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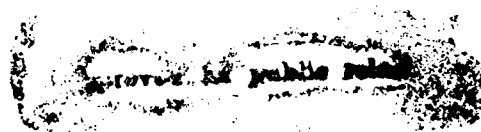


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MEASUREMENTS IN THE TURBULENT BOUNDARY LAYER AT CONSTANT PRESSURE IN SUBSONIC AND SUPERSONIC FLOW

Part I. Mean Flow

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May 1978

Final Report for Task 1 of AFOSR - May 1975 - May 1978

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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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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.

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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			COMPUTED
				PRESTON (H/K)	PRESTON (R/U)	BALANCE	
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	.002057	.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	.001847	.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	.001867	.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	.001788	.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	24690.	.001633	.001683	.001497	.001532	.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	.001445	.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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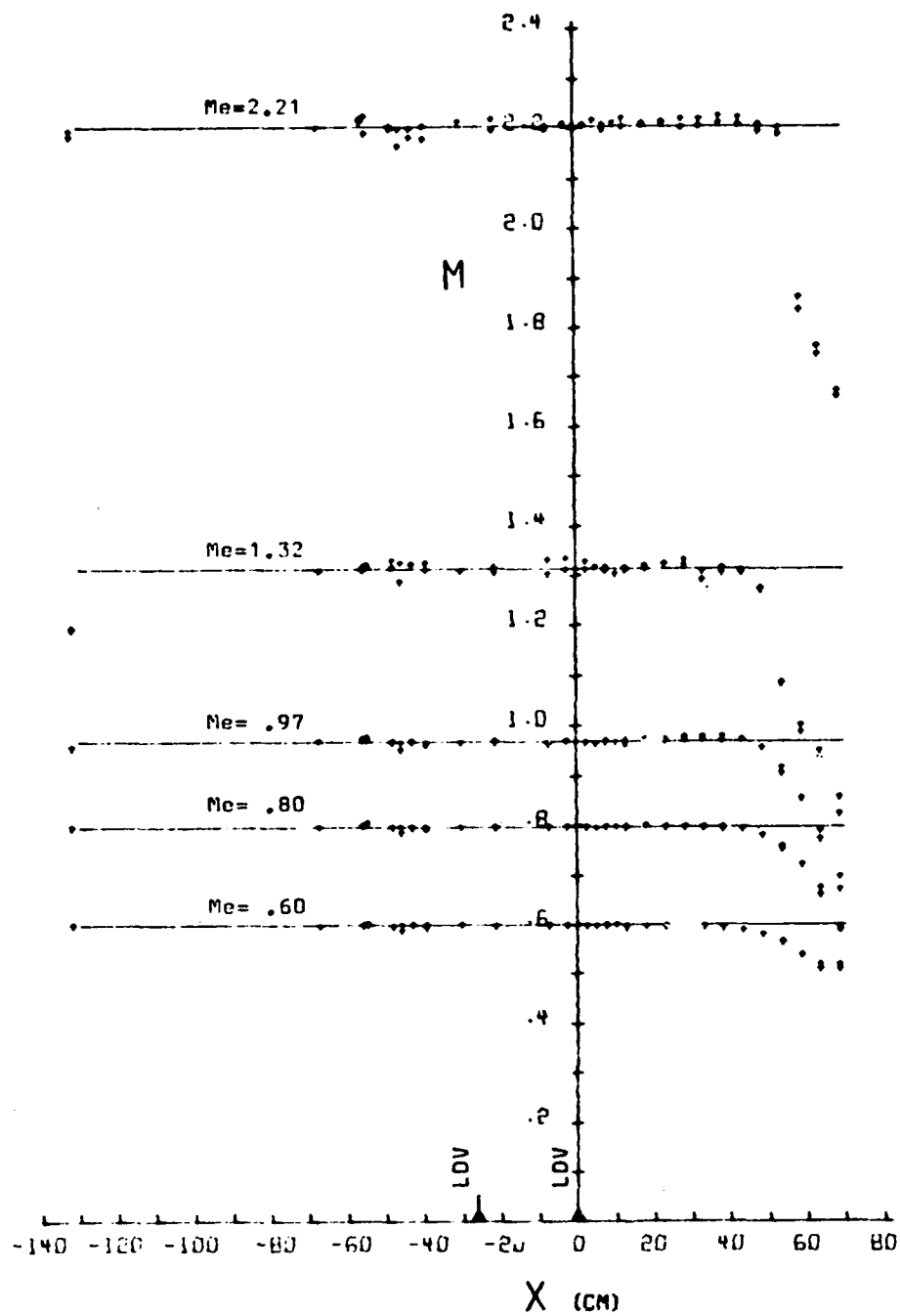


Figure 1. Free-stream Mach-Number Distribution, $Re_\rho = 40,000$.
JPL 20-inch Wind Tunnel

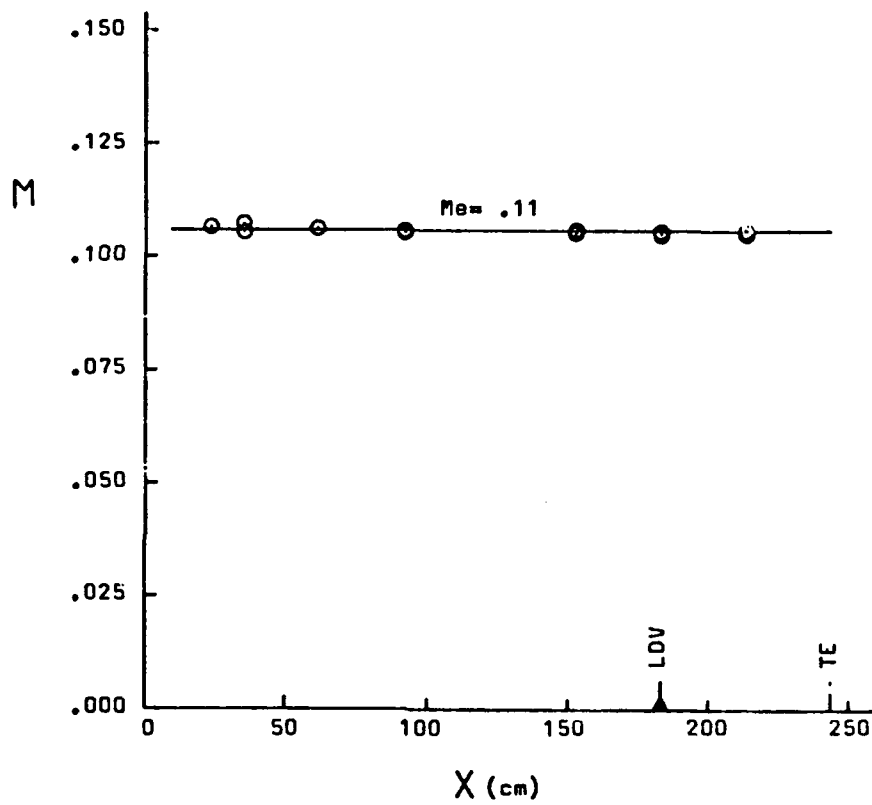


Figure 2. Free-stream Mach Number Distribution.
CIT Merrill Wind Tunnel

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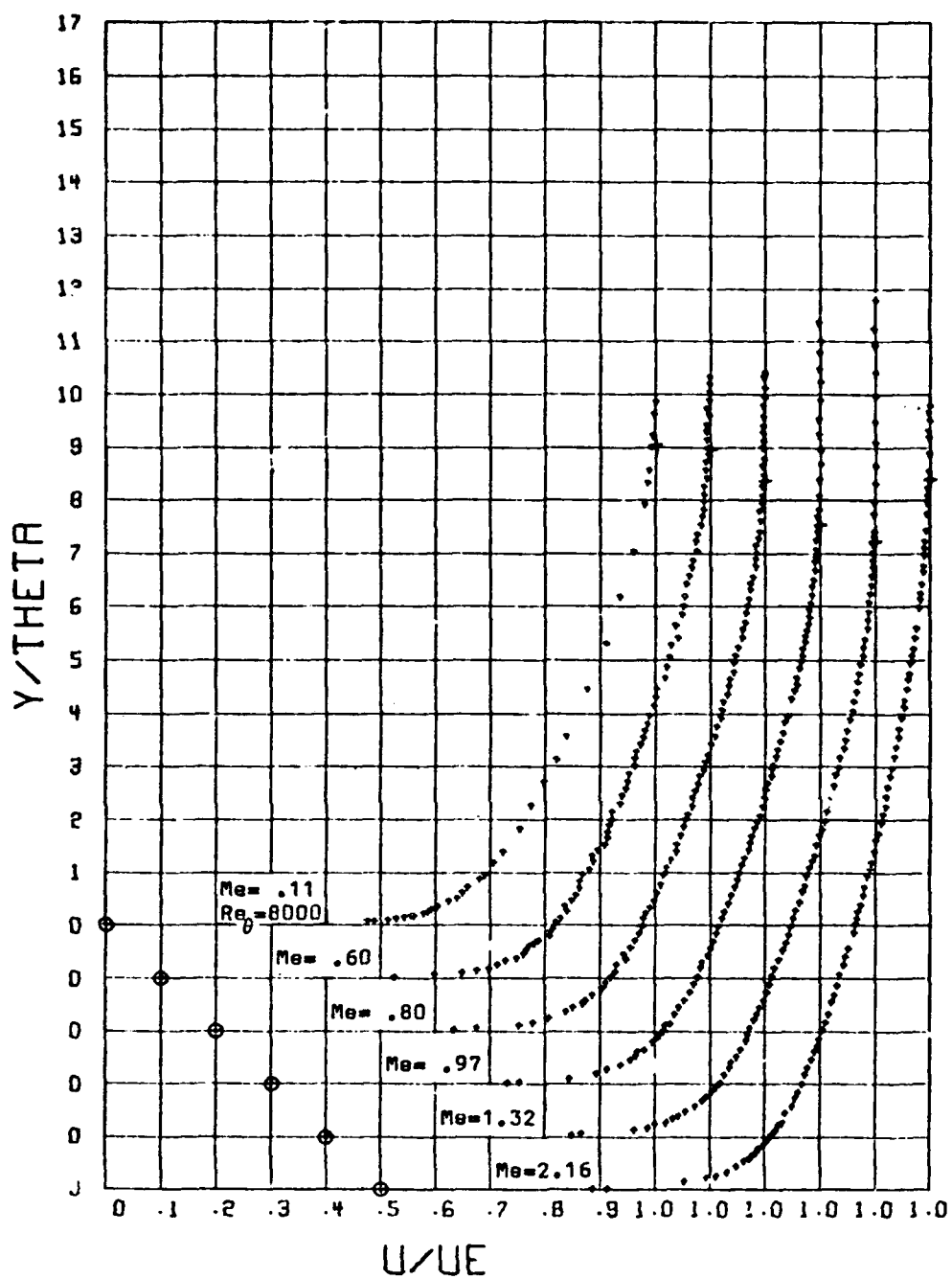


Figure 3. Mean Velocity Profiles. $Re_\theta = 23,000$

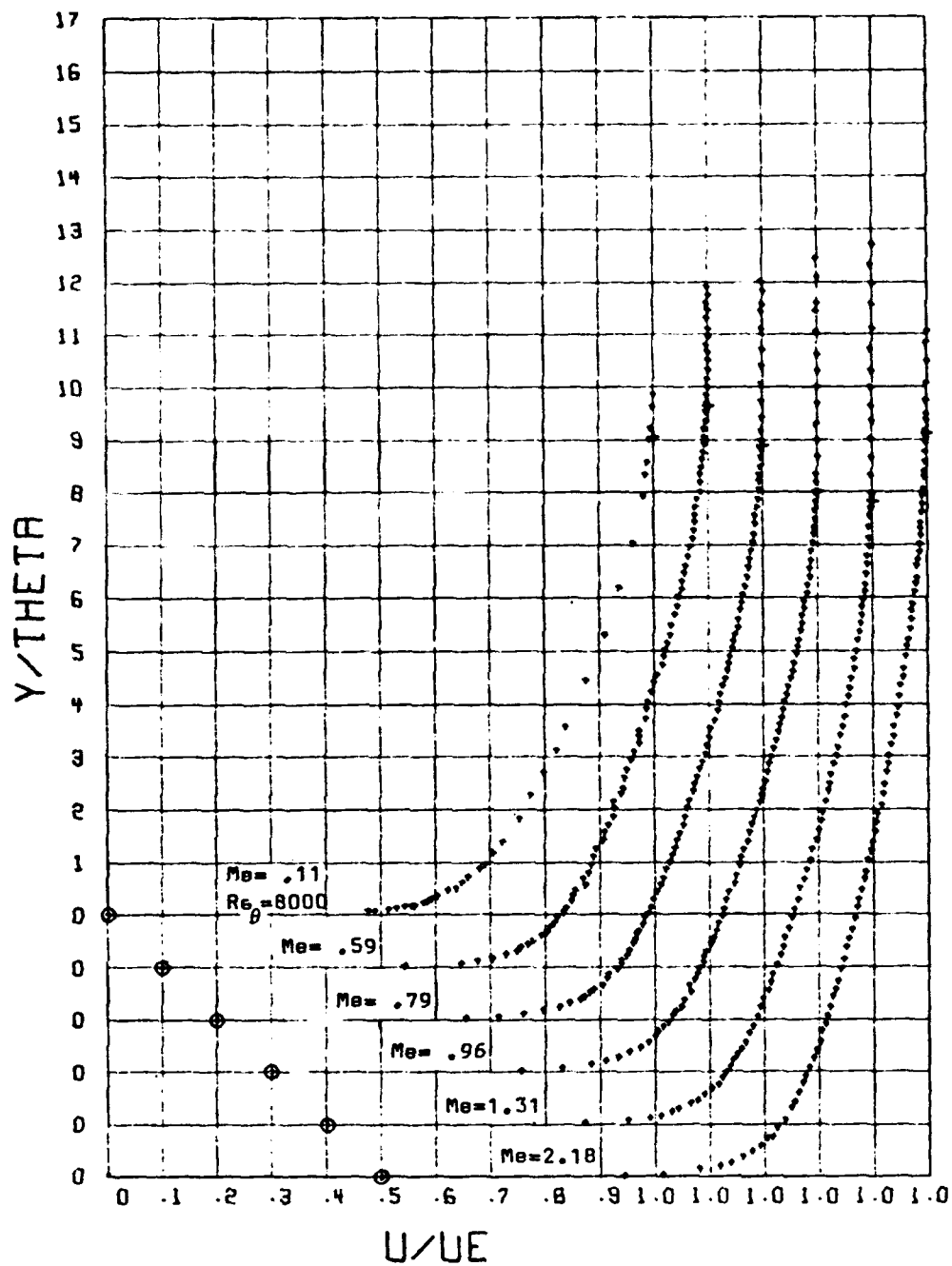


Figure 4. Mean Velocity Profiles. $Re_\theta = 40,000$

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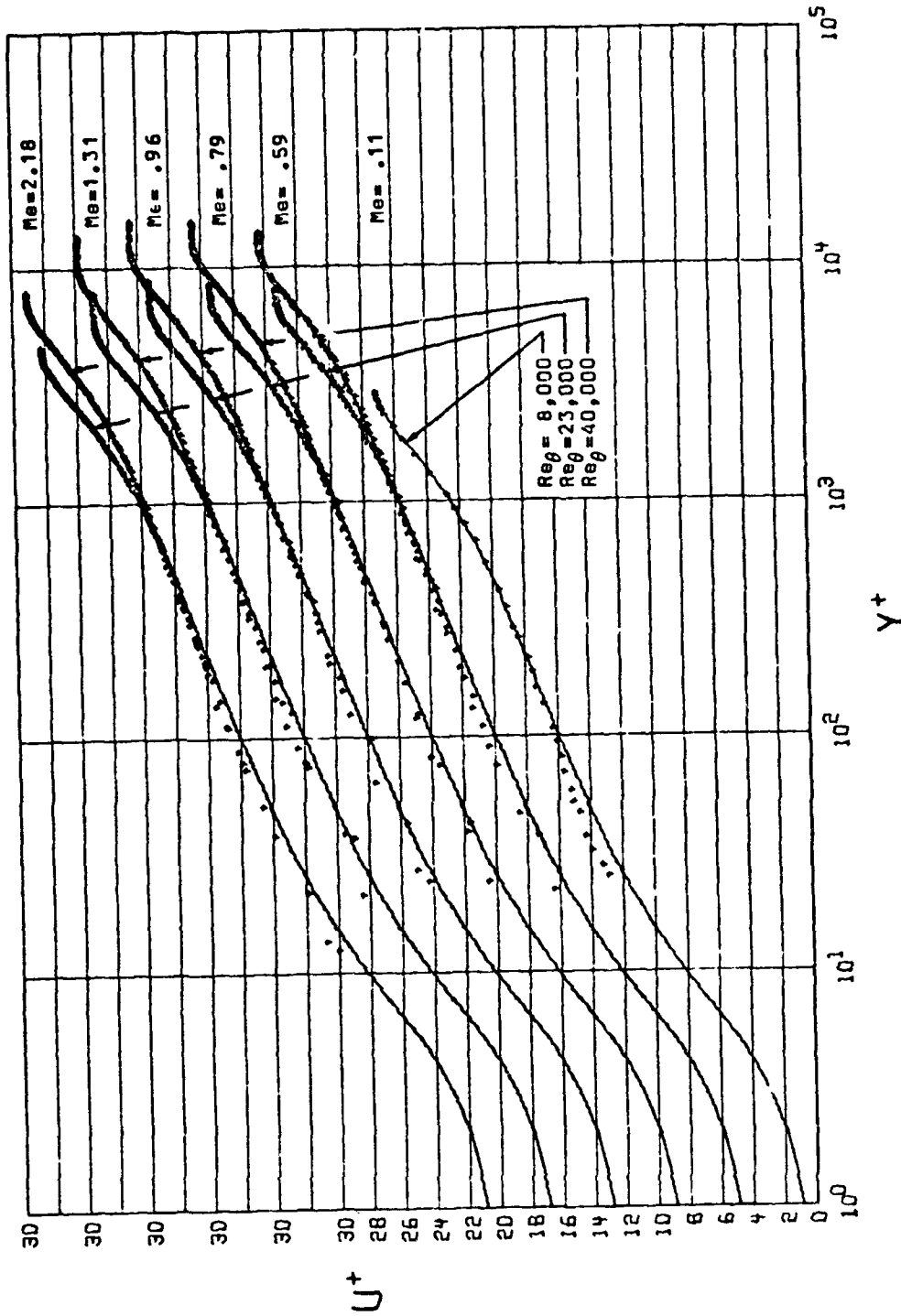


Figure 5. Mean Velocity Profiles with Van Driest Scaling.

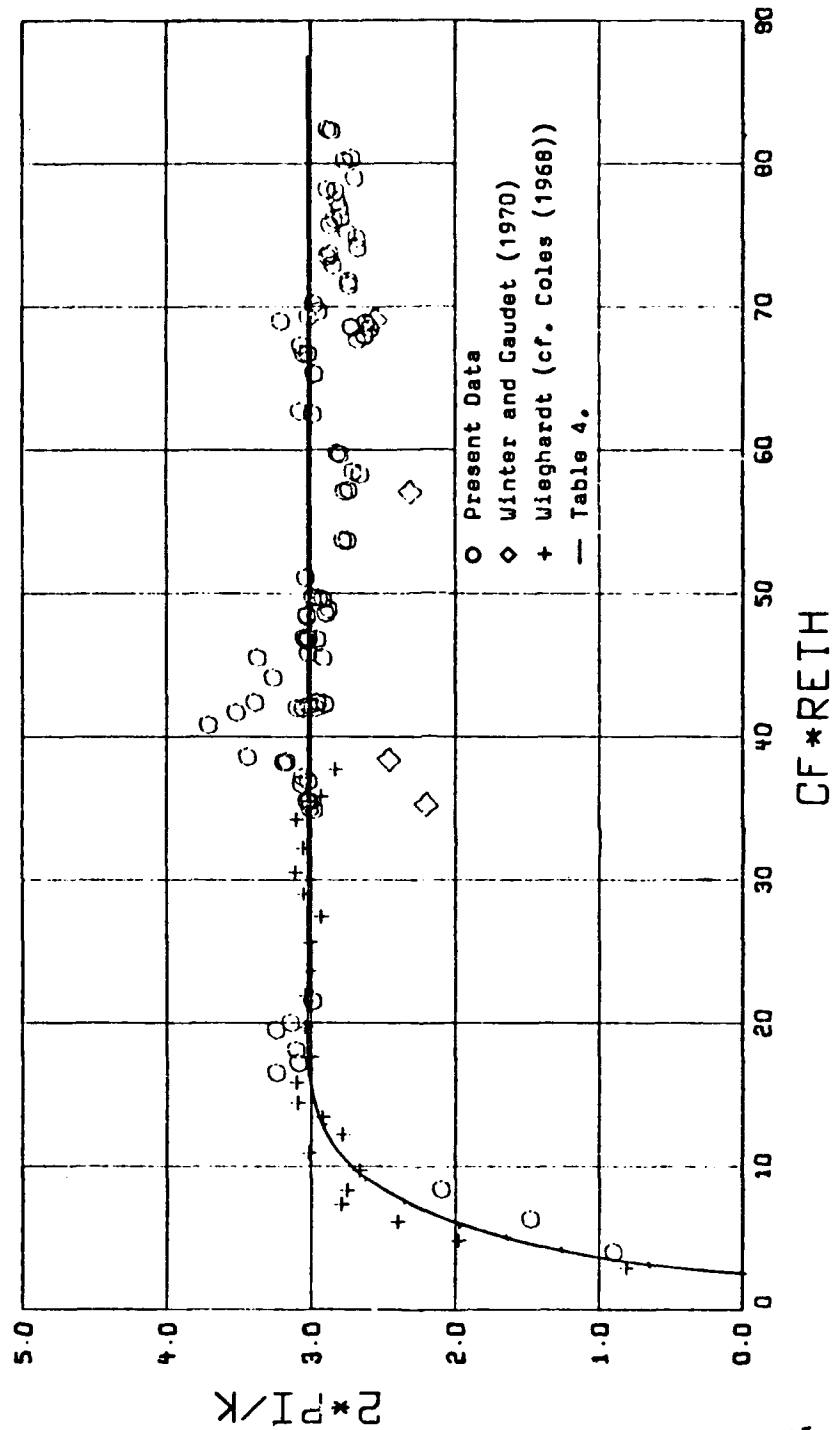


Figure 6. The Magnitude of the Wake Component
with Van Driest Scaling.

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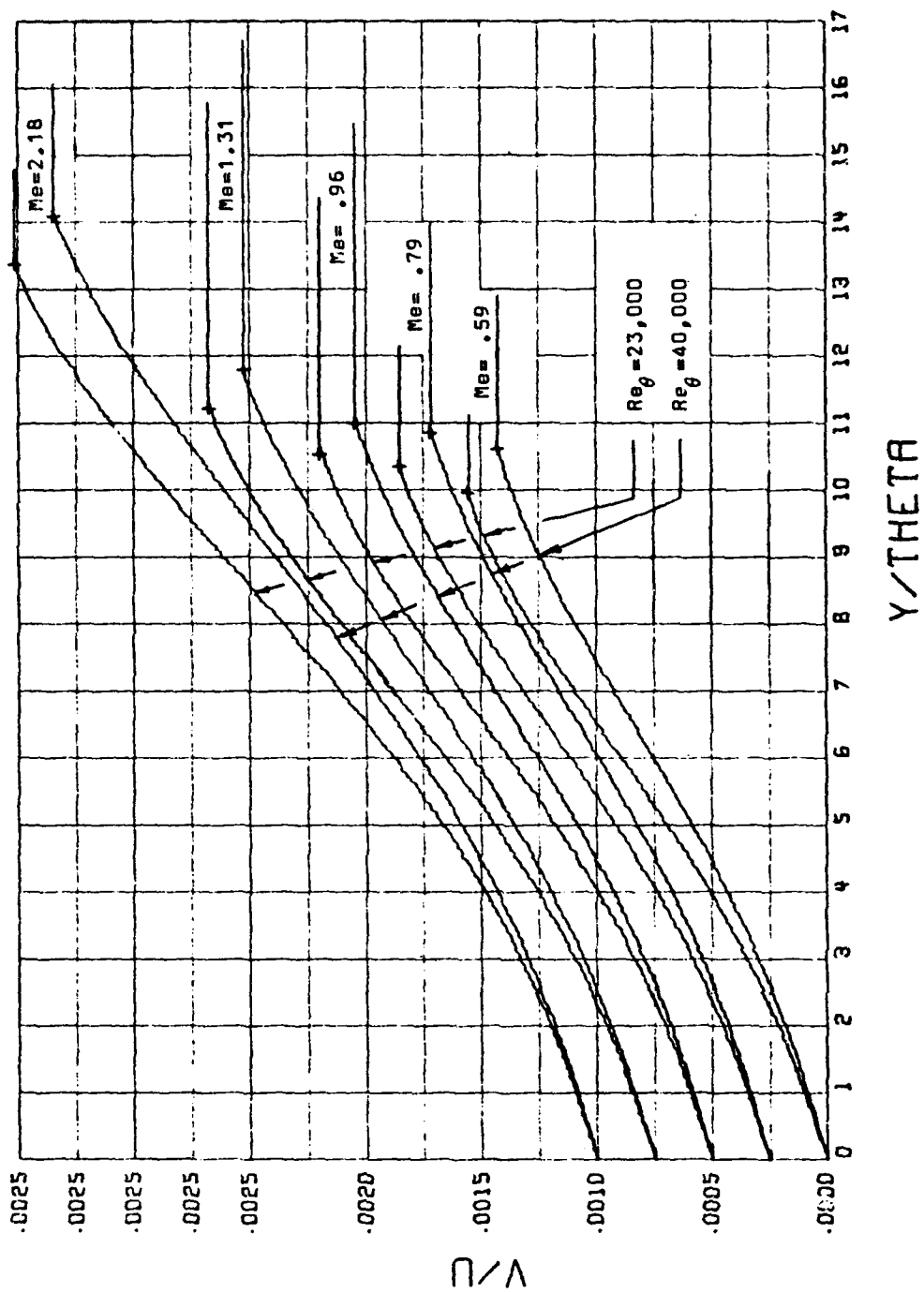


Figure 7. Distribution of Normal Velocity
According to Equation (38).

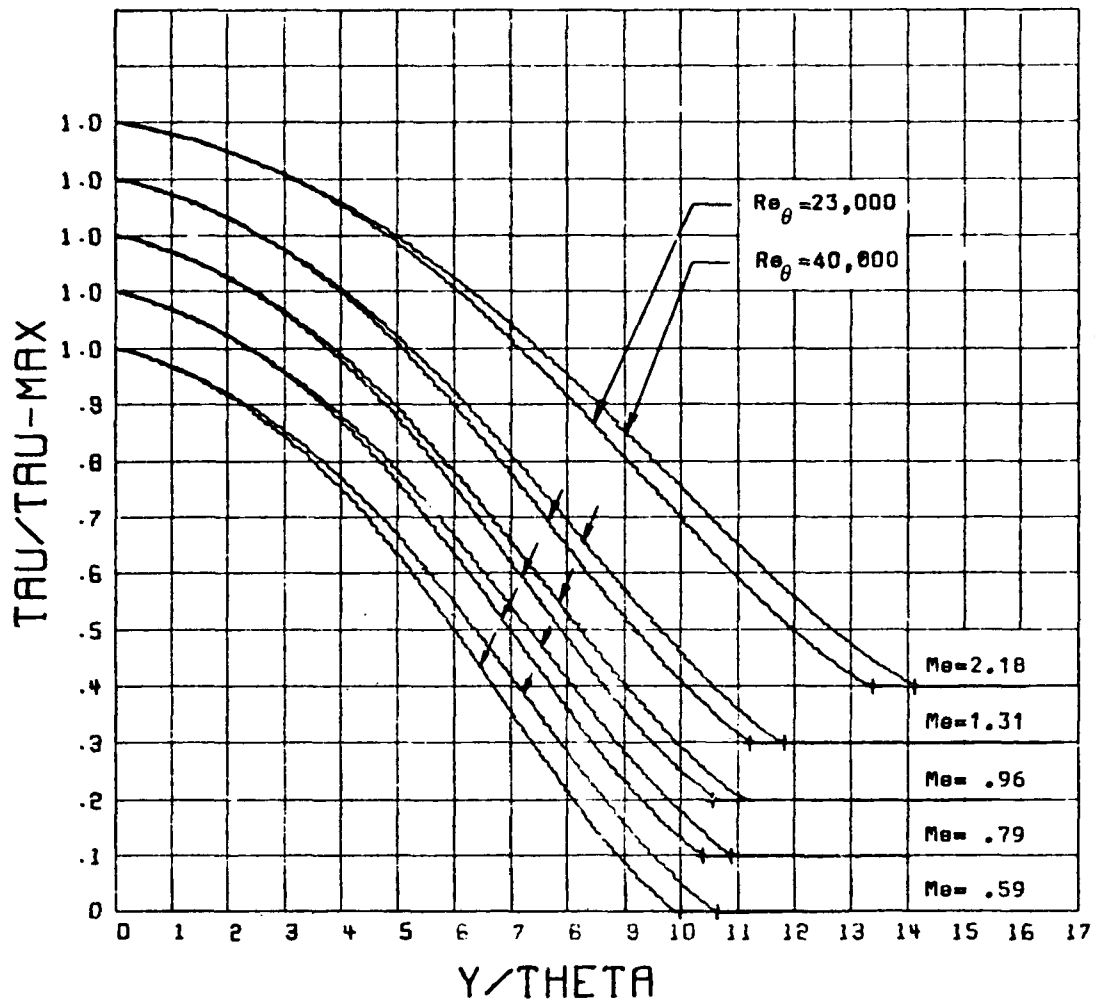


Figure 8. Distribution of Shearing Stress
According to Equation (37).

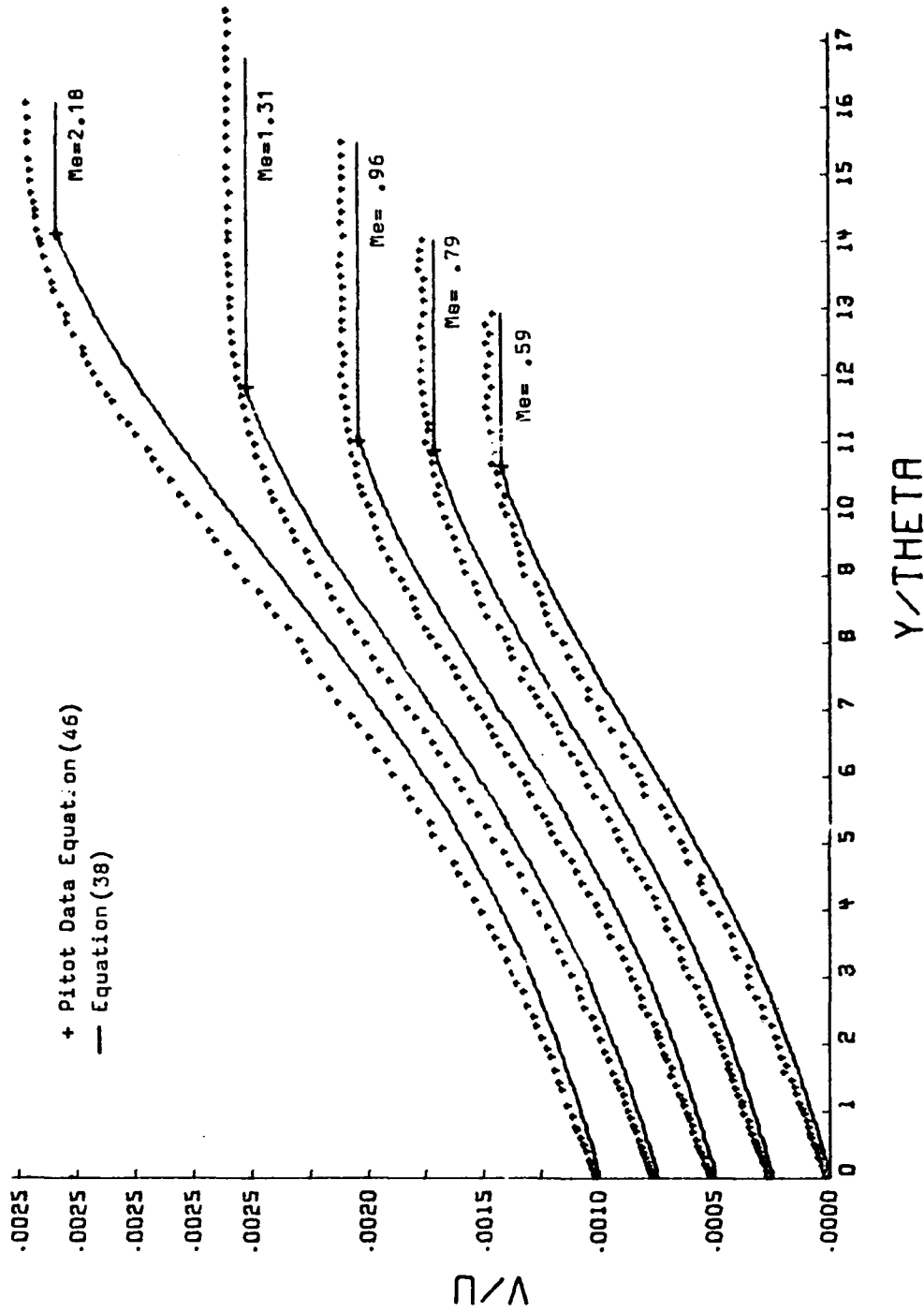


Figure 9. Comparison Between Direct Integration of Pitot Data and Integration Using the Fitted Profile. $Re_\theta = 40,000$

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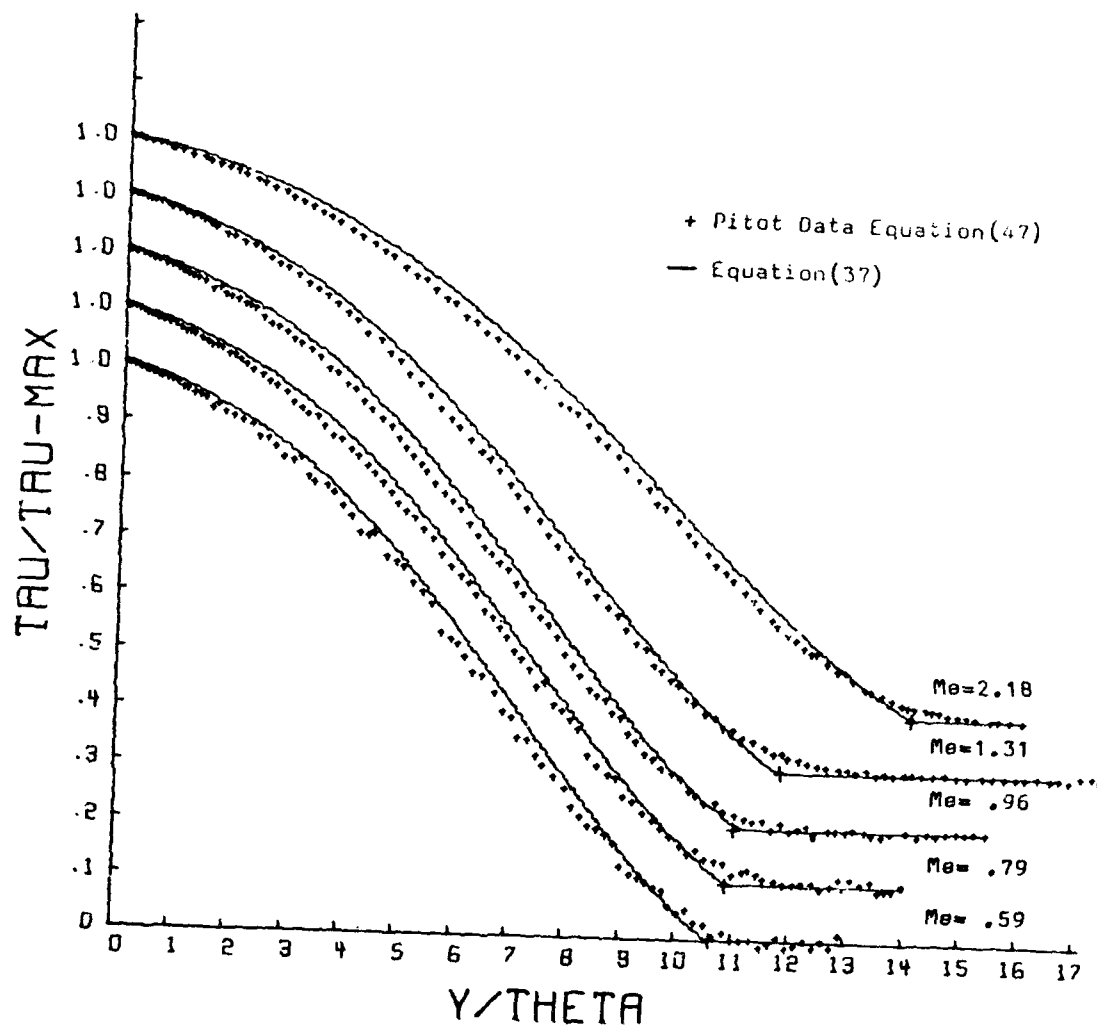


Figure 10. Comparison Between Direct Integration of Pitot Data and Integration Using the Fitted Profile.
 $Re_\theta = 40,000$

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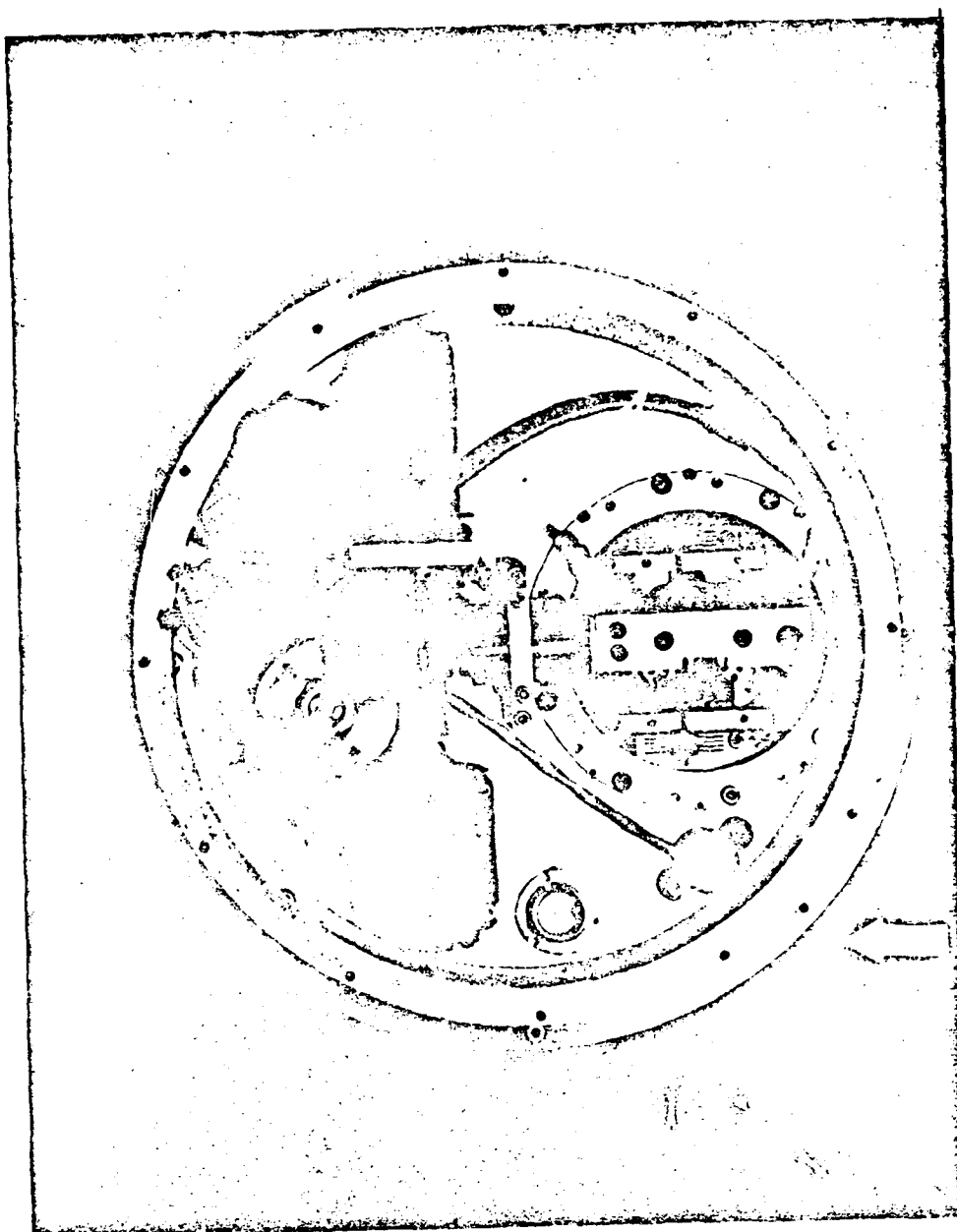


Figure 11. Floating-Element Balance.

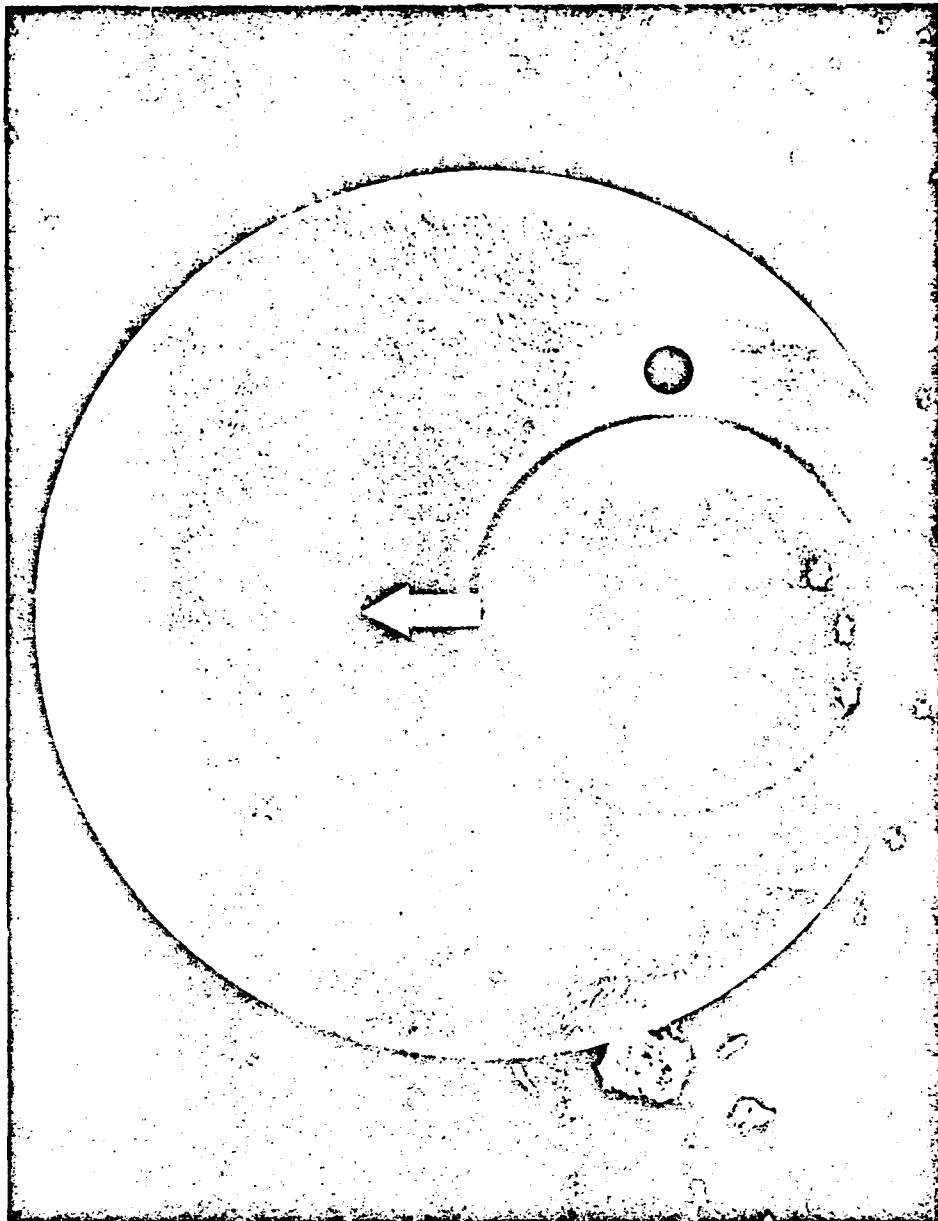


Figure 12. Floating-Element Balance.

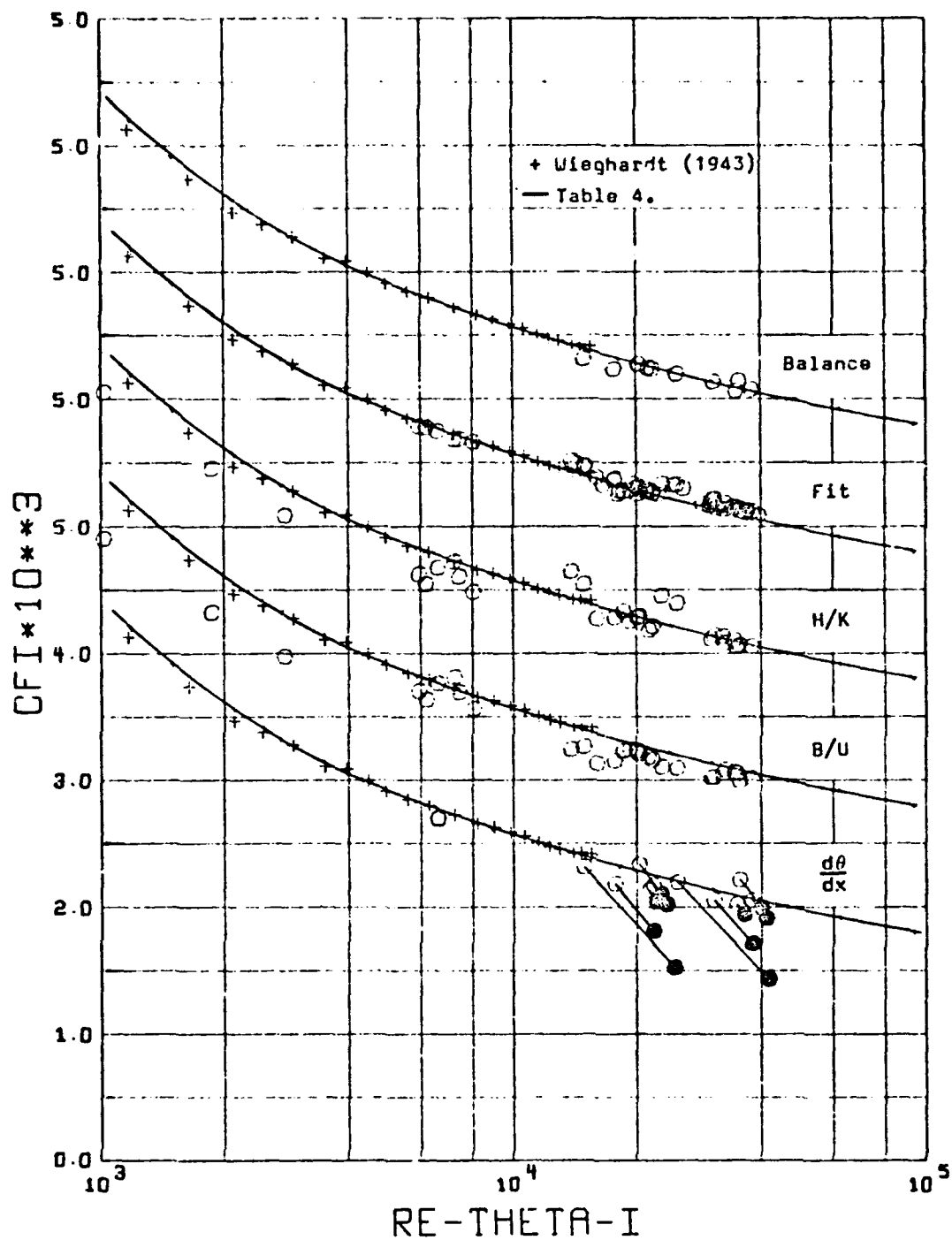


Figure 13. The Surface Friction as a Function of Reynolds Number.

AppendixTabulation of Experimental DataTable 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

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

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

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

This formula is soluble for C_f only by iteration, since the quantities D^+ and M_T 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	1.420	.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	3.718	.4404	.3328	1.323
CIT-8	.1052	7475.	37.42	1.373	.6453	3.149	.4545	.3439	1.321
CIT-9	.1070	8068.	37.79	1.393	.6139	3.404	.4814	.3659	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	3.744	.4333	.3028	1.420
JPL-4	.6018	22400.	204.91	7.007	.5908	3.147	.4531	.3177	1.426
JPL-5	.5962	22300.	203.19	6.941	.5944	3.264	.4552	.3201	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	.3003	1.404
JPL-1	.7958	19770.	244.47	9.115	.7221	2.305	.3655	.7238	1.562
JPL-2	.7882	21850.	243.34	9.711	.6917	2.660	.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	.7293	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	.5867	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	.001847	.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	14.46	.9985	.000008
.055	.207	45.	.5543	1.0000	.5543	14.83	.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	.749	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.	.9981	1.0000	.9981	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-E	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	.111	25.	.4877	1.0000	.4877	13.05	1.0000	0.000000
.032	.114	26.	.4942	1.0000	.4942	13.28	.9999	0.000000
.035	.125	28.	.5078	1.0000	.5078	13.59	.9994	.000002
.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	64.	.5840	1.0000	.5840	15.43	.9954	.000023
.097	.343	79.	.5925	1.0000	.5925	15.45	.9937	.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	3.358	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 DATA

EDGE MACH NO. = .1031 TOTAL PRESSURE = $1.275E+06$ N/m²
X = 182.88 CM 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 CM

UE = 37.34 M/SEC DELTA STAR = .3860 CM T-THETA = .2924 CM M = 1.320
RE-THETA = 6604.
NIMALL = .1653 CM**2/.EC

LEAST SQUARE FIT PARAMETERS
UTAU = 1.3875 M/SEC CF = .002756
CHISQR = .308E-04 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/UE	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.	.5884	1.0000	.5884	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	.9784	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	1248.	.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.	.9963	1.0000	.9963	27.14	0.0000	0.001719
3.148	9.521	2541.	.9981	1.0000	.9981	27.19	0.0000	0.001743
3.484	10.475	2764.	1.0000	1.0000	1.0000	27.24	0.0000	0.001749
3.643	10.948	2922.	1.0000	1.0000	1.0000	27.24	0.0000	0.001749

LEAST SQUARE FIT PARAMETERS

UTAU = 1.3180 M/SEC
CHISQR = .2505E-04

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

DELTA STAR = .4404 CM
RE-THETA = 7270.

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

M = 1.323

PI = .4443

YMIN = .087 CM
YMAX = 2.831 CM

DC-TAU = 3.0184 CM

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FOSS MACH W/8
213.36 CM
-1952
F. M. MESS MACH W/8
213.36 CM

USC 37.62 M/SEC
B-0.142-STR 9RTA,
DELTA STAB 4545 M
DELTA STAB 7475,
Mo 1.321

LEA Y SOURCE ET DIRMETUS
UT-10 1.9737-06
V-AIS - 2.944 CM
CEB .002849
PIL .0453
WING .007 CM
NFLTAN 3.1404 CM

PI = .4453
MI = .097 CM

0FLTA= 3.1494 CM

Y (cm)	V/T/META	Y-PLUS	M/SE	BW/BWME	U/IE	II-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	0.009	25.	4.709	1.0000	0.4338	13.14	1.0000	0.000000
0.020	0.019	25.	4.455	1.0000	0.4055	13.22	1.0000	0.000000
0.030	0.029	25.	4.401	1.0000	0.4001	13.58	0.9999	0.000000
0.040	0.039	41.	5.236	1.0000	0.5236	14.26	0.9999	0.000000
0.050	0.049	46.	5.603	1.0000	0.5603	14.73	0.9999	0.000000
0.060	0.059	56.	6.403	1.0000	0.6403	15.17	0.9999	0.000000
0.070	0.069	61.	6.506	1.0000	0.6506	15.22	0.9999	0.000000
0.080	0.079	70.	6.724	1.0000	0.6724	15.39	0.9999	0.000000
0.090	0.089	77.	6.925	1.0000	0.6925	15.47	0.9999	0.000000
0.100	0.099	103.	6.906	1.0000	0.6906	16.33	0.9999	0.000000
0.150	0.099	126.	6.160	1.0000	0.6160	16.74	0.9999	0.000000
0.200	0.099	157.	6.163	1.0000	0.6163	17.12	0.9999	0.000000
0.250	0.099	171.	6.460	1.0000	0.6460	18.16	0.9999	0.000000
0.300	0.099	225.	6.874	1.0000	0.6874	18.79	0.9999	0.000000
0.350	0.099	322.	7.739	1.0000	0.7739	19.23	0.9999	0.000000
0.400	0.099	407.	7.734	1.0000	0.7734	19.73	0.9999	0.000000
0.450	0.099	536.	7.961	1.0000	0.7961	20.57	0.9999	0.000000
0.500	0.099	650.	7.900	1.0000	0.7900	21.27	0.9999	0.000000
0.550	0.099	745.	7.461	1.0000	0.7461	21.91	0.9999	0.000000
0.600	0.099	819.	7.620	1.0000	0.7620	22.68	0.9999	0.000000
0.650	0.099	1047.	8.650	1.0000	0.8650	23.34	0.9999	0.000000
0.700	0.099	1100.	8.772	1.0000	0.8772	23.77	0.9999	0.000000
0.750	0.099	1265.	8.665	1.0000	0.8665	24.22	0.9999	0.000000
0.800	0.099	1501.	8.623	1.0000	0.8623	24.54	0.9999	0.000000
0.850	0.099	1547.	8.624	1.0000	0.8624	25.17	0.9999	0.000000
0.900	0.099	1675.	8.663	1.0000	0.8663	25.77	0.9999	0.000000
0.950	0.099	2150.	8.745	1.0000	0.8745	26.64	0.9999	0.000000
1.000	0.099	2436.	8.400	1.0000	0.8400	26.96	0.9999	0.000000
1.050	0.099	2436.	8.400	1.0000	0.8400	27.10	0.9999	0.000000
1.100	0.099	2671.	8.415	1.0000	0.8415	27.16	0.9999	0.000000
1.150	0.099	2646.	8.462	1.0000	0.8462	27.19	0.9999	0.000000
1.200	0.099	2646.	8.462	1.0000	0.8462	27.19	0.9999	0.000000
1.250	0.099	2696.	1.0000	1.0000	1.0000	27.24	0.9999	0.000000

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

FDCR 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		DELTA= 3.4060 CM		
RE-DELTA-STAR= 10A10.		RE-THETA= 8088.		MULL= .1714 CM/SEC				
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	26.92	.9104	.0001550
3.138	8.575	2433.	.9899	1.0000	.9899	27.03	.9035	.0001617
3.295	9.004	2660.	.9941	1.0000	.9941	27.14	.9066	.0001738
3.376	9.226	2726.	.9958	1.0000	.9958	27.19	.9184	.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

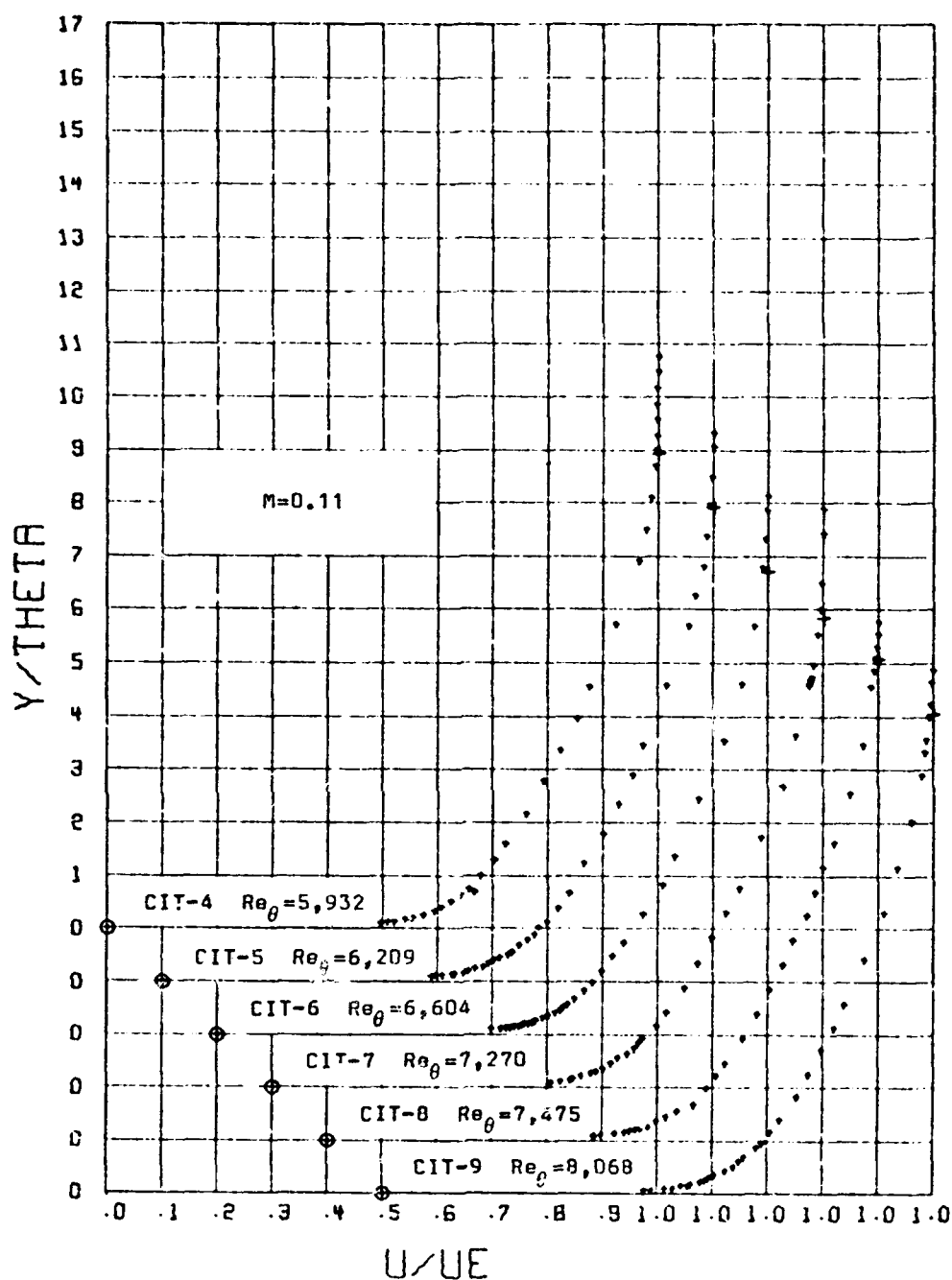


Figure A1. Mean Velocity Profiles.

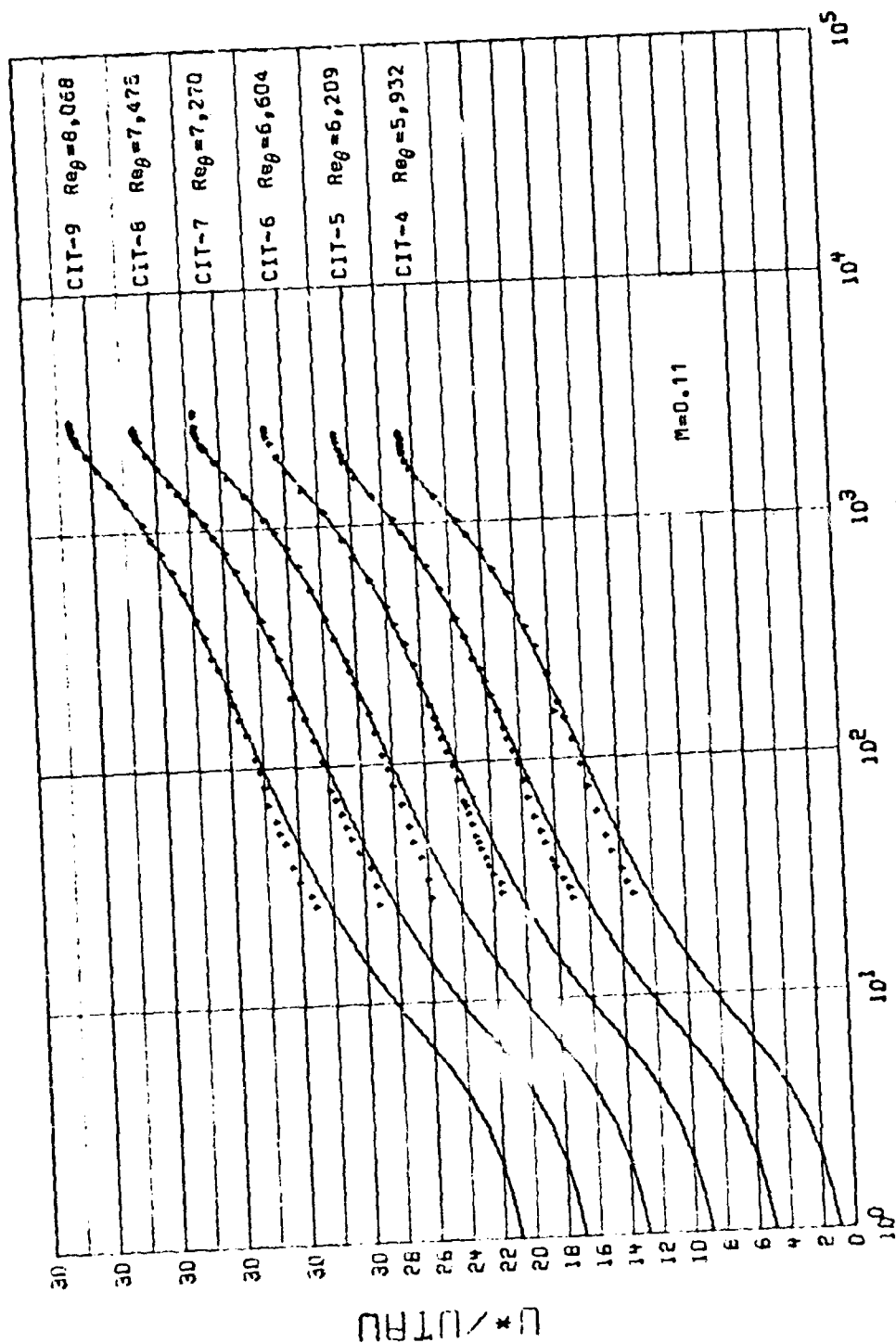


Figure A2. Van Driest Scaled Mean Velocity Profiles.

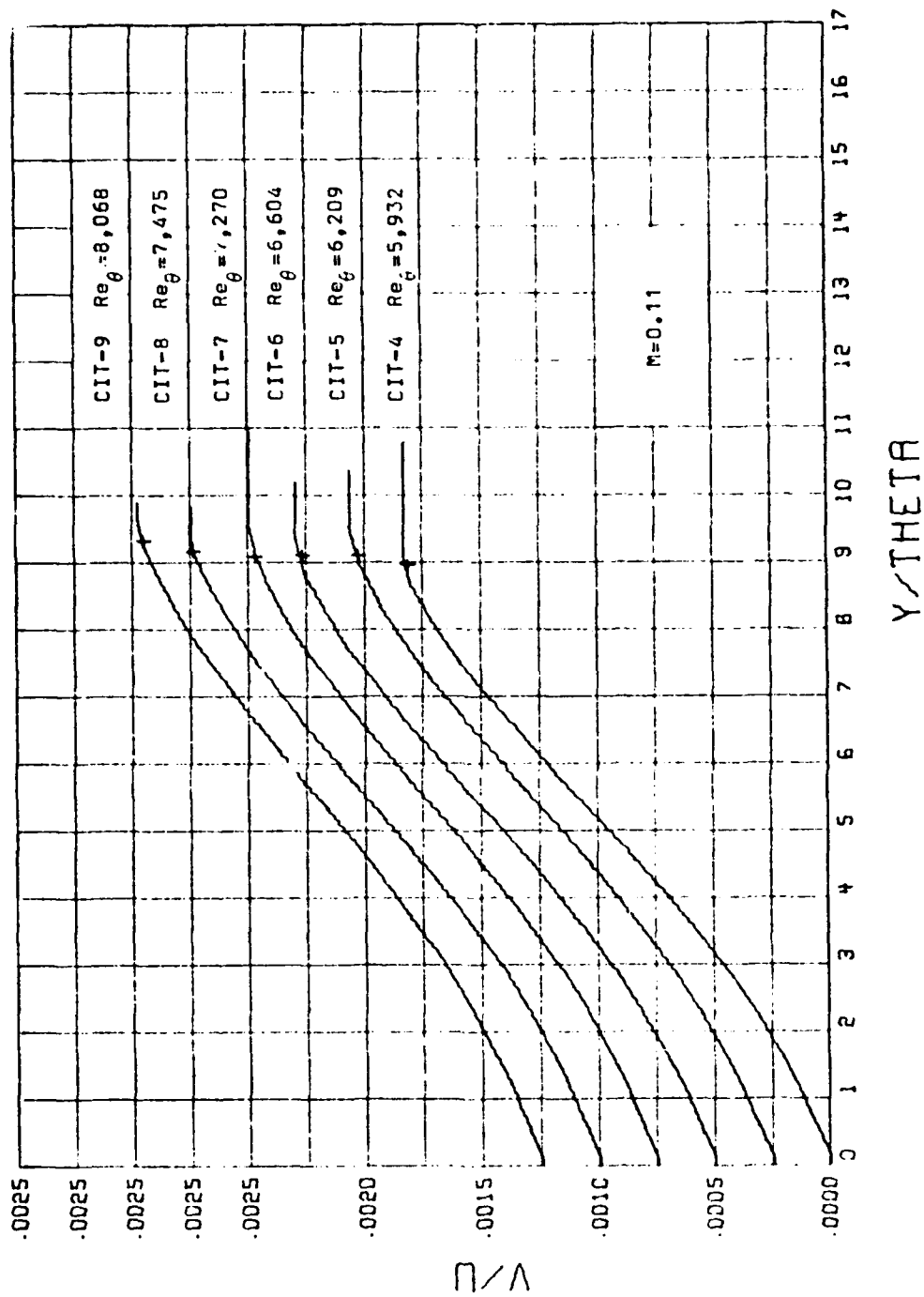


Figure A3. Normal Velocity Distribution.

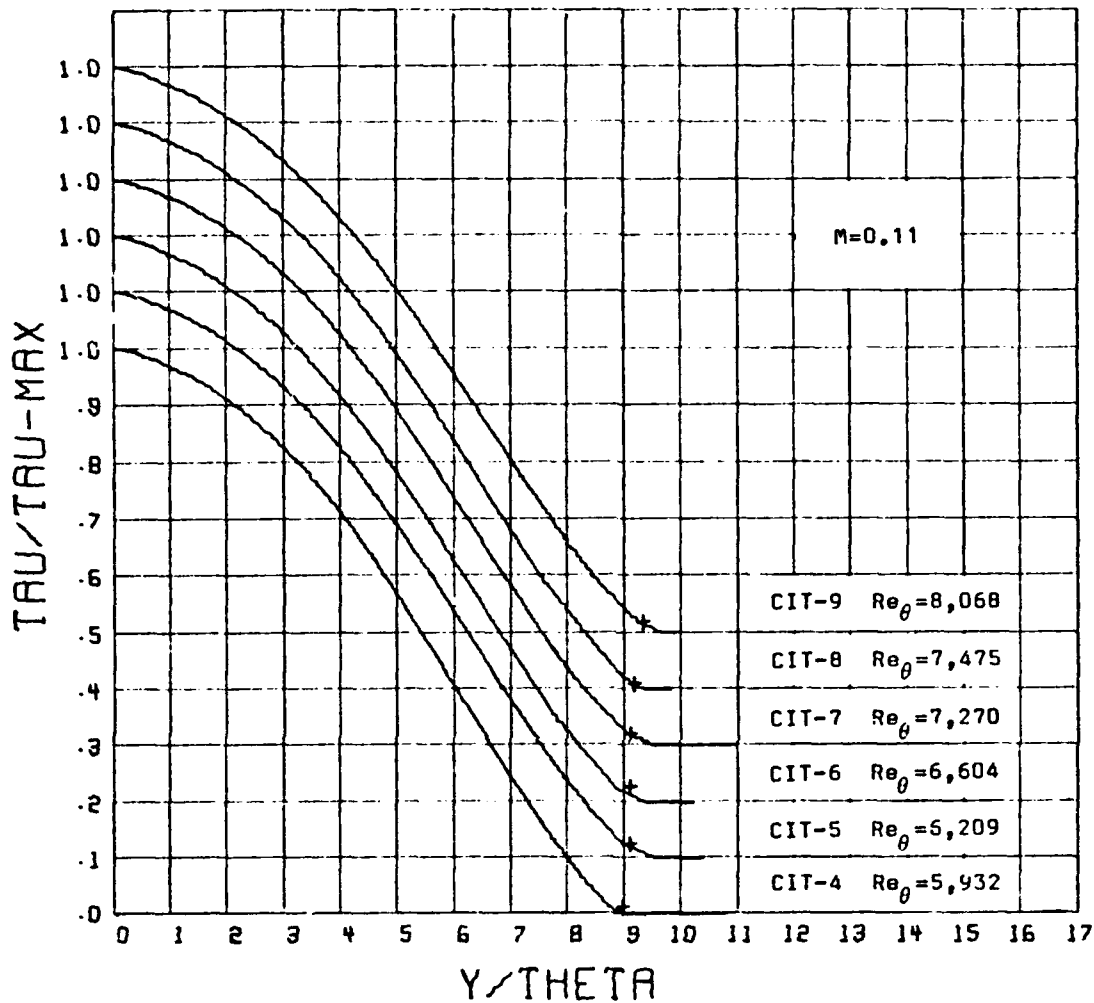


Figure A4. Shear Stress Distribution.

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

EDGE MACH NO. = .5927 TOTAL PRESSURE = .6665E+05 N/M²
X = -68.43 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)	V/THETA	Y-PLUS	M/E	RHO/RHREF	U/UF	U-PLUS	TAU/TAU-MAX	V/U
0.000	0.000	0.	0.0000	.9414	0.0000	0.00	1.0000	0.000000
.010	.039	22.	.3695	.9494	.3792	11.16	1.0000	0.000000
.019	.073	41.	.4757	.9547	.4848	14.34	.9994	.000003
.035	.134	77.	.5252	.9574	.5367	15.82	.9982	.000009
.069	.268	152.	.5845	.9614	.5941	17.58	.9950	.000021
.101	.390	222.	.6045	.9620	.6180	18.23	.9917	.000032
.130	.502	284.	.6218	.9640	.6333	18.69	.9882	.000042
.157	.604	344.	.6394	.9653	.6504	19.20	.9849	.000052
.182	.702	399.	.6579	.9648	.6691	19.75	.9815	.000061
.213	.819	444.	.6640	.9672	.6781	19.93	.9772	.000073
.226	.847	464.	.6791	.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
.314	1.213	691.	.7043	.9704	.7149	21.12	.9608	.000113
.345	1.324	755.	.7141	.9713	.7245	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	2.104	1199.	.7587	.9751	.7674	22.70	.9175	.000217
.577	2.218	1263.	.7646	.9754	.7720	22.88	.9052	.000232
.617	2.369	1349.	.7740	.9767	.7842	23.23	.8948	.000257
.651	2.501	1426.	.7853	.9775	.7943	23.22	.8853	.000271
.685	2.632	1499.	.7957	.9775	.7943	23.49	.8754	.000290
.741	2.847	1621.	.7957	.9785	.8044	23.79	.8582	.000322
.787	3.022	1721.	.7947	.9788	.8075	23.49	.8433	.000349
.839	3.222	1834.	.8143	.9802	.8225	24.33	.8252	.000382
.894	3.471	1977.	.8249	.9817	.8337	24.68	.8011	.000424
.944	3.627	2046.	.8330	.9820	.8405	24.98	.7852	.000452
.999	3.797	2163.	.8342	.9822	.8417	24.91	.7670	.000483
1.049	4.027	2293.	.8450	.9832	.8521	25.23	.7412	.000526
1.103	4.231	2410.	.8590	.9846	.8654	25.63	.7170	.000566
1.158	4.444	2532.	.8567	.9844	.8635	25.57	.6904	.000609
1.206	4.631	2638.	.8721	.9844	.8733	26.01	.6667	.000648
1.248	4.797	2729.	.8792	.9847	.8851	26.22	.6453	.000679
1.308	5.021	2860.	.8786	.9846	.8845	26.20	.6188	.000724
1.343	5.234	2982.	.8924	.9846	.8978	26.40	.5836	.000774
1.422	5.460	3110.	.9057	.9845	.9115	27.01	.5509	.000822
1.480	5.694	3238.	.9094	.9848	.9138	27.08	.5175	.000871
1.540	5.913	3368.	.9251	.9849	.9291	27.56	.4876	.000921
1.602	6.152	3504.	.9285	.9849	.9323	27.66	.4647	.000973

Y (CM)	Y/THETA	Y-PLUS	TABLE A 5. (CONT.) W/ME	RHO/RHOE	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
2.144	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 ²				TOTAL TEMPERATURE= 310.10 DEG-K			
X=-26.21 CM				DELTA STAR=-.4179 CM				THETA=.2902 CM			
M= 1.439				NIMALL=.3209 CM				DELTA= 2.4530 CM			
UE= 202.47 M/SEC				RE-THETA= 20180.				PI=.4484			
RE-DELTA-STAR= 29060.				CF=.002201				YMIN=.085 CM			
LEAST SQUARE FIT PARAMETERS				YMAX= 2.672 CM							
UTAU= 4.9226 M/SEC											
CHISQR=.1125E-04											
Y (CM)	Y/THETA	Y-PLUS	M/ME	RM/RHOF	U/UE	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		.000003			
.033	.113	71.	.5135	.9568	.5250	15.39		.000007			
.048	.166	104.	.5482	.9590	.5588	16.42		.000012			
.064	.223	139.	.5781	.9610	.5887	17.30		.000018			
.085	.293	183.	.5945	.9621	.6081	17.79		.000024			
.104	.358	224.	.6079	.9630	.6195	18.18		.000030			
.120	.415	260.	.6275	.9645	.6389	18.76		.000034			
.149	.514	323.	.6440	.9657	.6554	19.25		.000045			
.170	.586	367.	.6563	.9666	.6674	19.61		.000052			
.201	.695	435.	.6669	.9674	.6780	19.92		.000063			
.224	.774	484.	.6812	.9684	.6922	20.34		.000070			
.243	.840	524.	.6863	.9690	.6972	20.49		.000077			
.265	.914	572.	.6914	.9694	.7022	20.63		.000084			
.290	1.001	627.	.6975	.9695	.7033	20.67		.000093			
.316	1.099	682.	.7097	.9709	.7203	21.17		.000102			
.341	1.174	736.	.7111	.9710	.7216	21.21		.000111			
.372	1.241	802.	.7180	.9714	.7284	21.41		.000122			
.400	1.270	820.	.7224	.9720	.7328	21.54		.000143			
.426	1.285	835.	.7246	.9734	.7516	22.10		.000164			
.453	1.294	846.	.7284	.9742	.7583	22.33		.000176			
.480	1.304	854.	.7364	.9754	.7719	22.71		.000209			
.500	1.314	862.	.7404	.9761	.7749	22.91		.000233			
.525	1.323	867.	.7497	.9770	.7890	23.49		.000240			
.553	1.332	874.	.7564	.9777	.7958	23.49		.000240			
.580	1.341	881.	.7644	.9777	.8077	23.77		.000244			
.607	1.350	888.	.7749	.9777	.8144	23.77		.000244			
.634	1.359	895.	.7881	.9777	.8210	24.03		.000244			
.661	1.368	902.	.8081	.9777	.8274	24.17		.000244			
.688	1.377	909.	.8178	.9777	.8351	24.37		.000244			
.715	1.386	916.	.8274	.9777	.8431	24.59		.000244			
.742	1.395	923.	.8375	.9777	.8517	24.59		.000244			
.769	1.404	930.	.8485	.9777	.8607	24.91		.000244			
.796	1.413	937.	.8607	.9777	.8695	25.20		.000244			
.823	1.422	944.	.8749	.9777	.8784	25.20		.000244			
.850	1.431	951.	.8895	.9777	.8874	25.24		.000244			
.877	1.440	958.	.9045	.9777	.8965	25.59		.000244			
.904	1.449	965.	.9199	.9777	.9057	25.67		.000244			
.931	1.458	972.	.9354	.9777	.9151	26.11		.000244			
.958	1.467	979.	.9510	.9777	.9247	26.18		.000244			
.985	1.476	986.	.9666	.9777	.9347	26.34		.000244			
1.012	1.485	993.	.9824	.9777	.9447	26.34		.000244			
1.039	1.494	1000.	.9981	.9777	.9547	26.34		.000244			
1.066	1.503	1007.	1.0139	.9777	.9647	26.34		.000244			
1.093	1.512	1014.	1.0296	.9777	.9747	26.34		.000244			
1.120	1.521	1021.	1.0453	.9777	.9847	26.34		.000244			
1.147	1.530	1028.	1.0610	.9777	.9947	26.34		.000244			
1.174	1.539	1035.	1.0767	.9777	1.0047	26.34		.000244			
1.201	1.548	1042.	1.0924	.9777	1.0147	26.34		.000244			
1.228	1.557	1049.	1.1081	.9777	1.0247	26.34		.000244			
1.255	1.566	1056.	1.1238	.9777	1.0347	26.34		.000244			
1.282	1.575	1063.	1.1395	.9777	1.0447	26.34		.000244			
1.309	1.584	1070.	1.1552	.9777	1.0547	26.34		.000244			
1.336	1.593	1077.	1.1709	.9777	1.0647	26.34		.000244			
1.363	1.602	1084.	1.1866	.9777	1.0747	26.34		.000244			
1.390	1.611	1091.	1.2023	.9777	1.0847	26.34		.000244			
1.417	1.620	1098.	1.2180	.9777	1.0947	26.34		.000244			
1.444	1.629	1105.	1.2337	.9777	1.1047	26.34		.000244			
1.471	1.638	1112.	1.2494	.9777	1.1147	26.34		.000244			
1.498	1.647	1119.	1.2651	.9777	1.1247	26.34		.000244			
1.525	1.656	1126.	1.2808	.9777	1.1347	26.34		.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	.000785
1.718	5.919	3706.	.9181	.9908	.9223	27.20	.5007	.000791
1.771	6.103	3821.	.9216	.9914	.9276	27.36	.4738	.0007930
1.832	6.313	3953.	.9292	.9920	.9329	27.52	.4427	.0007974
1.893	6.523	4084.	.9358	.9927	.9392	27.71	.4114	.0008018
1.944	6.698	4194.	.9442	.9936	.9472	27.95	.3852	.0008054
2.005	6.908	4326.	.9466	.9936	.9476	27.96	.3537	.0008097
2.053	7.074	4430.	.9530	.9946	.9556	28.20	.3288	.0008131
2.117	7.293	4567.	.9543	.9948	.9573	28.25	.2963	.0008175
2.165	7.459	4671.	.9632	.9957	.9652	28.49	.2716	.0008204
2.241	7.722	4835.	.9673	.9962	.9691	28.61	.2439	.0008259
2.270	7.822	4898.	.9703	.9965	.9720	28.70	.2196	.0008276
2.325	8.010	5016.	.9755	.9971	.9769	28.84	.1934	.0008311
2.378	8.194	5131.	.9784	.9975	.9796	28.92	.1685	.0008343
2.432	8.378	5246.	.9777	.9976	.9790	28.90	.1444	.0008374
2.479	8.540	5347.	.9831	.9980	.9840	29.06	.1239	.0008400
2.527	8.706	5452.	.9868	.9984	.9876	29.16	.1036	.0008426
2.578	8.881	5561.	.9907	.9989	.9913	29.28	.0832	.0008452
2.626	9.047	5655.	.9946	.9994	.9952	29.39	.0644	.0008475
2.672	9.205	5764.	.9949	.9994	.9952	29.39	.0483	.0008498
2.711	9.340	5849.	.9923	.9991	.9928	29.32	.0349	.0008512
2.764	9.524	5944.	.9963	.9995	.9965	29.43	.0260	.0008533
2.805	9.666	6052.	.9967	.9996	.9969	29.45	.0200	.0008548
2.853	9.830	6156.	.9976	.9997	.9978	29.47	.0200	.0008554
2.894	9.970	6263.	.9986	.9998	.9987	29.50	.0200	.0008556
2.980	10.268	6430.	.9986	.9998	.9987	29.50	.0200	.0008556
3.055	10.526	6591.	.9987	.9998	.9987	29.50	.0200	.0008556
3.145	10.807	6764.	.9986	.9998	.9987	29.50	.0200	.0008556
3.204	11.034	6912.	.9986	.9998	.9987	29.50	.0200	.0008556
3.295	11.353	7109.	1.0004	1.0000	1.0004	29.55	.0200	.0008556
3.387	11.668	7306.	1.0004	1.0000	1.0006	29.56	.0200	.0008556
3.465	11.939	7476.	.9999	.9999	.9999	29.56	.0200	.0008554
3.544	12.210	7646.	1.0008	1.0001	1.0008	29.56	.0200	.0008556

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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/U
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	.9845	.000122
.089	.327	271.	.6127	.9627	.6245	18.34	.9829	.000027
.107	.354	241.	.6271	.9638	.6388	18.77	.9870	.000030
.132	.436	295.	.6372	.9645	.6489	19.06	.9895	.000037
.148	.490	332.	.6533	.9658	.6647	19.53	.9877	.001342
.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	22.68	.9313	.000173
.577	1.907	1291.	.7657	.9745	.7653	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.	.8417	.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	Y-PLUS	Y-MIN	RMS/CRIME	U/UE	II-PLUS	TAU/TAU-MAX	V/U
1.433	4.733	3205.	.4779	.9863	.8840	26.07	.6751	.000621
1.402	4.926	3335.	.8927	.9873	.8885	26.21	.6519	.000657
1.145	5.102	3455.	.9874	.9868	.8931	26.34	.6300	.000690
1.508	5.278	3578.	.8967	.9883	.9020	26.61	.6076	.000724
1.647	5.438	3692.	.9882	.9884	.9034	26.65	.5869	.000755
1.700	5.614	3801.	.9064	.9804	.9117	26.90	.5635	.000790
1.760	5.811	3935.	.9114	.9899	.9160	27.03	.5368	.000829
1.807	5.666	4040.	.9184	.9906	.9277	27.23	.5155	.000860
1.850	6.109	4136.	.9209	.9909	.9311	27.30	.4956	.000884
1.925	6.356	4304.	.9283	.9917	.9349	27.51	.4608	.000938
1.982	6.545	4431.	.9302	.9919	.9349	27.57	.4339	.000974
2.039	6.733	4559.	.9385	.9928	.9419	27.81	.4069	.001013
2.104	6.947	4704.	.9438	.9934	.9469	27.96	.3762	.001046
2.169	7.161	4849.	.9569	.9948	.9503	28.33	.3455	.001087
2.223	7.341	4962.	.9662	.9948	.9587	28.33	.3196	.001132
2.282	7.568	5124.	.9633	.9957	.9653	28.51	.2877	.001175
2.354	7.773	5263.	.9647	.9958	.9667	28.55	.2590	.001213
2.413	7.966	5374.	.9702	.9965	.9719	28.71	.2326	.001248
2.457	8.113	5493.	.9744	.9969	.9759	28.83	.2128	.001273
2.524	8.319	5644.	.9776	.9973	.9789	28.92	.1830	.001312
2.566	8.445	5732.	.9813	.9977	.9824	29.03	.1669	.001333
2.614	8.437	5848.	.9813	.9977	.9824	29.03	.1455	.001360
2.664	8.794	5954.	.9858	.9983	.9847	29.16	.1243	.001385
2.720	8.981	6081.	.9857	.9984	.9847	29.18	.1047	.001412
2.771	9.148	6194.	.9899	.9988	.9875	29.27	.0864	.001436
2.811	9.283	6285.	.9956	.9994	.9895	29.43	.0772	.001453
2.858	9.438	6390.	.9976	.9991	.9930	29.35	.0663	.001473
2.924	9.669	6546.	.9968	.9993	.9952	29.41	.0349	.001500
2.972	9.815	6646.	.9991	.9999	.9992	29.53	.0222	.001514
3.035	10.021	6785.	.9966	.9996	.9988	29.46	.0157	.001538
3.077	10.159	6878.	.9975	.9997	.9977	29.49	0.0000	.001550
3.129	10.331	6995.	.9984	.9998	.9985	29.51	0.0000	.001543
3.171	10.469	7080.	1.0014	1.0001	1.0013	29.60	0.0000	.001543
3.201	10.570	7157.	.9999	.9999	.9994	29.54	0.0000	.001543
3.268	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	11.102	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	11.497	7784.	1.0007	1.0000	1.0006	29.53	0.0000	.001543
3.539	11.485	7912.	.9993	.9999	.9994	29.54	0.0000	.001543
3.585	11.316	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-PLUS		M/NE		RHO/RHME		U/UFE	
UTAU = 7.0079 M/SEC		Y-PLUS		M/NE		RHO/RHME		U/UFE	
CHISON = .2022E-04		Y-PLUS		M/NE		RHO/RHME		U/UFE	
Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHME	U/UFE	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	.031	22.	.4144	.9500	.4752	12.45	1.0000	0.000000	
0.021	.067	47.	.4862	.9539	.4978	14.59	.9983	0.000003	
0.034	.107	75.	.5360	.9570	.5279	16.07	.9945	0.000007	
0.050	.159	111.	.5640	.9589	.5769	17.89	.9973	0.000012	
0.069	.197	131.	.5843	.9604	.5942	17.55	.9965	0.000115	
0.090	.251	176.	.6012	.9615	.6131	17.99	.9948	0.000021	
0.105	.331	231.	.6170	.9626	.6289	18.46	.9924	0.000120	
0.124	.391	273.	.6315	.9642	.6402	19.06	.9905	0.000035	
0.140	.471	329.	.6449	.9651	.6605	19.30	.9878	0.000047	
0.170	.535	374.	.6548	.9655	.6719	19.57	.9845	0.000049	
0.194	.611	427.	.6604	.9660	.6719	19.73	.9827	0.000056	
0.219	.699	460.	.6706	.9668	.6820	20.03	.9809	0.000061	
0.233	.735	513.	.6763	.9673	.6876	20.20	.9780	0.000069	
0.257	.811	567.	.6800	.9681	.7000	20.83	.9749	0.000074	
0.279	.879	614.	.6876	.9680	.7087	20.82	.9721	0.000083	
0.295	.931	651.	.7024	.9694	.7134	20.96	.9699	0.000089	
0.334	1.051	734.	.7085	.9699	.7104	21.14	.9644	0.000101	
0.364	1.144	801.	.7143	.9708	.7240	21.43	.9593	0.000111	
0.392	1.264	895.	.7304	.9719	.7413	21.79	.9546	0.000124	
0.431	1.458	952.	.7269	.9715	.7373	21.61	.9500	0.000134	
0.472	1.634	1039.	.7345	.9724	.7468	22.22	.9434	0.000149	
0.493	1.870	1098.	.7460	.9733	.7571	22.25	.9380	0.000157	
0.530	1.808	1187.	.7528	.9739	.7579	22.43	.9320	0.000172	
0.541	1.870	1279.	.7587	.9738	.7595	22.42	.9244	0.000184	
0.572	1.958	1369.	.7587	.9744	.7694	22.40	.9168	0.000203	
0.600	2.074	1453.	.7720	.9754	.7816	22.79	.9093	0.000218	
0.704	2.217	1560.	.7781	.9762	.7875	23.17	.9093	0.000234	
0.742	2.317	1626.	.7759	.9760	.7853	23.11	.9022	0.000251	
0.774	2.437	1704.	.7879	.9771	.7870	23.45	.8957	0.000264	
0.803	2.529	1764.	.7894	.9782	.7870	23.79	.8876	0.000277	
0.847	2.665	1863.	.8041	.9787	.8124	23.92	.8756	0.000294	
0.890	2.760	1934.	.8058	.9788	.8165	23.97	.8637	0.000310	
0.914	2.859	2029.	.8065	.9789	.8161	23.90	.8517	0.000324	
0.957	3.013	2104.	.8140	.9794	.8224	24.21	.8411	0.000349	
1.007	3.169	2215.	.8129	.9795	.8216	24.18	.8278	0.000369	
1.051	3.304	2316.	.8270	.9809	.8300	24.59	.8155	0.000381	
1.101	3.454	2427.	.8317	.9814	.8415	24.78	.8017	0.000394	
1.141	3.500	2512.	.8414	.9824	.8490	25.03	.7891	0.000407	
1.185	3.573	2591.	.8431	.9825	.8505	25.25	.7764	0.000424	
1.230	3.673	2707.	.8475	.9830	.8547	25.18	.7612	0.000443	

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TABLE A.5. (CONT.)
M/PE BMD/RMSE

Y (CM)	V/INETA	V-PLUS	M/PE	BMD/RMSE	U/IF	IM-PLUS	TAU/TAU-WAZ	V/U
1.278	6.024	2813.	.8541	.0819	.8431	25.43	.2644	.007510
1.375	6.172	2917.	.8554	.0818	.8476	25.41	.2704	.007534
1.467	6.303	3009.	.8551	.0842	.8662	25.52	.2710	.007559
1.555	6.423	3093.	.8554	.0851	.8749	25.74	.2712	.007581
1.643	6.543	3174.	.871.	.0854	.8794	25.91	.2713	.007603
1.731	6.671	3264.	.8708	.0857	.8806	26.06	.2711	.007627
1.817	6.823	3372.	.8843	.0863	.8849	26.11	.2817	.007654
1.904	6.975	3499.	.8879	.0867	.8849	26.23	.2818	.007685
1.991	7.147	3603.	.8938	.0874	.8902	26.41	.2819	.007719
2.078	7.305	3702.	.8948	.0882	.8921	26.63	.2816	.007748
2.164	7.459	3817.	.8987	.0884	.8949	26.85	.2718	.007780
2.251	7.602	3950.	.9115	.0900	.9149	27.37	.2642	.007841
2.337	7.744	4114.	.9158	.0907	.9293	27.36	.2642	.007867
2.424	7.884	4278.	.9217	.0909	.9349	27.31	.2645	.007902
2.511	8.024	4464.	.9215	.0911	.9376	27.34	.2648	.007934
2.598	8.169	4649.	.9349	.0924	.9413	27.76	.2646	.007977
2.685	8.313	4849.	.9332	.0927	.9452	27.64	.2642	.008011
2.772	8.464	5074.	.9462	.0937	.9602	28.01	.2644	.008041
2.859	8.609	5303.	.9472	.0944	.9601	28.36	.2619	.008074
2.946	8.757	5528.	.9508	.0947	.9636	28.36	.2647	.008111
3.033	8.902	5769.	.9545	.0948	.9671	28.24	.2646	.008144
3.120	9.047	6004.	.9551	.0957	.9676	28.43	.2643	.008174
3.207	9.194	6244.	.9631	.0964	.9676	28.53	.2649	.008204
3.294	9.344	6484.	.9654	.0969	.9676	28.56	.2646	.008234
3.381	9.494	6724.	.9734	.0974	.9676	28.79	.2644	.008264
3.468	9.644	6964.	.9729	.0977	.9745	28.77	.2644	.008294
3.555	9.794	7204.	.9757	.0977	.9731	28.64	.2646	.008327
3.642	9.944	7444.	.9816	.0980	.9844	28.37	.2621	.008357
3.729	10.094	7684.	.9836	.0981	.9844	29.10	.2644	.008387
3.816	10.244	7924.	.9847	.0984	.9876	29.16	.2646	.008417
3.903	10.394	8164.	.9847	.0984	.9876	29.16	.2646	.008447
3.990	10.544	8404.	.9847	.0984	.9876	29.16	.2646	.008477
4.077	10.694	8644.	.9847	.0984	.9876	29.16	.2646	.008507
4.164	10.844	8884.	.9847	.0984	.9876	29.16	.2646	.008537
4.251	10.994	9124.	.9847	.0984	.9876	29.16	.2646	.008567
4.338	11.144	9364.	.9847	.0984	.9876	29.16	.2646	.008597
4.425	11.294	9604.	.9847	.0984	.9876	29.16	.2646	.008627
4.512	11.444	9844.	.9847	.0984	.9876	29.16	.2646	.008657
4.599	11.594	10084.	.9847	.0984	.9876	29.16	.2646	.008687
4.686	11.744	10324.	.9847	.0984	.9876	29.16	.2646	.008717
4.773	11.894	10564.	.9847	.0984	.9876	29.16	.2646	.008747
4.860	12.044	10804.	.9847	.0984	.9876	29.16	.2646	.008777
4.947	12.194	11044.	.9847	.0984	.9876	29.16	.2646	.008807
5.034	12.344	11284.	.9847	.0984	.9876	29.16	.2646	.008837
5.121	12.494	11524.	.9847	.0984	.9876	29.16	.2646	.008867
5.208	12.644	11764.	.9847	.0984	.9876	29.16	.2646	.008897
5.295	12.794	12004.	.9847	.0984	.9876	29.16	.2646	.008927
5.382	12.944	12244.	.9847	.0984	.9876	29.16	.2646	.008957
5.469	13.094	12484.	.9847	.0984	.9876	29.16	.2646	.008987
5.556	13.244	12724.	.9847	.0984	.9876	29.16	.2646	.009017
5.643	13.394	12964.	.9847	.0984	.9876	29.16	.2646	.009047
5.730	13.544	13204.	.9847	.0984	.9876	29.16	.2646	.009077
5.817	13.694	13444.	.9847	.0984	.9876	29.16	.2646	.009107
5.904	13.844	13684.	.9847	.0984	.9876	29.16	.2646	.009137
5.991	13.994	13924.	.9847	.0984	.9876	29.16	.2646	.009167
6.078	14.144	14164.	.9847	.0984	.9876	29.16	.2646	.009197
6.165	14.294	14404.	.9847	.0984	.9876	29.16	.2646	.009227
6.252	14.444	14644.	.9847	.0984	.9876	29.16	.2646	.009257
6.339	14.594	14884.	.9847	.0984	.9876	29.16	.2646	.009287
6.426	14.744	15124.	.9847	.0984	.9876	29.16	.2646	.009317
6.513	14.894	15364.	.9847	.0984	.9876	29.16	.2646	.009347
6.600	15.044	15604.	.9847	.0984	.9876	29.16	.2646	.009377
6.687	15.194	15844.	.9847	.0984	.9876	29.16	.2646	.009407
6.774	15.344	16084.	.9847	.0984	.9876	29.16	.2646	.009437
6.861	15.494	16324.	.9847	.0984	.9876	29.16	.2646	.009467
6.948	15.644	16564.	.9847	.0984	.9876	29.16	.2646	.009497
7.035	15.794	16804.	.9847	.0984	.9876	29.16	.2646	.009527
7.122	15.944	17044.	.9847	.0984	.9876	29.16	.2646	.009557
7.209	16.094	17284.	.9847	.0984	.9876	29.16	.2646	.009587
7.296	16.244	17524.	.9847	.0984	.9876	29.16	.2646	.009617
7.383	16.394	17764.	.9847	.0984	.9876	29.16	.2646	.009647
7.470	16.544	18004.	.9847	.0984	.9876	29.16	.2646	.009677
7.557	16.694	18244.	.9847	.0984	.9876	29.16	.2646	.009707
7.644	16.844	18484.	.9847	.0984	.9876	29.16	.2646	.009737
7.731	16.994	18724.	.9847	.0984	.9876	29.16	.2646	.009767
7.818	17.144	18964.	.9847	.0984	.9876	29.16	.2646	.009797
7.905	17.294	19204.	.9847	.0984	.9876	29.16	.2646	.009827
7.992	17.444	19444.	.9847	.0984	.9876	29.16	.2646	.009857
8.079	17.594	19684.	.9847	.0984	.9876	29.16	.2646	.009887
8.166	17.744	19924.	.9847	.0984	.9876	29.16	.2646	.009917
8.253	17.894	20164.	.9847	.0984	.9876	29.16	.2646	.009947
8.340	18.044	20404.	.9847	.0984	.9876	29.16	.2646	.009977
8.427	18.194	20644.	.9847	.0984	.9876	29.16	.2646	.010007
8.514	18.344	20884.	.9847	.0984	.9876	29.16	.2646	.010037
8.601	18.494	21124.	.9847	.0984	.9876	29.16	.2646	.010067
8.688	18.644	21364.	.9847	.0984	.9876	29.16	.2646	.010097
8.775	18.794	21604.	.9847	.0984	.9876	29.16	.2646	.010127
8.862	18.944	21844.	.9847	.0984	.9876	29.16	.2646	.010157
8.949	19.094	22084.	.9847	.0984	.9876	29.16	.2646	.010187
9.036	19.244	22324.	.9847	.0984	.9876	29.16	.2646	.010217
9.123	19.394	22564.	.9847	.0984	.9876	29.16	.2646	.010247
9.210	19.544	22804.	.9847	.0984	.9876	29.16	.2646	.010277
9.297	19.694	23044.	.9847	.0984	.9876	29.16	.2646	.010307
9.384	19.844	23284.	.9847	.0984	.9876	29.16	.2646	.010337
9.471	19.994	23524.	.9847	.0984	.9876	29.16	.2646	.010367
9.558	20.144	23764.	.9847	.0984	.9876	29.16	.2646	.010397
9.645	20.294	24004.	.9847	.0984	.9876	29.16	.2646	.010427
9.732	20.444	24244.	.9847	.0984	.9876	29.16	.2646	.010457
9.819	20.594	24484.	.9847	.0984	.9876	29.16	.2646	.010487
9.906	20.744	24724.	.9847	.0984	.9876	29.16	.2646	.010517
9.993	20.894	24964.	.9847	.0984	.9876	29.16	.2646	.010547
10.080	21.044	25204.	.9847	.0984	.9876	29.16	.2646	.010577
10.167	21.194	25444.	.9847	.0984	.9876	29.16	.2646	.010607
10.254	21.344	25684.	.9847	.0984	.9876	29.16	.2646	.010637
10.341	21.494	25924.	.9847	.0984	.9876	29.16	.2646	.010667
10.428	21.644	26164.	.9847	.0984	.9876	29.16	.2646	.010697
10.515	21.794	26404.	.9847	.0984	.9876	29.16	.2646	.010727
10.602	21.944	26644.	.9847	.0984	.9876	29.16	.2646	.010757
10.689	22.094	26884.	.9847	.0984	.9876	29.16	.2646	.010787
10.776	22.244	27124.	.9847	.0984	.9876	29.16	.2646	.010817
10.863	22.394	27364.	.9847	.0984	.9876	29.16	.2646	.010847
10.950	22.544	27604.	.9847	.0984	.9876	29.16	.2646	.010877
11.037	22.694	27844.	.9847	.0984	.9876	29.16	.2646	.010907
11.124	22.844	28084.	.9847	.0984	.9876	29.16	.2646	.010937
11.211	22.994	28324.	.9847	.0984	.9876	29.16	.2646	.010967
11.298	23.144	28564.	.9847	.0984	.9876	29.16	.2646	.010997
11.385	23.294	28804.	.9847	.0984	.9876	29.16	.2646	.011027
11.472	23.444	29044.	.9847	.0984	.9876	29.16	.2646	.011057
11.559	23.594	29284.	.9847	.0984	.9876	29.16	.2646	.011087
11.646	23.744	29524.	.9847	.0984	.9876	29.16	.2646	.011117
11.733	23.894	29764.	.9847	.0984	.9876	29.16	.2646	.011147
11.820	24.044	30004.	.9847	.0984	.9876	29.16	.2646	.011177
11.907	24.194	30244.	.9847	.0984	.9876	29.16	.2646	.011207
11.994	24.344	30484.	.9847	.0984	.9876	29.16	.2646	.011237
12.081	24.494	30724.	.9847	.0984	.9876	29.16	.2646	.011267
12.168	24.644	30964.	.9847	.0984	.9876	29.16	.2646	.011297
12.255	24.794	31204.	.9847	.0984	.9876	29.16	.2646	.011327
12.342	24.944	31444.	.9847	.0984	.9876	29.16	.2646	.011357
12.429	25.094	31684.	.9847	.0984	.9876	29.16	.2646	.011387
12.516	25.244	31924.	.9847	.0984	.9876	29.16	.2646	.011417
12.603	25.394	32164.	.9847	.0984	.9876	29.16	.2646	.011447
12.690	25.544	32404.	.98					

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

EDGE 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 = 11710.	DELTA STAR = .4853 CM RE-REFLECTANCE = 22300.	DELTA STAR = .3211 CM RE-REFLECTANCE = 21136 (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	77.	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.	0.0012	0.000	0.000	0.0000	0.994	0.0000
0.094	0.094	174.	0.0013	0.000	0.000	0.0000	0.992	0.0000
0.109	0.109	203.	0.0014	0.000	0.000	0.0000	0.990	0.0000
0.124	0.124	229.	0.0015	0.000	0.000	0.0000	0.988	0.0000
0.146	0.146	257.	0.0016	0.000	0.000	0.0000	0.986	0.0000
0.167	0.167	283.	0.0017	0.000	0.000	0.0000	0.984	0.0000
0.191	0.191	308.	0.0018	0.000	0.000	0.0000	0.982	0.0000
0.217	0.217	331.	0.0019	0.000	0.000	0.0000	0.980	0.0000
0.249	0.249	352.	0.0020	0.000	0.000	0.0000	0.978	0.0000
0.283	0.283	371.	0.0021	0.000	0.000	0.0000	0.976	0.0000
0.319	0.319	389.	0.0022	0.000	0.000	0.0000	0.974	0.0000
0.356	0.356	407.	0.0023	0.000	0.000	0.0000	0.972	0.0000
0.397	0.397	423.	0.0024	0.000	0.000	0.0000	0.970	0.0000
0.442	0.442	439.	0.0025	0.000	0.000	0.0000	0.968	0.0000
0.490	0.490	454.	0.0026	0.000	0.000	0.0000	0.966	0.0000
0.541	0.541	469.	0.0027	0.000	0.000	0.0000	0.964	0.0000
0.596	0.596	483.	0.0028	0.000	0.000	0.0000	0.962	0.0000
0.655	0.655	497.	0.0029	0.000	0.000	0.0000	0.960	0.0000
0.718	0.718	510.	0.0030	0.000	0.000	0.0000	0.958	0.0000
0.785	0.785	523.	0.0031	0.000	0.000	0.0000	0.956	0.0000
0.856	0.856	535.	0.0032	0.000	0.000	0.0000	0.954	0.0000
0.931	0.931	547.	0.0033	0.000	0.000	0.0000	0.952	0.0000
1.010	1.010	559.	0.0034	0.000	0.000	0.0000	0.950	0.0000
1.093	1.093	570.	0.0035	0.000	0.000	0.0000	0.948	0.0000
1.180	1.180	581.	0.0036	0.000	0.000	0.0000	0.946	0.0000
1.271	1.271	592.	0.0037	0.000	0.000	0.0000	0.944	0.0000
1.366	1.366	603.	0.0038	0.000	0.000	0.0000	0.942	0.0000
1.465	1.465	614.	0.0039	0.000	0.000	0.0000	0.940	0.0000
1.568	1.568	625.	0.0040	0.000	0.000	0.0000	0.938	0.0000
1.675	1.675	636.	0.0041	0.000	0.000	0.0000	0.936	0.0000
1.786	1.786	647.	0.0042	0.000	0.000	0.0000	0.934	0.0000
1.901	1.901	658.	0.0043	0.000	0.000	0.0000	0.932	0.0000
2.020	2.020	669.	0.0044	0.000	0.000	0.0000	0.930	0.0000
2.143	2.143	680.	0.0045	0.000	0.000	0.0000	0.928	0.0000
2.271	2.271	691.	0.0046	0.000	0.000	0.0000	0.926	0.0000
2.403	2.403	702.	0.0047	0.000	0.000	0.0000	0.924	0.0000
2.540	2.540	713.	0.0048	0.000	0.000	0.0000	0.922	0.0000
2.682	2.682	724.	0.0049	0.000	0.000	0.0000	0.920	0.0000
2.829	2.829	735.	0.0050	0.000	0.000	0.0000	0.918	0.0000
2.981	2.981	746.	0.0051	0.000	0.000	0.0000	0.916	0.0000
3.138	3.138	757.	0.0052	0.000	0.000	0.0000	0.914	0.0000
3.300	3.300	768.	0.0053	0.000	0.000	0.0000	0.912	0.0000
3.467	3.467	779.	0.0054	0.000	0.000	0.0000	0.910	0.0000
3.639	3.639	790.	0.0055	0.000	0.000	0.0000	0.908	0.0000
3.816	3.816	801.	0.0056	0.000	0.000	0.0000	0.906	0.0000
4.000	4.000	812.	0.0057	0.000	0.000	0.0000	0.904	0.0000
4.189	4.189	823.	0.0058	0.000	0.000	0.0000	0.902	0.0000
4.384	4.384	834.	0.0059	0.000	0.000	0.0000	0.900	0.0000
4.585	4.585	845.	0.0060	0.000	0.000	0.0000	0.898	0.0000
4.792	4.792	856.	0.0061	0.000	0.000	0.0000	0.896	0.0000
5.006	5.006	867.	0.0062	0.000	0.000	0.0000	0.894	0.0000
5.226	5.226	878.	0.0063	0.000	0.000	0.0000	0.892	0.0000
5.452	5.452	889.	0.0064	0.000	0.000	0.0000	0.890	0.0000
5.684	5.684	900.	0.0065	0.000	0.000	0.0000	0.888	0.0000
5.922	5.922	911.	0.0066	0.000	0.000	0.0000	0.886	0.0000
6.166	6.166	922.	0.0067	0.000	0.000	0.0000	0.884	0.0000
6.416	6.416	933.	0.0068	0.000	0.000	0.0000	0.882	0.0000
6.672	6.672	944.	0.0069	0.000	0.000	0.0000	0.880	0.0000
6.935	6.935	955.	0.0070	0.000	0.000	0.0000	0.878	0.0000
7.204	7.204	966.	0.0071	0.000	0.000	0.0000	0.876	0.0000
7.479	7.479	977.	0.0072	0.000	0.000	0.0000	0.874	0.0000
7.760	7.760	988.	0.0073	0.000	0.000	0.0000	0.872	0.0000
8.048	8.048	999.	0.0074	0.000	0.000	0.0000	0.870	0.0000
8.342	8.342	1010.	0.0075	0.000	0.000	0.0000	0.868	0.0000
8.643	8.643	1021.	0.0076	0.000	0.000	0.0000	0.866	0.0000
8.950	8.950	1032.	0.0077	0.000	0.000	0.0000	0.864	0.0000
9.264	9.264	1043.	0.0078	0.000	0.000	0.0000	0.862	0.0000
9.584	9.584	1054.	0.0079	0.000	0.000	0.0000	0.860	0.0000
9.910	9.910	1065.	0.0080	0.000	0.000	0.0000	0.858	0.0000
10.243	10.243	1076.	0.0081	0.000	0.000	0.0000	0.856	0.0000
10.582	10.582	1087.	0.0082	0.000	0.000	0.0000	0.854	0.0000
10.928	10.928	1098.	0.0083	0.000	0.000	0.0000	0.852	0.0000
11.280	11.280	1109.	0.0084	0.000	0.000	0.0000	0.850	0.0000
11.638	11.638	1120.	0.0085	0.000	0.000	0.0000	0.848	0.0000
12.002	12.002	1131.	0.0086	0.000	0.000	0.0000	0.846	0.0000
12.372	12.372	1142.	0.0087	0.000	0.000	0.0000	0.844	0.0000
12.748	12.748	1153.	0.0088	0.000	0.000	0.0000	0.842	0.0000
13.130	13.130	1164.	0.0089	0.000	0.000	0.0000	0.840	0.0000
13.518	13.518	1175.	0.0090	0.000	0.000	0.0000	0.838	0.0000
13.912	13.912	1186.	0.0091	0.000	0.000	0.0000	0.836	0.0000
14.312	14.312	1197.	0.0092	0.000	0.000	0.0000	0.834	0.0000
14.718	14.718	1208.	0.0093	0.000	0.000	0.0000	0.832	0.0000
15.130	15.130	1219.	0.0094	0.000	0.000	0.0000	0.830	0.0000
15.548	15.548	1230.	0.0095	0.000	0.000	0.0000	0.828	0.0000
15.972	15.972	1241.	0.0096	0.000	0.000	0.0000	0.826	0.0000
16.402	16.402	1252.	0.0097	0.000	0.000	0.0000	0.824	0.0000
16.838	16.838	1263.	0.0098	0.000	0.000	0.0000	0.822	0.0000
17.280	17.280	1274.	0.0099	0.000	0.000	0.0000	0.820	0.0000
17.728	17.728	1285.	0.0100	0.000	0.000	0.0000	0.818	0.0000
18.182	18.182	1296.	0.0101	0.000	0.000	0.0000	0.816	0.0000
18.642	18.642	1307.	0.0102	0.000	0.000	0.0000	0.814	0.0000
19.108	19.108	1318.	0.0103	0.000	0.000	0.0000	0.812	0.0000
19.580	19.580	1329.	0.0104	0.000	0.000	0.0000	0.810	0.0000
20.058	20.058	1340.	0.0105	0.000	0.000	0.0000	0.808	0.0000
20.542	20.542	1351.	0.0106	0.000	0.000	0.0000	0.806	0.0000
21.032	21.032	1362.	0.0107	0.000	0.000	0.0000	0.804	0.0000
21.528	21.528	1373.	0.0108	0.000	0.000	0.0000	0.802	0.0000
22.030	22.030	1384.	0.0109	0.000	0.000	0.0000	0.800	0.0000
22.538	22.538	1395.	0.0110	0.000	0.000	0.0000	0.798	0.0000
23.052	23.052	1406.	0.0111	0.000	0.000	0.0000	0.796	0.0000
23.572	23.572	1417.	0.0112	0.000	0.000	0.0000	0.794	0.0000
24.098	24.098	1428.	0.0113	0.000	0.000	0.0000	0.792	0.0000
24.630	24.630	1439.	0.0114	0.000	0.000	0.0000	0.790	0.0000
25.168	25.168	1450.	0.0115	0.000	0.000	0.0000	0.788	0.0000
25.712	25.712	1461.	0.0116	0.000	0.000	0.0000	0.786	0.0000
26.262	26.262	1472.	0.0117	0.000	0.000	0.0000	0.784	0.0000
26.818	26.818	1483.	0.0118	0.000	0.000	0.0000	0.782	0.0000
27.380	27.380	1494.	0.0119	0.000	0.000	0.0000	0.780	0.0000
27.948	27.948	1505.	0.0120	0.000	0.000	0.0000	0.778	0.0000
28.522	28.522	1516.	0.0121	0.000	0.000	0.0000	0.776	0.0000
29.102	29.102	1527.	0.0122	0.000	0.000	0.0000	0.774	0.0000
29.688	29.688	1538.	0.0123	0.000	0.000	0.0000	0.772	0.0000
30.280	30.280	1549.	0.0124	0.000	0.000	0.0000	0.770	0.0000
30.878	30.878	1560.	0.0125	0.000	0.000	0.0000	0.768	0.0000
31.482	31.482	1571.	0.0126	0.000	0.000	0.0000	0.766	0.0000
32.092	32.092	1582.	0.0127	0.000	0.000	0.0000	0.764	0.0000
32.708	32.708	1593.	0.0128	0.000	0.000	0.0000	0.762	0.0000

✓ (: w) ✓ : T M E T A

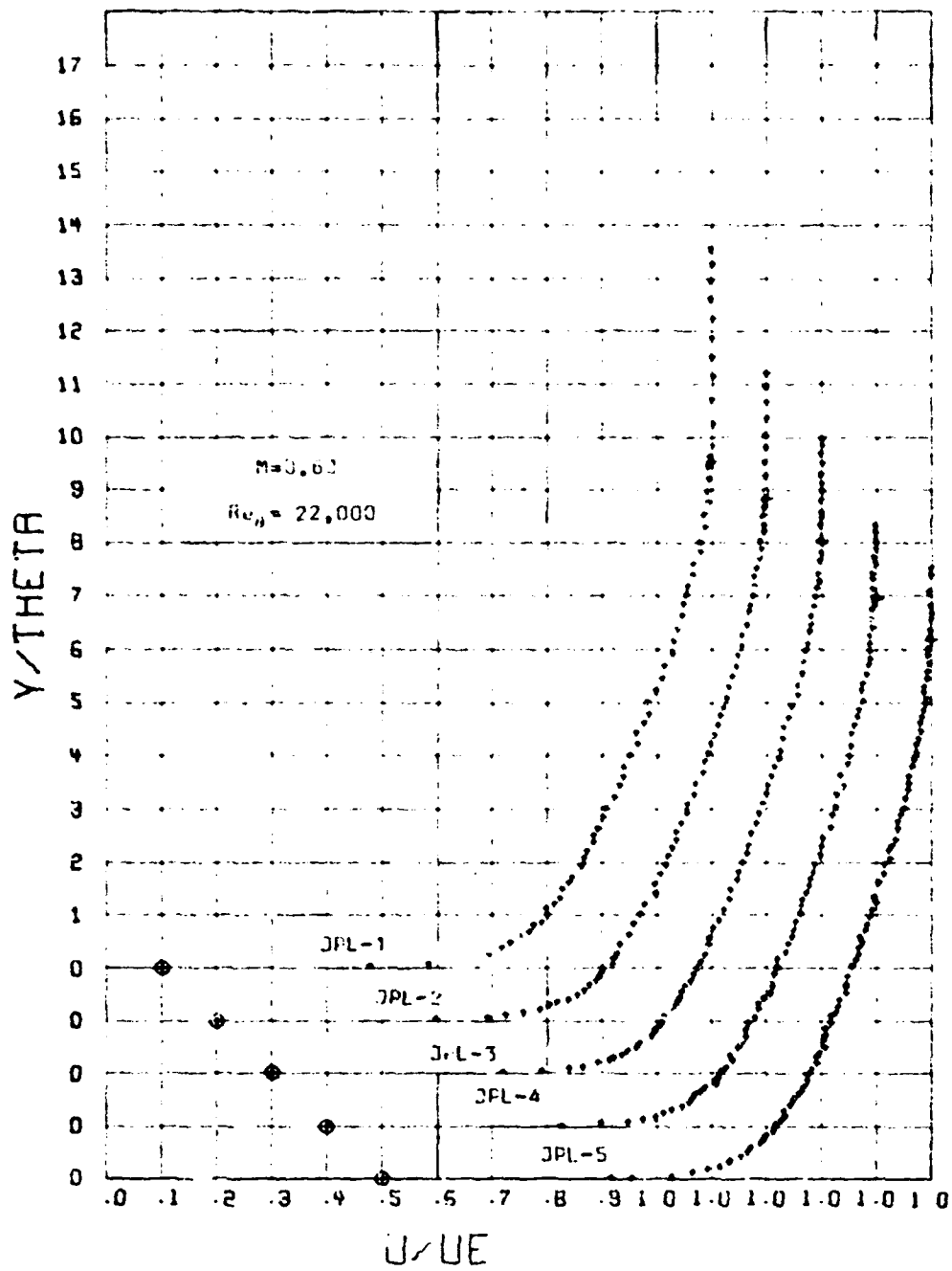


Figure A5. Mean Velocity Profiles.

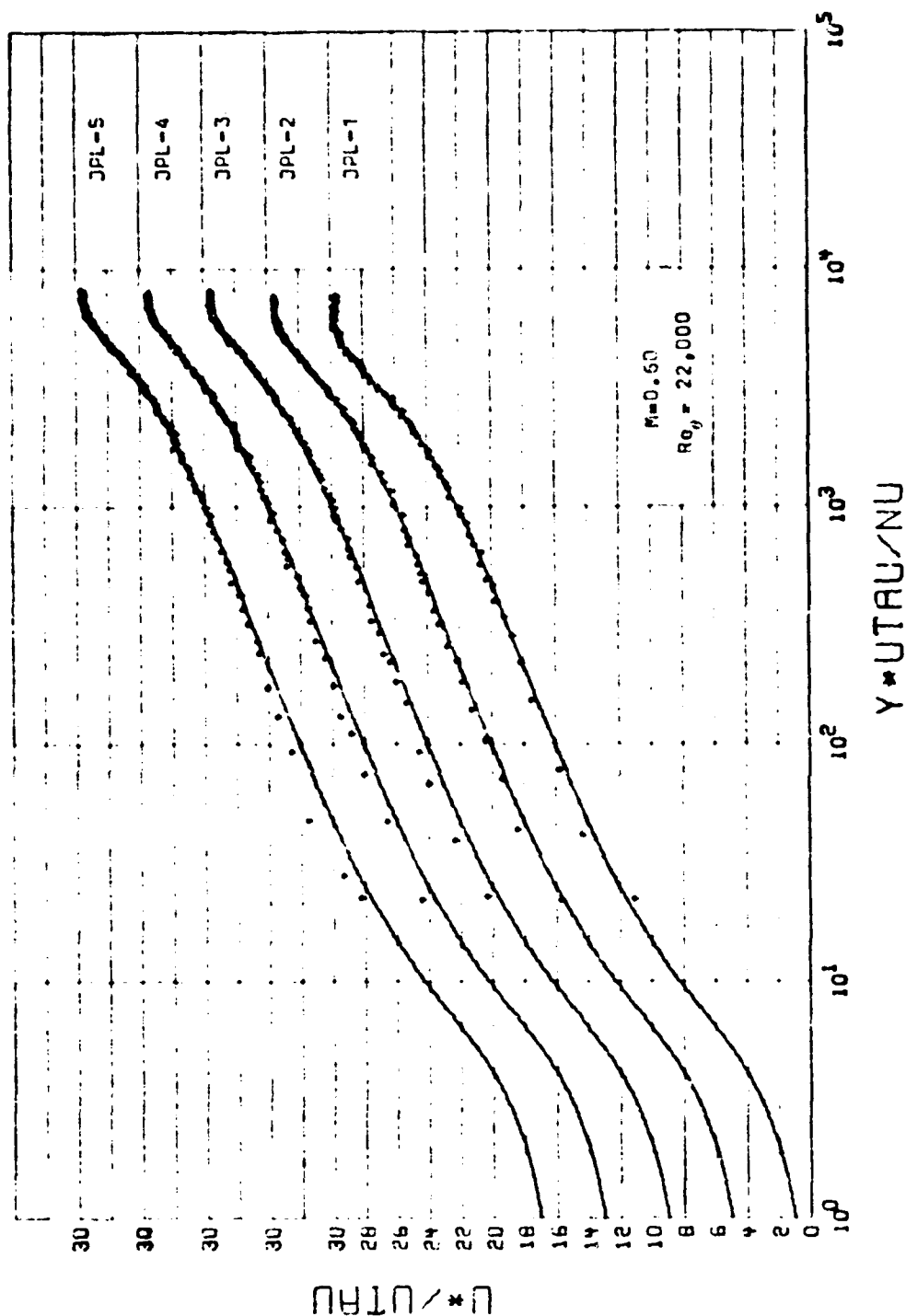
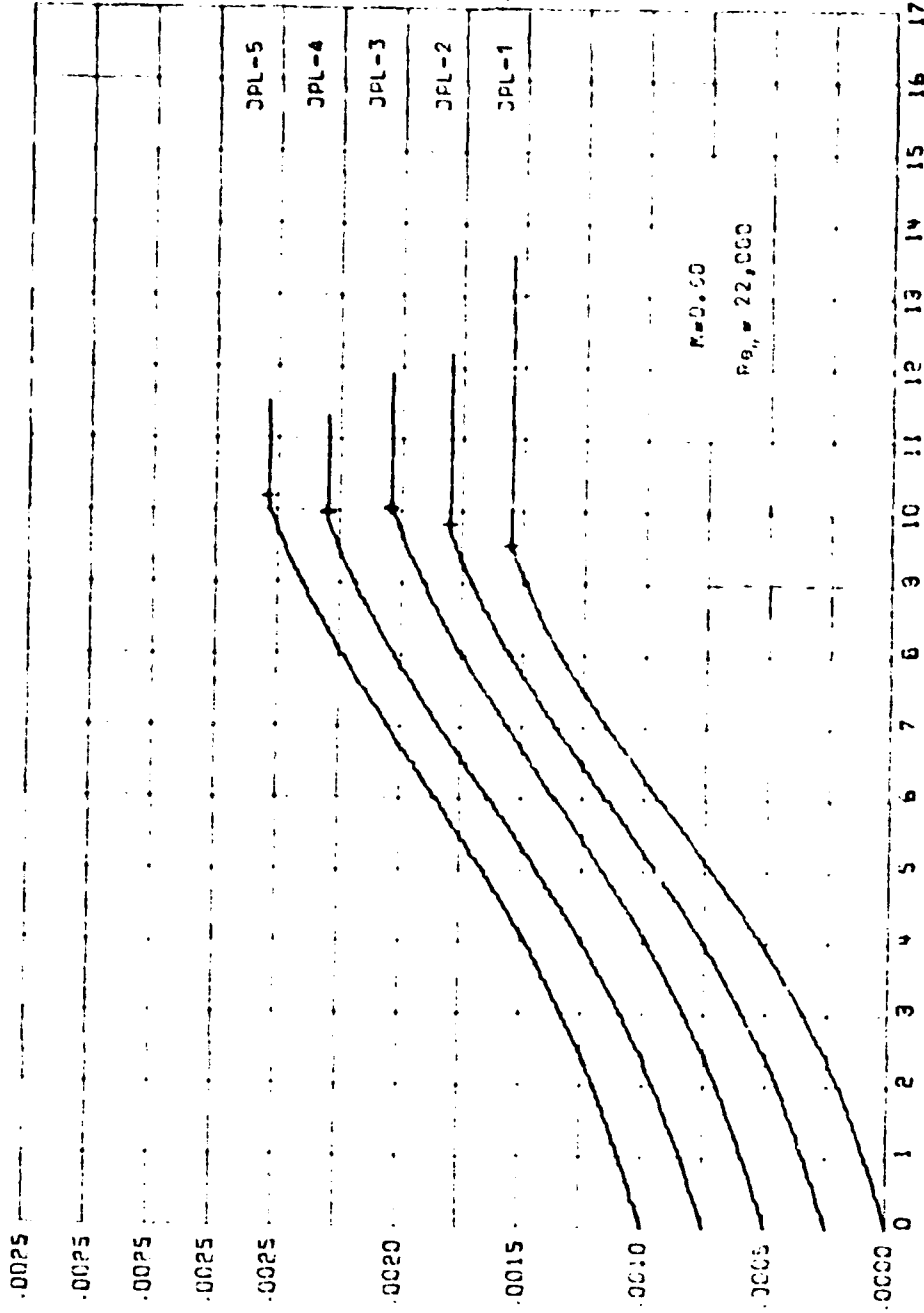


Figure A6. Van Orst Scaled Mean Velocity Profiles.



Y/THETA

Figure A7. Normal Velocity Distribution.

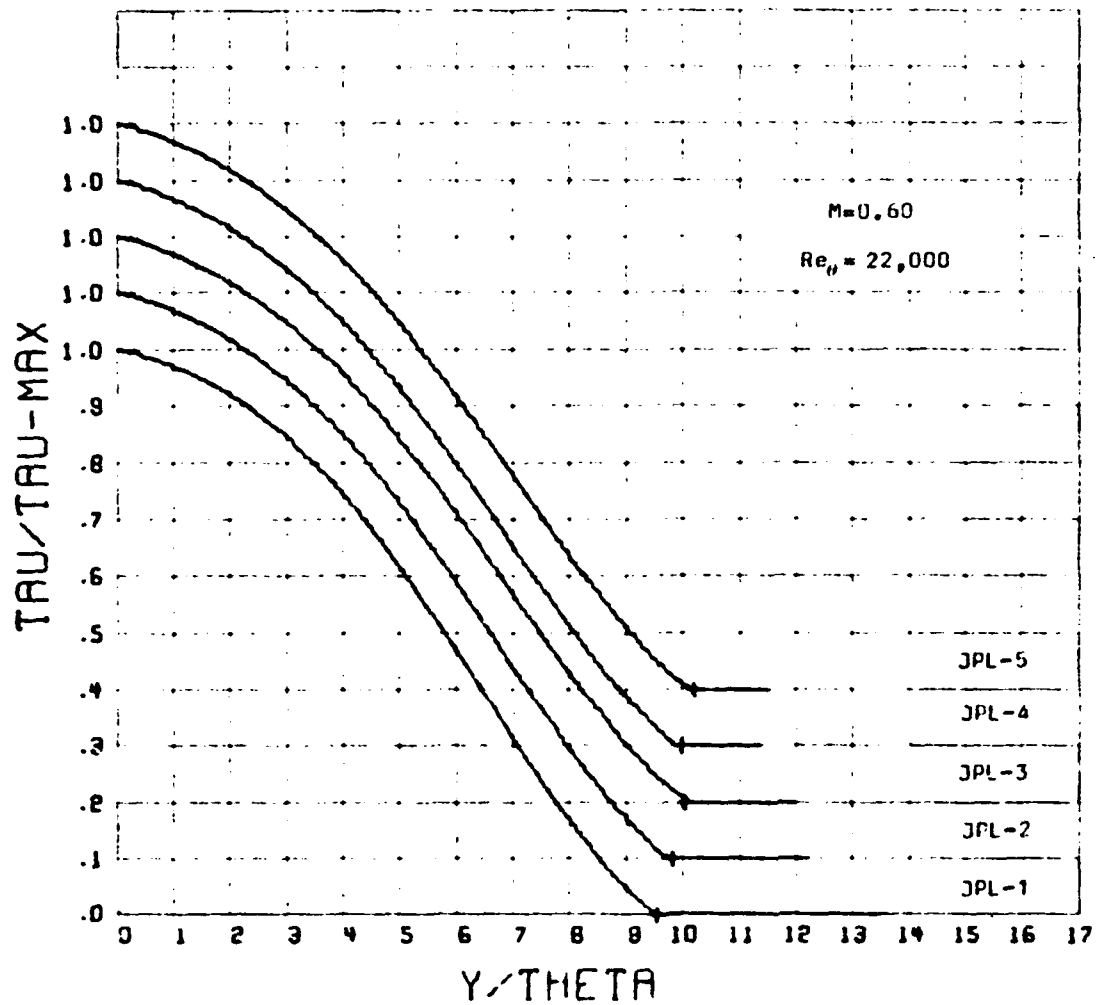


Figure A8. Shear Stress Distribution.

Y (CM)	V/TWETA	V-PLUS	M/ME	TABLE A. (CONT.) RMO/RMCG	U/UE	U-PLUS	TAU/TAU-MAX	V/U
1.147	4.978	4549.	.8450	.9871	.8907	24.93	.6539	.000615
1.205	5.140	4697.	.8484	.9874	.8941	27.03	.6342	.000643
1.240	5.293	4836.	.8570	.9844	.8973	27.24	.6154	.000670
1.280	5.440	4989.	.8610	.9800	.9000	27.46	.5963	.000700
1.324	5.590	5162.	.8647	.9804	.9115	27.57	.5808	.000735
1.365	5.723	5321.	.8687	.9804	.9167	27.73	.5670	.000767
1.410	5.878	5490.	.8727	.9800	.9220	27.84	.5507	.000803
1.457	6.032	5603.	.8774	.9812	.9270	28.07	.5355	.000842
1.442	6.121	5776.	.8843	.9813	.9283	28.03	.5205	.000879
1.522	6.505	5936.	.8927	.9822	.9346	28.13	.5055	.000914
1.591	6.744	6162.	.9017	.9824	.9392	28.42	.4903	.000939
1.621	6.917	6371.	.9014	.9832	.9448	28.59	.4753	.000970
1.677	7.154	6578.	.9042	.9840	.9511	28.79	.4607	.001014
1.718	7.414	6776.	.9072	.9845	.9554	28.93	.4462	.001061
1.783	7.681	6949.	.9060	.9848	.9584	29.31	.4317	.001104
1.847	7.881	7202.	.9088	.9853	.9606	29.34	.4166	.001143
1.911	8.152	7449.	.9149	.9870	.9733	29.56	.4016	.001184
1.967	8.391	7667.	.9179	.9871	.9773	29.60	.3863	.001227
2.015	8.597	7855.	.9196	.9874	.9814	29.71	.3714	.001274
2.070	8.829	8048.	.9274	.9879	.9836	29.79	.3567	.001324
2.112	9.008	8231.	.9349	.9882	.9858	29.86	.3422	.001370
2.160	9.214	8416.	.9429	.9884	.9884	29.96	.3277	.001424
2.205	9.366	8558.	.9505	.9888	.9910	30.07	.3134	.001484
2.233	9.472	8706.	.9575	.9891	.9939	30.14	.2990	.001540
2.274	9.722	8845.	.9623	.9894	.9974	30.17	.2847	.001604
2.320	9.897	8973.	.9664	.9897	.9984	30.14	.2703	.001650
2.362	10.103	9131.	.9668	.9894	.9984	30.14	.2560	.001700
2.421	10.130	9230.	.9668	.9893	.9981	30.16	.2417	.001750
2.459	10.503	9380.	.9677	.9894	.9974	30.23	.2274	.001800
2.556	10.899	9550.	.9674	.9894	.9975	30.22	.2131	.001850
2.667	11.294	10370.	1.0012	1.0001	1.0012	30.33	.2000	.001900
2.759	11.771	10756.	1.0019	1.0002	1.0018	30.35	.1869	.001950
2.856	12.183	11132.	1.0026	1.0000	1.0014	30.31	.1738	.002000
2.954	12.600	11513.	1.0003	1.0000	1.0003	30.31	.1607	.002050
3.037	12.957	11840.	1.0012	1.0001	1.0012	30.31	.1476	.002100
3.134	13.485	12231.	1.0000	.9999	1.0000	30.30	.1345	.002150
3.219	13.732	12546.	1.0003	1.0000	1.0013	30.31	.1214	.002200
3.298	14.068	12855.	1.0016	1.0001	1.0015	30.26	.1083	.002250
3.374	14.393	13152.	.9987	.9998	.9987	30.24	.0952	.002300
3.455	14.740	13454.	1.0016	1.0000	1.0000	30.31	.0821	.002350
3.531	15.065	13765.	.9964	.9999	.9964	30.29	.0690	.002400
3.614	15.433	14102.	.9940	.9997	.9940	30.26	.0560	.002450
3.709	15.824	14458.	1.0006	1.0000	1.0006	30.31	.0430	.002500

TABLE A-6. (CONT.)

V (CM)	V/TMSTA	V-PLUS	-/HF	RMH/RMSE	II/HF	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
1.231	4.543	4592	8766	9860	8806	26.83	7076	.000523
1.256	4.655	4716	8778	9858	8809	26.79	6938	.000543
1.282	4.769	4821	8780	9844	8820	26.94	6821	.000561
1.313	4.883	4936	8771	9834	8824	27.21	6651	.000580
1.343	4.994	5050	8760	9824	8817	27.18	6558	.000599
1.374	5.110	5174	8740	9814	8837	27.24	6412	.000620
1.400	5.237	5306	8652	9807	8806	27.45	6269	.000640
1.445	5.370	5437	8610	9804	8811	27.62	6094	.000664
1.476	5.483	5542	8607	9804	8811	27.80	5966	.000683
1.510	5.615	5676	8601	9805	8819	27.80	5796	.000704
1.544	5.704	5766	8608	9806	8824	27.83	5680	.000722
1.576	5.813	5881	8610	9801	8825	27.94	5533	.000742
1.606	5.940	6015	8616	9804	8829	28.11	5359	.000766
1.640	6.066	6159	8617	9806	8830	28.12	5208	.000786
1.677	6.177	6266	8624	9811	8835	28.26	5056	.000806
1.709	6.310	6397	8634	9818	8832	28.43	4864	.000832
1.740	6.396	6484	8643	9815	8832	28.37	4754	.000847
1.765	6.465	6614	8648	9825	8833	28.62	4654	.000873
1.791	6.563	6736	8654	9825	8830	28.42	4391	.000894
1.818	6.701	6864	8657	9829	8831	28.76	4215	.000917
1.845	6.823	6993	8659	9835	8830	28.89	4032	.000941
1.876	7.004	7122	8671	9839	8831	28.99	3861	.000963
1.901	7.132	7265	8690	9842	8837	29.07	3664	.000988
1.927	7.320	7409	8697	9846	8843	29.12	3467	.001013
2.006	7.657	7631	8715	9850	8848	29.29	3295	.001036
2.037	7.817	7751	8735	9854	8858	29.34	3159	.001055
2.072	7.977	7871	8752	9857	8863	29.44	2968	.001078
2.103	8.111	7996	8763	9857	8864	29.47	2804	.001095
2.124	8.201	8086	8760	9860	8860	29.55	2695	.001110
2.161	8.403	8176	8776	9862	8863	29.59	2502	.001133
2.174	8.526	8275	8778	9868	8864	29.75	2241	.001165
2.204	8.667	8389	8774	9874	8861	29.89	2034	.001190
2.233	8.827	8509	8785	9876	8867	29.91	1819	.001216
2.263	8.970	8635	8785	9881	8864	30.09	1571	.001246
2.292	9.110	8722	8784	9883	8864	30.09	1364	.001268
2.316	9.313	8816	8784	9884	8861	30.21	1165	.001294
2.346	9.413	8916	8791	9887	8867	30.27	9664	.001319
2.372	9.466	9017	8791	9889	8864	30.28	8077	.001354
2.402	9.678	9181	8797	9890	8864	30.30	6889	.001362
2.426	9.770	9272	8797	9892	8864	30.37	6012	.001383
2.453	10.050	9388	8796	9897	8867	30.47	5260	.001400
2.478	10.234	9496	8796	9896	8864	30.42	4614	.001417
2.508	10.417	9587	8799	9897	8860	30.48	4000	.001431
2.537	10.511	9681	8793	9896	8864	30.46	3400	.001451
2.567	11.139	9776	8793	9897	8864	30.47	2800	.001451
2.597	11.254	9871	8796	9897	8864	30.47	2200	.001451
2.627	11.369	9966	8796	9898	8864	30.51	1600	.001451
2.656	11.484	10060	8796	9898	8864	30.51	1000	.001451
2.686	12.236	10589	8796	9897	8864	30.44	0.0000	.001451
2.710	12.538	10776	8796	9899	8864	30.56	0.0000	.001451
2.737	12.840	10963	8796	9897	8864	30.44	0.0000	.001451
2.765	13.142	11150	8796	9897	8864	30.57	0.0000	.001451
2.792	13.444	11337	8796	9897	8864	30.56	0.0000	.001451
2.819	13.746	11524	8796	9897	8864	30.56	0.0000	.001451
2.846	14.048	11711	8796	9897	8864	30.56	0.0000	.001451
2.873	14.350	11898	8796	9897	8864	30.56	0.0000	.001451
2.900	14.652	12085	8796	9897	8864	30.56	0.0000	.001451
2.927	14.954	12272	8796	9897	8864	30.56	0.0000	.001451
2.954	15.256	12459	8796	9897	8864	30.56	0.0000	.001451
2.981	15.558	12646	8796	9897	8864	30.56	0.0000	.001451
3.008	15.860	12833	8796	9897	8864	30.56	0.0000	.001451

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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 = 33048 CM		DELTA = 2.9440 CM	
U = 205.97 M/SEC		RE-TUETA = 37260.		M = 1.409	
LEAST SQUARE FIT PARAMETERS		CF = .002056		PI = .5733	
STAR = 6.0001 M/SEC		YMAX = 2.759 CM		VMIN = .033 CM	
CHISON = .0078E-05					
Y (CM)	Y/TUETA	Y-PLUS	M/PE	MMQ/RHDE	U/UE
0.000	1.000	0.	0.0000	.0400	0.0000
0.010	.994	.09	.4287	.0414	13.22
0.020	.984	.39	.6683	.0430	1.0000
0.030	.970	.67	.8683	.0450	.9405
0.040	.954	.94	.9904	.0481	.8903
0.050	.936	1.26	.9976	.0513	.8403
0.060	.916	1.59	.9976	.0543	.7903
0.070	.894	1.92	.9976	.0573	.7403
0.080	.870	2.24	.9976	.0603	.6903
0.090	.844	2.56	.9976	.0633	.6403
0.100	.816	2.88	.9976	.0663	.5903
0.110	.786	3.20	.9976	.0693	.5403
0.120	.754	3.52	.9976	.0723	.4903
0.130	.720	3.84	.9976	.0753	.4403
0.140	.684	4.16	.9976	.0783	.3903
0.150	.646	4.48	.9976	.0813	.3403
0.160	.606	4.80	.9976	.0843	.2903
0.170	.564	5.12	.9976	.0873	.2403
0.180	.520	5.44	.9976	.0903	.1903
0.190	.474	5.76	.9976	.0933	.1403
0.200	.426	6.08	.9976	.0963	.0903
0.210	.376	6.40	.9976	.0993	.0403
0.220	.324	6.72	.9976	.1023	.0000
0.230	.270	7.04	.9976	.1053	.000000
0.240	.214	7.36	.9976	.1083	.000000
0.250	.156	7.68	.9976	.1113	.000000
0.260	.096	8.00	.9976	.1143	.000000
0.270	.034	8.32	.9976	.1173	.000000
0.280	-.028	8.64	.9976	.1203	.000000
0.290	-.086	8.96	.9976	.1233	.000000
0.300	-.140	9.28	.9976	.1263	.000000
0.310	-.190	9.60	.9976	.1293	.000000
0.320	-.236	9.92	.9976	.1323	.000000
0.330	-.278	10.24	.9976	.1353	.000000
0.340	-.316	10.56	.9976	.1383	.000000
0.350	-.350	10.88	.9976	.1413	.000000
0.360	-.380	11.20	.9976	.1443	.000000
0.370	-.406	11.52	.9976	.1473	.000000
0.380	-.428	11.84	.9976	.1503	.000000
0.390	-.446	12.16	.9976	.1533	.000000
0.400	-.460	12.48	.9976	.1563	.000000
0.410	-.470	12.80	.9976	.1593	.000000
0.420	-.476	13.12	.9976	.1623	.000000
0.430	-.478	13.44	.9976	.1653	.000000
0.440	-.476	13.76	.9976	.1683	.000000
0.450	-.470	14.08	.9976	.1713	.000000
0.460	-.460	14.40	.9976	.1743	.000000
0.470	-.446	14.72	.9976	.1773	.000000
0.480	-.428	15.04	.9976	.1803	.000000
0.490	-.406	15.36	.9976	.1833	.000000
0.500	-.380	15.68	.9976	.1863	.000000
0.510	-.350	16.00	.9976	.1893	.000000
0.520	-.316	16.32	.9976	.1923	.000000
0.530	-.278	16.64	.9976	.1953	.000000
0.540	-.236	16.96	.9976	.1983	.000000
0.550	-.190	17.28	.9976	.2013	.000000
0.560	-.140	17.60	.9976	.2043	.000000
0.570	-.086	17.92	.9976	.2073	.000000
0.580	-.028	18.24	.9976	.2103	.000000
0.590	.034	18.56	.9976	.2133	.000000
0.600	.096	18.88	.9976	.2163	.000000
0.610	.156	19.20	.9976	.2193	.000000
0.620	.214	19.52	.9976	.2223	.000000
0.630	.270	19.84	.9976	.2253	.000000
0.640	.324	20.16	.9976	.2283	.000000
0.650	.376	20.48	.9976	.2313	.000000
0.660	.426	20.80	.9976	.2343	.000000
0.670	.470	21.12	.9976	.2373	.000000
0.680	.506	21.44	.9976	.2403	.000000
0.690	.534	21.76	.9976	.2433	.000000
0.700	.554	22.08	.9976	.2463	.000000
0.710	.566	22.40	.9976	.2493	.000000
0.720	.570	22.72	.9976	.2523	.000000
0.730	.566	23.04	.9976	.2553	.000000
0.740	.554	23.36	.9976	.2583	.000000
0.750	.534	23.68	.9976	.2613	.000000
0.760	.506	24.00	.9976	.2643	.000000
0.770	.470	24.32	.9976	.2673	.000000
0.780	.426	24.64	.9976	.2703	.000000
0.790	.376	24.96	.9976	.2733	.000000
0.800	.324	25.28	.9976	.2763	.000000
0.810	.270	25.60	.9976	.2793	.000000
0.820	.214	25.92	.9976	.2823	.000000
0.830	.156	26.24	.9976	.2853	.000000
0.840	.096	26.56	.9976	.2883	.000000
0.850	.034	26.88	.9976	.2913	.000000
0.860	-.028	27.20	.9976	.2943	.000000
0.870	-.086	27.52	.9976	.2973	.000000
0.880	-.140	27.84	.9976	.3003	.000000
0.890	-.190	28.16	.9976	.3033	.000000
0.900	-.236	28.48	.9976	.3063	.000000
0.910	-.278	28.80	.9976	.3093	.000000
0.920	-.316	29.12	.9976	.3123	.000000
0.930	-.350	29.44	.9976	.3153	.000000
0.940	-.380	29.76	.9976	.3183	.000000
0.950	-.406	30.08	.9976	.3213	.000000
0.960	-.428	30.40	.9976	.3243	.000000
0.970	-.446	30.72	.9976	.3273	.000000
0.980	-.460	31.04	.9976	.3303	.000000
0.990	-.470	31.36	.9976	.3333	.000000
1.000	-.476	31.68	.9976	.3363	.000000

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

[illegible][illegible][illegible]

ORIGINAL, PAGE IS
OF POOR QUALITY

V (CM)	V (M/S)	TABLE 4.4. (Cont.) m/sec	W/F	U-PLUS	TAU/TAU-MAX	V/U
1.340	6.328	.0191	.4850	26.92	.4949	.000536
1.347	6.345	.0012	.4837	26.99	.4947	.000504
1.353	6.362	.0009	.4824	27.07	.4945	.000507
1.359	6.379	.0013	.4811	27.14	.4943	.000510
1.365	6.396	.0014	.4798	27.22	.4941	.000512
1.371	6.413	.0015	.4785	27.30	.4939	.000514
1.377	6.430	.0016	.4772	27.38	.4937	.000516
1.383	6.447	.0017	.4759	27.46	.4935	.000518
1.389	6.464	.0018	.4746	27.54	.4933	.000520
1.395	6.481	.0019	.4733	27.62	.4931	.000522
1.401	6.498	.0020	.4720	27.70	.4929	.000524
1.407	6.515	.0021	.4707	27.78	.4927	.000526
1.413	6.532	.0022	.4694	27.86	.4925	.000528
1.419	6.549	.0023	.4681	27.94	.4923	.000530
1.425	6.566	.0024	.4668	28.02	.4921	.000532
1.431	6.583	.0025	.4655	28.10	.4919	.000534
1.437	6.600	.0026	.4642	28.18	.4917	.000536
1.443	6.617	.0027	.4629	28.26	.4915	.000538
1.449	6.634	.0028	.4616	28.34	.4913	.000540
1.455	6.651	.0029	.4603	28.42	.4911	.000542
1.461	6.668	.0030	.4590	28.50	.4909	.000544
1.467	6.685	.0031	.4577	28.58	.4907	.000546
1.473	6.702	.0032	.4564	28.66	.4905	.000548
1.479	6.719	.0033	.4551	28.74	.4903	.000550
1.485	6.736	.0034	.4538	28.82	.4901	.000552
1.491	6.753	.0035	.4525	28.90	.4899	.000554
1.497	6.770	.0036	.4512	28.98	.4897	.000556
1.503	6.787	.0037	.4499	29.06	.4895	.000558
1.509	6.804	.0038	.4486	29.14	.4893	.000560
1.515	6.821	.0039	.4473	29.22	.4891	.000562
1.521	6.838	.0040	.4460	29.30	.4889	.000564
1.527	6.855	.0041	.4447	29.38	.4887	.000566
1.533	6.872	.0042	.4434	29.46	.4885	.000568
1.539	6.889	.0043	.4421	29.54	.4883	.000570
1.545	6.906	.0044	.4408	29.62	.4881	.000572
1.551	6.923	.0045	.4395	29.70	.4879	.000574
1.557	6.940	.0046	.4382	29.78	.4877	.000576
1.563	6.957	.0047	.4369	29.86	.4875	.000578
1.569	6.974	.0048	.4356	29.94	.4873	.000580
1.575	6.991	.0049	.4343	30.02	.4871	.000582
1.581	7.008	.0050	.4330	30.10	.4869	.000584
1.587	7.025	.0051	.4317	30.18	.4867	.000586
1.593	7.042	.0052	.4304	30.26	.4865	.000588
1.599	7.059	.0053	.4291	30.34	.4863	.000590
1.605	7.076	.0054	.4278	30.42	.4861	.000592
1.611	7.093	.0055	.4265	30.50	.4859	.000594
1.617	7.110	.0056	.4252	30.58	.4857	.000596
1.623	7.127	.0057	.4239	30.66	.4855	.000598
1.629	7.144	.0058	.4226	30.74	.4853	.000600
1.635	7.161	.0059	.4213	30.82	.4851	.000602
1.641	7.178	.0060	.4200	30.90	.4849	.000604
1.647	7.195	.0061	.4187	30.98	.4847	.000606
1.653	7.212	.0062	.4174	31.06	.4845	.000608
1.659	7.229	.0063	.4161	31.14	.4843	.000610
1.665	7.246	.0064	.4148	31.22	.4841	.000612
1.671	7.263	.0065	.4135	31.30	.4839	.000614
1.677	7.280	.0066	.4122	31.38	.4837	.000616
1.683	7.297	.0067	.4109	31.46	.4835	.000618
1.689	7.314	.0068	.4096	31.54	.4833	.000620
1.695	7.331	.0069	.4083	31.62	.4831	.000622
1.701	7.348	.0070	.4070	31.70	.4829	.000624
1.707	7.365	.0071	.4057	31.78	.4827	.000626
1.713	7.382	.0072	.4044	31.86	.4825	.000628
1.719	7.399	.0073	.4031	31.94	.4823	.000630
1.725	7.416	.0074	.4018	32.02	.4821	.000632
1.731	7.433	.0075	.4005	32.10	.4819	.000634
1.737	7.450	.0076	.3992	32.18	.4817	.000636
1.743	7.467	.0077	.3979	32.26	.4815	.000638
1.749	7.484	.0078	.3966	32.34	.4813	.000640
1.755	7.501	.0079	.3953	32.42	.4811	.000642
1.761	7.518	.0080	.3940	32.50	.4809	.000644
1.767	7.535	.0081	.3927	32.58	.4807	.000646
1.773	7.552	.0082	.3914	32.66	.4805	.000648
1.779	7.569	.0083	.3901	32.74	.4803	.000650
1.785	7.586	.0084	.3888	32.82	.4801	.000652
1.791	7.603	.0085	.3875	32.90	.4799	.000654
1.797	7.620	.0086	.3862	32.98	.4797	.000656
1.803	7.637	.0087	.3849	33.06	.4795	.000658
1.809	7.654	.0088	.3836	33.14	.4793	.000660
1.815	7.671	.0089	.3823	33.22	.4791	.000662
1.821	7.688	.0090	.3810	33.30	.4789	.000664
1.827	7.705	.0091	.3797	33.38	.4787	.000666
1.833	7.722	.0092	.3784	33.46	.4785	.000668
1.839	7.739	.0093	.3771	33.54	.4783	.000670
1.845	7.756	.0094	.3758	33.62	.4781	.000672
1.851	7.773	.0095	.3745	33.70	.4779	.000674
1.857	7.790	.0096	.3732	33.78	.4777	.000676
1.863	7.807	.0097	.3719	33.86	.4775	.000678
1.869	7.824	.0098	.3706	33.94	.4773	.000680
1.875	7.841	.0099	.3693	34.02	.4771	.000682
1.881	7.858	.0100	.3680	34.10	.4769	.000684
1.887	7.875	.0101	.3667	34.18	.4767	.000686
1.893	7.892	.0102	.3654	34.26	.4765	.000688
1.899	7.909	.0103	.3641	34.34	.4763	.000690
1.905	7.926	.0104	.3628	34.42	.4761	.000692
1.911	7.943	.0105	.3615	34.50	.4759	.000694
1.917	7.960	.0106	.3602	34.58	.4757	.000696
1.923	7.977	.0107	.3589	34.66	.4755	.000698
1.929	7.994	.0108	.3576	34.74	.4753	.000700
1.935	8.011	.0109	.3563	34.82	.4751	.000702
1.941	8.028	.0110	.3550	34.90	.4749	.000704
1.947	8.045	.0111	.3537	34.98	.4747	.000706
1.953	8.062	.0112	.3524	35.06	.4745	.000708
1.959	8.079	.0113	.3511	35.14	.4743	.000710
1.965	8.096	.0114	.3498	35.22	.4741	.000712
1.971	8.113	.0115	.3485	35.30	.4739	.000714
1.977	8.130	.0116	.3472	35.38	.4737	.000716
1.983	8.147	.0117	.3459	35.46	.4735	.000718
1.989	8.164	.0118	.3446	35.54	.4733	.000720
1.995	8.181	.0119	.3433	35.62	.4731	.000722
2.001	8.198	.0120	.3420	35.70	.4729	.000724
2.007	8.215	.0121	.3407	35.78	.4727	.000726
2.013	8.232	.0122	.3394	35.86	.4725	.000728
2.019	8.249	.0123	.3381	35.94	.4723	.000730
2.025	8.266	.0124	.3368	36.02	.4721	.000732
2.031	8.283	.0125	.3355	36.10	.4719	.000734
2.037	8.300	.0126	.3342	36.18	.4717	.000736
2.043	8.317	.0127	.3329	36.26	.4715	.000738
2.049	8.334	.0128	.3316	36.34	.4713	.000740
2.055	8.351	.0129	.3303	36.42	.4711	.000742
2.061	8.368	.0130	.3290	36.50	.4709	.000744
2.067	8.385	.0131	.3277	36.58	.4707	.000746
2.073	8.402	.0132	.3264	36.66	.4705	.000748
2.079	8.419	.0133	.3251	36.74	.4703	.000750
2.085	8.436	.0134	.3238	36.82	.4701	.000752
2.091	8.453	.0135	.3225	36.90	.4699	.000754
2.097	8.470	.0136	.3212	36.98	.4697	.000756
2.103	8.487	.0137	.3199	37.06	.4695	.000758
2.109	8.504	.0138	.3186	37.14	.4693	.000760
2.115	8.521	.0139	.3173	37.22	.4691	.000762
2.121	8.538	.0140	.3160	37.30	.4689	.000764
2.127	8.555	.0141	.3147	37.38	.4687	.000766
2.133	8.572	.0142	.3134	37.46	.4685	.000768
2.139	8.589	.0143	.3121	37.54	.4683	.000770
2.145	8.606	.0144	.3108	37.62	.4681	.000772
2.151	8.623	.0145	.3095	37.70	.4679	.000774
2.157	8.640	.0146	.3082	37.78	.4677	.000776
2.163	8.657	.0147	.3069	37.86	.4675	.000778
2.169	8.674	.0148	.3056	37.94	.4673	.000780
2.175	8.691	.0149	.3043	38.02	.4671	.000782
2.181	8.708	.0150	.3030	38.10	.4669	.000784
2.187	8.725	.0151	.3017	38.18	.4667	.000786
2.193	8.742	.0152	.3004	38.26	.4665	.000788
2.199	8.759	.0153	.2991	38.34	.4663	.000790
2.205	8.776	.0154	.2978	38.42	.4661	.000792
2.211	8.793	.0155	.2965	38.50	.4659	.000794
2.217	8.810	.0156	.2952	38.58	.4657	.000796
2.223	8.827	.0157	.2939	38.66	.4655	.000798
2.229	8.844	.0158	.2926	38.74	.4653	.000800
2.235	8.861	.0159	.2913	38.82	.4651	.000802
2.241	8.878	.0160	.2900	38.90	.4649	.000804
2.247	8.895	.0161	.2887	38.98	.4647	.000806
2.253	8.912	.0162	.2874	39.06	.4645	.000808
2.259	8.929	.0163	.2861	39.14	.4643	.000810
2.265	8.946	.0164	.2848	39.22	.4641	.000812
2.271	8.963	.0165	.2835	39.30	.4639	.000814
2.277	8.980	.0166	.2822	39.38	.4637	.000816
2.283	8.997	.0167	.2809	39.46	.4635	.000818
2.289	9.014	.0168	.2796	39.54	.4633	.000820
2.295	9.031	.0169	.2783	39.62	.4631	.000822
2.301	9.048	.0170	.2770	39.70	.4629	.000824
2.307	9.065	.0171	.2757	39.78	.4627	.000826
2.313	9.082	.0172	.2744	39.86	.4625	.000828
2.319	9.099	.0173	.2731	39.94	.4623	.000830
2.325	9.116	.0174	.2718	40.02	.4621	.000832
2.331	9.133	.0175	.2705	40.10	.4619	.000834
2.337	9.150	.0176	.2692	40.18	.4617	.000836
2.343	9.167	.0177	.2679	40.26		

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	0.583	51.11	.0376	27.03	.6918	.005537
1.475	0.585	50.60	.0455	27.27	.6843	.005571
1.525	0.587	50.12	.0501	27.51	.6785	.005594
1.575	0.592	49.64	.0554	27.57	.6742	.005627
1.625	0.594	49.21	.0599	27.71	.6715	.005651
1.675	0.597	48.79	.0622	27.77	.6688	.005682
1.725	0.599	48.40	.0649	27.97	.6669	.005709
1.775	0.600	48.02	.0674	28.18	.6649	.005737
1.825	0.602	47.64	.0696	28.15	.6629	.005767
1.875	0.604	47.26	.0719	28.32	.6607	.005792
1.925	0.606	46.87	.0741	28.56	.6582	.005822
1.975	0.608	46.48	.0763	28.79	.6562	.005846
2.025	0.610	46.09	.0784	28.74	.6547	.005869
2.075	0.612	45.69	.0805	28.66	.6524	.005894
2.125	0.614	45.29	.0826	28.91	.6509	.005933
2.175	0.616	44.89	.0847	29.22	.6494	.005954
2.225	0.618	44.49	.0868	29.37	.6477	.005982
2.275	0.620	44.09	.0889	29.56	.6463	.006007
2.325	0.622	43.69	.0910	29.74	.6449	.006031
2.375	0.624	43.29	.0931	29.91	.6433	.006057
2.425	0.626	42.89	.0952	30.00	.6419	.006081
2.475	0.628	42.49	.0973	30.05	.6403	.006105
2.525	0.630	42.09	.0994	30.17	.6389	.006129
2.575	0.632	41.69	.1015	30.33	.6374	.006154
2.625	0.634	41.29	.1036	30.44	.6360	.006178
2.675	0.636	40.89	.1057	30.54	.6346	.006202
2.725	0.638	40.49	.1078	30.62	.6332	.006226
2.775	0.640	40.09	.1099	30.73	.6319	.006250
2.825	0.642	39.69	.1120	30.83	.6305	.006274
2.875	0.644	39.29	.1141	30.94	.6292	.006298
2.925	0.646	38.89	.1162	31.03	.6279	.006322
2.975	0.648	38.49	.1183	31.13	.6266	.006346
3.025	0.650	38.09	.1204	31.24	.6253	.006370
3.075	0.652	37.69	.1225	31.34	.6240	.006394
3.125	0.654	37.29	.1246	31.44	.6227	.006418
3.175	0.656	36.89	.1267	31.54	.6214	.006442
3.225	0.658	36.49	.1288	31.64	.6201	.006466
3.275	0.660	36.09	.1309	31.74	.6188	.006490
3.325	0.662	35.69	.1330	31.84	.6175	.006514
3.375	0.664	35.29	.1351	31.94	.6162	.006538
3.425	0.666	34.89	.1372	32.04	.6149	.006562
3.475	0.668	34.49	.1393	32.14	.6136	.006586
3.525	0.670	34.09	.1414	32.24	.6123	.006610
3.575	0.672	33.69	.1435	32.34	.6110	.006634
3.625	0.674	33.29	.1456	32.44	.6097	.006658
3.675	0.676	32.89	.1477	32.54	.6084	.006682
3.725	0.678	32.49	.1498	32.64	.6071	.006706
3.775	0.680	32.09	.1519	32.74	.6058	.006730
3.825	0.682	31.69	.1540	32.84	.6045	.006754
3.875	0.684	31.29	.1561	32.94	.6032	.006778
3.925	0.686	30.89	.1582	33.04	.6019	.006802
3.975	0.688	30.49	.1603	33.14	.6006	.006826
4.025	0.690	30.09	.1624	33.24	.6000	.006850
4.075	0.692	29.69	.1645	33.34	.6000	.006874
4.125	0.694	29.29	.1666	33.44	.6000	.006898
4.175	0.696	28.89	.1687	33.54	.6000	.006922
4.225	0.698	28.49	.1708	33.64	.6000	.006946
4.275	0.700	28.09	.1729	33.74	.6000	.006970
4.325	0.702	27.69	.1750	33.84	.6000	.006994
4.375	0.704	27.29	.1771	33.94	.6000	.007018
4.425	0.706	26.89	.1792	34.04	.6000	.007042
4.475	0.708	26.49	.1813	34.14	.6000	.007066
4.525	0.710	26.09	.1834	34.24	.6000	.007090
4.575	0.712	25.69	.1855	34.34	.6000	.007114
4.625	0.714	25.29	.1876	34.44	.6000	.007138
4.675	0.716	24.89	.1897	34.54	.6000	.007162
4.725	0.718	24.49	.1918	34.64	.6000	.007186
4.775	0.720	24.09	.1939	34.74	.6000	.007210
4.825	0.722	23.69	.1960	34.84	.6000	.007234
4.875	0.724	23.29	.1981	34.94	.6000	.007258
4.925	0.726	22.89	.2002	35.04	.6000	.007282
4.975	0.728	22.49	.2023	35.14	.6000	.007306
5.025	0.730	22.09	.2044	35.24	.6000	.007330
5.075	0.732	21.69	.2065	35.34	.6000	.007354
5.125	0.734	21.29	.2086	35.44	.6000	.007378
5.175	0.736	20.89	.2107	35.54	.6000	.007402
5.225	0.738	20.49	.2128	35.64	.6000	.007426
5.275	0.740	20.09	.2149	35.74	.6000	.007450
5.325	0.742	19.69	.2170	35.84	.6000	.007474
5.375	0.744	19.29	.2191	35.94	.6000	.007498
5.425	0.746	18.89	.2212	36.04	.6000	.007522
5.475	0.748	18.49	.2233	36.14	.6000	.007546
5.525	0.750	18.09	.2254	36.24	.6000	.007570
5.575	0.752	17.69	.2275	36.34	.6000	.007594
5.625	0.754	17.29	.2296	36.44	.6000	.007618
5.675	0.756	16.89	.2317	36.54	.6000	.007642
5.725	0.758	16.49	.2338	36.64	.6000	.007666
5.775	0.760	16.09	.2359	36.74	.6000	.007690
5.825	0.762	15.69	.2380	36.84	.6000	.007714
5.875	0.764	15.29	.2401	36.94	.6000	.007738
5.925	0.766	14.89	.2422	37.04	.6000	.007762
5.975	0.768	14.49	.2443	37.14	.6000	.007786
6.025	0.770	14.09	.2464	37.24	.6000	.007810
6.075	0.772	13.69	.2485	37.34	.6000	.007834
6.125	0.774	13.29	.2506	37.44	.6000	.007858
6.175	0.776	12.89	.2527	37.54	.6000	.007882
6.225	0.778	12.49	.2548	37.64	.6000	.007906
6.275	0.780	12.09	.2569	37.74	.6000	.007930
6.325	0.782	11.69	.2590	37.84	.6000	.007954
6.375	0.784	11.29	.2611	37.94	.6000	.007978
6.425	0.786	10.89	.2632	38.04	.6000	.008002
6.475	0.788	10.49	.2653	38.14	.6000	.008026
6.525	0.790	10.09	.2674	38.24	.6000	.008050
6.575	0.792	9.69	.2695	38.34	.6000	.008074
6.625	0.794	9.29	.2716	38.44	.6000	.008098
6.675	0.796	8.89	.2737	38.54	.6000	.008122
6.725	0.798	8.49	.2758	38.64	.6000	.008146
6.775	0.800	8.09	.2779	38.74	.6000	.008170
6.825	0.802	7.69	.2800	38.84	.6000	.008194
6.875	0.804	7.29	.2821	38.94	.6000	.008218
6.925	0.806	6.89	.2842	39.04	.6000	.008242
6.975	0.808	6.49	.2863	39.14	.6000	.008266
7.025	0.810	6.09	.2884	39.24	.6000	.008290
7.075	0.812	5.69	.2905	39.34	.6000	.008314
7.125	0.814	5.29	.2926	39.44	.6000	.008338
7.175	0.816	4.89	.2947	39.54	.6000	.008362
7.225	0.818	4.49	.2968	39.64	.6000	.008386
7.275	0.820	4.09	.2989	39.74	.6000	.008410
7.325	0.822	3.69	.3010	39.84	.6000	.008434
7.375	0.824	3.29	.3031	39.94	.6000	.008458
7.425	0.826	2.89	.3052	40.04	.6000	.008482
7.475	0.828	2.49	.3073	40.14	.6000	.008506
7.525	0.830	2.09	.3094	40.24	.6000	.008530
7.575	0.832	1.69	.3115	40.34	.6000	.008554
7.625	0.834	1.29	.3136	40.44	.6000	.008578
7.675	0.836	0.89	.3157	40.54	.6000	.008602
7.725	0.838	0.49	.3178	40.64	.6000	.008626
7.775	0.840	0.09	.3199	40.74	.6000	.008650
7.825	0.842	0.00	.3220	40.84	.6000	.008674
7.875	0.844	0.00	.3241	40.94	.6000	.008698
7.925	0.846	0.00	.3262	41.04	.6000	.008722
7.975	0.848	0.00	.3283	41.14	.6000	.008746
8.025	0.850	0.00	.3304	41.24	.6000	.008770
8.075	0.852	0.00	.3325	41.34	.6000	.008794
8.125	0.854	0.00	.3346	41.44	.6000	.008818
8.175	0.856	0.00	.3367	41.54	.6000	.008842
8.225	0.858	0.00	.3388	41.64	.6000	.008866
8.275	0.860	0.00	.3409	41.74	.6000	.008890
8.325	0.862	0.00	.3430	41.84	.6000	.008914
8.375	0.864	0.00	.3451	41.94	.6000	.008938
8.425	0.866	0.00	.3472	42.04	.6000	.008962
8.475	0.868	0.00	.3493	42.14	.6000	.008986
8.525	0.870	0.00	.3514	42.24	.6000	.009010
8.575	0.872	0.00	.3535	42.34	.6000	.009034
8.625	0.874	0.00	.3556	42.44	.6000	.009058
8.675	0.876	0.00	.3577	42.54	.6000	.009082
8.725	0.878	0.00	.3598	42.64	.6000	.009106
8.775	0.880	0.00	.3619	42.74	.6000	.009130
8.825	0.882	0.00	.3640	42.84	.6000	.009154
8.875	0.884	0.00	.3661	42.94	.6000	.009178
8.925	0.886	0.00	.3682	43.04	.6000	.009202
8.975	0.888	0.00	.3703	43.14	.6000	.009226
9.025	0.890	0.00	.3724	43.24	.6000	.009250
9.075	0.892	0.00	.3745	43.34	.6000	.009274
9.125	0.894	0.00	.3766	43.44	.6000	.009298
9.175	0.896	0.00	.3787	43.54	.6000	.009322
9.225	0.898	0.00	.3808	43.64	.6000	.009346
9.275	0.900	0.00	.3829	43.74	.6000	.009370
9.325	0.902	0.00	.3850	43.84	.6000	.009394
9.375	0.904	0.00	.3871	43.94	.6000	.009418
9.425	0.906	0.00	.3892	44.04	.6000	.009442
9.475	0.908	0.00	.3913	44.14	.6000	.009466
9.525	0.910	0.00	.3934	44.24	.6000	.009490
9.575	0.912	0.00	.3955	44.34	.6000	.009514
9.625	0.914	0.00	.3976	44.44	.6000	

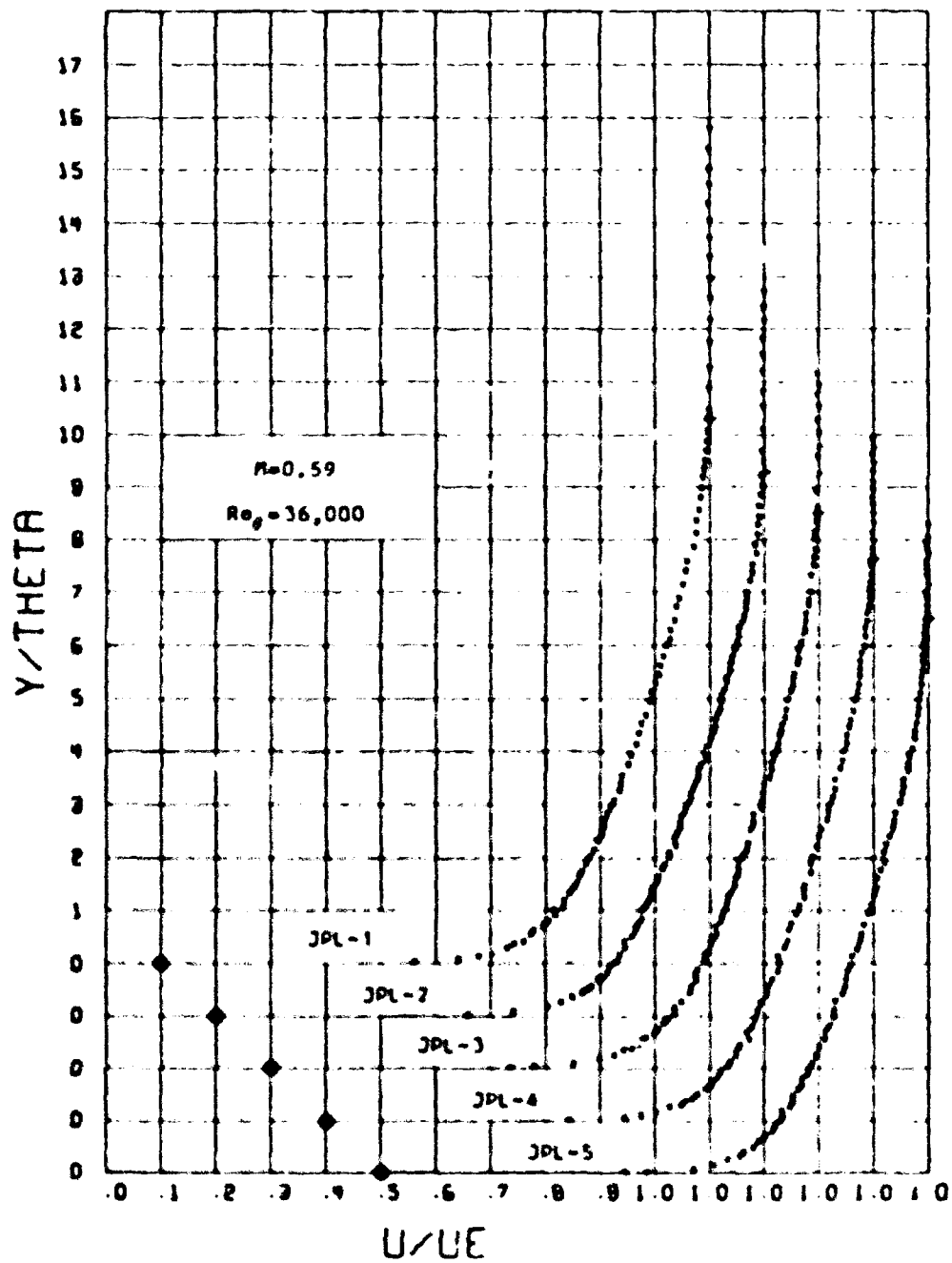
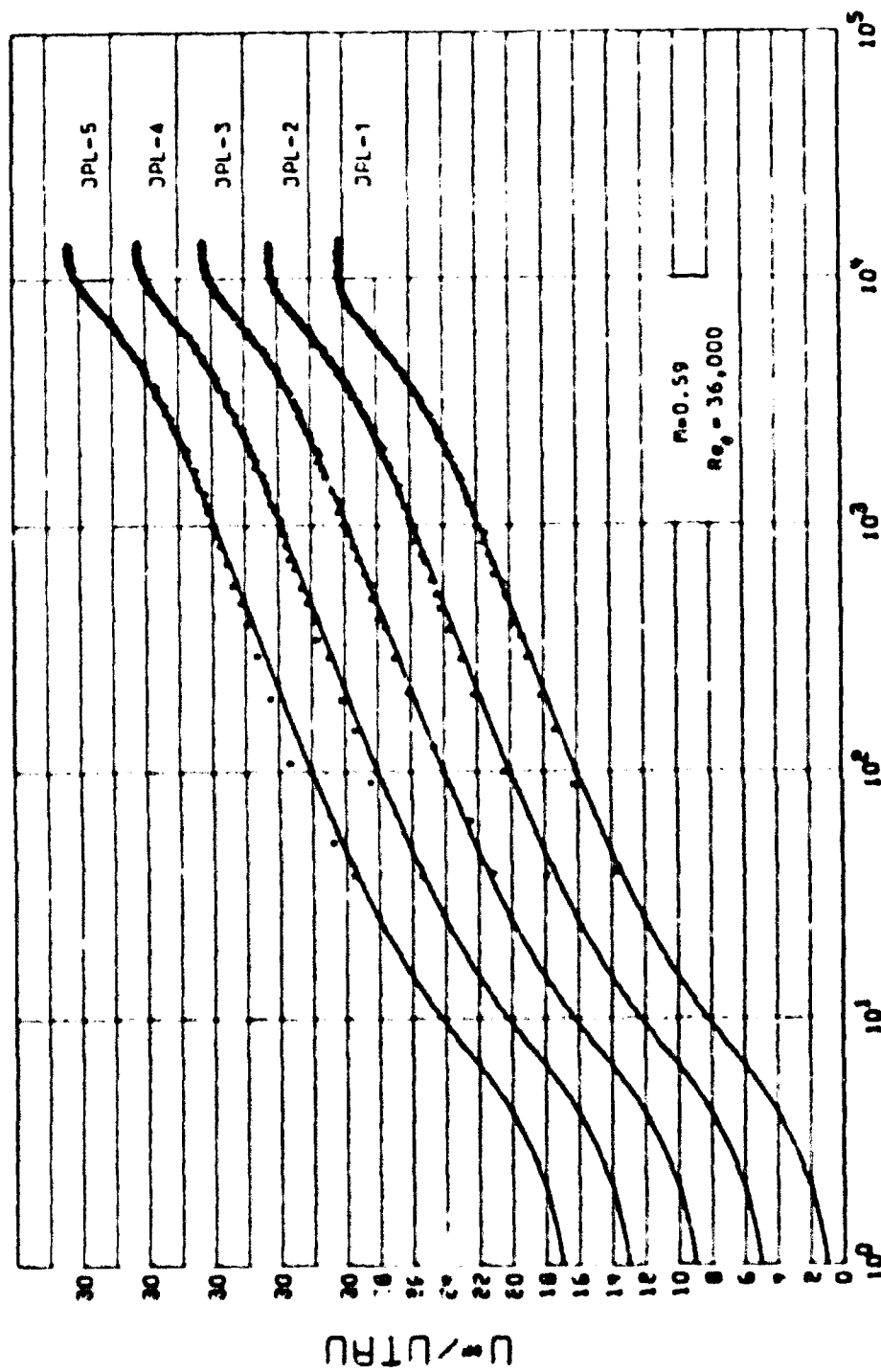


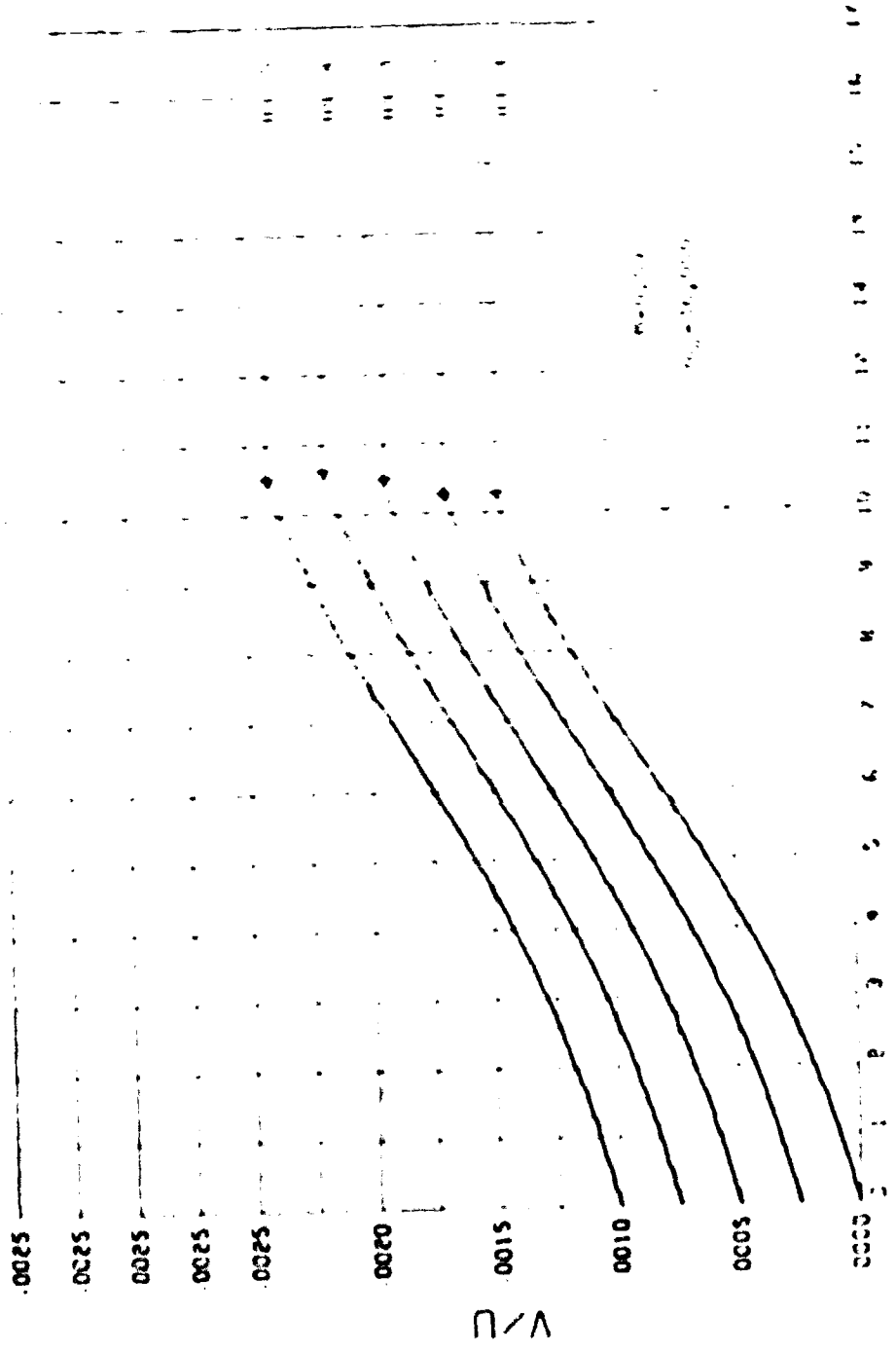
Figure A9. Mean Velocity Profiles.



$$Y^*UTAU/NU$$

Figure A10. Van Orist Scaled Mean Velocity Profiles.

ALL DATA



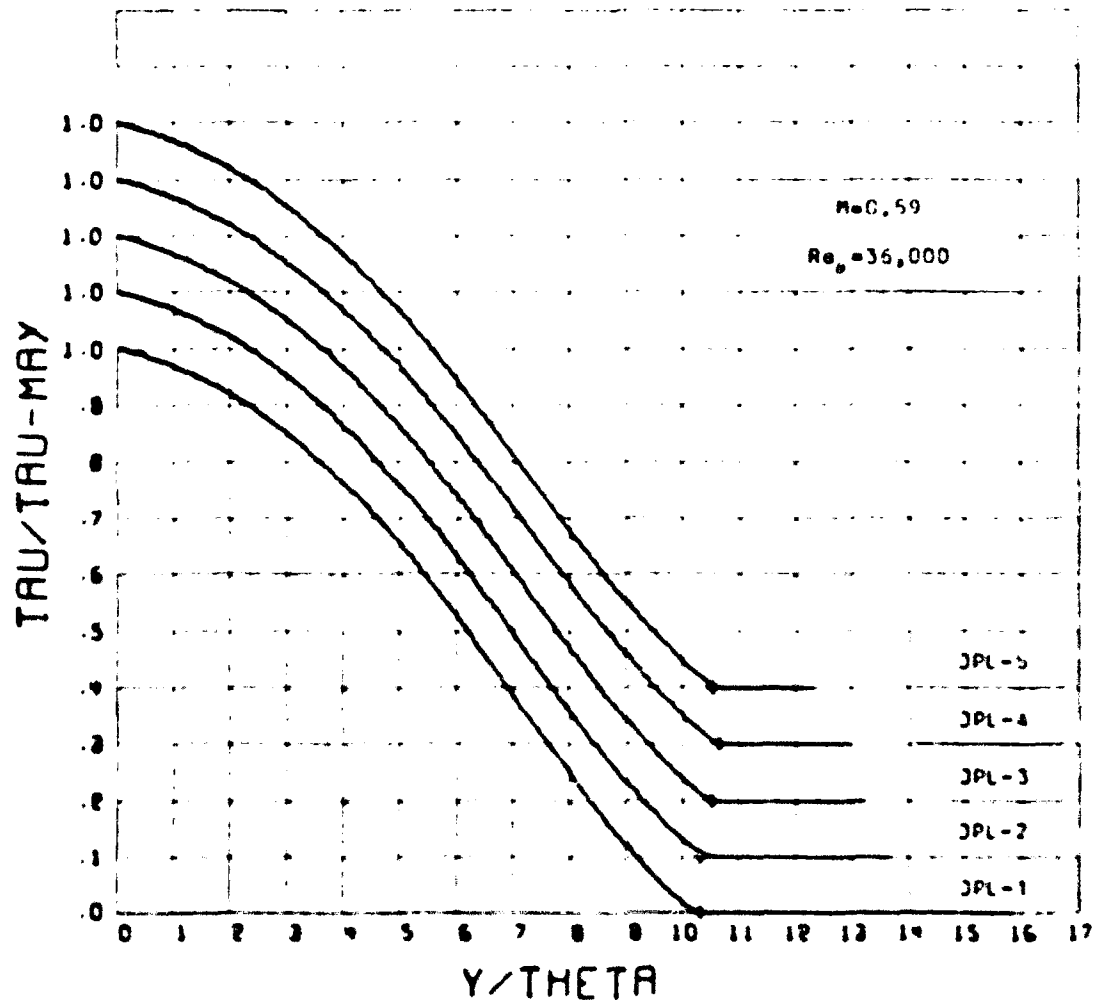


Figure A12. Shear Stress Distribution.

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OF POOR QUALITY

0-930 60°W 6' + 811,700,000 170101
1000/10 500+1165° ° 314153,000 10101

0501. ° 300=2900 27000

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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	.9999	28.29	.3058	.001214
1.390	1.426	.9912	28.37	.2686	.001260
1.396	1.457	.9918	28.64	.2330	.001320
1.405	0.679	.9964	28.77	.2051	.001358
1.411	0.713	.9964	28.86	.1788	.001394
1.416	0.740	.9957	28.86	.1780	.001396
1.422	0.760	.9957	29.04	.1461	.001425
1.427	0.789	.9945	29.11	.1350	.001444
1.431	0.813	.9970	29.11	.1048	.001494
1.435	0.837	.9974	29.17	.0839	.001527
1.439	0.860	.9913	29.20	.0695	.001541
1.444	0.886	.9918	29.21	.0474	.001571
1.449	0.910	.9919	29.28	.0289	.001595
1.454	0.934	.9918	29.38	.0107	.001619
1.458	0.957	.9901	29.40	0.0000	.001633
1.463	0.981	.9907	29.41	0.0000	.001633
1.468	1.004	.9907	29.49	0.0000	.001633
1.473	1.027	.9906	29.50	0.0000	.001633
1.478	1.051	1.0003	29.57	0.0000	.001633
1.483	1.074	.9997	29.48	0.0000	.001633
1.488	1.097	1.0007	29.55	0.0000	.001633
1.493	1.120	.9994	29.50	0.0000	.001633
1.498	1.143	.9992	29.50	0.0000	.001633
1.503	1.166	1.0012	29.55	0.0000	.001633
1.508	1.189	1.0001	29.53	0.0000	.001633
1.513	1.212	1.0002	29.56	0.0000	.001633
1.518	1.235	.9994	29.47	0.0000	.001633
1.523	1.258	1.0012	29.55	0.0000	.001633

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OF POOR QUALITY

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	4.491	2972.	.8671	.9756	.8779	25.99	.6836	.000428
1.311	4.929	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
1.450	5.738	3636.	.9063	.9823	.9126	27.10	.5475	.000642
1.581	5.930	3787.	.9106	.9830	.9184	27.22	.5209	.000442
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	6.768	4284.	.9369	.9878	.9426	27.96	.3959	.001049
1.832	6.969	4433.	.9426	.9880	.9474	28.12	.3716	.001097
1.901	7.211	4519.	.9479	.9885	.9524	28.33	.3449	.001155
1.950	7.336	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	8.035	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	.1632	.001364
2.335	8.865	5572.	.9821	.9966	.9816	29.23	.1393	.001418
2.366	9.076	5672.	.9860	.9972	.9873	29.36	.1117	.001454
2.426	9.192	5767.	.9885	.9977	.9896	29.40	.0869	.001468
2.501	9.355	5926.	.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	.0253	.001577
2.655	9.960	6317.	.9961	.9988	.9917	29.26	.0073	.001561
2.703	10.161	6425.	.9983	.9986	.9964	29.68	0.0000	.001567
2.757	10.361	6552.	.9993	.9986	.9985	29.68	0.0000	.001600
2.807	10.755	6816.	.9973	.9986	.9916	29.45	0.0000	.001600
2.956	11.079	7070.	.9976	.9995	.9979	29.60	0.0000	.001600
3.066	11.627	7260.	.9999	.9999	.9999	29.72	0.0000	.001600
3.116	11.889	7606.	.9996	.9996	.9996	29.71	0.0000	.001600
3.175	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
3.451	12.966	8203.	.9980	.9986	.9982	29.67	0.0000	.001600

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

ENGINE MACH NO. = 8049 TOTAL PRESSURE = 4001E+05 N/M²
 IN = 7.02 CM TOTAL TEMPERATURE = 306.95 DEG-K

U = 204.79 M/SEC		DELTA STAB = .0221 CM		INLET = .2748 CM		NO = 1.935	
RE-DELTA-STAB = .3410		RE-DELTA = .2350		WALL = .3757 CM/2/SEC			
LEAST SQUARE FIT PARAMETERS							
U = 0.1007 M/SEC		C _D = .00232		PI = .5000		DELTA = 2.8400 CM	
C = 100.14559-04		YMAX = 2.319 CM		WALL = .080 CM			
V (CM)	V/INLET	V-PLUS	M/ME	REPR/ME	U/M	U-PLUS	TAU/TAU-MAX
0.000	0.000	0.	0.0000	.0001	0.0000	0.00	1.0000
.010	.034	26.	.0203	.0152	.4393	12.70	1.0000
.020	.068	43.	.0408	.0312	.8981	14.71	.9999
.030	.102	62.	.0624	.0427	1.3573	16.72	.9999
.040	.136	81.	.0840	.0542	1.8165	18.73	.9999
.050	.170	100.	.1056	.0657	2.2757	20.74	.9999
.060	.204	119.	.1272	.0772	2.7349	22.75	.9999
.070	.238	138.	.1488	.0887	3.1941	24.76	.9999
.080	.272	157.	.1704	.1002	3.6533	26.77	.9999
.090	.306	176.	.1920	.1117	4.1125	28.78	.9999
.100	.340	195.	.2136	.1232	4.5717	30.79	.9999
.110	.374	214.	.2352	.1347	5.0309	32.80	.9999
.120	.408	233.	.2568	.1462	5.4901	34.81	.9999
.130	.442	252.	.2784	.1577	5.9493	36.82	.9999
.140	.476	271.	.3000	.1692	6.4085	38.83	.9999
.150	.510	290.	.3216	.1807	6.8677	40.84	.9999
.160	.544	309.	.3432	.1922	7.3269	42.85	.9999
.170	.578	328.	.3648	.2037	7.7861	44.86	.9999
.180	.612	347.	.3864	.2152	8.2453	46.87	.9999
.190	.646	366.	.4080	.2267	8.7045	48.88	.9999
.200	.680	385.	.4296	.2382	9.1637	50.89	.9999
.210	.714	404.	.4512	.2497	9.6229	52.90	.9999
.220	.748	423.	.4728	.2612	10.0821	54.91	.9999
.230	.782	442.	.4944	.2727	10.5413	56.92	.9999
.240	.816	461.	.5160	.2842	11.0005	58.93	.9999
.250	.850	480.	.5376	.2957	11.4597	60.94	.9999
.260	.884	500.	.5592	.3072	11.9189	62.95	.9999
.270	.918	519.	.5808	.3187	12.3781	64.96	.9999
.280	.952	538.	.6024	.3302	12.8373	66.97	.9999
.290	.986	557.	.6240	.3417	13.2965	68.98	.9999
.300	1.020	576.	.6456	.3532	13.7557	70.99	.9999
.310	1.054	595.	.6672	.3647	14.2149	73.00	.9999
.320	1.088	614.	.6888	.3762	14.6741	75.01	.9999
.330	1.122	633.	.7104	.3877	15.1333	77.02	.9999
.340	1.156	652.	.7320	.3992	15.5925	79.03	.9999
.350	1.190	671.	.7536	.4107	16.0517	81.04	.9999
.360	1.224	690.	.7752	.4222	16.5109	83.05	.9999
.370	1.258	709.	.7968	.4337	16.9701	85.06	.9999
.380	1.292	728.	.8184	.4452	17.4293	87.07	.9999
.390	1.326	747.	.8400	.4567	17.8885	89.08	.9999
.400	1.360	766.	.8616	.4682	18.3477	91.09	.9999
.410	1.394	785.	.8832	.4797	18.8069	93.10	.9999
.420	1.428	804.	.9048	.4912	19.2661	95.11	.9999
.430	1.462	823.	.9264	.5027	19.7253	97.12	.9999
.440	1.496	842.	.9480	.5142	20.1845	99.13	.9999
.450	1.530	861.	.9696	.5257	20.6437	101.14	.9999
.460	1.564	880.	.9912	.5372	21.1029	103.15	.9999
.470	1.598	899.	1.0128	.5487	21.5621	105.16	.9999
.480	1.632	918.	1.0344	.5602	22.0213	107.17	.9999
.490	1.666	937.	1.0560	.5717	22.4805	109.18	.9999
.500	1.700	956.	1.0776	.5832	22.9397	111.19	.9999
.510	1.734	975.	1.0992	.5947	23.3989	113.20	.9999
.520	1.768	994.	1.1208	.6062	23.8581	115.21	.9999
.530	1.802	1013.	1.1424	.6177	24.3173	117.22	.9999
.540	1.836	1032.	1.1640	.6292	24.7765	119.23	.9999
.550	1.870	1051.	1.1856	.6407	25.2357	121.24	.9999
.560	1.904	1070.	1.2072	.6522	25.6949	123.25	.9999
.570	1.938	1089.	1.2288	.6637	26.1541	125.26	.9999
.580	1.972	1108.	1.2504	.6752	26.6133	127.27	.9999
.590	2.006	1127.	1.2720	.6867	27.0725	129.28	.9999
.600	2.040	1146.	1.2936	.6982	27.5317	131.29	.9999
.610	2.074	1165.	1.3152	.7097	27.9909	133.30	.9999
.620	2.108	1184.	1.3368	.7212	28.4501	135.31	.9999
.630	2.142	1203.	1.3584	.7327	28.9093	137.32	.9999
.640	2.176	1222.	1.3800	.7442	29.3685	139.33	.9999
.650	2.210	1241.	1.4016	.7557	29.8277	141.34	.9999
.660	2.244	1260.	1.4232	.7672	30.2869	143.35	.9999
.670	2.278	1279.	1.4448	.7787	30.7461	145.36	.9999
.680	2.312	1298.	1.4664	.7902	31.2053	147.37	.9999
.690	2.346	1317.	1.4880	.8017	31.6645	149.38	.9999
.700	2.380	1336.	1.5096	.8132	32.1237	151.39	.9999
.710	2.414	1355.	1.5312	.8247	32.5829	153.40	.9999
.720	2.448	1374.	1.5528	.8362	33.0421	155.41	.9999
.730	2.482	1393.	1.5744	.8477	33.5013	157.42	.9999
.740	2.516	1412.	1.5960	.8592	33.9605	159.43	.9999
.750	2.550	1431.	1.6176	.8707	34.4197	161.44	.9999
.760	2.584	1450.	1.6392	.8822	34.8789	163.45	.9999
.770	2.618	1469.	1.6608	.8937	35.3381	165.46	.9999
.780	2.652	1488.	1.6824	.9052	35.7973	167.47	.9999
.790	2.686	1507.	1.7040	.9167	36.2565	169.48	.9999
.800	2.720	1526.	1.7256	.9282	36.7157	171.49	.9999
.810	2.754	1545.	1.7472	.9397	37.1749	173.50	.9999
.820	2.788	1564.	1.7688	.9512	37.6341	175.51	.9999
.830	2.822	1583.	1.7904	.9627	38.0933	177.52	.9999
.840	2.856	1602.	1.8120	.9742	38.5525	179.53	.9999
.850	2.890	1621.	1.8336	.9857	39.0117	181.54	.9999
.860	2.924	1640.	1.8552	.9972	39.4709	183.55	.9999
.870	2.958	1659.	1.8768	1.0087	39.9301	185.56	.9999
.880	2.992	1678.	1.8984	1.0202	40.3893	187.57	.9999
.890	3.026	1697.	1.9200	1.0317	40.8485	189.58	.9999
.900	3.060	1716.	1.9416	1.0432	41.3077	191.59	.9999
.910	3.094	1735.	1.9632	1.0547	41.7669	193.60	.9999
.920	3.128	1754.	1.9848	1.0662	42.2261	195.61	.9999
.930	3.162	1773.	2.0064	1.0777	42.6853	197.62	.9999
.940	3.196	1792.	2.0280	1.0892	43.1445	199.63	.9999
.950	3.230	1811.	2.0496	1.1007	43.6037	201.64	.9999
.960	3.264	1830.	2.0712	1.1122	44.0629	203.65	.9999
.970	3.298	1849.	2.0928	1.1237	44.5221	205.66	.9999
.980	3.332	1868.	2.1144	1.1352	44.9813	207.67	.9999
.990	3.366	1887.	2.1360	1.1467	45.4405	209.68	.9999
1.000	3.400	1906.	2.1576	1.1582	45.8997	211.69	.9999

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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	6.919	3388.	.8797	.9767	.8901	26.18	.6519	.000670
1.294	7.047	3475.	.8822	.9771	.8925	26.25	.6276	.000695
1.306	7.176	3569.	.8860	.9778	.8949	26.36	.6039	.000722
1.321	7.305	3691.	.8900	.9783	.8973	26.58	.6037	.000757
1.335	7.434	3772.	.8940	.9790	.9002	26.67	.5886	.000781
1.349	7.563	3858.	.8981	.9804	.9031	26.79	.5703	.000809
1.363	7.692	3944.	.9013	.9821	.9073	27.00	.5439	.000830
1.377	7.821	4006.	.9045	.9828	.9099	27.11	.5238	.000841
1.391	7.950	4109.	.9078	.9838	.9125	27.25	.5090	.000863
1.405	8.079	4183.	.9110	.9844	.9145	27.34	.4874	.000885
1.419	8.208	4280.	.9142	.9847	.9168	27.47	.4690	.000907
1.433	8.337	4383.	.9174	.9853	.9190	27.60	.4506	.000929
1.447	8.466	4483.	.9206	.9862	.9213	27.71	.4283	.000951
1.461	8.595	4588.	.9238	.9874	.9238	27.74	.4065	.000973
1.475	8.724	4694.	.9270	.9884	.9275	27.92	.3828	.001004
1.489	8.853	4804.	.9302	.9897	.9316	28.11	.3559	.001026
1.503	8.982	4934.	.9334	.9905	.9346	28.22	.3335	.001048
1.517	9.111	5065.	.9366	.9910	.9370	28.30	.3080	.001069
1.531	9.240	5169.	.9398	.9914	.9402	28.49	.2808	.001091
1.545	9.369	5275.	.9430	.9920	.9437	28.57	.2545	.001113
1.559	9.498	5381.	.9462	.9929	.9470	28.70	.2258	.001135
1.573	9.627	5412.	.9494	.9935	.9502	28.85	.2076	.001157
1.587	9.756	5437.	.9526	.9941	.9534	28.92	.1894	.001179
1.601	9.885	5462.	.9558	.9947	.9566	29.11	.1658	.001201
1.615	10.014	5487.	.9590	.9953	.9598	29.22	.1422	.001223
1.629	10.143	5512.	.9622	.9959	.9630	29.27	.1186	.001245
1.643	10.272	5537.	.9654	.9964	.9662	29.45	.0950	.001267
1.657	10.401	5562.	.9686	.9969	.9694	29.46	.0714	.001289
1.671	10.530	5587.	.9718	.9974	.9727	29.47	.0478	.001311
1.685	10.659	5612.	.9750	.9979	.9759	29.53	.0242	.001333
1.699	10.788	5637.	.9782	.9984	.9791	29.53	.0006	.001355
1.713	10.917	5662.	.9814	.9989	.9823	29.55	.0000	.001377
1.727	11.046	5687.	.9846	.9994	.9855	29.55	.0000	.001399
1.741	11.175	5712.	.9878	.9999	.9887	29.55	.0000	.001421
1.755	11.304	5737.	.9910	1.0004	.9919	29.55	.0000	.001443
1.769	11.433	5762.	.9942	.9999	.9951	29.55	.0000	.001465
1.783	11.562	5787.	.9974	1.0004	.9983	29.55	.0000	.001487
1.797	11.691	5812.	.9999	1.0009	.9994	29.55	.0000	.001509
1.811	11.820	5837.	1.0004	1.0014	.9999	29.55	.0000	.001531
1.825	11.949	5862.	1.0009	1.0019	.9999	29.55	.0000	.001553
1.839	12.078	5887.	1.0014	1.0024	.9999	29.55	.0000	.001575
1.853	12.207	5912.	1.0019	1.0029	.9999	29.55	.0000	.001597
1.867	12.336	5937.	1.0024	1.0034	.9999	29.55	.0000	.001619
1.881	12.465	5962.	1.0029	1.0039	.9999	29.55	.0000	.001641
1.895	12.594	5987.	1.0034	1.0044	.9999	29.55	.0000	.001663
1.909	12.723	6012.	1.0039	1.0049	.9999	29.55	.0000	.001685
1.923	12.852	6037.	1.0044	1.0054	.9999	29.55	.0000	.001707
1.937	12.981	6062.	1.0049	1.0059	.9999	29.55	.0000	.001729
1.951	13.110	6087.	1.0054	1.0064	.9999	29.55	.0000	.001751
1.965	13.239	6112.	1.0059	1.0069	.9999	29.55	.0000	.001773
1.979	13.368	6137.	1.0064	1.0074	.9999	29.55	.0000	.001795
1.993	13.497	6162.	1.0069	1.0079	.9999	29.55	.0000	.001817
2.007	13.626	6187.	1.0074	1.0084	.9999	29.55	.0000	.001839
2.021	13.755	6212.	1.0079	1.0089	.9999	29.55	.0000	.001861
2.035	13.884	6237.	1.0084	1.0094	.9999	29.55	.0000	.001883
2.049	14.013	6262.	1.0089	1.0099	.9999	29.55	.0000	.001905
2.063	14.142	6287.	1.0094	1.0104	.9999	29.55	.0000	.001927
2.077	14.271	6312.	1.0099	1.0109	.9999	29.55	.0000	.001949
2.091	14.400	6337.	1.0104	1.0114	.9999	29.55	.0000	.001971
2.105	14.529	6362.	1.0109	1.0119	.9999	29.55	.0000	.001993
2.119	14.658	6387.	1.0114	1.0124	.9999	29.55	.0000	.002015
2.133	14.787	6412.	1.0119	1.0129	.9999	29.55	.0000	.002037
2.147	14.916	6437.	1.0124	1.0134	.9999	29.55	.0000	.002059
2.161	15.045	6462.	1.0129	1.0139	.9999	29.55	.0000	.002081
2.175	15.174	6487.	1.0134	1.0144	.9999	29.55	.0000	.002103
2.189	15.303	6512.	1.0139	1.0149	.9999	29.55	.0000	.002125
2.203	15.432	6537.	1.0144	1.0154	.9999	29.55	.0000	.002147
2.217	15.561	6562.	1.0149	1.0159	.9999	29.55	.0000	.002169
2.231	15.690	6587.	1.0154	1.0164	.9999	29.55	.0000	.002191
2.245	15.819	6612.	1.0159	1.0169	.9999	29.55	.0000	.002213
2.259	15.948	6637.	1.0164	1.0174	.9999	29.55	.0000	.002235
2.273	16.077	6662.	1.0169	1.0179	.9999	29.55	.0000	.002257
2.287	16.206	6687.	1.0174	1.0184	.9999	29.55	.0000	.002279
2.301	16.335	6712.	1.0179	1.0189	.9999	29.55	.0000	.002301
2.315	16.464	6737.	1.0184	1.0194	.9999	29.55	.0000	.002323
2.329	16.593	6762.	1.0189	1.0199	.9999	29.55	.0000	.002345
2.343	16.722	6787.	1.0194	1.0204	.9999	29.55	.0000	.002367
2.357	16.851	6812.	1.0199	1.0209	.9999	29.55	.0000	.002389
2.371	16.980	6837.	1.0204	1.0214	.9999	29.55	.0000	.002411
2.385	17.109	6862.	1.0209	1.0219	.9999	29.55	.0000	.002433
2.399	17.238	6887.	1.0214	1.0224	.9999	29.55	.0000	.002455
2.413	17.367	6912.	1.0219	1.0229	.9999	29.55	.0000	.002477
2.427	17.496	6937.	1.0224	1.0234	.9999	29.55	.0000	.002499
2.441	17.625	6962.	1.0229	1.0239	.9999	29.55	.0000	.002521
2.455	17.754	6987.	1.0234	1.0244	.9999	29.55	.0000	.002543
2.469	17.883	7012.	1.0239	1.0249	.9999	29.55	.0000	.002565
2.483	18.012	7037.	1.0244	1.0254	.9999	29.55	.0000	.002587
2.497	18.141	7062.	1.0249	1.0259	.9999	29.55	.0000	.002609
2.511	18.270	7087.	1.0254	1.0264	.9999	29.55	.0000	.002631
2.525	18.399	7112.	1.0259	1.0269	.9999	29.55	.0000	.002653
2.539	18.528	7137.	1.0264	1.0274	.9999	29.55	.0000	.002675
2.553	18.657	7162.	1.0269	1.0279	.9999	29.55	.0000	.002697
2.567	18.786	7187.	1.0274	1.0284	.9999	29.55	.0000	.002719
2.581	18.915	7212.	1.0279	1.0289	.9999	29.55	.0000	.002741
2.595	19.044	7237.	1.0284	1.0294	.9999	29.55	.0000	.002763
2.609	19.173	7262.	1.0289	1.0299	.9999	29.55	.0000	.002785
2.623	19.302	7287.	1.0294	1.0304	.9999	29.55	.0000	.002807
2.637	19.431	7312.	1.0299	1.0309	.9999	29.55	.0000	.002829
2.651	19.560	7337.	1.0304	1.0314	.9999	29.55	.0000	.002851
2.665	19.689	7362.	1.0309	1.0319	.9999	29.55	.0000	.002873
2.679	19.818	7387.	1.0314	1.0324	.9999	29.55	.0000	.002895
2.693	19.947	7412.	1.0319	1.0329	.9999	29.55	.0000	.002917
2.707	20.076	7437.	1.0324	1.0334	.9999	29.55	.0000	.002939
2.721	20.205	7462.	1.0329	1.0339	.9999	29.55	.0000	.002961
2.735	20.334	7487.	1.0334	1.0344	.9999	29.55	.0000	.002983
2.749	20.463	7512.	1.0339	1.0349	.9999	29.55	.0000	.003005
2.763	20.592	7537.	1.0344	1.0354	.9999	29.55	.0000	.003027
2.777	20.721	7562.	1.0349	1.0359	.9999	29.55	.0000	.003049
2.791	20.850	7587.	1.0354	1.0364	.9999	29.55	.0000	.003071
2.805	20.979	7612.	1.0359	1.0369	.9999	29.55	.0000	.003093
2.819	21.108	7637.	1.0364	1.0374	.9999	29.55	.0000	.003115
2.833	21.237	7662.	1.0369	1.0379	.9999	29.55	.0000	.003137
2.847	21.366	7687.	1.0374	1.0384	.9999	29.55	.0000	.003159
2.861	21.495	7712.	1.0379	1.0389	.9999	29.55	.0000	.003181
2.875	21.624	7737.	1.0384	1.0394	.9999	29.55	.0000	.003203
2.889	21.753	7762.	1.0389	1.0399	.9999	29.55	.0000	.003225
2.903	21.882	7787.	1.0394	1.0404	.9999	29.55	.0000	.003247
2.917	22.011	7812.	1.0399	1.0409	.9999	29.55	.0000	.003269
2.931	22.140	7837.	1.0404	1.0414	.9999	29.55	.0000	.003291
2.945	22.269	7862.	1.0409	1.0419	.9999	29.55	.0000	.003313
2.959	22.398	7887.	1.0414	1.0424	.9999	29.55	.0000	.003335
2.973	22.527	7912.	1.0419	1.0429	.9999	29.55	.0000	.003357
2.987	22.656	7937.	1.0424	1.0434	.9999	29.55	.0000	.003379
2.991	22.785	7962.	1.0429	1.0439	.9999	29.55	.0000	.003401
3.005	22.914	7987.	1.0434	1.0444	.9999	29.55	.0000	.003423

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 = 9.1024 M/SEC. CHIKO = .0257E-05				Cp = .002120 VMAR = 2.709 CM		Plo = .4145 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	12.15	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	16.97		.000013	
.050	.180	170.	.5453	.9324	.4800	17.74		.000018	
.060	.216	248.	.5187	.9340	.4801	18.73		.000011	
.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		.00012	
.110	.396	541.	.4374	.9454	.4873	20.63		.000073	
.120	.432	636.	.4328	.9469	.4870	21.90		.00014	
.130	.468	696.	.4281	.9490	.4870	21.14		.000043	
.140	.504	774.	.4202	.9497	.4870	21.34		.000116	
.150	.540	854.	.4130	.9498	.4870	21.51		.000116	
.160	.576	934.	.4064	.9525	.4870	22.03		.000120	
.170	.612	1005.	.4010	.9514	.4870	21.91		.000159	
.180	.648	1065.	.3978	.9514	.4870	22.20		.000151	
.190	.684	1146.	.3976	.9549	.4870	22.44		.000168	
.200	.720	1246.	.3929	.9557	.4870	22.64		.000152	
.210	.756	1348.	.3884	.9584	.4870	22.80		.000145	
.220	.792	1449.	.3807	.9580	.4870	22.84		.000127	
.230	.828	1513.	.3746	.9580	.4870	22.84		.000128	
.240	.864	1507.	.3744	.9581	.4870	23.26		.000120	
.250	.900	1401.	.3736	.9581	.4870	23.52		.000126	
.260	.936	1400.	.3736	.9581	.4863	23.47		.000126	
.270	.972	1416.	.3736	.9581	.4864	23.47		.000126	
.280	1.008	1416.	.3736	.9581	.4864	23.47		.000126	
.290	1.044	1416.	.3736	.9581	.4864	23.47		.000126	
.300	1.080	1416.	.3736	.9581	.4864	23.47		.000126	
.310	1.116	1416.	.3736	.9581	.4864	23.47		.000126	
.320	1.152	1416.	.3736	.9581	.4864	23.47		.000126	
.330	1.188	1416.	.3736	.9581	.4864	23.47		.000126	
.340	1.224	1416.	.3736	.9581	.4864	23.47		.000126	
.350	1.260	1416.	.3736	.9581	.4864	23.47		.000126	
.360	1.296	1416.	.3736	.9581	.4864	23.47		.000126	
.370	1.332	1416.	.3736	.9581	.4864	23.47		.000126	
.380	1.368	1416.	.3736	.9581	.4864	23.47		.000126	
.390	1.404	1416.	.3736	.9581	.4864	23.47		.000126	
.400	1.440	1416.	.3736	.9581	.4864	23.47		.000126	
.410	1.476	1416.	.3736	.9581	.4864	23.47		.000126	
.420	1.512	1416.	.3736	.9581	.4864	23.47		.000126	
.430	1.548	1416.	.3736	.9581	.4864	23.47		.000126	
.440	1.584	1416.	.3736	.9581	.4864	23.47		.000126	
.450	1.620	1416.	.3736	.9581	.4864	23.47		.000126	
.460	1.656	1416.	.3736	.9581	.4864	23.47		.000126	
.470	1.692	1416.	.3736	.9581	.4864	23.47		.000126	
.480	1.728	1416.	.3736	.9581	.4864	23.47		.000126	
.490	1.764	1416.	.3736	.9581	.4864	23.47		.000126	
.500	1.800	1416.	.3736	.9581	.4864	23.47		.000126	
.510	1.836	1416.	.3736	.9581	.4864	23.47		.000126	
.520	1.872	1416.	.3736	.9581	.4864	23.47		.000126	
.530	1.908	1416.	.3736	.9581	.4864	23.47		.000126	
.540	1.944	1416.	.3736	.9581	.4864	23.47		.000126	
.550	1.980	1416.	.3736	.9581	.4864	23.47		.000126	
.560	2.016	1416.	.3736	.9581	.4864	23.47		.000126	
.570	2.052	1416.	.3736	.9581	.4864	23.47		.000126	
.580	2.088	1416.	.3736	.9581	.4864	23.47		.000126	
.590	2.124	1416.	.3736	.9581	.4864	23.47		.000126	
.600	2.160	1416.	.3736	.9581	.4864	23.47		.000126	
.610	2.196	1416.	.3736	.9581	.4864	23.47		.000126	
.620	2.232	1416.	.3736	.9581	.4864	23.47		.000126	
.630	2.268	1416.	.3736	.9581	.4864	23.47		.000126	
.640	2.304	1416.	.3736	.9581	.4864	23.47		.000126	
.650	2.340	1416.	.3736	.9581	.4864	23.47		.000126	
.660	2.376	1416.	.3736	.9581	.4864	23.47		.000126	
.670	2.412	1416.	.3736	.9581	.4864	23.47		.000126	
.680	2.448	1416.	.3736	.9581	.4864	23.47		.000126	
.690	2.484	1416.	.3736	.9581	.4864	23.47		.000126	
.700	2.520	1416.	.3736	.9581	.4864	23.47		.000126	
.710	2.556	1416.	.3736	.9581	.4864	23.47		.000126	
.720	2.592	1416.	.3736	.9581	.4864	23.47		.000126	
.730	2.628	1416.	.3736	.9581	.4864	23.47		.000126	
.740	2.664	1416.	.3736	.9581	.4864	23.47		.000126	
.750	2.700	1416.	.3736	.9581	.4864	23.47		.000126	
.760	2.736	1416.	.3736	.9581	.4864	23.47		.000126	
.770	2.772	1416.	.3736	.9581	.4864	23.47		.000126	
.780	2.808	1416.	.3736	.9581	.4864	23.47		.000126	
.790	2.844	1416.	.3736	.9581	.4864	23.47		.000126	
.800	2.880	1416.	.3736	.9581	.4864	23.47		.000126	
.810	2.916	1416.	.3736	.9581	.4864	23.47		.000126	
.820	2.952	1416.	.3736	.9581	.4864	23.47		.000126	
.830	2.988	1416.	.3736	.9581	.4864	23.47		.000126	
.840	3.024	1416.	.3736	.9581	.4864	23.47		.000126	
.850	3.060	1416.	.3736	.9581	.4864	23.47		.000126	
.860	3.096	1416.	.3736	.9581	.4864	23.47		.000126	
.870	3.132	1416.	.3736	.9581	.4864	23.47		.000126	
.880	3.168	1416.	.3736	.9581	.4864	23.47		.000126	
.890	3.204	1416.	.3736	.9581	.4864	23.47		.000126	
.900	3.240	1416.	.3736	.9581	.4864	23.47		.000126	
.910	3.276	1416.	.3736	.9581	.4864	23.47		.000126	
.920	3.312	1416.	.3736	.9581	.4864	23.47		.000126	
.930	3.348	1416.	.3736	.9581	.4864	23.47		.000126	
.940	3.384	1416.	.3736	.9581	.4864	23.47		.000126	
.950	3.420	1416.	.3736	.9581	.4864	23.47		.000126	
.960	3.456	1416.	.3736	.9581	.4864	23.47		.000126	
.970	3.492	1416.	.3736	.9581	.4864	23.47		.000126	
.980	3.528	1416.	.3736	.9581	.4864	23.47		.000126	
.990	3.564	1416.	.3736	.9581	.4864	23.47		.000126	
1.000	3.600	1416.	.3736	.9581	.4864	23.47		.000126	

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 OF POOR QUALITY

TABLE A 7. (CONT.)

V (CM)	V/TMSTA	V-PLUS	M/ME	ICONT.1 RMD/RMPC	U/ME	U-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
1.402	5.222	3547.	.8454	.9770	.AR55	24.42	.A330	.000A07
1.550	5.427	3707.	.8427	.9702	.AR21	24.43	.A074	.000344
1.546	5.547	3814.	.8090	.9403	.AR78	24.90	.5A7A	.000778
1.647	5.744	3718.	.9024	.9410	.AR12	24.90	.5A67	.000A13
1.692	5.925	4047.	.9114	.9427	.AR94	27.16	.4238	.000A55
1.733	6.067	4144.	.9143	.9433	.AR20	27.23	.4249	.000A74
1.779	6.227	4253.	.9141	.9435	.AR37	27.28	.4034	.000A04
1.817	6.350	4344.	.9235	.9440	.AR53	27.49	.4443	.000A93
1.840	6.512	4448.	.9274	.9457	.AR63	27.40	.4144	.000344
1.899	6.649	4562.	.9305	.9463	.AR70	27.49	.4454	.000A42
1.936	6.778	4630.	.9340	.9474	.AR28	27.47	.4277	.001014
1.985	6.947	4745.	.9384	.9474	.AR44	27.91	.4034	.001053
2.021	7.074	4833.	.9403	.9481	.AR50	27.96	.3843	.001014
2.062	7.234	4943.	.9442	.9491	.AR73	28.10	.3439	.001110
2.122	7.427	5073.	.9540	.9490	.AR92	28.37	.3373	.001140
2.162	7.569	5174.	.9541	.9490	.AR91	28.36	.3174	.001174
2.203	7.712	5248.	.9594	.9490	.AR35	28.50	.2900	.001273
2.249	7.872	5377.	.9615	.9492	.AR52	28.55	.2754	.001234
2.291	8.014	5477.	.9654	.9491	.AR00	28.47	.2442	.001211
2.327	8.147	5545.	.9678	.9495	.AR10	28.73	.2309	.001245
2.374	8.314	5647.	.9717	.9443	.AR45	28.43	.2142	.001314
2.407	8.427	5744.	.9722	.9444	.AR69	28.45	.2073	.001345
2.444	8.554	5844.	.9744	.9452	.AR80	28.97	.1840	.001347
2.513	8.741	5944.	.9818	.9451	.AR34	29.11	.1474	.001342
2.537	8.881	6044.	.9820	.9451	.AR37	29.11	.1459	.001311
2.549	8.992	6142.	.9833	.9444	.AR57	28.15	.1374	.001440
2.617	9.141	6247.	.9829	.9444	.AR44	28.14	.1133	.001455
2.654	9.290	6344.	.9840	.9445	.AR74	28.24	.0649	.001474
2.689	9.414	6437.	.9847	.9479	.AR97	29.33	.0454	.001492
2.744	9.619	6570.	.9827	.9484	.AR34	29.47	.0444	.001460
2.799	9.794	6652.	.9898	.9490	.AR94	29.34	.0474	.001442
2.834	9.934	6744.	.9944	.9499	.AR54	29.49	.0349	.001459
2.844	10.000	6842.	.9942	.9492	.AR44	29.51	.0214	.001474
2.943	10.244	7113.	.9970	.9493	.AR73	29.53	.0074	.001444
2.988	10.459	7144.	.9974	.9494	.AR80	29.54	.0000	.001444
3.044	10.643	7184.	.9971	.9494	.AR74	29.54	.0000	.001444
3.079	10.779	7143.	.9984	.9497	.AR99	29.54	.0000	.001444
3.139	10.948	7484.	.9971	.9494	.AR74	29.54	.0000	.001444
3.177	11.121	7504.	.9943	.9494	.AR84	29.57	.0000	.001444
3.279	11.249	7497.	.9998	.9494	.AR99	29.41	.0000	.001444
3.269	11.410	7794.	.9993	.9494	.AR94	29.40	.0000	.001444
3.304	11.570	7907.	.9994	.9499	.AR94	29.40	.0000	.001444
3.344	11.779	8044.	.9994	.9499	.AR99	29.41	.0000	.001444
3.412	11.942	8144.	1.0001	1.0000	.AR91	29.42	.0000	.001444
3.462	12.117	8277.	1.0001	1.0000	1.0001	29.42	.0000	.001444
3.521	12.374	8419.	.9993	.9494	.AR94	29.40	.0000	.001444
3.545	12.410	8477.	1.0004	1.0000	1.0003	29.43	.0000	.001444

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

V (M)	V/TMFE	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	.8453	28.55	.2950	.001149
2.344	7.920	5473.	.9614	.9923	.8453	28.65	.2631	.001243
2.374	8.082	5447.	.9692	.9934	.8433	28.85	.2411	.001273
2.429	8.194	5744.	.9694	.9939	.8476	28.89	.2261	.001294
2.443	8.309	5432.	.9740	.9947	.8465	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	6401.	.9892	.9974	.8403	29.43	.0821	.001444
2.471	9.417	6497.	.9893	.9974	.8404	29.43	.0677	.001505
2.470	9.480	6512.	.9916	.9983	.8424	29.50	.0435	.001526
2.944	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	.8464	29.59	.0136	.001574
3.231	10.224	7194.	.9959	.9991	.8463	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
4.173	10.729	7502.	.9974	.9994	.8474	29.66	0.0000	.001593
3.242	11.072	7791.	.9991	.9994	.8492	29.70	0.0000	.001593
3.359	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
3.413	12.194	8575.	1.0004	1.0001	1.0005	29.75	0.0000	.001593
3.495	12.444	8771.	1.0015	1.0003	1.0014	29.77	0.0000	.001593

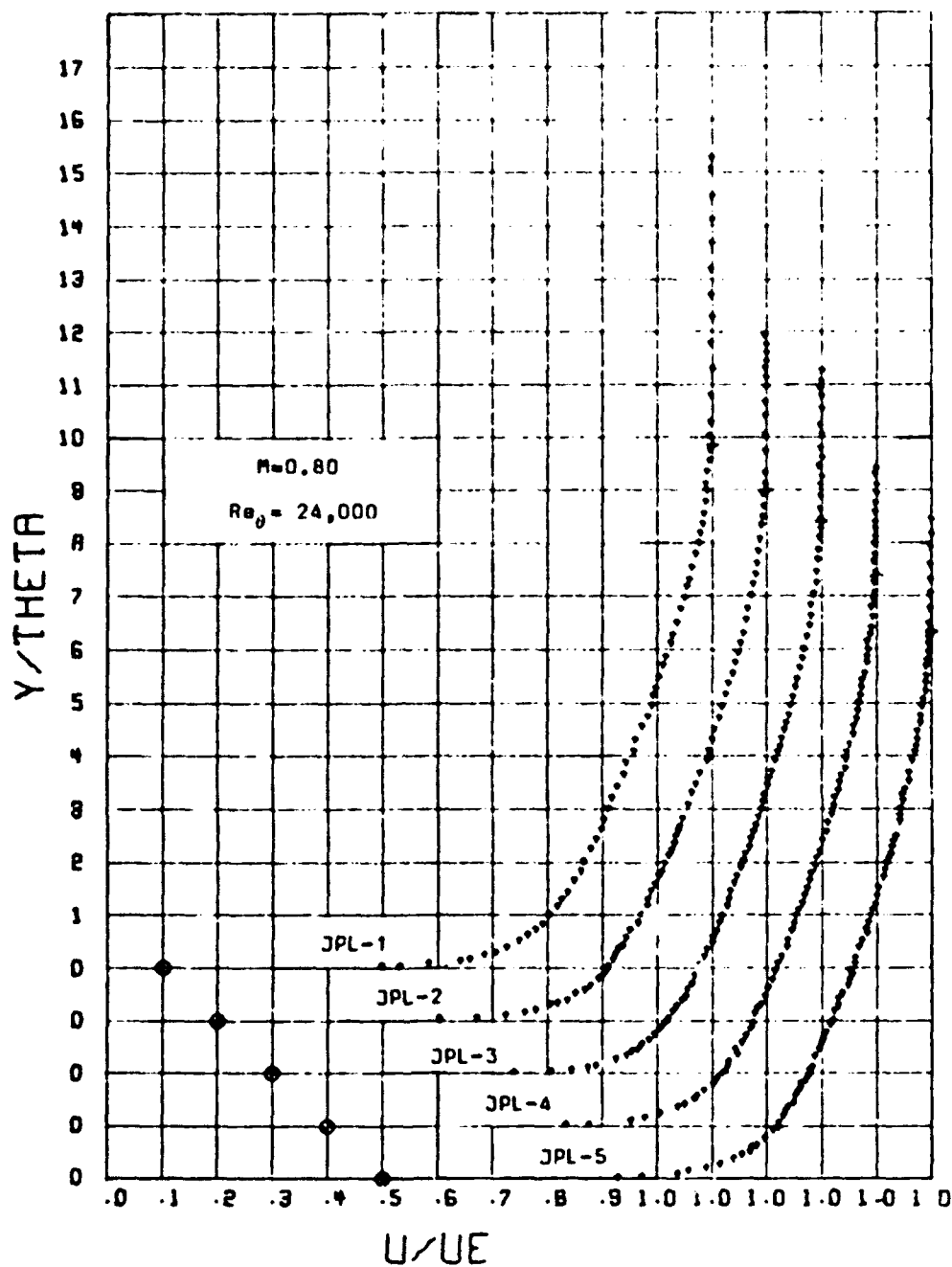


Figure A13. Mean Velocity Profiles.

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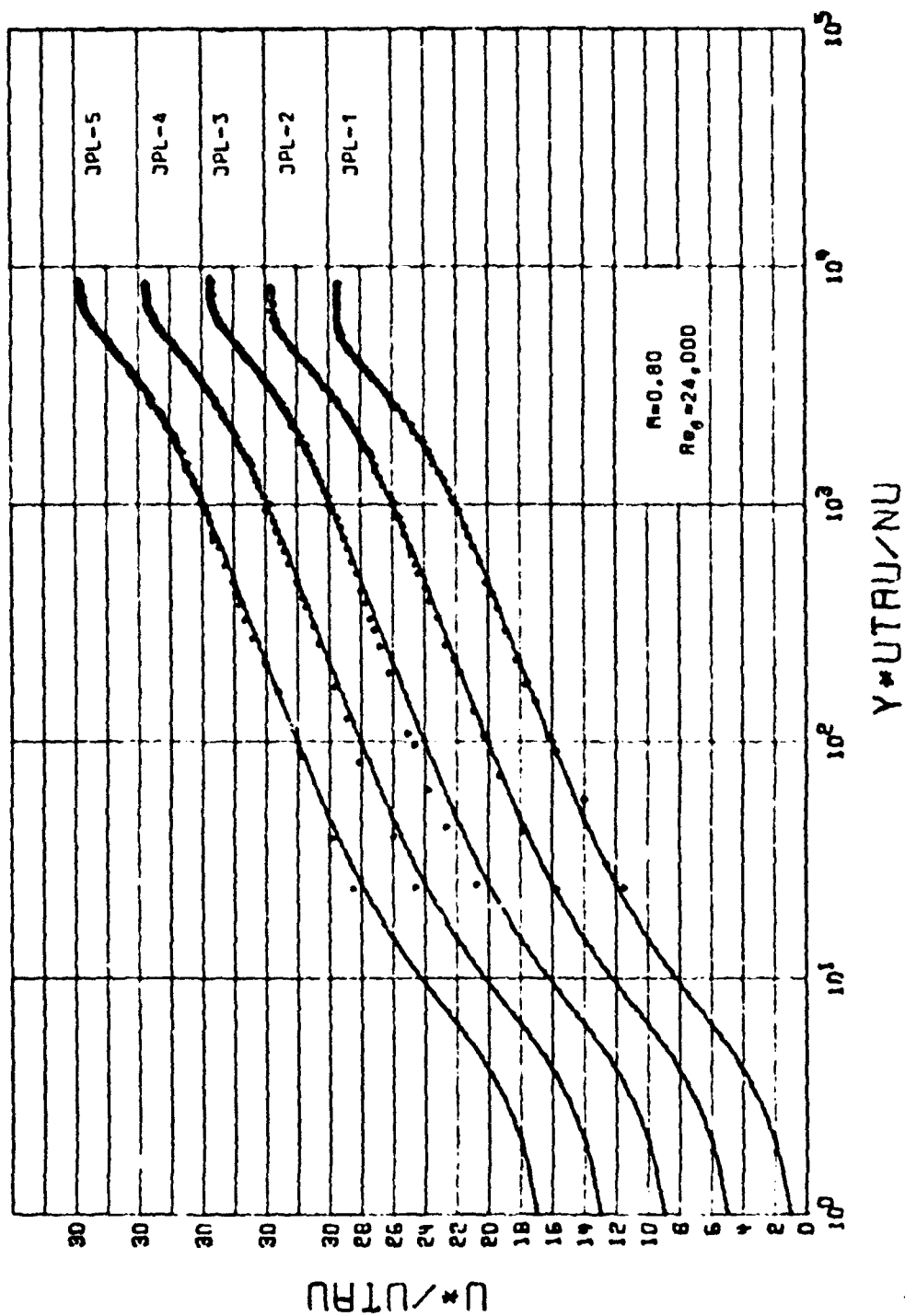


Figure M4. Van Driest Scaled Mean Velocity Profiles.

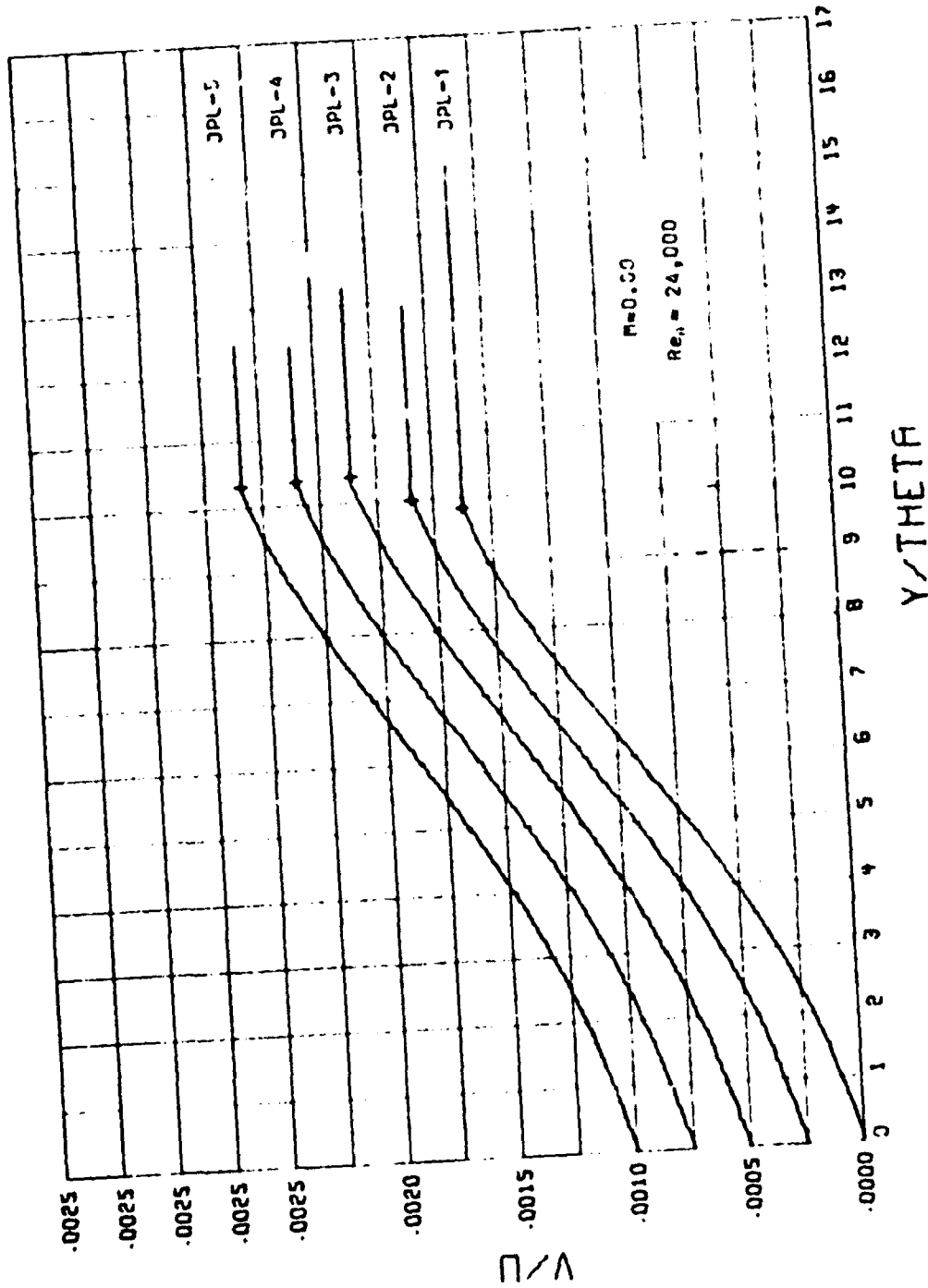


Figure A15. Normal Velocity Distribution.

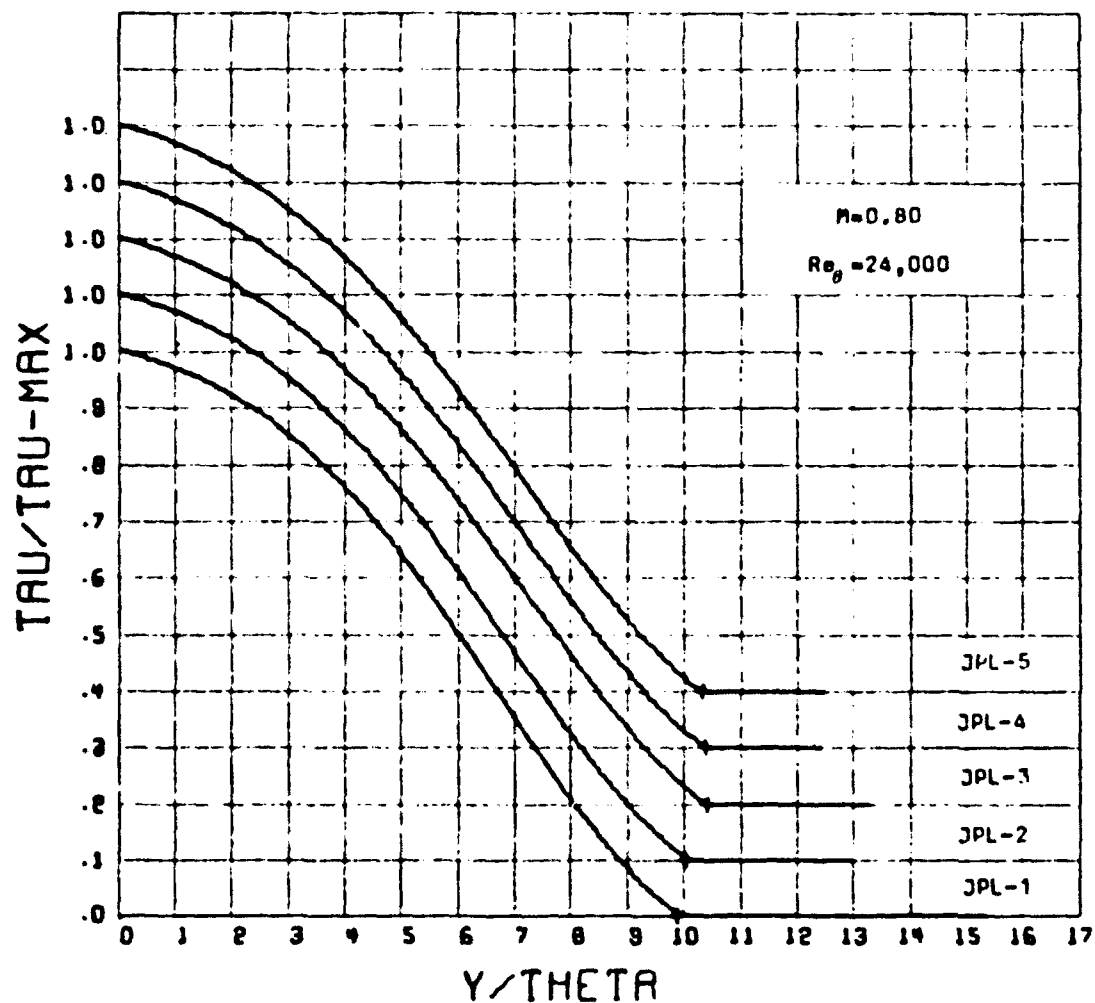


Figure A16. Shear Stress Distribution.

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TOTAL PRESSURE = .133E+06 N/M²
 TOTAL TEMPERATURE = 324.67 DEG-K
 20--48.43 CM

REF-TELAV-3740 91910.
OFLIA SVARO .3225 CM
TELAVO .2108 CM
MUMULLO .2077 CM002/SEC
MO 1.520

LAST SOURCE FLY PARACHUTES

60-311111-2051-2
3576 6080 01.8110
650200-013
60-002005
650-2-2704
650200-013

DL-0306
DL-0306
DL-0306

V	V/T	V/T ²	V/T ³	V/T ⁴	V/T ⁵	V/T ⁶	V/T ⁷	V/T ⁸	V/T ⁹	V/T ¹⁰	V/T ¹¹	V/T ¹²	V/T ¹³	V/T ¹⁴	V/T ¹⁵	V/T ¹⁶	V/T ¹⁷	V/T ¹⁸	V/T ¹⁹	V/T ²⁰	V/T ²¹	V/T ²²	V/T ²³	V/T ²⁴	V/T ²⁵	V/T ²⁶	V/T ²⁷	V/T ²⁸	V/T ²⁹	V/T ³⁰	V/T ³¹	V/T ³²	V/T ³³	V/T ³⁴	V/T ³⁵	V/T ³⁶	V/T ³⁷	V/T ³⁸	V/T ³⁹	V/T ⁴⁰	V/T ⁴¹	V/T ⁴²	V/T ⁴³	V/T ⁴⁴	V/T ⁴⁵	V/T ⁴⁶	V/T ⁴⁷	V/T ⁴⁸	V/T ⁴⁹	V/T ⁵⁰	V/T ⁵¹	V/T ⁵²	V/T ⁵³	V/T ⁵⁴	V/T ⁵⁵	V/T ⁵⁶	V/T ⁵⁷	V/T ⁵⁸	V/T ⁵⁹	V/T ⁶⁰	V/T ⁶¹	V/T ⁶²	V/T ⁶³	V/T ⁶⁴	V/T ⁶⁵	V/T ⁶⁶	V/T ⁶⁷	V/T ⁶⁸	V/T ⁶⁹	V/T ⁷⁰	V/T ⁷¹	V/T ⁷²	V/T ⁷³	V/T ⁷⁴	V/T ⁷⁵	V/T ⁷⁶	V/T ⁷⁷	V/T ⁷⁸	V/T ⁷⁹	V/T ⁸⁰	V/T ⁸¹	V/T ⁸²	V/T ⁸³	V/T ⁸⁴	V/T ⁸⁵	V/T ⁸⁶	V/T ⁸⁷	V/T ⁸⁸	V/T ⁸⁹	V/T ⁹⁰	V/T ⁹¹	V/T ⁹²	V/T ⁹³	V/T ⁹⁴	V/T ⁹⁵	V/T ⁹⁶	V/T ⁹⁷	V/T ⁹⁸	V/T ⁹⁹	V/T ¹⁰⁰																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

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

V (C4)	V/TWETA	V-PLUS	W/RE	ICONT.1	U/IR	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	.9241	28.16	.5176	.000836
1.353	6.419	6918.	.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	.9444	28.74	.4608	.000991
1.516	7.277	6718.	.9464	.9854	.9533	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	7.824	7566.	.9601	.9829	.9639	29.32	.2950	.001144
1.657	8.001	7673.	.9683	.9829	.9676	29.46	.2681	.001184
1.686	8.276	7673.	.9687	.9829	.9726	29.60	.2387	.001204
1.729	8.601	7726.	.9722	.9844	.9749	29.67	.2104	.001242
1.767	8.716	8516.	.9756	.9851	.9781	29.77	.1829	.001278
1.801	8.814	8184.	.9817	.9848	.9835	29.94	.1470	.001303
1.835	9.001	8172.	.9829	.9844	.9842	29.94	.1199	.001334
1.869	9.299	8578.	.9841	.9870	.9864	30.04	.1197	.001354
1.907	9.673	8133.	.9886	.9877	.9867	30.14	.0845	.001384
1.945	9.936	8111.	.9919	.9881	.9819	30.29	.0376	.001420
1.979	10.001	9184.	.9924	.9845	.9935	30.26	.0498	.001444
2.017	10.298	9184.	.9943	.9885	.9935	30.26	.0370	.001461
2.053	10.474	8466.	.9943	.9884	.9949	30.30	.0192	.001483
2.089	10.623	8766.	.9946	.9891	.9943	30.34	.0037	.001500
2.123	10.767	9018.	.9946	.9894	.9970	30.37	0.0000	.001517
2.156	10.906	9127.	.9974	.9894	.9970	30.39	0.0000	.001517
2.187	11.379	10492.	.9977	.9894	.9980	30.40	0.0000	.001517
2.226	11.909	10492.	1.0001	1.0000	1.0001	30.44	0.0000	.001517
2.259	12.231	10492.	1.0010	1.0002	1.0004	30.49	0.0000	.001517
2.293	12.474	11276.	.9999	.9999	.9999	30.46	0.0000	.001517
2.327	12.623	11437.	.9994	.9997	.9998	30.42	0.0000	.001517
2.361	12.779	11437.	.9994	.9999	.9999	30.46	0.0000	.001517
2.394	12.944	12416.	1.0001	1.0000	1.0001	30.46	0.0000	.001517
2.428	13.016	12792.	1.0001	1.0000	1.0001	30.46	0.0000	.001517
2.461	13.139	13116.	.9997	.9999	.9998	30.45	0.0000	.001517
2.495	13.277	13492.	.9994	.9997	.9999	30.43	0.0000	.001517
2.529	13.416	13492.	.9994	1.0000	1.0000	30.43	0.0000	.001517
2.563	13.556	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.597	13.694	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.631	13.834	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.665	13.974	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.699	14.114	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.733	14.254	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.767	14.394	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.801	14.534	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.835	14.674	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517
2.869	14.814	14116.	1.0001	1.0000	1.0001	30.43	0.0000	.001517

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 (CM)	V-PLUS	M/ME	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	0.00000
.012	.053	50.	.0001	.0213	.0000	14.06	1.0000	0.00000
.032	.104	100.	.0001	.0213	.0000	14.06	1.0000	0.00000
.050	.145	145.	.0001	.0213	.0000	14.06	1.0000	0.00000
.068	.186	186.	.0001	.0213	.0000	14.06	1.0000	0.00000
.086	.227	227.	.0001	.0213	.0000	14.06	1.0000	0.00000
.104	.268	268.	.0001	.0213	.0000	14.06	1.0000	0.00000
.122	.309	309.	.0001	.0213	.0000	14.06	1.0000	0.00000
.140	.350	350.	.0001	.0213	.0000	14.06	1.0000	0.00000
.158	.391	391.	.0001	.0213	.0000	14.06	1.0000	0.00000
.176	.432	432.	.0001	.0213	.0000	14.06	1.0000	0.00000
.194	.473	473.	.0001	.0213	.0000	14.06	1.0000	0.00000
.212	.514	514.	.0001	.0213	.0000	14.06	1.0000	0.00000
.230	.555	555.	.0001	.0213	.0000	14.06	1.0000	0.00000
.248	.596	596.	.0001	.0213	.0000	14.06	1.0000	0.00000
.266	.637	637.	.0001	.0213	.0000	14.06	1.0000	0.00000
.284	.678	678.	.0001	.0213	.0000	14.06	1.0000	0.00000
.302	.719	719.	.0001	.0213	.0000	14.06	1.0000	0.00000
.320	.760	760.	.0001	.0213	.0000	14.06	1.0000	0.00000
.338	.801	801.	.0001	.0213	.0000	14.06	1.0000	0.00000
.356	.842	842.	.0001	.0213	.0000	14.06	1.0000	0.00000
.374	.883	883.	.0001	.0213	.0000	14.06	1.0000	0.00000
.392	.924	924.	.0001	.0213	.0000	14.06	1.0000	0.00000
.410	.965	965.	.0001	.0213	.0000	14.06	1.0000	0.00000
.428	1.006	1006.	.0001	.0213	.0000	14.06	1.0000	0.00000
.446	1.047	1047.	.0001	.0213	.0000	14.06	1.0000	0.00000
.464	1.088	1088.	.0001	.0213	.0000	14.06	1.0000	0.00000
.482	1.129	1129.	.0001	.0213	.0000	14.06	1.0000	0.00000
.500	1.170	1170.	.0001	.0213	.0000	14.06	1.0000	0.00000
.518	1.211	1211.	.0001	.0213	.0000	14.06	1.0000	0.00000
.536	1.252	1252.	.0001	.0213	.0000	14.06	1.0000	0.00000
.554	1.293	1293.	.0001	.0213	.0000	14.06	1.0000	0.00000
.572	1.334	1334.	.0001	.0213	.0000	14.06	1.0000	0.00000
.590	1.375	1375.	.0001	.0213	.0000	14.06	1.0000	0.00000
.608	1.416	1416.	.0001	.0213	.0000	14.06	1.0000	0.00000
.626	1.457	1457.	.0001	.0213	.0000	14.06	1.0000	0.00000
.644	1.498	1498.	.0001	.0213	.0000	14.06	1.0000	0.00000
.662	1.539	1539.	.0001	.0213	.0000	14.06	1.0000	0.00000
.680	1.580	1580.	.0001	.0213	.0000	14.06	1.0000	0.00000
.698	1.621	1621.	.0001	.0213	.0000	14.06	1.0000	0.00000
.716	1.662	1662.	.0001	.0213	.0000	14.06	1.0000	0.00000
.734	1.703	1703.	.0001	.0213	.0000	14.06	1.0000	0.00000
.752	1.744	1744.	.0001	.0213	.0000	14.06	1.0000	0.00000
.770	1.785	1785.	.0001	.0213	.0000	14.06	1.0000	0.00000
.788	1.826	1826.	.0001	.0213	.0000	14.06	1.0000	0.00000
.806	1.867	1867.	.0001	.0213	.0000	14.06	1.0000	0.00000
.824	1.908	1908.	.0001	.0213	.0000	14.06	1.0000	0.00000
.842	1.949	1949.	.0001	.0213	.0000	14.06	1.0000	0.00000
.860	1.990	1990.	.0001	.0213	.0000	14.06	1.0000	0.00000
.878	2.031	2031.	.0001	.0213	.0000	14.06	1.0000	0.00000
.896	2.072	2072.	.0001	.0213	.0000	14.06	1.0000	0.00000
.914	2.113	2113.	.0001	.0213	.0000	14.06	1.0000	0.00000
.932	2.154	2154.	.0001	.0213	.0000	14.06	1.0000	0.00000
.950	2.195	2195.	.0001	.0213	.0000	14.06	1.0000	0.00000
.968	2.236	2236.	.0001	.0213	.0000	14.06	1.0000	0.00000
.986	2.277	2277.	.0001	.0213	.0000	14.06	1.0000	0.00000
1.004	2.318	2318.	.0001	.0213	.0000	14.06	1.0000	0.00000
1.022	2.359	2359.	.0001	.0213	.0000	14.06	1.0000	0.00000
1.040	2.400	2400.	.0001	.0213	.0000	14.06	1.0000	0.00000

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE A.8. (CONT.)

V (CM)	V/T*FT	V-PLUS	P/RE	MM/IN/RE	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	.8864	26.99	.6700	.000580
1.203	5.073	51.96	.8814	.9774	.8916	27.15	.6466	.000604
1.238	5.195	53.22	.8867	.9781	.8969	27.26	.6207	.000624
1.277	5.340	54.91	.8905	.9792	.9009	27.41	.6116	.000653
1.305	5.478	56.11	.8970	.9803	.9054	27.60	.6178	.000673
1.342	5.612	57.69	.8964	.9802	.9074	27.58	.5993	.000700
1.371	5.745	58.95	.9011	.9811	.9097	27.72	.5844	.000722
1.407	5.904	60.68	.9043	.9820	.9146	27.87	.5659	.000748
1.437	6.037	61.79	.9103	.9827	.9182	27.99	.5499	.000771
1.474	6.194	63.37	.9145	.9834	.9221	28.11	.5302	.000799
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	6.694	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	7.624	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	.001093
1.879	8.074	80.78	.9595	.9920	.9634	29.41	.3047	.001105
1.913	8.170	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	8.647	87.55	.9729	.9944	.9755	29.79	.2188	.001214
2.070	8.886	89.07	.9754	.9951	.9778	29.86	.2014	.001238
2.101	9.019	91.16	.9760	.9952	.9783	29.88	.1850	.001259
2.136	9.041	91.61	.9787	.9959	.9817	29.99	.1676	.001281
2.169	9.101	93.73	.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	.9884	30.21	.1107	.001353
2.289	9.602	98.94	.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	.9940	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	.0744	.001469
2.519	10.577	108.20	.9981	.9992	.9985	30.46	.0654	.001481
2.561	10.764	111.00	.9967	.9991	.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	122.11	.9995	.9999	.9995	30.55	0.0000	.001489
2.907	12.198	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	142.48	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.)
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	.000740
1.623	6.428	7069.	.9221	.9849	.9291	28.37	.5148	.000812
1.653	6.548	7202.	.9251	.9855	.9317	28.45	.4997	.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	.000959
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	.9548	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	.1246	.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 DATAEDGE MACH NO. = .7921
X = 0.00 CM
TOTAL PRESSURE = .1335E+06 N/M²
TOTAL TEMPERATURE = 328.31 DEG-KUE = 271.52 M/SEC
RE-DELTA-STAR = A1990.
DELTA STAR = .3979 CM
RE-THETA = 41090.
THETA = .2637 CM
NMALL = .2101 CM=2/SEC
M = 1.508
CF = .001942

LEAST SQUARE FIT PARAMETERS

UTIME = 9.0022 M/SEC

CHICOR = .8750E-05

CF = .001978

YMAX = 2.729 CM

PI = .5579

YMIN = .027 CM

DELTA = 2.8406 CM

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
.020	.067	76.	.4964	.9264	.5164	15.64	.9594	.000032
.030	.105	119.	.5618	.9393	.5670	17.04	.4986	.000004
.040	.147	212.	.5760	.9332	.5943	18.09	.0947	.000012
.050	.250	293.	.6055	.9344	.6744	18.09	.0947	.000018
.060	.337	375.	.6241	.9380	.6441	10.56	.0026	.000074
.070	.404	457.	.6438	.9416	.6645	20.19	.0004	.000119
.080	.467	534.	.6516	.9439	.6712	20.47	.9846	.000035
.090	.534	606.	.6571	.9439	.6816	20.72	.0002	.000141
.100	.577	652.	.6703	.9469	.6895	20.96	.0447	.000154
.110	.674	741.	.6844	.9471	.7057	21.44	.6513	.000007
.120	.770	811.	.6925	.9472	.7132	21.70	.9774	.000007
.130	.876	880.	.6942	.9487	.71	21.81	.9737	.000007
.140	.972	1009.	.7133	.9509	.7315	22.74	.0009	.000000
.150	1.068	1229.	.7210	.9520	.7300	22.49	.0657	.000000
.160	1.155	1406.	.7210	.9520	.7300	22.49	.9633	.000000
.170	1.242	1601.	.7208	.9542	.7475	22.75	.0635	.000000
.180	1.329	1801.	.7370	.9543	.7544	22.97	.0638	.000000
.190	1.416	1999.	.7460	.9553	.7612	23.18	.9487	.000000
.200	1.503	2198.	.7529	.9561	.7661	23.36	.0043	.000000
.210	1.590	2397.	.7601	.9561	.7661	23.65	.0041	.000000
.220	1.677	2596.	.7629	.9561	.7661	23.65	.0041	.000000
.230	1.764	2795.	.7629	.9561	.7716	23.51	.9345	.000000
.240	1.851	2994.	.7724	.9581	.7701	23.76	.9300	.000000
.250	1.938	3193.	.7661	.9581	.7824	23.86	.9214	.000000
.260	2.025	3392.	.7721	.9594	.7891	24.37	.9179	.000000
.270	2.112	3591.	.7772	.9594	.7937	24.16	.9100	.000000
.280	2.199	3790.	.7768	.9605	.7937	24.36	.9051	.000000
.290	2.286	3989.	.783	.9613	.7993	24.65	.9024	.000000
.300	2.373	4188.	.7857	.9623	.8060	24.65	.9024	.000000
.310	2.460	4387.	.7872	.9635	.8121	24.77	.8974	.000000
.320	2.547	4586.	.7872	.9635	.8121	24.77	.8974	.000000
.330	2.634	4785.	.7872	.9641	.8165	24.64	.8940	.000000
.340	2.715	4984.	.7872	.9641	.8165	24.64	.8940	.000000
.350	2.798	5183.	.7872	.9649	.8204	24.73	.8869	.000000
.360	2.879	5382.	.7872	.9649	.8204	24.73	.8869	.000000
.370	2.963	5581.	.7872	.9649	.8204	24.73	.8869	.000000
.380	3.046	5780.	.7872	.9649	.8204	24.73	.8869	.000000
.390	3.129	5979.	.7872	.9649	.8204	24.73	.8869	.000000
.400	3.212	6178.	.7872	.9649	.8204	24.73	.8869	.000000
.410	3.295	6377.	.7872	.9649	.8204	24.73	.8869	.000000
.420	3.378	6576.	.7872	.9649	.8204	24.73	.8869	.000000
.430	3.461	6775.	.7872	.9649	.8204	24.73	.8869	.000000
.440	3.544	6974.	.7872	.9649	.8204	24.73	.8869	.000000
.450	3.627	7173.	.7872	.9649	.8204	24.73	.8869	.000000
.460	3.710	7372.	.7872	.9649	.8204	24.73	.8869	.000000
.470	3.793	7571.	.7872	.9649	.8204	24.73	.8869	.000000
.480	3.876	7770.	.7872	.9649	.8204	24.73	.8869	.000000
.490	3.959	7969.	.7872	.9649	.8204	24.73	.8869	.000000
.500	4.042	8168.	.7872	.9649	.8204	24.73	.8869	.000000
.510	4.125	8367.	.7872	.9649	.8204	24.73	.8869	.000000
.520	4.208	8566.	.7872	.9649	.8204	24.73	.8869	.000000
.530	4.291	8765.	.7872	.9649	.8204	24.73	.8869	.000000
.540	4.374	8964.	.7872	.9649	.8204	24.73	.8869	.000000
.550	4.457	9163.	.7872	.9649	.8204	24.73	.8869	.000000
.560	4.540	9362.	.7872	.9649	.8204	24.73	.8869	.000000
.570	4.623	9561.	.7872	.9649	.8204	24.73	.8869	.000000
.580	4.706	9760.	.7872	.9649	.8204	24.73	.8869	.000000
.590	4.789	9959.	.7872	.9649	.8204	24.73	.8869	.000000
.600	4.872	10158.	.7872	.9649	.8204	24.73	.8869	.000000
.610	4.955	10357.	.7872	.9649	.8204	24.73	.8869	.000000
.620	5.038	10556.	.7872	.9649	.8204	24.73	.8869	.000000
.630	5.121	10755.	.7872	.9649	.8204	24.73	.8869	.000000
.640	5.204	10954.	.7872	.9649	.8204	24.73	.8869	.000000
.650	5.287	11153.	.7872	.9649	.8204	24.73	.8869	.000000
.660	5.370	11352.	.7872	.9649	.8204	24.73	.8869	.000000
.670	5.453	11551.	.7872	.9649	.8204	24.73	.8869	.000000
.680	5.536	11750.	.7872	.9649	.8204	24.73	.8869	.000000
.690	5.619	11949.	.7872	.9649	.8204	24.73	.8869	.000000
.700	5.702	12148.	.7872	.9649	.8204	24.73	.8869	.000000
.710	5.785	12347.	.7872	.9649	.8204	24.73	.8869	.000000
.720	5.868	12546.	.7872	.9649	.8204	24.73	.8869	.000000
.730	5.951	12745.	.7872	.9649	.8204	24.73	.8869	.000000
.740	6.034	12944.	.7872	.9649	.8204	24.73	.8869	.000000
.750	6.117	13143.	.7872	.9649	.8204	24.73	.8869	.000000
.760	6.200	13342.	.7872	.9649	.8204	24.73	.8869	.000000
.770	6.283	13541.	.7872	.9649	.8204	24.73	.8869	.000000
.780	6.366	13740.	.7872	.9649	.8204	24.73	.8869	.000000
.790	6.449	13939.	.7872	.9649	.8204	24.73	.8869	.000000
.800	6.532	14138.	.7872	.9649	.8204	24.73	.8869	.000000
.810	6.615	14337.	.7872	.9649	.8204	24.73	.8869	.000000
.820	6.698	14536.	.7872	.9649	.8204	24.73	.8869	.000000
.830	6.781	14735.	.7872	.9649	.8204	24.73	.8869	.000000
.840	6.864	14934.	.7872	.9649	.8204	24.73	.8869	.000000
.850	6.947	15133.	.7872	.9649	.8204	24.73	.8869	.000000
.860	7.030	15332.	.7872	.9649	.8204	24.73	.8869	.000000
.870	7.113	15531.	.7872	.9649	.8204	24.73	.8869	.000000
.880	7.196	15730.	.7872	.9649	.8204	24.73	.8869	.000000
.890	7.279	15929.	.7872	.9649	.8204	24.73	.8869	.000000
.900	7.362	16128.	.7872	.9649	.8204	24.73	.8869	.000000
.910	7.445	16327.	.7872	.9649	.8204	24.73	.8869	.000000
.920	7.528	16526.	.7872	.9649	.8204	24.73	.8869	.000000
.930	7.611	16725.	.7872	.9649	.8204	24.73	.8869	.000000
.940	7.694	16924.	.7872	.9649	.8204	24.73	.8869	.000000
.950	7.777	17123.	.7872	.9649	.8204	24.73	.8869	.000000
.960	7.860	17322.	.7872	.9649	.8204	24.73	.8869	.000000
.970	7.943	17521.	.7872	.9649	.8204	24.73	.8869	.000000
.980	8.026	17720.	.7872	.9649	.8204	24.73	.8869	.000000
.990	8.109	17919.	.7872	.9649	.8204	24.73	.8869	.000000
1.000	8.192	18118.	.7872	.9649	.8204	24.73	.8869	.000000
1.010	8.275	18317.	.7872	.9649	.8204	24.73	.8869	.000000
1.020	8.358	18516.	.7872	.9649	.8204	24.73	.8869	.000000
1.030	8.441	18715.	.7872	.9649	.8204	24.73	.8869	.000000
1.040	8.524	18914.	.7872	.9649	.8204	24.73	.8869	.000000
1.050	8.607	19113.	.7872	.9649	.8204	24.73	.8869	.000000
1.060	8.690	19312.	.7872	.9649	.8204	24.73	.8869	.000000
1.070	8.773	19511.	.7872	.9649	.8204	24.73	.8869	.000000
1.080	8.856	19710.	.7872	.9649	.8204	24.73	.8869	.000000
1.090	8.939	19909.	.7872	.9649	.8204	24.73	.8869	.000000
1.100	9.022	20108.	.7872	.9649	.8204	24.73	.8869	.000000
1.110	9.105	20307.	.7872	.9649	.8204	24.73	.8869	.000000
1.120	9.188	20506.	.7872	.9649	.8204	24.73	.8869	.000000
1.130	9.271	20705.	.7872	.9649	.8204	24.73	.8869	.000000
1.140	9.354	20904.	.7872	.9649	.8204	24.73	.8869	.000000
1.150	9.437	21103.	.7872	.9649	.8204	24.73	.8869	.000000
1.160	9.520	21302.	.7872	.9649	.8204	24.73	.8869	.000000
1.170	9.603	21501.	.7872	.9649	.8204	24.73	.8869	.000000
1.180	9.686	21700.	.7872	.9649	.8204	24.73	.8869	.000000
1.190	9.769	21899.	.7872	.9649	.8204	24.73	.8869	.000000
1.200	9.852	22098.	.7872	.9649	.8204	24.73	.8869	.000000
1.210	9.935	22297.	.7872	.9649	.8204	24.73	.8869	.000000
1.220	10.018	22496.	.7872	.9649	.8204	24.73	.8869	.000000
1.230	10.101	22695.	.7872	.9649	.8204	24.73	.8869	.000000
1.240	10.184	22894.	.7872	.9649	.8204	24.73	.8869	.000000
1.250	10.267	23093.	.7872	.9649	.8204	24.73	.8869	.000000
1.260	10.350	23292.	.7872	.9649	.8204	24.73	.8869	.000000
1.270	10.433	23491.	.7872	.9649	.8204	24.73	.8869	.000000
1.280	10.516	23690.	.7872	.9649	.8204	24.73	.8869	.000000
1.290	10.599	23889.	.7872	.9649	.8204	24.73	.8869	.000000
1.300	10.682	24088.	.7872	.9649	.8204	24.73	.8869	.000000
1.310	10.765	24287.	.7872	.9649	.8204	24.73	.8869	.000000
1.320	10.848	24486.	.7872	.9649	.8204	24.73	.8869	.000000

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

Y (CM)	V/TWETA	V-PLUS	M/ME	RND/RMCF	U/IE	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
1.171	4.631	5236.	.8677	.9753	.8787	26.85	.7183	.000513
1.209	4.775	5398.	.8736	.9763	.8842	27.03	.7035	.000536
1.204	4.915	5555.	.8784	.9772	.8884	27.17	.6884	.000554
1.336	5.064	5726.	.8830	.9779	.8929	27.30	.6731	.000574
1.374	5.209	5887.	.8861	.9785	.8957	27.39	.6573	.000595
1.417	5.372	6072.	.8912	.9794	.9006	27.56	.6391	.000631
1.443	5.544	6248.	.8954	.9801	.9044	27.66	.6193	.000660
1.503	5.700	6442.	.9023	.9816	.9108	27.86	.6014	.000686
1.550	5.978	6644.	.9071	.9823	.9153	28.00	.5863	.000714
1.595	6.044	6836.	.9102	.9838	.9181	28.09	.5599	.000745
1.633	6.210	7019.	.9135	.9836	.9212	28.19	.5399	.000773
1.673	6.345	7172.	.9180	.9847	.9253	28.32	.5231	.000796
1.713	6.494	7340.	.9239	.9853	.9307	28.49	.5064	.000822
1.745	6.643	7509.	.9287	.9858	.9333	28.57	.4845	.000848
1.748	6.778	7681.	.9300	.9864	.9363	28.67	.4683	.000872
1.871	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	8126.	.9408	.9885	.9463	29.04	.4154	.000943
1.940	7.317	8271.	.9441	.9891	.9493	29.08	.3965	.000966
1.945	7.457	8423.	.9496	.9901	.9541	29.23	.3810	.000989
2.006	7.604	8597.	.9547	.9909	.9579	29.10	.3609	.001016
2.004	7.770	8792.	.9547	.9911	.9590	29.34	.3396	.001043
2.125	7.914	8966.	.9566	.9915	.9620	29.44	.3209	.001068
2.125	8.050	9109.	.9592	.9920	.9630	29.51	.3073	.001092
2.160	8.223	9296.	.9623	.9924	.9659	29.60	.2913	.001110
2.213	8.391	9486.	.9696	.9930	.9723	29.81	.2599	.001144
2.263	8.579	9686.	.9721	.9945	.9748	29.89	.2345	.001174
2.337	8.767	9887.	.9745	.9959	.9759	29.95	.2157	.001203
2.443	8.941	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	10522.	.9842	.9968	.9857	30.23	.1397	.001298
2.522	9.561	10607.	.9850	.9972	.9873	30.24	.1218	.001320
2.564	9.729	10686.	.9881	.9974	.9893	30.35	.1044	.001341
2.554	9.869	11155.	.9900	.9980	.9910	30.40	.0807	.001360
2.621	10.042	11372.	.9920	.9984	.9924	30.46	.0794	.001383
2.671	10.201	11570.	.9937	.9987	.9943	30.51	.0574	.001399
2.729	10.364	11696.	.9928	.9985	.9935	30.49	.0448	.001415
2.771	10.504	11873.	.9948	.9989	.9954	30.54	.0313	.001431
2.857	10.684	12043.	.9952	.9990	.9957	30.55	.0148	.001449
2.857	10.837	12243.	.9958	.9991	.9962	30.56	.0000	.001462
2.898	10.984	12417.	.9980	.9994	.9982	30.63	0.0000	.001469
2.947	11.174	12629.	.9974	.9994	.9982	30.61	0.0000	.001469
3.012	11.419	12907.	.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
3.681	13.674	15146.	1.0004	1.0001	1.0005	30.70	0.0000	.001469
3.651	13.841	15646.	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=.13776-06 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= .6440.			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=.10025-04											
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	.604	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.	.7344	.9541	.7529	23.04	.9555	.000104			
.395	1.405	1640.	.7427	.9552	.7607	23.30	.9515	.000114			
.411	1.497	1748.	.7467	.9555	.7619	23.36	.9472	.000124			
.442	1.607	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	.8034	24.56	.8994	.000114			
.685	2.496	2914.	.7901	.9624	.8064	24.72	.8923	.000227			
.715	2.607	3043.	.7963	.9634	.8112	24.90	.8852	.000240			
.755	2.755	3216.	.8036	.9644	.8182	25.12	.8754	.000157			
.797	2.864	3345.	.8064	.9647	.8189	25.15	.8678	.000220			
.828	3.014	3518.	.8109	.9657	.8252	25.34	.8573	.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			

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE A.8. (CONT.)
M/M

V (%)	V/TMSTA	V-PLUS	M/M	(CONT.) RND/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	.9923	.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	.9941	.9704	29.94	.2444	.009852
2.330	8.515	9940.	.9738	.9948	.9731	30.03	.2328	.009852
2.373	8.640	10085.	.9754	.9951	.9743	30.13	.2173	.009859
2.411	8.778	10247.	.9769	.9954	.9760	30.14	.2092	.009859
2.433	8.844	10350.	.9789	.9954	.9791	30.22	.1895	.009823
2.433	9.185	10722.	.9820	.9965	.9842	30.37	.1518	.009827
2.506	9.305	10862.	.9825	.9965	.9842	30.38	.1380	.009827
2.533	9.439	11019.	.9856	.9971	.9870	30.47	.1231	.009835
2.593	9.540	11159.	.9863	.9973	.9877	30.49	.1099	.009835
2.624	9.649	11343.	.9890	.9978	.9901	30.57	.0934	.009835
2.649	9.717	11553.	.9909	.9981	.9919	30.62	.0752	.009835
2.714	9.897	11744.	.9916	.9983	.9924	30.64	.0579	.009835
2.748	10.077	11926.	.9925	.9985	.9933	30.67	.0452	.009835
2.806	10.214	12177.	.9937	.9987	.9943	30.70	.0338	.009835
2.842	10.344	12271.	.9957	.9991	.9961	30.76	.0202	.009835
2.887	10.512	12422.	.9961	.9992	.9965	30.77	.0101	.009835
2.923	10.641	12735.	.9976	.9995	.9978	30.82	.0000	.009835
2.947	10.910	12929.	.9974	.9994	.9977	30.81	.0000	.009835
3.042	11.076	13237.	.9976	.9995	.9978	30.82	.0000	.009835
3.115	11.339	13545.	.9989	.9997	.9980	30.85	.0000	.009835
3.147	11.603	13911.	.9981	.9996	.9983	30.83	.0000	.009835
3.274	11.917	14241.	.9992	.9999	.9993	30.84	.0000	.009835
3.351	12.199	14597.	1.0007	1.0001	1.0006	30.91	.0000	.009835
3.439	12.504	14880.	1.0005	1.0001	1.0005	30.90	.0000	.009835
3.525	12.833	15315.	.9991	1.0000	.9992	30.86	.0000	.009835
3.614	13.119	15509.	1.0000	1.0000	1.0000	30.89	.0000	.009835
3.649	13.226	15649.	.9995	.9999	.9997	30.84	.0000	.009835
3.683	13.404							

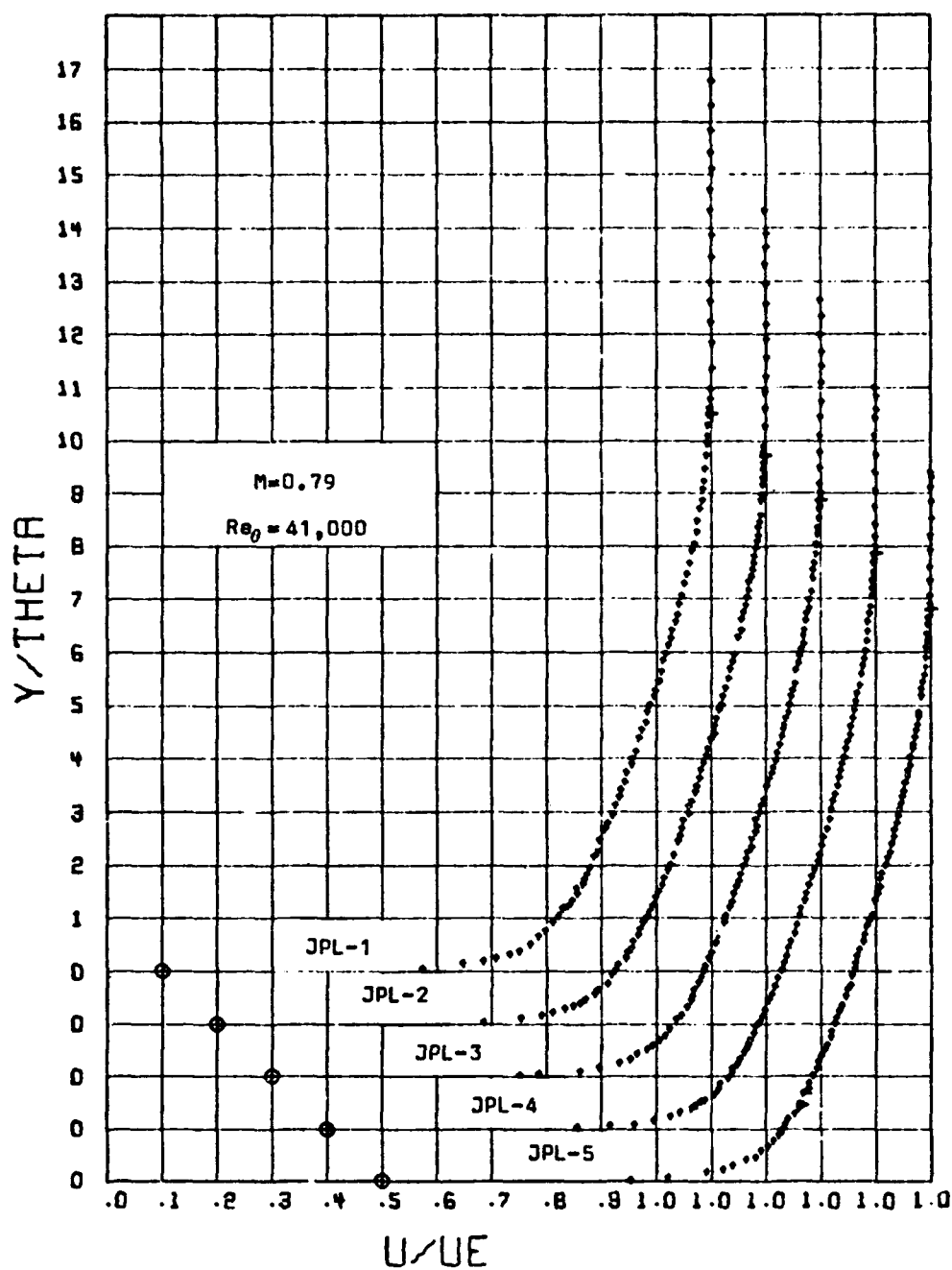


Figure A17. Mean Velocity Profiles.

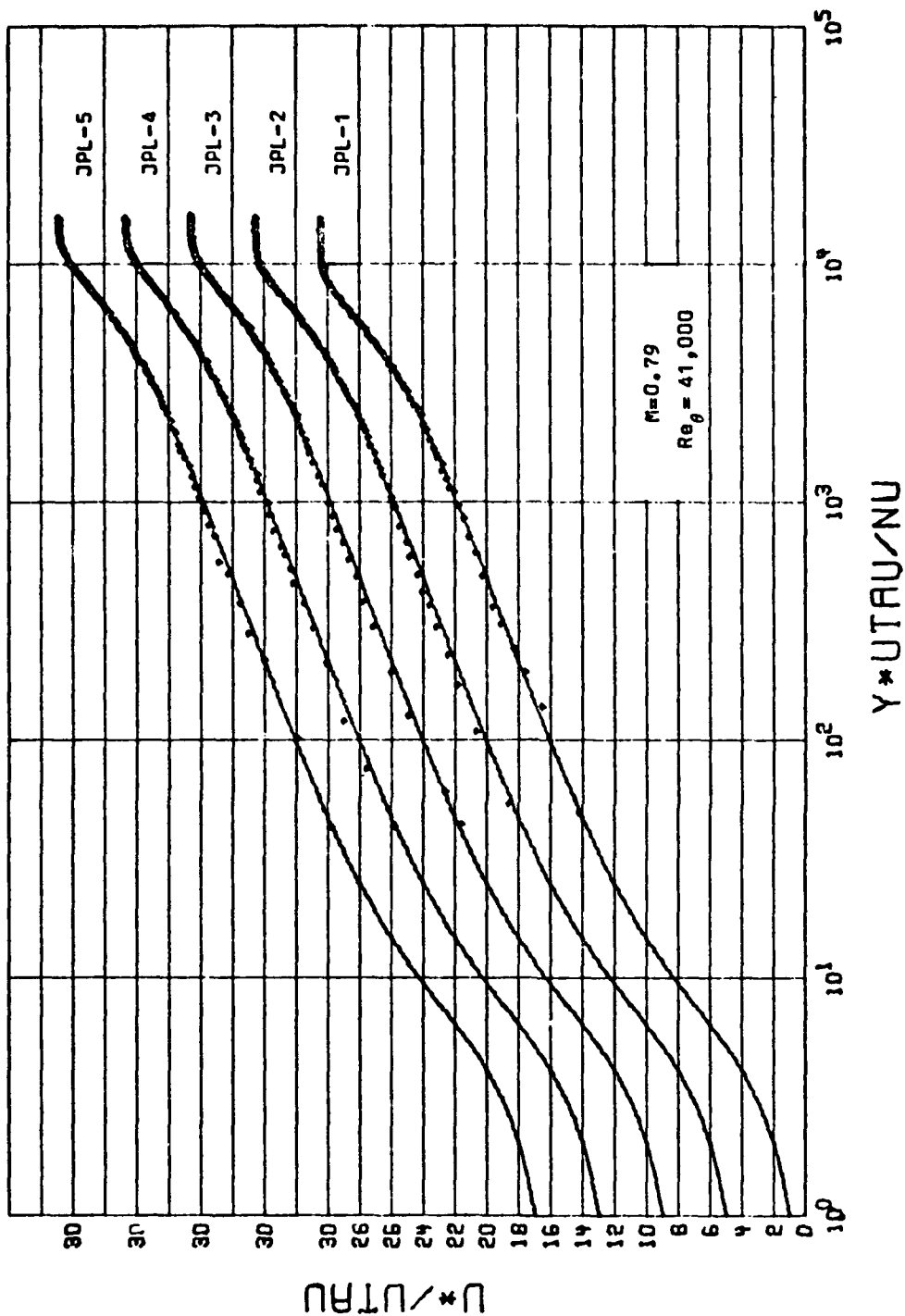


Figure A 18. Van Driest Scaled Mean Velocity Profiles.

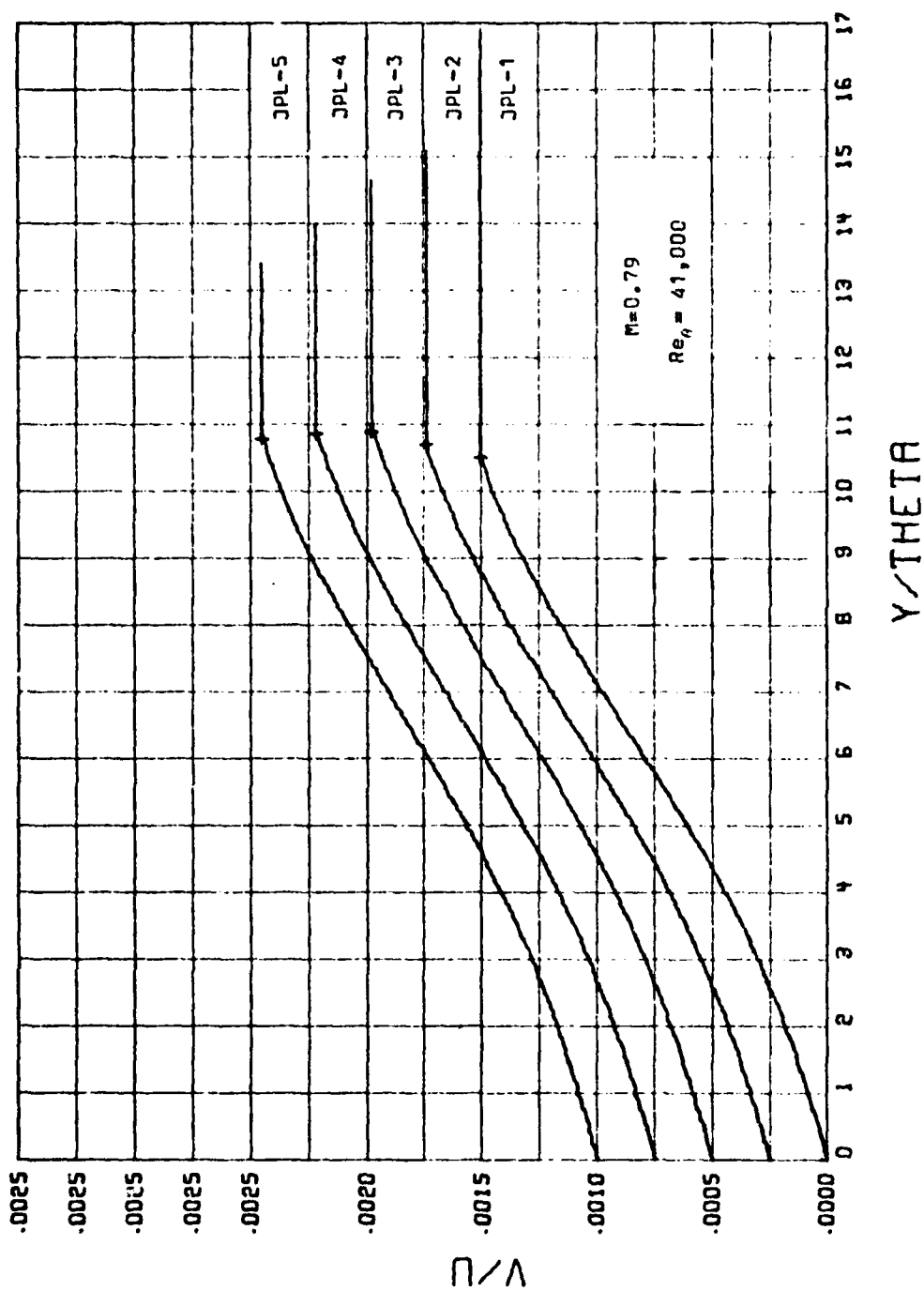


Figure A19. Normal Velocity Distribution.

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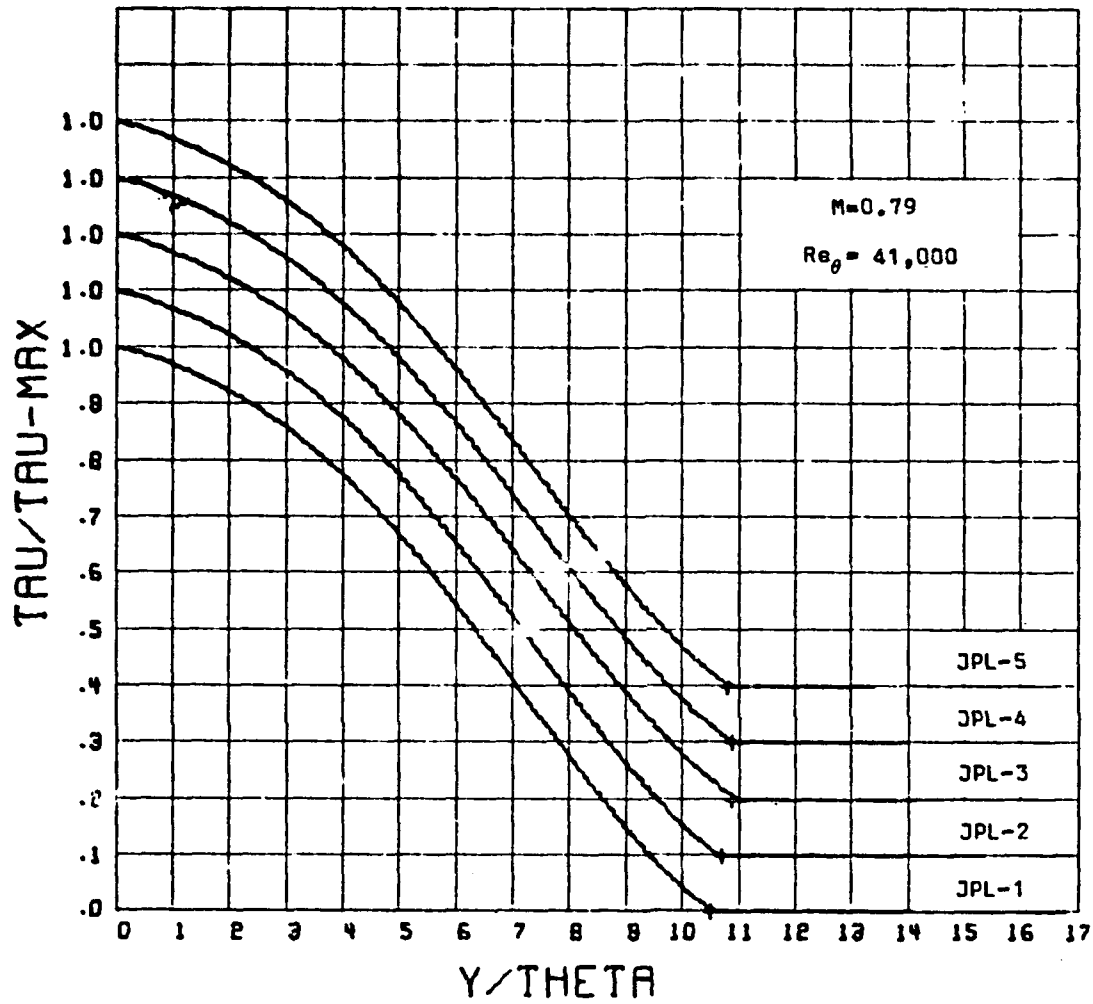


Figure A20. Shear Stress Distribution.

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				
UTAU= 10.9979 M/SEC		YMAX= 1.991 CM		YMIN= .081 CM				
CHISOR= .2873E-05								
Y (CM)	Y/THETA	Y-PLUS	M/ME	RM/RHME	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	11.43	1.0000	0.000000
.016	.091	45.	.4635	.8884	.4917	14.11	.9992	0.000304
.045	.210	110.	.5480	.9007	.5774	16.60	.9966	0.00014
.062	.299	149.	.5696	.9041	.5980	17.23	.9946	0.00023
.081	.393	195.	.5903	.9075	.6197	17.84	.9922	0.00032
.092	.445	223.	.6072	.9104	.6344	18.33	.9904	0.00037
.118	.547	284.	.6248	.9135	.6537	18.84	.9869	0.00049
.143	.649	345.	.6433	.9148	.6718	19.37	.9829	0.00061
.161	.775	389.	.6527	.9185	.6810	19.84	.9789	0.00070
.195	.940	471.	.6587	.9214	.6946	20.10	.9739	0.00084
.227	1.093	547.	.6639	.9244	.7112	20.54	.9680	0.00102
.269	1.294	648.	.6685	.9273	.7254	20.96	.9595	0.00124
.293	1.410	706.	.7047	.9285	.7312	21.13	.9543	0.00137
.327	1.575	789.	.7151	.9306	.7413	21.43	.9466	0.00154
.346	1.714	850.	.7265	.9330	.7521	21.75	.9396	0.00172
.348	1.844	914.	.7346	.9347	.7598	21.98	.9314	0.00191
.414	2.002	1003.	.7390	.9354	.7660	22.11	.9242	0.00208
.455	2.192	1094.	.7516	.9382	.7749	22.46	.9132	0.00237
.481	2.314	1159.	.7547	.9393	.7807	22.80	.9057	0.00249
.521	2.509	1257.	.7617	.9408	.7873	22.80	.8930	0.00274
.547	2.641	1343.	.7648	.9433	.7917	23.11	.8813	0.00301
.549	2.833	1419.	.7805	.9445	.8031	23.27	.8702	0.00324
.623	2.998	1503.	.7871	.9460	.8082	23.44	.8577	0.00350
.655	3.151	1579.	.7952	.9474	.8148	23.48	.8455	0.00375
.697	3.352	1680.	.8013	.9492	.8224	23.85	.8284	0.00434
.732	3.523	1745.	.8151	.9523	.8352	24.24	.8136	0.00438
.741	3.755	1881.	.8233	.9543	.8424	24.56	.7920	0.00479
.811	3.902	1954.	.8275	.9552	.8447	24.58	.7776	0.00507
.844	4.041	2035.	.8345	.9549	.8531	24.77	.7616	0.00537
.847	4.269	2139.	.8429	.9589	.8608	25.01	.7397	0.00577
.943	4.537	2273.	.8539	.9615	.8708	25.31	.7098	0.00631
.991	4.749	2360.	.8609	.9632	.8771	25.50	.6878	0.00679
1.043	4.920	2515.	.8713	.9667	.8871	25.69	.6523	0.00733
1.098	5.282	2647.	.8828	.9687	.8970	26.10	.6190	0.00790
1.147	5.417	2812.	.8925	.9711	.9046	26.35	.6755	0.00843
1.207	5.817	2910.	.9002	.9731	.9126	26.57	.6449	0.00908
1.214	6.040	3026.	.9089	.9753	.9204	26.81	.6146	0.00940
1.318	6.339	3170.	.9194	.9781	.9300	27.10	.5742	0.01029
1.343	6.450	3332.	.9248	.9800	.9342	27.29	.5293	0.01107
1.446	6.907	3461.	.9352	.9822	.9436	27.52	.3920	0.01154

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TABLE 4. 9. (CONT.)

V (CM)	V/THETA	V-PLUS	M/ME	RHO/RME	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
1.669	8.123	4070.	.9699	.9916	.9740	28.45	.2189	.001420
1.719	8.367	4192.	.9736	.9926	.9773	28.55	.1946	.001468
1.799	8.653	4336.	.9797	.994.	.9825	28.71	.1.98	.001541
1.842	8.861	4467.	.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	16.610	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	21.2	.9460	.000145
.393	.1650	945.	.7201	.9314	.7460	21.79	.9473	.000151
.424	.1778	1018.	.7309	.9339	.7563	22.10	.9358	.000174
.452	.1938	1110.	.7396	.9356	.7646	22.35	.9272	.000185
.490	.2064	1177.	.7443	.9371	.7709	22.54	.9206	.000210
.516	.2147	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
.681	.2774	1588.	.7837	.9452	.8061	23.40	.8741	.000308
.683	.2864	1640.	.7821	.9464	.8064	23.56	.8674	.000321
.724	.3056	1750.	.7938	.9475	.8155	23.89	.8577	.000350
.748	.3134	1794.	.7967	.9481	.8192	23.97	.8464	.000363
.770	.3269	1872.	.8018	.9493	.8230	24.11	.8354	.000374
.828	.3471	1998.	.8127	.9518	.8300	24.42	.8180	.000418
.864	.3647	2044.	.8214	.9538	.8411	24.66	.8074	.000447
.905	.3804	2174.	.8251	.9544	.8445	24.77	.7881	.000474
.949	.3984	2281.	.8306	.9559	.8495	24.92	.7697	.000504
.949	.4144	2376.	.8370	.9575	.8564	25.10	.7529	.000539
1.074	.4345	2688.	.8487	.9602	.8641	25.42	.7319	.000576

UE = 314.03 M/SEC DELTA STAR = .3983 CM TMETA = .2385 CM M = 1.070
RE-THETA = 2080.0. MUMALL = .4546 CM/SECLEAST SQUARE FIT PARAMETERS
DITAO = 10.9180 M/SEC CP = .002065 DELTA = 2.4307 CM
CHISQ = .4746E-05 YHNO = .07 CMORIGINAL PAGE IS
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TABLE A 9. (CONT.)

Y (CM)	Y/THETA	Y-PLUS	M/ME	Q. RMO/RHFC	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		MUHALL = .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.	.7637	.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

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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	4.474	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	.9854	.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
3.312	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
3.494	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
3.549	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/M²
X = 0.00 CM TOTAL TEMPERATURE = 312.77 DEG-K

LEAST SQUARE FIT PARAMETERS									
UE = 315.09 M/SEC DELTA STAR = .4228 CM THETA = .2556 CM M = 1.653									
RE-DELTA-STAR = 37790. RE-THETA = 22840. MINALL = .4571 CM=2/SEC CF = .002057									
UTAU = 10.9744 M/SEC CF = .002081 PI = .6222 DELTA = 2.6964 CM									
CHISQR = .6317E-05 YMAX = 2.538 CM YMIN = .074 CM									
Y (CM)	Y/THETA	Y-PLUS	M/ME	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	
.021	.044	27.	.4269	.8838	.4541	13.10	.9949	0.000000	
.036	.104	64.	.5148	.8955	.5440	15.73	.9988	.000004	
.052	.203	125.	.5843	.9031	.5938	17.19	.9867	.000015	
.074	.293	179.	.5847	.9065	.6142	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	
.283	1.107	679.	.6921	.9259	.7192	20.91	.9665	.000102	
.293	1.167	704.	.7011	.9277	.7279	21.17	.9648	.000104	
.341	1.336	820.	.7100	.9295	.7344	21.62	.9568	.000125	
.370	1.450	890.	.7165	.9308	.7426	21.81	.9516	.000138	
.406	1.589	975.	.7286	.9333	.7542	21.95	.9451	.000153	
.443	1.733	1064.	.7398	.9354	.7648	22.27	.9380	.000169	
.485	1.897	1164.	.7453	.9368	.7700	22.43	.9295	.000184	
.519	2.031	1247.	.7540	.9389	.7791	22.70	.9230	.000204	
.561	2.195	1347.	.7585	.9396	.7825	22.80	.9130	.000224	
.590	2.310	1417.	.7632	.9407	.7869	22.84	.9062	.000234	
.624	2.444	1500.	.7725	.9427	.7937	23.20	.8980	.000254	
.654	2.548	1570.	.7774	.9437	.8000	23.33	.8907	.000271	
.678	2.692	1652.	.7848	.9454	.8071	23.56	.8818	.000289	
.727	2.844	1747.	.7901	.9466	.8121	23.69	.8712	.000310	
.744	2.990	1835.	.7921	.9470	.8139	23.75	.8609	.000331	
.802	3.139	1927.	.7987	.9485	.8201	23.93	.8498	.000353	
.833	3.258	2000.	.8052	.9500	.8261	24.12	.8406	.000371	
.877	3.432	2106.	.8136	.9519	.8338	24.35	.8266	.000398	
.915	3.581	2198.	.8178	.9529	.8378	24.47	.8141	.000421	
.948	3.845	2372.	.8262	.9549	.8455	24.70	.8021	.000444	
1.023	4.004	2457.	.8314	.9561	.8502	24.85	.7897	.000468	
1.061	4.153	2549.	.8408	.9574	.8526	24.92	.7763	.000492	
1.094	4.287	2631.	.8459	.9583	.8589	25.11	.7621	.000518	
1.134	4.436	2722.	.8531	.9595	.8655	25.25	.7489	.000541	
1.164	4.555	2796.	.8570	.9622	.8737	25.45	.7338	.000568	
						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	5.429	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
1.940	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
2.059	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	9.044	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	.001562
2.513	9.831	6036.	.9897	.9970	.9911	29.16	.0652	.001593
2.538	9.930	6104.	.9914	.9974	.9926	29.21	.0554	.001616
2.574	10.069	6180.	.9931	.9980	.9941	29.25	.0432	.001653
2.623	10.263	6299.	.9937	.9982	.9946	29.27	.0268	.001656
2.659	10.402	6346.	.9952	.9984	.9949	29.31	.0159	.001671
2.691	10.527	6441.	.9967	.9989	.9957	29.33	.0048	.001684
2.733	10.600	6541.	.9966	.9990	.9971	29.36	0.0000	.001693
2.769	10.835	6650.	.9969	.9994	.9974	29.38	0.0000	.001693
2.800	11.073	6704.	.9987	.9994	.9984	29.40	0.0000	.001693
2.893	11.381	6945.	.9990	.9997	.9982	29.41	0.0000	.001693
2.914	11.689	7174.	1.0000	1.0000	1.0000	29.43	0.0000	.001693
3.014	11.967	7333.	1.0002	1.0002	1.0001	29.44	0.0000	.001693
3.133	12.256	7527.	.9991	.9997	.9992	29.45	0.0000	.001693
3.273	12.530	7696.	.9994	.9999	.9997	29.47	0.0000	.001693
3.294	12.846	7909.	1.0000	1.0000	1.0000	29.43	0.0000	.001693
3.300	13.224	8114.	1.0004	1.0001	1.0003	29.44	0.0000	.001693
3.466	13.482	8274.	.9994	.9999	.9997	29.42	0.0000	.001693
3.526	13.794	8447.	.9998	.9999	.9998	29.43	0.0000	.001693
3.543	14.019	8604.	1.0000	1.0000	1.0000	29.43	0.0000	.001693
3.674	14.372	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

LEAST SQUARE FIT PARAMETERS				DELTA STAR = .4407 CM		THETA = .2645 CM		M = 1.653	
UTIME = 10.9025 M/SEC				RE-THETA = 23850.		MINALL = .4549 CM=2/SEC			
CHISQ = .7261E-05				CF = .002047		PI = .6722		DELTA = 2.8165 CM	
				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	.4188	12.11	1.0000	0.000000	
.020	.072	27.	.4000	.8871	.4354	12.60	.9999	0.000000	
.030	.100	63.	.5002	.8939	.4290	13.34	.9999	0.000000	
.040	.123	79.	.5259	.8974	.4551	14.11	.9994	0.000000	
.050	.145	127.	.5526	.9014	.4820	14.90	.9967	0.000015	
.060	.168	114.	.5522	.9014	.5415	14.89	.9967	0.000015	
.070	.191	179.	.5820	.9044	.6113	17.77	.9947	0.000022	
.080	.214	252.	.6129	.9114	.6419	18.48	.9915	0.000032	
.090	.237	294.	.6256	.9138	.6542	19.04	.9896	0.000034	
.100	.259	337.	.6352	.9155	.6638	19.33	.9875	0.000045	
.110	.282	374.	.6458	.9174	.6742	19.64	.9857	0.000050	
.120	.305	447.	.6627	.9204	.6907	20.13	.9814	0.000061	
.130	.328	496.	.6663	.9213	.6942	20.21	.9791	0.000064	
.140	.351	572.	.6770	.9233	.7045	20.54	.9748	0.000070	
.150	.374	611.	.6884	.9257	.7145	20.90	.9724	0.000074	
.160	.397	636.	.6920	.9254	.7152	20.86	.9709	0.000079	
.170	.420	700.	.7044	.9264	.7191	20.94	.9670	0.000089	
.180	.443	794.	.7174	.9284	.7309	21.33	.9608	0.000114	
.190	.466	879.	.7204	.9319	.7434	21.71	.9550	0.000124	
.200	.489	940.	.7292	.9337	.7443	21.79	.9507	0.000134	
.210	.512	1019.	.7317	.9342	.7547	22.05	.9460	0.000152	
.220	.535	1117.	.7411	.9367	.7570	22.12	.9374	0.000164	
.230	.558	1174.	.7509	.9382	.7659	22.38	.9320	0.000181	
.240	.581	1244.	.7534	.9388	.7752	22.66	.9270	0.000197	
.250	.604	1311.	.7622	.9407	.7778	22.74	.9212	0.000204	
.260	.627	1391.	.7670	.9417	.7849	22.99	.9142	0.000210	
.270	.650	1484.	.7693	.9422	.7904	23.12	.9052	0.000234	
.280	.673	1531.	.7773	.9430	.7924	23.19	.9012	0.000247	
.290	.696	1604.	.7824	.9451	.8070	23.41	.8960	0.000261	
.300	.719	1695.	.7844	.9460	.8086	23.56	.8948	0.000260	
.310	.742	1794.	.7927	.9474	.8144	23.67	.8934	0.000302	
.320	.765	1899.	.8030	.9497	.8240	23.85	.8924	0.000324	
.330	.788	2044.	.8090	.9510	.8295	24.14	.8913	0.000343	
.340	.811	2134.	.8130	.9520	.8333	24.30	.8903	0.000379	
.350	.834	2200.	.8157	.9524	.8357	24.42	.8893	0.000414	
.360	.857	2282.	.8231	.9543	.8426	24.70	.8883	0.000441	
.370	.880	2384.	.8315	.9563	.8493	24.93	.8873	0.000465	
.380	.903	2486.	.8391	.9581	.8573	25.15	.8863	0.000495	
.390	.926	2554.	.8407	.9595	.8587	25.19	.8853	0.000509	
.400	.949	2644.							

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TABLE A 9. (CONT.)

Y (CM)	Y/TMETHA	V-F-US	M/ME	RHO/RMFE	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
1.210	4.541	2900.	.8545	.9623	.6732	25.63	.7241	.000530
1.253	4.703	3004.	.8608	.9644	.6807	25.89	.7070	.000510
1.278	4.798	3055.	.8660	.9663	.6881	26.09	.6966	.000624
1.316	4.941	3156.	.8730	.9673	.6941	26.18	.6809	.000655
1.352	5.075	3241.	.8811	.9683	.6994	26.31	.6658	.000650
1.389	5.213	3329.	.8887	.9702	.7022	26.52	.6210	.000707
1.444	5.454	3485.	.8982	.9701	.7018	26.51	.6012	.000755
1.497	5.618	3588.	.8954	.9719	.7083	26.71	.5483	.000788
1.523	5.723	3655.	.8973	.9724	.7089	26.76	.5775	.000809
1.548	5.808	3710.	.9042	.9761	.7161	26.95	.5600	.000855
1.594	5.947	3798.	.9049	.9743	.7147	26.96	.5429	.000852
1.620	6.080	3883.	.9090	.9754	.7203	27.08	.5324	.000849
1.642	6.141	3935.	.9139	.9764	.7247	27.21	.5168	.000824
1.673	6.280	4011.	.9183	.9774	.7297	27.33	.4973	.000954
1.713	6.424	4106.	.9221	.9784	.7320	27.43	.4783	.000944
1.741	6.571	4197.	.9260	.9794	.7355	27.54	.4662	.001003
1.775	6.661	4255.	.9334	.9817	.7402	27.57	.4495	.001029
1.808	6.785	4334.	.9366	.9824	.7449	27.74	.4282	.001051
1.850	6.943	4434.	.9394	.9834	.7499	27.83	.4101	.001149
1.875	7.074	4520.	.9415	.9839	.7501	27.91	.3997	.001105
1.904	7.187	4588.	.9440	.9849	.7549	27.96	.3871	.001131
1.940	7.281	4650.	.9480	.9854	.7549	28.14	.3568	.001169
1.990	7.467	4769.	.9575	.9882	.7632	28.40	.3012	.001252
2.040	7.877	5031.	.9606	.9897	.7649	28.49	.2843	.001277
2.133	8.095	5113.	.9648	.9902	.7659	28.59	.2673	.001302
2.167	8.134	5195.	.9635	.9898	.7655	28.56	.2498	.001327
2.203	8.247	5281.	.9694	.9914	.7736	28.72	.2240	.001364
2.246	8.467	5494.	.9718	.9921	.7756	28.78	.2071	.001399
2.338	8.772	5603.	.9766	.9934	.7808	28.91	.1858	.001419
2.341	8.934	5707.	.9793	.9942	.7831	29.04	.1682	.001447
2.410	9.044	5777.	.9802	.9944	.7830	29.01	.1532	.001465
2.442	9.143	5853.	.9819	.9949	.7844	29.05	.1394	.001485
2.460	9.304	5944.	.9842	.9961	.7881	29.17	.1233	.001508
2.486	9.511	6075.	.9849	.9963	.7887	29.19	.1011	.001519
2.541	9.647	6188.	.9848	.9968	.7904	29.24	.0829	.001544
2.622	9.860	6285.	.9923	.9974	.7934	29.33	.0680	.001555
2.643	9.992	6382.	.9936	.9982	.7945	29.37	.0517	.001565
2.694	10.176	6468.	.9943	.9984	.7951	29.39	.0419	.001561
2.741	10.248	6571.	.9946	.9981	.7943	29.34	.0283	.001540
2.774	10.412	6650.	.9950	.9984	.7957	29.43	.0184	.001551
2.815	10.564	6748.	.9951	.9984	.7958	29.41	.0075	.001569
2.842	10.740	6840.	.9973	.9987	.7977	29.47	0.0000	.001579
2.894	10.860	6936.	.9976	.9989	.7989	29.50	0.0000	.001579
2.970	11.144	7119.	.9987	.9994	.7989	29.52	0.0000	.001579
3.045	11.427	7299.	.9993	.9994	.7989	29.52	0.0000	.001579
3.117	11.694	7472.	.9998	.9994	.7989	29.50	0.0000	.001579
3.191	11.937	7624.	1.0001	1.0000	1.0001	29.54	0.0000	.001579
3.272	12.280	7843.	1.0007	1.0002	1.0006	29.55	0.0000	.001579
3.347	12.561	8123.	1.0002	1.0002	1.0002	29.54	0.0000	.001579
3.439	12.904	8247.	1.0009	1.0000	1.0000	29.54	0.0000	.001579
3.514	13.271	8677.	.9991	.9997	.9992	29.51	0.0000	.001579
3.613	13.557	9659.	.9997	.9999	.9997	29.53	0.0000	.001579
3.846	13.824	9840.	1.0008	1.0002	1.0007	29.54	0.0000	.001579

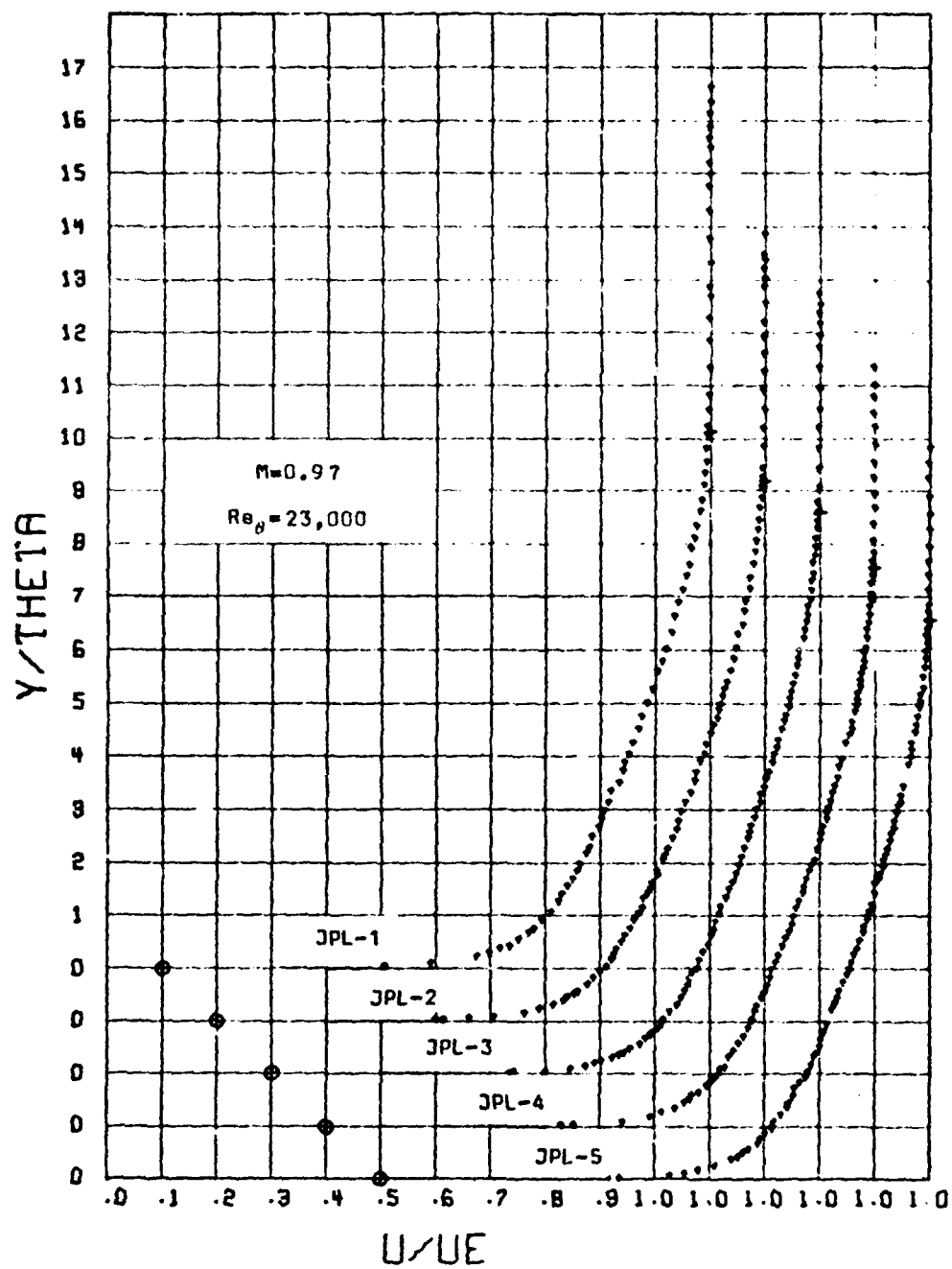


Figure A21. Mean Velocity Profiles.

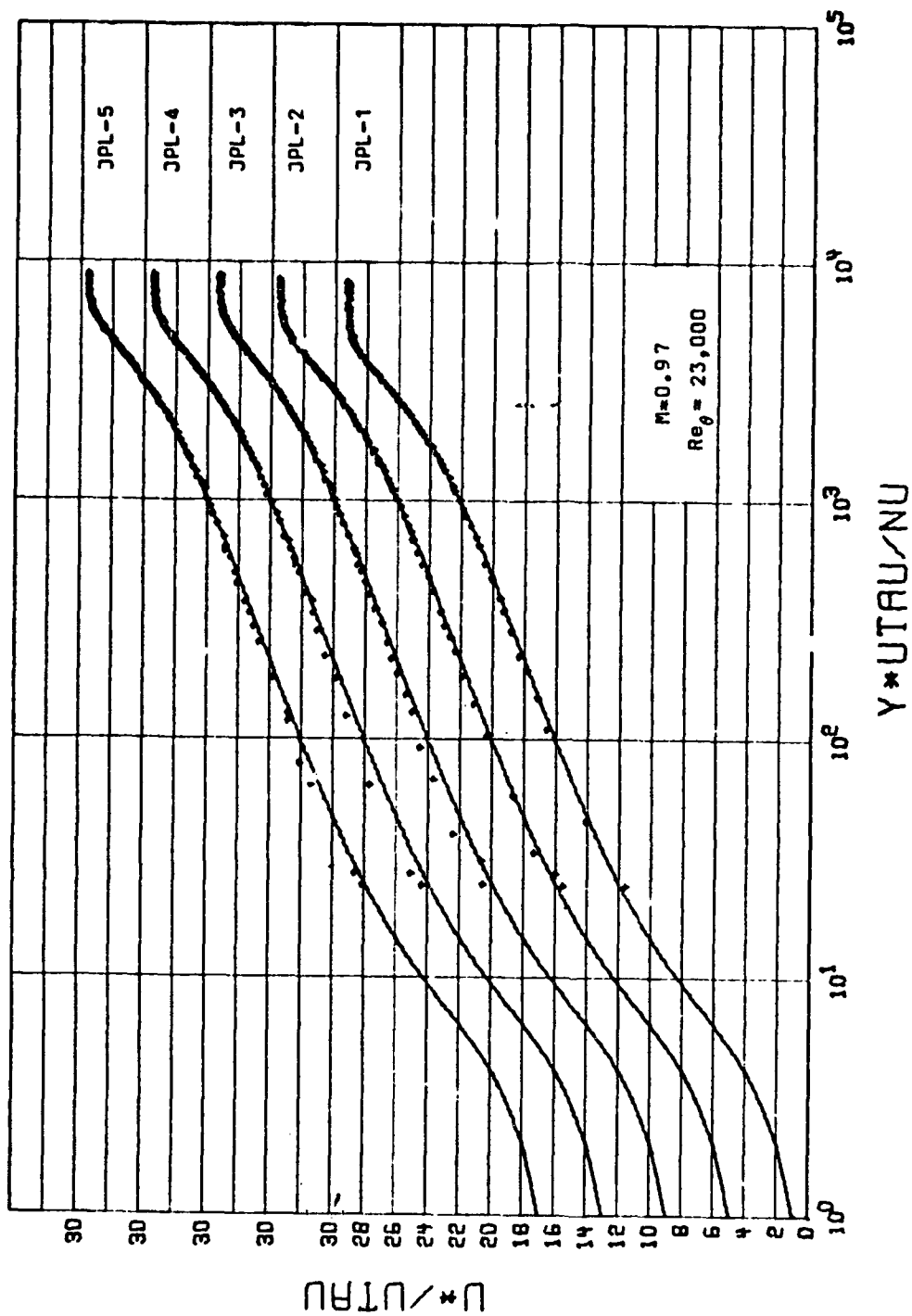


Figure A22. Van Driest Scaled Mean Velocity Profiles.

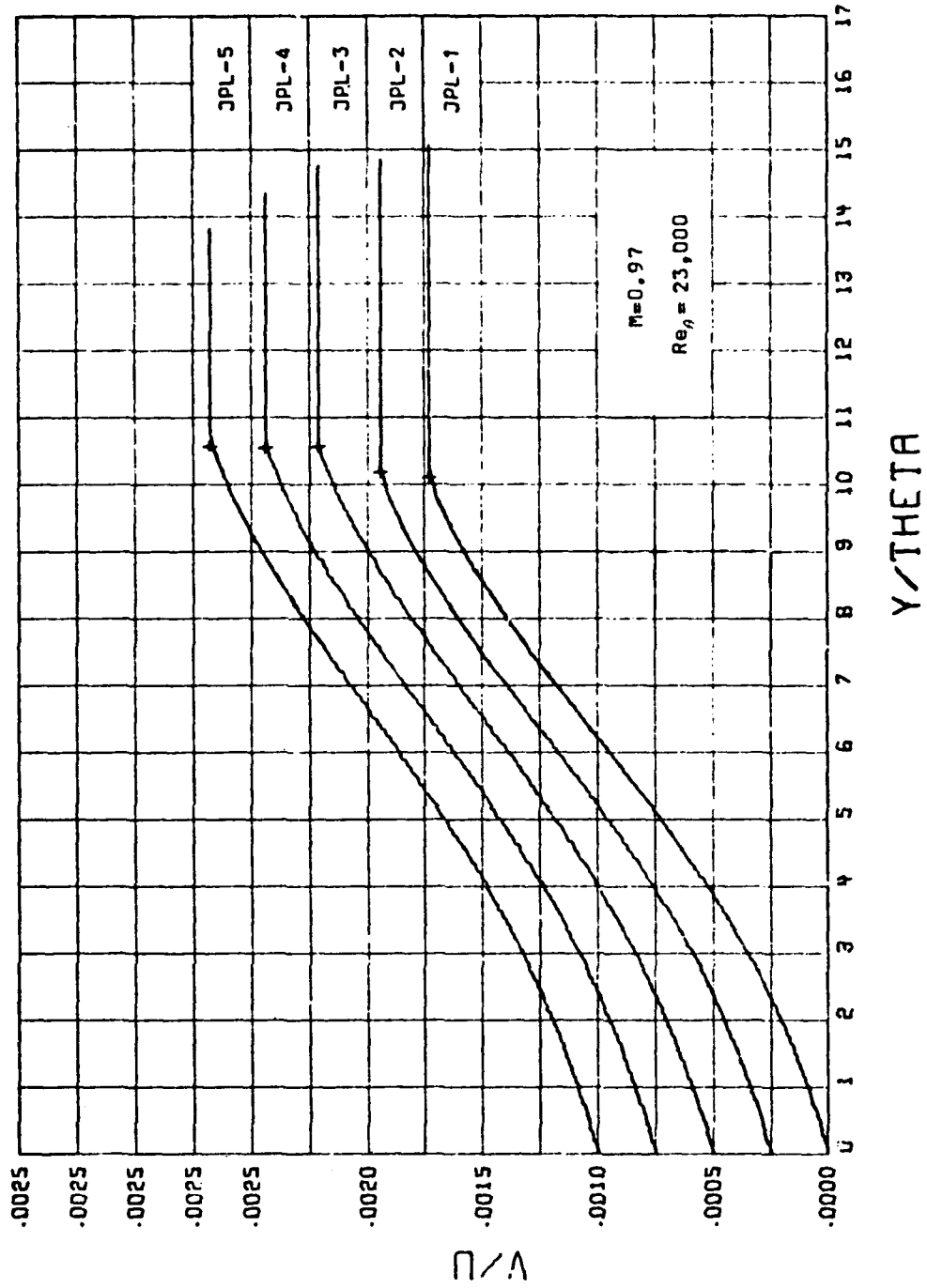


Figure A23. Normal Velocity Distribution.

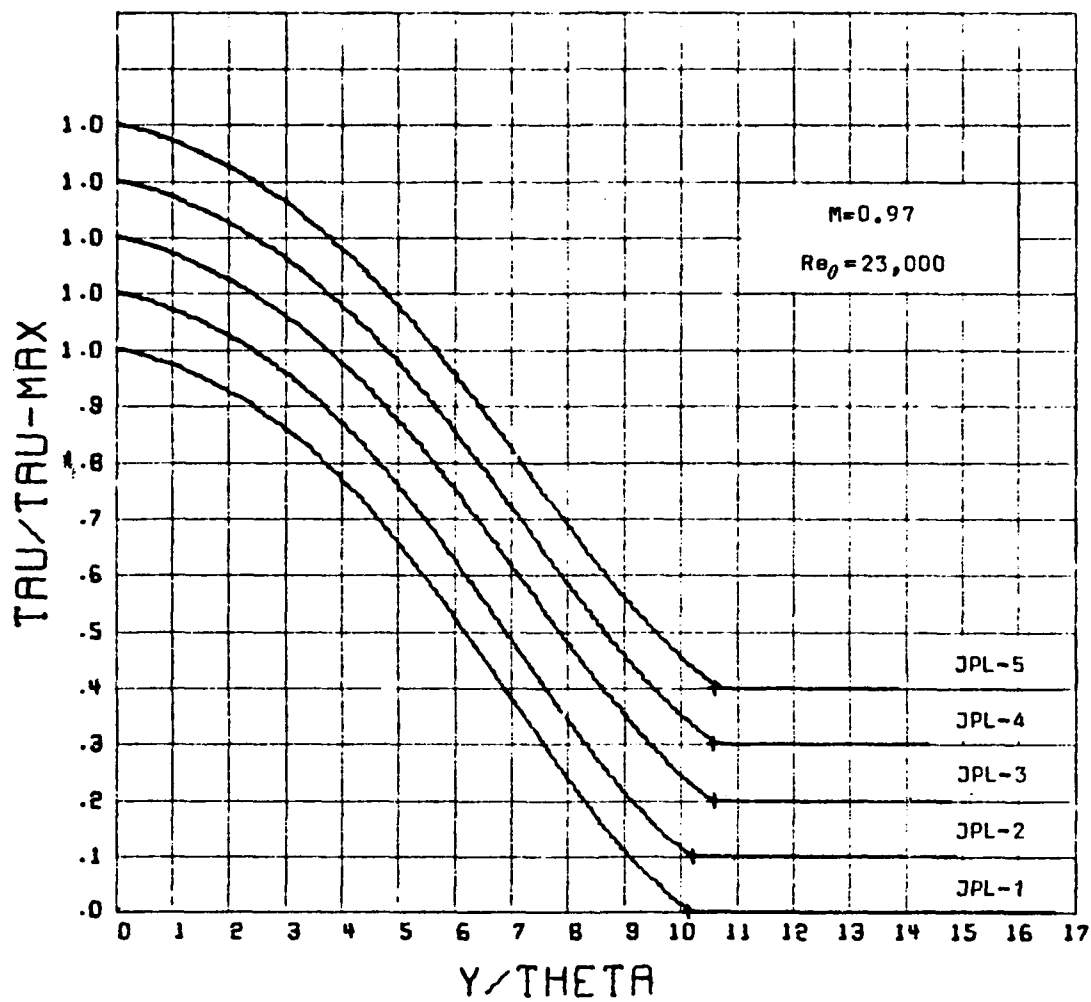


Figure A24. Shear Stress Distribution.

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/U
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	.000410
.728	3.834	3190.	.8304	.9567	.8497	25.53	.7929	.000431
.749	4.006	3329.	.8368	.9574	.8551	25.70	.7776	.000457
.789	4.159	3456.	.8416	.9587	.8596	25.83	.7631	.000482
.819	4.313	3584.	.8466	.9590	.8641	25.98	.7481	.000504
.844	4.447	3695.	.8533	.9615	.8702	26.17	.7346	.000530
.881	4.641	3957.	.8607	.9633	.8769	26.38	.7145	.000564
.916	4.828	4012.	.8648	.9643	.8807	26.49	.6944	.000597
.944	4.975	4134.	.8713	.9659	.8845	26.68	.6781	.000623
.970	5.109	4246.	.8773	.9674	.8900	26.85	.6629	.000648
.996	5.250	4362.	.8826	.9687	.8948	27.00	.6467	.000674
1.024	5.417	4501.	.8852	.9693	.8990	27.27	.6270	.000705
1.043	5.497	4568.	.8887	.9702	.9027	27.17	.6173	.000720
1.075	5.664	4707.	.8937	.9715	.9067	27.31	.6069	.000752

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/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	.0000947
1.264	6.661	5535.	.9255	.9797	.9350	28.20	.4662	.0000947
1.303	6.861	5702.	.9281	.9803	.9373	28.27	.4612	.0000987
1.339	7.009	5824.	.9334	.9817	.9420	28.42	.4213	.0010116
1.352	7.122	5919.	.9392	.9833	.9471	28.58	.4058	.0010171
1.384	7.290	6057.	.9410	.9834	.9487	28.63	.3831	.0011105
1.417	7.463	.202.	.9477	.9856	.9546	28.82	.3595	.0011124
1.437	7.570	6291.	.9495	.9860	.9561	28.87	.3450	.0011154
1.465	7.718	6413.	.9533	.9871	.9595	28.97	.3251	.0011154
1.497	7.885	6557.	.9555	.9877	.9614	29.03	.3024	.0011145
1.534	8.073	6713.	.9613	.9892	.9665	29.20	.2768	.0011221
1.563	8.279	6841.	.9648	.9902	.9695	29.29	.2566	.001250
1.582	8.333	6924.	.9663	.9906	.9709	29.37	.2435	.001268
1.625	8.560	7113.	.9713	.9920	.9752	29.67	.2145	.001304
1.662	8.754	7275.	.9743	.9928	.9778	29.55	.1903	.001341
1.684	8.848	7369.	.9776	.9937	.9807	29.65	.1764	.001360
1.727	9.095	7558.	.9789	.9940	.9818	29.68	.1494	.001396
1.752	9.229	7665.	.9819	.9949	.9844	29.76	.1340	.001417
1.780	9.430	7836.	.9849	.9957	.9870	29.84	.1118	.001447
1.818	9.577	7958.	.9877	.9965	.9894	29.92	.9962	.001468
1.854	9.754	8114.	.9899	.9971	.9913	29.98	.0772	.001493
1.882	9.965	8281.	.9915	.9976	.9927	30.03	.0580	.001514
1.922	10.125	8414.	.9921	.9978	.9932	30.04	.0436	.001537
1.95	10.299	8558.	.9935	.9981	.9944	30.08	.0289	.001557
1.981	10.433	8670.	.9948	.9985	.9955	30.12	.0184	.001571
2.011	10.593	8803.	.9956	.9987	.9962	30.14	.0067	.001586
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.	1.0002	1.0000	1.0002	30.27	.0000	.001595
3.039	16.004	13296.	.9997	.9999	.9998	30.26	.0000	.001595
3.139	16.532	13738.	.9995	.9998	.9995	30.24	.0000	.001595

TABLE A10. (CONT.)
PROFILE - JPL-2 - - - PITOT PRESSURE DATAEDGE MACH NO. = .9626
X = 26.21 CM
TOTAL PRESSURE = 1327E+06 N/M²
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/HF	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	.8998	.5667	17.99	.9994	0.000016							
.044	.204	189.	.5719	.9051	.6011	18.04	.9994	0.000113							
.074	.250	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	.8515	0.00314							
.731	3.362	3130.	.8116	.9519	.8319	25.17	.8456	0.00347							
.759	3.490	3249.	.8145	.9525	.8346	25.25	.8374	0.00365							
.789	3.630	3379.	.8208	.9540	.8404	25.44	.8284	0.00385							
.812	3.734	3477.	.8254	.9551	.8446	25.57	.8201	0.00400							
.843	3.875	3607.	.8313	.9564	.8500	25.74	.8130	0.00441							
.874	4.022	3744.	.8363	.9574	.8546	25.88	.8079	0.00443							
.914	4.154	3888.	.8414	.9588	.8593	26.03	.8026	0.00464							
.934	4.294	3999.	.8475	.9603	.8649	26.21	.7963	0.00484							
.954	4.456	4146.	.8524	.9614	.8693	26.35	.7899	0.00512							
.995	4.574	4260.	.8572	.9624	.8737	26.48	.7846	0.00532							

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TABLE A10. (CONT.)

Y (CM)	Y/THETA	Y-PLUS	M/ME	RHO/RHME	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	.0921	.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 TOTAL PRESSURE = .1339E+06 N/M²
X = -7.62 CM 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	.9824	.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.	.7656	.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
.563	2.680	2457.	.7841	.9458	.8082	24.29	.8982	.000230
.594	2.614	2490.	.7860	.9462	.8089	24.35	.8901	.000245
.617	2.714	2590.	.7910	.9473	.8127	24.49	.8839	.000254
.645	2.837	2512.	.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	.000306
.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	.8590	25.97	.7745	.000444
.970	4.247	4229.	.8459	.9600	.8633	26.08	.7667	.000457
.975	4.370	4310.	.8502	.9610	.8673	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	8.999	8917.	.9727	.9924	.9764	29.65	.2216	.001268
2.073	9.172	9039.	.9765	.9934	.9797	29.75	.2072	.001284
2.103	9.367	9166.	.9778	.9938	.9809	29.79	.1923	.001308
2.132	9.572	9294.	.9787	.9940	.9816	29.82	.1776	.001327
2.160	9.772	9416.	.9814	.9948	.9839	29.89	.1639	.001346
2.184	9.972	9532.	.9843	.9956	.9845	29.97	.1510	.001363
2.221	9.770	9681.	.9860	.9960	.9879	30.02	.1347	.001385
2.255	9.921	9831.	.9862	.9961	.9881	30.02	.1190	.001406
2.298	10.074	9975.	.9873	.9964	.9891	30.05	.1042	.001425
2.313	10.178	10085.	.9903	.9973	.9917	30.14	.0922	.001440
2.349	10.334	10240.	.9913	.9975	.9925	30.16	.0782	.001459
2.392	10.524	10429.	.9927	.9979	.9938	30.20	.0609	.001482
2.418	10.636	10530.	.9935	.9982	.9944	30.23	.0511	.001495
2.452	10.787	10686.	.9947	.9985	.9955	30.26	.0344	.001511
2.481	10.915	10814.	.9954	.9987	.9962	30.28	.0282	.001525
2.520	11.088	10963.	.9963	.9989	.9968	30.30	.0151	.001542
2.550	11.217	11115.	.9963	.9989	.9968	30.30	.0060	.001554
2.584	11.368	11264.	.9972	.9992	.9976	30.33	.0000	.001561
2.694	11.854	11766.	.9991	.9997	.9992	30.38	.0000	.001561
2.921	12.902	12966.	.9996	.9998	.9996	30.39	.0000	.001561
3.027	13.317	13196.	1.0004	1.0001	1.0003	30.41	.0000	.001561
3.378	14.859	14724.	1.0002	1.0000	1.0002	30.41	.0000	.001561
3.418	15.038	14901.	.9994	.9998	.9995	30.39	.0000	.001561
3.487	15.351	15211.	.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/RHOF	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	.7164	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	1494.	.7483	.9378	.7777	23.81	.9371	.000117	
.180	.773	1574.	.7538	.9400	.7770	23.57	.9323	.000122	
.190	.816	1648.	.7586	.9413	.7824	23.71	.9258	.000126	
.200	.859	1717.	.7645	.9417	.7899	23.89	.9189	.000134	
.210	.902	1781.	.7664	.9425	.7932	24.05	.9143	.000147	
.220	.945	1841.	.7801	.9447	.8076	24.36	.9080	.000209	
.230	.988	1897.	.7878	.9464	.8098	24.57	.8994	.000225	
.240	1.031	1949.	.7957	.9478	.8127	24.66	.8925	.000238	
.250	1.074	2003.	.8058	.9491	.8147	24.79	.8848	.000255	
.260	1.117	2054.	.8114	.9505	.8245	25.01	.8758	.000271	
.270	1.160	2104.	.8188	.9518	.8319	25.10	.8655	.000288	
.280	1.203	2154.	.8260	.9530	.8367	25.26	.8535	.000305	
.290	1.246	2204.	.8337	.9543	.8428	25.42	.8423	.000327	
.300	1.289	2254.	.8405	.9559	.8478	25.64	.8323	.000347	
.310	1.332	2304.	.8475	.9579	.8558	25.76	.8233	.000370	
.320	1.375	2354.	.8543	.9602	.8628	26.02	.8100	.000391	
.330	1.418	2404.	.8613	.9616	.8702	26.10	.7912	.000417	
.340	1.461	2454.	.8685	.9628	.8749	26.30	.7787	.000448	
.350	1.504	2504.	.8755	.9638	.8794	26.47	.7644	.000462	
.360	1.547	2554.	.8823	.9648	.8844	26.62	.7495	.000484	
.370	1.590	2604.	.8895	.9658	.8894	26.73	.7316	.000515	
.380	1.633	2654.	.8963	.9668	.8944		.7163	.000540	

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
1.106	5.017	5.112	.8738	.9656	.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	5.519	5.630	.8908	.9708	.9041	27.55	.6323	.00567
1.364	5.735	5.851	.8954	.9720	.9082	27.68	.6098	.00575
1.405	5.890	6.008	.8992	.9729	.9116	27.78	.5914	.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	.00581
1.511	6.331	6.459	.9128	.9764	.9236	28.17	.5383	.00581
1.553	6.484	6.594	.9174	.9775	.9279	28.30	.5222	.00583
1.576	6.603	6.735	.9206	.9784	.9307	28.39	.5050	.00581
1.599	6.741	6.877	.9238	.9793	.9337	28.48	.4874	.00587
1.644	6.890	7.028	.9264	.9800	.9360	28.56	.4687	.00591
1.670	7.039	7.180	.9310	.9811	.9398	28.68	.4496	.00594
1.713	7.177	7.322	.9348	.9822	.9432	28.79	.4319	.00596
1.751	7.337	7.486	.9392	.9833	.9472	28.92	.4113	.00595
1.786	7.496	7.646	.9430	.9843	.9506	29.02	.3921	.00592
1.819	7.624	7.778	.9453	.9849	.9525	29.09	.3742	.00597
1.852	7.773	7.930	.9491	.9860	.9559	29.20	.3553	.00597
1.896	7.944	8.103	.9544	.9874	.9604	29.34	.3330	.00594
1.929	8.082	8.244	.9582	.9884	.9638	29.45	.3153	.00592
1.960	8.215	8.380	.9612	.9892	.9666	29.53	.2983	.00592
2.002	8.391	8.559	.9652	.9903	.9699	29.65	.2761	.00592
2.032	8.513	8.684	.9686	.9907	.9711	29.68	.2508	.00593
2.068	8.657	8.841	.9716	.9911	.9723	29.72	.2247	.00592
2.101	8.806	8.983	.9732	.9925	.9754	29.82	.2081	.00592
2.134	8.944	9.124	.9732	.9936	.9758	29.87	.1901	.00592
2.171	9.093	9.281	.9773	.9936	.9804	29.98	.1798	.00592
2.208	9.243	9.438	.9792	.9942	.9821	30.04	.1719	.00592
2.244	9.402	9.590	.9827	.9951	.9851	30.13	.1550	.00592
2.280	9.554	9.742	.9838	.9954	.9860	30.16	.1380	.00592
2.317	9.710	9.905	.9862	.9961	.9881	30.23	.1215	.00592
2.353	9.872	10.061	.9874	.9964	.9891	30.26	.1077	.00592
2.386	10.040	10.242	.9890	.9969	.9906	30.31	.0873	.00592
2.434	10.200	10.405	.9916	.9976	.9927	30.38	.0727	.00592
2.465	10.377	10.535	.9926	.9979	.9937	30.41	.0607	.00592
2.503	10.487	10.698	.9945	.9984	.9952	30.46	.0471	.00592
2.546	10.668	10.882	.9964	.9984	.9958	30.51	.0322	.00592
2.581	10.817	11.034	.9963	.9989	.9968	30.51	.0207	.00592
2.627	11.009	11.210	.9970	.9991	.9974	30.53	.0070	.00592
2.668	11.179	11.403	.9979	.9994	.9982	30.55	0.0000	.00592
2.705	11.333	11.561	.9984	.9995	.9984	30.57	0.0000	.00592
2.747	11.679	11.914	1.0000	1.0000	1.0000	30.61	0.0000	.00592
2.843	11.998	12.239	1.0002	1.0000	1.0002	30.62	0.0000	.00592
2.977	12.307	12.554	.9991	.9997	.9992	30.59	0.0000	.00592
3.024	12.679	12.914	1.0000	1.0000	1.0000	30.61	0.0000	.00592
3.102	12.999	13.240	1.0001	1.0000	1.0001	30.62	0.0000	.00592
3.174	13.318	13.564	1.0000	1.0000	1.0000	30.61	0.0000	.00592
3.252	13.424	13.670	1.0000	1.0002	1.0000	30.63	0.0000	.00592
3.356	13.663	13.915	.9997	.9999	.9997	30.60	0.0000	.00592
3.443	14.435	14.726	.9999	.9999	.9999	30.61	0.0000	.00592
3.543	14.595	14.889	1.0001	1.0001	1.0004	30.63	0.0000	.00592
3.602	15.095	15.398	1.0001	1.0002	1.0001	30.61	0.0000	.00592
3.691	15.467	15.778	.9999	.9999	.9999	30.61	0.0000	.00592

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			M = 1.627		
RE-DELTA-STAR = 67630.			RE-THETA = 41550.			MINALL = .2521 CM			DELTA = 2.7502 CM		
LEAST SQUARE FIT PARAMETERS			CF = .001911			PI = .5925			DELTA = 2.7502 CM		
UTAU = 10.7382 M/SEC			YMAX = 2.603 CM			YMIN = .038 CM			DELTA = 2.7502 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			
.021	.086	48.	.4526	.8883	.4803	14.48	.9999	0.000000			
.038	.152	91.	.5081	.8958	.5348	16.21	.9991	0.000003			
.052	.207	142.	.5481	.9017	.5772	17.44	.9977	0.000009			
.064	.273	221.	.5784	.9065	.6075	18.38	.9963	0.000013			
.081	.324	292.	.5992	.9100	.6241	19.01	.9946	0.000019			
.104	.415	346.	.6218	.9138	.6505	19.70	.9932	0.000123			
.127	.506	443.	.6342	.9160	.6726	20.08	.9906	0.000031			
.144	.577	540.	.6503	.9189	.6784	20.57	.9877	0.000038			
.162	.634	616.	.6600	.9207	.6788	20.86	.9854	0.000044			
.181	.681	778.	.6734	.9232	.7008	21.26	.9802	0.000057			
.204	.724	908.	.6918	.9264	.7146	21.82	.9758	0.000068			
.234	.842	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			
.322	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	.8145	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.	.8543	.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 (CM)	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	8163.	.9468	.9854	29.25	.3633	.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	10984.	.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

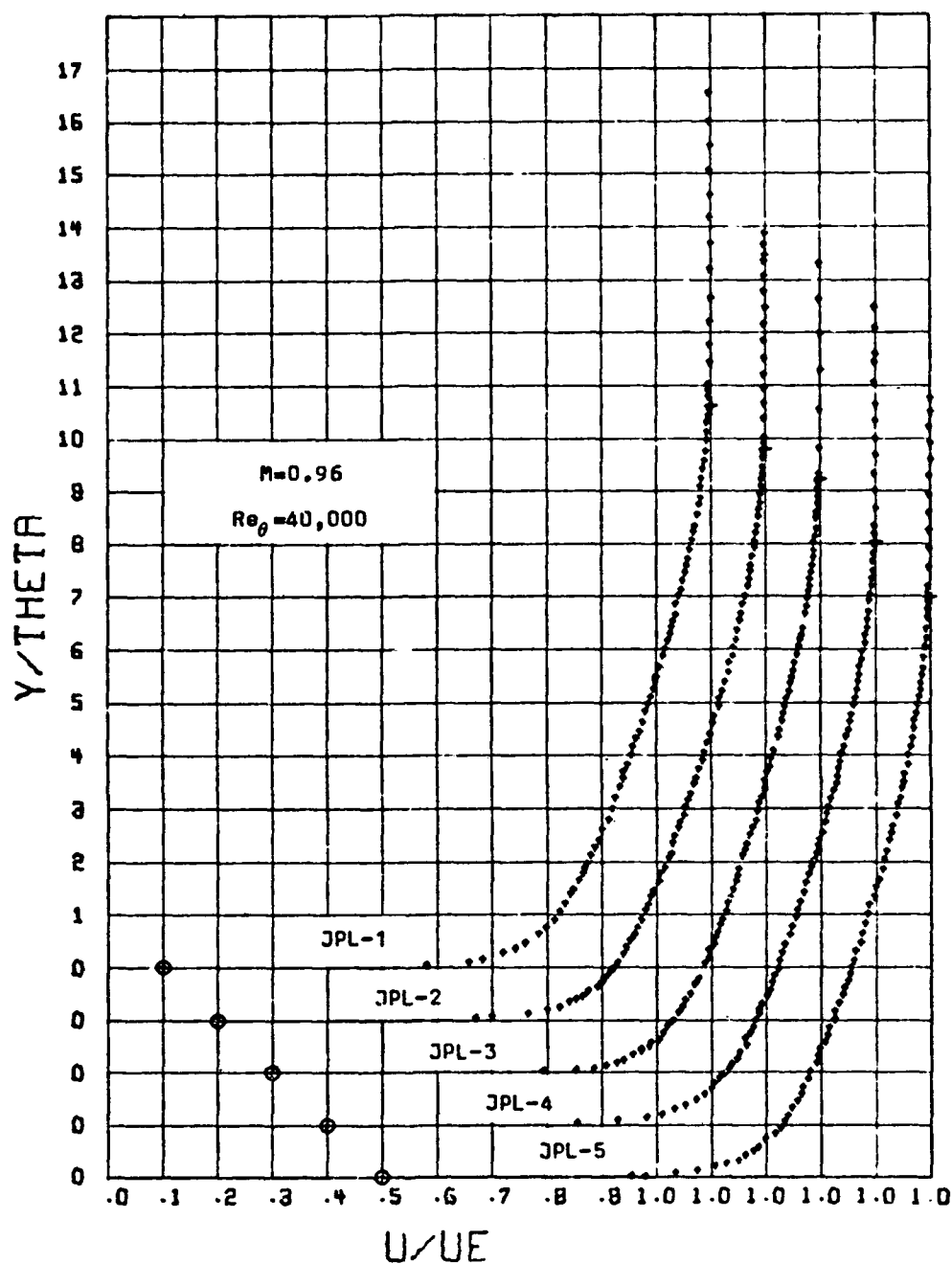


Figure A25. Mean Velocity Profiles.

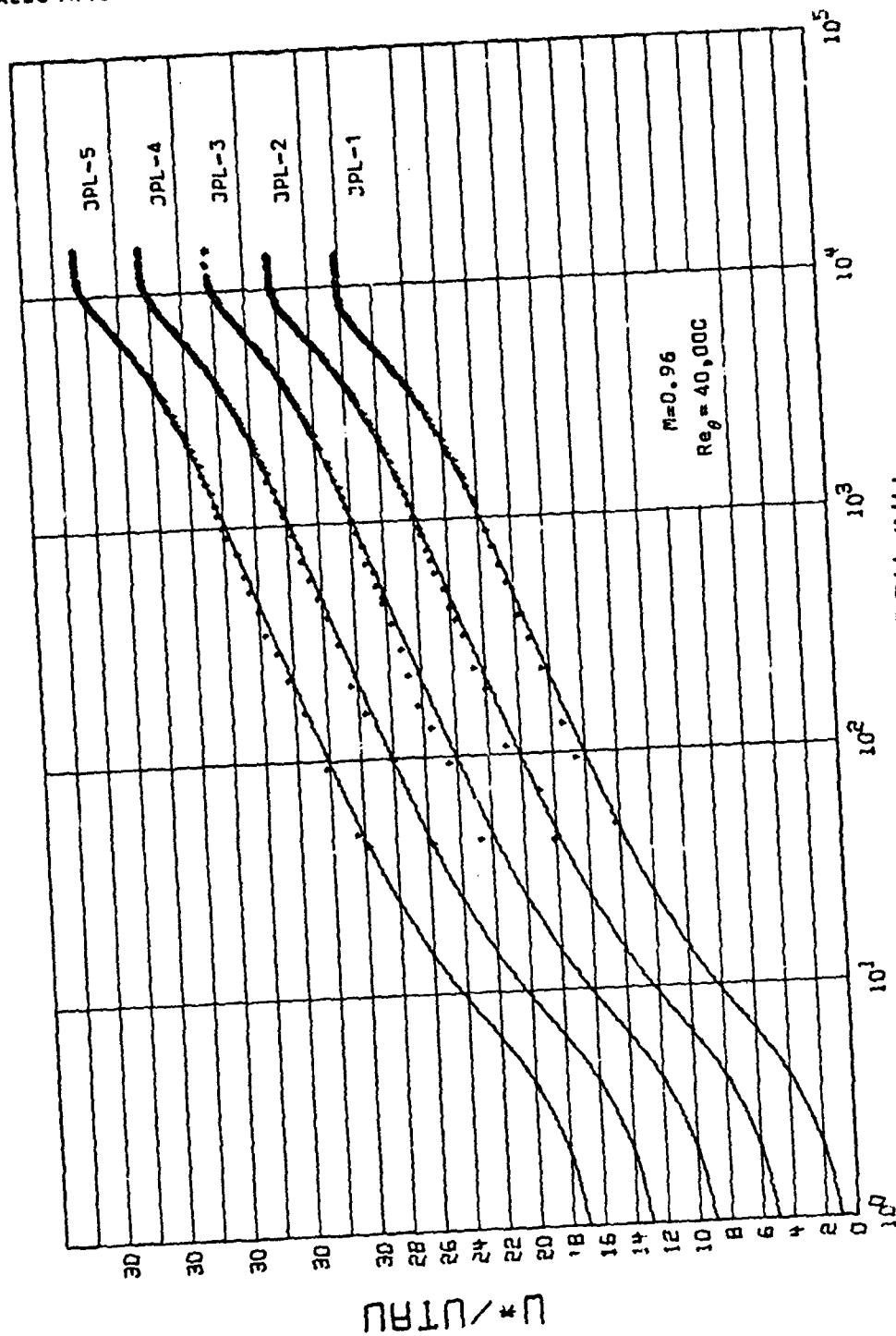
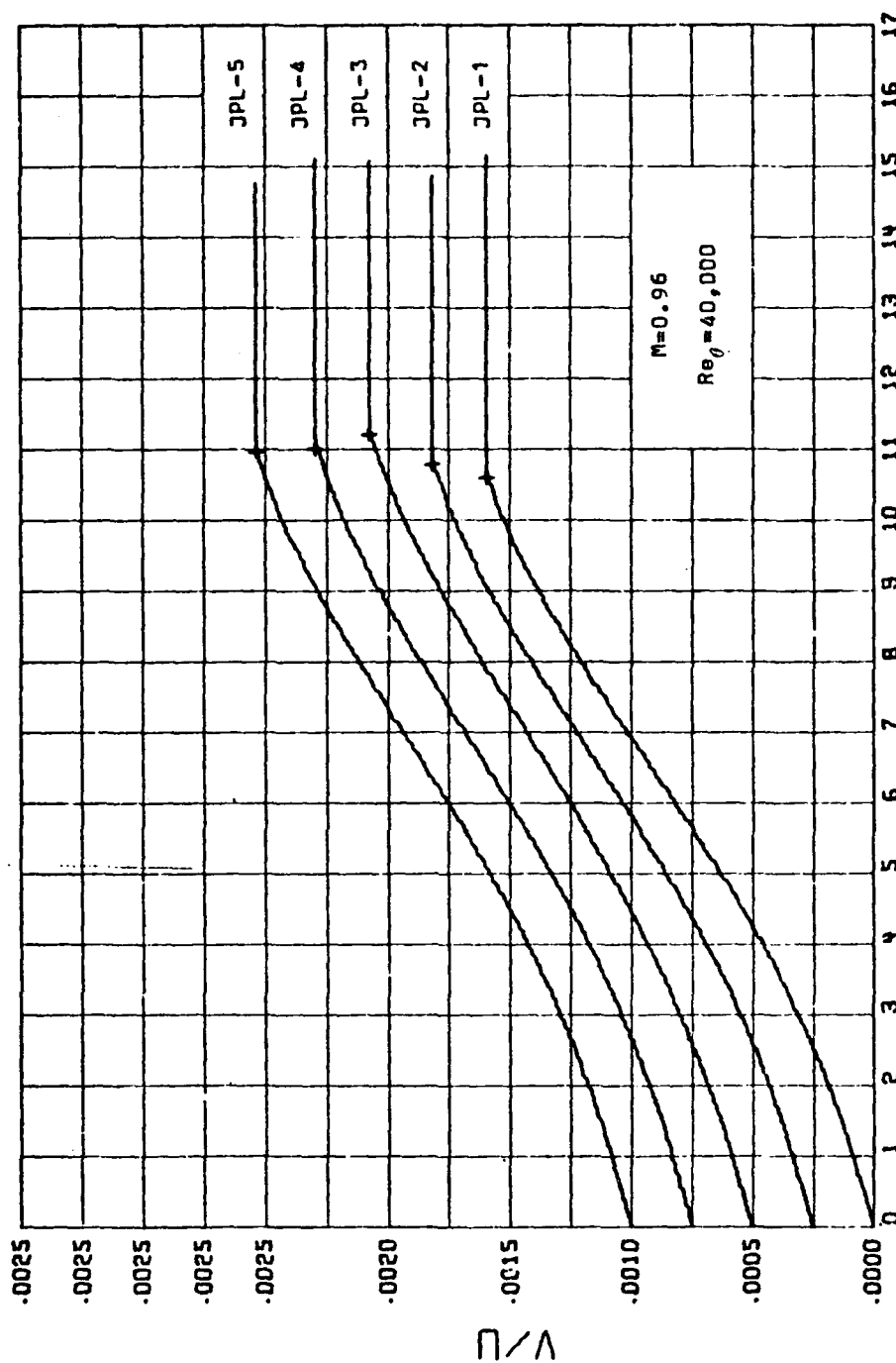


Figure A26. Van Orist Scaled Mean Velocity Profiles.



Y/THETA

Figure A27. Normal Velocity Distribution.

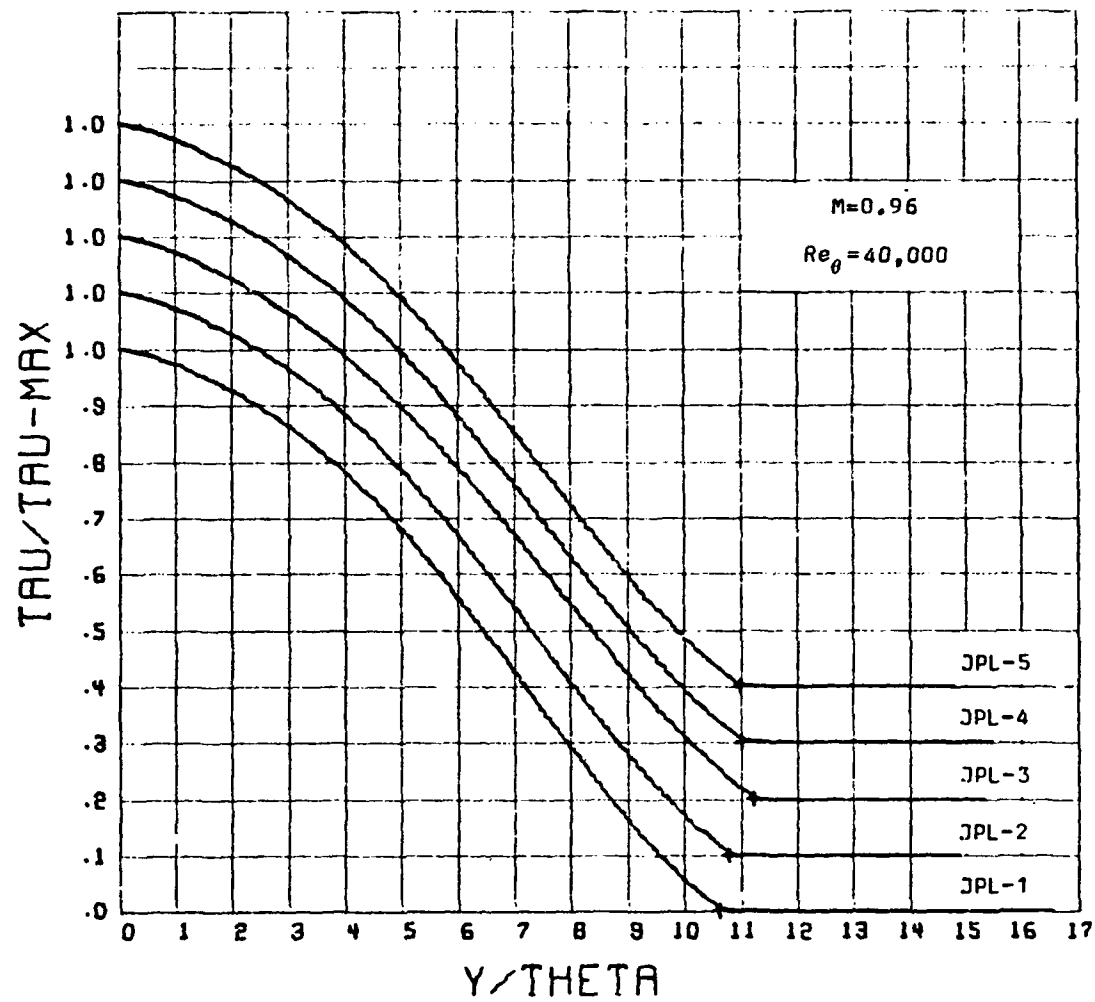


Figure A28. Shear Stress Distribution.

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	.8675	.000342
.715	3.371	1498.	.7861	.9105	.8238	23.44	.8548	.000340
.750	3.538	1573.	.7950	.9138	.8316	23.48	.8439	.000348
.748	3.718	1652.	.8049	.9175	.8403	23.94	.8175	.000370
.828	3.904	1725.	.8094	.9192	.8442	24.06	.8019	.000383
.871	4.107	1825.	.8176	.9224	.8513	24.28	.7841	.000341
.901	4.251	1889.	.8231	.9245	.8561	24.42	.7710	.000359
.940	4.434	1972.	.8314	.9278	.8633	24.44	.7534	.000605
1.018	4.622	2054.	.8389	.9304	.8694	24.83	.7350	.000643
1.059	4.802	2134.	.8473	.9339	.8748	25.05	.7170	.000679
1.089	4.993	2219.	.8510	.9354	.8799	25.15	.6969	.000719
1.121	5.137	2283.	.8563	.9375	.8844	25.28	.6814	.000750
1.154	5.287	2350.	.8620	.9398	.8892	25.33	.6646	.000783
1.190	5.440	2427.	.8678	.9422	.8941	25.58	.6451	.000821
1.229	5.658	2515.	.8752	.9452	.9002	25.77	.6271	.000865
1.270	5.794	2576.	.8816	.9478	.9055	26.93	.6057	.000897
1.290	5.930	2640.	.8853	.9494	.9086	26.03	.5883	.000920
1.325	6.107	2714.	.8910	.9517	.9096	26.17	.5677	.000949
1.355	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/HE	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	.9358	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	.9984	.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	.9987	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	.6460	17.87	.9947	.000025
.076	.336	158.	.5759	.8421	.6275	17.59	.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	2.700	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	.00843
1.336	5.906	2786.	.8839	.9483	.9076	26.08	.6017	.009895
1.371	6.063	2860.	.8870	.9496	.9102	26.16	.5830	.009930
1.407	6.220	2934.	.8939	.9525	.9159	26.34	.5639	.009966
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																			
X= 0.00 CM										DELTA STAR=.4601 CM										THETA= .2335 CM										M= 1.970									
										RE-THETA= 21900.										N/WALL= .6862 CM**2/SEC										CF= .001867									
LEAST SQUARE FIT PARAMETERS										CF= .001983										PI= .6090										DELTA= 2.6199 CM									
UTAU= 14.4789 M/SEC										YMAX= 2.470 CM										YMIN= .082 CM																			
CHISQR= .1029E-04																																							
Y (CM)	Y/THETA	Y-PLUS	M/E	RHO/RHOE	U/E	U-PLUS	TAU/TAU-MAX	V/U		Y (CM)	Y/THETA	Y-PLUS	M/E	RHO/RHOE	U/E	U-PLUS	TAU/TAU-MAX	V/U		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		0.000	0.000	0.00	1.0000	.7643	0.0000	0.00	1.0000	0.000000		0.000	0.000	0.00	1.0000	.7643	0.0000	0.00	1.0000	0.000000											
.010	.043	21.	.4022	.8024	.4490	12.56	1.0000	0.000000		.010	.043	21.	.4022	.8024	.4490	12.56	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		.017	.076	7.	.4190	.8057	.6668	13.07	.9995	0.000003		.017	.076	7.	.4190	.8057	.6668	13.07	.9995	0.000003											
.035	.152	75.	.5119	.8261	.5632	15.84	.9981	.000010		.035	.152	75.	.5119	.8261	.5632	15.84	.9981	.000010		.035	.152	75.	.5119	.8261	.5632	15.84	.9981	.000010											
.043	.184	91.	.5362	.8321	.5878	16.55	.9974	.000013		.043	.184	91.	.5362	.8321	.5878	16.55	.9974	.000013		.043	.184	91.	.5362	.8321	.5878	16.55	.9974	.000013											
.049	.261	128.	.5487	.8353	.6203	16.91	.9957	.000020		.049	.261	128.	.5487	.8353	.6203	16.91	.9957	.000020		.049	.261	128.	.5487	.8353	.6203	16.91	.9957	.000020											
.047	.284	142.	.5685	.8405	.6201	17.48	.9951	.000023		.047	.284	142.	.5685	.8405	.6201	17.48	.9951	.000023		.047	.284	142.	.5685	.8405	.6201	17.48	.9951	.000023											
.042	.353	174.	.5821	.8442	.6336	17.48	.9935	.000029		.042	.353	174.	.5821	.8442	.6336	17.48	.9935	.000029		.042	.353	174.	.5821	.8442	.6336	17.48	.9935	.000029											
.036	.413	203.	.5936	.8474	.6449	18.21	.9919	.000034		.036	.413	203.	.5936	.8474	.6449	18.21	.9919	.000034		.036	.413	203.	.5936	.8474	.6449	18.21	.9919	.000034											
.111	.478	235.	.6057	.8508	.6567	18.55	.9901	.000041		.111	.478	235.	.6057	.8508	.6567	18.55	.9901	.000041		.111	.478	235.	.6057	.8508	.6567	18.55	.9901	.000041											
.139	.598	294.	.6231	.8558	.6736	19.05	.9886	.000052		.139	.598	294.	.6231	.8558	.6736	19.05	.9886	.000052		.139	.598	294.	.6231	.8558	.6736	19.05	.9886	.000052											
.167	.685	337.	.6369	.8599	.6868	19.44	.9839	.000061		.167	.685	337.	.6369	.8599	.6868	19.44	.9839	.000061		.167	.685	337.	.6369	.8599	.6868	19.44	.9839	.000061											
.180	.772	380.	.6451	.8624	.6944	19.67	.9811	.000059		.180	.772	380.	.6451	.8624	.6944	19.67	.9811	.000059		.180	.772	380.	.6451	.8624	.6944	19.67	.9811	.000059											
.205	.881	434.	.6556	.8656	.7047	19.96	.9774	.000070		.205	.881	434.	.6556	.8656	.7047	19.96	.9774	.000070		.205	.881	434.	.6556	.8656	.7047	19.96	.9774	.000070											
.274	.967	474.	.6627	.8678	.7114	20.16	.9746	.000049		.274	.967	474.	.6627	.8678	.7114	20.16	.9746	.000049		.274	.967	474.	.6627	.8678	.7114	20.16	.9746	.000049											
.241	1.033	509.	.6707	.8703	.7189	20.39	.9721	.000096		.241	1.033	509.	.6707	.8703	.7189	20.39	.9721	.000096		.241	1.033	509.	.6707	.8703	.7189	20.39	.9721	.000096											
.274	1.174	578.	.6796	.8732	.7273	20.63	.9684	.000111		.274	1.174	578.	.6796	.8732	.7273	20.63	.9684	.000111		.274	1.174	578.	.6796	.8732	.7273	20.63	.9684	.000111											
.307	1.316	648.	.6893	.8763	.7363	20.90	.9612	.000124		.307	1.316	648.	.6893	.8763	.7363	20.90	.9612	.000124		.307	1.316	648.	.6893	.8763	.7363	20.90	.9612	.000124											
.328	1.408	694.	.6922	.8772	.7391	20.98	.9575	.000136		.328	1.408	694.	.6922	.8772	.7391	20.98	.9575	.000136		.328	1.408	694.	.6922	.8772	.7391	20.98	.9575	.000136											
.343	1.512	744.	.7038	.8810	.7408	21.30	.9531	.000148		.343	1.512	744.	.7038	.8810	.7408	21.30	.9531	.000148		.343	1.512	744.	.7038	.8810	.7408	21.30	.9531	.000148											
.374	1.653	814.	.7114	.8834	.7548	21.51	.9469	.000164		.374	1.653	814.	.7114	.8834	.7548	21.51	.9469	.000164		.374	1.653	814.	.7114	.8834	.7548	21.51	.9469	.000164											
.425	1.822	897.	.722.	.8873	.7669	21.81	.9392	.000183		.425	1.822	897.	.722.	.8873	.7669	21.81	.9392	.000183		.425	1.822	897.	.722.	.8873	.7669	21.81	.9392	.000183											
.453	1.941	956.	.7249	.8881	.7692	21.88	.9334	.000198		.453	1.941	956.	.7249	.8881	.7692	21.88	.9334	.000198		.453	1.941	956.	.7249	.8881	.7692	21.88	.9334	.000198											
.472	2.066	1018.	.7303	.8900	.7741	22.03	.9272	.000213		.472	2.066	1018.	.7303	.8900	.7741	22.03	.9272	.000213		.472	2.066	1018.	.7303	.8900	.7741	22.03	.9272	.000213											
.518	2.219	1093.	.7388	.8929	.7819	22.26	.9193	.000232		.518	2.219	1093.	.7388	.8929	.7819	22.26	.9193	.000232		.518	2.219	1093.	.7388	.8929	.7819	22.26	.9193	.000232											
.546	2.338	1152.	.7432	.8945	.7858	22.39	.9129	.000248		.546	2.338	1152.	.7432	.8945	.7858	22.39	.9129	.000248		.546	2.338	1152.	.7432	.8945	.7858	22.39	.9129	.000248											
.574	2.453	1211.	.7503	.8970	.7892	22.57	.9042	.000264		.574	2.453	1211.	.7503	.8970	.7892	22.57	.9042	.000264		.574	2.453	1211.	.7503	.8970	.7892	22.57	.9042	.000264											
.604	2.588	1276.	.7573	.8995	.7985	22.76	.8987	.000281		.604	2.588	1276.	.7573	.8995	.7985	22.76	.8987	.000281		.604	2.588	1276.	.7573	.8995	.7985	22.76	.8987	.000281											
.637	2.730	1345.	.7621	.9012	.8078	22.89	.8901	.000301		.637	2.730	1345.	.7621	.9012	.8078	22.89	.8901	.000301		.637	2.730	1345.	.7621	.9012	.8078	22.89	.8901	.000301											
.673	2.882	1420.	.7681	.9033	.8081	23.05	.8807	.000323		.673	2.882	1420.	.7681	.9033	.8081	23.05	.8807	.000323		.673	2.882	1420.	.7681	.9033	.8081	23.05	.8807	.000323											
.713	3.056	1506.	.7751	.9059	.8144	23.24	.8693	.000348		.713	3.056	1506.	.7751	.9059	.8144	23.24	.8693	.000348		.713	3.056	1506.	.7751	.9059	.8144	23.24	.8693	.000348											
.746	3.195	1575.	.7802	.9077	.8188	23.38	.8596	.000370		.746	3.195	1575.	.7802	.9077	.8188	23.38	.8596	.000370		.746	3.195	1575.	.7802	.9077	.8188	23.38	.8596	.000370											
.786	3.355	1658.	.7896	.9112	.8271	23.63	.8478	.000396		.786	3.355	1658.	.7896	.9112	.8271	23.63	.8478	.000396		.786	3.355	1658.	.7896	.9112	.8271	23.63	.8478	.000396											
.829	3.551	1749.	.7973	.9141	.8339	23.83	.8341	.000426		.829	3.551	1749.	.7973	.9141	.8339	23.83	.8341	.000426		.829	3.551	1749.	.7973	.9141	.8339	23.83	.8341	.000426											
.878	3.676	1811.	.8039	.9166	.8397	24.01	.8245	.000444		.878	3.676	1811.	.8039	.9166	.8397	24.01	.8245	.000444		.878	3.676	1811.	.8039	.9166	.8397	24.01	.8245	.000444											
.854	3.830	1891.	.8074	.9180	.8427	24.10	.8114	.000474		.854	3.830	1891.	.8074	.9180	.8427	24.10	.8114	.000474		.854	3.830	1891.	.8074	.9180	.8427	24.10	.8114	.000474											
.912	3.932	1966.	.8103	.9193	.8468	24.19	.7991	.000500		.912	3.932	1966.	.8103	.9193	.8468	24.19	.7991	.000500		.912	3.932	1966.	.8103	.9193	.8468	24.19	.7991	.000500											
.945	4.133	2036.	.8183	.9221	.8521	24.39	.7871	.000524		.945	4.133	2036.	.8183	.9221	.8521	24.39	.7871	.000524		.945	4.133	2036.	.8183	.9221	.8521	24.39	.7871	.000524											
.979	4.280	2108.	.8237	.9247	.8568	24.53	.7742	.000552		.979	4.280	2108.	.8237	.9247	.8568	24.53	.7742	.000552		.979	4.280	2108.	.8237	.9247	.8568	24.53	.7742	.000552											
1.033	4.449	2192.	.8317	.9271	.8632	24.73	.7590	.000583		1.033	4.449	2192.	.8317	.9271	.8632	24.73	.7590	.000583		1.033	4.449	2192.	.8317	.9271	.8632	24.73	.7590	.000583											
1.074	4.644	2288.	.8378	.9297	.8689	24.90	.7406	.000621		1.074	4.644	2288.	.8378	.9297	.8689	24.90	.7406	.000621		1.074	4.644	2288.	.8378	.9297	.8689	24.90	.7406	.000621											

ORIGINAL PAGE IS
OF POOR QUALITY

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 DATAEDGE MACH NO. = 1.3151 TOTAL PRESSURE = .6678E-05 N/M²
X = 7.62 CM TOTAL TEMPERATURE = 304.28 DEG-K

UE = 395.85 M/SEC WE-DELTA-STAR = 47510.				DELTA STAR = .4777 CM RE-THETA = 24190.				THETA = .2433 CM MUMALL = .6598 CM/SEC				M = 1.963	
LEAST SQUARE FIT PARAMETERS UTIME = 14.1076 M/SEC CMICOR = .9072E-05				CF = .001953 YMAX = 2.571 CM				PI = .6205 YMIN = .092 CM				DELTA = 2.7131 CM	
Y (CM)	Y/THETA	Y-PLUS	M/NE	RNO/RMPE	U/UE	U-PLUS	TAU/TAU-MAX	V/U					
3.040	0.000	0.	0.0000	.7656	0.0000	0.00	1.0000	0.000000					
3.10	.041	21.	.3934	.8024	.4428	12.47	1.0000	0.000000					
3.27	.093	49.	.4758	.8186	.5258	14.46	.8992	0.000005					
3.31	.130	68.	.5081	.8261	.5591	15.42	.8985	0.000004					
3.57	.204	109.	.5303	.8315	.5914	16.49	.8640	0.000015					
3.54	.224	117.	.5473	.8358	.5997	16.97	.8645	0.000017					
3.72	.297	155.	.5667	.8409	.6190	17.54	.8644	0.000024					
3.92	.381	199.	.5865	.8462	.6376	18.11	.8674	0.000031					
4.02	.405	209.	.5932	.8532	.6419	18.83	.8696	0.000042					
4.20	.445	242.	.6113	.8559	.6711	19.19	.8781	0.000057					
4.31	.479	330.	.6267	.8574	.6767	19.27	.8854	0.000065					
4.44	.509	371.	.6369	.8607	.6865	19.56	.8829	0.000063					
4.54	.541	401.	.6459	.8634	.6951	19.81	.8810	0.000060					
4.70	.570	439.	.6517	.8651	.7007	19.94	.8786	0.000056					
4.84	.598	508.	.6562	.8690	.7125	20.33	.8740	0.000050					
4.99	.624	557.	.6625	.8714	.7203	20.54	.8706	0.000043					
5.03	.646	631.	.6675	.8744	.7284	20.81	.8652	0.000034					
5.13	.669	675.	.6700	.8762	.7339	20.97	.8619	0.000023					
5.20	.683	729.	.6768	.8764	.7431	21.24	.8476	0.000014					
5.32	.701	827.	.6858	.8823	.7514	21.49	.8500	0.000014					
5.41	.713	907.	.6931	.8848	.7591	21.69	.8476	0.000012					
5.41	.716	951.	.7116	.8843	.7623	21.82	.8387	0.000012					
5.60	.739	1054.	.7339	.8915	.7643	22.24	.8251	0.000016					
5.74	.761	1158.	.7501	.8936	.7639	22.41	.8194	0.000021					
5.84	.781	1257.	.7647	.8963	.7647	22.67	.8143	0.000025					
5.97	.800	1360.	.7757	.8993	.7664	22.95	.8087	0.000027					
6.07	.817	1462.	.7862	.9024	.7664	23.09	.8068	0.000026					
6.17	.833	1562.	.7968	.9049	.7678	23.27	.8074	0.000026					
6.27	.848	1662.	.8078	.9078	.7693	23.44	.8077	0.000026					
6.37	.863	1762.	.8189	.9090	.7703	23.58	.8077	0.000026					
6.47	.878	1862.	.8299	.9111	.7714	23.73	.8077	0.000026					
6.57	.893	1962.	.8404	.9132	.7724	23.84	.8077	0.000026					
6.67	.908	2062.	.8509	.9153	.7734	23.91	.8077	0.000026					
6.77	.923	2162.	.8614	.9174	.7744	24.01	.8077	0.000026					
6.87	.938	2262.	.8719	.9195	.7754	24.11	.8077	0.000026					
6.97	.953	2362.	.8824	.9216	.7764	24.21	.8077	0.000026					
7.07	.968	2462.	.8929	.9237	.7774	24.31	.8077	0.000026					
7.17	.983	2562.	.9034	.9258	.7784	24.41	.8077	0.000026					
7.27	1.000	2662.	.9139	.9279	.7794	24.51	.8077	0.000026					
7.37	1.013	2762.	.9244	.9299	.7804	24.61	.8077	0.000026					
7.47	1.028	2862.	.9349	.9320	.7814	24.71	.8077	0.000026					
7.57	1.043	2962.	.9454	.9341	.7824	24.81	.8077	0.000026					
7.67	1.058	3062.	.9559	.9362	.7834	24.91	.8077	0.000026					
7.77	1.073	3162.	.9664	.9383	.7844	25.01	.8077	0.000026					
7.87	1.088	3262.	.9769	.9404	.7854	25.11	.8077	0.000026					
7.97	1.103	3362.	.9874	.9425	.7864	25.21	.8077	0.000026					
8.07	1.118	3462.	.9979	.9446	.7874	25.31	.8077	0.000026					
8.17	1.133	3562.	1.0084	.9467	.7884	25.41	.8077	0.000026					
8.27	1.148	3662.	1.0189	.9488	.7894	25.51	.8077	0.000026					
8.37	1.163	3762.	1.0294	.9509	.7904	25.61	.8077	0.000026					
8.47	1.178	3862.	1.0399	.9530	.7914	25.71	.8077	0.000026					
8.57	1.193	3962.	1.0504	.9551	.7924	25.81	.8077	0.000026					
8.67	1.208	4062.	1.0609	.9572	.7934	25.91	.8077	0.000026					
8.77	1.223	4162.	1.0714	.9593	.7944	26.01	.8077	0.000026					
8.87	1.238	4262.	1.0819	.9614	.7954	26.11	.8077	0.000026					
8.97	1.253	4362.	1.0924	.9635	.7964	26.21	.8077	0.000026					
9.07	1.268	4462.	1.1029	.9656	.7974	26.31	.8077	0.000026					
9.17	1.283	4562.	1.1134	.9677	.7984	26.41	.8077	0.000026					
9.27	1.298	4662.	1.1239	.9698	.7994	26.51	.8077	0.000026					
9.37	1.313	4762.	1.1344	.9719	.8004	26.61	.8077	0.000026					
9.47	1.328	4862.	1.1449	.9740	.8014	26.71	.8077	0.000026					
9.57	1.343	4962.	1.1554	.9761	.8024	26.81	.8077	0.000026					
9.67	1.358	5062.	1.1659	.9782	.8034	26.91	.8077	0.000026					
9.77	1.373	5162.	1.1764	.9803	.8044	27.01	.8077	0.000026					
9.87	1.388	5262.	1.1869	.9824	.8054	27.11	.8077	0.000026					
9.97	1.403	5362.	1.1974	.9845	.8064	27.21	.8077	0.000026					
10.07	1.418	5462.	1.2079	.9866	.8074	27.31	.8077	0.000026					
10.17	1.433	5562.	1.2184	.9887	.8084	27.41	.8077	0.000026					
10.27	1.448	5662.	1.2289	.9908	.8094	27.51	.8077	0.000026					
10.37	1.463	5762.	1.2394	.9929	.8104	27.61	.8077	0.000026					
10.47	1.478	5862.	1.2499	.9950	.8114	27.71	.8077	0.000026					
10.57	1.493	5962.	1.2604	.9971	.8124	27.81	.8077	0.000026					
10.67	1.508	6062.	1.2709	.9992	.8134	27.91	.8077	0.000026					
10.77	1.523	6162.	1.2814	1.0013	.8144	28.01	.8077	0.000026					
10.87	1.538	6262.	1.2919	1.0034	.8154	28.11	.8077	0.000026					
10.97	1.553	6362.	1.3024	1.0055	.8164	28.21	.8077	0.000026					
11.07	1.568	6462.	1.3129	1.0076	.8174	28.31	.8077	0.000026					
11.17	1.583	6562.	1.3234	1.0097	.8184	28.41	.8077	0.000026					
11.27	1.598	6662.	1.3339	1.0118	.8194	28.51	.8077	0.000026					
11.37	1.613	6762.	1.3444	1.0139	.8204	28.61	.8077	0.000026					
11.47	1.628	6862.	1.3549	1.0160	.8214	28.71	.8077	0.000026					
11.57	1.643	6962.	1.3654	1.0181	.8224	28.81	.8077	0.000026					
11.67	1.658	7062.	1.3759	1.0202	.8234	28.91	.8077	0.000026					
11.77	1.673	7162.	1.3864	1.0223	.8244	29.01	.8077	0.000026					
11.87	1.688	7262.	1.3969	1.0244	.8254	29.11	.8077	0.000026					
11.97	1.703	7362.	1.4074	1.0265	.8264	29.21	.8077	0.000026					
12.07	1.718	7462.	1.4179	1.0286	.8274	29.31	.8077	0.000026					
12.17	1.733	7562.	1.4284	1.0307	.8284	29.41	.8077	0.000026					
12.27	1.748	7662.	1.4389	1.0328	.8294	29.51	.8077	0.000026					
12.37	1.763	7762.	1.4494	1.0349	.8304	29.61	.8077	0.000026					
12.47	1.778	7862.	1.4599	1.0370	.8314	29.71	.8077	0.000026					
12.57	1.793	7962.	1.4704	1.0391	.8324	29.81	.8077	0.000026					
12.67	1.808	8062.	1.4809	1.0412	.8334	29.91	.8077	0.000026					
12.77	1.823	8162.	1.4914	1.0433	.8344	30.01	.8077	0.000026					
12.87	1.838	8262.	1.5019	1.0454	.8354	30.11	.8077	0.000026					
12.97	1.853	8362.	1.5124	1.0475	.8364	30.21	.8077	0.000026					
13.07	1.868	8462.	1.5229	1.0496	.8374	30.31	.8077	0.000026					
13.17	1.883	8562.	1.5334	1.0517	.8384	30.41	.8077	0.000026					
13.27	1.898	8662.	1.5439	1.0538	.8394	30.51	.8077	0.000026					
13.37	1.913	8762.	1.5544	1.0559	.8404	30.61	.8077	0.000026					
13.47	1.928	8862.	1.5649	1.0580	.8414	30.71	.8077	0.000026					
13.57	1.943	8962.	1.5754	1.0601	.8424	30.81	.8077	0.000026					
13.67	1.958	9062.	1.5859	1.0622	.8434	30.91	.8077	0.000026					
13.77	1.973	9162.	1.5964	1.0643	.8444	31.01	.8077	0.000026					
13.87	1.988	9262.	1.6069	1.0664	.8454	31.11	.8077	0.000026					
13.97	1.993	9362.	1.6174	1.0685	.8464	31.21	.8077	0.000026					
14.07	2.008	9462.	1.6279	1.0706	.8474	31.31	.8077	0.000026					
14.17	2.023	9562.	1.6384	1.0727	.8484	31.41	.8077	0.000026					
14.27	2.038	9662.	1.6489	1.0748	.8494	31.51	.8077	0.000026					
14.37	2.053	9762.	1.6594	1.0769	.8504	31.61	.8077	0.000026					
14.47	2.068	9862.	1.6699	1.0790	.8514	31.71	.8077	0.000026					
14.57	2.083	9962.	1.6804	1.0811	.8524	31.81	.8077	0.000026					
14.67	2.098	10062.	1.6909	1.0832	.8534	31.91	.8077	0.000026					
14.77	2.113	10162.	1.7014	1.0853	.8544	32.01	.8077	0.000026					
14.87	2.128	10262.	1.7119	1.0874	.8554	32.11	.8077	0.000026					
14.97	2.143	10362.	1.7224	1.0895	.8564	32.21	.8077	0.000026					
15.07	2.158	10462.	1.7329	1.0916	.8574	32.31	.8077	0.000026					
15.17	2.173	10562.	1.7434	1.0937	.8584	32.41	.8077	0.000026					
15.27	2.188	10662.	1.7539	1.0958	.8594	32.51	.8077	0.000026					
15.37	2.203	10762.	1.7644	1.0979									

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	.9594	.9244	26.86	.5141	.001039
1.677	6.895	3510.	.9135	.9617	.9277	27.02	.4776	.001104
1.720	7.072	3702.	.9188	.9634	.9300	27.15	.4547	.001144
1.771	7.281	3812.	.9254	.9654	.9312	27.32	.4276	.001192
1.809	7.438	3894.	.9308	.9677	.9347	27.46	.4072	.001227
1.845	7.594	3970.	.9337	.9691	.9341	27.53	.3840	.001260
1.879	7.725	4044.	.9368	.9711	.9356	27.61	.3696	.001297
1.937	7.944	4159.	.9433	.9741	.9397	27.77	.3409	.001341
1.981	8.142	4263.	.9475	.9760	.9451	27.88	.3145	.001366
2.014	8.278	4334.	.9528	.9784	.9493	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	9.044	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
2.289	9.411	4927.	.9754	.9886	.9610	28.57	.1575	.001644
2.307	9.484	4945.	.9782	.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	10.341	5424.	.9906	.9954	.9628	28.94	.0537	.001927
2.571	10.449	5533.	.9918	.9961	.9637	28.97	.0389	.001837
2.607	10.714	5610.	.9937	.9970	.9651	29.02	.0285	.001857
2.637	10.820	5665.	.9956	.9975	.9659	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	12.887	6747.	.9996	.9998	.9697	29.16	0.0000	.001899
3.243	13.351	6990.	.9996	.9995	.9693	29.15	0.0000	.001899
3.344	13.924	7219.	.9990	.9995	.9693	29.15	0.0000	.001899
3.443	14.223	7444.	.9998	.9999	.9698	29.17	0.0000	.001899
3.543	14.641	7665.	.9998	.9999	.9698	29.17	0.0000	.001899
3.631	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
3.871	15.993	7900.	.9996	.9998	.9997	29.17	0.0000	.001899

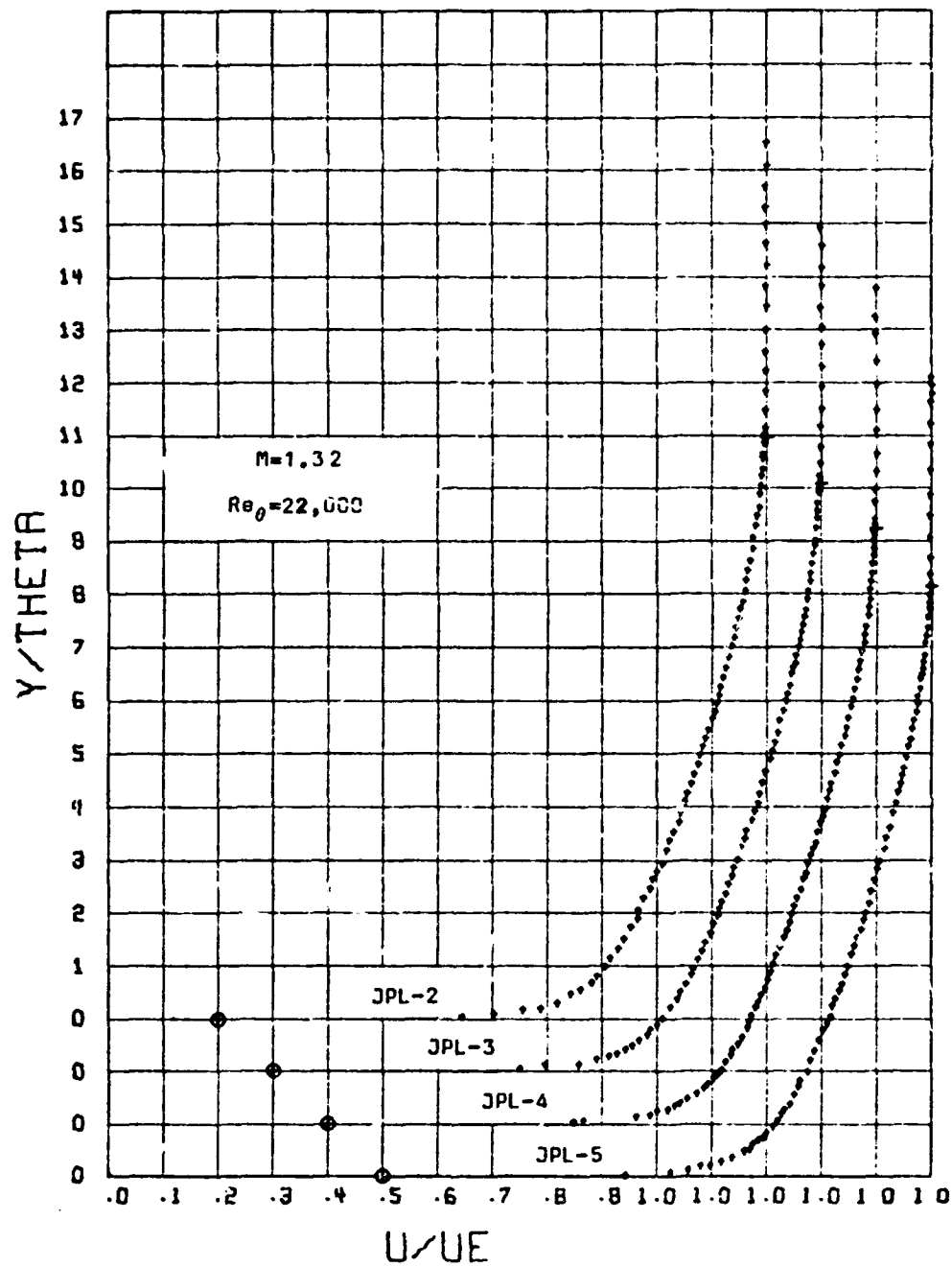
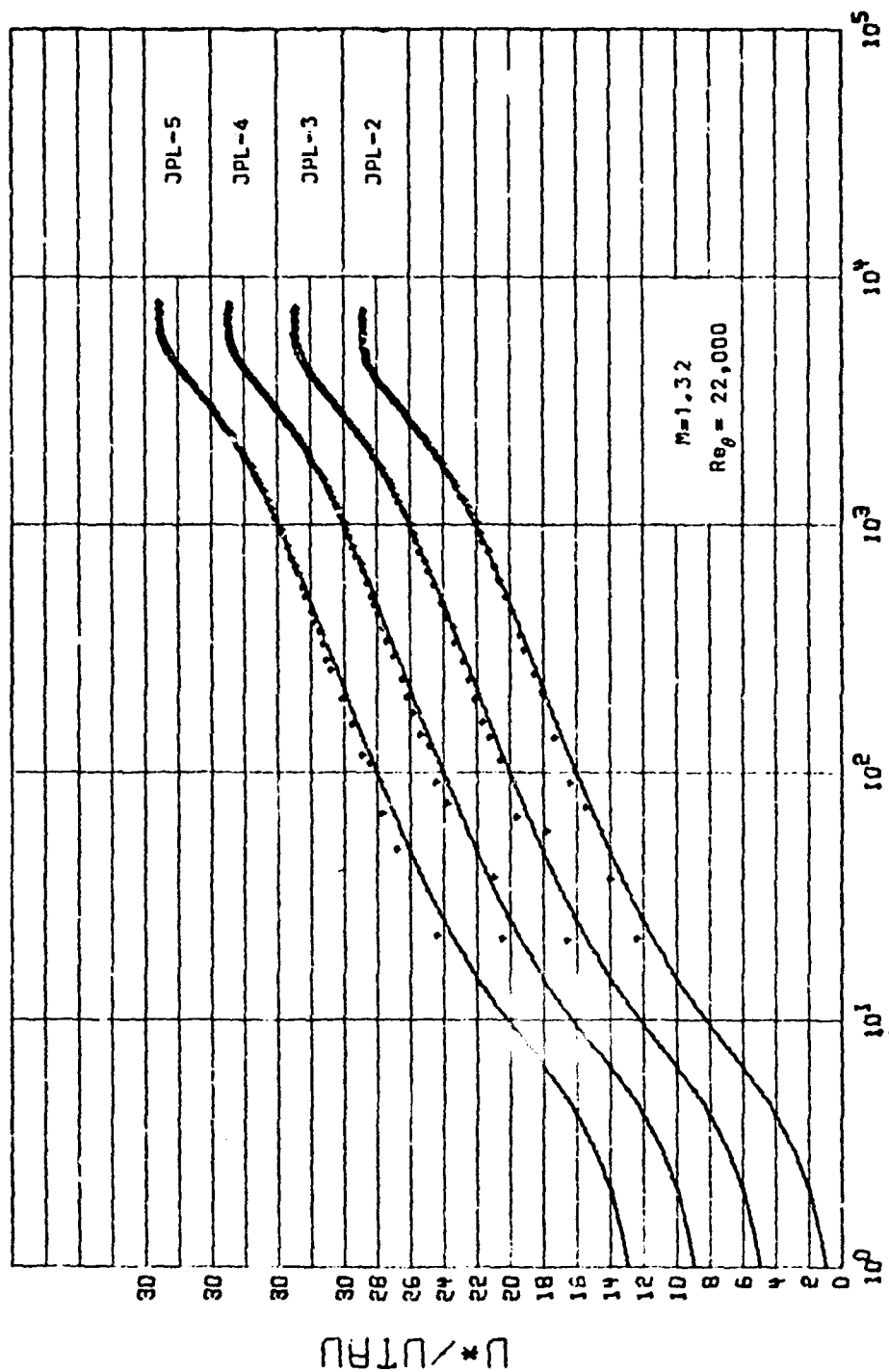


Figure A29. Mean Velocity Profiles.

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Figure A30. Van Driest Scaled Mean Velocity Profiles.

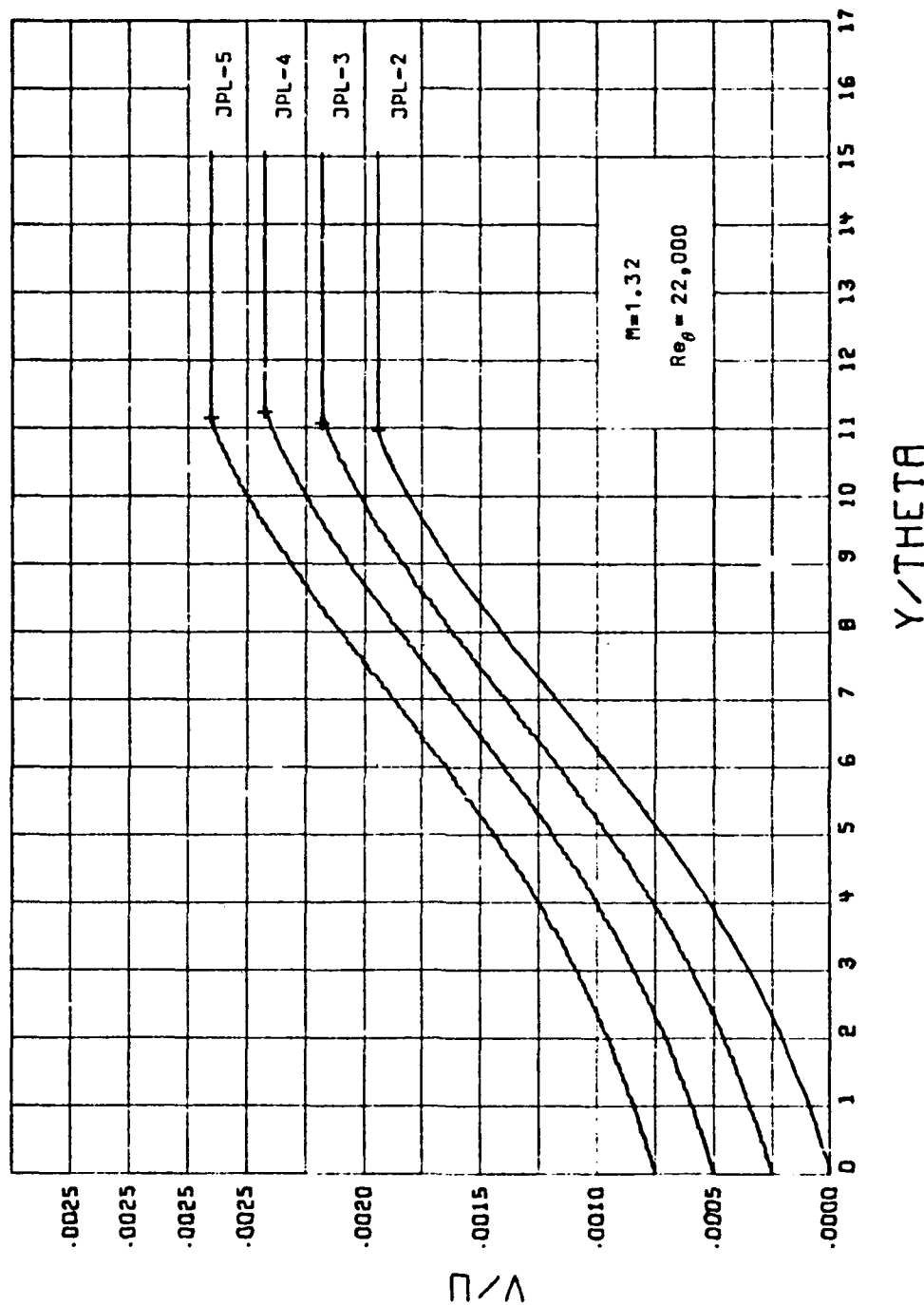


Figure A31. Normal Velocity Distribution.

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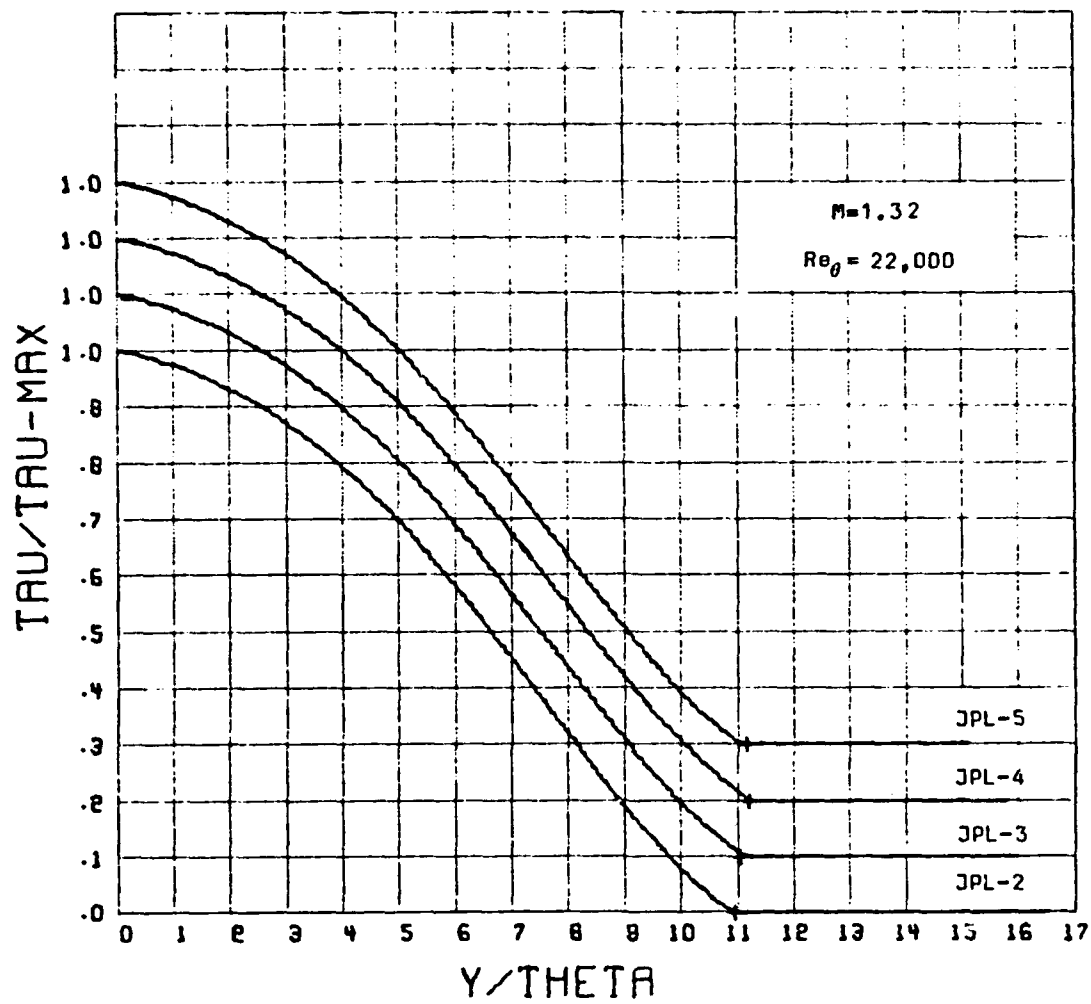


Figure A 32. Shear Stress Distribution.

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 = 2.249 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	.4776	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	542.	.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	.8797	.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	.8437	.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	.8109	.000637	
1.027	5.281	3920.	.8647	.9413	.8913	26.57	.8050	.000670	
1.061	5.457	4050.	.8704	.9434	.8960	26.73	.8000	.000703	
1.097	5.640	4186.	.8754	.9456	.9002	26.86	.7954	.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									
X= -7.62 CM									
TOTAL PRESSURE= .1335E+06 N/M**2									
TOTAL TEMPERATURE= 322.72 DEG-K									
M= 1.938									
DELTA STAR= .3969 CM									
THETA= .2047 CM									
MUWALL= .3709 CM**2/SEC									
DELTA= 2.4022 CM									
PI= .550R									
YMIN= .036 CM									
LEAST SQUARE FIT PARAMETERS									
CF= .001858									
UTAU= 14.2605 M/SEC									
CHISQR= .2328E-04									
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	.8854	.6934	20.29	.9875	.000049	
.100	.413	308.	.6658	.8924	.7047	20.63	.9815	.000060	
.113	.437	321.	.6876	.8991	.7140	20.92	.9777	.000071	
.127	.461	334.	.7115	.9056	.7252	21.26	.9742	.000082	
.143	.484	347.	.7376	.9129	.7319	21.47	.9692	.000093	
.160	.507	360.	.7658	.9204	.7395	21.70	.9647	.000105	
.178	.529	373.	.7962	.9279	.7471	21.93	.9603	.000115	
.197	.551	386.	.8286	.9353	.7541	22.15	.9572	.000122	
.217	.573	399.	.8630	.9433	.7606	22.35	.9518	.000135	
.238	.595	412.	.8994	.9517	.7668	22.54	.9469	.000147	
.260	.617	425.	.9376	.9604	.7742	22.77	.9385	.000164	
.283	.639	438.	.9776	.9694	.7796	22.94	.9324	.000180	
.307	.661	451.	.9955	.9785	.7876	23.19	.9248	.000197	
.332	.683	464.	.9955	.9875	.7927	23.34	.9174	.000213	
.358	.705	477.	.9955	.9964	.7975	23.49	.9104	.000229	
.385	.727	490.	.9955	.9977	.8059	23.75	.9011	.000249	
.413	.749	503.	.9955	.9987	.8156	24.06	.8971	.000274	
.442	.771	516.	.9955	.9994	.8184	24.14	.8981	.000299	
.472	.793	529.	.9955	.9997	.8261	24.39	.8971	.000320	
.503	.815	542.	.9955	.9997	.8313	24.55	.8957	.000348	
.535	.837	555.	.9955	.9997	.8367	24.72	.8926	.000370	
.568	.859	568.	.9955	.9997	.8417	24.88	.8926	.000400	
.602	.881	581.	.9955	.9997	.8491	25.11	.8915	.000424	
.637	.903	594.	.9955	.9997	.8571	25.20	.8904	.000447	
.673	.925	607.	.9955	.9997	.8650	25.41	.8893	.000470	
.710	.947	620.	.9955	.9997	.8729	25.64	.8882	.000493	
.748	.969	633.	.9955	.9997	.8807	25.76	.8871	.000512	
.787	.991	646.	.9955	.9997	.8885	25.99	.8860	.000534	
.827	.991	659.	.9955	.9997	.8963	26.17	.8849	.000557	
.868	.991	672.	.9955	.9997	.9041	26.31	.8838	.000580	
.910	.991	685.	.9955	.9997	.9119	26.53	.8827	.000603	
.953	.991	698.	.9955	.9997	.9197	26.71	.8816	.000626	
.997	.991	711.	.9955	.9997	.9275	26.92	.8805	.000649	
1.042	.991	724.	.9955	.9997	.9353			.000672	
1.087	.991	737.	.9955	.9997	.9431			.000695	
1.132	.991	750.	.9955	.9997	.9509			.000718	
1.177	.991	763.	.9955	.9997	.9587			.000741	
1.222	.991	776.	.9955	.9997	.9665			.000764	
1.267	.991	789.	.9955	.9997	.9743			.000787	
1.312	.991	802.	.9955	.9997	.9821			.000810	
1.357	.991	815.	.9955	.9997	.9899			.000833	
1.402	.991	828.	.9955	.9997	.9977			.000856	
1.447	.991	841.	.9955	.9997	.9955			.000879	
1.492	.991	854.	.9955	.9997	.9933			.000902	
1.537	.991	867.	.9955	.9997	.9911			.000925	
1.582	.991	880.	.9955	.9997	.9889			.000948	
1.627	.991	893.	.9955	.9997	.9867			.000971	
1.672	.991	906.	.9955	.9997	.9845			.000994	
1.717	.991	919.	.9955	.9997	.9823			.001017	
1.762	.991	932.	.9955	.9997	.9801			.001040	
1.807	.991	945.	.9955	.9997	.9779			.001063	
1.852	.991	958.	.9955	.9997	.9757			.001086	
1.897	.991	971.	.9955	.9997	.9735			.001109	
1.942	.991	984.	.9955	.9997	.9713			.001132	
1.987	.991	997.	.9955	.9997	.9691			.001155	
2.032	.991	1010.	.9955	.9997	.9669			.001178	
2.077	.991	1023.	.9955	.9997	.9647			.001201	
2.122	.991	1036.	.9955	.9997	.9625			.001224	
2.167	.991	1049.	.9955	.9997	.9603			.001247	
2.212	.991	1062.	.9955	.9997	.9581			.001270	
2.257	.991	1075.	.9955	.9997	.9559			.001293	
2.302	.991	1088.	.9955	.9997	.9537			.001316	
2.347	.991	1101.	.9955	.9997	.9515			.001339	
2.392	.991	1114.	.9955	.9997	.9493			.001362	
2.437	.991	1127.	.9955	.9997	.9471			.001385	
2.482	.991	1140.	.9955	.9997	.9449			.001408	
2.527	.991	1153.	.9955	.9997	.9427			.001431	
2.572	.991	1166.	.9955	.9997	.9405			.001454	
2.617	.991	1179.	.9955	.9997	.9383			.001477	
2.662	.991	1192.	.9955	.9997	.9361			.001500	
2.707	.991	1205.	.9955	.9997	.9339			.001523	
2.752	.991	1218.	.9955	.9997	.9317			.001546	
2.797	.991	1231.	.9955	.9997	.9295			.001569	
2.842	.991	1244.	.9955	.9997	.9273			.001592	
2.887	.991	1257.	.9955	.9997	.9251			.001615	
2.932	.991	1270.	.9955	.9997	.9229			.001638	
2.977	.991	1283.	.9955	.9997	.9207			.001661	
3.022	.991	1296.	.9955	.9997	.9185			.001684	
3.067	.991	1309.	.9955	.9997	.9163			.001707	
3.112	.991	1322.	.9955	.9997	.9141			.001730	
3.157	.991	1335.	.9955	.9997	.9119			.001753	
3.202	.991	1348.	.9955	.9997	.9097			.001776	
3.247	.991	1361.	.9955	.9997	.9075			.001799	
3.292	.991	1374.	.9955	.9997	.9053			.001822	
3.337	.991	1387.	.9955	.9997	.9031			.001845	
3.382	.991	1400.	.9955	.9997	.9009			.001868	
3.427	.991	1413.	.9955	.9997	.8987			.001891	
3.472	.991	1426.	.9955	.9997	.8965			.001914	
3.517	.991	1439.	.9955	.9997	.8943			.001937	
3.562	.991	1452.	.9955	.9997	.8921			.001960	
3.607	.991	1465.	.9955	.9997	.8899			.001983	
3.652	.991	1478.	.9955	.9997	.8877			.002006	
3.697	.991	1491.	.9955	.9997	.8855			.002029	
3.742	.991	1504.	.9955	.9997	.8833			.002052	
3.787	.991	1517.	.9955	.9997	.8811			.002075	
3.832	.991	1530.	.9955	.9997	.8789			.002098	
3.877	.991	1543.	.9955	.9997	.8767			.002121	
3.922	.991	1556.	.9955	.9997	.8745			.002144	
3.967	.991	1569.	.9955	.9997	.8723			.002167	
4.012	.991	1582.	.9955	.9997	.8701			.002190	
4.057	.991	1595.	.9955	.9997	.8679			.002213	
4.102	.991	1608.	.9955	.9997	.8657			.002236	
4.147	.991	1621.	.9955	.9997	.8635			.002259	
4.192	.991	1634.	.9955	.9997	.8613			.002282	
4.237	.991	1647.	.9955	.9997	.8591			.002305	
4.282	.991	1660.	.9955	.9997	.8569			.002328	
4.327	.991	1673.	.9955	.9997	.8547			.002351	
4.372	.991	1686.	.9955	.9997	.8525			.002374	
4.417	.991	1699.	.9955	.9997	.8503			.002397	
4.462	.991	1712.	.9955	.9997	.8481			.002420	
4.507	.991	1725.	.9955	.9997	.8459			.002443	
4.552	.991	1738.	.9955	.9997	.8437			.002466	
4.597	.991	1751.	.9955	.9997	.8415			.002489	
4.642	.991	1764.	.9955	.9997	.8393			.002512	
4.687	.991	1777.	.9955	.9997	.8371			.002535	
4.732	.991	1790.	.9955	.9997	.8349			.002558	
4.777	.991	1803.	.9955	.9997	.8327			.002581	
4.822	.991	1816.	.9955	.9997	.8305			.002604	
4.867	.991	1829.	.9955	.9997	.8283			.002627	
4.912	.991	1842.	.9955	.9997	.8261			.002650	
4.957	.991	1855.	.9955	.9997	.8239			.002673	
5.002	.991	1868.	.9955	.9997	.8217			.002696	
5.047	.991	1881.	.9955	.9997	.8195			.002719	
5.092	.991	1894.	.9955	.9997	.8173			.002742	

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	.0010112
1.494	7.299	5.747.	.9238	.9655	.9401	28.01	.4684	.0010102
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	9.971	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 DATA

ENGINE MACH NO.= 1.3125 X= 0.00 CM									
TOTAL PRESSURE= .1339E+06 N/M ² TOTAL TEMPERATURE= 323.70 DEG-K									
UE= 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= .001788 DELTA= 2.4868 CM									
LEAST SQUARE FIT PARAMETERS UTAD= 16.2391 M/SEC CHISQR= .277RE-04 CF= .001860 YMAX= 2.341 CM PI= .5314 YMIN= .038 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	0.000000	
.020	.096	78.	.5008	.8249	.5514	16.02	.9991	0.000004	
.030	.138	112.	.5395	.8343	.5906	17.19	.9982	0.000008	
.040	.181	147.	.5611	.8399	.6123	17.84	.9973	0.000011	
.050	.227	201.	.5812	.8452	.6322	18.44	.9957	0.000017	
.060	.274	255.	.5919	.8481	.6427	18.75	.9940	0.000023	
.070	.313	308.	.6046	.8519	.6469	19.49	.9917	0.000030	
.080	.354	373.	.6167	.8582	.6792	19.85	.9897	0.000037	
.090	.398	471.	.6292	.8589	.6789	19.85	.9897	0.000037	
.100	.444	574.	.6422	.8627	.6914	20.23	.9844	0.000046	
.110	.490	637.	.6551	.8666	.7038	20.61	.9823	0.000058	
.120	.537	736.	.6686	.8707	.7165	21.00	.9797	0.000065	
.130	.585	824.	.6824	.8752	.7298	21.22	.9775	0.000076	
.140	.633	912.	.6963	.8788	.7315	21.46	.9715	0.000087	
.150	.681	1015.	.7060	.8803	.7445	21.86	.9625	0.000109	
.160	.729	1094.	.7136	.8828	.7514	22.07	.9586	0.000118	
.170	.777	1177.	.7223	.8853	.7584	22.29	.9543	0.000129	
.180	.825	1275.	.7315	.8882	.7644	22.53	.9492	0.000141	
.190	.873	1432.	.7315	.8913	.7748	22.79	.9406	0.000161	
.200	.921	1536.	.7373	.8933	.7800	22.95	.9346	0.000174	
.210	.969	1688.	.7461	.8964	.7891	23.20	.9256	0.000195	
.220	1.017	1830.	.7515	.8993	.7929	23.35	.9167	0.000212	
.230	1.065	1953.	.7574	.9003	.7982	23.52	.9087	0.000237	
.240	1.113	2076.	.7684	.9043	.8080	23.82	.9004	0.000260	
.250	1.161	2208.	.7742	.9063	.8132	23.94	.8911	0.000289	
.260	1.209	2326.	.7778	.9077	.8164	24.09	.8826	0.000297	
.270	1.257	2478.	.7849	.9103	.8277	24.28	.8710	0.000311	
.280	1.305	2620.	.7935	.9134	.8303	24.52	.8597	0.000334	
.290	1.353	2757.	.7991	.9155	.8352	24.67	.8485	0.000356	
.300	1.401	2895.	.8045	.9175	.8398	24.82	.8368	0.000380	
.310	1.449	3047.	.8113	.9201	.8458	25.01	.8233	0.000404	
.320	1.497	3209.	.8177	.9226	.8514	25.18	.8084	0.000435	
.330	1.545	3341.	.8233	.9247	.8561	25.33	.7937	0.000460	
.340	1.593	3484.	.8280	.9261	.8607	25.57	.7817	0.000487	
.350	1.641	3580.	.8320	.9268	.8637	25.69	.7615	0.000525	
.360	1.689	3698.	.8364	.9298	.8674	25.90	.7479	0.000550	
.370	1.737	3845.	.8444	.9329	.8742	26.03	.7307	0.000582	
.380	1.785	3965.	.8492	.9348	.8783	26.26	.7144	0.000612	
.390	1.833	4107.	.8577	.9362	.8855	26.57	.6981	0.000678	
.400	1.881	4274.	.8659	.9414	.8953	26.57	.6781	0.000718	
.410	1.929		.8623	.9401	.8944	26.39	.6760	0.000661	

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OF POOR QUALITY

Y (CM)	Y/THETA	Y-PLUS	TABLE A12. (CONT.) M/WE	RH/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
1.562	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	7106.	.9575	.9805	.9670	28.89	.2884	.01330
1.886	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	8106.	.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	9216.	.9932	.9968	.9947	29.78	.0317	.01716
2.407	11.456	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	15.554	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.	.9999	.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	.660	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.	.7364	.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	23.80	.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/RHOE	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
2.018	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	8703.	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	10.807	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	9711.	9947	.9975	.9959	30.04	.0050	.001743
2.571	11.747	9803.	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
2.677	12.527	10579.	9986	.9993	.9989	30.14	0.0000	.001751
2.724	12.801	10877.	9990	.9995	.9992	30.15	0.0000	.001751
2.762	13.202	11214.	9995	.9997	.9996	30.17	0.0000	.001751
2.800	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	14.341	12124.	1.0001	1.0000	1.0001	30.18	0.0000	.001751
3.230	14.757	12442.	.9998	.9999	.9998	30.17	0.0000	.001751
3.313	15.188	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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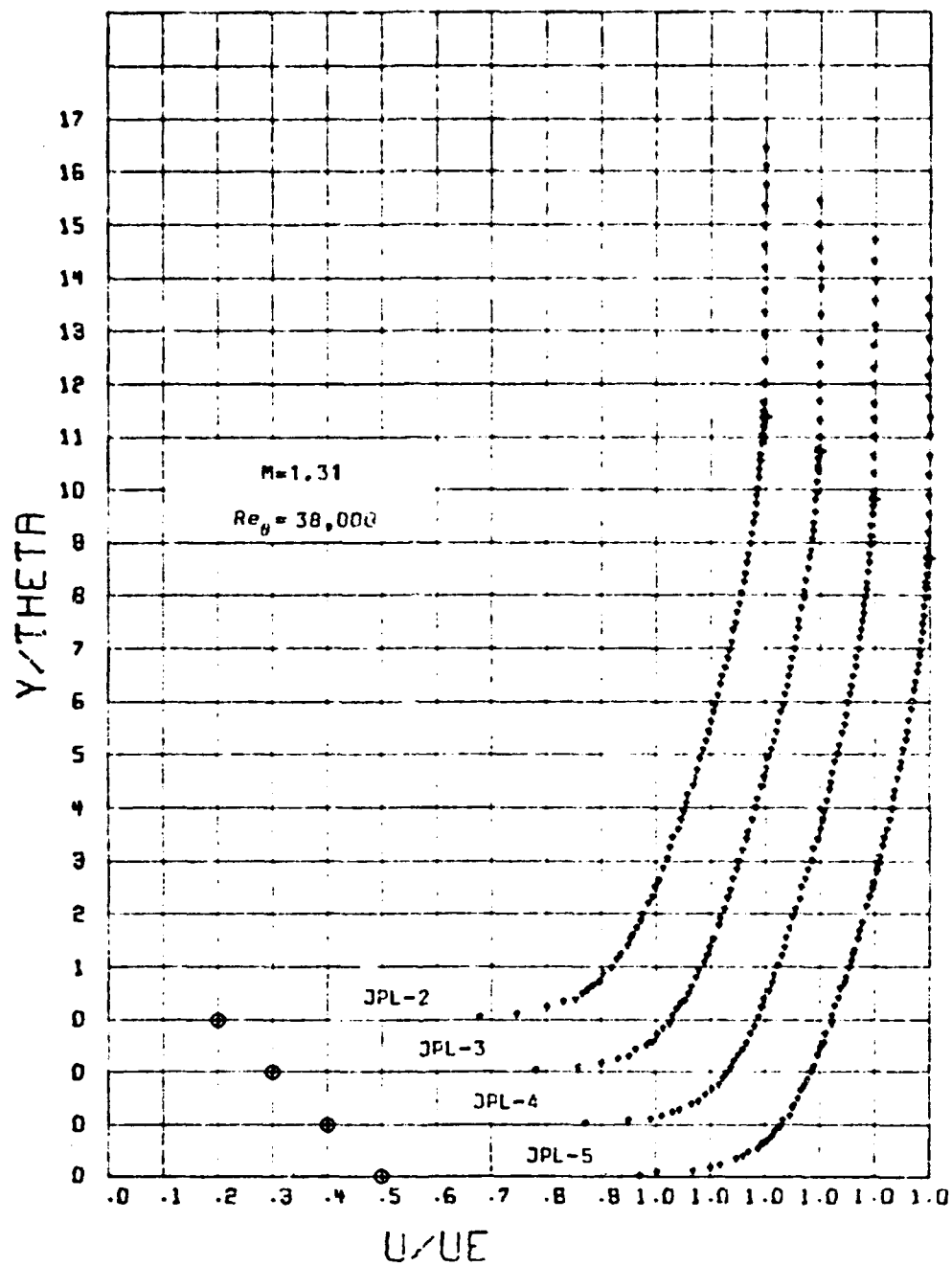


Figure A33. Mean Velocity Profiles.

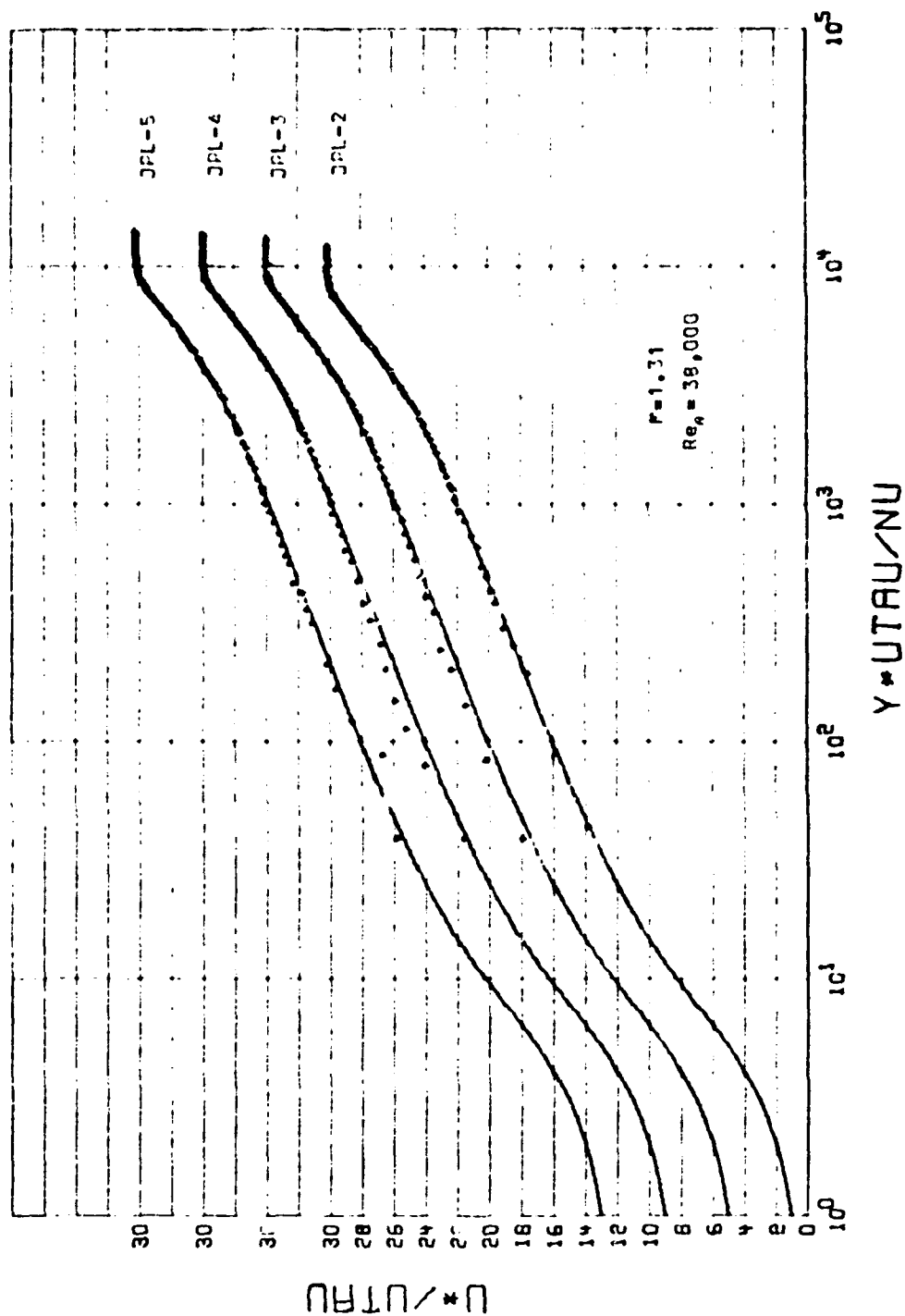


Figure A34. Van Orist Scaled Mean Velocity Profiles.

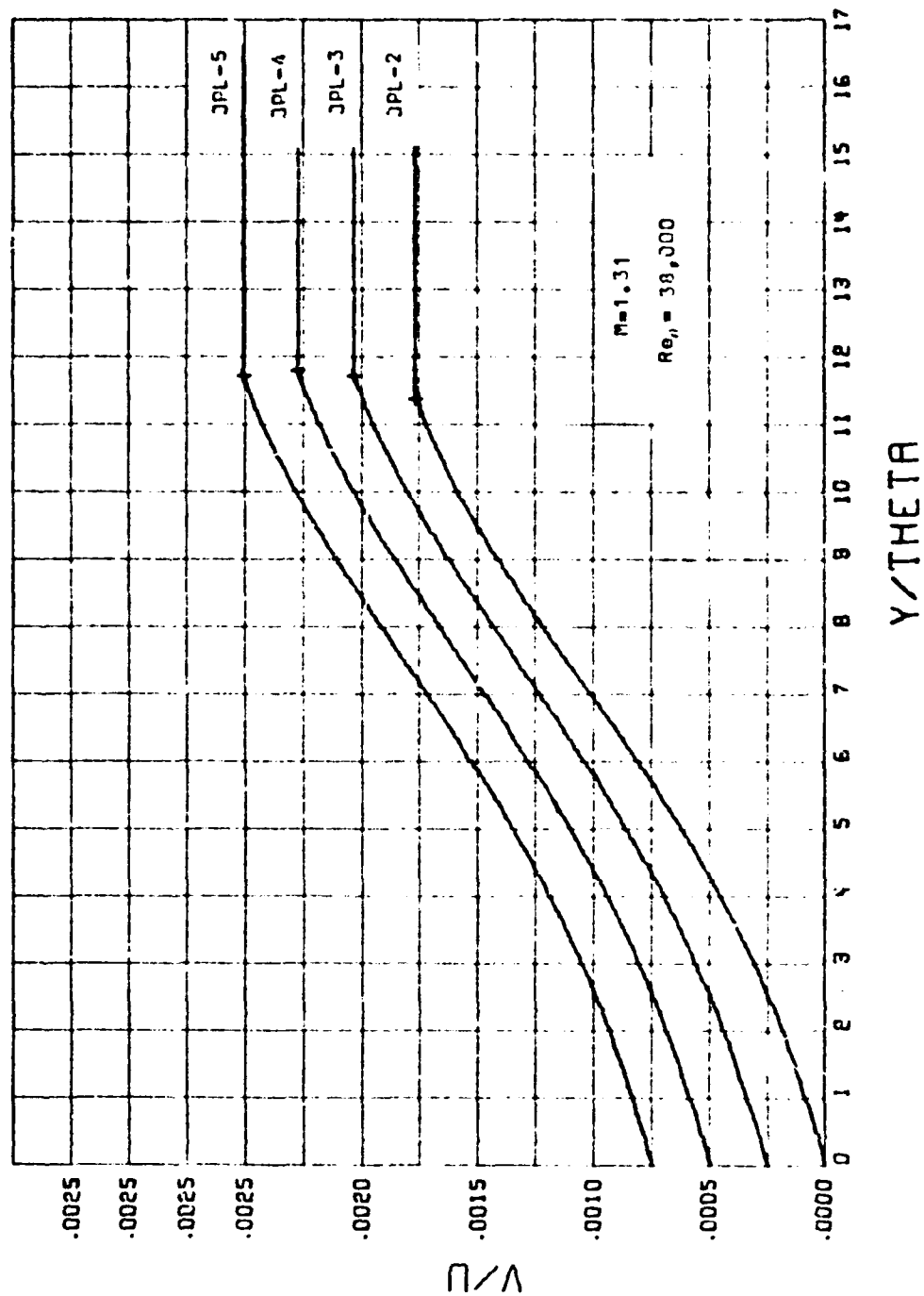


Figure A35. Normal Velocity Distribution.

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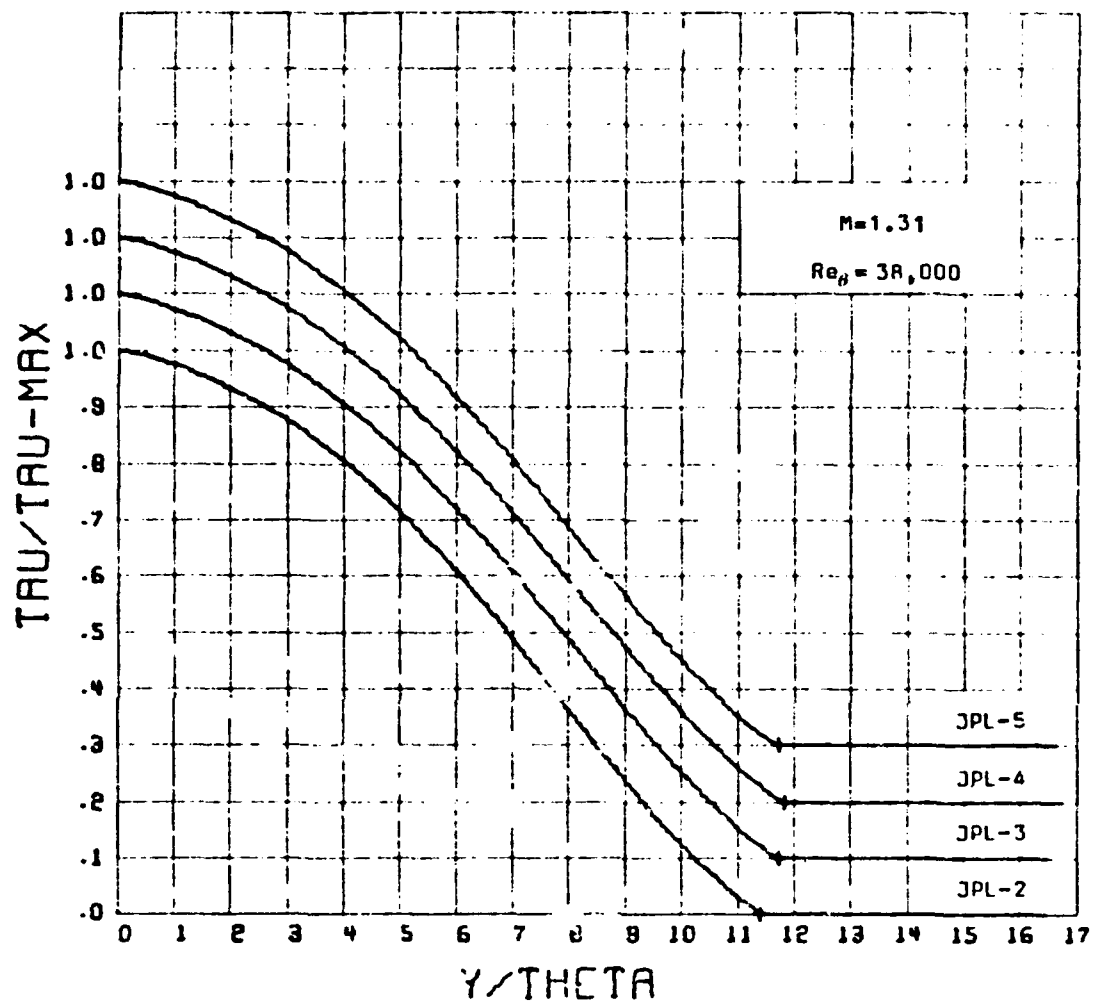


Figure A36. Shear Stress Distribution.

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
 R2-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
 YMAX = 2.998 CM

P/E = .6109
 VMIN = .151 CM

DELTA = 3.1706 CM

Y (CM)	V/THETA	Y-PLUS	Y-ME	RND/RHOF	U/HF	H-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	87.	.4972	.6574	.6132	16.71	.9973	0.00022
.082	.348	101.	.5095	.6639	.6257	16.56	.9954	0.00027
.092	.390	111.	.5167	.6654	.6329	16.77	.9944	0.00029
.094	.417	118.	.5262	.6724	.6415	17.91	.9943	0.00032
.113	.477	134.	.5361	.6757	.6522	17.32	.9929	0.00034
.139	.547	150.	.5418	.6785	.6578	17.49	.9916	0.00036
.140	.565	173.	.5491	.6831	.6649	17.63	.9903	0.00036
.141	.583	186.	.5591	.6871	.6744	17.06	.9893	0.00037
.170	.718	203.	.5688	.6921	.6837	16.32	.9874	0.00041
.187	.793	231.	.5744	.6950	.6920	15.17	.9854	0.00044
.201	.852	244.	.5844	.7008	.6992	14.57	.9841	0.00044
.217	.913	261.	.5904	.7035	.7030	14.21	.9830	0.00046
.230	1.013	294.	.5993	.7083	.7120	13.54	.9814	0.00046
.259	1.123	327.	.6091	.7137	.7219	12.81	.9789	0.00046
.294	1.240	368.	.6183	.7179	.7274	12.50	.9737	0.00045
.334	1.378	402.	.6235	.7218	.7319	12.49	.9693	0.00049
.354	1.491	439.	.6311	.7262	.7404	12.49	.9654	0.00049
.372	1.616	471.	.6416	.7329	.7498	12.16	.9618	0.00045
.423	1.745	525.	.6507	.7374	.7574	12.19	.9580	0.00044
.468	1.893	553.	.6540	.7394	.7635	12.49	.9572	0.00047
.506	2.014	615.	.6557	.7444	.7735	20.78	.9443	0.00049
.546	2.214	644.	.6709	.7497	.7764	20.41	.9402	0.00049
.587	2.311	674.	.6740	.7532	.7783	21.31	.9364	0.00048
.629	2.434	724.	.6847	.7592	.7843	21.25	.9292	0.00041
.654	2.454	774.	.6914	.7626	.7900	21.44	.9271	0.00043
.678	2.483	836.	.7007	.7684	.7959	21.44	.9128	0.00043
.714	2.615	885.	.7097	.7734	.8059	21.45	.9027	0.00044
.779	2.793	961.	.7189	.7801	.8160	22.10	.8970	0.00044
.841	2.915	1041.	.7319	.7847	.8241	22.41	.8739	0.00044
.903	3.002	1109.	.7375	.7926	.8385	22.54	.8645	0.00045
.964	3.095	1166.	.7484	.7998	.8460	22.61	.8439	0.00047
1.026	3.147	1208.	.7574	.8026	.8490	22.61	.8444	0.00047
1.084	3.285	1300.	.7649	.8069	.8494	23.04	.8154	0.00047
1.146	3.372	1392.	.7671	.8127	.8539	23.24	.8154	0.00047
1.211	3.440	1454.	.7704	.8151	.8555	23.17	.8115	0.00046

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TABLE A13. (CONT.)

Y (CH)	V/THETA	Y-PLUS	M/ME	ICONT.1 RM/RMC	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	6.047	1748.	.8199	.9166	.8888	24.44	.7097	.000987
1.459	6.287	1798.	.8254	.9349	.8977	24.57	.6960	.000919
1.502	6.561	1845.	.8304	.9547	.8961	24.68	.6826	.000944
1.532	6.873	1899.	.8367	.9764	.8904	24.91	.6686	.000990
1.573	7.218	1934.	.8418	.9999	.8839	24.93	.6506	.001030
1.612	7.611	1987.	.8469	.9713	.8771	25.04	.6349	.001070
1.650	8.071	2045.	.8528	.9759	.8712	25.17	.6162	.001118
1.687	8.610	2092.	.8599	.9822	.8655	25.34	.6005	.001157
1.729	9.230	2131.	.8642	.9868	.8617	25.41	.5873	.001190
1.770	9.933	2192.	.8702	.9905	.8577	25.54	.5664	.001242
1.845	10.778	2298.	.8820	.9930	.8503	25.79	.5291	.001334
1.911	11.811	2355.	.8878	.9934	.8430	25.91	.5090	.001383
1.958	12.970	2413.	.8925	.9974	.8349	26.01	.4881	.001434
1.998	14.330	2470.	.8973	.9913	.8269	26.11	.4710	.001475
2.028	15.864	2499.	.9016	.9818	.8199	26.20	.4567	.001509
2.113	17.624	2504.	.9122	.9736	.8127	26.42	.4177	.001603
2.160	19.122	2562.	.9193	.9677	.8059	26.54	.3945	.001653
2.213	20.348	2627.	.9238	.9632	.7982	26.65	.3721	.001710
2.260	21.660	2700.	.9269	.9599	.7901	26.72	.3509	.001739
2.324	23.175	2717.	.9319	.9561	.7811	26.82	.3300	.001788
2.335	24.869	2875.	.9375	.9468	.7644	26.93	.3177	.001838
2.371	26.735	2922.	.9434	.9409	.7479	27.05	.3004	.001878
2.403	28.804	3015.	.9495	.9352	.7315	27.17	.2852	.001959
2.432	31.097	3072.	.9540	.9291	.7141	27.26	.2662	.002003
2.464	33.604	3197.	.9577	.9233	.6963	27.33	.2490	.002042
2.516	36.454	3246.	.9626	.9164	.6791	27.43	.2324	.002103
2.559	39.648	3276.	.9645	.9100	.6613	27.50	.1929	.002125
2.609	43.197	3277.	.9700	.9031	.6433	27.57	.1755	.002164
2.702	47.042	3330.	.9728	.8954	.6249	27.63	.1580	.002204
2.739	51.200	3426.	.9763	.8877	.6068	27.69	.1404	.002244
2.773	55.739	3526.	.9792	.8813	.5885	27.75	.1277	.002272
2.808	60.672	3623.	.9833	.8749	.5698	27.83	.0847	.002337
2.830	66.001	3660.	.9851	.8685	.5518	27.86	.0879	.002362
2.907	71.635	3670.	.9873	.8618	.5345	27.90	.0712	.002399
2.970	77.564	3670.	.9898	.8548	.5179	27.95	.0606	.002432
3.038	83.892	3705.	.9907	.8480	.5005	27.96	.0518	.002447
3.072	90.616	3708.	.9923	.8413	.4825	28.00	.0395	.002470
3.121	97.842	3727.	.9936	.8346	.4645	28.03	.0271	.002497
3.161	105.563	3727.	.9941	.8279	.4464	28.03	.0184	.002521
3.201	113.843	3727.	.9949	.8213	.4283	28.07	.0062	.002543
3.240	122.690	3727.	.9957	.8146	.4102	28.08	0.0000	.002557
3.283	132.043	3727.	.9977	.8079	.3921	28.10	0.0000	.002557
3.309	141.919	4178.	.9984	.8012	.3740	28.12	0.0000	.002557
3.442	164.705	4291.	.9994	.8006	.3559	28.14	0.0000	.002557
3.564	187.183	4445.	.9998	.8004	.3378	28.15	0.0000	.002557
3.675	210.311	4449.	1.0001	.8007	.3197	28.15	0.0000	.002557
3.654	15.440	4475.	1.0003	.8009	.3016	28.15	0.0000	.002557

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

LEAST SQUARE FIT PARAMETERS				DELTA STAR = .7595 CM		TMEAN = .2435 CM		M = 3.119	
RE-DELTA-STAR = 73390.				RE-TMEAN = 23520.		MINALLO = 1.7470 CMOO2/SEC		DELTA = 3.2535 CM	
CHI-SQ = .4362E-05				CF = .001649		DIF = .4175		VMIN = .147 CM	
V (CM)				Y-PLUS		M/NE		RMR/RME	
V/THETA				U-PLUS		U/UE		TAU/TAU-MAX	
V/U				V/U		V/U		V/U	
0.010	0.000	0.	0.0000	0.	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.041	12.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.042	18.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.043	24.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.044	30.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.045	36.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.046	42.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.047	48.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.048	54.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.049	60.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.050	66.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.051	72.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.052	78.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.053	84.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.054	90.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.055	96.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.056	102.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.057	108.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.058	114.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.059	120.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.060	126.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.061	132.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.062	138.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.063	144.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.064	150.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.065	156.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.066	162.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.067	168.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.068	174.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.069	180.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.070	186.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.071	192.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.072	198.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.073	204.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.074	210.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.075	216.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.076	222.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.077	228.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.078	234.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.079	240.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.080	246.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.081	252.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.082	258.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.083	264.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.084	270.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.085	276.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.086	282.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.087	288.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.088	294.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.089	300.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.090	306.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.091	312.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.092	318.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.093	324.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.094	330.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.095	336.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.096	342.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.097	348.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.098	354.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.099	360.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.100	366.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.101	372.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.102	378.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.103	384.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.104	390.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.105	396.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.106	402.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.107	408.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.108	414.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.109	420.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.110	426.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.111	432.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.112	438.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.113	444.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.114	450.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.115	456.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.116	462.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.117	468.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.118	474.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.119	480.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.120	486.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.121	492.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.122	498.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.123	504.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.124	510.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.125	516.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.126	522.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.127	528.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.128	534.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.129	540.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.130	546.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.131	552.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.132	558.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.133	564.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.134	570.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.135	576.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.136	582.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.137	588.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.138	594.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.139	600.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.140	606.	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.000000
0.010	0.141	612.	0.0000	0.0000	0.0000	0.0000	0.0000		

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	.8416	.8705	26.22	.7392	.00106
1.417	5.820	1.736	.8150	.8476	.8852	26.40	.7210	.000843
1.463	6.007	1.702	.8205	.8517	.8921	26.52	.7051	.000844
1.510	6.200	1.650	.8275	.8570	.8939	26.43	.6882	.000842
1.566	6.362	1.595	.8332	.8612	.8978	26.81	.6747	.000843
1.565	6.550	1.554	.8379	.8668	.9010	26.91	.6566	.001060
1.645	6.764	2.016	.8450	.8702	.9058	25.07	.6371	.001058
1.676	6.804	2.053	.8500	.8761	.9082	25.14	.6252	.001068
1.723	7.076	2.111	.8548	.8793	.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	.9168	25.52	.5737	.001218
1.859	7.635	2.278	.8730	.8929	.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	.9299	25.84	.5168	.001356
1.984	8.154	2.431	.8896	.9065	.9299	26.00	.5064	.001467
2.036	8.354	2.492	.8958	.9103	.9388	26.15	.4747	.001557
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	.9111	.9233	.9516	26.58	.4000	.001635
2.280	9.283	2.749	.9136	.9236	.9540	26.72	.3738	.001696
2.302	9.455	2.821	.9219	.9369	.9586	26.81	.3550	.001740
2.338	9.601	2.864	.9323	.9404	.9612	26.90	.3340	.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	.9668	.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	.9747	.9842	27.68	.1659	.002173
2.788	11.482	3.417	.9748	.9776	.9860	27.74	.1476	.002214
2.832	11.670	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	.9890	.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	.0476	.002436
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	.002537
3.210	13.142	3.921	.9936	.9942	.9965	28.11	.0121	.002514
3.251	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
3.286	13.560	4.048	.9942	.9946	.9979	28.16	0.0000	.002541
3.369	13.724	4.075	.9971	.9974	.9984	28.17	0.0000	.002541
3.401	13.866	4.117	.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	.9984	.9984	.9993	28.21	0.0000	.002541
3.516	14.447	4.318	.9995	.9995	.9997	28.22	0.0000	.002541
3.556	14.597	4.365	.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	4.444	.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 W/SEC													
CHICKS=X=.0723E-05													
CF=.001433													
YMAX= 3.226 CM													
Y (CM)	Y/TMETA	Y-PLUS	M/ME	RWD/RMDF	U/UIE	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					
.020	.078	13.	.3181	.5924	.4132	10.83	.9990	0.000000					
.030	.117	50.	.4309	.6368	.5536	14.67	.9986	0.000310					
.040	.156	74.	.4792	.6508	.5940	15.81	.9975	0.000016					
.050	.195	89.	.4954	.6580	.6108	16.28	.9967	0.000120					
.060	.234	111.	.5165	.6676	.6321	16.89	.9953	0.000027					
.070	.273	143.	.5342	.6760	.6497	17.39	.9933	0.000336					
.080	.312	177.	.5475	.6824	.6627	17.77	.9910	0.000446					
.090	.351	188.	.5587	.6882	.6735	18.08	.9902	0.000749					
.100	.390	210.	.5654	.6914	.6789	18.27	.9886	0.000956					
.110	.429	226.	.5700	.6920	.6861	18.45	.9874	0.001060					
.120	.468	245.	.5781	.6942	.6919	18.62	.9859	0.001066					
.130	.507	270.	.5874	.7031	.6919	18.87	.9839	0.001074					
.140	.546	307.	.5955	.7075	.7005	19.09	.9808	0.000945					
.150	.585	346.	.6024	.7113	.7145	19.28	.9791	0.000791					
.160	.624	351.	.6108	.7158	.7219	19.50	.9769	0.000909					
.170	.663	387.	.6154	.7185	.7263	19.63	.9736	0.001111					
.180	.702	405.	.6241	.7219	.7347	19.84	.9720	0.001117					
.190	.741	458.	.6303	.7249	.7394	20.02	.9669	0.001135					
.200	.780	505.	.6441	.7349	.7514	20.34	.9619	0.001151					
.210	.819	552.	.6497	.7381	.7563	20.53	.9549	0.001168					
.220	.858	587.	.6544	.7420	.7620	20.70	.9531	0.001180					
.230	.897	615.	.6619	.7465	.7684	20.89	.9475	0.001190					
.240	.936	687.	.6701	.7503	.7737	21.05	.9412	0.002218					
.250	.975	722.	.6740	.7537	.7777	21.17	.9349	0.002235					
.260	.014	778.	.6848	.7593	.7859	21.42	.9296	0.002255					
.270	.023	859.	.6909	.7631	.7909	21.57	.9233	0.002274					
.280	.032	922.	.6977	.7674	.7965	21.74	.9184	0.002290					
.290	.041	957.	.7050	.7683	.8044	21.78	.9126	0.003306					
.300	.050	1000.	.7100	.7752	.8064	22.05	.9042	0.003331					
.310	.059	1000.	.7158	.7790	.8111	22.19	.9073	0.003352					
.320	.068	1052.	.7211	.7824	.8152	22.32	.9000	0.003376					
.330	.077	1110.	.7273	.7865	.8201	22.47	.8977	0.003409					
.340	.086	1162.	.7351	.7917	.8262	22.66	.8902	0.004430					
.350	.095	1223.	.7428	.7964	.8321	22.85	.8892	0.004441					
.360	.104	1286.	.7498	.8013	.8373	23.01	.8861	0.004455					
.370	.113	1347.	.7564	.8061	.8425	23.17	.8861	0.005226					
.380	.122	1406.	.7619	.8098	.8466	23.30	.8855	0.005255					
.390	.131	1460.	.7659	.8147	.8510	23.47	.8859	0.005261					
.400	.140	1540.	.7707	.8200	.8564	23.74	.8864	0.006641					

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	.00669
1.311	5.130	1618.	.7883	.8284	.8661	23.92	.7755	.00690
1.344	5.249	1662.	.7935	.8321	.8698	24.04	.7651	.00718
1.382	5.400	1706.	.7989	.8360	.8737	24.16	.7542	.00744
1.425	5.587	1762.	.8062	.8414	.8790	24.33	.7400	.00764
1.466	5.737	1810.	.8107	.8466	.8821	24.43	.7278	.00785
1.514	5.935	1872.	.8160	.8495	.8858	24.55	.7111	.00815
1.562	6.075	1916.	.8225	.8534	.8903	24.70	.6991	.00848
1.609	6.209	1959.	.8264	.8563	.8931	24.74	.6873	.00889
1.650	6.417	2024.	.8350	.8628	.8990	24.98	.6685	.00947
1.699	6.611	2085.	.8398	.8665	.9023	25.08	.6507	.01012
1.735	6.780	2129.	.8442	.8697	.9052	25.18	.6374	.01064
1.773	6.939	2169.	.8537	.8787	.9115	25.30	.6196	.01189
1.814	7.104	2242.	.8557	.8787	.9129	25.43	.6031	.01130
1.864	7.242	2291.	.8632	.8845	.9179	25.59	.5879	.01167
1.904	7.451	2351.	.8694	.8893	.9219	25.73	.5689	.01214
1.951	7.635	2408.	.8733	.8924	.9244	25.81	.5501	.01259
1.999	7.819	2466.	.8788	.8968	.9280	25.93	.5311	.01305
2.041	8.121	2520.	.8843	.9011	.9315	26.04	.5134	.01344
2.083	8.370	2581.	.8903	.9060	.9353	26.17	.4928	.01397
2.139	8.609	2641.	.8963	.9109	.9391	26.30	.4726	.01445
2.192	8.809	2700.	.9018	.9154	.9426	26.42	.4523	.01493
2.244	9.027	2764.	.9056	.9184	.9449	26.49	.4365	.01530
2.291	9.265	2814.	.9115	.9233	.9486	26.62	.4123	.01587
2.342	9.456	2879.	.9181	.9288	.9526	26.75	.3906	.01638
2.397	9.654	2923.	.9218	.9319	.9549	26.83	.3753	.01673
2.416	9.833	2962.	.9270	.9362	.9580	26.93	.3647	.01721
2.441	10.000	3019.	.9335	.9417	.9619	27.07	.3351	.01766
2.493	10.265	3078.	.9365	.9443	.9637	27.13	.3216	.01797
2.541	10.498	3138.	.9414	.9485	.9667	27.23	.3011	.01843
2.578	10.690	3183.	.9449	.9514	.9687	27.30	.2856	.01879
2.607	10.794	3219.	.9482	.9543	.9707	27.36	.2734	.01904
2.650	10.908	3283.	.9514	.9570	.9725	27.43	.2617	.01955
2.705	11.037	3347.	.9548	.9617	.9757	27.54	.2330	.00198
2.799	11.241	3462.	.9632	.9690	.9805	27.70	.1918	.00290
2.845	11.424	3512.	.9682	.9725	.9828	27.78	.1775	.00212
2.875	11.565	3560.	.9707	.9738	.9836	27.81	.1658	.00214
2.921	11.633	3606.	.9734	.9767	.9852	27.84	.1485	.002186
2.978	11.656	3677.	.9775	.9798	.9875	27.94	.1276	.002233
3.004	11.740	3710.	.9800	.9820	.9899	27.99	.1181	.002254
3.053	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	.0617	.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
3.393	13.241	4171.	.9953	.9958	.9974	28.29	.0046	.002502
3.455	13.406	4229.	.9964	.9967	.9980	28.31	0.0000	.002512
3.493	13.539	4271.	.9973	.9974	.9985	28.33	0.0000	.002512
3.545	13.877	4378.	.9983	.9985	.9991	28.35	0.0000	.002512
3.605	14.185	4475.	.9993	.9995	.9997	28.37	0.0000	.002512
3.673	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		M = 3.127		DELTA = 3.489R CM	
X = 7.62 CM		RE-THETA = 250.60.		PI = .6275		YMIN = .153 CM			
U = 552.35 M/SEC		DELTA STAR = .8137 CM		THETA = .2601 CM		M = 3.127			
RE-DELTA-STAR = 78400.		RE-THETA = 250.60.		M = 3.127					
LEAST SQUARE FIT PARAMETERS		CE = .001624		YMAX = 3.295 CM					
UTIME = 21.3250 M/SEC		CE = .001624		YMAX = 3.295 CM					
CHISQR = .0870E-05		CE = .001624		YMAX = 3.295 CM					
Y (CM)	Y/THETA	Y-PLUS	M/WE	RHO/RHOF	U/UE	I-PLUS	TAU/TAU-MAX	V/U	
0.200	0.070	0.	0.0000	.5448	0.0000	0.00	1.0000	0.000000	
.010	.034	12.	.2989	.5855	.3006	10.23	1.0000	0.000000	
.011	.063	13.	.3327	.5957	.4313	11.33		0.000000	
.031	.171	34.	.4332	.6303	.5657	14.47	.9990	0.000007	
.050	.220	72.	.4762	.6481	.7115	15.76	.9991	.000007	
.073	.322	101.	.5042	.6604	.8293	16.57	.9976	.000316	
.093	.400	129.	.5221	.6689	.8383	17.09	.9960	.000024	
.111	.473	156.	.5326	.6740	.8489	17.39	.9949	.000029	
.134	.517	183.	.5425	.6788	.8585	17.67	.9939	.000033	
.153	.559	194.	.5444	.6840	.8689	18.00	.9921	.000341	
.191	.716	232.	.5745	.6841	.8801	18.56	.9905	.000044	
.223	.868	271.	.5884	.7024	.7026	19.04	.9871	.000051	
.243	.956	302.	.5967	.7067	.7063	19.15	.9841	.000073	
.264	1.093	345.	.6103	.7144	.7221	19.53	.9815	.000142	
.332	1.278	403.	.6217	.7208	.7322	19.83	.9778	.000056	
.390	1.376	436.	.6381	.7246	.7390	20.00	.9725	.000115	
.497	1.527	485.	.6548	.7284	.7456	20.23	.9694	.000125	
.667	1.718	542.	.6746	.7350	.7550	20.52	.9649	.000141	
.830	1.884	596.	.6839	.7394	.7603	20.57	.9587	.000162	
.913	1.971	622.	.6819	.7437	.7664	20.84	.9530	.000120	
.993	2.047	679.	.6711	.7499	.7750	21.12	.9498	.000140	
.109	2.104	726.	.6757	.7527	.7789	21.24	.9433	.000211	
.132	2.250	773.	.6818	.7566	.7839	21.39	.9377	.000229	
.160	2.406	822.	.6890	.7621	.7914	21.62	.9314	.000249	
.173	2.479	878.	.6958	.7652	.7914	21.74	.9248	.000269	
.191	2.594	936.	.7020	.7692	.7944	21.90	.9171	.000292	
.203	2.681	995.	.7070	.7708	.8013	21.92	.9071	.000307	
.221	2.809	1047.	.7138	.7747	.8099	22.19	.8994	.000324	
.241	2.939	1104.	.7164	.7797	.8156	22.30	.8920	.000344	
.261	3.062	1164.	.7252	.7842	.8199	22.47	.8855	.000364	
.282	3.182	1226.	.7309	.7873	.8226	22.58	.8777	.000384	
.302	3.298	1292.	.7371	.7922	.8262	22.76	.8685	.000409	
.322	3.414	1361.	.7416	.7968	.8292	22.85	.8585	.000434	
.342	3.528	1432.	.7431	.7998	.8312	22.95	.8480	.000459	
.362	3.641	1506.	.7431	.7998	.8312	22.95	.8360	.000477	
.382	3.754	1582.	.7431	.7998	.8312	22.95	.8235	.000492	
.402	3.867	1660.	.7431	.7998	.8312	22.95	.8105	.000507	
.422	3.979	1740.	.7431	.7998	.8312	22.95	.7970	.000522	
.442	4.091	1822.	.7431	.7998	.8312	22.95	.7835	.000537	
.462	4.203	1906.	.7431	.7998	.8312	22.95	.7695	.000552	
.482	4.315	1992.	.7431	.7998	.8312	22.95	.7550	.000567	
.502	4.427	2080.	.7431	.7998	.8312	22.95	.7405	.000582	
.522	4.539	2170.	.7431	.7998	.8312	22.95	.7255	.000597	
.542	4.651	2262.	.7431	.7998	.8312	22.95	.7100	.000612	
.562	4.763	2356.	.7431	.7998	.8312	22.95	.6945	.000627	
.582	4.875	2452.	.7431	.7998	.8312	22.95	.6785	.000642	
.602	4.987	2550.	.7431	.7998	.8312	22.95	.6625	.000657	
.622	5.099	2650.	.7431	.7998	.8312	22.95	.6460	.000672	
.642	5.211	2752.	.7431	.7998	.8312	22.95	.6295	.000687	
.662	5.323	2856.	.7431	.7998	.8312	22.95	.6130	.000702	
.682	5.435	2962.	.7431	.7998	.8312	22.95	.5960	.000717	
.702	5.547	3070.	.7431	.7998	.8312	22.95	.5790	.000732	
.722	5.659	3180.	.7431	.7998	.8312	22.95	.5620	.000747	
.742	5.771	3292.	.7431	.7998	.8312	22.95	.5450	.000762	
.762	5.883	3406.	.7431	.7998	.8312	22.95	.5280	.000777	
.782	5.995	3522.	.7431	.7998	.8312	22.95	.5110	.000792	
.802	6.107	3640.	.7431	.7998	.8312	22.95	.4940	.000807	
.822	6.219	3760.	.7431	.7998	.8312	22.95	.4770	.000822	
.842	6.331	3882.	.7431	.7998	.8312	22.95	.4600	.000837	
.862	6.443	4006.	.7431	.7998	.8312	22.95	.4430	.000852	
.882	6.555	4132.	.7431	.7998	.8312	22.95	.4260	.000867	
.902	6.667	4260.	.7431	.7998	.8312	22.95	.4090	.000882	
.922	6.779	4390.	.7431	.7998	.8312	22.95	.3920	.000897	
.942	6.891	4522.	.7431	.7998	.8312	22.95	.3750	.000912	
.962	7.003	4656.	.7431	.7998	.8312	22.95	.3580	.000927	
.982	7.115	4792.	.7431	.7998	.8312	22.95	.3410	.000942	
1.002	7.227	4930.	.7431	.7998	.8312	22.95	.3240	.000957	
1.022	7.339	5070.	.7431	.7998	.8312	22.95	.3070	.000972	
1.042	7.451	5212.	.7431	.7998	.8312	22.95	.2900	.000987	
1.062	7.563	5356.	.7431	.7998	.8312	22.95	.2730	.001002	
1.082	7.675	5502.	.7431	.7998	.8312	22.95	.2560	.001017	
1.102	7.787	5650.	.7431	.7998	.8312	22.95	.2390	.001032	
1.122	7.899	5800.	.7431	.7998	.8312	22.95	.2220	.001047	
1.142	8.011	5952.	.7431	.7998	.8312	22.95	.2050	.001062	
1.162	8.123	6106.	.7431	.7998	.8312	22.95	.1880	.001077	
1.182	8.235	6262.	.7431	.7998	.8312	22.95	.1710	.001092	
1.202	8.347	6420.	.7431	.7998	.8312	22.95	.1540	.001107	
1.222	8.459	6580.	.7431	.7998	.8312	22.95	.1370	.001122	
1.242	8.571	6742.	.7431	.7998	.8312	22.95	.1200	.001137	
1.262	8.683	6906.	.7431	.7998	.8312	22.95	.1030	.001152	
1.282	8.795	7072.	.7431	.7998	.8312	22.95	.0860	.001167	
1.302	8.907	7240.	.7431	.7998	.8312	22.95	.0690	.001182	
1.322	9.019	7410.	.7431	.7998	.8312	22.95	.0520	.001197	
1.342	9.131	7582.	.7431	.7998	.8312	22.95	.0350	.001212	
1.362	9.243	7756.	.7431	.7998	.8312	22.95	.0180	.001227	
1.382	9.355	7932.	.7431	.7998	.8312	22.95	.0010	.001242	
1.402	9.467	8110.	.7431	.7998	.8312	22.95	.0000	.001257	
1.422	9.579	8290.	.7431	.7998	.8312	22.95	.0000	.001272	
1.442	9.691	8472.	.7431	.7998	.8312	22.95	.0000	.001287	
1.462	9.803	8656.	.7431	.7998	.8312	22.95	.0000	.001302	
1.482	9.915	8842.	.7431	.7998	.8312	22.95	.0000	.001317	
1.502	10.027	9030.	.7431	.7998	.8312	22.95	.0000	.001332	
1.522	10.139	9220.	.7431	.7998	.8312	22.95	.0000	.001347	
1.542	10.251	9412.	.7431	.7998	.8312	22.95	.0000	.001362	
1.562	10.363	9606.	.7431	.7998	.8312	22.95	.0000	.001377	
1.582	10.475	9802.	.7431	.7998	.8312	22.95	.0000	.001392	
1.602	10.587	10000.	.7431	.7998	.8312	22.95	.0000	.001407	
1.622	10.699	10200.	.7431	.7998	.8312	22.95	.0000	.001422	
1.642	10.811	10402.	.7431	.7998	.8312	22.95	.0000	.001437	
1.662	10.923	10606.	.7431	.7998	.8312	22.95	.0000	.001452	
1.682	11.035	10812.	.7431	.7998	.8312	22.95	.0000	.001467	
1.702	11.147	11020.	.7431	.7998	.8312	22.95	.0000	.001482	
1.722	11.259	11230.	.7431	.7998	.8312	22.95	.0000	.001497	
1.742	11.371	11442.	.7431	.7998	.8312	22.95	.0000	.001512	
1.762	11.483	11656.	.7431	.7998	.8312	22.95	.0000	.001527	
1.782	11.595	11872.	.7431	.7998	.8312	22.95	.0000	.001542	
1.802	11.707	12090.	.7431	.7998	.8312	22.95	.0000	.001557	
1.822	11.819	12310.	.7431	.7998	.8312	22.95	.0000	.001572	
1.842	11.931	12532.	.7431	.7998	.8312	22.95	.0000	.001587	
1.862	12.043	12756.	.7431	.7998	.8312	22.95	.0000	.001602	
1.882	12.155	12982.	.7431	.7998	.8312	22.95	.0000	.001617	
1.902	12.267	13210.	.7431	.7998	.8312	22.95	.0000	.001632	
1.922	12.379	13440.	.7431	.7998	.8312	22.95	.0000	.001647	
1.942	12.491	13672.	.7431	.7998	.8312	22.95	.0000	.001662	
1.962	12.603	13906.	.7431	.7998	.8312	22.95	.0000	.001677	
1.982	12.715	14142.	.7431	.7998	.8312	22.95	.0000	.001692	
2.002	12.827	14380.	.7431	.7998	.8312	22.95	.0000	.001707	
2.022	12.939	14620.	.7431	.7998	.8312	22.95	.0000	.001722	

TABLE A13. (CONT.)
M/NE

Y (CM)	Y/THETA	Y-PLUS	M/NE	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	.8964	24.93	.6779	.000941
1.704	6.550	2068.	.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.	.8651	.9159	25.57	.5957	.001146
1.930	7.419	2342.	.8742	.9229	25.68	.5772	.001191
1.979	7.570	2390.	.8808	.9253	25.80	.5620	.001228
2.024	7.702	2432.	.8862	.9295	25.88	.5484	.001261
2.063	7.892	2492.	.8905	.9330	26.02	.5289	.001308
2.103	8.083	2552.	.8953	.9356	26.13	.5090	.001356
2.139	8.274	2597.	.8982	.9375	26.22	.4941	.001391
2.175	8.461	2640.	.9017	.9407	26.29	.4793	.001427
2.215	8.650	2712.	.9048	.9446	26.39	.4551	.001444
2.273	8.837	2759.	.9099	.9478	26.52	.4393	.001521
2.314	9.023	2811.	.9169	.9570	26.78	.4214	.001563
2.364	9.215	2870.	.9208	.9544	26.85	.4010	.001610
2.412	9.419	2916.	.9254	.9572	26.95	.3854	.001647
2.459	9.604	2984.	.9293	.9595	27.03	.3620	.001700
2.509	9.787	3033.	.9352	.9631	27.15	.3451	.001739
2.570	9.973	3084.	.9434	.9656	27.23	.3287	.001777
2.614	10.172	3178.	.9507	.9679	27.32	.2957	.001852
2.664	10.318	3258.	.9529	.9699	27.38	.2843	.001878
2.733	10.504	3317.	.9584	.9715	27.44	.2698	.001913
2.773	10.640	3364.	.9629	.9739	27.52	.2493	.001957
2.815	10.821	3417.	.9675	.9767	27.61	.2332	.001993
2.877	11.060	3492.	.9727	.9792	27.70	.2167	.002030
2.934	11.280	3562.	.9745	.9819	27.79	.1927	.002084
2.987	11.490	3625.	.9779	.9878	27.93	.1712	.002132
3.035	11.665	3683.	.9832	.9907	28.00	.1521	.002174
3.094	11.900	3757.	.9849	.9916	28.10	.1349	.002212
3.154	12.124	3828.	.9863	.9933	28.13	.1139	.002257
3.200	12.300	3884.	.9878	.9947	28.19	.0947	.002301
3.253	12.525	3949.	.9904	.9966	28.24	.0802	.002333
3.295	12.666	3999.	.9921	.9972	28.27	.0637	.002369
3.347	12.927	4050.	.9939	.9984	28.31	.0516	.002395
3.375	12.974	4097.	.9954	.9994	28.33	.0393	.002421
3.423	13.150	4155.	.9972	.9997	28.33	.0182	.002468
3.441	13.319	4224.	.9989	.9998	28.37	.0048	.002497
3.516	13.514	4268.	.9978	.9988	28.38	0.0000	.002508
3.552	13.652	4311.	.9993	.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	4444.	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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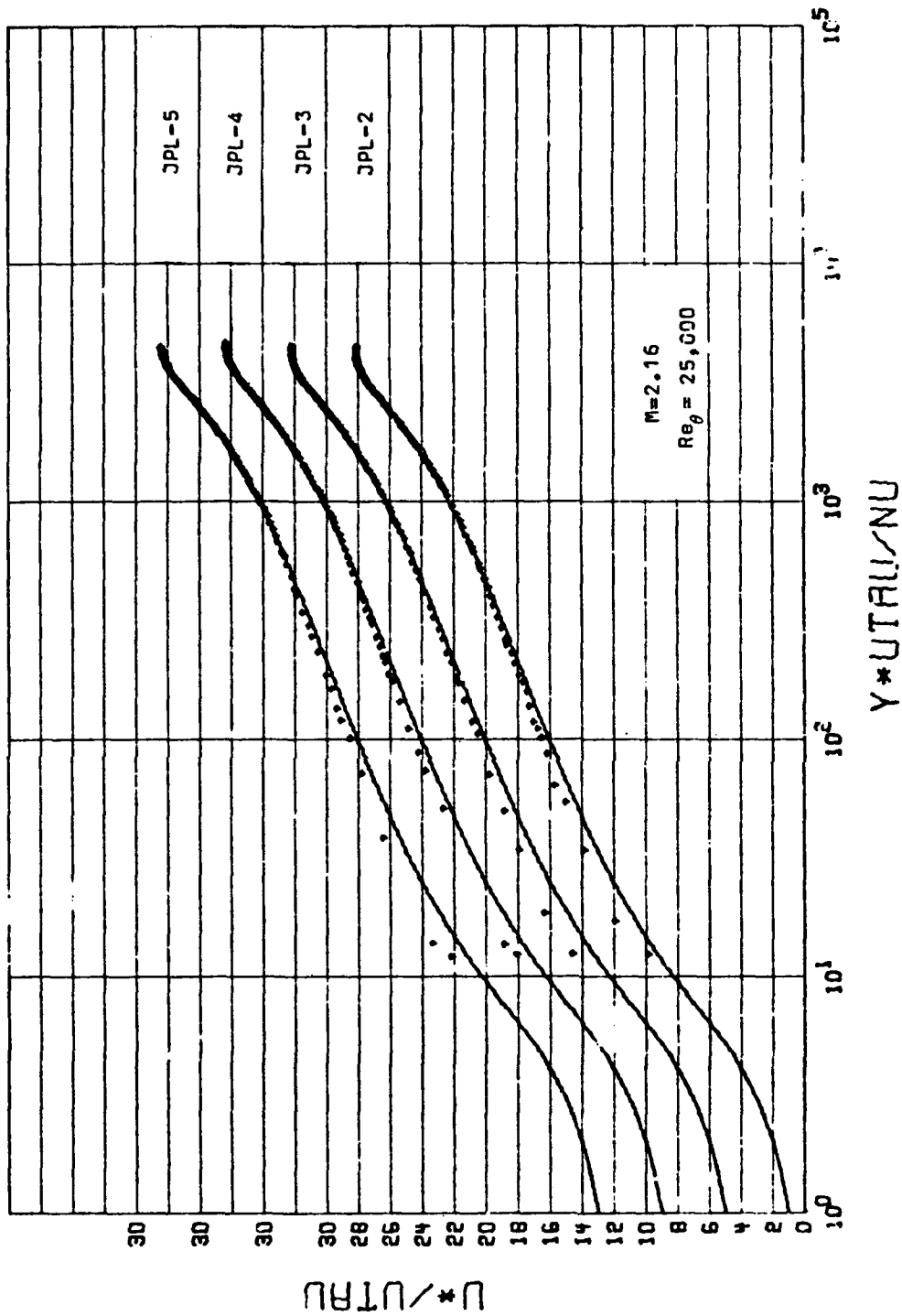


Figure A39, Van Driest Scaled mean Velocity Profiles.

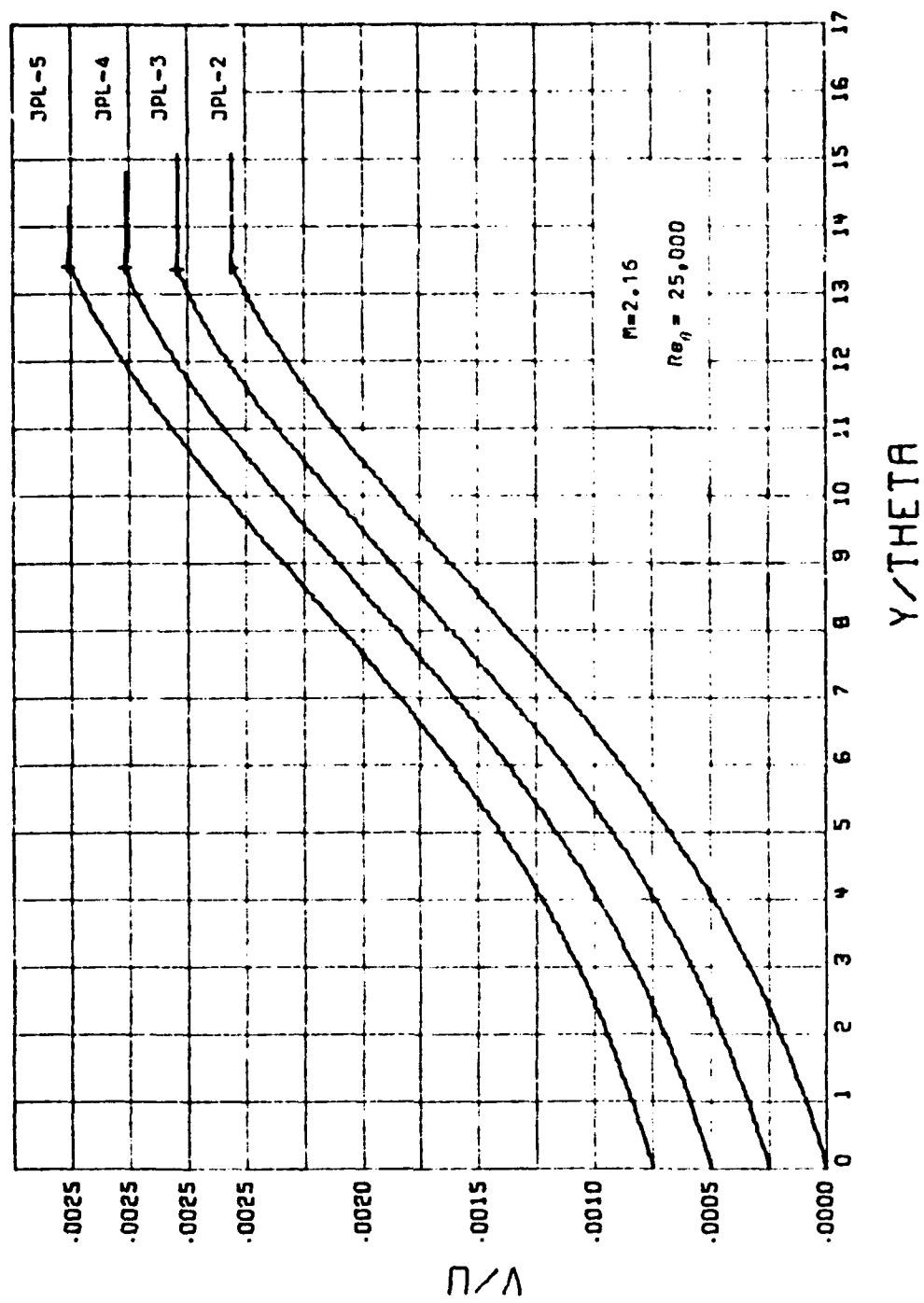


Figure A39. Normal Velocity Distribution.

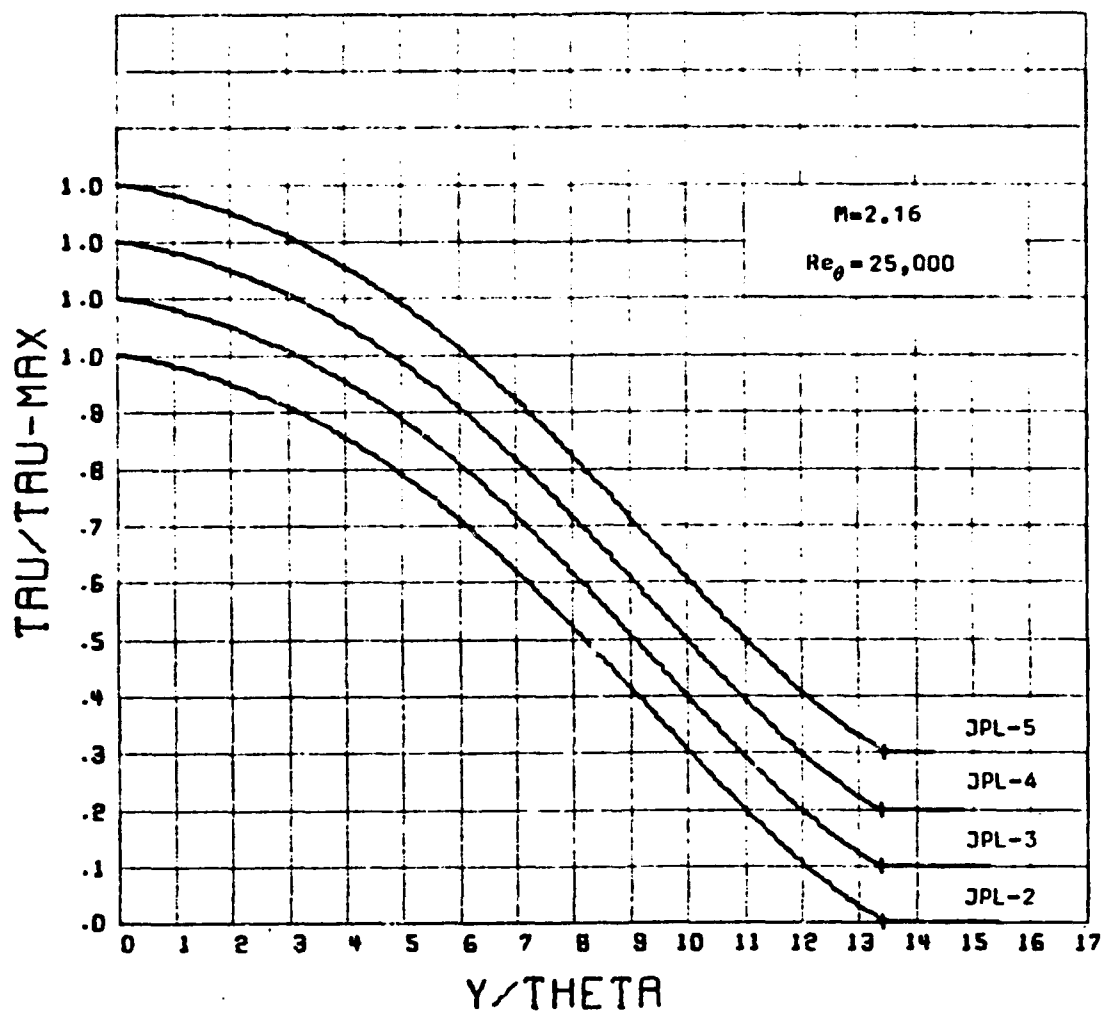


Figure A40. Shear Stress Distribution.

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	.000001
.082	.373	175.	.5305	.6715	.6474	17.82	.9846	.000124
.104	.471	221.	.5504	.6813	.6668	18.47	.9826	.000034
.133	.603	263.	.5741	.6934	.6904	19.37	.9806	.000064
.166	.753	353.	.5903	.7021	.7065	19.53	.9800	.000050
.195	.885	415.	.6024	.7087	.7155	19.86	.9824	.000071
.200	1.137	531.	.6237	.7204	.7343	20.44	.9758	.000103
.259	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	.000350
.810	3.654	1710.	.7434	.7945	.8335	23.55	.9042	.000354
.852	3.858	1808.	.7507	.8004	.8390	23.73	.9060	.000313
.897	4.019	1874.	.7580	.8041	.8431	23.84	.9053	.000317
.970	4.303	2300.	.7683	.8177	.8522	24.16	.9332	.000494
1.004	4.565	2140.	.7727	.8158	.8554	24.25	.9275	.000521
1.073	4.774	2166.	.7804	.8213	.8611	24.45	.9173	.000507
1.070	4.893	2264.	.7856	.8250	.8640	24.57	.9013	.000375
1.115	5.044	2366.	.7915	.8297	.8692	24.71	.7909	.000401
1.233	5.451	2455.	.8044	.8384	.8784	25.21	.7824	.000372
1.262	5.623	2376.	.8092	.8422	.8817	25.13	.7497	.000304
1.304	5.953	2274.	.8223	.8519	.8904	25.43	.7284	.000413
1.387	6.147	2401.	.8272	.8564	.8942	25.46	.7089	.000413
1.340	6.291	2460.	.8327	.8600	.8989	25.47	.6873	.000411
1.430	6.475	3035.	.8390	.8644	.9072	25.81	.6818	.000410
1.473	6.670	3127.	.8430	.8677	.9049	25.90	.6653	.000407

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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	.8990	.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
2.708	10.404	4779.	.9449	.9510	.9689	28.10	.2984	.001732
2.344	10.707	5019.	.9494	.9549	.9715	28.19	.2682	.001766
2.307	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	28.67	.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
2.716	12.570	5893.	.9840	.9855	.9912	28.89	.0963	.002159
2.806	12.704	6057.	.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
2.920	13.542	6348.	.9936	.9942	.9965	29.08	.0252	.002317
3.020	13.674	6410.	.9940	.9944	.9967	29.09	.0169	.002334
3.041	13.764	6499.	.9947	.9952	.9971	29.10	.0054	.002367
3.109	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	78.2.	.9998	.9998	.9999	29.20	0.0000	.002359
3.714	16.814	7942.	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	.9901	.000005
.050	.170	52.	.4675	.6441	.5826	15.97	.9983	.000009
.067	.277	134.	.5078	.6597	.6191	17.03	.9945	.000018
.078	.351	170.	.5243	.6697	.6406	17.67	.9940	.000024
.099	.442	213.	.5444	.6800	.6616	18.29	.9932	.000032
.121	.546	263.	.5575	.6861	.6730	18.63	.9910	.000040
.135	.617	299.	.5707	.6920	.6846	19.01	.9893	.000046
.149	.664	323.	.5808	.6982	.6951	19.30	.9880	.000051
.168	.753	346.	.5984	.7024	.7023	19.52	.9840	.000058
.205	.918	444.	.6055	.7115	.7119	19.89	.9817	.000073
.238	1.045	515.	.6198	.7194	.7307	20.34	.9777	.000086
.271	1.213	587.	.6290	.7248	.7380	20.43	.9716	.000100
.294	1.315	636.	.6378	.7298	.7446	20.47	.9705	.000110
.332	1.486	718.	.6504	.7372	.7575	21.21	.9647	.000124
.369	1.640	796.	.6593	.7419	.7642	21.47	.9599	.000143
.400	1.735	864.	.6663	.7455	.7696	21.58	.9554	.000154
.439	1.841	940.	.6715	.7490	.7746	21.77	.9502	.000174
.482	2.153	1042.	.6819	.7563	.7841	22.34	.9422	.000194
.519	2.301	1113.	.6926	.7629	.7927	22.31	.9366	.000217
.561	2.460	1193.	.6961	.7652	.7957	22.41	.9303	.000230
.604	2.640	1283.	.7043	.7704	.8023	22.41	.9224	.000252
.641	2.762	1365.	.7118	.7740	.8092	22.43	.9134	.000277
.676	3.021	1442.	.7193	.7792	.8163	22.03	.9042	.000307
.715	3.191	1442.	.7248	.7851	.8207	23.19	.8953	.000314
.762	3.401	1442.	.7333	.7896	.8263	23.35	.8881	.000346
.800	3.571	1726.	.7398	.7938	.8303	23.51	.8794	.000360
.840	3.752	1914.	.7472	.7948	.8360	23.69	.8701	.000364
.880	3.928	1901.	.7552	.8063	.8421	23.89	.8605	.000419
.920	4.064	1964.	.7577	.8061	.8460	23.95	.8532	.000434
.961	4.200	2132.	.7643	.8116	.8489	24.11	.8481	.000459
.991	4.437	2162.	.7723	.8192	.8544	24.30	.8315	.000464
1.033	4.614	2233.	.7770	.8195	.8583	24.42	.8200	.000484
1.074	4.749	2315.	.7851	.8257	.8642	24.41	.8087	.000532
1.124	5.022	2430.	.7915	.8299	.8698	24.76	.7933	.000541
1.143	5.192	2512.	.7977	.8364	.8733	24.41	.7816	.000547
1.198	5.360	2689.	.8072	.8374	.8765	24.92	.7704	.000647
1.244	5.520	2672.	.8102	.8436	.8822	24.70	.7481	.000674
1.274	5.646	2757.	.8133	.8459	.8872	24.29	.7450	.000710
1.314	5.983	2847.	.8181	.8496	.8977	24.39	.7307	.000744

LEAST SQUARE FIT PARAMETERS
UTAU = 21.0165 M/SEC
CHISQR = .5273E-05
CF = .001530
YMAX = 2.961 CM
PI = .5492
YMIN = .078 CM
DELTA = 3.1256 CM

U = 560.46 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/Ue	I-PLUS	TAU/TAU-MAX	V/U
1.357	6.059	2932.	.8252	.8547	.8926	25.55	.7169	.002777
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	.000731
1.567	6.994	3385.	.8542	.8817	.9122	26.21	.6381	.000963
1.612	7.149	3484.	.8604	.8864	.9163	26.35	.6196	.001367
1.656	7.391	3577.	.8686	.8932	.9203	26.44	.6022	.001047
1.691	7.550	3654.	.8688	.8932	.9218	26.54	.5874	.001011
1.727	7.709	3731.	.8716	.8986	.9258	26.67	.5724	.001115
1.770	7.901	3824.	.8816	.9006	.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	.002076
2.773	12.379	5991.	.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	.002183
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 = .7178 CM THETA = .2312 CM M = 3.104
RE-DELTA-STAR = 120100. RE-THETA = .41600. MINALL = .0781 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.	.3418	.5961	.6427	11.98	1.0000	0.000000
.017	.076	38.	.4041	.6173	.6143	14.00	.9996	.000302
.026	.159	79.	.4662	.6429	.5818	15.94	.9984	.000209
.052	.375	112.	.5009	.6574	.6170	15.08	.9973	.000214
.063	.574	134.	.5216	.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	20.60	.9765	.000140
.304	1.323	659.	.6416	.7308	.7503	20.97	.9699	.000111
.372	1.827	711.	.6540	.7347	.7650	21.15	.9687	.000121
.416	1.808	801.	.6565	.7397	.7633	21.37	.9609	.000159
.447	1.801	893.	.6664	.7466	.7701	21.59	.9544	.000159
.461	1.812	943.	.6727	.7496	.7770	21.83	.9494	.000173
.481	2.081	1037.	.6819	.7553	.7847	22.04	.9444	.000118
.523	2.262	1177.	.6900	.7603	.7917	22.25	.9376	.000208
.557	2.410	1201.	.6956	.7639	.7958	22.39	.9319	.000225
.594	2.563	1350.	.7048	.7698	.8033	22.63	.9264	.000243
.633	2.784	1387.	.7099	.7725	.8066	22.73	.9163	.000268
.673	2.910	1450.	.7177	.7782	.8136	22.96	.9100	.000294
.711	3.075	1532.	.7225	.7814	.8173	23.08	.9033	.000314
.753	3.255	1622.	.7265	.7854	.8220	23.23	.8948	.000347
.787	3.448	1718.	.7353	.7899	.8273	23.40	.8854	.000353
.831	3.534	1792.	.7416	.7942	.8322	23.55	.8780	.000373
.866	3.745	1861.	.7476	.7983	.8368	23.70	.8703	.000383
.919	3.975	1981.	.7549	.8033	.8423	23.84	.8578	.000426
.960	4.151	2048.	.7606	.8072	.8465	24.02	.8479	.000461
1.014	4.347	2184.	.7679	.8123	.8520	24.20	.8341	.000457
1.059	4.553	2249.	.7764	.8171	.8569	24.34	.8242	.000512
1.099	4.711	2369.	.7789	.8201	.8631	24.46	.8162	.000534
1.140	4.931	2457.	.7785	.8270	.8671	24.60	.8001	.000573
1.184	5.124	2554.	.7852	.8314	.8719	24.85	.7868	.000604
1.224	5.306	2643.	.7981	.8360	.8740	25.02	.7767	.000634
1.267	5.487	2731.	.8061	.8398	.8786	25.10	.7673	.000667
1.313	5.678	2829.	.8122	.8443	.8830	25.25	.7479	.000702
1.354	5.873	2900.	.8169	.8469	.8844	25.31	.7372	.000724
1.395	6.035	3007.	.8242	.8533	.8922	25.52	.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	.000803
1.475	6.341	3180.	.8348	.8616	.8995	25.77	.6933	.000933
1.522	6.584	3281.	.8393	.8668	.9025	25.87	.6766	.000973
1.564	6.765	3371.	.8463	.8702	.9072	26.03	.6613	.000909
1.609	6.919	3448.	.8508	.8729	.9096	26.11	.6481	.000940
1.645	7.114	3546.	.8581	.8794	.9150	26.29	.6309	.000980
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	.9568	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
2.737	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	.9816	.9888	28.96	.1308	.002074
2.871	12.414	6187.	.9803	.9821	.9891	28.99	.1209	.002095
2.915	12.608	6283.	.9837	.9852	.9911	28.94	.1049	.002128
2.916	12.794	6371.	.9861	.9874	.9924	28.99	.0907	.002157
2.987	12.915	6436.	.9889	.9899	.9939	28.99	.0804	.002179
3.020	13.058	6507.	.9899	.9909	.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		DELTA STAR = .7507 CM		THETA = .2415 CM		H = 3.107		
RE-DELTA-STAR = 133800.		RE-THETA = 43060.		MUMALL = .9817 CM=2/SEC		DELTA = 3.3810 CM		
LEAST SQUARE FIT PARAMETERS								
UTANG = 20.9635 M/SEC		CF = .001507		PI = .5751		YMIN = .085 CM		
CHISQ = .1419E-04		YMAX = 3.188 CM		YMIN = .085 CM				
Y (%)	Y/THETA	Y-PLUS	M/WE	RHO/RHDE	U/UIF	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	.5667	15.61	.9985	.000008
.048	.241	124.	.4978	.6564	.6145	17.01	.9971	.000015
.075	.365	181.	.5320	.6725	.6488	18.02	.9850	.000024
.105	.434	225.	.5499	.6813	.6642	18.55	.9933	.000031
.130	.561	276.	.5700	.6916	.6856	19.13	.9610	.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	.000064
.245	.993	512.	.6140	.7154	.7259	20.36	.9797	.000079
.265	1.093	566.	.6251	.7217	.7358	20.67	.9768	.000094
.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	.000214
.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	5.346	2763.	.8016	.8367	.8744	25.17	.7702	.000640
1.334	5.500	2848.	.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/RMG

Y (CM)	Y/TWFTA	Y-PLUS	M/ME	RMG/RMG	U/U	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	6.374	3289.	.8354	.8620	.8998	25.96	.6916	.000827
1.599	6.618	3414.	.8424	.8674	.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	3744.	.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	9.074	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	.9404	.9518	28.10	.3503	.001588
2.432	10.047	5193.	.9374	.9448	.9646	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	.001859
2.791	11.555	5960.	.9650	.9713	.9822	28.83	.1847	.001868
2.835	11.739	6055.	.9729	.9756	.9850	28.93	.1716	.001883
2.884	11.949	6164.	.9760	.9783	.9867	28.99	.1525	.002003
2.922	12.066	6240.	.9784	.9804	.9881	29.04	.1394	.002030
2.943	12.348	6370.	.9822	.9839	.9902	29.12	.1173	.002075
3.028	12.534	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
3.235	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

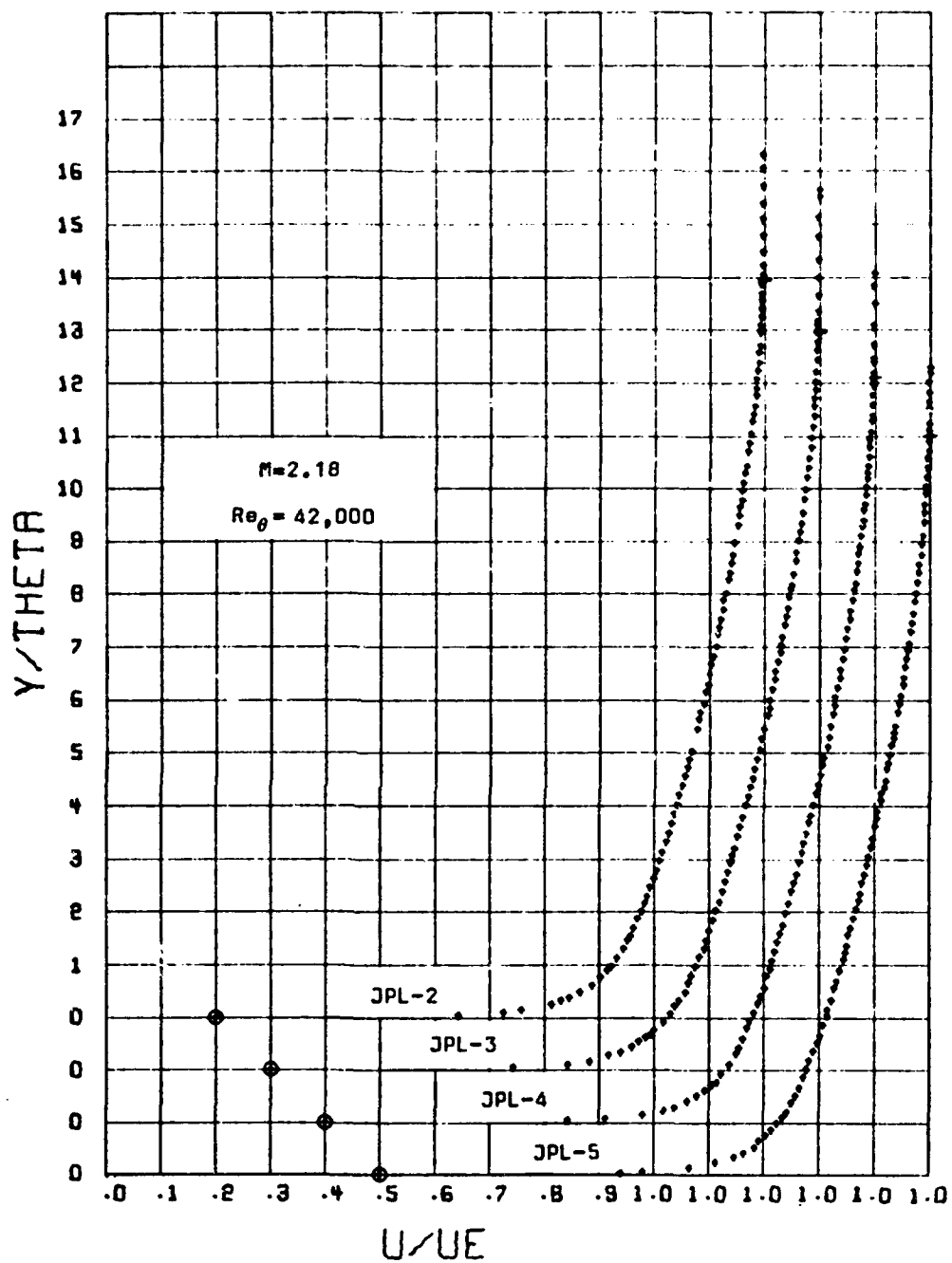
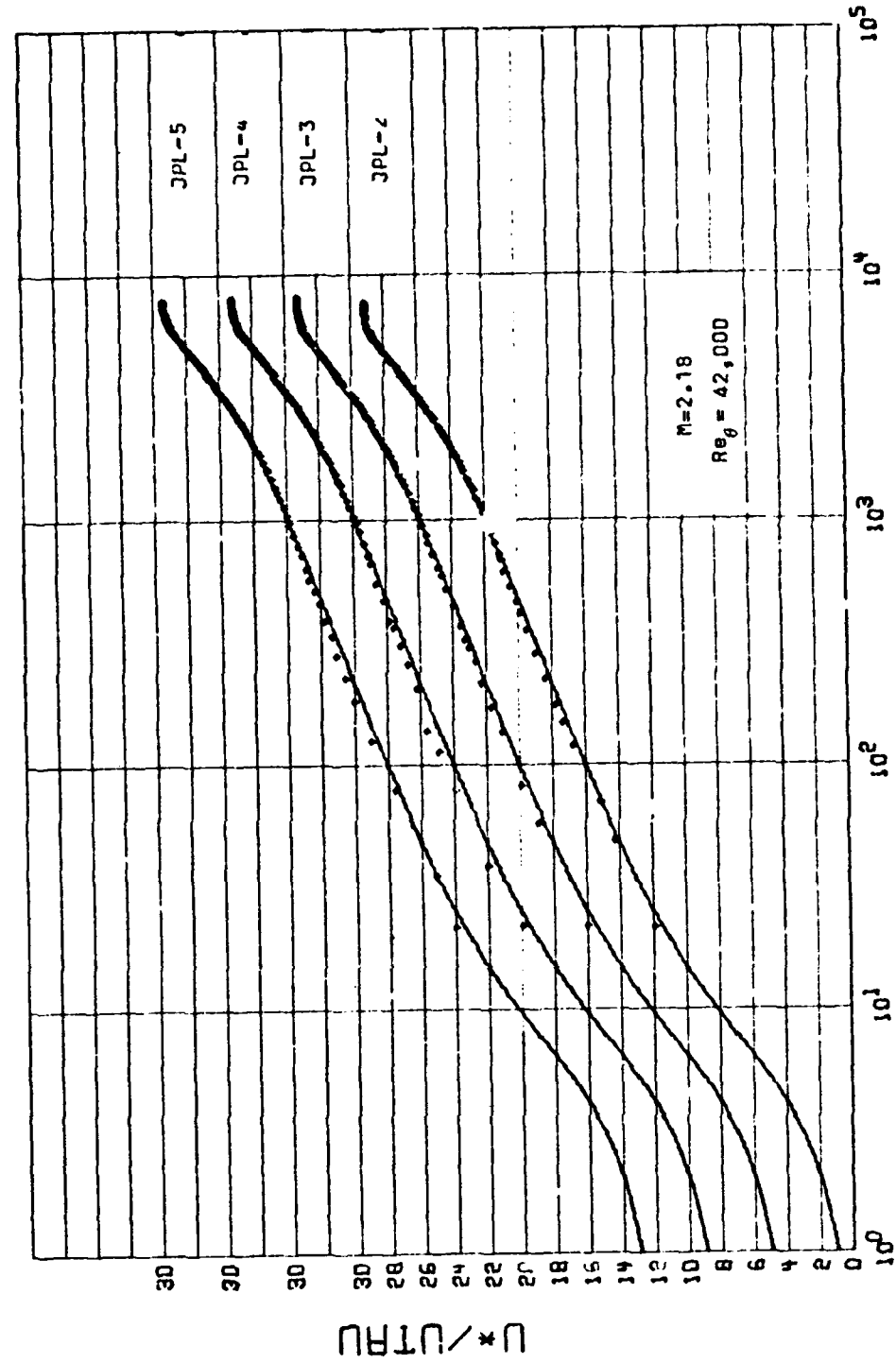
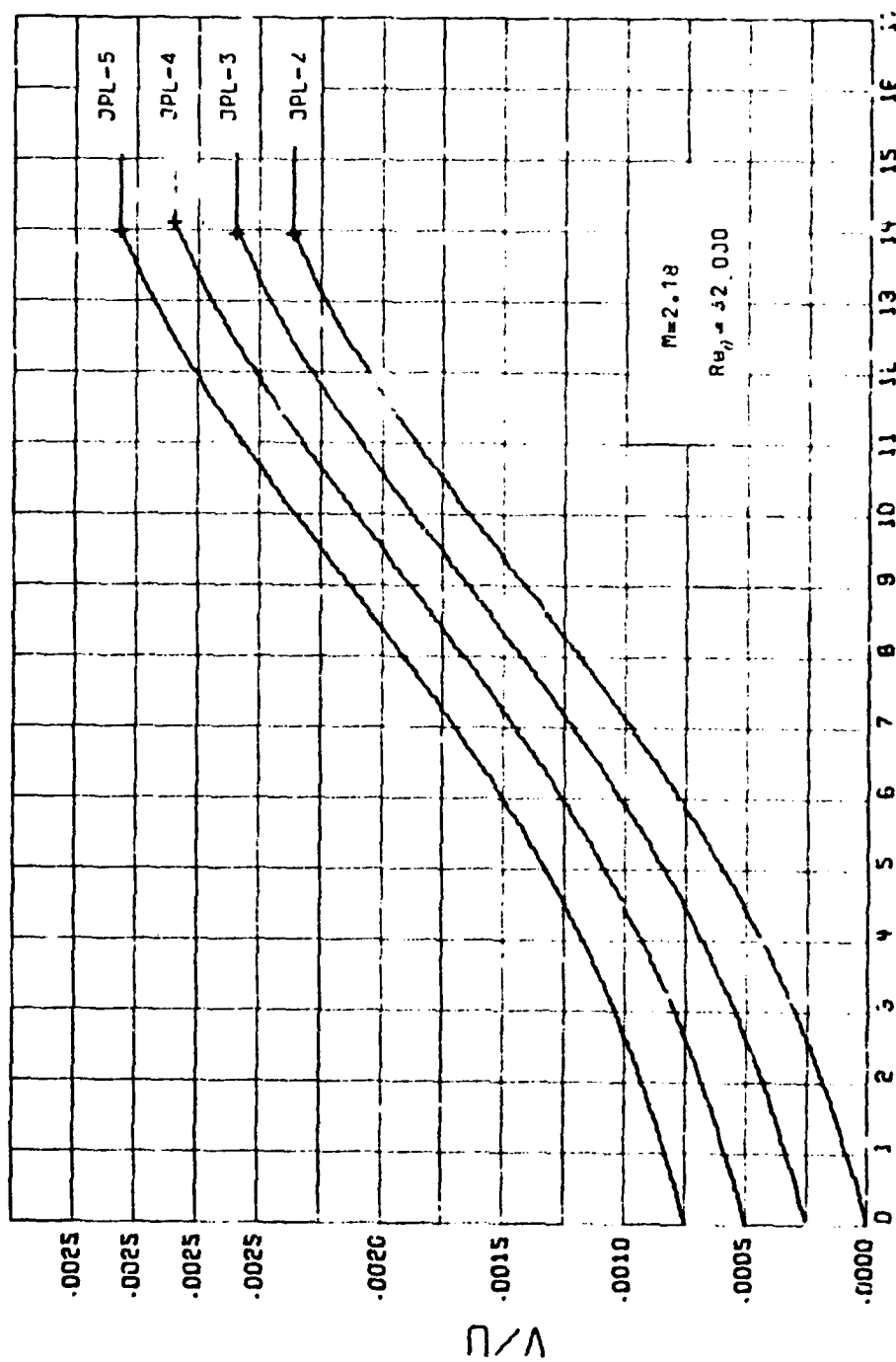


Figure A41. Mean Velocity Profiles.

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Y*UTAU/NU
Figure A42. Van Driest Scaled Mean Velocity Profiles.



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Figure A43. Normal Velocity Distribution.

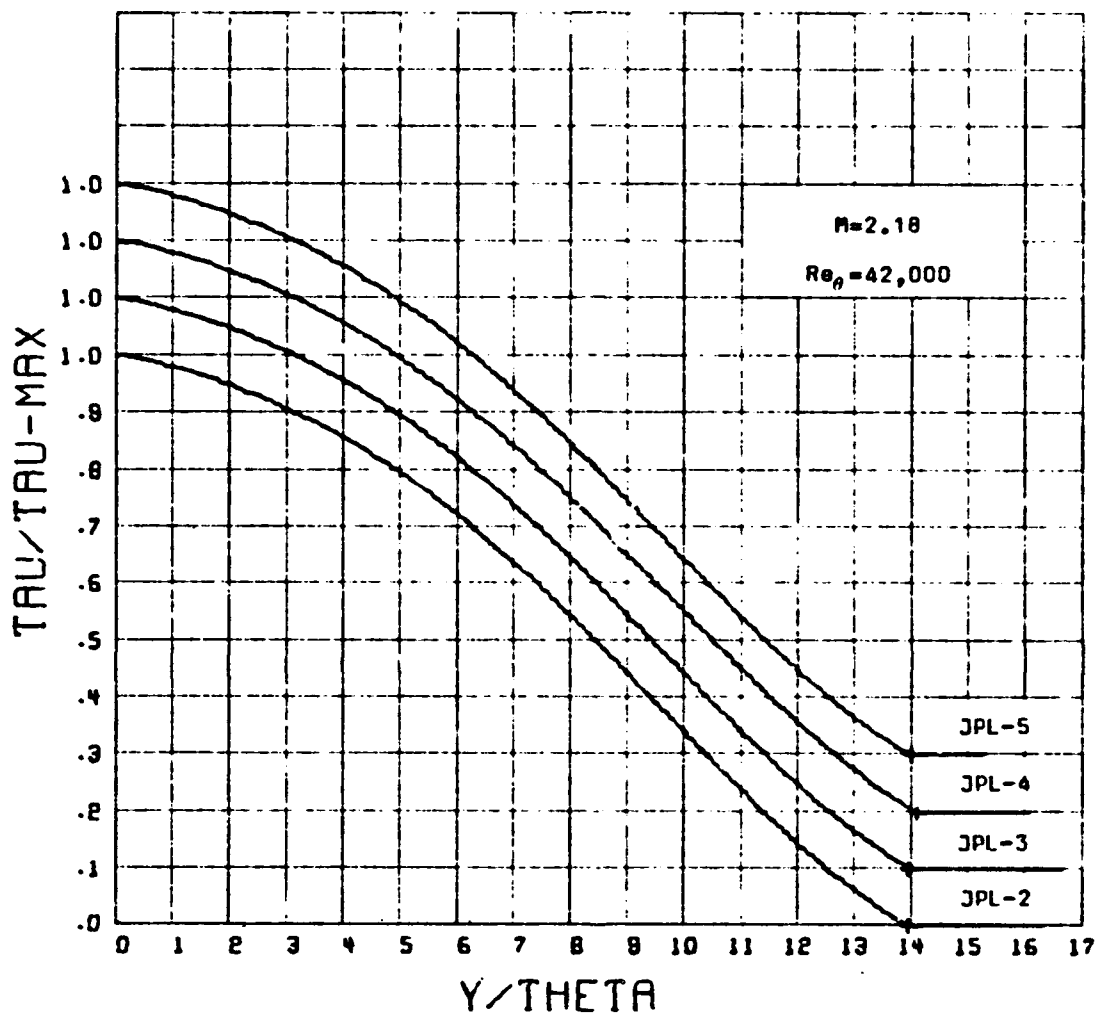


Figure A44. Shear Stress Distribution.

Y (CM)	Y/TMSTA	Y-PLUS	TABLE A14. M/ME	IC (CNT. 1) RHO/RHOE	U/UIE	II-PLUS	TAU/TAU-MAX	V/U
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	10.587	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	.9898	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	.9943	.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	.9976	.9987	29.22	0.0000	.002345
3.417	14.733	7342.	.9987	.9984	.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
3.715	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									
X= 7.62 CM									
TOTAL PRESSURE=.1802E+06 N/M ²									
TOTAL TEMPERATURE= 322.72 DEG-K									
M= 3.107									
DELTA STAR=.7507 CM									
RE-THETA= .43060.									
THETA=.2415 CM									
MUMALL=.9817 CM=2/SEC									
DELTA= 3.3810 CM									
PI=.5751									
YMIN=.083 CM									
LEAST SQUARE FIT PARAMETERS									
CF=.001907									
UTAU= 20.9835 M/SEC									
CH102=.141RF-04									
Y (CM)	Y/THETA	Y-PLUS	M/NE	RHO/RHOE	U/UF	U-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	.068	35.	.3752	.6075	.4814	13.16	.9997	.000002	
.036	.142	78.	.4521	.6365	.5667	15.61	.9985	.000008	
.059	.241	124.	.4978	.6564	.6145	17.01	.9971	.000015	
.083	.352	181.	.5320	.6725	.6488	18.02	.9950	.000024	
.105	.436	225.	.5499	.6813	.6682	18.55	.9933	.000031	
.130	.541	279.	.5700	.6916	.6874	19.13	.9910	.000039	
.157	.651	336.	.5786	.6961	.6935	19.37	.9884	.000049	
.181	.741	387.	.5933	.7039	.7071	19.79	.9860	.000057	
.212	.877	452.	.6040	.7098	.7169	20.09	.9828	.000068	
.240	.993	512.	.6140	.7154	.7259	20.36	.9797	.000079	
.265	1.098	566.	.6251	.7217	.7358	20.67	.9768	.000088	
.293	1.216	626.	.6333	.7264	.7431	20.89	.9734	.000099	
.316	1.342	713.	.6417	.7313	.7504	21.12	.9684	.000115	
.344	1.508	778.	.6519	.7373	.7592	21.40	.9645	.000127	
.402	1.666	859.	.6587	.7414	.7650	21.58	.9594	.000142	
.450	1.866	962.	.6685	.7473	.7733	21.84	.9526	.000162	
.491	2.034	1049.	.6761	.7520	.7796	22.04	.9466	.000160	
.527	2.181	1125.	.6824	.7559	.7849	22.20	.9412	.000196	
.570	2.360	1217.	.6909	.7613	.7919	22.43	.9343	.000215	
.608	2.518	1299.	.6996	.7668	.7990	22.65	.9280	.000233	
.641	2.654	1369.	.7041	.7694	.8024	22.77	.9224	.000249	
.689	2.854	1472.	.7110	.7741	.8081	22.94	.9138	.000272	
.735	3.043	1570.	.7200	.7800	.8152	23.17	.9053	.000295	
.760	3.148	1624.	.7223	.7815	.8171	23.23	.9004	.000309	
.806	3.339	1722.	.7316	.7877	.8243	23.47	.8914	.000333	
.848	3.553	1833.	.7431	.7954	.8299	23.65	.8806	.000361	
.889	3.679	1892.	.7504	.8004	.8332	23.75	.8741	.000378	
.918	3.884	2006.	.7598	.8062	.8388	23.93	.8631	.000407	
.948	4.089	2109.	.7738	.8117	.8451	24.14	.8516	.000437	
1.022	4.231	2183.	.7667	.8090	.8510	24.33	.8434	.000458	
1.055	4.368	2243.	.7717	.8152	.8547	24.46	.8353	.000478	
1.101	4.557	2351.	.7777	.8194	.8591	24.60	.8237	.000507	
1.134	4.694	2421.	.7844	.8229	.8640	24.76	.8151	.000529	
1.177	4.873	2514.	.7915	.8294	.8691	24.93	.8035	.000558	
1.220	5.052	2606.	.7964	.8326	.8726	25.05	.7916	.000587	
1.257	5.204	2696.	.8016	.8367	.8764	25.17	.7811	.000613	
1.294	5.356	2763.	.8055	.8396	.8791	25.24	.7702	.000640	
1.319	5.460	2856.	.8095	.8445	.8791	25.42	.7570	.000672	
1.377	5.703	2942.	.8122	.8465	.8838	25.42	.7448	.000701	

Y (CM)	Y/TWETA	Y-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	6.229	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	.6572	.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
2.855	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	.1018	.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	13.548	6999.	.9943	.9948	29.36	.0240	.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	14.095	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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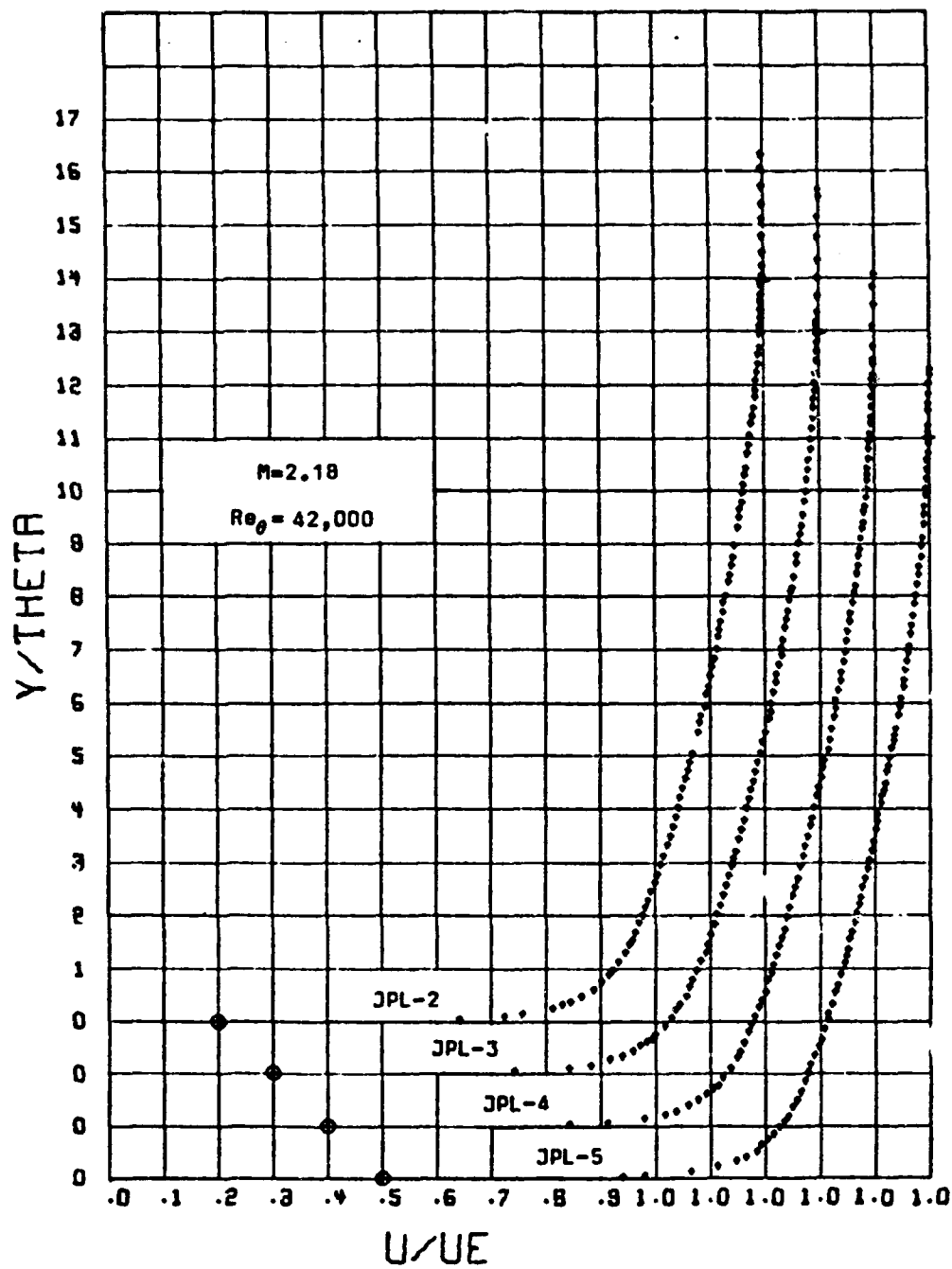


Figure A41. Mean Velocity Profiles.

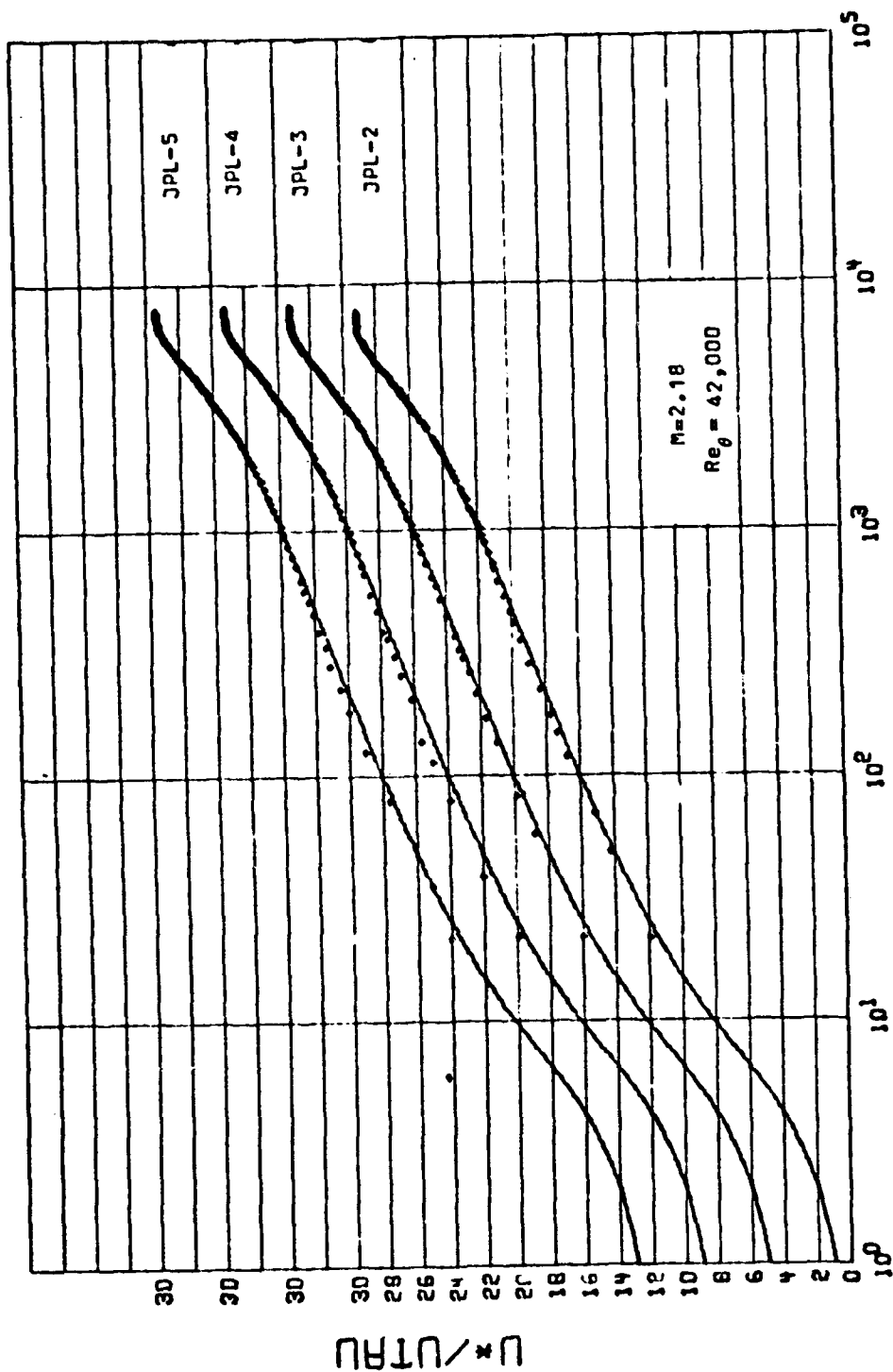


Figure A42. Van Driest Scaled Mean Velocity Profiles.

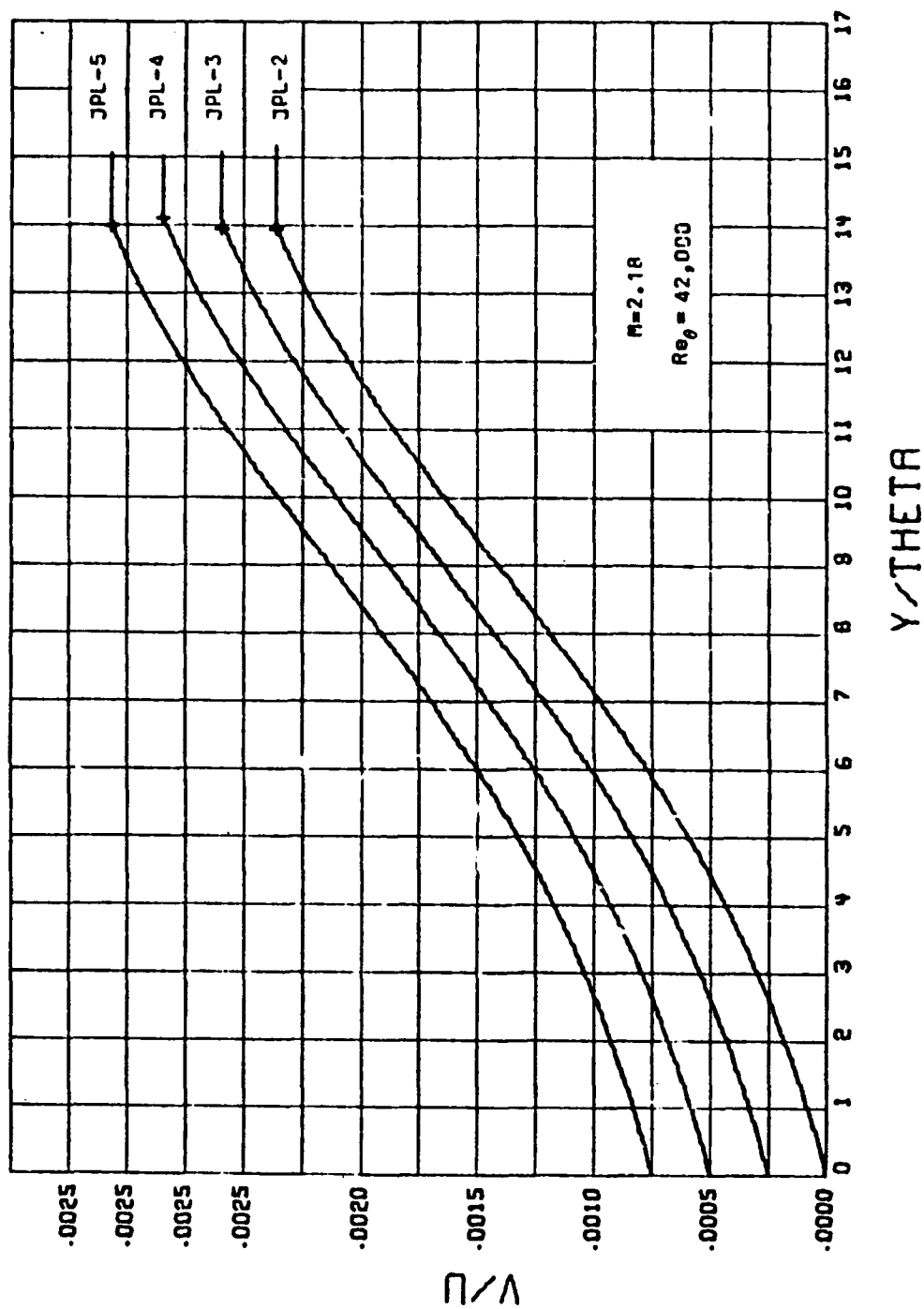


Figure A43. Normal Velocity Distribution.

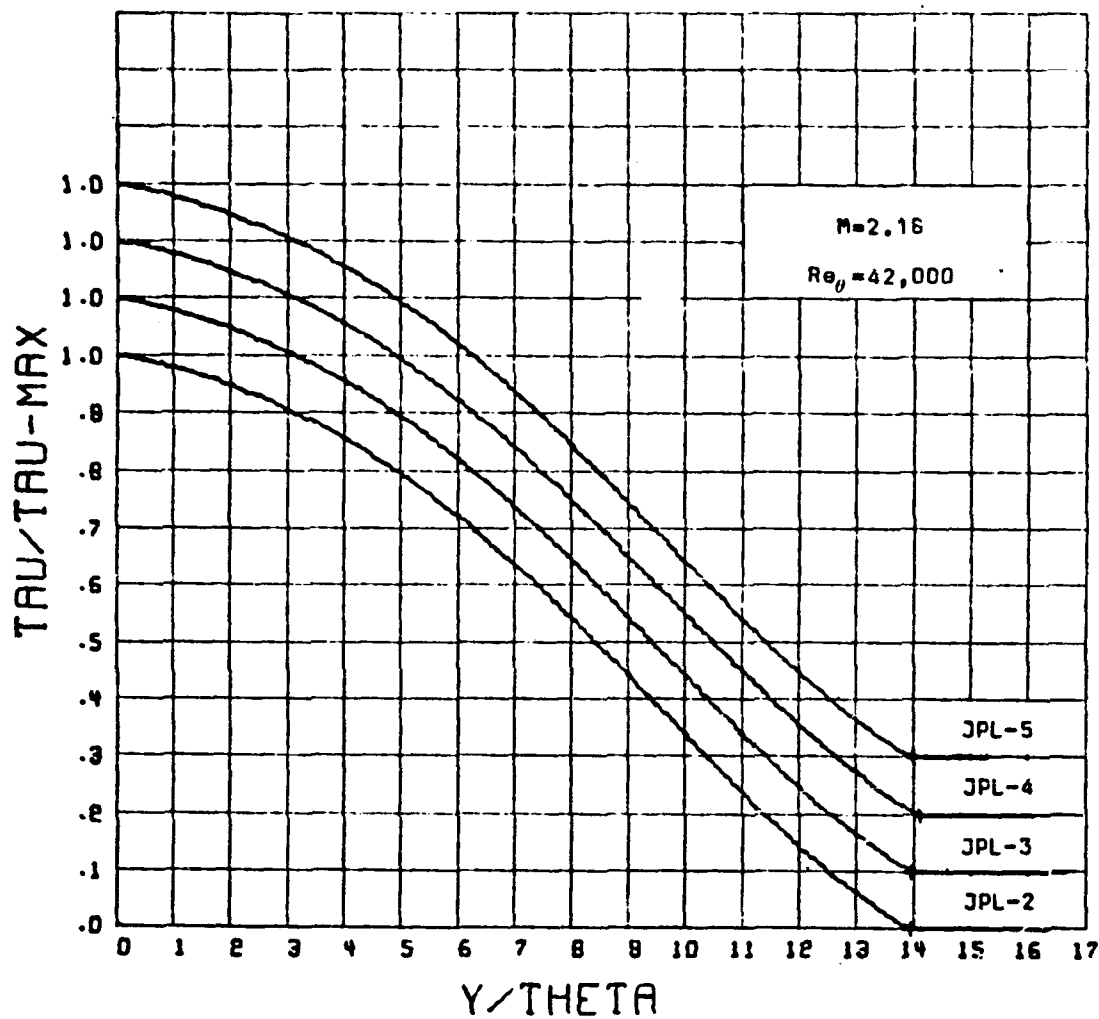


Figure A44. Shear Stress Distribution.

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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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