497	.7381	.7620	20.70	.9531	.000180					
.314	1.840	587.	.6544	.7420	.7684	20.89	.9475	.000190					
.316	2.014	615.	.6619	.7465	.7694	20.89	.9412	.000218					
.324	2.178	687.	.6701	.7503	.7737	21.05	.9359	.000235					
.331	2.313	722.	.6740	.7537	.7777	21.17	.9349	.000255					
.337	2.466	778.	.6848	.7593	.7859	21.42	.9296	.000274					
.343	2.615	855.	.6909	.7631	.7909	21.57	.9233	.000290					
.346	2.725	899.	.6977	.7674	.7965	21.74	.9184	.000306					
.350	2.854	932.	.6992	.7683	.7977	21.78	.9126	.000331					
.353	3.033	957.	.7100	.7752	.8064	22.05	.9062	.000352					
.357	3.172	1000.	.7148	.7790	.8111	22.19	.9073	.000352					
.362	3.336	1052.	.7211	.7824	.8152	22.32	.8990	.000376					
.367	3.550	1100.	.7273	.7865	.8201	22.47	.8977	.000409					
.371	3.636	1162.	.7351	.7917	.8262	22.66	.8902	.000430					
.374	3.478	1223.	.7428	.7964	.8321	22.85	.8802	.000441					
.377	4.077	1286.	.7495	.8013	.8373	23.01	.8702	.000455					
.381	4.255	1342.	.7546	.8061	.8425	23.17	.8643	.000465					
.387	4.555	1404.	.7619	.8098	.8466	23.30	.8555	.000476					
.390	4.625	1460.	.7629	.8147	.8510	23.47	.8461	.000485					
.397	4.642	1540.	.7607	.8230	.8604	23.74	.8361	.000491					

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE A13. (CONT.)

Y (CM)	Y/THETA	Y-PLUS	W/E	RMG/RMDF	U/HF	U-PLUS	TAU/TAU-MAX	V/U
1.284	5.024	1585.	.7851	.8261	.8637	23.44	.7833	.000669
1.311	5.130	1618.	.7883	.8284	.8661	23.92	.7755	.000690
1.344	5.249	1642.	.7935	.8321	.8698	24.04	.7651	.000718
1.382	5.400	1706.	.7989	.8360	.8737	24.16	.7542	.000744
1.425	5.587	1762.	.8062	.8414	.8790	24.33	.7400	.000764
1.466	5.737	1810.	.8107	.8466	.8821	24.43	.7278	.000815
1.514	5.935	1872.	.8160	.8495	.8858	24.55	.7111	.000858
1.562	6.075	1916.	.8225	.8534	.8903	24.70	.6991	.000889
1.609	6.209	1959.	.8264	.8563	.8931	24.74	.6873	.000919
1.650	6.417	2024.	.8350	.8628	.8990	24.98	.6685	.000967
1.699	6.611	2085.	.8398	.8665	.9023	25.08	.6507	.001012
1.735	6.780	2129.	.8442	.8697	.9052	25.18	.6374	.001044
1.773	6.939	2169.	.8537	.8787	.9115	25.40	.6196	.001089
1.814	7.104	2242.	.8557	.8787	.9129	25.63	.6031	.001130
1.864	7.262	2291.	.8632	.8845	.9179	25.59	.5879	.001167
1.904	7.451	2351.	.8694	.8893	.9219	25.73	.5689	.001214
1.951	7.635	2408.	.8733	.8924	.9244	25.81	.5501	.001259
1.999	7.819	2466.	.8788	.8968	.9280	25.93	.5311	.001305
2.041	8.000	2520.	.8843	.9011	.9315	26.04	.5134	.001344
2.083	8.181	2581.	.8903	.9060	.9353	26.17	.4928	.001397
2.139	8.370	2641.	.8963	.9109	.9391	26.30	.4726	.001445
2.192	8.569	2700.	.9018	.9154	.9426	26.42	.4523	.001493
2.244	8.703	2764.	.9056	.9184	.9449	26.49	.4365	.001530
2.291	8.927	2814.	.9115	.9233	.9486	26.62	.4123	.001587
2.342	9.126	2879.	.9181	.9288	.9526	26.75	.3906	.001638
2.387	9.265	2923.	.9218	.9319	.9549	26.83	.3753	.001673
2.416	9.456	2982.	.9270	.9362	.9580	26.93	.3647	.001721
2.461	9.633	3039.	.9335	.9417	.9619	27.07	.3351	.001766
2.503	9.787	3078.	.9365	.9443	.9637	27.13	.3216	.001797
2.541	9.924	3138.	.9414	.9485	.9667	27.23	.3011	.001843
2.578	10.090	3183.	.9449	.9514	.9687	27.30	.2856	.001879
2.607	10.204	3219.	.9482	.9543	.9707	27.36	.2734	.001904
2.650	10.408	3283.	.9514	.9570	.9725	27.43	.2517	.001955
2.705	10.587	3340.	.9548	.9617	.9757	27.54	.2330	.001998
2.799	10.990	3462.	.9652	.9690	.9805	27.70	.1918	.002090
2.845	11.124	3512.	.9682	.9725	.9828	27.78	.1775	.002122
2.875	11.255	3550.	.9707	.9755	.9836	27.81	.1658	.002148
2.921	11.433	3606.	.9734	.9767	.9852	27.84	.1485	.002186
2.978	11.656	3677.	.9775	.9798	.9875	27.94	.1276	.002233
3.004	11.760	3710.	.9800	.9820	.9899	27.99	.1181	.002254
3.051	11.949	3774.	.9822	.9840	.9901	28.03	.0996	.002295
3.093	12.103	3818.	.9840	.9854	.9911	28.07	.0881	.002320
3.122	12.217	3854.	.9856	.9871	.9920	28.10	.0785	.002341
3.175	12.424	3920.	.9890	.9901	.9939	28.17	.0517	.002378
3.240	12.759	4025.	.9915	.9924	.9953	28.22	.0366	.002433
3.312	12.983	4089.	.9932	.9939	.9962	28.25	.0224	.002463
3.365	13.092	4130.	.9944	.9953	.9971	28.28	.0139	.002492
3.433	13.241	4171.	.9953	.9958	.9974	28.29	.0046	.002502
3.475	13.406	4229.	.9964	.9967	.9980	28.31	0.0000	.002512
3.503	13.539	4271.	.9973	.9974	.9985	28.33	0.0000	.002512
3.545	13.877	4378.	.9983	.9985	.9991	28.35	0.0000	.002512
3.675	14.185	4475.	.9994	.9995	.9997	28.37	0.0000	.002512
3.693	14.334	4522.	.9994	.9995	.9997	28.37	0.0000	.002512
3.711	14.518	4590.	1.0000	1.0000	1.0000	28.39	0.0000	.002512
3.744	14.652	4622.	.9998	.9998	.9999	28.37	0.0000	.002512
3.792	14.901	4669.	1.0001	1.0001	1.0000	28.38	0.0000	.002512

TABLE A13. (CONT.)
PROFILE - JPL-5 - - - PITOT PRESSURE DATA

EDGE MACH NO.= 2.1722										TOTAL PRESSURE= .9331E+05 N/M**2										TOTAL TEMPERATURE= 312.05 DEG-K																			
X= 7.62 CM										DELTA STAR= .8137 CM										THETA= .2601 CM										M= 3.127									
U= 552.35 M/SEC										RE-DELTA-STAR= 78400.										MINALL= 1.7570 CM**2/SEC										DELTA= 3.489R CM									
LEAST SQUARE FIT PARAMETERS										CF= .001624										PI= .4275										YMIN= .153 CM									
UTURN= 21.3250 M/SEC										YMAX= 3.295 CM																													
CHISQR= .0870E-05																																							
Y (CM)	Y/THETA	Y-PLUS	M/WE	RHO/RHOF	U/UE	I-PLUS	TAU/TAU-MAX	V/U		Y (CM)	Y/THETA	Y-PLUS	M/WE	RHO/RHOF	U/UE	I-PLUS	TAU/TAU-MAX	V/U		Y (CM)	Y/THETA	Y-PLUS	M/WE	RHO/RHOF	U/UE	I-PLUS	TAU/TAU-MAX	V/U											
0.200	0.070	12.	0.0000	.5448	0.0000	0.00	1.0000	0.000000		0.200	0.070	12.	0.0000	.5448	0.0000	0.00	1.0000	0.000000		0.200	0.070	12.	0.0000	.5448	0.0000	0.00	1.0000	0.000000											
.010	.034	12.	.2989	.5855	.3006	10.23	1.0000	0.000000		.010	.034	12.	.2989	.5855	.3006	10.23	1.0000	0.000000		.010	.034	12.	.2989	.5855	.3006	10.23	1.0000	0.000000											
.011	.063	13.	.3327	.5952	.4313	11.33		0.000000		.011	.063	13.	.3327	.5952	.4313	11.33		0.000000		.011	.063	13.	.3327	.5952	.4313	11.33		0.000000											
.031	.171	33.	.4332	.6303	.5657	14.47	.9990	0.000007		.031	.171	33.	.4332	.6303	.5657	14.47	.9990	0.000007		.031	.171	33.	.4332	.6303	.5657	14.47	.9990	0.000007											
.059	.220	72.	.4762	.6481	.7115	15.76	.9991	.000007		.059	.220	72.	.4762	.6481	.7115	15.76	.9991	.000007		.059	.220	72.	.4762	.6481	.7115	15.76	.9991	.000007											
.073	.322	101.	.5042	.6606	.8213	16.57	.9976	.000024		.073	.322	101.	.5042	.6606	.8213	16.57	.9976	.000024		.073	.322	101.	.5042	.6606	.8213	16.57	.9976	.000024											
.073	.300	120.	.5221	.6689	.6383	17.09	.9960	.000029		.073	.300	120.	.5221	.6689	.6383	17.09	.9960	.000029		.073	.300	120.	.5221	.6689	.6383	17.09	.9960	.000029											
.111	.423	135.	.5326	.6740	.6489	17.39	.9949	.000033		.111	.423	135.	.5326	.6740	.6489	17.39	.9949	.000033		.111	.423	135.	.5326	.6740	.6489	17.39	.9949	.000033											
.134	.517	143.	.5425	.6788	.6585	17.67	.9921	.000041		.134	.517	143.	.5425	.6788	.6585	17.67	.9921	.000041		.134	.517	143.	.5425	.6788	.6585	17.67	.9921	.000041											
.153	.559	148.	.5444	.6840	.6500	18.00	.9905	.000044		.153	.559	148.	.5444	.6840	.6500	18.00	.9905	.000044		.153	.559	148.	.5444	.6840	.6500	18.00	.9905	.000044											
.191	.716	183.	.5745	.6840	.6801	18.56	.9871	.000051		.191	.716	183.	.5745	.6840	.6801	18.56	.9871	.000051		.191	.716	183.	.5745	.6840	.6801	18.56	.9871	.000051											
.223	.868	232.	.6061	.7024	.7026	18.94	.9841	.000073		.223	.868	232.	.6061	.7024	.7026	18.94	.9841	.000073		.223	.868	232.	.6061	.7024	.7026	18.94	.9841	.000073											
.243	.956	271.	.6384	.7067	.7063	19.15	.9815	.000082		.243	.956	271.	.6384	.7067	.7063	19.15	.9815	.000082		.243	.956	271.	.6384	.7067	.7063	19.15	.9815	.000082											
.264	1.093	302.	.6562	.7144	.7221	19.53	.9778	.000086		.264	1.093	302.	.6562	.7144	.7221	19.53	.9778	.000086		.264	1.093	302.	.6562	.7144	.7221	19.53	.9778	.000086											
.332	1.278	403.	.6217	.7208	.7322	19.83	.9725	.000115		.332	1.278	403.	.6217	.7208	.7322	19.83	.9725	.000115		.332	1.278	403.	.6217	.7208	.7322	19.83	.9725	.000115											
.350	1.376	436.	.6281	.7246	.7300	20.00	.9694	.000125		.350	1.376	436.	.6281	.7246	.7300	20.00	.9694	.000125		.350	1.376	436.	.6281	.7246	.7300	20.00	.9694	.000125											
.397	1.527	480.	.6348	.7284	.7456	20.23	.9649	.000141		.397	1.527	480.	.6348	.7284	.7456	20.23	.9649	.000141		.397	1.527	480.	.6348	.7284	.7456	20.23	.9649	.000141											
.467	1.718	542.	.6476	.7350	.7550	20.52	.9587	.000162		.467	1.718	542.	.6476	.7350	.7550	20.52	.9587	.000162		.467	1.718	542.	.6476	.7350	.7550	20.52	.9587	.000162											
.530	1.884	596.	.6539	.7394	.7603	20.57	.9530	.000170		.530	1.884	596.	.6539	.7394	.7603	20.57	.9530	.000170		.530	1.884	596.	.6539	.7394	.7603	20.57	.9530	.000170											
.513	1.871	622.	.6613	.7437	.7664	20.84	.9498	.000180		.513	1.871	622.	.6613	.7437	.7664	20.84	.9498	.000180		.513	1.871	622.	.6613	.7437	.7664	20.84	.9498	.000180											
.533	2.167	679.	.6711	.7499	.7750	21.12	.9433	.000211		.533	2.167	679.	.6711	.7499	.7750	21.12	.9433	.000211		.533	2.167	679.	.6711	.7499	.7750	21.12	.9433	.000211											
.539	2.304	726.	.6757	.7527	.7788	21.24	.9377	.000229		.539	2.304	726.	.6757	.7527	.7788	21.24	.9377	.000229		.539	2.304	726.	.6757	.7527	.7788	21.24	.9377	.000229											
.632	2.650	773.	.6818	.7606	.7839	21.33	.9314	.000249		.632	2.650	773.	.6818	.7606	.7839	21.33	.9314	.000249		.632	2.650	773.	.6818	.7606	.7839	21.33	.9314	.000249											
.670	2.876	823.	.6890	.7621	.7814	21.62	.9248	.000269		.670	2.876	823.	.6890	.7621	.7814	21.62	.9248	.000269		.670	2.876	823.	.6890	.7621	.7814	21.62	.9248	.000269											
.723	2.797	878.	.6958	.7652	.7814	21.74	.9171	.000292		.723	2.797	878.	.6958	.7652	.7814	21.74	.9171	.000292		.723	2.797	878.	.6958	.7652	.7814	21.74	.9171	.000292											
.723	2.806	916.	.7020	.7692	.8004	21.90	.9121	.000307		.723	2.806	916.	.7020	.7692	.8004	21.90	.9121	.000307		.723	2.806	916.	.7020	.7692	.8004	21.90	.9121	.000307											
.741	3.001	947.	.7010	.7698	.8013	21.92	.9071	.000322		.741	3.001	947.	.7010	.7698	.8013	21.92	.9071	.000322		.741	3.001	947.	.7010	.7698	.8013	21.92	.9071	.000322											
.803	3.153	995.	.7138	.7747	.8099	22.19	.8998	.000344		.803	3.153	995.	.7138	.7747	.8099	22.19	.8998	.000344		.803	3.153	995.	.7138	.7747	.8099	22.19	.8998	.000344											
.861	3.309	1045.	.7154	.7797	.8156	22.30	.8920	.000366		.861	3.309	1045.	.7154	.7797	.8156	22.30	.8920	.000366		.861	3.309	1045.	.7154	.7797	.8156	22.30	.8920	.000366											
.894	3.436	1084.	.7252	.7842	.8199	22.47	.8855	.000385		.894	3.436	1084.	.7252	.7842	.8199	22.47	.8855	.000385		.894	3.436	1084.	.7252	.7842	.8199	22.47	.8855	.000385											
.912	3.582	1131.	.7299	.7873	.8226	22.58	.8777	.000409		.912	3.582	1131.	.7299	.7873	.8226	22.58	.8777	.000409		.912	3.582	1131.	.7299	.7873	.8226	22.58	.8777	.000409											
.922	3.748	1183.	.7371	.7922	.8262	22.76	.8685	.000434		.922	3.748	1183.	.7371	.7922	.8262	22.76	.8685	.000434		.922	3.748	1183.	.7371	.7922	.8262	22.76	.8685	.000434											
1.036	3.944	1246.	.7416	.7968	.8312	22.85	.8630	.000450		1.036	3.944	1246.	.7416	.7968	.8312	22.85	.8630	.000450		1.036	3.944	1246.	.7416	.7968	.8312	22.85	.8630	.000450											
1.052	4.158	1267.	.7431	.7968	.8312	22.85	.8560	.000477		1.052	4.158	1267.	.7431	.7968	.8312	22.85	.8560	.000477		1.052	4.158	1267.	.7431	.7968	.8312	22.85	.8560	.000477											
1.114	4.200	1346.	.7521	.8023	.8337	23.12	.8465	.000502		1.114	4.200	1346.	.7521	.8023	.8337	23.12	.8465	.000502		1.114	4.200	1346.	.7521	.8023	.8337	23.12	.8465	.000502											
1.153	4.431	1392.	.7660	.8056	.8433	23.23	.8363	.000524		1.153	4.431	1392.	.7660	.8056	.8433	23.23	.8363	.000524		1.153	4.431	1392.	.7660	.8056	.8433	23.23	.8363	.000524											
1.203	4.577	1441.	.7623	.8093	.8473	23.36	.8272	.000549		1.203	4.577	1441.	.7623	.8093	.8473	23.36	.8272	.000549		1.203	4.577	1441.	.7623	.8093	.8473	23.36	.8272	.000549											
1.212	4.746	1466.	.7640	.8141	.8524	23.52	.8163	.000565		1.212	4.746	1466.	.7640	.8141	.8524	23.52	.8163	.000565		1.212	4.746	1466.	.7640	.8141	.8524	23.52	.8163	.000565											
1.213	4.845	1486.	.7747	.8192	.8567	23.66	.8049	.000586		1.213	4.845	1486.	.7747	.8192	.8567	23.66	.8049	.000586		1.213	4.845	1486.	.7747	.8192	.8567	23.66	.8049	.000586											
1.215	5.041	1506.	.7787	.8269	.8657	23.74	.7957	.000610		1.215	5.041	1506.	.7787	.8269	.8657	23.74	.7957	.000610		1.215	5.041	1506.	.7787	.8269	.8657	23.74	.7957	.000610											
1.215	5.041	1506.	.7787	.8269	.8657	23.94	.7822	.000671		1.215	5.041	1506.	.7787	.8269	.8657	23.94	.7822	.000671		1.215	5.041	1506.	.7787	.8269	.8657	23.94	.7822	.000671											

TABLE A13. (CONT.)
M/N/E

Y (CM)	Y/THETA	Y-PLUS	M/N/E	U/UE	U-PLUS	TAU/TAU-MAX	V/U
1.347	5.756	1640.	.7919	.8691	24.05	.7692	.000706
1.417	5.447	1720.	.8000	.8749	24.24	.7545	.000744
1.474	5.481	1794.	.8072	.8800	24.40	.7358	.000793
1.511	5.808	1834.	.8112	.8878	24.49	.7254	.000820
1.562	6.003	1894.	.8171	.8869	24.62	.7090	.000862
1.610	6.198	1954.	.8269	.8937	24.84	.6930	.000903
1.654	6.360	2008.	.8309	.8944	24.93	.6779	.000941
1.704	6.550	2048.	.8352	.8993	25.03	.6607	.000985
1.742	6.694	2114.	.8390	.9019	25.11	.6472	.001019
1.785	6.901	2179.	.8485	.9084	25.32	.6279	.001067
1.834	7.067	2231.	.8559	.9133	25.48	.6119	.001106
1.882	7.233	2284.	.8598	.9159	25.57	.5957	.001146
1.930	7.419	2342.	.8651	.9193	25.68	.5772	.001191
1.979	7.570	2390.	.8706	.9229	25.80	.5620	.001228
2.024	7.702	2432.	.8742	.9253	25.88	.5484	.001261
2.063	7.892	2492.	.8808	.9295	26.02	.5289	.001308
2.103	8.083	2552.	.8862	.9330	26.13	.5090	.001356
2.139	8.224	2597.	.8905	.9356	26.22	.4941	.001391
2.175	8.341	2640.	.8935	.9375	26.29	.4793	.001427
2.235	8.590	2712.	.8985	.9407	26.39	.4551	.001444
2.273	8.737	2759.	.9048	.9446	26.52	.4393	.001521
2.314	8.893	2811.	.9099	.9478	26.63	.4214	.001563
2.364	9.088	2870.	.9169	.9570	26.78	.4010	.001610
2.422	9.235	2916.	.9208	.9544	26.85	.3854	.001647
2.479	9.469	2986.	.9254	.9572	26.95	.3620	.001700
2.538	9.606	3033.	.9293	.9595	27.03	.3451	.001739
2.599	9.757	3084.	.9352	.9631	27.15	.3287	.001777
2.614	9.813	3130.	.9394	.9656	27.23	.3119	.001815
2.664	10.064	3178.	.9434	.9679	27.32	.2957	.001852
2.733	10.172	3212.	.9468	.9699	27.38	.2843	.001878
2.794	10.318	3258.	.9494	.9715	27.44	.2698	.001913
2.833	10.504	3317.	.9534	.9739	27.52	.2493	.001957
2.773	10.640	3364.	.9584	.9767	27.61	.2332	.001993
2.815	10.821	3417.	.9629	.9792	27.70	.2167	.002030
2.877	11.060	3492.	.9675	.9819	27.79	.1927	.002084
2.934	11.280	3562.	.9695	.9830	27.83	.1712	.002132
2.987	11.490	3625.	.9727	.9859	27.93	.1521	.002174
3.035	11.665	3683.	.9779	.9878	28.00	.1349	.002212
3.094	11.900	3757.	.9832	.9907	28.10	.1139	.002257
3.154	12.124	3828.	.9848	.9916	28.13	.0947	.002301
3.200	12.300	3886.	.9878	.9933	28.19	.0802	.002333
3.253	12.525	3949.	.9904	.9947	28.24	.0637	.002369
3.295	12.666	3999.	.9921	.9954	28.27	.0516	.002395
3.347	12.927	4050.	.9939	.9966	28.31	.0342	.002421
3.375	12.974	4097.	.9949	.9972	28.33	.0303	.002442
3.423	13.150	4155.	.9953	.9974	28.33	.0182	.002468
3.441	13.319	4224.	.9969	.9983	28.37	.0048	.002497
3.516	13.514	4268.	.9978	.9988	28.38	0.0000	.002508
3.552	13.652	4311.	.9989	.9994	28.40	0.0000	.002508
3.601	13.843	4371.	.9993	.9996	28.41	0.0000	.002508
3.637	13.979	4414.	1.0003	1.0002	28.43	0.0000	.002508
3.665	14.087	4448.	1.0005	1.0003	28.44	0.0000	.002508
3.714	14.282	4510.	1.0007	1.0004	28.44	0.0000	.002508

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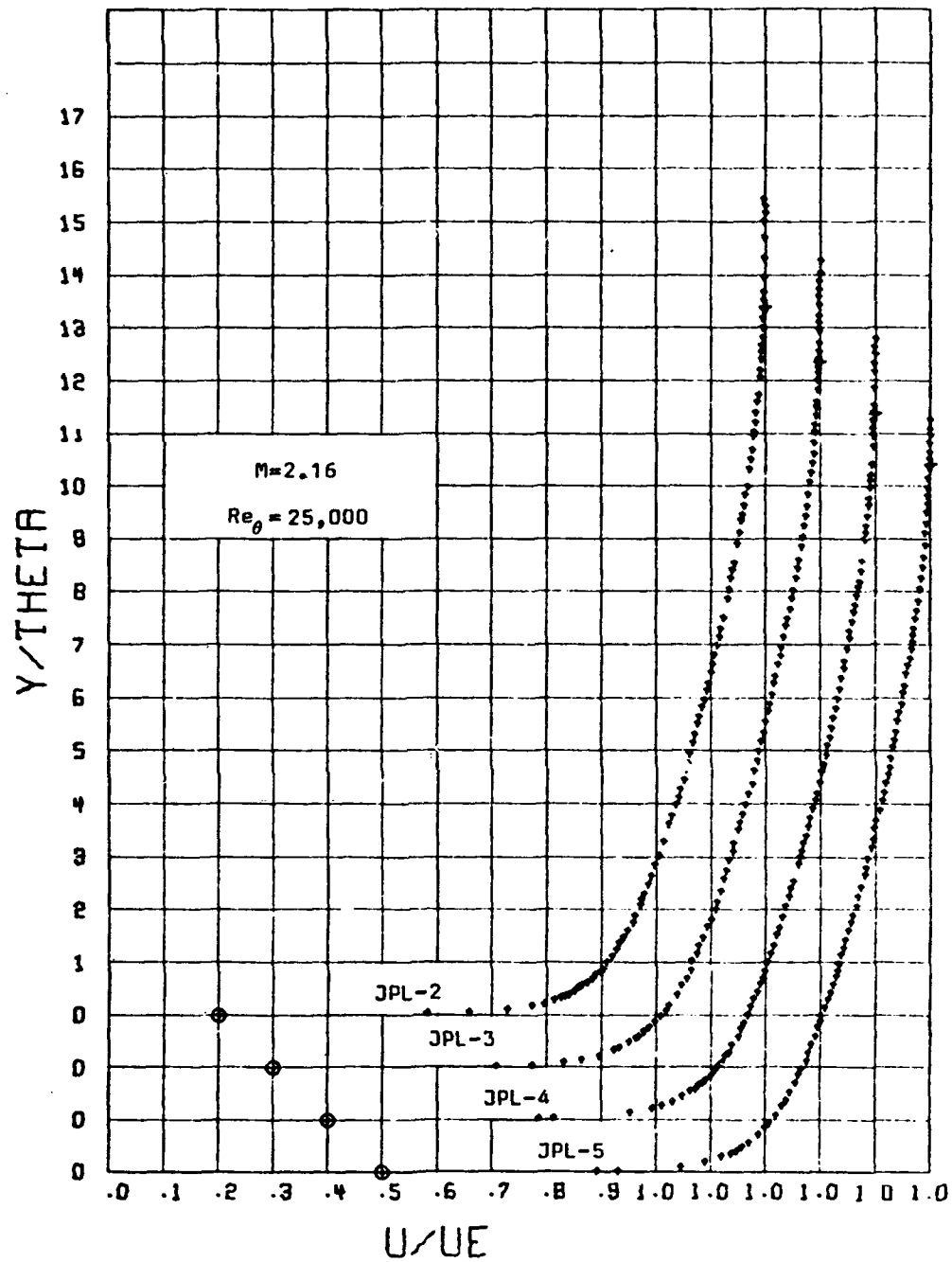


Figure A37. Mean Velocity Profiles.

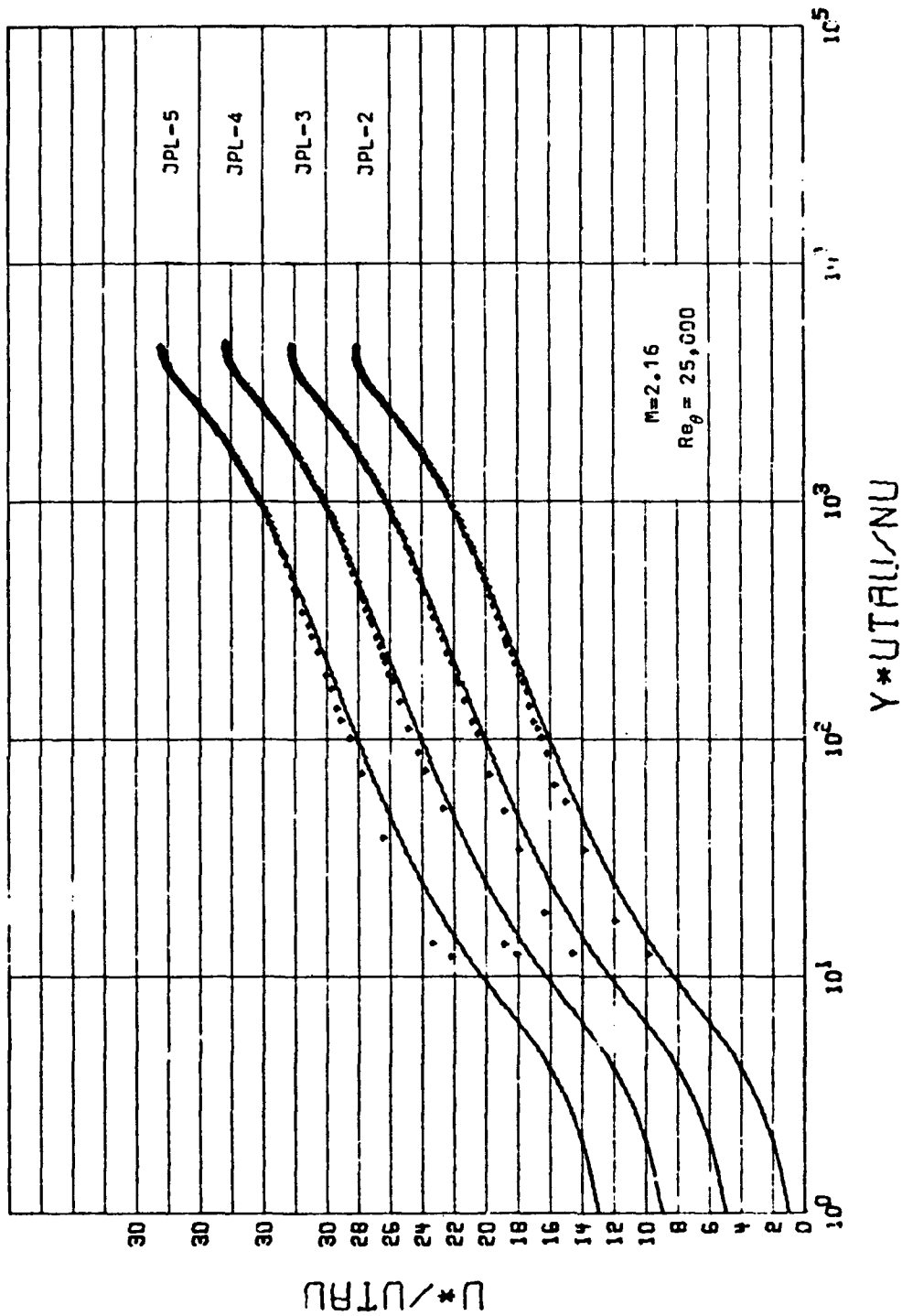


Figure A39, Van Driest Scaled mean Velocity Profiles.

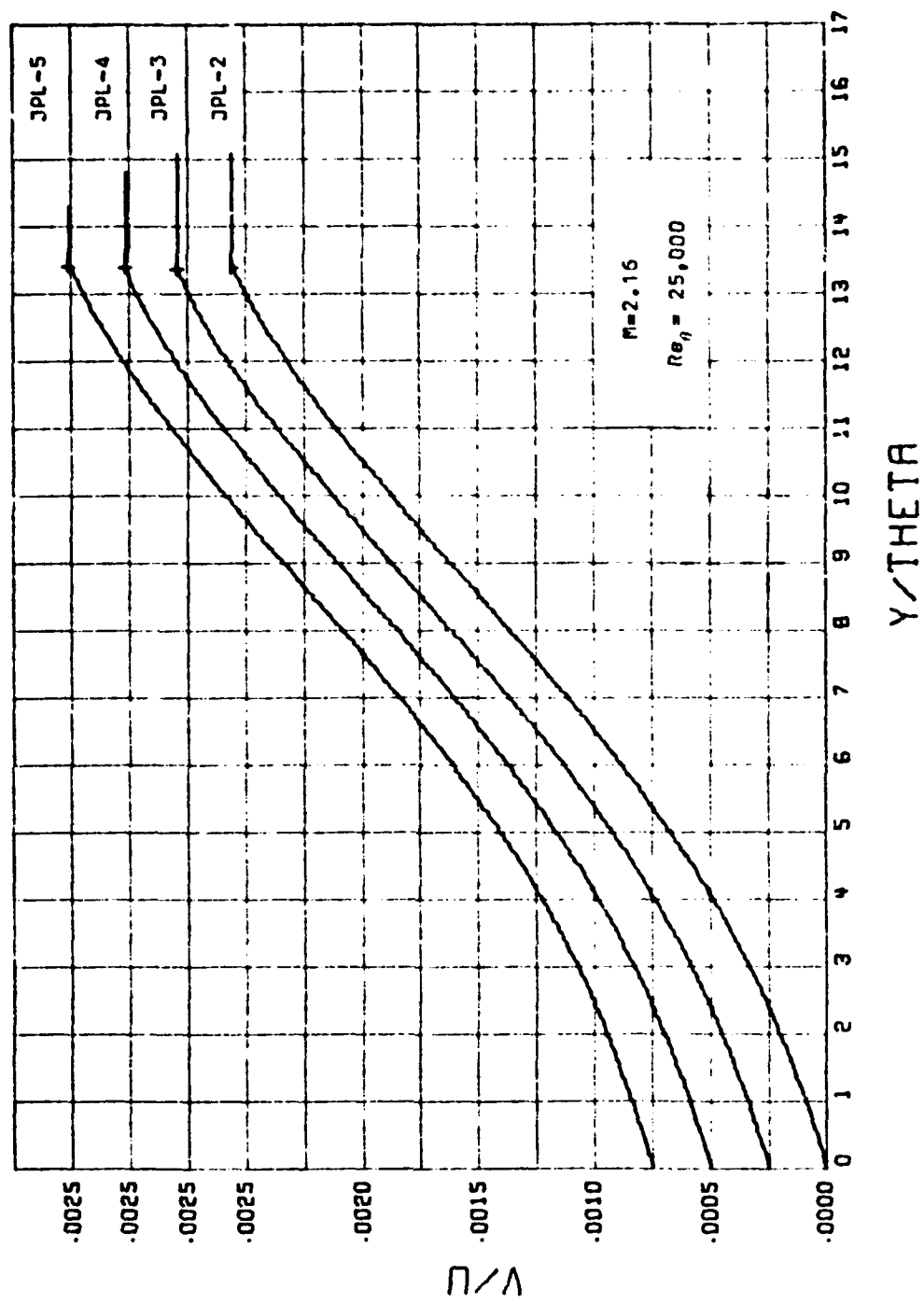


Figure A39. Normal Velocity Distribution.

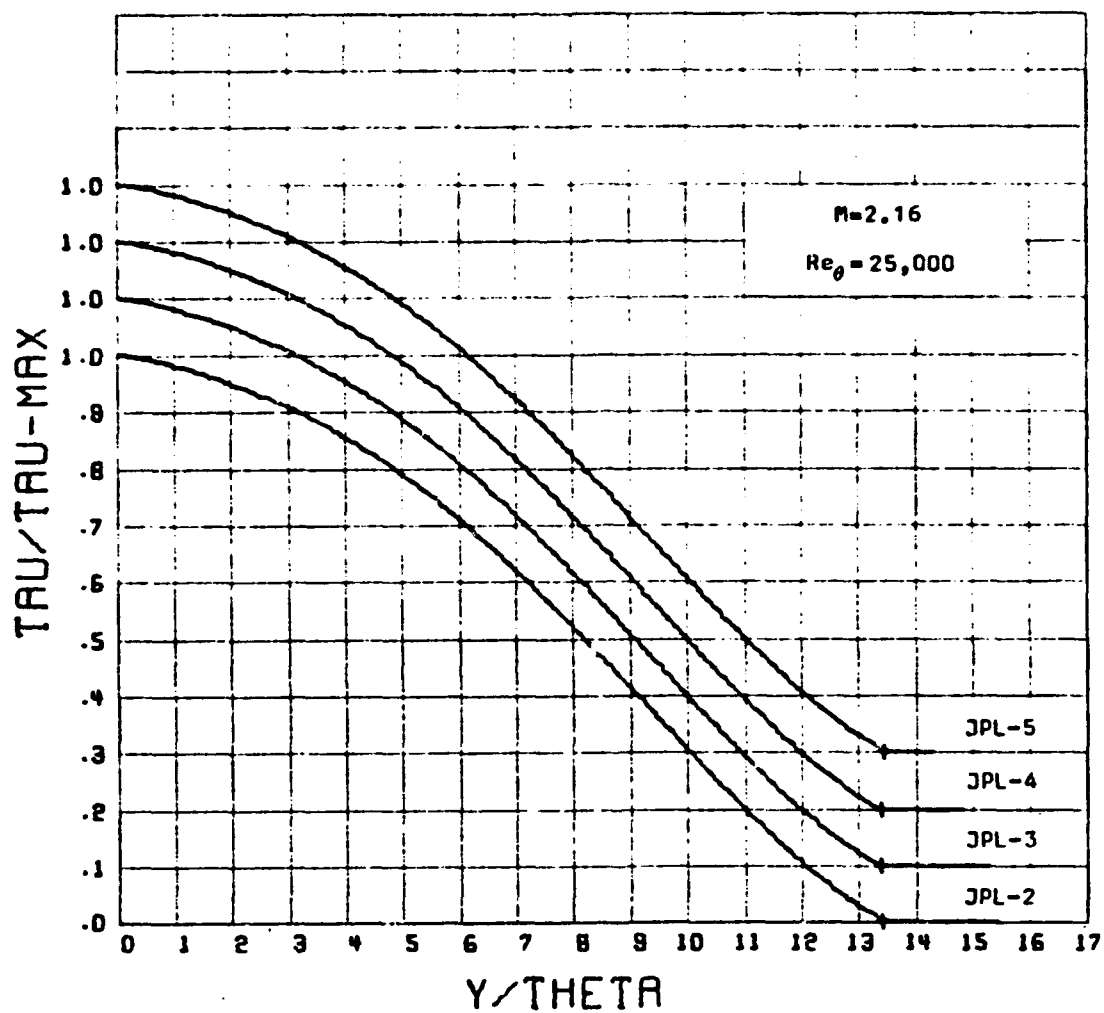


Figure A40. Shear Stress Distribution.

TABLE A14. DATA SUMMARY
PROFILE - JPL-2 - - - PITOT PRESSURE DATA

EDGE MACH NO. = 2.1812 TOTAL PRESSURE = .1799E+06 N/M²
X = 26.21 CM TOTAL TEMPERATURE = 324.18 DEG-K

Y (CM)	Y/TMETA	Y-PLUS	M/ME	RHO/RMFE	U/UE	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.5428	0.0000	0.00	1.0000	0.000000
.010	.064	21.	.3429	.5964	.4440	11.99	1.0000	0.000050
.022	.103	48.	.4149	.6215	.5263	14.31	.9999	.000104
.033	.140	70.	.4437	.6328	.5784	15.21	.9996	.000008
.055	.253	118.	.4964	.6555	.6131	16.41	.9949	.000016
.069	.316	148.	.5140	.6634	.6310	17.36	.9857	.000011
.082	.373	175.	.5305	.6715	.6474	17.82	.9844	.000014
.104	.471	221.	.5504	.6813	.6668	18.47	.9826	.000034
.133	.603	263.	.5741	.6934	.6904	19.37	.9806	.000064
.164	.753	353.	.5903	.7021	.7065	19.53	.9800	.000090
.195	.885	415.	.6024	.7087	.7155	19.86	.9824	.000071
.220	1.137	531.	.6237	.7204	.7343	20.44	.9758	.000093
.249	1.311	614.	.6380	.7289	.7472	20.83	.9704	.000110
.322	1.460	684.	.6459	.7335	.7541	21.04	.9660	.000124
.337	1.529	717.	.6502	.7361	.7574	21.16	.9638	.000132
.377	1.707	800.	.6584	.7410	.7648	21.38	.9589	.000140
.414	1.904	874.	.6668	.7441	.7720	21.67	.9518	.000168
.441	2.001	914.	.6743	.7407	.7782	21.80	.9477	.000181
.478	2.167	1016.	.6810	.7448	.7848	21.97	.9416	.000164
.504	2.282	1070.	.6877	.7490	.7903	22.14	.9372	.000212
.543	2.461	1153.	.6943	.7532	.7948	22.32	.9302	.000232
.577	2.614	1224.	.7025	.7566	.8014	22.52	.9238	.000267
.604	2.941	1369.	.7140	.7772	.8121	23.47	.9036	.000292
.638	3.114	1441.	.7217	.7810	.8147	23.71	.9014	.000317
.737	3.341	1566.	.7312	.7872	.8241	23.26	.9004	.000341
.767	3.473	1628.	.7348	.7910	.8285	23.39	.9043	.000359
.810	3.654	1719.	.7434	.7945	.8335	23.55	.9042	.000374
.852	3.858	1808.	.7507	.8004	.8390	23.73	.9060	.000413
.897	4.019	1874.	.7580	.8041	.8431	23.84	.9053	.000437
.970	4.303	2350.	.7683	.8177	.8522	24.16	.9332	.000494
1.004	4.565	2140.	.7727	.8158	.8545	24.25	.9275	.000521
1.073	4.774	2216.	.7804	.8213	.8611	24.45	.9173	.000557
1.090	4.893	2264.	.7856	.8250	.8640	24.57	.9013	.000575
1.115	5.044	2366.	.7915	.8297	.8692	24.71	.7909	.000601
1.233	5.451	2455.	.8044	.8384	.8784	25.21	.7824	.000672
1.262	5.623	2376.	.8092	.8422	.8817	25.13	.7497	.000704
1.304	5.953	2274.	.8223	.8519	.8904	25.43	.7284	.000740
1.387	6.147	2401.	.8272	.8564	.8942	25.46	.7089	.000773
1.340	6.291	2460.	.8327	.8600	.8989	25.47	.6873	.000791
1.430	6.475	3035.	.8390	.8644	.9072	25.81	.6818	.000799
1.473	6.670	3127.	.8430	.8677	.9049	25.90	.6653	.000807

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TABLE A14. (CONT.)
M/NE RHO/RHOE

Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHOE	U/NE	U-PLUS	TAU/TAU-MAX	V/U
1.509	6.831	3202.	.8474	.8712	.9079	24.00	.4513	.000940
1.544	6.992	3278.	.8545	.8767	.9126	26.16	.4371	.000974
1.548	7.239	3394.	.8595	.8805	.9159	26.27	.4147	.001026
1.629	7.377	3458.	.8630	.8833	.9182	26.35	.6020	.001055
1.641	7.521	3526.	.8682	.8874	.9216	26.46	.5486	.001086
1.649	7.694	3607.	.8761	.8937	.9247	26.64	.5723	.001124
1.743	7.895	3701.	.8770	.8945	.9273	26.66	.5530	.001164
1.770	8.016	3758.	.8827	.8980	.9309	26.70	.5413	.001195
1.828	8.280	3882.	.8900	.9050	.9356	26.94	.5151	.001254
1.856	8.407	3941.	.8954	.9094	.9389	27.04	.5077	.001282
1.884	8.579	4022.	.8976	.9112	.9403	27.10	.4854	.001321
1.931	8.746	4100.	.9070	.9184	.9431	27.20	.4486	.001359
1.991	8.970	4205.	.9067	.9186	.9459	27.30	.4458	.001409
2.057	9.315	4367.	.9174	.9274	.9525	27.53	.4105	.001487
2.057	9.498	4448.	.9226	.9320	.9557	27.64	.3928	.001526
2.128	9.637	4518.	.9241	.9338	.9566	27.67	.3774	.001560
2.146	9.764	4577.	.9306	.9384	.9605	27.80	.3643	.001589
2.200	9.965	4711.	.9332	.9410	.9620	27.86	.3436	.001634
2.270	10.097	4733.	.9369	.9441	.9642	27.93	.3301	.001683
2.270	10.241	4820.	.9418	.9484	.9671	28.04	.3112	.001704
2.298	10.404	4779.	.9449	.9510	.9689	28.10	.2984	.001732
2.344	10.707	5019.	.9494	.9549	.9715	28.19	.2682	.001766
2.387	10.854	5089.	.9546	.9594	.9746	28.30	.2533	.001828
2.435	11.029	5170.	.9577	.9621	.9763	28.35	.2362	.001865
2.480	11.270	5283.	.9631	.9649	.9794	28.47	.2127	.001915
2.517	11.397	5343.	.9668	.9702	.9816	28.55	.2006	.001940
2.520	11.547	5413.	.9697	.9728	.9832	28.61	.1845	.001970
2.508	11.745	5515.	.9728	.9755	.9850	29.67	.1662	.002013
2.628	11.903	5580.	.9757	.9781	.9866	28.73	.1534	.002039
2.664	12.064	5655.	.9771	.9793	.9873	28.75	.1393	.002069
2.700	12.225	5731.	.9807	.9825	.9894	28.83	.1252	.002099
2.733	12.375	5801.	.9822	.9839	.9902	28.84	.1125	.002126
2.776	12.570	5893.	.9840	.9855	.9912	28.89	.0963	.002159
2.806	12.704	5957.	.9867	.9879	.9927	28.95	.0843	.002182
2.841	12.855	6173.	.9878	.9889	.9933	28.97	.0742	.002222
2.890	13.088	6135.	.9900	.9909	.9945	29.01	.0544	.002242
2.923	13.237	6205.	.9912	.9920	.9952	29.03	.0457	.002264
2.940	13.404	6284.	.9919	.9927	.9956	29.05	.0341	.002284
2.930	13.542	6348.	.9936	.9942	.9965	29.08	.0252	.002317
3.020	13.674	6410.	.9940	.9944	.9967	29.09	.0169	.002334
3.061	13.764	6499.	.9947	.9952	.9971	29.10	.0054	.002367
3.100	14.036	6580.	.9960	.9963	.9978	29.13	0.0000	.002359
3.134	14.215	6654.	.9965	.9968	.9981	29.14	0.0000	.002359
3.200	14.431	6793.	.9977	.9979	.9987	29.16	0.0000	.002359
3.262	14.744	6931.	.9986	.9987	.9992	29.18	0.0000	.002359
3.417	15.112	7084.	.9985	.9986	.9992	29.18	0.0000	.002359
3.315	15.376	7203.	.9992	.9993	.9996	29.19	0.0000	.002359
3.470	15.716	7367.	.9996	.9997	.9998	29.20	0.0000	.002359
3.565	16.055	7526.	.9996	.9997	.9998	29.20	0.0000	.002359
3.634	16.331	7654.	.9998	.9998	.9999	29.20	0.0000	.002359
3.637	16.449	7770.	.9996	.9996	.9998	29.20	0.0000	.002359
3.680	16.644	7872.	.9998	.9998	.9999	29.20	0.0000	.002359
3.714	16.814	7982.	1.0000	1.0000	1.0000	29.21	0.0000	.002359
3.760	17.027	7982.	1.0005	1.0005	1.0002	29.22	0.0000	.002359

TABLE A14. (CONT.)
PROFILE - JPL-3 - - - PITOT PRESSURE DATA

EDGE MACH NO. = 2.1737 TOTAL PRESSURE = 1.102E+06 N/M²
X = -7.62 CM TOTAL TEMPERATURE = 321.27 DEG-K

Y (CM)	Y/THETA	Y-PLUS	P/ME	RHO/RHOE	U/UE	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.5445	0.0000	0.00	1.0000	0.000000
.010	.045	21.	.3431	.5981	.6436	12.02	1.0000	0.000000
.026	.119	57.	.4316	.6264	.5441	14.86	.9991	.000005
.054	.170	52.	.4675	.6441	.5826	15.97	.9983	.000009
.078	.277	134.	.5078	.6597	.6191	17.03	.9965	.000018
.099	.351	170.	.5243	.6697	.6406	17.67	.9940	.000024
.121	.442	213.	.5444	.6800	.6616	18.29	.9912	.000032
.149	.546	263.	.5675	.6861	.6730	18.63	.9890	.000040
.178	.617	299.	.5707	.6879	.6846	19.01	.9873	.000046
.205	.664	323.	.5698	.6882	.6851	19.30	.9860	.000051
.234	.753	344.	.5484	.7024	.7023	19.52	.9840	.000058
.268	.918	444.	.6055	.7115	.7116	19.89	.9817	.000073
.304	1.045	515.	.6198	.7194	.7307	20.34	.9777	.000100
.332	1.213	587.	.6290	.7248	.7380	20.43	.9716	.000160
.369	1.315	636.	.6378	.7294	.7446	20.47	.9705	.000160
.400	1.440	718.	.6504	.7372	.7575	21.21	.9647	.000174
.439	1.640	796.	.6503	.7419	.7642	21.47	.9599	.000183
.482	1.715	864.	.6463	.7455	.7696	21.59	.9554	.000194
.529	1.941	940.	.6415	.7490	.7746	21.77	.9502	.000174
.571	2.153	1042.	.6319	.7563	.7841	22.04	.9422	.000194
.619	2.301	1113.	.6226	.7629	.7927	22.31	.9366	.000217
.664	2.447	1193.	.6061	.7652	.7957	22.41	.9303	.000230
.704	2.652	1283.	.7043	.7704	.8023	22.61	.9224	.000267
.741	2.922	1365.	.7178	.7720	.8092	22.83	.9134	.000277
.776	3.071	1442.	.7193	.7722	.8143	22.93	.9062	.000297
.815	3.191	1442.	.7248	.7751	.8207	23.10	.8953	.000314
.852	3.401	1442.	.7333	.7846	.8263	23.35	.8881	.000346
.890	3.671	1726.	.7308	.7938	.8303	23.51	.8764	.000360
.928	3.752	1914.	.7472	.7948	.8360	23.69	.8701	.000364
.969	3.928	1901.	.7552	.8063	.8421	23.89	.8605	.000419
.999	4.054	1904.	.7577	.8061	.8460	23.95	.8532	.000434
1.031	4.200	2132.	.7643	.8116	.8489	24.11	.8481	.000459
1.063	4.437	2142.	.7723	.8192	.8544	24.30	.8315	.000464
1.094	4.614	2233.	.7770	.8195	.8583	24.42	.8200	.000484
1.124	4.719	2315.	.7851	.8257	.8642	24.41	.8087	.000552
1.154	5.022	2430.	.7915	.8299	.8698	24.76	.7933	.000591
1.184	5.192	2512.	.7977	.8464	.8733	24.41	.7816	.000640
1.214	5.360	2689.	.8072	.8374	.8765	24.92	.7704	.000647
1.244	5.520	2672.	.8102	.8436	.8822	25.20	.7481	.000674
1.274	5.656	2757.	.8133	.8459	.8873	25.29	.7450	.000710
1.304	5.983	2847.	.8181	.8496	.8977	25.39	.7307	.000744

PI = .5492
YMIN = .078 CM
DELTA = 3.1256 CM

LEAST SQUARE FIT PARAMETERS
UTAU = 21.0165 M/SEC
CHISQR = .5273E-05

U = 560.66 M/SEC
RE-DELTA-STAR = 125700.
DELTA STAR = .6942 CM
ME-THETA = 40570.
THETA = .2240 CM
MINALL = .9779 CM/SEC
M = 3.098

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TABLE A14. (CONT.)
M/ME RHO/RHOF

Y (CM)	Y/TMFA	Y-PLUS	M/ME	RHO/RHOF	U/U _E	I-PLUS	TAU/TAU-MAX	V/U
1.357	6.059	2932.	.8252	.8547	.8926	25.55	.7169	.007777
1.404	6.249	3034.	.8319	.8597	.8972	25.70	.7000	.000818
1.447	6.461	3127.	.8367	.8634	.9005	25.82	.6841	.000454
1.503	6.711	3248.	.8482	.8723	.9042	26.08	.6629	.000905
1.531	6.836	3308.	.8515	.8767	.9104	26.15	.6521	.007231
1.567	6.994	3385.	.8542	.8817	.9122	26.21	.6381	.000963
1.612	7.149	3484.	.8604	.8877	.9163	26.35	.6196	.001367
1.656	7.391	3577.	.8666	.8864	.9203	26.44	.6022	.001047
1.691	7.550	3654.	.8688	.8884	.9218	26.54	.5874	.001011
1.727	7.709	3731.	.8716	.8932	.9258	26.67	.5724	.001115
1.770	7.901	3824.	.8816	.8986	.9300	26.82	.5540	.001157
1.799	8.032	3887.	.8842	.9006	.9317	26.87	.5414	.001145
1.832	8.179	3958.	.8882	.9039	.9342	26.96	.5271	.001218
1.884	8.411	4071.	.8952	.9095	.9386	27.11	.5041	.001269
1.920	8.570	4148.	.8980	.9118	.9404	27.18	.4883	.001304
1.953	8.717	4219.	.9013	.9154	.9431	27.27	.4734	.001337
2.004	8.944	4329.	.9088	.9207	.9471	27.41	.4506	.001388
2.037	9.042	4400.	.9118	.9232	.9490	27.47	.4356	.001421
2.056	9.177	4441.	.9144	.9253	.9505	27.53	.4270	.001440
2.098	9.364	4532.	.9184	.9287	.9530	27.61	.4079	.001482
2.156	9.624	4658.	.9269	.9358	.9581	27.79	.3811	.001540
2.193	9.789	4737.	.9296	.9381	.9597	27.85	.3643	.001574
2.242	10.010	4844.	.9353	.9429	.9631	27.97	.3417	.001625
2.270	10.180	4927.	.9400	.9470	.9660	28.07	.3243	.001663
2.315	10.333	5001.	.9440	.9505	.9683	28.15	.3088	.001696
2.360	10.537	5100.	.9484	.9542	.9709	28.24	.2942	.001740
2.416	10.786	5220.	.9519	.9573	.9729	28.31	.2762	.001793
2.457	10.968	5308.	.9588	.9632	.9769	28.45	.2652	.001831
2.514	11.223	5432.	.9638	.9677	.9798	28.56	.2205	.001883
2.520	11.302	5508.	.9647	.9702	.9815	28.61	.2053	.001915
2.590	11.563	5596.	.9675	.9709	.9819	28.63	.1882	.001951
2.650	11.784	5703.	.9731	.9758	.9851	28.74	.1678	.001964
2.650	11.965	5791.	.9761	.9785	.9867	28.80	.1515	.002028
2.727	12.175	5892.	.9787	.9809	.9882	28.86	.1331	.002036
2.773	12.379	5981.	.9818	.9834	.9900	28.92	.1154	.002103
2.811	12.549	6073.	.9828	.9845	.9905	28.94	.1017	.002132
2.847	12.708	6150.	.9854	.9884	.9919	28.99	.0888	.002158
2.847	12.847	6227.	.9874	.9888	.9931	29.03	.0767	.002163
2.921	13.037	6309.	.9885	.9894	.9937	29.05	.0640	.002210
2.941	13.218	6397.	.9900	.9909	.9945	29.08	.0509	.002236
3.012	13.445	6507.	.9909	.9918	.9950	29.10	.0354	.002268
3.053	13.626	6595.	.9921	.9929	.9957	29.12	.0238	.002292
3.084	13.785	6672.	.9935	.9941	.9964	29.15	.0141	.002317
3.124	13.944	6748.	.9949	.9954	.9972	29.18	.0050	.002331
3.154	14.080	6814.	.9951	.9955	.9973	29.18	0.0000	.002341
3.171	14.153	6850.	.9950	.9955	.9973	29.18	0.0000	.002341
3.213	14.340	6940.	.9964	.9968	.9980	29.21	0.0000	.002341
3.274	14.653	7094.	.9976	.9978	.9986	29.23	0.0000	.002341
3.341	15.004	7261.	.9986	.9987	.9992	29.25	0.0000	.002341
3.435	15.332	7421.	.9989	.9990	.9994	29.26	0.0000	.002341
3.535	15.700	7637.	.9997	.9997	.9998	29.27	0.0000	.002341
3.611	16.120	7802.	.9996	.9996	.9997	29.27	0.0000	.002341
3.698	16.506	7988.	1.0001	1.0001	1.0000	29.28	0.0000	.002341
3.731	16.653	8060.	1.0001	1.0001	1.0000	29.28	0.0000	.002341

TABLE A14. (CONT.)
PROFILE - JPL-4 - - - PITOT PRESSURE DATA

ENGINE MACH NO. = 2.1820 TOTAL PRESSURE = .1798E+06 N/M²
X = 0.00 CM TOTAL TEMPERATURE = 321.27 DEG-K

UE = 541.76 M/SEC DELTA STAR = .717R CM THETA = .2312 CM M = 3.104
RE-DELTA-STAR = 120100. RE-THETA = .41600. MINALL = .0741 CM=2/SEC CF = .001445
DELTA = 3.2627 CM

LEAST SQUARE FIT PARAMETERS
UTAU = 21.0772 M/SEC CF = .001527
CHISQR = .2030E-04 YMAX = 3.094 CM

P1 = .5463
YMIN = .063 CM

Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHORE	U/UF	I-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.5424	0.0000	0.00	1.0000	0.000000
.010	.043	21.	.3414	.5941	.4427	11.98	1.0000	0.000000
.017	.076	38.	.4041	.6173	.5143	14.00	.9996	.000302
.026	.159	79.	.4462	.6429	.5818	15.94	.9984	.000209
.052	.375	112.	.5009	.6574	.6170	15.08	.9973	.000214
.063	.574	134.	.5214	.6570	.6384	17.59	.9944	.000018
.093	.806	202.	.5437	.6778	.6694	18.24	.9938	.000229
.114	.910	254.	.5615	.6868	.6775	18.76	.9916	.000138
.142	.915	304.	.5779	.6954	.6930	19.22	.9902	.000347
.167	.924	341.	.5915	.7024	.7054	19.60	.9885	.000054
.179	.938	385.	.6017	.7082	.7150	19.69	.9853	.000261
.215	.933	445.	.6127	.7133	.7249	20.19	.9811	.000075
.254	1.008	447.	.6276	.7224	.7382	20.40	.9765	.000140
.304	1.323	659.	.6414	.7308	.7503	20.97	.9699	.000111
.372	1.827	711.	.6480	.7347	.7630	21.15	.9687	.000121
.416	1.801	801.	.6545	.7397	.7633	21.37	.9609	.000159
.447	1.932	893.	.6644	.7464	.7701	21.59	.9544	.000159
.461	2.081	943.	.6727	.7494	.7770	21.83	.9494	.000173
.523	2.262	1037.	.6819	.7553	.7847	22.04	.9444	.000118
.557	2.410	1177.	.6900	.7603	.7917	22.25	.9376	.000208
.594	2.563	1201.	.6956	.7639	.7958	22.39	.9319	.000225
.633	2.784	1387.	.7049	.7648	.8033	22.63	.9264	.000243
.673	2.910	1450.	.7177	.7725	.8066	22.73	.9163	.000268
.711	3.075	1532.	.7225	.7814	.8134	22.96	.9100	.000294
.753	3.255	1622.	.7295	.7854	.8173	23.08	.9033	.000314
.797	3.448	1718.	.7353	.7899	.8220	23.23	.8944	.000347
.841	3.544	1792.	.7416	.7942	.8273	23.40	.8854	.000353
.886	3.745	1861.	.7476	.7983	.8322	23.55	.8780	.000373
.919	3.975	1981.	.7549	.8033	.8368	23.70	.8703	.000383
.960	4.151	2048.	.7606	.8072	.8423	23.84	.8626	.000426
1.014	4.347	2184.	.7679	.8123	.8445	24.02	.8479	.000441
1.052	4.553	2249.	.7764	.8173	.8520	24.20	.8341	.000457
1.090	4.711	2369.	.7769	.8201	.8549	24.34	.8242	.000512
1.140	4.931	2457.	.7785	.8270	.8631	24.44	.8142	.000534
1.194	5.124	2554.	.7852	.8314	.8671	24.60	.8001	.000573
1.224	5.306	2643.	.7981	.8360	.8740	24.85	.7844	.000604
1.247	5.487	2731.	.8061	.8398	.8786	24.92	.7747	.000647
1.313	5.678	2829.	.8122	.8438	.8830	25.10	.7673	.000672
1.344	5.873	2900.	.8169	.8469	.8844	25.25	.7479	.000702
1.395	6.035	3007.	.8242	.8533	.8922	25.52	.7372	.000724
							.7268	.000768

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TABLE A14.
(CONT.)
M/NE RHO/RMPE

Y (CM)	V/THETA	Y-PLUS	M/NE	RHO/RMPE	U/VE	U-PLUS	TAU/TAU-MAX	V/U
1.438	6.221	3100.	.8283	.8564	.8950	25.62	.7061	.000403
1.475	6.341	3180.	.8348	.8616	.8995	25.77	.6933	.000433
1.522	6.584	3281.	.8393	.8668	.9025	25.87	.6766	.000473
1.564	6.765	3371.	.8463	.8702	.9072	26.03	.6613	.000509
1.609	6.919	3448.	.8508	.8729	.9096	26.11	.6481	.000540
1.645	7.114	3546.	.8581	.8794	.9150	26.29	.6309	.000580
1.649	7.303	3630.	.8630	.8832	.9182	26.40	.6147	.001019
1.733	7.490	3732.	.8676	.8869	.9213	26.50	.5973	.001058
1.748	7.731	3853.	.8750	.8928	.9261	26.67	.5760	.001109
1.822	7.880	3927.	.8775	.8948	.9276	26.72	.5611	.001141
1.879	8.039	4006.	.8809	.8975	.9288	26.80	.5459	.001175
1.903	8.231	4102.	.8867	.9023	.9335	26.92	.5275	.001217
1.944	8.407	4189.	.8931	.9075	.9376	27.06	.5104	.001255
1.992	8.572	4272.	.8969	.9105	.9399	27.14	.4943	.001291
2.029	8.775	4373.	.9014	.9143	.9427	27.24	.4782	.001336
2.067	8.940	4455.	.9079	.9196	.9467	27.38	.4578	.001373
2.115	9.148	4559.	.9126	.9235	.9496	27.48	.4369	.001419
2.162	9.351	4660.	.9165	.9268	.9520	27.56	.4166	.001464
2.202	9.522	4745.	.9229	.9322	.9558	27.70	.3992	.001502
2.235	9.644	4816.	.9249	.9339	.9571	27.74	.3848	.001533
2.297	9.897	4928.	.9303	.9386	.9603	27.85	.3620	.001583
2.329	10.071	5019.	.9357	.9430	.9635	27.97	.3437	.001622
2.349	10.203	5070.	.9389	.9458	.9654	28.03	.3304	.001651
2.410	10.422	5196.	.9434	.9497	.9681	28.13	.3083	.001699
2.448	10.597	5276.	.9480	.9537	.9707	28.22	.2918	.001736
2.446	10.752	5358.	.9508	.9561	.9724	28.28	.2755	.001759
2.519	10.894	5429.	.9535	.9585	.9740	28.33	.2614	.001799
2.567	11.103	5533.	.9587	.9630	.9769	28.44	.2410	.001842
2.604	11.245	5615.	.9613	.9653	.9784	28.49	.2251	.001876
2.640	11.472	5687.	.9649	.9686	.9804	28.57	.2131	.001887
2.683	11.603	5782.	.9682	.9716	.9824	28.63	.1934	.001943
2.717	11.707	5834.	.9705	.9735	.9837	28.68	.1837	.001963
2.745	11.872	5916.	.9734	.9760	.9853	28.74	.1686	.001995
2.770	12.020	5990.	.9757	.9781	.9866	28.78	.1549	.002024
2.816	12.179	6070.	.9780	.9801	.9879	28.83	.1412	.002052
2.844	12.300	6120.	.9797	.9814	.9888	28.86	.1308	.002074
2.871	12.414	6187.	.9803	.9821	.9891	28.89	.1209	.002095
2.915	12.608	6283.	.9837	.9852	.9911	28.94	.1049	.002128
2.946	12.794	6371.	.9861	.9874	.9924	28.99	.0907	.002157
2.987	12.915	6436.	.9881	.9890	.9939	29.00	.0804	.002179
3.020	13.058	6507.	.9889	.9899	.9949	29.05	.0695	.002201
3.070	13.274	6617.	.9913	.9921	.9953	29.10	.0532	.002235
3.096	13.382	6669.	.9920	.9927	.9956	29.11	.0460	.002250
3.120	13.580	6757.	.9932	.9938	.9963	29.13	.0325	.002278
3.193	13.766	6861.	.9945	.9949	.9970	29.16	.0200	.002303
3.224	13.942	6948.	.9958	.9961	.9977	29.18	.0096	.002325
3.264	14.034	6995.	.9962	.9965	.9979	29.19	.0042	.002336
3.277	14.173	7063.	.9969	.9972	.9983	29.20	0.0000	.002345
3.326	14.376	7166.	.9973	.9976	.9985	29.21	0.0000	.002345
3.347	14.475	7214.	.9976	.9979	.9987	29.22	0.0000	.002345
3.417	14.733	7342.	.9987	.9998	.9993	29.24	0.0000	.002345
3.417	15.079	7515.	.9991	.9992	.9995	29.25	0.0000	.002345
3.543	15.496	7723.	1.0001	1.0001	1.0000	29.27	0.0000	.002345
3.645	15.868	7898.	.9999	.9999	.9999	29.26	0.0000	.002345
3.714	16.067	8007.	1.0003	1.0003	1.0002	29.27	0.0000	.002345

TABLE A14. (CONT.)
PROFILE - JPL-5 - - - PITOT PRESSURE DATAEDGE MACH NO. = 2.1797
X = 7.62 CM
TOTAL PRESSURE = 1802E+06 N/Sec²
TOTAL TEMPERATURE = 322.72 DEG-K

UE = 562.73 M/SEC RE-DELTA-STAR = 133800.		DELTA STAR = .7507 CM RE-THETA = 43060.		THETA = .2415 CM MUMALL = .9817 CM=2/SEC		H = 3.107		
LEAST SQUARE FIT PARAMETERS				DELTA = 3.3810 CM				
UTANG = 20.9635 M/SEC CHISQ = .1419E-04				PI = .5751 YMAX = .085 CM				
Y (%)	Y/THETA	Y-PLUS	M/WE	RHO/RHOC	U/U*	II-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.5431	0.0000	0.00	1.0000	0.000000
.010	.042	21.	.3410	.5983	.4416	12.03	1.0000	0.000000
.016	.064	35.	.3752	.6075	.4814	13.16	.9997	.000002
.036	.152	78.	.4521	.6365	.5657	15.61	.9985	.000008
.048	.241	124.	.4978	.6564	.6145	17.01	.9971	.000015
.075	.365	181.	.5320	.6725	.6488	18.02	.9950	.000024
.105	.434	225.	.5499	.6813	.6642	18.55	.9933	.000031
.130	.561	276.	.5700	.6916	.6856	19.13	.9910	.000039
.157	.651	336.	.5786	.6961	.6935	19.37	.9884	.000049
.181	.741	397.	.5933	.7030	.7071	19.79	.9860	.000057
.212	.877	452.	.6040	.7099	.7169	20.09	.9828	.000068
.245	.993	512.	.6140	.7154	.7259	20.36	.9797	.000079
.265	1.093	566.	.6251	.7217	.7358	20.67	.9768	.000088
.293	1.214	626.	.6333	.7264	.7431	20.89	.9734	.000099
.314	1.332	713.	.6417	.7313	.7504	21.12	.9684	.000115
.344	1.450	778.	.6519	.7373	.7592	21.40	.9645	.000127
.402	1.656	859.	.6587	.7414	.7650	21.58	.9594	.000142
.453	1.844	962.	.6685	.7473	.7713	21.84	.9526	.000162
.491	2.014	1049.	.6761	.7520	.7766	22.04	.9466	.000180
.527	2.181	1125.	.6824	.7559	.7849	22.27	.9412	.000196
.570	2.360	1217.	.6909	.7613	.7919	22.43	.9343	.000215
.603	2.514	1299.	.6996	.7648	.7980	22.65	.9280	.000233
.641	2.654	1369.	.7041	.7684	.8026	22.77	.9224	.000248
.689	2.854	1472.	.7110	.7741	.8081	22.94	.9139	.000272
.735	3.063	1570.	.7200	.7800	.8152	23.17	.9053	.000295
.769	3.148	1626.	.7223	.7815	.8171	23.23	.9004	.000304
.806	3.338	1722.	.7316	.7877	.8243	23.47	.8914	.000333
.848	3.553	1833.	.7389	.7925	.8299	23.65	.8804	.000361
.880	3.679	1907.	.7431	.7955	.8332	23.75	.8741	.000378
.939	3.834	2004.	.7504	.8004	.8388	23.93	.8631	.000407
.992	4.009	2109.	.7589	.8062	.8451	24.14	.8516	.000437
1.022	4.231	2183.	.7678	.8080	.8491	24.24	.8434	.000448
1.055	4.369	2253.	.7687	.8117	.8510	24.33	.8353	.000474
1.101	4.557	2351.	.7717	.8152	.8547	24.46	.8237	.000507
1.134	4.694	2421.	.7777	.8194	.8591	24.60	.8151	.000529
1.177	4.873	2514.	.7846	.8242	.8640	24.76	.8035	.000558
1.220	5.052	2606.	.7915	.8294	.8691	24.93	.7916	.000587
1.257	5.206	2684.	.7964	.8329	.8726	25.05	.7811	.000613
1.294	5.366	2763.	.8016	.8367	.8744	25.17	.7702	.000640
1.334	5.500	2844.	.8055	.8398	.8751	25.24	.7570	.000672
1.377	5.703	2942.	.8122	.8445	.8738	25.42	.7448	.000701

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TABLE A14. (CONT.)
M/ME RMG/RMPC

Y (CM)	Y/TWFTA	Y-PLUS	M/ME	RMG/RMPC	U/U _E	U-PLUS	TAU/TAU-MAX	V/U
1.410	5.877	3032.	.8187	.8494	.8894	25.57	.7316	.000733
1.463	6.056	3124.	.8235	.8530	.8917	25.69	.7176	.000766
1.504	6.279	3213.	.8303	.8581	.8963	25.84	.7037	.000799
1.540	6.376	3289.	.8354	.8620	.8998	25.96	.6916	.000827
1.599	6.618	3414.	.8424	.8676	.9045	26.12	.6713	.000875
1.637	6.776	3495.	.8456	.8698	.9067	26.19	.6578	.000906
1.667	6.902	3560.	.8466	.8706	.9073	26.22	.6457	.000932
1.715	7.102	3663.	.8550	.8771	.9129	26.40	.6290	.000973
1.748	7.234	3734.	.8578	.8793	.9148	26.47	.6166	.001031
1.777	7.338	3787.	.8632	.8836	.9183	26.59	.6073	.001022
1.804	7.470	3853.	.8646	.8862	.9205	26.67	.5953	.001050
1.843	7.712	3978.	.8721	.8904	.9241	26.79	.5726	.001101
1.895	7.806	4027.	.8761	.8938	.9267	26.88	.5616	.001121
1.922	7.959	4105.	.8781	.8954	.9280	26.92	.5490	.001154
1.943	8.127	4192.	.8848	.9008	.9222	27.07	.5326	.001191
1.996	8.264	4283.	.8899	.9050	.9255	27.18	.5191	.001221
2.021	8.369	4317.	.8911	.9059	.9262	27.21	.5086	.001244
2.056	8.511	4390.	.8945	.9087	.9283	27.28	.4945	.001275
2.114	8.743	4515.	.9011	.9141	.9255	27.42	.4704	.001328
2.152	8.910	4596.	.9067	.9187	.9459	27.54	.4545	.001363
2.193	9.078	4683.	.9095	.9211	.9471	27.61	.4374	.001400
2.244	9.249	4792.	.9181	.9282	.9529	27.79	.4159	.001447
2.273	9.410	4854.	.9202	.9300	.9542	27.83	.4035	.001474
2.320	9.604	4954.	.9246	.9337	.9568	27.93	.3835	.001511
2.348	9.762	5036.	.9297	.9381	.9599	28.04	.3673	.001551
2.399	9.930	5122.	.9329	.9409	.9518	28.10	.3503	.001588
2.432	10.047	5193.	.9374	.9448	.9644	28.20	.3360	.001618
2.485	10.283	5307.	.9402	.9470	.9661	28.26	.3235	.001666
2.520	10.435	5393.	.9435	.9499	.9681	28.33	.3096	.001698
2.566	10.624	5480.	.9504	.9569	.9721	28.47	.2795	.001739
2.623	10.861	5602.	.9539	.9589	.9742	28.54	.2558	.001768
2.661	11.019	5684.	.9577	.9621	.9763	28.62	.2403	.001820
2.708	11.213	5784.	.9635	.9672	.9794	28.74	.2213	.001840
2.754	11.402	5862.	.9652	.9684	.9806	28.77	.2030	.001898
2.791	11.555	5960.	.9650	.9713	.9822	28.83	.1847	.001928
2.835	11.739	6055.	.9729	.9756	.9850	28.93	.1716	.001963
2.884	11.949	6164.	.9760	.9783	.9867	28.99	.1525	.002003
2.922	12.066	6260.	.9784	.9804	.9881	29.04	.1394	.002030
2.943	12.348	6370.	.9822	.9839	.9902	29.12	.1173	.002075
3.028	12.538	6468.	.9839	.9854	.9911	29.15	.1018	.002107
3.069	12.706	6554.	.9860	.9873	.9923	29.19	.0847	.002135
3.115	12.895	6652.	.9878	.9890	.9933	29.23	.0735	.002165
3.144	13.032	6723.	.9904	.9913	.9947	29.28	.0632	.002186
3.188	13.200	6809.	.9915	.9923	.9953	29.30	.0509	.002211
3.215	13.394	6910.	.9926	.9933	.9960	29.33	.0374	.002238
3.277	13.568	6999.	.9943	.9948	.9969	29.36	.0261	.002261
3.310	13.735	7070.	.9955	.9959	.9975	29.38	.0173	.002279
3.355	13.889	7165.	.9967	.9970	.9982	29.41	.0063	.002301
3.406	14.099	7273.	.9972	.9974	.9984	29.42	0.0000	.002314
3.437	14.230	7341.	.9977	.9979	.9987	29.43	0.0000	.002314
3.502	14.498	7479.	.9986	.9988	.9992	29.44	0.0000	.002314
3.534	14.630	7547.	.9992	.9993	.9995	29.46	0.0000	.002314
3.580	14.819	7645.	.9998	.9998	.9998	29.47	0.0000	.002314
3.632	15.035	7756.	.9999	.9999	.9999	29.47	0.0000	.002314
3.649	15.187	7834.	1.0005	1.0005	1.0003	29.48	0.0000	.002314
3.691	15.282	7823.	1.0003	1.0003	1.0002	29.48	0.0000	.002314

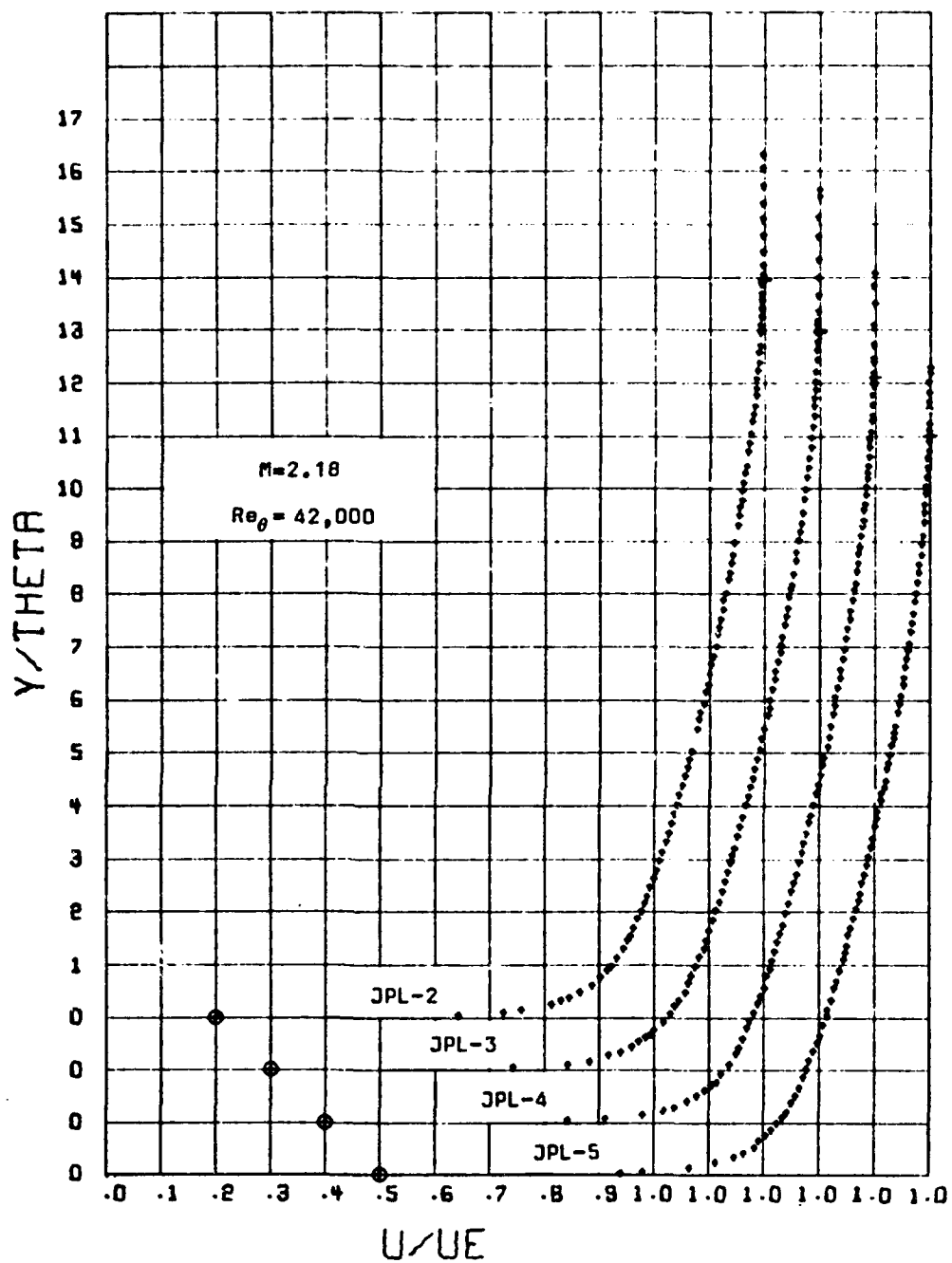
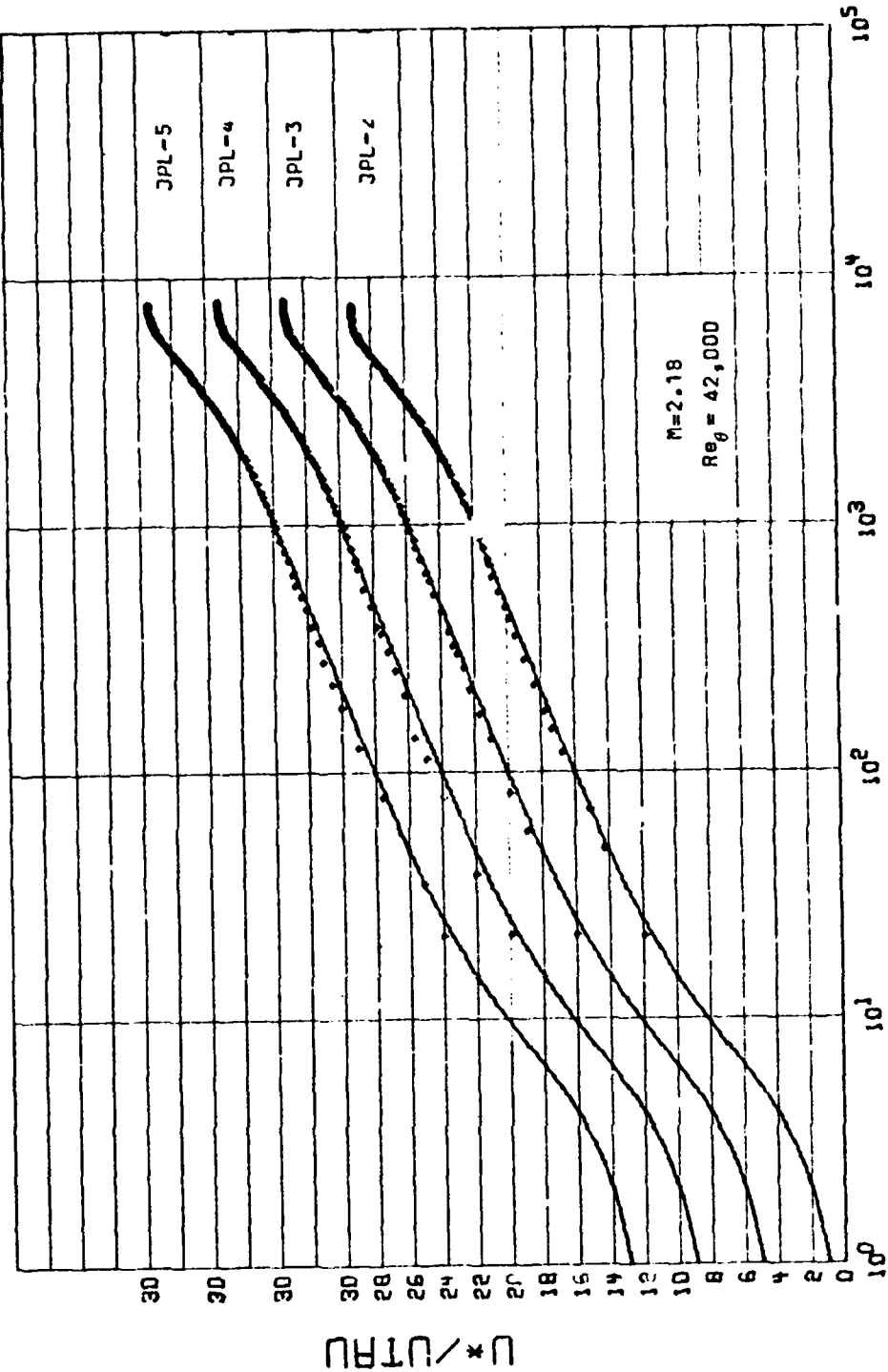


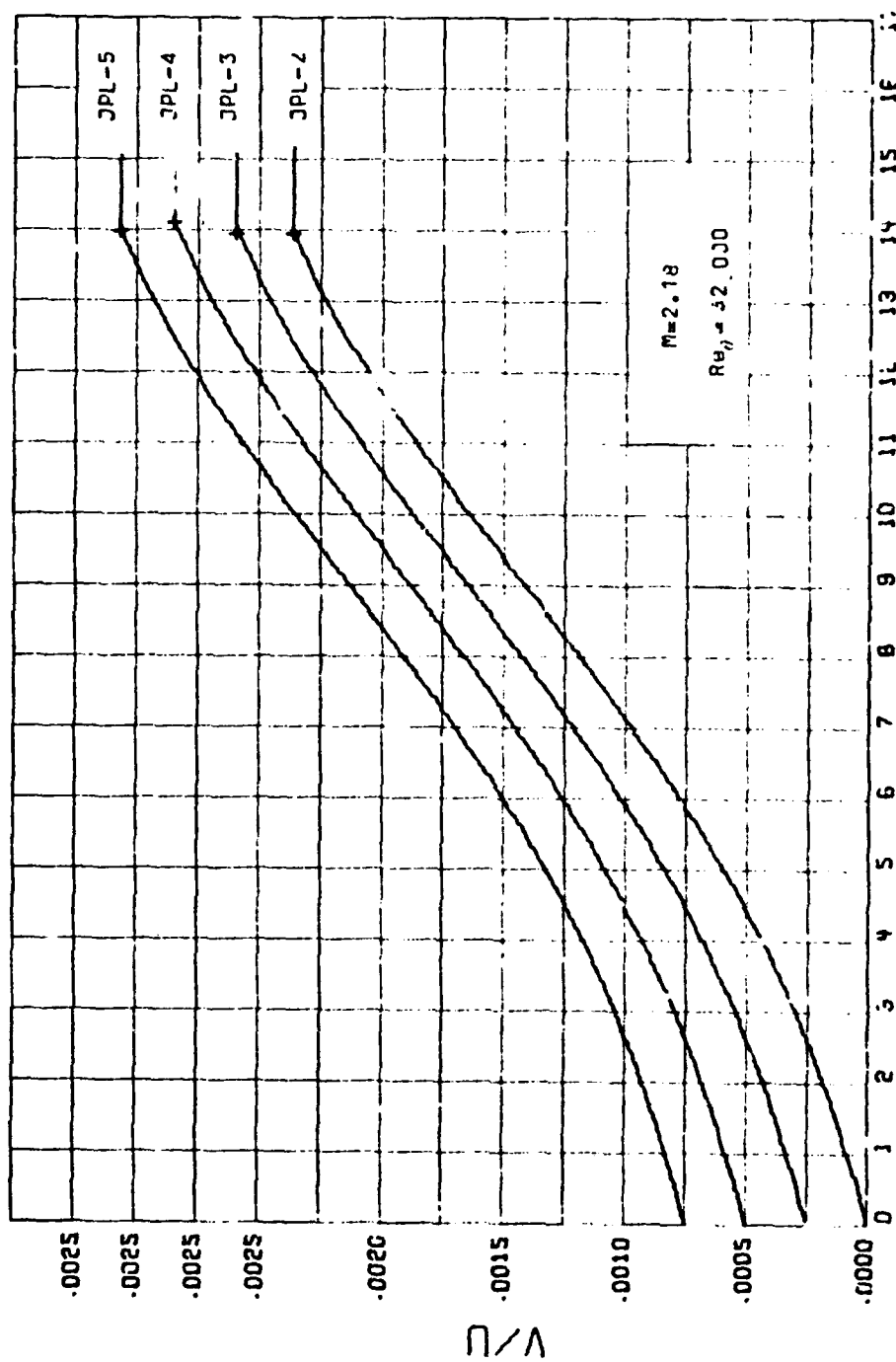
Figure A41. Mean Velocity Profiles.

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$Y^* U_{\tau} / \nu$

Figure A42. Van Driest Scaled Mean Velocity Profiles.



✓TII:ETA

Figure A43. Normal Velocity Distribution.

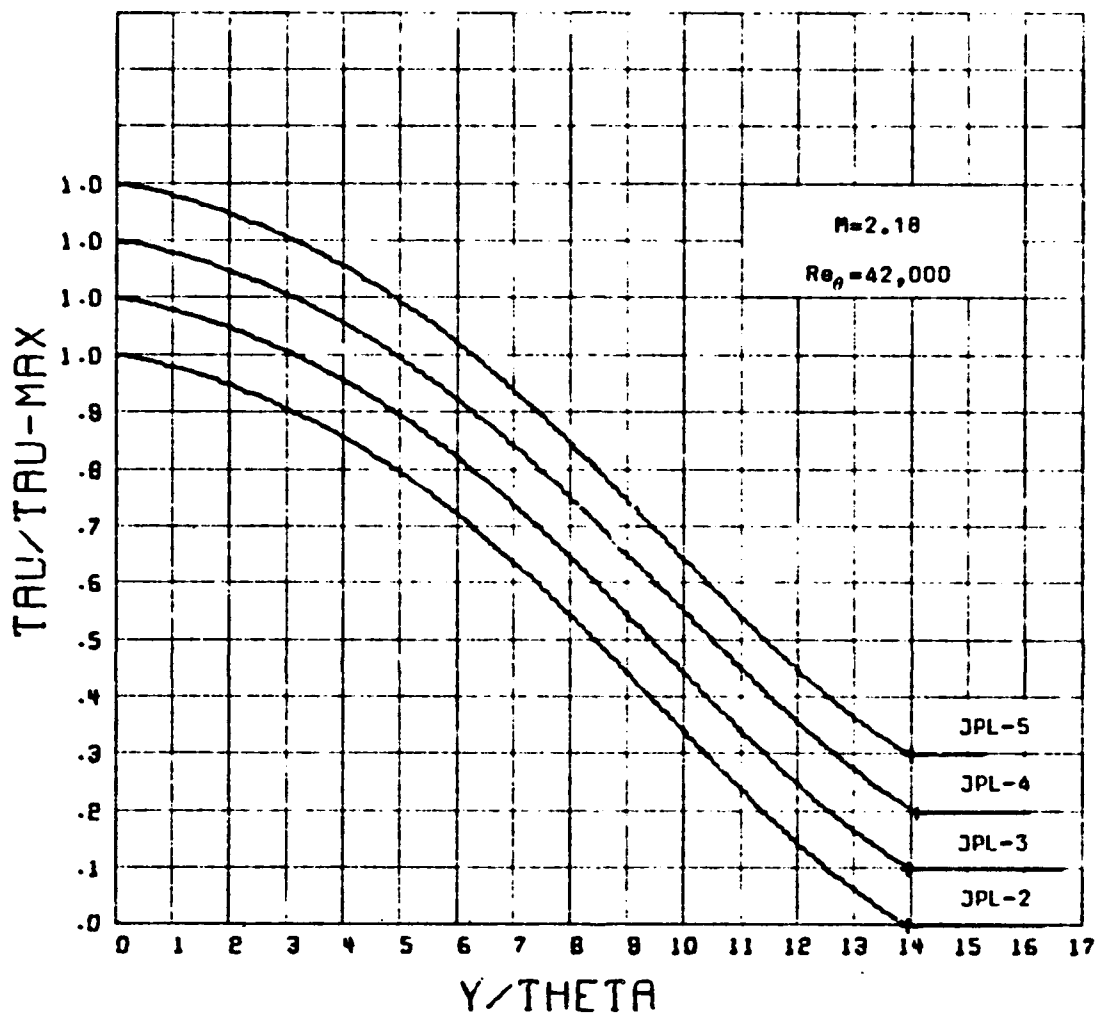


Figure A44. Shear Stress Distribution.

Y (CM)	Y/TMSTA	Y-PLUS	TABLE A14. M/ME	IC (CNT. 1) RHO/RHOE	U/UE	II-PLUS	TAU/TAU-MAX	V/VU
1.438	6.271	3100.	.8283	.8564	.8960	25.42	.7061	.000903
1.474	6.791	3185.	.8348	.8614	.8995	25.77	.7093	.000913
1.522	6.584	3281.	.8393	.8648	.9025	25.87	.7166	.000973
1.564	6.745	3371.	.8463	.8702	.9072	25.03	.7613	.000909
1.600	6.919	3468.	.8498	.8729	.9094	26.11	.6491	.000940
1.645	7.114	3544.	.8581	.8754	.9140	26.29	.6309	.000940
1.686	7.303	3639.	.8630	.8812	.9182	26.40	.6142	.001019
1.732	7.490	3732.	.8676	.8849	.9213	26.50	.5973	.001058
1.778	7.731	3853.	.8750	.8928	.9261	26.67	.5750	.001109
1.822	7.880	3927.	.8775	.8948	.9276	26.72	.5411	.001141
1.879	8.039	4006.	.8809	.8975	.9288	26.80	.5459	.001175
1.903	8.231	4102.	.8867	.9023	.9335	26.92	.5275	.001217
1.944	8.407	4189.	.8931	.9075	.9376	27.06	.5104	.001255
1.982	8.572	4272.	.8969	.9105	.9399	27.14	.4945	.001291
2.029	8.775	4373.	.9014	.9143	.9427	27.24	.4742	.001336
2.067	8.940	4455.	.9079	.9194	.9467	27.38	.4578	.001373
2.115	9.148	4559.	.9126	.9235	.9496	27.48	.4369	.001419
2.162	9.341	4600.	.9165	.9258	.9520	27.56	.4164	.001464
2.202	9.522	4745.	.9229	.9322	.9558	27.70	.3902	.001502
2.235	9.644	4814.	.9269	.9339	.9571	27.74	.3848	.001533
2.267	9.809	4928.	.9303	.9386	.9571	27.85	.3620	.001583
2.329	10.071	5019.	.9357	.9430	.9635	27.97	.3437	.001622
2.350	10.203	5084.	.9389	.9458	.9644	28.03	.3304	.001651
2.410	10.422	5194.	.9434	.9457	.9681	28.13	.3083	.001699
2.448	10.597	5276.	.9480	.9537	.9707	28.22	.2918	.001734
2.466	10.752	5358.	.9508	.9561	.9724	28.28	.2755	.001769
2.510	10.894	5429.	.9535	.9585	.9740	28.33	.2614	.001799
2.547	11.103	5533.	.9587	.9630	.9769	28.44	.2410	.001842
2.604	11.248	5615.	.9613	.9653	.9784	28.49	.2251	.001876
2.680	11.572	5687.	.9649	.9684	.9804	28.57	.2151	.001847
2.683	11.603	5782.	.9682	.9714	.9824	28.63	.1934	.001945
2.737	11.707	5834.	.9705	.9735	.9837	28.68	.1837	.001963
2.762	11.872	5916.	.9734	.9760	.9853	28.74	.1686	.001945
2.780	12.020	5990.	.9757	.9781	.9866	28.78	.1549	.002024
2.814	12.179	6070.	.9780	.9801	.9879	28.83	.1412	.002052
2.844	12.300	6130.	.9797	.9814	.9888	28.86	.1308	.002034
2.871	12.416	6187.	.9803	.9821	.9891	28.89	.1209	.002095
2.915	12.604	6283.	.9837	.9852	.9911	28.94	.1049	.002128
2.956	12.784	6371.	.9861	.9874	.9924	28.99	.0907	.002157
2.987	12.915	6434.	.9881	.9874	.9924	28.99	.0804	.002179
3.020	13.050	6502.	.9889	.9899	.9939	29.05	.0695	.002201
3.070	13.278	6617.	.9913	.9927	.9953	29.10	.0532	.002255
3.094	13.382	6669.	.9920	.9932	.9956	29.11	.0460	.002260
3.140	13.580	6767.	.9932	.9948	.9963	29.13	.0325	.002278
3.193	13.764	6861.	.9945	.9949	.9970	29.16	.0204	.002303
3.224	13.942	6948.	.9958	.9951	.9977	29.18	.0096	.002345
3.244	14.016	6995.	.9962	.9965	.9979	29.19	.0042	.002336
3.277	14.173	7063.	.9969	.9972	.9983	29.20	0.0000	.002344
3.324	14.376	7164.	.9973	.9976	.9985	29.21	0.0000	.002345
3.347	14.475	7214.	.9976	.9978	.9987	29.22	0.0000	.002345
3.417	14.733	7342.	.9987	.9989	.9993	29.24	0.0000	.002345
3.447	15.079	7515.	.9991	.9992	.9995	29.25	0.0000	.002345
3.543	15.496	7723.	1.0001	1.0001	1.0000	29.27	0.0000	.002345
3.665	15.868	7898.	.9999	.9999	.9999	29.26	0.0000	.002345
3.714	16.067	8007.	1.0003	1.0003	1.0002	29.27	0.0000	.002345

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TABLE A14. (CONT.)
PROFILE - JPL-5 - - - PITOT PRESSURE DATA

EDGE MACH NO.= 2.1797		TOTAL PRESSURE=.1802E+06 N/m ²		TOTAL TEMPERATURE= 322.72 DEG-K		M= 3.107	
X= 7.62 CM		DELTA STAR=.7507 CM		THETA=.2415 CM		M= 3.107	
RE-DELTA-STAR= 1.33800.		RE-THETA= 4.3060.		M= 3.107		DELTA= 3.3810 CM	
LEAST SQUARE FIT PARAMETERS		CF= .001907		P1= .5751		V/U	
UTAU= 20.9835 M/SEC		CF= .001907		V/U		TAU/TAU-MAX	
CH4O2= .141NF-04		YMAX= 3.188 CM		V/U		TAU/TAU-MAX	
Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHOE	U/U	U-PLUS	V/U
0.000	0.000	0.	0.0000	.5431	0.0000	0.00	0.000000
.010	.042	21.	.3410	.5983	.4416	12.03	0.000000
.016	.068	35.	.3752	.6075	.4814	13.16	0.000002
.036	.142	78.	.4521	.6365	.5667	15.61	.000008
.059	.241	124.	.4978	.6564	.6145	17.01	.000315
.083	.352	181.	.5320	.6725	.6488	18.02	.000024
.105	.436	225.	.5499	.6813	.6662	18.55	.000031
.130	.541	279.	.5700	.6916	.6874	19.13	.000039
.157	.651	336.	.5786	.6961	.6935	19.37	.000049
.181	.741	387.	.5933	.7039	.7071	19.79	.000057
.212	.877	452.	.6040	.7098	.7169	20.09	.000078
.240	.993	512.	.6140	.7154	.7259	20.36	.000079
.265	1.098	566.	.6251	.7217	.7358	20.67	.000099
.293	1.216	626.	.6333	.7264	.7431	20.89	.000115
.314	1.342	713.	.6417	.7313	.7504	21.12	.000127
.344	1.508	778.	.6519	.7373	.7592	21.40	.000142
.402	1.666	859.	.6587	.7414	.7650	21.58	.000162
.450	1.866	962.	.6685	.7473	.7733	21.84	.000160
.491	2.034	1049.	.6761	.7520	.7796	22.04	.000160
.527	2.181	1125.	.6824	.7559	.7849	22.20	.000196
.570	2.360	1217.	.6909	.7613	.7919	22.43	.000215
.608	2.518	1299.	.6996	.7668	.7990	22.65	.000233
.641	2.654	1369.	.7041	.7694	.8024	22.77	.000249
.689	2.854	1472.	.7110	.7741	.8081	22.94	.000272
.735	3.043	1570.	.7200	.7800	.8152	23.17	.000295
.760	3.148	1624.	.7223	.7815	.8171	23.23	.000309
.806	3.339	1722.	.7316	.7877	.8243	23.47	.000333
.848	3.553	1833.	.7431	.7954	.8299	23.65	.000361
.889	3.679	1892.	.7504	.8004	.8332	23.75	.000378
.918	3.884	2006.	.7598	.8062	.8388	23.93	.000407
.948	4.099	2109.	.7738	.8117	.8451	24.14	.000437
1.022	4.231	2183.	.7667	.8090	.8510	24.33	.000458
1.055	4.368	2243.	.7717	.8152	.8547	24.46	.000478
1.101	4.557	2351.	.7777	.8194	.8591	24.60	.000507
1.134	4.694	2421.	.7844	.8229	.8640	24.76	.000529
1.177	4.873	2514.	.7915	.8294	.8691	24.93	.000558
1.220	5.052	2606.	.7964	.8326	.8726	25.05	.000587
1.257	5.204	2696.	.8016	.8367	.8764	25.17	.000613
1.294	5.356	2763.	.8055	.8396	.8791	25.24	.000640
1.319	5.460	2856.	.8095	.8445	.8838	25.42	.000672
1.377	5.703	2942.	.8122	.8465	.8838	25.42	.000701

Y (CM)	V/TWETA	V-PLUS	TABLE A14. (CONT.) N/NE RHO/RHPE	U/UE	U-PLUS	TAU/TAU-MAX	V/U
1.419	5.877	3032.	.8187	.8454	25.57	.7316	.000733
1.463	6.056	3124.	.8235	.8510	25.49	.7176	.000766
1.506	6.239	3213.	.8303	.8581	25.84	.7037	.000799
1.540	6.374	3289.	.8354	.8620	25.96	.6916	.000827
1.598	6.618	3414.	.8424	.8676	26.12	.6713	.000875
1.637	6.776	3495.	.8456	.8698	26.19	.6576	.000906
1.667	6.902	3560.	.8466	.8698	26.22	.6467	.000932
1.715	7.102	3683.	.8550	.8771	26.47	.6290	.000973
1.748	7.234	3734.	.8578	.8793	26.47	.6166	.001001
1.772	7.338	3785.	.8632	.8836	26.59	.6075	.001022
1.804	7.470	3853.	.8666	.8862	26.67	.5953	.001050
1.843	7.712	3978.	.8721	.8904	26.79	.5726	.001101
1.895	7.804	4027.	.8761	.8938	26.88	.5616	.001121
1.922	7.959	4105.	.8781	.8956	26.92	.5490	.001154
1.943	8.127	4192.	.8848	.9009	27.07	.5326	.001191
1.966	8.264	4263.	.8899	.9050	27.18	.5191	.001221
2.021	8.149	4317.	.8911	.9059	27.21	.5086	.001244
2.056	8.511	4390.	.8945	.9087	27.28	.4945	.001275
2.114	8.743	4515.	.9011	.9161	27.42	.4704	.001328
2.147	8.910	4596.	.9067	.9187	27.54	.4545	.001383
2.193	9.078	4683.	.9095	.9211	27.61	.4374	.001400
2.244	9.249	4792.	.9181	.9282	27.79	.4159	.001447
2.273	9.410	4854.	.9202	.9301	27.83	.4035	.001474
2.320	9.604	4954.	.9246	.9337	27.93	.3835	.001517
2.358	9.742	5036.	.9297	.9381	28.04	.3673	.001551
2.399	9.930	5122.	.9329	.9409	28.10	.3500	.001588
2.432	10.067	5193.	.9376	.9448	28.20	.3360	.001618
2.485	10.288	5307.	.9402	.9470	28.26	.3135	.001666
2.520	10.435	5383.	.9435	.9499	28.33	.2986	.001698
2.566	10.674	5480.	.9504	.9558	28.47	.2795	.001738
2.623	10.861	5602.	.9539	.9589	28.54	.2558	.001788
2.661	11.014	5684.	.9577	.9621	28.62	.2403	.001820
2.708	11.213	5784.	.9635	.9672	28.76	.2213	.001860
2.754	11.402	5882.	.9652	.9688	28.77	.2030	.001898
2.791	11.555	5960.	.9680	.9713	28.83	.1887	.001948
2.835	11.739	6055.	.9729	.9756	28.93	.1716	.001963
2.886	11.949	6164.	.9760	.9783	28.99	.1525	.002003
2.922	12.096	6240.	.9784	.9804	29.04	.1394	.002030
2.983	12.349	6370.	.9822	.9839	29.12	.1173	.002075
3.028	12.538	6468.	.9839	.9854	29.15	.1016	.002107
3.069	12.704	6554.	.9860	.9873	29.19	.0842	.002135
3.115	12.895	6652.	.9878	.9890	29.23	.0735	.002165
3.144	13.032	6723.	.9904	.9913	29.28	.0637	.002186
3.188	13.200	6809.	.9915	.9923	29.30	.0509	.002211
3.235	13.394	6910.	.9926	.9933	29.33	.0374	.002238
3.277	13.568	6999.	.9943	.9948	29.36	.0260	.002261
3.310	13.795	7070.	.9955	.9959	29.38	.0173	.002279
3.355	13.889	7165.	.9967	.9970	29.41	.0063	.002301
3.406	14.096	7273.	.9972	.9974	29.42	0.0000	.002314
3.437	14.230	7341.	.9977	.9979	29.43	0.0000	.002314
3.502	14.498	7479.	.9988	.9988	29.44	0.0000	.002314
3.536	14.630	7547.	.9992	.9993	29.46	0.0000	.002314
3.580	14.819	7645.	.9998	.9998	29.47	0.0000	.002314
3.612	15.035	7756.	.9999	.9999	29.47	0.0000	.002314
3.649	15.187	7834.	1.0005	1.0005	29.48	0.0000	.002314
3.691	15.282	7883.	1.0003	1.0003	29.48	0.0000	.002314

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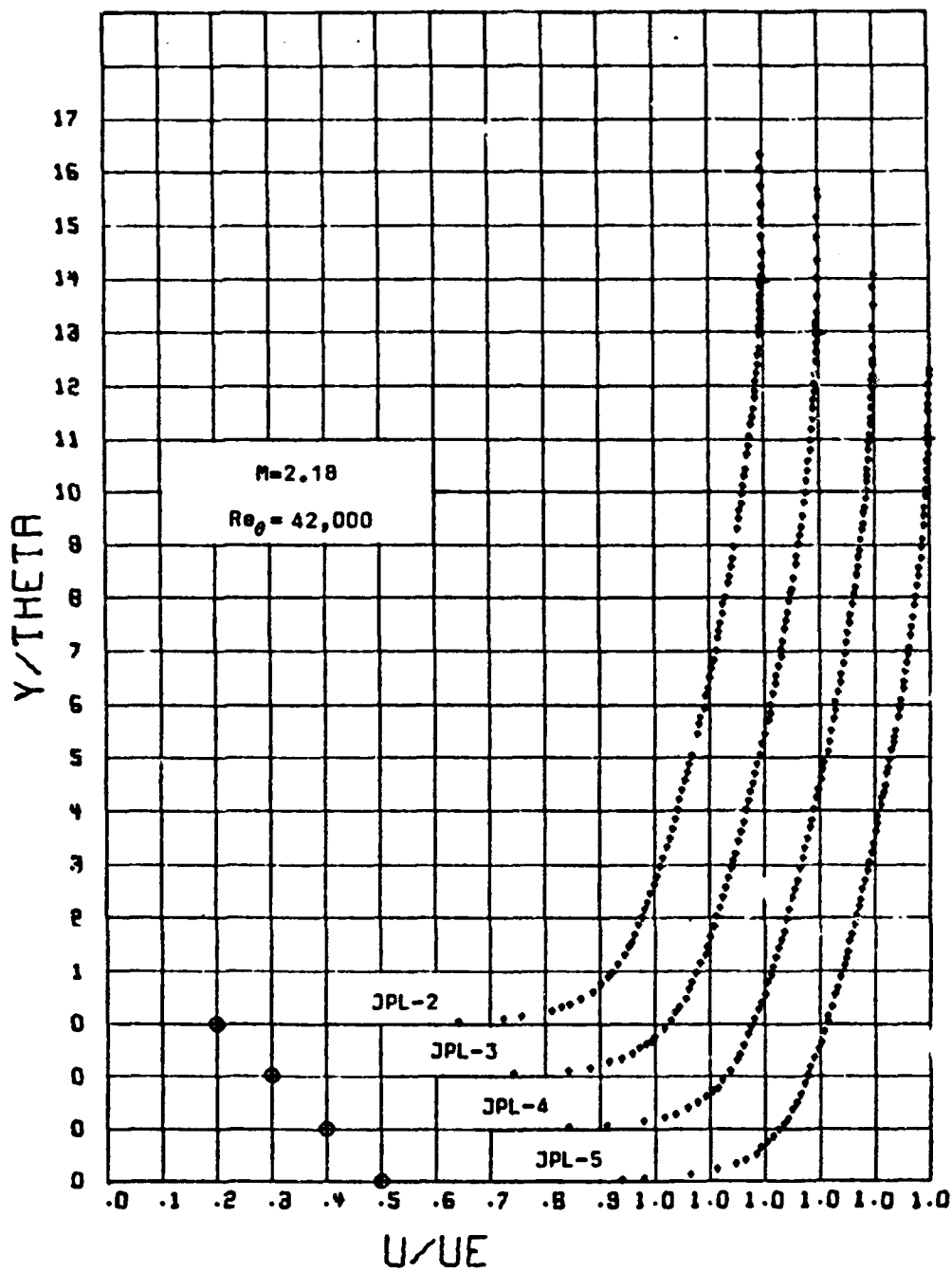


Figure A41. Mean Velocity Profiles.

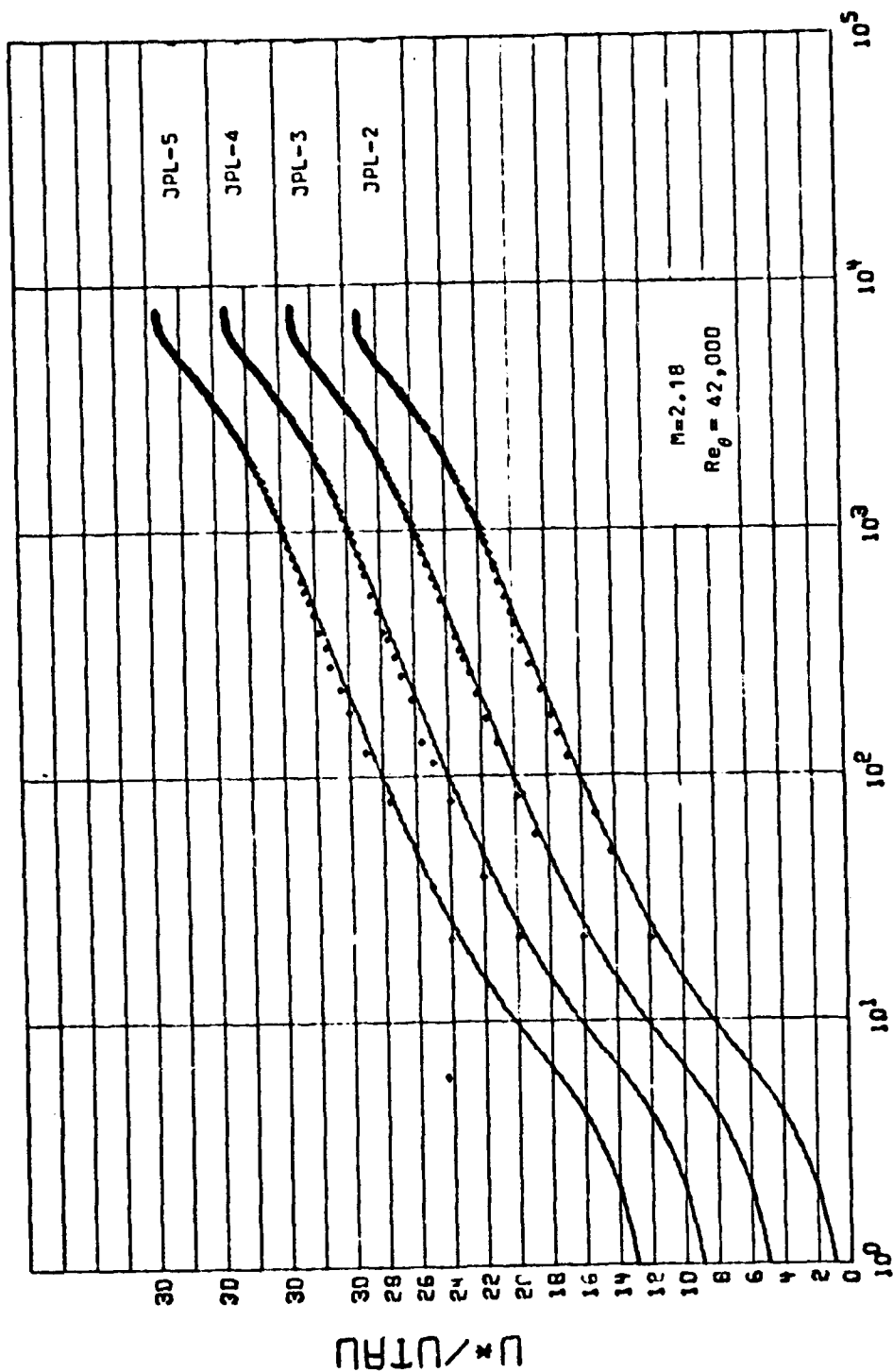


Figure A42. Van Driest Scaled Mean Velocity Profiles.

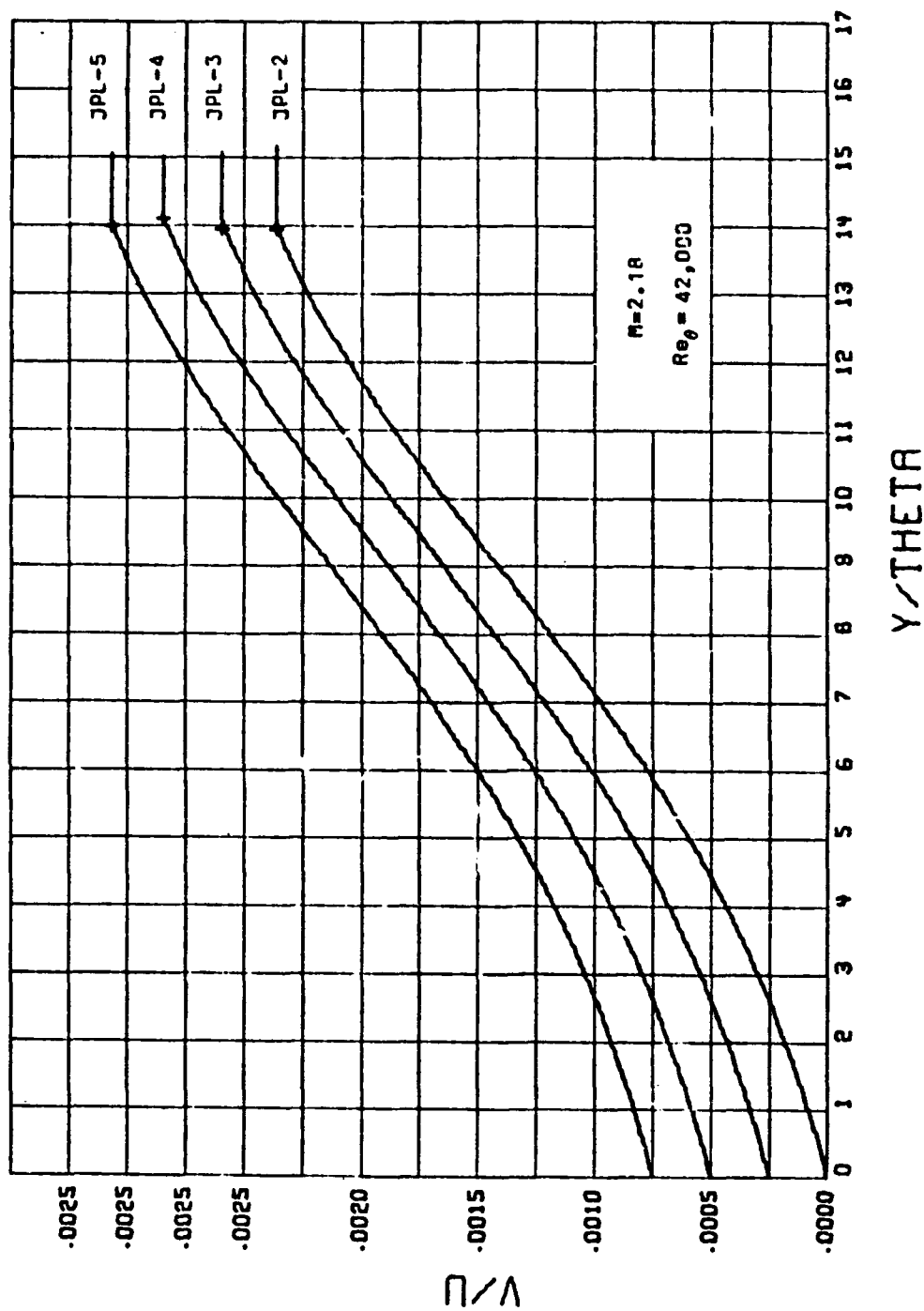


Figure A43. Normal Velocity Distribution.

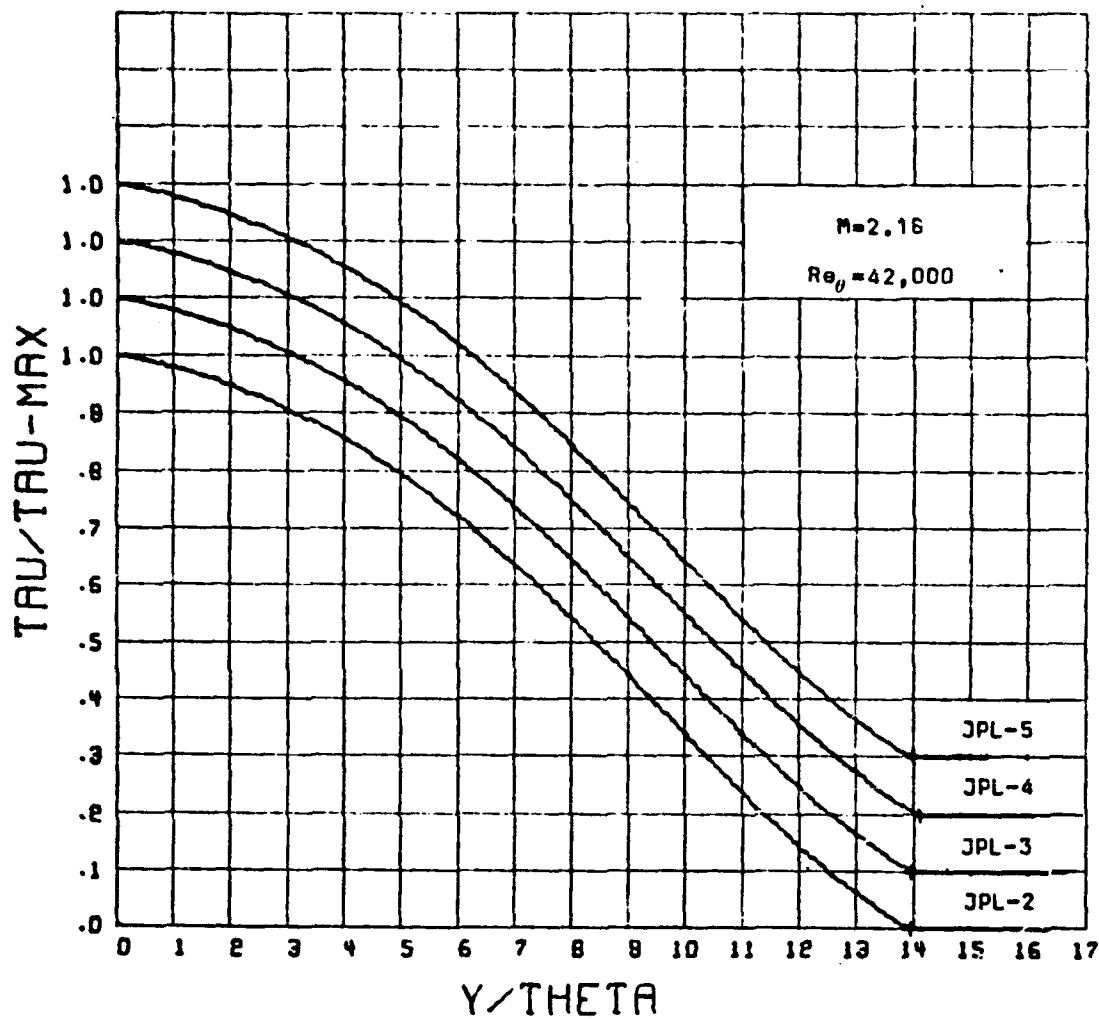


Figure A44. Shear Stress Distribution.

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Nomenclature

Symbol	Equation	Meaning
c	(19)	constant in wall law (5.0)
C_f	(7)	local friction coefficient
C_p	(59)	pressure coefficient for Preston tube
D	(52)	diameter of Preston tube
$f(y^+)$	(40)	function in wall law
$f_2(T')$	(54)	function of reference temperature
F_f	(62)	scaling function for C_f
F_θ	(63)	scaling function for Re_θ
H	(6)	boundary-layer profile form parameter
m	(14)	function of Mach number
M_p	(53)	pressure Mach number for Preston tube
M_T	(58)	friction Mach number for Preston tube
MDMB	(A3)	measure of momentum balance
P, Q	(30), (31)	definite integrals of velocity profile
r	(2)	temperature recovery factor (0.885)
Re_D	(22)	Reynolds number based on D
Re_θ		Reynolds number based on θ
u, v		streamwise and normal velocity components
u_τ	(15)	friction velocity
U	(25)	dimensionless velocity scaled according to Van Driest

Nomenclature (Cont.)

Symbol	Equation	Meaning
x, y		streamwise and normal coordinates
Y	(20)	distance from wall in outer variables
β	(A1)	pressure-gradient parameter
δ		boundary-layer thickness
δ^*	(4)	boundary-layer displacement thickness
θ	(5)	boundary-layer momentum thickness
κ	(9)	Kármán constant (0.41)
μ		viscosity
ν		kinematic viscosity
Π	(19)	strength of wake component
τ		shearing stress

Subscripts

$()_e$	edge or external value
$()_o$	stagnation value
$()_w$	wall value

Superscripts

$()^1$	value for incompressible flow
$()'$	value at effective temperature
$()^+$	value made dimensionless with u_τ, v_w
$()^*$	value for Van Driest scaling

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