THE TURBULENT BOUNDARY LAYER ON A POROUS PLATE: AN EXPERIMENTAL STUDY OF THE FLUID MECHANICS FOR ADVERSE FREE-STREAM PRESSURE GRADIENTS

By

P. S. Andersen, W. M. Kays and R. J. Moffat

Report No. HMT-15

Prepared Under Grant NASA NGR-05-020-134

for

The National Aeronautics and Space Administration

Thermosciences Division
Department of Mechanical Engineering
Stanford University
Stanford, California

May 1972

ACKNOWLEDGMENTS

This research was made possible through a grant from the National Aeronautics and Space Administration, NGL 05-020-134. The authors wish to express appreciation for the interest of Dr. Robert W. Graham of the NASA Lewis Laboratories.

The authors also wish to thank Mr. Robin Birch for his contribution to the design of the hot-wire probes and for his admirable execution of both probes and test section, Mr. James F. Marshall for his valuable assistance in the data taking, and last but not least Ms. Jan Elliott for her speedy typing of the manuscript and competent coordination of the publication process.

ABSTRACT

An experimental investigation of transpired turbulent boundary layers in zero and adverse pressure gradients has been carried out. Profiles of: a) the mean velocity, b) the three intensities of the turbulent fluctuations, and c) the Reynolds stress were obtained by hot-wire anemometry. The friction coefficients were measured by using an integrated form of the boundary layer equation to "extrapolate" the measured shear stress profiles to the wall.

The two adverse pressure gradients correspond to free-stream velocity distributions of the type, $u_\infty \propto x^m$, where $m < 0$. Equilibrium boundary layers (i.e. flows with defect profile similarity) were obtained when the transpiration velocity, v_o, was varied such that the blowing parameter, $B = \rho v_o u_\infty / \tau_o$, and the Clauser pressure gradient parameter, $\beta = \frac{\delta_1}{\tau_o}\frac{dp}{dx}$, were held constant.

In the analysis of the data it was found that the Prandtl mixing-length, ℓ, can be expressed as $\ell = \kappa y$ ($\kappa = 0.41$ is the von Kármán constant) in the "logarithmic" region of all the mean velocity profiles.

The following new law of the wall,

$$\frac{u}{\sqrt{\tau_c/\rho}} = \frac{1}{0.41}\ell n\left(\frac{y\sqrt{\tau_c/\rho}}{\nu}\right) + 5.0 + 14.0\left(\sqrt{\frac{\tau_o}{\tau_c}} - 1\right)$$

has been proposed and verified for the present data. The shear stress, $\tau_c = \tau(y_c)$ is characteristic for the logarithmic region. The parameter y_c, which is a measure of the thickness of the viscous sublayer, is related to τ_c through the equation:

$$\frac{y_c \sqrt{\tau_c/\rho}}{\nu} = 72 \quad .$$

The Reynolds number of turbulence, $Re_T = \ell \sqrt{-\overline{u'v'}}/\nu$ was found to have the constant value of $Re_{T,c} = 29$ at $y = y_c$.

Predictions of some of the experimental boundary layers were performed by solving the boundary layer equations numerically. The "mean field closure" in the inner region was provided by van Driests mixing-length model, $\ell = 1 - \exp(-3y/y_c)$. The length scale, y_c , was obtained from $y_c = 72\nu/\sqrt{\tau(y_c)\rho}$ by invoking the computed local shear stress profile.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

NOMENCLATURE

a		coefficient in Eq. (5-9)
A		length scale in van Driest's mixing-length model, $\ell = \kappa y[1 - \exp(-y/A)]$
A^+	$=$	Au_τ/ν
A_o^+		value of A^+ for $v_o^+ = p^+ = 0$
b		exponent in Eq. (5-9)
B	$=$	$F/(c_f/2)$, blowing parameter
B_o	$=$	$F/(c_f/2)_o$, modified blowing parameter
$c_f/2$	$=$	$\tau_o/\rho u_\infty^2$, friction coefficient
$(c_f/2)_o$		friction coefficient for $v_o = 0$
E,e,e'		instantaneous value, mean value and fluctuation of linearizer output
F	$=$	v_o/u_∞ , blowing fraction
F_1		reference blowing fraction in Eq. (2-13)
G	$=$	$\frac{1}{\Delta}\int_o^\infty \frac{u_\infty - u}{u_\tau}^2 dy$, Clauser shape factor
H	$=$	δ_1/δ_2 , shape factor
k	$=$	$\epsilon/\delta_1 u_\infty$
K	$=$	$\frac{\nu}{u_\infty^2}\frac{du_\infty}{dx}$
ℓ	$=$	$\sqrt{-\overline{u'v'}}/\frac{du}{dy}$, mixing-length
m		exponent in Eq. (2-12)

m_F exponent in Eq. (2-13)

p static pressure

p_d dynamic pressure

$p_{d_1} = \rho u_1^2$, reference dynamic pressure

$p^+ = \frac{\nu}{\rho u_\tau^3} \frac{dp}{dx}$

$Re_{\delta_2} = \delta_2 u_\infty / \nu$, momentum thickness Reynolds number

$Re_T = \ell \sqrt{-\overline{u'v'}} / \nu$, Reynolds number of turbulence

u,v,w components of mean velocity

u',v',w' components of instantaneous turbulent fluctuations

$U = u + u'$, instantaneous velocity in the x-direction

u_1 reference velocity in Eq. (2-12)

u_i "indicated" velocity defined by Eq. (A-1)

$u_\tau = \sqrt{\tau_o / \rho}$, friction velocity

$u_c = \sqrt{\tau_c / \rho}$, "characteristic" velocity scale

$u^+ = u/u_\tau$

$u_c^+ = u^+$ at $y^+ = y_c^+$

v_o blowing velocity

$v_o^+ = v_o / u_\tau$

x streamwise coordinate

x_o virtual origin of turbulent boundary layer

x_1 reference location in Eqs. (2-12) and (2-13)

y coordinate normal to wall

y_c = 3A, characteristic distance from the wall

y^+ = yu_τ/ν

z transverse coordinate

β = $\frac{\delta_1}{\tau_o}\frac{dp}{dx}$, Clauser pressure gradient parameter

δ boundary layer thickness

δ_1 = $\int_o^\infty (1 - \frac{u}{u_\infty})dy$, displacement thickness

δ_2 = $\int_o^\infty \frac{u}{u_\infty}(1 - \frac{u}{u_\infty})dy$, momentum thickness

δ_{99} boundary layer thickness defined such that $u(\delta_{99}) = .99u_\infty$

Δ = $\int_o^\infty \frac{u_\infty - u}{u_\tau} dy$, Clauser boundary layer thickness

ϵ = $\sqrt{-\overline{u'v'}}/\frac{du}{dy}$, eddy viscosity

ϵ^+ = ϵ/ν

κ von Kármán constant ($\ell = \kappa y$)

λ computational value of ℓ/δ_{99} in outer region

μ dynamic viscosity

ν		kinematic viscosity
ρ		density
τ		shear stress
τ_c	=	$\tau(y_c)$, characteristic shear stress
τ_ν	=	$\mu\frac{du}{dy}$
τ_o		shear stress at wall
τ^+	=	τ/τ_o
ϕ		slant of hot-wire
θ		angle of rotation of hot-wire spindle

CHAPTER 1

PRELIMINARY REMARKS

The present work is primarily concerned with "transpired" turbulent boundary layers, i.e. flows for which the normal velocity at the wall is different from zero. The terms "blowing" and "suction" will be used to describe the direction of the flow normal to the wall.

In the last twenty years interest in transpired turbulent boundary layers has been rapidly increasing and a great number of both experimental and theoretical contributions to the field have been published. For example, the Heat and Mass Transfer group at Stanford University has since 1967 been engaged in a continued effort directed towards the understanding of transpired turbulent boundary layers. Constant pressure boundary layers (Simpson [2]) and boundary layers in favorable pressure gradients (Julien [3], Loyd [4]) have been studied experimentally. Kays [5] summarizes the findings for these flows.

Only one experimental study of turbulent boundary layers in adverse pressure gradients with transpiration has been reported in the literature. McLean [7] studied blown turbulent boundary layers in very strong adverse pressure gradients. The main objective of this work was to study the onset of separation. McLean did not, however, measure the skin friction, but instead relied on Stevenson's [8] law of the wall. This reflects the great difficulty of measurement of the wall shear stress. The severity of this difficulty may be gauged by the very large discrepancies between the skin friction coefficients generated by different experimenters even for the constant pressure blown boundary layers. Squire [6] gives a comparative analysis of McQuaid's [27] and Simpson's [2] data, which disagree considerably.

Coles [24] surveys all existing data for basic transpired turbulent boundary layers.

In the present work it was proposed to determine the wall shear stress by measuring the shear stress away from the wall (as the sum of the Reynolds stress and the viscous stress) and extrapolating to the wall by the integrated boundary layer equations. This novel technique should give a degree of "independence" to the present data.

In addition to investigating the adverse pressure gradient boundary layers, which are the main focus of the present work, it seemed natural to repeat some of Simpson's constant pressure flows. A secondary motivation for doing this was the finding, during exploratory tests, that the mean velocity profiles obtained by hot-wire anemometry differed appreciably (especially very close to the wall) from the earlier flattened pitot tube results of Simpson.

Many ideas have been advanced, over the years, to provide a mean field closure (i.e. an empirical relationship between the shear stress profile and the mean velocity profile). Some of these will be treated as an introduction to the present treatment of the problem of closure. The idea of a law of the wall for transpired boundary layers will likewise be discussed and the empirical bases for some of the laws which have been proposed in the literature will be treated as an introduction to the present attack on the problem.

CHAPTER 2

EXPERIMENTAL BOUNDARY CONDITIONS

The principal objective of the experimental part of the present study has been to provide measurements for transpired boundary layers in adverse pressure gradients.

The experimental program was carried out on the Stanford Heat and Mass Transfer Apparatus [1] which has been modified to permit the establishment and accurate control of adverse pressure gradients.

It has been attempted to remove all complicating circumstances from the basic problem. This investigation is therefore limited to low speed, constant property flows with the transpiration fluid being the same as the free-stream fluid (air). Boundary conditions leading to strong deviations from "equilibrium" (e.g. steps in the pressure gradient or in the transpiration rate) have been avoided. Adverse pressure gradients strong enough to cause separation are also outside the scope of this investigation.

It is well known that the "outer region" (say the outer 90%) of the boundary layer reacts much slower than the inner wall region to changes in the boundary conditions. In fact, for most continuously varying boundary conditions the wall region may be considered to be in "equilibrium" in the sense that only local values of the pressure gradient and transpiration rate are important. The outer region of the boundary layer, on the contrary, shows a pronounced "history effect". The experimental boundary conditions will be chosen such that the outer region of the boundary layer is close to equilibrium.

Clauser 1954 [9] considered the problem of similarity in turbulent boundary layers. It had been known for a long time that the constant pressure boundary layer has both inner region similarity ("the law of the wall") and outer

region similarity ("velocity defect law"). It was Clauser's idea to extend the concept of outer similarity to also include turbulent boundary layers in adverse pressure gradients. He succeeded in experimentally creating adverse pressure gradient boundary layers with a defect similarity just as in the case of the zero pressure gradient boundary layer. Clauser called all boundary layers with outer similarity, "equilibrium boundary layers".

In this chapter it will be shown that one reasonably may hope to extend the equilibrium boundary layer concept to also include adverse pressure gradient boundary layers with transpiration. The boundary conditions necessary for such flows will be discussed in Section 2.2.

2.1 The Velocity Defect Law

The velocity defect i.e. $(u_\infty - u)$ normalized on the "friction velocity", u_τ, is seen to be a similarity variable for the outer region of the constant pressure boundary layer if plotted against y/δ : The outer $\simeq 90\%$ of the boundary layer has a unique shape (independent of the Reynolds number) when plotted this way. Thus:

$$\frac{u_\infty - u}{u_\tau} = F\left(\frac{y}{\delta}\right) \quad , \tag{2-1}$$

is the defect law for the zero pressure gradient boundary layer (δ is the boundary layer thickness).

Clauser defined a new boundary layer thickness, Δ, such that

$$\Delta = \delta \int_0^1 \frac{u_\infty - u}{u_\tau} \, d\left(\frac{y}{\delta}\right) \tag{2-2}$$

Note that the Clauser thickness, Δ, is a constant factor times δ when Eq. (2-1) is satisfied, i.e. when the boundary layer has outer region similarity. The defect law Eq. (2-1)

may therefore equivalently be written,

$$\frac{u_\infty - u}{u_\tau} = F\left(\frac{y}{\Delta}\right) \quad . \tag{2-1a}$$

The advantage of using the Clauser thickness, Δ , rather than δ is that it is more precisely defined and may be determined with greater accuracy from experimental data.

Clauser now showed experimentally that a relationship of the type (2-1a) exists also for certain adverse pressure gradients. The family of these pressure gradients will, following Clauser, be called "equilibrium pressure gradients"; the corresponding boundary layers are equilibrium boundary layers.

Clauser described the shape of the equilibrium velocity profiles by the shape factor,

$$G = \frac{1}{\Delta} \int_0^1 \left(\frac{u_\infty - u}{u_\tau} \right)^2 d\left(\frac{y}{\delta}\right) \quad . \tag{2-3}$$

Thus each equilibrium flow corresponds to a certain value of the "Clauser shape factor", G . For example, the zero pressure gradient boundary layer corresponds to $G \simeq 7$. Adverse pressure gradient boundary layers have higher values of G .

Clauser reasoned that an equilibrium boundary layer would be obtained if the ratio of the wall shear force and the pressure force acting on the boundary layer is constant. More precisely this condition implies that $\beta = \frac{\delta_1}{\tau_o} \frac{dp}{dx} = \text{const.}$ Bradshaw [10] writes the von Kármán momentum integral equation in the form,

$$\frac{d}{dx}(\delta_2 u_\infty^2) = \frac{\tau_o}{\rho}(1 + \beta) \quad . \tag{2-4}$$

From Eq. (2-4) β can be interpreted as the ratio between the contributions of the pressure and the shear stress to the production of the momentum defect in the boundary layer. Bradshaw found that an adverse equilibrium pressure gradient corresponds to an experimentally decreasing free-stream velocity, $u_\infty \propto x^m; m < 0$. The basis for this finding is both Clauser's work and Bradshaw's own measurements.

In the present work the idea of an equilibrium boundary layer in an adverse pressure gradient will be extended to include flows with transpiration. If the transpiration velocity, v_o , is not zero then the momentum integral equation (2-4) takes the form:

$$\frac{d}{dx}(\delta_2 u_\infty^2) = \frac{\tau_o}{\rho}(1 + \beta + B) , \qquad (2\text{-}5)$$

where $B = \rho v_o u_\infty / \tau_o$ will be called "the blowing parameter"; it is the ratio between the rate of change of x-momentum of the transpiration fluid and the wall shear force. B may also be interpreted as the ratio between the contributions of the transpiration fluid and the wall shear stress to the production of momentum defect in the boundary layer.

For flows with zero pressure gradient ($\beta = 0$) the results of Simpson [2] indicate that constant B flows also have G = constant, i.e. are equilibrium boundary layers. It is therefore reasonable to hope that keeping β and B constant will result in transpired adverse pressure gradient equilibrium boundary layers. The appropriate boundary conditions for such flows will be considered in the following section.

2.2 Analysis of Boundary Conditions for Equilibrium Boundary Layers

The boundary conditions which control the behavior of the boundary layer will be stated as $u_\infty = u_\infty(x)$ and

$F = F(x)$, where $F = v_o/u_\infty$ is the "blowing fraction". A priori it cannot be known which boundary conditions will produce a constant β and B simultaneously. It turns out, however, that a few reasonable assumptions permit the prediction of the correct boundary conditions. Furthermore, the hope that a constant β and B corresponds to an equilibrium boundary layer (constant G) will be verified experimentally (see Chapter 7).

In the following analysis the basic assumption is that β and B are constant. The following additional assumptions will be made:

$$\text{(a)} \qquad u_\infty = u_1 x^m \ ,$$

where u_1 is a constant. In other words, it is assumed that the free-stream velocity variation that leads to an equilibrium boundary layer for $B = 0$ also produces a constant G boundary layer for $B \neq 0$ (assuming of course that the correct transpiration rate boundary condition is used).

$$\text{(b)} \qquad (c_f/2)_o = a\mathrm{Re}_{\delta_2}^{-b} \ ,$$

where $(c_f/2)_o$ is the friction coefficient for a non-transpired boundary layer. This assumption is of course always valid in practice for a small enough range of Reynolds numbers, Re_{δ_2} . For the present experiments it was found to remain valid for the whole range of experimental Reynolds numbers.

$$\text{(c)} \qquad \left(\frac{c_f}{c_{fo}}\right)_{m,\mathrm{Re}_{\delta_2}} = f(B) \ .$$

This equation expresses the assumption that the ratio of the friction coefficient for the transpired boundary layer to the friction coefficient for the corresponding (same m) non-transpired boundary layer at the same Reynolds number, is a unique function of the blowing parameter, B . This assumption was verified by Simpson [2] for the case of $m = 0$. It turns out to be equally valid for $m < 0$ although the function, f , may depend parametrically upon m .

From the definition of B one has $F = Bc_f/2$, or, on account of assumptions (b) and (c):

$$F = Bf(B)aRe_{\delta_2}^{-b} \quad . \tag{2-6}$$

An explicit expression for the dependence of the Reynolds number upon x will now be sought by writing the momentum integral Eq. (2-5) in the form,

$$\frac{\nu}{u_\infty^2} \frac{d}{dx} (u_\infty Re_{\delta_2}) = (1 + \beta + B)c_f/2 \quad . \tag{2-7}$$

By introducing assumptions (a), (b), and (c) into this equation one may obtain:

$$\frac{d}{dx} Re_{\delta_2} + mx^{-1}Re_{\delta_2} - x^m \frac{u_1}{\nu} af(B)(1 + \beta + B)Re_{\delta_2}^{-b} = 0 \quad . \tag{2-8}$$

For $(\beta + B)$ = constant the solution is:

$$Re_{\delta_2} = \left(\frac{u_1 a(1+b)(1+\beta+B)f(B)}{\nu(2m + mb + 1)} \right)^{\frac{1}{1+b}} x^{\frac{1+m}{1+b}} \tag{2-9}$$

Introducing this result into Eq. (2-6) one obtains the desired boundary condition for the blowing fraction:

$$F(x) \propto x^{m_F} \quad , \quad \text{where} \quad m_F = -(1 + m)\frac{b}{1 + b} \quad . \tag{2-10}$$

In conclusion it is expected that the boundary conditions:

$$u_\infty \propto x^m$$
$$F \propto x^{m_F} \; ; \; m_F = -(1+m)\frac{b}{1+b} \qquad (2\text{-}11)$$

will lead to boundary layers with constant β and B. These flows are then hoped to be equilibrium (constant G) boundary layers.

2.3 Nominal Boundary Conditions

Three different velocity distributions have been established experimentally in the present work. They may all be represented by:

$$u_\infty = u_1\left(\frac{x-x_o}{x_1-x_o}\right)^m \quad , \quad \text{where} \quad u_1 = \sqrt{\frac{2p_{d_1}}{\rho}} \quad . \qquad (2\text{-}12)$$

In this equation, p_{d_1}, is a reference dynamic pressure, whereas ρ is the actual air density during a given experiment (run). x_o is the (virtual) origin of the turbulent boundary layer. The three experimental velocity distributions (nominal) are determined by the parameters given in the table below.

m	u_1[ft/s]	x_o[in]	x_1[in]
0	31.1	-	-
-0.15	29.2	-3	4
-0.20	29.2	-2	4

Table 2-1 Experimental velocity distributions (nominal)

The parameters in Table 2-1 are defined by Eq. (2-12). The values of u_1 are only approximate since ρ may vary slightly from run to run. The values of x_o obtained by upstream extrapolation of δ_2 (see Section 6.5) may vary ± 1 inch from run to run; nevertheless the values indicated in Table 2-1 were always used in Eq. (2-12).

The transpiration boundary condition is expressed as

$$F = F_1 \left(\frac{x - x_o}{x_1 - x_o} \right)^{m_F} , \qquad (2\text{-}13)$$

where F_1 is a reference value obtained at $x = x_1$. The boundary conditions which have been established in the present work are summarized in Table 2-2 below.

m	F_1	m_F
0	0 0.001 0.002 0.00375 0.008	– 0
-0.15	0 $\pm$0.001 $\pm$0.002 $\pm$0.004	– 0 and -0.17
-0.20	0 -0.002	– -0.16

Table 2-2 Experimental transpiration boundary conditions (nominal)

The non-zero values of m_F satisfy the condition $m_F = -(1 + m)b/(1 + b)$ and thus correspond to constant B boundary layers.

As explained in Appendix B, the nominal boundary conditions (2-12) and (2-13) cannot be satisfied exactly. In the case of the velocity distribution Eq. (2-12) is not satisfied for $x < 10$ inches (except when $m = 0$) because of design limitations of the apparatus. The transpiration boundary condition (2-13) is only satisfied exactly at the center of each of the 24 porous plates. The continuous distribution of the blowing fraction of F expressed by Eq. (2-13) is approximated by 24 constant values of the blowing velocity, v_o .

CHAPTER 3

EXPERIMENTAL APPARATUS, INSTRUMENTATION AND PROCEDURE

The basic wind tunnel, the "Stanford Heat and Mass Transfer Apparatus" has been very adequately described by previous experimenters, see in particular Ref. [1]. The present chapter will therefore only give a very short description of the basic experimental apparatus. The heat transfer characteristics of the apparatus will not be treated at all.

The only major modification of the apparatus was a redesigning of the test section; it was carried out to permit the present work on adverse pressure gradients. The new test section has a constant cross section and features 23 adjustable slots in the top wall. The slots permit control of the pressure gradient and also prevent boundary layer separation on the top wall.

Two different hot-wire probes were designed and built: a horizontal hot-wire probe, and a rotatable probe with a single slant wire. Detailed descriptions of these instruments will be given below.

3.1 Main Air Systems

The apparatus is essentially an open-end wind tunnel. It features two independent air systems which come together in the test section: The Main Air System and the Transpiration Air System.

The flow path of the main air is as follows: (a) Inlet Air Filter: The filter is made of 0.7 micron retention felt-type filter material, (b) Main Air Blower: The centrifugal blower has a 2000 scfm capacity at 30 inches of water; it is powered by a 7.5 HP electrical motor, (c) Heat Exchanger: The heat exchanger is water cooled and it is effective enough that the air leaves it essentially at the temperature of the

cooling water. The cooling water is taken from the building water supply. However, in order to remove unacceptable fluctuations in the temperature of the water which occur at certain hours of the day the water passes through two large tanks in series before entering the heat exchanger. Just upstream and downstream of the heat exchanger the air passes through 1-1/2 inch thick honeycomb with 3/16 inch cell size. (d) In the constant 23 x 23 inch cross section after the heat exchanger the air passes through six 32 x 32 mesh stainless steel screens. (e) The nozzle, which is 36 inches long, provides an almost two-dimensional contraction to a 6 x 20 inch cross section. The nozzle is symmetric with a sine function as basic shape. However, it was found that a small separation occurred in the upstream end of the nozzle. This disturbance was effectively removed by modifying the basic shape of the nozzle to incorporate an initial contracting angle of 5^{o} just downstream of the last screen. Very close to the exit the nozzle features a 3/16 inch wide slot in the bottom wall and the side walls. Because the tunnel is operated with a static pressure slightly above ambient this slot effectively removes the bottom and side wall boundary layers. This boundary layer suction slot was initially incorporated in an effort to eliminate a non-uniformity in the lateral distribution of the boundary layer thickness. It was later found, however, that the non-uniformity was due to a small crease in the last screen and was unrelated to the nozzle boundary layers. The boundary layer suction was never-the-less retained for reasons related to the heat transfer research which was carried out in parallel with the present hydrodynamic investigation. (f) A 6 inch long transition section between the nozzle and the test section contains a 1/32 inch high, 1/4 inch wide boundary layer trip on the bottom wall, 6 inches upstream of the test section. There are no trips on the side walls or on the top wall.

3.2 Test Section

The test section is an 8 ft. long straight duct with a rectangular cross section (20 inches wide and 6 inches high). The test plate (the floor of the test section) is composed of 24 porous plates each 18 inches wide and 4 inches in the direction of the main flow. Each porous plate is connected to the transpiration air system which permits control and measurement of the flow rate. The porous plates are 0.25 inches thick and made of sintered bronze material composed of particles with diameters between 0.0023 and 0.0007 inches. The porosity is approximately 40% and the flow rate uniformity is within $\pm 6\%$ in the center 6 inch span. The flow resistance offered by the plates is large enough that the uniformity of the transpiration velocity is not significantly affected by the pressure gradients in the main flow.

The side walls of the test section are made of 1/2 inch plexiglass. One of the side walls has 0.040 inch diameter square edged static pressure tap holes drilled with a 2 inch pitch 1 inch above the test plate. These static pressure taps were used in connection with a Kiel probe in the free-stream, for the measurement of the free-stream dynamic pressure distribution. Every 12 inches in the flow direction four additional pressure taps are provided 2, 3, 4 and 5 inches above the test plate in both side walls. These pressure taps were used for comparing the static pressures at the two side walls and for check of the vertical pressure gradient in the boundary layer. It was found that the difference in static pressures between the two sides of the tunnel was always smaller than 0.002 inches H_2O. No significant pressure differences between static pressures at various heights above the test plate could be detected at any streamwise position for any of the flows.

The upper wall of the test section consists of 24, 5/16 inch thick, 3.5 inches wide plates (material: tooling

aluminum). Each of the 23, 0.5 inches wide spaces between the plate is partially covered with a movable 1.25 x 0.25 inch aluminum bar fastened on top of the upstream plate and a 0.75 x 0.25 bar fixed on top of the downstream plate. See Fig. 3-1 for a longitudinal cross section of the test section. Figure 3-2 is a photograph of the test section; it shows in particular the arrangement of the top plates. The arrangement just described provides 23 slots extending across the tunnel with widths adjustable to between 0 and 0.4 inches. The slot widths can be set to an accuracy of 0.001 inches by means of a simple feeler gauge. Since the tunnel is operated with a static pressure in the test section slightly above ambient (0.4 - 1.1 inches H_2O), the adjustable slots provide a means of controlling the velocity distribution (i.e. pressure gradient) at the test plate. (See Appendix B for details)

The length of the slots (in the lateral direction of the tunnel) may be restricted by movable "fingers". These permit the length of the slots to be equal to or less than the width of the tunnel (20 inches). This feature was incorporated because Clauser [9] reported a lateral divergence in the bottom wall boundary layer of a wind tunnel where an adverse pressure gradient was generated by removal of air through slots in the top wall. Clauser found that this undesired three-dimensionality could be eliminated by restricting the length of the suction slots.

Tests were carried out in the present tunnel both with the fingers flush with the sidewalls and restricting the slot lengths up to 0.5 inches on each side. No significant effect on the rate of growth, $d\delta_2/dx$, of the test plate boundary layer was found. The effect reported by Clauser could therefore not be detected. This is possibly because the present tunnel has a greater width to height ratio (20/6) than Clauser's tunnel (3/4). For all the runs reported the fingers were set to restrict the length of the slots by approximately

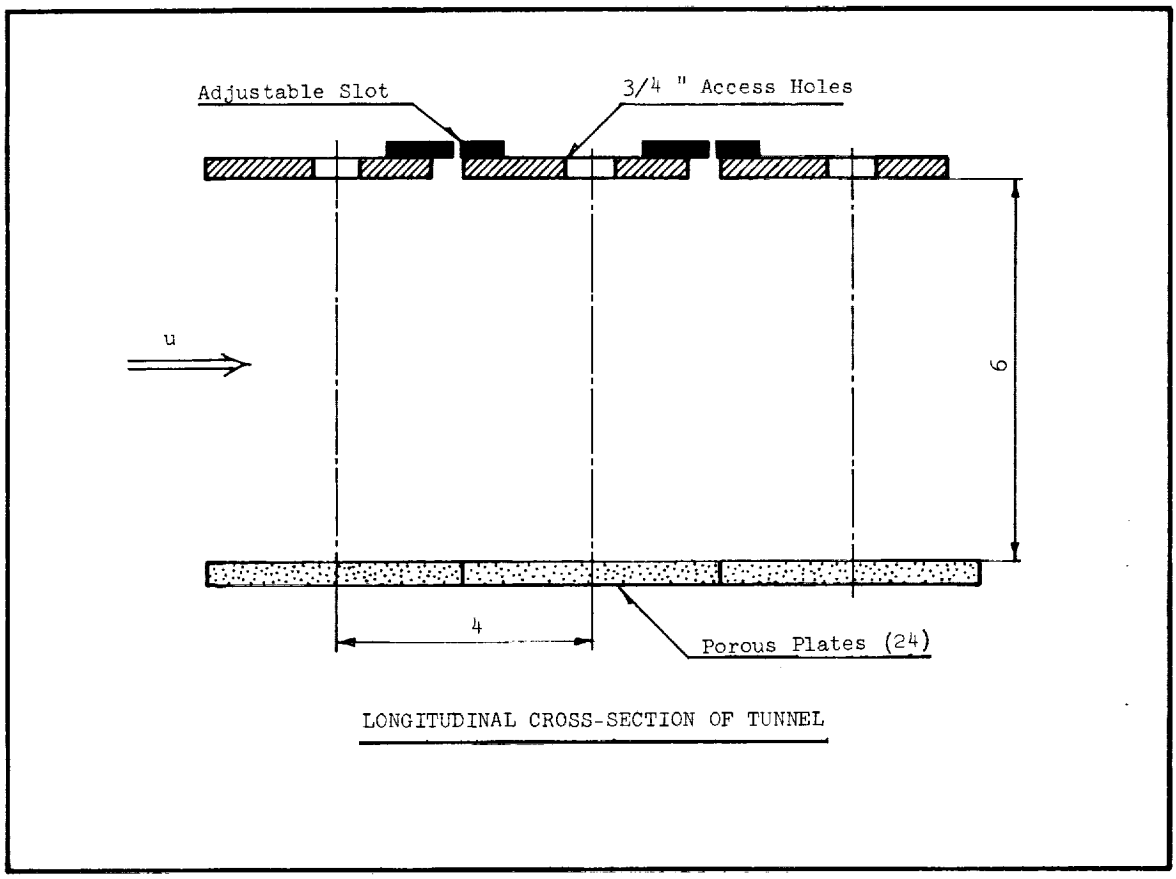

Fig. 3-1 Longitudinal cross section of the tunnel test section

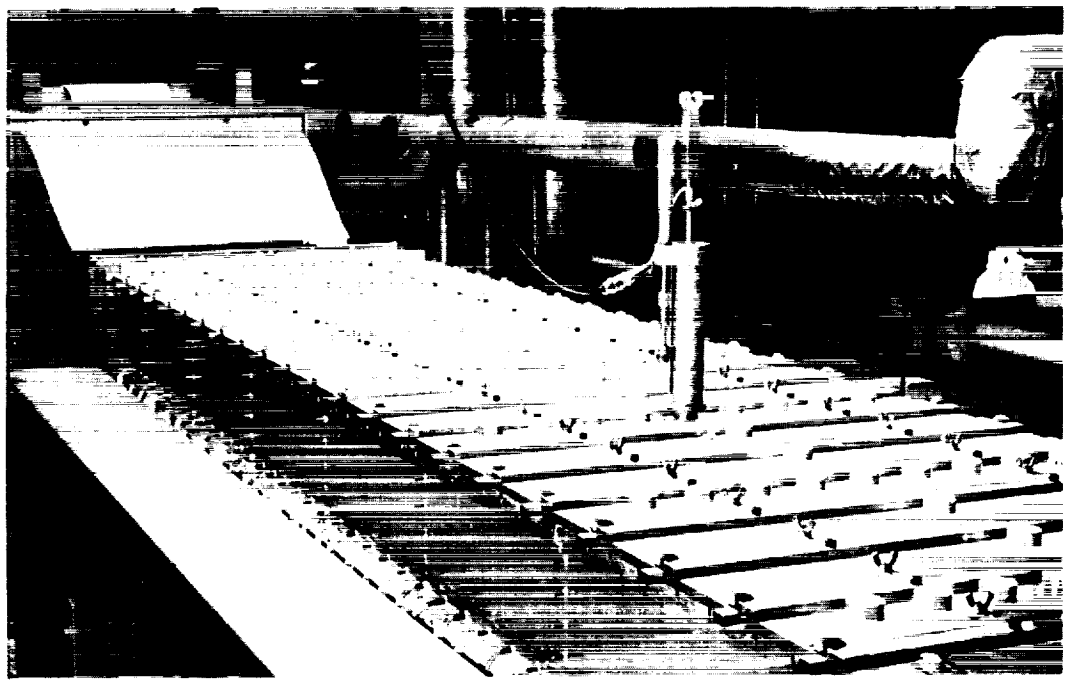

Fig. 3-2 Photograph of test section with traversing mechanism in position

the displacement thickness of the side wall boundary layers in zero pressure gradient.

Each of the 24 plates that form the top wall has a 3/4 inch access hole at the centerline of the test section. Every third plate has 8 additional 3/4 inch access holes at 2 inch intervals in the transverse direction. When not in use the access holes are closed with plugs which are flush with the inside of the top plates.

The test section is at the downstream provided with a 14 inch long extension with constant cross section. The extension is terminated with vertically movable gate. This gate valve permits adjustment of the pressure in the test section. The main function of the extension is to assure that the disturbing effect of the exit gate valve is sufficiently far removed from the test section.

3.3 Transpiration Air System

The flow rate of transpiration air is controlled and metered individually for each of the 24 porous plates. There are two rotameters for each plate providing a metering capability from 0.5 to 18 scfm. The transpiration air is supplied by a transpiration air blower. In the blowing mode the transpiration air is filtered in a 0.7 micron retention felt-type filter.

3.4 Procedure for Setting-up a New Run

The setting-up of a new run to a specified free-stream velocity and transpiration boundary condition is an iterative procedure: For a desired velocity distribution, the computer program, SLOT (see Appendix B) supplies the desired dynamic pressure at $x = 2$ inches . The total and static pressure at this position (pressure tap #1) are then held constant during the course of the iterations. (This can be done by means of the control provided by the main flow valve and

the exit gate valve). The rotameter readings (in case transpiration is used) and the slot widths are reset at each iterative cycle. The computer program mentioned above is designed to aid in the iterative procedure. On the basis of the measured distribution of dynamic pressures, the total pressure and the rotameter settings it computes a correction to the slot widths and the rotameter settings which should result in attainment of the desired boundary conditions. In very few cases have more than two resettings been necessary. As a practical matter the iterations were discontinued when the SLOT predicted changes in slot widths of 0.001 inches or less. This corresponds in practice to an error in the velocity gradient of less than $\simeq 3\%$.

3.5 Pressure Measurements

All pressures were measured with a STATHAM strain gauge transducer, type PM97 with a maximum reading of 1.4 inches H_2O. The Wheatstone bridge for the transducers was powered by stable power supply that assured negligible drift. The transducer was calibrated at regular intervals against a MERIAM micro manometer model 34FB2; the calibration curve was found to be linear and stable to ± 0.001 inches H_2O. The electrical signal was read by a VIDAR 5206 D-DAS Data Acquisition System employing a DIGITAL PDP 8/L computer. The average of 50 measurements taken during 6 seconds was used.

3.6 Velocity Measurements

The free-stream velocity distribution was computed from the dynamic pressure distribution using Bernoulli's equation. However, all velocity profiles and turbulence profiles were obtained by linearized constant temperature hot-wire anemometry. The reason that pitot tubes (which are more convenient to use) were discarded is that serious discrepancies were found in turbulent shear flow between tubes with rounded

and flattened mouths. As an example Fig. 3-3 shows experimental mean velocity profiles obtained by a round mouth (0.020 inches O.D.) and a flattened mouth pitot tube (external height = 0.015, width = 0.032 inches) in an adverse pressure gradient, non-transpired boundary layer. The Young and Maas [11] shear correction was applied for both pitot probes. The correction amounts to a displacement away from the wall (for all the profile points) of $\Delta y = 0.15D + 0.08d$, where D is outer diameter and d the inner diameter of the mouth of the pitot tube. For the flattened probe D and d are taken to be external and internal probe heights respectively. It is obvious from Fig. 3-3 that the two pitot probes disagree greatly in the inner regions of the boundary layer. The disagreement would have been even greater without the shear correction; however, no correction amounting to a simple constant displacement, Δy, of the effective probe center would be able to bring the results from the two probes into agreement. The effect displayed on Fig. 3-3 was found very consistently both for the zero and adverse pressure gradient boundary layers for which the probes were compared. Also shown in the figure is the same velocity profile as measured with a hot-wire.

3.6.1 Hot-Wire Instrumentation

The hot-wire instrumentation consisted of a DISA 55D05 Constant Temperature Anemometer in connection with a DISA 55D15 Linearizer. For mean velocity measurements the linearizer output was read by the VIDAR Data Acquisition System effectively using a 6 second average. The mean square of the linearizer output was obtained from a THERMO-SYSTEMS RMS Voltmeter Model 1060 with the time constant set at 10 sec. (It was found that a 3 second time constant gave slightly low readings for the very thick boundary layers). The mean square output from the RMS meter was integrated

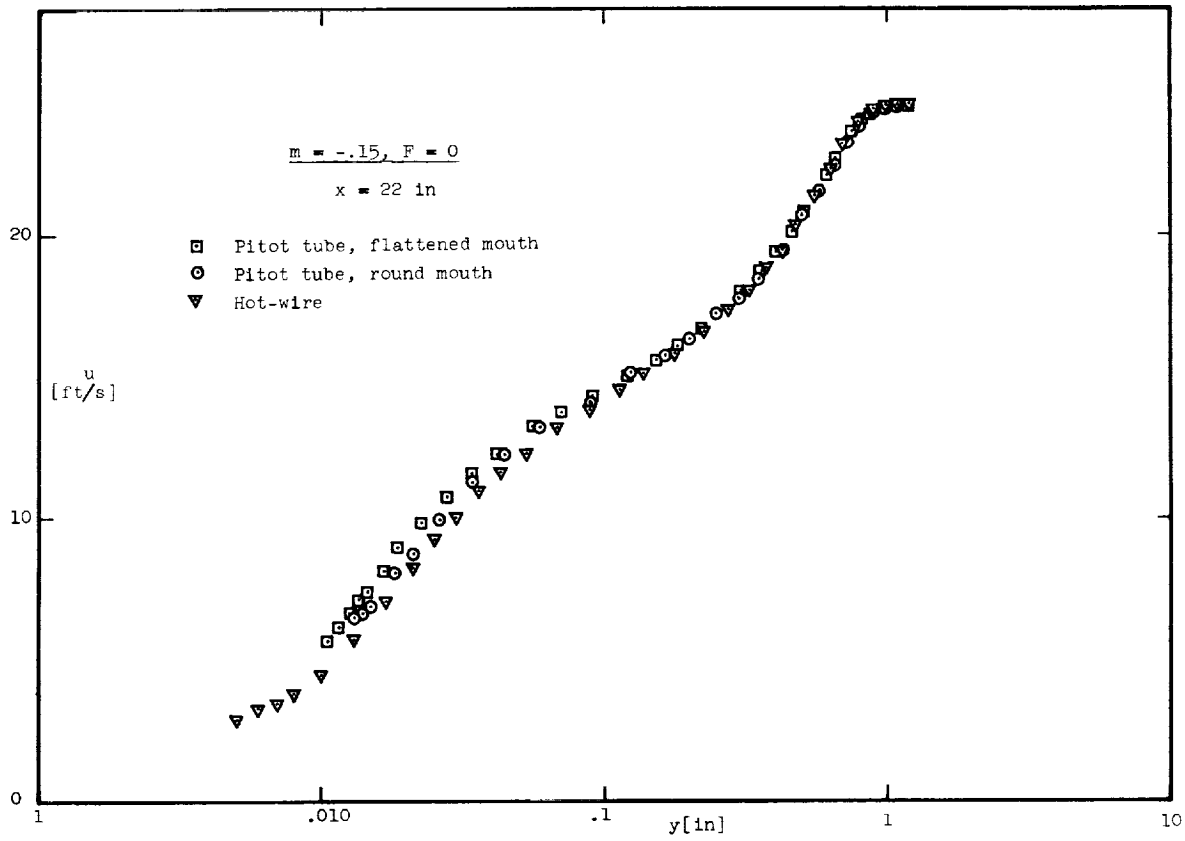

Fig. 3-3 Comparison of probes. Velocity profile in an adverse pressure gradient

over 200 secs. by a Hewlett-Packard Integrating Digital Voltmeter, Model 2401C, in connection with an external quartz crystal oscillator. The very long integration time was necessary to reduce the random scatter of the mean square values to below 1%.

Two different hot-wire probes were used:

(a) A horizontal hot-wire was used for the measurement of mean velocities and of $\overline{u'^2}$. The probe features a 0.0002 inches diameter, 0.080 inches long platinum wire soft soldered to the prongs of a DISA 55F01 probe element. The cold resistance of the wire is about 8Ω ; the operating resistance was 13Ω , corresponding to an overheat ratio of $\simeq 1.6$. The hot-wire probe is shown in Fig. 3-4.

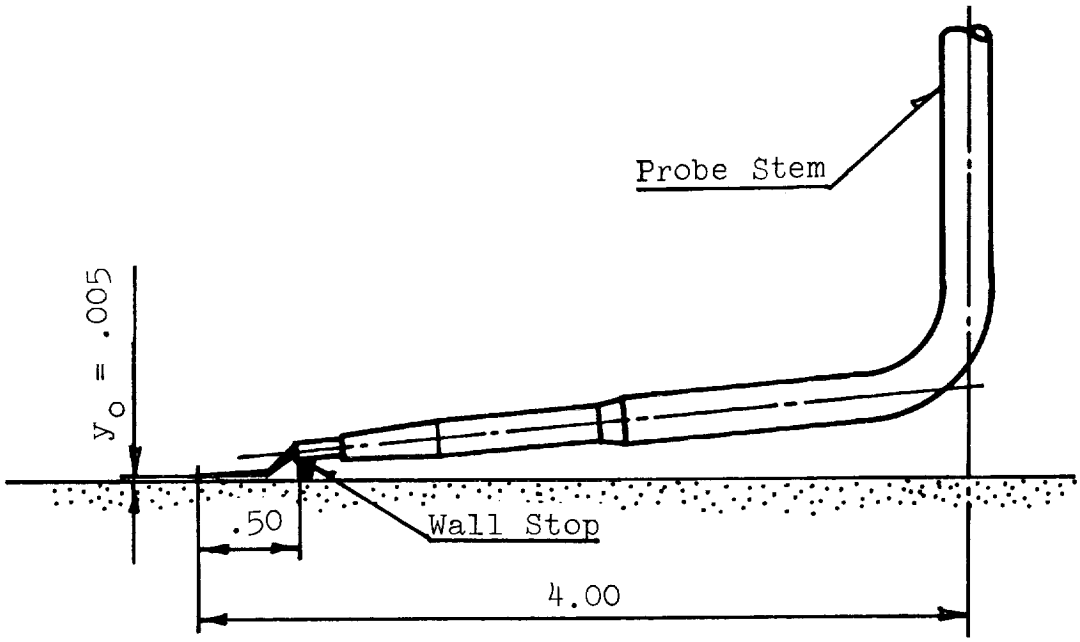

Fig. 3-4 Horizontal Hot-Wire Probe

Because of the flexibility of the probe stem the "wall stop" effectively prevents the wire from accidentally being damaged by the wall. The wire distance from the wall when the wall stop just touches is nominally 0.005 inches (as

measured by an optical comparator). In practice the probe stem may deviate up to $\simeq$ 0.1% from verticality with a corresponding influence on the wire distance from the wall of $\simeq$ 0.001 inches. It appears, however, that for a given x-position (i.e. a given access hole) the wall distance of the wire is reproducible to a greater accuracy; this conclusion is based on repeated evaluations of the wall shear stress using the first data point for the computation of the wall gradient, $(\frac{du}{dy})_{y=0}$.

Individual wall distances for the nine x-positions used in the present tests have been computed by the sublayer method using the accepted zero pressure gradient friction coefficient correlation. The wall distances used for the data reduction are: $y_o(2) = 0.0043$, $y_o(34) = 0.0056$ and $y_o(90) = 0.0068$ inches; for all other positions, $y_o = 0.0050$ inches. These numbers may give the illusion of greater accuracy than is actually obtained; $\pm$ 0.001 inches is a reasonable estimate of the uncertainty of the wire distance from the wall.

(b) A rotatable 45^o slant hot-wire was used for the measurement of the Reynolds stress, $-\overline{u'v'}$ and (in connection with the horizontal wire) of $\overline{v'^2}$ and $\overline{w'^2}$. The rotatable probe features a DISA 55F02 hot-wire element. The wire has a total length of 3 mm with a 1.25 mm active center portion. The ends of the wire are gold plated to reduce prong interference at the central sensing part of the wire. The wire is made of tungsten and has a diameter of 5 μm. The cold resistance is $\simeq 4.8\Omega$ and it was operated at 7.5Ω giving an overheat ratio of $\simeq 1.6$.

The choice of a single, rotatable, slant wire over x-wires was made for three reasons: (1) Any uncertainty about possible interaction between two wires and 4 prongs is eliminated. The directional sensitivity of the single hot-

wire of the type used is well documented, see for example [12]. (2) The need for two anemometers and two linearizers together with a critical matching of the two hot-wire calibrations is avoided. (3) There is only one wire to break! The rotatable hot-wire probe is shown in Fig. 3-5. A cable drive permits the probe to be rotated while in position in

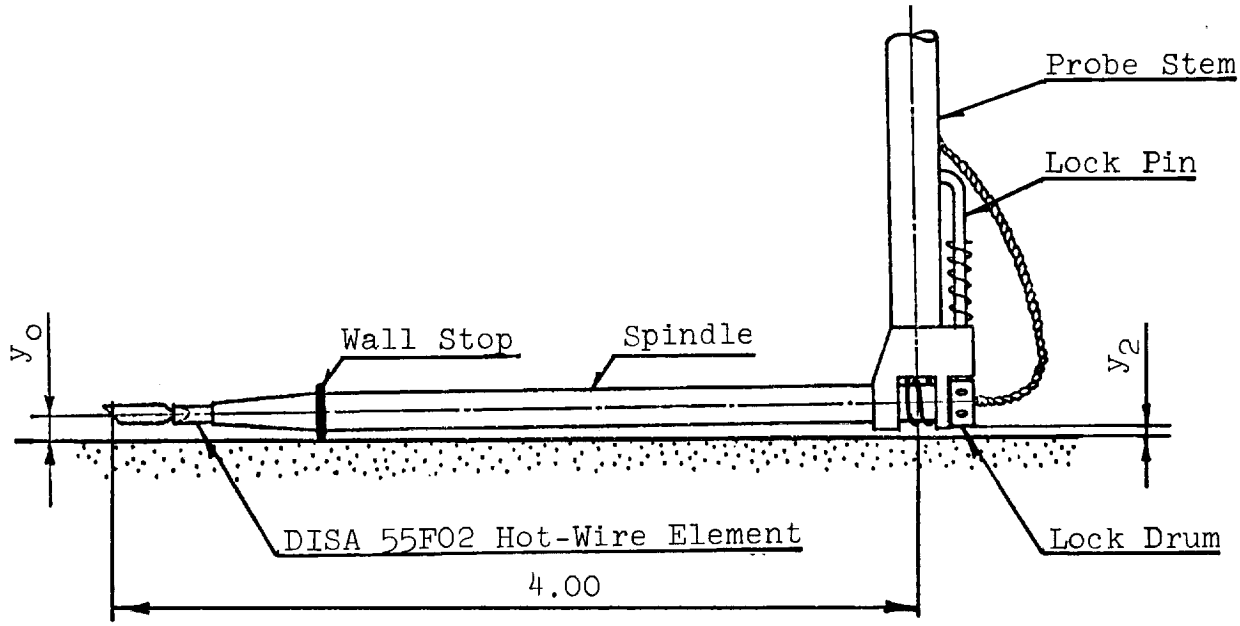

Fig. 3-5 Rotatable Hot-Wire Probe

the tunnel. The probe spindle incorporates a "lock-drum" which features six radially drilled holes spaced at 60°. The spring loaded "lock pin" which fits into the holes in the lock drum may be lifted by means of a lever located on top of the traversing mechanism. The arrangement permits turning of the probe to any of the six angular positions, $\phi_n = (n - 1)\frac{\pi}{6}$; $n = 1, 2 \ldots 6$, while operating in the tunnel.

The "wall stop" is an interchangeable wire of known diameter, D , wrapped around the spindle. The distance, y_2 , (see Fig. 3-5) may be measured by the micrometer drive

incorporated in the traversing mechanism. The knowledge of D and y_2 permits calculation of the position of the center of the hot-wire, y_o , when the wall stop just touches the wall.

Ideally the hot-wire spindle should be aligned with the "mean flow vector" (see Appendix A on hot-wire anemometry). This alignment has been accomplished to within $\pm 0.25^\circ$ by bending the probe stem according to transpiration rate and pressure gradient. The direction of the mean flow vector was inferred from the mean velocity profiles. Figure 3-6 is a photograph of the rotatable probe in operating position in the test section.

3.7 Traversing Mechanisms

Figure 3-7 is a photograph of the traversing mechanism for the rotatable probe. The traversing mechanism for the horizontal probe is identical except that it does not have the cable drive and the spindle lock lever.

The traversing mechanisms fit into the access holes in the top plates and are locked in place. The accuracy of the lateral probe alignment is $\simeq 0.5^\circ$.

The probe is traversed manually by starting from the position where the probe wall stop just touches the wall. The smallest division on the micrometers is 0.001 inches.

3.8 Calibration of Hot-Wires

The hot-wires were calibrated in the test section outside of the boundary layer. The dynamic pressure at the position of the wire was measured as the difference between the total pressure measured by a 1/4 inch pitot tube and the static pressure at a wall tap. The minimum calibration velocity was $\simeq 2.4$ ft/s . The corresponding Reynolds number based on the pitot tube O.D. is $\simeq 340$; according to

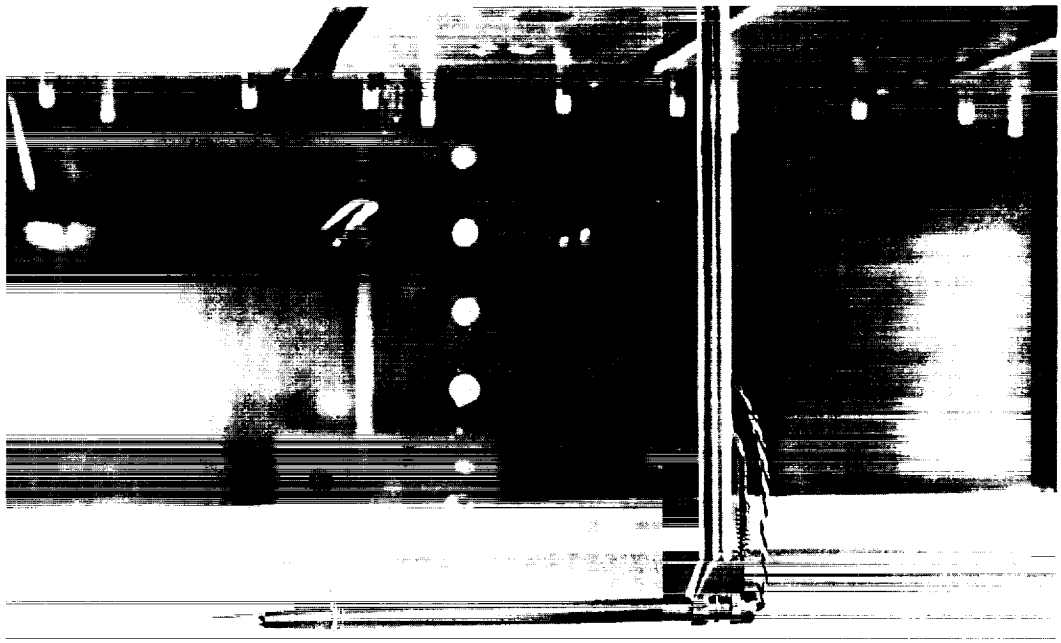

Fig. 3-6 Photograph of rotatable hot-wire probe in operating condition

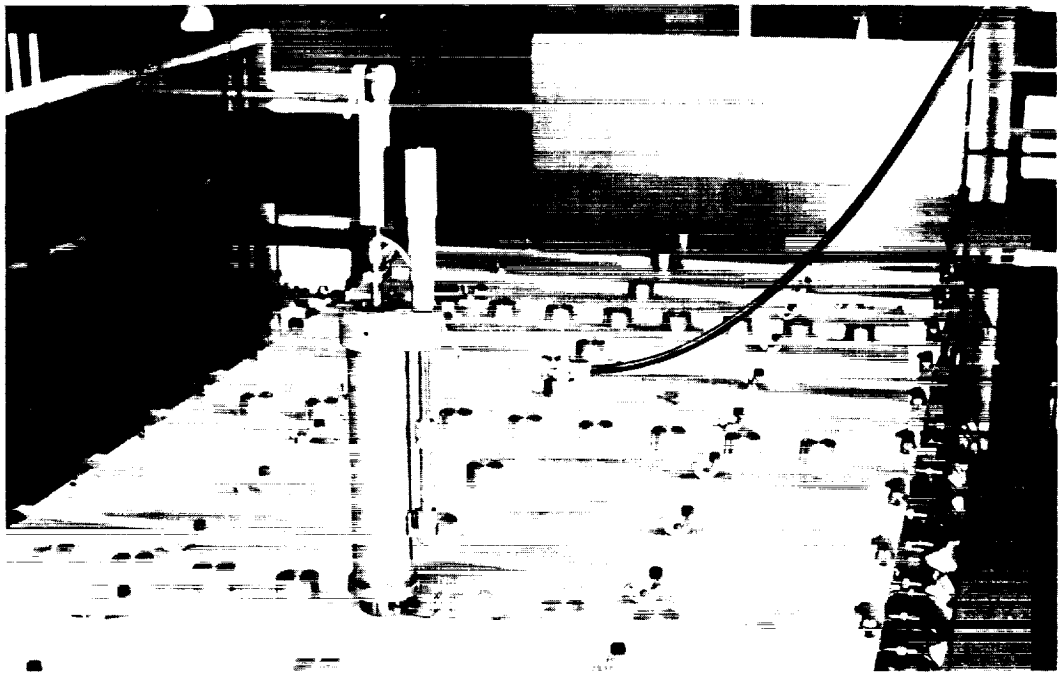

Fig. 3-7 Photograph of rotatable hot-wire traversing mechanism in operating position

McMillan [13], no correction is necessary at this Reynolds number. The maximum temperature variation during a calibration was $\pm 0.25^{\circ}F$.

The calibration curves were obtained by least square fitting measured values of velocity, U , and linearizer output, E . For the horizontal wire a 3rd order polynomial was used.

For the slant wire a straight line was used i.e.

$$U = c_1 + c_2 E \quad . \tag{3-1}$$

The calibration would be repeated with a slightly different value of V_o' (see the DISA manual for the 55D15 linearizer) until the intercept c_1 in Eq. 3-1 assumed a value below 0.05 ft/s. The reason that special care was taken in obtaining a "straight line through zero" as a calibration curve for the slant wire is that proportionality between U and E is assumed in the data reduction for measurements with this wire (see Section 6.3).

The RMS deviation of the experimental velocities from the calibration curves was always less than 0.02 ft/s. A typical calibration curve together with experimental points is shown in Fig. 3-8.

The calibration of both wires was repeated several times during the course of the experiments. No significant drift was found. All the slant wire results were obtained using the same wire. Two different horizontal wires were used.

3.9 Qualifications of the Apparatus

Surveys in the potential core in the test section have shown that the lateral variation of the free-stream velocity was less than 0.5% at all streamwise locations for all three pressure gradients. The experimental free-stream velocities never deviated more than 0.5% from the desired "practical"

velocity distribution (see Appendix B for details). For the two adverse pressure gradients the nominal velocity distribution (Eq. 2-12) and the desired "practical" distribution are very nearly identical for $x > 10$ inches. The temperature drift in the tunnel was less than $1^{\circ}F$ during any run.

The zero pressure gradient boundary layer provides a good test case for the apparatus and the hot-wire equipment. Figure 3-9 shows the friction coefficients as measured by the "shear stress" method, a method that requires measurement of the Reynolds stress $-\overline{u'v'}$ (see Section 4.1.2); also shown is the "best fit", $c_f/2 = 0.120\ Re_{\delta_2}^{-0.25}$, of the measured friction coefficients. The friction coefficients obtained by the two-dimensional momentum integral equation (Eq. 4-5 with $3D = 0$) can be seen to lie slightly below the "best fit"; the difference is probably due to a slight lateral divergence of the stream lines in the boundary layer. Discrepancies of this order of magnitude (i.e. $\Delta c_f \simeq 0.0001$) were found for most of the experimental flows, the two-dimensional momentum integral equation usually giving the lowest friction coefficients. In Fig. 3-9 the skin friction coefficient recommended by Coles [16] is displayed for comparison. The measured skin friction coefficients are slightly lower than the values of Coles.

The uniformity of the boundary layer in the lateral direction was checked by measuring mean velocity profiles at the nine transverse positions, $z = -8, -6, \ldots 8$ inches both for zero and adverse pressure gradients. Figure 3-10 shows as an example five mean velocity profiles measured at $x = 82$ inches in an adverse pressure gradient ($m = -0.15$). The profiles for $z \leq 4$ inches appear to be identical; for $z \geq 6$ inches the effect of the side wall boundary layer becomes noticeable. The same conclusion may be drawn from Fig. 3-11 in which the momentum thickness, δ_2, is plotted versus the transverse coordinate, z. It may be seen that

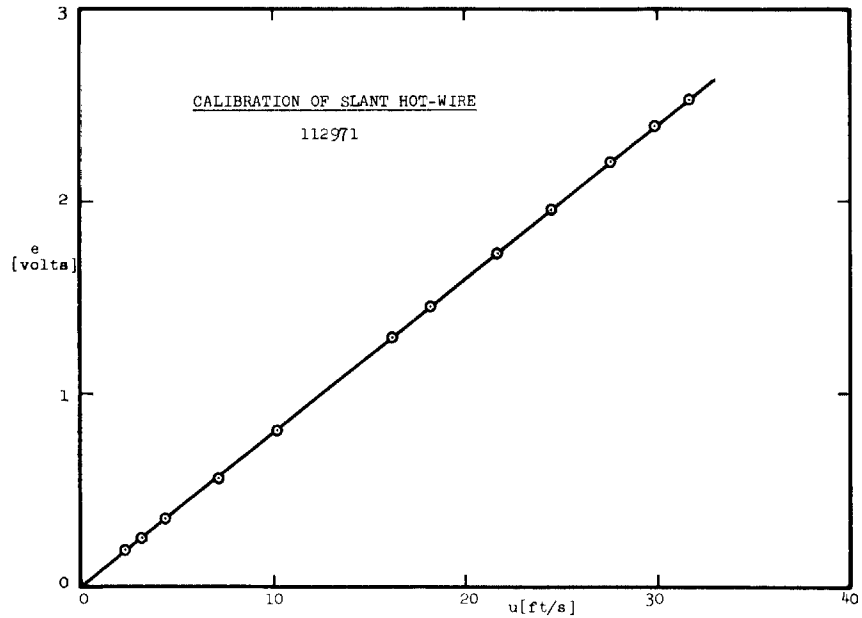

Fig. 3-8 Typical hot-wire calibration: linearizer output versus air velocity

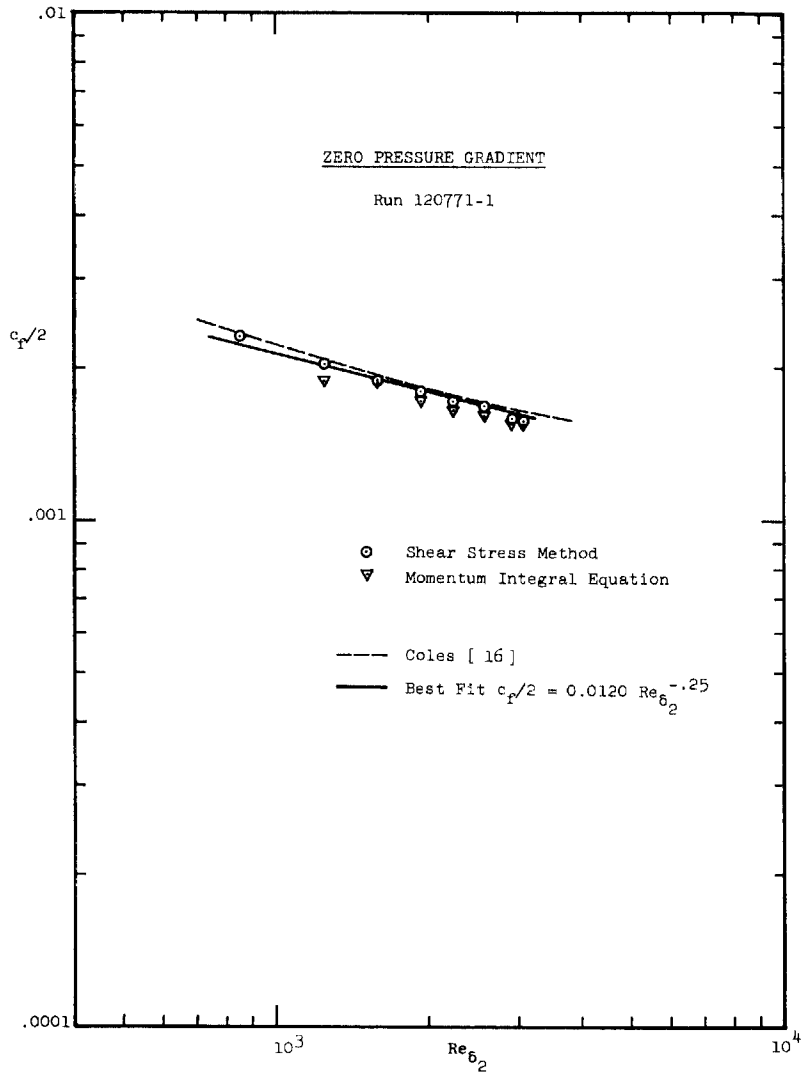

Fig. 3-9 Friction coefficients for constant pressure and no transpiration

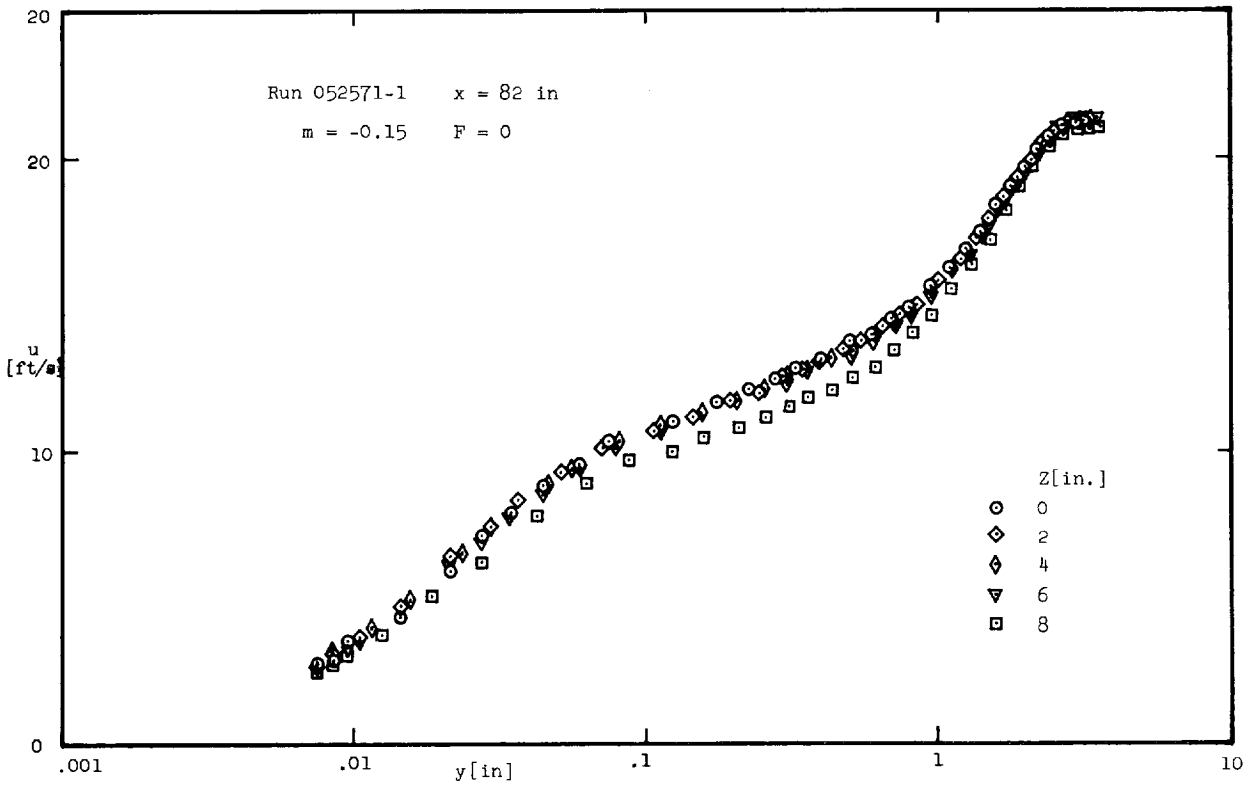

Fig. 3-10 Comparison of measured velocity profiles at five different transverse locations but at the same streamwise position

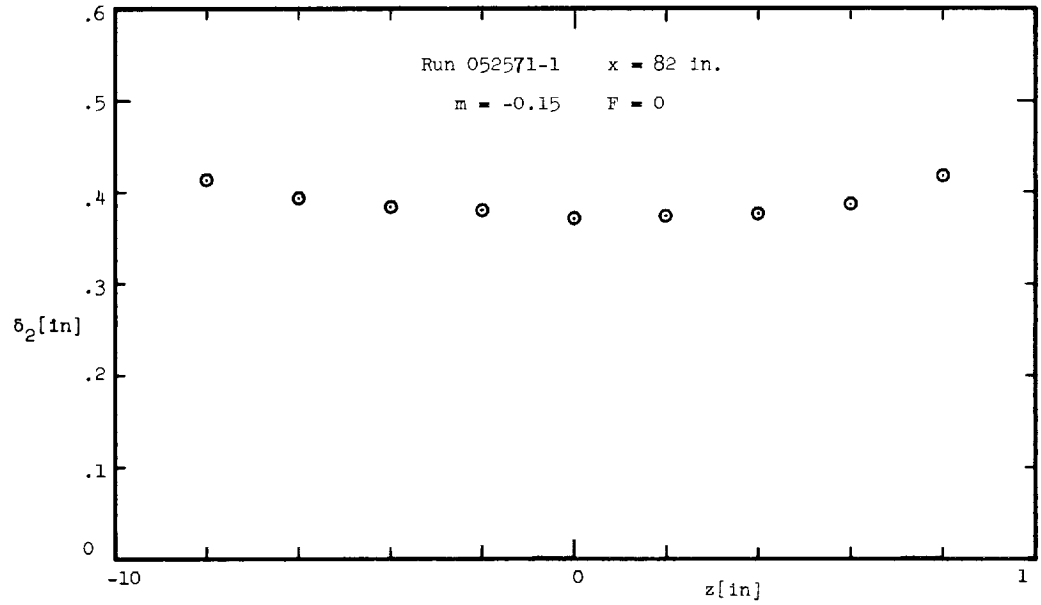

Fig. 3-11 Lateral variation of the momentum thickness

δ_2 varies less than 3% over the central 8 inches of the span. Further upstream and for zero pressure gradient flows the width of the uniform central span is even greater. This degree of uniformity was only achieved after a rather extensive "debugging" of the components upstream of the test section. The main reason for the initial non-uniformity was a small crease in the last screen. It was found that the quality of the screens is of the greatest importance (this has also been reported by Bradshaw [15] who did a careful study of wind tunnel screens). The crease responsible for the non-uniformity was barely noticeable!

The mean velocity profiles fit the law-of-the-wall, $u^+ = \frac{1}{0.41} \ell n y^+ + 5.0$, with constants from Coles [14] (see for example Fig. 7-12). The above law-of-the-wall is applicable for boundary layers on <u>smooth</u> surfaces; the fact that it fits the present velocity profiles is a sensitive test of the aerodynamic smoothness of the porous test plate (at least for zero pressure gradient).

The "strength of the wake" (Coles [16]) i.e. the maximum deviation of u^+ from the law-of-the-wall, Eq. 3-2, in the outer region is shown in Fig. 3-12 as a function of the Reynolds number, Re_{δ_2}. Also shown in the figure is Coles "normal" strength of the wake. The profiles appear to be close to normal in the sense of Coles.

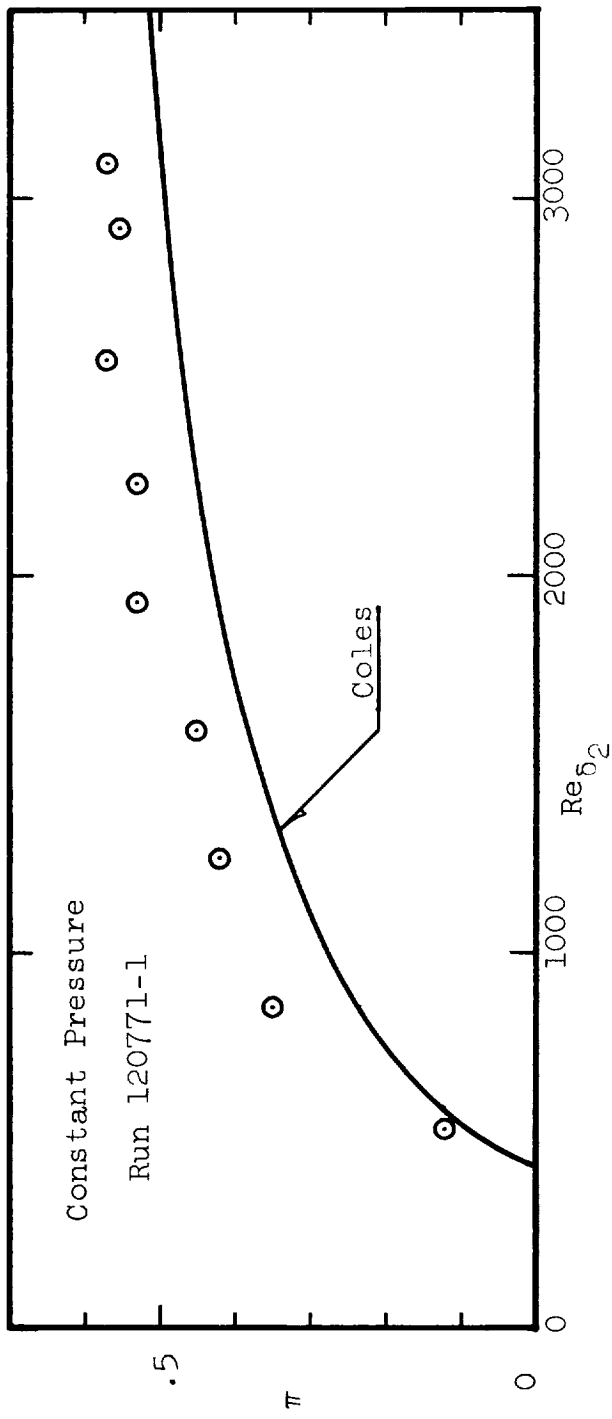

Fig. 3-12 Measured strength of the wake compared to Coles [16] "normal" strength ($\kappa = 0.41$)

CHAPTER 4

MEASUREMENT OF WALL SHEAR STRESS

For a given Reynolds number, Re_{δ_2} , boundary layers in adverse pressure gradients have lower friction coefficients than constant pressure or favorable pressure gradient boundary layers. Blowing similarly lowers the friction coefficient. In the present work very low values of friction coefficients must therefore be measured.

The method used to measure the wall shear stress must be fundamental because the flow regimes to be explored are unknown a priori. Methods which depend upon similarity in the inner region of the boundary layer cannot be used for the flows investigated in this work.

A direct measurement of the wall shear force is, in practice, impossible to carry out for flows on a porous wall. (It is a very difficult measurement even on an impermeable wall with no pressure gradient). The wall shear stress must therefore be inferred from measurements carried out in the flow and by invoking fundamental principles.

4.1 The Shear Stress Equation

For the incompressible boundary layer the time averaged x-momentum and continuity equations may be written:

$$\frac{\partial u^2}{\partial x} + \frac{\partial (uv)}{\partial y} + \frac{\partial (uw)}{\partial z} = u_\infty \frac{du_\infty}{dx} + \frac{1}{\rho}\frac{\partial \tau}{\partial y} \ ,$$

$$\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} + \frac{\partial w}{\partial z} = 0 \ . \qquad (4\text{-}1)$$

Note that the shear stress, τ , is understood to be equal to the sum of a viscous contribution, $\mu \frac{\partial u}{\partial y}$, and a Reynolds stress, $-\rho\overline{u'v'}$, thus:

$$\tau(y) = \mu \frac{\partial u}{\partial y} - \rho\overline{u'v'} \quad . \tag{4-2}$$

The normal Reynolds stress term, $-\frac{\partial}{\partial x}(\overline{u'^2})$, which belongs on the right hand side of Eq. (4-1) has been neglected.

Integrating Eqs. (4-1) from $y = 0$ to $y = y$ leads to an equation for the shear stress, τ :

$$c_f/2 = \frac{\tau(y)}{\rho u_\infty^2} + \frac{y}{u_\infty}\frac{du_\infty}{dx} - F + \frac{1}{u_\infty^2}\left(u\int_o^y \frac{\partial u}{\partial x}dy - 2\int_o^y u\frac{\partial u}{\partial x}dy\right) + 3D(y) \ , \tag{4-3}$$

where

$$3D(y) = \frac{1}{u_\infty^2}\left(\int_o^y u\,\frac{\partial w}{\partial z}dy - u\int_o^y \frac{\partial w}{\partial z}dy\right) \text{ (for } w = 0) \ . \tag{4-4}$$

In this equation $c_f/2 = \tau_o/\rho u_\infty^2$ is the friction coefficient. The term, $3D(y)$, is non-zero if the boundary layer flow deviates from the ideal of two-dimensionality. It can reasonably be assumed that $3D(y)$ is an increasing function of y and that it is very small compared to the two integrals involving only u .

4.1.1 The Momentum Integral Equation

If y in the shear stress equation (4-3) is taken to be equal to the boundary layer thickness then $\tau = 0$, and the equation may be written

$$c_f/2 = \frac{d\delta_2}{dx} + \delta_2(2 + H)\frac{1}{u_\infty}\frac{du_\infty}{dx} - F + 3D(\delta) \ . \tag{4-5}$$

This is the von Kármán momentum integral equation with a correction, $3D(\delta)$, for a deviation from the ideal of two-dimensionality.

There are two reasons why it is difficult to obtain reliable results from Eq. (4-5) for small values of the friction coefficient:

(a) In adverse pressure gradients, for boundary layers with blowing, du_∞/dx and/or F are negative and $c_f/2$ must be computed as the small difference between large numbers.

(b) The computation of $3D(\delta)$ from Eq. (4-4) would require the knowledge of $\partial w(y)/dz$, but the direct measurement of this quantity was found to be impractical. The term, $3D(\delta)$ in Eq. (4-3) is a priori unknown.

Because of the above reasons the momentum integral Eq. (4-5) was not in any case relied upon for the determination of the friction coefficient correlations (Section 6.1).

However, friction coefficients were computed from Eq. (4-5) with $3D(\delta)$ set equal to zero for all profiles for 34 inches $\leq x \leq$ 82 inches and compared to the adopted correlations. It was found that the discrepancy was usually of the order of magnitude $\Delta c_f/2 = 0.0001$. The momentum equation results were in most cases the lowest, but not always. Therefore in most cases it may be assumed that $3D(\delta) > 0$ indicating positive average values of $\frac{\partial w}{\partial z}$ i.e. a slight divergence of the streamlines.

4.1.2 The Shear Stress Method

The friction coefficient, $c_f/2$, can be determined from Eq. (4-3) using a measured shear stress $\tau(y)$ evaluated according to Eq. (4-2). The viscous contribution was obtained by differentiation of the mean velocity profile (see Section 5.2 for details). The Reynolds stress was measured using a slant hot-wire (see Section 5.3).

The shear stress $\tau(y)$ was measured in the fully turbulent region of the boundary layer, but as close to the wall as the Reynolds stress measuring hot-wire probe would permit. By performing the measurement of $\tau(y)$ at a small y the accuracy of the terms on the right hand side of Eq. (4-3) becomes of lesser importance. In particular the two integrals containing $\partial u/\partial x$ become very small (in some cases negligible). The same holds to an even greater extent for the 3D-term which can be considered truly vanishing for small y. Figures 6-35 through 6-46 show examples of the relative magnitudes of the various terms in Eq. (4-3). The Reynolds stress measured closest to the wall (at $y \simeq .1$ inches) has been used for the determination of the friction coefficient.

All measured wall shear stresses in the present work (with the only exception being those for Runs 112871-1, 102171-1 and 092271-5) were determined by the method described in this section. The reason that a different method had to be used for the above mentioned three runs is a difficulty in measuring the Reynolds stress accurately enough for runs with very low friction coefficients (see Appendix A, Section 5).

CHAPTER 5

DATA REDUCTION

5.1 Mean Velocity Profiles and $\overline{u'^2}$

The distance from the wall, y , was obtained directly from the micrometer readings, the wall having been "found" as explained in Section 3.6.1 .

The mean velocity, u , was computed as

$$u = c_1 + c_2 e + c_3 e^2 \quad , \tag{5-1}$$

where e is the time averaged output from the linearizer and the coefficients are known from the hot-wire calibration (see Section 3.8 for details).

The turbulence intensity $\overline{u'^2}/u_\infty^2$ was computed by

$$\frac{\overline{u'^2}}{u_\infty^2} = \frac{c_2 + 2c_3\overline{e'^2}}{c_1 + c_2 e_\infty^2 + c_3 e_\infty^3} \quad . \tag{5-2}$$

5.2 Viscous Shear Stress

The normalized viscous shear stress is

$$\frac{\tau_\nu}{\rho u_\infty^2} = \frac{\nu}{u_\infty^2}\frac{du}{dy} \quad . \tag{5-3}$$

The derivative, $\frac{du}{dy}$, was evaluated by least-square fitting seven profile points by a polynomial in ℓny ,

$$u = a_1 + a_2 \ell ny + a_3 (\ell ny)^2 \quad ,$$

and then computing $\frac{du}{dy}$ at the center point. For the first and last three profile points the fit of the seven first and last points respectively were used.

5.3 $-\overline{u'v'}$, $\overline{v'^2}$ and $\overline{w'^2}$

The calibration curve for the rotatable hot-wire probe is (see Section 3.8):

$$U = c_2 E \tag{5-5}$$

The indicated velocity, U_i , defined by Eq. (A-1), is related to U according to Eq. (A-5). In terms of the indicated velocity the calibration curve thus becomes, $U_i = Ac_2E$, where $A = 0.502$ for a hot-wire with $\phi = 45^\circ$ and $k_1 = 0.2$. The mean square of the fluctuating part of the indicated velocity, $\overline{u_i'^2}$, is therefore related to the mean square of the linearizer output, $\overline{e'^2}$, as

$$\overline{u_i'^2} = Ac_2\overline{e'^2} \tag{5-6}$$

The normalized Reynolds stress, $-\overline{u'v'}/u_\infty^2$ was evaluated from either one of Eqs. (A-10) or (A-12). In Eq. (A-10) the Reynolds stress is computed from measurements performed at <u>two</u> angular positions of the hot-wire ($\theta_1 = 0$ and $\theta_2 = \pi$). All the friction coefficients obtained from the "shear stress method" (see Section 4.12) are obtained from Reynolds stresses computed from this equation.

The Reynolds stress profiles (one for each run, taken at $x = 70$ inches) were all computed from Eq. (A-12) which require measurements at <u>six</u> angular positions of the hot-wire ($\theta_n = (n - 1)\frac{\pi}{6}$; $n = 1,2..6$). As discussed in Section (A-6) the results from Eqs. (A-10) and (A-12) are equivalent to the order of the triple correlations of the turbulent fluctuations. In practice the two equations give identical values of the Reynolds stress except for Runs 112871-1, 102171-1 and 092271-5. For these three runs, which all have very low values of the friction coefficient, the measured Reynolds stresses were <u>not</u> used for the evaluation of friction coefficients.

The normalized turbulent fluctuations, $\overline{v'^2}/u_\infty^2$ and $\overline{w'^2}/u_\infty^2$ were evaluated using Eq. (A-13) combined with Eq. (5-6).

5.4 The Free-Stream Velocity

The free-stream velocity, u_∞, was deduced from dynamic pressures, P_d, measured at the position of the 46 static pressure taps in the side wall. Thus the free-stream velocity is computed as

$$u_\infty = \sqrt{\frac{2P_d}{\rho}} \quad ,$$

where ρ is the air density obtained from the measured values of pressure, temperature and humidity in conjunction with saturation data from Ref. [17].

The measured velocities were curve-fit and du_∞/dx was obtained by differentiation of the analytical fit (see Appendix B for details). The RMS - difference between measured values of the free-stream velocity and the fit was about 0.03 ft/s for most runs.

5.5 Virtual Origin and $d\delta_2/dx$

The experimental values of δ_2 for 10 inches $\leq x \leq$ 90 inches were fitted by an equation of the form:

$$\delta_{2,fit} = \alpha(x - x_o)^\beta \quad . \tag{5-8}$$

The constants α, β, and x_o were determined by the method of least squares. The "virtual origin" of the boundary layer was taken to be at $x = x_o$.

The derivative, $d\delta_2/dx$, was taken to be equal to the derivative of $\delta_{2,fit}$ from Eq. (5-8).

5.6 Correlation of Friction Coefficients

The friction coefficients, $(c_f/2)_o$, for the three boundary layers without transpiration (corresponding to $m = 0$, -0.15 and -0.20) have been fitted by equations of the form:

$$(c_f/2)_o = aRe_{\delta_2}^{-b} . \qquad (5\text{-}9)$$

All the friction coefficients for boundary layers with transpiration belonging to each of the three pressure gradients were correlated with an equation of the type:

$$c_f/2 = (c_f/2)_o[1 + a_1 B_o + a_2 B_o^2 + a_3 B_o^3] , \qquad (5\text{-}10)$$

where

$$B_o = F/(c_f/2)_o$$

and $(c_f/2)_o$ is determined from Eq. (5-9). The fitted values of the friction coefficient, as determined by the three equations of type (5-10) were then used for the data reduction (i.e. for the computation of y^+, u^+, v_o^+ etc.).

It should again be stressed that the friction coefficients used to evaluate the coefficients for Eqs. (5-9) and (5-10) were all obtained from the "shear stress method" except in the case of Runs 112871-1, 102171-1 and 092271-5 for which $c_f/2$ was evaluated from the "generalized law of the wall", Eq. (7-25).

5.7 Shear Stress Profiles

The shear stress profiles may be computed from Eq. (4-3). However, because of the uncertainty in $\partial u/\partial x$, and because of the unknown magnitude of the left out 3D term, the equation usually predicts a non-zero shear stress at the outer edge of the boundary layer.

The derivative $\partial u/\partial x$ in Eq. (4-3) was evaluated at the measured profile points of a given profile by using interpolated values for u (at the same y) at the first upstream and downstream profiles assuming a linear variation of u with x. The integrations were performed by using the trapezoidal rule.

It was assumed that the major reason for the failure of Eq. (4-3) to satisfy the outer boundary condition, $\tau(\delta) = 0$, was experimental uncertainty of $\partial u/\partial x$. By further assuming that the percentage error in $\partial u/\partial x$ is independent of y, the shear stress profiles may be corrected by multiplying the bracketed term in Eq. (4-3) containing the two integrals, by a factor, α, which is adjusted such that $\tau(\delta) = 0$. The computing equation for the shear stress then becomes:

$$\frac{\tau(y)}{\rho u_\infty^2} = c_f/2 - \frac{y}{u_\infty}\frac{du_\infty}{dx} - \frac{\alpha}{u_\infty^2}\left(u\int_o^y \frac{\partial u}{\partial x}\,dy - 2\int_o^y u\,\frac{\partial u}{\partial x}\,dy\right) , \tag{5-11}$$

where

$$\alpha = \frac{c_f/2 - \frac{y}{u_\infty}\frac{du_\infty}{dx}}{\left(u\int_o^\delta \frac{\partial u}{\partial x}\,dy - 2\int_o^\delta u\,\frac{\partial u}{\partial x}\,dy\right)\Big/u_\infty^2} .$$

If profiles at $x = 10$ inches are excluded $\partial u/\partial x$ has in general been corrected by less than $\pm 6\%$. Furthermore, the correction never has the same sign for all profiles belonging to a given run; this seems to indicate that experimental uncertainty on $\partial u/\partial x$ (rather than effects of three-dimensionality) is indeed largely responsible for the necessity to correct the shear stress profiles.

It should be noted that the influence of the corrective factor, α , on the shear stress profiles computed from Eq. (5-11) is extremely small close to the wall. For example only in a few cases does the correction influence the evaluation of friction coefficients by the "shear stress" method.

CHAPTER 6

ANALYSIS AND DISCUSSION OF EXPERIMENTAL RESULTS

In the present chapter certain aspects of these results will be discussed in detail. In particular correlations for the friction coefficients and for the Clauser shape factor, G , (defined in Section 2.2), will be given. It will be shown that equilibrium boundary layers are in fact obtained when the acceleration parameter, $\beta = \frac{\delta_1}{\tau_o}\frac{dp}{dx}$, and the blowing parameter, $B = \rho v_o u_\infty / \tau_o$, are held constant.

Attention will be given to the behavior of the "eddy viscosity", ϵ , defined by

$$\tau = \rho(\nu + \epsilon)\frac{du}{dy} \tag{6-1}$$

and the "mixing length", ℓ , which is related to the eddy viscosity through the definition:

$$\epsilon = \ell^2 \frac{du}{dy} \quad . \tag{6-2}$$

It will be shown that for all the experimental boundary layers reported herein, there exists a range of y close to the wall where the mixing length is approximately proportional to the distance from the wall, i.e. where

$$\ell = \kappa y \quad . \tag{6-3}$$

Moreover, the factor of proportionality, the von Kármán constant, κ , is the same for all the flows: i.e., κ is independent of the pressure gradient, the transpiration rate, and the Reynolds number.

The range of distances from the wall where approximate proportionality between ℓ and y exists (i.e. where Eq.

(6-3) remains valid) will be called the "overlap region". It separates the inner "wall region" from the "outer region". In both the inner and outer regions, $\ell \leq \kappa y$, may then be considered the "common asymptote" for the wall region and the outer region.

6.1 Friction Coefficients

All the measured friction coefficients are plotted versus the momentum thickness Reynolds number in the following figures: Fig. 6-1 for $m = 0$ (constant pressure flows), Fig. 6-2 and Fig. 6-3 for $m = -0.15$ and Fig. 6-4 for $m = -0.20$. The "open" symbols represent friction coefficients evaluated by the shear stress method (Section 4.1.2); the "solid" symbols correspond to friction coefficients obtained from the "generalized law of the wall" (see Section 7.3). Also shown in the figures are lines representing analytical "fits" of the friction coefficient data.

The friction coefficients, $(c_f/2)_o$, for the three non-transpired flows (corresponding to $m = 0$, -0.15 and -0.20) have been fitted by the following equations:

$$(c_f/2)_o = a\mathrm{Re}_{\delta_2}^{-0.25} , \qquad (6\text{-}4)$$

where

$$m = 0 \quad , \; a = 0.0120 \quad (850 < \mathrm{Re}_{\delta_2} < 3000)$$

$$m = -0.15, \; a = 0.0102 \quad (1500 < \mathrm{Re}_{\delta_2} < 3500)$$

$$m = -0.20, \; a = 0.0083 \quad (1700 < \mathrm{Re}_{\delta_2} < 4200)$$

These fits seem to be quite adequate for the present range of Reynolds numbers.

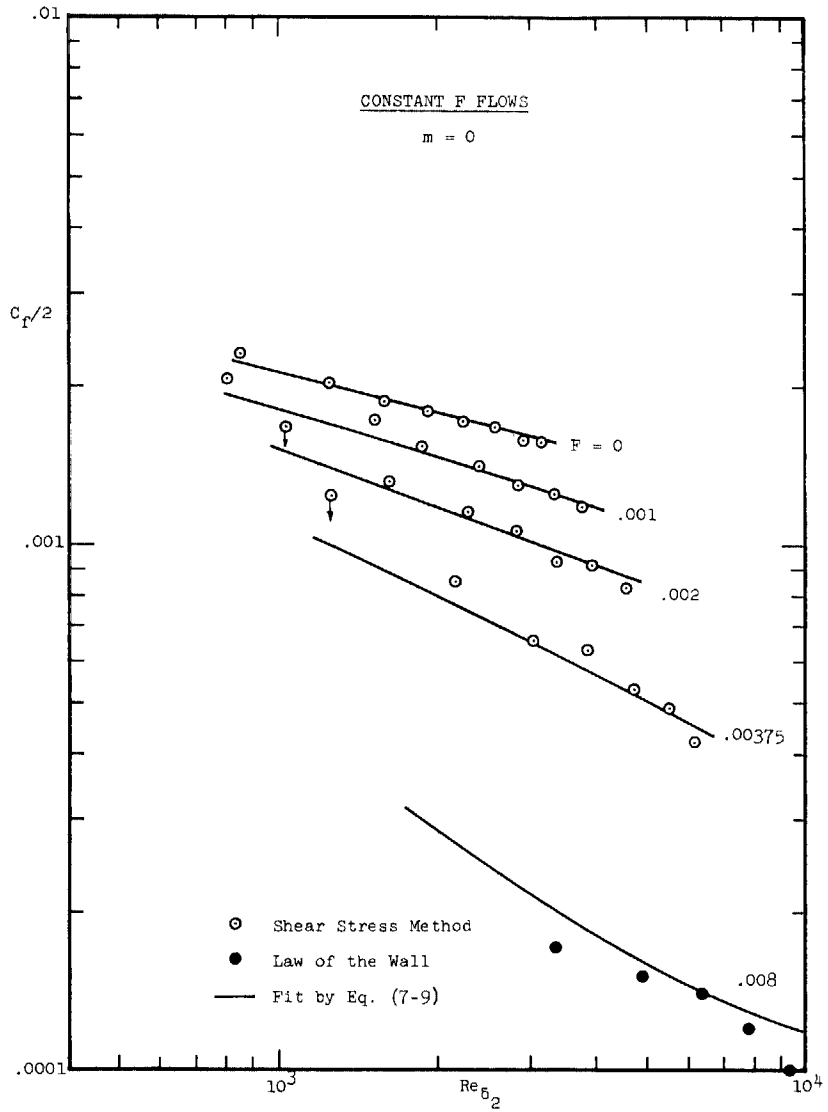

Fig. 6-1 $c_f/2$ versus Re_{δ_2} ; m = 0, constant blowing fractions

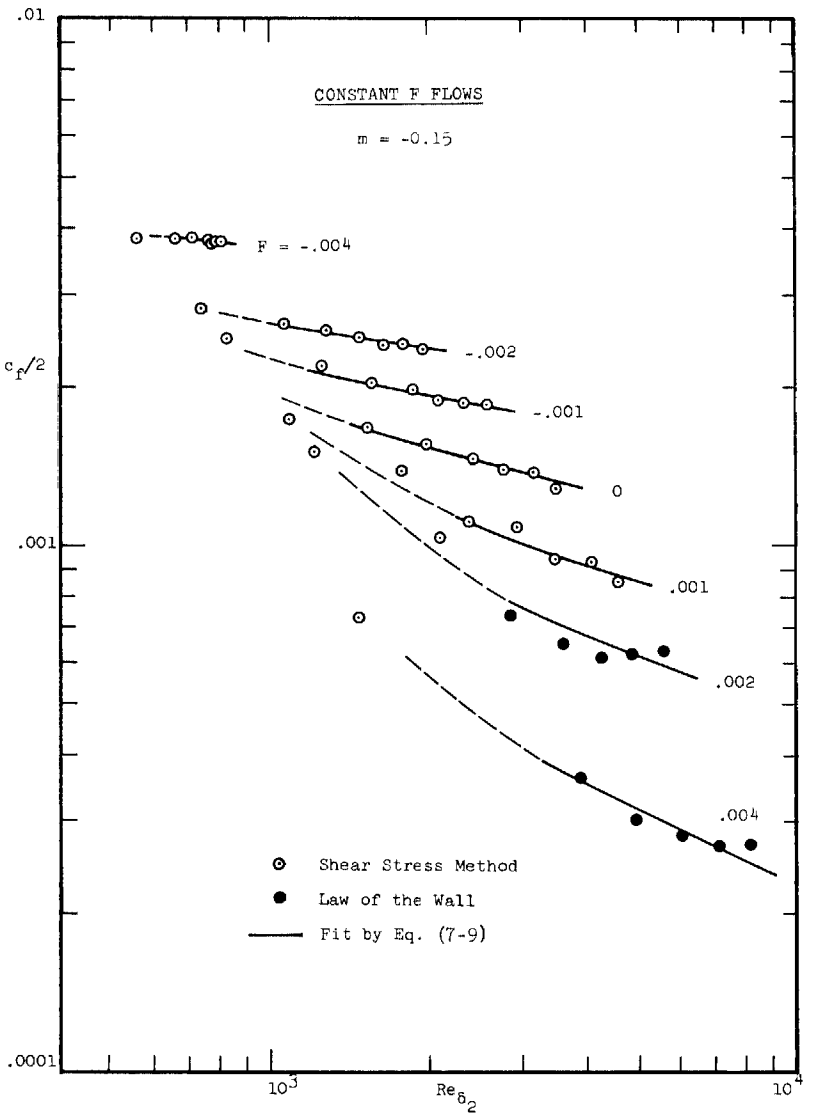

Fig. 6-2 $c_f/2$ versus Re_{δ_2} ; m = -0.15, constant blowing fractions

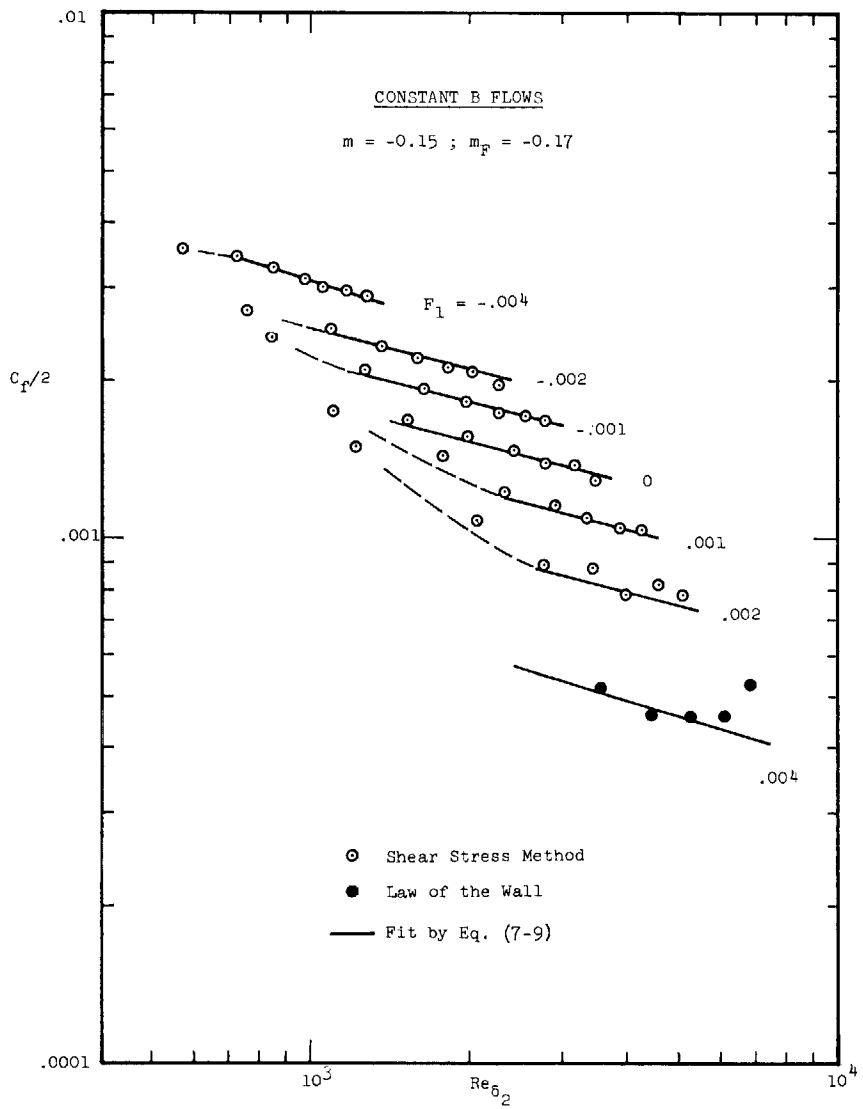

Fig. 6-3 $c_f/2$ versus Re_{δ_2} ; m = -0.15, equilibrium boundary layers

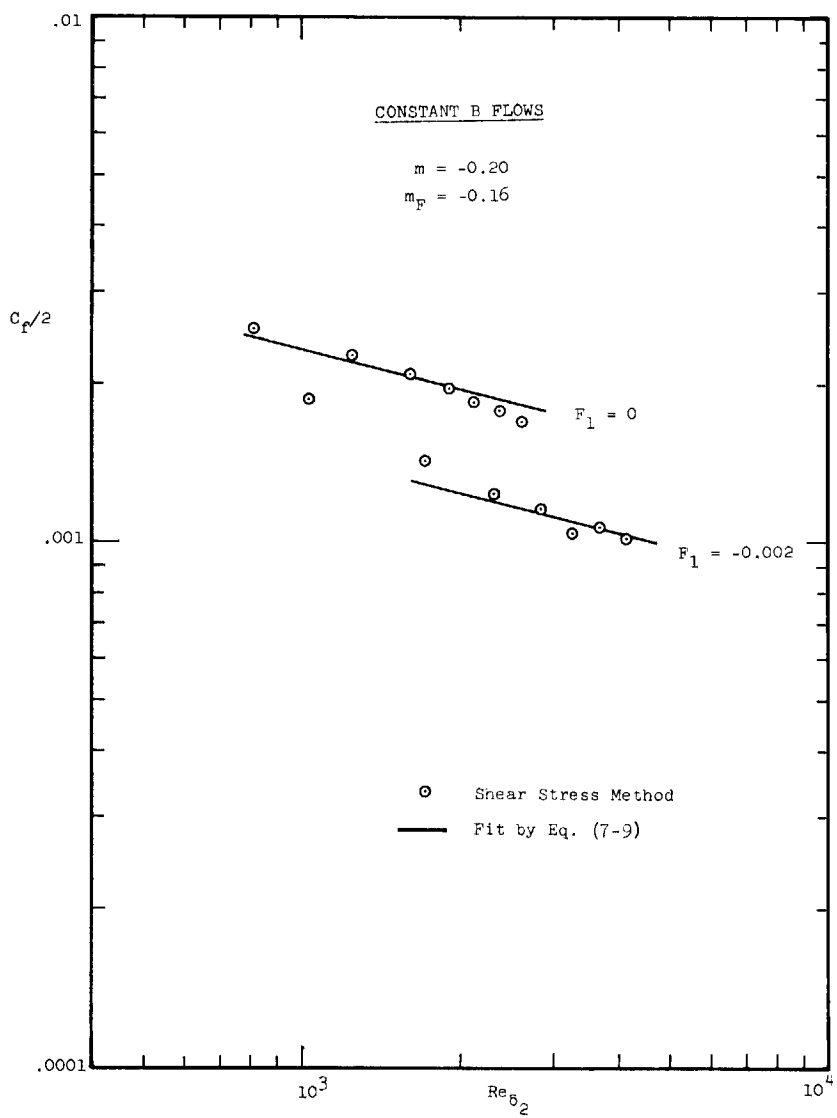

Fig. 6-4 $c_f/2$ versus Re_{δ_2} ; m = -.20, equilibrium boundary layers

In an attempt to correlate all transpired and non-transpired friction coefficients for flows with the same pressure gradient (same m) one might try to determine a function $f = f(B)$ such that

$$\left(\frac{c_f}{c_{f,o}}\right)_{m,Re_{\delta_2}} = f(B) \text{ , where } B = \frac{F}{(c_f/2)} \text{ .} \qquad (6\text{-}6)$$

A correlation of the above type was shown by Simpson [2] to exist for constant pressure ($m = 0$) boundary layers. However, for convenience the following relationship will be preferred:

$$\left(\frac{c_f}{c_{f,o}}\right)_{m,Re_{\delta_2}} = f_o(B_o) \quad \text{where} \quad B_o = \frac{F}{(c_f/2)_o} \text{ .} \qquad (6\text{-}7)$$

From the above definitions it is obvious that $B_o = Bf(B)$, $B = B_o/f_o(B_o)$ and $f(B) = f_o(B_o)$ so that if Eq. (6-6) holds true then Eq. (6-7) follows, and vice versa. Therefore correlations (6-6) and (6-7) are equivalent formulations.

Figure 6-5 shows $\left(\frac{c_f}{c_{f_o}}\right)_{Re_{\delta_2}}$ for constant pressure ($m = 0$) boundary layers plotted versus B_o (only data for $x \geq 22$ inches is shown). The existence of a relationship of the form (6-7) for these zero pressure gradient boundary layers merely confirms Simpson's earlier experimental finding. Simpson's best fit of his experimental results is represented by the dashed line in the figure.

Figure 6-6 displays experimental results (for $x \geq 34$ inches) for the $m = -0.15$ boundary layers. Note that the data, as anticipated, can be adequately correlated by an equation of the type (6-7). The best fits (least square)

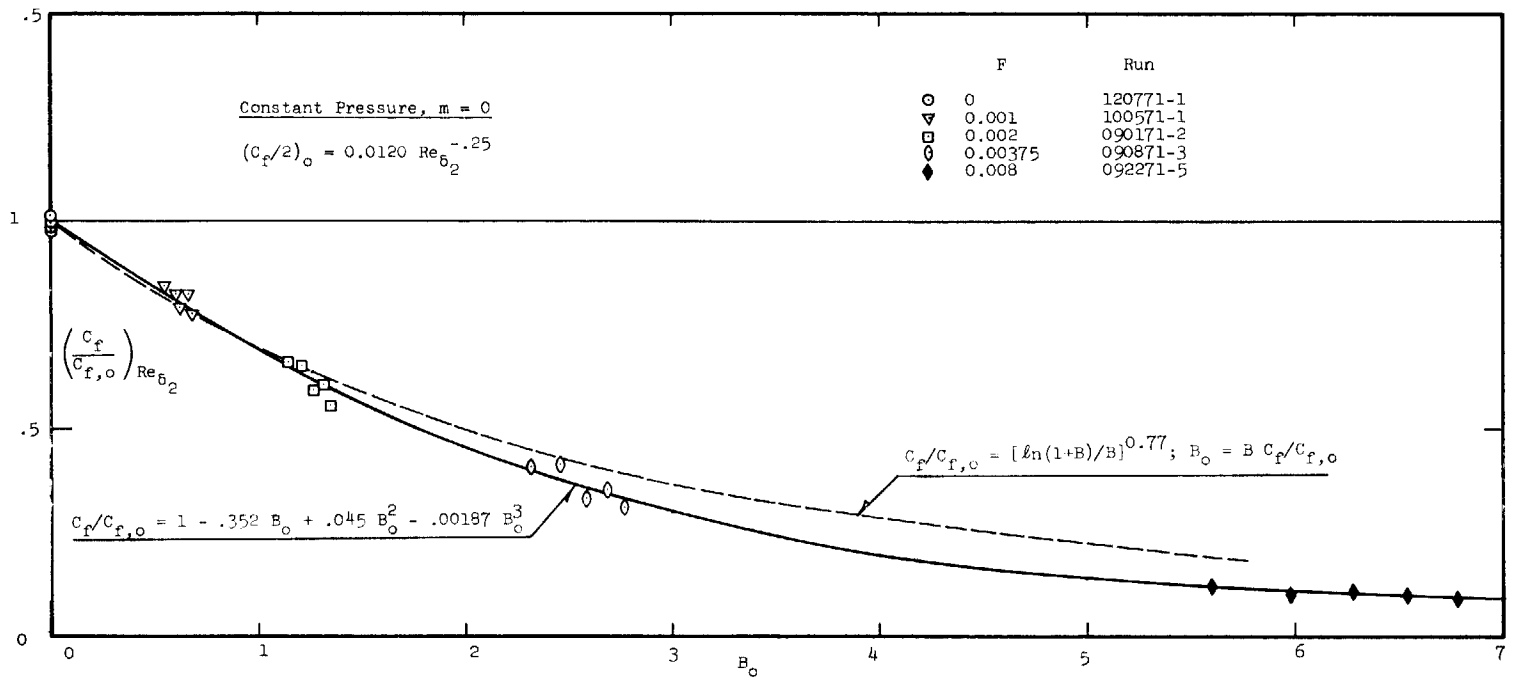

Fig. 6-5 Ratio of friction coefficient to the friction coefficient for the non-transpired boundary layer at the same momentum thickness Reynolds number versus a modified blowing parameter, m = 0 .

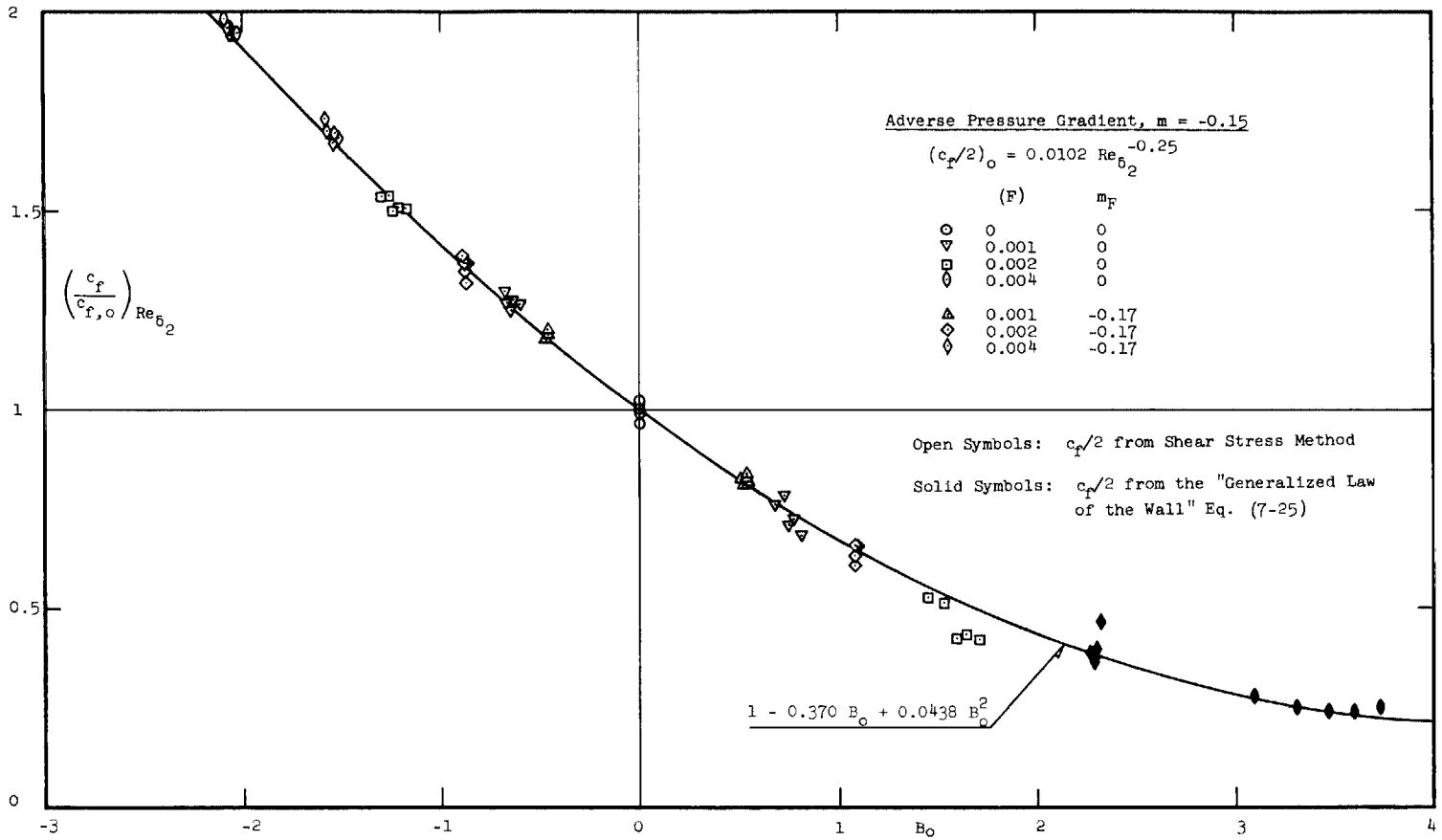

Fig. 6-6 Ratio of friction coefficient to the friction coefficient for the non-transpired boundary layer at the same momentum thickness Reynolds number versus a modified blowing parameter, m = -.15 .

for the three pressure gradients are summarized below:

$$m = 0 \quad : \quad f_o = 1 - .351B_o + .045B_o^2 - .00187B_o^3 \; ; \; 0 \leq B_o < 7$$

$$m = -0.15 \; : \; f_o = 1 - .370B_o + .0438B_o^2 \; ; \; -2.2 < B_o < 4$$

$$m = -0.20 \; : \; f_o = 1 - .51B_o \; ; \; -1.2 < B_o \leq 0 \qquad (6\text{-}9)$$

The friction coefficient for a given boundary layer may then be evaluated as $c_f/2 = (c_f/2)_o f_o(B_o)$, where $(c_f/2)_o$ is given by Eqs. (6-4). Note that the correlation for $m = -0.20$ is based on only two boundary layers. The correlations, Eqs. (6-9) should of course not be used outside the range of experimental Reynolds numbers; these may be read off Figs. 6-1 to 6-4 .

6.2 The Outer Region

The outer region includes approximately the outer 90% of the boundary layer. It includes the logarithmic portion of the mean velocity profile as an inner asymptote.

6.2.1 Velocity Defect Profile Similarity

The analysis of Chapter 2 suggested that turbulent boundary layers subject to the boundary conditions Eqs. (2-12) and (2-13) would have a constant acceleration parameter, β , and a constant blowing parameter, B . The data tabulated in Chapter 9 show that this is indeed the case in practice for $x \geq 10$ inches, for $m = 0$, and for $x \geq 34$ inches, for $m = -0.15$ and $m = -0.20$. Therefore assumption (a), (b) and (c) of Chapter 2 which formed the basis for the analysis are verified for the present experimental range of parametric variations.

Furthermore, the boundary layers with constant β and constant B also have a constant Clauser shape factor, G (defined by Eq. (2-3)). Thus constant β and B boundary layers are equilibrium flows i.e., they have velocity defect profile similarity. Figure 6-7 shows velocity defect profiles for a blown equilibrium boundary layer. Note the near perfect similarity in the outer region of the boundary layer. This similarity is of course also indicated by the constancy of the Clauser shape factor, G .

In Fig. 6-8 G has been plotted against $(\beta + B)$ for all the runs reported (only profiles for $x \geq 34$ inches are included). Each run consists of 5 profiles along the plate. The runs for which β and B are constants are, as mentioned, equilibrium boundary layers; measured values of G are substantially the same for all profiles of the run and thus plot almost as a single (filled) symbol. The open symbols are for constant $F \neq 0$ runs. For these runs $(\beta + B)$ changes along the plate. Note that the shape factor, G , is a unique function of $(\beta + B)$ (rather than of β and B separately). The fact that $G = G(\beta + B)$ indicates that the acceleration parameter, β , and the blowing parameter, B , have identical effect on the shape of the velocity defect profile. This is true at least for equilibrium boundary layers and for flows close to equilibrium (constant F).

6.2.2 Shear Stress, Eddy Viscosity and Mixing-Length

In view of the velocity defect profile similarity demonstrated in the previous section for boundary layers with constant β and B it may be reasonable to expect that the shear stress, eddy viscosity and mixing-length profiles are also self-similar (i.e. independent of the Reynolds number) for these flows. Clauser 1956 [18] showed that the assumption of a constant eddy viscosity, $\epsilon = k\delta_1 u_\infty$ $(k \simeq 0.018)$, in the outer region of non-transpired equilib-

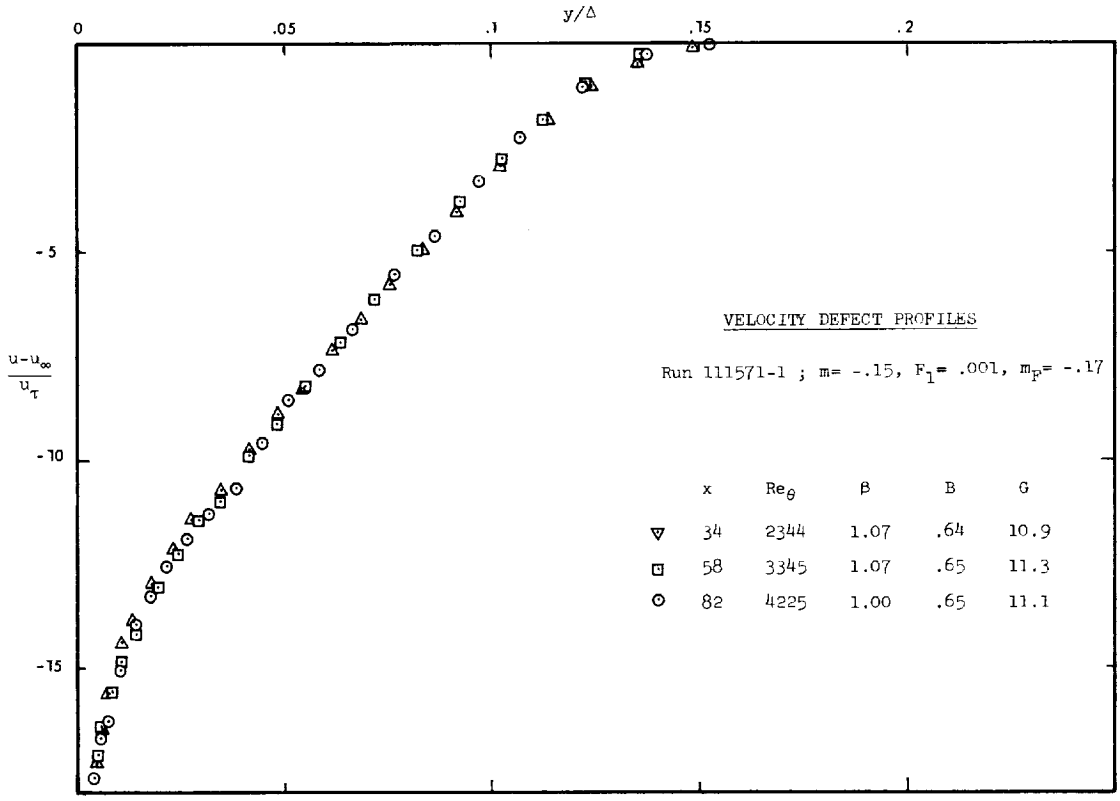

Fig. 6-7 Defect profiles for a blown equilibrium boundary layer

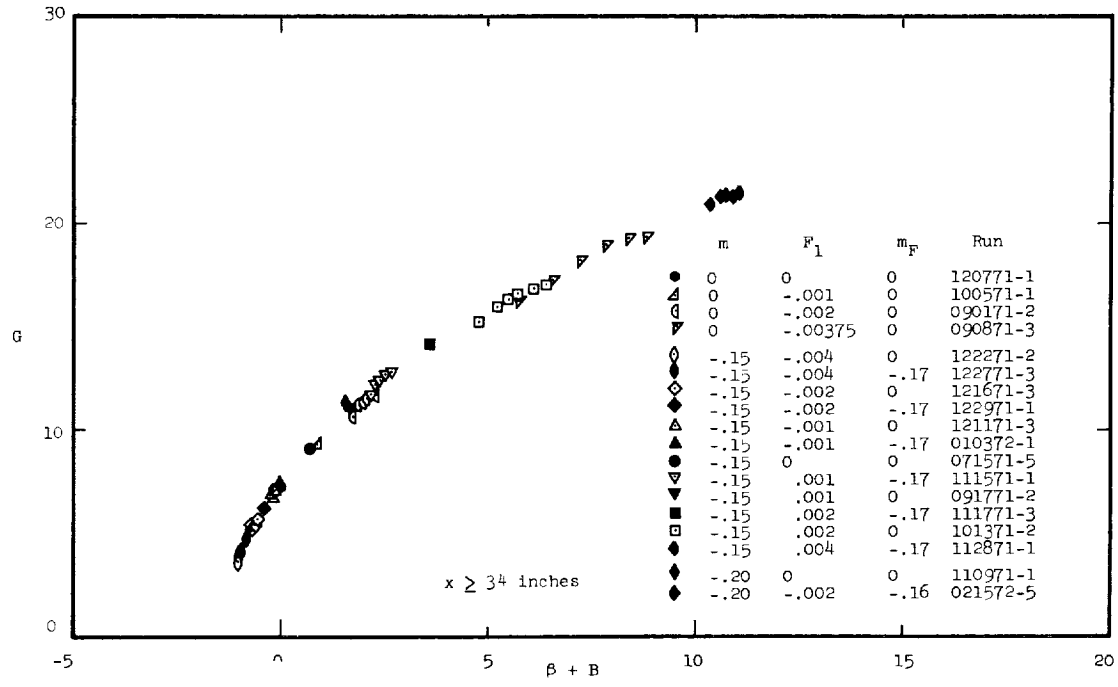

Fig. 6-8 Clauser shape factor. All runs except 102171-1 and 092271-5 are represented

rium boundary layers leads to the prediction of velocity defect profiles that compare very well with experimental profiles. In Fig. 6-9 $k = \epsilon/\delta_1 u_\infty$ is plotted against y/δ_{99} for an equilibrium boundary layer with $B = 0$. Note that the assumption of a constant k is not quite satisfactory, but that $k = \epsilon/\delta_1 u_\infty$ does show outer similarity, i.e. may be expressed as:

$$k = k(y/\Delta) \tag{6-11}$$

(Δ and δ are proportional for constant G flows (see Chapter 2)).

Velocity defect profile similarity means that $(u-u_\infty)/u_\tau = F(y/\Delta)$. Using this in Eq. (6-1) for the shear stress, and neglecting the viscous contribution one may obtain

$$\frac{\tau}{\tau_o} = k\left(\frac{y}{\Delta}\right)F'\left(\frac{y}{\Delta}\right) \quad . \tag{6-12}$$

In Fig. 6-10 experimental values of τ/τ_o are plotted against y/δ_{99} for three equilibrium flows. It may be noted that the similarity indicated by Eq. (6-12) does indeed exist.

From the definition of the mixing length, Eq. (6-2), one may now obtain:

$$\frac{\ell}{\Delta} = \sqrt{k\left(\frac{y}{\Delta}\right)\Big/F'\left(\frac{y}{\Delta}\right)} \quad . \tag{6-13}$$

In Fig. 6-11 experimental values of ℓ/δ_{99} is plotted against y/δ_{99} for the same boundary layer for which $\epsilon/\delta_1 u_\infty$ was displayed in Fig. 6-9. Note that the mixing length, as expected, shows the same outer region similarity as $(u-u_\infty)/u_\tau$, τ/τ_o and $k = \epsilon/\delta_1 u_\infty$. The above conclusions concerning similarity (i.e. Reynolds number independence of $k = \epsilon/\delta_1 u_\infty$, τ/τ_o and ℓ/δ_{99}) were based on data corresponding to a rather limited range of Reynolds numbers. There is

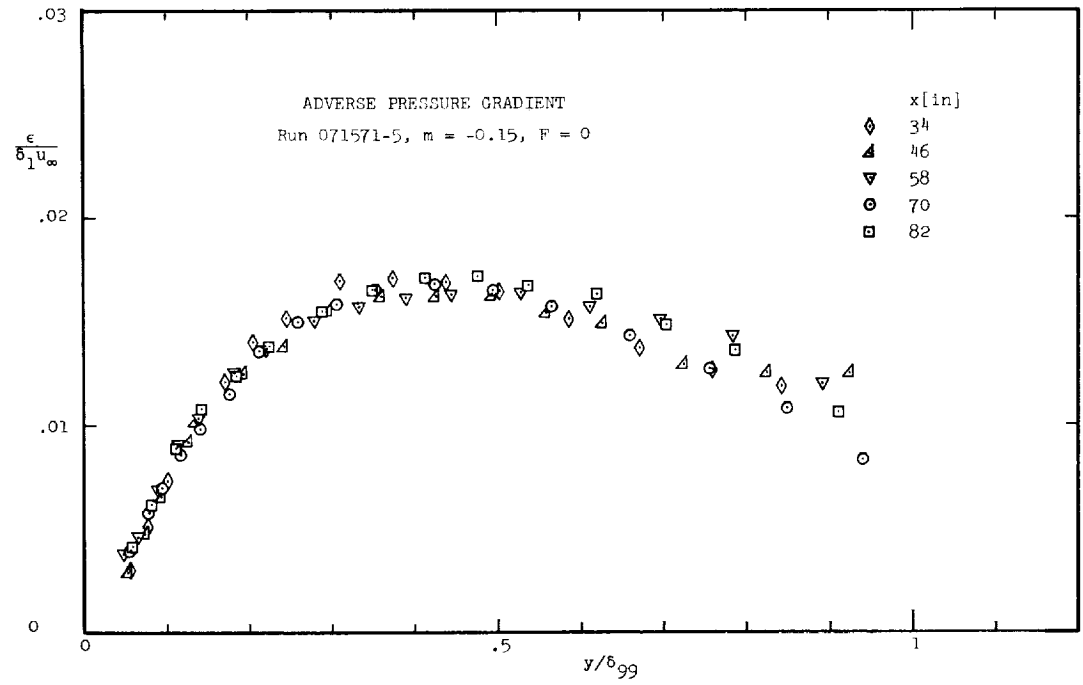

Fig. 6-9 Profiles of non-dimensional eddy viscosity in outer region. Weak adverse pressure gradient, no transpiration

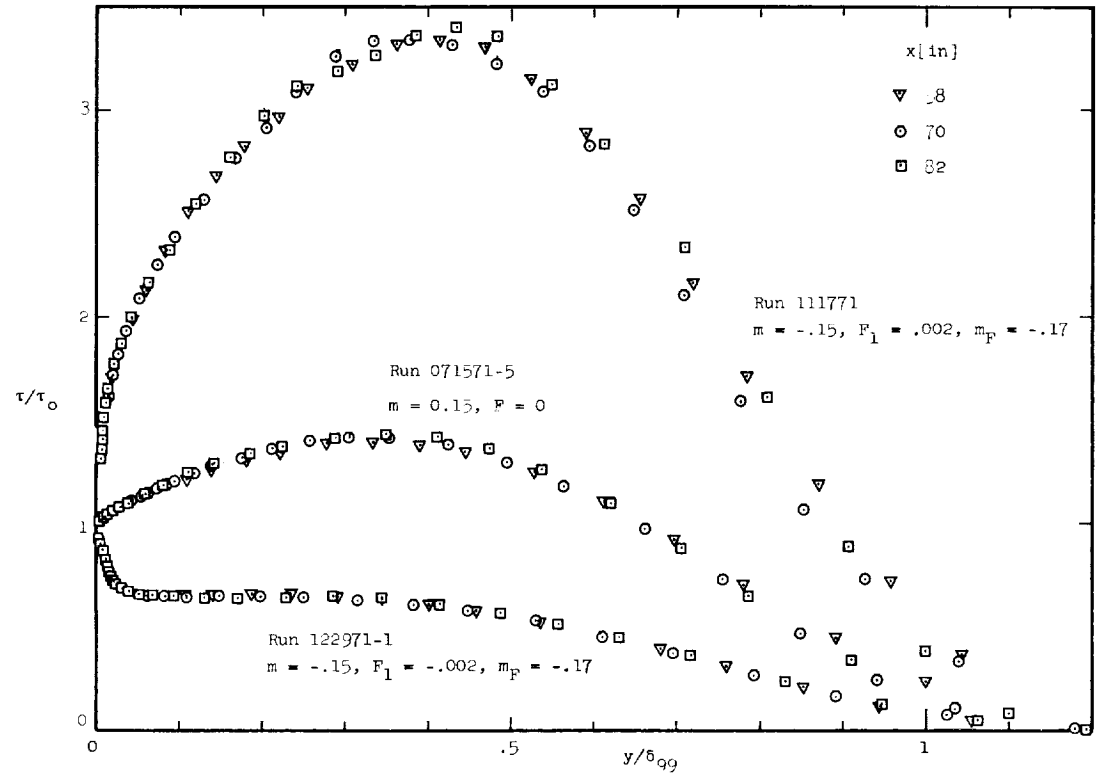

Fig. 6-10 Non-dimensional shear stress profiles for three equilibrium boundary layers. Weak adverse pressure gradient

some evidence of a slight Reynolds number effect for small Reynolds numbers. The predictions carried out in Section 7.4 indicate that the value of ℓ/δ_{99} in the outer region decreases as $Re_{\delta_2}^{-.125}$ for $Re_{\delta_2} < 6000$. The same effect has previously been reported in connection with predictions of turbulent boundary layers in favorable pressure gradients.

In Fig. 6-12 ℓ/δ_{99} is plotted versus y/δ_{99} for a broad range of pressure gradient and transpiration boundary conditions. All the profiles are for $x = 70$ or 82 inches. Figure 6-12 includes not only equilibrium boundary layers, but also flows with $F = \text{const.} \neq 0$; these latter boundary layers deviate slightly from equilibrium (G is not quite constant). The figure indicates a slight systematic decrease in the value of ℓ/δ_{99} in the outer region with increasing blowing rate. However, all the profiles are for approximately the same x-position. This means that the Reynolds number, Re_{δ_2} , increases with an increasing blowing rate for a given pressure gradient. Because of the Reynolds number effect mentioned above it is not possible to deduce a possible effect of transpiration from Fig. 6-12 alone. However, the predictions of the experimental flows carried out in Section 7.4 indicate that increasing values of the blowing fraction, F , correspond to reduced values of ℓ/δ_{99} in the outer region.

Figure 6-12 shows very clearly that $\ell = \kappa y$ becomes a common "asymptote" for the mixing length for small enough values of y/δ_{99} . The overlap region, where $\ell = \kappa y$, separates the outer region from the inner region.

Figure 6-13 shows experimental profiles of $\epsilon/\delta_1 u_\infty$ versus y/δ_{99} . The plot is equivalent to Fig. 6-12 for the mixing length. It indicates the same systematic behavior for $\epsilon/\delta_1 u_\infty$ in the outer region as was observed for ℓ/δ_{99} .

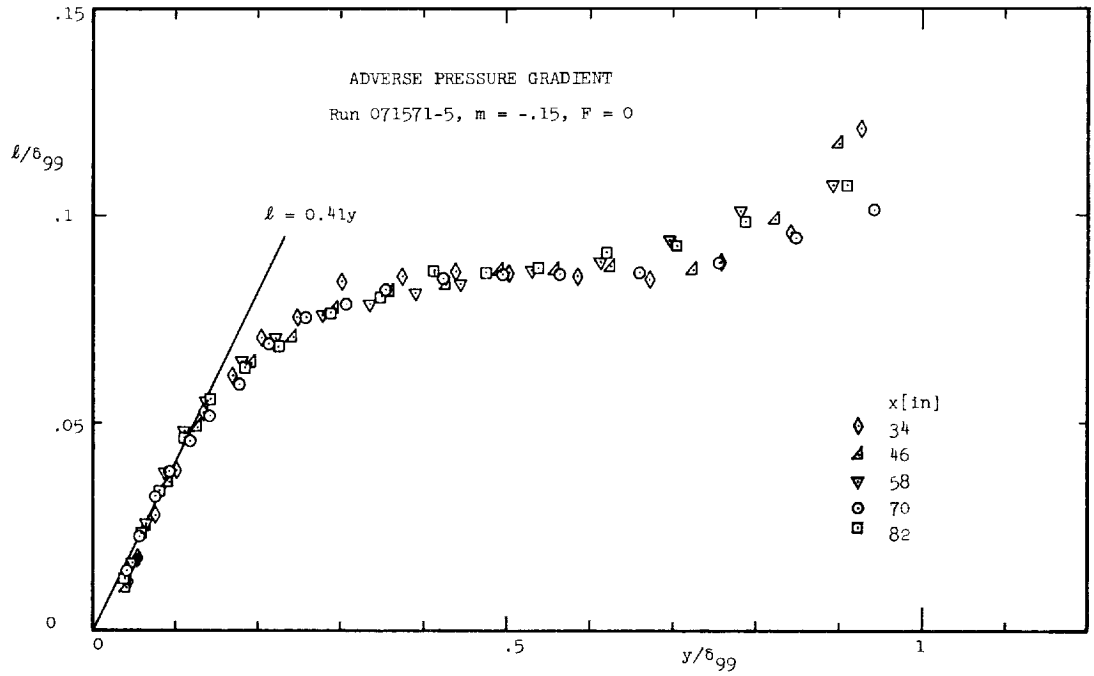

Fig. 6-11 Profiles of non-dimensional mixing-length in outer region. Weak adverse pressure gradient, no transpiration

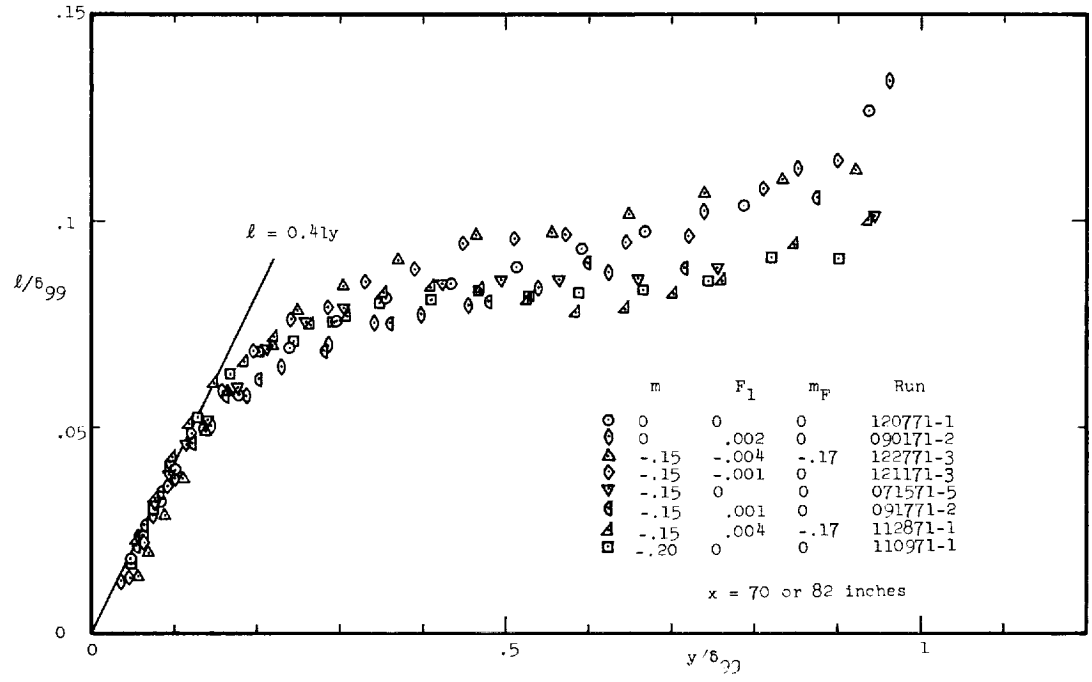

Fig. 6-12 Profiles of non-dimensional mixing-length in outer region. Comparison for selected boundary conditions

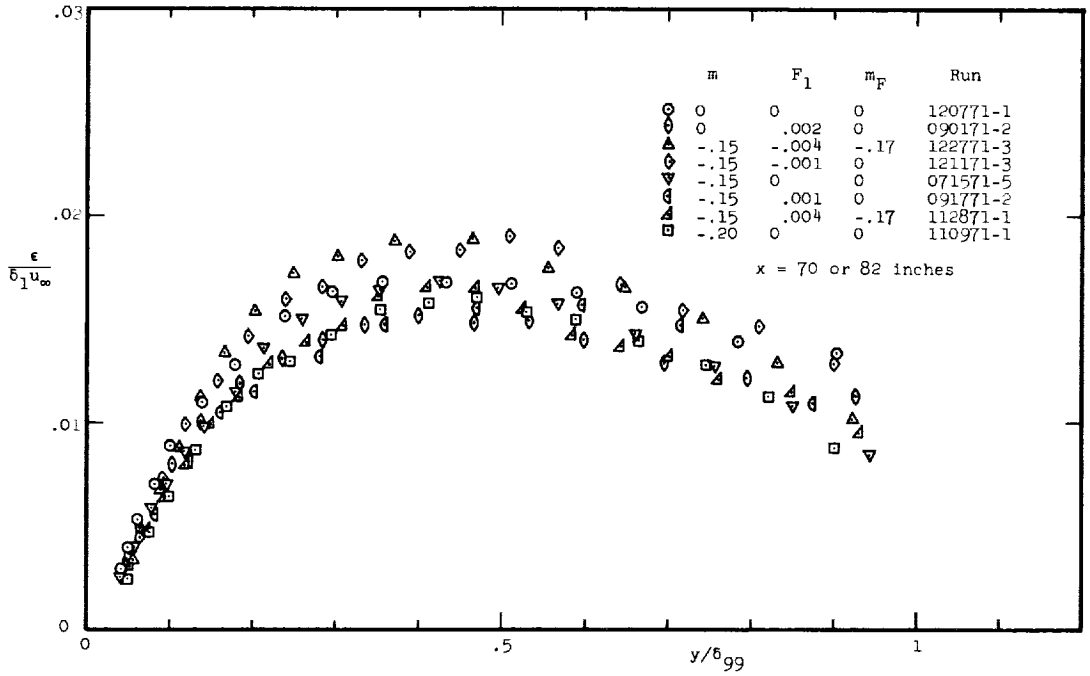

Fig. 6-13 Profiles of non-dimensional eddy viscosity in outer region. Comparison for selected boundary conditions

6.3 The Inner Region

In the inner region ("wall region") of the boundary layer, viscous effects are important and u_τ and ν/u_τ are generally used as velocity and length scales. The non-dimensional mean velocity profile, for example, is described, by the "wall coordinates" $u^+ = u/u_\tau$ and $y^+ = yu_\tau/\nu$. Similarly the transpiration rate will be expressed as $v_o^+ = v_o/u_\tau$ (and <u>not</u> by the blowing parameter, B, which is appropriate in the outer region). The proper pressure gradient parameter is $p^+ = \frac{\nu}{\rho u_\tau^3} \frac{dp}{dx}$.

6.3.1 Mean Velocity Profiles in Wall Coordinates

Figure 6-14 shows experimental velocity profiles in wall coordinates for the three non-transpired boundary layers (corresponding to $m = 0$, -0.15 and -0.20). Note that the three flows have pressure gradients ranging from $p^+ = 0$ to a rather severe adverse pressure gradient, $p^+ = 0.0075$, but that they all fit the law of the wall:

$$u^+ = \frac{1}{0.41} \ell n y^+ + 5.0 \qquad (6\text{-}14)$$

(constants from Coles [14]) reasonably well over a range of y^+.

Figure 6-15 is a plot of experimental mean velocity profiles in wall coordinates all belonging to the same family ($m = -0.15$), but having different transpiration rates, v_o^+, and pressure gradients, p^+. The profiles for $v_o^+ > 0$ (blowing) lie above the law of the wall, Eq. (6-14), and those for $v_o^+ < 0$ (suction) lie below. It appears however, that all the experimental profiles have a "logarithmic portion" i.e. a region where u is proportional to $\ell n y$. A "generalized law of the wall" that fits this region for all the experimental flows will be presented in Section 7.3.

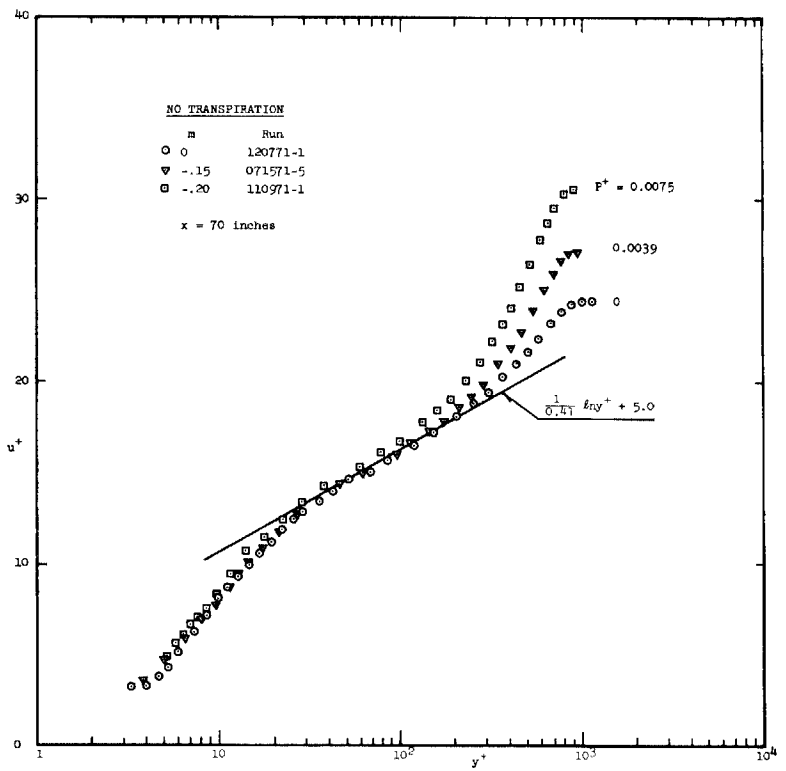

Fig. 6-14 Velocity profiles in wall coordinates for the three boundary layers without transpiration

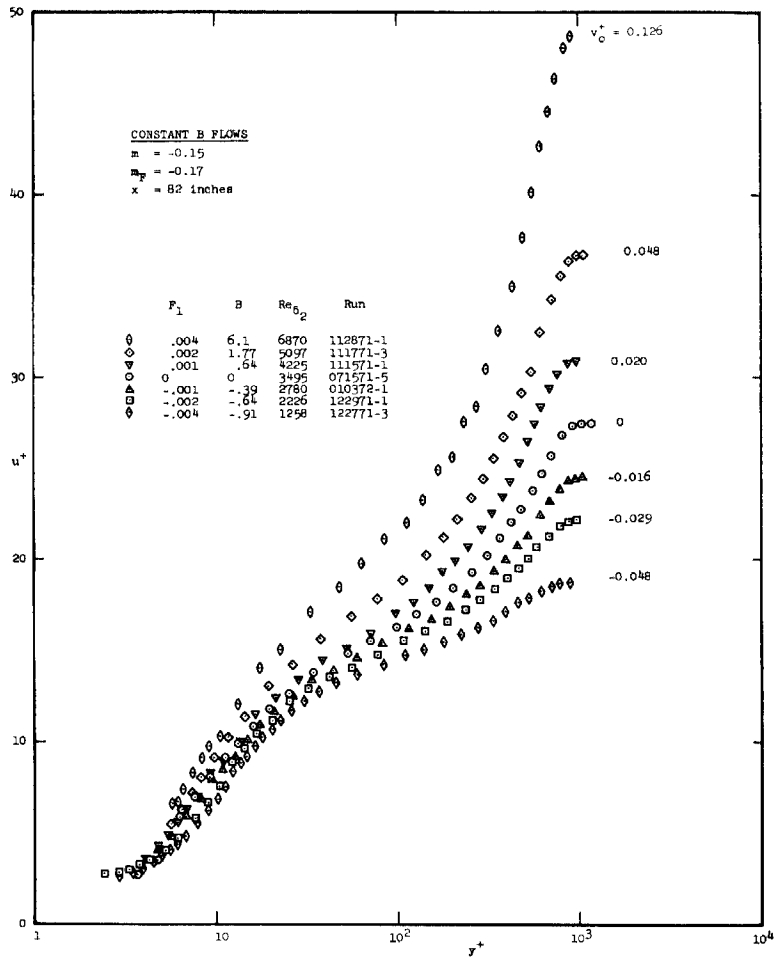

Fig. 6-15 Velocity profiles in wall coordinates for equilibrium boundary layers. Weak adverse pressure gradient

6.3.2 Mixing-Length and Eddy Viscosity

Figure 6-16 shows experimental values of ℓ/y plotted versus y^+ for boundary layers with different transpiration rates. Note that for large enough values of y^+ they all exhibit a range where $\ell/y \simeq 0.41$; this is the overlap region between the inner and outer regions of the boundary layer. The thickness (in terms of y^+) of the inner region can be seen to depend greatly upon the transpiration rate, v_o^+ . It depends similarly on the pressure gradient parameter, p^+ . Large values of v_o^+ or p^+ correspond to thin sublayers.

The observed deviation from proportionality between ℓ and y in the inner region may be accounted for by, for example, the van Driest model for the mixing length:

$$\ell = \kappa y[1 - \exp\left(-\frac{y}{A}\right)] \qquad (6\text{-}15)$$

Note that this model assures the proper asymptotic behavior, $\ell = \kappa y$, for "large" values of y . The parameter A may be considered a length scale proportional to the thickness of the inner region. The value of $A^+ = Au_\tau/\nu$ therefore must depend upon v_o^+ and p^+ i.e. $A^+ = A^+(p^+, v_o^+)$. Experimentally A^+ may be found by fitting $\ell/y = \kappa[1 - \exp(-y^+/A^+)]$ to the experimental values of ℓ/y . Here, however, an indirect method that assures a correct mean velocity profile in the overlap region will be used. From the definitions of ϵ and ℓ , Eqs. (6-1) and (6-2) together with the expression (6-15) one may obtain

$$\frac{du^+}{dy^+} = \frac{2\tau^+}{1 + \sqrt{1 + 4\tau^+\kappa^2 y^{+2}[1 - \exp(-y^+/A^+)]^2}} \quad , \qquad (6\text{-}16)$$

where $\tau^+ = \tau/\tau_o$. Using the experimental shear stress profile this equation may be integrated (numerically) to give

u^+ as a function of y^+ with A^+ as a parameter. The experimental values of A^+ have then been chosen such that the velocity profiles thus generated match the experimental velocity profiles in the overlap region (in practice at $y^+ \simeq 2.5A^+$).

In Fig. 6-17 experimental values of ℓ/y are plotted versus $y/A = y^+/A^+$, where A^+ is determined by the above method. Note how data points for boundary layers with a wide range of sublayer thickness (as expressed by A) now plot on a single universal curve. The continuous curve in Fig. 6-17 corresponds to the behavior of the mixing-length as predicted by a van Driest model.

The successful correlation of the mixing length data obtained by plotting ℓ/y versus y/A suggests that A may be a significant length scale of the inner region. It is therefore quite reasonable to attempt to correlate the eddy viscosity similarly by plotting $\epsilon^+ = \epsilon/\nu$ versus y/A . This has been done in Fig. 6-18; the plot shows that ϵ^+ is indeed a unique function of y/A over an extended range in the inner region.

The experimental values of A^+ have been expressed as a function of p^+ and v_o^+ by the method of least squares. The best fit was obtained by the following expression:

$$A^+ = 24 \exp\left(\sum_{i=0}^{2} \sum_{j=0}^{1} a_{ij} \left[\ell n(v_o^+ + .08)\right]^i \left[\ell n(p^+ + .04)\right]^j \right) , \tag{6-20}$$

where

$$a_{ij} = \begin{bmatrix} -6.71751 & -1.50414 \\ -4.81589 & -1.24311 \\ -1.27827 & -0.388216 \end{bmatrix}$$

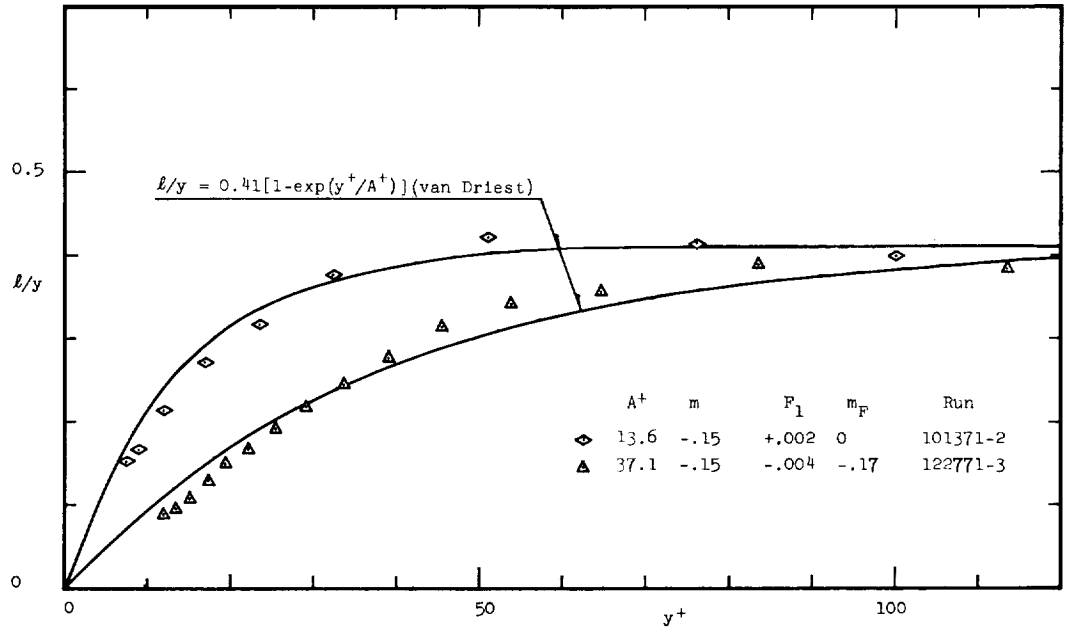

Fig. 6-16 Comparison of two profiles of the normalized mixing-length in the inner region

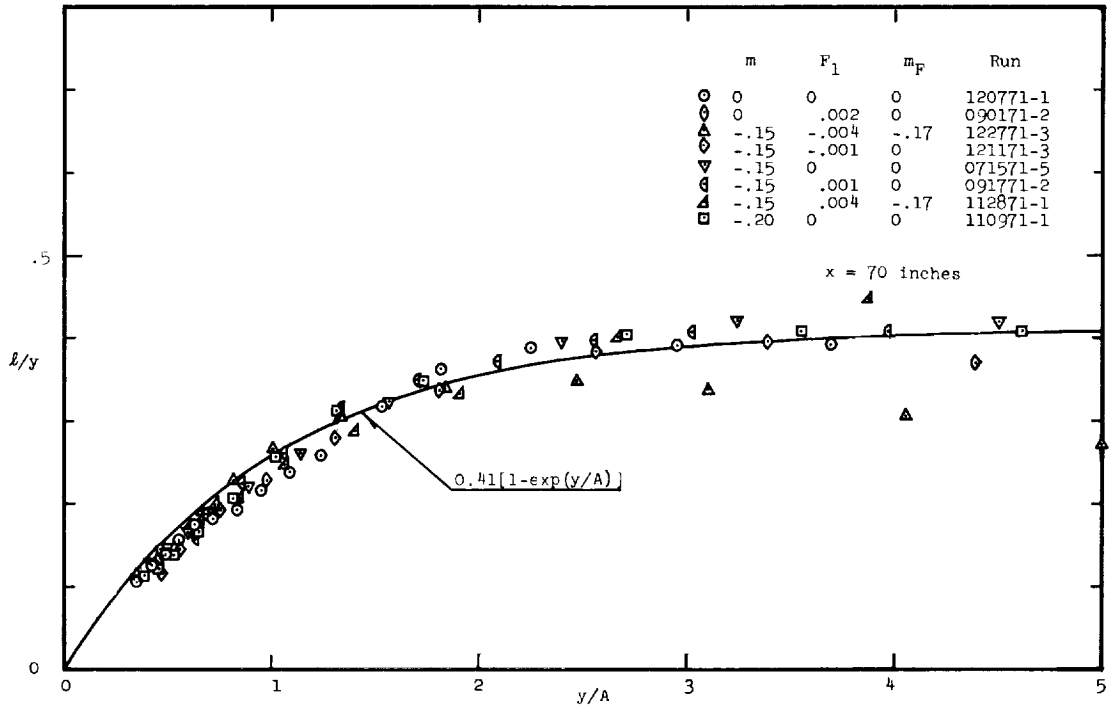

Fig. 6-17 Profiles of the normalized mixing-length versus the distance from the wall divided by van Driests length scale

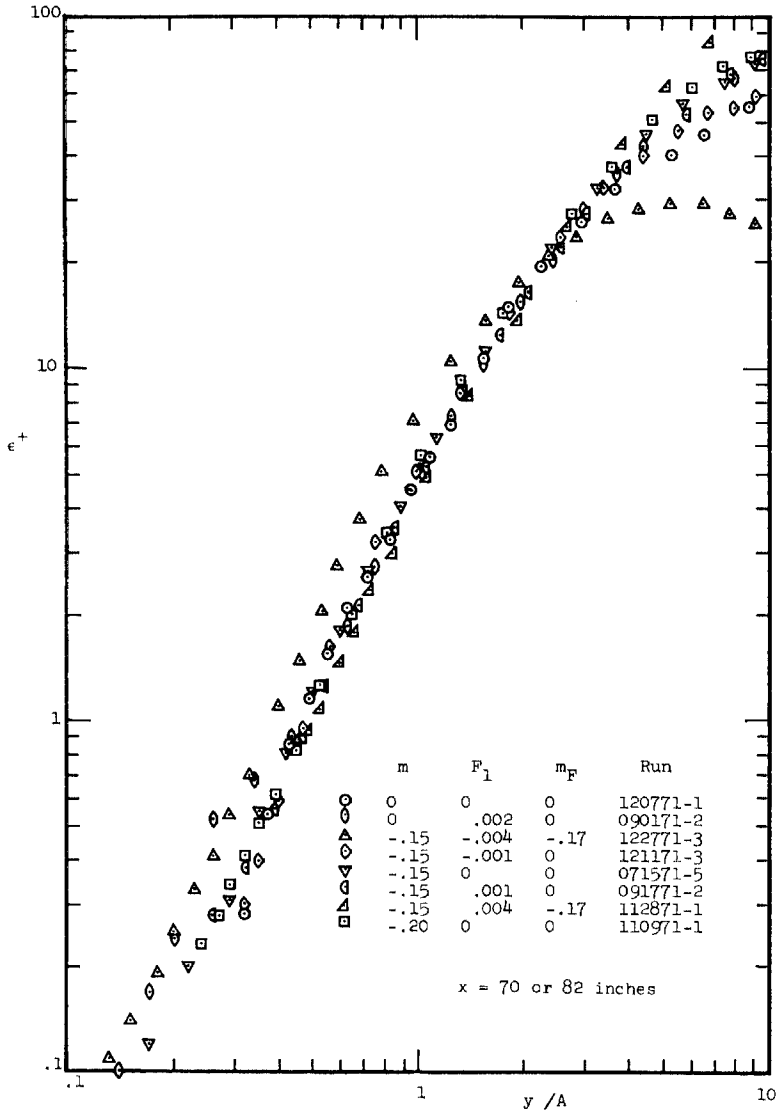

Fig. 6-18 Profiles of the non-dimensional eddy viscosity, $\epsilon^+ = \epsilon/\nu$

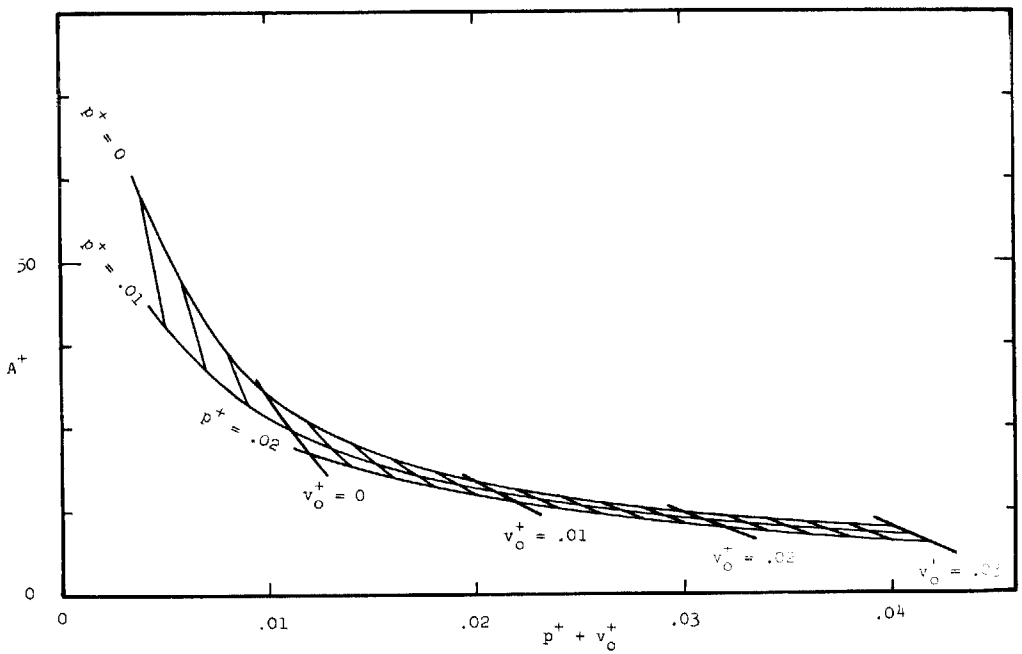

Fig. 6-19 Empirical correlation for A^+ from Eq. (6-20)

The RMS of the relative error of the fit is ≃ 6%. Figure 6-19 is a graphical display of the A^+-correlation represented by Eq. (6-20).

6.4 Profiles of Turbulence Intensities

All the measured profiles of the mean square of the three components of the turbulent velocity fluctuations are presented in this section. The data are presented as profiles of the three non-dimensional intensities, $\overline{u'^2}/u_\infty^2$, $\overline{v'^2}/u_\infty^2$ and $\overline{w'^2}/u_\infty^2$, plotted versus the distance from the wall, y, in inches. All the profiles are measured at $x = 70$ inches.

Figure 6-20 is for the non-transpired, constant pressure boundary layer. Figures 6-21 to 6-32 are for the adverse pressure gradient corresponding to $m = -0.15$ and Figs. 6-33 and 6-34 are for the $m = -0.20$ pressure gradient.

The turbulence intensity profiles were measured in the hope that they may serve as reference for future theoretical work which might involve a "turbulence field closure". They are not important for the conclusions of the present investigation.

6.5 Shear Stress Profiles

Measured profiles of the Reynolds stress are plotted versus the distance from the wall for the adverse pressure gradient boundary layers. Figures 6-35 to 6-44 are for boundary layers corresponding to $m = -.15$ and Figs. 6-45 and 6-46 are for $m = -.20$ boundary layers.

Also shown in the figures is the shear stress distribution computed from the momentum equation, Eq. (5-11) and the Reynolds stress distribution computed by subtracting the viscous stress, $\tau_\nu = \mu \frac{du}{dy}$ from the total shear stress. The skin friction coefficients indicated in the figures

are obtained as the value of $c_f/2$ in Eq. (5-11) that will produce the measured Reynolds stress closest to the wall. See Section 4.1.2 for more details on the shear stress method.

The computed shear stress profiles shown in the figures of course correspond closely to the profiles tabulated in Chapter 9. However, because the friction coefficients used for the tabulated data in Chapter 9 is a curve fit of the measured, "raw" friction coefficients the plotted and the tabulated shear stress profiles may differ by a small constant amount, namely the difference between the raw values of $c_f/2$ (used in the figures) and the fitted values used for the tables.

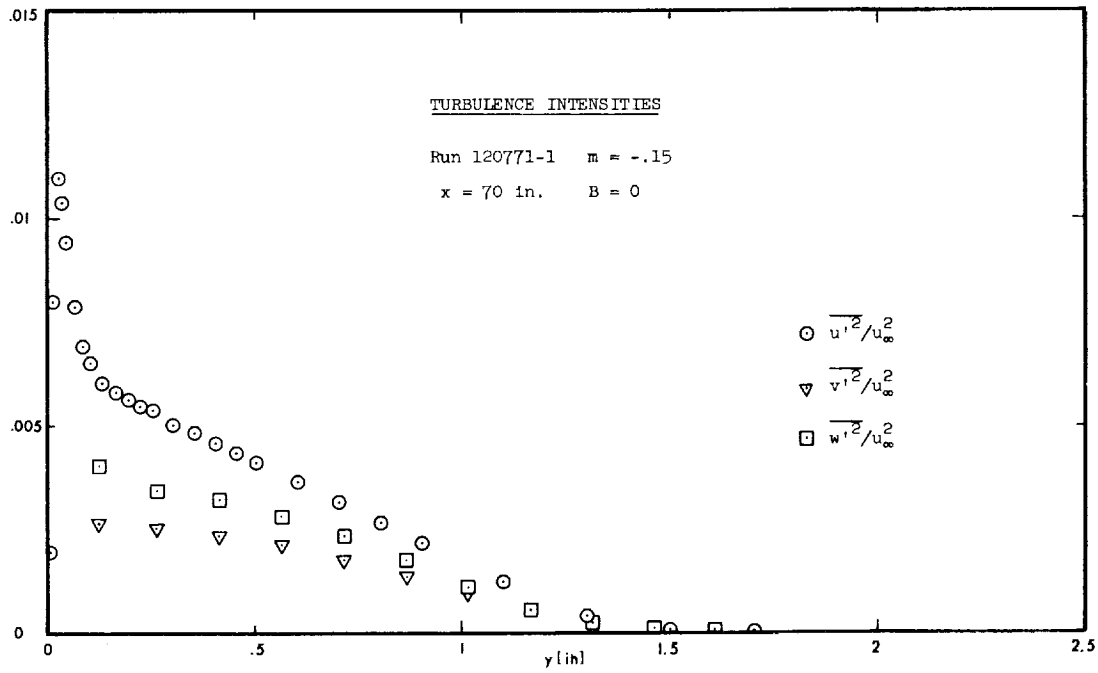

Fig. 6-20 Run 120771-1

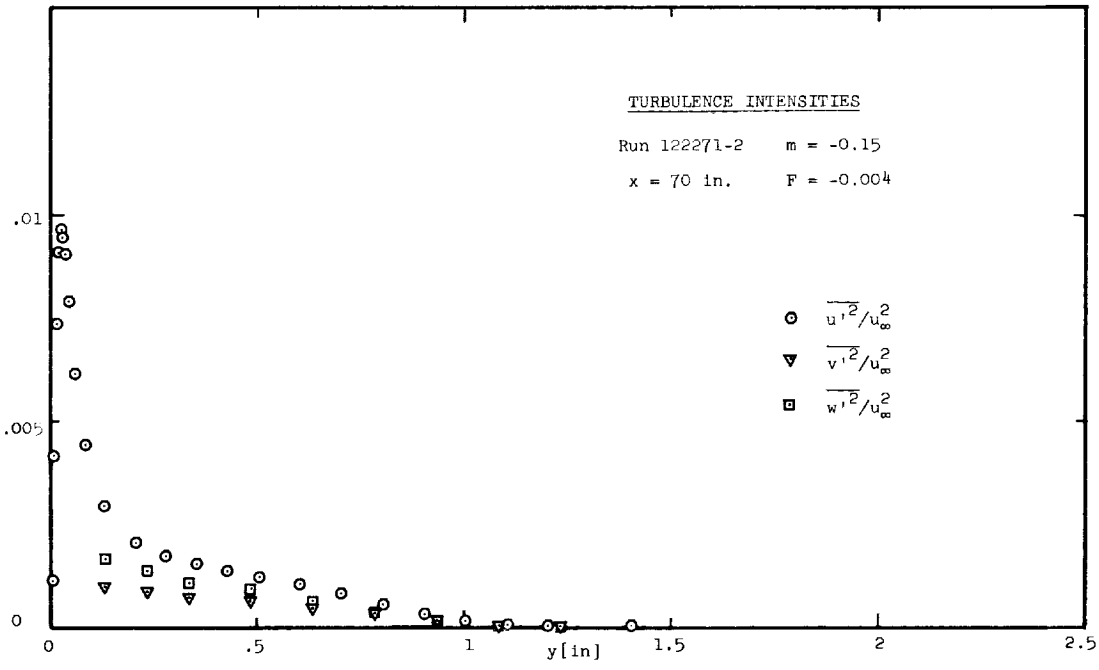

Fig. 6-21 Run 122271-2

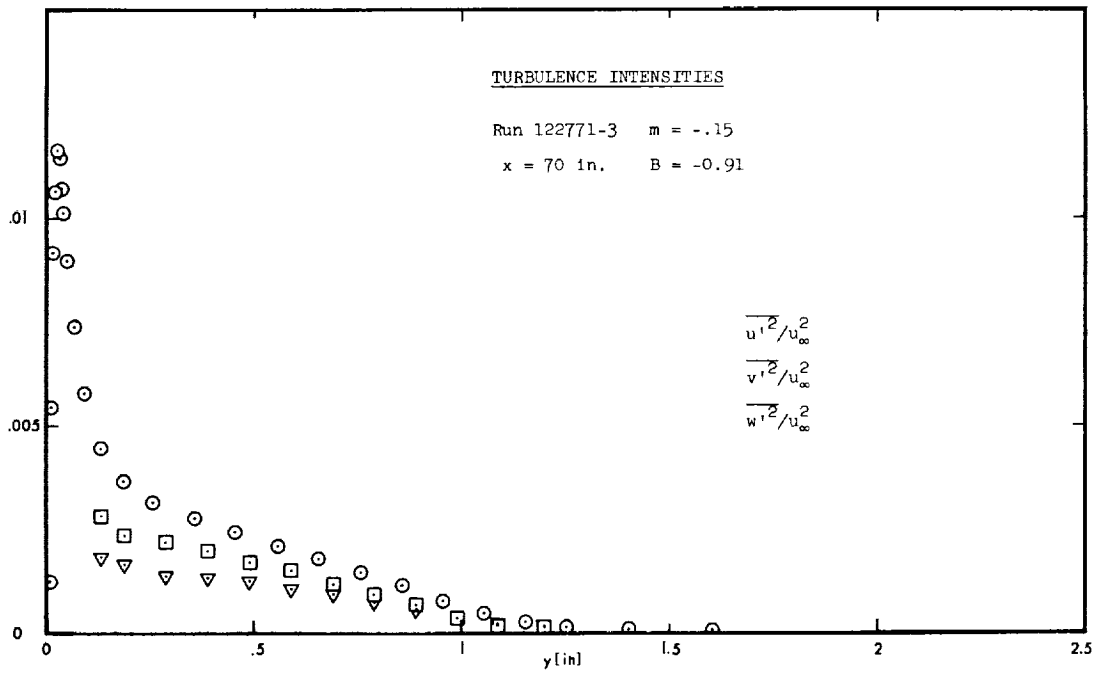

Fig. 6-22 Run 122771-3

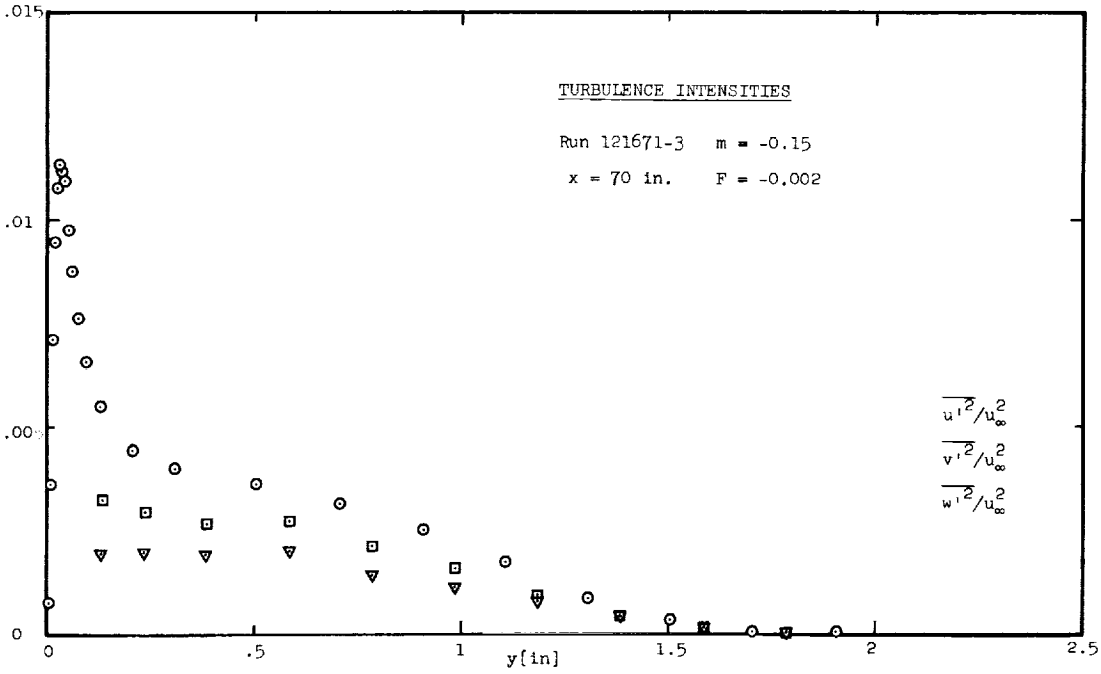

Fig. 6-23 Run 121671-3

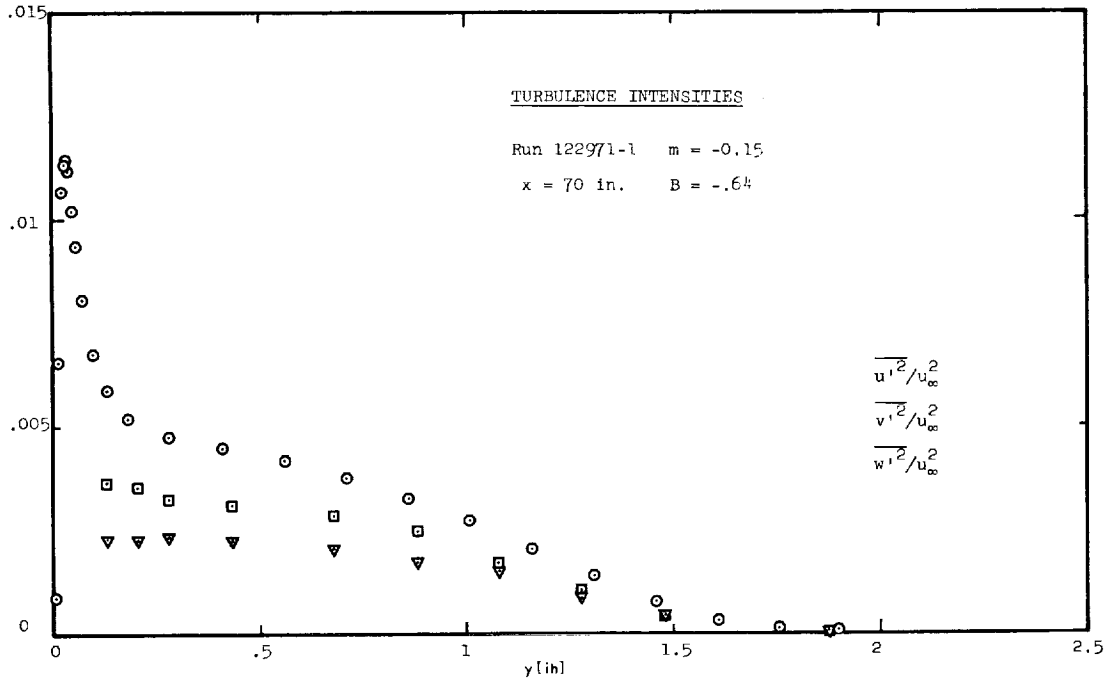

Fig. 6-24 Run 122971-1

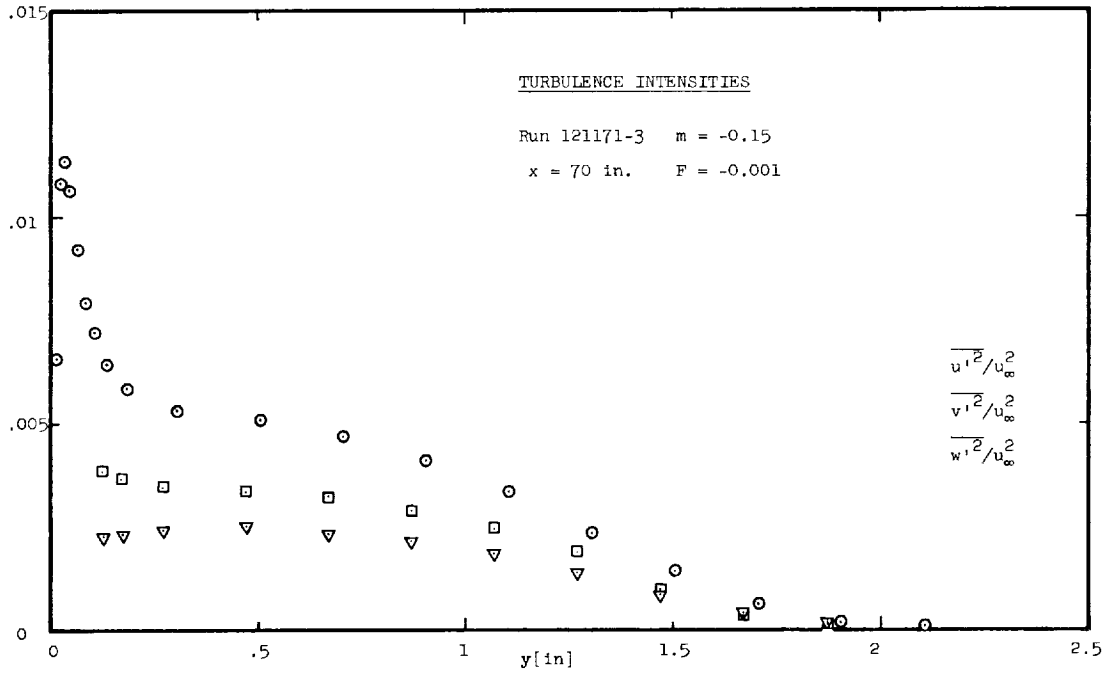

Fig. 6-25 Run 121171-3

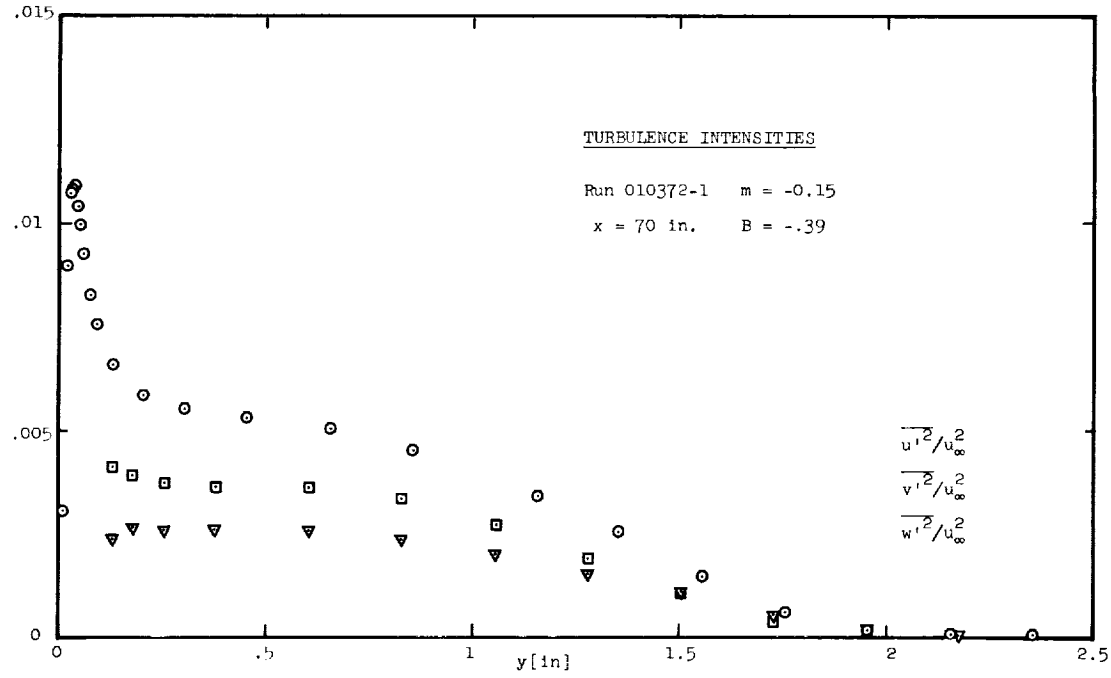

Fig. 6-26 Run 010372-1

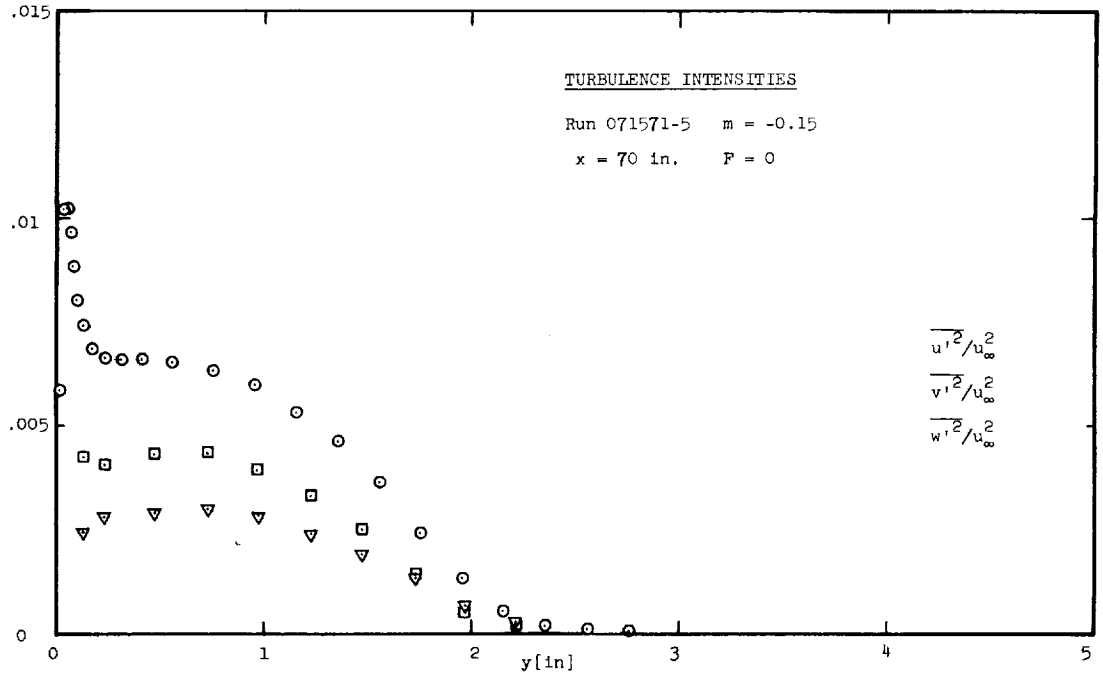

Fig. 6-27 Run 071571-5

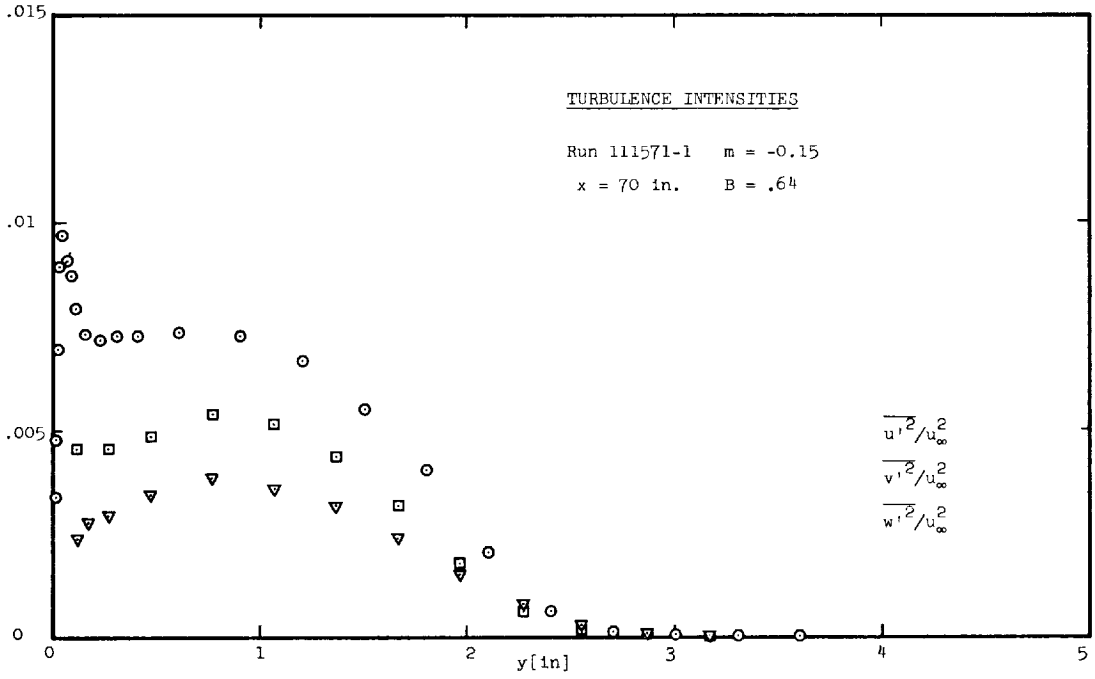

Fig. 6-28 Run 111571-1

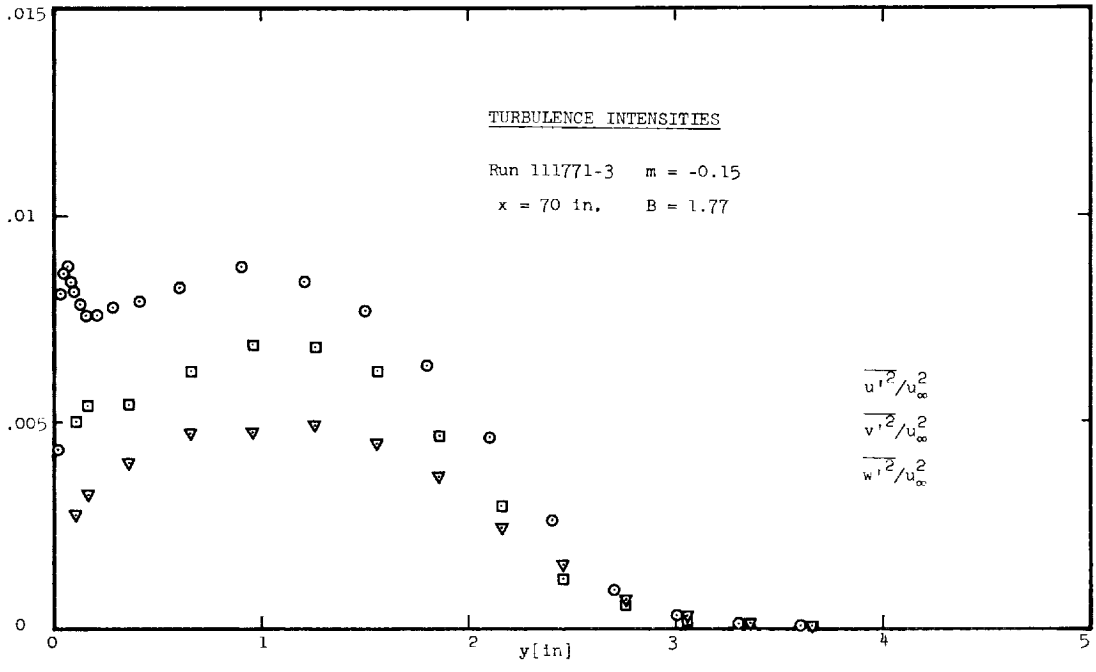

Fig. 6-29 Run 111771-3

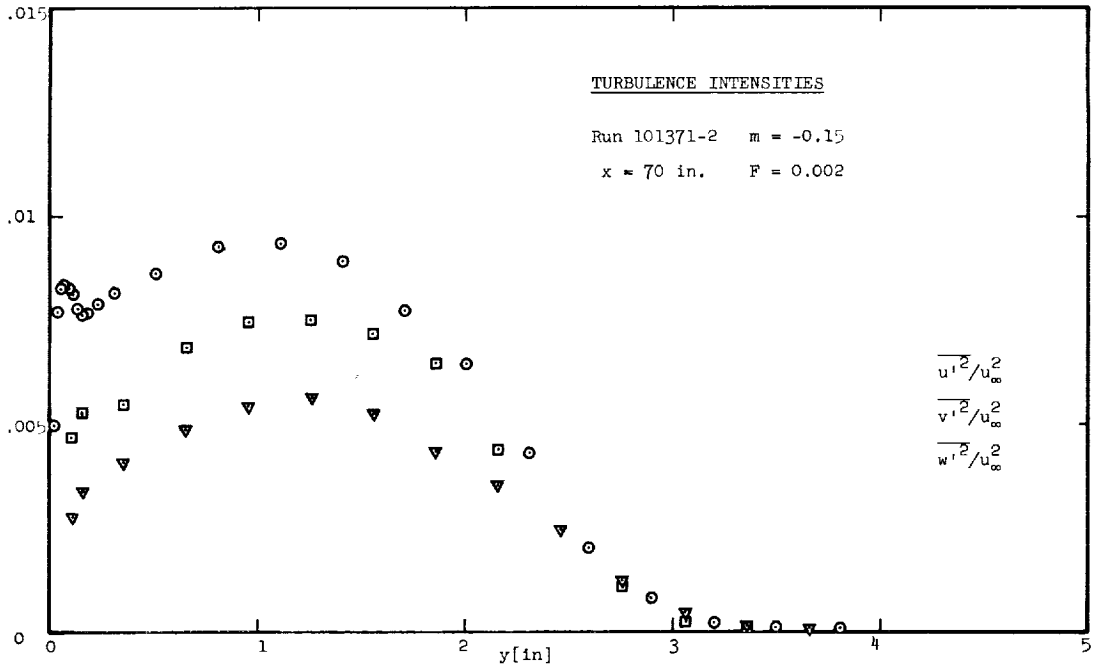

Fig. 6-30 Run 101371-2

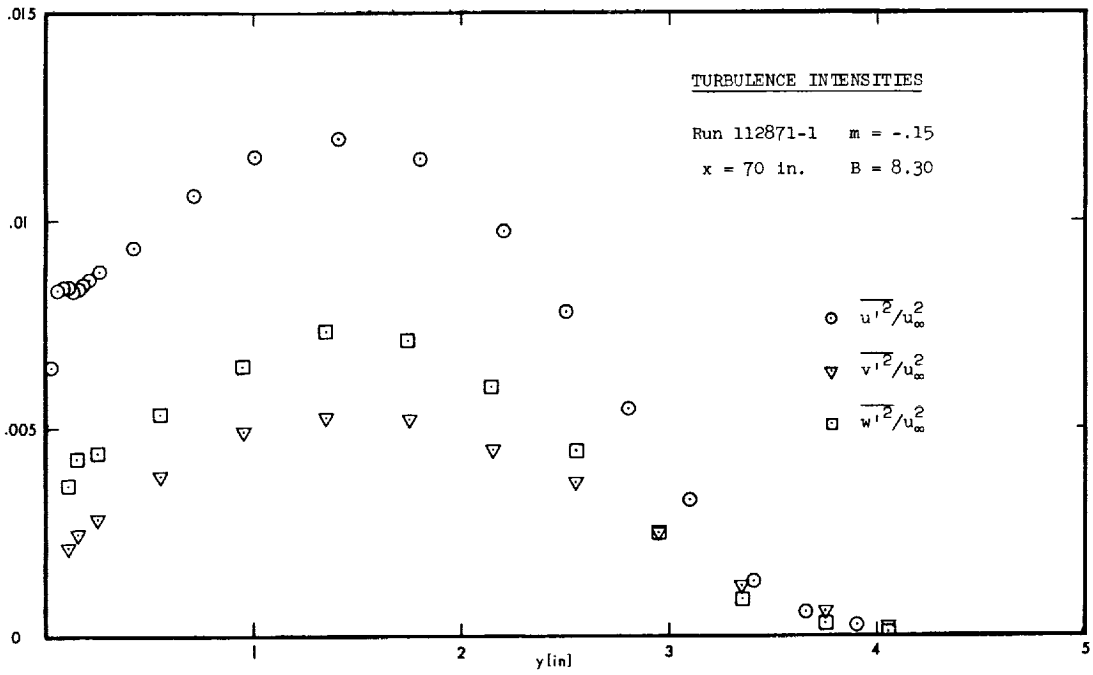

Fig. 6-31 Run 112871-1

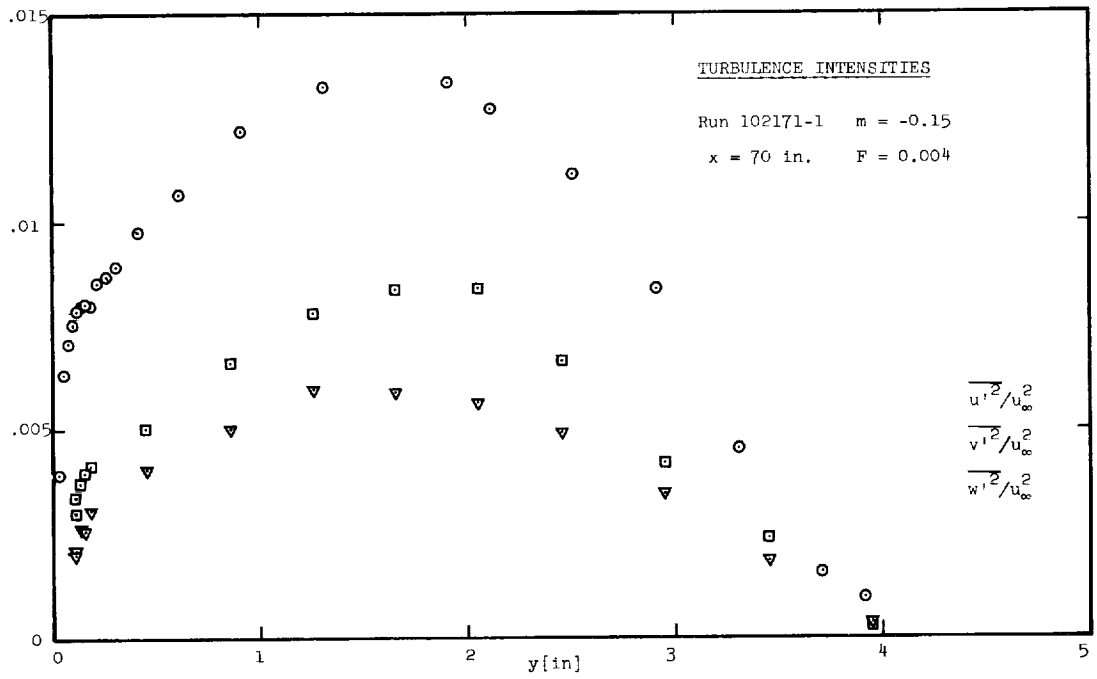

Fig. 6-32 Run 102171-1

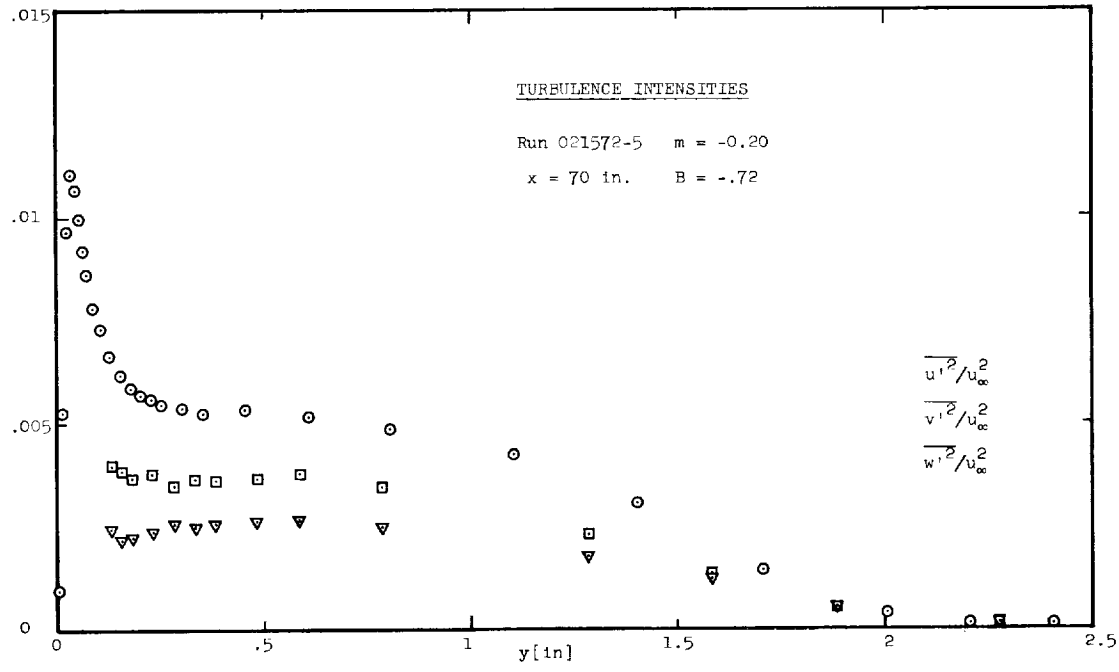

Fig. 6-33 Run 021572-5

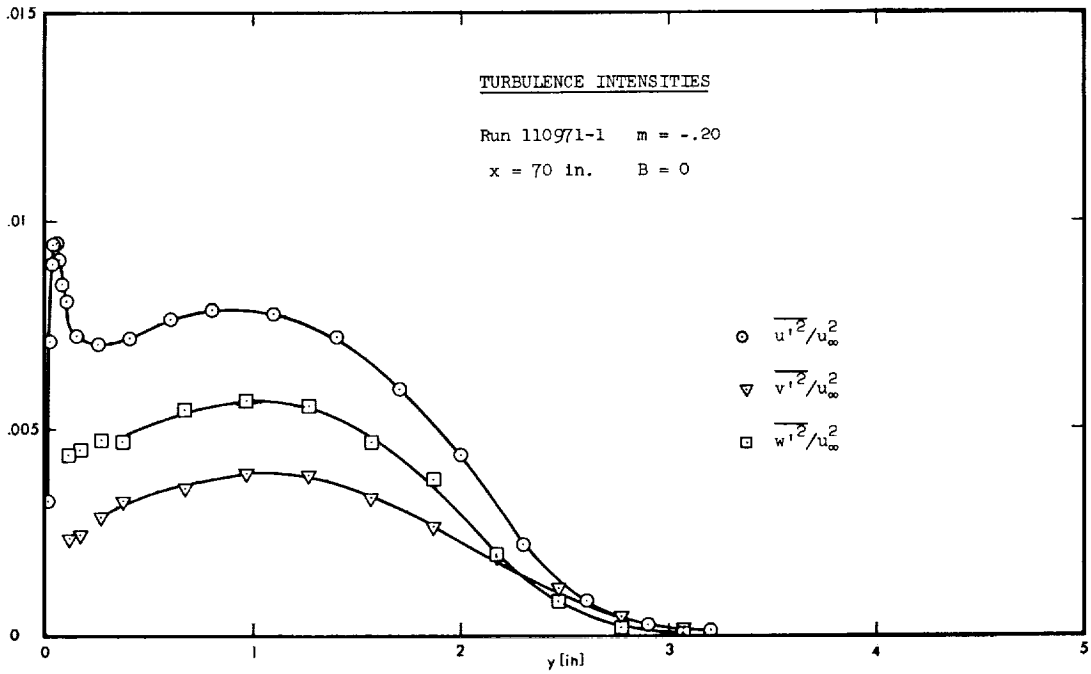

Fig. 6-34 Run 110971-1

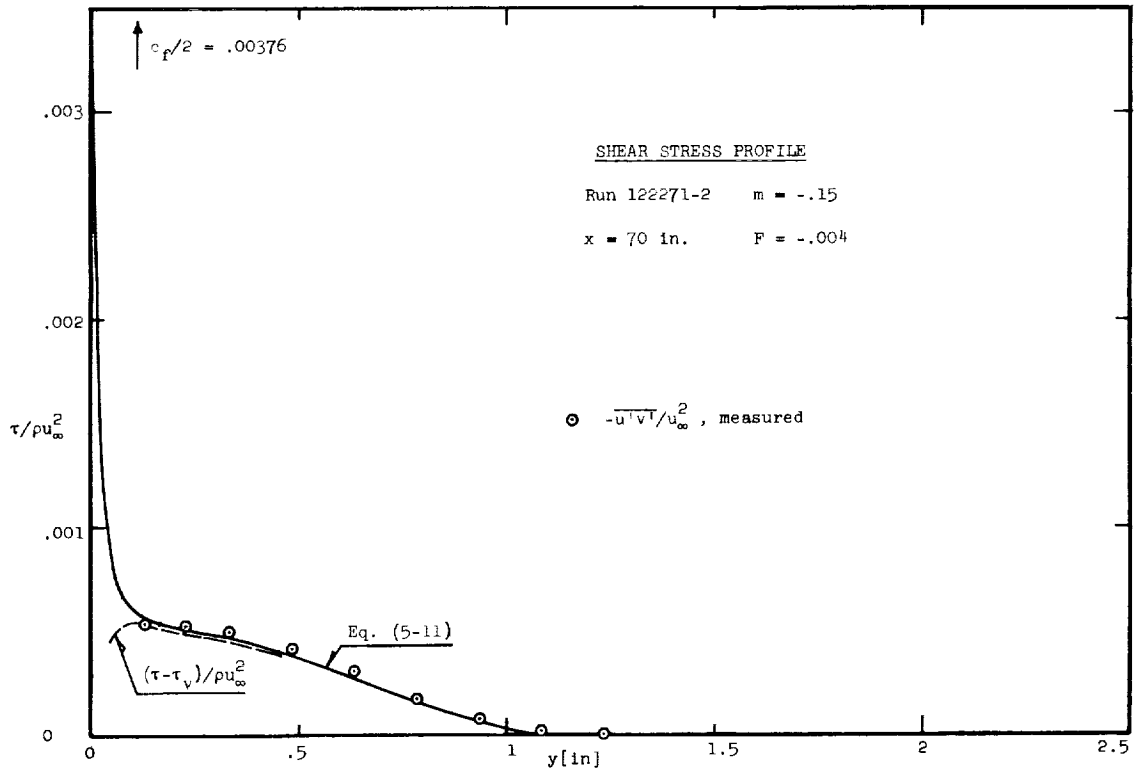

Fig. 6-35 Run 122271-2

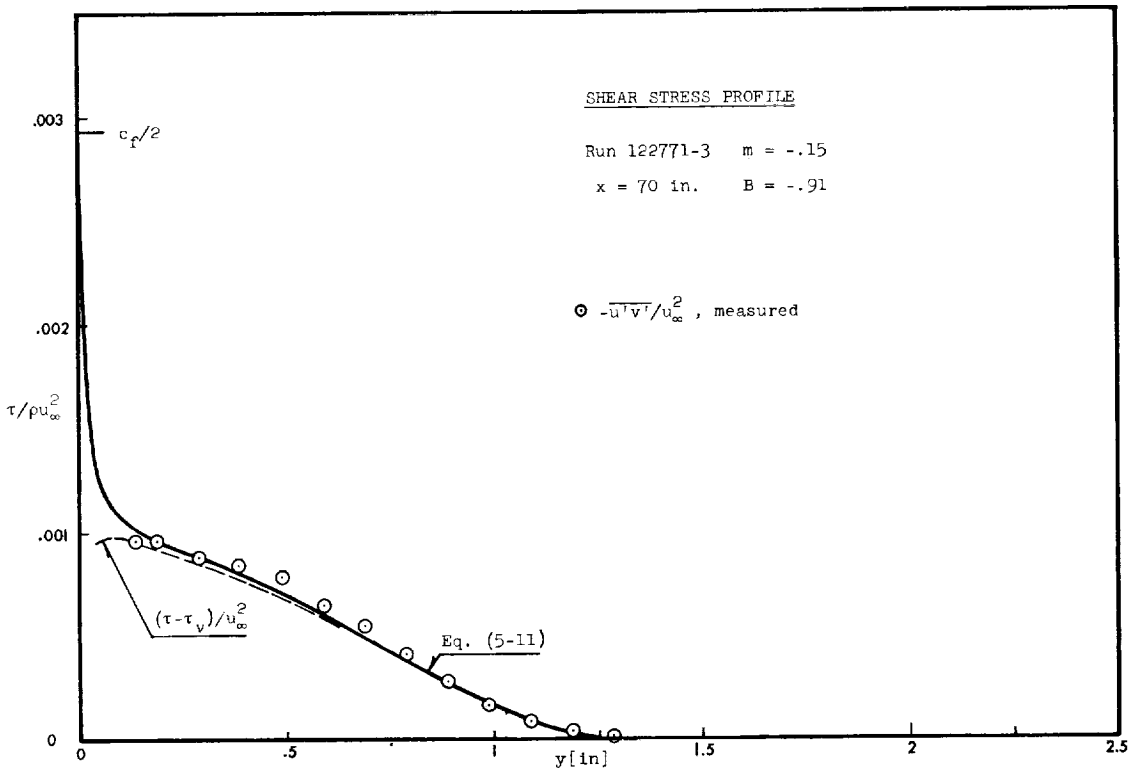

Fig. 6-36 Run 122771-3

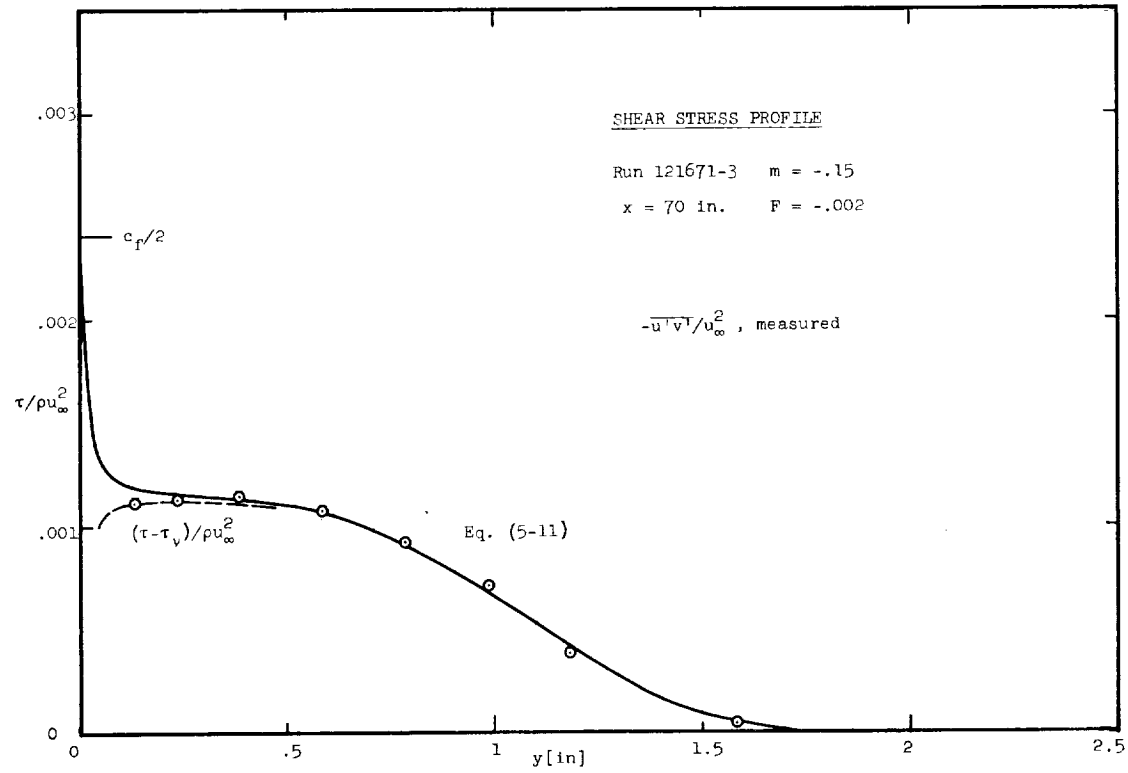

Fig. 6-37 Run 121671-3

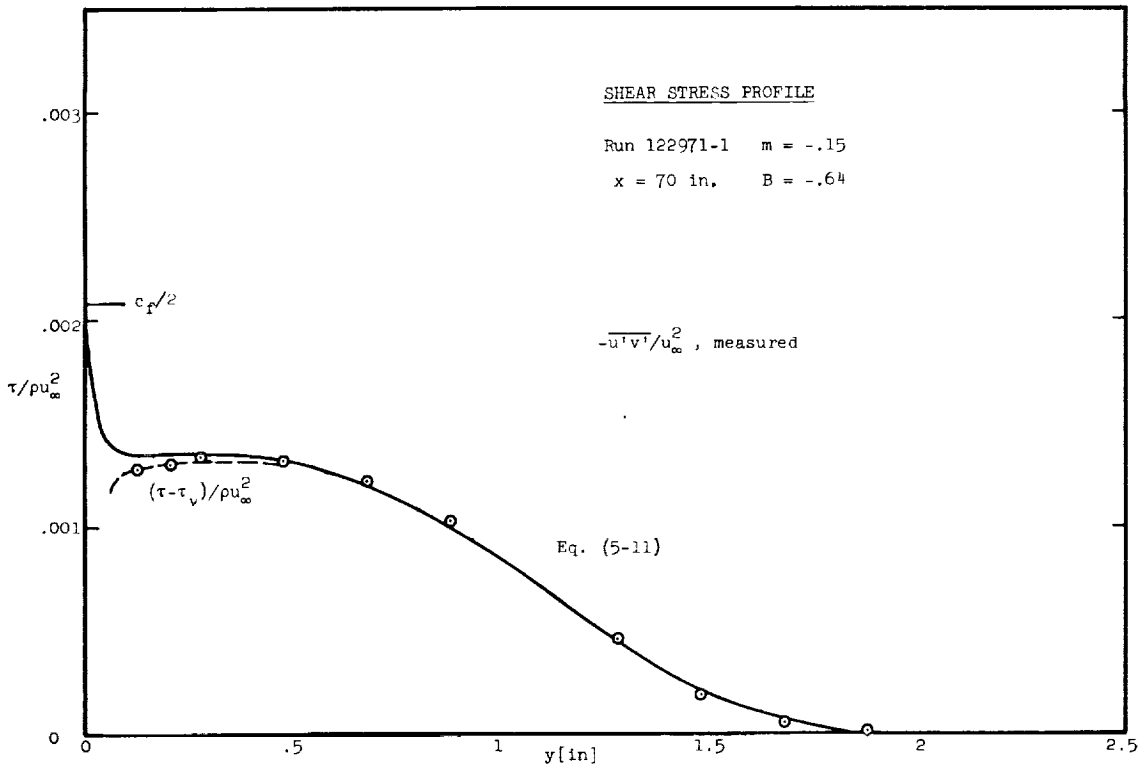

Fig. 6-38 Run 122971-1

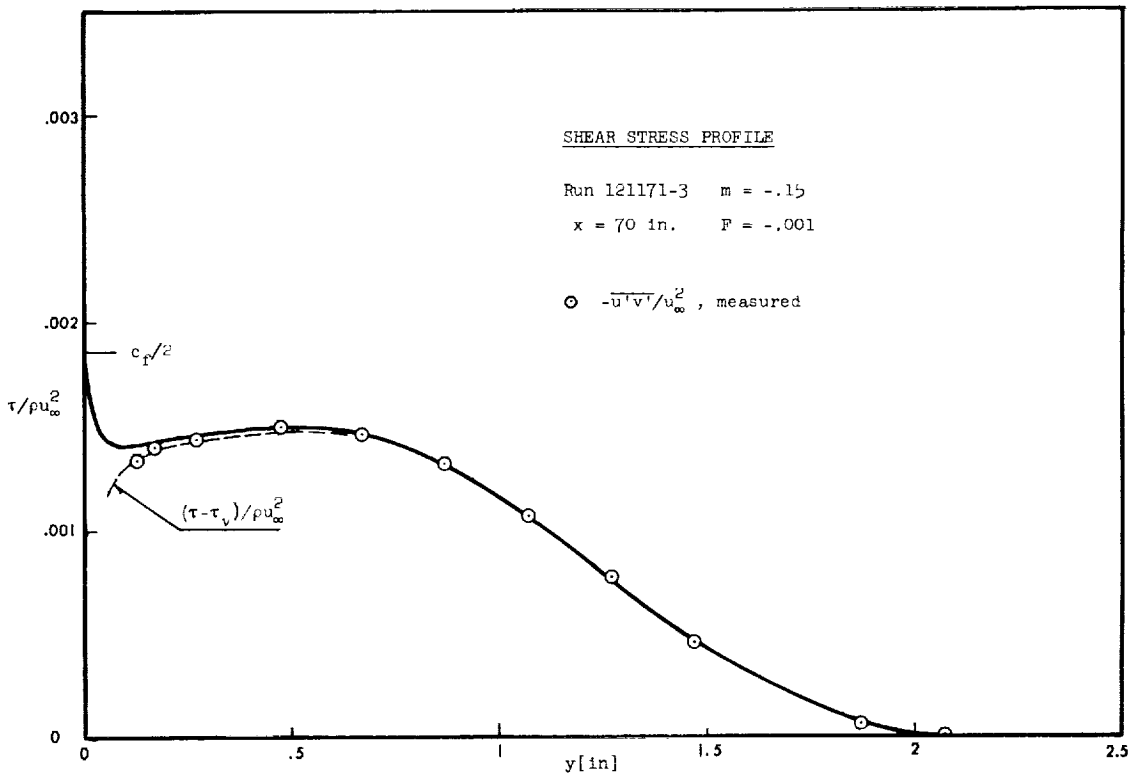

Fig. 6-39 Run 121171-3

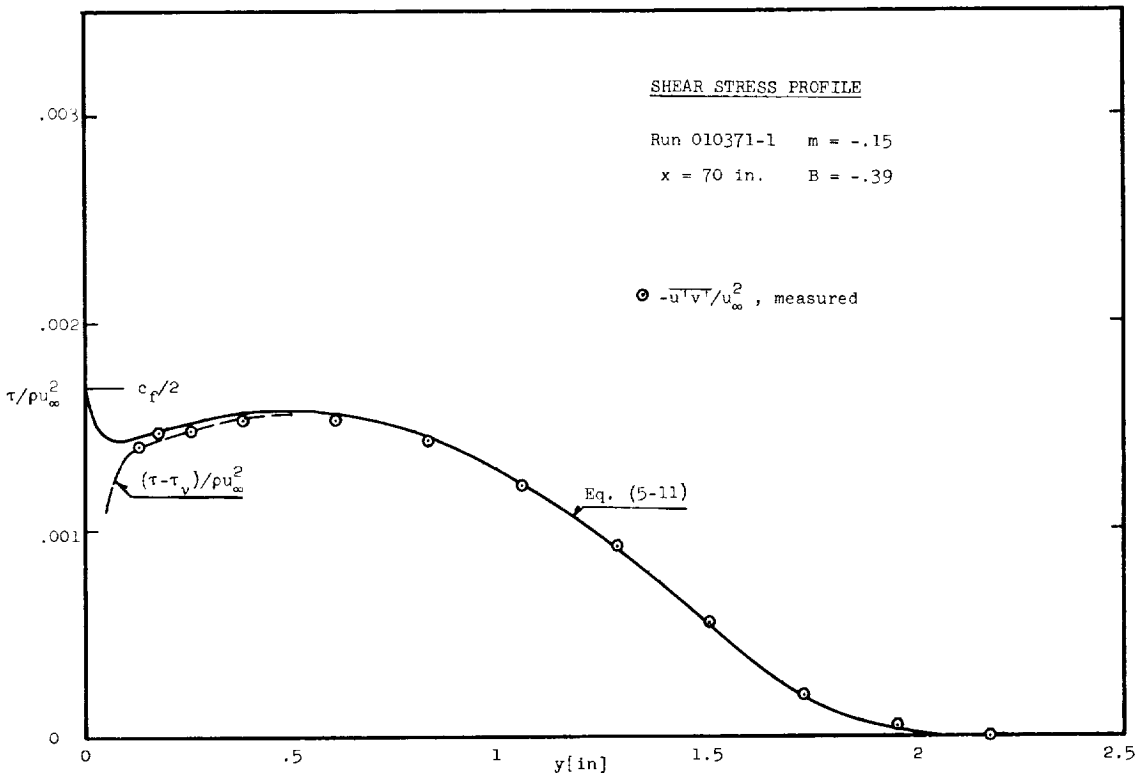

Fig. 6-40 Run 010371-1

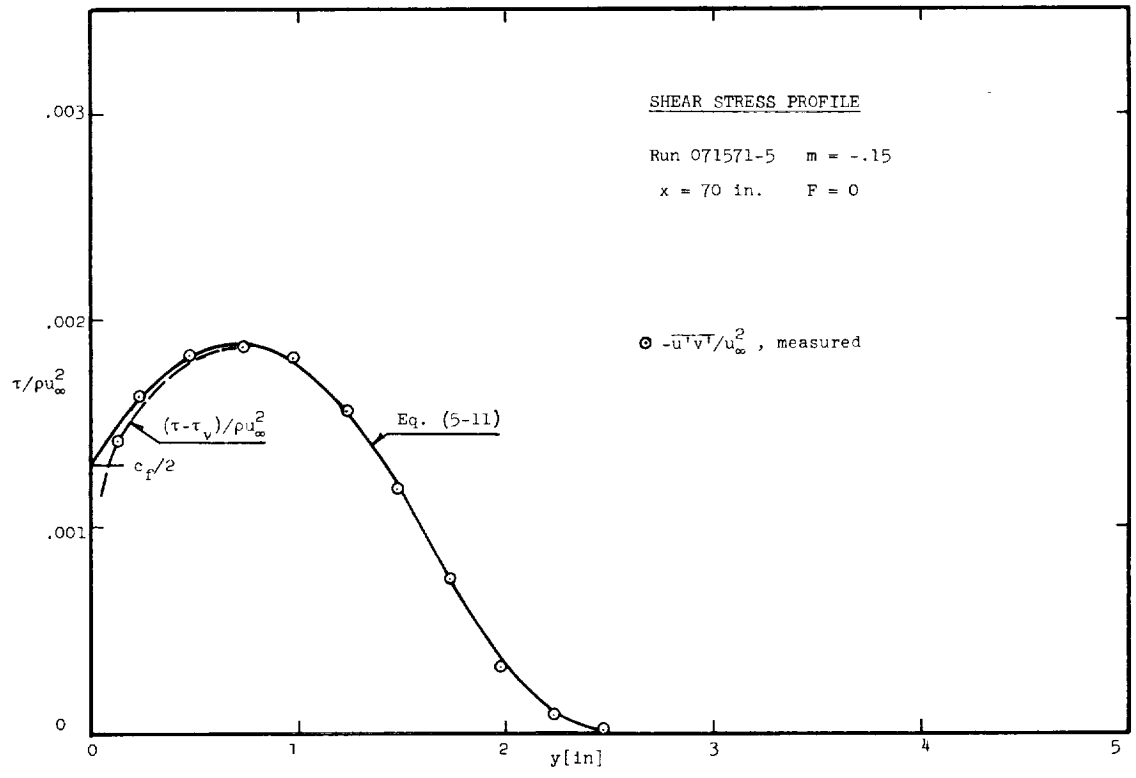

Fig. 6-41 Run 071571-5

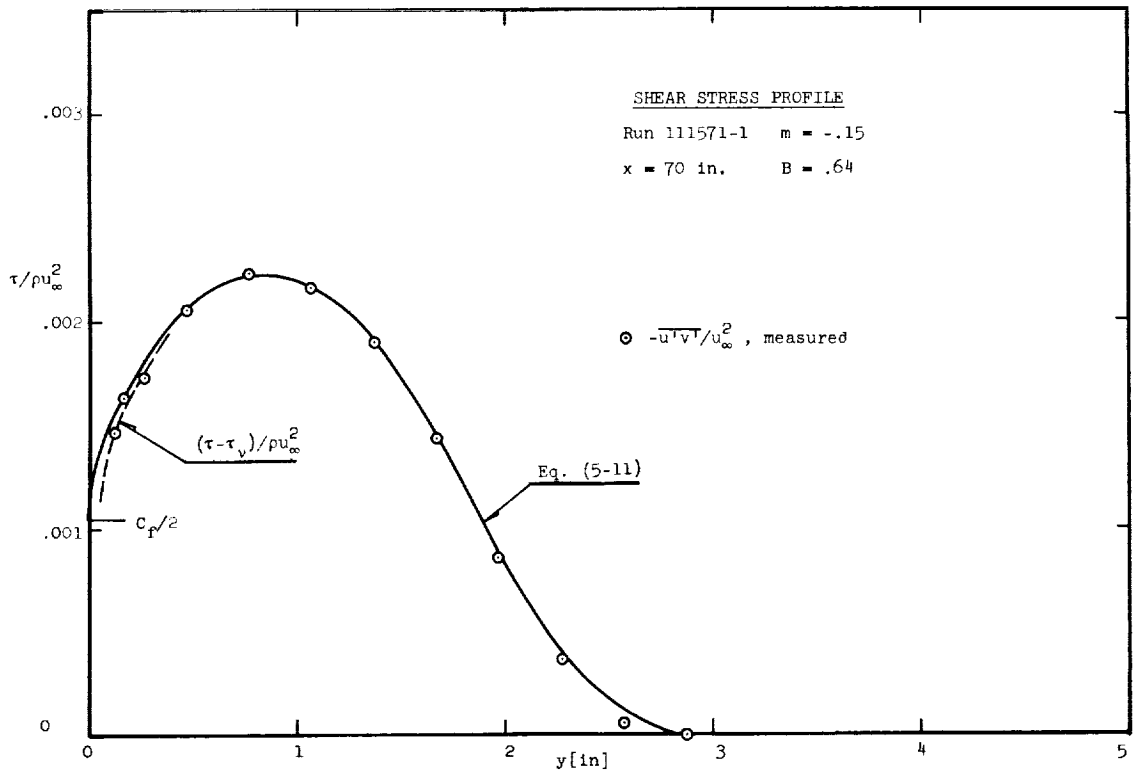

Fig. 6-42 Run 111571-1

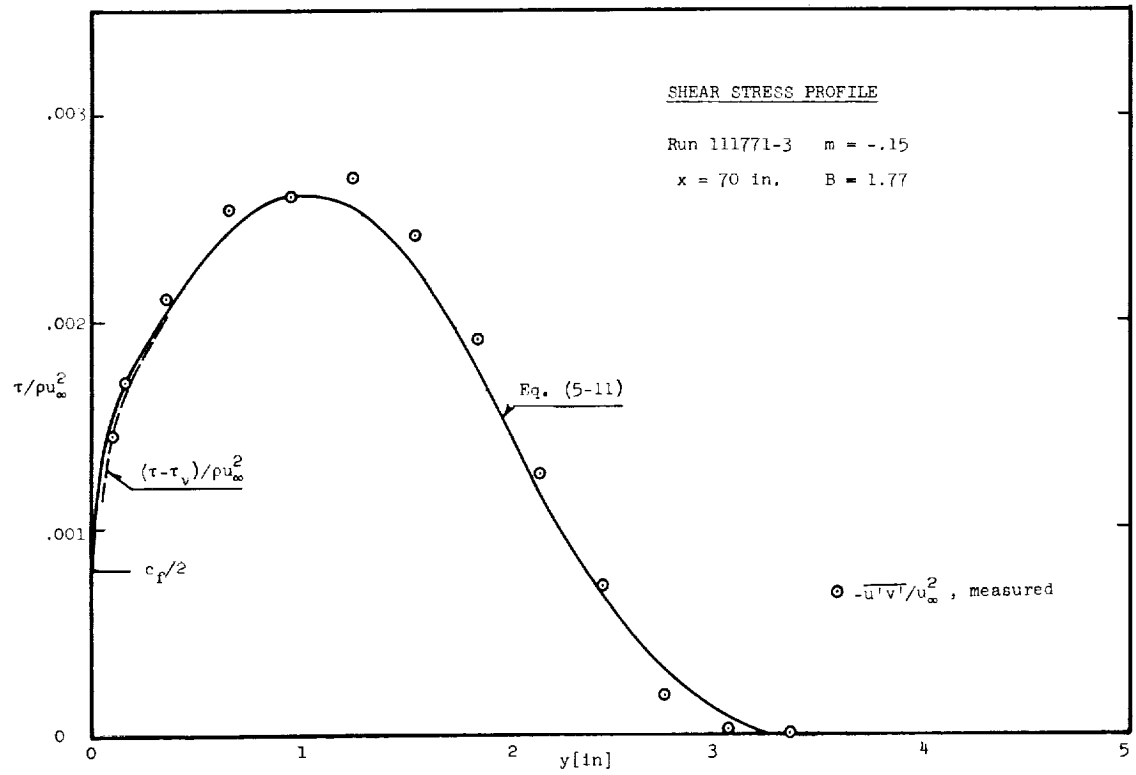

Fig. 6-43 Run 111771-3

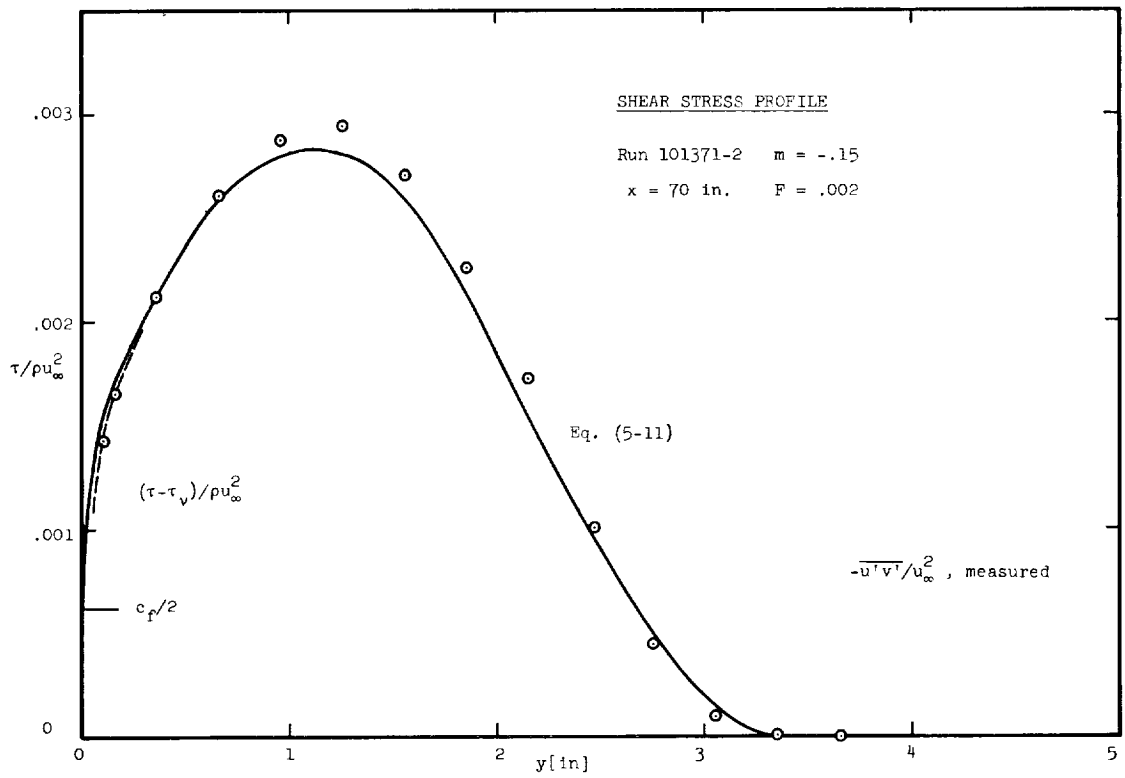

Fig. 6-44 Run 101371-2

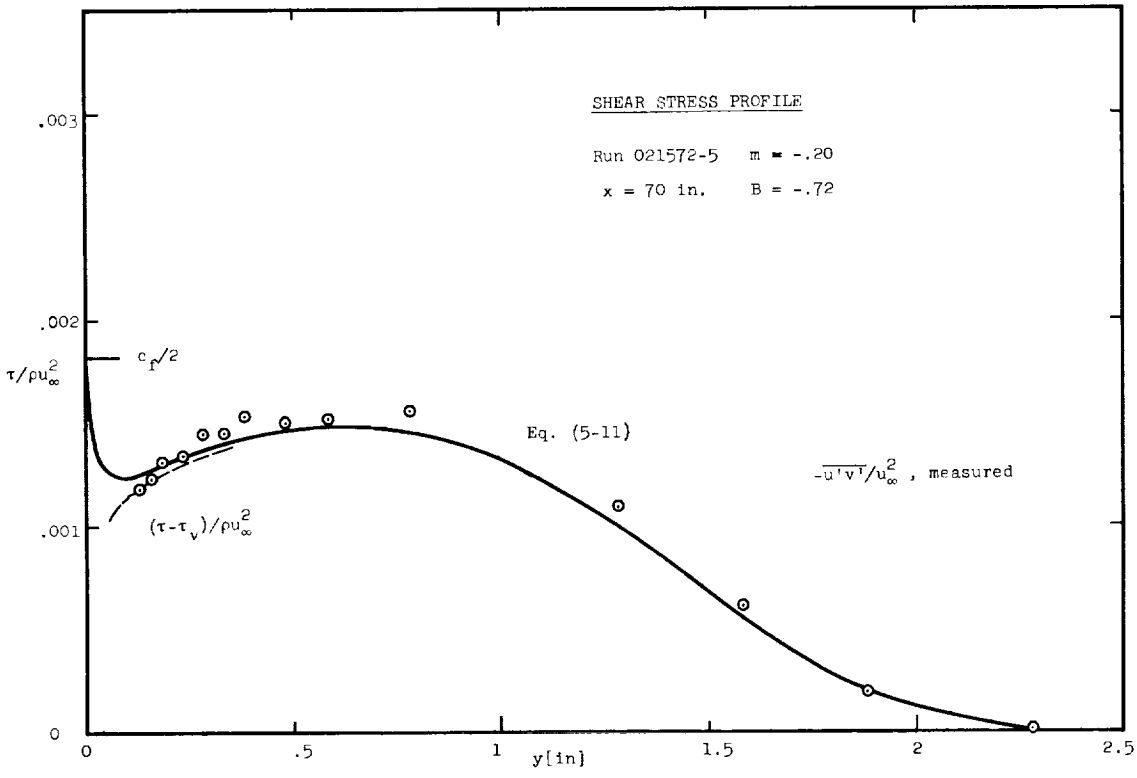

Fig. 6-45 Run 021572-5

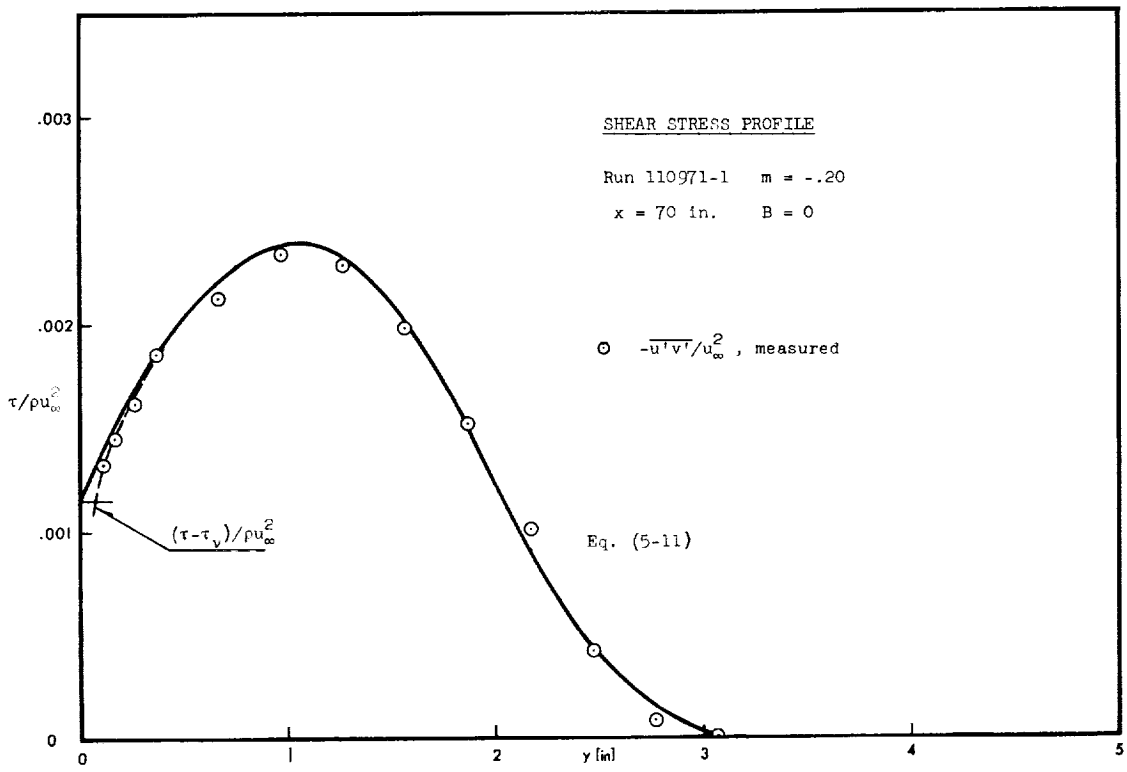

Fig. 6-46 Run 110971-1

CHAPTER 7

THEORETICAL RESULTS

7.1 Theories for A^+

As demonstrated in Chapter 6 the thickness of the wall region (expressed in the wall coordinate y^+) varies considerably with pressure gradient and transpiration rate. Adverse pressure gradients and blowing result in "thin" wall regions; favorable pressure gradients and suction have the opposite effect. In the van Driest model (Eq. (6-15)) for the mixing-length, A may be interpreted as a measure of the sublayer thickness. The measured variation of A^+ ($A^+ = Au_\tau/\nu$) with p^+ and v_o^+ is expressed by Eq. (6-20) which is a least squares fit of the experimental data. It would obviously be desirable to have a theory which would account for the functional dependence of A^+ upon p^+ and v_o^+. Attempts in this direction have been reported by several authors; some of the ideas will be discussed below. One of the proposed theories, the idea of a critical "Reynolds number of turbulence" defining the thickness of the wall region is supported by the present data.

Patankar and Spalding [19] modified van Driest's mixing-length model to read:

$$\ell = \kappa y \left[1 - \exp\left(- \frac{y^+}{A_o^+} \sqrt{\tau^+} \right) \right] \quad , \qquad (7\text{-}1)$$

where A_o^+ is a constant. Note that in this formulation the "effective" van Driest length scale, $A^+ = A_o^+ / \sqrt{\tau^+}$, is a function of y^+. The behavior of the non-dimensional shear stress, τ^+, may be expressed by the Couette-flow approximation:

$$\tau^+ = 1 + p^+ y^+ + v_o^+ u^+ \qquad (7\text{-}2)$$

From this it can be seen that the factor, $\sqrt{\tau^+}$, in the modified van Driest model, Eq. (7-1), has the correct qualitative influence; it results, for example, in lower values of the effective local length scale for adverse pressure gradients and blowing (i.e. $p^+ > 0$ and $v_o^+ > 0$). However, although Eq. (7-1) appears to be adequate for flows with weak transpiration rates and pressure gradients, it is not satisfactory for larger values of p^+ and v_o^+ even if the correct value of τ^+ (rather than the Couette-approximation, Eq. (7-2)) is used.

Cebeci [20] improved the performance of the model by evaluating τ^+ in Eq. (7-1) at $y^+ = 11.8$. The result is that the van Driest length scale becomes:

$$A^+ = A_o^+ \Big/ \sqrt{\tau^+(11.8)} \quad . \tag{7-3}$$

However, in evaluating the shear stress, τ^+, Cebeci not only used the Couette-flow approximation Eq. (7-2), but also assumed that the shear stress has no Reynolds stress contribution all the way out to $y^+ = 11.8$. The result is that the value of τ^+ used by Cebeci in Eq. (7.3) is not the actual shear stress at $y^+ = 11.8$, but rather a function of p^+ and v_o^+ that happens to account for the behavior of A^+. This fact is further emphasized by the arbitrary value of $y^+ = 11.8$.

Launder and Jones [21] proposed that at the "edge" of the sublayer (which was taken to be at $y^+ = A^+$) a Reynolds number of turbulence,

$$Re_T = \frac{\ell \sqrt{-\overline{u'v'}}}{\nu} \qquad (\ell \text{ is the mixing-length}) \tag{7-4}$$

takes on a constant, characteristic value. (Note that since by definition, $-\overline{u'v'} = \epsilon \frac{du}{dy}$ and $\ell = \sqrt{\epsilon / \frac{du}{dy}}$ then

$\epsilon^+ = \frac{\epsilon}{\nu} = Re_T$). This assumption seems to have some physical basis and a paper by Bradshaw [22] had indeed suggested that the Reynolds number of turbulence, Re_T , remains smaller than about 12 everywhere in a turbulent boundary layer undergoing laminarization. If laminarization is interpreted as the growth of the sublayer until it penetrates to the edge of the boundary layer, then the idea of a characteristic value of Re_T as defining the edge of the sublayer seems reasonable.

7.2 Sublayer Thickness and Characteristic Shear Stress

The derivative du/dy may be eliminated from the defining equations (Eqs. (6-1) and (6-2)) for the eddy viscosity, ϵ , and the mixing length, ℓ . Introducting $\epsilon^+ = \epsilon/\nu$ and $\tau^+ = \tau/\tau_o$ the result may be expressed as

$$y^+\sqrt{\tau^+} = \sqrt{\epsilon^+(1 + \epsilon^+)}\Big/(\frac{\ell}{y}) \qquad (7\text{-}5)$$

Now Figs. 6-17 and 6-18 indicate that both ϵ^+ and ℓ/y quite adequately may be described as unique functions of $y/A = y^+/A^+$ over a range in the inner region. It is therefore to be expected that $y^+\sqrt{\tau^+}$, the left hand side of Eq. (7-5), similarly depends upon y^+/A^+ in a range.

For the non-transpired constant pressure boundary layer $\tau^+ \simeq 1$ all the way from the wall and out through the logarithmic region of the velocity profile. The right hand side of Eq. (7-5) must therefore be equal to $y^+A_o^+/A^+$ and the equation may be written

$$\sqrt{\tau^+} \simeq A_o^+/A^+ \quad . \qquad (7\text{-}6)$$

The validity of this equation may be checked directly by plotting experimental profiles $\frac{A^+}{A_o^+}\sqrt{\tau^+}$ versus $y^+A_o^+/A^+$.

This has been done in Fig. 7-1 for a wide range of boundary conditions. Examination of this graph reveals that there is a range away from the wall where Eq. (7-6) is an adequate description of the shear stress behavior. This range corresponds to the logarithmic region of the mean velocity profiles.

Figure 7-1 is highly suggestive of the idea that Eq. (7-6) might be exactly true at a certain characteristic distance, y_c , from the wall. It is thus suggested that

$$\sqrt{\tau_c^+} = A_o^+/A^+ \ , \tag{7-7}$$

where the "characteristic shear stress", τ_c , obtains at the "characteristic point", $y_c = \alpha A$ ($\alpha \simeq 3$). It is difficult to give a precise value of the constant, α , because Eq. (7-6) is adequate for a wide range of y^+/A^+ . (By the same token a precise value of α is not needed because $\tau \simeq \tau_c$ in a range around $y = \alpha A$).

If the "characteristic velocity scale", $u_c = \sqrt{\tau_c/\rho}$, is introduced Eq. (7-7) may be written

$$\frac{Au_c}{\nu} = A_o^+ \tag{7-8}$$

Equations (7-7) and (7-8) are equivalent formulations of a relationship between the measure of the sublayer thickness, A , and the characteristic shear stress, τ_c . Equation (7-8) in particular shows that ν/u_c is a measure of the sublayer thickness entirely equivalent with and proportional to A .

The definitions of the eddy viscosity, ϵ , and the mixing length, ℓ , imply that

$$\epsilon^+ = \frac{1}{2} + \sqrt{\frac{1}{4} + \ell^{+2}\tau^+} \ , \quad \text{where} \quad \ell^+ = \ell u_\tau/\nu \tag{7-9}$$

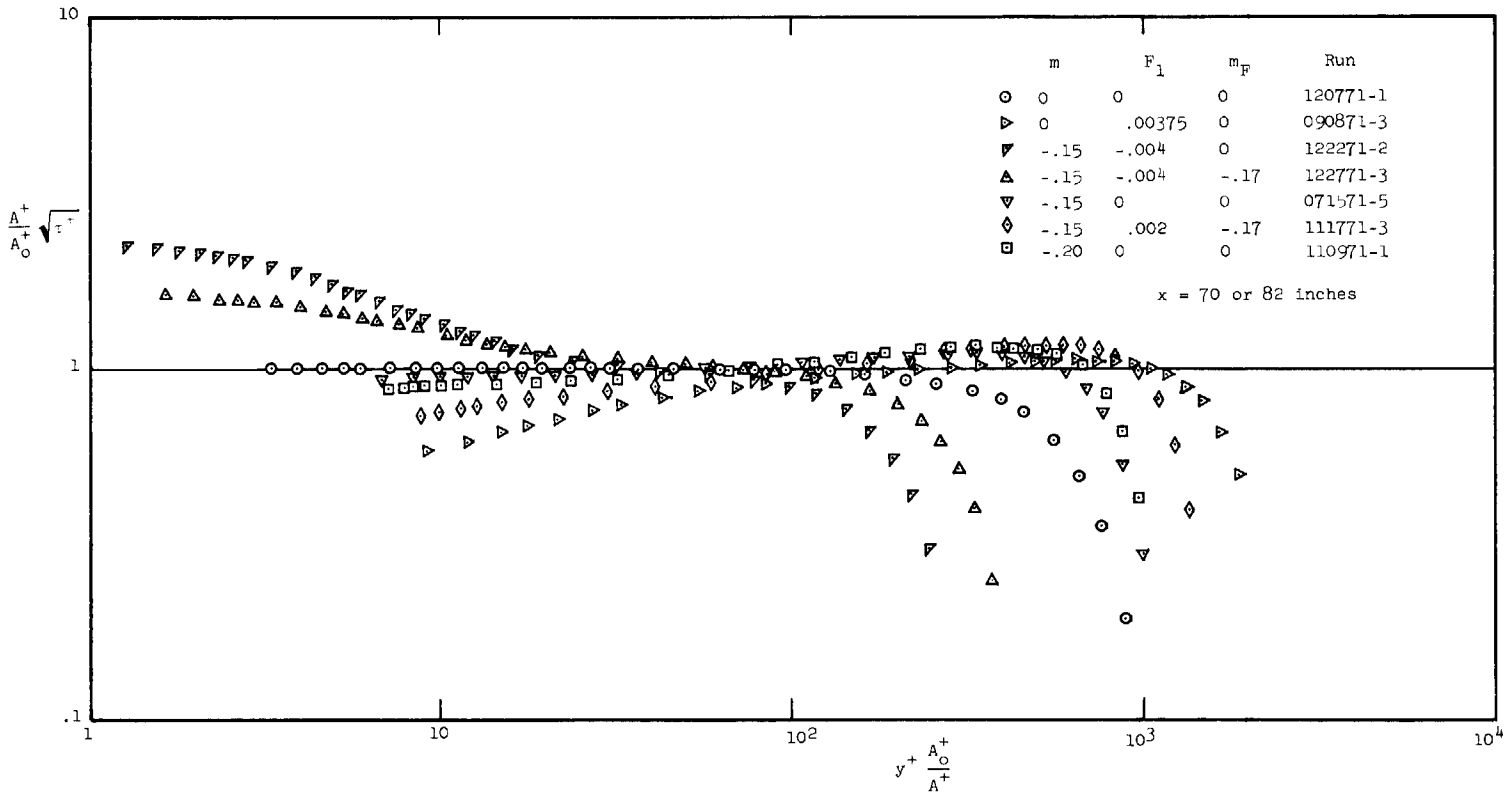

Fig. 7-1 $\frac{A^+}{A_o^+}\sqrt{\tau^+}$ versus $y^+ \frac{A_o^+}{A^+}$ for selected boundary conditions

The characteristic point, $y_c = 3A$, is located in the logarithmic region where, as noted, $\ell = 0.41y$. The value of the Reynolds number of turbulence, $Re_T = \ell \sqrt{-\overline{u'v'}}/\nu = \epsilon^+$, may therefore be obtained at the characteristic point by inserting $\ell_c^+ = 0.41y_c^+$, $y_c^+ = 3A^+$ and the result from Eq. (7-7) into Eq. (7-9). The result is that $\epsilon_c^+ = 29$ i.e. a constant. In other words the Reynolds number of turbulence has a "characteristic" value (independent of the pressure gradient and/or transpiration rate) at the characteristic point, y_c .

A turbulent boundary layer prediction program that solves the differential boundary layer equations may use either Eq. (7-8) or the fact that $\epsilon^+(3A) = \epsilon_c^+ = 29$ to obtain A , and thereby provide "closure" in the inner region.

Predictions of some of the present experimental boundary layers with closure provided by Eq. (7-8) are presented in Section 7.4.

The measure, A , of the sublayer thickness is of course the length scale in the van Driest model

$$\ell = \kappa y[1 - \exp(-\frac{y}{A})] \quad . \tag{7-10}$$

This reference to a particular mixing-length model may at first seem to limit the generality of Eqs. (7-7) and (7-8). However, experience with two alternative models has shown that this is not the case. The two mixing-length models are:

1. The two-layer model:

$$\ell = \begin{cases} 0 & \text{for} \quad y \leq C \\ \kappa y & \text{for} \quad y > C \end{cases} \tag{7-11}$$

2. The Evans [23] model:

$$\ell = \begin{cases} \kappa y^2/B & y \leq B \\ \kappa y & y > B \end{cases} \qquad (7\text{-}12)$$

For these two models C and B are measures of the sublayer thickness equivalent to A in the van Driest model Eq. (7-10). If C_o and B_o represent the case of a non-transpired, constant pressure boundary layer it is found that,

$$\frac{A}{A_o} = \frac{C}{C_o} = \frac{B}{B_o} \qquad (7\text{-}13)$$

In other words the ratio $A^+/A_o^+ = A/A_o$ seems to be a true measure of the relative sublayer thickness because its value is independent of any particular assumption about the mixing length behavior in the inner region. Since Eqs. (7-7) and (7-8) only involve the ratio, A^+/A_o^+ they may be thought of as universal and not dependent upon the use of the van Driest model.

7.3 Generalized Law of the Wall

In Chapter 6 it was demonstrated that the classical law of the wall

$$\frac{u}{u_\tau} = \frac{1}{\kappa} \ell n \frac{y u_\tau}{\nu} + c \quad (\kappa = 0.41 \text{ and } c = 5.0) \qquad (7\text{-}14)$$

fails for boundary layers with transpiration. It continues to hold, at least approximately, even in rather strong adverse pressure gradients whereas it rapidly becomes inapplicable for favorable pressure gradient boundary layers. (For evidence of the latter statement see for example Loyd [4]).

Several authors have proposed forms of the law of the wall applicable for constant pressure flows with transpiration. Coles [24] gives a critical survey of these laws and also proposes a new generalized law of the wall.

All the proposed laws of the wall (except Coles') rely on an integration of the Couette approximation Eq. (7-2) for the shear stress using the Prandtl assumption, $\ell = \kappa y$, for the mixing length behavior in the logarithmic region. The difference between them is essentially the choice of the integration constant. However, it cannot easily be extended to boundary layers with strong adverse pressure gradients because the Couette approximation in this case becomes too inaccurate in the logarithmic region. Simpson's law of the wall, which is especially successful in fitting most available data, becomes inapplicable for very strong suction or blowing rates.

Coles' new law of the wall is based on a Millikan [25] type argument which leads to the conclusion that a logarithmic portion of the mean velocity profile must exist if both wall region similarity and outer region similarity (in the form of a defect law) exists. The difference between Coles' new law of the wall and the classical law, Eq. (7-14), is that u and y are normalized by u_o and $y_o = \nu u_o/u_\tau^2$ respectively rather than on u_τ and ν/u_τ. u_o is a shear velocity based on the average shear stress for a "laminar sublayer". This computational concept is assumed to extend from the wall to the point where the laminar velocity profile intercepts the logarithmic law of the wall.

Coles himself concludes that his new law of the wall does <u>not</u> fit the experimental data as well as, especially, Simpson's law of the wall. This author feels that the reason for the relative failure of Coles approach is the insistance that the normalizing scales, u_o and y_o, satisfy the condition, $u_o/y_o = u_\tau^2/\nu$. This condition is

rooted in Coles' requirement that the normalized velocity profile (i.e. the profile in terms of u/u_o and y/y_o) shows similarity in the entire inner region, i.e., not only in the logarithmic region, but also in the viscous sublayer. Such a requirement cannot be satisfied and is furthermore unnecessary. The reason for Coles' insistance on this point is apparently that he arrived at the law of the wall from a Millikan argument which presupposes the existence of a set of wall coordinates i.e. u/u_o and y/y_o in terms of which similarity exists all the way to the wall. But in order to conclude that a logarithmic region exists it is enough to assume that two distinct regions exist; the innermost of these two regions does not have to extend into the fully viscous region.

In the following a new law of the wall is proposed. The essential feature is the use of the coordinates u/u_c and yu_c/ν, where $u_c = \sqrt{\tau_c/\rho}$ is a velocity scale based on the characteristic shear stress, τ_c. It was shown in the previous section that τ_c characterizes the shear stress in the logarithmic region and furthermore is directly related to the thickness of the viscous sublayer through Eq. (7-8) which may be written:

$$\frac{u_c}{u_\tau} = \frac{A_o^+}{A^+} \tag{7-15}$$

It was found that τ_c obtains exactly at the characteristic wall distance, $y_c = 3A$, which may be said to define the thickness of the viscous sublayer. The van Driest length scale, A, in Eq. (7-15) can therefore be thought of as merely a convenient measure of the sublayer thickness for which experimental values are available.

It has been shown that both ℓ/y and ϵ/ν plot as unique functions of $y^+A_o^+/A^+ = yu_c/\nu$ (see Figs. 6-17

and 6-18) over an extended range in the wall region. This range includes the logarithmic region.

From the definition of the mixing-length, $\epsilon = \ell^2 du/dy$, one may obtain

$$\frac{d\left(\frac{u}{u_c}\right)}{d\left(\frac{yu_c}{\nu}\right)} = \frac{\epsilon/\nu}{\left(\frac{\ell}{y}\right)^2 \left(\frac{yu_c}{\nu}\right)^2} \quad . \tag{7-16}$$

The derivative on the left hand side is, in view of what was stated above, expected to be a function of yu_c/ν at least in the logarithmic region.

The logarithmic part of the velocity profile will be expressed as

$$\frac{u}{u_c} = \frac{1}{0.41} \ell n\left(\frac{yu_c}{\nu}\right) + 5.0 + h(u_\tau/u_c) \quad . \tag{7-17}$$

This expression correctly leads to a derivative, $d\left(\frac{u}{u_c}\right) \Big/ d\left(\frac{yu_c}{\nu}\right)$, which is a function of yu_c/ν as required by Eq. (7-16). For a non-transpired, constant pressure boundary layer, $u_\tau = u_c$, and the function h must be such that $h = 0$ for this case. The <u>simplest</u> function form with this property is $h = c_1(\frac{u_\tau}{u_c} - 1)$, where the constant, c_1, remains to be determined. Inserting this expression for h into Eq. (7-17) and solving for c_1 one obtains

$$c_1 = \left[\frac{u}{u_\tau} - \frac{u_c}{u_\tau}\left(\frac{1}{0.41} \ell n \frac{yu_c}{\nu} + 5.0\right)\right] \Big/ \left(1 - \frac{u_c}{u_\tau}\right) . \tag{7-18}$$

For c_1 to be a constant there must therefore exist a set of coordinates, $(u_1/u_\tau , y_1u_c/\nu)$, such that $c_1 = u_1/u_\tau = \frac{1}{0.41} \ell n \frac{y_1u_c}{\nu} + 5.0$. The value of the constant,

c_1 , may thus be found by plotting experimental velocity profiles as u/u_τ versus yu_c/ν . If the assumed form of the function, h , is correct, then there must be a point in these coordinates in which all the profiles intersect. Figure 7-2, in which profiles for a broad range of boundary conditions have been plotted, clearly shows that all the experimental profiles have $(u_1/u_\tau,\ y_1u_c/\nu) = (14.0, 40)$ as a common point. It then follows from Eq. (7-18) that $c_1 = 14.0$ and Eq. (7-16) becomes:

$$\frac{u}{u_c} = \frac{1}{0.41}\ell n\left(\frac{yu_c}{\nu}\right) + 5.0 + 14.0\left(\frac{u_\tau}{u_c} - 1\right) \quad . \qquad (7\text{-}19a)$$

This new "generalized law of the wall" of course reduces to the classical law of the wall, Eq. (7-14), for $u_c = u_\tau$. Equation (7-19a) has been verified by plotting experimental profiles of $\frac{u}{u_c} - 14\left(\frac{u_\tau}{u_c} - 1\right)$ versus yu_c/ν in Fig. 7-3 . It may be noted that the logarithmic portion of all the experimental profiles is well fitted by Eq. (7-19a), thus verifying the new law of the wall for the present data.

The new law of the wall Eq. (7-19a) may of course be expressed in the wall coordinates $u^+ = u/u_\tau$ and $y^+ = yu_\tau/\nu$ by making use of the identity, $u_c/u_\tau = \sqrt{\tau_c^+}$. The result is:

$$u^+ = \frac{\sqrt{\tau_c^+}}{0.41}\ell n(y^+\sqrt{\tau_c^+}) + 5.0\sqrt{\tau_c^+} + 14.0(1 - \sqrt{\tau_c^+}) \qquad (7\text{-}19b)$$

Since $\sqrt{\tau_c^+} = A_o^+/A^+$, Eq. (7-15), the generalized law of the wall may also be expressed as

$$u^+ = \frac{A_o^+}{A^+}\ \frac{1}{0.41}\ell n\left(y^+\ \frac{A_o^+}{A^+}\right) + 5.0\ \frac{A_o^+}{A^+} + 14.0\left(1 - \frac{A_o^+}{A^+}\right) \qquad (7\text{-}19c)$$

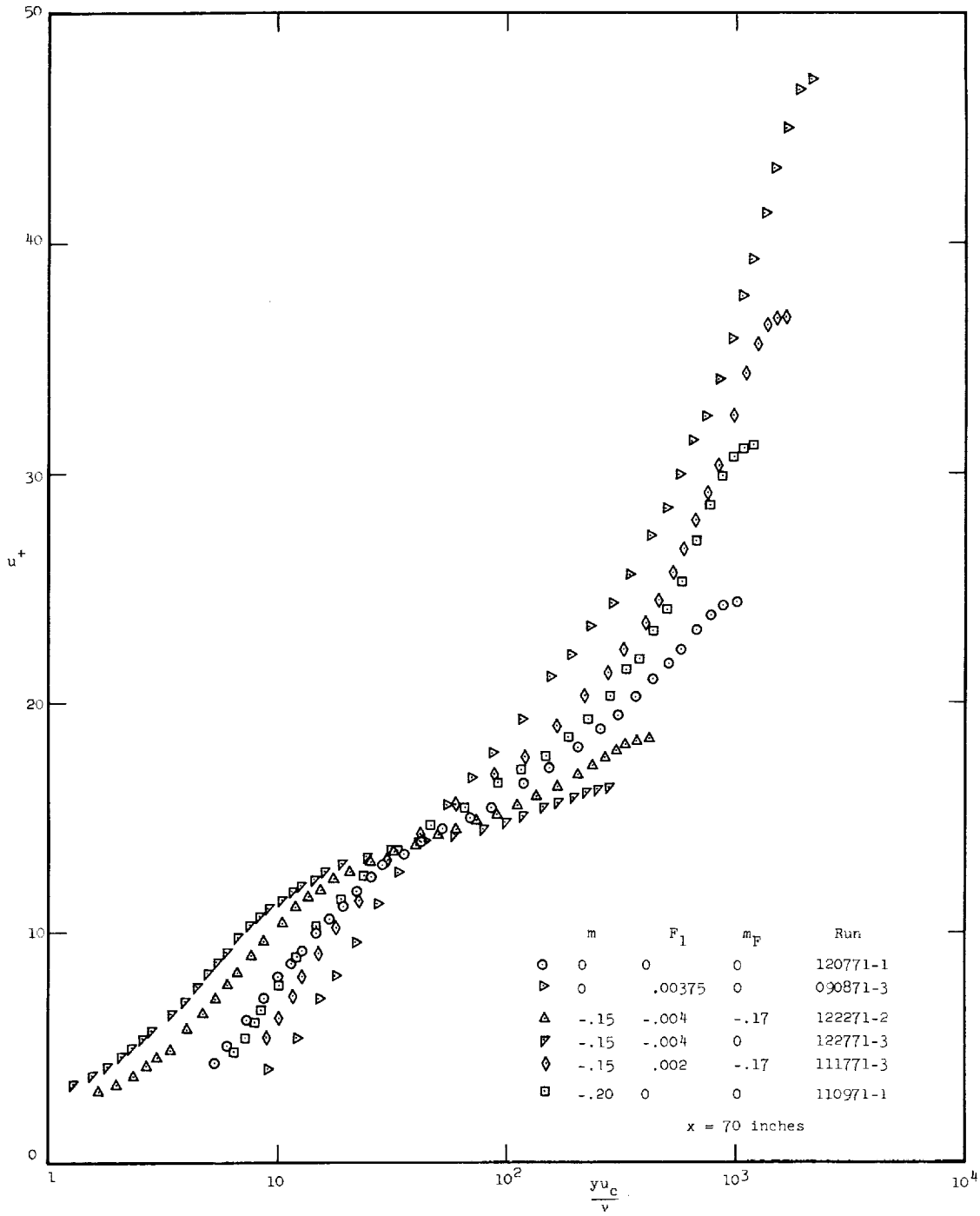

Fig. 7-2 u^+ versus $yu_c/\nu = y^+A_o^+/A^+$ for selected runs

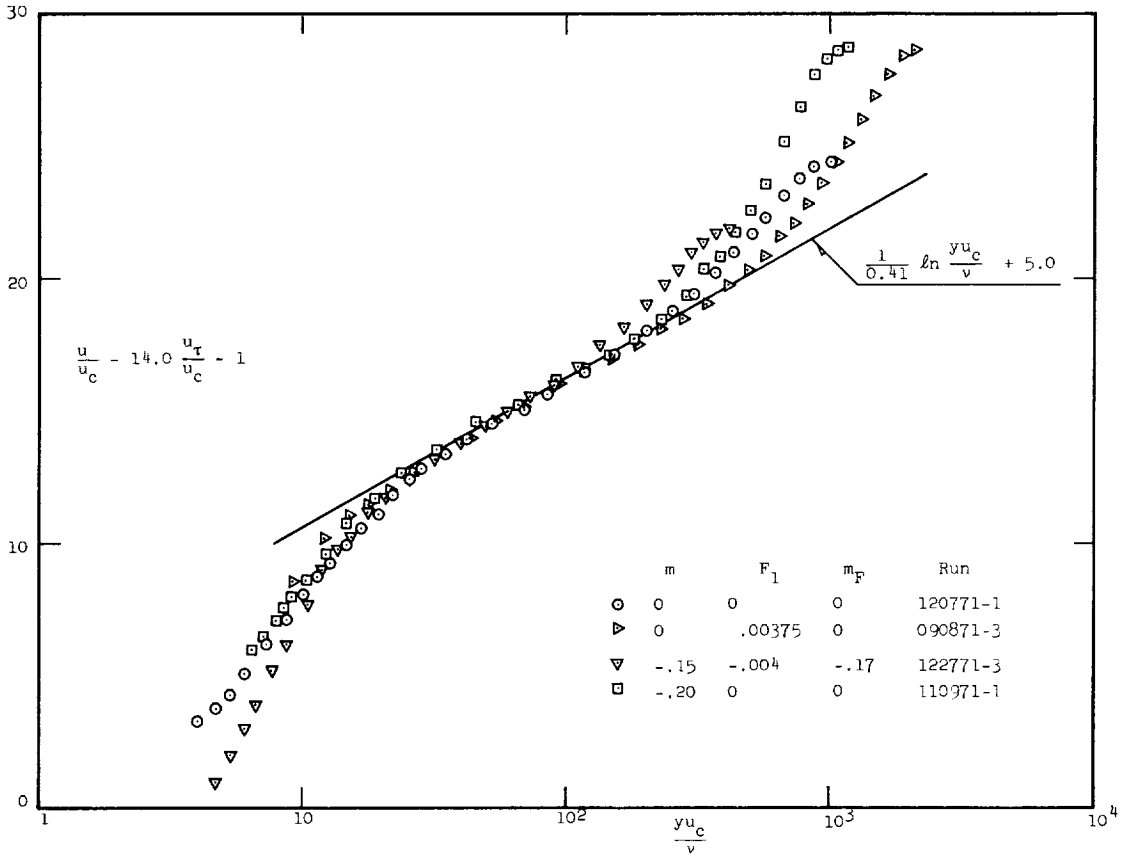

Fig. 7-3 Verification of the generalized law of the wall, Eq. (8-19)

This form of the equation makes the sublayer thickness (i.e. the van Driest length scale) appear explicitly.

Note also that the ratio A_o^+/A^+ is independent of the wall hypothesis, as demonstrated by Eq. (7-13).

In order to make the non-dimensional pressure gradient, p^+, and the non-dimensional transpiration rate, v_o^+, appear explicitly in the new law of the wall the characteristic shear stress, τ_c, might be expressed by the Couette approximation, Eq. (7-2). However the term, p^+y^+, is a very poor approximation of the effect of the pressure gradient on the shear stress in the logarithmic region; only the influence of transpiration can be adequately treated by the Couette approximation. For a constant pressure boundary layer the characteristic shear stress, τ_c, may then be approximated by

$$\tau_c^+ = 1 + v_o^+ u_c^+ \tag{7-20}$$

The velocity, u_c^+, at the characteristic point, y_c, may be obtained from Eq. (7-19b) for $y^+\sqrt{\tau^+} = y_c^+\sqrt{\tau_c^+} = 3A_o^+$. The result is

$$u_c^+ = 14 + 1.4\sqrt{\tau_c^+} \tag{7-21}$$

Inserting this expression into Eq. (7-20) one obtains a 2nd order equation for $\sqrt{\tau_c^+}$; the solution is, with approximation,

$$\sqrt{\tau_c^+} = 1 + 7.7\ v_o^+ \tag{7-22}$$

Inserting this result into Eq. (7-19b) the following approximation for the new law of the wall may be obtained:

$$u^+ = \frac{1 + 7.7\ v_o^+}{0.41}\ \ell n y^+ + 5.0 - 50\ v_o^+ + 72\ v_o^{+2} \tag{7-23}$$

In passing it may be noted that Eq. (7-22) for $\sqrt{\tau_c^+}$ may be used to obtain an approximate (but quite adequate for moderate transpiration rates) expression for the van Driest length scale, namely:

$$A^+ = \frac{A_o^+}{\sqrt{\tau_c^+}} = \frac{24}{1 + 7.7\ v_o^+} \quad . \tag{7-24}$$

The generalized law of the wall may of course be used to obtain the friction velocity, u_τ (and thus the friction coefficient, $c_f/2 = u_\tau^2/u_\infty^2$), from experimental velocity profiles. For this purpose it is convenient to write Eq. (7-19a) in the form:

$$u = \frac{u_c}{0.41}\ \ell n\left(\frac{y u_c}{40\nu}\right) + 14.0 u_\tau \quad . \tag{7-25}$$

Thus if u is plotted against $\ell n y$ then u_c may be obtained directly from the slope of the logarithmic region. u_τ may then be obtained, for example, as the velocity at $y = 40\nu/u_c$ divided by 14.0. If desired the van Driest length scale may be obtained as $A^+ = 24 u_\tau/u_c$.

7.4 Predictions of Experimental Boundary Layers

Four of the experimental boundary layers representing rather extreme boundary conditions were predicted using a numerical procedure capable of solving the boundary layer Eqs. (3-1) when "closure" is provided in the form of a connection between the shear stress, τ , and the mean velocity field. The solution method is that of Patankar and Spalding [19].

The closure used in the present predictions is provided by the following model:

$$\tau = \rho(\nu + \epsilon)\ \frac{du}{dy}\ , \quad \text{where} \quad \epsilon = \ell^2\ \frac{du}{dy}\ . \tag{7-26}$$

The mixing-length, ℓ , is obtained from the van Driest model, Eq. (6-15) in the inner and overlap region. In the outer region ℓ is taken to be equal to $\lambda\delta_{99}$, where λ is a constant. Thus

$$\ell = \begin{cases} \kappa y\left[1 - \exp\left(-\frac{y}{A}\right)\right] & \text{for } y \leq \lambda\delta_{99}/\kappa \\ \lambda\delta_{99} & \text{for } y > \lambda\delta_{99}/\kappa \end{cases} . \tag{7-27}$$

The length scale, A , in the van Driest model was obtained from Eq. (7-8) which may be written

$$A = \frac{\nu A_o^+}{u_c} , \text{ where } u_c = \sqrt{\tau(3A)/\rho} . \tag{7-28}$$

The value of λ is very nearly a constant for all the boundary layers. It was found, however, that the following dependence of λ upon the Reynolds number, Re_{δ_2} , and the blowing fraction, F , leads to slightly improved predictions:

$$\lambda = \begin{cases} \lambda_\infty(6000/Re_{\delta_2})^{.125}(1 - 67.5F) & \text{for } Re_{\delta_2} < 6000 \\ \lambda_\infty(1 - 67.5F) & \text{for } Re_{\delta_2} > 6000 \end{cases} \tag{7-29}$$

In the above expression λ_∞ is a constant. The dependence of λ upon Re_{δ_2} and F is rather weak, but the same dependence has been used with success (see Julien [3]) for the prediction of boundary layer with strong favorable pressure gradients; this seems to indicate that Eq. (7-29) is rather universal.

Not counting the constants in Eq. (7-29) associated with the weak Reynolds number and transpiration dependence, the present closure model contains only <u>three</u> empirical

constants, namely:

1. The von Kármán constant, $\kappa = 0.41$.
2. The van Driest length scale for the non-transpired constant pressure boundary layer, $A_o^+ = 24.0$.
3. The value of ℓ/δ_{99} in the outer region, $\lambda_\infty = 0.0779$.

All the predictions were started at the first experimental velocity profile (at x = 2 inches). The boundary conditions were specified as the measured free-stream velocity distribution and transpiration rate. The four experimental boundary layers which have been predicted are listed below.

m	F_1	m_F	Run
0	0	0	120771-1
0	.00375	0	090871-3
-.15	-.004	-.17	122271-2
-.20	0	0	110971-1

The values given for m , F_1 and m_F specify the nominal boundary conditions (see Section 2).

Figures 7-4 and 7-5 compare experimental and predicted variations of the Reynolds number, $Re\delta_2$, and the friction coefficient, $c_f/2$. The slight general overprediction of $Re\delta_2$ is possibly due to a small experimental three-dimensionality.

Figure 7-6 compares experimental and predicted values of A^+/A_o^+ . The agreement is good.

Figures 7-7 and 7-8 display for comparison experimental and predicted velocity profiles at (in wall coordinates) x = 70 inches. The greatest discrepancy between experiment and prediction occurs for the run (090871-3) with the highest blowing rate. The underprediction of the "strength of the wake" seems to be due to a too high value of λ rather than a faulty value of A^+ .

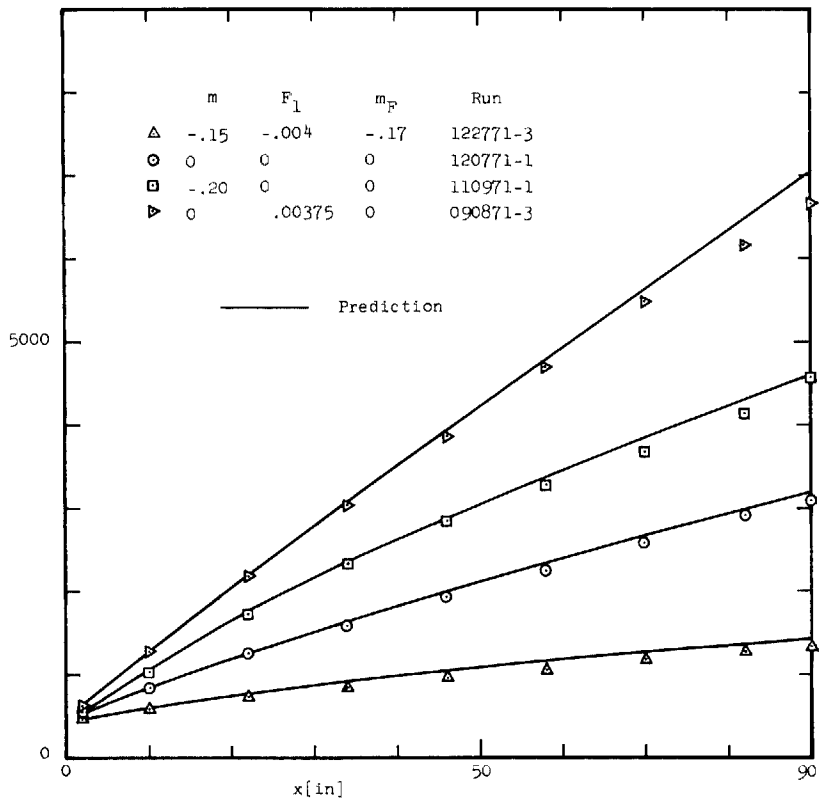

Fig. 7-4 Comparison of prediction of the Re_{δ_2} with experimental data

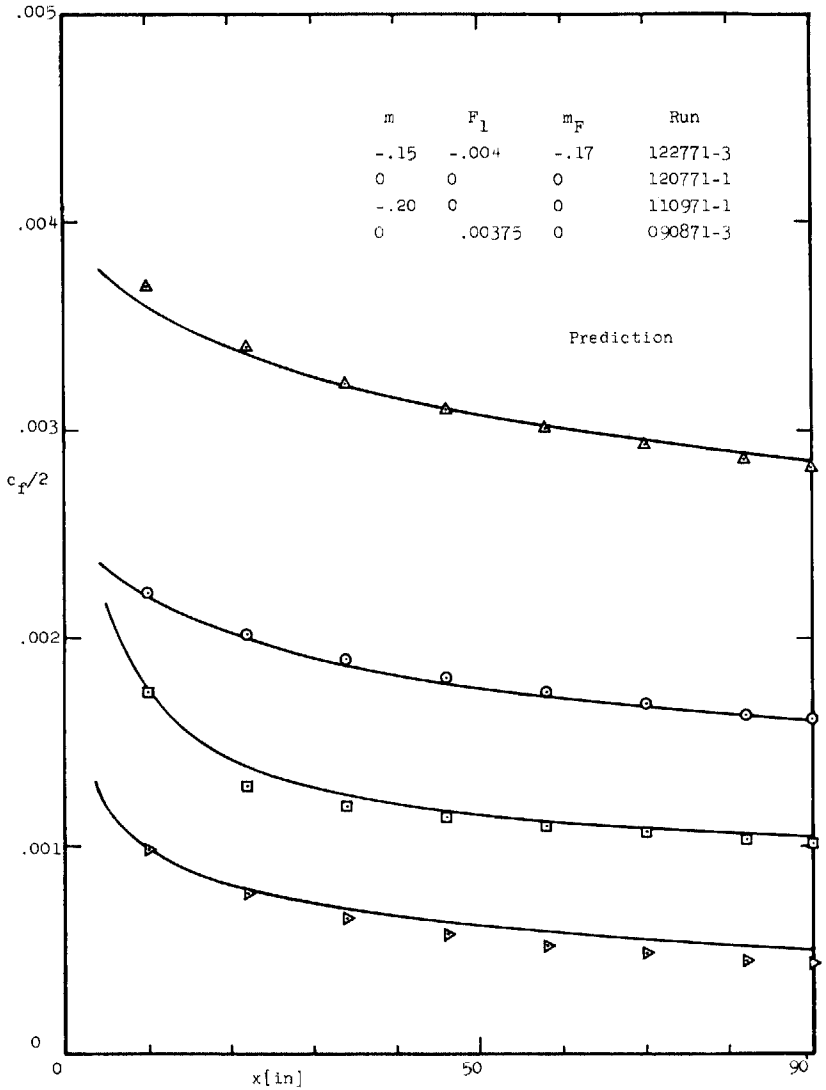

Fig. 7-5 Comparison of prediction of $c_f/2$ with experimental data

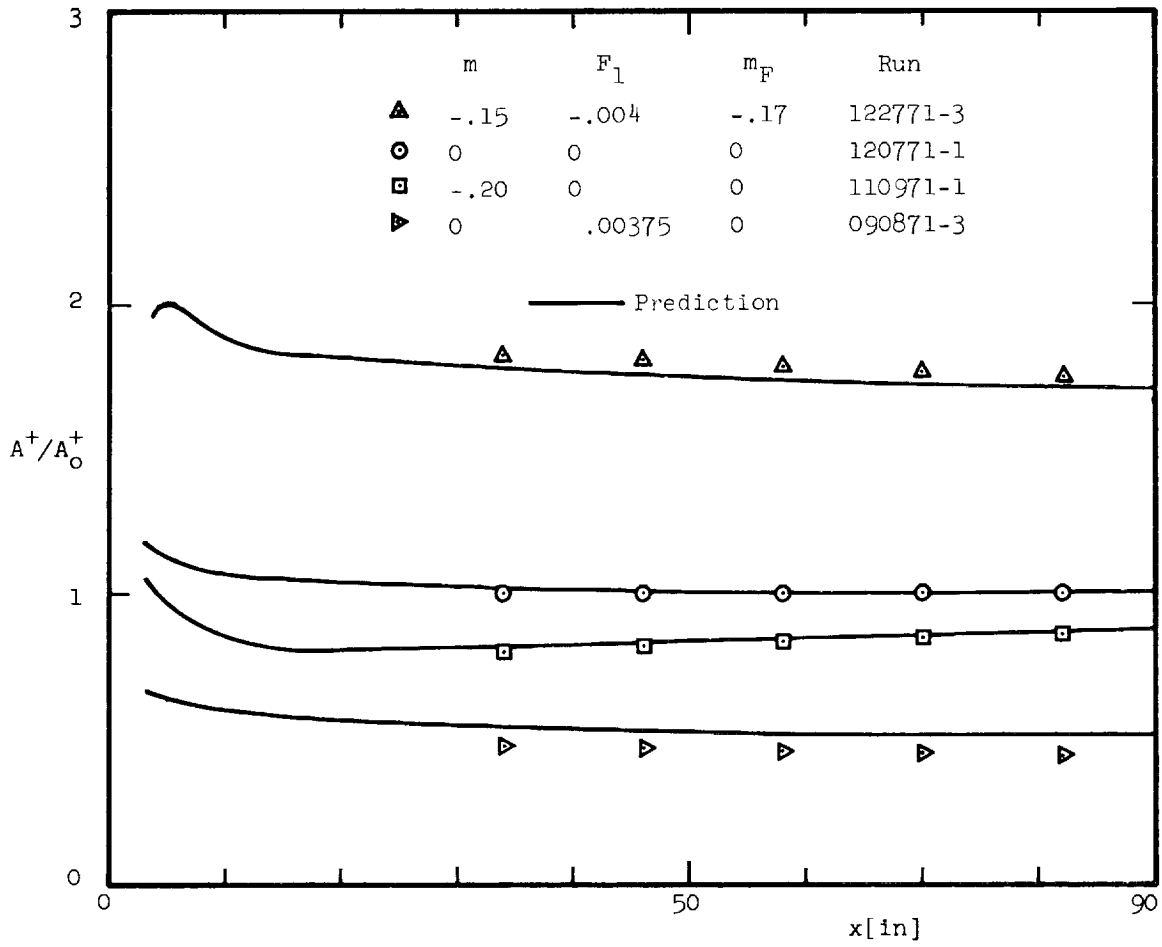

Fig. 7-6 Comparison of prediction of A^+/A_o^+ with experimental data

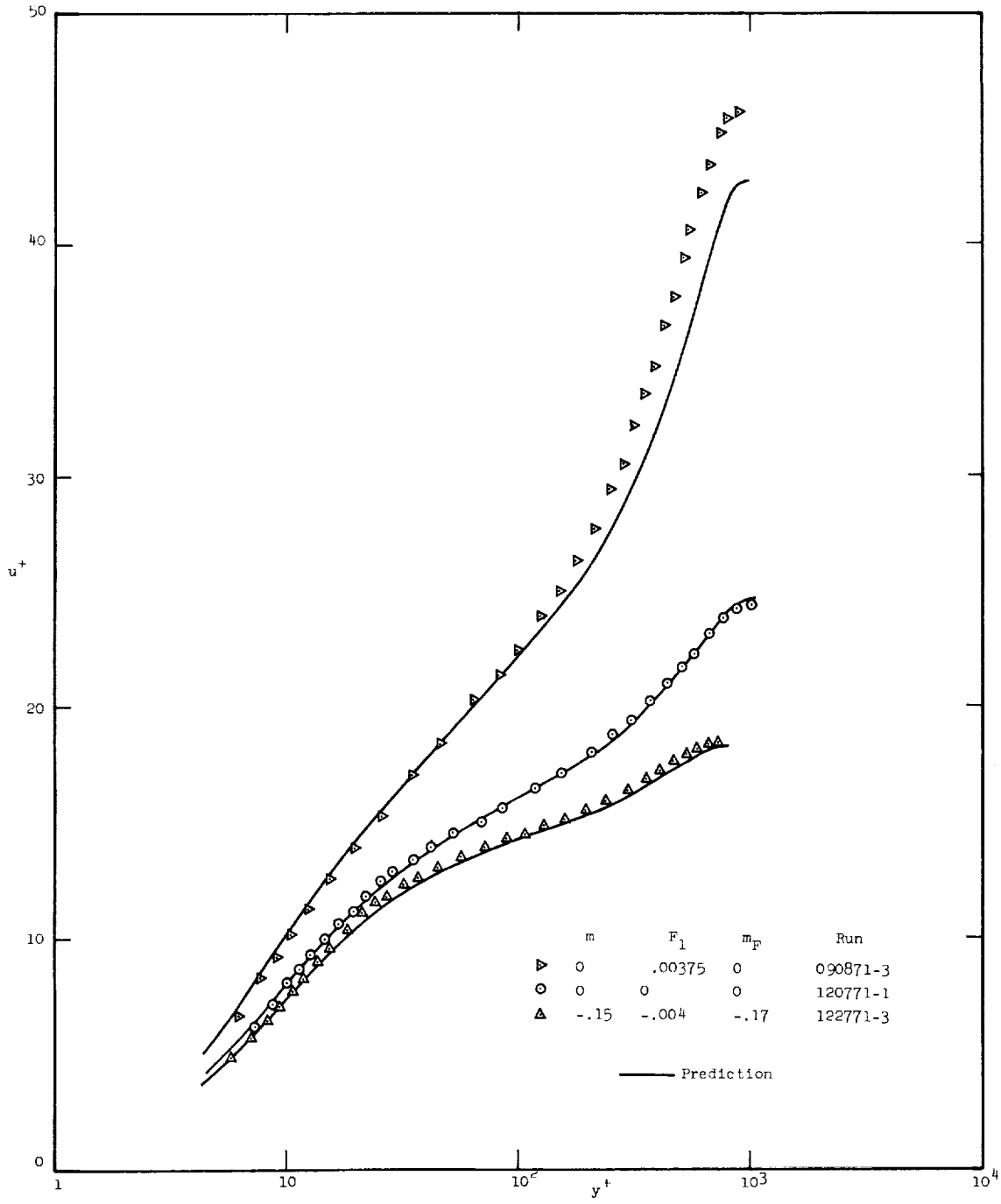

Fig. 7-7 Comparison of predicted and experimental velocity profiles

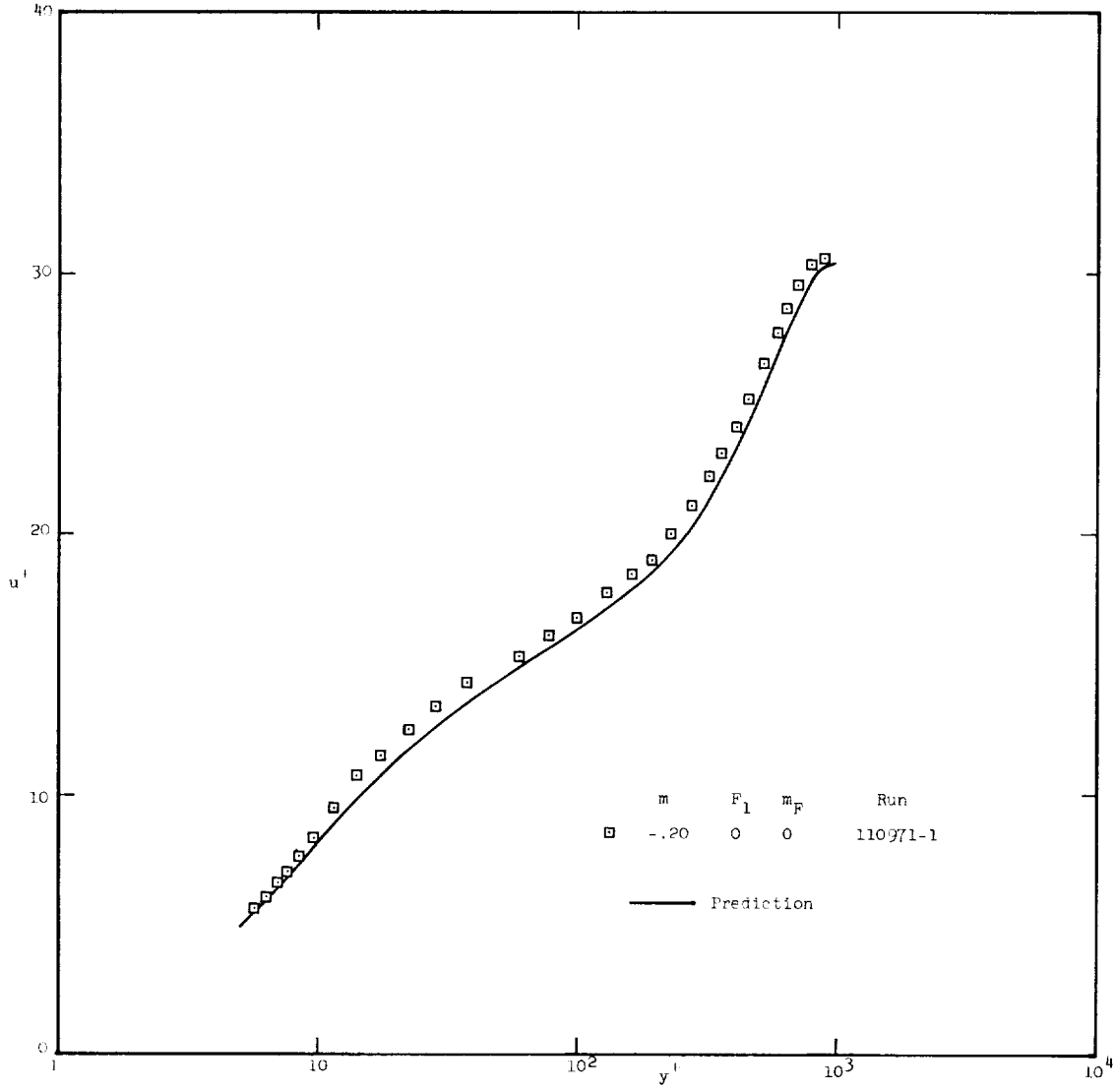

Fig. 7-8 Comparison of predicted and measured velocity profile

CHAPTER 8

SUMMARY AND CONCLUSIONS

Experimental results for turbulent incompressible boundary layers with transpiration (blowing and suction through a porous wall), and both constant pressure and adverse pressure gradients, have been presented. The three different free-stream velocity distributions may be described by an equation of the form:

$$u_\infty \propto u_1 x^m \quad , \quad \text{where} \quad m \leq 0 \quad . \tag{8-1}$$

The transpiration boundary condition may be expressed by

$$F \propto F_1 x^{m_F} \quad \text{where} \quad F = v_o/u_\infty \quad \text{and}$$

$$F \gtrless 0 \; ; \; m_F \leq 0 \; . \tag{8-2}$$

Table 2-2 summarizes the experimental boundary conditions. A total of 20 "runs" (i.e. sets of different boundary conditions), corresponding to a total of 179 mean velocity profiles, are presented.

All velocity profile measurement were carried out using linearized constant temperature anemometry. In addition to mean velocity profiles, Reynolds stress profiles and profiles of the three turbulence intensities were measured.

The skin friction was determined by a technique involving the measurement of the shear stress close to the wall (as the sum of the Reynolds stress and the viscous stress) and then "extrapolating" to the wall using the integrated boundary layer equations.

The analysis of the experimental results has lead to the following conclusions:

1. The skin friction results for a given pressure gradient (i.e. a given m) may be correlated by an equation of the type:

$$c_f/2 = (c_f/2)_o f_o(B_o) \text{ , where } B_o = \frac{F}{(c_f/2)_o} \text{ and} \tag{8-3}$$

$$(c_f/2)_o = a\mathrm{Re}_{\delta_2}^{-0.25} \tag{8-4}$$

The constant, a , in Eq. (8-4) for the non-transpired boundary layers depends parametrically upon m (see Eq. (6-4)). Explicit expressions for the function $f_o(B_o)$ are given in Eqs. (6-9). Although different functions are presented for each of the three pressure gradients, these functions do not differ greatly within their common ranges of applicability.

Equation (8-3) may be written in the equivalent form:

$$c_f/2 = (c_f/2)_o f(B) \text{ , where}$$

$$f(B) = f_o(B_o) \quad \text{and} \quad B = \frac{F}{c_f/2} = B_o/f_o(B_o) \text{ .} \tag{8-5}$$

2. Clauser-type equilibrium boundary layers (i.e. flows having a constant Clauser shape factor, G) are obtained for constant values of the Clauser pressure gradient parameter, β , and the blowing parameter, B . Furthermore it is shown that G is a function of $(\beta + B)$, indicating that constant values of β and B have identical effects upon the shape of the defect profile.

3. For all the experimental boundary layers there exists a range of y , the "logarithmic region", where the mixing-length may be expressed as

$$\ell = \kappa y \quad (\kappa = 0.41) \quad . \tag{8-6}$$

The von Kármán constant, κ , is therefore independent of both transpiration rate and pressure gradient.

4. The logarithmic region is characterized by a shear stress, $\tau_c = \tau(y_c)$. The "characteristic" wall distance, y_c , is related to τ_c through the equation

$$\frac{y_c u_c}{\nu} = y^+_{o,c} \quad , \quad \text{where} \quad u_c = \sqrt{\tau_c/\rho} \quad . \tag{8-7}$$

The constant, $y^+_{o,c} = 72$, may be interpreted as the characteristic distance (in wall coordinates) for a non-transpired constant pressure boundary layer ($u_c = u_\tau$ for this case). y_c may be identified as the thickness of the inner region. If for example the van Driest model, Eq. (7-10), is used to describe the mixing-length behavior in the inner region, then the van Driest length scale may be determined as $A = y_c/3$. The length scales for other mixing-length models are also proportional to y_c .

5. The Reynolds number of turbulence, $Re_T = \ell \sqrt{-\overline{u'v'}}/\nu = \epsilon/\nu = \epsilon^+$, has the constant, characteristic value, $\epsilon^+_c = 29$, at the characteristic point, $y = y_c$.

6. A new generalized law of the wall which fits the logarithmic region of all the experimental velocity profiles, may be expressed as

$$\frac{u}{u_c} = \frac{1}{0.41} \ell n\left(\frac{y u_c}{\nu}\right) + 5.0 + 14.0\left(\frac{u_\tau}{u_c} - 1\right) \quad . \tag{8-8}$$

This new law of the wall reduces to the classical law for $u_c = u_\tau$, i.e., for the case, where the shear stress in the logarithmic region is equal to the wall shear stress.

7. Successful predictions of four of the experimental boundary layers have been carried out using a numerical procedure that solves the differential boundary layer equations. The closure (mean velocity field) relies on only <u>three</u> empirical constants:

   a) The von Kármán constant, $\kappa = 0.41$.

   b) The constant $y^+_{o,c} = 72$ in Eq. (8-6) .

   c) The value $\lambda_\infty = \ell/\delta_{99} = 0.0779$ used in the outer region of the boundary layer.

   The van Driest model was used for the mixing-length in the inner region. (The length scale was obtained from $3A = \frac{\nu}{u_c} y^+_{o,c}$) .

CHAPTER 9

TABULATED EXPERIMENTAL DATA

All the experimental data related to the mean velocity profiles are presented in this chapter. The run numbers together with corresponding nominal boundary conditions (see Section 2.3) are listed in the table below.

Run	m	F_1	m_F
120771-1	0	0	0
100571-1	0	.001	0
090171-2	0	.002	0
090871-3	0	.00375	0
092271-5	0	.008	0
122271-2	-.15	-.004	0
122771-3	-.15	-.004	-.17
121671-3	-.15	-.002	0
122971-1	-.15	-.002	-.17
121171-3	-.15	-.001	0
010372-1	-.15	-.001	-.17
071571-5	-.15	0	0
111571-1	-.15	.001	-.17
091771-2	-.15	.001	0
111771-3	-.15	.002	-.17
101371-2	-.15	.002	0
112871-1	-.15	.004	-.17
102171-1	-.15	.004	0
021572-5	-.20	-.004	-.16
110971-1	-.20	0	0

Table 9-1 Run numbers and nominal boundary conditions

Table 9-2 gives the measured streamwise velocity distributions for all the runs and Table 9-3 presents the measured blowing fractions.

Each of the following three sections contains a run by run summary of a few relevant parameters for each velocity profile. The profile tables following this summary contain a detailed list of boundary conditions, skin friction coefficients and integral parameters.

Note: The free-stream velocities listed in the summaries and the profile tables of the following sections are hot-wire results corresponding to the last profile points, whereas the free-stream velocity distributions listed in Table 9-2 is computed from the pressure distribution. As a consequence slight discrepancies between the two quotations of u_∞ may be found. The pressure gradient parameter, $K = \frac{\nu}{u_\infty^2} \frac{du_\infty}{dx}$, is computed on the basis of the velocities in Table 9-2 (see Appendix B for details).

Special Nomenclature and units:

BETA = β

CF2 = $c_f/2$

D1 = δ_1 [in]

D2 = δ_2 [in]

D99 = δ_{99} [in]

DC = Δ

NU = ν [ft^2/s]

RD2 = Re_{δ_2}

VO$^+$ = v_o^+

UI = u_∞

U* = u_τ

TAU = $\tau/\rho u_\infty$

TAULAM = $\tau_\nu/\rho u_\infty$

X = x [in]

Y = y [in]

Table 9-2 Measured free-stream velocity distributions; u_∞[ft/s]

x in.	120771-1	120571-1	090171-2	090871-3	092271-5	122271-2	122771-3	121671-3	122371-1	121171-3	010371-1	071571-5	111571-1	091771-2	111771-3	101371-2	112871-1	102171-1	110771-1	021572-5
2.	31.16	31.43	31.56	31.56	31.54	29.53	29.51	29.23	29.32	29.41	29.35	29.80	29.47	29.87	29.36	29.68	29.59	29.50	29.33	29.31
4.	31.12	31.41	31.52	31.52	31.54	28.97	28.93	28.72	28.81	28.87	28.81	29.16	28.84	29.24	28.76	29.07	29.01	28.92	28.54	28.63
6.	31.08	31.37	31.48	31.52	31.53	28.29	28.30	28.09	28.18	28.20	28.18	28.37	28.04	28.43	27.98	28.27	28.26	28.15	27.56	27.75
8.	31.08	31.35	31.48	31.52	31.54	27.57	27.56	27.36	27.45	27.51	27.43	27.53	27.23	27.60	27.20	27.45	27.46	27.37	26.57	26.78
10.	31.10	31.35	31.48	31.56	31.54	26.93	26.89	26.73	26.79	26.89	26.82	26.80	26.44	26.87	26.48	26.75	26.76	26.67	25.72	25.96
12.	31.00	31.29	31.42	31.48	31.43	26.27	26.26	26.12	26.18	26.28	26.25	26.17	25.86	26.22	25.82	26.13	26.12	26.05	24.91	25.21
14.	31.17	31.47	31.60	31.66	31.64	25.92	25.93	25.75	25.84	25.89	25.89	25.82	25.56	25.87	25.49	25.75	25.81	25.70	24.37	24.63
16.	31.12	31.41	31.52	31.58	31.54	25.49	25.46	25.31	25.37	25.45	25.44	25.39	25.14	25.46	25.07	25.37	25.38	25.25	23.40	24.04
18.	31.02	31.33	31.44	31.48	31.45	25.01	24.96	24.86	24.92	25.00	24.99	24.98	24.75	25.04	24.66	24.95	24.97	24.84	23.23	23.43
20.	31.06	31.37	31.48	31.54	31.51	24.72	24.71	24.52	24.61	24.66	24.68	24.68	24.45	24.75	24.36	24.66	24.70	24.55	22.79	23.02
22.	31.04	31.35	31.46	31.50	31.51	24.42	24.37	24.23	24.29	24.34	24.36	24.41	24.19	24.45	24.07	24.36	24.38	24.25	22.39	22.57
24.	31.10	31.39	31.48	31.56	31.53	24.12	24.14	23.96	24.02	24.07	24.07	24.15	23.96	24.17	23.86	24.11	24.11	24.00	22.04	22.19
26.	31.14	31.41	31.52	31.58	31.56	23.92	23.92	23.76	23.79	23.84	23.87	23.94	23.73	23.99	23.61	23.91	23.90	23.80	21.71	21.87
28.	31.16	31.41	31.54	31.58	31.58	23.69	23.66	23.48	23.56	23.61	23.62	23.72	23.50	23.73	23.39	23.68	23.73	23.55	21.40	21.53
30.	31.12	31.37	31.48	31.56	31.54	23.43	23.43	23.28	23.33	23.38	23.36	23.47	23.27	23.49	23.15	23.42	23.47	23.33	21.09	21.23
32.	31.16	31.43	31.50	31.56	31.56	23.23	23.22	23.07	23.13	23.18	23.18	23.28	23.08	23.31	22.97	23.23	23.29	23.12	20.83	20.97
34.	31.14	31.41	31.50	31.54	31.54	23.04	23.04	22.89	22.95	23.00	22.98	23.09	22.87	23.10	22.76	23.02	23.02	22.94	20.59	20.68
36.	31.12	31.39	31.48	31.54	31.54	22.83	22.86	22.68	22.76	22.81	22.79	22.89	22.69	22.91	22.60	22.86	22.86	22.76	20.36	20.48
38.	31.12	31.39	31.48	31.52	31.54	22.65	22.67	22.53	22.61	22.63	22.61	22.71	22.53	22.72	22.42	22.68	22.68	22.60	20.15	20.24
40.	31.14	31.41	31.50	31.54	31.56	22.54	22.51	22.37	22.45	22.49	22.48	22.56	22.40	22.59	22.26	22.51	22.52	22.46	19.97	20.09
42.	31.12	31.41	31.48	31.54	31.54	22.32	22.35	22.21	22.26	22.33	22.32	22.39	22.21	22.42	22.10	22.35	22.38	22.27	19.76	19.88
44.	31.16	31.41	31.52	31.54	31.58	22.19	22.21	22.07	22.13	22.20	22.16	22.26	22.04	22.28	21.96	22.21	22.24	22.14	19.64	19.73
46.	31.10	31.39	31.50	31.52	31.56	22.05	22.08	21.94	21.99	22.06	21.99	22.10	21.91	22.12	21.82	22.08	22.08	22.00	19.45	19.55
48.	31.10	31.39	31.48	31.52	31.51	21.91	21.91	21.80	21.83	21.93	21.86	21.95	21.77	21.95	21.66	21.94	21.91	21.89	19.33	19.42
50.	31.10	31.41	31.48	31.54	31.53	21.80	21.83	21.69	21.74	21.79	21.80	21.82	21.63	21.84	21.52	21.80	21.77	21.75	19.17	19.27
52.	31.10	31.41	31.48	31.56	31.54	21.66	21.69	21.58	21.61	21.71	21.66	21.69	21.52	21.72	21.41	21.68	21.66	21.61	19.01	19.17
54.	31.14	31.41	31.50	31.58	31.54	21.58	21.60	21.47	21.52	21.60	21.58	21.57	21.47	21.58	21.30	21.57	21.55	21.53	18.92	19.05
56.	31.10	31.37	31.46	31.56	31.53	21.46	21.49	21.36	21.41	21.49	21.44	21.45	21.29	21.47	21.16	21.43	21.47	21.41	18.79	18.95
58.	31.12	31.39	31.50	31.58	31.53	21.41	21.38	21.28	21.30	21.40	21.36	21.34	21.18	21.35	21.07	21.32	21.35	21.33	18.69	18.79
60.	31.12	31.37	31.48	31.56	31.53	21.26	21.27	21.19	21.22	21.29	21.28	21.22	21.06	21.24	20.98	21.23	21.27	21.21	18.60	18.70
62.	31.10	31.37	31.48	31.56	31.51	21.21	21.21	21.08	21.13	21.20	21.16	21.13	20.98	21.12	20.87	21.11	21.12	21.10	18.47	18.60
64.	31.10	31.37	31.50	31.58	31.54	21.09	21.12	21.02	21.02	21.12	21.11	21.02	20.89	21.03	20.78	21.03	21.06	21.01	18.37	18.54
66.	31.10	31.35	31.48	31.54	31.53	21.01	21.04	20.94	20.96	21.03	20.99	20.93	20.80	20.94	20.70	20.94	21.01	20.93	18.27	18.44
68.	31.08	31.33	31.44	31.52	31.49	20.89	20.98	20.83	20.88	20.95	20.91	20.85	20.69	20.88	20.61	20.85	20.89	20.87	18.17	18.34
70.	31.10	31.35	31.48	31.56	31.51	20.83	20.89	20.77	20.79	20.86	20.82	20.78	20.66	20.80	20.55	20.79	20.83	20.81	18.10	18.24
72.	31.08	31.33	31.46	31.54	31.51	20.77	20.81	20.65	20.70	20.78	20.76	20.70	20.54	20.71	20.47	20.70	20.74	20.72	18.00	18.16
74.	31.12	31.39	31.52	31.56	31.51	20.69	20.75	20.60	20.65	20.72	20.71	20.62	20.48	20.68	20.32	20.56	20.63	20.56	17.83	17.94
76.	31.10	31.33	31.48	31.52	31.49	20.60	20.66	20.51	20.59	20.63	20.59	20.54	20.42	20.58	20.26	20.47	20.51	20.49	17.77	17.88
78.	31.10	31.33	31.48	31.52	31.51	20.54	20.57	20.42	20.50	20.54	20.50	20.46	20.36	20.58	20.17	20.41	20.45	20.46	17.70	17.77
80.	31.12	31.33	31.48	31.54	31.53	20.42	20.51	20.36	20.41	20.49	20.42	20.40	20.28	20.44	20.08	20.35	20.39	20.34	17.66	17.67
82.	31.12	31.37	31.54	31.56	31.53	20.39	20.48	20.31	20.35	20.43	20.36	20.32	20.25	20.38	20.02	20.29	20.33	20.28	17.49	17.57
84.	31.12	31.39	31.52	31.54	31.51	20.27	20.40	20.22	20.30	20.34	20.27	20.26	20.13	20.32	19.96	20.20	20.24	20.22	17.36	17.43
86.	31.10	31.37	31.50	31.56	31.51	20.18	20.31	20.13	20.21	20.25	20.15	20.19	20.10	20.22	19.87	20.14	20.15	20.16	17.25	17.36
88.	31.10	31.35	31.50	31.54	31.49	20.18	20.22	20.04	20.12	20.16	20.09	20.12	20.04	20.16	19.81	20.08	20.09	20.10	17.15	17.23
90.	31.08	31.37	31.50	31.52	31.49	20.03	20.13	19.95	20.03	20.07	20.00	20.05	19.98	20.07	19.75	20.01	20.00	20.01	17.04	17.12
92.	31.10	31.39	31.52	31.56	31.53	20.00	20.10	19.89	19.97	20.01	19.94		19.92	20.01						

Table 9-3 Measured blowing fractions, F

x in.	120571-1	090171-2	090371-3	092271-5	122271-2	122771-3	121671-3	122971-1	121171-3	010372-1	111571-1	091771-2	111771-3	101171-2	112871-1	102171-1	021572-5
	0.00103	0.00200	0.00375	0.00806	-0.00399	-0.1176	-0.00199	-0.00169	-0.00033	-0.00101	0.00099	0.00099	0.00200	0.00200	0.00399	0.00399	-0.00201
2.	0.00101	0.00201	0.00376	0.00803	-0.00399	-0.1079	-0.00200	-0.00161	-0.00038	-0.00095	0.00097	0.00099	0.00192	0.00201	0.00383	0.00402	-0.00190
6.	0.00101	0.00200	0.00375	0.00801	-0.00398	-0.0967	-0.00198	-0.00178	-0.00033	-0.00090	0.00092	0.00099	0.00181	0.00201	0.00360	0.00402	-0.00177
10.	0.00100	0.00199	0.00373	0.00800	-0.00397	-0.0888	-0.00199	-0.00171	-0.00037	-0.00085	0.00086	0.00100	0.00173	0.00202	0.00343	0.00401	-0.00167
14.	0.00100	0.00201	0.00376	0.00807	-0.00400	-0.0831	-0.00199	-0.00165	-0.00038	-0.00083	0.00083	0.00101	0.00168	0.00202	0.00333	0.00403	-0.00159
18.	0.00101	0.00200	0.00375	0.00809	-0.00399	-0.0784	-0.00199	-0.00159	-0.00038	-0.00079	0.00081	0.00100	0.00161	0.00201	0.00322	0.00402	-0.00156
22.	0.00101	0.00200	0.00375	0.00802	-0.00399	-0.0746	-0.00198	-0.00156	-0.00037	-0.00078	0.00079	0.00098	0.00157	0.00202	0.00313	0.00401	-0.00152
26.	0.00102	0.00201	0.00375	0.00806	-0.00400	-0.0716	-0.00200	-0.00152	-0.00039	-0.00076	0.00077	0.00101	0.00155	0.00201	0.00305	0.00400	-0.00151
30.	0.00100	0.00200	0.00375	0.00806	-0.00400	-0.0691	-0.00199	-0.00149	-0.00038	-0.00075	0.00076	0.00100	0.00152	0.00202	0.00300	0.00400	-0.00146
34.	0.00105	0.00200	0.00375	0.00807	-0.00399	-0.0669	-0.00200	-0.00148	-0.00038	-0.00074	0.00075	0.00100	0.00149	0.00202	0.00294	0.00401	-0.00144
38.	0.00105	0.00201	0.00376	0.00804	-0.00400	-0.0651	-0.00199	-0.00145	-0.00038	-0.00073	0.00074	0.00099	0.00145	0.00202	0.00286	0.00402	-0.00143
42.	0.00103	0.00200	0.00376	0.00807	-0.00401	-0.0634	-0.00199	-0.00142	-0.00038	-0.00072	0.00072	0.00098	0.00144	0.00201	0.00282	0.00402	-0.00142
46.	0.00101	0.00200	0.00375	0.00810	-0.00401	-0.0616	-0.00198	-0.00141	-0.00038	-0.00070	0.00071	0.00099	0.00138	0.00202	0.00280	0.00400	-0.00139
50.	0.00105	0.00201	0.00375	0.00806	-0.00399	-0.0602	-0.00199	-0.00145	-0.00038	-0.00071	0.00069	0.00099	0.00139	0.00202	0.00275	0.00401	-0.00138
54.	0.00102	0.00200	0.00375	0.00804	-0.00399	-0.0590	-0.00199	-0.00138	-0.00038	-0.00068	0.00069	0.00100	0.00138	0.00202	0.00273	0.00400	-0.00136
58.	0.00105	0.00200	0.00374	0.00807	-0.00398	-0.0580	-0.00199	-0.00138	-0.00038	-0.00068	0.00069	0.00100	0.00136	0.00202	0.00270	0.00401	-0.00133
62.	0.00103	0.00200	0.00375	0.00809	-0.00400	-0.0567	-0.00199	-0.00134	-0.00038	-0.00067	0.00067	0.00101	0.00135	0.00200	0.00266	0.00399	-0.00132
66.	0.00105	0.00200	0.00375	0.00803	-0.00399	-0.0559	-0.00197	-0.00132	-0.00038	-0.00066	0.00067	0.00098	0.00133	0.00200	0.00263	0.00400	-0.00131
70.	0.00107	0.00200	0.00375	0.00806	-0.00398	-0.0548	-0.00197	-0.00132	-0.00037	-0.00066	0.00066	0.00100	0.00132	0.00201	0.00261	0.00401	-0.00130
74.	0.00105	0.00201	0.00375	0.00811	-0.00398	-0.0538	-0.00198	-0.00130	-0.00037	-0.00066	0.00065	0.00100	0.00131	0.00202	0.00260	0.00401	-0.00130
78.	0.00105	0.00199	0.00375	0.00804	-0.00399	-0.0531	-0.00199	-0.00129	-0.00038	-0.00065	0.00065	0.00100	0.00131	0.00201	0.00257	0.00400	-0.00130
82.	0.00102	0.00200	0.00376	0.00803	-0.00399	-0.0522	-0.00199	-0.00129	-0.00037	-0.00066	0.00065	0.00099	0.00129	0.00201	0.00256	0.00399	-0.00129
86.	0.00104	0.00200	0.00376	0.00805	-0.00401	-0.0516	-0.00199	-0.00126	-0.00038	-0.00065	0.00064	0.00101	0.00128	0.00201	0.00252	0.00398	-0.00128
90.	0.00106	0.00199	0.00375	0.00806	-0.00399	-0.0510	-0.00199	-0.00127	-0.00038	-0.00064	0.00064						

9.1 Constant Pressure, m = 0

RUN: 120771-1 NU= 0.159E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	31.21	0.139E-08	0.00000	535.	0.00249	-0.000	0.000	-0.000	7.00	
2	10.	31.13	0.123E-08	0.00000	849.	0.00222	-0.001	0.000	-0.001	6.91	
3	22.	31.14	0.926E-09	0.00000	1251.	0.00202	-0.001	0.000	-0.001	7.20	
4	34.	31.05	0.563E-09	0.00000	1588.	0.00190	-0.001	0.000	-0.001	7.07	24.0
5	46.	31.04	0.138E-09	0.00000	1926.	0.00181	-0.000	0.000	-0.000	7.20	24.0
6	58.	31.13	-0.351E-09	0.00000	2240.	0.00174	0.001	0.000	0.001	7.22	24.0
7	70.	31.04	-0.902E-09	0.00000	2574.	0.00168	0.002	0.000	0.002	7.25	24.0
8	82.	31.07	-0.152E-08	0.00000	2919.	0.00163	0.004	0.000	0.004	7.22	24.0
9	90.	31.06	-0.196E-08	0.00000	3093.	0.00161	0.005	0.000	0.005	7.17	

RUN: 100571-1 NU= 0.164E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	30.95	0.489E-08	0.00103	525.	0.00217	-0.002	0.475	0.473	7.80	
2	10.	30.28	0.303E-08	0.00101	802.	0.00193	-0.002	0.524	0.522	8.34	
3	22.	32.15	0.796E-09	0.00101	1623.	0.00157	-0.001	0.645	0.644	8.79	
4	34.	30.51	-0.760E-09	0.00100	1878.	0.00150	0.001	0.666	0.668	8.55	19.8
5	46.	31.28	-0.164E-08	0.00103	2404.	0.00138	0.004	0.744	0.748	9.05	19.6
6	58.	31.17	-0.186E-08	0.00102	2857.	0.00132	0.006	0.775	0.781	9.08	19.5
7	70.	31.10	-0.139E-08	0.00105	3326.	0.00125	0.006	0.842	0.848	9.34	19.3
8	82.	31.18	-0.254E-09	0.00105	3776.	0.00120	0.001	0.877	0.878	9.40	19.3
9	90.	31.02	0.879E-09	0.00104	3996.	0.00118	-0.004	0.882	0.877	9.33	

RUN: 90171-2 NU= 0.167E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	31.66	-0.873E-09	0.00200	566.	0.00183	0.000	1.090	1.091	8.91	
2	10.	31.57	-0.109E-08	0.00200	1034.	0.00150	0.001	1.334	1.335	9.63	
3	22.	31.57	-0.113E-08	0.00200	1661.	0.00127	0.002	1.574	1.577	10.34	
4	34.	31.62	-0.945E-09	0.00200	2259.	0.00114	0.003	1.759	1.762	10.64	16.4
5	46.	31.48	-0.508E-09	0.00200	2843.	0.00104	0.002	1.915	1.917	11.20	16.2
6	58.	31.38	0.183E-09	0.00200	3384.	0.00098	-0.001	2.045	2.044	11.40	16.0
7	70.	31.33	0.113E-08	0.00200	3918.	0.00092	-0.007	2.163	2.156	11.54	15.9
8	82.	31.34	0.232E-08	0.00199	4450.	0.00088	-0.018	2.255	2.237	11.71	15.8
9	90.	31.28	0.326E-08	0.00200	4742.	0.00086	-0.027	2.330	2.303	11.69	

RUN: 90871-3 NU= 0.166E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	31.62	0.105E-08	0.00375	626.	0.00133	-0.001	2.829	2.828	11.20	
2	10.	31.34	0.851E-09	0.00375	1258.	0.00098	-0.002	3.809	3.807	13.26	
3	22.	31.52	0.570E-09	0.00375	2172.	0.00077	-0.003	4.897	4.894	15.03	
4	34.	31.50	0.306E-09	0.00375	3030.	0.00065	-0.002	5.761	5.758	16.25	11.5
5	46.	31.39	0.600E-10	0.00376	3863.	0.00057	-0.001	6.554	6.554	17.62	11.2
6	58.	31.40	-0.169E-09	0.00375	4700.	0.00052	0.003	7.226	7.228	18.21	10.9
7	70.	31.31	-0.380E-09	0.00375	5494.	0.00048	0.007	7.861	7.868	18.98	10.7
8	82.	30.94	-0.575E-09	0.00375	6173.	0.00045	0.013	8.381	8.395	19.32	10.6
9	90.	30.98	-0.694E-09	0.00376	6667.	0.00043	0.018	8.802	8.820	19.38	

RUN: 92271-5 NU= 0.165E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G
1	2.	31.44	0.347E-08	0.00801	750.	0.00106	-0.004	7.557	7.552	13.73
2	10.	31.47	0.228E-08	0.00796	1783.	0.00031	-0.026	25.492	25.466	28.21
3	22.	31.46	0.762E-09	0.00804	3349.	0.00020	-0.026	40.032	40.005	36.45
4	34.	31.45	-0.417E-09	0.00801	4876.	0.00016	0.026	49.745	49.771	40.85
5	46.	31.51	-0.126E-08	0.00802	6340.	0.00014	0.118	57.014	57.132	43.77
6	58.	31.51	-0.178E-08	0.00798	7830.	0.00013	0.220	61.801	62.021	44.89
7	70.	31.48	-0.196E-08	0.00798	9327.	0.00012	0.305	65.634	65.939	45.98
8	82.	31.47	-0.181E-08	0.00799	10787.	0.00012	0.335	68.401	68.736	46.33

9.2 Weak Adverse Pressure Gradient, m = -.15

RUN: 122271-2 NU= 0.161E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.32	-0.446E-06	-0.00399	451.	0.00397	0.073	-1.006	-0.933	4.84	
2	10.	26.81	-0.838E-06	-0.00398	557.	0.00380	0.174	-1.046	-0.873	4.75	
3	22.	24.29	-0.468E-06	-0.00399	662.	0.00383	0.111	-1.041	-0.929	4.43	
4	34.	22.95	-0.335E-06	-0.00400	712.	0.00381	0.084	-1.050	-0.966	4.13	60.4
5	46.	22.07	-0.263E-06	-0.00401	761.	0.00379	0.070	-1.059	-0.989	4.04	62.5
6	58.	21.45	-0.218E-06	-0.00399	773.	0.00377	0.059	-1.059	-1.000	3.99	63.1
7	70.	20.77	-0.187E-06	-0.00399	788.	0.00376	0.051	-1.061	-1.010	3.74	63.9
8	82.	20.38	-0.164E-06	-0.00399	814.	0.00375	0.046	-1.065	-1.018	3.81	64.6
9	90.	20.14	-0.160E-06	-0.00401	822.	0.00375	0.045	-1.068	-1.023	3.63	

RUN: 122771-3 NU= 0.161E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.29	-0.445E-06	-0.00399	469.	0.00389	0.078	-1.027	-0.948	5.05	
2	10.	26.80	-0.836E-06	-0.00360	567.	0.00369	0.184	-0.976	-0.792	4.97	
3	22.	24.29	-0.465E-06	-0.00322	720.	0.00340	0.137	-0.946	-0.809	4.86	
4	34.	22.97	-0.331E-06	-0.00300	843.	0.00322	0.118	-0.930	-0.813	4.68	43.6
5	46.	21.99	-0.257E-06	-0.00287	970.	0.00310	0.110	-0.926	-0.815	4.89	43.2
6	58.	21.30	-0.210E-06	-0.00276	1047.	0.00301	0.099	-0.916	-0.817	4.81	42.6
7	70.	20.77	-0.176E-06	-0.00268	1167.	0.00293	0.054	-0.915	-0.821	4.66	42.3
8	82.	20.35	-0.151E-06	-0.00259	1258.	0.00286	0.089	-0.907	-0.818	4.74	41.7
9	90.	20.01	-0.144E-06	-0.00256	1314.	0.00282	0.089	-0.906	-0.818	4.59	

RUN: 121671-3 NU= 0.158E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.30	-0.441E-06	-0.00199	510.	0.00323	0.104	-0.617	-0.512	5.86	
2	10.	26.95	-0.826E-06	-0.00198	741.	0.00282	0.322	-0.703	-0.381	6.13	
3	22.	24.58	-0.457E-06	-0.00199	1070.	0.00264	0.270	-0.755	-0.485	6.09	
4	34.	23.21	-0.325E-06	-0.00200	1285.	0.00256	0.230	-0.780	-0.550	5.74	34.0
5	46.	22.11	-0.253E-06	-0.00199	1482.	0.00250	0.210	-0.795	-0.585	5.74	34.8
6	58.	21.55	-0.210E-06	-0.00199	1642.	0.00246	0.192	-0.808	-0.616	5.48	35.3
7	70.	20.95	-0.182E-06	-0.00197	1797.	0.00242	0.184	-0.814	-0.630	5.40	35.5
8	82.	20.50	-0.166E-06	-0.00199	1956.	0.00240	0.184	-0.830	-0.646	5.40	36.0
9	90.	20.21	-0.166E-06	-0.00199	2065.	0.00238	0.194	-0.837	-0.643	5.27	

RUN: 122971-1 NU= 0.159E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.20	-0.440E-06	-0.00199	504.	0.00320	0.104	-0.623	-0.519	5.88	
2	10.	26.91	-0.826E-06	-0.00178	752.	0.00275	0.335	-0.647	-0.312	6.20	
3	22.	24.38	-0.460E-06	-0.00159	1089.	0.00244	0.298	-0.650	-0.352	6.34	
4	34.	23.00	-0.328E-06	-0.00149	1353.	0.00231	0.275	-0.645	-0.371	6.25	30.2
5	46.	21.97	-0.257E-06	-0.00142	1592.	0.00221	0.263	-0.642	-0.379	6.32	30.3
6	58.	21.27	-0.211E-06	-0.00138	1801.	0.00215	0.248	-0.643	-0.396	6.15	30.5
7	70.	20.68	-0.179E-06	-0.00132	2010.	0.00208	0.242	-0.635	-0.394	6.23	30.4
8	82.	20.26	-0.155E-06	-0.00129	2226.	0.00203	0.237	-0.636	-0.400	6.24	30.5
9	90.	19.91	-0.149E-06	-0.00128	2316.	0.00201	0.237	-0.637	-0.400	6.16	

RUN: 121171-3 NU= 0.160E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.35	-0.445E-06	-0.00099	514.	0.00294	0.120	-0.336	-0.217	6.47	
2	10.	26.89	-0.832E-06	-0.00099	826.	0.00244	0.425	-0.406	0.018	6.80	
3	22.	24.35	-0.461E-06	-0.00098	1253.	0.00212	0.407	-0.463	-0.056	7.14	
4	34.	22.94	-0.326E-06	-0.00098	1560.	0.00203	0.369	-0.484	-0.115	7.09	26.9
5	46.	21.98	-0.254E-06	-0.00099	1871.	0.00196	0.353	-0.505	-0.153	7.05	27.5
6	58.	21.29	-0.210E-06	-0.00098	2093.	0.00191	0.330	-0.512	-0.183	6.93	27.8
7	70.	20.73	-0.181E-06	-0.00098	2332.	0.00187	0.321	-0.523	-0.202	6.90	28.1
8	82.	20.28	-0.165E-06	-0.00098	2573.	0.00184	0.325	-0.533	-0.208	6.75	28.3
9	90.	19.96	-0.165E-06	-0.00098	2774.	0.00181	0.354	-0.541	-0.187	6.72	

RUN: 10372-1 NU= 0.161E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.27	-0.433E-06	-0.00100	515.	0.00293	0.116	-0.341	-0.225	6.35	
2	10.	26.94	-0.821E-06	-0.00090	841.	0.00238	0.438	-0.378	0.060	6.93	
3	22.	24.43	-0.455E-06	-0.00079	1271.	0.00204	0.427	-0.388	0.039	7.44	
4	34.	23.06	-0.325E-06	-0.00074	1624.	0.00191	0.408	-0.388	0.020	7.38	25.5
5	46.	22.12	-0.256E-06	-0.00071	1973.	0.00182	0.409	-0.390	0.019	7.52	25.8
6	58.	21.50	-0.212E-06	-0.00069	2262.	0.00176	0.396	-0.392	0.004	7.43	26.0
7	70.	20.94	-0.180E-06	-0.00067	2545.	0.00171	0.388	-0.392	-0.004	7.46	26.1
8	82.	20.50	-0.156E-06	-0.00065	2780.	0.00167	0.373	-0.389	-0.017	7.41	26.2
9	90.	20.16	-0.148E-06	-0.00064	2946.	0.00164	0.379	-0.389	-0.010	7.43	

RUN: 71571-5 NU= 0.166E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.69	-0.460E-06	0.00000	532.	0.00271	0.141	0.000	0.141	6.89	
2	10.	26.93	-0.867E-06	0.00000	971.	0.00198	0.674	0.000	0.674	8.29	
3	22.	24.57	-0.485E-06	0.00000	1528.	0.00169	0.686	0.000	0.686	8.77	
4	34.	23.26	-0.348E-06	0.00000	1986.	0.00153	0.696	0.000	0.696	8.96	21.4
5	46.	22.27	-0.274E-06	0.00000	2434.	0.00145	0.708	0.000	0.708	9.23	21.7
6	58.	21.36	-0.228E-06	0.00000	2781.	0.00140	0.685	0.000	0.685	9.10	22.0
7	70.	20.74	-0.196E-06	0.00000	3177.	0.00136	0.693	0.000	0.693	9.19	22.2
8	82.	20.35	-0.174E-06	0.00000	3495.	0.00133	0.685	0.000	0.685	9.08	22.3
9	90.	20.05	-0.170E-06	0.00000	3681.	0.00131	0.712	0.000	0.712	9.09	

RUN: 111571-1 NU= 0.161E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.39	-0.444E-06	0.00099	563.	0.00249	0.160	0.397	0.557	7.48	
2	10.	26.52	-0.843E-06	0.00092	1100.	0.00176	0.865	0.523	1.387	9.31	
3	22.	24.26	-0.469E-06	0.00081	1785.	0.00144	0.968	0.563	1.510	10.19	
4	34.	22.90	-0.336E-06	0.00076	2344.	0.00118	1.066	0.643	1.709	10.91	17.8
5	46.	21.98	-0.265E-06	0.00072	2910.	0.00112	1.103	0.643	1.746	11.22	18.2
6	58.	21.19	-0.218E-06	0.00070	3345.	0.00108	1.072	0.648	1.720	11.25	18.5
7	70.	20.61	-0.184E-06	0.00067	3788.	0.00105	1.046	0.638	1.684	11.26	18.8
8	82.	20.23	-0.156E-06	0.00065	4225.	0.00102	1.002	0.636	1.637	11.14	19.0
9	90.	20.09	-0.145E-06	0.00064	4506.	0.00101	1.006	0.636	1.642	11.17	

RUN: 91771-2 NU= 0.166E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.49	-0.467E-06	0.00099	555.	0.00249	0.167	0.398	0.564	7.52	
2	10.	26.89	-0.872E-06	0.00099	1090.	0.00173	0.908	0.572	1.480	9.50	
3	22.	24.30	-0.490E-06	0.00100	1785.	0.00138	1.055	0.725	1.780	10.75	
4	34.	22.87	-0.352E-06	0.00100	2395.	0.00109	1.271	0.917	2.189	11.86	16.7
5	46.	21.80	-0.276E-06	0.00099	2959.	0.00102	1.313	0.971	2.284	12.21	16.9
6	58.	21.41	-0.227E-06	0.00099	3548.	0.00096	1.364	1.032	2.396	12.41	17.0
7	70.	21.13	-0.193E-06	0.00101	4095.	0.00091	1.411	1.114	2.525	12.69	17.0
8	82.	20.36	-0.169E-06	0.00100	4544.	0.00088	1.403	1.139	2.542	12.71	17.2
9	90.	20.16	-0.164E-06	0.00099	4911.	0.00086	1.502	1.154	2.656	12.80	

RUN: 111771-3 NU= 0.160E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.26	-0.452E-06	0.00200	587.	0.00230	0.187	0.871	1.059	8.00	
2	10.	26.59	-0.847E-06	0.00181	1219.	0.00150	1.165	1.207	2.372	10.56	
3	22.	24.11	-0.472E-06	0.00161	2062.	0.00108	1.542	1.491	3.032	12.64	
4	34.	22.78	-0.336E-06	0.00152	2758.	0.00087	1.806	1.751	3.557	13.88	14.5
5	46.	21.79	-0.263E-06	0.00145	3412.	0.00082	1.853	1.768	3.621	14.30	14.8
6	58.	20.96	-0.218E-06	0.00139	3973.	0.00079	1.820	1.757	3.576	14.17	15.2
7	70.	20.46	-0.188E-06	0.00135	4544.	0.00076	1.839	1.769	3.607	14.16	15.4
8	82.	20.00	-0.169E-06	0.00131	5097.	0.00074	1.897	1.765	3.662	14.25	15.5
9	90.	19.73	-0.168E-06	0.00129	5471.	0.00073	2.053	1.771	3.825	14.28	

RUN: 101371-2 NU= 0.164E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.77	-0.454E-06	0.00200	591.	0.00228	0.189	0.877	1.067	7.94	
2	10.	27.05	-0.855E-06	0.00201	1213.	0.00152	1.164	1.322	2.486	10.60	
3	22.	24.64	-0.477E-06	0.00201	2081.	0.00103	1.675	1.951	3.626	13.23	
4	34.	23.31	-0.342E-06	0.00202	2855.	0.00078	2.185	2.603	4.788	15.23	12.9
5	46.	22.36	-0.268E-06	0.00202	3585.	0.00071	2.361	2.860	5.220	15.95	12.9
6	58.	21.53	-0.222E-06	0.00202	4222.	0.00066	2.448	3.064	5.512	16.33	12.9
7	70.	20.97	-0.189E-06	0.00200	4877.	0.00062	2.524	3.205	5.729	16.60	12.9
8	82.	20.62	-0.165E-06	0.00202	5576.	0.00058	2.657	3.457	6.114	16.85	12.8
9	90.	20.43	-0.159E-06	0.00201	6015.	0.00057	2.840	3.543	6.383	17.06	

RUN: 112871-1 NU= 0.163E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.49	-0.445E-06	0.00399	641.	0.00194	0.248	2.057	2.305	9.25	
2	10.	26.66	-0.844E-06	0.00360	1431.	0.00071	3.148	5.070	8.218	17.25	
3	22.	24.18	-0.469E-06	0.00322	2549.	0.00056	4.077	5.745	9.822	20.14	
4	34.	22.85	-0.336E-06	0.00300	3546.	0.00051	4.435	5.882	10.317	20.95	9.2
5	46.	21.77	-0.265E-06	0.00286	4425.	0.00048	4.596	5.972	10.568	21.35	9.5
6	58.	21.04	-0.220E-06	0.00275	5258.	0.00046	4.668	6.020	10.687	21.40	9.8
7	70.	20.55	-0.187E-06	0.00266	6046.	0.00044	4.663	6.039	10.702	21.42	10.0
8	82.	20.13	-0.162E-06	0.00260	6870.	0.00042	4.684	6.152	10.836	21.29	10.2
9	90.	19.81	-0.155E-06	0.00256	7331.	0.00042	4.867	6.161	11.028	21.50	

RUN: 102171-1 NU= 0.162E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.71	-0.455E-06	0.00399	639.	0.00194	0.251	2.052	2.303	9.17	
2	10.	27.02	-0.850E-06	0.00402	1472.	0.00073	3.179	5.507	8.685	17.06	
3	22.	24.57	-0.470E-06	0.00402	2757.	0.00042	6.117	9.502	15.620	24.27	
4	34.	23.18	-0.331E-06	0.00400	3891.	0.00035	7.333	11.296	18.628	26.78	6.0
5	46.	22.13	-0.255E-06	0.00402	4986.	0.00031	8.252	12.985	21.237	28.55	5.9
6	58.	21.46	-0.209E-06	0.00401	6040.	0.00028	8.947	14.218	23.165	29.76	5.8
7	70.	20.97	-0.179E-06	0.00399	7146.	0.00026	9.625	15.250	24.875	30.42	5.7
8	82.	20.48	-0.160E-06	0.00400	8207.	0.00025	10.301	16.287	26.588	30.69	5.7
9	90.	20.27	-0.160E-06	0.00399	8785.	0.00024	11.319	16.686	28.005	31.08	

9.3 Strong Adverse Pressure Gradient, m = -.20

RUN: 110971-1 NU= 0.161E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.13	-0.699E-06	0.00000	541.	0.00269	0.219	0.000	0.219	6.93	
2	10.	25.70	-0.127E-05	0.00000	1024.	0.00174	1.201	0.000	1.201	9.05	
3	22.	22.31	-0.702E-06	0.00000	1727.	0.00129	1.559	0.000	1.559	11.05	
4	34.	20.53	-0.504E-06	0.00000	2331.	0.00119	1.626	0.000	1.626	11.43	19.1
5	46.	19.39	-0.396E-06	0.00000	2845.	0.00114	1.630	0.000	1.630	11.62	19.8
6	58.	18.55	-0.328E-06	0.00000	3269.	0.00110	1.577	0.000	1.577	11.48	20.2
7	70.	17.97	-0.282E-06	0.00000	3673.	0.00107	1.547	0.000	1.547	11.39	20.5
8	82.	17.42	-0.249E-06	0.00000	4139.	0.00103	1.575	0.000	1.575	11.43	20.7
9	90.	17.10	-0.242E-06	0.00000	4578.	0.00101	1.750	0.000	1.750	11.72	

RUN: 21572-5 NU= 0.160E-03

N	X	UI	K	F	RD2	CF/2	BETA	B	BETA+B	G	A^+
1	2.	29.42	-0.685E-06	-0.00201	519.	0.00276	0.194	-0.728	-0.535	6.37	
2	10.	26.05	-0.125E-05	-0.00177	801.	0.00246	0.611	-0.720	-0.109	6.72	
3	22.	22.55	-0.690E-06	-0.00159	1250.	0.00221	0.590	-0.719	-0.129	7.20	
4	34.	20.69	-0.499E-06	-0.00151	1608.	0.00208	0.571	-0.726	-0.155	7.12	28.8
5	46.	19.49	-0.396E-06	-0.00143	1911.	0.00198	0.565	-0.722	-0.158	7.25	29.2
6	58.	18.73	-0.330E-06	-0.00138	2121.	0.00193	0.524	-0.715	-0.191	7.01	29.5
7	70.	18.10	-0.283E-06	-0.00132	2381.	0.00186	0.518	-0.710	-0.192	6.96	29.5
8	82.	17.53	-0.246E-06	-0.00130	2619.	0.00182	0.505	-0.714	-0.210	7.00	29.8
9	90.	17.02	-0.236E-06	-0.00129	2860.	0.00179	0.542	-0.721	-0.178	7.20	

RUN: 120771-1 X= 2. Z= 0.

UI = 31.21 D1 = 0.0504 BETA=-0.000 RD2 = 535.
CF/2= 0.00249 D2 = 0.0328 B = 0.000 H = 1.538
F = 0.00000 DC = 1.0089 P+ =-0.0000 G = 7.002
K = 0.139E-08 D99 = 0.2871 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	5.81	0.0043	0.186	-16.29	3.5	3.73	0.002180
0.005	6.52	0.0053	0.209	-15.84	4.3	4.18	0.002067
0.006	7.41	0.0062	0.237	-15.27	5.1	4.75	0.001955
0.007	8.25	0.0072	0.264	-14.73	6.0	5.29	0.001808
0.008	9.21	0.0082	0.295	-14.11	6.8	5.91	0.001835
0.010	11.25	0.0102	0.361	-12.80	8.4	7.22	0.001665
0.012	12.75	0.0122	0.408	-11.84	10.0	8.18	0.001650
0.014	14.37	0.0142	0.461	-10.80	11.7	9.22	0.001209
0.016	15.47	0.0162	0.496	-10.10	13.3	9.93	0.001098
0.018	16.51	0.0181	0.529	-9.43	14.9	10.59	0.000848
0.020	17.11	0.0201	0.548	-9.05	16.6	10.97	0.000698
0.023	18.15	0.0231	0.582	-8.38	19.0	11.64	0.000560
0.026	18.91	0.0261	0.606	-7.89	21.5	12.13	0.000470
0.029	19.55	0.0290	0.626	-7.48	23.9	12.54	0.000406
0.033	20.27	0.0330	0.649	-7.02	27.2	13.00	0.000352
0.038	21.15	0.0380	0.678	-6.45	31.3	13.57	0.000270
0.044	21.79	0.0439	0.698	-6.04	36.2	13.98	0.000219
0.052	22.57	0.0518	0.723	-5.54	42.7	14.48	0.000175
0.062	23.31	0.0617	0.747	-5.07	50.8	14.95	0.000142
0.072	23.98	0.0717	0.768	-4.64	59.0	15.38	0.000124
0.087	24.85	0.0865	0.796	-4.08	71.2	15.94	0.000106
0.102	25.60	0.1014	0.820	-3.60	83.5	16.42	0.000095
0.117	26.27	0.1163	0.842	-3.17	95.7	16.85	0.000086
0.137	27.12	0.1361	0.869	-2.63	112.1	17.40	0.000077
0.157	27.91	0.1559	0.894	-2.12	128.4	17.91	0.000068
0.182	28.72	0.1807	0.920	-1.60	148.8	18.42	0.000057
0.207	29.45	0.2055	0.944	-1.13	169.2	18.89	0.000046
0.247	30.32	0.2451	0.971	-0.57	201.8	19.45	0.000030
0.287	30.90	0.2848	0.990	-0.20	234.5	19.82	0.000018
0.332	31.16	0.3294	0.998	-0.04	271.2	19.99	0.000008
0.382	31.22	0.3789	1.000	0.01	312.0	20.03	0.000001
0.432	31.21	0.4285	1.000	0.00	352.8	20.02	0.000000

RUN: 120771-1 X=10. Z= 0.

UI = 31.13 D1 = 0.0772 BETA=-0.001 RD2 = 849.
CF/2= 0.00222 D2 = 0.0521 B = 0.000 H = 1.484
F = 0.00000 DC = 1.6383 P+ =-0.0000 G = 6.913
K = 0.123E-08 D99 = 0.4225 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	6.66	0.0031	0.214	-16.67	3.8	4.53	0.00222	0.002155
0.006	7.53	0.0037	0.242	-16.08	4.6	5.13	0.00222	0.001986
0.007	8.54	0.0043	0.274	-15.39	5.4	5.82	0.00222	0.001817
0.008	9.48	0.0049	0.304	-14.75	6.1	6.45	0.00222	0.001592
0.009	10.20	0.0055	0.328	-14.26	6.9	6.95	0.00222	0.001484
0.011	11.59	0.0067	0.372	-13.31	8.5	7.90	0.00222	0.001217
0.013	12.75	0.0079	0.410	-12.52	10.0	8.69	0.00221	0.001026
0.015	13.74	0.0092	0.441	-11.85	11.5	9.36	0.00221	0.000866
0.017	14.56	0.0104	0.468	-11.29	13.1	9.92	0.00221	0.000745
0.020	15.64	0.0122	0.502	-10.55	15.4	10.66	0.00220	0.000612
0.023	16.37	0.0140	0.526	-10.06	17.7	11.15	0.00219	0.000509
0.027	17.33	0.0165	0.557	-9.46	20.8	11.81	0.00218	0.000405
0.033	18.55	0.0201	0.596	-8.67	25.4	12.63	0.00217	0.000303
0.041	19.52	0.0250	0.627	-7.91	31.5	13.30	0.00215	0.000222
0.051	20.32	0.0311	0.653	-7.37	39.2	13.84	0.00211	0.000162
0.063	21.26	0.0385	0.683	-6.72	48.4	14.49	0.00207	0.000123
0.078	21.98	0.0476	0.706	-6.24	59.9	14.97	0.00201	0.000099
0.093	22.71	0.0568	0.729	-5.74	71.5	15.47	0.00194	0.000088
0.113	23.42	0.0690	0.752	-5.25	86.8	15.95	0.00184	0.000077
0.133	24.18	0.0812	0.777	-4.74	102.2	16.47	0.00174	0.000071
0.158	25.08	0.0964	0.806	-4.12	121.4	17.09	0.00159	0.000065
0.198	26.30	0.1209	0.845	-3.29	152.2	17.92	0.00135	0.000058
0.238	27.43	0.1453	0.881	-2.52	182.9	18.69	0.00110	0.000050
0.278	28.44	0.1697	0.913	-1.83	213.7	19.37	0.00086	0.000042
0.318	29.33	0.1941	0.942	-1.23	244.4	19.98	0.00064	0.000034
0.373	30.24	0.2277	0.971	-0.60	286.7	20.60	0.00041	0.000023
0.423	30.83	0.2582	0.990	-0.21	325.1	21.00	0.00027	0.000015
0.473	31.06	0.2887	0.998	-0.05	363.5	21.16	0.00019	0.000009
0.523	31.14	0.3192	1.000	0.01	402.0	21.22	0.00008	0.000003
0.598	31.15	0.3650	1.001	0.01	459.6	21.22	0.00000	-0.000002
0.673	31.13	0.4108	1.000	0.00	517.2	21.21	0.00000	0.000000

RUN: 120771-1 X=22. Z= 0.

UI = 31.14 D1 = 0.1135 BETA=-0.001 RD2 = 1251.
CF/2= 0.00202 D2 = 0.0768 B = 0.000 H = 1.478
F = 0.00000 DC = 2.3260 P+ =-0.0000 G = 7.201
K = 0.926E-09 D99 = 0.6242 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAL	TAULAM
0.005	4.74	0.0020	0.152	-18.87	3.7	3.39	0.00202	0.001489
0.006	4.94	0.0024	0.159	-18.73	4.4	3.53	0.00202	0.001416
0.007	5.57	0.0028	0.179	-18.28	5.1	3.98	0.00202	0.001342
0.008	6.28	0.0032	0.202	-17.77	5.9	4.49	0.00202	0.001334
0.009	6.96	0.0036	0.224	-17.29	6.6	4.98	0.00202	0.001453
0.011	8.32	0.0044	0.267	-16.32	8.1	5.95	0.00202	0.001397
0.013	9.96	0.0051	0.320	-15.14	9.5	7.12	0.00202	0.001266
0.015	11.21	0.0059	0.360	-14.25	11.0	8.01	0.00201	0.001129
0.017	12.38	0.0067	0.398	-13.41	12.4	8.85	0.00201	0.000990
0.019	13.22	0.0075	0.425	-12.81	13.9	9.45	0.00201	0.000843
0.022	14.48	0.0087	0.465	-11.91	16.1	10.35	0.00201	0.000662
0.025	15.38	0.0099	0.494	-11.27	18.3	11.00	0.00201	0.000525
0.028	16.14	0.0111	0.518	-10.72	20.5	11.54	0.00201	0.000435
0.032	16.74	0.0127	0.538	-10.29	23.4	11.97	0.00200	0.000336
0.037	17.52	0.0146	0.563	-9.73	27.1	12.53	0.00200	0.000265
0.043	18.30	0.0170	0.588	-9.18	31.5	13.08	0.00199	0.000209
0.051	18.98	0.0202	0.609	-8.69	37.3	13.57	0.00198	0.000165
0.061	19.75	0.0241	0.634	-8.14	44.7	14.12	0.00197	0.000127
0.076	20.46	0.0301	0.657	-7.63	55.6	14.63	0.00194	0.000096
0.096	21.32	0.0380	0.685	-7.02	70.3	15.24	0.00191	0.000076
0.116	22.02	0.0459	0.707	-6.52	84.9	15.74	0.00187	0.000065
0.141	22.75	0.0558	0.731	-6.00	103.2	16.27	0.00181	0.000057
0.171	23.52	0.0677	0.755	-5.45	125.2	16.82	0.00174	0.000051
0.206	24.40	0.0816	0.784	-4.82	150.8	17.45	0.00164	0.000047
0.256	25.48	0.1013	0.818	-4.04	187.5	18.22	0.00147	0.000042
0.306	26.50	0.1211	0.851	-3.31	224.1	18.95	0.00128	0.000039
0.356	27.52	0.1409	0.884	-2.59	260.7	19.68	0.00108	0.000035
0.406	28.36	0.1607	0.911	-1.99	297.3	20.28	0.00087	0.000030
0.456	29.15	0.1805	0.936	-1.42	333.9	20.84	0.00067	0.000026
0.531	30.12	0.2102	0.968	-0.72	388.8	21.54	0.00042	0.000018
0.606	30.75	0.2399	0.988	-0.28	443.7	21.99	0.00023	0.000011
0.681	31.05	0.2696	0.997	-0.06	498.6	22.20	0.00009	0.000006
0.756	31.14	0.2993	1.000	0.00	553.6	22.27	0.00000	0.000002
0.856	31.14	0.3389	1.000	0.00	626.8	22.26	0.00000	0.000000

RUN: 120771-1 X=34. Z= 0.

UI = 31.05 D1 = 0.1412 BETA=-0.001 RD2 = 1588.
CF/2= 0.00190 D2 = 0.0977 B = 0.000 H = 1.446
F = 0.00000 DC = 3.2389 P+ =-0.0000 G = 7.069
K = 0.563E-09 D99 = 0.7854 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	5.15	0.0017	0.166	-19.13	4.0	3.80	0.00190	0.001521
0.007	5.76	0.0020	0.185	-18.68	4.7	4.25	0.00190	0.001445
0.008	6.31	0.0023	0.203	-18.28	5.4	4.66	0.00190	0.001369
0.009	6.88	0.0027	0.222	-17.85	6.1	5.08	0.00190	0.001287
0.010	7.66	0.0030	0.246	-17.29	6.8	5.64	0.00190	0.001302
0.012	8.98	0.0036	0.289	-16.30	8.2	6.63	0.00190	0.001240
0.014	10.14	0.0042	0.327	-15.45	9.6	7.49	0.00190	0.001111
0.016	11.29	0.0048	0.364	-14.59	11.1	8.34	0.00190	0.000979
0.019	12.81	0.0057	0.413	-13.47	13.2	9.46	0.00190	0.000797
0.022	13.80	0.0067	0.444	-12.74	15.3	10.19	0.00190	0.000641
0.025	14.79	0.0076	0.476	-12.01	17.4	10.93	0.00189	0.000519
0.029	15.62	0.0088	0.503	-11.39	20.3	11.54	0.00189	0.000407
0.033	16.32	0.0101	0.526	-10.88	23.1	12.05	0.00189	0.000333
0.038	17.08	0.0116	0.550	-10.31	26.6	12.62	0.00188	0.000261
0.046	18.06	0.0141	0.582	-9.59	32.3	13.34	0.00188	0.000194
0.056	18.87	0.0172	0.608	-9.00	39.4	13.96	0.00187	0.000143
0.071	19.60	0.0218	0.631	-8.46	50.0	14.48	0.00185	0.000101
0.091	20.45	0.0280	0.659	-7.83	64.2	15.11	0.00183	0.000075
0.121	21.35	0.0372	0.688	-7.16	85.5	15.77	0.00180	0.000058
0.161	22.40	0.0496	0.721	-6.39	113.8	16.54	0.00176	0.000047
0.201	23.28	0.0619	0.750	-5.74	142.2	17.20	0.00168	0.000041
0.241	24.01	0.0743	0.773	-5.20	170.5	17.74	0.00161	0.000038
0.291	24.90	0.0897	0.802	-4.54	205.9	18.40	0.00151	0.000034
0.341	25.75	0.1052	0.829	-3.91	241.4	19.02	0.00139	0.000032
0.391	26.54	0.1206	0.855	-3.33	276.8	19.61	0.00126	0.000030
0.441	27.24	0.1360	0.877	-2.81	312.3	20.12	0.00112	0.000028
0.491	27.98	0.1515	0.901	-2.27	347.7	20.67	0.00097	0.000025
0.566	28.89	0.1746	0.931	-1.59	400.8	21.34	0.00074	0.000021
0.641	29.69	0.1978	0.956	-1.00	454.0	21.94	0.00052	0.000017
0.716	30.14	0.2209	0.971	-0.67	507.1	22.26	0.00032	0.000012
0.791	30.78	0.2441	0.991	-0.20	560.3	22.74	0.00019	0.000008
0.891	31.00	0.2750	0.999	-0.03	631.2	22.90	0.00006	0.000004
0.991	31.05	0.3058	1.000	0.00	702.0	22.94	0.00000	0.000001
1.091	31.05	0.3367	1.000	0.00	772.9	22.94	0.00000	0.000000

RUN: 120771-1 X=46. Z= 0.

UI = 31.04 D1 = 0.1709 BETA=-0.000 RD2 = 1926.
CF/2= 0.00181 D2 = 0.1185 B = 0.000 H = 1.442
F = 0.00000 DC = 4.0149 P+ =-0.0000 G = 7.199
K = 0.138E-09 D99 = 0.9590 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.01	0.0012	0.129	-20.46	3.5	3.03	0.00181	0.001456
0.006	4.57	0.0015	0.147	-20.04	4.1	3.46	0.00181	0.001424
0.007	5.27	0.0017	0.170	-19.51	4.8	3.99	0.00181	0.001393
0.008	6.04	0.0020	0.195	-18.92	5.5	4.58	0.00181	0.001355
0.009	6.62	0.0022	0.213	-18.48	6.2	5.01	0.00181	0.001351
0.011	8.06	0.0027	0.260	-17.40	7.6	6.10	0.00181	0.001228
0.013	9.18	0.0032	0.296	-16.55	9.0	6.95	0.00181	0.001092
0.015	10.34	0.0037	0.333	-15.67	10.4	7.82	0.00181	0.000973
0.018	11.71	0.0045	0.377	-14.63	12.4	8.86	0.00181	0.000790
0.021	12.84	0.0052	0.414	-13.78	14.5	9.72	0.00181	0.000658
0.024	13.79	0.0060	0.444	-13.06	16.6	10.44	0.00180	0.000544
0.028	14.66	0.0070	0.472	-12.41	19.4	11.09	0.00180	0.000429
0.033	15.75	0.0082	0.507	-11.57	22.8	11.92	0.00180	0.000328
0.039	16.58	0.0097	0.534	-10.94	27.0	12.55	0.00180	0.000250
0.047	17.35	0.0117	0.559	-10.36	32.5	13.13	0.00179	0.000186
0.059	18.23	0.0147	0.587	-9.69	40.8	13.80	0.00179	0.000128
0.074	19.08	0.0184	0.615	-9.05	51.2	14.44	0.00178	0.000094
0.094	19.88	0.0234	0.640	-8.45	65.0	15.04	0.00176	0.000073
0.119	20.56	0.0296	0.663	-7.93	82.3	15.57	0.00174	0.000058
0.149	21.30	0.0371	0.686	-7.37	103.1	16.13	0.00171	0.000048
0.199	22.44	0.0496	0.723	-6.51	137.6	16.99	0.00166	0.000039
0.249	23.32	0.0620	0.751	-5.84	172.2	17.65	0.00159	0.000034
0.299	24.14	0.0745	0.778	-5.22	206.8	18.28	0.00152	0.000031
0.349	24.85	0.0869	0.801	-4.69	241.4	18.81	0.00143	0.000028
0.399	25.53	0.0994	0.823	-4.17	276.0	19.33	0.00134	0.000027
0.474	26.51	0.1181	0.856	-3.43	327.8	20.07	0.00118	0.000024
0.549	27.41	0.1367	0.883	-2.75	379.7	20.75	0.00101	0.000022
0.624	28.22	0.1554	0.909	-2.14	431.6	21.36	0.00082	0.000020
0.699	28.94	0.1741	0.932	-1.59	483.5	21.90	0.00064	0.000017
0.799	29.81	0.1990	0.960	-0.93	552.6	22.57	0.00041	0.000013
0.899	30.51	0.2239	0.983	-0.40	621.8	23.09	0.00022	0.000009
0.999	30.88	0.2488	0.995	-0.12	691.0	23.37	0.00009	0.000005
1.099	31.03	0.2737	1.000	-0.01	760.1	23.49	0.00002	0.000003
1.199	31.06	0.2986	1.001	0.02	829.3	23.51	-0.00000	0.000001
1.299	31.07	0.3235	1.001	0.02	898.5	23.52	0.00000	-0.000001
1.424	31.04	0.3547	1.000	0.00	984.9	23.50	0.00000	0.000000

RUN: 120771-1 X=58. Z= 0.

UI = 31.13 D1 = 0.1968 BETA= 0.001 RD2 = 2240.
CF/2= 0.00174 D2 = 0.1379 B = 0.000 H = 1.432
F = 0.00000 DC = 4.7124 P+ = 0.0000 G = 7.219
K = -0.351E-09 D99 = 1.1065 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.72	0.0011	0.120	-21.08	3.4	2.86	0.00174	0.001234
0.006	3.96	0.0013	0.127	-20.90	4.1	3.04	0.00174	0.001214
0.007	4.37	0.0015	0.140	-20.58	4.8	3.36	0.00174	0.001195
0.008	5.04	0.0017	0.162	-20.07	5.4	3.88	0.00174	0.001182
0.009	5.56	0.0019	0.179	-19.67	6.1	4.28	0.00174	0.001289
0.011	7.10	0.0023	0.228	-18.48	7.5	5.46	0.00174	0.001276
0.013	8.24	0.0028	0.265	-17.60	8.8	6.34	0.00174	0.001221
0.015	9.45	0.0032	0.303	-16.68	10.2	7.27	0.00174	0.001121
0.017	10.67	0.0036	0.343	-15.74	11.6	8.20	0.00174	0.000990
0.019	11.85	0.0040	0.381	-14.83	12.9	9.12	0.00174	0.000890
0.021	12.56	0.0045	0.404	-14.28	14.3	9.66	0.00174	0.000759
0.023	13.19	0.0049	0.424	-13.80	15.7	10.15	0.00174	0.000622
0.026	14.21	0.0055	0.457	-13.01	17.7	10.93	0.00174	0.000485
0.029	14.77	0.0062	0.475	-12.58	19.7	11.37	0.00174	0.000409
0.033	15.36	0.0070	0.494	-12.13	22.5	11.82	0.00174	0.000329
0.037	16.07	0.0079	0.516	-11.59	25.2	12.36	0.00173	0.000262
0.042	16.76	0.0089	0.538	-11.06	28.6	12.89	0.00173	0.000219
0.047	17.22	0.0100	0.553	-10.70	32.0	13.25	0.00173	0.000186
0.056	17.80	0.0119	0.572	-10.25	38.1	13.69	0.00173	0.000136
0.066	18.50	0.0140	0.594	-9.72	44.9	14.23	0.00172	0.000105
0.081	19.17	0.0172	0.616	-9.20	55.1	14.75	0.00171	0.000081
0.106	19.98	0.0225	0.642	-8.57	72.1	15.37	0.00170	0.000060
0.131	20.61	0.0278	0.662	-8.09	89.2	15.85	0.00168	0.000049
0.181	21.66	0.0384	0.696	-7.28	123.2	16.66	0.00164	0.000038
0.231	22.49	0.0490	0.722	-6.65	157.2	17.30	0.00159	0.000033
0.281	23.30	0.0596	0.749	-6.02	191.3	17.93	0.00154	0.000029
0.331	23.99	0.0702	0.771	-5.49	225.3	18.45	0.00148	0.000027
0.406	24.95	0.0862	0.801	-4.75	276.3	19.19	0.00138	0.000025
0.481	25.83	0.1021	0.830	-4.07	327.4	19.87	0.00127	0.000022
0.581	26.91	0.1233	0.864	-3.25	395.5	20.70	0.00110	0.000020
0.681	27.94	0.1445	0.897	-2.46	463.5	21.49	0.00092	0.000017
0.806	28.98	0.1710	0.931	-1.65	548.6	22.29	0.00067	0.000014
0.956	30.13	0.2029	0.968	-0.77	650.7	23.17	0.00039	0.000009
1.106	30.82	0.2347	0.990	-0.24	752.8	23.70	0.00017	0.000006
1.306	31.14	0.2771	1.000	0.01	888.9	23.95	0.00003	0.000002
1.506	31.15	0.3196	1.001	0.01	1025.1	23.96	0.00000	0.000000
1.706	31.13	0.3620	1.000	0.00	1161.2	23.94	0.00000	0.000000

RUN: 120771-1 X=70. Z= 0.

UI = 31.04 D1 = 0.2255 BETA= 0.002 RD2 = 2574.
CF/2= 0.00168 D2 = 0.1584 B = 0.000 H = 1.424
F = 0.00000 DC = 5.4933 P+ = 0.0000 G = 7.249
K = -0.902E-09 D99 = 1.2755 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.14	0.0009	0.133	-21.11	3.3	3.25	0.00168	0.001389
0.006	4.19	0.0011	0.135	-21.08	4.0	3.29	0.00168	0.001384
0.007	4.75	0.0013	0.153	-20.63	4.7	3.73	0.00168	0.001380
0.008	5.45	0.0015	0.176	-20.09	5.3	4.28	0.00168	0.001350
0.009	6.48	0.0016	0.209	-19.27	6.0	5.09	0.00168	0.001458
0.011	7.89	0.0020	0.254	-18.17	7.3	6.19	0.00168	0.001369
0.013	9.10	0.0024	0.293	-17.22	8.7	7.14	0.00168	0.001092
0.015	10.26	0.0027	0.330	-16.32	10.0	8.05	0.00168	0.000969
0.017	11.09	0.0031	0.356	-15.69	11.3	8.68	0.00168	0.000780
0.019	11.73	0.0035	0.378	-15.16	12.7	9.21	0.00168	0.000663
0.022	12.66	0.0040	0.408	-14.43	14.7	9.94	0.00168	0.000543
0.025	13.45	0.0046	0.433	-13.81	16.7	10.55	0.00168	0.000472
0.029	14.17	0.0053	0.456	-13.24	19.3	11.12	0.00168	0.000394
0.033	15.04	0.0060	0.484	-12.56	22.0	11.80	0.00167	0.000318
0.038	15.86	0.0069	0.511	-11.92	25.4	12.44	0.00167	0.000255
0.043	16.43	0.0078	0.529	-11.47	28.7	12.90	0.00167	0.000211
0.053	17.06	0.0096	0.550	-10.97	35.4	13.39	0.00167	0.000142
0.063	17.77	0.0115	0.572	-10.42	42.0	13.94	0.00166	0.000106
0.078	18.52	0.0142	0.597	-9.83	52.0	14.54	0.00166	0.000081
0.103	19.14	0.0188	0.617	-9.34	68.7	15.02	0.00165	0.000061
0.128	19.90	0.0233	0.641	-8.75	85.4	15.61	0.00164	0.000049
0.178	20.67	0.0324	0.675	-7.91	118.7	16.46	0.00161	0.000039
0.228	21.84	0.0415	0.703	-7.22	152.1	17.14	0.00157	0.000033
0.303	22.93	0.0552	0.739	-6.37	202.1	18.00	0.00152	0.000027
0.378	23.92	0.0688	0.771	-5.59	252.2	18.77	0.00145	0.000024
0.453	24.66	0.0825	0.794	-5.01	302.2	19.35	0.00137	0.000022
0.553	25.78	0.1007	0.830	-4.13	368.9	20.23	0.00125	0.000020
0.653	26.74	0.1189	0.862	-3.37	435.6	20.99	0.00112	0.000018
0.753	27.59	0.1371	0.889	-2.71	502.3	21.65	0.00097	0.000016
0.853	28.37	0.1553	0.914	-2.10	569.1	22.27	0.00081	0.000014
1.003	29.49	0.1826	0.950	-1.22	669.1	23.14	0.00057	0.000011
1.153	30.29	0.2099	0.976	-0.59	769.2	23.77	0.00035	0.000007
1.303	30.83	0.2372	0.993	-0.16	869.3	24.20	0.00019	0.000005
1.503	31.05	0.2736	1.000	0.01	1002.7	24.37	0.00005	0.000002
1.703	31.08	0.3100	1.001	0.03	1136.1	24.39	0.00000	-0.000000
1.878	31.04	0.3419	1.000	0.00	1252.9	24.36	0.00000	0.000000

RUN: 120771-1 X=82. Z= 0.

UI = 31.07 D1 = 0.2533 BETA= 0.004 RD2 = 2919.
CF/2= 0.00163 D2 = 0.1794 B = 0.000 H = 1.412
F = 0.00000 DC = 6.2686 P+ = 0.0000 G = 7.218
K = -0.152E-08 D99 = 1.4808 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.79	0.0008	0.122	-21.73	3.3	3.02	0.00163	0.001244
0.006	4.15	0.0010	0.134	-21.44	3.9	3.31	0.00163	0.001185
0.007	4.69	0.0011	0.151	-21.01	4.6	3.74	0.00163	0.001127
0.008	5.11	0.0013	0.164	-20.68	5.3	4.07	0.00163	0.001102
0.009	5.83	0.0014	0.188	-20.11	5.9	4.64	0.00163	0.001159
0.011	6.88	0.0018	0.222	-19.27	7.2	5.48	0.00163	0.001131
0.013	8.09	0.0021	0.260	-18.31	8.5	6.44	0.00163	0.001058
0.015	9.22	0.0024	0.297	-17.40	9.9	7.35	0.00163	0.000965
0.017	10.15	0.0027	0.327	-16.66	11.2	8.09	0.00163	0.000888
0.020	11.42	0.0032	0.367	-15.66	13.1	9.09	0.00163	0.000730
0.023	12.49	0.0037	0.402	-14.80	15.1	9.95	0.00163	0.000604
0.026	13.41	0.0041	0.432	-14.07	17.1	10.68	0.00163	0.000505
0.030	14.17	0.0048	0.456	-13.48	19.7	11.29	0.00163	0.000403
0.036	15.30	0.0057	0.492	-12.56	23.7	12.19	0.00163	0.000295
0.041	15.92	0.0065	0.512	-12.07	27.0	12.68	0.00163	0.000235
0.046	16.53	0.0073	0.532	-11.59	30.2	13.16	0.00163	0.000197
0.056	17.28	0.0089	0.556	-10.98	36.8	13.77	0.00162	0.000138
0.071	18.10	0.0113	0.583	-10.33	46.7	14.42	0.00162	0.000095
0.096	18.99	0.0153	0.611	-9.62	63.1	15.13	0.00161	0.000062
0.121	19.65	0.0193	0.632	-9.10	79.5	15.65	0.00161	0.000050
0.146	20.21	0.0233	0.650	-8.65	96.0	16.10	0.00160	0.000041
0.196	20.96	0.0313	0.675	-8.05	128.8	16.69	0.00159	0.000033
0.246	21.96	0.0392	0.707	-7.26	161.7	17.49	0.00156	0.000028
0.321	22.72	0.0512	0.731	-6.65	211.0	18.10	0.00152	0.000024
0.396	23.64	0.0632	0.761	-5.92	260.3	18.83	0.00147	0.000022
0.496	24.57	0.0791	0.791	-5.18	326.0	19.57	0.00140	0.000019
0.596	25.58	0.0951	0.823	-4.38	391.8	20.37	0.00133	0.000018
0.696	26.46	0.1110	0.851	-3.68	457.5	21.07	0.00123	0.000016
0.846	27.60	0.1350	0.888	-2.77	556.1	21.98	0.00103	0.000014
0.996	28.63	0.1589	0.921	-1.95	654.7	22.80	0.00081	0.000011
1.146	29.56	0.1828	0.951	-1.20	753.3	23.55	0.00059	0.000009
1.346	30.44	0.2147	0.980	-0.50	884.8	24.25	0.00032	0.000006
1.546	30.91	0.2466	0.995	-0.13	1016.2	24.62	0.00014	0.000003
1.796	31.06	0.2865	1.000	-0.01	1180.6	24.74	0.00004	0.000001
2.096	31.07	0.3344	1.000	0.00	1377.8	24.75	0.00000	0.000000

RUN: 120771-1 X=90. Z= 0.

UI = 31.06 D1 = 0.2670 BETA= 0.005 RD2 = 3093.
CF/2= 0.00161 D2 = 0.1902 B = 0.000 H = 1.404
F = 0.00000 DC = 6.6566 P+ = 0.0000 G = 7.169
K = -0.196E-08 D99 = 1.5810 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	4.95	0.0010	0.159	-20.56	4.4	3.57	0.001316
0.008	5.42	0.0012	0.174	-20.58	5.1	4.35	0.001293
0.009	6.07	0.0013	0.196	-20.05	5.7	4.86	0.001275
0.010	6.58	0.0015	0.212	-19.65	6.4	5.28	0.001217
0.011	7.20	0.0016	0.232	-19.15	7.0	5.78	0.001212
0.012	8.17	0.0018	0.263	-18.37	7.7	6.56	0.001188
0.014	9.07	0.0021	0.292	-17.65	9.0	7.28	0.001034
0.016	9.99	0.0024	0.322	-16.91	10.3	8.02	0.000867
0.018	11.03	0.0027	0.355	-16.08	11.6	8.85	0.000727
0.020	11.59	0.0030	0.373	-15.63	12.9	9.30	0.000656
0.023	12.47	0.0034	0.402	-14.92	14.9	10.01	0.000542
0.026	13.19	0.0039	0.425	-14.34	16.8	10.59	0.000464
0.030	14.12	0.0045	0.455	-13.60	19.4	11.33	0.000391
0.034	14.82	0.0051	0.477	-13.04	22.0	11.89	0.000314
0.038	15.58	0.0057	0.502	-12.42	24.7	12.51	0.000268
0.043	16.06	0.0064	0.517	-12.04	27.9	12.89	0.000213
0.053	16.74	0.0079	0.539	-11.49	34.4	13.44	0.000146
0.068	17.90	0.0102	0.576	-10.57	44.2	14.36	0.000100
0.083	18.36	0.0124	0.591	-10.19	54.0	14.74	0.000077
0.108	19.07	0.0162	0.614	-9.62	70.3	15.31	0.000056
0.133	19.96	0.0200	0.643	-8.91	86.6	16.02	0.000044
0.158	20.23	0.0237	0.651	-8.70	102.9	16.23	0.000039
0.208	21.07	0.0312	0.679	-8.01	135.5	16.92	0.000031
0.258	21.76	0.0387	0.701	-7.46	168.2	17.47	0.000027
0.333	22.77	0.0500	0.733	-6.65	217.1	18.28	0.000024
0.408	23.56	0.0613	0.758	-6.02	266.0	18.91	0.000021
0.508	24.55	0.0763	0.790	-5.22	331.2	19.71	0.000018
0.608	25.52	0.0913	0.822	-4.45	396.5	20.48	0.000017
0.708	26.19	0.1063	0.843	-3.91	461.7	21.02	0.000015
0.858	27.30	0.1289	0.879	-3.02	559.5	21.91	0.000013
1.008	28.36	0.1514	0.913	-2.16	657.4	22.77	0.000011
1.208	29.50	0.1814	0.950	-1.25	787.8	23.68	0.000008
1.408	30.38	0.2115	0.978	-0.55	918.3	24.38	0.000005
1.708	31.02	0.2566	0.999	-0.03	1114.0	24.90	0.000003
2.008	30.98	0.3016	0.998	-0.06	1309.7	24.87	0.000001
2.308	31.04	0.3467	0.999	-0.01	1505.3	24.92	0.000000
2.608	31.05	0.3918	1.000	-0.01	1701.0	24.92	-0.000000
2.808	31.06	0.4218	1.000	0.00	1831.5	24.93	-0.000000
3.108	31.06	0.4669	1.000	0.00	2027.2	24.93	0.000000

RUN: 100571-1 X= 2. Z= 0.

UI = 30.95 D1 = 0.0524 BETA=-0.002 RD2 = 525.
CF/2= 0.00217 D2 = 0.0334 B = 0.475 H = 1.570
F = 0.00103 DC = 1.1252 P+ =-0.0000 G = 7.795
K = 0.489E-08 D99 = 0.2946 VO+ = 0.0221

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	5.39	0.0038	0.174	-17.72	3.2	3.74	0.002193
0.005	6.37	0.0047	0.206	-17.05	3.9	4.42	0.002047
0.006	7.31	0.0056	0.236	-16.39	4.6	5.07	0.001901
0.007	7.99	0.0065	0.258	-15.92	5.4	5.54	0.001740
0.008	8.93	0.0074	0.289	-15.27	6.1	6.19	0.001660
0.010	10.49	0.0092	0.339	-14.19	7.5	7.28	0.001496
0.012	11.91	0.0109	0.385	-13.20	9.0	8.26	0.001323
0.014	13.14	0.0127	0.425	-12.35	10.5	9.11	0.001159
0.016	14.33	0.0145	0.463	-11.53	11.9	9.94	0.001002
0.018	15.19	0.0163	0.491	-10.93	13.4	10.53	0.000878
0.020	16.07	0.0180	0.519	-10.32	14.9	11.14	0.000767
0.023	16.94	0.0207	0.547	-9.71	17.1	11.75	0.000629
0.026	17.90	0.0234	0.578	-9.05	19.3	12.41	0.000531
0.029	18.60	0.0260	0.601	-8.56	21.5	12.90	0.000450
0.033	19.41	0.0296	0.627	-8.00	24.4	13.46	0.000377
0.040	20.49	0.0358	0.662	-7.26	29.5	14.21	0.000277
0.045	21.05	0.0403	0.680	-6.86	33.2	14.60	0.000237
0.055	22.07	0.0491	0.713	-6.16	40.5	15.30	0.000188
0.065	22.78	0.0580	0.736	-5.66	47.9	15.80	0.000159
0.080	23.86	0.0714	0.771	-4.91	58.9	16.55	0.000134
0.100	25.11	0.0891	0.811	-4.05	73.5	17.41	0.000111
0.120	26.16	0.1069	0.845	-3.32	88.2	18.14	0.000094
0.140	26.95	0.1247	0.871	-2.77	102.8	18.69	0.000081
0.160	27.67	0.1425	0.894	-2.27	117.5	19.19	0.000070
0.185	28.49	0.1647	0.921	-1.71	135.8	19.76	0.000057
0.210	29.21	0.1869	0.944	-1.21	154.1	20.26	0.000047
0.260	30.30	0.2313	0.979	-0.45	190.8	21.01	0.000028
0.310	30.80	0.2758	0.995	-0.11	227.4	21.36	0.000015
0.410	31.05	0.3647	1.003	0.07	300.7	21.53	0.000001
0.510	30.95	0.4535	1.000	0.00	374.0	21.46	0.000000

RUN: 100571-1 X=10. Z= 0.

UI = 30.28 D1 = 0.0822 BETA=-0.002 RD2 = 802.
CF/2= 0.00193 D2 = 0.0521 B = 0.524 H = 1.577
F = 0.00101 DC = 1.8720 P+ =-0.0000 G = 8.339
K = 0.303E-08 D99 = 0.3951 VO+ = 0.0230

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	5.07	0.0027	0.167	-18.97	3.4	3.81	0.00210	0.001852
0.006	5.69	0.0032	0.188	-18.50	4.1	4.28	0.00212	0.001794
0.007	6.48	0.0037	0.214	-17.91	4.7	4.87	0.00214	0.001656
0.008	7.22	0.0043	0.238	-17.35	5.4	5.43	0.00217	0.001538
0.009	7.97	0.0048	0.263	-16.78	6.1	6.00	0.00219	0.001503
0.010	8.73	0.0053	0.288	-16.21	6.8	6.57	0.00222	0.001440
0.012	9.93	0.0064	0.328	-15.31	8.1	7.47	0.00225	0.001256
0.014	11.00	0.0075	0.363	-14.51	9.5	8.28	0.00229	0.001104
0.016	12.15	0.0085	0.401	-13.64	10.8	9.14	0.00232	0.000975
0.018	12.85	0.0096	0.424	-13.11	12.2	9.67	0.00234	0.000858
0.021	14.09	0.0112	0.465	-12.18	14.2	10.60	0.00237	0.000690
0.024	15.01	0.0128	0.496	-11.49	16.2	11.30	0.00240	0.000558
0.028	15.90	0.0150	0.525	-10.82	18.9	11.97	0.00241	0.000443
0.032	16.49	0.0171	0.544	-10.38	21.6	12.40	0.00242	0.000352
0.037	17.30	0.0198	0.571	-9.77	25.0	13.02	0.00242	0.000278
0.042	17.92	0.0224	0.592	-9.30	28.4	13.48	0.00242	0.000234
0.052	18.83	0.0278	0.622	-8.62	35.1	14.16	0.00240	0.000178
0.062	19.43	0.0331	0.642	-8.16	41.9	14.62	0.00237	0.000142
0.082	20.59	0.0438	0.680	-7.29	55.4	15.49	0.00229	0.000110
0.102	21.47	0.0545	0.709	-6.63	68.9	16.15	0.00218	0.000095
0.127	22.54	0.0678	0.744	-5.83	85.8	16.95	0.00202	0.000085
0.152	23.36	0.0812	0.772	-5.21	102.7	17.58	0.00183	0.000079
0.177	24.29	0.0946	0.802	-4.51	119.6	18.27	0.00165	0.000074
0.202	25.11	0.1079	0.829	-3.89	136.5	18.89	0.00146	0.000070
0.252	26.72	0.1346	0.882	-2.68	170.3	20.10	0.00110	0.000060
0.302	28.13	0.1613	0.929	-1.62	204.0	21.16	0.00076	0.000049
0.352	29.29	0.1880	0.967	-0.75	237.8	22.03	0.00050	0.000036
0.402	30.09	0.2147	0.994	-0.14	271.6	22.64	0.00029	0.000021
0.452	30.57	0.2415	1.010	0.22	305.4	23.00	0.00012	0.000010
0.502	30.79	0.2682	1.017	0.38	339.2	23.16	0.00000	0.000002
0.602	30.28	0.3216	1.000	0.00	406.7	22.78	0.00000	0.000000

RUN: 100571-1 X=22. Z= 0.

UI = 32.15 D1 = 0.1523 BETA=-0.001 RD2 = 1e23.
CF/2= 0.00157 D2 = 0.0993 B = 0.645 H = 1.533
F = 0.00101 DC = 3.8493 P+ =-0.0000 G = 8.791
K = 0.796E-09 D99 = 0.7549 VO+ = 0.0255

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.23	0.0013	0.132	-21.95	3.2	3.33	0.00170	0.001496
0.006	4.65	0.0016	0.145	-21.62	3.9	3.66	0.00172	0.001209
0.007	5.20	0.0018	0.162	-21.19	4.5	4.09	0.00173	0.001114
0.008	5.76	0.0021	0.179	-20.75	5.2	4.53	0.00175	0.001086
0.009	6.33	0.0023	0.197	-20.30	5.8	4.98	0.00177	0.001115
0.010	6.95	0.0026	0.216	-19.81	6.5	5.46	0.00179	0.001107
0.012	8.13	0.0031	0.253	-18.88	7.8	6.39	0.00182	0.001015
0.014	9.13	0.0036	0.284	-18.10	9.0	7.18	0.00185	0.000937
0.016	10.09	0.0042	0.314	-17.34	10.3	7.94	0.00188	0.000860
0.018	10.88	0.0047	0.338	-16.72	11.6	8.55	0.00191	0.000763
0.021	12.19	0.0055	0.379	-15.69	13.6	9.58	0.00195	0.000650
0.024	13.04	0.0062	0.406	-15.03	15.5	10.25	0.00197	0.000551
0.027	13.93	0.0070	0.433	-14.32	17.5	10.95	0.00200	0.000471
0.031	14.75	0.0081	0.459	-13.68	20.0	11.60	0.00202	0.000368
0.035	15.51	0.0091	0.483	-13.08	22.6	12.20	0.00204	0.000305
0.039	16.13	0.0101	0.502	-12.59	25.2	12.68	0.00205	0.000248
0.043	16.46	0.0112	0.512	-12.34	27.8	12.94	0.00206	0.000210
0.048	17.08	0.0125	0.531	-11.85	31.0	13.43	0.00207	0.000173
0.053	17.43	0.0138	0.542	-11.57	34.3	13.71	0.00207	0.000148
0.063	18.08	0.0164	0.562	-11.06	40.7	14.21	0.00208	0.000121
0.088	19.40	0.0229	0.603	-10.02	56.9	15.25	0.00207	0.000085
0.113	20.34	0.0294	0.633	-9.29	73.0	15.99	0.00204	0.000071
0.138	21.20	0.0359	0.660	-8.61	89.2	16.67	0.00201	0.000062
0.163	21.85	0.0423	0.680	-8.09	105.4	17.18	0.00196	0.000056
0.213	23.28	0.0553	0.724	-6.97	137.7	18.30	0.00184	0.000049
0.263	24.65	0.0683	0.760	-6.05	170.0	19.22	0.00167	0.000044
0.313	25.49	0.0813	0.793	-5.23	202.3	20.04	0.00147	0.000041
0.363	26.59	0.0943	0.827	-4.37	234.6	20.91	0.00126	0.000039
0.413	27.56	0.1073	0.857	-3.61	267.0	21.67	0.00102	0.000036
0.463	28.54	0.1203	0.888	-2.83	299.3	22.44	0.00080	0.000032
0.513	29.50	0.1333	0.918	-2.08	331.6	23.19	0.00060	0.000028
0.613	30.88	0.1593	0.961	-0.99	396.3	24.28	0.00030	0.000018
0.713	31.71	0.1852	0.986	-0.34	460.9	24.93	0.00013	0.000011
0.813	31.98	0.2112	0.995	-0.13	525.5	25.15	0.00002	0.000005
0.913	32.10	0.2372	0.999	-0.04	590.2	25.24	-0.00001	0.000001
1.013	32.15	0.2632	1.000	0.00	654.8	25.28	0.00000	-0.000001
1.113	32.15	0.2891	1.000	0.00	719.5	25.28	0.00000	0.000000

RUN: 100571-1 X=34. Z= 0.

UI = 30.51 D1 = 0.1811 BETA= 0.001 RD2 = 1678.
CF/2= 0.00150 D2 = 0.1211 B = 0.666 H = 1.495
F = 0.00100 DC = 4.6750 P+ = 0.0000 G = 8.551
K = -0.760E-09 D99 = 0.9212 VD+ = 0.0258

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	4.43	0.0012	0.145	-22.06	3.4	3.75	0.00165	0.001466
0.007	5.00	0.0014	0.164	-21.58	4.0	4.23	0.00166	0.001401
0.008	5.67	0.0016	0.186	-21.02	4.6	4.79	0.00169	0.001335
0.009	6.33	0.0018	0.207	-20.46	5.2	5.35	0.00171	0.001276
0.010	6.93	0.0021	0.227	-19.95	5.8	5.86	0.00173	0.001237
0.011	7.44	0.0023	0.244	-19.51	6.4	6.30	0.00174	0.001197
0.013	8.59	0.0027	0.282	-18.54	7.6	7.27	0.00178	0.001074
0.015	9.46	0.0031	0.310	-17.81	8.8	8.00	0.00181	0.000941
0.017	10.52	0.0036	0.345	-16.91	10.0	8.90	0.00184	0.000815
0.019	11.22	0.0040	0.368	-16.32	11.2	9.49	0.00186	0.000716
0.022	12.09	0.0046	0.396	-15.58	13.0	10.23	0.00189	0.000588
0.025	12.79	0.0053	0.419	-14.99	14.8	10.82	0.00191	0.000481
0.029	13.70	0.0061	0.449	-14.22	17.2	11.59	0.00194	0.000389
0.034	14.50	0.0072	0.475	-13.55	20.2	12.26	0.00197	0.000308
0.039	15.21	0.0083	0.498	-12.95	23.2	12.87	0.00199	0.000250
0.049	16.08	0.0104	0.527	-12.21	29.2	13.60	0.00201	0.000172
0.059	16.81	0.0125	0.551	-11.59	35.2	14.22	0.00202	0.000132
0.074	17.55	0.0157	0.575	-10.96	44.2	14.85	0.00203	0.000099
0.099	18.41	0.0211	0.603	-10.24	59.2	15.57	0.00204	0.000074
0.124	19.29	0.0264	0.632	-9.49	74.3	16.32	0.00204	0.000062
0.149	19.96	0.0318	0.654	-8.93	89.3	16.88	0.00203	0.000055
0.199	21.03	0.0425	0.689	-8.02	119.3	17.79	0.00200	0.000046
0.249	22.10	0.0532	0.724	-7.12	149.4	18.69	0.00195	0.000041
0.299	22.98	0.0639	0.753	-6.37	179.4	19.44	0.00188	0.000038
0.349	23.87	0.0746	0.782	-5.62	209.5	20.19	0.00181	0.000035
0.449	25.35	0.0960	0.831	-4.36	269.5	21.45	0.00160	0.000031
0.549	26.78	0.1173	0.878	-3.16	329.6	22.66	0.00135	0.000027
0.649	28.08	0.1387	0.920	-2.05	389.7	23.76	0.00106	0.000021
0.749	29.17	0.1601	0.956	-1.13	449.8	24.68	0.00078	0.000016
0.849	29.95	0.1815	0.982	-0.47	509.9	25.34	0.00053	0.000011
0.999	30.48	0.2136	0.999	-0.03	600.0	25.78	0.00023	0.000005
1.149	30.53	0.2457	1.001	0.02	690.1	25.83	0.00000	0.000001
1.299	30.51	0.2778	1.000	0.00	780.2	25.81	0.00000	0.000000

RUN: 100571-1 X=46. Z= 0.

UI = 31.28 D1 = 0.2279 BETA= 0.004 RD2 = 2404.
CF/2= 0.00138 D2 = 0.1512 B = 0.744 H = 1.508
F = 0.00103 DC = 6.1264 P+ = 0.0000 G = 9.049
K = -0.164E-08 D99 = 1.1291 VD+ = 0.0277

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.24	0.0008	0.103	-24.10	3.0	2.78	0.00149	0.001077
0.006	3.48	0.0010	0.111	-23.89	3.5	2.99	0.00149	0.001045
0.007	3.78	0.0011	0.121	-23.63	4.1	3.25	0.00150	0.001013
0.008	4.33	0.0013	0.138	-23.16	4.7	3.72	0.00152	0.001017
0.009	4.89	0.0015	0.156	-22.67	5.3	4.21	0.00154	0.001096
0.011	5.98	0.0018	0.191	-21.74	6.5	5.14	0.00158	0.001104
0.013	7.12	0.0021	0.228	-20.76	7.7	6.12	0.00161	0.001038
0.015	8.15	0.0024	0.261	-19.87	8.9	7.01	0.00165	0.000940
0.017	9.08	0.0028	0.290	-19.17	10.1	7.80	0.00168	0.000851
0.020	10.38	0.0033	0.332	-17.96	11.8	8.92	0.00172	0.000700
0.023	11.27	0.0038	0.360	-17.19	13.6	9.68	0.00174	0.000580
0.026	12.09	0.0042	0.387	-16.49	15.4	10.39	0.00177	0.000480
0.029	12.68	0.0047	0.405	-15.98	17.2	10.89	0.00179	0.000405
0.033	13.49	0.0054	0.431	-15.29	19.5	11.59	0.00181	0.000336
0.038	14.16	0.0062	0.453	-14.71	22.5	12.17	0.00183	0.000270
0.043	14.83	0.0070	0.474	-14.13	25.4	12.74	0.00185	0.000225
0.053	15.76	0.0087	0.504	-13.34	31.3	13.54	0.00187	0.000161
0.063	16.42	0.0103	0.525	-12.77	37.3	14.11	0.00189	0.000126
0.083	17.39	0.0135	0.556	-11.93	49.1	14.95	0.00191	0.000088
0.103	18.10	0.0168	0.579	-11.32	60.9	15.56	0.00192	0.000070
0.128	18.91	0.0209	0.605	-10.63	75.7	16.25	0.00193	0.000056
0.153	19.52	0.0250	0.624	-10.10	90.5	16.78	0.00192	0.000049
0.178	20.11	0.0291	0.643	-9.60	105.3	17.28	0.00191	0.000044
0.203	20.57	0.0331	0.658	-9.20	120.1	17.68	0.00189	0.000040
0.253	21.49	0.0413	0.687	-8.41	149.6	18.47	0.00185	0.000036
0.303	22.33	0.0495	0.714	-7.69	179.2	19.19	0.00179	0.000033
0.403	24.00	0.0658	0.767	-6.25	238.4	20.63	0.00166	0.000029
0.503	25.24	0.0821	0.807	-5.19	297.5	21.69	0.00146	0.000026
0.603	26.52	0.0984	0.848	-4.09	356.7	22.79	0.00123	0.000024
0.703	27.68	0.1147	0.885	-3.10	415.8	23.78	0.00095	0.000021
0.803	28.70	0.1311	0.918	-2.22	475.0	24.66	0.00065	0.000018
0.903	29.73	0.1474	0.951	-1.33	534.1	25.55	0.00039	0.000014
1.053	30.73	0.1719	0.983	-0.47	622.8	26.41	0.00009	0.000009
1.203	31.19	0.1964	0.997	-0.08	711.6	26.80	-0.00005	0.000004
1.403	31.29	0.2290	1.000	0.01	829.9	26.89	0.00000	0.000001
1.603	31.28	0.2617	1.000	0.00	948.2	26.88	0.00000	0.000000

RUN: 100571-1 X=58. Z= 0.

UI = 31.17 D1 = 0.2688 BETA= 0.006 RD2 = 2857.
CF/2= 0.00132 D2 = 0.1803 B = 0.775 H = 1.491
F = 0.00102 DC = 7.4113 P+ = 0.0000 G = 9.075
K = -0.186E-08 D99 = 1.3490 VD+ = 0.0281

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.15	0.0007	0.101	-24.78	2.9	2.79	0.00142	0.001028
0.006	3.47	0.0008	0.111	-24.50	3.4	3.07	0.00143	0.000959
0.007	3.81	0.0009	0.122	-24.20	4.0	3.37	0.00144	0.000890
0.008	4.27	0.0011	0.137	-23.79	4.6	3.78	0.00146	0.000890
0.009	4.75	0.0012	0.152	-23.37	5.2	4.20	0.00148	0.000963
0.010	5.17	0.0013	0.166	-22.99	5.7	4.58	0.00149	0.000998
0.012	6.18	0.0016	0.198	-22.10	6.9	5.47	0.00152	0.001002
0.014	7.15	0.0019	0.229	-21.25	8.0	6.32	0.00155	0.000949
0.016	8.27	0.0022	0.265	-20.25	9.2	7.32	0.00159	0.000871
0.019	9.44	0.0026	0.303	-19.22	10.9	8.35	0.00163	0.000742
0.022	10.49	0.0030	0.337	-18.29	12.6	9.28	0.00166	0.000642
0.025	11.33	0.0034	0.363	-17.55	14.4	10.02	0.00169	0.000532
0.029	12.25	0.0039	0.393	-16.73	16.7	10.84	0.00172	0.000427
0.034	13.49	0.0046	0.433	-15.64	19.5	11.93	0.00176	0.000336
0.039	13.99	0.0053	0.449	-15.19	22.4	12.37	0.00177	0.000286
0.044	14.46	0.0059	0.464	-14.78	25.3	12.79	0.00179	0.000247
0.054	15.54	0.0073	0.499	-13.83	31.0	13.74	0.00182	0.000192
0.064	16.05	0.0086	0.515	-13.38	36.8	14.19	0.00183	0.000124
0.089	17.34	0.0120	0.556	-12.23	51.1	15.34	0.00186	0.000078
0.114	18.05	0.0154	0.579	-11.61	65.5	15.96	0.00187	0.000058
0.139	18.73	0.0188	0.601	-11.00	79.9	16.57	0.00187	0.000049
0.164	19.14	0.0221	0.614	-10.64	94.2	16.93	0.00187	0.000042
0.214	20.11	0.0289	0.645	-9.79	123.0	17.78	0.00186	0.000037
0.264	20.94	0.0356	0.672	-9.05	151.7	18.52	0.00183	0.000033
0.314	21.72	0.0424	0.697	-8.36	180.4	19.21	0.00180	0.000030
0.414	23.14	0.0559	0.742	-7.10	237.9	20.47	0.00172	0.000026
0.514	24.27	0.0694	0.779	-6.10	295.4	21.47	0.00160	0.000023
0.614	25.44	0.0828	0.816	-5.07	352.8	22.50	0.00147	0.000022
0.714	26.43	0.0963	0.848	-4.20	410.3	23.37	0.00131	0.000020
0.814	27.35	0.1098	0.878	-3.37	467.8	24.19	0.00112	0.000018
0.914	28.29	0.1233	0.908	-2.55	525.2	25.02	0.00093	0.000015
1.114	29.80	0.1503	0.956	-1.21	640.1	26.36	0.00054	0.000010
1.314	30.80	0.1773	0.988	-0.33	755.1	27.24	0.00025	0.000006
1.514	31.15	0.2043	0.999	-0.02	870.0	27.55	0.00008	0.000002
1.714	31.19	0.2313	1.001	0.02	984.9	27.59	0.00000	0.000000
1.864	31.17	0.2515	1.000	0.00	1071.1	27.57	0.00000	0.000000

RUN: 100571-1 X=70. Z= 0.

UI = 31.10 D1 = 0.3139 BETA= 0.006 RD2 = 3326.
CF/2= 0.00125 D2 = 0.2104 B = 0.842 H = 1.492
F = 0.00105 DC = 8.8911 P+ = 0.0000 G = 9.336
K = -0.139E-08 D99 = 1.5565 VD+ = 0.0297

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.54	0.0006	0.114	-25.10	2.8	3.22	0.00137	0.001166
0.006	4.01	0.0007	0.129	-24.68	3.3	3.65	0.00139	0.001076
0.007	4.44	0.0008	0.143	-24.29	3.9	4.04	0.00140	0.000986
0.008	4.87	0.0009	0.157	-23.89	4.5	4.44	0.00141	0.000903
0.009	5.32	0.0010	0.171	-23.48	5.0	4.85	0.00143	0.000955
0.010	5.84	0.0011	0.188	-23.01	5.6	5.32	0.00145	0.000953
0.012	6.60	0.0013	0.212	-22.31	6.7	6.01	0.00147	0.000891
0.014	7.73	0.0016	0.249	-21.28	7.8	7.04	0.00151	0.000824
0.016	8.35	0.0018	0.269	-20.72	8.9	7.61	0.00153	0.000735
0.018	9.09	0.0020	0.292	-20.05	10.0	8.28	0.00156	0.000681
0.022	10.38	0.0025	0.334	-18.87	12.3	9.46	0.00160	0.000548
0.026	11.22	0.0029	0.361	-18.11	14.5	10.22	0.00163	0.000453
0.030	12.22	0.0034	0.393	-17.19	16.7	11.13	0.00166	0.000372
0.035	13.09	0.0039	0.421	-16.40	19.5	11.92	0.00169	0.000294
0.040	13.62	0.0045	0.438	-15.92	22.3	12.41	0.00170	0.000240
0.045	14.19	0.0051	0.456	-15.40	25.1	12.93	0.00172	0.000193
0.050	14.59	0.0056	0.469	-15.04	27.9	13.29	0.00173	0.000161
0.060	15.31	0.0067	0.492	-14.38	33.5	13.95	0.00175	0.000123
0.085	16.40	0.0096	0.527	-13.39	47.4	14.94	0.00177	0.000080
0.110	17.25	0.0124	0.555	-12.61	61.4	15.71	0.00179	0.000061
0.160	18.49	0.0180	0.595	-11.48	89.3	16.85	0.00180	0.000044
0.210	19.27	0.0236	0.620	-10.78	117.2	17.55	0.00180	0.000036
0.310	20.82	0.0349	0.669	-9.36	173.0	18.96	0.00179	0.000029
0.410	21.98	0.0461	0.707	-8.31	228.8	20.02	0.00173	0.000025
0.510	23.31	0.0574	0.749	-7.10	284.6	21.23	0.00166	0.000023
0.710	25.17	0.0799	0.810	-5.40	396.2	22.93	0.00143	0.000019
0.910	27.05	0.1023	0.870	-3.69	507.8	24.63	0.00114	0.000016
1.110	28.54	0.1248	0.918	-2.33	619.4	26.00	0.00079	0.000012
1.310	29.88	0.1473	0.961	-1.11	731.0	27.22	0.00047	0.000009
1.510	30.70	0.1698	0.987	-0.36	842.6	27.97	0.00021	0.000005
1.710	31.06	0.1923	0.999	-0.03	954.2	28.29	0.00006	0.000003
1.885	31.13	0.2120	1.001	0.03	1051.9	28.36	0.00000	0.000001
2.110	31.10	0.2373	1.000	0.00	1177.4	28.33	0.00000	0.000000

RUN: 100571-1 X=82. Z= 0.

UI = 31.18 D1 = 0.1531 BETA= 0.001 RD2 = 3776.
CF/2= 0.00120 D2 = 0.2383 B = 0.877 H = 1.482
F = 0.00105 DC =13.2032 P+ = 0.0000 G = 9.397
K = -0.254E-09 D99 = 1.8018 V0+ = 0.0303

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.17	0.0005	0.102	-25.56	2.7	2.94	0.00131	0.001046
0.006	3.47	0.0006	0.111	-25.68	3.3	3.21	0.00132	0.000985
0.007	3.88	0.0007	0.124	-25.30	3.9	3.59	0.00133	0.000924
0.008	4.30	0.0008	0.138	-24.91	4.4	3.98	0.00134	0.000924
0.009	4.75	0.0009	0.153	-24.49	4.9	4.41	0.00136	0.000960
0.010	5.31	0.0010	0.170	-23.97	5.5	4.93	0.00138	0.000977
0.012	6.26	0.0012	0.202	-23.07	6.6	5.82	0.00141	0.000909
0.014	7.05	0.0014	0.226	-22.36	7.7	6.54	0.00144	0.000808
0.016	7.95	0.0016	0.255	-21.53	8.8	7.36	0.00147	0.000712
0.018	8.63	0.0018	0.277	-20.89	9.9	8.00	0.00149	0.000651
0.023	9.97	0.0023	0.320	-19.66	12.6	9.24	0.00154	0.000516
0.028	11.05	0.0027	0.354	-18.65	15.4	10.24	0.00157	0.000404
0.033	12.23	0.0032	0.392	-17.56	18.1	11.33	0.00161	0.000350
0.043	13.67	0.0042	0.438	-16.23	23.6	12.67	0.00166	0.000232
0.053	14.40	0.0052	0.462	-15.55	29.1	13.34	0.00168	0.000170
0.078	16.06	0.0076	0.515	-14.01	42.8	14.88	0.00173	0.000097
0.103	16.77	0.0101	0.538	-13.35	56.5	15.54	0.00175	0.000069
0.153	18.09	0.0150	0.580	-12.13	83.9	16.77	0.00178	0.000046
0.203	19.16	0.0199	0.615	-11.13	111.3	17.76	0.00179	0.000035
0.303	20.47	0.0297	0.656	-9.93	166.2	18.97	0.00179	0.000027
0.403	21.55	0.0395	0.691	-8.92	221.0	19.97	0.00177	0.000023
0.503	22.62	0.0493	0.726	-7.93	275.9	20.96	0.00173	0.000021
0.703	24.45	0.0689	0.784	-6.23	385.6	22.66	0.00159	0.000018
0.903	26.10	0.0885	0.837	-4.70	495.2	24.19	0.00140	0.000016
1.103	27.59	0.1081	0.885	-3.33	604.9	25.57	0.00116	0.000013
1.303	28.97	0.1277	0.929	-2.05	714.6	26.85	0.00086	0.000010
1.503	30.00	0.1473	0.962	-1.09	824.3	27.81	0.00053	0.000007
1.703	30.71	0.1669	0.985	-0.44	934.0	28.46	0.00025	0.000005
2.003	31.19	0.1963	1.000	0.01	1098.5	28.91	0.00000	0.000003
2.303	31.18	0.2257	1.000	0.00	1263.1	28.89	0.00000	0.000000

RUN: 100571-1 X=90. Z= 0.

UI = 31.02 D1 = 0.1730 BETA=-0.004 RD2 = 3996.
CF/2= 0.00118 D2 = 0.2535 B = 0.882 H = 1.472
F = 0.00104 DC =13.8605 P+ =-0.0000 G = 9.330
K = 0.879E-09 D99 = 1.8736 V0+ = 0.0303

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	4.23	0.0006	0.136	-25.15	3.7	3.97	0.001068
0.008	4.73	0.0007	0.152	-24.68	4.2	4.44	0.001044
0.009	5.06	0.0008	0.163	-24.37	4.8	4.75	0.001000
0.010	5.57	0.0009	0.180	-23.88	5.3	5.23	0.000949
0.012	6.47	0.0011	0.209	-23.04	6.4	6.08	0.000886
0.014	7.39	0.0013	0.238	-22.18	7.5	6.94	0.000865
0.017	8.52	0.0015	0.275	-21.12	9.1	8.00	0.000696
0.021	9.79	0.0019	0.315	-19.93	11.3	9.18	0.000573
0.026	11.13	0.0024	0.359	-18.67	14.0	10.45	0.000439
0.031	12.01	0.0028	0.387	-17.85	16.7	11.27	0.000341
0.037	13.11	0.0034	0.423	-16.81	19.9	12.30	0.000282
0.044	13.72	0.0040	0.442	-16.24	23.7	12.88	0.000200
0.053	14.41	0.0049	0.465	-15.59	28.6	13.53	0.000154
0.068	15.31	0.0062	0.493	-14.75	36.7	14.37	0.000134
0.088	16.23	0.0081	0.523	-13.88	47.5	15.23	0.000077
0.118	17.15	0.0108	0.553	-13.02	63.8	16.10	0.000055
0.148	17.69	0.0136	0.570	-12.51	80.0	16.60	0.000044
0.198	18.60	0.0173	0.600	-11.65	101.7	17.46	0.000035
0.243	19.35	0.0224	0.624	-10.96	131.5	18.16	0.000030
0.318	20.29	0.0293	0.654	-10.07	172.1	19.05	0.000025
0.418	21.48	0.0385	0.693	-8.95	226.2	20.17	0.000022
0.518	22.37	0.0477	0.721	-8.12	280.4	21.00	0.000020
0.668	23.67	0.0615	0.763	-6.90	361.6	22.22	0.000018
0.818	25.00	0.0753	0.806	-5.66	442.8	23.46	0.000016
1.018	26.47	0.0937	0.853	-4.27	551.1	24.85	0.000014
1.218	27.72	0.1121	0.894	-3.10	659.4	26.02	0.000012
1.418	28.92	0.1305	0.932	-1.97	767.7	27.14	0.000009
1.618	29.87	0.1490	0.963	-1.08	876.0	28.04	0.000007
1.918	30.86	0.1766	0.995	-0.15	1038.5	28.96	0.000004
2.218	31.04	0.2042	1.000	0.01	1200.9	29.13	0.000002
2.518	31.02	0.2318	1.000	0.00	1363.4	29.12	0.000000

RUN: 90171-2 X= 2. Z= 0.

UI = 31.66 D1 = 0.0579 BETA= 0.000 RD2 = 566.
CF/2= 0.00183 D2 = 0.0358 B = 1.090 H = 1.618
F = 0.00200 DC = 1.3528 P+ = 0.0000 G = 8.914
K = -0.873E-09 D99 = 0.3028 V0+ = 0.0467

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	4.62	0.0032	0.146	-19.96	2.9	3.61	0.001849
0.005	5.17	0.0039	0.163	-19.33	3.6	3.82	0.001790
0.006	5.67	0.0047	0.188	-18.55	4.3	4.40	0.001732
0.007	6.82	0.0054	0.215	-18.32	4.9	5.03	0.001668
0.009	8.60	0.0069	0.271	-17.01	6.3	6.34	0.001565
0.011	10.12	0.0084	0.320	-15.89	7.6	7.46	0.001393
0.013	11.55	0.0098	0.365	-14.83	9.0	8.52	0.001252
0.015	12.63	0.0113	0.399	-14.03	10.4	9.32	0.001099
0.018	14.20	0.0135	0.449	-12.87	12.4	10.47	0.000917
0.021	15.66	0.0157	0.494	-11.80	14.4	11.55	0.000743
0.024	16.55	0.0180	0.523	-11.14	16.4	12.20	0.000618
0.028	17.81	0.0209	0.562	-10.22	19.2	13.13	0.000482
0.032	18.45	0.0239	0.583	-9.74	21.9	13.61	0.000387
0.037	19.40	0.0276	0.613	-9.04	25.2	14.30	0.000314
0.042	20.06	0.0313	0.633	-8.56	28.6	14.79	0.000264
0.049	20.91	0.0364	0.661	-7.93	33.4	15.42	0.000227
0.057	21.67	0.0424	0.684	-7.37	38.8	15.98	0.000192
0.082	23.71	0.0608	0.749	-5.87	55.7	17.48	0.000143
0.107	25.39	0.0793	0.802	-4.63	72.6	18.72	0.000114
0.132	26.70	0.0978	0.843	-3.66	89.5	19.69	0.000094
0.157	27.76	0.1163	0.877	-2.88	106.5	20.47	0.000079
0.182	28.70	0.1348	0.906	-2.19	123.4	21.16	0.000065
0.207	29.51	0.1532	0.932	-1.59	140.3	21.76	0.000053
0.247	30.54	0.1828	0.964	-0.83	167.4	22.52	0.000037
0.287	31.22	0.2124	0.986	-0.33	194.4	23.02	0.000023
0.332	31.59	0.2456	0.998	-0.05	224.9	23.30	0.000013
0.382	31.71	0.2826	1.001	0.03	258.7	23.38	0.000004
0.432	31.71	0.3196	1.002	0.04	292.6	23.39	-0.000002
0.507	31.66	0.3750	1.000	0.00	343.3	23.35	0.000000

RUN: 90171-2 X=10. Z= 0.

UI = 31.57 D1 = 0.1047 BETA= 0.001 RD2 = 1034.
CF/2= 0.00150 D2 = 0.0657 B = 1.334 H = 1.595
F = 0.00200 DC = 2.7040 P+ = 0.0000 G = 9.631
K = -0.109E-08 D99 = 0.4839 V0+ = 0.0517

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.48	0.0018	0.142	-22.16	3.0	3.67	0.00178	0.001542
0.006	5.07	0.0022	0.161	-21.68	3.7	4.15	0.00182	0.001466
0.007	5.75	0.0026	0.182	-21.12	4.3	4.71	0.00186	0.001389
0.008	6.37	0.0030	0.202	-20.62	4.9	5.21	0.00190	0.001326
0.009	7.06	0.0033	0.224	-20.05	5.5	5.78	0.00195	0.001324
0.011	8.31	0.0041	0.263	-19.03	6.7	6.80	0.00202	0.001207
0.013	9.55	0.0048	0.303	-18.01	7.9	7.82	0.00210	0.001074
0.015	10.70	0.0055	0.339	-17.07	9.1	8.76	0.00217	0.000938
0.018	11.88	0.0067	0.376	-16.11	11.0	9.72	0.00224	0.000767
0.022	13.33	0.0081	0.422	-14.92	13.4	10.90	0.00232	0.000585
0.027	14.61	0.0100	0.463	-13.88	16.5	11.95	0.00239	0.000438
0.034	15.79	0.0126	0.500	-12.91	20.7	12.92	0.00244	0.000318
0.044	17.10	0.0163	0.542	-11.84	26.8	13.99	0.00248	0.000224
0.059	18.43	0.0218	0.584	-10.75	36.0	15.08	0.00249	0.000157
0.074	19.34	0.0274	0.613	-10.01	45.1	15.82	0.00247	0.000125
0.099	20.73	0.0366	0.657	-8.87	60.4	16.96	0.00240	0.000099
0.124	21.70	0.0459	0.687	-8.07	75.6	17.75	0.00226	0.000087
0.149	22.73	0.0551	0.720	-7.23	90.9	18.60	0.00212	0.000081
0.179	23.85	0.0662	0.755	-6.32	109.2	19.51	0.00193	0.000074
0.219	25.30	0.0810	0.801	-5.13	133.6	20.70	0.00166	0.000067
0.279	27.20	0.1032	0.862	-3.57	170.2	22.26	0.00125	0.000056
0.324	28.46	0.1198	0.902	-2.54	197.6	23.29	0.00097	0.000046
0.399	30.18	0.1476	0.956	-1.13	243.3	24.70	0.00062	0.000030
0.449	31.00	0.1661	0.982	-0.47	273.8	25.36	0.00045	0.000021
0.524	31.54	0.1938	0.999	-0.02	319.6	25.81	0.00021	0.000010
0.599	31.61	0.2215	1.001	0.04	365.3	25.87	0.00000	0.000002
0.674	31.59	0.2493	1.001	0.02	411.1	25.85	0.00000	0.000003
0.749	31.57	0.2770	1.000	0.00	456.8	25.83	0.00000	0.000000

RUN: 90171-2 X=22. Z= 0.

UI = 31.57 D1 = 0.1670 BETA= 0.002 RD2 = 1661.
CF/2= 0.00127 D2 = 0.1055 B = 1.574 H = 1.584
F = 0.00200 DC = 4.6865 P+ = 0.0000 G =10.343
K = -0.113E-08 D99 = 0.7460 V0+ = 0.0561

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.38	0.0011	0.107	-25.05	2.8	3.00	0.00148	0.001156
0.006	3.67	0.0013	0.116	-24.79	3.4	3.26	0.00150	0.001128
0.007	4.13	0.0015	0.131	-24.38	3.9	3.67	0.00153	0.001101
0.008	4.60	0.0017	0.146	-23.96	4.5	4.09	0.00156	0.001084
0.010	5.75	0.0021	0.182	-22.94	5.6	5.11	0.00163	0.001109
0.012	6.89	0.0026	0.218	-21.94	6.7	6.12	0.00170	0.001040
0.015	8.51	0.0032	0.269	-20.50	8.4	7.56	0.00181	0.000894
0.018	9.80	0.0038	0.310	-19.35	10.1	8.71	0.00189	0.000751
0.021	10.80	0.0045	0.342	-18.46	11.8	9.59	0.00195	0.000632
0.025	11.98	0.0053	0.379	-17.41	14.0	10.65	0.00202	0.000503
0.030	13.07	0.0064	0.414	-16.44	16.8	11.62	0.00208	0.000393
0.035	13.99	0.0075	0.443	-15.62	19.7	12.43	0.00214	0.000318
0.043	15.01	0.0092	0.476	-14.71	24.1	13.34	0.00219	0.000235
0.053	16.04	0.0113	0.508	-13.80	29.8	14.26	0.00224	0.000175
0.068	17.10	0.0145	0.542	-12.86	38.2	15.20	0.00228	0.000126
0.088	18.04	0.0188	0.571	-12.03	49.4	16.03	0.00230	0.000095
0.113	19.09	0.0241	0.605	-11.09	63.5	16.96	0.00231	0.000077
0.148	20.09	0.0316	0.636	-10.20	83.1	17.85	0.00228	0.000064
0.188	21.33	0.0401	0.676	-9.10	105.6	18.96	0.00223	0.000056
0.233	22.56	0.0497	0.715	-8.01	130.8	20.05	0.00214	0.000051
0.283	23.66	0.0604	0.749	-7.03	158.9	21.03	0.00198	0.000047
0.333	24.75	0.0711	0.784	-6.06	187.0	22.00	0.00178	0.000044
0.383	25.80	0.0817	0.817	-5.13	215.1	22.93	0.00156	0.000040
0.458	27.28	0.0977	0.864	-3.81	257.2	24.24	0.00120	0.000035
0.558	29.12	0.1191	0.923	-2.17	313.3	25.88	0.00078	0.000027
0.658	30.50	0.1404	0.966	-0.95	369.5	27.11	0.00045	0.000018
0.758	31.36	0.1617	0.993	-0.19	425.6	27.87	0.00020	0.000011
0.858	31.63	0.1831	1.002	0.05	481.8	28.11	0.00000	0.000005
1.008	31.62	0.2151	1.002	0.05	566.0	28.10	0.00000	-0.000001
1.158	31.57	0.2471	1.000	0.00	650.3	28.06	0.00000	0.000000

RUN: 90171-2 X=34. Z= 0.

UI = 31.62 D1 = 0.2233 BETA= 0.003 RD2 = 2259.
CF/2= 0.00114 D2 = 0.1432 B = 1.759 H = 1.560
F = 0.00200 DC = 6.6207 P+ = 0.0000 G =10.640
K = -0.945E-09 D99 = 1.0030 V0+ = 0.0593

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	3.41	0.0008	0.108	-26.45	3.0	3.20	0.00136	0.001123
0.007	3.80	0.0010	0.120	-26.09	3.5	3.56	0.00138	0.001106
0.008	4.37	0.0011	0.138	-25.55	4.0	4.10	0.00142	0.001090
0.010	5.46	0.0014	0.173	-24.54	5.1	5.12	0.00149	0.001065
0.012	6.43	0.0018	0.204	-23.62	6.2	6.04	0.00155	0.001003
0.015	8.04	0.0022	0.254	-22.11	7.8	7.54	0.00165	0.000860
0.018	9.35	0.0027	0.296	-20.89	9.4	8.77	0.00173	0.000717
0.021	10.30	0.0031	0.326	-19.99	11.0	9.66	0.00179	0.000604
0.025	11.43	0.0037	0.362	-18.93	13.1	10.72	0.00186	0.000477
0.033	12.97	0.0049	0.410	-17.49	17.3	12.16	0.00195	0.000322
0.046	14.57	0.0069	0.461	-15.98	24.3	13.67	0.00204	0.000200
0.066	16.16	0.0099	0.511	-14.50	34.9	15.15	0.00212	0.000124
0.091	17.02	0.0137	0.538	-13.69	48.2	15.97	0.00215	0.000086
0.121	18.25	0.0182	0.577	-12.53	64.2	17.12	0.00219	0.000065
0.156	19.21	0.0235	0.608	-11.64	82.8	18.02	0.00220	0.000053
0.196	20.18	0.0295	0.638	-10.73	104.1	18.93	0.00219	0.000046
0.246	21.12	0.0371	0.668	-9.84	130.7	19.81	0.00216	0.000039
0.296	22.14	0.0446	0.700	-8.89	157.3	20.76	0.00211	0.000037
0.360	23.14	0.0543	0.732	-7.95	191.3	21.70	0.00200	0.000035
0.346	22.95	0.0522	0.726	-8.13	183.9	21.53	0.00203	0.000036
0.421	24.31	0.0635	0.769	-6.85	223.8	22.80	0.00190	0.000034
0.496	25.49	0.0749	0.806	-5.75	263.7	23.91	0.00172	0.000032
0.571	26.67	0.0862	0.843	-4.64	303.6	25.01	0.00152	0.000030
0.646	27.80	0.0975	0.879	-3.58	343.5	26.08	0.00130	0.000027
0.721	28.80	0.1088	0.911	-2.64	383.4	27.01	0.00106	0.000023
0.796	29.70	0.1202	0.939	-1.80	423.3	27.85	0.00086	0.000019
0.896	30.64	0.1353	0.969	-0.92	476.5	28.73	0.00057	0.000014
0.996	31.28	0.1504	0.989	-0.31	529.7	29.34	0.00036	0.000009
1.146	31.62	0.1730	1.000	0.00	609.5	29.66	0.00012	0.000003
1.296	31.65	0.1957	1.001	0.03	689.4	29.69	0.00000	-0.000001
1.446	31.62	0.2183	1.000	0.00	769.2	29.65	0.00000	0.000000

RUN: 90171-2 X=46. Z= 0.

UI = 31.48 D1 = 0.2837 BETA= 0.002 RD2 = 2863.
CF/2= 0.00104 D2 = 0.1810 B = 1.915 H = 1.567
F = 0.00200 DC = 8.7785 P+ = 0.0000 G =11.200
K = -0.508E-09 D99 = 1.2818 V0+ = 0.0619

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.78	0.0006	0.088	-28.21	2.5	2.73	0.00122	0.000855
0.006	2.85	0.0007	0.091	-28.14	3.0	2.80	0.00122	0.000832
0.007	3.02	0.0008	0.096	-27.98	3.6	2.97	0.00123	0.000809
0.009	3.67	0.0010	0.117	-27.34	4.6	3.61	0.00127	0.000826
0.011	4.62	0.0013	0.147	-26.40	5.6	4.54	0.00133	0.000880
0.013	5.55	0.0015	0.176	-25.48	6.6	5.46	0.00139	0.000863
0.016	7.03	0.0018	0.223	-24.03	8.1	6.91	0.00149	0.000802
0.019	7.98	0.0022	0.254	-23.10	9.4	7.86	0.00155	0.000702
0.023	9.33	0.0026	0.296	-21.77	11.7	9.17	0.00163	0.000580
0.027	10.56	0.0031	0.335	-20.56	13.7	10.38	0.00171	0.000468
0.031	11.35	0.0035	0.361	-19.78	15.7	11.16	0.00176	0.000387
0.035	12.07	0.0040	0.384	-19.07	17.8	11.87	0.00180	0.000322
0.041	12.83	0.0047	0.407	-18.33	20.8	12.61	0.00184	0.000243
0.049	13.65	0.0056	0.433	-17.53	24.9	13.41	0.00189	0.000185
0.059	14.54	0.0067	0.462	-16.65	30.0	14.29	0.00194	0.000142
0.074	15.22	0.0084	0.483	-15.98	37.6	14.96	0.00197	0.000106
0.099	16.36	0.0113	0.520	-14.86	50.3	16.09	0.00203	0.000077
0.124	17.20	0.0141	0.546	-14.04	62.9	16.90	0.00206	0.000062
0.149	17.86	0.0170	0.567	-13.39	75.6	17.55	0.00208	0.000053
0.174	18.51	0.0198	0.588	-12.75	88.3	18.20	0.00209	0.000047
0.224	19.48	0.0255	0.619	-11.79	113.7	19.15	0.00210	0.000039
0.274	20.40	0.0312	0.648	-10.89	139.1	20.06	0.00209	0.000035
0.324	21.18	0.0369	0.673	-10.12	164.5	20.82	0.00206	0.000033
0.399	22.23	0.0455	0.706	-9.09	202.6	21.85	0.00199	0.000030
0.474	23.34	0.0540	0.742	-8.00	240.6	22.95	0.00192	0.000029
0.549	24.45	0.0625	0.777	-6.91	278.7	24.03	0.00183	0.000027
0.624	25.40	0.0711	0.807	-5.98	316.8	24.96	0.00169	0.000025
0.699	26.37	0.0796	0.838	-5.02	354.8	25.92	0.00155	0.000024
0.799	27.47	0.0910	0.873	-3.94	405.6	27.00	0.00130	0.000021
0.899	28.48	0.1024	0.905	-2.94	456.4	28.00	0.00104	0.000018
1.049	29.94	0.1195	0.951	-1.51	532.5	29.43	0.00070	0.000013
1.199	30.95	0.1366	0.983	-0.52	608.7	30.42	0.00042	0.000009
1.399	31.47	0.1594	1.000	-0.01	710.2	30.93	0.00014	0.000004
1.599	31.51	0.1822	1.001	0.04	811.7	30.98	0.00000	0.000000
1.799	31.48	0.2049	1.000	0.00	913.3	30.94	0.00000	0.000000

RUN: 90171-2 X=58. Z= 0.

UI = 31.38 D1 = 0.3359 BETA=-0.001 RD2 = 3384.
CF/2= 0.00098 D2 = 0.2161 B = 2.045 H = 1.554
F = 0.00200 DC =10.7416 P+ =-0.0000 G =11.405
K = 0.183E-09 D99 = 1.5208 V0+ = 0.0640

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.72	0.0005	0.087	-29.20	2.4	2.77	0.00115	0.000880
0.006	2.83	0.0006	0.090	-29.09	2.9	2.89	0.00116	0.000863
0.007	3.09	0.0007	0.099	-28.83	3.4	3.15	0.00118	0.000847
0.009	3.86	0.0008	0.123	-28.04	4.4	3.93	0.00123	0.000829
0.011	4.68	0.0010	0.149	-27.21	5.4	4.77	0.00128	0.000865
0.014	6.06	0.0013	0.193	-25.80	6.9	6.17	0.00137	0.000817
0.017	7.34	0.0016	0.234	-24.50	8.3	7.48	0.00145	0.000738
0.020	8.32	0.0019	0.265	-23.50	9.8	8.48	0.00151	0.000626
0.023	9.26	0.0021	0.295	-22.54	11.3	9.44	0.00157	0.000543
0.027	10.36	0.0025	0.330	-21.42	13.2	10.56	0.00164	0.000440
0.031	10.94	0.0029	0.349	-20.83	15.2	11.15	0.00168	0.000363
0.039	12.32	0.0036	0.393	-19.42	19.1	12.55	0.00176	0.000254
0.044	12.78	0.0041	0.407	-18.96	21.5	13.02	0.00179	0.000211
0.054	13.64	0.0050	0.434	-18.08	26.4	13.89	0.00184	0.000157
0.064	14.33	0.0060	0.457	-17.37	31.3	14.61	0.00188	0.000120
0.079	15.12	0.0074	0.482	-16.57	38.7	15.41	0.00192	0.000095
0.099	15.73	0.0092	0.501	-15.95	48.5	16.03	0.00195	0.000073
0.134	16.41	0.0125	0.539	-14.75	65.6	17.23	0.00200	0.000054
0.159	17.61	0.0148	0.561	-14.03	77.9	17.96	0.00203	0.000047
0.209	18.47	0.0195	0.589	-13.16	102.4	18.82	0.00204	0.000038
0.284	19.61	0.0264	0.625	-11.99	139.1	19.99	0.00204	0.000032
0.359	20.70	0.0334	0.660	-10.88	175.8	21.09	0.00203	0.000029
0.434	21.77	0.0404	0.694	-9.79	212.6	22.19	0.00201	0.000027
0.509	22.73	0.0474	0.724	-8.82	249.3	23.16	0.00196	0.000025
0.609	23.88	0.0567	0.761	-7.64	298.3	24.34	0.00187	0.000023
0.709	24.91	0.0660	0.794	-6.60	347.2	25.38	0.00173	0.000022
0.809	26.02	0.0753	0.829	-5.47	396.2	26.51	0.00158	0.000020
0.909	27.03	0.0846	0.861	-4.43	445.2	27.55	0.00141	0.000019
1.059	28.30	0.0986	0.902	-3.14	518.6	28.84	0.00110	0.000016
1.209	29.52	0.1126	0.941	-1.89	592.1	30.08	0.00078	0.000012
1.409	30.77	0.1312	0.980	-0.63	690.1	31.35	0.00042	0.000007
1.609	31.31	0.1498	0.998	-0.08	788.0	31.90	0.00016	0.000004
1.809	31.42	0.1684	1.001	0.04	886.0	32.01	0.00000	0.000001
2.109	31.38	0.1963	1.000	0.00	1032.9	31.98	0.00000	0.000000

RUN: 90171-2 X=70. Z= 0.

UI = 31.33 D1 = 0.3860 BETA=-0.007 RD2 = 3918.
CF/2= 0.00092 D2 = 0.2506 B = 2.163 H = 1.540
F = 0.00200 DC =12.6946 P+ =-0.0000 G =11.537
K = 0.113E-08 D99 = 1.7713 VO+ = 0.0658

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.44	0.0004	0.110	-29.27	2.4	3.61	0.00114	0.001140
0.006	3.81	0.0005	0.122	-28.89	2.9	4.00	0.00116	0.001081
0.007	4.18	0.0006	0.133	-28.50	3.3	4.39	0.00119	0.001023
0.008	4.66	0.0006	0.149	-27.99	3.8	4.89	0.00122	0.000887
0.010	5.52	0.0008	0.176	-27.09	4.8	5.79	0.00127	0.000854
0.013	6.85	0.0010	0.219	-25.69	6.2	7.19	0.00136	0.000722
0.016	7.74	0.0013	0.247	-24.76	7.6	8.13	0.00141	0.000600
0.020	9.08	0.0016	0.290	-23.36	9.5	9.53	0.00150	0.000488
0.024	9.66	0.0019	0.308	-22.75	11.4	10.14	0.00154	0.000400
0.030	10.80	0.0024	0.345	-21.56	14.3	11.33	0.00161	0.000308
0.038	11.95	0.0030	0.381	-20.34	18.1	12.54	0.00168	0.000224
0.048	12.92	0.0038	0.412	-19.33	22.8	13.56	0.00174	0.000170
0.063	13.81	0.0050	0.441	-18.39	30.0	14.50	0.00179	0.000118
0.083	14.71	0.0065	0.470	-17.45	39.5	15.44	0.00184	0.000082
0.108	15.66	0.0085	0.500	-16.45	51.3	16.44	0.00189	0.000065
0.133	16.36	0.0105	0.522	-15.72	63.2	17.17	0.00192	0.000054
0.183	17.19	0.0144	0.549	-14.84	87.0	18.04	0.00195	0.000042
0.258	18.86	0.0203	0.602	-13.09	122.7	19.80	0.00201	0.000032
0.333	19.82	0.0262	0.633	-12.08	158.3	20.81	0.00202	0.000028
0.408	20.71	0.0321	0.661	-11.14	194.0	21.74	0.00201	0.000025
0.508	21.75	0.0400	0.694	-10.05	241.5	22.83	0.00197	0.000023
0.608	22.91	0.0479	0.731	-8.86	289.1	24.05	0.00192	0.000021
0.708	23.88	0.0558	0.762	-7.82	336.6	25.07	0.00185	0.000020
0.808	24.86	0.0636	0.793	-6.80	384.1	26.09	0.00176	0.000019
0.958	26.22	0.0755	0.837	-5.36	455.5	27.52	0.00158	0.000017
1.108	27.38	0.0873	0.874	-4.14	526.8	28.74	0.00134	0.000015
1.308	28.93	0.1030	0.923	-2.52	621.9	30.37	0.00099	0.000011
1.508	30.10	0.1188	0.961	-1.30	716.9	31.59	0.00063	0.000008
1.708	30.94	0.1345	0.987	-0.41	812.0	32.47	0.00035	0.000005
2.008	31.32	0.1582	1.000	-0.01	954.7	32.88	0.00009	0.000002
2.308	31.38	0.1818	1.001	0.05	1097.3	32.93	0.00000	0.000000
2.608	31.33	0.2054	1.000	0.00	1239.9	32.89	0.00000	0.000000

RUN: 90171-2 X=82. Z= 0.

UI = 31.36 D1 = 0.4364 BETA=-0.018 RD2 = 4450.
CF/2= 0.00088 D2 = 0.2846 B = 2.255 H = 1.534
F = 0.00199 DC =14.6925 P+ =-0.0001 G =11.712
K = 0.232E-08 D99 = 2.0255 VO+ = 0.0670

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.00	0.0003	0.096	-30.44	2.3	3.22	0.00107	0.000975
0.006	3.35	0.0004	0.107	-30.07	2.8	3.60	0.00109	0.000934
0.007	3.58	0.0005	0.114	-29.82	3.3	3.84	0.00111	0.000892
0.009	4.32	0.0008	0.138	-29.03	4.2	4.64	0.00115	0.000761
0.012	5.43	0.0008	0.173	-27.84	5.6	5.83	0.00122	0.000731
0.015	6.65	0.0010	0.212	-26.52	7.0	7.15	0.00130	0.000694
0.018	7.42	0.0012	0.237	-25.69	8.4	7.98	0.00135	0.000606
0.022	8.70	0.0015	0.278	-24.32	10.2	9.35	0.00143	0.000500
0.026	9.87	0.0018	0.315	-23.06	12.1	10.60	0.00151	0.000405
0.030	10.36	0.0020	0.331	-22.53	13.9	11.13	0.00154	0.000348
0.036	11.26	0.0025	0.359	-21.56	16.7	12.10	0.00160	0.000264
0.044	12.06	0.0030	0.385	-20.70	20.4	12.96	0.00165	0.000197
0.056	13.10	0.0037	0.418	-19.59	25.1	14.07	0.00171	0.000152
0.069	14.00	0.0047	0.447	-18.62	32.1	15.04	0.00176	0.000107
0.084	14.63	0.0057	0.467	-17.95	39.0	15.72	0.00180	0.000083
0.104	15.25	0.0071	0.487	-17.28	48.3	16.38	0.00184	0.000063
0.129	15.92	0.0088	0.508	-16.57	59.9	17.10	0.00187	0.000051
0.154	16.57	0.0105	0.529	-15.87	71.5	17.80	0.00191	0.000044
0.204	17.39	0.0139	0.555	-14.98	94.8	18.68	0.00195	0.000036
0.279	18.64	0.0190	0.595	-13.64	129.6	20.03	0.00199	0.000029
0.354	19.54	0.0241	0.624	-12.67	164.4	21.00	0.00200	0.000025
0.454	20.64	0.0309	0.659	-11.49	210.9	22.18	0.00201	0.000023
0.554	21.68	0.0377	0.692	-10.38	257.3	23.29	0.00200	0.000021
0.654	22.65	0.0445	0.723	-9.34	303.8	24.33	0.00198	0.000019
0.804	24.03	0.0547	0.767	-7.85	373.5	25.81	0.00187	0.000017
1.004	25.60	0.0683	0.817	-6.16	466.4	27.50	0.00164	0.000015
1.204	27.00	0.0819	0.862	-4.65	559.3	29.01	0.00139	0.000014
1.404	28.35	0.0956	0.905	-3.20	652.2	30.46	0.00110	0.000011
1.604	29.56	0.1092	0.943	-1.91	745.1	31.75	0.00080	0.000009
1.804	30.51	0.1228	0.974	-0.89	838.0	32.78	0.00050	0.000006
2.104	31.20	0.1432	0.996	-0.14	977.3	33.52	0.00016	0.000003
2.404	31.35	0.1636	1.001	0.02	1116.7	33.68	0.00000	0.000001
2.704	31.34	0.1840	1.000	0.00	1256.0	33.67	0.00000	0.000000

RUN: 90171-2 X=90. Z= 0.

UI = 31.28 D1 = 0.4619 BETA=-0.027 RD2 = 4742.
CF/2= 0.00086 D2 = 0.3038 B = 2.330 H = 1.521
F = 0.00200 DC =15.7674 P+ =-0.0001 G =11.687
K = 0.326E-08 D99 = 2.1644 VO+ = 0.0683

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	4.39	0.0004	0.140	-29.34	3.1	4.79	0.001062
0.008	4.76	0.0005	0.152	-28.94	3.6	5.19	0.001002
0.009	5.13	0.0006	0.164	-28.54	4.0	5.60	0.000942
0.010	5.53	0.0006	0.177	-28.10	4.5	6.03	0.000842
0.012	6.42	0.0007	0.205	-27.13	5.4	7.00	0.000795
0.014	7.21	0.0009	0.231	-26.27	6.3	7.87	0.000714
0.017	8.07	0.0011	0.258	-25.33	7.7	8.80	0.000586
0.020	9.08	0.0013	0.290	-24.23	9.1	9.90	0.000485
0.024	9.84	0.0015	0.315	-23.40	10.9	10.74	0.000384
0.031	10.95	0.0020	0.350	-22.19	14.1	11.95	0.000276
0.041	12.00	0.0026	0.384	-21.06	18.7	13.09	0.000191
0.051	12.74	0.0032	0.407	-20.23	23.2	13.90	0.000147
0.066	13.79	0.0042	0.441	-19.09	30.1	15.04	0.000111
0.086	14.66	0.0054	0.469	-18.14	39.2	16.00	0.000080
0.106	15.26	0.0067	0.488	-17.48	48.4	16.66	0.000061
0.141	16.41	0.0089	0.524	-16.23	64.4	17.90	0.000046
0.166	16.63	0.0105	0.531	-15.99	75.8	18.14	0.000040
0.216	17.33	0.0137	0.554	-15.22	98.7	18.92	0.000032
0.266	18.35	0.0169	0.587	-14.11	121.6	20.03	0.000028
0.316	18.89	0.0200	0.604	-13.52	144.4	20.62	0.000026
0.416	19.97	0.0264	0.638	-12.36	190.2	21.79	0.000022
0.516	21.16	0.0327	0.676	-11.04	235.9	23.09	0.000020
0.616	21.97	0.0391	0.702	-10.16	281.6	23.98	0.000018
0.766	23.09	0.0486	0.738	-8.94	350.2	25.20	0.000017
0.916	24.37	0.0581	0.779	-7.56	418.8	26.59	0.000016
1.116	25.86	0.0708	0.827	-5.92	510.3	28.22	0.000014
1.316	27.26	0.0835	0.871	-4.39	601.7	29.74	0.000013
1.516	28.40	0.0961	0.908	-3.14	693.2	30.99	0.000010
1.716	29.53	0.1088	0.944	-1.91	784.7	32.22	0.000008
2.016	30.70	0.1278	0.981	-0.64	921.9	33.50	0.000005
2.316	31.25	0.1469	0.999	-0.04	1059.0	34.10	0.000002
2.616	31.31	0.1659	1.001	0.03	1196.2	34.16	0.000001
2.916	31.28	0.1849	1.000	0.00	1333.4	34.14	0.000000

RUN: 90871-3 X= 2. Z= 0.

UI = 31.62 D1 = 0.0666 BETA=-0.001 RD2 = 626.
CF/2= 0.00133 D2 = 0.0394 B = 2.829 H = 1.689
F = 0.00375 DC = 1.8285 P+ =-0.0000 G =11.201
K = 0.105E-08 D99 = 0.3159 VO+ = 0.1030

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	3.88	0.0024	0.123	-24.10	2.5	3.37	0.001444
0.005	4.00	0.0029	0.126	-24.00	3.1	3.47	0.001415
0.006	4.55	0.0036	0.144	-23.51	3.6	3.95	0.001386
0.007	5.36	0.0040	0.170	-22.81	4.2	4.66	0.001385
0.008	5.96	0.0045	0.188	-22.29	4.8	5.18	0.001494
0.010	7.64	0.0056	0.242	-20.83	6.0	6.64	0.001397
0.012	9.09	0.0067	0.286	-19.60	7.1	7.86	0.001243
0.014	10.32	0.0078	0.326	-18.50	8.3	8.96	0.001110
0.017	11.70	0.0095	0.370	-17.30	10.0	10.16	0.000920
0.020	13.07	0.0111	0.413	-16.11	11.7	11.35	0.000773
0.023	14.21	0.0127	0.449	-15.12	13.5	12.34	0.000657
0.026	15.14	0.0144	0.479	-14.31	15.2	13.15	0.000573
0.030	16.16	0.0166	0.511	-13.42	17.5	14.04	0.000463
0.035	17.22	0.0193	0.545	-12.51	20.4	14.96	0.000371
0.040	18.10	0.0220	0.573	-11.74	23.3	15.72	0.000311
0.045	18.67	0.0248	0.591	-11.25	26.2	16.22	0.000266
0.055	19.88	0.0302	0.629	-10.20	32.0	17.27	0.000215
0.065	20.87	0.0357	0.660	-9.34	37.8	18.13	0.000188
0.075	21.66	0.0412	0.685	-8.65	43.5	18.82	0.000171
0.090	22.95	0.0494	0.726	-7.53	52.2	19.94	0.000152
0.105	24.02	0.0576	0.760	-6.60	60.9	20.87	0.000137
0.120	24.98	0.0658	0.790	-5.76	69.6	21.70	0.000123
0.135	25.93	0.0740	0.820	-4.94	78.2	22.52	0.000109
0.155	26.97	0.0849	0.853	-4.04	89.8	23.43	0.000095
0.180	28.07	0.0986	0.888	-3.08	104.2	24.38	0.000078
0.205	28.99	0.1123	0.917	-2.28	118.7	25.18	0.000063
0.230	29.73	0.1260	0.940	-1.64	133.2	25.83	0.000051
0.255	30.34	0.1396	0.960	-1.11	147.6	26.36	0.000040
0.305	31.21	0.1670	0.987	-0.35	176.5	27.12	0.000022
0.355	31.62	0.1943	1.000	0.01	205.4	27.47	0.000010

RUN: 90871-3 X=10. Z= 0.

UI = 31.34 D1 = 0.1369 BETA=-0.002 RD2 = 1258.
CF/2= 0.00098 D2 = 0.0799 B = 3.809 H = 1.713
F = 0.00375 DC = 4.3628 P+ =-0.0000 G =13.264
K = 0.851E-09 D99 = 0.5362 V0+ = 0.1195

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.23	0.0011	0.103	-28.59	2.5	3.28	0.00137	0.001100
0.006	3.48	0.0014	0.111	-28.33	3.0	3.54	0.00140	0.001060
0.007	3.95	0.0016	0.126	-27.86	3.5	4.01	0.00145	0.001020
0.008	4.49	0.0018	0.143	-27.31	4.0	4.56	0.00152	0.000957
0.010	5.45	0.0023	0.174	-26.32	4.9	5.55	0.00163	0.000973
0.013	6.75	0.0030	0.215	-25.01	6.4	6.86	0.00178	0.000866
0.016	8.09	0.0037	0.258	-23.64	7.9	8.23	0.00194	0.000761
0.019	9.26	0.0044	0.296	-22.45	9.4	9.42	0.00207	0.000669
0.023	10.42	0.0053	0.333	-21.27	11.4	10.60	0.00220	0.000550
0.027	11.50	0.0062	0.367	-20.18	13.3	11.69	0.00232	0.000447
0.031	12.36	0.0071	0.394	-19.30	15.3	12.57	0.00241	0.000369
0.036	13.11	0.0083	0.418	-18.54	17.8	13.33	0.00248	0.000302
0.043	14.00	0.0099	0.447	-17.64	21.2	14.23	0.00256	0.000235
0.051	14.79	0.0117	0.472	-16.83	25.2	15.03	0.00261	0.000190
0.061	15.66	0.0140	0.500	-15.95	30.1	15.92	0.00266	0.000158
0.076	16.64	0.0174	0.531	-14.95	37.5	16.92	0.00269	0.000129
0.101	18.02	0.0232	0.575	-13.55	49.9	18.32	0.00267	0.000104
0.126	19.17	0.0289	0.612	-12.38	62.2	19.49	0.00260	0.000091
0.151	20.25	0.0346	0.646	-11.28	74.6	20.59	0.00249	0.000085
0.176	21.14	0.0403	0.674	-10.38	86.9	21.49	0.00233	0.000080
0.201	22.15	0.0461	0.707	-9.35	99.3	22.52	0.00219	0.000077
0.241	23.61	0.0552	0.753	-7.86	119.1	24.01	0.00193	0.000072
0.281	25.01	0.0644	0.798	-6.44	138.8	25.43	0.00168	0.000068
0.321	26.28	0.0736	0.838	-5.15	158.6	26.72	0.00143	0.000062
0.381	28.11	0.0873	0.897	-3.29	188.2	28.58	0.00116	0.000050
0.426	29.29	0.0976	0.935	-2.08	210.5	29.78	0.00101	0.000039
0.476	30.34	0.1091	0.968	-1.02	235.2	30.85	0.00089	0.000029
0.551	31.20	0.1263	0.995	-0.15	272.2	31.72	0.00063	0.000016
0.626	31.38	0.1435	1.001	0.03	309.3	31.90	0.00029	0.000005
0.701	31.38	0.1607	1.001	0.03	346.3	31.90	0.00000	-0.000002
0.801	31.34	0.1836	1.000	0.00	395.7	31.87	0.00000	0.000000

RUN: 90871-3 X=22. Z= 0.

UI = 31.52 D1 = 0.2348 BETA=-0.003 RD2 = 2172.
CF/2= 0.00077 D2 = 0.1372 B = 4.897 H = 1.712
F = 0.00375 DC = 4.4864 P+ =-0.0000 G =15.025
K = 0.570E-09 D99 = 0.8914 V0+ = 0.1355

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	2.57	0.0007	0.082	-33.19	2.6	2.95	0.00108	0.000791
0.007	2.89	0.0008	0.092	-32.82	3.1	3.32	0.00111	0.000788
0.009	3.48	0.0011	0.110	-32.15	3.9	3.99	0.00118	0.000783
0.011	4.27	0.0013	0.136	-31.24	4.8	4.90	0.00128	0.000784
0.014	5.63	0.0016	0.178	-29.89	6.1	6.45	0.00144	0.000726
0.018	7.08	0.0021	0.225	-28.02	7.9	8.12	0.00161	0.000605
0.022	8.30	0.0026	0.263	-26.62	9.6	9.51	0.00175	0.000495
0.026	9.12	0.0031	0.289	-25.68	11.4	10.45	0.00185	0.000408
0.033	10.34	0.0039	0.328	-24.28	14.5	11.85	0.00199	0.000304
0.041	11.44	0.0048	0.363	-23.03	18.0	13.11	0.00211	0.000236
0.051	12.41	0.0060	0.394	-21.91	22.3	14.23	0.00221	0.000183
0.061	13.23	0.0072	0.420	-20.98	26.7	15.16	0.00229	0.000147
0.076	14.32	0.0090	0.454	-19.72	33.3	16.41	0.00240	0.000114
0.096	15.18	0.0113	0.482	-18.74	42.1	17.40	0.00246	0.000091
0.116	15.90	0.0137	0.505	-17.90	50.8	18.23	0.00250	0.000077
0.146	16.99	0.0172	0.539	-16.66	64.0	19.47	0.00255	0.000066
0.191	18.33	0.0225	0.581	-15.12	83.7	21.01	0.00257	0.000057
0.236	19.48	0.0278	0.618	-13.81	103.4	22.33	0.00253	0.000052
0.286	20.72	0.0337	0.657	-12.39	125.3	23.75	0.00245	0.000049
0.336	21.85	0.0396	0.693	-11.09	147.2	25.05	0.00232	0.000047
0.386	22.98	0.0455	0.729	-9.80	169.1	26.34	0.00216	0.000045
0.436	24.07	0.0514	0.764	-8.54	191.0	27.59	0.00197	0.000042
0.486	25.15	0.0573	0.798	-7.30	213.0	28.84	0.00176	0.000041
0.536	26.13	0.0632	0.829	-6.18	234.9	29.95	0.00153	0.000039
0.586	27.04	0.0691	0.858	-5.14	256.8	31.00	0.00131	0.000036
0.661	28.50	0.0779	0.904	-3.47	289.6	32.67	0.00108	0.000031
0.736	29.69	0.0867	0.942	-2.10	322.5	34.03	0.00087	0.000024
0.811	30.60	0.0956	0.971	-1.06	355.4	35.08	0.00068	0.000018
0.911	31.36	0.1073	0.995	-0.19	399.2	35.94	0.00044	0.000010
1.011	31.54	0.1191	1.001	0.02	443.0	36.16	0.00018	0.000004
1.111	31.57	0.1309	1.001	0.05	486.8	36.19	0.00000	-0.000000
1.261	31.52	0.1486	1.000	0.00	552.5	36.14	0.00000	0.000000

RUN: 90871-3 X=34. Z= 0.

UI = 31.50 D1 = 0.3271 BETA=-0.002 RD2 = 3030.
CF/2= 0.00065 D2 = 0.1915 B = 5.761 H = 1.708
F = 0.00375 DC =12.8194 P+ =-0.0000 G =16.246
K = 0.306E-09 D99 = 1.2300 V0+ = 0.1470

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.007	2.50	0.0005	0.079	-36.08	2.7	3.11	0.00095	0.000690
0.008	2.69	0.0006	0.085	-35.84	3.1	3.35	0.00097	0.000688
0.010	3.37	0.0007	0.107	-35.00	3.9	4.19	0.00105	0.000686
0.012	3.93	0.0009	0.125	-34.31	4.7	4.89	0.00112	0.000687
0.015	4.99	0.0011	0.158	-32.99	5.9	6.20	0.00124	0.000649
0.019	6.48	0.0015	0.206	-31.13	7.5	8.07	0.00142	0.000553
0.023	7.55	0.0018	0.240	-29.80	9.1	9.40	0.00155	0.000471
0.027	8.34	0.0021	0.265	-28.82	10.7	10.37	0.00164	0.000393
0.033	9.34	0.0025	0.297	-27.57	13.2	11.62	0.00175	0.000297
0.040	10.44	0.0031	0.331	-26.20	16.0	12.99	0.00188	0.000232
0.052	11.51	0.0040	0.365	-24.87	20.8	14.32	0.00200	0.000166
0.072	12.63	0.0056	0.401	-23.48	28.9	15.72	0.00211	0.000111
0.102	14.06	0.0079	0.447	-21.69	41.0	17.50	0.00225	0.000077
0.137	15.14	0.0107	0.481	-20.35	55.1	18.84	0.00233	0.000060
0.177	16.18	0.0138	0.514	-19.05	71.3	20.14	0.00239	0.000050
0.222	17.14	0.0173	0.544	-17.87	89.5	21.33	0.00242	0.000044
0.272	18.17	0.0212	0.577	-16.58	109.6	22.61	0.00244	0.000041
0.322	19.09	0.0251	0.606	-15.44	129.8	23.75	0.00243	0.000038
0.372	20.02	0.0290	0.636	-14.28	150.0	24.91	0.00240	0.000037
0.447	21.42	0.0348	0.680	-12.55	180.3	26.65	0.00233	0.000035
0.522	22.58	0.0407	0.717	-11.10	210.6	28.09	0.00220	0.000033
0.597	23.91	0.0465	0.759	-9.45	240.8	29.75	0.00206	0.000032
0.697	25.33	0.0543	0.804	-7.68	281.2	31.52	0.00177	0.000030
0.797	26.88	0.0621	0.853	-5.74	321.6	33.45	0.00147	0.000027
0.897	28.25	0.0699	0.897	-4.04	361.9	35.16	0.00114	0.000023
0.997	29.41	0.0777	0.934	-2.60	402.3	36.60	0.00084	0.000018
1.097	30.45	0.0855	0.967	-1.30	442.7	37.89	0.00062	0.000014
1.247	31.27	0.0972	0.993	-0.28	503.2	38.92	0.00028	0.000007
1.397	31.51	0.1089	1.000	0.02	563.8	39.21	0.00000	0.000003
1.597	31.50	0.1245	1.000	0.00	644.5	39.19	0.00000	0.000000

RUN: 90871-3 X=46. Z= 0.

UI = 31.39 D1 = 0.4238 BETA=-0.001 RD2 = 3863.
CF/2= 0.00057 D2 = 0.2450 B = 6.554 H = 1.730
F = 0.00376 DC =17.6945 P+ =-0.0000 G =17.616
K = 0.600E-10 D99 = 1.5807 V0+ = 0.1570

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.011	2.75	0.0006	0.088	-38.09	4.2	3.66	0.00090	0.000531
0.014	3.52	0.0008	0.112	-37.07	5.3	4.68	0.00099	0.000518
0.017	4.44	0.0010	0.142	-35.84	6.4	5.91	0.00110	0.000504
0.021	5.73	0.0012	0.183	-34.13	7.9	7.62	0.00126	0.000473
0.026	6.76	0.0015	0.215	-32.76	9.8	9.00	0.00138	0.000397
0.033	8.02	0.0019	0.256	-31.08	12.5	10.67	0.00153	0.000304
0.043	9.24	0.0024	0.294	-29.46	16.2	12.29	0.00167	0.000214
0.055	10.39	0.0031	0.331	-27.94	20.8	13.81	0.00180	0.000157
0.070	11.49	0.0040	0.366	-26.47	26.4	15.28	0.00193	0.000116
0.090	12.19	0.0051	0.388	-25.54	34.0	16.21	0.00200	0.000086
0.120	13.33	0.0068	0.425	-24.03	45.3	17.72	0.00211	0.000064
0.160	14.35	0.0090	0.457	-22.67	60.4	19.08	0.00220	0.000050
0.200	15.25	0.0113	0.486	-21.47	75.5	20.28	0.00228	0.000042
0.250	16.23	0.0141	0.517	-20.17	94.4	21.58	0.00235	0.000037
0.300	17.07	0.0170	0.544	-19.04	113.3	22.71	0.00239	0.000035
0.350	17.76	0.0198	0.566	-18.13	132.2	23.62	0.00240	0.000033
0.400	18.59	0.0226	0.592	-17.03	151.1	24.72	0.00243	0.000032
0.475	19.81	0.0268	0.631	-15.40	179.4	26.35	0.00246	0.000030
0.550	20.88	0.0311	0.665	-13.98	207.7	27.77	0.00242	0.000028
0.625	21.90	0.0353	0.698	-12.63	236.0	29.12	0.00236	0.000027
0.700	22.88	0.0396	0.729	-11.32	264.4	30.43	0.00227	0.000026
0.775	23.74	0.0438	0.756	-10.18	292.7	31.57	0.00214	0.000026
0.850	24.79	0.0480	0.790	-8.78	321.0	32.97	0.00203	0.000025
0.925	25.64	0.0523	0.817	-7.64	349.3	34.11	0.00186	0.000024
1.000	26.58	0.0565	0.847	-6.40	377.7	35.35	0.00170	0.000023
1.100	27.63	0.0622	0.880	-5.00	415.4	36.75	0.00143	0.000020
1.200	28.69	0.0678	0.914	-3.59	453.2	38.16	0.00118	0.000018
1.350	29.98	0.0763	0.955	-1.88	509.8	39.87	0.00085	0.000013
1.500	30.87	0.0848	0.983	-0.69	566.5	41.06	0.00057	0.000009
1.700	31.38	0.0961	1.000	-0.01	642.0	41.74	0.00028	0.000004
2.000	31.42	0.1130	1.001	0.04	755.3	41.79	0.00000	-0.000001
2.300	31.39	0.1300	1.000	0.00	868.6	41.75	0.00000	0.000000

RUN: 90871-3 X=58. Z= 0.

UI = 31.40 D1 = 0.5091 BETA= 0.003 RD2 = 4700.
CF/2= 0.00052 D2 = 0.2980 B = 7.226 H = 1.709
F = 0.00375 DC =22.3489 P+ = 0.0000 G =18.207
K = -0.169E-09 D99 = 1.9347 VO+ = 0.1646

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.013	2.80	0.0006	0.089	-39.98	4.7	3.92	0.00085	0.000486
0.017	4.01	0.0008	0.128	-38.29	6.1	5.60	0.00100	0.000477
0.021	5.25	0.0009	0.167	-36.55	7.5	7.34	0.00115	0.000467
0.025	6.07	0.0011	0.193	-35.41	9.0	8.49	0.00124	0.000410
0.029	6.93	0.0013	0.221	-34.21	10.4	9.69	0.00135	0.000354
0.034	7.76	0.0015	0.247	-33.05	12.2	10.84	0.00145	0.000292
0.041	8.55	0.0018	0.272	-31.98	14.7	11.92	0.00154	0.000231
0.050	9.52	0.0022	0.303	-30.59	18.0	13.31	0.00165	0.000173
0.063	10.58	0.0028	0.337	-29.10	22.6	14.79	0.00178	0.000131
0.078	11.19	0.0035	0.356	-28.26	28.0	15.64	0.00184	0.000102
0.103	12.12	0.0046	0.386	-26.95	37.0	16.95	0.00194	0.000073
0.138	13.55	0.0062	0.432	-24.95	49.6	18.95	0.00210	0.000055
0.183	14.50	0.0082	0.462	-23.63	65.8	20.26	0.00219	0.000044
0.233	15.18	0.0104	0.483	-22.68	83.7	21.22	0.00225	0.000037
0.283	16.17	0.0127	0.515	-21.29	101.7	22.61	0.00233	0.000032
0.358	17.30	0.0160	0.551	-19.71	128.6	24.19	0.00241	0.000027
0.433	18.36	0.0194	0.585	-18.23	155.6	25.67	0.00246	0.000025
0.508	19.03	0.0227	0.606	-17.30	182.6	26.60	0.00244	0.000024
0.583	19.83	0.0261	0.631	-16.18	209.5	27.71	0.00242	0.000023
0.658	20.86	0.0294	0.664	-14.74	236.5	29.16	0.00242	0.000023
0.758	21.96	0.0339	0.699	-13.20	272.4	30.70	0.00235	0.000023
0.858	22.99	0.0384	0.732	-11.76	308.3	32.13	0.00225	0.000022
0.958	24.06	0.0429	0.766	-10.27	344.3	33.63	0.00213	0.000021
1.058	25.18	0.0473	0.802	-8.69	380.2	35.20	0.00199	0.000020
1.158	26.04	0.0518	0.829	-7.50	416.1	36.40	0.00178	0.000019
1.258	26.97	0.0563	0.859	-6.20	452.1	37.70	0.00158	0.000018
1.358	27.91	0.0608	0.889	-4.88	488.0	39.02	0.00137	0.000016
1.508	29.06	0.0675	0.925	-3.28	541.9	40.62	0.00101	0.000013
1.658	30.10	0.0742	0.959	-1.82	595.8	42.08	0.00072	0.000010
1.858	30.95	0.0831	0.986	-0.63	667.7	43.27	0.00040	0.000006
2.108	31.39	0.0943	1.000	-0.01	757.5	43.88	0.00016	0.000002
2.408	31.40	0.1077	1.000	0.00	865.3	43.90	0.00000	0.000000

RUN: 90871-3 X=70. Z= 0.

UI = 31.31 D1 = 0.5969 BETA= 0.007 RD2 = 5494.
CF/2= 0.00048 D2 = 0.3494 B = 7.861 H = 1.708
F = 0.00375 DC =27.3267 P+ = 0.0000 G =18.982
K = -0.380E-09 D99 = 2.2310 VO+ = 0.1717

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.014	3.50	0.0005	0.112	-40.67	4.8	5.12	0.00090	0.000482
0.018	4.58	0.0007	0.146	-39.08	6.2	6.70	0.00103	0.000443
0.022	5.67	0.0008	0.181	-37.49	7.6	8.30	0.00116	0.000405
0.026	6.28	0.0010	0.201	-36.59	8.9	9.19	0.00123	0.000349
0.030	6.97	0.0011	0.223	-35.59	10.3	10.20	0.00131	0.000297
0.036	7.70	0.0013	0.246	-34.52	12.4	11.26	0.00140	0.000234
0.044	8.64	0.0016	0.276	-33.14	15.1	12.64	0.00151	0.000189
0.057	9.59	0.0021	0.306	-31.76	19.6	14.03	0.00162	0.000138
0.074	10.48	0.0027	0.335	-30.45	25.4	15.33	0.00173	0.000103
0.099	11.71	0.0036	0.374	-28.66	34.0	17.12	0.00187	0.000074
0.134	12.59	0.0049	0.402	-27.37	46.0	18.41	0.00196	0.000055
0.184	13.94	0.0067	0.445	-25.40	63.2	20.39	0.00210	0.000041
0.234	14.65	0.0086	0.468	-24.36	80.4	21.42	0.00216	0.000033
0.284	15.42	0.0104	0.493	-23.23	97.5	22.55	0.00223	0.000029
0.359	16.37	0.0131	0.523	-21.84	123.3	23.95	0.00230	0.000025
0.434	17.14	0.0159	0.548	-20.72	149.1	25.07	0.00232	0.000024
0.509	18.10	0.0186	0.578	-19.31	174.8	26.48	0.00238	0.000022
0.609	18.98	0.0223	0.606	-18.03	209.2	27.76	0.00239	0.000021
0.709	20.17	0.0259	0.644	-16.29	243.5	29.49	0.00242	0.000021
0.809	20.91	0.0296	0.668	-15.20	277.9	30.58	0.00237	0.000020
0.909	22.02	0.0333	0.703	-13.58	312.2	32.20	0.00236	0.000019
1.009	22.97	0.0369	0.734	-12.19	346.6	33.60	0.00230	0.000018
1.109	23.81	0.0406	0.760	-10.97	380.9	34.82	0.00218	0.000018
1.234	24.58	0.0452	0.798	-9.25	423.8	36.53	0.00205	0.000017
1.359	25.89	0.0497	0.827	-7.93	466.8	37.86	0.00184	0.000016
1.484	27.01	0.0543	0.863	-6.28	509.7	39.50	0.00167	0.000016
1.609	27.87	0.0589	0.890	-5.03	552.6	40.75	0.00143	0.000014
1.759	28.95	0.0644	0.925	-3.44	604.2	42.35	0.00117	0.000012
1.909	29.93	0.0699	0.956	-2.01	655.7	43.78	0.00094	0.000009
2.109	30.69	0.0772	0.980	-0.89	724.4	44.89	0.00059	0.000006
2.309	31.18	0.0845	0.996	-0.18	793.1	45.60	0.00032	0.000004
2.609	31.34	0.0955	1.001	0.05	896.1	45.83	0.00000	0.000001
3.009	31.31	0.1101	1.000	0.00	1033.5	45.78	0.00000	0.000000

RUN: 90871-3 X=82. Z= 0.

UI = 30.94 D1 = 0.6716 BETA= 0.013 RD2 = 6173.
CF/2= 0.00045 D2 = 0.3972 B = 8.381 H = 1.691
F = 0.00375 DC =31.7522 P+ = 0.0001 G =19.318
K = -0.575E-09 D99 = 2.5111 VO+ = 0.1773

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.012	2.69	0.0004	0.087	-43.17	3.9	4.11	0.00078	0.000464
0.016	3.55	0.0005	0.115	-41.85	5.3	5.43	0.00088	0.000443
0.020	4.70	0.0006	0.152	-40.09	6.6	7.19	0.00102	0.000422
0.024	5.34	0.0008	0.173	-39.12	7.9	8.16	0.00110	0.000387
0.029	6.28	0.0009	0.203	-37.69	9.5	9.59	0.00121	0.000325
0.036	7.39	0.0011	0.239	-35.99	11.8	11.29	0.00135	0.000254
0.044	8.31	0.0014	0.269	-34.58	14.5	12.69	0.00146	0.000203
0.058	9.24	0.0018	0.299	-33.16	19.1	14.12	0.00157	0.000140
0.073	10.23	0.0023	0.331	-31.65	24.0	15.63	0.00169	0.000104
0.093	11.02	0.0029	0.356	-30.44	30.6	16.84	0.00178	0.000080
0.113	11.67	0.0036	0.377	-29.45	37.2	17.82	0.00186	0.000065
0.153	12.67	0.0048	0.410	-27.91	50.3	19.37	0.00197	0.000048
0.203	13.85	0.0064	0.448	-26.11	66.7	21.16	0.00210	0.000037
0.253	14.46	0.0080	0.467	-25.18	83.2	22.10	0.00216	0.000031
0.303	15.32	0.0095	0.495	-23.87	99.6	23.41	0.00226	0.000027
0.378	15.97	0.0119	0.516	-22.88	124.3	24.39	0.00232	0.000023
0.453	16.83	0.0143	0.544	-21.56	148.9	25.72	0.00241	0.000022
0.553	17.94	0.0174	0.580	-19.87	181.8	27.40	0.00252	0.000020
0.653	18.86	0.0206	0.603	-18.76	214.7	28.51	0.00257	0.000019
0.753	19.63	0.0237	0.634	-17.28	247.6	29.99	0.00262	0.000018
0.853	20.60	0.0269	0.666	-15.80	280.4	31.47	0.00264	0.000017
0.978	21.33	0.0308	0.689	-14.69	321.5	32.58	0.00256	0.000017
1.103	22.33	0.0347	0.722	-13.16	362.6	34.11	0.00254	0.000016
1.253	23.54	0.0395	0.761	-11.31	411.9	35.96	0.00247	0.000016
1.403	24.72	0.0442	0.799	-9.50	461.3	37.77	0.00232	0.000015
1.553	25.76	0.0489	0.833	-7.92	510.6	39.36	0.00212	0.000014
1.753	27.09	0.0552	0.875	-5.89	576.3	41.38	0.00183	0.000012
1.953	28.36	0.0615	0.917	-3.94	642.1	43.34	0.00150	0.000010
2.203	29.54	0.0694	0.955	-2.14	724.3	45.13	0.00102	0.000007
2.503	30.62	0.0788	0.990	-0.49	822.9	46.79	0.00058	0.000004
2.803	30.95	0.0883	1.000	0.01	921.5	47.29	0.00024	0.000002
3.203	30.97	0.1009	1.001	0.05	1053.0	47.32	0.00000	-0.000000
3.603	30.94	0.1135	1.000	0.00	1184.5	47.28	0.00000	0.000000

RUN: 90871-3 X=90. Z= 0.

UI = 30.98 D1 = 0.7147 BETA= 0.018 RD2 = 6667.
CF/2= 0.00043 D2 = 0.4285 B = 8.802 H = 1.668
F = 0.00376 DC =34.5813 P+ = 0.0001 G =19.379
K = -0.694E-09 D99 = 2.7922 VO+ = 0.1819

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.013	3.36	0.0004	0.108	-43.14	4.1	5.24	0.000495
0.017	4.28	0.0005	0.138	-41.70	5.4	6.69	0.000454
0.021	5.21	0.0006	0.168	-40.25	6.7	8.14	0.000413
0.026	6.05	0.0007	0.195	-38.94	8.3	9.45	0.000339
0.033	7.38	0.0009	0.238	-36.86	10.5	11.52	0.000264
0.041	8.68	0.0012	0.281	-35.76	13.1	12.63	0.000205
0.052	9.12	0.0015	0.295	-34.13	16.7	14.25	0.000149
0.067	9.90	0.0019	0.319	-32.93	21.5	15.46	0.000108
0.087	10.91	0.0025	0.352	-31.34	27.9	17.04	0.000082
0.117	11.57	0.0034	0.373	-30.32	37.6	18.07	0.000060
0.167	13.12	0.0048	0.423	-27.90	53.6	20.49	0.000045
0.217	13.86	0.0063	0.447	-26.74	69.7	21.64	0.000035
0.267	14.67	0.0077	0.474	-25.47	85.8	22.91	0.000031
0.342	15.77	0.0099	0.509	-23.75	109.9	24.63	0.000025
0.417	16.41	0.0121	0.530	-22.75	134.0	25.64	0.000022
0.517	17.63	0.0149	0.569	-20.84	166.2	27.54	0.000019
0.617	18.29	0.0178	0.590	-19.81	198.4	28.57	0.000017
0.717	19.14	0.0207	0.618	-18.49	230.5	29.89	0.000017
0.842	19.91	0.0243	0.643	-17.28	270.7	31.10	0.000016
0.967	20.84	0.0280	0.673	-15.84	310.9	32.54	0.000015
1.092	22.07	0.0316	0.712	-13.91	351.1	34.47	0.000015
1.217	22.80	0.0352	0.736	-12.77	391.3	35.62	0.000015
1.367	23.63	0.0395	0.763	-11.48	439.6	36.90	0.000014
1.517	24.84	0.0439	0.802	-9.59	487.8	38.79	0.000013
1.717	26.17	0.0496	0.845	-7.50	552.1	40.88	0.000012
1.917	27.38	0.0554	0.884	-5.62	616.5	42.76	0.000011
2.217	28.80	0.0641	0.930	-3.40	712.9	44.99	0.000008
2.517	30.10	0.0728	0.972	-1.38	809.4	47.01	0.000005
2.917	30.93	0.0843	0.998	-0.08	938.1	48.30	0.000003
3.317	31.01	0.0959	1.001	0.05	1066.7	48.44	0.000001
3.717	30.98	0.1075	1.000	0.00	1195.4	48.38	0.000000

RUN: 92271-5 X= 2. Z= 0.

UI = 31.44 D1 = 0.0856 BETA=-0.004 RD2 = 750.
CF/2= 0.00106 D2 = 0.0473 B = 7.557 H = 1.808
F = 0.00801 DC = 2.6280 P+ =-0.0001 G =13.728
K = 0.347E-08 D99 = 0.3556 V0+ = 0.2460

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	3.03	0.0016	0.096	-27.76	2.2	2.96	0.001132
0.005	3.29	0.0020	0.105	-27.56	2.7	3.22	0.001092
0.006	3.66	0.0024	0.116	-27.14	3.3	3.57	0.001053
0.008	4.62	0.0032	0.147	-26.21	4.3	4.51	0.001009
0.010	5.67	0.0039	0.180	-25.18	5.3	5.54	0.001061
0.012	6.70	0.0047	0.213	-24.17	6.3	6.55	0.000983
0.014	7.75	0.0054	0.246	-23.15	7.4	7.57	0.000964
0.016	8.54	0.0062	0.272	-22.37	8.4	8.34	0.000848
0.018	9.57	0.0070	0.304	-21.37	9.4	9.34	0.000769
0.021	10.44	0.0081	0.332	-20.52	11.0	10.20	0.000658
0.024	11.56	0.0092	0.368	-19.42	12.5	11.29	0.000571
0.028	12.47	0.0108	0.397	-18.53	14.6	12.18	0.000466
0.032	13.37	0.0123	0.425	-17.66	16.7	13.06	0.000409
0.036	14.14	0.0138	0.450	-16.90	18.7	13.81	0.000353
0.041	14.86	0.0157	0.473	-16.20	21.3	14.52	0.000304
0.046	15.72	0.0176	0.500	-15.36	23.9	15.35	0.000268
0.052	16.43	0.0199	0.522	-14.67	27.0	16.05	0.000240
0.058	16.99	0.0222	0.540	-14.12	30.1	16.59	0.000218
0.067	17.92	0.0256	0.570	-13.21	34.7	17.51	0.000193
0.078	18.99	0.0298	0.604	-12.17	40.4	18.55	0.000180
0.093	20.16	0.0355	0.641	-11.02	48.1	19.69	0.000167
0.108	21.41	0.0412	0.681	-9.86	55.9	20.92	0.000157
0.123	22.56	0.0469	0.718	-8.67	63.6	22.04	0.000148
0.138	23.59	0.0526	0.750	-7.67	71.4	23.05	0.000139
0.158	25.02	0.0602	0.796	-6.28	81.7	24.44	0.000123
0.178	26.21	0.0678	0.834	-5.11	92.0	25.60	0.000107
0.198	27.30	0.0755	0.868	-4.05	102.3	26.66	0.000092
0.223	28.29	0.0850	0.900	-3.09	115.2	27.63	0.000074
0.253	29.31	0.0964	0.932	-2.09	130.7	28.63	0.000056
0.283	30.06	0.1078	0.956	-1.35	146.2	29.37	0.000042
0.328	30.86	0.1249	0.981	-0.57	169.4	30.14	0.000025
0.368	31.26	0.1401	0.994	-0.18	190.0	30.53	0.000015
0.423	31.45	0.1611	1.000	0.01	218.4	30.72	0.000005
0.483	31.47	0.1839	1.001	0.02	249.4	30.74	-0.000002
0.548	31.44	0.2086	1.000	0.00	282.9	30.71	0.000000

RUN: 92271-5 X=10. Z= 0.

UI = 31.47 D1 = 0.2241 BETA=-0.026 RD2 = 1783.
CF/2= 0.00031 D2 = 0.1124 B =25.492 H = 1.994
F = 0.00796 DC =12.6839 P+ =-0.0004 G =28.211
K = 0.228E-08 D99 = 0.6839 V0+ = 0.4505

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.009	2.55	0.0007	0.081	-52.00	2.5	4.59	0.000537
0.011	3.09	0.0009	0.098	-51.04	3.1	5.56	0.000519
0.014	3.85	0.0011	0.122	-49.66	3.9	6.93	0.000492
0.018	4.83	0.0014	0.153	-47.91	5.0	8.68	0.000452
0.022	5.72	0.0017	0.182	-46.31	6.2	10.28	0.000393
0.027	6.65	0.0021	0.211	-44.63	7.6	11.96	0.000333
0.033	7.68	0.0026	0.244	-42.77	9.2	13.82	0.000275
0.040	8.46	0.0032	0.269	-41.38	11.2	15.21	0.000228
0.048	9.28	0.0038	0.295	-39.90	13.5	16.69	0.000191
0.061	10.32	0.0048	0.328	-38.04	17.1	18.55	0.000152
0.077	11.48	0.0061	0.365	-35.95	21.6	20.64	0.000126
0.097	12.65	0.0076	0.402	-33.84	27.2	22.75	0.000105
0.119	13.61	0.0094	0.432	-32.12	33.3	24.47	0.000092
0.139	14.44	0.0110	0.459	-30.62	39.0	25.97	0.000086
0.159	15.28	0.0125	0.486	-29.11	44.6	27.48	0.000083
0.184	16.27	0.0145	0.517	-27.33	51.6	29.26	0.000080
0.209	17.23	0.0165	0.548	-25.60	58.6	30.99	0.000078
0.234	18.26	0.0184	0.580	-23.76	65.6	32.83	0.000076
0.259	19.10	0.0204	0.607	-22.24	72.6	34.36	0.000074
0.289	20.26	0.0228	0.644	-20.15	81.0	36.44	0.000073
0.324	21.41	0.0255	0.680	-18.09	90.8	38.50	0.000071
0.374	23.16	0.0295	0.736	-14.94	104.8	41.65	0.000070
0.424	24.91	0.0334	0.792	-11.78	118.8	44.81	0.000066
0.474	26.66	0.0374	0.847	-8.65	132.8	47.94	0.000060
0.524	28.11	0.0413	0.893	-6.04	146.8	50.55	0.000051
0.574	29.43	0.0453	0.935	-3.67	160.9	52.93	0.000040
0.624	30.47	0.0492	0.968	-1.80	174.9	54.79	0.000029
0.699	31.32	0.0551	0.996	-0.25	195.9	56.34	0.000017
0.774	31.47	0.0610	1.000	0.00	216.9	56.59	0.000000

RUN: 92271-5 X=22. Z= 0.

UI = 31.46 D1 = 0.4368 BETA=-0.026 RD2 = 3349.
CF/2= 0.00020 D2 = 0.2112 B =40.032 H = 2.068
F = 0.00804 DC =30.8216 P+ =-0.0003 G =36.446
K = 0.762E-09 D99 = 1.2546 V0+ = 0.5673

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.018	2.59	0.0006	0.082	-64.76	4.0	5.80	0.000279
0.022	3.23	0.0007	0.103	-63.31	4.9	7.25	0.000268
0.027	4.02	0.0009	0.128	-61.55	6.1	9.02	0.000254
0.033	4.68	0.0011	0.149	-60.06	7.4	10.50	0.000233
0.040	5.39	0.0013	0.171	-58.46	9.0	12.10	0.000198
0.050	6.43	0.0016	0.204	-56.15	11.2	14.42	0.000158
0.063	7.43	0.0020	0.236	-53.91	14.2	16.66	0.000126
0.083	8.48	0.0027	0.270	-51.53	18.7	19.03	0.000095
0.103	9.06	0.0033	0.288	-50.25	23.1	20.31	0.000080
0.128	10.02	0.0042	0.319	-48.09	28.8	22.48	0.000068
0.163	11.07	0.0053	0.352	-45.74	36.6	24.83	0.000058
0.208	12.51	0.0067	0.398	-42.50	46.7	28.07	0.000052
0.253	13.39	0.0082	0.426	-40.53	56.9	30.04	0.000048
0.298	14.30	0.0097	0.455	-38.49	67.0	32.08	0.000045
0.358	15.72	0.0116	0.500	-35.31	80.4	35.26	0.000043
0.418	16.98	0.0136	0.540	-32.48	93.9	38.09	0.000043
0.468	17.96	0.0152	0.571	-30.28	105.2	40.28	0.000043
0.528	19.21	0.0171	0.611	-27.47	118.6	43.09	0.000042
0.588	20.55	0.0191	0.653	-24.47	132.1	46.09	0.000041
0.648	21.71	0.0210	0.690	-21.87	145.6	48.69	0.000041
0.718	23.13	0.0233	0.735	-18.69	161.3	51.87	0.000039
0.776	24.30	0.0252	0.772	-16.06	174.8	54.50	0.000039
0.828	25.26	0.0269	0.803	-13.91	186.1	56.65	0.000037
0.883	26.22	0.0286	0.833	-11.75	198.4	58.81	0.000036
0.958	27.72	0.0311	0.881	-8.38	215.3	62.18	0.000032
1.033	28.80	0.0335	0.915	-5.98	232.1	64.58	0.000027
1.133	30.16	0.0368	0.959	-2.91	254.6	67.65	0.000019
1.258	31.17	0.0408	0.991	-0.64	282.7	69.92	0.000011
1.358	31.46	0.0441	1.000	0.00	305.2	70.56	0.000005
1.508	31.50	0.0489	1.001	0.10	338.9	70.66	-0.000001
1.658	31.46	0.0538	1.000	0.00	372.6	70.56	0.000000

RUN: 92271-5 X=34. Z= 0.

UI = 31.45 D1 = 0.6386 BETA= 0.026 RD2 = 4876.
CF/2= 0.00016 D2 = 0.3076 B =49.745 H = 2.076
F = 0.00801 DC =50.3253 P+ = 0.0002 G =40.845
K = -0.417E-09 D99 = 1.8358 V0+ = 0.6312

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.023	2.83	0.0004	0.090	-71.71	4.5	7.09	0.000218
0.030	3.54	0.0006	0.113	-69.94	6.0	8.87	0.000200
0.038	4.25	0.0007	0.135	-68.16	7.6	10.65	0.000179
0.050	5.25	0.0010	0.167	-65.65	10.0	13.16	0.000136
0.063	6.14	0.0012	0.195	-63.42	12.6	15.38	0.000111
0.078	6.80	0.0015	0.216	-61.76	15.6	17.04	0.000092
0.098	7.62	0.0019	0.242	-59.71	19.6	19.10	0.000074
0.128	8.56	0.0025	0.272	-57.37	25.7	21.44	0.000059
0.168	9.65	0.0033	0.307	-54.62	33.7	24.18	0.000049
0.218	10.64	0.0042	0.338	-52.14	43.8	26.67	0.000039
0.268	11.71	0.0053	0.372	-49.46	53.8	29.35	0.000035
0.318	12.42	0.0063	0.395	-47.68	63.9	31.13	0.000033
0.368	13.05	0.0073	0.415	-46.12	73.9	32.69	0.000031
0.433	14.14	0.0086	0.450	-43.38	87.0	35.43	0.000030
0.498	15.18	0.0099	0.482	-40.78	100.1	38.02	0.000031
0.573	16.10	0.0114	0.512	-38.47	115.2	40.34	0.000030
0.648	17.14	0.0129	0.545	-35.86	130.3	42.94	0.000030
0.723	18.57	0.0144	0.590	-32.27	145.4	46.53	0.000030
0.798	19.46	0.0158	0.619	-30.05	160.4	48.76	0.000030
0.873	20.66	0.0173	0.657	-27.03	175.5	51.77	0.000029
0.948	21.62	0.0188	0.688	-24.63	190.6	54.18	0.000028
1.023	22.74	0.0203	0.723	-21.83	205.7	56.97	0.000028
1.123	24.09	0.0223	0.766	-18.45	225.8	60.36	0.000027
1.223	25.48	0.0243	0.810	-14.98	245.9	63.83	0.000026
1.323	26.80	0.0263	0.852	-11.67	266.1	67.14	0.000024
1.423	28.10	0.0283	0.893	-8.41	286.2	70.39	0.000021
1.548	29.37	0.0308	0.934	-5.21	311.3	73.60	0.000017
1.698	30.56	0.0337	0.972	-2.24	341.5	76.57	0.000011
1.848	31.19	0.0367	0.992	-0.66	371.7	78.14	0.000007
1.998	31.46	0.0397	1.000	0.03	401.8	78.83	0.000003
2.198	31.47	0.0437	1.000	0.03	442.1	78.84	-0.000001
2.398	31.45	0.0476	1.000	0.00	482.3	78.81	0.000000

RUN: 92271-5 X=46. Z= 0.

UI = 31.51 D1 = 0.8303 BETA= 0.118 RD2 = 6340.
CF/2= 0.00014 D2 = 0.3993 B =57.014 H = 2.080
F = 0.00802 DC =70.0101 P+ = 0.0008 G =43.770
K = -0.126E-08 D99 = 2.3793 VO+ = 0.6762

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.028	2.59	0.0004	0.082	-77.39	5.3	6.92	0.000164
0.035	3.41	0.0005	0.108	-75.19	6.6	9.13	0.000154
0.044	3.89	0.0006	0.124	-73.89	8.3	10.42	0.000141
0.056	4.56	0.0008	0.145	-72.10	10.5	12.21	0.000110
0.073	5.48	0.0010	0.174	-69.64	13.7	14.67	0.000089
0.103	6.77	0.0015	0.215	-66.20	19.4	18.12	0.000069
0.143	7.74	0.0020	0.246	-63.61	26.9	20.70	0.000052
0.183	8.89	0.0026	0.282	-60.51	34.5	23.80	0.000044
0.228	9.61	0.0033	0.305	-58.58	42.9	25.73	0.000037
0.278	10.46	0.0040	0.332	-56.31	52.4	28.00	0.000032
0.353	11.76	0.0050	0.373	-52.84	66.5	31.48	0.000028
0.428	12.56	0.0061	0.399	-50.69	80.6	33.62	0.000027
0.503	13.29	0.0072	0.422	-48.76	94.7	35.55	0.000025
0.603	14.78	0.0086	0.469	-44.77	113.6	39.55	0.000024
0.703	15.88	0.0100	0.504	-41.82	132.4	42.49	0.000024
0.803	16.96	0.0115	0.538	-38.92	151.2	45.40	0.000023
0.903	18.05	0.0129	0.573	-36.02	170.1	48.30	0.000023
1.003	19.36	0.0143	0.614	-32.51	188.9	51.80	0.000023
1.103	20.36	0.0158	0.646	-29.83	207.7	54.49	0.000022
1.203	21.51	0.0172	0.683	-26.75	226.6	57.57	0.000022
1.328	22.78	0.0190	0.723	-23.36	250.1	60.95	0.000021
1.453	24.13	0.0208	0.766	-19.74	273.6	64.58	0.000020
1.578	25.34	0.0225	0.804	-16.51	297.2	67.80	0.000020
1.703	26.71	0.0243	0.848	-12.84	320.7	71.47	0.000019
1.853	27.97	0.0265	0.888	-9.47	349.0	74.85	0.000017
2.003	29.24	0.0286	0.928	-6.06	377.2	78.25	0.000014
2.153	30.34	0.0308	0.963	-3.11	405.5	81.20	0.000010
2.303	31.05	0.0329	0.986	-1.21	433.7	83.10	0.000007
2.453	31.32	0.0350	0.994	-0.48	462.0	83.83	0.000004
2.603	31.51	0.0372	1.000	0.02	490.2	84.33	0.000002
2.803	31.53	0.0400	1.001	0.07	527.9	84.38	-0.000001
3.003	31.51	0.0429	1.000	0.00	565.5	84.31	0.000000

RUN: 92271-5 X=58. Z= 0.

UI = 31.51 D1 = 1.0066 BETA= 0.220 RD2 = 7830.
CF/2= 0.00013 D2 = 0.4931 B =61.801 H = 2.041
F = 0.00798 DC =88.5819 P+ = 0.0012 G =44.891
K = -0.178E-08 D99 = 2.9569 VO+ = 0.7023

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.031	2.75	0.0003	0.087	-80.31	5.6	7.69	0.000153
0.041	3.52	0.0005	0.112	-78.17	7.4	9.83	0.000140
0.051	4.19	0.0006	0.133	-76.29	9.2	11.71	0.000127
0.066	4.92	0.0007	0.156	-74.26	11.9	13.74	0.000099
0.086	5.87	0.0010	0.186	-71.61	15.5	16.39	0.000080
0.116	6.94	0.0013	0.220	-68.62	20.9	19.39	0.000061
0.156	8.12	0.0018	0.258	-65.31	28.1	22.69	0.000044
0.211	9.18	0.0024	0.291	-62.36	38.1	25.64	0.000034
0.271	9.94	0.0031	0.315	-60.25	48.9	27.76	0.000027
0.336	10.51	0.0038	0.334	-58.64	60.6	29.36	0.000024
0.411	11.68	0.0046	0.371	-55.38	74.2	32.62	0.000023
0.486	12.25	0.0055	0.389	-53.78	87.7	34.22	0.000021
0.561	13.09	0.0063	0.415	-51.44	101.2	36.56	0.000022
0.636	14.01	0.0072	0.445	-48.89	114.8	39.12	0.000020
0.711	14.51	0.0080	0.461	-47.47	128.3	40.53	0.000020
0.811	15.87	0.0092	0.504	-43.68	146.3	44.32	0.000019
0.911	16.43	0.0103	0.521	-42.12	164.4	45.88	0.000018
1.011	17.45	0.0114	0.554	-39.27	182.4	48.73	0.000018
1.111	18.24	0.0125	0.579	-37.04	200.5	50.96	0.000018
1.211	19.08	0.0137	0.605	-34.72	218.5	53.29	0.000018
1.311	20.11	0.0148	0.638	-31.83	236.6	56.17	0.000018
1.436	21.40	0.0162	0.679	-28.22	259.1	59.78	0.000018
1.561	22.33	0.0176	0.709	-25.63	281.7	62.38	0.000018
1.711	23.51	0.0193	0.746	-22.32	308.7	65.68	0.000017
1.861	24.96	0.0210	0.792	-18.28	335.8	69.73	0.000016
2.011	26.18	0.0227	0.831	-14.89	362.9	73.11	0.000015
2.161	27.24	0.0244	0.864	-11.93	389.9	76.08	0.000014
2.311	28.26	0.0261	0.897	-9.08	417.0	78.92	0.000012
2.511	29.53	0.0283	0.937	-5.53	453.1	82.47	0.000010
2.711	30.59	0.0306	0.971	-2.58	489.2	85.43	0.000007
2.911	31.14	0.0329	0.988	-1.02	525.3	86.98	0.000005
3.211	31.47	0.0362	0.999	-0.11	579.4	87.89	0.000002
3.511	31.51	0.0396	1.000	0.02	633.5	88.02	-0.000001
3.811	31.51	0.0430	1.000	0.00	687.7	88.00	0.000000

RUN: 92271-5 X=70. Z= 0.

UI = 31.48 D1 = 1.1924 BETA= 0.305 RD2 = 9327.
CF/2= 0.00012 D2 = 0.5879 B =65.634 H = 2.028
F = 0.00798 DC = 108.1 P+ = 0.0015 G =45.977
K = -0.196E-08 D99 = 3.4972 VO+ = 0.7237

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.034	2.80	0.0003	0.089	-82.61	5.9	8.68	0.000137
0.044	3.56	0.0004	0.113	-80.43	7.7	10.26	0.000125
0.054	4.14	0.0005	0.132	-78.76	9.4	11.93	0.000112
0.069	4.66	0.0006	0.148	-77.26	12.1	13.43	0.000088
0.089	5.34	0.0008	0.169	-75.32	15.6	15.37	0.000069
0.119	6.50	0.0011	0.206	-71.97	20.8	18.72	0.000054
0.159	7.82	0.0015	0.249	-68.15	27.8	22.54	0.000043
0.209	8.07	0.0019	0.256	-67.45	36.6	23.24	0.000034
0.284	9.41	0.0026	0.299	-63.59	49.7	27.10	0.000027
0.359	10.24	0.0033	0.325	-61.19	62.8	29.50	0.000023
0.434	11.25	0.0040	0.357	-58.27	75.9	32.42	0.000022
0.509	11.95	0.0047	0.380	-56.26	89.0	34.43	0.000020
0.609	12.71	0.0056	0.404	-54.08	106.5	36.61	0.000019
0.709	13.96	0.0066	0.443	-50.48	124.0	40.21	0.000017
0.809	14.53	0.0075	0.462	-48.83	141.5	41.86	0.000016
0.909	15.44	0.0084	0.491	-46.20	159.0	44.49	0.000016
1.009	16.15	0.0093	0.513	-44.16	176.5	46.53	0.000015
1.134	16.92	0.0105	0.538	-41.94	198.4	48.75	0.000015
1.259	17.95	0.0116	0.570	-38.98	220.3	51.71	0.000015
1.384	18.94	0.0128	0.602	-36.11	242.1	54.58	0.000015
1.509	19.87	0.0140	0.631	-33.44	264.0	57.25	0.000015
1.659	20.80	0.0153	0.661	-30.77	290.2	59.92	0.000014
1.809	21.96	0.0167	0.698	-27.41	316.5	63.28	0.000014
1.959	22.95	0.0181	0.729	-24.56	342.7	66.13	0.000014
2.109	24.04	0.0195	0.764	-21.44	369.0	69.25	0.000014
2.309	25.39	0.0214	0.807	-17.53	403.9	73.16	0.000013
2.509	26.64	0.0232	0.846	-13.95	438.9	76.75	0.000013
2.709	28.08	0.0251	0.892	-9.80	473.9	80.89	0.000011
2.909	29.20	0.0269	0.927	-6.58	508.9	84.11	0.000010
3.105	30.06	0.0288	0.955	-4.10	543.9	86.60	0.000007
3.309	30.82	0.0306	0.979	-1.90	578.9	88.79	0.000005
3.509	31.19	0.0324	0.991	-0.8*	613.9	89.85	0.000003
3.709	31.41	0.0343	0.998	-0.21	648.9	90.48	0.000002
3.909	31.48	0.0361	1.000	0.00	683.8	90.69	0.000000

RUN: 92271-5 X=82. Z= 0.

UI = 31.47 D1 = 1.3625 BETA= 0.335 RD2 =10787.
CF/2= 0.00012 D2 = 0.6802 B =68.401 H = 2.003
F = 0.00799 DC = 126.1 P+ = 0.0014 G =46.334
K = -0.181E-08 D99 = 4.1139 VO+ = 0.7393

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.037	2.87	0.0003	0.091	-84.08	6.3	8.45	0.000126
0.047	3.40	0.0004	0.108	-82.53	8.1	10.00	0.000117
0.062	4.14	0.0005	0.132	-80.35	10.6	12.18	0.000102
0.082	4.92	0.0007	0.156	-78.05	14.1	14.48	0.000072
0.112	6.12	0.0009	0.194	-74.54	19.2	17.99	0.000058
0.152	6.81	0.0012	0.216	-72.50	26.1	20.03	0.000044
0.202	7.85	0.0016	0.250	-69.44	34.6	23.09	0.000034
0.277	9.21	0.0022	0.293	-65.43	47.5	27.09	0.000027
0.352	9.82	0.0028	0.312	-63.65	60.3	28.88	0.000023
0.452	10.68	0.0036	0.340	-61.11	77.5	31.42	0.000020
0.552	11.88	0.0044	0.378	-57.59	94.6	34.93	0.000018
0.652	12.73	0.0052	0.404	-55.10	111.8	37.42	0.000019
0.752	13.48	0.0060	0.428	-52.89	128.9	39.64	0.000015
0.852	14.26	0.0068	0.453	-50.59	146.0	41.93	0.000014
0.977	15.70	0.0077	0.499	-46.35	167.5	46.17	0.000013
1.102	15.43	0.0087	0.491	-47.14	188.9	45.39	0.000013
1.227	16.68	0.0097	0.530	-43.47	210.3	49.06	0.000012
1.352	17.62	0.0107	0.560	-40.72	231.7	51.81	0.000013
1.477	18.15	0.0117	0.577	-39.15	253.2	53.38	0.000013
1.602	18.96	0.0127	0.603	-36.76	274.6	55.76	0.000013
1.752	20.10	0.0139	0.639	-33.41	300.3	59.11	0.000013
1.902	20.95	0.0151	0.666	-30.93	326.0	61.59	0.000013
2.052	21.93	0.0163	0.697	-28.02	351.7	64.50	0.000013
2.152	22.59	0.0171	0.718	-26.09	368.8	66.43	0.000012
2.302	23.31	0.0183	0.741	-23.98	394.6	68.55	0.000012
2.502	24.73	0.0198	0.786	-19.82	428.8	72.70	0.000011
2.702	25.52	0.0214	0.811	-17.47	463.1	75.05	0.000011
2.902	26.87	0.0230	0.854	-13.50	497.4	79.02	0.000010
3.102	27.86	0.0246	0.885	-10.60	531.7	81.92	0.000010
3.302	28.66	0.0262	0.911	-8.25	566.0	84.27	0.000009
3.502	29.72	0.0278	0.945	-5.13	600.2	87.39	0.000007
3.702	30.35	0.0294	0.965	-3.28	634.5	89.25	0.000006
3.902	30.92	0.0310	0.983	-1.61	668.8	90.92	0.000004
4.402	31.47	0.0349	1.000	0.00	754.5	92.52	0.000000

RUN: 122271-2 X= 2. Z= 0.

UI = 28.32 D1 = 0.0428 BETA= 0.073 RD2 = 451.
CF/2= 0.00397 D2 = 0.0297 B =-1.006 H = 1.438
F = -0.00399 DC = 0.6790 P+ = 0.002 G = 4.839
K = -0.446E-06 D99 = 0.2833 VD+ =-0.063

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	6.96	0.0063	0.238	-12.11	4.1	3.77	0.003428
0.005	9.15	0.0078	0.312	-10.92	5.1	4.95	0.003294
0.006	10.26	0.0093	0.350	-10.32	6.0	5.56	0.002980
0.007	11.74	0.0108	0.400	-9.52	7.0	6.36	0.002530
0.008	12.77	0.0122	0.435	-8.96	7.9	6.91	0.002155
0.009	13.60	0.0137	0.464	-8.51	8.9	7.36	0.001899
0.010	14.36	0.0152	0.490	-8.10	9.8	7.78	0.001604
0.012	15.77	0.0181	0.538	-7.34	11.7	8.54	0.001260
0.014	16.89	0.0211	0.569	-6.84	13.7	9.04	0.001038
0.016	17.49	0.0240	0.596	-6.41	15.6	9.47	0.000858
0.018	18.17	0.0269	0.620	-6.04	17.5	9.84	0.000709
0.021	19.16	0.0314	0.654	-5.50	20.3	10.38	0.000568
0.025	20.00	0.0373	0.682	-5.05	24.2	10.83	0.000427
0.030	20.77	0.0446	0.708	-4.63	28.9	11.25	0.000309
0.036	21.43	0.0535	0.731	-4.27	34.7	11.61	0.000224
0.044	22.07	0.0652	0.753	-3.93	42.3	11.95	0.000168
0.052	22.55	0.0770	0.769	-3.67	49.9	12.21	0.000137
0.067	23.29	0.0991	0.794	-3.26	64.3	12.61	0.000109
0.087	24.10	0.1286	0.822	-2.83	83.3	13.05	0.000092
0.107	24.92	0.1580	0.850	-2.38	102.4	13.49	0.000083
0.132	25.76	0.1948	0.878	-1.93	126.3	13.95	0.000074
0.157	26.55	0.2317	0.905	-1.50	150.2	14.38	0.000064
0.187	27.41	0.2758	0.935	-1.04	178.8	14.84	0.000051
0.222	28.25	0.3274	0.963	-0.58	212.2	15.30	0.000037
0.262	28.86	0.3863	0.984	-0.25	250.4	15.63	0.000024
0.302	29.19	0.4452	0.995	-0.07	288.6	15.80	0.000014
0.352	29.32	0.5188	1.000	0.00	336.3	15.88	0.000006
0.427	29.33	0.6293	1.000	0.00	408.0	15.88	-0.000002
0.502	29.32	0.7397	1.000	0.00	479.6	15.88	0.000000

RUN: 122271-2 X=10. Z= 0.

UI = 26.81 D1 = 0.0568 BETA= 0.174 RD2 = 557.
CF/2= 0.00380 D2 = 0.0402 B =-1.046 H = 1.414
F = -0.00398 DC = 0.9216 P+ = 0.004 G = 4.746
K = -0.838E-06 D99 = 0.3956 VD+ =-0.065

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	6.62	0.0054	0.247	-12.21	4.3	4.00	0.00287	0.002757
0.006	7.01	0.0065	0.262	-11.97	5.1	4.24	0.00282	0.002544
0.007	7.93	0.0076	0.296	-11.42	6.0	4.80	0.00270	0.002331
0.008	8.78	0.0087	0.328	-10.90	6.8	5.31	0.00258	0.002058
0.009	9.55	0.0098	0.356	-10.44	7.7	5.78	0.00247	0.002065
0.011	11.04	0.0119	0.412	-9.54	9.4	6.69	0.00227	0.001800
0.013	12.31	0.0141	0.459	-8.77	11.1	7.46	0.00210	0.001577
0.015	13.39	0.0163	0.500	-8.11	12.8	8.10	0.00195	0.001364
0.017	14.44	0.0184	0.538	-7.48	14.5	8.73	0.00181	0.001180
0.020	15.72	0.0217	0.586	-6.71	17.1	9.50	0.00165	0.000958
0.023	16.61	0.0250	0.619	-6.17	19.7	10.04	0.00153	0.000764
0.028	17.35	0.0262	0.647	-5.72	22.2	10.49	0.00144	0.000611
0.030	18.28	0.0326	0.682	-5.16	25.6	11.05	0.00133	0.000457
0.034	18.78	0.0365	0.700	-4.86	29.1	11.36	0.00128	0.000361
0.039	19.38	0.0423	0.723	-4.50	33.3	11.72	0.00122	0.000273
0.045	19.79	0.0488	0.738	-4.25	38.5	11.97	0.00119	0.000201
0.053	20.37	0.0575	0.760	-3.90	45.3	12.32	0.00115	0.000155
0.065	20.89	0.0705	0.779	-3.58	55.6	12.63	0.00113	0.000116
0.079	21.38	0.0857	0.798	-3.28	67.5	12.93	0.00111	0.000092
0.199	21.99	0.1074	0.820	-2.92	84.8	13.29	0.00109	0.000073
0.129	22.70	0.1400	0.847	-2.49	110.3	13.73	0.00105	0.000060
0.159	23.26	0.1725	0.867	-2.15	135.9	14.06	0.00099	0.000051
0.199	23.90	0.2159	0.891	-1.72	170.1	14.49	0.00086	0.000046
0.249	24.84	0.2702	0.926	-1.20	212.9	15.02	0.00065	0.000039
0.299	25.57	0.3244	0.954	-0.75	255.6	15.46	0.00044	0.000030
0.349	26.16	0.3787	0.975	-0.40	298.4	15.82	0.00028	0.000021
0.399	26.57	0.4329	0.991	-0.15	341.1	16.07	0.00017	0.000014
0.474	26.80	0.5143	1.000	-0.01	405.2	16.21	0.00007	0.000006
0.549	26.82	0.5957	1.000	0.01	469.3	16.22	0.00002	0.000001
0.624	26.83	0.6771	1.001	0.01	533.4	16.22	0.00000	-0.000003
0.699	26.81	0.7584	1.000	0.00	597.6	16.21	0.00000	0.000000

RUN: 122271-2 X=22. Z= 0.

UI = 24.29 D1 = 0.0727 BETA= 0.111 RD2 = 667.
CF/2= 0.00383 D2 = 0.0528 B =-1.041 H = 1.378
F = -0.00399 DC = 1.1741 P+ = 0.002 G = 4.431
K = -0.468E-06 D99 = 0.5466 VD+ =-0.064

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.91	0.0043	0.202	-12.89	3.9	3.26	0.00305	0.002697
0.006	5.36	0.0051	0.221	-12.59	4.7	3.56	0.00298	0.002634
0.007	5.79	0.0060	0.239	-12.30	5.4	3.85	0.00292	0.002571
0.008	6.54	0.0068	0.269	-11.80	6.2	4.35	0.00280	0.002434
0.010	8.27	0.0085	0.340	-10.65	7.8	5.50	0.00253	0.002393
0.012	9.83	0.0102	0.407	-9.57	9.3	6.57	0.00227	0.002084
0.014	11.14	0.0119	1.459	-8.74	10.9	7.41	0.00208	0.001771
0.016	12.05	0.0136	0.496	-8.13	12.4	8.02	0.00194	0.001479
0.018	12.77	0.0153	0.526	-7.66	14.0	8.49	0.00183	0.001248
0.020	13.66	0.0170	0.562	-7.07	15.5	9.08	0.00169	0.001062
0.023	14.45	0.0196	0.595	-6.56	17.9	9.61	0.00157	0.000874
0.026	15.26	0.0221	0.628	-6.00	20.2	10.15	0.00145	0.000726
0.029	15.76	0.0247	0.649	-5.67	22.5	10.48	0.00138	0.000585
0.033	16.46	0.0281	0.678	-5.20	25.7	10.95	0.00128	0.000464
0.038	17.13	0.0324	0.705	-4.76	29.5	11.39	0.00118	0.000348
0.044	17.61	0.0375	0.725	-4.44	34.2	11.71	0.00112	0.000262
0.052	18.07	0.0443	0.744	-4.13	40.4	12.02	0.00107	0.000183
0.062	18.55	0.0528	0.764	-3.81	48.2	12.34	0.00102	0.000130
0.077	19.01	0.0656	0.783	-3.51	59.9	12.64	0.00098	0.000094
0.097	19.44	0.0826	0.800	-3.22	75.4	12.92	0.00095	0.000072
0.117	19.80	0.0997	0.815	-2.98	91.0	13.17	0.00092	0.000060
0.157	20.41	0.1337	0.840	-2.58	122.1	13.57	0.00088	0.000050
0.207	21.13	0.1763	0.870	-2.10	160.9	14.05	0.00080	0.000042
0.257	21.75	0.2189	0.896	-1.68	199.8	14.47	0.00072	0.000037
0.307	22.28	0.2615	0.917	-1.33	238.7	14.82	0.00061	0.000033
0.357	22.74	0.3041	0.936	-1.03	277.5	15.12	0.00050	0.000028
0.407	23.18	0.3466	0.955	-0.73	316.4	15.41	0.00038	0.000023
0.482	23.75	0.4105	0.978	-0.36	374.7	15.79	0.00022	0.000016
0.557	24.09	0.4744	0.992	-0.13	433.0	16.02	0.00011	0.000010
0.632	24.25	0.5383	0.999	-0.02	491.3	16.13	0.00004	0.000005
0.707	24.29	0.6022	1.000	0.00	549.6	16.15	0.00000	0.000001
0.807	24.29	0.6873	1.000	0.00	627.4	16.15	0.00000	0.000000

RUN: 122271-2 X=34. Z= 0.

UI = 22.95 D1 = 0.0806 BETA= 0.084 RD2 = 712.
CF/2= 0.00381 D2 = 0.0601 B =-1.050 H = 1.342
F = -0.00400 DC = 1.3065 P+ = 0.001 G = 4.133
K = -0.335E-06 D99 = 0.6494 VD+ =-0.065

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	5.19	0.0043	0.226	-12.54	4.1	3.67	0.00293	0.002799
0.007	5.68	0.0051	0.248	-12.19	4.8	4.01	0.00285	0.002633
0.008	6.42	0.0058	0.280	-11.67	5.6	4.53	0.00272	0.002467
0.009	7.00	0.0066	0.305	-11.26	6.3	4.94	0.00262	0.002312
0.010	7.61	0.0073	0.332	-10.83	7.0	5.37	0.00252	0.002312
0.012	8.85	0.0089	0.386	-9.96	8.5	6.25	0.00231	0.002106
0.014	10.01	0.0104	0.436	-9.13	10.0	7.07	0.00211	0.001885
0.016	11.03	0.0119	0.481	-8.41	11.4	7.79	0.00194	0.001631
0.019	12.35	0.0142	0.538	-7.49	13.6	8.72	0.00172	0.001310
0.023	13.63	0.0173	0.594	-6.58	16.5	9.62	0.00151	0.000969
0.027	14.45	0.0204	0.630	-6.00	19.5	10.20	0.00137	0.000729
0.031	15.16	0.0234	0.661	-5.50	22.4	10.70	0.00126	0.000573
0.035	15.73	0.0265	0.686	-5.09	25.3	11.11	0.00117	0.000461
0.039	16.18	0.0295	0.705	-4.79	28.3	11.43	0.00110	0.000375
0.043	16.57	0.0326	0.722	-4.50	31.2	11.70	0.00104	0.000311
0.049	17.01	0.0372	0.741	-4.19	35.6	12.01	0.00098	0.000237
0.057	17.38	0.0433	0.757	-3.93	41.4	12.27	0.00093	0.000175
0.069	17.88	0.0525	0.779	-3.58	50.2	12.63	0.00087	0.000121
0.088	18.35	0.0670	0.800	-3.25	64.1	12.96	0.00082	0.000082
0.113	18.77	0.0862	0.818	-2.98	82.4	13.22	0.00080	0.000060
0.143	19.15	0.1091	0.835	-2.68	104.4	13.53	0.00078	0.000047
0.193	19.66	0.1474	0.857	-2.32	141.0	13.89	0.00075	0.000037
0.243	20.18	0.1857	0.879	-1.96	177.6	14.25	0.00070	0.000033
0.293	20.54	0.2240	0.895	-1.70	214.2	14.50	0.00066	0.000030
0.343	20.94	0.2622	0.913	-1.41	250.8	14.79	0.00059	0.000027
0.418	21.51	0.3196	0.938	-1.01	305.7	15.19	0.00048	0.000024
0.493	21.98	0.3770	0.958	-0.69	360.6	15.52	0.00035	0.000019
0.568	22.37	0.4344	0.975	-0.41	415.5	15.79	0.00023	0.000015
0.643	22.70	0.4918	0.989	-0.17	470.4	16.03	0.00013	0.000010
0.718	22.85	0.5492	0.996	-0.07	525.3	16.14	0.00006	0.000006
0.793	22.93	0.6067	0.999	-0.01	580.2	16.19	0.00002	0.000003
0.893	22.95	0.6832	1.000	0.00	653.4	16.21	0.00000	-0.000000
0.993	22.95	0.7597	1.000	0.00	726.6	16.20	0.00000	0.000000

RUN: 122271-2 X=46. Z= 0.

UI = 22.07 D1 = 0.0888 BETA= 0.070 RD2 = 761.
CF/2= 0.00379 D2 = 0.0667 B =-1.059 H = 1.331
F = -0.00401 DC = 1.4433 P+ = 0.001 G = 4.042
K = -0.263E-06 D99 = 0.7610 VO+ =-0.065

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.58	0.0035	0.208	-12.88	3.5	3.38	0.00297	0.002748
0.006	4.81	0.0042	0.218	-12.71	4.2	3.55	0.00293	0.002529
0.007	5.36	0.0049	0.243	-12.30	4.9	3.95	0.00284	0.002110
0.008	5.85	0.0055	0.265	-11.94	5.6	4.31	0.00275	0.002070
0.009	6.47	0.0062	0.293	-11.49	6.3	4.76	0.00264	0.002182
0.011	7.51	0.0076	0.340	-10.72	7.7	5.53	0.00245	0.002041
0.013	8.50	0.0090	0.385	-9.99	9.1	6.26	0.00228	0.001872
0.015	9.44	0.0104	0.428	-9.30	10.5	6.95	0.00211	0.001736
0.017	10.34	0.0118	0.469	-8.64	11.9	7.62	0.00195	0.001605
0.019	11.07	0.0132	0.502	-8.10	13.3	8.15	0.00183	0.001463
0.021	11.89	0.0146	0.539	-7.50	14.7	8.76	0.00168	0.001329
0.023	12.54	0.0159	0.568	-7.02	16.1	9.23	0.00157	0.001163
0.025	13.02	0.0173	0.590	-6.66	17.5	9.59	0.00148	0.001067
0.028	13.81	0.0194	0.626	-6.09	19.7	10.17	0.00135	0.000815
0.031	14.27	0.0215	0.647	-5.74	21.8	10.51	0.00127	0.000679
0.034	14.74	0.0236	0.668	-5.40	23.9	10.86	0.00119	0.000580
0.038	15.30	0.0263	0.693	-4.98	26.7	11.27	0.00109	0.000454
0.042	15.72	0.0291	0.712	-4.68	29.5	11.57	0.00102	0.000377
0.046	16.10	0.0319	0.729	-4.40	32.3	11.86	0.00096	0.000309
0.052	16.39	0.0360	0.743	-4.18	36.5	12.07	0.00091	0.000234
0.060	16.82	0.0416	0.762	-3.86	42.1	12.39	0.00085	0.000175
0.071	17.22	0.0492	0.780	-3.57	49.8	12.68	0.00079	0.000128
0.086	17.64	0.0596	0.799	-3.26	60.4	12.99	0.00074	0.000094
0.111	18.06	0.0769	0.818	-2.95	77.9	13.30	0.00070	0.000063
0.151	18.50	0.1046	0.838	-2.63	106.0	13.62	0.00067	0.000043
0.201	18.98	0.1393	0.860	-2.27	141.1	13.98	0.00063	0.000033
0.251	19.33	0.1739	0.876	-2.02	176.2	14.23	0.00060	0.000028
0.301	19.64	0.2086	0.890	-1.79	211.3	14.46	0.00058	0.000026
0.351	19.98	0.2432	0.905	-1.54	246.4	14.71	0.00054	0.000025
0.426	20.34	0.2952	0.924	-1.24	299.0	15.01	0.00047	0.000022
0.501	20.85	0.3471	0.945	-0.90	351.7	15.35	0.00038	0.000019
0.576	21.23	0.3991	0.962	-0.62	404.3	15.63	0.00029	0.000016
0.676	21.62	0.4684	0.980	-0.33	474.5	15.92	0.00017	0.000011
0.776	21.83	0.5377	0.992	-0.13	544.7	16.12	0.00008	0.000007
0.876	22.03	0.6069	0.998	-0.03	614.9	16.23	0.00003	0.000004
1.001	22.09	0.6936	1.001	0.01	702.7	16.27	0.00000	0.000001
1.126	22.07	0.7802	1.000	0.00	790.4	16.25	0.00000	0.000000

RUN: 122271-2 X=58. Z= 0.

UI = 21.45 D1 = 0.0923 BETA= 0.059 RD2 = 773.
CF/2= 0.00377 D2 = 0.0697 B =-1.059 H = 1.325
F = -0.00399 DC = 1.5037 P+ = 0.001 G = 3.991
K = -0.218E-06 D99 = 0.8322 VO+ =-0.065

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.27	0.0033	0.199	-13.05	3.4	3.24	0.00299	0.002557
0.006	4.33	0.0040	0.202	-13.00	4.1	3.28	0.00298	0.002345
0.007	4.56	0.0047	0.213	-12.83	4.8	3.46	0.00294	0.002133
0.008	4.96	0.0053	0.231	-12.52	5.4	3.77	0.00287	0.002156
0.009	5.82	0.0060	0.271	-11.87	6.1	4.42	0.00271	0.002400
0.010	6.42	0.0067	0.299	-11.42	6.8	4.87	0.00260	0.002478
0.011	7.05	0.0073	0.328	-10.94	7.5	5.35	0.00249	0.002454
0.013	8.03	0.0086	0.374	-10.20	8.9	6.09	0.00231	0.002126
0.015	8.96	0.0100	0.417	-9.49	10.2	6.80	0.00214	0.001899
0.017	9.92	0.0113	0.462	-8.76	11.6	7.53	0.00197	0.001657
0.019	10.78	0.0126	0.503	-8.10	12.9	8.19	0.00181	0.001503
0.021	11.42	0.0140	0.532	-7.62	14.3	8.67	0.00169	0.001285
0.023	11.96	0.0153	0.553	-7.28	15.7	9.01	0.00161	0.001131
0.025	12.52	0.0166	0.584	-6.78	17.0	9.51	0.00150	0.001024
0.027	12.79	0.0180	0.596	-6.57	18.4	9.71	0.00145	0.000950
0.029	13.37	0.0193	0.623	-6.14	19.7	10.15	0.00135	0.000864
0.031	13.82	0.0206	0.644	-5.80	21.1	10.49	0.00127	0.000751
0.034	14.30	0.0226	0.666	-5.43	23.1	10.86	0.00118	0.000645
0.037	14.66	0.0246	0.683	-5.16	25.2	11.13	0.00112	0.000511
0.041	15.10	0.0273	0.704	-4.82	27.9	11.46	0.00104	0.000413
0.045	15.41	0.0299	0.718	-4.59	30.6	11.70	0.00099	0.000340
0.049	15.68	0.0326	0.731	-4.38	33.4	11.91	0.00095	0.000291
0.055	16.18	0.0366	0.754	-4.00	37.4	12.29	0.00086	0.000234
0.066	16.49	0.0426	0.768	-3.77	43.6	12.52	0.00082	0.000178
0.079	17.03	0.0525	0.794	-3.36	53.8	12.93	0.00074	0.000118
0.099	17.46	0.0658	0.814	-3.03	67.4	13.26	0.00068	0.000077
0.124	17.77	0.0825	0.829	-2.79	84.4	13.50	0.00065	0.000056
0.149	18.23	0.1124	0.850	-2.45	115.1	13.84	0.00062	0.000038
0.219	18.50	0.1456	0.862	-2.24	149.1	14.05	0.00061	0.000031
0.269	18.97	0.1789	0.884	-1.89	183.1	14.40	0.00056	0.000027
0.334	19.42	0.2221	0.900	-1.62	227.4	14.67	0.00053	0.000024
0.409	19.69	0.2720	0.918	-1.34	278.5	14.95	0.00049	0.000021
0.509	20.16	0.3385	0.940	-0.99	346.5	15.30	0.00041	0.000018
0.608	20.63	0.4050	0.961	-0.63	414.6	15.66	0.00031	0.000014
0.709	20.91	0.4715	0.975	-0.41	482.7	15.88	0.00021	0.000011
0.809	21.20	0.5380	0.988	-0.19	550.8	16.10	0.00012	0.000007
0.934	21.40	0.6211	0.998	-0.04	635.9	16.25	0.00004	0.000004
1.059	21.46	0.7042	1.000	0.00	721.0	16.29	0.00000	0.000002
1.209	21.45	0.8040	1.000	0.00	823.1	16.29	0.00000	0.000000

RUN: 122271-2 X=70. Z= 0.

UI = 20.77 D1 = 0.0953 BETA= 0.051 RD2 = 788.
CF/2= 0.00376 D2 = 0.0734 B =-1.061 H = 1.298
F = -0.00399 DC = 1.5536 P+ = 0.001 G = 3.739
K = -0.187E-06 D99 = 0.9165 VO+ =-0.065

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.42	0.0032	0.213	-12.86	3.3	3.47	0.00292	0.003029
0.006	4.82	0.0039	0.232	-12.52	4.0	3.78	0.00285	0.002736
0.007	5.13	0.0045	0.256	-12.13	4.6	4.18	0.00275	0.002443
0.008	5.87	0.0051	0.282	-11.70	5.3	4.61	0.00265	0.002164
0.009	6.41	0.0058	0.309	-11.28	5.9	5.03	0.00255	0.002189
0.010	6.86	0.0064	0.330	-10.92	6.6	5.39	0.00246	0.002116
0.011	7.28	0.0071	0.351	-10.59	7.2	5.72	0.00238	0.002053
0.013	8.19	0.0084	0.394	-9.87	8.6	6.43	0.00221	0.001893
0.015	8.96	0.0097	0.431	-9.27	9.9	7.04	0.00207	0.001756
0.017	9.78	0.0109	0.471	-8.63	11.2	7.69	0.00191	0.001598
0.019	10.52	0.0122	0.506	-8.05	12.5	8.26	0.00177	0.001470
0.021	11.18	0.0135	0.538	-7.53	13.8	8.78	0.00165	0.001369
0.023	11.65	0.0148	0.561	-7.16	15.1	9.14	0.00156	0.001218
0.026	12.50	0.0167	0.602	-6.49	17.1	9.81	0.00140	0.001021
0.029	13.23	0.0187	0.637	-5.92	19.1	10.39	0.00127	0.000854
0.032	13.66	0.0206	0.658	-5.58	21.1	10.72	0.00119	0.000732
0.035	14.08	0.0225	0.678	-5.26	23.0	11.05	0.00111	0.000595
0.039	14.56	0.0251	0.701	-4.87	25.7	11.43	0.00102	0.000473
0.043	15.04	0.0277	0.724	-4.50	28.3	11.80	0.00094	0.000409
0.048	15.34	0.0309	0.738	-4.27	31.6	12.04	0.00089	0.000331
0.054	15.71	0.0348	0.756	-3.97	35.6	12.33	0.00082	0.000257
0.062	16.22	0.0399	0.781	-3.58	40.8	12.73	0.00073	0.000188
0.074	16.59	0.0476	0.799	-3.28	48.7	13.02	0.00068	0.000132
0.094	16.91	0.0605	0.814	-3.03	61.9	13.27	0.00063	0.000083
0.124	17.31	0.0798	0.833	-2.72	81.7	13.59	0.00059	0.000052
0.164	17.73	0.1056	0.854	-2.39	108.0	13.92	0.00054	0.000038
0.229	18.14	0.1474	0.873	-2.07	150.8	14.24	0.00051	0.000028
0.304	18.52	0.1957	0.891	-1.77	200.2	14.54	0.00049	0.000022
0.379	18.86	0.2439	0.908	-1.50	249.6	14.80	0.00045	0.000020
0.454	19.17	0.2922	0.923	-1.26	299.0	15.05	0.00041	0.000018
0.554	19.54	0.3566	0.941	-0.97	364.8	15.34	0.00034	0.000016
0.654	19.91	0.4210	0.958	-0.68	430.7	15.63	0.00026	0.000014
0.754	20.21	0.4853	0.973	-0.44	496.5	15.87	0.00018	0.000011
0.854	20.45	0.5497	0.984	-0.25	562.4	16.05	0.00011	0.000008
0.954	20.63	0.6140	0.993	-0.11	628.2	16.20	0.00006	0.000006
1.079	20.75	0.6945	0.999	-0.02	710.5	16.29	0.00001	0.000003
1.204	20.78	0.7750	1.000	0.00	792.8	16.31	-0.00000	0.000001
1.354	20.78	0.8715	1.001	0.01	891.6	16.32	0.00000	-0.000001
1.504	20.77	0.9681	1.000	0.00	990.4	16.31	0.00000	0.000000

RUN: 122271-2 X=82. Z= 0.

UI = 20.38 D1 = 0.1007 BETA= 0.046 RD2 = 814.
CF/2= 0.00375 D2 = 0.0772 B =-1.065 H = 1.304
F = -0.00399 DC = 1.6457 P+ = 0.001 G = 3.910
K = -0.164E-06 D99 = 0.9870 VO+ =-0.065

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.62	0.0030	0.178	-13.43	3.2	2.99	0.00305	0.002625
0.006	3.99	0.0036	0.196	-13.14	3.9	3.20	0.00298	0.002406
0.007	4.31	0.0042	0.211	-12.92	4.5	3.45	0.00292	0.002187
0.008	4.79	0.0049	0.235	-12.50	5.2	3.84	0.00283	0.002042
0.009	5.35	0.0055	0.263	-12.04	5.9	4.29	0.00272	0.002133
0.010	5.74	0.0061	0.282	-11.73	6.4	4.60	0.00264	0.002203
0.011	6.22	0.0067	0.305	-11.35	7.1	4.98	0.00255	0.002195
0.013	7.09	0.0079	0.348	-10.65	8.4	5.68	0.00239	0.002048
0.015	8.00	0.0091	0.393	-9.92	9.7	6.41	0.00221	0.001967
0.017	8.87	0.0103	0.435	-9.23	11.0	7.11	0.00205	0.001841
0.019	9.56	0.0115	0.469	-8.67	12.3	7.67	0.00192	0.001732
0.021	10.47	0.0128	0.514	-7.94	13.5	8.39	0.00174	0.001586
0.024	11.34	0.0146	0.557	-7.24	15.5	9.09	0.00157	0.001369
0.027	12.72	0.0164	0.600	-6.54	17.4	9.80	0.00141	0.001070
0.030	12.37	0.0182	0.632	-6.02	19.3	10.32	0.00128	0.000865
0.034	13.37	0.0207	0.656	-5.61	21.9	10.72	0.00119	0.000691
0.038	13.91	0.0231	0.683	-5.18	24.5	11.15	0.00109	0.000546
0.043	14.48	0.0261	0.711	-4.73	27.7	11.61	0.00098	0.000434
0.050	15.09	0.0304	0.741	-4.24	32.2	12.10	0.00087	0.000336
0.060	15.61	0.0365	0.766	-3.82	38.7	12.51	0.00077	0.000230
0.072	16.08	0.0438	0.789	-3.44	46.4	12.89	0.00069	0.000157
0.090	16.55	0.0547	0.813	-3.06	58.0	13.28	0.00061	0.000101
0.115	16.91	0.0699	0.830	-2.76	74.2	13.56	0.00056	0.000066
0.160	17.34	0.0972	0.851	-2.43	103.2	13.90	0.00051	0.000041
0.225	17.75	0.1367	0.871	-2.10	145.1	14.23	0.00046	0.000028
0.300	18.14	0.1823	0.890	-1.80	193.5	14.54	0.00043	0.000022
0.400	18.54	0.2431	0.910	-1.47	257.9	14.86	0.00038	0.000018
0.500	18.83	0.3038	0.927	-1.19	322.4	15.15	0.00034	0.000016
0.600	19.20	0.3644	0.942	-0.94	386.9	15.38	0.00030	0.000015
0.700	19.54	0.4254	0.959	-0.67	451.4	15.66	0.00024	0.000013
0.800	19.83	0.4861	0.973	-0.44	515.9	15.90	0.00016	0.000010
0.900	20.04	0.5465	0.983	-0.27	580.4	16.06	0.00010	0.000008
1.000	20.19	0.6077	0.991	-0.15	644.9	16.19	0.00005	0.000006
1.125	20.32	0.6836	0.997	-0.06	725.5	16.29	0.00001	0.000003
1.250	20.38	0.7596	1.000	0.00	806.1	16.34	0.00000	0.000001
1.375	20.38	0.8355	1.000	0.00	886.7	16.34	0.00000	0.000000

RUN: 122771-2 X=90. Z= 0.

UI = 20.14 D1 = 0.1016 BETA= 0.045 RD2 = 822.
CF/2= 0.00375 D2 = 0.0790 B =-1.068 H = 1.286
F = -0.00401 DC = 1.6576 P+ = 0.001 G = 3.629
K = -0.160E-06 D99 = 1.0294 V0+ =-0.065

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	4.98	0.0041	0.248	-12.28	4.3	4.04	0.002838
0.008	5.35	0.0047	0.266	-11.98	5.0	4.34	0.002681
0.009	5.85	0.0053	0.291	-11.58	5.6	4.74	0.002523
0.010	6.45	0.0059	0.320	-11.09	6.2	5.23	0.002387
0.011	6.90	0.0065	0.342	-10.73	6.9	5.59	0.002336
0.013	7.86	0.0077	0.390	-9.95	8.2	6.37	0.002151
0.015	8.80	0.0089	0.437	-9.19	9.4	7.13	0.001876
0.017	9.53	0.0101	0.473	-8.59	10.7	7.73	0.001669
0.019	10.22	0.0113	0.508	-8.04	12.0	8.29	0.001452
0.022	11.01	0.0132	0.547	-7.39	13.9	8.93	0.001199
0.025	11.79	0.0150	0.585	-6.77	15.8	9.55	0.001044
0.028	12.25	0.0168	0.608	-6.39	17.7	9.93	0.000916
0.031	12.87	0.0186	0.639	-5.89	19.6	10.43	0.000795
0.035	13.58	0.0210	0.674	-5.32	22.2	11.01	0.000649
0.040	14.22	0.0240	0.706	-4.79	25.4	11.53	0.000517
0.046	14.71	0.0276	0.731	-4.40	29.2	11.92	0.000374
0.052	15.02	0.0312	0.746	-4.15	33.0	12.17	0.000285
0.060	15.50	0.0361	0.770	-3.76	38.1	12.56	0.000212
0.071	15.85	0.0427	0.787	-3.49	45.2	12.85	0.000156
0.086	16.33	0.0516	0.811	-3.08	54.7	13.24	0.000109
0.111	16.71	0.0666	0.830	-2.78	70.7	13.55	0.000069
0.161	17.08	0.0970	0.849	-2.47	102.6	13.85	0.000040
0.236	17.66	0.1423	0.877	-2.00	150.4	14.32	0.000027
0.311	17.94	0.1875	0.891	-1.78	198.2	14.54	0.000021
0.411	18.35	0.2478	0.911	-1.45	262.0	14.87	0.000018
0.536	18.77	0.3232	0.932	-1.11	341.7	15.21	0.000015
0.661	19.14	0.3986	0.951	-0.81	421.4	15.52	0.000013
0.786	19.47	0.4741	0.967	-0.54	501.1	15.78	0.000010
0.911	19.75	0.5495	0.981	-0.31	580.9	16.01	0.000008
1.036	19.94	0.6249	0.990	-0.16	660.6	16.17	0.000005
1.161	20.08	0.7003	0.997	-0.04	740.3	16.28	0.000003
1.311	20.14	0.7908	1.000	0.01	836.0	16.33	0.000001
1.461	20.14	0.8813	1.000	0.01	931.6	16.33	-0.000000
1.617	20.14	0.9718	1.000	0.00	1027.3	16.32	0.000000

RUN: 122771-3 X= 2. Z= 0.

UI = 29.29 D1 = 0.0451 BETA= 0.078 RD2 = 469.
CF/2= 0.00389 D2 = 0.0309 B =-1.027 H = 1.480
F = -0.00359 DC = 0.7233 P+ = 0.0018 G = 5.055
K = -0.445E-06 D99 = 0.2880 V0+ =-0.0640

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	6.92	0.0059	0.236	-12.25	4.1	3.79	0.002962
0.005	7.89	0.0073	0.269	-11.72	5.0	4.32	0.002747
0.006	8.98	0.0087	0.307	-11.12	6.0	4.92	0.002531
0.007	9.92	0.0101	0.339	-10.61	6.9	5.44	0.002238
0.008	11.07	0.0115	0.378	-9.98	7.9	6.06	0.002142
0.010	12.92	0.0142	0.441	-8.96	9.7	7.08	0.001791
0.012	14.42	0.0170	0.492	-8.15	11.6	7.90	0.001474
0.014	15.66	0.0198	0.535	-7.47	13.5	8.58	0.001213
0.016	16.60	0.0225	0.567	-6.95	15.4	9.09	0.001014
0.018	17.44	0.0253	0.595	-6.49	17.3	9.55	0.000843
0.021	18.48	0.0294	0.631	-5.92	20.2	10.12	0.000659
0.024	19.30	0.0336	0.659	-5.47	23.0	10.57	0.000524
0.028	20.03	0.0391	0.684	-5.07	26.8	10.97	0.000396
0.034	20.95	0.0474	0.715	-4.57	32.5	11.48	0.000276
0.042	21.67	0.0585	0.740	-4.17	40.0	11.87	0.000193
0.052	22.35	0.0723	0.763	-3.80	49.5	12.24	0.000144
0.064	22.93	0.0889	0.783	-3.49	60.9	12.56	0.000114
0.079	23.61	0.1096	0.806	-3.11	75.1	12.93	0.000097
0.099	24.36	0.1373	0.832	-2.70	94.0	13.34	0.000086
0.124	25.26	0.1718	0.862	-2.21	117.7	13.83	0.000076
0.154	26.23	0.2133	0.895	-1.68	146.1	14.37	0.000065
0.194	27.41	0.2686	0.936	-1.03	183.9	15.01	0.000050
0.234	28.30	0.3239	0.966	-0.54	221.8	15.50	0.000035
0.274	28.90	0.3792	0.987	-0.22	259.6	15.83	0.000022
0.314	29.19	0.4345	0.997	-0.06	297.5	15.99	0.000012
0.354	29.28	0.4898	1.000	-0.00	335.4	16.04	0.000005
0.404	29.30	0.5589	1.000	0.00	382.7	16.05	-0.000001
0.466	29.29	0.6419	1.000	0.00	439.5	16.04	0.000000

RUN: 122771-3 X=16. Z= 0.

UI = 26.80 D1 = 0.0585 BETA= 0.184 RD2 = 547.
CF/2= 0.00369 D2 = 0.0408 B =-0.976 H = 1.432
F = -0.00360 DC = 0.9625 P+ = 0.0037 G = 4.966
K = -0.836E-06 D99 = 0.3977 V0+ =-0.0593

Y	U	Y/DC	U/UI	(L-LTI)/L*	Y+	U+	TAL	TAULAM
0.005	5.92	0.0052	0.221	-12.83	4.2	3.64	0.00265	0.002557
0.006	6.62	0.0062	0.247	-12.40	5.1	4.06	0.00287	0.002363
0.007	7.40	0.0073	0.276	-11.92	5.9	4.55	0.00277	0.002170
0.008	8.16	0.0083	0.304	-11.46	6.8	5.01	0.00268	0.001970
0.009	8.81	0.0094	0.329	-11.06	7.6	5.41	0.00260	0.001958
0.011	10.24	0.0114	0.382	-10.18	9.3	6.29	0.00243	0.001608
0.013	11.58	0.0135	0.432	-9.35	11.0	7.11	0.00227	0.001662
0.015	12.82	0.0156	0.478	-8.59	12.7	7.88	0.00212	0.001461
0.017	13.91	0.0177	0.519	-7.92	14.3	8.55	0.00198	0.001285
0.019	14.84	0.0197	0.554	-7.35	16.0	9.11	0.00188	0.001114
0.021	15.57	0.0218	0.581	-6.90	17.7	9.57	0.00179	0.000949
0.023	16.27	0.0239	0.607	-6.47	19.4	9.99	0.00171	0.000807
0.025	16.82	0.0260	0.628	-6.13	21.1	10.33	0.00165	0.000675
0.027	17.26	0.0281	0.644	-5.86	22.8	10.61	0.00160	0.000582
0.030	17.87	0.0312	0.667	-5.49	25.3	10.98	0.00154	0.000468
0.033	18.26	0.0343	0.681	-5.25	27.9	11.22	0.00150	0.000388
0.037	18.83	0.0384	0.703	-4.90	31.2	11.57	0.00145	0.000512
0.042	19.38	0.0436	0.723	-4.56	35.4	11.91	0.00140	0.000244
0.048	19.76	0.0499	0.737	-4.32	40.5	12.14	0.00137	0.000194
0.056	20.27	0.0582	0.756	-4.01	47.3	12.45	0.00134	0.000148
0.066	20.72	0.0686	0.773	-3.74	55.7	12.73	0.00132	0.000116
0.078	21.23	0.0810	0.792	-3.42	65.8	13.04	0.00129	0.000096
0.093	21.65	0.0966	0.808	-3.16	78.5	13.30	0.00128	0.000079
0.113	22.16	0.1174	0.827	-2.85	95.4	13.62	0.00126	0.000068
0.138	22.73	0.1434	0.848	-2.50	116.5	13.96	0.00121	0.000059
0.168	23.35	0.1745	0.871	-2.12	141.8	14.34	0.00113	0.000053
0.208	24.09	0.2161	0.899	-1.67	175.5	14.80	0.00099	0.000047
0.248	24.78	0.2577	0.924	-1.25	209.3	15.22	0.00081	0.000040
0.298	25.53	0.3056	0.953	-0.78	251.5	15.69	0.00058	0.000032
0.348	26.11	0.3616	0.974	-0.43	293.7	16.04	0.00038	0.000023
0.398	26.54	0.4135	0.990	-0.16	335.9	16.30	0.00024	0.000015
0.448	26.74	0.4655	0.998	-0.04	378.1	16.43	0.00014	0.000009
0.508	26.82	0.5278	1.001	0.01	428.7	16.48	0.00006	0.000003
0.573	26.83	0.5953	1.001	0.02	483.6	16.48	0.00000	-0.000001
0.648	26.80	0.6733	1.000	0.00	546.9	16.47	0.00000	0.000000

RUN: 122771-3 X=22. Z= 0.

UI = 24.29 D1 = 0.0709 BETA= 0.137 RD2 = 720.
CF/2= 0.00340 D2 = 0.0571 B =-0.946 H = 1.396
F = -0.00322 DC = 1.3676 P+ = 0.0023 G = 4.864
K = -0.465E-06 D99 = 0.5832 V0+ =-0.0552

Y	U	Y/DC	U/UI	(L-LTI)/L*	Y+	U+	TAL	TAULAM
0.005	4.54	0.0037	0.187	-13.54	3.7	3.20	0.00283	0.002593
0.006	5.07	0.0044	0.209	-13.56	4.4	3.58	0.00276	0.002468
0.007	6.43	0.0051	0.265	-12.60	5.1	4.54	0.00259	0.002354
0.009	7.15	0.0066	0.294	-12.10	6.6	5.04	0.00250	0.002058
0.010	7.85	0.0073	0.323	-11.60	7.3	5.54	0.00242	0.002041
0.012	9.07	0.0088	0.374	-10.74	8.8	6.40	0.00226	0.001777
0.014	10.27	0.0102	0.423	-9.89	10.3	7.25	0.00212	0.001643
0.016	11.28	0.0117	0.464	-9.18	11.8	7.96	0.00199	0.001430
0.018	12.00	0.0132	0.494	-8.67	13.2	8.47	0.00190	0.001269
0.020	12.71	0.0146	0.523	-8.17	14.7	8.97	0.00182	0.001077
0.022	13.39	0.0161	0.551	-7.69	16.2	9.45	0.00173	0.000951
0.025	14.30	0.0183	0.589	-7.05	18.4	10.09	0.00163	0.000799
0.028	14.77	0.0205	0.608	-6.71	20.6	10.43	0.00157	0.000652
0.031	15.46	0.0227	0.637	-6.23	22.8	10.91	0.00149	0.000530
0.035	16.04	0.0256	0.661	-5.88	25.7	11.32	0.00142	0.000413
0.041	16.63	0.0302	0.685	-5.48	30.1	11.74	0.00134	0.000310
0.049	17.20	0.0358	0.708	-5.09	36.0	12.14	0.00130	0.000215
0.061	17.80	0.0446	0.733	-4.67	44.8	12.57	0.00124	0.000149
0.076	18.40	0.0556	0.758	-4.25	55.8	12.99	0.00115	0.000109
0.096	18.92	0.0702	0.779	-3.78	70.5	13.36	0.00115	0.000082
0.121	19.40	0.0885	0.799	-3.45	88.9	13.69	0.00111	0.000066
0.151	19.97	0.1104	0.822	-3.06	110.9	14.10	0.00106	0.000055
0.186	20.48	0.1360	0.843	-2.69	136.6	14.45	0.00101	0.000048
0.226	21.05	0.1653	0.867	-2.28	166.0	14.86	0.00093	0.000043
0.276	21.63	0.2018	0.891	-1.87	202.8	15.27	0.00082	0.000039
0.326	22.23	0.2384	0.915	-1.45	239.5	15.69	0.00070	0.000034
0.376	22.72	0.2749	0.936	-1.10	276.2	16.04	0.00057	0.000030
0.431	23.26	0.3152	0.958	-0.73	316.6	16.42	0.00043	0.000024
0.491	23.67	0.3550	0.975	-0.43	360.7	16.71	0.00030	0.000018
0.556	24.02	0.4066	0.989	-0.19	408.4	16.96	0.00019	0.000012
0.631	24.23	0.4614	0.998	-0.04	463.5	17.10	0.00011	0.000007
0.706	24.30	0.5162	1.000	0.01	518.6	17.15	0.00005	0.000003
0.781	24.31	0.5711	1.001	0.02	573.7	17.16	0.00002	0.000000
0.856	24.31	0.6259	1.001	0.02	628.8	17.16	0.00000	-0.000002
0.931	24.29	0.6808	1.000	0.00	683.9	17.14	0.00000	0.000000

RUN: 122771-3 X=34. Z= 0.

UI = 22.97 D1 = 0.0964 BETA= 0.118 RD2 = 843.
CF/2= 0.00322 D2 = 0.0708 B =-0.930 H = 1.362
F = -0.00300 DC = 1.6980 P+ = 0.0018 G = 4.683
K = -0.331E-06 D99 = 0.6996 V0+ =-0.0528

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	5.19	0.0033	0.226	-13.63	3.8	3.58	0.00256	0.002672
0.007	5.72	0.0036	0.249	-13.22	4.5	4.39	0.00250	0.002467
0.008	6.19	0.0041	0.270	-12.86	5.1	4.75	0.00244	0.002302
0.009	6.74	0.0051	0.294	-12.44	5.8	5.17	0.00237	0.002112
0.011	7.83	0.0062	0.341	-11.61	7.2	6.00	0.00224	0.001829
0.013	8.56	0.0074	0.390	-10.74	8.5	6.87	0.00209	0.001702
0.015	9.85	0.0086	0.429	-10.06	9.9	7.55	0.00198	0.001564
0.017	10.38	0.0098	0.452	-9.66	11.2	7.96	0.00192	0.001386
0.019	11.45	0.0110	0.498	-8.83	12.6	8.78	0.00178	0.001274
0.021	12.10	0.0121	0.527	-8.33	13.9	9.28	0.00170	0.001132
0.023	12.53	0.0133	0.546	-8.00	15.3	9.61	0.00165	0.000934
0.025	13.23	0.0145	0.576	-7.46	16.6	10.15	0.00156	0.000759
0.026	13.77	0.0163	0.600	-7.05	18.7	10.56	0.00150	0.000653
0.032	14.33	0.0186	0.624	-6.62	21.4	10.99	0.00143	0.000516
0.037	14.92	0.9216	0.650	-6.17	24.7	11.44	0.00136	0.000375
0.044	15.54	0.0257	0.676	-5.70	29.5	11.91	0.00129	0.000282
0.053	16.14	0.0310	0.703	-5.23	35.6	12.38	0.00123	0.000207
0.066	16.68	0.0386	0.726	-4.82	44.4	12.79	0.00118	0.000145
0.084	17.31	0.0492	0.754	-4.34	56.5	13.27	0.00112	0.000101
0.104	17.69	0.0610	0.770	-4.05	70.0	13.56	0.00109	0.000077
0.129	18.18	0.0757	0.797	-3.67	87.0	13.94	0.00105	0.000060
0.159	18.59	0.0934	0.809	-3.36	107.2	14.25	0.00101	0.000050
0.199	19.06	0.1170	0.830	-2.99	134.3	14.62	0.00096	0.000043
0.244	19.50	0.1435	0.849	-2.66	164.7	14.95	0.00091	0.000038
0.294	20.05	0.1729	0.873	-2.24	198.5	15.37	0.00084	0.000035
0.344	20.53	0.2024	0.894	-1.87	232.3	15.75	0.00076	0.000032
0.394	20.90	0.2318	0.910	-1.59	266.1	16.02	0.00067	0.000029
0.469	21.50	0.2760	0.936	-1.13	316.8	16.49	0.00052	0.000025
0.544	22.00	0.3201	0.958	-0.74	367.6	16.87	0.00037	0.000020
0.619	22.45	0.3643	0.977	-0.40	418.3	17.21	0.00024	0.000015
0.694	22.72	0.4085	0.989	-0.19	469.0	17.42	0.00014	0.000010
0.769	22.90	0.4526	0.997	-0.05	519.7	17.56	0.00007	0.000006
0.844	22.97	0.4968	1.000	0.00	570.4	17.61	0.00003	0.000003
0.944	22.98	0.5557	1.000	0.01	638.0	17.62	0.00000	-0.000001
1.044	22.97	0.6146	1.000	0.00	705.6	17.61	0.00000	0.000000

RUN: 122771-3 X=46. Z= 0.

UI = 21.99 D1 = 0.1168 BETA= 0.110 RD2 = 970.
CF/2= 0.00310 D2 = 0.0851 B =-0.926 H = 1.374
F = -0.002E7 DC = 2.0586 P+ = 0.0015 G = 4.887
K = -0.257E-06 D99 = 0.8314 V0+ =-0.0515

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.45	0.0024	0.157	-15.15	3.2	2.81	0.00266	0.002173
0.006	3.74	0.0029	0.170	-14.91	3.8	3.05	0.00263	0.002056
0.007	4.10	0.0033	0.186	-14.61	4.4	3.35	0.00258	0.001939
0.008	4.50	0.0038	0.205	-14.29	5.1	3.67	0.00253	0.001785
0.010	5.37	0.0048	0.244	-13.58	6.3	4.38	0.00243	0.001853
0.012	6.41	0.0057	0.291	-12.73	7.6	5.23	0.00230	0.001838
0.014	7.34	0.0067	0.334	-11.97	8.9	5.99	0.00218	0.001768
0.016	8.18	0.0076	0.372	-11.28	10.2	6.68	0.00207	0.001647
0.018	9.05	0.0086	0.411	-10.57	11.4	7.39	0.00196	0.001540
0.020	9.86	0.0095	0.448	-9.91	12.7	8.05	0.00186	0.001384
0.022	10.41	0.0105	0.473	-9.46	14.0	8.50	0.00179	0.001257
0.024	11.19	0.0114	0.509	-8.82	15.2	9.14	0.00170	0.001090
0.027	11.83	0.0129	0.538	-8.30	17.1	9.66	0.00162	0.000899
0.030	12.55	0.0143	0.571	-7.71	19.0	10.25	0.00153	0.000761
0.034	13.09	0.0162	0.595	-7.27	21.6	10.69	0.00146	0.000593
0.038	13.68	0.0181	0.622	-6.75	24.1	11.17	0.00139	0.000485
0.044	14.39	0.0210	0.654	-6.21	27.9	11.75	0.00131	0.000357
0.052	14.94	0.0248	0.679	-5.76	33.0	12.20	0.00125	0.000264
0.062	15.33	0.0295	0.697	-5.44	39.4	12.52	0.00121	0.000185
0.075	15.91	0.0357	0.723	-4.97	47.6	12.99	0.00115	0.000129
0.092	16.42	0.0438	0.746	-4.56	58.4	13.40	0.00110	0.000096
0.120	16.82	0.0572	0.765	-4.23	76.2	13.73	0.00107	0.000069
0.150	17.27	0.0715	0.785	-3.86	95.2	14.10	0.00103	0.000053
0.190	17.76	0.0905	0.807	-3.46	120.6	14.50	0.00099	0.000044
0.240	18.26	0.1144	0.830	-3.05	152.4	14.91	0.00094	0.000037
0.290	18.66	0.1382	0.848	-2.72	184.1	15.24	0.00090	0.000033
0.340	19.08	0.1620	0.867	-2.38	215.9	15.58	0.00084	0.000031
0.390	19.43	0.1858	0.883	-2.10	247.6	15.87	0.00077	0.000029
0.440	19.77	0.2097	0.899	-1.82	279.4	16.16	0.00071	0.000028
0.490	20.14	0.2335	0.916	-1.51	311.1	16.45	0.00063	0.000026
0.550	20.51	0.2621	0.932	-1.21	349.2	16.75	0.00054	0.000023
0.625	20.67	0.2978	0.953	-0.84	396.8	17.12	0.00042	0.000020
0.700	21.30	0.3336	0.969	-0.56	444.4	17.40	0.00029	0.000016
0.775	21.61	0.3693	0.983	-0.31	492.1	17.65	0.00019	0.000012
0.850	21.83	0.4050	0.992	-0.14	539.7	17.82	0.00011	0.000008
0.950	21.95	0.4527	0.998	-0.04	603.2	17.92	0.00004	0.000004
1.050	21.99	0.5003	1.000	0.00	666.7	17.96	0.00000	0.000000

RUN: 122771-3 X=58. Z= 0.

UI = 21.30 D1 = 0.1288 BETA= 0.099 RD2 = 1047.
CF/2= 0.00301 D2 = 0.0948 B =-0.916 H = 1.358
F = -0.00276 DC = 2.3662 P+ = 0.0013 G = 4.805
K = -0.210E-06 D99 = 0.9474 V0+ =-0.0503

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.30	0.0021	0.155	-15.39	3.0	2.82	0.00259	0.002023
0.006	3.39	0.0026	0.159	-15.31	3.6	2.90	0.00258	0.001833
0.007	3.68	0.0033	0.173	-15.07	4.2	3.14	0.00255	0.001643
0.008	4.05	0.0034	0.190	-14.75	4.8	3.46	0.00250	0.001726
0.009	4.47	0.0038	0.210	-14.29	5.5	3.83	0.00245	0.001974
0.010	4.98	0.0043	0.234	-13.56	6.1	4.26	0.00239	0.002041
0.012	6.06	0.0051	0.285	-13.03	7.3	5.18	0.00225	0.002039
0.014	6.94	0.0060	0.326	-12.28	8.5	5.54	0.00214	0.001900
0.016	7.81	0.0068	0.367	-11.54	9.7	6.68	0.00204	0.001566
0.018	8.68	0.0077	0.408	-10.79	10.9	7.43	0.00193	0.001467
0.020	9.36	0.0085	0.440	-10.21	12.1	8.01	0.00184	0.001367
0.023	10.10	0.0098	0.474	-9.58	13.9	8.64	0.00175	0.001173
0.026	10.89	0.0111	0.511	-8.90	15.8	9.31	0.00165	0.001006
0.029	11.69	0.0124	0.549	-8.21	17.6	10.00	0.00156	0.000880
0.032	12.29	0.0136	0.577	-7.70	19.4	10.51	0.00148	0.000745
0.035	12.71	0.0149	0.597	-7.35	21.2	10.87	0.00143	0.000618
0.039	13.19	0.0166	0.619	-6.94	23.6	11.28	0.00138	0.000482
0.044	13.75	0.0188	0.646	-6.45	26.7	11.76	0.00131	0.000377
0.050	14.09	0.0213	0.662	-6.17	30.3	12.05	0.00127	0.000297
0.057	14.62	0.0243	0.687	-5.71	34.6	12.51	0.00121	0.000232
0.067	15.03	0.0286	0.706	-5.36	40.6	12.86	0.00116	0.000176
0.079	15.43	0.0337	0.724	-5.02	47.9	13.20	0.00112	0.000136
0.099	15.91	0.0422	0.747	-4.61	60.0	13.61	0.00108	0.000105
0.129	16.36	0.0550	0.768	-4.22	78.2	14.00	0.00104	0.000064
0.169	16.88	0.0720	0.793	-3.78	102.4	14.44	0.00099	0.000047
0.209	17.29	0.0891	0.812	-3.42	126.7	14.79	0.00096	0.000039
0.259	17.67	0.1104	0.830	-3.10	157.0	15.12	0.00092	0.000034
0.319	17.98	0.1317	0.844	-2.84	187.3	15.38	0.00089	0.000031
0.384	18.56	0.1637	0.871	-2.34	232.8	15.87	0.00081	0.000027
0.459	18.97	0.1956	0.891	-1.99	278.2	16.23	0.00074	0.000025
0.534	19.44	0.2276	0.913	-1.59	323.7	16.63	0.00064	0.000023
0.609	19.80	0.2596	0.930	-1.28	369.1	16.94	0.00055	0.000020
0.709	20.28	0.3022	0.952	-0.87	429.8	17.35	0.00041	0.000017
0.809	20.68	0.3448	0.971	-0.53	490.4	17.69	0.00027	0.000013
0.909	21.02	0.3874	0.987	-0.24	551.0	17.98	0.00016	0.000009
1.009	21.19	0.4301	0.995	-0.09	611.6	18.12	0.00008	0.000006
1.109	21.28	0.4727	0.999	-0.01	672.2	18.20	0.00003	0.000003
1.209	21.31	0.5153	1.001	0.01	732.8	18.23	0.00000	0.000001
1.359	21.30	0.5792	1.000	0.00	823.8	18.22	0.00000	0.000000

RUN: 122771-3 X=70. Z= 0.

UI = 20.77 D1 = 0.1449 BETA= 0.094 RD2 = 1167.
CF/2= 0.00293 D2 = 0.1084 B =-0.915 H = 1.337
F = -0.00268 DC = 2.6764 P+ = 0.0011 G = 4.655
K = -0.176E-06 D99 = 1.0891 V0+ =-0.0495

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.48	0.0019	0.167	-15.38	2.9	3.09	0.00249	0.002420
0.006	3.80	0.0022	0.183	-15.10	3.5	3.38	0.00245	0.002210
0.007	4.17	0.0026	0.201	-14.77	4.1	3.71	0.00241	0.002000
0.008	4.68	0.0030	0.225	-14.32	4.7	4.16	0.00234	0.001954
0.009	5.16	0.0034	0.249	-13.88	5.2	4.59	0.00228	0.002039
0.010	5.46	0.0037	0.263	-13.62	5.8	4.86	0.00224	0.002025
0.012	6.45	0.0045	0.311	-12.73	7.0	5.75	0.00212	0.001861
0.014	7.30	0.0052	0.352	-11.98	8.2	6.50	0.00201	0.001693
0.016	8.02	0.0060	0.386	-11.34	9.3	7.14	0.00192	0.001540
0.018	8.66	0.0067	0.417	-10.77	10.5	7.71	0.00184	0.001382
0.020	9.26	0.0075	0.446	-10.24	11.7	8.23	0.00177	0.001251
0.023	10.09	0.0086	0.486	-9.50	13.4	8.97	0.00167	0.001083
0.026	10.76	0.0097	0.518	-8.90	15.2	9.57	0.00159	0.000934
0.031	11.68	0.0116	0.562	-8.09	18.1	10.39	0.00147	0.000762
0.036	12.49	0.0135	0.601	-7.37	21.0	11.11	0.00137	0.000651
0.041	13.03	0.0153	0.627	-6.89	23.9	11.58	0.00131	0.000429
0.046	13.26	0.0172	0.638	-6.68	26.8	11.80	0.00128	0.000343
0.053	13.92	0.0198	0.670	-6.10	30.9	12.38	0.00120	0.000253
0.062	14.25	0.0232	0.686	-5.80	36.1	12.67	0.00117	0.000192
0.076	14.72	0.0284	0.709	-5.38	44.3	13.09	0.00111	0.000138
0.096	15.23	0.0359	0.733	-4.93	56.0	13.54	0.00106	0.000092
0.121	15.61	0.0452	0.751	-4.59	70.5	13.88	0.00102	0.000070
0.151	16.03	0.0564	0.772	-4.22	88.0	14.26	0.00098	0.000053
0.181	16.34	0.0676	0.787	-3.94	105.5	14.53	0.00096	0.000044
0.221	16.72	0.0826	0.805	-3.61	128.8	14.87	0.00092	0.000037
0.271	17.00	0.1013	0.818	-3.36	158.0	15.12	0.00089	0.000032
0.331	17.44	0.1237	0.840	-2.96	193.0	15.51	0.00085	0.000029
0.406	17.90	0.1517	0.862	-2.55	236.7	15.92	0.00079	0.000026
0.506	18.41	0.1891	0.886	-2.10	295.0	16.37	0.00070	0.000023
0.606	18.93	0.2264	0.912	-1.63	353.3	16.84	0.00059	0.000021
0.706	19.39	0.2638	0.933	-1.23	411.6	17.24	0.00048	0.000018
0.806	19.79	0.3012	0.953	-0.87	469.9	17.60	0.00037	0.000015
0.906	20.14	0.3385	0.970	-0.56	528.2	17.91	0.00025	0.000012
1.006	20.42	0.3759	0.983	-0.31	586.5	18.16	0.00015	0.000009
1.131	20.63	0.4226	0.993	-0.12	659.3	18.35	0.00006	0.000006
1.256	20.75	0.4693	0.999	-0.02	732.2	18.45	0.00001	0.000003
1.406	20.78	0.5253	1.000	0.01	819.6	18.48	0.00000	0.000000
1.556	20.77	0.5814	1.000	0.00	907.1	18.47	0.00000	0.000000

RUN: 122771-3 X=82. Z= 0.

UI = 20.35 D1 = 0.1597 BETA= 0.089 RD2 = 1.658.
CF/2= 0.00286 D2 = 0.1193 B =-0.907 H = 1.339
F = -0.00259 DC = 2.5887 P+ = 0.0010 G = 4.739
K = -0.151E-06 D99 = 1.2074 VO+ =-0.0485

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.04	0.0017	0.150	-15.51	2.8	2.80	0.00240	0.002033
0.006	3.21	0.0020	0.158	-15.76	3.4	2.95	0.00243	0.001759
0.007	3.47	0.0023	0.171	-15.52	3.9	3.19	0.00238	0.001564
0.008	3.86	0.0027	0.189	-15.17	4.5	3.55	0.00234	0.001398
0.009	4.19	0.0030	0.206	-14.86	5.1	3.85	0.00231	0.001548
0.010	4.47	0.0033	0.220	-14.60	5.6	4.11	0.00227	0.001684
0.011	4.79	0.0037	0.236	-14.30	6.2	4.41	0.00222	0.001749
0.012	5.20	0.0040	0.256	-13.93	6.8	4.78	0.00211	0.001786
0.014	5.86	0.0047	0.288	-13.14	7.9	5.37	0.00202	0.001841
0.016	6.81	0.0054	0.335	-12.45	9.0	6.26	0.00194	0.001853
0.018	7.42	0.0060	0.365	-11.89	10.1	6.83	0.00182	0.001713
0.020	8.40	0.0067	0.413	-10.99	11.3	7.73	0.00173	0.001549
0.022	9.13	0.0074	0.449	-10.32	12.4	8.40	0.00164	0.001415
0.024	9.59	0.0080	0.472	-9.89	13.5	8.82	0.00162	0.001241
0.026	10.05	0.0087	0.494	-9.47	14.7	9.24	0.00154	0.001146
0.029	10.72	0.0097	0.527	-8.85	16.3	9.86	0.00149	0.000834
0.032	11.17	0.0107	0.549	-8.44	18.0	10.27	0.00142	0.000728
0.036	11.71	0.0120	0.575	-7.95	20.3	10.77	0.00137	0.000589
0.040	12.17	0.0134	0.598	-7.52	22.5	11.19	0.00129	0.000467
0.046	12.79	0.0154	0.629	-6.95	25.9	11.77	0.00123	0.000387
0.054	13.30	0.0181	0.653	-6.48	30.4	12.23	0.00115	0.000288
0.066	13.90	0.0221	0.683	-5.93	37.2	12.79	0.00110	0.000196
0.081	14.43	0.0271	0.709	-5.44	45.7	13.27	0.00106	0.000138
0.106	14.90	0.0355	0.732	-5.01	59.8	13.71	0.00100	0.000091
0.146	15.54	0.0489	0.764	-4.42	82.3	14.29	0.00095	0.000059
0.196	16.06	0.0656	0.789	-3.94	110.5	14.77	0.00092	0.000042
0.246	16.37	0.0823	0.805	-3.65	138.7	15.06	0.00087	0.000023
0.321	16.88	0.1074	0.830	-3.19	181.0	15.53	0.00082	0.000028
0.396	17.28	0.1325	0.850	-2.82	223.2	15.90	0.00076	0.000025
0.496	17.77	0.1660	0.873	-2.37	279.6	16.34	0.00068	0.000022
0.596	18.21	0.1994	0.895	-1.96	336.0	16.75	0.00059	0.000026
0.696	18.67	0.2329	0.917	-1.55	392.4	17.17	0.00047	0.000018
0.821	19.15	0.2747	0.941	-1.10	462.8	17.61	0.00034	0.000015
0.946	19.55	0.3165	0.961	-0.73	533.3	17.98	0.00026	0.000012
1.096	19.95	0.3667	0.981	-0.36	617.9	18.35	0.00018	0.000008
1.246	20.21	0.4169	0.993	-0.13	702.4	18.59	0.00004	0.000005
1.396	20.33	0.4671	0.999	-0.01	787.0	18.70	0.00000	0.000003
1.596	20.35	0.5340	1.000	0.00	899.7	18.71	0.00000	0.000000

RUN: 122771-3 X=90. Z= 0.

UI = 20.01 D1 = 0.1674 BETA= 0.089 RD2 = 1.814.
CF/2= 0.00282 D2 = 0.1266 B =-0.906 H = 1.323
F = -0.00256 DC = 3.1507 P+ = 0.0010 G = 4.589
K = -0.144E-06 D99 = 1.2588 VO+ =-0.0482

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	3.93	0.0022	0.197	-15.12	3.7	3.70	0.002385
0.008	4.37	0.0025	0.218	-14.71	4.3	4.11	0.002275
0.009	4.84	0.0028	0.242	-14.27	4.9	4.55	0.002164
0.010	5.31	0.0031	0.265	-13.83	5.4	4.99	0.002067
0.012	6.03	0.0037	0.301	-13.15	6.5	5.67	0.001919
0.014	6.84	0.0044	0.342	-12.39	7.6	6.43	0.001715
0.016	7.64	0.0050	0.382	-11.63	8.7	7.19	0.001559
0.018	8.24	0.0056	0.412	-11.07	9.8	7.75	0.001449
0.020	8.74	0.0063	0.437	-10.60	10.5	8.21	0.001295
0.023	9.65	0.0072	0.482	-9.75	12.6	9.07	0.001088
0.027	10.38	0.0085	0.519	-9.05	14.8	9.76	0.000874
0.031	11.07	0.0098	0.553	-8.41	17.0	10.41	0.000698
0.036	11.76	0.0114	0.587	-7.76	19.7	11.06	0.000534
0.042	12.28	0.0133	0.614	-7.27	23.0	11.55	0.000415
0.050	12.81	0.0158	0.640	-6.77	27.5	12.04	0.000303
0.063	13.51	0.0199	0.675	-6.11	34.6	12.71	0.000204
0.081	14.09	0.0256	0.704	-5.57	44.5	13.25	0.000138
0.109	14.72	0.0342	0.735	-4.98	59.4	13.84	0.000090
0.143	15.15	0.0453	0.757	-4.57	78.7	14.25	0.000061
0.193	15.68	0.0612	0.783	-4.08	106.3	14.74	0.000043
0.263	16.13	0.0834	0.806	-3.65	144.9	15.16	0.000033
0.363	16.71	0.1151	0.835	-3.10	200.0	15.72	0.000026
0.463	17.22	0.1469	0.860	-2.63	255.2	16.19	0.000023
0.568	17.74	0.1866	0.886	-2.14	324.1	16.68	0.000020
0.713	18.26	0.2262	0.912	-1.65	393.0	17.17	0.000017
0.863	18.77	0.2738	0.938	-1.16	475.7	17.65	0.000014
1.063	19.38	0.3373	0.968	-0.59	586.0	18.22	0.000010
1.263	19.82	0.4008	0.990	-0.18	696.3	18.64	0.000006
1.513	20.01	0.4801	1.000	0.00	834.1	18.82	0.000003
1.813	20.03	0.5754	1.001	0.02	999.5	18.84	0.000000
1.913	20.01	0.6071	1.000	0.00	1054.6	18.82	0.000000

RUN: 121671-3 X= 2. Z= 0.

UI = 29.30 D1 = 0.0495 BETA= 0.104 RD2 = 510.
CF/2= 0.00323 D2 = 0.0330 B =-0.617 H = 1.498
F = -0.00199 DC = 0.8706 P+ = 0.002 G = 5.855
K = -0.441E-06 D99 = 1.2973 VO+ =-0.035

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	6.33	0.0045	0.216	-13.80	3.8	3.61	0.002595
0.005	7.14	0.0061	0.244	-13.31	4.6	4.29	0.002384
0.006	8.05	0.0072	0.275	-12.77	5.5	4.83	0.002173
0.007	8.94	0.0084	0.305	-12.23	6.4	5.37	0.001982
0.009	10.60	0.0107	0.362	-11.23	8.2	6.37	0.001707
0.011	12.00	0.0130	0.410	-10.39	9.9	7.21	0.001508
0.013	13.48	0.0153	0.460	-9.50	11.7	8.10	0.001341
0.015	14.63	0.0176	0.499	-8.82	13.4	8.79	0.001180
0.017	15.62	0.0199	0.533	-8.22	15.2	9.39	0.000996
0.019	16.55	0.0222	0.565	-7.66	16.9	9.95	0.000833
0.021	17.27	0.0245	0.589	-7.23	18.7	10.37	0.000704
0.024	18.02	0.0279	0.615	-6.76	21.3	10.83	0.000551
0.027	18.69	0.0314	0.638	-6.37	23.9	11.23	0.000441
0.031	19.40	0.0360	0.662	-5.95	27.4	11.66	0.000350
0.036	20.09	0.0417	0.686	-5.53	31.8	12.07	0.000276
0.042	20.75	0.0486	0.708	-5.14	37.1	12.47	0.000218
0.048	21.26	0.0555	0.726	-4.83	42.4	12.77	0.000181
0.056	21.80	0.0647	0.744	-4.50	49.4	13.10	0.000149
0.066	22.42	0.0762	0.765	-4.14	58.1	13.47	0.000125
0.080	23.13	0.0922	0.789	-3.71	70.4	13.90	0.000108
0.095	23.77	0.1095	0.811	-3.32	83.6	14.28	0.000096
0.115	24.60	0.1324	0.840	-2.82	101.1	14.78	0.000085
0.140	25.51	0.1612	0.871	-2.29	123.0	15.33	0.000075
0.170	26.49	0.1956	0.904	-1.65	149.3	15.92	0.000062
0.210	27.61	0.2416	0.942	-1.01	184.4	16.59	0.000046
0.250	28.46	0.2875	0.971	-0.51	219.5	17.10	0.000031
0.290	28.97	0.3335	0.989	-0.20	254.6	17.40	0.000019
0.330	29.20	0.3794	0.997	-0.06	289.7	17.55	0.000011
0.375	29.31	0.4311	1.000	0.00	329.1	17.61	0.000005
0.425	29.31	0.4885	1.000	0.01	373.0	17.61	0.000001
0.475	29.32	0.5460	1.001	0.01	416.8	17.61	-0.000002
0.550	29.30	0.6321	1.000	0.00	482.6	17.60	0.000000

RUN: 121671-3 X=10. Z= 0.

UI = 26.95 D1 = 0.0774 BETA= 0.322 RD2 = 741.
CF/2= 0.00282 D2 = 0.0522 B =-0.703 H = 1.482
F = -0.00198 DC = 1.4571 P+ = 0.006 G = 6.129
K = -0.826E-06 D99 = 0.4537 VO+ =-0.037

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.87	0.0034	0.181	-15.63	3.8	3.41	0.00252	0.002081
0.006	5.39	0.0041	0.200	-15.07	4.5	3.76	0.00249	0.001965
0.007	5.95	0.0048	0.221	-14.69	5.3	4.16	0.00246	0.001848
0.008	6.64	0.0055	0.246	-14.20	6.0	4.64	0.00242	0.001733
0.009	7.35	0.0062	0.273	-13.70	6.8	5.14	0.00238	0.001754
0.011	8.49	0.0075	0.323	-12.76	8.3	6.08	0.00230	0.001660
0.013	9.94	0.0089	0.369	-11.89	9.8	6.94	0.00223	0.001469
0.015	11.03	0.0103	0.409	-11.13	11.3	7.71	0.00216	0.001287
0.018	12.59	0.0124	0.467	-10.04	13.6	8.80	0.00207	0.001054
0.022	13.91	0.0151	0.516	-9.12	16.6	9.72	0.00200	0.000734
0.028	15.58	0.0192	0.578	-7.95	21.1	10.89	0.00192	0.000532
0.036	16.77	0.0247	0.622	-7.11	27.1	11.72	0.00187	0.000342
0.044	17.58	0.0302	0.652	-6.55	33.2	12.29	0.00184	0.000242
0.054	18.28	0.0371	0.678	-6.06	40.7	12.77	0.00181	0.000172
0.066	18.98	0.0453	0.704	-5.57	49.8	13.27	0.00179	0.000130
0.079	19.50	0.0542	0.723	-5.21	59.6	13.63	0.00177	0.000107
0.099	20.18	0.0679	0.749	-4.73	74.6	14.10	0.00174	0.000088
0.124	20.89	0.0851	0.775	-4.24	93.5	14.60	0.00168	0.000077
0.154	21.76	0.1057	0.807	-3.63	116.1	15.21	0.00158	0.000069
0.184	22.48	0.1263	0.834	-3.14	138.7	15.71	0.00145	0.000063
0.224	23.42	0.1537	0.869	-2.47	168.9	16.37	0.00125	0.000056
0.274	24.42	0.1880	0.906	-1.77	206.6	17.07	0.00098	0.000047
0.324	25.32	0.2224	0.939	-1.14	244.2	17.70	0.00072	0.000036
0.374	26.10	0.2567	0.968	-0.60	281.9	18.24	0.00053	0.000026
0.424	26.54	0.2910	0.985	-0.29	319.6	18.55	0.00037	0.000018
0.499	26.89	0.3425	0.998	-0.04	376.2	18.80	0.00019	0.000009
0.574	26.96	0.3939	1.000	0.00	432.7	18.84	0.00007	0.000002
0.649	26.97	0.4454	1.001	0.01	489.2	18.85	0.00000	-0.000003
0.724	26.95	0.4969	1.000	0.00	545.8	18.84	0.00000	0.000000

RUN: 121671-3 X=22. Z= 0.

UI = 24.58 D1 = 0.1203 BETA= 0.270 RDZ = 1070.
DF/Z= 0.00264 D2 = 0.0826 B =-0.755 H = 1.455
F = -0.00199 DC = 2.3428 P+ = 0.003 G = 6.095
K = -0.457E-06 D99 = 0.6765 V0+ =-0.039

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.78	0.0021	0.154	-16.48	3.3	3.00	0.00236	0.001857
0.006	4.10	0.0026	0.167	-16.23	4.0	3.25	0.00234	0.001730
0.007	4.53	0.0030	0.184	-15.89	4.7	3.59	0.00231	0.001604
0.008	4.95	0.0034	0.201	-15.55	5.3	3.92	0.00229	0.001537
0.009	5.42	0.0038	0.220	-15.19	6.0	4.29	0.00225	0.001636
0.011	6.48	0.0047	0.264	-14.34	7.3	5.14	0.00218	0.001591
0.013	7.61	0.0055	0.309	-13.45	8.6	6.03	0.00210	0.001494
0.016	8.99	0.0068	0.366	-12.36	10.6	7.12	0.00200	0.001302
0.019	10.11	0.0081	0.411	-11.47	12.6	8.01	0.00193	0.001097
0.022	11.15	0.0094	0.453	-10.65	14.6	8.83	0.00185	0.000920
0.025	12.06	0.0107	0.491	-9.97	16.6	9.56	0.00179	0.000766
0.028	12.64	0.0120	0.514	-9.46	18.6	10.02	0.00176	0.000634
0.031	13.24	0.0132	0.539	-8.97	20.6	10.49	0.00172	0.000525
0.035	13.81	0.0149	0.562	-8.54	23.3	10.94	0.00169	0.000408
0.040	14.37	0.0171	0.585	-8.09	26.6	11.39	0.00166	0.000324
0.047	15.01	0.0201	0.611	-7.59	31.2	11.89	0.00163	0.000241
0.056	15.44	0.0239	0.628	-7.24	37.2	12.24	0.00161	0.000181
0.066	16.11	0.0282	0.655	-6.71	43.9	12.77	0.00159	0.000141
0.081	16.59	0.0346	0.675	-6.33	53.8	13.14	0.00157	0.000108
0.101	17.15	0.0431	0.698	-5.89	67.1	13.59	0.00156	0.000084
0.126	17.73	0.0538	0.721	-5.43	83.8	14.05	0.00155	0.000067
0.156	18.33	0.0666	0.746	-4.95	103.7	14.53	0.00153	0.000059
0.196	18.92	0.0837	0.770	-4.49	130.3	14.99	0.00148	0.000052
0.246	19.70	0.1050	0.801	-3.87	163.5	15.61	0.00139	0.000048
0.301	20.49	0.1285	0.834	-3.24	200.1	16.24	0.00126	0.000044
0.366	21.37	0.1562	0.870	-2.54	243.3	16.94	0.00107	0.000040
0.431	22.23	0.1840	0.906	-1.86	286.5	17.62	0.00085	0.000035
0.506	23.08	0.2160	0.939	-1.19	336.4	18.29	0.00062	0.000028
0.581	23.78	0.2480	0.968	-0.63	386.3	18.85	0.00043	0.000020
0.656	24.28	0.2800	0.988	-0.24	436.1	19.24	0.00028	0.000013
0.756	24.54	0.3227	0.998	-0.03	502.6	19.45	0.00011	0.000006
0.856	24.61	0.3654	1.001	0.03	569.1	19.50	0.00000	0.000001
0.956	24.58	0.4081	1.000	0.00	635.6	19.48	0.00000	0.000000

RUN: 121671-3 X=34. Z= 0.

UI = 23.21 D1 = 0.1482 BETA= 0.230 RDZ = 1285.
DF/Z= 0.00256 D2 = 0.1051 B =-0.780 H = 1.410
F = -0.00200 DC = 2.9267 P+ = 0.003 G = 5.743
K = -0.325E-06 D99 = 0.8755 V0+ =-0.039

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	3.93	0.0019	0.169	-16.40	3.5	3.35	0.00224	0.002035
0.007	4.31	0.0023	0.186	-16.08	4.1	3.67	0.00221	0.001930
0.008	4.70	0.0026	0.203	-15.75	4.7	4.00	0.00218	0.001825
0.009	5.29	0.0029	0.228	-15.25	5.3	4.50	0.00214	0.001729
0.010	5.71	0.0033	0.246	-14.89	5.9	4.86	0.00211	0.001778
0.012	6.77	0.0040	0.291	-13.99	7.2	5.76	0.00202	0.001703
0.014	7.70	0.0046	0.332	-13.20	8.4	6.55	0.00195	0.001531
0.016	8.60	0.0053	0.370	-12.44	9.7	7.31	0.00188	0.001365
0.018	9.41	0.0060	0.405	-11.75	10.9	8.00	0.00181	0.001219
0.021	10.32	0.0070	0.445	-10.97	12.8	8.78	0.00174	0.000999
0.024	11.07	0.0081	0.477	-10.33	14.6	9.42	0.00169	0.000808
0.028	12.01	0.0094	0.518	-9.53	17.1	10.22	0.00162	0.000616
0.032	12.57	0.0108	0.541	-9.06	19.6	10.69	0.00158	0.000499
0.036	13.02	0.0122	0.561	-8.67	22.0	11.08	0.00155	0.000402
0.042	13.57	0.0142	0.585	-8.20	25.8	11.55	0.00152	0.000296
0.050	14.29	0.0169	0.615	-7.59	30.7	12.16	0.00148	0.000225
0.060	14.73	0.0204	0.635	-7.22	36.9	12.53	0.00146	0.000168
0.074	15.20	0.0251	0.655	-6.82	45.6	12.93	0.00145	0.000121
0.089	15.75	0.0303	0.679	-6.35	54.9	13.40	0.00143	0.000090
0.109	16.15	0.0371	0.696	-6.01	67.2	13.74	0.00143	0.000072
0.129	16.51	0.0439	0.711	-5.70	79.6	14.05	0.00143	0.000061
0.159	16.88	0.0542	0.727	-5.39	98.2	14.36	0.00143	0.000051
0.199	17.43	0.0679	0.751	-4.92	123.0	14.83	0.00143	0.000045
0.254	18.19	0.0867	0.779	-4.36	157.0	15.39	0.00141	0.000041
0.319	18.82	0.1089	0.811	-3.73	197.3	16.02	0.00135	0.000038
0.394	19.53	0.1345	0.841	-3.14	243.7	16.61	0.00126	0.000034
0.469	20.25	0.1601	0.872	-2.52	290.2	17.23	0.00112	0.000032
0.544	20.92	0.1857	0.901	-1.95	336.6	17.80	0.00096	0.000029
0.619	21.52	0.2114	0.927	-1.44	383.1	18.31	0.00077	0.000025
0.694	22.09	0.2370	0.952	-0.95	429.5	18.80	0.00058	0.000021
0.794	22.68	0.2712	0.977	-0.46	491.4	19.29	0.00036	0.000014
0.894	23.05	0.3053	0.993	-0.14	553.4	19.61	0.00020	0.000009
0.994	23.20	0.3395	0.999	-0.01	615.3	19.74	0.00008	0.000004
1.094	23.22	0.3737	1.000	0.01	677.2	19.76	0.00000	0.000000
1.194	23.21	0.4078	1.000	0.00	739.1	19.75	0.00000	0.000000

RUN: 121671-3 X=46. Z= 0.

UI = 22.11 D1 = 0.1785 BETA= 0.210 RDZ = 1482.
DF/Z= 0.00250 D2 = 0.1272 B =-0.795 H = 1.403
F = -0.00199 DC = 3.5676 P+ = 0.002 G = 5.740
K = -0.253E-06 D99 = 1.0702 V0+ =-0.040

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.19	0.0014	0.144	-17.11	2.9	2.88	0.00223	0.001744
0.006	3.26	0.0017	0.148	-17.04	3.5	2.95	0.00222	0.001576
0.007	3.51	0.0020	0.159	-16.81	4.1	3.18	0.00220	0.001468
0.008	3.84	0.0022	0.174	-16.52	4.7	3.47	0.00218	0.001262
0.009	4.21	0.0025	0.190	-16.19	5.2	3.80	0.00215	0.001456
0.011	4.91	0.0031	0.222	-15.55	6.4	4.44	0.00209	0.001531
0.013	5.67	0.0036	0.256	-14.87	7.6	5.12	0.00203	0.001526
0.015	6.59	0.0042	0.298	-14.03	8.7	5.96	0.00195	0.001522
0.017	7.36	0.0048	0.333	-13.33	9.9	6.66	0.00188	0.001437
0.019	8.09	0.0053	0.366	-12.68	11.1	7.31	0.00182	0.001345
0.022	9.16	0.0062	0.414	-11.71	12.8	8.28	0.00173	0.001188
0.025	9.93	0.0070	0.449	-11.01	14.6	8.98	0.00167	0.000949
0.028	10.70	0.0078	0.484	-10.32	16.3	9.67	0.00161	0.000780
0.031	11.32	0.0087	0.512	-9.76	18.1	10.23	0.00156	0.000645
0.035	11.71	0.0098	0.530	-9.40	20.4	10.59	0.00153	0.000511
0.041	12.43	0.0115	0.562	-8.75	23.9	11.24	0.00148	0.000368
0.049	13.09	0.0137	0.592	-8.16	28.6	11.83	0.00143	0.000269
0.059	13.63	0.0165	0.617	-7.67	34.4	12.33	0.00140	0.000200
0.072	14.15	0.0202	0.640	-7.20	42.0	12.79	0.00138	0.000142
0.087	14.71	0.0244	0.665	-6.69	50.7	13.30	0.00135	0.000106
0.107	15.03	0.0300	0.680	-6.40	62.4	13.59	0.00135	0.000080
0.132	15.53	0.0370	0.702	-5.95	76.9	14.04	0.00134	0.000061
0.167	15.95	0.0468	0.721	-5.57	97.3	14.42	0.00135	0.000048
0.212	16.45	0.0594	0.744	-5.12	123.6	14.88	0.00135	0.000041
0.277	17.02	0.0776	0.770	-4.60	161.4	15.39	0.00135	0.000036
0.352	17.63	0.0987	0.797	-4.05	205.2	15.94	0.00132	0.000033
0.427	18.28	0.1197	0.827	-3.47	248.9	16.53	0.00127	0.000030
0.502	18.85	0.1407	0.852	-2.96	292.6	17.04	0.00119	0.000028
0.577	19.39	0.1617	0.877	-2.46	336.3	17.53	0.00108	0.000027
0.677	20.00	0.1836	0.905	-1.91	394.6	18.08	0.00091	0.000024
0.777	20.61	0.2178	0.932	-1.36	452.9	18.64	0.00071	0.000021
0.877	21.21	0.2456	0.959	-0.82	511.1	19.17	0.00052	0.000016
0.977	21.63	0.2739	0.978	-0.43	569.4	19.56	0.00034	0.000012
1.077	21.91	0.3019	0.991	-0.18	627.7	19.81	0.00019	0.000008
1.202	22.09	0.3369	0.999	-0.02	700.6	19.97	0.00008	0.000004
1.352	22.13	0.3790	1.001	0.01	788.0	20.00	0.00000	0.000000
1.502	22.11	0.4210	1.000	0.00	875.4	19.99	0.00000	0.000000

RUN: 121671-3 X=58. Z= 0.

UI = 21.55 D1 = 0.1987 BETA= 0.192 RDZ = 1642.
DF/Z= 0.00246 D2 = 0.1446 B =-0.808 H = 1.374
F = -0.00199 DC = 4.0031 P+ = 0.002 G = 5.492
K = -0.210E-06 D99 = 1.2496 V0+ =-0.040

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.11	0.0012	0.144	-17.24	2.8	2.91	0.00219	0.001940
0.006	3.30	0.0015	0.153	-17.06	3.4	3.09	0.00217	0.001798
0.007	3.62	0.0017	0.168	-16.77	3.9	3.39	0.00214	0.001655
0.008	4.04	0.0020	0.188	-16.37	4.5	3.78	0.00211	0.001472
0.010	4.72	0.0025	0.219	-15.74	5.6	4.41	0.00205	0.001588
0.012	5.42	0.0030	0.252	-15.08	6.8	5.07	0.00199	0.001641
0.014	6.22	0.0035	0.289	-14.33	7.9	5.82	0.00192	0.001536
0.016	7.14	0.0040	0.332	-13.47	9.0	6.68	0.00184	0.001409
0.018	7.91	0.0045	0.367	-12.75	10.1	7.40	0.00177	0.001214
0.020	8.36	0.0050	0.388	-12.34	11.3	7.81	0.00173	0.001125
0.022	8.80	0.0055	0.408	-11.92	12.4	8.23	0.00170	0.001013
0.024	9.16	0.0060	0.425	-11.59	13.5	8.56	0.00167	0.000938
0.027	10.09	0.0067	0.468	-10.72	15.2	9.43	0.00159	0.000862
0.031	10.83	0.0077	0.503	-10.02	17.5	10.13	0.00153	0.000725
0.035	11.51	0.0087	0.534	-9.39	19.7	10.76	0.00147	0.000595
0.040	12.13	0.0100	0.563	-8.81	22.5	11.34	0.00142	0.000467
0.046	12.67	0.0115	0.588	-8.30	25.9	11.85	0.00138	0.000340
0.056	13.34	0.0140	0.619	-7.68	31.6	12.47	0.00134	0.000225
0.068	13.86	0.0170	0.643	-7.19	38.3	12.96	0.00131	0.000156
0.083	14.23	0.0207	0.660	-6.84	46.8	13.31	0.00129	0.000111
0.108	14.74	0.0270	0.684	-6.36	60.8	13.79	0.00128	0.000075
0.148	15.36	0.0370	0.713	-5.79	83.4	14.36	0.00127	0.000053
0.208	15.97	0.0520	0.741	-5.21	117.2	14.94	0.00128	0.000039
0.283	16.56	0.0707	0.769	-4.66	159.4	15.49	0.00129	0.000032
0.358	17.03	0.0894	0.790	-4.22	201.7	15.93	0.00129	0.000029
0.458	17.72	0.1144	0.823	-3.58	258.0	16.57	0.00125	0.000026
0.558	18.33	0.1394	0.851	-3.01	314.4	17.14	0.00118	0.000024
0.658	18.88	0.1644	0.876	-2.49	370.7	17.66	0.00107	0.000022
0.758	19.47	0.1894	0.903	-1.95	427.1	18.21	0.00093	0.000020
0.858	19.92	0.2143	0.925	-1.52	483.4	18.63	0.00077	0.000018
0.958	20.38	0.2393	0.946	-1.09	539.7	19.06	0.00059	0.000015
1.108	20.96	0.2768	0.973	-0.55	624.2	19.60	0.00035	0.000011
1.258	21.35	0.3143	0.991	-0.18	708.8	19.97	0.00016	0.000007
1.408	21.53	0.3517	0.999	-0.01	793.3	20.14	0.00005	0.000003
1.558	21.55	0.3892	1.000	0.00	877.8	20.15	0.00000	0.000001
1.708	21.55	0.4267	1.000	0.00	962.3	20.15	0.00000	0.000000

RUN: 121671-3 X=70. Z= 0.

UI = 20.95 D1 = 0.2217 BETA= 0.184 RD2 = 1797.
CF/2= 0.00242 D2 = 0.1628 B =-0.814 H = 1.362
F = -0.00197 DC = 4.5067 P+ = 0.002 G = 5.401
K = -0.182E-06 D99 = 1.4422 V0+ =-0.040

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.02	0.0011	0.144	-17.40	2.7	2.93	0.00215	0.002015
0.006	3.25	0.0013	0.155	-17.18	3.3	3.15	0.00213	0.001889
0.007	3.57	0.0016	0.171	-16.86	3.8	3.47	0.00210	0.001764
0.009	4.21	0.0020	0.201	-16.24	4.9	4.09	0.00204	0.001559
0.011	4.95	0.0024	0.236	-15.53	6.0	4.80	0.00198	0.001560
0.013	5.69	0.0028	0.272	-14.81	7.1	5.53	0.00191	0.001462
0.015	6.48	0.0033	0.309	-14.05	8.1	6.29	0.00184	0.001402
0.017	7.03	0.0038	0.335	-13.51	9.2	6.82	0.00179	0.001338
0.019	7.59	0.0042	0.362	-12.97	10.3	7.36	0.00174	0.001265
0.022	8.68	0.0049	0.414	-12.11	11.9	8.23	0.00166	0.001099
0.025	9.28	0.0055	0.443	-11.33	13.6	9.00	0.00159	0.000955
0.028	10.00	0.0062	0.477	-10.63	15.2	9.70	0.00153	0.000810
0.032	10.54	0.0071	0.503	-10.10	17.4	10.23	0.00148	0.000641
0.036	11.09	0.0080	0.529	-9.57	19.5	10.76	0.00144	0.000515
0.041	11.62	0.0091	0.554	-9.06	22.3	11.27	0.00139	0.000409
0.047	12.11	0.0106	0.578	-8.59	25.5	11.75	0.00135	0.000325
0.054	12.60	0.0120	0.601	-8.10	29.3	12.23	0.00131	0.000252
0.062	13.03	0.0138	0.622	-7.69	33.7	12.64	0.00128	0.000197
0.072	13.33	0.0160	0.636	-7.40	39.1	12.93	0.00126	0.000152
0.084	13.73	0.0186	0.655	-7.01	45.6	13.33	0.00124	0.000115
0.099	14.08	0.0220	0.672	-6.67	53.8	13.66	0.00122	0.000090
0.119	14.45	0.0264	0.690	-6.31	64.6	14.02	0.00120	0.000072
0.154	14.83	0.0342	0.708	-5.94	83.6	14.39	0.00119	0.000051
0.209	15.50	0.0464	0.740	-5.29	113.5	15.04	0.00117	0.000038
0.279	15.88	0.0619	0.758	-4.92	151.5	15.41	0.00116	0.000030
0.354	16.37	0.0786	0.781	-4.44	192.2	15.89	0.00115	0.000026
0.429	16.83	0.0952	0.803	-4.00	233.0	16.33	0.00114	0.000024
0.504	17.17	0.1118	0.819	-3.67	273.7	16.66	0.00112	0.000023
0.604	17.67	0.1340	0.843	-3.18	328.0	17.15	0.00106	0.000022
0.704	18.18	0.1562	0.868	-2.69	382.3	17.64	0.00098	0.000021
0.804	18.62	0.1784	0.889	-2.26	436.6	18.07	0.00089	0.000019
0.904	19.10	0.2006	0.911	-1.80	490.9	18.53	0.00078	0.000018
1.054	19.71	0.2339	0.941	-1.20	572.4	19.13	0.00059	0.000015
1.204	20.23	0.2672	0.965	-0.71	653.8	19.62	0.00040	0.000011
1.354	20.61	0.3004	0.984	-0.33	735.3	20.00	0.00022	0.000008
1.554	20.91	0.3448	0.998	-0.04	843.9	20.29	0.00007	0.000004
1.754	20.98	0.3892	1.001	0.03	952.5	20.36	0.00001	0.000001
1.954	20.99	0.4336	1.002	0.04	1061.1	20.37	0.00000	-0.000001
2.704	20.95	0.4891	1.000	0.00	1196.9	20.33	0.00000	0.000000

RUN: 121671-3 X=82. Z= 0.

UI = 20.50 D1 = 0.2461 BETA= 0.186 RD2 = 1956.
CF/2= 0.00240 D2 = 0.1811 B =-0.830 H = 1.359
F = -0.00199 DC = 5.0264 P+ = 0.001 G = 5.398
K = -0.186E-06 D99 = 1.6662 V0+ =-0.041

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.79	0.0010	0.136	-17.64	2.6	2.78	0.00214	0.001732
0.006	2.79	0.0012	0.136	-17.64	3.2	2.78	0.00214	0.001576
0.007	3.04	0.0014	0.148	-17.40	3.7	3.02	0.00212	0.001420
0.008	3.18	0.0016	0.156	-17.24	4.2	3.18	0.00210	0.001194
0.010	3.82	0.0020	0.186	-16.61	5.3	3.81	0.00205	0.001431
0.012	4.40	0.0024	0.215	-16.03	6.3	4.39	0.00199	0.001682
0.014	5.17	0.0028	0.252	-15.27	7.4	5.15	0.00192	0.001517
0.017	6.17	0.0034	0.301	-14.27	9.0	6.15	0.00183	0.001444
0.020	7.04	0.0040	0.343	-13.41	10.6	7.01	0.00175	0.001323
0.023	8.07	0.0046	0.394	-12.38	12.2	8.04	0.00166	0.001153
0.026	8.81	0.0052	0.429	-11.65	13.8	8.77	0.00159	0.001004
0.028	9.24	0.0056	0.451	-11.22	14.8	9.20	0.00155	0.000918
0.032	9.90	0.0064	0.483	-10.56	16.9	9.86	0.00150	0.000735
0.037	10.66	0.0074	0.520	-9.81	19.6	10.61	0.00143	0.000578
0.043	11.30	0.0086	0.551	-9.17	22.7	11.25	0.00138	0.000442
0.051	12.17	0.0101	0.594	-8.30	27.0	12.12	0.00130	0.000323
0.063	12.58	0.0125	0.613	-7.90	33.3	12.52	0.00127	0.000210
0.083	13.34	0.0165	0.650	-7.14	43.9	13.28	0.00121	0.000126
0.113	13.82	0.0225	0.674	-6.66	59.8	13.76	0.00118	0.000076
0.148	14.28	0.0294	0.697	-6.20	78.3	14.23	0.00117	0.000056
0.223	15.00	0.0444	0.731	-5.49	118.0	14.94	0.00115	0.000037
0.298	15.52	0.0593	0.757	-4.97	157.6	15.45	0.00113	0.000029
0.373	15.96	0.0742	0.779	-4.52	197.3	15.90	0.00112	0.000025
0.448	16.37	0.0891	0.798	-4.12	237.0	16.30	0.00109	0.000023
0.548	16.78	0.1090	0.819	-3.71	289.9	16.71	0.00107	0.000021
0.648	17.25	0.1289	0.841	-3.24	342.8	17.18	0.00104	0.000020
0.773	17.82	0.1538	0.869	-2.68	408.9	17.75	0.00098	0.000018
0.898	18.27	0.1787	0.891	-2.22	475.1	18.20	0.00088	0.000017
1.023	18.74	0.2035	0.914	-1.75	541.2	18.67	0.00077	0.000015
1.148	19.19	0.2284	0.936	-1.31	607.3	19.11	0.00063	0.000014
1.298	19.61	0.2582	0.956	-0.90	686.7	19.53	0.00047	0.000011
1.498	20.15	0.2980	0.983	-0.36	792.5	20.07	0.00027	0.000007
1.698	20.43	0.3378	0.996	-0.08	898.3	20.35	0.00011	0.000004
1.898	20.53	0.3776	1.001	0.02	1004.1	20.44	0.00003	0.000002
2.098	20.54	0.4174	1.002	0.03	1109.9	20.45	0.00000	-0.000000
2.298	20.50	0.4572	1.000	0.00	1215.7	20.42	0.00000	0.000000

RUN: 121671-3 X=90. Z= 0.

UI = 20.21 D1 = 0.2609 BETA= 0.194 RD2 = 2065.
CF/2= 0.00238 D2 = 0.1939 B =-0.837 H = 1.346
F = -0.00199 DC = 5.3506 P+ = 0.001 G = 5.268
K = -0.166E-06 D99 = 1.7362 V0+ =-0.041

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	3.43	0.0013	0.170	-17.02	3.5	3.48	0.001970
0.008	3.61	0.0015	0.179	-16.84	4.1	3.67	0.001888
0.010	4.40	0.0018	0.218	-16.04	5.1	4.46	0.001725
0.012	5.26	0.0022	0.260	-15.17	6.1	5.34	0.001562
0.014	5.86	0.0026	0.290	-14.56	7.2	5.94	0.001510
0.016	6.39	0.0030	0.316	-14.03	8.2	6.48	0.001406
0.018	7.14	0.0033	0.353	-13.26	9.2	7.24	0.001206
0.020	7.67	0.0037	0.379	-12.73	10.3	7.78	0.001153
0.022	8.17	0.0041	0.404	-12.21	11.3	8.29	0.001099
0.024	8.31	0.0044	0.411	-12.08	12.4	8.43	0.000971
0.027	9.19	0.0050	0.455	-11.18	13.9	9.32	0.000860
0.030	9.79	0.0056	0.484	-10.57	15.5	9.93	0.000765
0.033	10.13	0.0061	0.501	-10.23	17.0	10.27	0.000681
0.037	10.65	0.0069	0.527	-9.70	19.1	10.81	0.000505
0.043	11.32	0.0080	0.560	-9.02	22.2	11.49	0.000373
0.051	11.61	0.0095	0.574	-8.73	26.4	11.78	0.000281
0.060	12.20	0.0112	0.603	-8.13	31.1	12.37	0.000210
0.072	12.63	0.0134	0.625	-7.69	37.3	12.82	0.000155
0.087	13.11	0.0162	0.649	-7.20	45.1	13.30	0.000123
0.112	13.59	0.0209	0.672	-6.72	58.1	13.79	0.000081
0.152	14.12	0.0284	0.698	-6.18	78.8	14.32	0.000054
0.212	14.62	0.0396	0.723	-5.68	110.0	14.83	0.000037
0.287	15.14	0.0536	0.749	-5.15	149.0	15.36	0.000030
0.362	15.53	0.0676	0.768	-4.75	187.9	15.76	0.000026
0.462	16.02	0.0863	0.793	-4.25	239.9	16.25	0.000023
0.587	16.63	0.1097	0.823	-3.63	304.8	16.87	0.000020
0.712	17.15	0.1330	0.848	-3.11	369.7	17.39	0.000019
0.862	17.67	0.1611	0.874	-2.59	447.6	17.92	0.000017
1.012	18.20	0.1891	0.900	-2.04	525.5	18.46	0.000015
1.212	18.86	0.2265	0.933	-1.37	629.4	19.13	0.000013
1.412	19.43	0.2639	0.961	-0.79	733.3	19.71	0.000010
1.612	19.85	0.3012	0.982	-0.37	837.2	20.13	0.000007
1.812	20.11	0.3386	0.995	-0.10	941.0	20.40	0.000004
2.012	20.22	0.3760	1.000	0.01	1044.9	20.51	0.000002
2.212	20.22	0.4134	1.000	0.01	1148.8	20.51	0.000000
2.412	20.21	0.4508	1.000	0.00	1252.7	20.51	0.000000

RUN: 122971-1 X= 2. Z= 0.

UI = 29.20 D1 = 0.0493 BETA= 0.174 RD2 = 506.
CF/2= 0.00320 D2 = 0.0329 B =-0.623 H = 1.498
F = -0.00199 DC = 0.8720 P+ = 0.002 G = 5.889
K = -0.440E-06 D99 = 0.2958 V0+ =-0.035

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	5.93	0.0049	0.203	-14.19	3.7	3.59	0.002631
0.005	6.63	0.0061	0.227	-13.57	4.6	4.02	0.002519
0.006	7.62	0.0072	0.261	-13.17	5.5	4.62	0.002417
0.007	8.78	0.0084	0.301	-12.37	6.3	5.32	0.002298
0.008	9.87	0.0095	0.338	-11.71	7.2	5.98	0.002214
0.009	10.95	0.0107	0.375	-11.05	8.0	6.64	0.002068
0.011	11.81	0.0118	0.404	-10.54	8.9	7.15	0.001848
0.011	12.56	0.0130	0.430	-10.08	9.8	7.61	0.001543
0.013	14.02	0.0153	0.480	-9.19	11.5	8.49	0.001135
0.015	14.94	0.0175	0.512	-8.64	13.2	9.05	0.001072
0.017	15.84	0.0198	0.542	-8.09	15.0	9.59	0.000896
0.020	16.90	0.0233	0.579	-7.45	17.6	10.24	0.000732
0.023	17.78	0.0267	0.609	-6.92	20.2	10.77	0.000579
0.026	18.47	0.0302	0.633	-6.50	22.8	11.19	0.000470
0.030	19.22	0.0347	0.658	-6.04	26.2	11.65	0.000369
0.035	20.00	0.0405	0.685	-5.57	30.6	12.11	0.000286
0.041	20.53	0.0474	0.703	-5.25	35.7	12.44	0.000224
0.049	21.21	0.0565	0.727	-4.84	42.7	12.85	0.000175
0.060	21.98	0.0692	0.753	-4.38	52.2	13.31	0.000140
0.075	22.77	0.0864	0.780	-3.90	65.2	13.79	0.000118
0.095	23.70	0.1093	0.812	-3.33	82.5	14.36	0.000099
0.120	24.69	0.1380	0.846	-2.73	104.1	14.96	0.000085
0.150	25.78	0.1724	0.883	-2.17	130.1	15.62	0.000073
0.180	26.70	0.2068	0.915	-1.51	156.1	16.18	0.000061
0.210	27.54	0.2412	0.943	-1.01	182.0	16.68	0.000048
0.240	28.19	0.2756	0.965	-0.61	208.0	17.08	0.000036
0.275	28.74	0.3157	0.984	-0.28	238.3	17.41	0.000024
0.315	29.06	0.3616	0.995	-0.08	272.9	17.61	0.000015
0.355	29.18	0.4075	0.999	-0.01	307.5	17.68	0.000007
0.405	29.20	0.4648	1.000	0.00	350.8	17.69	0.000001
0.505	29.20	0.5795	1.000	0.00	437.4	17.69	0.000000

RUN: 122971-1 X=10. Z= 0.

UI = 26.91 DI = 0.0790 BETA= 0.335 RD2 = 752.
CF/2= 0.00275 D2 = 0.0533 B =-0.647 H = 1.482
F = -0.00178 DC = 1.9062 P+ = 0.006 G = 6.233
K = -3.826E-06 D99 = 0.4469 V0+ =-0.034

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	5.04	0.0033	0.187	-15.50	3.7	3.57	0.00247	0.002135
0.006	5.57	0.0040	0.207	-15.12	4.4	3.95	0.00245	0.001975
0.007	6.28	0.0046	0.233	-14.62	5.2	4.45	0.00241	0.001815
0.008	6.88	0.0053	0.256	-14.19	5.9	4.88	0.00238	0.001689
0.009	7.56	0.0060	0.281	-13.71	6.7	5.36	0.00235	0.001562
0.010	8.25	0.0066	0.306	-13.22	7.4	5.84	0.00231	0.001458
0.012	9.43	0.0085	0.350	-12.39	8.9	6.68	0.00225	0.001519
0.014	10.72	0.0093	0.398	-11.49	10.4	7.58	0.00218	0.001343
0.016	11.47	0.0106	0.426	-10.94	11.8	8.13	0.00215	0.001184
0.018	12.49	0.0120	0.464	-10.22	13.3	8.85	0.00209	0.001034
0.021	13.56	0.0139	0.504	-9.46	15.5	9.61	0.00204	0.000836
0.024	14.50	0.0159	0.539	-8.80	17.8	10.27	0.00200	0.000735
0.027	15.39	0.0179	0.561	-8.37	20.0	10.69	0.00198	0.000645
0.030	15.71	0.0199	0.585	-7.92	22.2	11.15	0.00195	0.000553
0.034	16.33	0.0226	0.607	-7.50	25.2	11.57	0.00193	0.000362
0.039	16.85	0.0259	0.626	-7.13	28.9	11.94	0.00191	0.000286
0.045	17.48	0.0299	0.650	-6.68	33.3	12.39	0.00189	0.000223
0.052	18.03	0.0345	0.670	-6.29	38.5	12.78	0.00187	0.000180
0.062	18.49	0.0412	0.687	-5.97	45.9	13.10	0.00186	0.000142
0.075	19.16	0.0498	0.712	-5.49	55.5	13.57	0.00184	0.000112
0.090	19.72	0.0598	0.733	-5.09	66.6	13.97	0.00181	0.000095
0.110	20.33	0.0730	0.755	-4.66	81.4	14.40	0.00176	0.000084
0.140	21.14	0.0929	0.786	-4.09	103.6	14.98	0.00167	0.000073
0.175	22.09	0.1162	0.821	-3.42	129.5	15.65	0.00152	0.000066
0.215	23.01	0.1427	0.855	-2.77	159.1	16.30	0.00131	0.000059
0.255	23.90	0.1693	0.888	-2.14	188.7	16.93	0.00108	0.000053
0.300	24.81	0.1992	0.922	-1.49	222.0	17.58	0.00083	0.000044
0.350	25.64	0.2324	0.953	-0.90	259.0	18.17	0.00059	0.000034
0.400	26.29	0.2656	0.977	-0.44	296.0	18.63	0.00041	0.000023
0.450	26.66	0.2988	0.991	-0.17	333.0	18.89	0.00027	0.000015
0.500	26.86	0.3320	0.998	-0.03	370.0	19.06	0.00015	0.000008
0.575	26.92	0.3818	1.000	0.01	425.5	19.07	0.00000	0.000000
0.650	26.91	0.4315	1.000	0.00	481.0	19.07	0.00000	0.000000

RUN: 122971-1 X=22. Z= 0.

UI = 24.38 DI = 0.1241 BETA= 0.298 RD2 = 1089.
CF/2= 0.00244 D2 = 0.0852 B =-0.650 H = 1.456
F = -0.00159 DC = 2.5097 P+ = 0.004 G = 6.335
K = -0.460E-06 D99 = 0.6831 V0+ =-0.032

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.72	0.0020	0.153	-17.14	3.2	3.09	0.00223	0.002332
0.006	4.10	0.0024	0.168	-16.82	3.8	3.40	0.00221	0.001962
0.007	4.59	0.0028	0.188	-16.42	4.4	3.81	0.00218	0.001891
0.008	5.11	0.0032	0.210	-15.99	5.1	4.24	0.00215	0.001835
0.009	5.86	0.0036	0.241	-15.36	5.7	4.86	0.00211	0.001872
0.011	6.96	0.0044	0.286	-14.45	7.0	5.78	0.00205	0.001724
0.013	8.07	0.0052	0.331	-13.53	8.2	6.70	0.00199	0.001490
0.015	8.93	0.0060	0.365	-12.84	9.5	7.38	0.00194	0.001268
0.017	9.76	0.0068	0.400	-12.13	10.7	8.10	0.00189	0.001138
0.019	10.31	0.0076	0.423	-11.67	12.0	8.56	0.00187	0.000967
0.021	10.86	0.0084	0.445	-11.21	13.3	9.01	0.00184	0.000873
0.024	11.63	0.0096	0.477	-10.57	15.2	9.65	0.00180	0.000720
0.027	12.29	0.0108	0.504	-10.03	17.1	10.19	0.00177	0.000622
0.031	13.08	0.0124	0.537	-9.37	19.6	10.86	0.00173	0.000499
0.036	13.64	0.0143	0.560	-8.91	22.7	11.32	0.00171	0.000380
0.042	14.35	0.0167	0.589	-8.32	26.5	11.90	0.00168	0.000289
0.049	14.87	0.0199	0.613	-7.89	31.6	12.34	0.00167	0.000211
0.058	15.28	0.0231	0.627	-7.56	36.7	12.68	0.00166	0.000159
0.070	15.89	0.0279	0.652	-7.04	44.2	13.18	0.00164	0.000126
0.087	16.39	0.0347	0.672	-6.62	55.3	13.60	0.00164	0.000099
0.107	16.95	0.0426	0.695	-6.17	67.6	14.06	0.00163	0.000080
0.137	17.51	0.0546	0.718	-5.69	86.6	14.53	0.00161	0.000065
0.177	18.33	0.0705	0.751	-5.04	111.9	15.18	0.00158	0.000056
0.227	19.03	0.0905	0.781	-4.44	143.4	15.79	0.00151	0.000051
0.277	19.81	0.1104	0.812	-3.79	175.0	16.43	0.00141	0.000048
0.327	20.48	0.1303	0.840	-3.23	206.6	16.99	0.00127	0.000045
0.377	21.20	0.1502	0.870	-2.63	238.2	17.59	0.00112	0.000043
0.427	21.88	0.1701	0.898	-2.07	269.8	18.16	0.00095	0.000039
0.482	22.54	0.1921	0.925	-1.52	304.6	18.70	0.00077	0.000034
0.537	23.12	0.2140	0.949	-1.04	339.3	19.19	0.00061	0.000029
0.592	23.57	0.2359	0.967	-0.67	374.1	19.55	0.00046	0.000022
0.647	23.93	0.2578	0.984	-0.32	408.9	19.91	0.00035	0.000016
0.707	24.22	0.2817	0.994	-0.13	446.8	20.13	0.00023	0.000010
0.782	24.36	0.3116	0.999	-0.01	494.2	20.21	0.00010	0.000005
0.857	24.38	0.3415	1.000	0.00	541.6	20.23	0.00000	0.000000
0.957	24.38	0.3813	1.000	0.00	604.8	20.23	0.00000	0.000000

RUN: 122971-1 X=34. Z= 0.

UI = 23.00 DI = 0.1603 BETA= 0.275 RD2 = 1353.
CF/2= 0.00231 D2 = 0.1122 B =-0.645 H = 1.429
F = -0.00149 DC = 3.3373 P+ = 0.003 G = 6.251
K = -0.328E-06 D99 = 0.8938 V0+ =-0.031

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	3.73	0.0017	0.162	-17.44	3.2	3.37	0.00209	0.001978
0.007	4.09	0.0020	0.178	-17.11	3.8	3.70	0.00207	0.001876
0.008	4.53	0.0023	0.196	-16.74	4.4	4.08	0.00205	0.001775
0.009	4.99	0.0026	0.217	-16.30	5.0	4.51	0.00202	0.001663
0.011	5.87	0.0032	0.255	-15.50	6.1	5.31	0.00197	0.001624
0.013	6.78	0.0038	0.295	-14.68	7.3	6.13	0.00192	0.001516
0.015	7.72	0.0044	0.336	-13.82	8.5	6.99	0.00186	0.001389
0.017	8.39	0.0050	0.365	-13.27	9.6	7.59	0.00183	0.001299
0.019	9.11	0.0056	0.396	-12.57	10.8	8.24	0.00179	0.001126
0.022	9.99	0.0065	0.434	-11.77	12.5	9.04	0.00174	0.000914
0.025	10.91	0.0074	0.474	-10.94	14.3	9.87	0.00169	0.000756
0.029	11.36	0.0086	0.494	-10.53	16.6	10.28	0.00166	0.000588
0.033	12.01	0.0098	0.522	-9.95	18.9	10.86	0.00163	0.000472
0.037	12.48	0.0110	0.543	-9.52	21.2	11.30	0.00161	0.000380
0.042	13.01	0.0125	0.566	-9.04	24.1	11.78	0.00159	0.000328
0.049	13.55	0.0146	0.589	-8.55	29.2	12.27	0.00157	0.000246
0.059	14.09	0.0176	0.611	-8.06	34.9	12.75	0.00155	0.000176
0.074	14.69	0.0221	0.639	-7.52	42.6	13.30	0.00154	0.000122
0.094	15.15	0.0280	0.659	-7.11	54.2	13.71	0.00154	0.000089
0.119	15.62	0.0355	0.679	-6.68	68.7	14.14	0.00154	0.000070
0.154	16.29	0.0460	0.708	-6.07	89.0	14.74	0.00154	0.000057
0.194	16.82	0.0580	0.731	-5.59	112.2	15.22	0.00154	0.000049
0.254	17.58	0.0760	0.764	-4.91	146.9	15.91	0.00151	0.000042
0.314	18.21	0.0940	0.792	-4.33	181.7	16.48	0.00147	0.000039
0.374	18.78	0.1119	0.817	-3.81	216.5	17.00	0.00139	0.000037
0.444	19.48	0.1329	0.847	-3.19	257.0	17.63	0.00127	0.000035
0.519	20.22	0.1554	0.879	-2.52	300.5	18.29	0.00111	0.000032
0.594	20.83	0.1779	0.906	-1.96	343.9	18.85	0.00092	0.000030
0.669	21.52	0.2003	0.936	-1.34	387.4	19.47	0.00073	0.000026
0.744	22.02	0.2228	0.957	-0.89	430.8	19.92	0.00053	0.000021
0.819	22.49	0.2453	0.978	-0.46	474.3	20.35	0.00037	0.000015
0.894	22.77	0.2678	0.990	-0.21	517.7	20.60	0.00024	0.000010
0.994	22.97	0.2977	0.999	-0.03	575.7	20.79	0.00010	0.000005
1.094	23.00	0.3277	1.000	0.00	633.6	20.81	0.00000	0.000000
1.194	23.00	0.3577	1.000	0.00	691.5	20.81	0.00000	0.000000

RUN: 122971-1 X=46. Z= 0.

UI = 21.97 DI = 0.1967 BETA= 0.263 RD2 = 1592.
CF/2= 0.00221 D2 = 0.1382 B =-0.642 H = 1.423
F = -0.00142 DC = 4.1827 P+ = 0.002 G = 6.325
K = -0.257E-06 D99 = 1.1196 V0+ =-0.030

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.90	0.0012	0.132	-18.46	2.7	2.83	0.00204	0.001748
0.006	3.14	0.0014	0.143	-18.22	3.3	3.04	0.00202	0.001592
0.007	3.45	0.0017	0.157	-17.92	3.8	3.34	0.00201	0.001636
0.008	3.77	0.0019	0.171	-17.62	4.3	3.65	0.00199	0.001457
0.009	4.18	0.0022	0.190	-17.22	4.9	4.05	0.00197	0.001514
0.011	4.54	0.0024	0.206	-16.87	5.4	4.39	0.00195	0.001536
0.012	5.34	0.0029	0.243	-16.10	6.5	5.16	0.00190	0.001512
0.014	6.11	0.0033	0.278	-15.36	7.6	5.91	0.00186	0.001422
0.016	6.75	0.0038	0.307	-14.73	8.7	6.53	0.00182	0.001314
0.019	7.78	0.0045	0.354	-13.73	10.3	7.53	0.00176	0.001167
0.022	8.68	0.0053	0.395	-12.86	11.9	8.40	0.00171	0.001019
0.025	9.26	0.0060	0.421	-12.30	13.5	8.96	0.00168	0.000898
0.029	10.27	0.0069	0.467	-11.33	15.7	9.94	0.00162	0.000708
0.033	10.91	0.0079	0.497	-10.70	17.9	10.56	0.00159	0.000569
0.037	11.54	0.0088	0.525	-10.19	20.0	11.17	0.00155	0.000478
0.042	11.82	0.0100	0.538	-9.83	22.8	11.44	0.00154	0.000359
0.048	12.36	0.0115	0.563	-9.30	26.0	11.96	0.00152	0.000277
0.056	12.97	0.0134	0.590	-8.71	30.3	12.55	0.00149	0.000211
0.066	13.28	0.0158	0.605	-8.41	35.8	12.86	0.00149	0.000167
0.080	13.79	0.0191	0.627	-7.92	43.3	13.34	0.00148	0.000118
0.097	14.27	0.0232	0.650	-7.45	52.6	13.81	0.00147	0.000087
0.122	14.66	0.0292	0.667	-7.08	66.1	14.18	0.00148	0.000059
0.157	15.12	0.0375	0.688	-6.63	85.1	14.64	0.00148	0.000054
0.202	15.69	0.0483	0.714	-6.08	109.4	15.19	0.00149	0.000045
0.252	16.20	0.0602	0.737	-5.58	136.5	15.68	0.00149	0.000040
0.312	16.78	0.0746	0.764	-5.02	169.0	16.24	0.00147	0.000037
0.372	17.26	0.0889	0.786	-4.56	201.5	16.71	0.00145	0.000034
0.432	17.77	0.1033	0.809	-4.07	234.1	17.19	0.00141	0.000332
0.502	18.36	0.1200	0.835	-3.53	272.0	17.76	0.00134	0.000030
0.577	18.88	0.1379	0.859	-2.99	312.6	18.27	0.00124	0.000028
0.652	19.37	0.1559	0.882	-2.52	353.2	18.75	0.00111	0.000027
0.752	20.06	0.1798	0.913	-1.85	407.4	19.41	0.00091	0.000024
0.852	20.66	0.2037	0.940	-1.27	461.6	20.00	0.00070	0.000020
0.952	21.21	0.2276	0.965	-0.74	515.8	20.53	0.00051	0.000016
1.052	21.62	0.2515	0.983	-0.36	570.0	20.90	0.00034	0.000011
1.177	21.88	0.2814	0.996	-0.09	637.7	21.18	0.00018	0.000006
1.302	21.99	0.3113	1.001	0.01	705.4	21.28	0.00007	0.000003
1.452	21.99	0.3471	1.001	0.02	786.7	21.28	0.00000	0.000001
1.602	21.97	0.3830	1.000	0.00	867.9	21.26	0.00000	0.000000

RUN: 122971-1 X=58. Z= 0.

UI = 21.27 D1 = 0.7257 BETA= 0.248 RD2 = 1801.
CF/2= 0.00215 D2 = 0.1614 B =-0.663 H = 1.398
P = -2.00138 DC = 4.8719 P+ = 0.002 G = 6.146
K = -0.211E-06 D99 = 1.3304 V0+ =-0.030

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.92	0.0010	0.137	-18.43	2.6	2.96	0.00197	0.001949
0.006	3.18	0.0012	0.149	-18.36	3.1	3.22	0.00196	0.001818
0.007	3.56	0.0014	0.167	-17.37	3.6	3.61	0.00194	0.001688
0.008	3.91	0.0016	0.184	-17.41	4.1	3.97	0.00191	0.001547
0.009	4.20	0.0018	0.197	-17.33	4.7	4.26	0.00190	0.001609
0.011	5.06	0.0023	0.238	-16.45	5.7	5.14	0.00185	0.001550
0.013	5.72	0.0027	0.269	-15.79	6.7	5.80	0.00181	0.001459
0.015	6.49	0.0031	0.305	-15.1	7.8	6.58	0.00176	0.001336
0.018	7.39	0.0037	0.347	-14.09	9.3	7.50	0.00171	0.001170
0.021	8.18	0.0043	0.385	-13.29	10.9	8.30	0.00167	0.001096
0.024	8.79	0.0049	0.413	-12.67	12.4	8.92	0.00163	0.001065
0.028	9.71	0.0057	0.456	-11.74	14.5	9.85	0.00158	0.000726
0.032	10.15	0.0066	0.477	-11.29	16.5	10.30	0.00156	0.000595
0.037	10.96	0.0076	0.515	-10.47	19.1	11.12	0.00151	0.000481
0.044	11.67	0.0090	0.549	-9.74	22.7	11.84	0.00147	0.000352
0.053	12.28	0.0109	0.577	-9.12	27.4	12.46	0.00145	0.000257
0.066	12.74	0.0135	0.599	-8.66	34.1	12.92	0.00143	0.000168
0.084	13.43	0.0172	0.630	-7.99	43.4	13.59	0.00141	0.000113
0.109	13.89	0.0224	0.653	-7.49	56.3	14.09	0.00141	0.000080
0.144	14.41	0.0296	0.677	-6.96	74.4	14.67	0.00141	0.000059
0.189	14.93	0.0388	0.702	-6.44	97.7	15.15	0.00142	0.000046
0.249	15.47	0.0511	0.727	-5.89	128.7	15.69	0.00142	0.000037
0.309	15.99	0.0634	0.752	-5.36	159.7	16.23	0.00142	0.000033
0.384	16.52	0.0788	0.776	-4.84	198.4	16.75	0.00140	0.000029
0.459	16.99	0.0942	0.799	-4.34	237.2	17.24	0.00137	0.000027
0.534	17.47	0.1096	0.821	-3.86	275.9	17.73	0.00132	0.000026
0.609	17.82	0.1250	0.837	-3.51	314.7	18.08	0.00125	0.000025
0.739	18.49	0.1455	0.869	-2.84	366.3	18.75	0.00115	0.000024
0.899	19.06	0.1661	0.896	-2.24	418.0	19.34	0.00101	0.000022
0.959	19.62	0.1866	0.922	-1.68	469.7	19.91	0.00085	0.000020
1.019	21.67	0.2071	0.943	-1.22	521.3	20.36	0.00067	0.000017
1.134	20.51	0.2328	0.964	-1.77	585.9	21.82	0.00045	0.000013
1.259	20.94	0.2584	0.984	-0.34	650.5	21.25	0.00027	0.000009
1.409	21.19	0.2892	0.996	-0.08	728.0	21.51	0.00011	0.000005
1.609	21.29	0.3303	1.001	0.02	831.3	21.61	0.00000	0.000001
1.809	21.27	0.3713	1.000	0.00	934.7	21.59	0.00000	0.000000

RUN: 122971-1 X=70. Z= 0.

UI = 20.68 D1 = 0.2588 BETA= 0.242 RD2 = 2010.
CF/2= 0.00208 D2 = 0.1853 B =-0.635 H = 1.396
P = -0.00132 DC = 5.6776 P+ = 0.002 G = 6.226
K = -0.179E-06 D99 = 1.5199 V0+ =-0.029

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.57	0.0009	0.124	-19.21	2.5	2.73	0.00193	0.001767
0.006	2.73	0.0011	0.132	-19.04	3.0	2.89	0.00192	0.001637
0.007	3.05	0.0012	0.147	-18.70	3.5	3.24	0.00190	0.001506
0.008	3.37	0.0014	0.163	-18.37	4.0	3.57	0.00188	0.001385
0.009	3.66	0.0016	0.177	-18.06	4.6	3.88	0.00186	0.001497
0.011	4.32	0.0019	0.209	-17.36	5.4	4.58	0.00183	0.001469
0.013	4.94	0.0023	0.239	-16.75	6.4	5.24	0.00179	0.001304
0.016	5.94	0.0028	0.287	-15.64	7.9	6.30	0.00173	0.001270
0.019	6.82	0.0033	0.330	-14.70	9.4	7.24	0.00168	0.001145
0.023	7.75	0.0041	0.372	-13.77	11.4	8.17	0.00163	0.000980
0.027	8.56	0.0048	0.414	-12.86	13.3	9.08	0.00158	0.000868
0.032	9.48	0.0056	0.458	-11.88	15.8	10.06	0.00153	0.000651
0.037	10.21	0.0065	0.494	-11.11	18.3	10.83	0.00149	0.000536
0.043	10.67	0.0076	0.516	-10.62	21.3	11.32	0.00146	0.000462
0.051	11.41	0.0090	0.552	-9.83	25.2	12.10	0.00142	0.000341
0.062	12.07	0.0109	0.584	-9.13	30.6	12.81	0.00140	0.000211
0.075	12.48	0.0134	0.603	-8.70	37.6	13.24	0.00138	0.000152
0.096	13.07	0.0169	0.632	-8.08	47.5	13.86	0.00136	0.000101
0.126	13.49	0.0222	0.652	-7.63	62.3	14.31	0.00135	0.000069
0.166	14.13	0.0292	0.683	-6.95	82.1	14.99	0.00134	0.000051
0.226	14.56	0.0398	0.704	-6.50	111.7	15.44	0.00135	0.000039
0.301	15.10	0.0530	0.730	-5.93	148.8	16.01	0.00135	0.000033
0.381	15.71	0.0671	0.759	-5.29	188.3	16.65	0.00134	0.000029
0.481	16.22	0.0847	0.784	-4.74	237.8	17.20	0.00130	0.000027
0.581	16.88	0.1023	0.816	-4.03	287.2	17.91	0.00126	0.000024
0.681	17.34	0.1199	0.838	-3.55	336.6	18.39	0.00120	0.000023
0.806	17.99	0.1420	0.870	-2.86	398.4	19.08	0.00109	0.000021
0.931	18.51	0.1640	0.895	-2.33	460.2	19.63	0.00094	0.000019
1.056	19.13	0.1860	0.923	-1.68	522.0	20.25	0.00077	0.000017
1.206	19.65	0.2124	0.950	-1.09	596.1	20.85	0.00055	0.000013
1.356	20.11	0.2388	0.972	-0.60	670.3	21.33	0.00035	0.000010
1.556	20.56	0.2741	0.994	-0.13	769.1	21.80	0.00015	0.000006
1.756	20.67	0.3093	0.999	-0.01	868.0	21.93	0.00003	0.000002
1.856	20.68	0.3269	1.000	0.00	917.4	21.94	0.00000	0.000001
2.056	20.68	0.3621	1.000	0.00	1016.3	21.94	0.00000	0.000000

RUN: 122971-1 X=82. Z= 0.

UI = 20.26 D1 = 0.2913 BETA= 0.237 RD2 = 2226.
CF/2= 0.00203 D2 = 0.2095 B =-0.636 H = 1.393
P = -0.00129 DC = 6.4707 P+ = 0.002 G = 6.237
K = -0.155E-06 D99 = 1.7392 V0+ =-0.029

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.53	0.0008	0.125	-19.43	2.4	2.78	0.00188	0.001602
0.006	2.62	0.0009	0.129	-19.34	2.9	2.87	0.00187	0.001515
0.007	2.75	0.0011	0.136	-19.20	3.3	3.01	0.00187	0.001428
0.008	3.06	0.0012	0.151	-18.86	3.8	3.35	0.00185	0.001274
0.009	3.21	0.0014	0.158	-18.71	4.3	3.50	0.00184	0.001246
0.011	3.75	0.0017	0.185	-18.10	5.3	4.11	0.00181	0.001343
0.013	4.34	0.0020	0.214	-17.46	6.2	4.76	0.00178	0.001304
0.016	5.34	0.0025	0.264	-16.35	7.7	5.86	0.00172	0.001381
0.019	6.12	0.0029	0.301	-15.51	9.1	6.69	0.00167	0.001285
0.022	6.93	0.0034	0.342	-14.62	10.5	7.59	0.00163	0.001151
0.026	8.13	0.0040	0.401	-13.30	12.4	8.91	0.00155	0.000934
0.031	8.82	0.0046	0.435	-12.54	14.3	9.67	0.00151	0.000790
0.035	9.59	0.0054	0.473	-11.75	16.7	10.51	0.00147	0.000868
0.043	10.23	0.0066	0.505	-11.10	20.6	11.21	0.00144	0.000607
0.053	11.17	0.0082	0.551	-9.97	25.3	12.25	0.00139	0.000283
0.068	11.80	0.0105	0.583	-9.27	32.5	12.94	0.00136	0.000184
0.088	12.37	0.0136	0.611	-8.65	42.1	13.56	0.00134	0.000145
0.116	12.85	0.0182	0.634	-8.17	56.4	14.09	0.00133	0.000079
0.163	13.51	0.0252	0.667	-7.49	78.0	14.81	0.00132	0.000054
0.228	14.22	0.0352	0.702	-6.83	109.3	15.58	0.00130	0.000039
0.298	14.64	0.0461	0.723	-6.36	142.5	16.05	0.00130	0.000032
0.398	15.15	0.0615	0.748	-5.81	190.3	16.60	0.00131	0.000027
0.498	15.71	0.0770	0.775	-4.99	238.2	17.22	0.00132	0.000024
0.598	16.27	0.0924	0.803	-4.38	286.0	17.84	0.00130	0.000023
0.723	16.78	0.1117	0.828	-3.81	345.8	18.40	0.00125	0.000021
0.848	17.33	0.1311	0.856	-3.21	405.6	19.03	0.00116	0.000019
0.973	17.85	0.1504	0.881	-2.65	465.4	19.57	0.00105	0.000018
1.098	18.30	0.1697	0.903	-2.15	525.1	20.06	0.00092	0.000016
1.248	18.88	0.1929	0.932	-1.52	596.9	20.70	0.00074	0.000014
1.448	19.46	0.2238	0.961	-0.87	692.5	21.34	0.00049	0.000011
1.648	19.94	0.2547	0.984	-0.35	788.2	21.86	0.00026	0.000007
1.848	20.20	0.2856	0.997	-0.07	883.8	22.14	0.00009	0.000004
2.048	20.29	0.3165	1.001	0.03	979.5	22.24	0.00000	0.000002
2.298	20.26	0.3551	1.000	0.00	1099.1	22.21	0.00000	0.000000

RUN: 122971-1 X=90. Z= 0.

UI = 19.91 D1 = 0.3065 BETA= 0.237 RD2 = 2316.
CF/2= 0.00201 D2 = 0.2218 B =-0.637 H = 1.382
P = -0.00128 DC = 6.8399 P+ = 0.002 G = 6.164
K = -0.149E-06 D99 = 1.8492 V0+ =-0.029

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	3.05	0.0010	0.153	-18.90	3.2	3.42	0.001718
0.008	3.19	0.0011	0.160	-18.75	3.6	3.57	0.001639
0.009	3.40	0.0013	0.171	-18.51	4.1	3.81	0.001561
0.011	4.00	0.0016	0.201	-17.83	5.1	4.49	0.001404
0.013	4.73	0.0019	0.238	-17.01	6.0	5.31	0.001437
0.016	5.42	0.0023	0.272	-16.24	7.4	6.08	0.001286
0.019	6.38	0.0027	0.320	-15.17	8.8	7.15	0.001133
0.022	7.15	0.0032	0.359	-14.31	10.2	8.71	0.001306
0.026	7.74	0.0038	0.388	-13.65	12.1	8.67	0.000864
0.031	8.59	0.0045	0.431	-12.69	14.4	9.63	0.000862
0.036	9.37	0.0052	0.470	-11.82	16.7	10.50	0.000536
0.043	10.09	0.0063	0.507	-11.01	20.0	11.30	0.000437
0.053	10.82	0.0077	0.543	-10.19	24.7	12.13	0.000302
0.066	11.45	0.0096	0.575	-9.49	30.8	12.83	0.000204
0.084	12.01	0.0123	0.603	-8.86	39.2	13.46	0.000133
0.111	12.58	0.0162	0.632	-8.21	51.8	14.10	0.000067
0.146	13.13	0.0213	0.659	-7.65	68.2	14.72	0.000061
0.176	13.39	0.0256	0.673	-7.31	81.6	15.01	0.000046
0.206	14.12	0.0299	0.709	-6.50	124.4	15.82	0.000335
0.366	14.72	0.0535	0.739	-5.82	171.1	16.50	0.000032
0.491	15.41	0.0718	0.774	-5.05	229.6	17.27	0.000024
0.641	16.02	0.0937	0.805	-4.36	299.8	17.96	0.000021
0.791	16.64	0.1156	0.835	-3.67	370.0	18.64	0.000019
0.966	17.27	0.1412	0.867	-2.96	451.9	19.36	0.000017
1.166	18.03	0.1704	0.905	-2.12	545.4	20.20	0.000015
1.366	18.64	0.1997	0.936	-1.43	639.0	20.89	0.000012
1.566	19.23	0.2289	0.964	-0.87	732.6	21.51	0.000009
1.816	19.68	0.2655	0.988	-0.26	849.5	22.06	0.000006
2.066	19.92	0.3020	1.000	0.01	966.5	22.32	0.000003
2.316	19.94	0.3386	1.001	0.02	1083.5	22.34	0.000001
2.616	19.91	0.3824	1.000	0.00	1223.8	22.32	0.000000

RUN: 121171-3 X= 2. Z= 0.

UI = 29.35 D1 = 0.0518 BETA= 0.127 RDZ = 514.
CF/2= 0.00294 D2 = 0.0337 B =-0.336 H = 1.563
F = -0.00199 DC = 0.9555 P+ = 0.003 G = 6.465
K = -9.445E-06 D99 = 0.2991 V0+ =-0.118

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	5.02	0.0045	0.171	-15.28	3.6	3.15	0.002262
0.005	5.64	0.0055	0.192	-14.89	4.4	3.54	0.002172
0.006	6.38	0.0066	0.217	-14.43	5.2	4.21	0.002162
0.007	7.43	0.0076	0.253	-13.76	6.1	4.67	0.001973
0.008	8.49	0.0087	0.289	-13.10	6.9	5.33	0.001990
0.010	10.22	0.0108	0.348	-12.02	8.5	6.42	0.001731
0.012	11.55	0.0129	0.394	-11.18	10.2	7.25	0.001505
0.013	12.35	0.0139	0.421	-10.68	11.0	7.75	0.001411
0.016	13.95	0.0171	0.475	-9.67	13.5	8.76	0.001164
0.018	15.17	0.0192	0.517	-8.91	15.2	9.52	0.001013
0.020	15.98	0.0212	0.544	-8.40	16.8	10.03	0.000858
0.022	15.71	0.0233	0.569	-7.94	18.5	10.49	0.000756
0.025	17.59	0.0265	0.599	-7.38	21.0	11.05	0.000691
0.029	18.57	0.0307	0.633	-6.77	24.3	11.66	0.000650
0.033	19.18	0.0349	0.654	-6.38	27.6	12.05	0.000350
0.038	19.95	0.0401	0.680	-5.97	31.8	12.53	0.000270
0.043	20.39	0.0453	0.695	-5.62	35.9	12.81	0.000221
0.049	20.90	0.0516	0.712	-5.31	40.9	13.12	0.000186
0.055	21.37	0.0579	0.728	-5.01	45.9	13.42	0.000161
0.063	21.94	0.0662	0.748	-4.65	52.5	13.78	0.000144
0.074	22.54	0.0778	0.768	-4.28	61.6	14.16	0.000126
0.089	23.37	0.0935	0.796	-3.76	74.0	14.67	0.000109
0.109	24.23	0.1144	0.825	-3.22	90.6	15.21	0.000095
0.129	24.99	0.1353	0.851	-2.74	107.2	15.69	0.000084
0.154	25.95	0.1615	0.884	-2.14	127.9	16.30	0.000073
0.184	26.88	0.1929	0.916	-1.55	152.8	16.88	0.000061
0.214	27.69	0.2243	0.944	-1.04	177.7	17.39	0.000048
0.244	28.35	0.2557	0.966	-0.63	202.6	17.80	0.000036
0.286	28.95	0.2975	0.986	-0.25	235.7	18.18	0.000023
0.329	29.28	0.3446	0.998	-0.05	273.0	18.39	0.000011
0.379	29.35	0.3970	1.000	0.00	314.5	18.43	0.000003
0.454	29.35	0.4755	1.000	0.00	376.7	18.43	0.000000

RUN: 121171-3 X=10. Z= 0.

UI = 26.89 D1 = 0.0888 BETA= 0.425 RDZ = 826.
CF/2= 0.00244 D2 = 0.0590 B =-0.406 H = 1.505
F = -0.00099 DC = 1.7994 P+ = 0.007 G = 6.795
K = -0.832E-06 D99 = 1.4732 V0+ =-0.126

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	5.23	0.0028	0.194	-16.32	3.5	3.96	0.00230	0.002391
0.006	5.61	0.0033	0.211	-16.19	4.1	4.07	0.00231	0.001932
0.007	5.97	0.0039	0.222	-15.76	4.8	4.50	0.00230	0.001774
0.008	6.73	0.0044	0.250	-15.19	5.5	5.07	0.00228	0.001569
0.009	7.34	0.0050	0.273	-14.73	6.2	5.53	0.00227	0.001468
0.011	8.55	0.0061	0.318	-13.82	7.6	6.45	0.00224	0.001482
0.013	9.72	0.0072	0.361	-12.94	9.0	7.32	0.00222	0.001288
0.015	10.57	0.0083	0.393	-12.30	10.4	7.96	0.00221	0.001166
0.017	11.39	0.0094	0.423	-11.69	11.7	8.58	0.00219	0.001025
0.019	12.14	0.0106	0.451	-11.11	13.1	9.15	0.00218	0.000900
0.021	12.92	0.0117	0.481	-10.52	14.5	9.74	0.00216	0.000798
0.024	13.67	0.0133	0.508	-9.96	16.6	10.30	0.00215	0.000665
0.028	14.55	0.0156	0.541	-9.29	19.3	10.97	0.00214	0.000568
0.034	15.44	0.0189	0.574	-8.63	23.5	11.63	0.00213	0.000366
0.042	16.14	0.0233	0.600	-8.10	29.0	12.16	0.00212	0.000250
0.053	17.09	0.0295	0.636	-7.38	36.6	12.88	0.00211	0.000178
0.068	17.91	0.0378	0.666	-6.77	47.0	13.49	0.00210	0.000134
0.088	18.72	0.0489	0.696	-6.17	60.8	14.09	0.00206	0.000119
0.108	19.34	0.0600	0.719	-5.69	74.6	14.57	0.00201	0.000093
0.138	20.31	0.1767	0.755	-4.96	95.4	15.30	0.00191	0.000081
0.178	21.52	0.0989	0.800	-4.05	123.0	16.22	0.00174	0.000072
0.223	22.60	0.1239	0.841	-3.23	154.1	17.03	0.00148	0.000063
0.273	23.74	0.1517	0.883	-2.37	188.6	17.89	0.00117	0.000054
0.323	24.73	0.1795	0.920	-1.62	223.2	18.64	0.00088	0.000043
0.373	25.61	0.2073	0.952	-0.97	257.8	19.29	0.00065	0.000033
0.423	26.29	0.2351	0.978	-0.45	292.3	19.81	0.00048	0.000023
0.498	26.78	0.2768	0.996	-0.08	344.1	20.18	0.00024	0.000012
0.573	26.89	0.3184	1.000	0.00	396.0	20.26	0.00000	0.000004
0.648	26.89	0.3601	1.000	0.00	447.8	20.26	0.00000	0.000000

RUN: 121171-3 X=22. Z= 0.

UI = 24.35 D1 = 0.1473 BETA= 0.497 RDZ = 1253.
CF/2= 0.00212 D2 = 0.0989 B =-0.463 H = 1.489
F = -0.00098 DC = 3.2012 P+ = 0.005 G = 7.143
K = -9.461E-06 D99 = 2.7584 V0+ =-0.021

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.83	0.0016	0.157	-18.32	2.9	3.42	0.00199	0.001893
0.006	3.92	0.0019	0.161	-18.24	3.5	3.50	0.00200	0.001783
0.007	4.35	0.0022	0.179	-17.85	4.1	3.89	0.00198	0.001673
0.008	4.81	0.0025	0.198	-17.44	4.7	4.30	0.00197	0.001490
0.010	5.94	0.0031	0.244	-16.44	5.8	5.30	0.00194	0.001529
0.012	6.76	0.0037	0.277	-15.71	7.0	6.03	0.00191	0.001392
0.014	7.67	0.0044	0.315	-14.89	8.2	6.85	0.00189	0.001229
0.017	8.80	0.0053	0.361	-13.99	9.9	7.85	0.00186	0.001138
0.020	9.66	0.0062	0.397	-13.12	11.7	8.62	0.00183	0.000880
0.024	10.56	0.0075	0.434	-12.31	14.0	9.43	0.00181	0.000693
0.029	11.70	0.0091	0.481	-11.29	16.9	10.45	0.00179	0.000531
0.036	12.66	0.0112	0.520	-10.43	21.0	11.31	0.00177	0.000381
0.045	13.51	0.0141	0.555	-9.68	26.2	12.06	0.00176	0.000267
0.057	14.21	0.0178	0.583	-9.05	33.2	12.68	0.00177	0.000180
0.072	14.86	0.0225	0.610	-8.47	42.0	13.27	0.00177	0.000136
0.092	15.57	0.0287	0.640	-7.94	53.7	13.90	0.00178	0.000096
0.117	16.15	0.0365	0.663	-7.32	68.2	14.42	0.00179	0.000078
0.157	16.94	0.0490	0.696	-6.61	91.6	15.12	0.00179	0.000064
0.207	17.71	0.0647	0.727	-5.93	120.7	15.81	0.00175	0.000057
0.267	18.73	0.0834	0.769	-5.12	155.7	16.72	0.00166	0.000052
0.332	19.77	0.1037	0.812	-4.09	193.6	17.65	0.00150	0.000048
0.397	20.81	0.1271	0.855	-3.15	231.4	18.58	0.00126	0.000043
0.482	21.78	0.1506	0.895	-2.29	281.1	19.45	0.00099	0.000037
0.557	22.62	0.1740	0.929	-1.56	324.8	20.20	0.00075	0.000030
0.632	23.43	0.1974	0.962	-0.82	368.6	20.92	0.00057	0.000022
0.707	23.90	0.2209	0.982	-0.40	412.3	21.34	0.00039	0.000016
0.807	24.29	0.2521	0.998	-0.05	470.6	21.69	0.00019	0.000008
0.907	24.35	0.2833	1.000	0.01	529.0	21.75	0.00000	0.000002
1.007	24.35	0.3146	1.000	0.00	587.3	21.74	0.00000	0.000000

RUN: 121171-3 X=34. Z= 0.

UI = 22.94 D1 = 0.1918 BETA= 0.369 RDZ = 1550.
CF/2= 0.00203 D2 = 0.1306 B =-0.484 H = 1.469
F = -0.00098 DC = 4.2612 P+ = 0.004 G = 7.092
K = -0.326E-06 D99 = 3.9902 V0+ =-0.022

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	3.22	0.0013	0.140	-19.10	3.0	3.12	0.00191	0.001710
0.007	3.45	0.0015	0.150	-18.88	3.5	3.34	0.00191	0.001662
0.009	4.15	0.0023	0.181	-18.19	4.6	4.02	0.00189	0.001566
0.011	4.90	0.0025	0.214	-17.47	5.7	4.74	0.00186	0.001493
0.013	5.82	0.0030	0.254	-16.58	6.8	5.64	0.00183	0.001444
0.016	7.07	0.0037	0.308	-15.37	8.4	6.85	0.00178	0.001243
0.019	8.16	0.0044	0.356	-14.32	10.0	7.90	0.00175	0.001084
0.023	9.31	0.0053	0.406	-13.22	12.2	9.00	0.00171	0.000834
0.029	10.22	0.0067	0.446	-12.32	15.4	9.90	0.00169	0.000595
0.039	11.69	0.0091	0.510	-10.89	20.8	11.32	0.00165	0.000371
0.055	12.61	0.0116	0.549	-10.02	26.7	12.21	0.00164	0.000250
0.065	13.37	0.0152	0.583	-9.27	34.7	12.94	0.00164	0.000169
0.090	14.12	0.0210	0.616	-8.54	48.2	13.68	0.00165	0.000123
0.125	14.85	0.0292	0.647	-7.83	67.0	14.38	0.00168	0.000072
0.170	15.52	0.0398	0.677	-7.18	91.2	15.03	0.00170	0.000055
0.220	16.25	0.0515	0.708	-6.48	118.1	15.74	0.00172	0.000047
0.295	17.11	0.0691	0.746	-5.65	158.4	16.57	0.00172	0.000042
0.370	17.78	0.0867	0.775	-5.00	198.7	17.22	0.00166	0.000040
0.445	18.62	0.1043	0.811	-4.19	239.1	18.03	0.00157	0.000037
0.520	19.43	0.1219	0.847	-3.49	279.4	18.81	0.00143	0.000035
0.595	20.13	0.1395	0.877	-2.72	319.7	19.49	0.00125	0.000032
0.670	20.75	0.1571	0.904	-2.13	360.1	20.09	0.00104	0.000029
0.745	21.35	0.1747	0.931	-1.54	400.4	20.68	0.00083	0.000025
0.845	22.06	0.1982	0.962	-0.85	454.2	21.37	0.00058	0.000019
0.945	22.56	0.2217	0.983	-0.37	507.9	21.85	0.00037	0.000013
1.045	22.89	0.2451	0.998	-0.05	561.7	22.17	0.00022	0.000008
1.145	22.95	0.2686	1.000	0.01	615.5	22.23	0.00008	0.000003
1.245	22.98	0.2921	1.002	0.04	669.2	22.25	0.00000	-0.000000
1.395	22.94	0.3273	1.000	0.00	749.9	22.22	0.00000	0.000000

RUN: 121171-3 X=46. Z= 3.

UI = 21.98 D1 = 0.2376 BETA= 0.353 RD2 = 1671.
CF/2= 0.00196 D2 = 0.1635 B =-0.505 H = 1.454
F = -0.FFFL99 DC = 5.3687 P+ = 0.003 G = 7.052
K = -0.254E-06 D99 = 1.2397 V0+ =-0.022

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.72	0.0009	0.124	-19.80	2.5	2.80	0.00185	0.001664
0.007	3.19	0.0013	0.145	-19.31	3.5	3.28	0.00184	0.001538
0.009	3.88	0.0017	0.176	-18.61	4.6	3.99	0.00181	0.001411
0.011	4.42	0.0020	0.201	-18.05	5.6	4.54	0.00179	0.001316
0.014	5.56	0.0026	0.253	-16.88	7.1	5.71	0.00175	0.001260
0.017	6.35	0.0032	0.289	-16.07	8.6	6.52	0.00172	0.001137
0.020	7.37	0.0037	0.335	-15.02	10.1	7.57	0.00168	0.001002
0.024	8.35	0.0045	0.380	-14.01	12.2	8.58	0.00164	0.000832
0.030	9.51	0.0056	0.433	-12.82	15.2	9.78	0.00160	0.000634
0.042	11.02	0.0078	0.501	-11.27	21.3	11.33	0.00156	0.000370
0.057	11.95	0.0106	0.544	-10.31	28.9	12.29	0.00155	0.000227
0.077	12.87	0.0143	0.586	-9.36	39.0	13.23	0.00154	0.000142
0.102	13.43	0.0190	0.611	-8.79	51.7	13.81	0.00156	0.000093
0.142	14.23	0.0264	0.646	-8.00	71.9	14.59	0.00159	0.000064
0.202	14.85	0.0376	0.676	-7.33	102.3	15.26	0.00162	0.000047
0.262	15.48	0.0488	0.704	-6.69	132.7	15.91	0.00165	0.000040
0.327	16.12	0.0609	0.733	-6.03	165.7	16.57	0.00166	0.000036
0.402	16.73	0.0749	0.761	-5.39	203.7	17.20	0.00166	0.000033
0.502	17.46	0.0935	0.794	-4.65	254.3	17.94	0.00160	0.000030
0.577	18.04	0.1075	0.821	-4.05	292.3	18.54	0.00151	0.000029
0.652	18.57	0.1214	0.845	-3.51	330.3	19.08	0.00140	0.000028
0.727	19.11	0.1354	0.869	-2.96	368.3	19.64	0.00127	0.000027
0.802	19.62	0.1494	0.893	-2.43	406.3	20.17	0.00112	0.000026
0.902	20.24	0.1680	0.921	-1.79	457.0	20.80	0.00089	0.000023
1.002	20.86	0.1866	0.949	-1.16	507.7	21.44	0.00067	0.000019
1.102	21.37	0.2053	0.972	-0.62	558.3	21.97	0.00048	0.000015
1.202	21.69	0.2239	0.987	-0.30	609.0	22.30	0.00031	0.000010
1.302	21.88	0.2425	0.995	-0.11	659.6	22.49	0.00017	0.000006
1.402	21.98	0.2611	1.000	-0.01	710.3	22.59	0.00009	0.000003
1.552	22.02	0.2891	1.001	0.02	786.3	22.61	0.00000	-0.000001
1.752	21.98	0.3170	1.000	0.00	862.3	22.59	0.00000	0.000000

RUN: 121171-3 X=58. Z= 0.

UI = 21.29 D1 = 0.2710 BETA= 0.330 RD2 = 2093.
CF/2= 0.00191 D2 = 0.1888 B =-0.512 H = 1.435
F = -0.00098 DC = 6.1973 P+ = 0.003 G = 6.933
K = -0.210E-06 D99 = 1.4683 V0+ =-0.022

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.59	0.0008	0.122	-20.09	2.4	2.78	0.00180	0.001453
0.006	2.62	0.0010	0.123	-20.05	2.9	2.82	0.00180	0.001377
0.008	2.68	0.0013	0.126	-19.99	3.9	2.88	0.00180	0.001226
0.010	3.34	0.0016	0.157	-19.28	4.8	3.59	0.00178	0.001245
0.012	3.97	0.0019	0.186	-18.61	5.8	4.26	0.00175	0.001370
0.014	4.73	0.0023	0.221	-17.82	6.8	5.05	0.00172	0.001310
0.016	5.33	0.0026	0.251	-17.14	7.8	5.73	0.00170	0.001265
0.018	5.87	0.0029	0.276	-16.56	8.7	6.31	0.00168	0.001213
0.021	6.64	0.0034	0.312	-15.74	10.2	7.13	0.00165	0.001094
0.024	7.48	0.0039	0.351	-14.84	11.6	8.03	0.00162	0.000976
0.028	8.40	0.0045	0.395	-13.85	13.6	9.02	0.00158	0.000824
0.034	9.53	0.0055	0.448	-12.63	16.5	10.24	0.00154	0.000626
0.042	10.50	0.0068	0.493	-11.59	20.4	11.28	0.00151	0.000436
0.054	11.34	0.0087	0.533	-10.69	26.2	12.18	0.00149	0.000279
0.069	12.09	0.0111	0.568	-9.88	33.4	12.98	0.00148	0.000178
0.089	12.87	0.0144	0.604	-9.05	43.1	13.82	0.00147	0.000117
0.119	13.38	0.0192	0.628	-8.50	57.7	14.37	0.00149	0.000077
0.159	13.83	0.0257	0.650	-8.01	77.1	14.85	0.00151	0.000054
0.219	14.49	0.0353	0.681	-7.30	106.2	15.57	0.00154	0.000040
0.284	15.04	0.0458	0.706	-6.71	137.7	16.15	0.00157	0.000035
0.359	15.61	0.0579	0.733	-6.10	174.0	16.77	0.00158	0.000031
0.434	16.07	0.0700	0.755	-5.61	210.4	17.26	0.00158	0.000029
0.534	16.74	0.0862	0.786	-4.88	258.8	17.98	0.00156	0.000027
0.634	17.29	0.1023	0.812	-4.30	307.3	18.57	0.00150	0.000026
0.734	17.93	0.1184	0.842	-3.61	355.8	19.25	0.00142	0.000024
0.859	18.62	0.1386	0.875	-2.86	416.4	20.01	0.00128	0.000023
0.984	19.28	0.1588	0.906	-2.15	477.0	20.71	0.00108	0.000020
1.109	19.90	0.1789	0.935	-1.50	537.6	21.37	0.00085	0.000017
1.259	20.54	0.2032	0.965	-0.81	610.3	22.06	0.00057	0.000013
1.409	20.93	0.2274	0.986	-0.33	683.0	22.54	0.00034	0.000009
1.559	21.22	0.2516	0.997	-0.08	755.7	22.79	0.00017	0.000005
1.709	21.29	0.2758	1.000	0.00	828.4	22.87	0.00007	0.000002
1.909	21.30	0.3080	1.001	0.01	925.3	22.88	0.00000	-0.000001
2.109	21.29	0.3403	1.000	0.00	1022.3	22.87	0.00000	0.000000

RUN: 121171-3 X=70. Z= 0.

UI = 20.73 D1 = 0.3079 BETA= 0.321 RD2 = 2332.
CF/2= 0.00187 D2 = 0.2160 B =-0.523 H = 1.425
F = -0.00098 DC = 7.1155 P+ = 0.002 G = 6.895
K = -0.181E-06 D99 = 1.6713 V0+ =-0.023

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.009	3.18	0.0013	0.153	-19.57	4.2	3.54	0.00174	0.001424
0.011	3.71	0.0015	0.179	-18.98	5.1	4.13	0.00172	0.001383
0.013	4.21	0.0018	0.203	-18.42	6.1	4.69	0.00170	0.001342
0.015	4.85	0.0021	0.234	-17.71	7.0	5.40	0.00167	0.001264
0.017	5.53	0.0024	0.265	-16.98	7.9	6.13	0.00164	0.001168
0.019	6.06	0.0027	0.292	-16.35	8.9	6.76	0.00162	0.001148
0.021	6.53	0.0030	0.315	-15.81	9.8	7.28	0.00160	0.001144
0.024	7.52	0.0034	0.363	-14.73	11.2	8.38	0.00156	0.000979
0.028	8.22	0.0039	0.396	-13.97	13.1	9.14	0.00153	0.000788
0.034	9.07	0.0048	0.437	-13.00	15.9	10.11	0.00150	0.000574
0.046	10.22	0.0065	0.493	-11.72	21.5	11.39	0.00146	0.000348
0.059	10.99	0.0083	0.530	-10.87	27.6	12.24	0.00145	0.000238
0.079	12.03	0.0111	0.580	-9.70	36.9	13.41	0.00142	0.000149
0.109	12.57	0.0153	0.606	-9.10	50.9	14.01	0.00142	0.000092
0.154	13.22	0.0216	0.638	-8.37	71.9	14.74	0.00143	0.000056
0.204	13.69	0.0287	0.660	-7.85	95.3	15.26	0.00146	0.000043
0.264	14.26	0.0371	0.688	-7.21	123.3	15.90	0.00148	0.000036
0.329	14.68	0.0462	0.708	-6.75	153.7	16.36	0.00150	0.000031
0.404	15.14	0.0568	0.730	-6.24	188.7	16.87	0.00151	0.000028
0.479	15.65	0.0673	0.755	-5.56	223.8	17.45	0.00151	0.000027
0.554	15.97	0.0779	0.770	-5.31	258.8	17.79	0.00150	0.000025
0.654	16.57	0.0919	0.799	-4.64	305.5	18.47	0.00148	0.000024
0.754	17.12	0.1060	0.826	-4.03	352.3	19.08	0.00143	0.000022
0.854	17.55	0.1200	0.846	-3.55	399.0	19.56	0.00135	0.000021
0.954	18.07	0.1341	0.871	-2.97	445.7	20.14	0.00124	0.000020
1.079	18.56	0.1516	0.895	-2.42	504.1	20.69	0.00108	0.000019
1.204	19.13	0.1692	0.923	-1.79	562.5	21.32	0.00089	0.000017
1.354	19.67	0.1903	0.949	-1.19	632.6	21.92	0.00065	0.000013
1.504	20.17	0.2114	0.973	-0.63	702.7	22.48	0.00044	0.000010
1.704	20.59	0.2395	0.993	-0.15	796.1	22.95	0.00022	0.000006
1.904	20.64	0.2676	0.996	-0.10	889.5	23.01	0.00005	0.000003
2.104	20.76	0.2957	1.002	0.04	983.0	23.14	0.00000	0.000001
2.304	20.76	0.3238	1.001	0.03	1076.4	23.14	0.00000	-0.000001
2.504	20.73	0.3519	1.000	0.00	1169.9	23.11	0.00000	0.000000

RUN: 121171-3 X=82. Z= 0.

UI = 20.28 D1 = 0.3429 BETA= 0.325 RD2 = 2573.
CF/2= 0.00184 D2 = 0.2436 B =-0.533 H = 1.407
F = -0.00098 DC = 7.9988 P+ = 0.002 G = 6.752
K = -0.165E-06 D99 = 1.9825 V0+ =-0.023

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.010	3.45	0.0013	0.170	-19.36	4.5	3.97	0.00169	0.001429
0.012	4.16	0.0015	0.205	-18.54	5.4	4.79	0.00166	0.001349
0.014	4.63	0.0018	0.227	-18.04	6.3	5.29	0.00164	0.001269
0.016	5.17	0.0020	0.255	-17.38	7.2	5.95	0.00162	0.001193
0.018	5.65	0.0023	0.279	-16.83	8.2	6.50	0.00160	0.001150
0.021	6.13	0.0025	0.302	-16.28	9.1	7.05	0.00158	0.001107
0.022	6.61	0.0028	0.326	-15.72	10.0	7.60	0.00156	0.001034
0.025	7.31	0.0031	0.360	-14.93	11.3	8.40	0.00153	0.000936
0.028	7.87	0.0035	0.388	-14.28	12.7	9.05	0.00151	0.000815
0.032	8.50	0.0040	0.419	-13.55	14.5	9.78	0.00148	0.000672
0.038	9.29	0.0048	0.458	-12.64	17.2	10.69	0.00145	0.000512
0.046	10.02	0.0058	0.494	-11.82	20.8	11.53	0.00143	0.000374
0.057	10.74	0.0071	0.529	-10.98	25.8	12.35	0.00141	0.000260
0.072	11.38	0.0090	0.561	-10.23	32.6	13.09	0.00139	0.000174
0.092	11.99	0.0115	0.591	-9.54	41.7	13.79	0.00138	0.000117
0.117	12.66	0.0171	0.624	-8.77	62.0	14.56	0.00138	0.000066
0.197	13.36	0.0246	0.659	-7.96	89.2	15.36	0.00139	0.000043
0.272	13.91	0.0340	0.686	-7.33	123.2	15.99	0.00141	0.000033
0.347	14.32	0.0434	0.705	-6.86	157.1	16.47	0.00143	0.000028
0.422	14.74	0.0528	0.727	-6.37	191.1	16.96	0.00145	0.000026
0.497	15.18	0.0621	0.748	-5.87	225.0	17.46	0.00145	0.000024
0.597	15.65	0.0746	0.771	-5.33	270.3	18.00	0.00144	0.000022
0.697	16.14	0.0871	0.796	-4.76	315.6	18.56	0.00140	0.000021
0.797	16.47	0.0996	0.812	-4.39	360.9	18.94	0.00135	0.000019
0.897	16.89	0.1121	0.833	-3.90	406.1	19.43	0.00131	0.000019
1.022	17.43	0.1278	0.859	-3.28	462.7	20.05	0.00123	0.000018
1.147	17.84	0.1434	0.880	-2.81	519.3	20.52	0.00113	0.000018
1.297	18.47	0.1621	0.911	-2.18	587.3	21.25	0.00099	0.000016
1.447	19.00	0.1809	0.937	-1.68	655.2	21.85	0.00080	0.000013
1.597	19.44	0.1997	0.958	-1.28	723.1	22.35	0.00058	0.000011
1.797	19.92	0.2247	0.982	-0.82	813.6	22.91	0.00031	0.000007
1.997	20.09	0.2497	0.991	-0.62	904.2	23.11	0.00011	0.000005
2.197	20.29	0.2747	1.000	0.01	994.8	23.33	0.00004	0.000002
2.497	20.31	0.3122	1.001	0.03	1130.6	23.36	0.00000	-0.000000
2.797	20.28	0.3497	1.000	0.00	1266.4	23.33	0.00000	0.000000

RUN: 121171-3 X=90. Z= ⁻.

UI = 19.96 D1 = 0.3738 BETA= 0.354 RD2 = 2774.
CF/2= 0.00181 D2 = 0.2669 B =-0.541 H = 1.400
F = -0.00098 DC = 8.7820 P+ = 0.002 G = 6.719
K = -0.165E-06 D99 = 2.1015 V0+ =-0.023

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	2.80	0.0008	0.140	-20.20	3.0	3.29	0.001681
0.009	3.45	0.0010	0.173	-19.43	3.9	4.07	0.001533
0.011	3.99	0.0012	0.200	-18.80	4.8	4.70	0.001385
0.013	4.44	0.0015	0.223	-18.26	5.7	5.23	0.001256
0.015	5.09	0.0017	0.255	-17.51	6.5	5.99	0.001231
0.017	5.49	0.0019	0.275	-17.04	7.4	6.46	0.001147
0.020	6.23	0.0023	0.312	-16.17	8.8	7.33	0.001051
0.024	7.05	0.0027	0.353	-15.20	10.5	8.30	0.000880
0.030	8.12	0.0034	0.407	-13.94	13.2	9.56	0.000679
0.039	9.29	0.0044	0.465	-12.56	17.2	10.93	0.000462
0.052	10.21	0.0059	0.512	-11.47	22.9	12.02	0.000290
0.067	10.81	0.0076	0.541	-10.77	29.6	12.72	0.000190
0.087	11.47	0.0099	0.575	-9.99	38.4	13.50	0.000125
0.117	12.02	0.0133	0.602	-9.35	51.7	14.15	0.000082
0.152	12.51	0.0173	0.627	-8.77	67.2	14.72	0.000059
0.212	13.10	0.0241	0.656	-8.08	93.7	15.42	0.000041
0.287	13.57	0.0327	0.680	-7.52	126.9	15.98	0.000032
0.362	14.02	0.0412	0.702	-7.00	160.1	16.50	0.000027
0.437	14.41	0.0497	0.722	-6.54	193.3	16.96	0.000024
0.537	14.91	0.0611	0.747	-5.95	237.5	17.55	0.000022
0.637	15.27	0.0725	0.765	-5.52	281.7	17.98	0.000021
0.762	15.80	0.0867	0.791	-4.91	337.1	18.59	0.000020
0.887	16.36	0.1010	0.819	-4.24	392.4	19.25	0.000019
1.012	16.81	0.1152	0.842	-3.71	447.7	19.78	0.000018
1.162	17.36	0.1323	0.870	-3.07	514.0	20.43	0.000016
1.312	17.85	0.1494	0.894	-2.49	580.4	21.00	0.000015
1.512	18.45	0.1721	0.924	-1.78	668.9	21.72	0.000013
1.912	19.45	0.2177	0.974	-0.60	845.9	22.90	0.000010
2.112	19.78	0.2405	0.991	-0.22	934.3	23.28	0.000009
2.312	19.95	0.2632	0.999	-0.02	1022.8	23.48	0.000008
2.512	19.98	0.2860	1.001	0.02	1111.3	23.52	0.000008
2.812	19.96	0.3202	1.000	0.00	1244.1	23.50	0.000008

RUN: 10372-1 X= 2. Z= 0.

UI = 29.27 D1 = 0.0517 BETA= 0.116 RD2 = 515.
CF/2= 0.00293 D2 = 0.0340 B =-0.341 H = 1.524
F = -0.00100 DC = 0.9561 P+ = 0.003 G = 6.353
K = -0.433E-06 D99 = 0.2985 V0+ =-0.018

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	5.77	0.0045	0.197	-14.83	3.5	3.64	0.002520
0.005	6.63	0.0055	0.227	-14.29	4.4	4.19	0.002331
0.006	7.58	0.0066	0.259	-13.69	5.2	4.79	0.002141
0.007	8.56	0.0076	0.292	-13.07	6.0	5.40	0.001944
0.008	9.44	0.0087	0.323	-12.52	6.8	5.96	0.001877
0.009	10.18	0.0097	0.348	-12.05	7.6	6.43	0.001755
0.011	11.68	0.0118	0.399	-11.10	9.3	7.38	0.001475
0.013	12.99	0.0139	0.444	-10.27	10.9	8.20	0.001234
0.015	13.96	0.0160	0.477	-9.66	12.6	8.81	0.001059
0.017	14.88	0.0181	0.509	-9.08	14.2	9.39	0.000928
0.020	15.88	0.0212	0.543	-8.45	16.7	10.02	0.000754
0.023	16.88	0.0244	0.577	-7.82	19.1	10.66	0.000632
0.026	17.80	0.0275	0.608	-7.24	21.6	11.24	0.000523
0.030	18.52	0.0317	0.633	-6.78	24.9	11.69	0.000416
0.034	19.24	0.0359	0.657	-6.33	28.2	12.14	0.000332
0.040	19.92	0.0422	0.681	-5.90	33.1	12.58	0.000253
0.046	20.44	0.0484	0.699	-5.56	38.0	12.92	0.000209
0.054	21.17	0.0568	0.723	-5.11	44.6	13.37	0.000171
0.064	21.85	0.0673	0.747	-4.68	52.8	13.81	0.000145
0.076	22.55	0.0798	0.769	-4.27	62.6	14.21	0.000125
0.093	23.36	0.0976	0.798	-3.74	76.6	14.75	0.000108
0.113	24.22	0.1185	0.828	-3.19	93.0	15.29	0.000095
0.138	25.23	0.1447	0.862	-2.55	113.5	15.93	0.000083
0.163	26.14	0.1708	0.893	-1.97	134.1	16.50	0.000072
0.188	26.91	0.1970	0.919	-1.49	154.6	16.99	0.000062
0.213	27.57	0.2231	0.942	-1.07	175.1	17.40	0.000051
0.238	28.14	0.2493	0.961	-0.71	195.6	17.76	0.000043
0.273	28.74	0.2859	0.982	-0.34	224.4	18.14	0.000027
0.313	29.11	0.3277	0.995	-0.10	257.2	18.38	0.000016
0.358	29.27	0.3748	1.000	0.00	294.1	18.48	0.000007
0.433	29.35	0.4532	1.001	0.02	355.7	18.50	-0.000002
0.508	29.27	0.5317	1.000	0.00	417.3	18.48	0.000000

RUN: 10372-1 X=10. Z= 0.

UI = 26.94 D1 = 0.0909 BETA= 0.438 RD2 = 841.
CF/2= 0.00238 D2 = 0.0602 B =-0.378 H = 1.511
F = -0.00090 DC = 1.8639 P+ = 0.007 G = 6.927
K = -0.821E-06 D99 = 0.4682 V0+ =-0.018

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	5.20	0.0027	0.193	-16.53	3.4	3.96	0.00226	0.002143
0.006	5.87	0.0032	0.218	-16.03	4.1	4.47	0.00225	0.001933
0.007	6.46	0.0038	0.240	-15.58	4.8	4.92	0.00224	0.001723
0.008	7.08	0.0043	0.263	-15.11	5.4	5.38	0.00223	0.001514
0.009	7.43	0.0048	0.276	-14.84	6.1	5.65	0.00223	0.001460
0.011	8.61	0.0059	0.319	-13.95	7.5	6.55	0.00221	0.001329
0.013	9.65	0.0070	0.358	-13.15	8.9	7.34	0.00219	0.001217
0.015	10.48	0.0080	0.389	-12.52	10.2	7.98	0.00218	0.001168
0.018	11.64	0.0097	0.432	-11.63	12.3	8.86	0.00216	0.001039
0.021	12.71	0.0113	0.472	-10.82	14.3	9.67	0.00214	0.000741
0.024	13.36	0.0129	0.496	-10.33	16.3	10.16	0.00214	0.000616
0.027	14.15	0.0145	0.525	-9.73	18.4	10.77	0.00213	0.000511
0.031	14.70	0.0166	0.546	-9.31	21.1	11.19	0.00212	0.000503
0.037	15.54	0.0199	0.577	-8.67	25.2	11.83	0.00212	0.000307
0.045	16.24	0.0241	0.603	-8.13	30.7	12.36	0.00211	0.000225
0.055	17.02	0.0295	0.632	-7.54	37.5	12.95	0.00211	0.000174
0.067	17.62	0.0359	0.654	-7.09	45.6	13.40	0.00210	0.000137
0.082	18.32	0.0440	0.680	-6.56	55.9	13.94	0.00208	0.000113
0.102	19.03	0.0547	0.706	-6.02	69.5	14.48	0.00204	0.000396
0.127	19.84	0.0681	0.736	-5.40	86.5	15.09	0.00196	0.000085
0.157	20.70	0.0842	0.769	-4.74	106.9	15.75	0.00184	0.000077
0.187	21.56	0.1003	0.801	-4.09	127.4	16.41	0.00170	0.000371
0.217	22.36	0.1164	0.830	-3.49	147.8	17.01	0.00153	0.000066
0.252	23.17	0.1352	0.860	-2.88	171.7	17.63	0.00132	0.000061
0.292	24.06	0.1567	0.893	-2.19	198.9	18.30	0.00108	0.000054
0.332	24.85	0.1781	0.923	-1.59	226.2	18.91	0.00086	0.000046
0.372	25.60	0.1996	0.950	-1.02	253.4	19.47	0.00070	0.000037
0.422	26.27	0.2266	0.975	-0.51	287.5	19.99	0.00052	0.000026
0.472	26.70	0.2532	0.991	-0.18	321.5	20.31	0.00037	0.000017
0.527	26.90	0.2827	0.999	-0.03	359.0	20.47	0.00020	0.000008
0.602	26.95	0.3230	1.000	0.01	410.1	20.50	0.00000	-0.000001
0.677	26.94	0.3632	1.000	0.00	461.2	20.49	0.00000	0.000000

RUN: 10372-1 X=22. Z= 0.

UI = 24.43 D1 = 0.1517 BETA= 0.427 RD2 = 1271.
CF/2= 0.00204 D2 = 0.1003 B =-0.388 H = 1.505
F = -0.00079 DC = 3.3477 P+ = 0.005 G = 7.439
K = -0.455E-06 D99 = 0.7442 V0+ =-0.018

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.52	0.0015	0.144	-18.56	2.9	3.19	0.00195	0.001821
0.006	3.77	0.0018	0.154	-18.24	3.4	3.42	0.00195	0.001720
0.007	4.24	0.0021	0.173	-17.82	4.0	3.84	0.00194	0.001518
0.008	4.69	0.0024	0.192	-17.41	4.6	4.25	0.00193	0.001469
0.010	5.65	0.0030	0.231	-16.54	5.7	5.12	0.00191	0.001459
0.012	6.51	0.0036	0.266	-15.78	6.9	5.90	0.00190	0.001323
0.014	7.43	0.0042	0.304	-14.92	8.0	6.74	0.00188	0.001188
0.017	8.40	0.0051	0.344	-14.04	9.7	7.62	0.00186	0.001027
0.021	9.30	0.0061	0.381	-13.22	11.4	8.44	0.00184	0.000882
0.023	10.03	0.0069	0.410	-12.57	13.1	9.09	0.00183	0.000751
0.026	10.81	0.0078	0.442	-11.86	14.9	9.80	0.00182	0.000656
0.030	11.55	0.0090	0.473	-11.18	17.1	10.47	0.00181	0.000532
0.035	12.25	0.0105	0.501	-11.05	20.0	11.11	0.00181	0.000416
0.041	12.97	0.0122	0.531	-10.39	23.4	11.77	0.00180	0.000312
0.049	13.51	0.0146	0.553	-9.91	28.0	12.25	0.00181	0.000231
0.061	14.23	0.0182	0.582	-9.25	34.9	12.91	0.00182	0.000161
0.076	14.86	0.0227	0.608	-8.68	43.4	13.48	0.00183	0.000120
0.094	15.43	0.0281	0.630	-8.19	53.7	13.97	0.00184	0.000097
0.119	15.91	0.0356	0.651	-7.73	68.0	14.43	0.00186	0.000078
0.154	16.79	0.0460	0.687	-6.93	88.0	15.22	0.00187	0.000065
0.189	17.41	0.0565	0.713	-6.37	108.0	15.79	0.00185	0.000059
0.234	18.12	0.0699	0.742	-5.73	133.7	16.43	0.00180	0.000054
0.284	18.90	0.0849	0.774	-5.02	162.1	17.14	0.00171	0.000050
0.334	19.67	0.0998	0.805	-4.32	190.9	17.84	0.00159	0.000048
0.384	20.38	0.1147	0.834	-3.68	219.5	18.48	0.00144	0.000046
0.434	21.07	0.1297	0.862	-3.05	248.0	19.11	0.00128	0.000043
0.489	21.78	0.1461	0.892	-2.40	279.5	19.75	0.00109	0.000040
0.549	22.57	0.1640	0.923	-1.70	313.8	20.46	0.00091	0.000035
0.609	23.23	0.1820	0.951	-1.10	348.1	21.08	0.00076	0.000028
0.684	23.90	0.2044	0.978	-0.48	390.9	21.68	0.00060	0.000019
0.759	24.26	0.2268	0.993	-0.16	433.8	22.00	0.00044	0.000012
0.859	24.45	0.2566	1.001	0.02	490.9	22.18	0.00025	0.000005
0.959	24.44	0.2865	1.001	0.03	548.1	22.18	0.00009	0.000001
1.059	24.47	0.3164	1.001	0.03	605.2	22.19	0.00000	-0.000003
1.159	24.43	0.3463	1.000	0.00	662.4	22.16	0.00000	0.000000

RUN: 10372-1 X=34. Z= 0.

UI = 23.06 D1 = 0.2005 BETA= 0.408 RD2 = 1024.
CF/2= 0.00191 D2 = 0.1359 B =-0.388 H = 1.475
F = -0.00074 DC = 4.5902 P+ = 0.004 G = 7.377
K = -0.325E-06 D99 = 1.0112 V0+ =-0.017

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	3.42	0.0012	0.148	-19.50	2.9	3.40	0.00182	0.001805
0.007	3.67	0.0014	0.159	-19.25	3.4	3.65	0.00182	0.001767
0.008	4.18	0.0017	0.181	-18.74	4.0	4.15	0.00181	0.001538
0.009	4.54	0.0019	0.197	-18.39	4.5	4.51	0.00180	0.001569
0.011	5.29	0.0023	0.229	-17.65	5.5	5.25	0.00178	0.001471
0.013	6.15	0.0027	0.267	-16.79	6.6	6.11	0.00176	0.001384
0.015	7.02	0.0032	0.304	-15.93	7.6	6.97	0.00174	0.001260
0.018	7.91	0.0038	0.343	-15.05	9.2	7.85	0.00172	0.001063
0.021	8.92	0.0045	0.387	-14.04	10.8	8.86	0.00170	0.000870
0.024	9.45	0.0051	0.410	-13.51	12.3	9.39	0.00169	0.000722
0.028	10.17	0.0060	0.441	-12.79	14.4	10.10	0.00168	0.000582
0.034	10.99	0.0073	0.476	-11.99	17.5	10.91	0.00166	0.000423
0.042	11.83	0.0091	0.513	-11.15	21.7	11.75	0.00166	0.000308
0.052	12.51	0.0112	0.542	-10.48	26.9	12.42	0.00166	0.000222
0.065	13.18	0.0141	0.572	-9.80	33.7	13.09	0.00166	0.000156
0.083	13.68	0.0180	0.593	-9.31	43.1	13.59	0.00168	0.000139
0.105	14.37	0.0228	0.623	-8.62	54.6	14.27	0.00170	0.000082
0.135	14.80	0.0293	0.642	-8.20	73.3	14.69	0.00172	0.000054
0.185	15.51	0.0402	0.672	-7.50	96.4	15.40	0.00176	0.000053
0.245	16.32	0.0533	0.708	-6.69	127.7	16.21	0.00177	0.000046
0.320	17.15	0.0696	0.744	-5.87	166.8	17.02	0.00174	0.000042
0.395	18.00	0.0860	0.781	-5.02	206.0	17.88	0.00168	0.000039
0.470	18.75	0.1023	0.813	-4.28	245.1	18.62	0.00156	0.000037
0.545	19.47	0.1186	0.844	-3.56	284.3	19.33	0.00140	0.000035
1.620	20.23	0.1350	0.877	-2.91	323.4	20.08	0.00222	0.000033
0.695	20.94	0.1513	0.908	-2.11	362.5	20.79	0.00101	0.000029
0.770	21.49	0.1677	0.932	-1.56	401.7	21.34	0.00079	0.000025
0.845	22.07	0.1840	0.957	-0.98	440.8	21.92	0.00061	0.000021
0.945	22.58	0.2058	0.979	-0.48	493.0	22.42	0.00038	0.000014
1.045	22.95	0.2276	0.995	-0.10	545.2	22.79	0.00023	0.000006
1.145	23.07	0.2496	1.000	0.01	597.4	22.90	0.00009	0.000004
1.245	23.10	0.2711	1.002	0.04	649.6	22.94	0.00000	-0.000003
1.370	23.06	0.2984	1.000	0.00	714.9	22.90	0.00000	0.000000

RUN: 10372-1 X=46. Z= 0.

UI = 22.12 D1 = 0.2594 BETA= 0.409 RD2 = 1973.
CF/2= 0.00182 D2 = 0.1721 B =-0.390 H = 1.472
F = -0.00071 DC = 5.9412 P+ = 0.003 G = 7.519
K = -0.256E-06 D99 = 1.2802 V0+ =-0.017

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.69	0.0008	0.122	-20.59	2.4	2.85	0.00175	0.001569
0.006	2.95	0.0010	0.133	-20.32	2.9	3.12	0.00174	0.001418
0.007	3.19	0.0012	0.144	-20.16	3.4	3.39	0.00174	0.001267
0.008	3.45	0.0013	0.156	-19.79	3.9	3.65	0.00173	0.001146
0.009	3.71	0.0015	0.167	-19.52	4.4	3.92	0.00173	0.001019
0.011	4.31	0.0019	0.195	-18.88	5.4	4.57	0.00171	0.001269
0.013	4.96	0.0022	0.224	-18.19	6.4	5.25	0.00170	0.001249
0.016	5.93	0.0027	0.267	-17.19	7.8	6.24	0.00167	0.001182
0.019	6.84	0.0032	0.309	-16.19	9.3	7.25	0.00165	0.001041
0.023	7.88	0.0039	0.356	-15.09	11.2	8.35	0.00163	0.000859
0.028	9.07	0.0047	0.410	-13.83	13.7	9.61	0.00160	0.000679
0.035	9.91	0.0058	0.448	-12.94	17.1	10.50	0.00159	0.000484
0.043	10.75	0.0072	0.486	-12.05	21.0	11.39	0.00158	0.000347
0.053	11.56	0.0088	0.522	-11.26	25.9	12.25	0.00157	0.000240
0.065	12.11	0.0109	0.548	-10.61	31.8	12.84	0.00157	0.000175
0.082	12.74	0.0138	0.576	-9.94	40.1	13.51	0.00158	0.000121
0.107	13.23	0.0180	0.598	-9.42	52.3	14.02	0.00160	0.000083
0.142	13.78	0.0239	0.623	-8.84	69.4	14.61	0.00163	0.000061
0.192	14.54	0.0323	0.657	-8.04	93.9	15.41	0.00167	0.000048
0.252	15.11	0.0424	0.683	-7.43	123.2	16.01	0.00170	0.000041
0.327	15.73	0.0553	0.711	-6.76	159.9	16.67	0.00172	0.000037
0.402	16.45	0.0677	0.744	-6.01	196.6	17.44	0.00171	0.000035
0.502	17.22	0.0845	0.779	-5.19	245.5	18.25	0.00164	0.000033
0.602	18.08	0.1013	0.817	-4.28	294.4	19.17	0.00156	0.000031
1.702	18.85	0.1182	0.852	-3.47	343.2	19.98	0.00138	0.000029
0.802	19.52	0.1350	0.882	-2.76	392.1	20.69	0.00116	0.000027
0.902	20.19	0.1518	0.913	-2.05	441.0	21.40	0.00094	0.000024
1.002	20.83	0.1687	0.940	-1.40	489.9	22.04	0.00071	0.000020
1.102	21.35	0.1855	0.965	-0.82	538.8	22.63	0.00050	0.000016
1.202	21.71	0.2023	0.981	-0.44	587.7	23.01	0.00032	0.000011
1.302	21.95	0.2191	0.992	-0.18	636.6	23.27	0.00018	0.000008
1.427	22.11	0.2402	0.999	-0.01	697.7	23.43	0.00007	0.000003
1.552	22.13	0.2612	1.001	0.01	758.9	23.44	0.00000	-0.000000
1.702	22.12	0.2865	1.000	0.00	832.2	23.45	0.00000	0.000000

RUN: 10372-1 X=58. Z= 0.

UI = 21.50 D1 = 0.2948 BETA= 0.396 RD2 = 2262.
CF/2= 0.00176 D2 = 0.2030 B =-0.392 H = 1.452
F = -0.00089 DC = 7.0291 P+ = 0.003 G = 7.425
K = -0.212E-06 D99 = 1.5242 V0+ =-0.016

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	2.57	0.0009	0.120	-20.99	2.8	2.85	0.00169	0.001529
0.007	2.90	0.0010	0.135	-20.62	3.3	3.22	0.00168	0.001489
0.009	3.36	0.0013	0.156	-20.12	4.2	3.72	0.00167	0.001438
0.011	4.05	0.0016	0.188	-19.35	5.1	4.49	0.00166	0.001268
0.013	4.69	0.0018	0.218	-18.64	6.1	5.23	0.00164	0.001222
0.016	5.70	0.0023	0.265	-17.52	7.5	6.32	0.00161	0.001140
0.019	6.23	0.0027	0.290	-16.93	8.9	6.91	0.00160	0.001063
0.022	7.07	0.0031	0.329	-16.09	10.3	7.84	0.00158	0.000948
0.025	7.72	0.0036	0.361	-15.23	11.7	8.61	0.00156	0.000838
0.028	8.52	0.0040	0.396	-14.39	13.1	9.45	0.00155	0.000759
0.032	9.04	0.0046	0.420	-13.82	15.0	10.02	0.00154	0.000662
0.037	9.72	0.0053	0.452	-13.07	17.3	10.77	0.00152	0.000474
0.043	10.31	0.0061	0.480	-12.46	20.1	11.44	0.00151	0.000355
0.050	10.69	0.0071	0.497	-12.08	23.4	11.86	0.00151	0.000287
0.058	11.39	0.0083	0.530	-11.31	27.1	12.63	0.00150	0.000223
0.070	11.72	0.0100	0.545	-10.95	32.7	12.99	0.00151	0.000166
0.088	12.31	0.0125	0.572	-10.37	41.1	13.67	0.00151	0.000117
0.120	13.05	0.0171	0.607	-9.57	56.1	14.47	0.00153	0.000073
0.163	13.56	0.0228	0.630	-8.82	76.8	15.02	0.00156	0.000054
0.220	14.16	0.0313	0.659	-8.14	102.8	15.70	0.00160	0.000040
0.285	14.75	0.0405	0.686	-7.48	133.2	16.36	0.00163	0.000035
0.360	15.30	0.0512	0.712	-6.87	168.3	16.97	0.00167	0.000032
0.435	15.72	0.0619	0.731	-6.41	203.3	17.43	0.00168	0.000030
0.535	16.50	0.0761	0.767	-5.54	250.1	18.30	0.00167	0.000028
0.635	17.13	0.0903	0.797	-4.85	296.8	18.99	0.00162	0.000027
0.735	17.73	0.1046	0.825	-4.18	343.5	19.66	0.00152	0.000026
0.835	18.32	0.1188	0.852	-3.53	390.3	20.31	0.00140	0.000024
0.935	18.93	0.1330	0.880	-2.95	437.0	20.99	0.00125	0.000023
1.063	19.58	0.1518	0.911	-2.13	495.4	21.71	0.00103	0.000020
1.185	20.18	0.1686	0.939	-1.46	553.9	22.38	0.00079	0.000017
1.310	20.72	0.1864	0.964	-0.87	612.3	22.97	0.00055	0.000013
1.460	21.19	0.2077	0.985	-0.35	682.4	23.49	0.00032	0.000009
1.610	21.42	0.2290	0.996	-0.09	752.5	23.75	0.00015	0.000005
1.760	21.50	0.2504	1.000	0.00	822.6	23.84	0.00005	0.000002
1.900	21.50	0.2703	1.000	0.00	888.0	23.84	0.00000	0.000000

RUN: 10372-1 X=70. Z= 0.

UI = 20.94 D1 = 0.3392 BETA= 0.388 RD2 = 2545.
CF/2= 0.00171 D2 = 0.2336 B =-0.392 H = 1.446
F = -0.00067 DC = 8.2966 P+ = 0.003 G = 7.464
K = -0.183E-06 D99 = 1.7847 V0+ =-0.016

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.008	2.83	0.0010	0.138	-20.85	3.6	3.34	0.00163	0.001377
0.010	3.44	0.0012	0.174	-20.21	4.5	3.98	0.00162	0.001295
0.012	3.93	0.0015	0.190	-19.58	5.4	4.51	0.00160	0.001213
0.014	4.46	0.0017	0.213	-19.03	6.3	5.16	0.00159	0.001170
0.017	5.23	0.0021	0.250	-18.15	7.6	6.04	0.00157	0.001129
0.023	5.95	0.0029	0.284	-17.32	9.9	6.88	0.00156	0.001025
0.023	6.83	0.0029	0.326	-16.39	10.3	7.83	0.00153	0.000933
0.027	7.67	0.0033	0.366	-15.53	12.1	8.86	0.00151	0.000778
0.031	8.20	0.0038	0.391	-14.72	13.8	9.47	0.00150	0.000651
0.036	8.97	0.0044	0.428	-13.93	16.1	10.37	0.00149	0.000510
0.042	9.45	0.0051	0.452	-13.27	18.8	10.92	0.00148	0.000357
0.049	10.13	0.0060	0.484	-12.48	22.0	11.71	0.00147	0.000320
0.057	10.42	0.0069	0.497	-11.92	25.6	12.27	0.00146	0.000243
0.069	11.09	0.0084	0.530	-11.28	30.9	12.82	0.00146	0.000186
0.087	11.83	0.0105	0.565	-10.52	38.8	13.68	0.00146	0.000121
0.112	12.15	0.0136	0.580	-10.16	50.2	14.04	0.00147	0.000085
0.147	12.79	0.0179	0.611	-9.41	65.8	14.78	0.00148	0.000061
0.197	13.43	0.0252	0.642	-8.67	92.8	15.52	0.00151	0.000043
0.282	13.99	0.0344	0.668	-8.03	126.5	16.17	0.00155	0.000036
0.357	14.62	0.0435	0.698	-7.30	160.1	16.89	0.00158	0.000030
0.457	15.15	0.0557	0.724	-6.69	205.0	17.51	0.00159	0.000027
0.557	15.84	0.0679	0.757	-5.89	249.8	18.31	0.00159	0.000025
0.657	16.23	0.0801	0.775	-5.44	294.7	18.75	0.00156	0.000024
0.757	16.81	0.0922	0.803	-4.77	339.5	19.42	0.00151	0.000023
0.857	17.38	0.1044	0.830	-4.11	384.4	20.08	0.00144	0.000022
0.957	17.86	0.1166	0.853	-3.55	429.2	20.64	0.00134	0.000021
1.082	18.46	0.1318	0.882	-2.86	485.3	21.33	0.00119	0.000020
1.237	18.98	0.1471	0.907	-2.24	541.3	21.95	0.00098	0.000018
1.357	19.60	0.1654	0.936	-1.55	608.6	22.64	0.00072	0.000015
1.557	20.09	0.1836	0.959	-0.98	675.9	23.21	0.00048	0.000012
1.657	20.52	0.2019	0.980	-0.48	743.1	23.72	0.00028	0.000008
1.857	20.84	0.2263	0.996	-0.11	832.8	24.09	0.00010	0.000005
2.057	20.95	0.2537	1.001	0.01	922.5	24.21	0.00000	0.000002
2.257	20.94	0.2750	1.000	0.00	1012.2	24.19	0.00000	0.000000

RUN: 10372-1 X=82. Z= 0.

UI = 20.50 D1 = 0.3754 BETA= 0.373 RD2 = 2780.
CF/2= 0.00167 D2 = 0.2617 B =-0.389 H = 1.434
F = -0.00065 DC = 0.1895 P+ = 0.002 G = 7.441
K = -0.156E-06 D99 = 1.6772 V0+ =-0.016

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.009	2.92	0.0010	0.142	-20.99	1.9	3.48	0.00159	0.001406
0.011	3.44	0.0012	0.168	-20.37	4.8	4.11	0.00158	0.001384
0.013	4.08	0.0014	0.199	-19.60	5.6	4.89	0.00156	0.001361
0.016	4.95	0.0017	0.241	-18.57	6.9	5.91	0.00154	0.001249
0.019	5.73	0.0021	0.280	-17.63	8.2	6.85	0.00152	0.001086
0.022	6.69	0.0024	0.326	-16.49	9.5	7.99	0.00149	0.000954
0.025	7.05	0.0027	0.344	-16.06	10.8	8.42	0.00149	0.000843
0.029	7.67	0.0032	0.374	-15.31	12.6	9.16	0.00147	0.000696
0.034	8.48	0.0037	0.414	-14.35	14.8	10.13	0.00145	0.000553
0.040	9.17	0.0044	0.447	-13.52	17.4	10.95	0.00144	0.000462
0.048	9.81	0.0052	0.478	-12.77	20.8	11.71	0.00143	0.000345
0.060	10.61	0.0065	0.518	-11.81	26.0	12.67	0.00147	0.000228
0.078	11.36	0.0085	0.554	-10.91	33.8	13.57	0.00141	0.000145
0.103	11.66	0.0112	0.569	-10.55	44.7	13.93	0.00141	0.000096
0.138	12.28	0.0150	0.599	-9.82	59.9	14.66	0.00142	0.000063
0.188	12.91	0.0205	0.630	-9.06	81.6	15.42	0.00143	0.000046
0.263	13.54	0.0286	0.661	-8.31	114.1	16.17	0.00145	0.000035
0.363	13.93	0.0379	0.682	-7.77	151.0	16.73	0.00147	0.000029
0.448	14.58	0.0488	0.711	-7.06	194.4	17.41	0.00149	0.000026
0.548	15.08	0.0596	0.736	-6.46	237.8	18.01	0.00150	0.000024
0.648	15.59	0.0705	0.761	-5.86	281.2	18.62	0.00149	0.000023
0.773	16.21	0.0841	0.791	-5.12	335.4	19.36	0.00147	0.000021
0.898	16.73	0.0977	0.816	-4.50	389.7	19.98	0.00141	0.000020
1.048	17.43	0.1140	0.850	-3.67	454.8	20.81	0.00131	0.000019
1.198	17.86	0.1304	0.871	-3.15	519.9	21.33	0.00116	0.000018
1.398	18.78	0.1521	0.916	-2.05	606.7	22.43	0.00097	0.000015
1.598	19.43	0.1739	0.948	-1.27	693.4	23.21	0.00068	0.000012
1.798	19.98	0.1957	0.975	-0.62	780.2	23.86	0.00041	0.000009
1.998	20.33	0.2174	0.992	-0.20	867.0	24.28	0.00020	0.000005
2.198	20.49	0.2392	1.000	-0.00	953.8	24.48	0.00007	0.000003
2.398	20.52	0.2609	1.001	0.03	1040.6	24.51	0.00000	0.000001
2.698	20.50	0.2936	1.000	0.10	1171.8	24.48	0.00000	0.000000

RUN: 10372-1 X=90. Z= 0.

UI = 20.16 D1 = 0.4034 BETA= 0.379 RD2 = 2946.
CF/2= 0.00164 D2 = 0.2819 B =-0.389 H = 1.431
F = -0.00064 DC = 0.9467 P+ = 0.002 G = 7.429
K = -0.148E-06 D99 = 2.1203 V0+ =-0.016

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.007	2.69	0.0007	0.134	-21.36	2.9	3.30	0.001538
0.009	3.13	0.0009	0.155	-20.83	3.7	3.83	0.001432
0.011	3.65	0.0011	0.181	-20.20	4.6	4.46	0.001327
0.013	4.14	0.0013	0.205	-19.60	5.4	5.06	0.001222
0.015	4.73	0.0015	0.234	-18.88	6.3	5.78	0.001129
0.019	5.47	0.0018	0.271	-17.96	7.5	6.69	0.001079
0.021	6.13	0.0021	0.304	-17.16	8.8	7.50	0.000976
0.024	6.82	0.0024	0.338	-16.31	10.1	8.34	0.000864
0.028	7.31	0.0028	0.363	-15.70	11.8	8.96	0.000733
0.031	7.80	0.0031	0.387	-15.10	13.1	9.56	0.000590
0.035	8.43	0.0035	0.418	-14.35	14.7	10.30	0.000534
0.040	8.93	0.0040	0.443	-13.74	16.9	10.92	0.000448
0.047	9.46	0.0047	0.469	-13.09	19.8	11.57	0.000353
0.056	9.99	0.0056	0.495	-12.45	23.6	12.21	0.000243
0.067	10.46	0.0067	0.519	-11.86	28.3	12.80	0.000179
0.085	11.14	0.0085	0.552	-11.04	35.9	13.62	0.000164
0.110	11.92	0.0110	0.591	-10.09	46.5	13.84	0.000086
0.145	12.63	0.0146	0.627	-9.25	61.4	14.71	0.000062
0.195	12.96	0.0196	0.643	-8.90	82.6	15.36	0.000046
0.245	13.48	0.0246	0.668	-8.47	112.2	15.99	0.000037
0.365	13.77	0.0367	0.683	-7.93	154.6	16.83	0.000029
0.490	14.43	0.0492	0.716	-7.18	207.6	17.61	0.000025
0.615	14.95	0.0618	0.741	-6.58	260.6	18.23	0.000022
0.765	15.71	0.0769	0.778	-5.66	324.1	19.20	0.000021
0.915	16.26	0.0920	0.806	-4.97	387.7	19.89	0.000019
1.065	16.87	0.1071	0.837	-4.23	451.3	20.63	0.000018
1.215	17.44	0.1221	0.865	-3.59	514.8	21.33	0.000017
1.415	18.11	0.1422	0.898	-2.81	599.6	22.14	0.000015
1.615	18.74	0.1623	0.930	-2.04	684.4	22.92	0.000012
1.865	19.53	0.1875	0.967	-1.21	790.3	23.85	0.000009
2.115	19.96	0.2126	0.990	-0.65	896.3	24.41	0.000006
2.415	20.19	0.2428	1.001	-0.28	1023.4	24.69	0.000002
2.715	20.20	0.2729	1.002	-0.24	1150.6	24.70	-0.000000
3.015	20.16	0.3031	1.000	-0.35	1277.7	24.66	0.000000

RUN: 71571-5 X= 2. Z= 0.

UI = 29.69 D1 = 0.0556 BETA= 0.141 RD2 = 532.
CF/2= 0.00271 D2 = 0.0357 B = 0.000 H = 1.559
F = 0.00000 DC = 1.0674 P+ = 0.0033 G = 6.887
K = -0.460E-06 D99 = 0.3081 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	5.19	0.0040	0.175	-15.85	3.3	3.36	0.002227
0.005	5.55	0.0050	0.187	-15.62	4.1	3.59	0.002119
0.006	6.32	0.0059	0.213	-15.12	4.9	4.09	0.002012
0.007	7.09	0.0068	0.239	-14.62	5.7	4.59	0.001864
0.008	8.79	0.0078	0.296	-13.52	6.4	5.68	0.001917
0.012	10.44	0.0106	0.352	-12.45	8.8	6.75	0.001536
0.018	11.88	0.0125	0.400	-11.52	10.3	7.68	0.001314
0.015	13.01	0.0143	0.438	-10.79	11.9	8.41	0.001099
0.018	14.56	0.0171	0.490	-9.79	14.2	9.42	0.000927
0.021	15.60	0.0200	0.525	-9.12	16.5	10.09	0.000753
0.024	16.38	0.0228	0.552	-8.61	18.9	10.59	0.000625
0.028	17.42	0.0265	0.587	-7.94	22.0	11.27	0.000497
0.033	18.49	0.0312	0.623	-7.25	25.9	11.96	0.000390
0.038	19.25	0.0359	0.649	-6.75	29.7	12.45	0.000313
0.043	19.87	0.0406	0.669	-6.35	33.6	12.85	0.000259
0.048	20.28	0.0452	0.683	-6.08	37.5	13.12	0.000218
0.058	21.12	0.0546	0.711	-5.54	45.3	13.66	0.000177
0.068	21.87	0.0640	0.736	-5.06	53.0	14.14	0.000151
0.083	22.86	0.0780	0.770	-4.42	64.7	14.78	0.000129
0.108	24.07	0.1015	0.811	-3.63	84.1	15.57	0.000105
0.128	24.74	0.1202	0.833	-3.20	99.6	16.00	0.000094
0.138	25.42	0.1296	0.856	-2.76	107.4	16.44	0.000089
0.158	26.12	0.1483	0.880	-2.31	122.9	16.89	0.000081
0.178	26.79	0.1670	0.902	-1.88	138.5	17.33	0.000073
0.198	27.41	0.1858	0.923	-1.48	154.0	17.73	0.000061
0.223	28.06	0.2092	0.945	-1.05	173.4	18.15	0.000051
0.248	28.61	0.2326	0.964	-0.70	192.8	18.51	0.000040
0.273	29.04	0.2560	0.978	-0.42	212.3	18.78	0.000030
0.298	29.33	0.2795	0.988	-0.23	231.7	18.97	0.000021
0.323	29.49	0.3029	0.993	-0.13	251.1	19.07	0.000013
0.348	29.61	0.3263	0.997	-0.05	270.5	19.15	0.000008
0.373	29.66	0.3497	0.999	-0.02	289.9	19.18	0.000004
0.398	29.68	0.3731	1.000	-0.01	309.4	19.20	0.000002
0.423	29.69	0.3966	1.000	0.00	328.8	19.20	-0.000001
0.448	29.69	0.4200	1.000	0.00	348.2	19.20	0.000000

RUN: 71571-5 X=10. Z= 0.

UI = 26.93 D1 = 0.1138 BETA= 0.674 RD2 = 971.
CF/2= 0.00198 D2 = 0.0718 B = 0.000 H = 1.585
F = 0.00000 DC = 2.5573 P+ = 0.0098 G = 8.294
K = -0.867E-06 D99 = 0.5179 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.92	0.0020	0.146	-19.20	3.0	3.27	0.00204	0.001701
0.006	4.26	0.0023	0.158	-18.92	3.6	3.55	0.00205	0.001561
0.007	4.88	0.0027	0.181	-18.40	4.2	4.07	0.00206	0.001420
0.008	5.31	0.0031	0.197	-18.04	4.8	4.43	0.00207	0.001326
0.009	5.82	0.0035	0.216	-17.61	5.4	4.86	0.00208	0.001352
0.010	6.28	0.0039	0.233	-17.23	6.0	5.24	0.00209	0.001316
0.012	7.21	0.0047	0.268	-16.45	7.2	6.02	0.00211	0.001230
0.015	8.46	0.0059	0.314	-15.41	9.0	7.06	0.00213	0.001061
0.019	10.00	0.0074	0.371	-14.13	11.4	8.34	0.00217	0.000853
0.024	11.45	0.0094	0.425	-12.92	14.5	9.55	0.00220	0.000644
0.029	12.63	0.0113	0.469	-11.94	17.5	10.53	0.00223	0.000500
0.035	13.46	0.0137	0.500	-11.24	21.1	11.23	0.00225	0.000376
0.043	14.35	0.0168	0.533	-10.50	25.9	11.97	0.00226	0.000274
0.054	15.27	0.0211	0.567	-9.73	32.5	12.74	0.00230	0.000196
0.069	16.12	0.0270	0.598	-9.02	41.5	13.45	0.00231	0.000148
0.089	16.99	0.0348	0.631	-8.29	53.6	14.17	0.00229	0.000116
0.114	17.86	0.0446	0.663	-7.57	68.6	14.90	0.00224	0.000098
0.139	18.71	0.0544	0.695	-6.86	83.7	15.61	0.00216	0.000089
0.179	19.84	0.0700	0.737	-5.92	107.8	16.55	0.00196	0.000080
0.219	20.96	0.0856	0.778	-4.98	131.9	17.49	0.00173	0.000074
0.259	22.01	0.1013	0.817	-4.10	155.9	18.37	0.00148	0.000070
0.298	23.02	0.1169	0.855	-3.27	180.0	19.20	0.00123	0.000064
0.339	23.92	0.1326	0.888	-2.51	204.1	19.96	0.00101	0.000057
0.389	25.01	0.1521	0.929	-1.60	234.2	20.87	0.00081	0.000047
0.439	25.84	0.1717	0.960	-0.91	264.3	21.56	0.00065	0.000034
0.489	26.49	0.1912	0.984	-0.37	294.4	22.10	0.00052	0.000023
0.539	26.79	0.2108	0.995	-0.12	324.5	22.35	0.00032	0.000013
0.614	26.94	0.2401	1.001	0.01	369.7	22.48	0.00000	0.000003
0.689	26.93	0.2694	1.000	0.00	414.8	22.47	0.00000	0.000000

RUN: 71571-5 X=22. Z= 0.

UI = 24.57 D1 = 0.1936 BETA= 0.686 RD2 = 1528.
CF/2= 0.00169 D2 = 0.1238 B = 0.000 H = 1.563
F = 0.00000 DC = 4.7088 P+ = 0.0870 G = 8.766
K = -0.485E-06 D99 = 0.8628 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.92	0.0011	0.119	-21.43	2.5	2.90	0.00172	0.001507
0.006	3.25	0.0013	0.132	-21.11	3.0	3.22	0.00172	0.001434
0.007	3.47	0.0015	0.141	-20.89	3.6	3.43	0.00173	0.001360
0.008	3.72	0.0017	0.151	-20.64	4.1	3.68	0.00174	0.001168
0.010	4.45	0.0021	0.181	-19.92	5.1	4.40	0.00175	0.001218
0.013	5.75	0.0028	0.234	-18.63	6.6	5.69	0.00176	0.001173
0.017	7.13	0.0036	0.290	-17.27	8.6	7.05	0.00179	0.000982
0.021	8.23	0.0045	0.335	-16.18	10.7	8.15	0.00181	0.000812
0.026	9.27	0.0053	0.377	-15.14	12.7	9.18	0.00182	0.000656
0.030	10.09	0.0064	0.411	-14.34	15.2	9.99	0.00185	0.000509
0.036	11.03	0.0076	0.449	-13.40	18.3	10.92	0.00187	0.000393
0.043	11.65	0.0091	0.474	-12.79	21.8	11.54	0.00190	0.000293
0.053	12.31	0.0113	0.501	-12.14	26.9	12.18	0.00193	0.000215
0.068	13.24	0.0144	0.539	-11.22	34.5	13.10	0.00197	0.000149
0.088	13.86	0.0187	0.564	-10.61	44.7	13.72	0.00202	0.000110
0.113	14.57	0.0240	0.593	-9.90	57.3	14.43	0.00208	0.000084
0.138	15.15	0.0293	0.617	-9.33	70.0	15.00	0.00212	0.000070
0.178	15.85	0.0378	0.645	-8.64	90.3	15.69	0.00215	0.000061
0.223	16.55	0.0474	0.673	-7.94	113.2	16.38	0.00216	0.000056
0.275	17.37	0.0580	0.707	-7.13	138.5	17.20	0.00213	0.000053
0.323	18.13	0.0686	0.738	-6.37	163.9	17.95	0.00205	0.000052
0.373	18.91	0.0792	0.770	-5.61	189.3	18.72	0.00194	0.000050
0.423	19.64	0.0898	0.799	-4.89	214.6	19.44	0.00178	0.000048
0.473	20.38	0.1005	0.829	-4.15	240.0	20.17	0.00160	0.000046
0.548	21.38	0.1164	0.870	-3.16	278.1	21.16	0.00132	0.000041
0.623	22.33	0.1323	0.909	-2.22	316.1	22.11	0.00107	0.000035
0.698	23.21	0.1482	0.945	-1.35	354.2	22.98	0.00068	0.000028
0.798	24.04	0.1695	0.978	-0.52	404.9	23.80	0.00065	0.000018
0.898	24.68	0.1907	0.996	-0.09	455.6	24.23	0.00042	0.000010
0.998	24.59	0.2119	1.001	0.02	506.4	24.34	0.00018	0.000003
1.098	24.60	0.2332	1.001	0.03	557.1	24.35	0.00000	-0.000002
1.198	24.57	0.2544	1.000	0.00	607.9	24.33	0.00000	0.000000

RUN: 71571-5 X=34. Z= 0.

UI = 23.26 D1 = 0.2616 BETA= 0.696 RD2 = 1986.
CF/2= 0.00153 D2 = 0.1700 B = 0.000 H = 1.539
F = 0.00000 DC = 6.6924 P+ = 0.0058 G = 8.960
K = -0.348E-06 D99 = 1.1752 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	2.76	0.0008	0.118	-22.55	2.6	3.03	0.00155	0.001414
0.007	2.94	0.0010	0.126	-22.35	3.0	3.23	0.00156	0.001322
0.008	3.24	0.0011	0.139	-22.02	3.5	3.56	0.00156	0.001231
0.009	3.59	0.0013	0.154	-21.64	3.9	3.94	0.00156	0.001105
0.011	4.09	0.0016	0.176	-21.08	4.8	4.50	0.00157	0.001141
0.014	4.92	0.0020	0.212	-20.17	6.2	5.41	0.00158	0.001098
0.018	6.23	0.0026	0.268	-18.73	8.0	6.86	0.00160	0.000964
0.023	7.67	0.0034	0.330	-17.15	10.3	8.44	0.00161	0.000786
0.028	8.60	0.0041	0.370	-16.13	12.6	9.46	0.00163	0.000620
0.033	9.34	0.0049	0.402	-15.31	14.9	10.27	0.00164	0.000488
0.040	10.23	0.0059	0.440	-14.34	18.1	11.25	0.00166	0.000359
0.050	10.99	0.0074	0.473	-13.49	22.7	12.09	0.00169	0.000254
0.065	11.73	0.0097	0.504	-12.68	29.5	12.90	0.00173	0.000168
0.090	12.60	0.0134	0.542	-11.73	40.9	13.86	0.00178	0.000107
0.120	13.29	0.0179	0.571	-10.97	54.6	14.62	0.00184	0.000079
0.160	13.90	0.0238	0.597	-10.30	72.9	15.28	0.00191	0.000060
0.208	14.61	0.0298	0.628	-9.52	91.2	16.06	0.00197	0.000052
0.240	15.12	0.0358	0.650	-8.95	109.4	16.63	0.00202	0.000046
0.298	15.59	0.0433	0.670	-8.44	132.3	17.15	0.00205	0.000043
0.365	16.51	0.0545	0.710	-7.42	166.5	18.16	0.00207	0.000039
0.440	17.13	0.0657	0.736	-6.75	200.8	18.84	0.00202	0.000038
0.515	17.91	0.0769	0.770	-5.89	235.1	19.69	0.00195	0.000037
0.590	18.74	0.0881	0.805	-4.98	269.3	20.61	0.00185	0.000036
0.690	19.66	0.1030	0.845	-3.97	315.0	21.62	0.00161	0.000034
0.790	20.59	0.1180	0.885	-2.94	360.7	22.64	0.00133	0.000031
0.890	21.44	0.1329	0.922	-2.01	406.3	23.58	0.00103	0.000026
0.990	22.20	0.1479	0.956	-1.17	452.0	24.41	0.00078	0.000021
1.090	22.74	0.1628	0.977	-0.58	497.7	25.00	0.00056	0.000014
1.190	23.08	0.1778	0.992	-0.20	543.4	25.38	0.00037	0.000009
1.290	23.22	0.1927	0.998	-0.05	589.1	25.53	0.00019	0.000005
1.390	23.26	0.2076	1.000	0.00	634.7	25.58	0.00007	0.000001
1.490	23.27	0.2226	1.000	0.01	680.4	25.59	0.00000	-0.000002
1.590	23.26	0.2375	1.000	0.00	726.1	25.58	0.00000	0.000000

RUN: 71571-5 X=46. Z= 0.

UI = 22.27 D1 = 0.3356 BETA= 0.708 RD2 = 2434.
CF/2= 0.00145 D2 = 0.2176 B = 0.000 H = 1.542
F = 0.00000 DC = 8.8058 P+ = 0.0050 G = 9.225
K = -0.274E-06 D99 = 1.5029 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.010	2.85	0.0011	0.128	-22.89	4.3	3.35	0.00148	0.001079
0.013	3.48	0.0015	0.156	-22.14	5.5	4.10	0.00149	0.001044
0.017	4.46	0.0019	0.200	-20.98	7.2	5.26	0.00150	0.000999
0.021	5.75	0.0024	0.258	-19.47	9.0	6.77	0.00151	0.000897
0.026	6.86	0.0030	0.308	-18.16	11.1	8.09	0.00153	0.000759
0.032	7.93	0.0036	0.356	-16.90	13.6	9.34	0.00154	0.000588
0.038	8.78	0.0044	0.394	-15.90	16.6	10.35	0.00156	0.000436
0.049	9.84	0.0056	0.442	-14.65	20.9	11.59	0.00158	0.000307
0.061	10.36	0.0069	0.464	-14.06	26.0	12.18	0.00160	0.000214
0.081	11.31	0.0092	0.508	-12.92	34.5	13.32	0.00164	0.000138
0.114	12.06	0.0126	0.541	-12.06	47.3	14.18	0.00170	0.000089
0.141	12.51	0.0160	0.562	-11.51	60.1	14.74	0.00175	0.000068
0.191	13.18	0.0217	0.592	-10.71	81.4	15.53	0.00182	0.000051
0.291	14.22	0.0330	0.639	-9.49	124.1	16.76	0.00192	0.000040
0.366	14.75	0.0416	0.662	-8.86	156.0	17.38	0.00196	0.000037
0.441	15.55	0.0501	0.698	-7.92	188.0	18.32	0.00199	0.000034
0.541	16.35	0.0614	0.734	-6.98	230.6	19.26	0.00198	0.000032
0.642	17.07	0.0728	0.767	-6.13	273.3	20.12	0.00192	0.000031
0.741	17.81	0.0841	0.800	-5.25	315.9	20.98	0.00181	0.000029
0.841	18.47	0.0955	0.830	-4.47	358.5	21.77	0.00165	0.000028
0.941	19.27	0.1069	0.865	-3.53	401.2	22.71	0.00148	0.000026
1.091	20.18	0.1239	0.906	-2.46	465.1	23.78	0.00114	0.000023
1.241	21.06	0.1409	0.946	-1.43	529.1	24.81	0.00082	0.000017
1.392	21.79	0.1580	0.978	-0.57	593.0	25.68	0.00057	0.000012
1.541	22.14	0.1750	0.994	-0.16	657.0	26.08	0.00033	0.000007
1.691	22.28	0.1920	1.000	0.01	720.9	26.25	0.00016	0.000003
1.891	22.29	0.2167	1.001	0.02	806.2	26.26	0.00000	-0.000001
2.091	22.27	0.2375	1.000	0.00	891.4	26.24	0.00000	0.000000

RUN: 71571-5 X=58. Z= 0.

UI = 21.36 D1 = 0.3934 BETA= 0.685 RD2 = 2781.
CF/2= 0.00140 D2 = 0.2592 B = 0.000 H = 1.518
F = 0.00000 DC =10.4960 P+ = 0.0043 G = 9.101
K = -0.228E-06 D99 = 1.7870 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.009	2.85	0.0009	0.133	-23.13	3.6	3.55	0.00142	0.001210
0.012	3.60	0.0011	0.169	-22.18	4.8	4.50	0.00143	0.001134
0.016	4.40	0.0015	0.206	-21.19	6.4	5.49	0.00144	0.001032
0.021	5.65	0.0020	0.265	-19.62	8.4	7.06	0.00145	0.000862
0.026	6.74	0.0025	0.315	-18.27	10.5	8.42	0.00146	0.000725
0.031	7.40	0.0030	0.347	-17.43	12.5	9.25	0.00147	0.000596
0.037	8.22	0.0035	0.385	-16.41	14.9	10.27	0.00148	0.000468
0.045	9.03	0.0043	0.423	-15.41	18.1	11.28	0.00150	0.000351
0.052	9.41	0.0050	0.441	-14.93	20.9	11.75	0.00151	0.000286
0.067	10.23	0.0064	0.479	-13.91	26.9	12.78	0.00154	0.000187
0.087	10.98	0.0083	0.514	-12.97	35.0	13.71	0.00157	0.000123
0.117	11.55	0.0111	0.541	-12.25	47.1	14.43	0.00161	0.000079
0.157	12.06	0.0150	0.565	-11.62	63.1	15.07	0.00167	0.000055
0.197	12.49	0.0188	0.585	-11.09	79.2	15.60	0.00171	0.000044
0.247	12.90	0.0235	0.604	-10.57	99.3	16.11	0.00175	0.000039
0.322	13.52	0.0307	0.633	-9.79	129.5	16.89	0.00182	0.000034
0.397	14.04	0.0378	0.657	-9.15	159.7	17.53	0.00188	0.000032
0.497	14.72	0.0474	0.689	-8.29	199.9	18.39	0.00193	0.000030
0.597	15.38	0.0569	0.720	-7.46	240.1	19.22	0.00195	0.000029
0.697	15.99	0.0664	0.748	-6.71	280.3	19.97	0.00192	0.000028
0.797	16.63	0.0759	0.778	-5.91	320.5	20.77	0.00188	0.000027
0.947	17.58	0.0902	0.823	-4.72	380.8	21.96	0.00176	0.000025
1.097	18.35	0.1045	0.859	-3.76	441.2	22.92	0.00155	0.000023
1.247	19.17	0.1188	0.897	-2.74	501.5	23.94	0.00130	0.000020
1.397	19.82	0.1331	0.928	-1.93	561.8	24.75	0.00098	0.000016
1.597	20.64	0.1522	0.967	-0.89	642.2	25.79	0.00062	0.000012
1.797	21.17	0.1712	0.991	-0.23	722.7	26.45	0.00034	0.000007
1.997	21.36	0.1903	1.000	-0.01	803.1	26.68	0.00013	0.000003
2.197	21.38	0.2093	1.001	0.02	883.5	26.71	0.00000	0.000000
2.397	21.36	0.2284	1.000	0.00	964.0	26.68	0.00000	0.000000

RUN: 71571-5 X=70. Z= 0.

UI = 20.74 D1 = 8.4610 BETA= 0.693 RD2 = 3177.
CF/2= 0.00136 D2 = 0.3049 B = 0.000 H = 1.512
F = 0.00000 DC =12.5079 P+ = 0.0039 G = 9.191
K = -0.196E-06 D99 = 2.1211 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.010	2.76	0.0006	0.133	-23.52	3.8	3.61	0.00138	0.001178
0.013	3.57	0.0010	0.172	-22.46	5.0	4.67	0.00139	0.001092
0.017	4.48	0.0014	0.216	-21.27	6.5	5.86	0.00139	0.000979
0.021	5.34	0.0017	0.258	-20.14	8.1	6.99	0.00140	0.000843
0.025	5.92	0.0020	0.285	-19.39	9.6	7.74	0.00141	0.000725
0.030	6.69	0.0024	0.322	-18.39	11.5	8.74	0.00142	0.000602
0.037	7.68	0.0030	0.370	-17.09	14.2	10.04	0.00143	0.000472
0.045	8.33	0.0036	0.402	-16.23	17.3	10.90	0.00144	0.000365
0.055	8.96	0.0044	0.432	-15.41	21.1	11.72	0.00146	0.000269
0.070	9.76	0.0056	0.470	-14.37	26.9	12.76	0.00148	0.000180
0.090	10.29	0.0072	0.496	-13.67	34.6	13.46	0.00151	0.000118
0.120	10.98	0.0096	0.529	-12.77	46.1	14.36	0.00154	0.000077
0.160	11.43	0.0128	0.551	-12.18	61.5	14.95	0.00159	0.000055
0.200	11.55	0.0160	0.557	-12.03	76.8	15.10	0.00163	0.000047
0.250	12.24	0.0200	0.590	-11.13	96.0	16.00	0.00169	0.000040
0.300	12.68	0.0240	0.611	-10.55	115.2	16.58	0.00174	0.000036
0.375	13.21	0.0300	0.637	-9.86	144.0	17.27	0.00180	0.000032
0.450	13.62	0.0360	0.657	-9.31	172.8	17.82	0.00185	0.000028
0.550	14.22	0.0440	0.686	-8.53	211.3	18.60	0.00191	0.000026
0.650	14.64	0.0520	0.706	-7.98	249.7	19.15	0.00192	0.000025
0.750	15.20	0.0600	0.733	-7.25	288.1	19.88	0.00193	0.000024
0.900	16.02	0.0720	0.772	-6.18	345.7	20.95	0.00188	0.000023
1.050	16.70	0.0839	0.805	-5.29	403.3	21.84	0.00176	0.000022
1.200	17.39	0.0959	0.838	-4.39	460.9	22.74	0.00160	0.000021
1.400	18.28	0.1119	0.881	-3.22	537.7	23.91	0.00132	0.000019
1.600	19.14	0.1279	0.923	-2.09	614.5	25.04	0.00100	0.000016
1.800	19.85	0.1439	0.957	-1.17	691.4	25.96	0.00064	0.000012
2.000	20.35	0.1599	0.981	-0.52	768.2	26.61	0.00033	0.000008
2.200	20.66	0.1759	0.996	-0.11	845.0	27.02	0.00014	0.000005
2.458	20.74	0.1959	1.000	0.00	941.0	27.13	0.00000	0.000001

RUN: 71571-5 X=82. Z= 0.

UI = 20.35 D1 = 6.5108 BETA= 0.685 RD2 = 3495.
CF/2= 0.00133 D2 = 0.3419 B = 0.000 H = 1.494
F = 0.00000 DC =14.0251 P+ = 0.0036 G = 9.080
K = -0.174E-06 D99 = 2.4043 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.010	2.78	0.0007	0.137	-23.70	3.7	3.75	0.00135	0.001199
0.013	3.40	0.0009	0.167	-22.86	4.8	4.59	0.00135	0.001129
0.017	4.36	0.0012	0.214	-21.57	6.3	5.89	0.00136	0.001036
0.021	5.20	0.0015	0.256	-20.44	7.8	7.02	0.00137	0.000882
0.025	5.95	0.0018	0.292	-19.43	9.3	8.03	0.00137	0.000758
0.030	6.74	0.0021	0.331	-18.35	11.2	9.10	0.00138	0.000624
0.036	7.39	0.0026	0.363	-17.48	13.4	9.97	0.00139	0.000494
0.043	8.04	0.0031	0.395	-16.60	16.0	10.85	0.00140	0.000384
0.053	8.75	0.0038	0.430	-15.65	19.7	11.81	0.00141	0.000281
0.068	9.44	0.0048	0.464	-14.72	25.3	12.73	0.00143	0.000194
0.093	10.24	0.0066	0.503	-13.63	34.6	13.82	0.00146	0.000119
0.143	11.04	0.0102	0.543	-12.55	53.2	14.90	0.00152	0.000066
0.193	11.48	0.0138	0.564	-11.96	71.9	15.50	0.00158	0.000047
0.268	12.08	0.0191	0.594	-11.15	99.8	16.30	0.00166	0.000035
0.343	12.62	0.0245	0.620	-10.43	127.7	17.03	0.00172	0.000030
0.443	13.09	0.0316	0.643	-9.80	164.9	17.66	0.00178	0.000027
0.543	13.66	0.0387	0.672	-9.02	202.2	18.44	0.00183	0.000025
0.693	14.32	0.0496	0.704	-8.14	258.0	19.32	0.00189	0.000023
0.843	14.99	0.0601	0.737	-7.22	313.8	20.23	0.00191	0.000022
0.993	15.71	0.0708	0.772	-6.25	369.7	21.20	0.00189	0.000021
1.143	16.31	0.0815	0.802	-5.44	425.5	22.01	0.00181	0.000020
1.293	16.86	0.0922	0.829	-4.70	481.4	22.75	0.00168	0.000019
1.493	17.68	0.1065	0.869	-3.61	555.8	23.85	0.00146	0.000017
1.693	18.35	0.1207	0.902	-2.69	630.3	24.76	0.00117	0.000015
1.893	19.02	0.1350	0.935	-1.79	704.7	25.67	0.00087	0.000012
2.193	19.85	0.1564	0.976	-0.67	816.4	26.79	0.00045	0.000008
2.493	20.27	0.1778	0.996	-0.11	928.1	27.35	0.00014	0.000004
2.793	20.37	0.1991	1.001	0.03	1039.8	27.48	0.00000	0.000002
3.193	20.35	0.2277	1.000	0.00	1188.7	27.46	0.00000	0.000000

RUN: 71571-5 X=90. Z= 0.

UI = 20.05 D1 = 8.5449 BETA= 0.712 RD2 = 3681.
CF/2= 0.00131 D2 = 0.3656 B = 0.000 H = 1.491
F = 0.00000 DC =15.0589 P+ = 0.0036 G = 9.094
K = -0.170E-06 D99 = 2.5701 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.009	2.58	0.0006	0.129	-24.08	3.2	3.55	0.001270
0.010	2.80	0.0007	0.140	-23.77	3.6	3.86	0.001231
0.012	3.12	0.0007	0.156	-23.34	3.9	4.30	0.001191
0.013	3.44	0.0008	0.172	-22.89	4.7	4.74	0.001114
0.016	4.22	0.0010	0.210	-21.82	5.8	5.81	0.000987
0.020	4.90	0.0013	0.244	-20.89	7.2	6.75	0.000838
0.025	5.69	0.0016	0.284	-19.79	9.0	7.84	0.000704
0.031	6.55	0.0020	0.327	-18.60	11.2	9.04	0.000571
0.037	7.12	0.0024	0.355	-17.82	13.4	9.82	0.000474
0.047	8.02	0.0031	0.400	-16.58	17.1	11.05	0.000352
0.062	9.01	0.0041	0.449	-15.22	22.5	12.42	0.000234
0.082	9.69	0.0054	0.483	-14.28	29.8	13.35	0.000153
0.107	10.30	0.0071	0.514	-13.44	38.9	14.19	0.000100
0.149	10.81	0.0097	0.539	-12.73	53.5	14.90	0.000062
0.207	11.35	0.0137	0.566	-11.98	75.4	15.65	0.000043
0.282	11.91	0.0187	0.594	-11.21	102.7	16.42	0.000034
0.357	12.33	0.0237	0.615	-10.64	130.0	17.00	0.000030
0.457	12.86	0.0303	0.642	-9.91	166.5	17.73	0.000026
0.607	13.59	0.0403	0.678	-8.90	221.1	18.74	0.000023
0.757	14.27	0.0503	0.712	-7.96	275.8	19.67	0.000021
0.908	14.78	0.0602	0.737	-7.26	330.4	20.37	0.000020
1.057	15.53	0.0702	0.775	-6.23	385.1	21.41	0.000019
1.207	15.88	0.0801	0.792	-5.74	439.7	21.89	0.000018
1.407	16.76	0.0934	0.835	-4.56	512.6	23.07	0.000018
1.607	17.40	0.1067	0.868	-3.65	585.5	23.99	0.000016
1.907	18.39	0.1266	0.917	-2.28	694.8	25.35	0.000013
2.207	19.25	0.1465	0.960	-1.10	804.1	26.54	0.000009
2.507	19.79	0.1665	0.987	-0.35	913.5	27.28	0.000006
2.807	20.05	0.1864	1.000	0.00	1022.8	27.63	0.000003
3.207	20.07	0.2130	1.001	0.04	1168.5	27.67	0.000000
3.507	20.06	0.2329	1.000	0.01	1277.9	27.65	-0.000001
3.807	20.05	0.2528	1.000	0.00	1387.2	27.63	0.000000

RUN: 111571-1 X= 2. Z= 0.

UI = 29.39 D1 = 0.0592 BETA= 0.160 RD2 = 563.
CF/2= 0.00249 D2 = 0.0371 B = 0.367 H = 1.586
F = 0.00099 DC = 1.1647 P+ = 0.0036 G = 7.476
K = -0.444E-06 D99 = 0.3127 VO+ = 0.0198

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	4.76	0.0036	0.162	-16.78	3.3	3.24	0.001928
0.005	4.89	0.0045	0.166	-16.69	4.0	3.39	0.001857
0.007	6.34	0.0062	0.216	-15.70	5.5	4.32	0.001715
0.009	7.88	0.0078	0.268	-14.65	7.1	5.37	0.001551
0.011	9.40	0.0095	0.320	-13.62	8.6	6.40	0.001479
0.013	10.76	0.0112	0.366	-12.69	10.1	7.33	0.001324
0.015	11.92	0.0129	0.405	-11.90	11.6	8.12	0.001149
0.017	12.89	0.0146	0.439	-11.24	13.1	8.78	0.000989
0.019	13.71	0.0163	0.467	-10.68	14.6	9.34	0.000861
0.022	14.76	0.0188	0.502	-9.97	16.9	10.05	0.000719
0.025	15.66	0.0214	0.533	-9.35	19.2	10.67	0.000609
0.028	16.32	0.0239	0.555	-8.90	21.5	11.12	0.000520
0.032	17.34	0.0273	0.590	-8.21	24.5	11.81	0.000425
0.036	17.98	0.0306	0.612	-7.77	27.5	12.25	0.000332
0.040	18.53	0.0340	0.630	-7.40	30.6	12.62	0.000302
0.045	19.10	0.0382	0.650	-7.01	34.4	13.01	0.000248
0.051	19.68	0.0433	0.670	-6.61	38.9	13.41	0.000214
0.057	20.29	0.0484	0.690	-6.20	43.5	13.82	0.000188
0.064	20.79	0.0543	0.708	-5.86	48.8	14.16	0.000167
0.072	21.36	0.0610	0.727	-5.47	54.9	14.55	0.000151
0.080	21.82	0.0678	0.743	-5.16	60.9	14.86	0.000139
0.090	22.42	0.0762	0.763	-4.75	68.5	15.27	0.000128
0.102	23.11	0.0863	0.786	-4.28	77.6	15.74	0.000118
0.115	23.80	0.0973	0.810	-3.81	87.5	16.21	0.000109
0.130	24.42	0.1100	0.831	-3.38	98.9	16.64	0.000099
0.145	25.11	0.1226	0.854	-2.92	110.3	17.10	0.000090
0.165	25.87	0.1395	0.880	-2.40	125.4	17.62	0.000080
0.185	26.56	0.1564	0.904	-1.93	140.6	18.09	0.000071
0.210	27.31	0.1775	0.929	-1.42	159.6	18.63	0.000059
0.235	27.93	0.1986	0.950	-1.00	178.6	19.02	0.000047
0.260	28.47	0.2197	0.969	-0.63	197.5	19.39	0.000036
0.290	28.92	0.2450	0.984	-0.32	220.3	19.70	0.000025
0.320	29.16	0.2704	0.992	-0.16	243.1	19.86	0.000017
0.360	29.34	0.3041	0.998	-0.03	273.4	19.99	0.000008
0.410	29.39	0.3463	1.000	-0.00	311.4	20.02	0.000003
0.460	29.39	0.3885	1.000	-0.00	349.3	20.02	-0.000001
0.535	29.39	0.4518	1.000	0.00	406.2	20.02	0.000000

RUN: 111571-1 X=10. Z= 0.

UI = 26.52 D1 = 0.1317 BETA= 0.855 RD2 = 1100.
CF/2= 0.00176 D2 = 0.0803 B = 0.923 H = 1.641
F = 0.00092 DC = 3.1392 P+ = 0.0114 G = 5.310
K = -0.843E-06 D99 = 0.5445 V0+ = 0.0219

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.40	0.0016	0.128	-20.78	2.9	3.06	0.00196	0.001491
0.007	4.02	0.0022	0.152	-20.22	4.0	3.61	0.00201	0.001381
0.009	4.69	0.0029	0.178	-19.35	5.2	4.49	0.00206	0.001271
0.011	5.85	0.0035	0.221	-18.57	6.3	5.26	0.00211	0.001170
0.013	6.70	0.0041	0.253	-17.81	7.5	6.02	0.00216	0.001066
0.016	7.91	0.0051	0.298	-16.72	9.2	7.11	0.00224	0.000948
0.019	8.95	0.0061	0.338	-15.79	10.9	8.05	0.00229	0.000821
0.022	9.66	0.0070	0.364	-15.15	12.7	8.69	0.00234	0.000689
0.025	10.50	0.0080	0.396	-14.40	14.4	9.44	0.00238	0.000562
0.028	11.11	0.0089	0.419	-13.85	16.1	9.99	0.00242	0.000477
0.032	11.69	0.0102	0.441	-13.33	18.4	10.51	0.00245	0.000352
0.037	12.15	0.0118	0.458	-12.92	21.3	10.93	0.00250	0.000309
0.043	12.88	0.0137	0.486	-12.26	24.7	11.58	0.00253	0.000252
0.050	13.44	0.0159	0.507	-11.76	28.8	12.08	0.00257	0.000209
0.058	14.04	0.0185	0.529	-11.22	33.4	12.62	0.00259	0.000178
0.070	14.67	0.0223	0.553	-10.65	40.3	13.19	0.00260	0.000141
0.083	15.20	0.0264	0.573	-10.18	47.7	13.66	0.00261	0.000121
0.098	15.86	0.0312	0.598	-9.58	56.4	14.26	0.00258	0.000104
0.118	16.55	0.0376	0.624	-8.96	67.9	14.87	0.00249	0.000086
0.148	17.48	0.0471	0.659	-8.13	85.1	15.71	0.00238	0.000087
0.178	18.40	0.0567	0.694	-7.30	102.4	16.54	0.00222	0.000082
0.208	19.23	0.0663	0.725	-6.55	119.6	17.29	0.00205	0.000083
0.238	20.07	0.0758	0.757	-5.80	136.9	18.04	0.00189	0.000077
0.268	20.89	0.0854	0.788	-5.06	154.1	18.77	0.00171	0.000074
0.303	21.87	0.0965	0.825	-4.18	174.3	19.66	0.00153	0.000071
0.338	22.72	0.1077	0.857	-3.42	194.4	20.42	0.00140	0.000065
0.378	23.70	0.1204	0.894	-2.53	217.4	21.30	0.00129	0.000058
0.418	24.54	0.1332	0.926	-1.78	240.4	22.06	0.00120	0.000048
0.458	25.26	0.1459	0.953	-1.13	263.4	22.71	0.00109	0.000039
0.498	25.81	0.1586	0.973	-0.64	286.4	23.21	0.00095	0.000029
0.548	26.29	0.1746	0.991	-0.21	315.2	23.63	0.00070	0.000018
0.598	26.46	0.1905	0.998	-0.06	343.9	23.78	0.00031	0.000008
0.673	26.51	0.2144	1.000	-0.00	387.1	23.83	0.00000	-0.000001
0.748	26.52	0.2383	1.000	0.00	430.2	23.84	0.00000	0.000000

RUN: 111571-1 X=22. Z= 0.

UI = 24.26 D1 = 0.2321 BETA= 0.549 RD2 = 1795.
CF/2= 0.00144 D2 = 0.1424 B = 0.963 H = 1.430
F = 0.00081 DC = 6.1156 P+ = 0.0056 G = 10.187
K = -0.469E-06 D99 = 0.9279 V0+ = 0.0213

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	2.57	0.0008	0.106	-23.56	2.4	2.79	0.00156	0.001304
0.006	2.76	0.0010	0.114	-23.36	2.9	2.99	0.00159	0.001250
0.008	3.24	0.0013	0.134	-22.83	3.8	3.52	0.00162	0.001141
0.010	3.91	0.0016	0.161	-22.10	4.8	4.25	0.00165	0.001047
0.012	4.55	0.0020	0.187	-21.41	5.7	4.96	0.00169	0.000966
0.014	5.35	0.0023	0.221	-20.54	6.7	5.81	0.00173	0.000901
0.017	6.14	0.0028	0.253	-19.68	8.1	6.67	0.00178	0.000858
0.020	7.03	0.0033	0.290	-18.71	9.5	7.64	0.00181	0.000796
0.023	7.58	0.0038	0.312	-18.17	10.9	8.23	0.00185	0.000744
0.026	8.31	0.0043	0.343	-17.33	12.4	9.02	0.00187	0.000594
0.029	8.60	0.0047	0.355	-17.01	13.8	9.34	0.00192	0.000568
0.034	9.35	0.0056	0.385	-16.20	16.2	10.15	0.00197	0.000476
0.040	10.19	0.0065	0.420	-15.28	19.0	11.07	0.00201	0.000411
0.048	10.69	0.0078	0.441	-14.74	22.8	11.62	0.00208	0.000342
0.060	11.39	0.0098	0.469	-13.99	28.6	12.36	0.00213	0.000268
0.073	11.92	0.0119	0.491	-13.40	34.7	12.93	0.00220	0.000223
0.088	12.53	0.0144	0.517	-12.74	41.9	13.61	0.00225	0.000192
0.108	12.94	0.0177	0.534	-12.29	51.4	14.05	0.00232	0.000182
0.133	13.42	0.0217	0.553	-11.77	63.3	14.58	0.00239	0.000170
0.168	14.21	0.0275	0.586	-10.92	79.9	15.44	0.00243	0.000161
0.203	14.71	0.0332	0.606	-10.37	96.6	15.98	0.00245	0.000153
0.238	15.37	0.0389	0.634	-9.66	113.3	16.70	0.00244	0.000144
0.278	15.95	0.0455	0.658	-9.02	132.3	17.33	0.00239	0.000133
0.328	16.81	0.0536	0.693	-8.10	156.1	18.25	0.00227	0.000121
0.378	17.53	0.0618	0.722	-7.32	179.9	19.04	0.00212	0.000110
0.428	18.24	0.0700	0.752	-6.54	203.7	19.81	0.00193	0.000098
0.483	19.07	0.0790	0.786	-5.64	229.9	20.72	0.00169	0.000088
0.543	19.92	0.0888	0.821	-4.72	258.4	21.63	0.00146	0.000078
0.608	20.88	0.0994	0.861	-3.67	289.3	22.68	0.00122	0.000066
0.683	21.86	0.1117	0.901	-2.61	325.0	23.74	0.00104	0.000058
0.758	22.77	0.1239	0.938	-1.62	360.7	24.73	0.00057	0.000030
0.833	23.49	0.1362	0.968	-0.84	396.4	25.51	0.00066	0.000032
0.908	23.97	0.1485	0.986	-0.32	432.1	26.04	0.00032	0.000015
1.008	24.23	0.1648	0.999	-0.03	479.7	26.32	0.00000	0.000001
1.108	24.29	0.1812	1.001	0.03	527.3	26.38	0.00000	0.000000
1.233	24.26	0.2016	1.000	0.00	586.8	26.35	0.00000	0.000000

RUN: 111571-1 X=34. Z= 0.

UI = 22.90 D1 = 0.3168 BETA= 1.066 RD2 = 2344.
CF/2= 0.00118 D2 = 0.1980 B = 0.949 H = 1.430
F = 0.00076 DC = 9.2158 P+ = 0.0083 G = 10.911
K = -0.336E-06 D99 = 1.3042 V0+ = 0.0221

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.007	2.53	0.0007	0.111	-25.87	2.7	3.22	0.00129	0.001179
0.009	2.93	0.0009	0.128	-25.36	3.5	3.72	0.00131	0.001114
0.011	3.40	0.0012	0.149	-24.76	4.3	4.32	0.00133	0.001054
0.013	4.05	0.0014	0.177	-23.94	5.1	5.15	0.00136	0.001042
0.015	4.65	0.0016	0.203	-23.18	5.9	5.91	0.00139	0.001030
0.017	5.16	0.0018	0.225	-22.54	6.8	6.55	0.00141	0.000960
0.020	6.00	0.0021	0.262	-21.66	8.0	7.63	0.00145	0.000914
0.023	6.70	0.0025	0.293	-20.97	9.2	8.52	0.00149	0.000796
0.027	7.15	0.0029	0.312	-20.01	10.8	9.09	0.00151	0.000715
0.031	7.88	0.0033	0.344	-19.08	12.5	10.01	0.00155	0.000648
0.038	8.72	0.0041	0.381	-18.01	15.3	11.08	0.00160	0.000562
0.046	9.30	0.0049	0.406	-17.28	18.6	11.81	0.00164	0.000491
0.056	9.92	0.0060	0.433	-16.49	22.6	12.59	0.00169	0.000405
0.071	10.60	0.0077	0.463	-15.63	28.7	13.46	0.00175	0.000347
0.096	11.60	0.0104	0.507	-14.35	38.9	14.74	0.00185	0.000300
0.126	12.01	0.0136	0.525	-13.83	51.1	15.26	0.00192	0.000273
0.166	12.68	0.0180	0.554	-12.98	67.4	16.11	0.00202	0.000255
0.216	13.35	0.0234	0.583	-12.14	87.8	16.95	0.00211	0.000247
0.266	13.91	0.0288	0.607	-11.42	108.1	17.67	0.00219	0.000244
0.321	14.48	0.0348	0.632	-10.70	130.5	18.36	0.00224	0.000241
0.386	15.23	0.0418	0.665	-9.75	156.9	19.34	0.00228	0.000240
0.446	15.89	0.0484	0.694	-8.99	181.4	20.19	0.00230	0.000239
0.506	16.38	0.0549	0.715	-8.28	205.8	20.81	0.00226	0.000238
0.566	17.11	0.0614	0.747	-7.36	230.2	21.75	0.00222	0.000237
0.631	17.69	0.0684	0.772	-6.62	256.7	22.47	0.00211	0.000234
0.696	18.35	0.0755	0.801	-5.78	283.1	23.30	0.00198	0.000235
0.771	19.02	0.0836	0.830	-4.94	313.6	24.15	0.00176	0.000234
0.846	19.71	0.0918	0.861	-4.05	344.2	25.04	0.00154	0.000232
0.946	20.59	0.1026	0.899	-2.94	384.9	26.15	0.00123	0.000229
1.046	21.42	0.1135	0.935	-1.88	425.6	27.20	0.00096	0.000224
1.146	22.06	0.1243	0.963	-1.07	466.3	28.01	0.00071	0.000218
1.246	22.54	0.1352	0.984	-0.47	507.0	28.63	0.00050	0.000212
1.371	22.81	0.1487	0.996	-0.12	557.9	28.97	0.00022	0.000206
1.496	22.91	0.1623	1.000	0.01	608.7	29.09	0.00000	0.000201
1.646	22.90	0.1786	1.000	0.00	669.8	29.09	0.00000	0.000200

RUN: 111571-1 X=46. Z= 0.

UI = 21.98 D1 = 0.4100 BETA= 1.122 RD2 = 2510.
CF/2= 0.00112 D2 = 0.2561 B = 1.043 H = 1.401
F = 0.00072 DC = 12.2529 P+ = 0.0071 G = 11.920
K = -0.265E-06 D99 = 1.6937 V0+ = 0.0215

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.010	2.67	0.0008	0.121	-26.25	3.8	4.63	0.00124	0.001000
0.012	3.11	0.0010	0.142	-25.65	4.6	4.23	0.00126	0.000962
0.014	3.48	0.0011	0.158	-25.15	5.3	4.73	0.00127	0.000926
0.016	4.11	0.0013	0.187	-24.30	6.1	5.58	0.00130	0.000929
0.018	4.56	0.0015	0.207	-23.68	6.8	6.20	0.00132	0.000877
0.020	5.00	0.0016	0.227	-23.09	7.6	6.80	0.00134	0.000893
0.023	5.63	0.0019	0.256	-22.23	8.7	7.65	0.00137	0.000713
0.027	6.17	0.0022	0.281	-21.49	10.3	8.33	0.00140	0.000663
0.033	7.04	0.0027	0.320	-20.32	12.5	9.57	0.00144	0.000643
0.041	7.99	0.0033	0.364	-19.02	15.5	10.97	0.00149	0.000764
0.051	8.64	0.0042	0.393	-18.13	19.4	11.75	0.00153	0.000269
0.066	9.50	0.0054	0.432	-16.97	25.1	12.92	0.00160	0.000173
0.081	10.26	0.0066	0.467	-15.94	30.8	13.94	0.00165	0.000124
0.107	10.68	0.0087	0.486	-15.35	40.7	14.53	0.00171	0.000086
0.137	10.99	0.0112	0.500	-14.95	52.1	14.93	0.00177	0.000059
0.177	11.60	0.0144	0.528	-14.11	67.3	15.77	0.00186	0.000049
0.232	12.25	0.0189	0.557	-13.24	88.2	16.65	0.00195	0.000044
0.292	12.64	0.0238	0.575	-12.76	111.0	17.19	0.00203	0.000041
0.352	13.37	0.0287	0.608	-11.71	133.8	18.19	0.00212	0.000037
0.427	14.07	0.0348	0.640	-10.76	162.4	19.14	0.00220	0.000035
0.502	14.69	0.0410	0.668	-9.92	190.9	19.97	0.00224	0.000033
0.602	15.38	0.0491	0.699	-8.98	228.9	20.90	0.00224	0.000032
0.702	16.16	0.0573	0.735	-7.92	266.9	21.95	0.00220	0.000030
0.802	16.89	0.0655	0.768	-6.93	304.0	22.94	0.00210	0.000029
0.927	17.83	0.0757	0.814	-5.57	352.5	24.31	0.00193	0.000028
1.052	18.67	0.0859	0.849	-4.51	400.0	25.34	0.00164	0.000026
1.177	19.48	0.0961	0.886	-3.41	447.6	26.48	0.00132	0.000024
1.302	20.23	0.1063	0.920	-2.38	495.1	27.51	0.00100	0.000020
1.452	21.05	0.1185	0.958	-1.26	552.1	28.62	0.00069	0.000015
1.602	21.59	0.1307	0.982	-0.54	609.2	29.35	0.00041	0.000010
1.752	21.88	0.1430	0.995	-0.15	666.2	29.74	0.00017	0.000006
1.902	21.99	0.1552	1.000	0.01	723.2	29.90	0.00000	0.000002
2.102	21.98	0.1716	1.000	0.00	799.3	29.89	0.00000	0.000000

RUN: 111571-1 X=58. Z= 0.

UI = 21.19 D1 = 0.4866 BETA= 1.072 RD2 = 3745.
CF/2= 0.00108 D2 = 0.3054 B = 0.648 H = 1.587
F = 0.00070 DC =14.7476 P+ = 0.0061 G =11.254
K = -0.218E-06 D99 = 1.9937 V0+ = 0.0213

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.016	3.20	0.0011	0.151	-25.84	5.8	4.60	0.00122	0.000865
0.018	3.53	0.0012	0.167	-25.36	6.5	5.07	0.00124	0.000867
0.020	4.02	0.0014	0.190	-24.66	7.2	5.78	0.00126	0.000869
0.022	4.36	0.0015	0.206	-24.18	7.9	6.26	0.00128	0.000860
0.025	5.07	0.0017	0.239	-23.15	9.0	7.28	0.00131	0.000813
0.029	5.78	0.0020	0.273	-22.13	10.4	8.31	0.00134	0.000893
0.034	6.44	0.0023	0.304	-21.18	12.2	9.25	0.00137	0.000565
0.040	7.36	0.0027	0.347	-19.86	14.4	10.57	0.00141	0.000436
0.049	7.95	0.0033	0.375	-19.02	17.6	11.42	0.00145	0.000313
0.061	8.70	0.0041	0.411	-17.94	22.0	12.49	0.00150	0.000216
0.076	9.31	0.0052	0.439	-17.06	27.4	13.37	0.00154	0.000148
0.096	9.80	0.0065	0.463	-16.36	34.6	14.08	0.00159	0.000104
0.121	10.33	0.0082	0.488	-15.59	43.6	14.84	0.00165	0.000076
0.156	10.85	0.0106	0.512	-14.86	56.2	15.59	0.00172	0.000057
0.211	11.24	0.0143	0.531	-14.29	75.9	16.15	0.00180	0.000045
0.286	12.09	0.0194	0.570	-13.08	102.9	17.36	0.00193	0.000036
0.361	12.64	0.0245	0.596	-12.28	129.9	18.15	0.00203	0.000033
0.436	13.24	0.0296	0.625	-11.42	156.9	19.01	0.00211	0.000030
0.511	13.53	0.0346	0.639	-11.00	183.9	19.44	0.00215	0.000028
0.611	14.33	0.0414	0.676	-9.86	219.9	20.57	0.00222	0.000027
0.711	14.84	0.0482	0.700	-9.12	255.9	21.31	0.00223	0.000026
0.811	15.47	0.0550	0.730	-8.22	291.9	22.22	0.00222	0.000026
0.936	16.19	0.0635	0.764	-7.18	336.9	23.26	0.00214	0.000025
1.061	16.93	0.0719	0.799	-6.12	381.9	24.31	0.00202	0.000024
1.211	17.74	0.0821	0.837	-4.96	435.9	25.49	0.00182	0.000023
1.361	18.56	0.0923	0.876	-3.78	489.9	26.66	0.00158	0.000021
1.511	19.28	0.1025	0.910	-2.74	543.9	27.69	0.00125	0.000019
1.661	19.90	0.1126	0.939	-1.86	597.9	28.58	0.00092	0.000015
1.811	20.50	0.1228	0.967	-0.99	651.8	29.44	0.00067	0.000012
2.011	21.02	0.1364	0.992	-0.24	723.8	30.19	0.00040	0.000007
2.211	21.20	0.1499	1.001	0.02	795.8	30.45	0.00017	0.000003
2.411	21.22	0.1635	1.001	0.03	867.8	30.47	0.00000	0.000000
2.711	21.19	0.1838	1.000	0.00	975.8	30.43	0.00000	0.000000

RUN: 111571-1 X=70. Z= 0.

UI = 20.61 D1 = 0.5600 BETA= 1.046 RD2 = 3789.
CF/2= 0.00105 D2 = 0.3556 B = 0.638 H = 1.575
F = 0.00067 DC =17.2852 P+ = 0.0054 G =11.765
K = -0.184E-06 D99 = 2.3843 V0+ = 0.0207

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.012	2.54	0.0007	0.123	-27.06	4.1	3.81	0.00116	0.000937
0.014	2.92	0.0008	0.142	-26.49	4.8	4.37	0.00117	0.000930
0.016	3.27	0.0009	0.159	-25.97	5.5	4.90	0.00119	0.000923
0.018	3.74	0.0010	0.181	-25.27	6.2	5.60	0.00121	0.000932
0.020	4.25	0.0012	0.206	-24.50	6.9	6.37	0.00123	0.000880
0.023	4.69	0.0013	0.228	-23.84	7.9	7.02	0.00125	0.000783
0.027	5.52	0.0016	0.268	-22.60	9.3	8.27	0.00128	0.000661
0.032	5.94	0.0019	0.288	-21.97	11.0	8.90	0.00130	0.000537
0.039	6.70	0.0023	0.325	-20.83	13.5	10.03	0.00134	0.000419
0.048	7.72	0.0028	0.375	-19.30	16.6	11.57	0.00139	0.000307
0.062	8.31	0.0036	0.403	-18.42	21.4	12.45	0.00143	0.000214
0.082	8.98	0.0047	0.436	-17.41	28.3	13.46	0.00148	0.000133
0.112	9.69	0.0065	0.470	-16.35	38.7	14.51	0.00155	0.000083
0.152	10.15	0.0088	0.493	-15.66	52.5	15.21	0.00161	0.000059
0.207	10.67	0.0120	0.518	-14.89	71.4	15.98	0.00170	0.000044
0.282	11.45	0.0163	0.556	-13.72	97.3	17.15	0.00182	0.000037
0.357	11.81	0.0207	0.573	-13.17	123.2	17.69	0.00192	0.000032
0.432	12.37	0.0250	0.600	-12.34	149.1	18.53	0.00201	0.000028
0.507	12.56	0.0293	0.629	-11.46	175.0	19.41	0.00210	0.000026
0.607	13.35	0.0351	0.648	-10.88	209.5	19.99	0.00216	0.000025
0.707	13.85	0.0409	0.672	-10.13	244.0	20.74	0.00219	0.000024
0.832	14.51	0.0481	0.704	-9.13	287.1	21.74	0.00221	0.000024
0.957	15.08	0.0554	0.732	-8.27	330.3	22.59	0.00219	0.000023
1.082	15.80	0.0626	0.767	-7.20	373.4	23.67	0.00217	0.000022
1.207	16.43	0.0698	0.797	-6.26	416.6	24.61	0.00209	0.000021
1.357	17.05	0.0785	0.827	-5.33	468.3	25.54	0.00192	0.000021
1.507	17.66	0.0872	0.857	-4.41	520.1	26.45	0.00171	0.000019
1.657	18.38	0.0959	0.892	-3.33	571.9	27.54	0.00149	0.000018
1.807	18.96	0.1045	0.920	-2.47	623.6	28.39	0.00120	0.000015
2.007	19.66	0.1161	0.954	-1.42	692.7	29.45	0.00082	0.000012
2.207	20.15	0.1277	0.978	-0.69	761.7	30.17	0.00049	0.000008
2.507	20.58	0.1450	0.999	-0.04	865.2	30.82	0.00017	0.000004
2.807	20.64	0.1624	1.001	0.05	968.8	30.91	0.00000	0.000001
3.107	20.61	0.1797	1.000	0.00	1072.3	30.87	0.00000	0.000000

RUN: 111571-1 X=82. Z= 0.

UI = 20.23 D1 = 0.6275 BETA= 1.002 RD2 = 4295.
CF/2= 0.00102 D2 = 0.4040 B = 0.636 H = 1.553
F = 0.00065 DC =19.6277 P+ = 0.0048 G =11.141
K = -0.156E-06 D99 = 2.6869 V0+ = 0.0203

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.015	2.86	0.0008	0.141	-26.85	5.0	4.43	0.00114	0.000985
0.017	3.29	0.0009	0.162	-26.20	5.7	5.08	0.00115	0.000838
0.019	3.61	0.0010	0.179	-25.69	6.4	5.59	0.00117	0.000872
0.021	4.05	0.0011	0.200	-25.02	7.0	6.25	0.00119	0.000884
0.024	4.48	0.0012	0.221	-24.36	8.0	6.92	0.00120	0.000800
0.028	5.28	0.0014	0.261	-23.12	9.4	8.16	0.00124	0.000687
0.033	6.05	0.0017	0.299	-21.93	11.0	9.35	0.00127	0.000564
0.040	6.80	0.0020	0.336	-21.07	13.4	10.21	0.00130	0.000440
0.050	7.30	0.0025	0.361	-19.99	16.7	11.29	0.00133	0.000300
0.064	8.38	0.0033	0.414	-18.33	21.4	12.95	0.00138	0.000205
0.081	8.81	0.0041	0.436	-17.66	27.1	13.62	0.00142	0.000144
0.106	9.44	0.0054	0.467	-16.68	35.4	14.60	0.00147	0.000097
0.146	9.73	0.0074	0.481	-16.23	48.8	15.05	0.00152	0.000062
0.201	10.51	0.0102	0.520	-15.02	67.2	16.26	0.00161	0.000047
0.276	11.23	0.0141	0.555	-13.92	92.3	17.36	0.00170	0.000036
0.351	11.66	0.0179	0.576	-13.25	117.3	18.03	0.00178	0.000029
0.426	12.12	0.0217	0.599	-12.53	142.4	18.74	0.00185	0.000024
0.526	12.54	0.0268	0.620	-11.89	175.9	19.39	0.00190	0.000022
0.626	12.94	0.0319	0.640	-11.27	209.3	20.01	0.00195	0.000022
0.751	13.33	0.0383	0.659	-10.67	251.1	20.61	0.00200	0.000021
0.876	14.04	0.0446	0.694	-9.57	292.9	21.71	0.00208	0.000021
1.001	14.71	0.0510	0.727	-8.54	334.7	22.74	0.00209	0.000021
1.151	15.18	0.0586	0.750	-7.81	384.8	23.47	0.00203	0.000020
1.301	15.81	0.0663	0.781	-6.83	435.0	24.44	0.00198	0.000019
1.501	16.67	0.0765	0.824	-5.51	501.8	25.77	0.00187	0.000018
1.701	17.23	0.0867	0.852	-4.63	568.7	26.64	0.00161	0.000017
1.901	18.10	0.0969	0.894	-3.30	635.6	27.98	0.00137	0.000015
2.101	18.76	0.1070	0.927	-2.27	702.4	29.01	0.00104	0.000013
2.401	19.53	0.1223	0.965	-1.08	802.7	30.20	0.00053	0.000009
2.701	20.05	0.1376	0.991	-0.27	903.0	31.06	0.00018	0.000005
3.001	20.23	0.1529	1.000	-0.00	1003.3	31.27	0.00001	0.000002
3.301	20.26	0.1682	1.001	0.04	1103.6	31.32	0.00000	-0.000000
3.601	20.23	0.1835	1.000	0.00	1203.9	31.28	0.00000	0.000000

RUN: 111571-1 X=90. Z= 0.

UI = 20.09 D1 = 0.6719 BETA= 1.036 RD2 = 4506.
CF/2= 0.00101 D2 = 0.4339 B = 0.636 H = 1.548
F = 0.00064 DC =21.1867 P+ = 0.0045 G =11.145
K = -0.145E-06 D99 = 2.9187 V0+ = 0.0202

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.014	2.86	0.0007	0.143	-27.04	4.5	4.49	0.000966
0.016	3.34	0.0007	0.166	-26.30	5.2	5.24	0.000951
0.018	3.79	0.0008	0.188	-25.59	5.9	5.94	0.000935
0.020	4.07	0.0009	0.203	-25.15	6.5	6.39	0.000901
0.023	4.72	0.0011	0.235	-24.13	7.5	7.40	0.000788
0.027	5.38	0.0013	0.268	-23.08	8.8	8.45	0.000668
0.032	5.91	0.0015	0.294	-22.25	10.5	9.29	0.000521
0.039	6.62	0.0018	0.329	-21.15	12.8	10.39	0.000390
0.049	7.14	0.0023	0.356	-20.32	16.1	11.21	0.000294
0.064	8.04	0.0030	0.400	-18.91	21.0	12.69	0.000197
0.084	8.79	0.0040	0.437	-17.74	27.6	13.79	0.000134
0.114	9.29	0.0054	0.463	-16.95	37.5	14.58	0.000089
0.164	9.97	0.0077	0.496	-15.85	53.9	15.65	0.000055
0.239	10.57	0.0113	0.526	-14.94	78.6	16.60	0.000038
0.314	11.18	0.0148	0.557	-13.98	103.3	17.56	0.000030
0.389	11.57	0.0184	0.576	-13.37	128.0	18.14	0.000026
0.489	12.04	0.0231	0.599	-12.64	161.0	18.89	0.000024
0.589	12.48	0.0278	0.621	-11.95	193.9	19.59	0.000022
0.714	12.97	0.0337	0.646	-11.17	235.1	20.36	0.000021
0.839	13.63	0.0396	0.678	-10.14	276.2	21.39	0.000021
0.964	14.02	0.0455	0.698	-9.52	317.4	22.01	0.000020
1.114	14.70	0.0526	0.732	-8.45	366.8	23.08	0.000019
1.264	15.29	0.0597	0.761	-7.53	416.2	24.00	0.000018
1.464	16.06	0.0691	0.800	-6.32	482.0	25.21	0.000017
1.664	16.64	0.0785	0.828	-5.41	547.9	26.12	0.000016
1.914	17.57	0.0903	0.875	-3.95	630.2	27.58	0.000014
2.214	18.47	0.1045	0.920	-2.54	729.0	29.00	0.000012
2.514	19.24	0.1186	0.958	-1.34	827.8	30.20	0.000009
2.814	19.80	0.1328	0.986	-0.45	926.6	31.08	0.000006
3.114	20.05	0.1470	0.998	-0.07	1025.4	31.47	0.000003
3.514	20.09	0.1658	1.000	0.01	1157.1	31.54	0.000001
3.914	20.09	0.1847	1.000	0.00	1288.8	31.53	0.000000

RUN: 91771-2 X= 2. Z= 0.

UI = 29.49 D1 = 0.1601 BETA= 0.167 RD2 = 555.
CF/2= 0.00249 D2 = 0.0376 B = 7.398 H = 1.631
F = 0.00099 DC = 1.2053 P+ = 0.004 G = 7.523
K = -0.467E-06 D99 = 0.3192 V0+ = 0.020

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	4.56	0.0036	0.155	-16.94	3.2	3.10	0.001906
0.005	4.84	0.0044	0.164	-16.75	3.9	3.29	0.001830
0.006	5.42	0.0052	0.184	-16.36	4.6	3.68	0.001753
0.007	6.04	0.0061	0.205	-15.94	5.4	4.10	0.001626
0.009	7.66	0.0077	0.260	-14.84	6.9	5.20	0.001659
0.011	9.18	0.0094	0.311	-13.80	8.3	6.24	0.001552
0.014	11.13	0.0119	0.378	-12.47	10.5	7.57	0.001290
0.017	12.74	0.0144	0.432	-11.38	12.8	8.66	0.001057
0.020	14.23	0.0168	0.482	-10.37	15.0	9.67	0.000862
0.023	15.02	0.0193	0.509	-9.84	17.2	10.21	0.000765
0.027	16.25	0.0228	0.551	-9.00	20.1	11.06	0.000596
0.031	17.06	0.0260	0.578	-8.45	23.1	11.59	0.000435
0.036	17.87	0.0301	0.606	-7.90	26.8	12.14	0.000358
0.043	18.91	0.0359	0.641	-7.19	31.9	12.85	0.000274
0.052	19.56	0.0434	0.663	-6.75	38.6	13.29	0.000221
0.062	20.62	0.0517	0.699	-6.03	45.9	14.01	0.000186
0.077	21.61	0.0641	0.733	-5.36	57.0	14.68	0.000154
0.097	22.88	0.0807	0.776	-4.50	71.7	15.54	0.000130
0.122	24.16	0.1015	0.819	-3.62	90.2	16.42	0.000106
0.147	25.23	0.1222	0.855	-2.90	108.6	17.14	0.000090
0.172	26.18	0.1429	0.888	-2.25	127.0	17.79	0.000076
0.202	27.12	0.1678	0.919	-1.62	149.1	18.42	0.000061
0.232	27.90	0.1927	0.946	-1.09	171.3	18.95	0.000047
0.267	28.60	0.2218	0.970	-0.61	197.1	19.43	0.000033
0.312	29.17	0.2591	0.989	-0.22	230.2	19.82	0.000020
0.362	29.41	0.3006	0.997	-0.06	267.1	19.98	0.000010
0.412	29.50	0.3421	1.000	0.00	304.0	20.04	0.000004
0.487	29.51	0.4043	1.000	0.01	359.2	20.05	-0.000002
0.562	29.49	0.4665	1.000	0.00	414.5	20.04	0.000000

RUN: 91771-2 X=10. Z= 0.

UI = 26.89 D1 = 0.1337 BETA= 0.968 RD2 = 1090.
CF/2= 0.00173 D2 = 0.0809 B = 0.572 H = 1.653
F = 0.00099 DC = 3.2151 P+ = 0.012 G = 9.561
K = -0.872E-06 D99 = 0.5533 V0+ = 0.024

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.37	0.0016	0.125	-21.02	2.8	3.01	0.00191	0.001422
0.006	3.63	0.0019	0.128	-20.97	3.4	3.07	0.00193	0.001368
0.007	3.79	0.0022	0.141	-20.65	3.9	3.39	0.00195	0.001314
0.008	4.24	0.0025	0.158	-20.25	4.5	3.79	0.00198	0.001157
0.010	5.03	0.0031	0.187	-19.54	5.6	4.50	0.00203	0.001250
0.013	6.58	0.0040	0.245	-18.16	7.3	5.88	0.00211	0.001113
0.017	8.19	0.0053	0.304	-16.72	9.5	7.32	0.00221	0.000877
0.021	9.44	0.0065	0.351	-15.66	11.8	8.44	0.00229	0.000713
0.026	10.49	0.0081	0.390	-14.86	14.6	9.38	0.00235	0.000544
0.034	11.76	0.0106	0.438	-13.91	19.0	10.53	0.00244	0.000379
0.044	13.09	0.0137	0.487	-12.94	24.7	11.70	0.00253	0.000238
0.059	14.14	0.0184	0.526	-12.20	33.1	12.64	0.00259	0.000167
0.079	15.14	0.0246	0.563	-11.50	44.3	13.54	0.00262	0.000136
0.104	16.15	0.0323	0.600	-10.81	58.3	14.43	0.00260	0.000110
0.134	17.23	0.0417	0.641	-10.03	75.1	15.41	0.00254	0.000095
0.169	18.24	0.0526	0.678	-9.34	94.7	16.31	0.00239	0.000087
0.209	19.53	0.0650	0.725	-8.41	117.1	17.43	0.00219	0.000082
0.254	20.66	0.0790	0.769	-7.55	142.3	18.49	0.00190	0.000077
0.304	22.06	0.0946	0.820	-6.52	170.3	19.73	0.00163	0.000071
0.354	23.39	0.1101	0.870	-5.53	198.3	20.91	0.00141	0.000063
0.404	24.53	0.1257	0.911	-4.74	226.4	21.91	0.00127	0.000052
0.454	25.48	0.1412	0.948	-4.06	254.4	22.78	0.00110	0.000040
0.504	26.25	0.1568	0.976	-3.58	282.6	23.47	0.00099	0.000328
0.564	26.79	0.1754	0.993	-3.17	316.0	23.87	0.00074	0.000017
0.629	26.88	0.1956	1.000	-3.01	352.4	24.03	0.00040	0.000307
0.704	26.91	0.2190	1.001	-3.01	394.4	24.06	0.00000	-0.000001
0.804	26.89	0.2501	1.000	-3.03	450.5	24.04	0.00000	0.000010

RUN: 91771-2 X=22. Z= 0.

UI = 24.30 D1 = 0.2442 BETA= 1.055 RD2 = 1785.
CF/2= 0.00138 D2 = 0.1467 B = 0.725 H = 1.665
F = 0.00100 DC = 4.5737 P+ = 0.010 G = 10.750
K = -0.491E-06 D99 = 0.9489 V0+ = 0.027

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.008	2.69	0.0012	0.111	-23.94	3.6	2.98	0.00154	0.001042
0.010	3.05	0.0015	0.126	-23.54	4.5	3.38	0.00156	0.001019
0.013	4.00	0.0020	0.165	-22.49	5.9	4.43	0.00162	0.000985
0.016	4.90	0.0024	0.202	-21.49	7.2	5.43	0.00167	0.000930
0.020	6.20	0.0030	0.255	-20.05	9.0	6.87	0.00175	0.000813
0.025	7.24	0.0038	0.298	-18.89	11.3	8.03	0.00182	0.000651
0.030	8.17	0.0046	0.336	-17.86	13.6	9.06	0.00188	0.000522
0.036	9.00	0.0055	0.370	-16.95	16.3	9.97	0.00194	0.000400
0.043	9.70	0.0065	0.399	-16.17	19.4	10.75	0.00199	0.000304
0.053	10.55	0.0081	0.434	-15.24	24.0	11.68	0.00207	0.000221
0.065	11.14	0.0099	0.458	-14.58	29.4	12.34	0.00213	0.000169
0.083	11.65	0.0126	0.479	-14.02	37.5	12.90	0.00219	0.000121
0.093	12.24	0.0141	0.504	-13.36	42.1	13.56	0.00225	0.000145
0.118	12.98	0.0180	0.534	-12.53	53.4	14.38	0.00234	0.000085
0.148	13.41	0.0225	0.552	-12.06	66.9	14.86	0.00239	0.000071
0.178	14.05	0.0271	0.578	-11.35	80.5	15.57	0.00245	0.000062
0.228	14.85	0.0347	0.611	-10.47	103.1	16.45	0.00249	0.000058
0.283	15.73	0.0431	0.647	-9.49	128.0	17.42	0.00249	0.000056
0.353	16.78	0.0537	0.691	-8.33	159.6	18.59	0.00240	0.000054
0.413	17.78	0.0628	0.732	-7.22	186.7	19.70	0.00227	0.000053
0.473	18.65	0.0720	0.768	-6.26	213.9	20.66	0.00207	0.000051
0.533	19.54	0.0811	0.804	-5.27	241.0	21.65	0.00186	0.000049
0.593	20.47	0.0902	0.842	-4.24	268.1	22.68	0.00167	0.000046
0.663	21.34	0.1009	0.878	-3.28	299.8	23.64	0.00142	0.000042
0.738	22.32	0.1123	0.918	-2.19	333.7	24.72	0.00125	0.000036
0.813	23.20	0.1237	0.955	-1.22	367.6	25.70	0.00112	0.000028
0.888	23.76	0.1351	0.978	-0.60	401.5	26.32	0.00092	0.000020
0.963	24.12	0.1465	0.993	-0.19	435.4	26.73	0.00069	0.000013
1.063	24.31	0.1617	1.001	0.01	480.6	26.93	0.00034	0.000005
1.163	24.32	0.1769	1.001	0.02	525.9	26.94	0.00000	-0.000001
1.288	24.30	0.1959	1.000	0.00	582.4	26.92	0.00000	0.000000

RUN: 91771-2 X=34. Z= 0.

UI = 22.87 D1 = 0.3437 BETA= 1.271 RD2 = 2395.
CF/2= 0.00109 D2 = 0.2091 B = 0.917 H = 1.644
F = 0.00100 DC = 10.4125 P+ = 0.010 G = 11.865
K = -0.352E-06 D99 = 1.3671 V0+ = 0.030

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.009	2.54	0.0008	0.111	-26.93	3.3	3.36	0.00124	0.001338
0.011	3.05	0.0010	0.133	-26.25	4.0	4.04	0.00127	0.001988
0.013	3.58	0.0012	0.157	-25.55	4.8	4.74	0.00130	0.000939
0.016	4.36	0.0015	0.191	-24.52	5.9	5.77	0.00134	0.000858
0.019	5.01	0.0018	0.219	-23.66	7.0	6.63	0.00138	0.000803
0.023	5.69	0.0022	0.249	-22.76	8.5	7.53	0.00143	0.000714
0.027	6.45	0.0026	0.282	-21.75	10.1	8.54	0.00147	0.000623
0.031	7.22	0.0029	0.316	-20.72	11.6	9.57	0.00152	0.000526
0.036	7.86	0.0034	0.344	-19.88	13.5	10.41	0.00157	0.000420
0.041	8.36	0.0039	0.366	-19.21	15.4	11.08	0.00160	0.000345
0.046	8.65	0.0044	0.378	-18.84	17.2	11.45	0.00163	0.000279
0.051	8.96	0.0049	0.392	-18.42	19.1	11.87	0.00166	0.000230
0.061	9.62	0.0058	0.421	-17.54	22.9	12.75	0.00172	0.000180
0.071	10.31	0.0068	0.438	-17.03	26.7	13.26	0.00176	0.000150
0.086	10.28	0.0082	0.449	-16.68	32.4	13.61	0.00180	0.000116
0.101	11.03	0.0097	0.483	-15.67	38.0	14.62	0.00188	0.000092
0.121	11.23	0.0116	0.494	-15.34	45.6	14.95	0.00192	0.000078
0.151	11.83	0.0145	0.517	-14.62	57.0	15.67	0.00201	0.000066
0.201	12.42	0.0193	0.543	-13.93	75.9	16.46	0.00211	0.000051
0.251	13.28	0.0241	0.581	-12.70	94.8	17.59	0.00223	0.000048
0.326	13.95	0.0313	0.610	-11.81	123.1	18.48	0.00231	0.000045
0.401	14.73	0.0385	0.644	-10.78	151.5	19.51	0.00237	0.000043
0.501	15.85	0.0481	0.693	-9.30	189.3	20.99	0.00239	0.000041
0.601	16.90	0.0577	0.739	-7.90	227.1	22.39	0.00231	0.000040
0.701	17.88	0.0673	0.782	-6.60	264.9	23.69	0.00214	0.000038
0.801	18.89	0.0769	0.826	-5.27	302.8	25.02	0.00191	0.000035
0.901	19.79	0.0865	0.866	-4.07	340.6	26.22	0.00161	0.000032
1.001	20.71	0.0961	0.906	-2.86	378.4	27.43	0.00135	0.000027
1.151	21.77	0.1105	0.952	-1.45	435.1	28.84	0.00098	0.000019
1.301	22.53	0.1249	0.985	-0.45	491.8	29.84	0.00070	0.000012
1.501	22.86	0.1441	1.000	-0.01	567.5	30.28	0.00030	0.000005
1.701	22.87	0.1634	1.000	0.00	643.1	30.29	0.00000	0.000000

RUN: 91771-2 X=46. Z= 0.

UI = 21.80 D1 = 0.4441 BETA= 1.313 RD2 = 2959.
CF/2= 0.00102 D2 = 0.2709 B = 0.971 H = 1.639
F = 0.00099 DC =13.9093 P+ = 0.008 G =12.213
K = -0.276E-06 099 = 1.7662 V0+ = 0.031

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.011	2.70	0.0008	0.124	-27.44	3.8	3.88	0.00117	0.000972
0.013	3.24	0.0009	0.148	-26.67	4.5	4.65	0.00121	0.000834
0.016	3.89	0.0012	0.183	-25.59	5.6	5.73	0.00125	0.000877
0.019	4.49	0.0014	0.206	-24.87	6.6	6.45	0.00128	0.000795
0.022	5.14	0.0016	0.236	-23.94	7.7	7.38	0.00132	0.000687
0.026	5.71	0.0019	0.262	-23.12	9.1	8.20	0.00135	0.000585
0.030	6.29	0.0022	0.289	-22.28	10.5	9.04	0.00139	0.000527
0.034	6.64	0.0024	0.305	-21.78	11.9	9.54	0.00142	0.000439
0.039	7.18	0.0028	0.329	-21.00	13.6	10.32	0.00145	0.000372
0.044	7.76	0.0032	0.356	-20.18	15.3	11.16	0.00149	0.000310
0.054	8.23	0.0039	0.377	-19.50	18.8	11.82	0.00154	0.000225
0.064	8.72	0.0046	0.400	-18.79	22.3	12.53	0.00158	0.000170
0.079	9.13	0.0057	0.417	-18.25	27.6	13.07	0.00163	0.000127
0.104	9.79	0.0075	0.449	-17.26	36.3	14.06	0.00171	0.000094
0.129	10.37	0.0093	0.476	-16.42	45.0	14.90	0.00178	0.000073
0.154	10.74	0.0111	0.493	-15.89	53.7	15.43	0.00184	0.000063
0.204	11.31	0.0147	0.519	-15.07	71.1	16.25	0.00195	0.000049
0.254	11.74	0.0183	0.538	-14.46	88.6	16.86	0.00204	0.000043
0.304	12.30	0.0219	0.564	-13.66	106.0	17.66	0.00212	0.000040
0.404	13.17	0.0290	0.604	-12.40	140.9	18.91	0.00225	0.000037
0.504	14.02	0.0362	0.643	-11.19	175.8	20.13	0.00234	0.000036
0.654	15.14	0.0470	0.695	-9.57	228.1	21.75	0.00236	0.000034
0.804	16.31	0.0578	0.748	-7.90	280.4	23.42	0.00227	0.000032
1.054	17.73	0.0722	0.816	-5.77	350.1	25.55	0.00195	0.000028
1.254	19.17	0.0866	0.879	-3.78	419.9	27.54	0.00150	0.000023
1.404	20.39	0.1009	0.935	-2.04	489.6	29.28	0.00105	0.000017
1.604	21.24	0.1153	0.974	-0.81	559.4	30.51	0.00066	0.000011
1.804	21.67	0.1297	0.994	-0.20	629.1	31.12	0.00036	0.000007
2.104	21.83	0.1513	1.000	-0.01	733.7	31.31	0.00007	0.000002
2.404	21.83	0.1728	1.000	0.00	838.4	31.32	0.00000	0.000000

RUN: 91771-2 X=58. Z= 0.

UI = 21.41 D1 = 0.5373 BETA= 1.364 RD2 = 3548.
CF/2= 0.00096 D2 = 0.3307 B = 1.032 H = 1.625
F = 0.00099 DC =17.3472 P+ = 0.008 G =12.412
K = -0.227E-06 099 = 2.1731 V0+ = 0.032

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.012	2.66	0.0007	0.124	-28.28	4.0	4.01	0.00111	0.000889
0.015	3.13	0.0009	0.146	-27.58	5.0	4.71	0.00114	0.000857
0.018	3.86	0.0010	0.180	-26.46	6.0	5.83	0.00118	0.000825
0.021	4.41	0.0012	0.206	-25.64	7.0	6.64	0.00121	0.000752
0.025	5.03	0.0014	0.235	-24.70	8.3	7.59	0.00125	0.000673
0.029	5.75	0.0017	0.269	-23.62	9.6	8.67	0.00129	0.000582
0.034	6.26	0.0020	0.292	-22.95	11.3	9.44	0.00133	0.000486
0.039	6.86	0.0022	0.319	-21.98	13.0	10.31	0.00137	0.000388
0.044	7.50	0.0028	0.350	-20.97	16.3	11.31	0.00142	0.000274
0.059	8.08	0.0034	0.377	-20.11	19.6	12.18	0.00146	0.000209
0.074	8.66	0.0043	0.404	-19.26	24.6	13.03	0.00152	0.000147
0.089	9.17	0.0051	0.428	-18.45	29.6	13.83	0.00157	0.000113
0.119	9.52	0.0063	0.445	-17.93	36.2	14.35	0.00162	0.000087
0.134	9.94	0.0077	0.464	-17.30	44.5	14.98	0.00168	0.000068
0.159	10.26	0.0092	0.479	-16.81	52.8	15.48	0.00173	0.000056
0.209	10.89	0.0120	0.509	-15.87	69.4	16.42	0.00184	0.000046
0.309	11.69	0.0178	0.546	-14.67	102.7	17.62	0.00201	0.000037
0.419	12.41	0.0236	0.579	-13.58	135.9	18.70	0.00215	0.000033
0.539	13.18	0.0293	0.615	-12.42	169.1	19.87	0.00226	0.000032
0.799	14.42	0.0409	0.673	-10.55	235.5	21.74	0.00233	0.000029
0.909	15.63	0.0524	0.729	-8.76	332.0	23.53	0.00223	0.000027
1.299	17.45	0.0697	0.815	-5.98	401.7	26.30	0.00186	0.000022
1.599	19.05	0.0870	0.890	-3.57	501.3	28.72	0.00121	0.000016
1.809	20.35	0.1043	0.950	-1.61	601.0	30.68	0.00052	0.000011
2.299	21.23	0.1273	0.994	-0.21	733.9	32.09	0.00002	0.000006
2.609	21.45	0.1564	1.002	0.15	866.8	32.34	0.00000	0.000003
3.009	21.41	0.1735	1.000	0.00	999.7	32.29	0.00000	0.000000

RUN: 91771-2 X=70. Z= 0.

UI = 21.13 D1 = 0.6262 BETA= 1.411 RD2 = 4095.
CF/2= 0.00091 D2 = 0.3869 B = 1.114 H = 1.619
F = 0.00101 DC =20.7965 P+ = 0.007 G =12.691
K = -0.193E-06 099 = 2.5267 V0+ = 0.034

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.014	3.04	0.0007	0.144	-28.42	4.5	4.78	0.00108	0.000847
0.017	3.47	0.0008	0.164	-27.76	5.4	5.45	0.00111	0.000812
0.021	4.31	0.0010	0.204	-26.43	6.7	6.77	0.00116	0.000744
0.025	4.79	0.0012	0.227	-25.67	8.0	7.53	0.00119	0.000624
0.029	5.44	0.0014	0.257	-24.66	9.2	8.55	0.00123	0.000545
0.036	6.37	0.0017	0.302	-23.19	11.5	10.02	0.00128	0.000413
0.046	7.02	0.0022	0.332	-22.18	14.7	11.03	0.00133	0.000295
0.056	7.51	0.0027	0.355	-21.42	17.8	11.79	0.00137	0.000219
0.071	8.16	0.0034	0.386	-20.38	22.6	12.83	0.00142	0.000150
0.091	8.73	0.0044	0.413	-19.49	29.0	13.72	0.00148	0.000110
0.111	9.23	0.0053	0.437	-18.71	35.4	14.50	0.00153	0.000087
0.136	9.65	0.0065	0.457	-18.16	43.3	14.86	0.00158	0.000068
0.161	9.93	0.0077	0.470	-17.80	51.3	15.61	0.00164	0.000057
0.211	10.46	0.0101	0.495	-16.78	67.3	16.43	0.00173	0.000045
0.311	11.23	0.0150	0.531	-15.56	99.1	17.65	0.00189	0.000035
0.411	12.04	0.0198	0.570	-14.29	131.0	18.92	0.00204	0.000029
0.511	12.46	0.0246	0.589	-13.63	162.9	19.58	0.00214	0.000028
0.711	13.55	0.0342	0.641	-11.91	226.6	21.30	0.00230	0.000026
0.911	14.56	0.0438	0.689	-10.32	290.4	22.89	0.00236	0.000024
1.711	16.39	0.0582	0.771	-7.80	386.0	25.61	0.00228	0.000022
1.511	17.61	0.0727	0.834	-5.53	481.6	27.68	0.00189	0.000018
1.811	18.95	0.0871	0.897	-3.43	577.2	29.78	0.00138	0.000014
2.211	20.29	0.1063	0.960	-1.32	704.7	31.89	0.00066	0.000009
2.611	21.09	0.1255	0.998	-0.07	832.2	33.14	0.00023	0.000005
3.011	21.19	0.1448	1.003	0.09	959.7	33.30	0.00000	0.000003
3.411	21.13	0.1640	1.000	0.00	1087.2	33.21	0.00000	0.000000

RUN: 91771-2 X=82. Z= 0.

UI = 20.36 D1 = 0.7148 BETA= 1.403 RD2 = 4544.
CF/2= 0.00088 D2 = 0.4456 B = 1.139 H = 1.604
F = 0.00100 DC =24.1203 P+ = 0.006 G =12.709
K = -0.169E-06 099 = 2.9028 V0+ = 0.034

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.016	2.98	0.0007	0.147	-28.86	4.8	4.95	0.00105	0.000766
0.019	3.43	0.0008	0.169	-28.06	5.7	5.69	0.00108	0.000739
0.022	3.81	0.0009	0.187	-27.42	6.6	6.32	0.00110	0.000691
0.026	4.47	0.0011	0.219	-26.34	7.9	7.41	0.00114	0.000618
0.031	5.26	0.0013	0.258	-25.02	9.4	8.72	0.00119	0.000536
0.046	6.37	0.0019	0.313	-23.18	13.9	10.56	0.00127	0.000320
0.056	7.16	0.0023	0.351	-21.88	16.9	11.86	0.00132	0.000236
0.066	7.36	0.0027	0.362	-21.55	19.9	12.20	0.00134	0.000188
0.086	8.16	0.0036	0.401	-20.22	26.0	13.53	0.00143	0.000132
0.116	8.52	0.0044	0.419	-19.62	32.0	14.13	0.00145	0.000099
0.131	9.02	0.0054	0.443	-18.80	39.6	14.94	0.00150	0.000080
0.156	9.36	0.0065	0.460	-18.22	47.1	15.52	0.00155	0.000063
0.206	9.93	0.0085	0.486	-17.33	62.3	16.42	0.00163	0.000049
0.306	10.71	0.0127	0.526	-16.00	92.5	17.75	0.00178	0.000035
0.516	11.86	0.0214	0.582	-14.09	152.9	19.66	0.00200	0.000026
0.706	12.71	0.0293	0.624	-12.68	213.4	21.07	0.00214	0.000023
0.906	13.58	0.0376	0.667	-11.24	273.8	22.50	0.00225	0.000022
1.206	14.84	0.0500	0.729	-9.15	364.5	24.59	0.00225	0.000020
1.506	16.01	0.0624	0.786	-7.21	455.1	26.54	0.00206	0.000019
1.806	17.17	0.0749	0.844	-5.28	545.8	28.47	0.00174	0.000016
2.206	18.61	0.0915	0.914	-2.90	666.7	30.84	0.00123	0.000012
2.606	19.76	0.1080	0.970	-1.00	787.5	32.75	0.00064	0.000008
3.006	20.29	0.1246	0.997	-0.11	908.4	33.64	0.00022	0.000005
3.406	20.40	0.1412	1.002	0.07	1029.3	33.82	0.00000	0.000002
3.806	20.36	0.1578	1.000	0.00	1150.2	33.75	0.00000	0.000000

RUN: 91771-2 X=90. Z= 0.

UI = 20.16 D1 = 0.7783 BETA= 1.502 RDZ = 4911.
CF/2= 0.00086 D2 = 0.4864 B = 1.154 H = 1.600
F = 0.00099 DC =26.5704 P+ = 0.097 G =12.803
K = -0.164E-06 D99 = 3.1636 V0+ = 0.034

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.016	2.87	0.0006	0.142	-29.28	4.7	4.86	0.006791
0.019	3.34	0.0007	0.165	-28.49	5.6	5.65	0.003748
0.023	3.92	0.0009	0.194	-27.50	6.7	6.64	0.000691
0.027	4.58	0.0010	0.227	-26.38	7.9	7.75	0.003614
0.032	5.13	0.0012	0.254	-25.46	9.4	8.68	0.000491
0.038	5.69	0.0014	0.282	-24.50	11.2	9.64	0.000401
0.045	6.31	0.0017	0.313	-23.45	13.3	10.69	0.000317
0.056	6.60	0.0021	0.327	-22.97	16.5	11.17	0.000238
0.071	7.43	0.0027	0.369	-21.55	20.9	12.58	0.000173
0.096	8.25	0.0036	0.409	-20.17	28.3	13.97	0.000118
0.146	8.93	0.0055	0.443	-19.02	43.1	15.12	0.000071
0.221	9.87	0.0083	0.490	-17.42	65.3	16.72	0.000042
0.296	10.40	0.0111	0.516	-16.53	87.5	17.61	0.000033
0.371	10.74	0.0140	0.533	-15.94	109.7	18.20	0.000028
0.446	11.10	0.0168	0.551	-15.34	131.9	18.80	0.000025
0.546	11.66	0.0205	0.579	-14.38	161.4	19.75	0.000023
0.671	12.14	0.0252	0.602	-13.58	198.4	20.56	0.000022
0.821	12.82	0.0309	0.636	-12.43	242.8	21.71	0.000021
1.021	13.59	0.0384	0.674	-11.12	301.9	23.01	0.000020
1.221	14.34	0.0459	0.711	-9.86	361.1	24.28	0.000019
1.521	15.42	0.0572	0.765	-8.02	449.8	26.11	0.000018
1.821	16.59	0.0685	0.823	-6.04	538.6	28.09	0.000016
2.221	17.79	0.0836	0.882	-4.02	656.9	30.12	0.000013
2.621	19.08	0.0986	0.947	-1.82	775.2	32.31	0.000009
3.021	19.86	0.1137	0.985	-0.50	893.5	33.64	0.000006
3.421	20.13	0.1287	0.998	-0.05	1011.8	34.08	0.000003
3.821	20.16	0.1438	1.000	0.00	1130.1	34.14	0.000001
3.921	20.16	0.1476	1.000	0.00	1159.7	34.14	0.000000

RUN: 111771-3 X= 2. Z= 0.

UI = 29.26 D1 = 0.0423 BETA= 0.187 RDZ = 587.
CF/2= 0.00230 D2 = 0.0384 B = 0.871 H = 1.621
F = 0.00200 DC = 1.2998 P+ = 0.004 G = 7.997
K = -0.452E-06 D99 = 0.3194 V0+ = 0.042

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	4.19	0.0033	0.143	-17.89	3.1	2.99	0.001821
0.005	4.58	0.0041	0.156	-17.61	3.9	3.26	0.001756
0.006	5.28	0.0048	0.181	-17.10	4.6	3.77	0.001692
0.008	6.74	0.0064	0.231	-16.06	6.1	4.81	0.001581
0.010	8.20	0.0079	0.280	-15.02	7.5	5.85	0.001481
0.012	9.50	0.0095	0.325	-14.09	9.0	6.78	0.001366
0.014	10.81	0.0110	0.370	-13.16	10.5	7.72	0.001209
0.016	11.75	0.0125	0.402	-12.49	11.9	8.38	0.001059
0.018	12.72	0.0141	0.435	-11.80	13.4	9.08	0.000916
0.020	13.53	0.0156	0.462	-11.22	14.9	9.65	0.000796
0.022	14.15	0.0172	0.484	-10.78	16.3	10.10	0.000710
0.025	14.96	0.0195	0.511	-10.20	18.5	10.67	0.000583
0.028	15.74	0.0218	0.538	-9.64	20.7	11.23	0.000496
0.032	16.60	0.0249	0.567	-9.03	23.6	11.84	0.000408
0.036	17.20	0.0279	0.588	-8.61	26.6	12.27	0.000342
0.040	17.79	0.0310	0.608	-8.18	29.5	12.69	0.000294
0.045	18.32	0.0349	0.626	-7.80	33.2	13.07	0.000251
0.050	18.87	0.0387	0.645	-7.41	36.8	13.46	0.000227
0.057	19.54	0.0441	0.668	-6.93	41.9	13.94	0.000199
0.065	20.18	0.0502	0.690	-6.47	47.8	14.40	0.000180
0.075	20.98	0.0575	0.717	-5.91	55.1	14.97	0.000159
0.088	21.76	0.0679	0.744	-5.35	64.6	15.53	0.000140
0.103	22.72	0.0795	0.777	-4.66	75.6	16.21	0.000124
0.118	23.45	0.0910	0.802	-4.14	86.6	16.73	0.000112
0.133	24.21	0.1026	0.827	-3.60	97.6	17.27	0.000102
0.153	25.04	0.1179	0.856	-2.91	112.2	17.86	0.000089
0.178	26.04	0.1372	0.890	-2.30	130.5	18.58	0.000076
0.208	26.99	0.1603	0.922	-1.62	152.5	19.25	0.000061
0.238	27.75	0.1833	0.949	-1.07	174.4	19.80	0.000046
0.268	28.37	0.2064	0.970	-0.63	196.4	20.24	0.000034
0.308	28.90	0.2372	0.988	-0.26	225.7	20.62	0.000021
0.358	29.21	0.2757	0.998	-0.03	262.3	20.84	0.000010
0.408	29.27	0.3141	1.000	0.01	298.9	20.88	0.000003
0.469	29.27	0.3603	1.000	0.01	342.8	20.88	-0.000003
0.529	29.26	0.4064	1.000	0.00	386.7	20.87	0.000000

RUN: 111771-3 X=10. Z= 0.

UI = 26.59 D1 = 0.1486 BETA= 1.165 RDZ = 1219.
CF/2= 0.00150 D2 = 0.0978 B = 1.207 H = 1.692
F = 0.00181 DC = 3.8361 P+ = 0.015 G =10.563
K = -0.847E-06 D99 = 0.5788 V0+ = 0.047

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.01	0.0013	0.113	-22.90	2.7	2.92	0.00176	0.001738
0.007	3.63	0.0018	0.137	-22.29	3.8	3.53	0.00183	0.001216
0.009	4.34	0.0023	0.163	-21.61	4.8	4.21	0.00190	0.001134
0.011	5.20	0.0029	0.196	-20.77	5.9	5.05	0.00198	0.001068
0.013	5.97	0.0034	0.224	-20.03	7.0	5.79	0.00205	0.001021
0.016	7.16	0.0042	0.269	-18.87	8.6	6.95	0.00216	0.000938
0.019	8.13	0.0050	0.306	-17.92	10.2	7.90	0.00225	0.000753
0.022	9.00	0.0057	0.338	-17.08	11.8	8.74	0.00233	0.000628
0.026	9.78	0.0068	0.368	-16.32	14.0	9.50	0.00241	0.000494
0.030	10.40	0.0078	0.391	-15.72	16.1	10.10	0.00247	0.000403
0.035	11.05	0.0091	0.416	-15.09	18.8	10.73	0.00253	0.000316
0.041	11.69	0.0107	0.439	-14.48	22.0	11.34	0.00260	0.000259
0.048	12.34	0.0125	0.464	-13.83	25.8	11.99	0.00266	0.000214
0.056	12.77	0.0146	0.480	-13.42	30.1	12.40	0.00269	0.000178
0.071	13.70	0.0185	0.515	-12.52	38.2	13.30	0.00276	0.000140
0.091	14.55	0.0237	0.547	-11.69	48.9	14.13	0.00278	0.000115
0.116	15.47	0.0302	0.582	-10.79	62.4	15.03	0.00276	0.000101
0.146	16.55	0.0381	0.622	-9.75	78.5	16.07	0.00269	0.000090
0.181	17.50	0.0472	0.658	-8.82	97.3	17.00	0.00251	0.000084
0.216	18.61	0.0563	0.700	-7.75	116.2	18.07	0.00233	0.000080
0.251	19.61	0.0654	0.738	-6.77	135.0	19.05	0.00211	0.000077
0.286	20.57	0.0746	0.774	-5.84	153.8	19.98	0.00188	0.000074
0.321	21.55	0.0837	0.811	-4.89	172.6	20.93	0.00169	0.000071
0.356	22.41	0.0928	0.843	-4.06	191.4	21.76	0.00149	0.000067
0.391	23.30	0.1019	0.876	-3.19	210.3	22.63	0.00137	0.000061
0.431	24.20	0.1124	0.910	-2.31	231.8	23.51	0.00126	0.000053
0.471	24.98	0.1226	0.940	-1.55	253.3	24.25	0.00117	0.000044
0.521	25.76	0.1358	0.969	-0.80	280.2	25.02	0.00105	0.000031
0.571	26.28	0.1488	0.989	-0.29	307.1	25.53	0.00086	0.000021
0.621	26.52	0.1619	0.997	-0.07	333.9	25.75	0.00055	0.000011
0.696	26.59	0.1814	1.000	0.01	374.3	25.83	0.00000	0.000301
0.796	26.59	0.2075	1.000	0.00	428.0	25.82	0.00000	0.000000

RUN: 111771-3 X=22. Z= 0.

UI = 24.11 D1 = 0.2801 BETA= 1.542 RDZ = 2042.
CF/2= 0.00108 D2 = 0.1638 B = 1.491 H = 1.710
F = 0.00161 DC = 8.5238 P+ = 0.013 G =12.638
K = -0.472E-06 D99 = 1.0319 V0+ = 0.049

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.010	3.02	0.0012	0.125	-26.62	4.1	3.81	0.00134	0.000899
0.012	3.47	0.0014	0.144	-26.05	5.0	4.38	0.00138	0.000873
0.014	3.93	0.0016	0.163	-25.47	5.8	4.96	0.00142	0.000948
0.016	4.50	0.0019	0.187	-24.75	6.6	5.68	0.00147	0.000799
0.019	5.23	0.0022	0.217	-23.93	7.9	6.60	0.00154	0.000762
0.022	5.96	0.0026	0.247	-22.91	9.1	7.52	0.00160	0.000633
0.026	6.65	0.0031	0.276	-22.04	10.8	8.39	0.00167	0.000571
0.032	7.91	0.0038	0.328	-20.57	13.2	9.86	0.00177	0.000438
0.041	8.72	0.0048	0.362	-19.43	17.0	11.00	0.00187	0.000299
0.051	9.47	0.0060	0.393	-18.48	21.1	11.95	0.00196	0.000215
0.063	10.04	0.0074	0.416	-17.76	26.1	12.67	0.00204	0.000157
0.078	10.61	0.0092	0.440	-17.03	32.3	13.39	0.00212	0.000121
0.098	11.26	0.0115	0.467	-16.22	40.6	14.21	0.00222	0.000096
0.128	12.06	0.0150	0.500	-15.21	53.0	15.22	0.00235	0.000077
0.163	12.70	0.0191	0.527	-14.40	67.5	16.03	0.00245	0.000063
0.198	13.37	0.0232	0.554	-13.56	81.9	16.87	0.00253	0.000058
0.238	14.01	0.0279	0.581	-12.75	98.5	17.68	0.00258	0.000054
0.283	14.60	0.0332	0.605	-12.01	117.1	18.42	0.00258	0.000053
0.333	15.44	0.0391	0.640	-10.95	137.8	19.48	0.00257	0.000052
0.383	16.19	0.0449	0.671	-10.00	158.5	20.43	0.00249	0.000051
0.433	16.97	0.0508	0.704	-9.01	179.2	21.42	0.00239	0.000050
0.483	17.74	0.0567	0.736	-8.05	199.9	22.38	0.00224	0.000048
0.533	18.40	0.0625	0.763	-7.21	220.6	23.21	0.00204	0.000048
0.583	19.15	0.0684	0.794	-6.26	241.3	24.17	0.00187	0.000047
0.633	19.83	0.0743	0.822	-5.40	262.0	25.03	0.00168	0.000046
0.683	20.54	0.0801	0.852	-4.51	282.7	25.92	0.00154	0.000044
0.733	21.22	0.0860	0.880	-3.65	303.3	26.78	0.00142	0.000041
0.783	21.82	0.0919	0.905	-2.89	324.0	27.54	0.00129	0.000037
0.833	22.38	0.0977	0.928	-2.18	344.7	28.25	0.00117	0.000033
0.908	23.18	0.1065	0.961	-1.18	375.8	29.25	0.00105	0.000025
1.008	23.81	0.1183	0.987	-0.38	417.2	30.05	0.00077	0.000015
1.108	24.07	0.1300	0.998	-0.06	458.5	30.37	0.00039	0.000007
1.208	24.11	0.1417	1.000	0.00	499.9	30.43	0.00000	0.000000
1.333	24.11	0.1564	1.000	0.00	551.7	30.43	0.00000	0.000000

RUN: 111771-3 X=34. Z= 0.

UI = 22.78 D1 = 0.3921 BETA= 1.806 RD2 = 2758.
CF/2= 0.00087 D2 = 0.2318 B = 1.751 H = 1.691
F = 0.00152 DC =13.3107 P+ = 0.013 G =13.875
K = -0.336E-06 D99 = 1.4647 VO+ = 0.052

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.012	2.99	0.0009	0.131	-29.49	4.1	4.46	0.00111	0.000870
0.014	3.43	0.0010	0.151	-28.83	4.8	5.11	0.00115	0.000839
0.016	3.93	0.0012	0.172	-28.09	5.5	5.85	0.00119	0.000807
0.018	4.34	0.0013	0.191	-27.47	6.2	6.47	0.00123	0.000744
0.020	4.88	0.0015	0.214	-26.67	6.9	7.27	0.00127	0.000696
0.023	5.27	0.0017	0.232	-26.08	7.9	7.86	0.00131	0.000593
0.027	5.87	0.0020	0.258	-25.20	9.3	8.75	0.00136	0.000501
0.033	6.53	0.0024	0.287	-24.21	11.4	9.74	0.00143	0.000396
0.041	7.50	0.0031	0.329	-22.77	14.2	11.18	0.00152	0.000312
0.053	8.34	0.0040	0.366	-21.52	18.4	12.43	0.00161	0.000225
0.070	9.08	0.0052	0.399	-20.41	24.4	13.53	0.00170	0.000155
0.095	9.95	0.0071	0.437	-19.11	33.1	14.84	0.00183	0.000101
0.130	10.73	0.0097	0.471	-17.98	45.4	15.99	0.00070	0.000070
0.170	11.34	0.0127	0.498	-17.05	59.4	16.90	0.00208	0.000055
0.220	11.85	0.0165	0.520	-16.28	76.9	17.66	0.00220	0.000047
0.270	12.50	0.0203	0.549	-15.31	94.5	18.63	0.00231	0.000043
0.345	13.24	0.0259	0.581	-14.21	120.7	19.73	0.00243	0.000041
0.420	14.11	0.0315	0.620	-12.91	147.0	21.03	0.00254	0.000039
0.495	14.82	0.0372	0.651	-11.85	173.3	22.09	0.00256	0.000039
0.570	15.63	0.0428	0.686	-10.65	199.6	23.30	0.00256	0.000037
0.645	16.34	0.0484	0.718	-9.59	225.9	24.36	0.00248	0.000037
0.720	17.13	0.0541	0.752	-8.41	252.1	25.53	0.00237	0.000036
0.795	17.73	0.0597	0.778	-7.52	278.4	26.42	0.00215	0.000035
0.895	18.76	0.0672	0.824	-5.99	313.5	27.96	0.00189	0.000034
0.995	19.71	0.0747	0.865	-4.57	348.5	29.37	0.00159	0.000032
1.095	20.53	0.0822	0.902	-3.34	383.5	30.60	0.00128	0.000029
1.195	21.34	0.0897	0.937	-2.14	418.6	31.81	0.00104	0.000023
1.295	21.95	0.0973	0.964	-1.23	453.6	32.71	0.00080	0.000017
1.395	22.38	0.1048	0.983	-0.59	488.7	33.35	0.00057	0.000012
1.420	22.68	0.1142	0.996	-0.14	532.5	33.80	0.00028	0.000007
1.645	22.78	0.1236	1.000	0.01	576.3	33.96	0.00000	0.000002
1.770	22.78	0.1329	1.000	0.01	620.1	33.96	0.00000	-0.000001
1.885	22.78	0.1416	1.000	0.00	660.4	33.94	0.00000	0.000000

RUN: 111771-3 X=46. Z= 0.

UI = 21.73 D1 = 0.5078 BETA= 1.853 RD2 = 3612.
CF/2= 0.00082 D2 = 0.2999 B = 1.768 H = 1.693
F = 0.00145 DC =17.7313 P+ = 0.011 G =14.297
K = -0.263E-06 D99 = 1.8774 VO+ = 0.051

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.014	2.55	0.0008	0.117	-30.83	4.6	4.09	0.00103	0.000733
0.016	2.96	0.0009	0.136	-30.18	5.2	4.74	0.00106	0.000732
0.018	3.22	0.0010	0.148	-29.76	5.9	5.16	0.00109	0.000730
0.020	3.73	0.0011	0.171	-28.94	6.5	5.98	0.00113	0.000744
0.022	3.95	0.0012	0.181	-28.59	7.2	6.33	0.00115	0.000719
0.025	4.57	0.0014	0.210	-27.60	8.1	7.32	0.00120	0.000673
0.030	5.44	0.0017	0.250	-26.19	9.8	8.73	0.00127	0.000533
0.037	6.18	0.0021	0.284	-25.02	12.1	9.90	0.00134	0.000405
0.047	6.98	0.0027	0.320	-23.73	15.3	11.19	0.00142	0.000279
0.062	7.77	0.0035	0.357	-22.47	20.2	12.45	0.00151	0.000183
0.087	8.75	0.0049	0.402	-20.90	28.4	14.02	0.00163	0.000117
0.122	9.28	0.0069	0.426	-20.05	39.8	14.87	0.00173	0.000077
0.162	10.09	0.0091	0.463	-18.74	52.8	16.18	0.00187	0.000059
0.217	10.68	0.0122	0.490	-17.80	70.7	17.12	0.00200	0.000047
0.277	11.19	0.0156	0.514	-16.93	90.3	17.94	0.00213	0.000041
0.352	12.07	0.0199	0.554	-15.58	114.7	19.34	0.00231	0.000036
0.427	12.60	0.0241	0.578	-14.72	139.1	20.20	0.00242	0.000033
0.502	13.18	0.0283	0.605	-13.80	163.6	21.12	0.00251	0.000031
0.602	13.92	0.0340	0.639	-12.56	196.2	22.32	0.00257	0.000030
0.702	14.60	0.0396	0.670	-11.52	228.8	23.40	0.00258	0.000031
0.802	15.28	0.0452	0.701	-10.43	261.3	24.49	0.00255	0.000030
0.927	16.42	0.0523	0.749	-8.76	302.1	26.16	0.00248	0.000030
1.052	17.23	0.0593	0.795	-7.15	342.8	27.77	0.00233	0.000029
1.177	18.04	0.0664	0.828	-6.00	383.5	28.92	0.00203	0.000027
1.302	18.97	0.0734	0.871	-4.52	424.3	30.40	0.00176	0.000024
1.452	19.84	0.0819	0.911	-3.12	473.2	31.80	0.00137	0.000021
1.602	20.63	0.0903	0.947	-1.86	522.0	33.06	0.00103	0.000016
1.752	21.28	0.0988	0.976	-0.82	570.9	34.10	0.00077	0.000011
1.902	21.63	0.1073	0.993	-0.26	619.8	34.66	0.00052	0.000008
2.102	21.81	0.1185	1.001	0.03	685.0	34.95	0.00022	0.000003
2.302	21.82	0.1298	1.001	0.05	750.1	34.97	0.00000	-0.000001
2.502	21.79	0.1411	1.000	0.00	815.3	34.92	0.00000	0.000000

RUN: 111771-3 X=58. Z= 0.

UI = 20.96 D1 = 0.6034 BETA= 1.820 RD2 = 3973.
CF/2= 0.00079 D2 = 0.3629 B = 1.757 H = 1.662
F = 0.00139 DC =21.4486 P+ = 0.010 G =14.165
K = -0.218E-06 D99 = 2.3054 VO+ = 0.049

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.017	2.89	0.0008	0.138	-30.64	5.2	4.91	0.00102	0.000720
0.019	3.29	0.0009	0.157	-29.97	5.9	5.58	0.00105	0.000713
0.021	3.57	0.0010	0.170	-29.49	6.5	6.06	0.00108	0.000706
0.023	3.94	0.0011	0.188	-28.87	7.1	6.69	0.00111	0.000695
0.026	4.34	0.0012	0.207	-28.18	8.0	7.36	0.00114	0.000643
0.031	5.17	0.0014	0.247	-26.78	9.5	8.76	0.00121	0.000550
0.038	5.86	0.0018	0.280	-25.61	11.7	9.94	0.00127	0.000420
0.048	6.84	0.0022	0.326	-23.96	14.8	11.61	0.00135	0.000297
0.060	7.45	0.0028	0.355	-22.92	18.5	12.63	0.00142	0.000206
0.075	7.94	0.0035	0.379	-22.08	23.1	13.46	0.00148	0.000147
0.100	8.63	0.0047	0.412	-20.92	30.8	14.63	0.00157	0.000096
0.140	9.22	0.0065	0.440	-19.92	43.1	15.63	0.00169	0.000066
0.195	9.93	0.0091	0.474	-18.71	60.1	16.84	0.00184	0.000049
0.260	10.61	0.0121	0.506	-17.56	80.1	17.99	0.00199	0.000038
0.335	11.14	0.0156	0.531	-16.66	103.2	18.89	0.00212	0.000031
0.410	11.68	0.0191	0.557	-15.75	126.3	19.80	0.00223	0.000029
0.510	12.19	0.0238	0.582	-14.87	157.1	20.67	0.00235	0.000027
0.610	12.66	0.0284	0.604	-14.08	187.9	21.47	0.00243	0.000026
0.710	13.42	0.0331	0.640	-12.79	218.6	22.76	0.00255	0.000027
0.835	14.11	0.0389	0.673	-11.62	257.1	23.93	0.00263	0.000027
0.960	14.79	0.0448	0.706	-10.47	295.6	25.08	0.00264	0.000026
1.085	15.63	0.0506	0.746	-9.05	334.1	26.50	0.00261	0.000025
1.210	16.32	0.0564	0.779	-7.87	372.6	27.68	0.00249	0.000024
1.360	17.39	0.0634	0.815	-6.57	418.8	28.98	0.00228	0.000023
1.510	17.93	0.0704	0.855	-5.14	465.0	30.40	0.00203	0.000021
1.660	18.66	0.0774	0.890	-3.91	511.2	31.64	0.00171	0.000019
1.810	19.33	0.0844	0.922	-2.77	557.4	32.78	0.00136	0.000017
2.010	20.13	0.0937	0.960	-1.41	619.0	34.14	0.00095	0.000012
2.210	20.63	0.1030	0.984	-0.56	680.6	34.99	0.00057	0.000008
2.410	20.83	0.1124	0.994	-0.13	742.2	35.42	0.00028	0.000004
2.710	20.38	0.1263	1.001	0.03	834.6	35.58	0.00000	0.000000
3.010	20.96	0.1403	1.000	0.00	926.9	35.55	0.00000	0.000000

RUN: 111771-3 X=70. Z= 0.

UI = 20.46 D1 = 0.6967 BETA= 1.839 RD2 = 4544.
CF/2= 0.00076 D2 = 0.4253 B = 1.769 H = 1.643
F = 0.00135 DC =25.2876 P+ = 0.009 G =14.162
K = -0.198E-06 D99 = 2.7056 VO+ = 0.049

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.020	3.47	0.0008	0.170	-30.05	5.9	6.14	0.00103	0.000696
0.022	3.66	0.0009	0.179	-29.73	6.5	6.47	0.00104	0.000681
0.024	3.97	0.0009	0.194	-29.16	7.1	7.03	0.00107	0.000665
0.026	4.26	0.0010	0.208	-28.66	7.7	7.53	0.00109	0.000622
0.029	4.64	0.0011	0.227	-27.98	8.6	8.21	0.00112	0.000589
0.034	5.39	0.0013	0.264	-26.65	10.0	9.54	0.00118	0.000482
0.042	5.95	0.0017	0.291	-25.67	12.4	10.53	0.00123	0.000353
0.054	6.79	0.0021	0.332	-24.18	15.9	12.02	0.00131	0.000243
0.072	7.49	0.0028	0.366	-22.95	21.3	13.24	0.00138	0.000159
0.097	8.13	0.0038	0.397	-21.82	28.6	14.38	0.00147	0.000108
0.137	8.89	0.0054	0.440	-20.28	40.4	15.91	0.00159	0.000067
0.197	9.57	0.0078	0.468	-19.27	58.2	16.93	0.00171	0.000046
0.257	10.04	0.0102	0.491	-18.44	75.9	17.76	0.00181	0.000035
0.357	10.53	0.0141	0.515	-17.56	105.4	18.63	0.00195	0.000029
0.457	11.36	0.0181	0.555	-16.11	134.9	20.09	0.00211	0.000029
0.557	11.66	0.0220	0.570	-15.57	164.4	20.63	0.00221	0.000027
0.657	12.38	0.0260	0.605	-14.27	194.0	21.90	0.00235	0.000025
0.782	13.16	0.0309	0.643	-12.91	230.9	23.29	0.00248	0.000023
0.907	13.65	0.0359	0.667	-12.05	267.8	24.16	0.00253	0.000022
1.032	14.14	0.0408	0.691	-11.18	304.7	25.02	0.00254	0.000022
1.157	14.74	0.0458	0.721	-10.11	341.6	26.08	0.00252	0.000021
1.307	15.46	0.0517	0.755	-8.85	385.8	27.34	0.00245	0.000021
1.457	16.20	0.0576	0.792	-7.54	430.1	28.65	0.00235	0.000020
1.607	16.76	0.0635	0.819	-6.54	474.4	29.64	0.00214	0.000019
1.757	17.41	0.0695	0.851	-5.39	518.7	30.81	0.00191	0.000018
1.957	17.98	0.0754	0.879	-4.39	563.0	31.80	0.00160	0.000017
2.107	18.73	0.0833	0.918	-2.95	622.0	33.24	0.00121	0.000015
2.307	19.40	0.0912	0.948	-1.88	681.1	34.32	0.00081	0.000012
2.507	19.97	0.0991	0.976	-0.86	740.1	35.33	0.00056	0.000009
2.807	20.40	0.1110	0.997	-0.11	828.7	36.09	0.00025	0.000004
3.207	20.49	0.1268	1.002	0.06	946.8	36.25	0.00000	0.000000
3.607	20.46	0.1426	1.000	0.00	1064.8	36.19	0.00000	0.000000

RUN: 111771-3 X=82. Z= 0.

UI = 20.00	D1 = 0.7977	BETA= 1.897	RD2 = 5097.
CF/2= 0.00074	D2 = 0.4881	B = 1.765	H = 1.634
F = 0.00131	DC =29.2779	P+ = 0.008	G =14.246
K = -0.169E-06	D99 = 3.0886	V0+ = 0.048	

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.020	2.98	0.0007	0.149	-31.24	5.7	5.47	0.00097	0.000667
0.023	3.42	0.0008	0.171	-30.43	6.5	6.27	0.00100	0.000642
0.026	3.95	0.0009	0.197	-29.46	7.4	7.25	0.00104	0.000618
0.029	4.40	0.0010	0.220	-28.63	8.3	8.08	0.00108	0.000604
0.034	4.97	0.0012	0.249	-27.58	9.7	9.13	0.00112	0.000502
0.041	5.56	0.0014	0.278	-26.51	11.7	10.20	0.00117	0.000342
0.051	6.22	0.0017	0.311	-25.29	14.5	11.41	0.00123	0.000279
0.068	7.17	0.0023	0.358	-23.55	19.3	13.15	0.00131	0.000184
0.093	7.79	0.0032	0.389	-22.41	26.5	14.29	0.00138	0.000116
0.133	8.51	0.0045	0.425	-21.09	37.8	15.61	0.00148	0.000071
0.198	9.17	0.0068	0.459	-19.87	56.3	16.84	0.00161	0.000046
0.273	9.58	0.0093	0.479	-19.12	77.7	17.58	0.00172	0.000035
0.373	10.11	0.0127	0.516	-17.77	106.1	18.93	0.00188	0.000029
0.498	11.04	0.0170	0.552	-16.45	141.7	20.25	0.00205	0.000025
0.623	11.56	0.0213	0.578	-15.48	177.3	21.22	0.00220	0.000022
0.748	12.17	0.0255	0.608	-14.37	212.8	22.33	0.00231	0.000021
0.898	12.75	0.0307	0.638	-13.30	255.5	23.41	0.00236	0.000020
1.048	13.29	0.0358	0.665	-12.31	298.2	24.40	0.00242	0.000020
1.198	13.93	0.0409	0.697	-11.13	340.9	25.57	0.00249	0.000019
1.348	14.55	0.0460	0.728	-10.00	383.6	26.70	0.00252	0.000019
1.498	15.20	0.0512	0.760	-8.81	426.2	27.90	0.00248	0.000018
1.698	15.85	0.0580	0.793	-7.61	483.2	29.10	0.00231	0.000018
1.898	16.51	0.0648	0.825	-6.41	540.1	30.30	0.00210	0.000017
2.198	17.67	0.0751	0.884	-4.27	625.4	32.43	0.00173	0.000015
2.498	18.66	0.0853	0.933	-2.46	710.8	34.25	0.00119	0.000011
2.798	19.36	0.0956	0.968	-1.16	796.1	35.54	0.00066	0.000008
3.098	19.81	0.1058	0.991	-0.34	881.5	36.36	0.00029	0.000005
3.398	19.95	0.1161	0.998	-0.08	966.9	36.62	0.00005	0.000002
3.698	20.01	0.1263	1.001	0.02	1052.2	36.73	0.00000	-0.000000
3.898	20.00	0.1331	1.000	0.00	1109.1	36.70	0.00000	0.000000

RUN: 111771-3 X=90. Z= 0.

UI = 19.73	D1 = 0.8640	BETA= 2.053	RD2 = 5471.
CF/2= 0.00073	D2 = 0.5309	B = 1.771	H = 1.627
F = 0.00129	DC =32.0137	P+ = 0.009	G =14.285
K = -0.168E-06	D99 = 3.3884	V0+ = 0.048	

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.020	3.24	0.0006	0.164	-30.97	5.5	6.08	0.000626
0.023	3.66	0.0007	0.186	-30.18	6.3	6.88	0.000571
0.026	4.06	0.0008	0.206	-29.43	7.2	7.62	0.000515
0.029	4.28	0.0009	0.217	-29.02	8.0	8.03	0.000429
0.039	4.83	0.0012	0.245	-27.98	10.8	9.08	0.000364
0.046	5.40	0.0014	0.274	-26.92	12.7	10.14	0.000320
0.056	6.15	0.0017	0.312	-25.50	15.5	11.55	0.000249
0.063	6.65	0.0020	0.337	-24.57	17.5	12.48	0.000239
0.078	7.16	0.0024	0.363	-23.61	21.6	13.44	0.000169
0.109	7.61	0.0033	0.386	-22.77	28.6	14.29	0.000106
0.143	8.50	0.0045	0.431	-21.09	39.7	15.96	0.000066
0.219	9.09	0.0066	0.461	-19.98	59.2	17.07	0.000044
0.313	9.70	0.0098	0.492	-18.94	87.0	18.22	0.000032
0.413	10.12	0.0129	0.513	-18.06	114.8	19.00	0.000025
0.538	11.05	0.0168	0.560	-16.30	149.6	20.76	0.000021
0.663	11.43	0.0207	0.579	-15.60	184.3	21.46	0.000020
0.738	11.57	0.0230	0.586	-15.33	205.2	21.72	0.000020
0.813	11.88	0.0254	0.602	-14.74	226.0	22.31	0.000019
0.963	12.60	0.0301	0.638	-13.40	267.7	23.66	0.000020
1.113	13.16	0.0349	0.667	-12.36	309.5	24.71	0.000019
1.263	13.74	0.0394	0.697	-11.24	351.2	25.81	0.000018
1.413	14.25	0.0441	0.722	-10.29	392.9	26.77	0.000017
1.613	14.83	0.0504	0.752	-9.21	448.5	27.95	0.000016
1.813	15.56	0.0566	0.789	-7.83	504.1	29.23	0.000016
2.013	16.15	0.0629	0.819	-6.72	559.7	30.33	0.000016
2.313	17.11	0.0722	0.867	-4.93	643.2	32.13	0.000014
2.613	18.05	0.0816	0.915	-3.15	726.6	33.91	0.000012
2.913	18.86	0.0910	0.956	-1.63	810.0	35.42	0.000009
3.213	19.36	0.1004	0.981	-0.69	893.4	36.36	0.000006
3.513	19.66	0.1097	0.996	-0.14	976.9	36.91	0.000003
3.913	19.76	0.1222	1.001	0.05	1088.1	37.10	0.000001
4.413	19.73	0.1378	1.000	0.00	1227.2	37.05	0.000000

RUN: 101371-2 X= 2. Z= 0.

UI = 29.77	D1 = 0.0629	BETA= 0.189	RD2 = 591.
CF/2= 0.00228	D2 = 0.0391	B = 0.877	H = 1.611
F = 0.00200	DC = 1.3178	P+ = 0.0042	G = 7.940
K = -0.454E-06	D99 = 0.3210	V0+ = 0.0419	

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	4.41	0.0033	0.148	-17.84	3.1	3.10	0.001937
0.005	5.03	0.0040	0.169	-17.40	3.8	3.54	0.001849
0.006	5.77	0.0048	0.194	-16.89	4.5	4.06	0.001761
0.007	6.46	0.0055	0.217	-16.40	5.3	4.54	0.001659
0.009	7.99	0.0071	0.268	-15.32	6.7	5.62	0.001575
0.011	9.39	0.0086	0.315	-14.34	8.2	6.60	0.001392
0.013	10.69	0.0101	0.359	-13.42	9.6	7.52	0.001241
0.015	11.88	0.0116	0.399	-12.59	11.0	8.36	0.001096
0.017	12.56	0.0131	0.422	-12.11	12.5	8.84	0.000968
0.019	13.53	0.0146	0.454	-11.43	13.9	9.52	0.000821
0.022	14.61	0.0169	0.491	-10.67	16.1	10.27	0.000662
0.025	15.50	0.0192	0.521	-10.04	18.3	10.90	0.000558
0.029	16.15	0.0222	0.542	-9.59	21.2	11.36	0.000445
0.033	16.88	0.0253	0.567	-9.06	24.0	11.88	0.000370
0.038	17.68	0.0291	0.594	-8.51	27.7	12.43	0.000311
0.044	18.56	0.0336	0.623	-7.89	32.0	13.06	0.000271
0.052	19.33	0.0397	0.649	-7.35	37.8	13.60	0.000224
0.062	20.21	0.0473	0.679	-6.73	45.0	14.21	0.000186
0.075	21.23	0.0571	0.713	-6.01	54.4	14.94	0.000158
0.090	22.17	0.0685	0.744	-5.35	65.2	15.59	0.000139
0.105	23.05	0.0799	0.774	-4.73	76.0	16.21	0.000124
0.125	24.14	0.0951	0.811	-3.96	90.5	16.98	0.000109
0.145	25.07	0.1103	0.842	-3.31	104.9	17.63	0.000097
0.165	25.90	0.1254	0.870	-2.72	119.3	18.22	0.000085
0.190	26.80	0.1444	0.900	-2.09	137.4	18.85	0.000071
0.215	27.61	0.1634	0.928	-1.52	155.4	19.42	0.000059
0.245	28.32	0.1861	0.951	-1.02	177.1	19.92	0.000045
0.275	28.92	0.2089	0.971	-0.60	198.8	20.34	0.000033
0.310	29.41	0.2355	0.988	-0.26	224.0	20.68	0.000021
0.350	29.66	0.2658	0.996	-0.08	252.9	20.86	0.000012
0.390	29.76	0.2962	1.000	-0.01	281.8	20.93	0.000004
0.435	29.78	0.3303	1.000	0.01	314.3	20.95	-0.000002
0.485	29.77	0.3683	1.000	0.00	350.4	20.94	0.000000

RUN: 101371-2 X=10. Z= 0.

UI = 27.05	D1 = 0.1506	BETA= 1.164	RD2 = 1213.
CF/2= 0.00152	D2 = 0.0883	B = 1.322	H = 1.705
F = 0.00201	DC = 3.8620	P+ = 0.0144	G =10.604
K = -0.855E-06	D99 = 0.5772	V0+ = 0.0516	

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.04	0.0013	0.112	-22.77	2.7	2.88	0.00180	0.001342
0.006	3.30	0.0016	0.122	-22.52	3.2	3.13	0.00183	0.001290
0.008	3.99	0.0021	0.148	-21.86	4.3	3.79	0.00191	0.001186
0.010	4.96	0.0026	0.183	-20.95	5.4	4.70	0.00200	0.001072
0.012	5.91	0.0031	0.218	-20.05	6.4	5.60	0.00209	0.001000
0.015	6.83	0.0039	0.252	-19.18	8.0	6.47	0.00218	0.000864
0.018	7.83	0.0047	0.290	-18.22	9.6	7.43	0.00228	0.000727
0.022	8.84	0.0057	0.327	-17.27	11.8	8.38	0.00239	0.000599
0.026	9.61	0.0067	0.355	-16.54	13.9	9.11	0.00247	0.000500
0.031	10.46	0.0080	0.387	-15.73	16.6	9.91	0.00256	0.000395
0.037	11.39	0.0096	0.421	-14.85	19.8	10.80	0.00265	0.000314
0.046	12.19	0.0119	0.451	-14.09	24.6	11.56	0.00273	0.000237
0.056	12.88	0.0145	0.476	-13.43	30.0	12.22	0.00279	0.000184
0.071	13.75	0.0184	0.508	-12.62	38.0	13.03	0.00285	0.000142
0.091	14.67	0.0236	0.542	-11.74	48.7	13.91	0.00288	0.000117
0.111	15.42	0.0287	0.570	-11.03	59.5	14.62	0.00287	0.000103
0.136	16.32	0.0352	0.603	-10.17	72.8	15.48	0.00282	0.000094
0.166	17.24	0.0430	0.637	-9.31	88.9	16.34	0.00269	0.000087
0.201	18.32	0.0520	0.677	-8.28	107.7	17.37	0.00251	0.000083
0.241	19.49	0.0624	0.720	-7.17	129.1	18.48	0.00225	0.000080
0.281	20.68	0.0728	0.764	-6.04	150.5	19.60	0.00201	0.000077
0.321	21.76	0.0831	0.804	-5.02	171.9	20.63	0.00176	0.000074
0.361	22.86	0.0935	0.845	-3.98	193.4	21.67	0.00158	0.000069
0.401	23.88	0.1038	0.883	-3.01	214.8	22.64	0.00145	0.000062
0.441	24.87	0.1142	0.919	-2.07	236.2	23.57	0.00140	0.000053
0.481	25.60	0.1245	0.946	-1.37	257.6	24.27	0.00128	0.000042
0.526	26.30	0.1362	0.972	-0.71	281.7	24.94	0.00117	0.000031
0.576	26.78	0.1491	0.990	-0.26	308.5	25.39	0.00093	0.000019
0.626	27.01	0.1621	0.998	-0.04	335.3	25.61	0.00060	0.000010
0.701	27.07	0.1815	1.000	0.01	375.5	25.66	0.00000	-0.000000
0.776	27.05	0.2009	1.000	0.00	415.6	25.65	0.00000	0.000000

RUN: 101371-2 X=22. Z= 0.

UI = 24.64 D1 = 0.2890 BETA= 1.675 RD2 = 2081.
CF/2= 0.00103 D2 = 0.1663 B = 1.951 H = 1.738
F = 0.00201 DC = 9.0051 P+ = 0.0144 G =13.232
K = -0.477E-06 D99 = 1.0379 VO+ = 0.0626

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.010	2.85	0.0011	0.115	-27.56	4.0	3.60	0.00132	0.000885
0.012	3.37	0.0013	0.137	-26.90	4.8	4.26	0.00137	0.000857
0.015	4.16	0.0017	0.169	-25.89	6.0	5.26	0.00146	0.000816
0.018	5.06	0.0020	0.205	-24.76	7.2	6.40	0.00155	0.000752
0.022	5.98	0.0024	0.243	-23.59	8.8	7.57	0.00164	0.000602
0.027	6.84	0.0030	0.278	-22.51	10.8	8.65	0.00173	0.000479
0.033	7.71	0.0037	0.313	-21.41	13.3	9.75	0.00183	0.000365
0.047	8.53	0.0052	0.346	-20.37	18.9	10.79	0.00195	0.000240
0.057	9.44	0.0063	0.383	-19.22	22.9	11.93	0.00207	0.000192
0.067	10.05	0.0074	0.408	-18.45	26.9	12.71	0.00215	0.000157
0.082	10.68	0.0091	0.433	-17.66	32.9	13.50	0.00225	0.000130
0.102	11.32	0.0113	0.459	-16.85	41.0	14.31	0.00235	0.000097
0.132	12.06	0.0147	0.489	-15.92	53.0	15.24	0.00247	0.000075
0.162	12.57	0.0180	0.510	-15.27	65.1	15.89	0.00255	0.000067
0.202	13.41	0.0224	0.544	-14.21	81.1	16.95	0.00265	0.000061
0.252	14.14	0.0280	0.574	-13.29	101.2	17.87	0.00270	0.000058
0.312	15.23	0.0346	0.618	-11.90	125.3	19.26	0.00273	0.000054
0.372	16.19	0.0413	0.657	-10.69	149.4	20.47	0.00267	0.000052
0.432	17.19	0.0480	0.698	-9.42	173.5	21.74	0.00255	0.000050
0.492	17.96	0.0546	0.729	-8.45	197.6	22.71	0.00230	0.000049
0.552	18.86	0.0613	0.765	-7.31	221.7	23.85	0.00208	0.000048
0.612	19.79	0.0680	0.803	-6.14	245.8	25.02	0.00187	0.000047
0.687	20.84	0.0763	0.846	-4.81	275.9	26.35	0.00161	0.000044
0.762	21.92	0.0846	0.889	-3.44	306.0	27.71	0.00144	0.000039
0.837	22.84	0.0929	0.927	-2.28	336.2	28.88	0.00129	0.000032
0.912	23.63	0.1013	0.959	-1.28	366.3	29.88	0.00115	0.000025
1.012	24.33	0.1124	0.987	-0.40	406.4	30.76	0.00087	0.000015
1.112	24.60	0.1235	0.998	-0.06	446.6	31.10	0.00044	0.000007
1.212	24.65	0.1346	1.000	0.00	486.8	31.16	0.00000	0.000000
1.312	24.64	0.1457	1.000	0.00	526.9	31.16	0.00000	0.000000

RUN: 101371-2 X=34. Z= 0.

UI = 23.31 D1 = 0.4189 BETA= 2.185 RD2 = 2855.
CF/2= 0.00078 D2 = 0.2412 B = 2.603 H = 1.737
F = 0.00202 DC =15.0382 P+ = 0.0158 G =15.227
K = -0.342E-06 D99 = 1.5027 VO+ = 0.0725

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.014	2.90	0.0009	0.124	-31.44	4.5	4.46	0.00108	0.000722
0.017	3.58	0.0011	0.153	-30.39	5.5	5.51	0.00116	0.000690
0.020	4.18	0.0013	0.179	-29.46	6.5	6.44	0.00122	0.000658
0.024	4.75	0.0016	0.204	-28.58	7.8	7.32	0.00128	0.000577
0.030	5.83	0.0020	0.250	-26.92	9.8	8.98	0.00140	0.000465
0.036	6.61	0.0024	0.283	-25.72	11.7	10.18	0.00149	0.000376
0.044	7.12	0.0029	0.306	-24.93	14.4	10.97	0.00156	0.000294
0.056	8.11	0.0037	0.348	-23.40	18.3	12.50	0.00168	0.000202
0.071	8.75	0.0047	0.375	-22.42	23.3	13.48	0.00178	0.000145
0.096	9.59	0.0064	0.412	-21.12	31.5	14.78	0.00192	0.000102
0.126	10.09	0.0084	0.433	-20.36	41.6	15.54	0.00203	0.000074
0.156	10.69	0.0103	0.459	-19.44	51.3	16.46	0.00215	0.000062
0.196	11.41	0.0130	0.489	-18.33	64.5	17.57	0.00229	0.000054
0.246	11.93	0.0163	0.512	-17.52	81.0	18.38	0.00240	0.000047
0.296	12.55	0.0197	0.539	-16.57	97.5	19.33	0.00252	0.000043
0.346	13.24	0.0230	0.568	-15.51	114.0	20.39	0.00263	0.000041
0.396	13.62	0.0263	0.584	-14.93	130.5	20.97	0.00266	0.000040
0.496	14.73	0.0330	0.632	-13.21	163.4	22.68	0.00274	0.000038
0.571	15.56	0.0379	0.666	-11.97	188.2	23.92	0.00275	0.000038
0.646	16.17	0.0429	0.694	-11.00	212.9	24.90	0.00266	0.000039
0.721	17.01	0.0479	0.730	-9.71	237.6	26.19	0.00258	0.000038
0.796	17.85	0.0529	0.766	-8.41	262.4	27.49	0.00246	0.000037
0.871	18.63	0.0579	0.799	-7.21	287.1	28.68	0.00228	0.000036
0.946	19.32	0.0629	0.829	-6.14	311.8	29.75	0.00204	0.000034
1.021	20.01	0.0679	0.859	-5.08	336.5	30.82	0.00179	0.000032
1.096	20.70	0.0729	0.888	-4.02	361.3	31.87	0.00157	0.000030
1.196	21.52	0.0795	0.923	-2.75	394.3	33.14	0.00131	0.000025
1.296	22.23	0.0862	0.954	-1.66	427.2	34.24	0.00110	0.000020
1.396	22.76	0.0928	0.976	-0.85	460.2	35.05	0.00088	0.000014
1.521	23.13	0.1011	0.992	-0.28	501.4	35.62	0.00057	0.000008
1.646	23.30	0.1094	1.000	-0.02	542.6	35.88	0.00029	0.000003
1.796	23.32	0.1194	1.000	0.01	592.1	35.91	0.00000	-0.000002
1.871	23.31	0.1244	1.000	0.00	616.8	35.90	0.00000	0.000000

RUN: 101371-2 X=46. Z= 0.

UI = 22.36 D1 = 0.5480 BETA= 2.361 RD2 = 3585.
CF/2= 0.00071 D2 = 0.3157 B = 2.860 H = 1.736
F = 0.00202 DC =20.6197 P+ = 0.0143 G =15.949
K = -0.268E-06 D99 = 1.9414 VO+ = 0.0760

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.014	2.52	0.0007	0.113	-33.38	4.2	4.24	0.00098	0.000668
0.018	3.24	0.0009	0.145	-32.17	5.4	5.45	0.00106	0.000633
0.022	3.82	0.0011	0.171	-31.20	6.6	6.42	0.00112	0.000597
0.026	4.45	0.0013	0.199	-30.14	7.8	7.49	0.00119	0.000525
0.031	5.27	0.0015	0.236	-28.75	9.4	8.87	0.00128	0.000441
0.038	5.92	0.0018	0.265	-27.67	11.5	9.96	0.00135	0.000349
0.048	6.67	0.0023	0.298	-26.40	14.5	11.22	0.00145	0.000253
0.060	7.17	0.0029	0.321	-25.56	18.1	12.06	0.00152	0.000185
0.075	7.86	0.0036	0.352	-24.39	22.6	13.23	0.00162	0.000137
0.095	8.55	0.0046	0.382	-23.24	28.7	14.39	0.00172	0.000103
0.125	9.15	0.0061	0.409	-22.23	37.7	15.40	0.00184	0.000076
0.165	9.62	0.0080	0.430	-21.44	49.8	16.18	0.00195	0.000058
0.205	10.27	0.0099	0.459	-20.34	61.9	17.29	0.00209	0.000046
0.255	10.80	0.0124	0.483	-19.44	76.9	18.18	0.00222	0.000041
0.305	11.34	0.0148	0.507	-18.55	92.0	19.08	0.00234	0.000039
0.380	11.75	0.0184	0.526	-17.85	114.7	19.78	0.00245	0.000035
0.455	12.56	0.0221	0.562	-16.48	137.3	21.14	0.00261	0.000034
0.555	13.45	0.0269	0.602	-14.99	167.5	22.64	0.00274	0.000033
0.655	14.07	0.0318	0.629	-13.95	197.6	23.67	0.00277	0.000032
0.755	15.00	0.0366	0.671	-12.38	227.8	25.25	0.00283	0.000030
0.855	15.71	0.0415	0.703	-11.18	258.0	26.45	0.00278	0.000030
0.955	16.49	0.0463	0.738	-9.87	288.2	27.75	0.00270	0.000030
1.055	17.13	0.0512	0.766	-8.79	318.4	28.83	0.00252	0.000028
1.180	18.15	0.0572	0.812	-7.09	356.1	30.54	0.00232	0.000028
1.305	18.97	0.0633	0.848	-5.70	393.8	31.92	0.00198	0.000026
1.455	19.95	0.0706	0.892	-4.05	439.1	33.58	0.00157	0.000023
1.605	20.88	0.0778	0.934	-2.49	484.3	35.14	0.00123	0.000018
1.755	21.58	0.0851	0.965	-1.32	529.6	36.31	0.00090	0.000013
1.905	22.09	0.0924	0.988	-0.45	574.8	37.17	0.00065	0.000009
2.105	22.34	0.1021	0.999	-0.03	635.2	37.60	0.00028	0.000004
2.305	22.37	0.1118	1.001	0.03	695.5	37.65	0.00000	-0.000000
2.505	22.36	0.1215	1.000	0.00	755.9	37.62	0.00000	0.000000

RUN: 101371-2 X=58. Z= 0.

UI = 21.53 D1 = 0.6647 BETA= 2.448 RD2 = 4222.
CF/2= 0.00066 D2 = 0.3860 B = 3.064 H = 1.722
F = 0.00202 DC =25.8893 P+ = 0.0131 G =16.329
K = -0.222E-06 D99 = 2.3763 VO+ = 0.0787

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.020	2.94	0.0008	0.137	-33.63	5.6	5.32	0.00098	0.000579
0.024	3.60	0.0009	0.167	-32.44	6.7	6.51	0.00106	0.000543
0.028	4.10	0.0011	0.190	-31.54	7.9	7.41	0.00111	0.000508
0.033	4.79	0.0013	0.223	-30.28	9.3	8.67	0.00119	0.000458
0.041	5.63	0.0016	0.262	-28.76	11.5	10.19	0.00128	0.000344
0.051	6.22	0.0020	0.289	-27.69	14.3	11.26	0.00136	0.000254
0.066	7.04	0.0025	0.327	-26.21	18.5	12.74	0.00147	0.000171
0.081	7.35	0.0031	0.341	-25.66	22.7	13.29	0.00153	0.000127
0.101	8.05	0.0039	0.374	-24.39	28.4	14.56	0.00163	0.000099
0.131	8.50	0.0051	0.395	-23.47	36.8	15.38	0.00173	0.000074
0.166	9.01	0.0064	0.418	-22.66	46.6	16.29	0.00183	0.000059
0.226	9.82	0.0087	0.456	-21.18	63.5	17.76	0.00201	0.000044
0.286	10.36	0.0110	0.481	-20.21	80.3	18.74	0.00215	0.000037
0.361	10.84	0.0139	0.503	-19.34	101.4	19.60	0.00230	0.000031
0.436	11.46	0.0168	0.532	-18.23	122.4	20.72	0.00244	0.000029
0.511	11.90	0.0197	0.553	-17.42	143.5	21.53	0.00254	0.000029
0.611	12.42	0.0236	0.577	-16.49	171.6	22.46	0.00265	0.000028
0.711	13.11	0.0275	0.609	-15.25	199.6	23.70	0.00276	0.000027
0.811	13.85	0.0313	0.643	-13.90	227.7	25.05	0.00284	0.000027
0.911	14.38	0.0352	0.668	-12.94	255.8	26.01	0.00283	0.000026
1.036	15.10	0.0400	0.701	-11.64	290.9	27.31	0.00281	0.000025
1.161	15.88	0.0448	0.737	-10.23	326.0	28.72	0.00277	0.000024
1.311	16.66	0.0506	0.774	-8.81	368.1	30.13	0.00260	0.000024
1.461	17.55	0.0564	0.815	-7.20	410.2	31.75	0.00239	0.000023
1.611	18.34	0.0622	0.852	-5.77	452.3	33.18	0.00207	0.000022
1.761	19.16	0.0680	0.890	-4.30	494.5	34.65	0.00174	0.000020
1.911	19.82	0.0738	0.921	-3.09	536.6	35.85	0.00136	0.000017
2.061	20.50	0.0796	0.952	-1.87	578.7	37.08	0.00106	0.000014
2.211	20.95	0.0854	0.973	-1.05	620.8	37.90	0.00074	0.000011
2.411	21.40	0.0931	0.994	-0.25	677.0	38.70	0.00044	0.000006
2.611	21.54	0.1009	1.000	0.01	733.1	38.96	0.00018	0.000003
2.811	21.57	0.1086	1.002	0.07	789.3	39.02	0.00000	-0.000000
3.111	21.53	0.1202	1.000	0.00	873.5	38.95	0.00000	0.000000

RUN: 101371-2 X=70. Z= 0.

UI = 20.97 D1 = 0.7826 BETA= 2.524 RD2 = 4877.
CF/2= 0.00062 D2 = 0.4580 B = 3.205 H = 1.709
F = 0.00200 DC =31.3255 P+ = 0.0121 G =16.604
K = -0.189E-06 D99 = 2.8244 V0+ = 0.0801

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.021	2.97	0.0007	0.142	-34.36	5.6	5.67	0.00094	0.000555
0.025	3.48	0.0008	0.166	-33.39	6.7	6.63	0.00100	0.000522
0.029	3.96	0.0009	0.188	-32.51	7.7	7.52	0.00105	0.000490
0.036	4.71	0.0011	0.225	-31.04	9.6	8.99	0.00114	0.000403
0.044	5.32	0.0014	0.253	-29.88	11.7	10.15	0.00121	0.000325
0.054	6.11	0.0017	0.291	-28.37	14.4	11.66	0.00131	0.000249
0.074	6.92	0.0024	0.330	-26.82	19.7	13.21	0.00142	0.000156
0.094	7.53	0.0030	0.359	-25.66	25.0	14.37	0.00151	0.000113
0.119	7.98	0.0038	0.381	-24.80	31.7	15.23	0.00159	0.000083
0.169	8.55	0.0054	0.408	-23.70	45.0	16.33	0.00173	0.000054
0.234	9.32	0.0075	0.444	-22.24	62.3	17.79	0.00189	0.000040
0.309	10.19	0.0099	0.486	-20.58	82.2	19.44	0.00208	0.000034
0.409	10.29	0.0131	0.490	-20.40	108.8	19.63	0.00219	0.000028
0.509	11.07	0.0162	0.528	-18.91	135.4	21.12	0.00236	0.000025
0.609	11.80	0.0194	0.563	-17.50	162.0	22.53	0.00254	0.000024
0.709	12.14	0.0226	0.579	-16.86	188.6	23.16	0.00263	0.000025
0.809	12.61	0.0258	0.601	-15.97	215.2	24.06	0.00271	0.000023
0.934	13.22	0.0298	0.630	-14.80	248.5	25.23	0.00277	0.000023
1.059	14.07	0.0338	0.671	-13.17	281.8	26.86	0.00285	0.000022
1.209	14.68	0.0386	0.700	-12.00	321.7	28.03	0.00282	0.000022
1.359	15.45	0.0434	0.736	-10.55	361.6	29.48	0.00277	0.000021
1.509	16.00	0.0482	0.763	-9.48	401.5	30.55	0.00259	0.000020
1.659	16.78	0.0530	0.800	-8.00	441.4	32.03	0.00246	0.000020
1.809	17.44	0.0577	0.832	-6.74	481.3	33.29	0.00223	0.000019
2.009	18.31	0.0641	0.873	-5.09	534.5	34.94	0.00187	0.000018
2.209	19.05	0.0705	0.909	-3.66	587.7	36.37	0.00143	0.000015
2.409	19.86	0.0769	0.947	-2.12	640.9	37.91	0.00109	0.000012
2.709	20.64	0.0865	0.984	-0.63	720.7	39.39	0.00058	0.000008
3.009	20.96	0.0961	0.999	-0.02	800.6	40.00	0.00020	0.000003
3.309	21.00	0.1056	1.001	0.05	880.4	40.08	0.00000	0.000000
3.609	20.97	0.1152	1.000	0.00	960.2	40.03	0.00000	0.000000

RUN: 101371-2 X=82. Z= 0.

UI = 20.62 D1 = 0.8987 BETA= 2.657 RD2 = 5576.
CF/2= 0.00058 D2 = 0.5325 B = 3.457 H = 1.688
F = 0.00202 DC =37.1748 P+ = 0.0117 G =16.855
K = -0.165E-06 D99 = 3.2985 V0+ = 0.0836

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.021	2.80	0.0006	0.136	-35.74	5.3	5.63	0.00089	0.000563
0.025	3.41	0.0007	0.165	-34.54	6.3	6.83	0.00096	0.000529
0.030	4.08	0.0008	0.198	-33.18	7.6	8.18	0.00103	0.000486
0.036	4.49	0.0010	0.218	-32.37	9.1	9.00	0.00108	0.000413
0.048	5.59	0.0013	0.271	-30.14	12.2	11.22	0.00121	0.000284
0.068	6.57	0.0018	0.319	-28.18	17.2	13.19	0.00134	0.000176
0.093	7.18	0.0025	0.348	-26.95	23.5	14.41	0.00144	0.000118
0.128	7.84	0.0034	0.380	-25.64	32.4	15.72	0.00155	0.000076
0.203	8.75	0.0055	0.424	-23.82	51.4	17.55	0.00174	0.000046
0.303	9.59	0.0082	0.465	-22.13	76.7	19.23	0.00193	0.000033
0.403	10.03	0.0108	0.486	-21.25	102.0	20.12	0.00209	0.000027
0.503	10.63	0.0135	0.516	-20.04	127.3	21.33	0.00226	0.000024
0.603	11.21	0.0162	0.544	-18.88	152.6	22.48	0.00237	0.000022
0.703	11.60	0.0189	0.563	-18.09	178.0	23.27	0.00244	0.000020
0.803	11.95	0.0216	0.580	-17.39	203.3	23.97	0.00252	0.000021
0.928	12.54	0.0250	0.608	-16.21	234.9	25.16	0.00263	0.000019
1.053	12.93	0.0283	0.627	-15.43	266.5	25.93	0.00265	0.000020
1.203	13.84	0.0324	0.671	-13.60	304.5	27.77	0.00271	0.000020
1.353	14.17	0.0364	0.687	-12.95	342.5	28.42	0.00263	0.000019
1.503	14.91	0.0404	0.723	-11.45	380.5	29.91	0.00268	0.000019
1.703	15.74	0.0458	0.763	-9.80	431.1	31.57	0.00259	0.000018
1.903	16.51	0.0512	0.801	-8.24	481.7	33.12	0.00236	0.000018
2.103	17.19	0.0566	0.834	-6.88	532.3	34.49	0.00207	0.000016
2.303	18.05	0.0620	0.876	-5.15	583.0	36.22	0.00178	0.000015
2.503	18.57	0.0673	0.900	-4.12	633.6	37.24	0.00124	0.000013
2.703	19.14	0.0727	0.928	-2.96	684.2	38.40	0.00084	0.000011
3.003	19.98	0.0808	0.969	-1.29	760.2	40.07	0.00045	0.000008
3.303	20.42	0.0889	0.990	-0.40	836.1	40.97	0.00013	0.000005
3.603	20.58	0.0969	0.998	-0.08	912.0	41.29	-0.00005	0.000002
3.903	20.62	0.1050	1.000	-0.01	988.0	41.36	-0.00009	0.000000
4.403	20.62	0.1184	1.000	0.00	1114.5	41.37	0.00000	0.000000

RUN: 101371-2 X=90. Z= 0.

UI = 20.43 D1 = 0.6767 BETA= 2.840 RD2 = 6015.
CF/2= 0.00057 D2 = 0.5798 B = 3.543 H = 1.684
F = 0.00201 DC =41.0050 P+ = 0.0118 G =17.059
K = -0.159E-06 D99 = 3.6141 V0+ = 0.0844

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.022	3.03	0.0005	0.148	-35.76	5.4	6.23	0.000559
0.027	3.66	0.0007	0.179	-34.46	6.6	7.53	0.000516
0.034	4.34	0.0008	0.212	-33.07	8.4	8.92	0.000455
0.044	5.20	0.0011	0.255	-31.29	10.8	10.69	0.000314
0.057	5.97	0.0014	0.292	-29.71	14.0	12.28	0.000222
0.072	6.71	0.0018	0.328	-28.20	17.7	13.79	0.000162
0.092	7.04	0.0022	0.344	-27.52	22.7	14.46	0.000111
0.127	7.71	0.0031	0.378	-26.13	31.3	15.85	0.000072
0.167	8.27	0.0041	0.405	-24.98	41.2	17.00	0.000053
0.242	8.76	0.0059	0.429	-23.99	59.7	18.00	0.000038
0.317	9.49	0.0077	0.464	-22.49	78.3	19.50	0.000029
0.417	9.98	0.0102	0.489	-21.47	103.0	20.52	0.000024
0.517	10.38	0.0126	0.508	-20.65	127.7	21.34	0.000021
0.617	10.69	0.0150	0.523	-20.01	152.4	21.97	0.000020
0.717	11.26	0.0175	0.551	-18.85	177.1	23.13	0.000019
0.817	11.61	0.0199	0.568	-18.13	201.8	23.85	0.000019
0.942	12.13	0.0230	0.594	-17.05	232.7	24.94	0.000019
1.067	12.51	0.0260	0.612	-16.28	263.6	25.70	0.000019
1.217	13.19	0.0297	0.646	-14.87	300.6	27.12	0.000019
1.367	13.80	0.0333	0.676	-13.62	337.7	28.37	0.000018
1.517	14.44	0.0370	0.707	-12.30	374.8	29.68	0.000018
1.717	15.03	0.0419	0.736	-11.10	424.2	30.88	0.000017
1.917	15.74	0.0467	0.770	-9.64	473.6	32.34	0.000016
2.117	16.53	0.0516	0.809	-8.01	523.0	33.97	0.000016
2.317	17.03	0.0565	0.834	-6.99	572.4	35.00	0.000016
2.517	17.73	0.0614	0.868	-5.55	621.9	36.44	0.000014
2.817	18.80	0.0687	0.920	-3.36	696.0	38.63	0.000012
3.117	19.54	0.0760	0.957	-1.81	770.1	40.17	0.000009
3.417	20.03	0.0833	0.980	-0.83	844.2	41.16	0.000006
3.717	20.33	0.0906	0.995	-0.21	918.4	41.78	0.000003
3.917	20.35	0.0955	0.996	-0.15	967.8	41.83	0.000002
4.417	20.43	0.1077	1.000	0.00	1091.3	41.98	0.000000

RUN: 112871-1 X= 2. Z= 0.

UI = 29.49 D1 = 0.0717 BETA= 0.248 RD2 = 641.
CF/2= 0.00194 D2 = 0.0425 B = 2.057 H = 1.687
F = 0.00399 DC = 1.6282 P+ = 0.0052 G = 9.247
K = -0.445E-06 D99 = 0.3362 V0+ = 0.0906

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	3.52	0.0026	0.119	-20.00	2.9	2.71	0.001486
0.005	3.80	0.0033	0.129	-19.78	3.5	2.92	0.001420
0.006	4.25	0.0039	0.144	-19.43	4.2	3.27	0.001355
0.007	4.86	0.0045	0.165	-18.96	4.8	3.74	0.001404
0.008	5.50	0.0051	0.187	-18.47	5.5	4.24	0.001509
0.009	6.31	0.0057	0.214	-17.85	6.2	4.86	0.001571
0.011	7.65	0.0069	0.260	-16.81	7.5	5.89	0.001437
0.013	8.87	0.0082	0.301	-15.87	8.8	6.83	0.001269
0.015	10.11	0.0094	0.343	-14.92	10.2	7.79	0.001075
0.017	10.95	0.0106	0.371	-14.27	11.5	8.43	0.000934
0.020	12.17	0.0125	0.413	-13.33	13.5	9.37	0.000750
0.023	12.90	0.0143	0.437	-12.77	15.5	9.93	0.000613
0.026	13.70	0.0162	0.465	-12.15	17.5	10.55	0.000529
0.030	14.58	0.0186	0.494	-11.48	20.1	11.22	0.000436
0.034	15.28	0.0211	0.518	-10.94	22.8	11.76	0.000383
0.040	16.24	0.0248	0.551	-10.20	26.8	12.50	0.000314
0.048	17.14	0.0297	0.581	-9.50	32.1	13.20	0.000256
0.058	18.18	0.0358	0.616	-8.71	38.7	14.00	0.000214
0.069	19.18	0.0426	0.650	-7.93	46.0	14.77	0.000189
0.081	20.02	0.0499	0.679	-7.29	54.0	15.41	0.000171
0.093	20.88	0.0573	0.708	-6.63	62.0	16.08	0.000157
0.109	22.02	0.0671	0.747	-5.75	72.6	16.96	0.000143
0.124	22.92	0.0763	0.777	-5.05	82.6	17.65	0.000130
0.139	23.76	0.0856	0.806	-4.41	92.5	18.29	0.000118
0.159	24.78	0.0978	0.840	-3.62	105.8	19.08	0.000102
0.184	25.86	0.1132	0.877	-2.79	122.4	19.91	0.000086
0.209	26.77	0.1285	0.908	-2.09	139.0	20.61	0.000071
0.234	27.46	0.1439	0.931	-1.56	155.6	21.14	0.000057
0.259	28.08	0.1593	0.952	-1.08	172.2	21.62	0.000045
0.294	28.75	0.1808	0.975	-0.57	195.5	22.14	0.000031
0.329	29.16	0.2022	0.989	-0.25	218.7	22.45	0.000021
0.379	29.41	0.2330	0.997	-0.06	251.9	22.64	0.000010
0.434	29.48	0.2667	1.000	-0.01	288.5	22.70	0.000004
0.509	29.49	0.3128	1.000	0.01	338.3	22.71	-0.000003
0.584	29.49	0.3589	1.000	0.00	388.1	22.70	0.000000

RUN: 112871-1 X=10. Z= 0.

UI = 26.66 D1 = 0.1942 BETA= 3.148 RD2 = 1431.
CF/2= 0.00071 D2 = 0.1050 B = 5.070 H = 1.850
F = 0.00360 DC = 7.2899 P+ = 0.0446 G = -17.245
K = -0.844E-06 D99 = 0.6550 VO+ = 0.1351

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.009	3.11	0.0012	0.117	-33.15	3.3	4.38	0.00123	0.000843
0.011	3.60	0.0015	0.135	-32.46	4.0	5.07	0.00132	0.000805
0.013	4.19	0.0018	0.157	-31.63	4.7	5.90	0.00142	0.000767
0.015	4.74	0.0021	0.178	-30.86	5.4	6.67	0.00151	0.000737
0.018	5.54	0.0025	0.208	-29.73	6.5	7.80	0.00165	0.000685
0.022	6.45	0.0030	0.242	-28.45	8.0	9.08	0.00180	0.000572
0.026	7.44	0.0036	0.279	-27.05	9.4	10.48	0.00197	0.000480
0.031	8.21	0.0043	0.308	-25.98	11.3	11.55	0.00210	0.000388
0.038	8.93	0.0052	0.335	-24.96	13.8	12.57	0.00223	0.000296
0.048	9.91	0.0066	0.372	-23.58	17.4	13.95	0.00240	0.000215
0.059	10.61	0.0081	0.398	-22.60	21.4	14.93	0.00251	0.000172
0.074	11.43	0.0102	0.429	-21.43	26.9	16.10	0.00262	0.000140
0.094	12.26	0.0129	0.460	-20.27	34.1	17.26	0.00270	0.000115
0.119	13.19	0.0163	0.495	-18.96	43.2	18.57	0.00274	0.000101
0.149	14.22	0.0204	0.533	-17.51	54.1	20.02	0.00271	0.000092
0.179	15.10	0.0246	0.566	-16.27	65.0	21.25	0.00258	0.000089
0.209	16.03	0.0287	0.601	-14.96	75.9	22.57	0.00245	0.000086
0.249	17.20	0.0342	0.645	-13.32	90.4	24.21	0.00221	0.000084
0.299	18.73	0.0410	0.703	-11.16	108.6	26.37	0.00196	0.000081
0.349	20.16	0.0479	0.756	-9.14	126.8	28.39	0.00171	0.000077
0.399	21.58	0.0547	0.810	-7.15	144.9	30.38	0.00156	0.000073
0.449	22.85	0.0616	0.857	-5.35	163.1	32.18	0.00144	0.000066
0.499	24.10	0.0685	0.904	-3.60	181.3	33.93	0.00146	0.000054
0.549	25.18	0.0753	0.945	-2.08	199.4	35.45	0.00150	0.000042
0.599	25.97	0.0822	0.974	-0.97	217.6	36.56	0.00142	0.000031
0.674	26.53	0.0925	0.995	-0.17	244.8	37.35	0.00085	0.000015
0.749	26.67	0.1027	1.001	0.02	272.1	37.55	0.00000	0.000003
0.849	26.68	0.1165	1.000	0.00	308.4	37.53	0.00000	0.000000

RUN: 112871-1 X=22. Z= 0.

UI = 24.18 D1 = 0.3941 BETA= 4.077 RD2 = 2549.
CF/2= 0.00056 D2 = 0.2061 B = 5.745 H = 1.912
F = 0.00322 DC = 16.6468 P+ = 0.0353 G = 20.145
K = -0.469E-06 D99 = 1.2180 VO+ = 0.1360

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.017	3.06	0.0010	0.127	-36.89	5.0	5.35	0.00106	0.000535
0.019	3.41	0.0011	0.141	-36.29	5.6	5.95	0.00112	0.000517
0.021	3.80	0.0013	0.157	-35.59	6.1	6.65	0.00118	0.000500
0.023	3.96	0.0014	0.164	-35.33	6.7	6.91	0.00122	0.000494
0.026	4.44	0.0016	0.184	-34.48	7.6	7.76	0.00130	0.000454
0.030	4.95	0.0018	0.205	-33.60	8.8	8.64	0.00138	0.000397
0.036	5.78	0.0022	0.239	-32.15	10.5	10.09	0.00152	0.000329
0.044	6.32	0.0026	0.262	-31.19	12.9	11.05	0.00163	0.000253
0.055	7.01	0.0033	0.290	-30.00	16.1	12.24	0.00177	0.000191
0.070	7.77	0.0042	0.321	-28.67	20.5	13.57	0.00193	0.000139
0.090	8.52	0.0054	0.353	-27.35	26.3	14.89	0.00211	0.000107
0.120	9.27	0.0072	0.383	-26.04	35.1	16.20	0.00230	0.000081
0.160	9.99	0.0096	0.413	-24.79	46.8	17.45	0.00248	0.000066
0.210	10.86	0.0126	0.449	-23.26	61.5	18.97	0.00268	0.000057
0.270	11.78	0.0162	0.487	-21.66	79.0	20.58	0.00284	0.000052
0.330	12.73	0.0198	0.527	-20.00	96.6	22.24	0.00294	0.000050
0.390	13.44	0.0234	0.556	-18.75	114.2	23.49	0.00290	0.000051
0.450	14.36	0.0270	0.594	-17.15	131.7	25.09	0.00286	0.000052
0.510	15.24	0.0306	0.631	-15.61	149.3	26.63	0.00274	0.000052
0.585	16.47	0.0351	0.681	-13.47	171.2	28.77	0.00259	0.000050
0.660	17.69	0.0396	0.732	-11.33	193.2	30.91	0.00240	0.000049
0.735	18.78	0.0442	0.777	-9.42	215.1	32.81	0.00216	0.000048
0.810	19.54	0.0487	0.808	-8.10	237.1	34.14	0.00176	0.000046
0.885	20.81	0.0532	0.861	-5.88	259.1	36.36	0.00184	0.000043
0.960	21.79	0.0577	0.901	-4.17	281.0	38.07	0.00176	0.000037
1.035	22.64	0.0622	0.936	-2.69	303.0	39.55	0.00167	0.000031
1.110	23.34	0.0667	0.965	-1.47	324.9	40.77	0.00154	0.000023
1.210	23.92	0.0727	0.989	-0.45	354.2	41.78	0.00118	0.000014
1.310	24.15	0.0787	0.999	-0.05	383.5	42.19	0.00062	0.000007
1.410	24.19	0.0847	1.001	0.03	412.7	42.27	0.00000	0.000001
1.560	24.18	0.0937	1.000	0.00	456.6	42.24	0.00000	0.000000

RUN: 112871-1 X=34. Z= 0.

UI = 22.85 D1 = 0.5760 BETA= 4.435 RD2 = 3546.
CF/2= 0.00051 D2 = 0.3035 B = 5.882 H = 1.898
F = 0.00300 DC = 25.5059 P+ = 0.0292 G = 20.951
K = -0.336E-06 D99 = 1.8068 VO+ = 0.1328

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.019	2.70	0.0007	0.118	-38.06	4.9	5.22	0.00094	0.000530
0.021	3.10	0.0008	0.136	-38.27	5.4	6.01	0.00100	0.000523
0.023	3.43	0.0009	0.150	-37.63	6.0	6.66	0.00105	0.000516
0.025	3.63	0.0010	0.159	-37.25	6.5	7.04	0.00108	0.000484
0.027	3.82	0.0010	0.167	-36.87	7.0	7.41	0.00111	0.000430
0.030	4.29	0.0012	0.188	-35.97	7.8	8.31	0.00119	0.000382
0.035	4.66	0.0014	0.204	-35.25	9.1	9.03	0.00125	0.000334
0.042	5.25	0.0016	0.230	-34.10	11.0	10.18	0.00136	0.000272
0.052	5.90	0.0020	0.258	-32.85	13.6	11.43	0.00147	0.000205
0.067	6.65	0.0026	0.291	-31.39	17.6	12.89	0.00162	0.000148
0.087	7.31	0.0034	0.320	-30.12	22.9	14.16	0.00177	0.000106
0.117	7.91	0.0046	0.346	-28.94	30.8	15.34	0.00193	0.000074
0.157	8.45	0.0061	0.370	-27.91	41.3	16.37	0.00211	0.000055
0.217	9.32	0.0085	0.408	-26.22	57.2	18.06	0.00237	0.000045
0.272	9.85	0.0106	0.431	-25.20	71.7	19.08	0.00255	0.000041
0.347	10.52	0.0136	0.460	-23.89	91.5	20.39	0.00277	0.000039
0.422	11.29	0.0165	0.494	-22.40	111.3	21.88	0.00297	0.000038
0.497	11.97	0.0195	0.524	-21.08	131.1	23.20	0.00312	0.000037
0.597	13.07	0.0234	0.572	-18.96	157.4	25.33	0.00327	0.000037
0.697	13.88	0.0273	0.607	-17.39	183.8	26.89	0.00326	0.000037
0.797	14.90	0.0312	0.652	-15.41	210.2	28.87	0.00325	0.000037
0.897	15.88	0.0352	0.695	-13.50	236.6	30.78	0.00314	0.000037
0.997	16.87	0.0391	0.738	-11.59	263.0	32.69	0.00294	0.000036
1.097	17.88	0.0430	0.783	-9.63	289.4	34.65	0.00269	0.000035
1.197	18.85	0.0469	0.825	-7.75	315.8	36.53	0.00239	0.000033
1.297	19.61	0.0508	0.858	-6.28	342.2	38.00	0.00198	0.000031
1.397	20.50	0.0548	0.897	-4.56	368.6	39.73	0.00176	0.000028
1.497	21.28	0.0587	0.931	-3.04	395.0	41.24	0.00157	0.000023
1.597	21.89	0.0626	0.958	-1.85	421.4	42.43	0.00134	0.000019
1.697	22.37	0.0665	0.979	-0.94	447.8	43.34	0.00111	0.000013
1.797	22.60	0.0704	0.989	-0.48	474.1	43.80	0.00076	0.000009
1.897	22.81	0.0744	0.998	-0.07	500.5	44.21	0.00049	0.000005
2.047	22.86	0.0802	1.000	0.01	540.1	44.30	0.00000	0.000000
2.197	22.85	0.0861	1.000	0.00	579.7	44.28	0.00000	0.000000

RUN: 112871-1 X=46. Z= 0.

UI = 21.77 D1 = 0.7459 BETA= 4.596 RD2 = 4425.
CF/2= 0.00048 D2 = 0.3975 B = 5.972 H = 1.877
F = 0.00286 DC = 34.0860 P+ = 0.0253 G = 21.347
K = -0.265E-06 D99 = 2.3782 VO+ = 0.1307

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.026	3.13	0.0008	0.144	-39.13	6.3	6.56	0.00097	0.000407
0.028	3.32	0.0008	0.153	-38.72	6.8	6.98	0.00100	0.000393
0.030	3.51	0.0009	0.161	-38.33	7.3	7.36	0.00103	0.000378
0.032	3.76	0.0009	0.173	-37.81	7.8	7.89	0.00107	0.000391
0.034	3.91	0.0010	0.179	-37.50	8.3	8.20	0.00109	0.000375
0.038	4.17	0.0011	0.192	-36.94	9.3	8.76	0.00114	0.000342
0.046	4.89	0.0013	0.225	-35.43	11.2	10.27	0.00126	0.000258
0.058	5.51	0.0017	0.253	-34.14	14.1	11.56	0.00137	0.000186
0.078	6.13	0.0023	0.282	-32.83	19.0	12.87	0.00150	0.000124
0.108	6.82	0.0032	0.313	-31.39	26.3	14.31	0.00167	0.000082
0.153	7.54	0.0045	0.346	-29.87	37.3	15.83	0.00187	0.000060
0.213	8.15	0.0062	0.374	-28.59	51.9	17.11	0.00208	0.000046
0.278	8.89	0.0082	0.409	-27.03	67.7	18.67	0.00232	0.000038
0.378	9.74	0.0111	0.448	-25.25	92.1	20.45	0.00262	0.000034
0.478	10.34	0.0140	0.475	-23.99	116.5	21.71	0.00286	0.000032
0.578	11.00	0.0170	0.505	-22.60	140.8	23.10	0.00306	0.000031
0.703	12.09	0.0206	0.556	-20.31	171.3	25.39	0.00330	0.000031
0.828	12.88	0.0243	0.592	-18.66	201.7	27.03	0.00339	0.000029
0.953	13.82	0.0280	0.635	-16.69	232.2	29.01	0.00345	0.000029
1.078	14.67	0.0316	0.674	-14.90	262.6	30.80	0.00338	0.000028
1.203	15.40	0.0353	0.707	-13.37	293.1	32.33	0.00319	0.000028
1.328	16.32	0.0390	0.750	-11.44	323.6	34.25	0.00301	0.000028
1.453	17.19	0.0426	0.790	-9.62	354.0	36.08	0.00277	0.000027
1.578	17.93	0.0463	0.824	-8.05	384.5	37.65	0.00241	0.000026
1.703	18.82	0.0500	0.865	-6.19	414.9	39.51	0.00214	0.000024
1.853	19.55	0.0544	0.898	-4.65	451.5	41.05	0.00165	0.000021
2.003	20.50	0.0588	0.941	-2.68	488.0	43.02	0.00145	0.000017
2.153	21.11	0.0632	0.970	-1.38	524.6	44.31	0.00116	0.000013
2.303	21.47	0.0676	0.986	-0.63	561.1	45.07	0.00080	0.000009
2.503	21.69	0.0734	0.996	-0.17	609.8	45.53	0.00034	0.000004
2.703	21.78	0.0793	1.000	0.01	658.6	45.71	0.00000	-0.000001
2.903	21.77	0.0852	1.000	0.00	707.3	45.70	0.00000	0.000000

RUN: 112871-1 X=58. Z= 0.

UI = 21.04 D1 = 0.9009 BETA= 4.668 RD2 = 5258.
CF/2= 0.00046 D2 = 0.4887 B = 6.020 H = 1.843
F = 0.00275 DC =42.1483 P+ = 0.0225 G =21.404
K = -0.220E-06 D99 = 2.9299 VO+ = 0.1287

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.028	3.40	0.0007	0.162	-39.21	6.4	7.57	0.00097	0.000404
0.030	3.76	0.0007	0.179	-38.42	6.9	8.37	0.00102	0.000381
0.032	3.92	0.0008	0.186	-38.07	7.4	8.72	0.00105	0.000359
0.034	4.16	0.0008	0.198	-37.54	7.8	9.24	0.00108	0.000362
0.038	4.31	0.0009	0.205	-37.21	8.7	9.58	0.00111	0.000272
0.046	4.76	0.0011	0.226	-36.21	10.6	10.58	0.00119	0.000220
0.058	5.33	0.0014	0.254	-34.92	13.3	11.86	0.00129	0.000167
0.078	5.98	0.0019	0.284	-33.48	17.9	13.30	0.00142	0.000122
0.113	6.67	0.0027	0.317	-31.95	26.0	14.84	0.00158	0.000080
0.158	7.44	0.0037	0.354	-30.24	36.3	16.54	0.00177	0.000056
0.233	8.08	0.0055	0.384	-28.81	53.6	17.98	0.00200	0.000039
0.308	8.67	0.0073	0.412	-27.51	70.8	19.28	0.00222	0.000031
0.408	9.28	0.0097	0.441	-26.16	93.8	20.63	0.00246	0.000026
0.508	9.84	0.0121	0.468	-24.90	116.8	21.89	0.00269	0.000025
0.608	10.33	0.0144	0.491	-23.81	139.8	22.98	0.00289	0.000023
0.733	10.86	0.0174	0.516	-22.65	168.6	24.14	0.00307	0.000024
0.858	11.62	0.0204	0.552	-20.94	197.3	25.85	0.00325	0.000024
1.008	12.30	0.0239	0.585	-19.43	231.8	27.35	0.00335	0.000025
1.158	13.22	0.0275	0.628	-17.38	266.3	29.40	0.00345	0.000026
1.308	14.04	0.0310	0.667	-15.56	300.8	31.23	0.00346	0.000026
1.458	14.98	0.0346	0.712	-13.47	335.3	33.32	0.00343	0.000025
1.638	15.80	0.0382	0.751	-11.64	369.8	35.14	0.00329	0.000024
1.758	16.64	0.0417	0.791	-9.79	404.3	37.00	0.00308	0.000023
1.908	17.36	0.0453	0.825	-8.17	438.8	38.61	0.00274	0.000021
2.058	18.13	0.0488	0.862	-6.48	473.3	40.31	0.00238	0.000020
2.208	18.72	0.0524	0.890	-5.16	507.8	41.63	0.00192	0.000018
2.408	19.56	0.0571	0.930	-3.28	553.7	43.51	0.00147	0.000014
2.608	20.21	0.0619	0.961	-1.84	599.7	44.94	0.00106	0.000011
2.808	20.72	0.0666	0.985	-0.71	645.7	46.07	0.00076	0.000008
3.108	20.99	0.0737	0.998	-0.11	714.7	46.68	0.00028	0.000003
3.408	21.05	0.0809	1.000	0.02	783.7	46.80	0.00000	-0.000000
3.708	21.04	0.0880	1.000	0.00	852.7	46.79	0.00000	0.000000

RUN: 112871-1 X=70. Z= 0.

UI = 20.55 D1 = 1.0454 BETA= 4.663 RD2 = 6046.
CF/2= 0.00044 D2 = 0.5754 B = 6.039 H = 1.817
F = 0.00266 DC =49.8095 P+ = 0.0202 G =21.423
K = -0.187E-06 D99 = 3.4270 VO+ = 0.1267

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.028	3.10	0.0006	0.151	-40.45	6.2	7.20	0.00090	0.000380
0.030	3.38	0.0006	0.165	-39.81	6.6	7.84	0.00094	0.000360
0.032	3.43	0.0006	0.167	-39.70	7.1	7.94	0.00094	0.000340
0.034	3.56	0.0007	0.173	-39.39	7.5	8.26	0.00097	0.000309
0.039	3.95	0.0008	0.192	-38.49	8.6	9.15	0.00102	0.000275
0.049	4.38	0.0010	0.213	-37.48	10.8	10.17	0.00110	0.000235
0.068	5.30	0.0014	0.258	-35.36	15.0	12.29	0.00125	0.000155
0.108	6.34	0.0022	0.309	-32.95	23.8	14.70	0.00146	0.000091
0.183	7.11	0.0037	0.346	-31.15	40.4	16.50	0.00169	0.000050
0.258	8.03	0.0052	0.391	-29.02	56.9	18.63	0.00195	0.000037
0.333	8.53	0.0067	0.415	-27.87	73.4	19.78	0.00214	0.000030
0.408	8.75	0.0082	0.426	-27.36	90.0	20.29	0.00229	0.000026
0.508	9.48	0.0102	0.461	-25.67	112.0	21.98	0.00253	0.000023
0.633	9.88	0.0127	0.481	-24.74	139.6	22.91	0.00274	0.000022
0.758	10.50	0.0152	0.511	-23.29	167.2	24.36	0.00297	0.000021
0.908	11.16	0.0182	0.543	-21.77	200.2	25.88	0.00321	0.000021
1.058	11.81	0.0212	0.575	-20.25	233.3	27.39	0.00340	0.000021
1.208	12.45	0.0243	0.606	-18.77	266.4	28.88	0.00355	0.000020
1.408	13.32	0.0283	0.649	-16.75	310.5	30.90	0.00365	0.000020
1.608	14.31	0.0323	0.696	-14.47	354.6	33.18	0.00363	0.000020
1.808	14.96	0.0363	0.728	-12.96	398.7	34.69	0.00339	0.000020
2.008	15.82	0.0403	0.770	-10.97	442.8	36.68	0.00314	0.000020
2.208	16.83	0.0443	0.819	-8.63	486.9	39.02	0.00289	0.000019
2.408	17.61	0.0483	0.857	-6.80	531.0	40.85	0.00248	0.000017
2.608	18.33	0.0524	0.892	-5.14	575.1	42.51	0.00201	0.000015
2.908	19.32	0.0584	0.941	-2.83	641.3	44.81	0.00140	0.000011
3.208	20.01	0.0644	0.974	-1.24	707.4	46.41	0.00084	0.000008
3.508	20.46	0.0704	0.996	-0.19	773.6	47.45	0.00047	0.000004
3.808	20.51	0.0765	0.998	-0.08	839.8	47.57	0.00011	0.000001
3.908	20.54	0.0785	1.000	-0.02	861.8	47.63	0.00007	0.000001
4.308	20.55	0.0865	1.000	0.00	950.0	47.65	0.00000	0.000000

RUN: 112871-1 X=82. Z= 0.

UI = 20.13 D1 = 1.1871 BETA= 4.694 RD2 = 6870.
CF/2= 0.00042 D2 = 0.6674 B = 6.152 H = 1.779
F = 0.00260 DC =57.7434 P+ = 0.0186 G =21.295
K = -0.162E-06 D99 = 3.9999 VO+ = 0.1265

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.027	2.75	0.0005	0.137	-42.00	5.7	6.65	0.00082	0.000435
0.029	2.79	0.0005	0.139	-41.89	6.1	6.75	0.00083	0.000428
0.031	3.07	0.0005	0.153	-41.21	6.6	7.43	0.00087	0.000420
0.035	3.43	0.0006	0.170	-40.35	7.4	8.29	0.00092	0.000374
0.039	3.76	0.0007	0.187	-39.55	8.3	9.09	0.00097	0.000348
0.043	4.03	0.0007	0.200	-38.91	9.1	9.73	0.00101	0.000303
0.050	4.22	0.0009	0.210	-38.45	10.6	10.19	0.00105	0.000264
0.062	5.03	0.0011	0.250	-36.50	13.1	12.14	0.00117	0.000199
0.082	5.82	0.0014	0.289	-34.57	17.4	14.07	0.00130	0.000141
0.112	6.21	0.0019	0.309	-33.63	23.7	15.01	0.00140	0.000095
0.157	7.09	0.0027	0.352	-31.50	33.2	17.14	0.00157	0.000060
0.227	7.66	0.0039	0.381	-30.13	48.0	18.51	0.00172	0.000039
0.302	8.18	0.0052	0.407	-28.86	63.9	19.78	0.00187	0.000029
0.402	8.77	0.0070	0.436	-27.65	85.1	21.19	0.00205	0.000024
0.527	9.11	0.0091	0.452	-26.64	111.5	22.00	0.00222	0.000020
0.652	9.62	0.0113	0.478	-25.40	138.0	23.24	0.00244	0.000020
0.802	10.33	0.0139	0.513	-23.68	169.7	24.96	0.00268	0.000019
0.952	10.65	0.0165	0.529	-22.90	201.5	25.75	0.00282	0.000018
1.102	11.43	0.0191	0.568	-21.01	233.2	27.63	0.00304	0.000018
1.302	12.15	0.0225	0.604	-19.27	275.5	29.37	0.00324	0.000017
1.502	12.63	0.0260	0.627	-18.12	317.8	30.52	0.00332	0.000017
1.702	13.45	0.0295	0.668	-16.14	360.2	32.50	0.00337	0.000017
2.002	14.47	0.0347	0.719	-13.66	423.7	34.98	0.00324	0.000017
2.302	15.57	0.0399	0.774	-11.01	487.1	37.64	0.00300	0.000017
2.602	16.62	0.0451	0.826	-8.49	550.6	40.15	0.00258	0.000015
2.902	17.65	0.0503	0.877	-5.98	614.1	42.66	0.00209	0.000014
3.202	18.42	0.0555	0.915	-4.13	677.6	44.52	0.00144	0.000011
3.502	19.16	0.0606	0.952	-2.33	741.1	46.31	0.00089	0.000009
3.902	19.86	0.0676	0.987	-0.64	825.7	48.00	0.00034	0.000007
4.302	20.13	0.0745	1.000	0.00	910.4	48.64	0.00000	0.000000

RUN: 112871-1 X=90. Z= 0.

UI = 19.81 D1 = 1.2877 BETA= 4.867 RD2 = 7331.
CF/2= 0.00042 D2 = 0.7234 B = 6.161 H = 1.780
F = 0.00256 DC =63.1724 P+ = 0.0183 G =21.497
K = -0.155E-06 D99 = 4.2811 VO+ = 0.1256

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.030	3.07	0.0005	0.155	-41.44	6.2	7.61	0.000402
0.034	3.46	0.0005	0.174	-40.50	7.0	8.56	0.000375
0.038	3.64	0.0006	0.184	-40.03	7.8	9.02	0.000348
0.042	3.87	0.0007	0.195	-39.48	8.6	9.58	0.000284
0.050	4.16	0.0008	0.210	-38.75	10.3	10.31	0.000237
0.065	5.12	0.0010	0.258	-36.39	13.4	12.67	0.000175
0.085	5.51	0.0013	0.278	-35.41	17.5	13.65	0.000120
0.115	6.11	0.0018	0.308	-33.94	23.7	15.12	0.000082
0.165	6.44	0.0023	0.325	-33.12	29.9	15.94	0.000058
0.205	6.94	0.0032	0.350	-31.87	42.3	17.19	0.000044
0.290	7.71	0.0046	0.389	-29.97	59.9	19.08	0.000033
0.390	8.15	0.0062	0.411	-28.87	80.5	20.18	0.000027
0.515	8.88	0.0081	0.448	-27.08	106.3	21.97	0.000022
0.665	9.47	0.0105	0.478	-25.62	137.3	23.44	0.000021
0.815	9.89	0.0129	0.499	-24.58	168.3	24.48	0.000019
1.015	10.57	0.0161	0.533	-22.90	209.6	26.16	0.000017
1.215	11.52	0.0192	0.581	-20.54	250.9	28.51	0.000015
1.415	11.98	0.0224	0.604	-19.40	292.2	29.65	0.000316
1.615	12.46	0.0256	0.629	-18.21	333.6	30.84	0.000015
1.815	12.95	0.0287	0.653	-17.00	374.9	32.05	0.000015
2.115	14.17	0.0335	0.715	-13.98	436.8	35.07	0.000016
2.415	14.93	0.0382	0.754	-12.09	498.8	36.97	0.000016
2.715	16.04	0.0430	0.809	-9.35	560.8	39.70	0.000015
3.015	16.96	0.0477	0.856	-7.07	622.7	41.98	0.000014
3.315	17.66	0.0525	0.891	-5.34	684.7	43.72	0.000012
3.615	18.52	0.0572	0.935	-3.20	746.7	45.85	0.000011
3.915	19.07	0.0620	0.963	-1.83	808.6	47.22	0.000009
4.415	19.81	0.0699	1.000	0.00	911.9	49.06	0.000000

RUN: 102171-1 X= 2. Z= 0.

UI = 29.71 D1 = 0.0702 BETA= 0.251 RD2 = 639.
CF/Z= 0.00194 D2 = 0.0418 B = 2.052 H = 1.679
F = 0.00399 DC = 1.5925 P+ = 0.0053 G = 9.169
K = -0.455E-06 D99 = 0.3301 V0+ = 0.0905

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	3.83	0.0027	0.129	-19.76	2.9	2.92	0.001593
0.005	4.26	0.0033	0.143	-19.43	3.6	3.25	0.001520
0.006	4.77	0.0040	0.161	-19.04	4.2	3.64	0.001447
0.008	6.00	0.0052	0.202	-18.09	5.6	4.58	0.001362
0.010	7.13	0.0065	0.240	-17.24	6.9	5.44	0.001315
0.012	8.38	0.0077	0.282	-16.28	8.3	6.40	0.001221
0.014	9.76	0.0090	0.328	-15.23	9.6	7.45	0.001128
0.016	10.59	0.0102	0.356	-14.60	11.0	8.08	0.001034
0.018	11.45	0.0115	0.385	-13.94	12.3	8.74	0.000906
0.021	12.69	0.0134	0.427	-12.99	14.4	9.68	0.000738
0.024	13.71	0.0153	0.461	-12.21	16.4	10.46	0.000609
0.027	14.36	0.0171	0.483	-11.72	18.4	10.96	0.000514
0.030	15.01	0.0190	0.505	-11.22	20.4	11.46	0.000430
0.034	15.60	0.0215	0.525	-10.77	23.1	11.91	0.000359
0.039	16.48	0.0247	0.555	-10.10	26.5	12.58	0.000308
0.045	17.17	0.0284	0.578	-9.58	30.5	13.10	0.000263
0.052	17.97	0.0328	0.605	-8.96	35.3	13.71	0.000228
0.060	18.69	0.0379	0.629	-8.41	40.6	14.26	0.000201
0.070	19.55	0.0441	0.658	-7.75	47.4	14.92	0.000181
0.085	20.61	0.0536	0.694	-6.95	57.5	15.73	0.000161
0.102	21.87	0.0642	0.736	-5.99	69.0	16.69	0.000145
0.122	23.12	0.0768	0.778	-5.03	82.4	17.64	0.000127
0.142	24.22	0.0894	0.815	-4.19	95.9	18.48	0.000112
0.162	25.24	0.1019	0.849	-3.42	109.4	19.26	0.000098
0.182	26.04	0.1145	0.876	-2.80	122.9	19.87	0.000085
0.207	27.00	0.1302	0.909	-2.07	139.7	20.60	0.000071
0.232	27.71	0.1459	0.933	-1.53	156.6	21.15	0.000057
0.262	28.47	0.1647	0.958	-0.95	176.8	21.73	0.000043
0.297	29.09	0.1867	0.979	-0.47	200.4	22.20	0.000028
0.337	29.49	0.2118	0.992	-0.17	227.4	22.50	0.000017
0.382	29.67	0.2401	0.998	-0.03	257.7	22.64	0.000008
0.432	29.71	0.2715	1.000	-0.00	291.4	22.68	0.000000
0.597	29.71	0.3186	1.000	0.00	341.9	22.68	0.000000

RUN: 102171-1 X=10. Z= 0.

UI = 27.02 D1 = 0.1964 BETA= 3.179 RD2 = 1472.
CF/Z= 0.00073 D2 = 0.1059 B = 5.507 H = 1.855
F = 0.00402 DC = 7.2700 P+ = 0.0431 G = 17.060
K = -0.850E-06 D99 = 0.6491 V0+ = 0.1488

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.008	2.93	0.0011	0.108	-33.00	3.0	4.01	0.00126	0.000880
0.010	3.45	0.0014	0.128	-32.28	3.8	4.73	0.00136	0.000834
0.013	4.42	0.0018	0.164	-30.95	4.9	6.06	0.00153	0.000765
0.017	5.61	0.0023	0.208	-29.32	6.4	7.69	0.00175	0.000634
0.022	6.69	0.0030	0.248	-27.84	8.3	9.17	0.00195	0.000507
0.027	7.60	0.0037	0.281	-26.60	10.1	10.41	0.00212	0.000413
0.032	8.28	0.0044	0.307	-25.66	12.0	11.35	0.00225	0.000328
0.038	8.98	0.0052	0.332	-24.71	14.3	12.30	0.00238	0.000274
0.045	9.68	0.0062	0.358	-23.75	16.9	13.26	0.00251	0.000224
0.054	10.14	0.0074	0.375	-23.12	20.3	13.89	0.00259	0.000183
0.069	11.22	0.0095	0.415	-21.64	25.9	15.37	0.00278	0.000144
0.089	12.08	0.0122	0.447	-20.46	33.4	16.55	0.00289	0.000118
0.114	13.07	0.0157	0.484	-19.10	42.8	17.91	0.00297	0.000101
0.139	13.86	0.0191	0.513	-18.02	52.2	18.99	0.00295	0.000093
0.164	14.79	0.0226	0.547	-16.75	61.6	20.26	0.00295	0.000089
0.189	15.51	0.0260	0.574	-15.76	71.0	21.25	0.00285	0.000085
0.214	16.33	0.0294	0.604	-14.64	80.4	22.37	0.00278	0.000083
0.239	17.08	0.0329	0.632	-13.61	89.7	23.40	0.00266	0.000081
0.264	17.80	0.0363	0.659	-12.62	99.1	24.39	0.00252	0.000080
0.294	18.72	0.0404	0.693	-11.37	110.4	25.64	0.00239	0.000078
0.324	19.58	0.0446	0.725	-10.19	121.7	26.82	0.00225	0.000077
0.354	20.46	0.0487	0.757	-8.98	132.9	28.03	0.00215	0.000076
0.384	21.26	0.0528	0.787	-7.89	144.2	29.12	0.00204	0.000075
0.414	22.11	0.0569	0.818	-6.73	155.5	30.29	0.00202	0.000072
0.449	23.09	0.0618	0.855	-5.38	168.6	31.63	0.00206	0.000068
0.489	24.15	0.0673	0.894	-3.93	183.6	33.09	0.00215	0.000061
0.529	25.02	0.0728	0.926	-2.74	198.6	34.27	0.00218	0.000051
0.569	25.79	0.0783	0.955	-1.68	213.7	35.33	0.00220	0.000040
0.609	26.35	0.0838	0.975	-0.91	228.7	36.10	0.00210	0.000029
0.649	26.75	0.0893	0.990	-0.37	243.7	36.64	0.00190	0.000020
0.699	26.96	0.0961	0.998	-0.07	262.5	36.94	0.00142	0.000011
0.749	27.03	0.1030	1.000	0.01	281.2	37.03	0.00084	0.000005
0.824	27.03	0.1133	1.001	0.02	309.4	37.04	0.00000	-0.000003
0.899	27.02	0.1237	1.000	0.00	337.6	37.01	0.00000	0.000000

RUN: 102171-1 X=22. Z= 0.

UI = 24.57 D1 = 0.4357 BETA= 6.117 RD2 = 2757.
CF/Z= 0.00042 D2 = 0.2182 B = 9.502 H = 1.997
F = 0.00402 DC = 21.1852 P+ = 0.0540 G = 24.273
K = -0.470E-06 D99 = 1.2763 V0+ = 0.1954

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.018	2.63	0.0008	0.107	-43.42	4.7	5.20	0.00095	0.000444
0.023	3.35	0.0011	0.136	-42.00	6.0	6.62	0.00110	0.000412
0.028	4.10	0.0013	0.167	-40.51	7.3	8.11	0.00125	0.000381
0.033	4.72	0.0016	0.192	-39.27	8.6	9.34	0.00138	0.000325
0.040	5.35	0.0019	0.218	-38.04	10.4	10.58	0.00151	0.000265
0.048	5.94	0.0023	0.242	-36.86	12.5	11.75	0.00164	0.000208
0.058	6.43	0.0027	0.262	-35.89	15.1	12.73	0.00177	0.000162
0.073	7.15	0.0034	0.291	-34.46	19.0	14.16	0.00195	0.000124
0.093	7.80	0.0044	0.317	-33.19	24.2	15.43	0.00212	0.000095
0.118	8.34	0.0056	0.340	-32.10	30.7	16.52	0.00228	0.000076
0.158	9.26	0.0075	0.377	-30.29	41.1	18.33	0.00252	0.000063
0.198	9.78	0.0093	0.398	-29.26	51.5	19.36	0.00265	0.000056
0.238	10.50	0.0112	0.427	-27.84	61.9	20.78	0.00280	0.000053
0.288	11.34	0.0136	0.462	-26.17	74.9	22.45	0.00295	0.000050
0.338	11.98	0.0160	0.488	-24.91	87.9	23.71	0.00299	0.000050
0.388	12.80	0.0183	0.521	-23.29	100.8	25.32	0.00305	0.000050
0.438	13.45	0.0207	0.548	-22.00	113.8	26.62	0.00299	0.000050
0.488	14.31	0.0230	0.583	-20.29	126.8	28.33	0.00298	0.000049
0.538	15.07	0.0254	0.613	-18.80	139.8	29.82	0.00286	0.000049
0.588	15.85	0.0278	0.645	-17.26	152.8	31.36	0.00274	0.000050
0.638	16.49	0.0301	0.671	-15.97	165.8	32.64	0.00252	0.000050
0.688	17.33	0.0325	0.706	-14.31	178.8	34.30	0.00244	0.000051
0.738	18.14	0.0348	0.739	-12.71	191.8	35.91	0.00236	0.000050
0.788	18.96	0.0372	0.772	-11.09	204.8	37.53	0.00231	0.000048
0.843	19.77	0.0398	0.805	-9.49	219.1	39.13	0.00223	0.000047
0.908	20.63	0.0429	0.840	-7.78	236.0	40.84	0.00212	0.000044
0.968	21.41	0.0457	0.872	-6.25	251.6	42.37	0.00203	0.000041
1.028	22.30	0.0485	0.908	-4.49	267.2	44.13	0.00217	0.000037
1.088	22.95	0.0514	0.934	-3.20	282.8	45.42	0.00209	0.000032
1.148	23.50	0.0542	0.957	-2.10	298.4	46.52	0.00197	0.000026
1.208	23.96	0.0570	0.975	-1.20	314.0	47.42	0.00179	0.000019
1.283	24.36	0.0606	0.991	-0.42	333.5	48.20	0.00146	0.000013
1.383	24.53	0.0653	0.999	-0.07	359.5	48.55	0.00072	0.000005
1.483	24.58	0.0700	1.001	0.03	385.5	48.65	0.00000	-0.000000
1.608	24.57	0.0759	1.000	0.00	417.9	48.62	0.00000	0.000000

RUN: 102171-1 X=34. Z= 0.

UI = 23.18 D1 = 0.6578 BETA= 7.333 RD2 = 3891.
CF/Z= 0.00035 D2 = 0.3263 B = 11.296 H = 2.016
F = 0.00400 DC = 34.9565 P+ = 0.0497 G = 26.783
K = -0.331E-06 D99 = 1.9199 V0+ = 0.2126

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.033	3.45	0.0009	0.149	-45.22	7.3	7.92	0.00107	0.000311
0.043	4.30	0.0012	0.186	-43.28	9.6	9.86	0.00125	0.000263
0.053	4.98	0.0015	0.215	-41.72	11.8	11.42	0.00141	0.000216
0.063	5.50	0.0018	0.237	-40.53	14.0	12.61	0.00153	0.000150
0.078	5.97	0.0022	0.257	-39.47	17.4	13.67	0.00166	0.000106
0.093	6.32	0.0026	0.273	-38.65	20.8	14.49	0.00176	0.000081
0.113	6.74	0.0032	0.291	-37.69	25.3	15.45	0.00190	0.000066
0.143	7.06	0.0041	0.304	-36.96	32.0	16.18	0.00203	0.000056
0.193	7.68	0.0055	0.331	-35.53	43.2	17.61	0.00228	0.000049
0.268	8.96	0.0077	0.387	-32.60	60.1	20.54	0.00269	0.000043
0.318	9.32	0.0091	0.402	-31.79	71.3	21.35	0.00284	0.000038
0.368	9.82	0.0105	0.424	-30.63	82.5	22.51	0.00302	0.000036
0.418	10.30	0.0119	0.444	-29.54	93.7	23.60	0.00317	0.000035
0.493	10.89	0.0141	0.470	-28.18	110.5	24.96	0.00333	0.000036
0.568	11.73	0.0162	0.506	-26.26	127.4	26.88	0.00353	0.000036
0.643	12.51	0.0184	0.540	-24.47	144.2	28.67	0.00366	0.000037
0.718	13.27	0.0205	0.572	-22.72	161.0	30.42	0.00373	0.000037
0.793	13.93	0.0227	0.601	-21.21	177.9	31.93	0.00370	0.000037
0.868	14.73	0.0248	0.635	-19.38	194.7	33.76	0.00368	0.000036
0.943	15.52	0.0270	0.670	-17.56	211.5	35.58	0.00362	0.000036
1.018	16.25	0.0291	0.701	-15.99	228.4	37.25	0.00348	0.000035
1.093	16.88	0.0313	0.728	-14.44	245.2	38.70	0.00322	0.000035
1.168	17.68	0.0334	0.763	-12.62	262.0	40.52	0.00305	0.000034
1.243	18.35	0.0355	0.792	-11.07	278.9	42.07	0.00279	0.000034
1.343	19.33	0.0384	0.834	-8.83	301.3	44.31	0.00255	0.000033
1.443	20.24	0.0413	0.873	-6.75	323.7	46.39	0.00235	0.000030
1.543	21.06	0.0441	0.908	-4.87	346.2	48.27	0.00217	0.000026
1.643	21.79	0.0470	0.940	-3.19	368.6	49.95	0.00202	0.000021
1.743	22.38	0.0499	0.965	-1.85	391.1	51.29	0.00184	0.000016
1.843	22.81	0.0527	0.984	-0.86	413.5	52.28	0.00158	0.000012
1.993	23.09	0.0570	0.996	-0.22	447.2	52.92	0.00100	0.000006
2.143	23.19	0.0613	1.000	0.01	480.8	53.15	0.00045	0.000002
2.293	23.20	0.0656	1.001	0.03	514.5	53.17	0.00000	-0.000001
2.493	23.18	0.0713	1.000	0.00	559.4	53.14	0.00000	0.000000

RUN: 102171-1 X=46. Z= 0.

UI = 22.13 D1 = 0.8801 BETA= 8.252 RD2 = 4986.
CF/2= 0.00031 D2 = 0.4380 B =12.985 H = 2.009
F = 0.00402 DC =50.0180 P+ = 0.0468 G =28.551
K = -0.255E-06 D99 = 2.5698 V0+ = 0.2285

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.043	3.55	0.0009	0.160	-47.73	8.6	9.11	0.00108	0.000239
0.053	3.97	0.0011	0.179	-46.63	10.6	10.20	0.00118	0.000216
0.068	4.58	0.0014	0.207	-45.07	13.6	11.76	0.00133	0.000183
0.088	5.38	0.0018	0.243	-43.02	17.6	13.81	0.00153	0.000108
0.113	5.71	0.0023	0.258	-42.17	22.6	14.66	0.00164	0.000081
0.153	6.70	0.0031	0.303	-39.63	30.6	17.20	0.00192	0.000059
0.213	7.24	0.0043	0.327	-38.25	42.7	18.59	0.00216	0.000043
0.278	7.66	0.0056	0.345	-37.21	55.7	19.63	0.00236	0.000035
0.353	8.55	0.0071	0.386	-34.88	70.7	21.95	0.00267	0.000031
0.428	8.91	0.0086	0.402	-33.96	85.7	22.87	0.00284	0.000030
0.503	9.43	0.0101	0.426	-32.61	100.7	24.23	0.00304	0.000028
0.603	10.12	0.0121	0.457	-30.84	120.8	25.99	0.00327	0.000027
0.703	10.86	0.0141	0.491	-28.93	140.8	27.90	0.00348	0.000028
0.803	11.29	0.0161	0.510	-27.83	160.8	29.00	0.00356	0.000027
0.903	12.25	0.0181	0.553	-25.38	180.9	31.45	0.00377	0.000027
1.003	12.93	0.0201	0.584	-23.63	200.9	33.20	0.00380	0.000028
1.103	13.43	0.0221	0.607	-22.33	220.9	34.50	0.00373	0.000030
1.203	14.17	0.0241	0.640	-20.44	241.0	36.39	0.00372	0.000030
1.303	15.05	0.0261	0.680	-18.19	261.0	38.64	0.00373	0.000030
1.403	15.86	0.0280	0.717	-16.10	281.0	40.74	0.00367	0.000029
1.503	16.54	0.0300	0.747	-14.36	301.0	42.47	0.00347	0.000027
1.603	17.24	0.0320	0.779	-12.56	321.1	44.27	0.00324	0.000026
1.703	17.87	0.0340	0.807	-10.95	341.1	45.89	0.00293	0.000025
1.803	18.39	0.0360	0.831	-9.60	361.1	47.24	0.00254	0.000025
1.903	19.07	0.0380	0.862	-7.86	381.2	48.97	0.00230	0.000024
2.003	19.77	0.0400	0.893	-6.07	401.2	50.76	0.00214	0.000022
2.103	20.30	0.0420	0.917	-4.69	421.2	52.14	0.00188	0.000020
2.203	20.84	0.0440	0.942	-3.30	441.3	53.54	0.00171	0.000017
2.353	21.37	0.0470	0.966	-1.94	471.3	54.89	0.00134	0.000013
2.503	21.81	0.0500	0.986	-0.81	501.3	56.02	0.00107	0.000009
2.703	22.10	0.0540	0.999	-0.08	541.4	56.76	0.00063	0.000004
3.003	22.15	0.0600	1.001	0.06	601.5	56.89	0.00000	-0.000000
3.303	22.13	0.0660	1.000	0.00	661.6	56.83	0.00000	0.000000

RUN: 102171-1 X=58. Z= 0.

UI = 21.46 D1 = 1.0938 BETA= 8.947 RD2 = 6040.
CF/2= 0.00028 D2 = 0.5472 B =14.218 H = 1.999
F = 0.00401 DC =65.1328 P+ = 0.0441 G =29.756
K = -0.209E-06 D99 = 3.2329 V0+ = 0.2388

Y	U	Y/DC	L/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.042	3.07	0.0006	0.143	-51.02	7.8	8.53	0.00095	0.000236
0.052	3.86	0.0008	0.180	-48.83	9.6	10.71	0.00112	0.000215
0.067	4.38	0.0010	0.204	-47.39	12.4	12.15	0.00125	0.000183
0.087	4.71	0.0013	0.220	-46.47	16.1	13.07	0.00135	0.000103
0.117	5.48	0.0018	0.255	-44.34	21.7	15.21	0.00156	0.000069
0.172	6.12	0.0026	0.285	-42.57	31.9	16.98	0.00178	0.000048
0.227	6.77	0.0035	0.315	-40.77	42.1	18.77	0.00199	0.000037
0.287	7.09	0.0044	0.330	-39.87	53.2	19.68	0.00216	0.000030
0.362	7.67	0.0056	0.357	-38.26	67.1	21.28	0.00240	0.000028
0.437	8.05	0.0067	0.375	-37.21	81.0	22.33	0.00258	0.000026
0.512	8.44	0.0079	0.393	-36.12	94.9	23.42	0.00276	0.000027
0.612	9.10	0.0094	0.424	-34.28	113.5	25.26	0.00303	0.000023
0.712	9.62	0.0109	0.448	-32.86	132.0	26.69	0.00325	0.000024
0.812	10.41	0.0125	0.485	-30.66	150.5	28.88	0.00352	0.000023
0.937	10.51	0.0144	0.490	-30.38	173.7	29.17	0.00356	0.000024
1.062	11.63	0.0163	0.542	-27.26	196.9	32.28	0.00387	0.000024
1.187	12.06	0.0182	0.562	-26.08	220.0	33.46	0.00391	0.000024
1.312	13.06	0.0201	0.609	-23.29	243.2	36.25	0.00412	0.000024
1.437	13.67	0.0221	0.637	-21.62	266.4	37.93	0.00409	0.000023
1.562	14.20	0.0240	0.662	-20.14	289.6	39.40	0.00397	0.000023
1.712	15.05	0.0263	0.701	-17.78	317.4	41.76	0.00387	0.000022
1.862	15.95	0.0286	0.743	-15.29	345.2	44.25	0.00373	0.000023
2.012	16.65	0.0309	0.776	-13.34	373.0	46.21	0.00341	0.000022
2.212	17.76	0.0340	0.828	-10.27	410.1	49.27	0.00299	0.000021
2.412	18.81	0.0370	0.877	-7.34	447.1	52.21	0.00254	0.000019
2.612	19.62	0.0401	0.914	-5.11	484.2	54.43	0.00200	0.000015
2.812	20.45	0.0432	0.953	-2.81	521.3	56.74	0.00169	0.000012
3.012	20.93	0.0462	0.976	-1.45	558.4	58.09	0.00126	0.000009
3.312	21.35	0.0508	0.995	-0.29	614.0	59.26	0.00072	0.000004
3.612	21.45	0.0555	0.999	-0.03	669.6	59.52	0.00025	0.000000
3.912	21.46	0.0601	1.000	0.00	725.2	59.55	0.00000	0.000000

RUN: 102171-1 X=70. Z= 0.

UI = 20.97 D1 = 1.3042 BETA= 9.625 RD2 = 7146.
CF/2= 0.00026 D2 = 0.6625 B =15.250 H = 1.969
F = 0.00399 DC =80.6323 P+ = 0.0423 G =30.420
K = -0.179E-06 D99 = 3.9518 V0+ = 0.2467

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.048	3.43	0.0006	0.164	-51.71	8.4	10.11	0.00100	0.000215
0.058	3.96	0.0007	0.189	-50.15	10.1	11.67	0.00112	0.000195
0.073	4.27	0.0009	0.204	-49.23	12.7	12.59	0.00120	0.000164
0.093	4.57	0.0012	0.218	-48.34	16.2	13.48	0.00130	0.000079
0.133	5.16	0.0016	0.246	-46.61	23.2	15.21	0.00148	0.000058
0.183	5.71	0.0023	0.273	-44.97	31.9	16.85	0.00168	0.000048
0.258	6.46	0.0032	0.308	-42.77	45.0	19.05	0.00195	0.000035
0.333	7.15	0.0041	0.341	-40.73	58.1	21.10	0.00220	0.000032
0.408	7.53	0.0051	0.359	-39.62	71.2	22.21	0.00239	0.000027
0.508	7.78	0.0063	0.371	-38.88	88.6	22.94	0.00258	0.000023
0.608	8.83	0.0075	0.421	-35.78	106.1	26.04	0.00295	0.000020
0.708	9.00	0.0088	0.429	-35.29	123.5	26.53	0.00310	0.000019
0.808	9.42	0.0100	0.449	-34.05	141.0	27.77	0.00330	0.000020
0.908	9.71	0.0113	0.463	-33.18	158.4	28.64	0.00346	0.000018
1.058	10.36	0.0131	0.494	-31.28	184.6	30.54	0.00371	0.000020
1.208	11.21	0.0150	0.535	-28.77	210.8	33.05	0.00397	0.000020
1.358	11.70	0.0168	0.558	-27.32	236.9	34.51	0.00407	0.000020
1.508	12.49	0.0187	0.596	-25.01	263.1	36.82	0.00422	0.000019
1.708	13.26	0.0212	0.632	-22.73	298.0	39.09	0.00425	0.000019
1.908	14.14	0.0237	0.674	-20.13	332.9	41.69	0.00420	0.000019
2.108	14.97	0.0261	0.714	-17.69	367.8	44.13	0.00398	0.000019
2.308	15.74	0.0286	0.751	-15.40	402.7	46.42	0.00364	0.000019
2.508	16.83	0.0311	0.802	-12.21	437.6	49.61	0.00344	0.000018
2.808	18.00	0.0348	0.858	-8.75	489.9	53.07	0.00272	0.000016
3.108	19.11	0.0385	0.911	-5.49	542.3	56.33	0.00198	0.000013
3.408	19.84	0.0423	0.946	-3.32	594.6	58.50	0.00117	0.000009
3.708	20.53	0.0460	0.979	-1.28	646.9	60.54	0.00080	0.000007
3.908	20.73	0.0485	0.989	-0.69	681.8	61.13	0.00050	0.000005
4.308	20.97	0.0534	1.000	0.00	751.6	61.82	0.00000	0.000000

RUN: 102171-1 X=82. Z= 0.

UI = 20.48 D1 = 1.5008 BETA=10.301 RD2 = 8207.
CF/2= 0.00025 D2 = 0.7789 B =16.287 H = 1.927
F = 0.00400 DC =95.7636 P+ = 0.0416 G =30.692
K = -0.160E-06 D99 = 4.7414 V0+ = 0.2552

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.051	2.83	0.0005	0.138	-55.00	8.4	8.80	0.00089	0.000208
0.061	3.30	0.0006	0.161	-53.54	10.1	10.27	0.00100	0.000193
0.076	3.80	0.0008	0.186	-51.96	12.5	11.85	0.00112	0.000170
0.101	4.65	0.0011	0.227	-49.32	16.7	14.49	0.00133	0.000106
0.136	5.20	0.0014	0.254	-47.61	22.5	16.20	0.00149	0.000070
0.186	5.89	0.0019	0.287	-45.47	30.7	18.34	0.00170	0.000049
0.261	6.32	0.0027	0.309	-44.12	43.1	19.69	0.00189	0.000034
0.361	6.77	0.0038	0.330	-42.73	59.6	21.08	0.00212	0.000027
0.461	7.73	0.0048	0.378	-39.71	76.1	24.10	0.00245	0.000025
0.561	7.90	0.0059	0.386	-39.20	92.6	24.61	0.00259	0.000024
0.661	8.36	0.0069	0.408	-37.75	109.1	26.06	0.00278	0.000019
0.761	8.94	0.0079	0.436	-35.96	125.7	27.85	0.00299	0.000017
0.861	9.44	0.0090	0.461	-34.41	142.2	29.40	0.00319	0.000017
0.961	9.37	0.0100	0.457	-34.63	158.7	29.18	0.00327	0.000017
1.061	9.87	0.0111	0.482	-33.07	175.2	30.74	0.00352	0.000016
1.211	10.39	0.0126	0.507	-31.44	200.0	32.37	0.00377	0.000016
1.361	11.05	0.0142	0.540	-29.38	224.7	34.43	0.00395	0.000017
1.511	11.47	0.0158	0.560	-28.09	249.5	35.72	0.00397	0.000016
1.711	12.23	0.0179	0.597	-25.71	282.5	38.10	0.00404	0.000015
1.911	12.77	0.0200	0.624	-24.02	315.5	39.79	0.00402	0.000016
2.111	13.29	0.0220	0.649	-22.42	348.6	41.39	0.00399	0.000016
2.311	14.19	0.0241	0.693	-19.61	381.6	44.20	0.00407	0.000016
2.511	15.02	0.0262	0.733	-17.01	414.6	46.80	0.00396	0.000017
2.811	15.90	0.0294	0.776	-14.27	464.2	49.54	0.00339	0.000016
3.111	16.99	0.0325	0.830	-10.87	513.7	52.94	0.00287	0.000014
3.411	17.91	0.0356	0.875	-8.00	563.2	55.81	0.00220	0.000012
3.711	19.03	0.0388	0.929	-4.52	612.8	59.29	0.00168	0.000010
4.911	20.48	0.0513	1.000	0.00	810.9	63.81	0.00000	0.000000

RUN: 102171-1 X=90. Z= 0.

UI = 20.27 D1 = 1.6225 BETA=11.319 RD2 = 8785.
CF/2= 0.00024 D2 = 0.8427 B =16.686 H = 1.925
F = 0.00399 DC = 104.9 P+ = 0.0433 G =31.083
K = -0.160E-06 D99 = 4.8166 V0+ = 0.2580

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.055	3.47	0.0005	0.171	-53.58	8.8	11.09	0.000160
0.065	3.66	0.0006	0.180	-53.00	10.4	11.67	0.000154
0.085	4.54	0.0008	0.224	-50.17	13.7	14.50	0.000142
0.115	4.74	0.0011	0.234	-49.56	18.5	15.11	0.000074
0.215	5.86	0.0020	0.289	-45.95	34.6	18.71	0.000041
0.415	7.18	0.0040	0.354	-41.76	66.9	22.91	0.000027
0.615	7.78	0.0059	0.384	-39.85	99.1	24.82	0.000020
0.815	8.82	0.0078	0.435	-36.51	131.4	28.16	0.000018
1.115	9.98	0.0106	0.493	-32.81	179.7	31.86	0.000017
1.415	10.39	0.0135	0.513	-31.51	228.1	33.16	0.000016
1.815	11.89	0.0173	0.587	-26.72	292.6	37.94	0.000015
2.215	13.19	0.0211	0.651	-22.59	357.0	42.07	0.000015
2.615	14.35	0.0249	0.708	-18.88	421.5	45.79	0.000015
3.015	15.65	0.0287	0.772	-14.73	486.0	49.94	0.000014
3.415	16.90	0.0325	0.834	-10.73	550.5	53.94	0.000013
3.915	18.20	0.0373	0.898	-6.58	631.1	58.09	0.000012
4.915	20.27	0.0468	1.000	0.00	792.3	64.67	0.000000

RUN: 110971-1 X= 2. Z= 0.

UI = 29.13 D1 = 0.0561 BETA= 0.219 RD2 = 541.
CF/2= 0.00269 D2 = 0.0359 B = 0.000 H = 1.562
F = 0.00000 DC = 1.0802 P+ = 0.0050 G = 6.933
K = -0.699E-06 D99 = 0.3064 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	4.97	0.0040	0.171	-15.98	3.4	3.29	0.002143
0.006	5.55	0.0049	0.190	-15.60	4.1	3.67	0.002056
0.006	6.09	0.0058	0.209	-15.24	4.9	4.03	0.001968
0.008	7.80	0.0077	0.268	-14.11	6.5	5.16	0.001767
0.010	9.35	0.0095	0.321	-13.08	8.1	6.18	0.001681
0.012	11.01	0.0114	0.378	-11.98	9.6	7.28	0.001519
0.014	12.16	0.0132	0.417	-11.22	11.2	8.04	0.001311
0.016	13.48	0.0151	0.463	-10.35	12.8	8.91	0.001121
0.018	14.38	0.0169	0.493	-9.76	14.3	9.51	0.000925
0.021	15.40	0.0197	0.529	-9.08	16.7	10.18	0.000734
0.024	16.28	0.0225	0.559	-8.50	19.0	10.77	0.000582
0.027	16.80	0.0253	0.577	-8.16	21.4	11.11	0.000490
0.032	17.90	0.0299	0.614	-7.43	25.3	11.84	0.000388
0.037	18.63	0.0345	0.640	-6.94	29.2	12.32	0.000312
0.042	19.29	0.0392	0.662	-6.51	33.1	12.76	0.000264
0.048	20.00	0.0456	0.687	-6.04	38.6	13.23	0.000210
0.053	20.55	0.0530	0.705	-5.68	44.8	13.59	0.000175
0.067	21.25	0.0623	0.729	-5.21	52.7	14.05	0.000151
0.077	21.92	0.0716	0.753	-4.77	60.5	14.50	0.000136
0.087	22.46	0.0808	0.771	-4.42	68.3	14.85	0.000125
0.102	23.25	0.0947	0.798	-3.89	80.0	15.38	0.000112
0.118	23.93	0.1086	0.821	-3.44	91.8	15.83	0.000100
0.133	24.78	0.1271	0.850	-2.88	107.4	16.38	0.000090
0.157	25.53	0.1456	0.876	-2.38	123.1	16.89	0.000080
0.182	26.35	0.1688	0.904	-1.84	142.6	17.42	0.000069
0.207	27.12	0.1919	0.931	-1.33	162.2	17.93	0.000057
0.237	27.86	0.2197	0.956	-0.84	185.7	18.42	0.000043
0.267	28.41	0.2475	0.975	-0.48	209.1	18.79	0.000031
0.307	28.85	0.2845	0.990	-0.19	240.4	19.08	0.000019
0.357	29.08	0.3308	0.998	-0.03	279.6	19.23	0.000007
0.407	29.13	0.3771	1.000	0.00	318.7	19.27	-0.000000
0.457	29.13	0.4234	1.000	0.00	357.8	19.27	0.000000

RUN: 110971-1 X=10. Z= 0.

UI = 25.70 D1 = 0.1237 BETA= 1.201 RD2 = 1024.
CF/2= 0.00174 D2 = 0.0770 B = 0.000 H = 1.607
F = 0.00000 DC = 2.9662 P+ = 0.0175 G = 9.052
K = -0.127E-05 D99 = 0.5366 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.47	0.0017	0.135	-20.73	2.8	3.24	0.00182	0.001736
0.006	3.98	0.0020	0.155	-20.26	3.3	3.71	0.00184	0.001660
0.008	4.92	0.0027	0.191	-19.38	4.4	4.59	0.00187	0.001507
0.010	5.95	0.0034	0.231	-18.43	5.5	5.55	0.00190	0.001312
0.012	6.78	0.0040	0.264	-17.65	6.7	6.32	0.00193	0.001176
0.016	8.04	0.0051	0.313	-16.47	8.3	7.50	0.00197	0.001023
0.018	9.00	0.0061	0.350	-15.58	10.0	8.39	0.00200	0.000851
0.021	9.74	0.0071	0.379	-14.89	11.6	9.09	0.00204	0.000727
0.026	10.83	0.0084	0.422	-13.87	13.9	10.11	0.00208	0.000579
0.029	11.41	0.0098	0.444	-13.33	16.1	10.64	0.00211	0.000472
0.034	12.26	0.0115	0.477	-12.54	18.9	11.44	0.00215	0.000373
0.039	12.72	0.0131	0.495	-12.11	21.6	11.86	0.00218	0.000300
0.045	13.28	0.0152	0.517	-11.58	25.0	12.39	0.00222	0.000248
0.053	13.87	0.0179	0.540	-11.04	29.4	12.94	0.00225	0.000193
0.063	14.49	0.0212	0.564	-10.45	34.9	13.52	0.00229	0.000158
0.078	15.04	0.0260	0.587	-9.90	42.7	14.08	0.00232	0.000127
0.092	15.68	0.0310	0.610	-9.35	51.0	14.62	0.00233	0.000109
0.107	16.16	0.0361	0.629	-8.90	59.3	15.07	0.00233	0.000100
0.127	16.81	0.0428	0.654	-8.30	70.4	15.68	0.00230	0.000093
0.158	17.67	0.0529	0.687	-7.49	87.1	16.48	0.00223	0.000087
0.197	18.85	0.0666	0.734	-6.39	109.3	17.59	0.00209	0.000082
0.237	19.86	0.0799	0.773	-5.45	131.5	18.53	0.00188	0.000076
0.278	20.93	0.0934	0.814	-4.45	153.6	19.53	0.00169	0.000072
0.317	21.87	0.1069	0.851	-3.57	175.8	20.40	0.00149	0.000066
0.357	22.76	0.1204	0.886	-2.74	198.0	21.23	0.00132	0.000059
0.397	23.59	0.1338	0.918	-1.97	220.2	22.00	0.00121	0.000051
0.447	24.49	0.1507	0.951	-1.17	247.9	22.81	0.00110	0.000039
0.497	25.14	0.1676	0.978	-0.52	275.7	23.45	0.00102	0.000027
0.547	25.52	0.1844	0.993	-0.16	303.4	23.81	0.00092	0.000018
0.622	25.70	0.2097	1.000	-0.00	345.0	23.97	0.00040	0.000006
0.697	25.72	0.2350	1.001	0.02	386.6	23.99	0.00000	0.000001
0.797	25.70	0.2687	1.000	0.00	442.1	23.97	0.00000	0.000000

RUN: 110971-1 X=22. Z= 0.

UI = 22.31 D1 = 0.2478 BETA= 1.559 RD2 = 1727.
CF/2= 0.00129 D2 = 0.1496 B = 0.000 H = 1.657
F = 0.00000 DC = 4.9052 P+ = 0.0152 G = 11.046
K = -0.702E-06 D99 = 0.9542 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.008	2.64	0.0012	0.118	-24.57	3.3	3.29	0.00135	0.001173
0.010	3.11	0.0014	0.139	-23.99	4.1	3.88	0.00137	0.001138
0.012	3.73	0.0017	0.167	-23.20	5.0	4.66	0.00138	0.001102
0.014	4.32	0.0020	0.194	-22.47	5.8	5.40	0.00140	0.001069
0.016	4.82	0.0023	0.216	-21.85	6.6	6.02	0.00141	0.001020
0.019	5.63	0.0028	0.252	-20.83	7.9	7.03	0.00144	0.000899
0.022	6.59	0.0033	0.295	-19.63	9.5	8.23	0.00146	0.000758
0.027	7.24	0.0039	0.325	-18.82	11.2	9.04	0.00149	0.000625
0.032	7.96	0.0046	0.357	-17.92	13.3	9.94	0.00152	0.000487
0.038	8.77	0.0055	0.393	-16.92	15.7	10.95	0.00156	0.000379
0.045	9.27	0.0065	0.416	-16.29	18.6	11.58	0.00159	0.000291
0.054	9.77	0.0078	0.438	-15.66	22.4	12.21	0.00164	0.000218
0.066	10.45	0.0096	0.468	-14.81	27.3	13.05	0.00169	0.000155
0.078	10.80	0.0114	0.484	-14.37	32.7	13.50	0.00174	0.000124
0.094	11.30	0.0136	0.507	-13.75	38.9	14.12	0.00180	0.000101
0.114	11.60	0.0165	0.520	-13.38	47.2	14.49	0.00186	0.000082
0.139	12.15	0.0201	0.545	-12.69	57.6	15.18	0.00194	0.000073
0.174	12.72	0.0252	0.570	-11.98	72.1	15.89	0.00202	0.000065
0.214	13.36	0.0310	0.599	-11.18	88.6	16.69	0.00208	0.000061
0.259	14.04	0.0375	0.629	-10.33	107.3	17.54	0.00211	0.000058
0.309	14.67	0.0447	0.658	-9.54	128.0	18.32	0.00209	0.000057
0.359	15.43	0.0520	0.691	-8.60	148.7	19.27	0.00205	0.000055
0.408	16.16	0.0592	0.724	-7.68	169.4	20.19	0.00196	0.000054
0.459	16.86	0.0665	0.756	-6.81	190.1	21.06	0.00184	0.000053
0.519	17.58	0.0752	0.788	-5.91	215.0	21.96	0.00164	0.000051
0.579	18.41	0.0839	0.825	-4.87	239.8	23.00	0.00149	0.000050
0.639	19.14	0.0925	0.858	-3.96	264.7	23.91	0.00132	0.000047
0.709	20.04	0.1027	0.898	-2.83	293.7	25.04	0.00121	0.000042
0.784	20.87	0.1135	0.936	-1.80	324.7	26.07	0.00110	0.000034
0.859	21.56	0.1244	0.966	-0.94	355.8	26.93	0.00098	0.000025
0.959	22.11	0.1389	0.991	-0.25	397.2	27.62	0.00073	0.000015
1.059	22.31	0.1534	1.000	0.01	438.7	27.87	0.00037	0.000006
1.159	22.32	0.1678	1.001	0.02	480.1	27.88	0.00000	0.000001
1.284	22.31	0.1859	1.000	0.00	531.9	27.87	0.00000	0.000000

RUN: 110971-1 X=34. Z= 0.

UI = 20.53 D1 = 0.3628 BETA= 1.626 RD2 = 2331.
CF/2= 0.00119 D2 = 0.2195 B = 0.000 H = 1.653
F = 0.00000 DC = 10.4980 P+ = 0.0122 G = 11.427
K = -0.504E-06 D99 = 1.3935 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.011	2.63	0.0010	0.128	-25.22	3.9	3.71	0.00125	0.001035
0.013	2.90	0.0012	0.142	-24.84	4.6	4.09	0.00126	0.001008
0.015	3.39	0.0014	0.165	-24.16	5.4	4.78	0.00127	0.000981
0.017	3.90	0.0016	0.190	-23.43	6.1	5.50	0.00128	0.000952
0.019	4.32	0.0018	0.210	-22.85	6.8	6.09	0.00129	0.000969
0.023	4.83	0.0021	0.235	-22.12	7.9	6.81	0.00130	0.000877
0.026	5.59	0.0024	0.272	-21.06	9.4	7.88	0.00132	0.000729
0.031	6.51	0.0029	0.317	-19.75	11.2	9.18	0.00134	0.000585
0.037	7.20	0.0035	0.351	-18.79	13.4	10.15	0.00137	0.000462
0.045	7.65	0.0042	0.373	-18.15	16.4	10.78	0.00140	0.000328
0.057	8.44	0.0054	0.411	-17.03	20.8	11.90	0.00145	0.000217
0.070	9.07	0.0066	0.442	-16.15	25.5	12.79	0.00150	0.000157
0.088	9.38	0.0083	0.457	-15.71	32.2	13.22	0.00156	0.000115
0.105	9.83	0.0100	0.479	-15.08	38.4	13.85	0.00162	0.000088
0.135	10.22	0.0128	0.498	-14.53	49.4	14.41	0.00171	0.000067
0.175	10.78	0.0166	0.525	-13.73	64.1	15.20	0.00183	0.000056
0.226	11.24	0.0214	0.548	-13.09	82.4	15.85	0.00196	0.000049
0.280	11.86	0.0266	0.578	-12.22	102.6	16.71	0.00208	0.000046
0.340	12.34	0.0323	0.601	-11.54	124.6	17.40	0.00218	0.000044
0.405	12.97	0.0385	0.632	-10.65	148.5	18.28	0.00225	0.000044
0.470	13.54	0.0447	0.659	-9.85	172.4	19.08	0.00228	0.000043
0.545	14.26	0.0519	0.695	-8.83	199.9	20.10	0.00227	0.000043
0.645	15.19	0.0614	0.740	-7.53	236.6	21.41	0.00219	0.000042
0.745	16.05	0.0709	0.782	-6.31	273.3	22.63	0.00201	0.000040
0.848	16.92	0.0805	0.824	-5.09	310.0	23.85	0.00176	0.000038
0.948	17.78	0.0900	0.866	-3.86	346.7	25.07	0.00149	0.000036
1.048	18.45	0.0995	0.899	-2.92	383.4	26.01	0.00117	0.000031
1.145	19.28	0.1090	0.939	-1.75	420.1	27.18	0.00101	0.000025
1.245	19.83	0.1186	0.966	-0.98	456.8	27.95	0.00081	0.000019
1.378	20.28	0.1305	0.988	-0.34	502.7	28.59	0.00056	0.000012
1.495	20.48	0.1424	0.998	-0.06	548.6	28.88	0.00029	0.000006
1.645	20.54	0.1567	1.001	0.02	603.6	28.95	0.00000	-0.000001
1.795	20.53	0.1709	1.000	0.00	658.7	28.93	0.00000	0.000000

RUN: 110971-1 X=46. Z= 0.

UI = 19.39 D1 = 0.4663 BETA= 1.630 RD2 = 2845.
CF/2= 0.00114 D2 = 0.2836 B = 0.000 M = 1.644
F = 0.00000 DC =19.8318 P+ = 0.0103 G =11.621
K = -0.396E-06 D99 = 1.8038 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.015	2.71	0.0011	0.140	-25.52	5.1	4.14	0.00120	0.000920
0.018	3.09	0.0012	0.160	-24.93	5.7	4.73	0.00121	0.000916
0.019	3.41	0.0014	0.176	-24.44	6.4	5.22	0.00121	0.000912
0.021	3.79	0.0015	0.195	-23.86	7.1	5.88	0.00122	0.000855
0.028	4.18	0.0017	0.216	-23.27	7.8	6.40	0.00123	0.000816
0.026	4.64	0.0019	0.240	-22.58	8.8	7.18	0.00124	0.000746
0.030	5.06	0.0022	0.261	-21.93	10.1	7.74	0.00125	0.000642
0.035	5.73	0.0025	0.295	-20.90	11.8	8.76	0.00127	0.000533
0.042	6.40	0.0030	0.330	-19.87	14.2	9.79	0.00130	0.000425
0.052	7.24	0.0038	0.374	-18.58	17.6	11.08	0.00133	0.000317
0.066	7.69	0.0047	0.397	-17.90	22.0	11.76	0.00137	0.000219
0.085	8.51	0.0061	0.439	-16.64	28.7	13.02	0.00143	0.000143
0.116	9.04	0.0083	0.466	-15.83	38.9	13.84	0.00152	0.000092
0.156	9.60	0.0112	0.495	-14.98	52.4	14.69	0.00163	0.000063
0.205	10.10	0.0148	0.521	-14.21	69.3	15.46	0.00176	0.000048
0.265	10.59	0.0192	0.547	-13.45	89.6	16.21	0.00191	0.000040
0.328	10.91	0.0235	0.563	-12.97	109.9	16.69	0.00203	0.000038
0.408	11.49	0.0289	0.593	-12.07	135.3	17.59	0.00218	0.000036
0.508	12.02	0.0361	0.620	-11.26	169.1	18.40	0.00233	0.000036
0.608	12.83	0.0434	0.662	-10.04	202.9	19.63	0.00244	0.000036
0.708	13.48	0.0506	0.696	-9.03	236.7	20.63	0.00246	0.000035
0.808	14.11	0.0578	0.728	-8.07	270.5	21.59	0.00242	0.000035
0.926	14.97	0.0669	0.772	-6.76	312.8	22.91	0.00230	0.000033
1.058	15.72	0.0759	0.811	-5.61	355.0	24.05	0.00209	0.000031
1.178	16.59	0.0849	0.856	-4.28	397.3	25.38	0.00185	0.000029
1.308	17.18	0.0940	0.886	-3.37	439.6	26.29	0.00147	0.000026
1.458	17.98	0.1048	0.927	-2.15	490.3	27.51	0.00111	0.000022
1.608	18.62	0.1157	0.960	-1.18	541.0	28.48	0.00080	0.000016
1.758	19.10	0.1265	0.985	-0.44	591.7	29.22	0.00057	0.000011
1.908	19.36	0.1374	0.998	-0.03	642.4	29.63	0.00038	0.000007
2.108	19.41	0.1518	1.001	0.04	710.1	29.70	0.00013	0.000002
2.308	19.41	0.1663	1.001	0.04	777.7	29.78	0.00000	-0.000002
2.508	19.39	0.1807	1.000	0.00	845.3	29.66	0.00000	0.000000

RUN: 110971-1 X=58. Z= 0.

UI = 18.55 D1 = 0.5497 BETA= 1.577 RD2 = 3269.
CF/2= 0.00110 D2 = 0.3406 B = 0.000 M = 1.614
F = 0.00000 DC =16.5931 P+ = 0.0090 G =11.483
K = -0.328E-06 D99 = 2.1736 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.018	2.92	0.0011	0.157	-25.44	5.7	4.75	0.00116	0.000947
0.020	3.24	0.0012	0.175	-24.91	6.4	5.27	0.00116	0.000956
0.022	3.67	0.0013	0.198	-24.22	7.0	5.96	0.00117	0.000964
0.024	3.90	0.0014	0.210	-23.83	7.6	6.35	0.00117	0.000915
0.026	4.27	0.0016	0.230	-23.23	8.3	6.96	0.00118	0.000880
0.029	4.83	0.0017	0.261	-22.32	9.2	7.86	0.00119	0.000781
0.033	5.21	0.0020	0.281	-21.71	10.5	8.47	0.00120	0.000668
0.038	5.84	0.0023	0.315	-20.68	12.1	9.50	0.00122	0.000517
0.045	6.44	0.0027	0.347	-19.70	14.3	10.49	0.00124	0.000386
0.054	6.80	0.0033	0.366	-19.12	17.2	11.06	0.00126	0.000295
0.068	7.43	0.0042	0.401	-18.09	21.9	12.18	0.00130	0.000197
0.088	8.15	0.0054	0.439	-16.92	28.3	13.26	0.00135	0.000137
0.110	8.63	0.0072	0.465	-16.14	37.8	14.04	0.00142	0.000093
0.150	9.16	0.0096	0.494	-15.28	50.6	14.90	0.00152	0.000064
0.209	9.66	0.0126	0.521	-14.47	66.5	15.71	0.00162	0.000048
0.284	10.05	0.0171	0.542	-13.83	90.3	16.35	0.00177	0.000039
0.359	10.60	0.0216	0.572	-12.93	114.2	17.25	0.00192	0.000033
0.458	11.14	0.0277	0.601	-12.05	146.0	18.13	0.00209	0.000030
0.558	11.65	0.0337	0.628	-11.23	177.8	18.96	0.00224	0.000029
0.684	12.11	0.0412	0.653	-10.48	217.5	19.70	0.00234	0.000029
0.808	12.81	0.0488	0.690	-9.34	257.3	20.84	0.00241	0.000028
0.958	13.55	0.0578	0.731	-8.13	305.0	22.05	0.00241	0.000029
1.108	14.35	0.0668	0.773	-6.84	352.7	23.35	0.00233	0.000028
1.259	15.00	0.0759	0.809	-5.78	400.4	24.41	0.00212	0.000027
1.408	15.80	0.0849	0.852	-4.47	448.1	25.71	0.00189	0.000025
1.608	16.64	0.0970	0.897	-3.10	511.7	27.08	0.00145	0.000021
1.809	17.47	0.1090	0.942	-1.76	575.3	28.42	0.00104	0.000016
2.009	18.12	0.1211	0.977	-0.70	638.9	29.48	0.00068	0.000011
2.209	18.42	0.1331	0.993	-0.22	702.5	29.97	0.00033	0.000007
2.509	18.58	0.1512	1.001	0.04	797.9	30.23	0.00000	0.000002
2.809	18.55	0.1693	1.000	0.00	893.3	30.18	0.00000	0.000000

RUN: 110971-1 X=70. Z= 0.

UI = 17.97 D1 = 0.6291 BETA= 1.547 RD2 = 3673.
CF/2= 0.00107 D2 = 0.3951 B = 0.000 M = 1.592
F = 0.00000 DC =19.2678 P+ = 0.0081 G =11.391
K = -0.282E-06 D99 = 2.5570 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.017	2.90	0.0009	0.161	-25.68	5.2	4.95	0.00111	0.000908
0.019	3.31	0.0010	0.184	-24.99	5.8	5.64	0.00112	0.000875
0.021	3.58	0.0011	0.199	-24.53	6.4	6.10	0.00112	0.000841
0.023	3.91	0.0012	0.218	-23.96	7.0	6.67	0.00113	0.000800
0.025	4.10	0.0013	0.228	-23.64	7.6	6.99	0.00113	0.000751
0.028	4.44	0.0015	0.247	-23.05	8.5	7.57	0.00114	0.000708
0.032	4.88	0.0017	0.272	-22.31	9.7	8.32	0.00115	0.000631
0.038	5.57	0.0020	0.310	-21.13	11.5	9.49	0.00117	0.000519
0.046	6.30	0.0024	0.351	-19.88	14.0	10.74	0.00118	0.000395
0.058	6.73	0.0030	0.375	-19.16	17.6	11.47	0.00121	0.000274
0.073	7.31	0.0038	0.407	-18.18	22.2	12.47	0.00125	0.000185
0.093	7.87	0.0048	0.438	-17.21	28.2	13.42	0.00129	0.000126
0.123	8.40	0.0064	0.467	-16.31	37.3	14.31	0.00135	0.000089
0.198	8.97	0.0100	0.499	-15.33	58.6	15.29	0.00148	0.000052
0.258	9.45	0.0131	0.526	-14.52	76.8	16.11	0.00159	0.000041
0.328	9.86	0.0170	0.549	-13.82	99.6	16.80	0.00172	0.000033
0.428	10.44	0.0222	0.581	-12.82	129.9	17.80	0.00186	0.000029
0.528	10.84	0.0274	0.604	-12.14	160.3	18.48	0.00198	0.000027
0.628	11.16	0.0326	0.621	-11.60	190.6	19.02	0.00208	0.000027
0.753	11.79	0.0391	0.657	-10.52	228.5	20.11	0.00220	0.000026
0.908	12.40	0.0469	0.690	-9.49	274.1	21.19	0.00229	0.000025
1.058	13.05	0.0547	0.726	-8.38	319.6	22.25	0.00233	0.000025
1.208	13.58	0.0624	0.756	-7.47	365.1	23.16	0.00228	0.000024
1.358	14.14	0.0702	0.787	-6.52	410.6	24.11	0.00218	0.000024
1.508	14.82	0.0780	0.825	-5.37	456.2	25.26	0.00204	0.000023
1.708	15.59	0.0884	0.868	-4.04	516.8	26.58	0.00174	0.000021
1.908	16.29	0.0988	0.907	-2.85	577.6	27.78	0.00136	0.000018
2.108	16.87	0.1091	0.939	-1.87	638.3	28.76	0.00094	0.000014
2.308	17.37	0.1195	0.967	-1.02	699.0	29.61	0.00058	0.000011
2.608	17.86	0.1351	0.994	-0.18	790.0	30.45	0.00022	0.000006
2.908	17.99	0.1507	1.001	0.04	881.1	30.67	0.00000	0.000002
3.308	17.97	0.1714	1.000	0.00	1002.5	30.63	0.00000	0.000000

RUN: 110971-1 X=82. Z= 0.

UI = 17.42 D1 = 0.7263 BETA= 1.575 RD2 = 4139.
CF/2= 0.00103 D2 = 0.4591 B = 0.000 M = 1.582
F = 0.00000 DC =22.5768 P+ = 0.0075 G =11.435
K = -0.249E-06 D99 = 2.9793 V0+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.018	2.68	0.0008	0.154	-26.30	5.5	4.79	0.00107	0.000936
0.021	3.01	0.0009	0.173	-25.72	6.1	5.37	0.00108	0.000939
0.023	3.41	0.0010	0.195	-25.01	6.7	6.08	0.00108	0.000942
0.025	3.71	0.0011	0.213	-24.47	7.2	6.61	0.00109	0.000933
0.027	3.96	0.0012	0.227	-24.02	7.8	7.06	0.00109	0.000873
0.030	4.32	0.0013	0.248	-23.38	8.7	7.71	0.00110	0.000769
0.036	5.00	0.0016	0.287	-22.16	10.4	8.98	0.00111	0.000610
0.046	5.78	0.0019	0.332	-20.78	12.8	10.31	0.00112	0.000456
0.056	6.35	0.0025	0.364	-19.76	16.2	11.33	0.00114	0.000313
0.071	6.99	0.0031	0.401	-18.61	20.6	12.47	0.00117	0.000212
0.098	7.59	0.0043	0.435	-17.55	27.8	13.54	0.00120	0.000131
0.138	8.24	0.0060	0.473	-16.39	39.4	14.78	0.00126	0.000081
0.196	8.65	0.0087	0.496	-15.65	56.8	15.43	0.00134	0.000049
0.271	9.24	0.0120	0.530	-14.60	78.6	16.49	0.00145	0.000036
0.348	9.56	0.0153	0.549	-14.03	100.3	17.05	0.00152	0.000030
0.446	9.85	0.0198	0.565	-13.52	129.3	17.57	0.00160	0.000026
0.546	10.34	0.0242	0.594	-12.64	158.3	18.45	0.00169	0.000025
0.696	10.79	0.0308	0.619	-11.84	201.8	19.24	0.00179	0.000023
0.846	11.31	0.0375	0.649	-10.91	245.3	20.18	0.00188	0.000023
0.996	12.00	0.0441	0.689	-9.67	288.8	21.42	0.00194	0.000022
1.146	12.26	0.0508	0.704	-9.22	332.3	21.87	0.00190	0.000022
1.296	12.96	0.0574	0.744	-7.96	375.8	23.13	0.00192	0.000021
1.496	13.46	0.0663	0.772	-7.07	433.8	24.01	0.00180	0.000021
1.696	14.15	0.0751	0.812	-5.84	491.8	25.24	0.00169	0.000020
1.994	15.15	0.0884	0.869	-4.06	578.8	27.08	0.00142	0.000018
2.295	15.98	0.1017	0.918	-2.56	665.8	28.52	0.00101	0.000015
2.596	16.73	0.1150	0.960	-1.24	752.8	29.84	0.00060	0.000010
2.898	17.19	0.1283	0.987	-0.42	839.8	30.67	0.00027	0.000007
3.196	17.41	0.1416	0.999	-0.03	926.8	31.05	0.00008	0.000003
3.498	17.46	0.1548	1.002	0.06	1013.8	31.15	0.00000	0.000001
3.896	17.42	0.1726	1.000	0.00	1129.8	31.09	0.00000	0.000000

RUN: 110971-1 X=90. Z= 0.

UI = 17.10 D1 = 0.8244 BETA= 1.750 RD2 = 4578.
CF/2= 0.00101 D2 = 0.5174 B = 0.080 H = 1.593
F = 0.00000 DC =25.9536 P+ = 0.0876 G =11.724
K = -0.242E-06 D99 = 3.3669 VO+ = 0.0000

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.021	2.98	0.0008	0.174	-26.00	5.8	5.48	0.000862
0.028	3.19	0.0009	0.187	-25.60	6.4	5.88	0.000846
0.025	3.38	0.0010	0.198	-25.25	7.0	6.23	0.000830
0.027	3.89	0.0010	0.227	-24.33	7.5	7.15	0.000766
0.029	3.99	0.0011	0.233	-24.14	8.1	7.35	0.000732
0.032	4.28	0.0012	0.250	-23.60	8.9	7.88	0.000638
0.037	4.65	0.0014	0.272	-22.93	10.3	8.55	0.000503
0.046	5.21	0.0017	0.305	-21.89	12.3	9.59	0.000431
0.054	5.85	0.0021	0.342	-20.71	15.1	10.77	0.000324
0.068	6.46	0.0027	0.378	-19.59	19.3	11.89	0.000228
0.089	6.99	0.0034	0.409	-18.62	25.0	12.86	0.000154
0.114	7.28	0.0044	0.426	-18.08	32.0	13.40	0.000105
0.154	8.04	0.0059	0.470	-16.69	43.2	14.79	0.000067
0.214	8.40	0.0082	0.491	-16.01	60.1	15.47	0.000043
0.289	8.79	0.0111	0.514	-15.30	81.2	16.18	0.000034
0.366	8.97	0.0140	0.525	-14.96	102.3	16.52	0.000028
0.466	9.37	0.0179	0.548	-14.23	130.4	17.25	0.000025
0.589	9.96	0.0227	0.582	-13.15	165.5	18.33	0.000024
0.716	10.27	0.0275	0.600	-12.58	200.6	18.90	0.000022
0.864	10.74	0.0333	0.628	-11.72	242.8	19.77	0.000021
1.014	11.28	0.0391	0.659	-10.72	285.0	20.76	0.000021
1.166	11.66	0.0448	0.682	-10.03	327.1	21.46	0.000021
1.364	12.28	0.0525	0.718	-8.89	383.4	22.59	0.000021
1.514	12.80	0.0583	0.749	-7.92	425.5	23.57	0.000020
1.714	13.32	0.0660	0.779	-6.97	481.7	24.51	0.000020
1.914	14.05	0.0737	0.821	-5.62	538.0	25.86	0.000019
2.114	14.54	0.0814	0.850	-4.72	594.2	26.76	0.000018
2.314	15.00	0.0892	0.877	-3.88	650.4	27.60	0.000016
2.614	15.81	0.1007	0.924	-2.38	734.7	29.10	0.000013
2.914	16.47	0.1123	0.963	-1.17	819.1	30.31	0.000010
3.214	16.82	0.1238	0.983	-0.52	903.4	30.96	0.000006
3.514	17.04	0.1354	0.996	-0.12	987.7	31.37	0.000003
3.814	17.11	0.1469	1.000	0.01	1072.0	31.49	0.000001
3.914	17.10	0.1508	1.000	0.00	1100.1	31.48	0.000000

RUN: 21572-5 X= 2. Z= 0.

UI = 29.42 D1 = 0.0510 BETA= 0.194 RD2 = 519.
CF/2= 0.00276 D2 = 0.0339 B =-0.728 H = 1.503
F = -0.00201 DC = 0.9701 P+ = 0.0047 G = 6.372
K = -0.685E-06 D99 = 0.3067 VO+ =-0.0383

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.004	5.81	0.0044	0.198	-15.27	3.5	3.76	0.002636
0.005	6.63	0.0055	0.225	-14.74	4.3	4.29	0.002277
0.006	7.22	0.0065	0.245	-14.36	5.1	4.67	0.002119
0.007	8.40	0.0075	0.285	-13.60	5.9	5.43	0.001967
0.008	9.09	0.0086	0.309	-13.15	6.7	5.88	0.001964
0.010	10.94	0.0106	0.372	-11.96	8.3	7.07	0.001802
0.012	12.59	0.0127	0.428	-10.89	9.9	8.15	0.001561
0.014	13.87	0.0147	0.471	-10.06	11.5	8.97	0.001323
0.016	15.15	0.0168	0.515	-9.23	13.1	9.80	0.001105
0.018	16.09	0.0189	0.547	-8.62	14.7	10.41	0.000926
0.021	17.08	0.0220	0.580	-7.99	17.1	11.05	0.000712
0.024	17.93	0.0250	0.609	-7.43	19.5	11.60	0.000555
0.027	18.67	0.0281	0.634	-6.96	22.0	12.08	0.000448
0.031	19.31	0.0323	0.656	-6.54	25.2	12.49	0.000359
0.035	19.91	0.0364	0.677	-6.15	28.4	12.88	0.000292
0.043	20.69	0.0446	0.703	-5.65	34.8	13.39	0.000212
0.048	21.25	0.0498	0.722	-5.29	38.9	13.75	0.000184
0.058	21.92	0.0601	0.745	-4.85	46.9	14.18	0.000148
0.068	22.45	0.0704	0.763	-4.51	54.9	14.53	0.000126
0.078	23.00	0.0807	0.782	-4.16	63.0	14.88	0.000112
0.098	23.93	0.1013	0.813	-3.56	79.1	15.48	0.000097
0.118	24.71	0.1219	0.840	-3.05	95.2	15.99	0.000086
0.148	25.84	0.1529	0.878	-2.32	119.3	16.72	0.000072
0.178	26.77	0.1838	0.910	-1.72	143.4	17.32	0.000059
0.208	27.61	0.2147	0.938	-1.17	167.6	17.86	0.000046
0.258	28.64	0.2663	0.973	-0.51	207.8	18.53	0.000029
0.308	29.14	0.3178	0.991	-0.18	248.0	18.85	0.000017
0.383	29.38	0.3951	0.999	-0.02	308.4	19.01	0.000004
0.458	29.40	0.4724	0.999	-0.01	368.7	19.02	-0.000003
0.508	29.42	0.5240	1.000	0.00	408.9	19.03	0.000000

RUN: 21572-5 X=10. Z= 0.

UI = 26.05 D1 = 0.0887 BETA= 0.611 RD2 = 801.
CF/2= 0.00246 D2 = 0.0591 B =-0.720 H = 1.500
F = -0.00177 DC = 1.7877 P+ = 0.0102 G = 6.723
K = -0.125E-05 D99 = 0.4691 VO+ =-0.0357

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	4.60	0.0028	0.177	-16.60	3.4	3.56	0.00223	0.002216
0.006	5.10	0.0034	0.196	-16.21	4.0	3.95	0.00221	0.002069
0.007	6.13	0.0039	0.235	-15.42	4.7	4.74	0.00216	0.001921
0.008	6.76	0.0045	0.260	-14.93	5.4	5.23	0.00213	0.001756
0.009	7.28	0.0050	0.279	-14.53	6.1	5.63	0.00211	0.001721
0.010	7.76	0.0056	0.298	-14.15	6.7	6.01	0.00209	0.001551
0.012	8.87	0.0067	0.340	-13.30	8.1	6.86	0.00204	0.001448
0.014	9.94	0.0078	0.382	-12.47	9.4	7.69	0.00200	0.001208
0.016	10.78	0.0089	0.414	-11.82	10.8	8.34	0.00196	0.001086
0.018	11.71	0.0101	0.450	-11.10	12.1	9.07	0.00192	0.000971
0.021	12.05	0.0117	0.462	-10.84	14.1	9.32	0.00192	0.000792
0.024	13.29	0.0134	0.510	-9.88	16.1	10.29	0.00187	0.000657
0.027	14.00	0.0151	0.537	-9.33	18.2	10.84	0.00185	0.000556
0.031	14.58	0.0173	0.560	-8.88	20.8	11.28	0.00184	0.000471
0.036	15.25	0.0201	0.585	-8.36	24.2	11.80	0.00183	0.000331
0.042	15.97	0.0231	0.613	-7.80	28.2	12.36	0.00182	0.000256
0.049	16.39	0.0274	0.629	-7.48	33.0	12.69	0.00182	0.000206
0.059	16.96	0.0330	0.651	-7.03	39.7	13.13	0.00182	0.000158
0.079	17.92	0.0442	0.688	-6.29	53.1	13.87	0.00183	0.000116
0.099	18.65	0.0554	0.716	-5.73	66.6	14.43	0.00181	0.000099
0.139	19.76	0.0778	0.759	-4.87	93.5	15.30	0.00174	0.000080
0.179	20.79	0.1001	0.798	-4.07	120.4	16.09	0.00160	0.000071
0.219	21.74	0.1225	0.835	-3.33	147.3	16.83	0.00143	0.000065
0.259	22.63	0.1449	0.869	-2.64	174.2	17.52	0.00122	0.000059
0.299	23.50	0.1673	0.902	-1.98	201.1	18.19	0.00103	0.000051
0.349	24.38	0.1952	0.936	-1.29	234.7	18.87	0.00082	0.000040
0.399	25.16	0.2232	0.966	-0.68	268.3	19.48	0.00067	0.000029
0.474	25.83	0.2651	0.992	-0.17	318.7	19.99	0.00045	0.000016
0.549	26.05	0.3071	1.000	0.00	369.2	20.16	0.00022	0.000006
0.624	26.07	0.3490	1.001	0.01	419.6	20.18	0.00000	-0.000001
0.699	26.05	0.3910	1.000	0.00	470.1	20.16	0.00000	0.000000

RUN: 21572-5 X=22. Z= 0.

UI = 22.55 D1 = 0.1610 BETA= 0.590 RD2 = 1250.
CF/2= 0.00221 D2 = 0.1065 B =-0.719 H = 1.512
F = -0.00159 DC = 3.4256 P+ = 0.0066 G = 7.201
K = -0.690E-06 D99 = 0.7882 VO+ =-0.0338

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.005	3.00	0.0015	0.133	-18.44	2.8	2.83	0.00204	0.001704
0.006	3.18	0.0018	0.141	-18.27	3.3	3.00	0.00203	0.001553
0.007	3.61	0.0020	0.160	-17.87	3.9	3.40	0.00201	0.001402
0.008	3.80	0.0023	0.169	-17.68	4.4	3.59	0.00201	0.001342
0.009	4.23	0.0026	0.187	-17.28	5.0	3.99	0.00198	0.001427
0.011	4.87	0.0032	0.216	-16.68	6.1	4.59	0.00195	0.001456
0.013	5.81	0.0038	0.258	-15.79	7.2	5.48	0.00190	0.001455
0.015	6.49	0.0044	0.288	-15.15	8.3	6.12	0.00187	0.001365
0.018	7.65	0.0053	0.339	-14.05	9.9	7.22	0.00181	0.001199
0.021	8.61	0.0061	0.382	-13.15	11.6	8.12	0.00176	0.000993
0.024	9.35	0.0070	0.415	-12.45	13.2	8.82	0.00173	0.000842
0.028	10.13	0.0082	0.449	-11.72	15.5	9.56	0.00169	0.000655
0.032	10.68	0.0093	0.474	-11.20	17.7	10.08	0.00168	0.000526
0.039	11.62	0.0114	0.515	-10.31	21.5	10.96	0.00165	0.000380
0.049	12.32	0.0143	0.546	-9.65	27.0	11.62	0.00164	0.000260
0.059	12.98	0.0172	0.576	-9.03	32.6	12.24	0.00163	0.000194
0.079	13.70	0.0231	0.607	-8.35	43.6	12.92	0.00165	0.000125
0.109	14.35	0.0318	0.637	-7.73	60.1	13.54	0.00168	0.000089
0.159	15.29	0.0464	0.678	-6.85	87.7	14.42	0.00171	0.000069
0.209	16.01	0.0610	0.710	-6.17	115.3	15.10	0.00170	0.000061
0.284	17.19	0.0829	0.762	-5.06	156.7	16.21	0.00162	0.000055
0.359	18.13	0.1048	0.804	-4.17	198.1	17.11	0.00146	0.000051
0.434	19.15	0.1267	0.849	-3.21	239.5	18.06	0.00126	0.000046
0.509	20.10	0.1486	0.891	-2.31	280.9	18.96	0.00105	0.000039
0.609	21.13	0.1778	0.937	-1.34	336.0	19.93	0.00079	0.000030
0.709	22.00	0.2070	0.975	-0.52	391.2	20.75	0.00060	0.000019
0.809	22.41	0.2362	0.994	-0.13	446.4	21.14	0.00039	0.000012
0.909	22.55	0.2654	1.000	-0.00	501.6	21.27	0.00018	0.000006
1.009	22.55	0.2945	1.000	0.00	556.8	21.27	0.00000	0.000000

RUN: 21572-5 X=34. Z= 0.

UI = 20.69 D1 = 0.2211 BETA= 0.571 RD2 = 1608.
CF/2= 0.00208 D2 = 0.1493 B =-0.726 H = 1.481
F = -0.00151 DC = 4.8479 P+ = 0.0053 G = 7.118
K = -0.499E-06 D99 = 1.1037 VO+ =-0.0331

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	3.08	0.0012	0.149	-18.66	2.8	3.27	0.00189	0.001953
0.007	3.38	0.0014	0.163	-18.35	3.2	3.58	0.00187	0.001799
0.008	3.75	0.0016	0.181	-17.95	3.7	3.97	0.00185	0.001644
0.009	4.08	0.0018	0.197	-17.60	4.2	4.32	0.00183	0.001586
0.010	4.48	0.0020	0.216	-17.18	4.7	4.74	0.00180	0.001610
0.011	4.76	0.0022	0.230	-16.88	5.2	5.05	0.00179	0.001588
0.013	5.53	0.0026	0.267	-16.07	6.2	5.86	0.00174	0.001461
0.015	6.13	0.0030	0.296	-15.43	7.2	6.50	0.00171	0.001301
0.018	6.93	0.0036	0.335	-14.58	8.6	7.35	0.00166	0.001104
0.021	7.72	0.0042	0.373	-13.74	10.1	8.19	0.00162	0.000938
0.025	8.36	0.0051	0.404	-13.07	12.1	8.86	0.00159	0.000746
0.030	9.22	0.0061	0.446	-12.15	14.5	9.77	0.00155	0.000582
0.035	9.84	0.0071	0.476	-11.49	17.0	10.43	0.00152	0.000459
0.043	10.39	0.0088	0.502	-10.92	20.9	11.01	0.00151	0.000335
0.053	11.11	0.0109	0.537	-10.16	25.8	11.77	0.00149	0.000232
0.068	11.73	0.0139	0.567	-9.49	33.2	12.43	0.00149	0.000158
0.093	12.28	0.0191	0.594	-8.91	45.5	13.01	0.00152	0.000105
0.143	13.10	0.0294	0.633	-8.04	70.0	13.88	0.00159	0.000066
0.193	13.72	0.0397	0.663	-7.39	94.6	14.54	0.00165	0.000055
0.268	14.46	0.0552	0.699	-6.60	131.4	15.32	0.00171	0.000048
0.343	15.17	0.0707	0.733	-5.85	168.3	16.07	0.00172	0.000045
0.443	16.13	0.0913	0.780	-4.83	217.4	17.09	0.00165	0.000042
0.543	17.00	0.1119	0.822	-3.90	266.5	18.02	0.00150	0.000039
0.643	17.87	0.1326	0.864	-2.99	315.6	18.94	0.00129	0.000034
0.743	18.69	0.1532	0.903	-2.12	364.7	19.81	0.00105	0.000029
0.893	19.71	0.1841	0.953	-1.03	438.4	20.89	0.00069	0.000020
1.043	20.37	0.2151	0.984	-0.34	512.1	21.58	0.00041	0.000013
1.193	20.65	0.2460	0.998	-0.04	585.7	21.89	0.00019	0.000008
1.393	20.69	0.2873	1.000	0.00	684.0	21.93	0.00000	0.000000

RUN: 21572-5 X=46. Z= 0.

UI = 19.49 D1 = 0.2782 BETA= 0.565 RD2 = 1911.
CF/2= 0.00198 D2 = 0.1884 B =-0.722 H = 1.477
F = -0.00143 DC = 6.2517 P+ = 0.0045 G = 7.255
K = -0.396E-06 D99 = 1.3716 VO+ =-0.0321

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.007	2.52	0.0011	0.129	-19.57	3.2	2.90	0.00182	0.001646
0.008	2.81	0.0013	0.144	-19.24	3.6	3.24	0.00181	0.001612
0.009	3.07	0.0014	0.157	-18.96	4.1	3.53	0.00179	0.001577
0.011	3.68	0.0018	0.189	-18.23	5.0	4.24	0.00175	0.001497
0.013	4.23	0.0021	0.217	-17.60	5.9	4.88	0.00172	0.001449
0.015	4.90	0.0024	0.251	-16.82	6.8	5.65	0.00168	0.001376
0.018	5.62	0.0029	0.288	-16.00	8.1	6.47	0.00164	0.001216
0.021	6.38	0.0034	0.327	-15.11	9.5	7.36	0.00159	0.001067
0.024	7.00	0.0038	0.359	-14.40	10.8	8.07	0.00156	0.000928
0.028	7.62	0.0045	0.391	-13.68	12.6	8.79	0.00152	0.000772
0.033	8.37	0.0053	0.429	-12.83	14.9	9.64	0.00148	0.000603
0.038	8.95	0.0061	0.459	-12.15	17.2	10.32	0.00146	0.000488
0.048	9.69	0.0077	0.497	-11.31	21.7	11.17	0.00143	0.000334
0.063	10.43	0.0101	0.535	-10.45	28.4	12.03	0.00142	0.000210
0.078	10.98	0.0125	0.563	-9.82	35.2	12.66	0.00142	0.000149
0.098	11.39	0.0157	0.584	-9.34	44.2	13.14	0.00144	0.000106
0.148	12.11	0.0237	0.621	-8.51	66.8	13.96	0.00151	0.000064
0.198	12.62	0.0317	0.647	-7.92	89.4	14.55	0.00158	0.000049
0.273	13.17	0.0437	0.676	-7.29	123.3	15.18	0.00168	0.000042
0.348	13.75	0.0557	0.705	-6.62	157.1	15.85	0.00174	0.000039
0.448	14.33	0.0717	0.735	-5.96	202.3	16.51	0.00178	0.000037
0.548	15.15	0.0877	0.777	-5.01	247.4	17.47	0.00175	0.000035
0.698	16.11	0.1117	0.826	-3.90	315.1	18.57	0.00158	0.000032
0.848	17.04	0.1356	0.874	-2.83	382.9	19.64	0.00130	0.000027
0.998	17.91	0.1596	0.919	-1.82	450.6	20.65	0.00096	0.000022
1.198	18.83	0.1916	0.966	-0.76	540.9	21.71	0.00053	0.000014
1.398	19.37	0.2236	0.994	-0.14	631.2	22.33	0.00022	0.000009
1.598	19.50	0.2556	1.000	0.01	721.5	22.48	0.00000	0.000005
1.748	19.49	0.2796	1.000	0.00	789.2	22.47	0.00000	0.000000

RUN: 21572-5 X=58. Z= 0.

UI = 18.73 D1 = 0.3143 BETA= 0.524 RD2 = 2121.
CF/2= 0.00193 D2 = 0.2175 B =-0.715 H = 1.445
F = -0.00138 DC = 7.1540 P+ = 0.0039 G = 7.011
K = -0.330E-06 D99 = 1.6292 VO+ =-0.0314

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.008	2.78	0.0011	0.149	-19.38	3.4	3.38	0.00175	0.001640
0.009	3.00	0.0013	0.160	-19.11	3.9	3.65	0.00174	0.001595
0.011	3.47	0.0015	0.185	-18.55	4.7	4.21	0.00171	0.001504
0.013	4.06	0.0018	0.217	-17.83	5.6	4.93	0.00167	0.001441
0.015	4.52	0.0021	0.241	-17.27	6.4	5.50	0.00164	0.001421
0.018	5.32	0.0025	0.284	-16.30	7.7	6.46	0.00159	0.001309
0.021	6.09	0.0029	0.325	-15.37	9.0	7.40	0.00155	0.001145
0.024	6.73	0.0034	0.359	-14.58	10.3	8.18	0.00151	0.000995
0.028	7.38	0.0039	0.394	-13.79	12.0	8.97	0.00147	0.000810
0.033	8.03	0.0046	0.429	-13.00	14.1	9.76	0.00144	0.000633
0.038	8.52	0.0053	0.455	-12.41	16.3	10.35	0.00141	0.000506
0.048	9.28	0.0067	0.495	-11.49	20.6	11.27	0.00138	0.000353
0.058	9.93	0.0081	0.530	-10.70	24.8	12.06	0.00136	0.000263
0.073	10.38	0.0102	0.554	-10.15	31.3	12.62	0.00136	0.000180
0.088	10.89	0.0123	0.581	-9.53	37.7	13.24	0.00135	0.000133
0.108	11.28	0.0151	0.602	-9.06	46.3	13.70	0.00137	0.000094
0.158	11.80	0.0221	0.630	-8.43	67.7	14.33	0.00143	0.000059
0.208	12.27	0.0291	0.655	-7.85	89.1	14.91	0.00148	0.000045
0.308	12.93	0.0431	0.690	-7.05	131.9	15.71	0.00159	0.000036
0.408	13.45	0.0570	0.718	-6.43	174.8	16.34	0.00169	0.000033
0.558	14.22	0.0780	0.759	-5.49	239.0	17.27	0.00175	0.000030
0.708	15.00	0.0990	0.800	-4.54	303.3	18.22	0.00170	0.000028
0.908	16.00	0.1269	0.854	-3.32	389.0	19.44	0.00151	0.000025
1.108	16.95	0.1549	0.905	-2.17	474.7	20.59	0.00119	0.000021
1.308	17.75	0.1828	0.947	-1.20	560.3	21.57	0.00078	0.000016
1.508	18.36	0.2108	0.980	-0.46	646.0	22.31	0.00041	0.000011
1.708	18.67	0.2387	0.997	-0.08	731.7	22.68	0.00015	0.000007
1.858	18.73	0.2597	1.000	-0.00	796.0	22.76	0.00002	0.000005
1.883	18.73	0.2632	1.000	0.00	806.7	22.76	0.00000	0.000000

RUN: 21572-5 X=70. Z= 0.

UI = 18.10 D1 = 0.3613 BETA= 0.518 RD2 = 2381.
CF/2= 0.00186 D2 = 0.2528 B =-0.710 H = 1.429
F = -0.00132 DC = 8.3767 P+ = 0.0035 G = 6.962
K = -0.283E-06 D99 = 1.9116 VO+ =-0.0306

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.006	2.58	0.0007	0.142	-19.89	2.4	3.30	0.00169	0.001929
0.007	2.85	0.0008	0.158	-19.53	2.8	3.66	0.00167	0.001783
0.008	2.96	0.0010	0.164	-19.39	3.2	3.80	0.00167	0.001636
0.009	3.21	0.0011	0.177	-19.08	3.7	4.11	0.00165	0.001383
0.011	3.75	0.0013	0.207	-18.38	4.5	4.80	0.00162	0.001377
0.013	4.21	0.0016	0.232	-17.80	5.3	5.39	0.00159	0.001380
0.016	4.86	0.0019	0.269	-16.96	6.5	6.23	0.00155	0.001243
0.019	5.45	0.0023	0.301	-16.20	7.7	6.99	0.00151	0.001126
0.023	6.32	0.0027	0.349	-15.09	9.3	8.10	0.00146	0.000956
0.028	7.01	0.0033	0.387	-14.21	11.4	8.98	0.00142	0.000780
0.033	7.72	0.0039	0.426	-13.30	13.4	9.89	0.00138	0.000630
0.043	8.57	0.0051	0.474	-12.20	17.5	10.99	0.00133	0.000420
0.053	9.19	0.0063	0.508	-11.41	21.5	11.78	0.00131	0.000300
0.068	9.74	0.0081	0.538	-10.71	27.6	12.47	0.00129	0.000198
0.083	10.23	0.0099	0.565	-10.08	33.7	13.11	0.00128	0.000144
0.103	10.53	0.0123	0.582	-9.70	41.8	13.49	0.00129	0.000103
0.153	11.20	0.0183	0.619	-8.84	62.2	14.35	0.00131	0.000063
0.203	11.60	0.0242	0.641	-8.32	82.5	14.87	0.00135	0.000047
0.303	12.20	0.0362	0.674	-7.55	123.1	15.63	0.00142	0.000036
0.403	12.79	0.0481	0.707	-6.80	163.7	16.38	0.00147	0.000031
0.553	13.39	0.0660	0.740	-6.03	224.6	17.16	0.00151	0.000028
0.703	14.05	0.0839	0.776	-5.19	285.6	18.00	0.00152	0.000026
0.903	14.92	0.1078	0.824	-4.07	366.8	19.11	0.00144	0.000023
1.103	15.66	0.1317	0.865	-3.12	448.1	20.06	0.00126	0.000020
1.403	16.76	0.1675	0.926	-1.72	569.9	21.47	0.00086	0.000015
1.703	17.61	0.2033	0.973	-0.62	691.8	22.56	0.00043	0.000010
2.003	18.05	0.2391	0.997	-0.06	813.7	23.13	0.00015	0.000006
2.303	18.09	0.2749	1.000	-0.01	935.5	23.18	0.00001	0.000004
2.403	18.10	0.2869	1.000	0.00	976.2	23.19	0.00000	0.000000

RUN: 21572-5 X=82. Z= 0.

UI = 17.53 D1 = 0.4091 BETA= 0.505 RD2 = 2619.
CF/2= 0.00182 D2 = 0.2869 B =-0.714 H = 1.426
F = -0.00130 DC = 9.5894 P+ = 0.0032 G = 7.001
K = -0.246E-06 D99 = 2.1881 V0+ =-0.0305

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAU	TAULAM
0.008	2.61	0.0008	0.149	-19.45	3.1	3.49	0.00164	0.001686
0.009	2.79	0.0009	0.159	-19.71	3.5	3.73	0.00163	0.001627
0.011	3.19	0.0011	0.182	-19.17	4.3	4.27	0.00161	0.001509
0.013	3.70	0.0014	0.211	-18.50	5.1	4.94	0.00157	0.001369
0.016	4.23	0.0017	0.242	-17.78	6.2	5.66	0.00154	0.001307
0.019	4.97	0.0020	0.284	-16.79	7.4	6.65	0.00149	0.001187
0.024	5.89	0.0025	0.336	-15.56	9.3	7.88	0.00143	0.000974
0.029	6.68	0.0030	0.381	-14.51	11.3	8.93	0.00138	0.000806
0.039	7.73	0.0041	0.441	-13.10	15.2	10.34	0.00132	0.000530
0.049	8.50	0.0051	0.485	-12.07	19.1	11.37	0.00128	0.000376
0.064	9.18	0.0067	0.523	-11.17	24.9	12.27	0.00125	0.000240
0.079	9.65	0.0082	0.550	-10.55	30.8	12.89	0.00123	0.000169
0.099	10.10	0.0103	0.576	-9.93	38.5	13.51	0.00121	0.000116
0.149	10.63	0.0155	0.606	-9.23	58.0	14.21	0.00122	0.000065
0.199	11.02	0.0208	0.628	-8.71	77.5	14.73	0.00123	0.000047
0.299	11.77	0.0312	0.671	-7.70	116.4	15.74	0.00125	0.000034
0.399	12.00	0.0416	0.684	-7.40	155.4	16.04	0.00127	0.000030
0.549	12.68	0.0573	0.723	-6.49	213.8	16.95	0.00129	0.000026
0.699	13.28	0.0729	0.758	-5.68	272.2	17.76	0.00128	0.000024
0.899	13.99	0.0937	0.798	-4.74	350.0	18.70	0.00124	0.000023
1.099	14.72	0.1146	0.839	-3.76	427.9	19.68	0.00117	0.000020
1.399	15.63	0.1459	0.891	-2.55	544.7	20.89	0.00095	0.000017
1.699	16.52	0.1772	0.942	-1.35	661.5	22.09	0.00063	0.000013
1.999	17.16	0.2085	0.979	-0.50	778.3	22.94	0.00031	0.000009
2.299	17.47	0.2397	0.997	-0.08	895.1	23.36	0.00008	0.000006
2.499	17.55	0.2606	1.001	0.02	973.0	23.46	0.00000	0.000005
2.599	17.53	0.2710	1.000	0.00	1011.9	23.44	0.00000	0.000000

RUN: 21572-5 X=90. Z= 0.

UI = 17.02 D1 = 0.4641 BETA= 0.562 RD2 = 2860.
CF/2= 0.00179 D2 = 0.3228 B =-0.721 H = 1.438
F = -0.00129 DC =10.9695 P+ = 0.0031 G = 7.198
K = -0.236E-06 D99 = 2.3911 V0+ =-0.0305

Y	U	Y/DC	U/UI	(U-UI)/U*	Y+	U+	TAULAM
0.010	2.70	0.0009	0.159	-19.89	3.7	3.75	0.001565
0.011	2.92	0.0010	0.171	-19.59	4.0	4.05	0.001518
0.013	3.32	0.0012	0.195	-19.02	4.8	4.62	0.001423
0.015	3.69	0.0013	0.217	-18.51	5.5	5.13	0.001313
0.018	4.35	0.0016	0.256	-17.60	6.7	6.04	0.001209
0.023	5.13	0.0021	0.302	-16.51	8.5	7.13	0.001002
0.028	5.97	0.0025	0.351	-15.35	10.4	8.29	0.000814
0.038	7.17	0.0034	0.421	-13.68	14.2	9.96	0.000548
0.048	7.64	0.0044	0.449	-13.03	17.9	10.60	0.000397
0.063	8.40	0.0057	0.493	-11.98	23.5	11.66	0.000257
0.083	9.06	0.0075	0.532	-11.05	31.0	12.59	0.000164
0.113	9.65	0.0103	0.567	-10.24	42.3	13.40	0.000108
0.163	10.17	0.0148	0.597	-9.52	61.0	14.12	0.000063
0.213	10.46	0.0194	0.614	-9.11	79.8	14.52	0.000046
0.313	11.08	0.0285	0.651	-8.25	117.3	15.38	0.000034
0.463	11.56	0.0422	0.679	-7.59	173.5	16.04	0.000029
0.613	12.20	0.0559	0.717	-6.70	229.7	16.94	0.000026
0.813	12.93	0.0741	0.760	-5.68	304.7	17.95	0.000023
1.013	13.61	0.0923	0.800	-4.74	379.7	18.90	0.000022
1.313	14.50	0.1197	0.852	-3.50	492.2	20.14	0.000019
1.613	15.24	0.1470	0.895	-2.47	604.6	21.16	0.000016
1.813	15.89	0.1653	0.933	-1.58	679.6	22.06	0.000013
2.113	16.50	0.1926	0.969	-0.73	792.1	22.90	0.000009
2.413	16.88	0.2200	0.992	-0.20	904.5	23.44	0.000006
2.713	17.01	0.2473	0.999	-0.02	1017.0	23.62	0.000004
3.013	17.02	0.2747	1.000	0.00	1129.5	23.64	0.000000

REFERENCES

1. Moffat, R. J. and Kays, W. M., "The Turbulent Boundary Layer on a Porous Plate: Experimental Heat Transfer with Uniform Blowing and Suction," Report No. HMT-1, Thermosciences Division, Dept. of Mech. Engrg., Stanford Univ., (1967).

2. Simpson, R. L., Kays, W. M. and Moffat, R. J., "The Turbulent Boundary Layer on a Porous Plate: An Experimental Study of the Fluid Dynamics with Injection and Suction," Report No. HMT-2, Thermosciences Division, Dept. of Mech. Engrg., Stanford Univ., (1967).

3. Julien, H. L., Kays, W. M. and Moffat, R. J., "The Turbulent Boundary Layer on a Porous Plate: Experimental Study of the Effects of a Favorable Pressure Gradient," Report No. HMT-4, Thermosciences Division, Dept. of Mech. Engrg., Stanford Univ., (1969).

4. Loyd, R. J., Moffat, R. J. and Kays, W. M., "The Turbulent Boundary Layer on a Porous Plate: An Experimental Study of the Fluid Dynamics with Strong Favorable Pressure Gradients and Blowing," Report No. HMT-13, Thermosciences Division, Dept. of Mech. Engrg., Stanford Univ., (1970).

5. Kays, W. M., "Heat Transfer to the Transpired Turbulent Boundary Layer," Report No. HMT-14, Thermosciences Division, Dept. of Mech. Engrg., Stanford Univ., (1971).

6. Squire, L. C., "The Constant Property Turbulent Boundary Layer with Injection; A Reanalysis of Some Experimental Results," Int. Jn. Heat and Mass Transfer, Vol. 13, pp. 939-942, (1970).

7. McLean, J. D., "The Transpired Turbulent Boundary Layer in an Adverse Pressure Gradient," PhD Thesis, Department of Aerospace and Mechanical Sciences, Princeton Univ., (1970).

8. Stevenson, T. N., "A Law of the Wall for Turbulent Boundary Layers with Suction or Injection," The College of Aeronautics, Cranfield, Aero Report No. 166, (1963).

9. Clauser, F. H., "Turbulent Boundary Layers in Adverse Pressure Gradients, J. of Aero Sci., 21, 91, (1954).

10. Bradshaw, P., "The Turbulence Structure of Equilibrium Boundary Layers," J. Fluid Mech., Vol. 29, Part 4, pp. 625-645, (1967).

11. Young, A. D. and Maas, J. N., "The Behavior of a Pitot Tube in a Transverse Total Pressure Gradient," A.R.C. R & M No. 1770, (1936).

12. Jorgensen, F. E., "Directional Sensitivity of Wire and Hot-film Probes," DISA Information No. 11, (1971).

13. MacMillan, F. A., "Experiments on Pitot Tubes in Shear Flow," A.R.C. R & M No. 3028, (1956).

14. Coles, D. E., "The Young Persons's Guide to the Data, Proceedings, Computation of Turbulent Boundary Layers," 1968 AFOSR-IFP Stanford Conference, Vol. II, pp. 1-45.

15. Bradshaw, P., "The Effect of Wind-Tunnel Screens on Nominally Two-Dimensional Boundary Layers," J. Fluid Mech., Vol. 22, Part 4, pp. 679-687, (1965).

16. Coles, D. E., "The Turbulent Boundary Layer in a Compressible Fluid," The Rand Corporation, Report R-403-PR, (1962).

17. Keenan, J. H., Keyes, F. G., Hill, P. G., Moore, J. G., Steam Tables, John Wiley and Sons, New York, 1969.

18. Clauser, F. H., "The Turbulent Boundary Layer," Advances in Applied Mechanics, Vol. IV, pp. 1-51, Academic Press, New York, (1956).

19. Spalding, D. B., and Patankar, S. V., Heat and Mass Transfer in Boundary Layers, Morgan-Granpian: London (1967).

20. Cebeci, T., "The Behavior of Turbulent Flow Near a Porous Wall with Pressure Gradient," McDonnell Douglas, Report No. DAC 70014, (1969).

21. Launder, B. E. and Jones, W. P., "A Note on Bradshaw's Hypothesis for Laminarization," ASME-AIChE Conference, 69-HT-12, (1969).

22. Bradshaw, P., "A Note on Reverse Transition," J. Fluid Mech., Vol. 35, Part 2, pp. 387-390, (1969).

23. Evans, H. L., Lea, J. F., and Swayne, D. A., "The Couette-Flow Model in Turbulent Boundary Layers," Research Report No. 16, Dept. of Mech. Engrg., Univ. of Waterloo, Ontario, (1970).

24. Coles, D. E., "Survey of Data for Turbulent Boundary Layers with Mass Transfer," AGARD-CP-93, (1972).

25. Millikan, C. B., "A Critical Discussion of Turbulent Flows in Channels and Circular Tubes," Proc. 5th International Congress of Applied Mechanics, Cambridge, Mass., (1938).

26. Laufer, J., "The Structure of Fully Developed Pipe Flow," NACA Report 1174, (1957).

27. McQuaid, J., "Incompressible Turbulent Boundary Layers with Distributed Injection," PhD Thesis, Cambridge Univ., (1966).

APPENDIX A

MEASUREMENT OF TURBULENCE INTENSITIES AND REYNOLDS STRESS

The directional sensitivity of the hot-wire makes it possible to use it for measurement of individual components of the velocity vector. In what follows it will be shown how a slant hot-wire may be used for measurement of the statistical mean values of the three components of the turbulent fluctuations and the Reynolds stress $-\overline{u'v'}$. (The Reynolds stresses $-\overline{v'w'}$ and $-\overline{u'w'}$ can also be measured, but from reasons of symmetry they are known to be zero for the two-dimensional flows considered in this report. The postulate of zero value of $-\overline{v'w'}$ and $-\overline{u'w'}$ will be used to eliminate first order errors due to a lateral misalignment of the probe with the flow).

1. Directional Sensitivity of the Hot-Wire

As shown in Ref. [12] the response of the hot-wire may be approximated by

$$u_i^2 = u_2^2 + k_1^2 v_2^2 + k_2^2 w_2^2 \quad , \qquad \text{(A-1)}$$

where u_2 , v_2 and w_2 are the velocity components in the coordinate system of the wire: v_2 is the velocity component parallel to the wire, w_2 is perpendicular to the wire and the wire supports and u_2 is perpendicular to the wire and lies in the plane of the wire supports. u_i , the 'indicated velocity' is defined by Eq. (A-1); it may be thought of, for example, as the velocity one would deduce by using a calibration curve that was obtained for $v_2 = w_2 = 0$. k_1 and k_2 are constants which to some extent depend upon the hot-wire probe design. (The hot-wire used in the present experiments is a DISA which has a wire diameter of 5μ , length-to-diameter ratio of 200, and gold-plated wire ends to reduce prong

interference with the flow over the central sensitive part of the wire. For this probe design Ref. [12] indicates that $k_1 = .2$ and $k_2 = 1.02$).

2. Probe Position and Velocity Decomposition

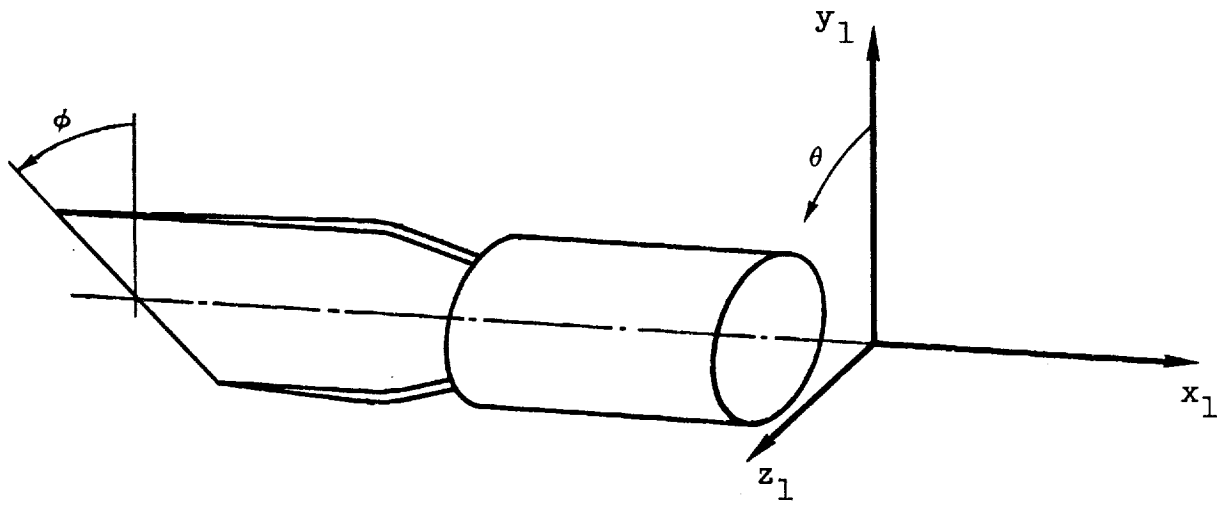

Fig. A-1 Geometry and position of hot-wire probe (schematic). Probe shown for $\theta = 0$.

The hot-wire forms an angle, ϕ , with a plane perpendicular to the probe axis (see Fig. (A-1)). For a slant hot-wire, $\phi \neq 0$.

In describing the position of the hot-wire probe in the flow we shall start from a 'mean flow' coordinate system (x_1,y_1,z_1) in which the mean velocity vector has the components $(\overline{u}_1,0,0)$. This coordinate system is in general not completely coincident with the laboratory coordinate system (x,y,z) in which the mean velocity vector is $(\overline{u},\overline{v},\overline{w})$. However, for the two-dimensional boundary layer flows considered in this report, one has that $\overline{w} = 0$ and $\overline{v} \ll \overline{u}$ (boundary layer approximation). In fact, for all flows considered it

is true that $v < .02u$, anywhere. The measured values of the correlations $\overline{u'^2}$, $\overline{v'^2}$, $\overline{w'^2}$ and $-\overline{u'v'}$ will strictly speaking be expressed in the (x_1,y_1,z_1) coordinate system, but a transformation into the laboratory plane of reference (x,y,z) would only result in a negligible correction. The hot-wire probe axis will be assumed to be aligned with the mean velocity vector, i.e. the probe axis is in the direction of x_1 .

The angle of rotation around the probe axis is ϕ . (See Fig. (A-1)). The relationship between the velocity components (u_1,v_1,w_1) in the 'mean flow' reference system (x_1,y_1,z_1) and the components (u_2,v_2,w_2) in the wire reference system is then

$$\begin{Bmatrix} u_2 \\ v_2 \\ w_2 \end{Bmatrix} = \begin{bmatrix} \cos\phi & \sin\phi\cos\theta & \sin\phi\sin\theta \\ -\sin\phi & \cos\phi\cos\theta & \cos\phi\sin\theta \\ 0 & -\sin\theta & \cos\theta \end{bmatrix} \begin{Bmatrix} u_1 \\ v_1 \\ w_1 \end{Bmatrix} \tag{A-2}$$

Inserting this result in Eq. (A-1) gives

$$u_i^2 = Au_1^2 + Bv_1^2 + Cw_1^2 + Du_1v_1 + Ev_1w_1 + Fu_1w_1 \text{ , where}$$

$$A = \cos^2\phi + k_1^2\sin^2\phi$$

$$B = (\sin^2\phi + k_1^2\cos^2\phi)\cos^2\theta + k_2^2\sin^2\theta$$

$$C = (\sin^2\phi + k_1^2\cos^2\phi)\sin^2\theta + k_2^2\cos^2\theta$$

$$D = (1-k_1^2)\sin 2\phi\cos\theta$$

$$E = (\sin^2\phi + k_1^2\cos^2\theta - k_2^2)\sin 2\theta$$

$$F = (1-k_1^2)\sin 2\phi\sin\theta \quad .$$

3. The Hot-Wire Response to Turbulence

The velocity components in the 'mean flow' frame of reference may be expressed as

$$\begin{aligned} u_1 &= \bar{u} + u' \\ v_1 &= \quad v' \\ w_1 &= \quad w' \end{aligned} \qquad \text{(A-4)}$$

where the primed velocities represent the turbulent fluctuations (assumed to have zero statistical mean values). Note that from now on we shall make no distinction between $\bar{u}$ and $\bar{u}_1$; also u', v' and w' in Eqs. (A-4) should really be u_1' , v_1' and w_1' because they are expressed in the 'mean flow' frame of reference. Introducing the decomposition Eq. (A-4) into Eq. (A-3) results in

$$u_i^2 = A\bar{u}^2 + 2A\bar{u}u' + D\bar{u}v' + F\bar{u}w' + 0(2) \ , \qquad \text{(A-5)}$$

where $0(2)$ represents terms of the order of the turbulent fluctuations squared.

Taking the square root of this expression and introducing the fluctuation of the indicated velocity, u_i' , leads to

$$u_i' = \sqrt{A}u' + \frac{D}{2\sqrt{A}}v' + \frac{F}{2\sqrt{A}}w' + 0(2) \ . \qquad \text{(A-6)}$$

Squaring this equation and taking the time average one obtains:

$$\overline{u_i'^2} = A\overline{u'^2} + \frac{D^2}{4A}\overline{v'^2} + \frac{F^2}{4A}\overline{w'^2} + D\overline{u'v'} + \frac{DF}{2A}\overline{v'w'} + F\overline{u'w'} + 0(3), \qquad \text{(A-7)}$$

where $0(3)$ represents terms of the order of the triple correlations of the turbulent fluctuations. (See Section 6 for the explicit expression for $0(3)$). Equation (A-7) re-

lates the mean square of the indicated velocity fluctuations to the correlations of the turbulent velocity fluctuations.

4. Measurement of Turbulent Velocity Correlations

Note that the coefficients in Eq. (A-1) depend upon ϕ, the slant of the hot-wire and θ, the angle of rotation of the hot-wire probe. By performing measurements of $\overline{u_i'^2}$ for six suitable combinations of ϕ and θ the resulting six equations (7) may be solved for the six unknown correlations, $\overline{u'^2}$, $\overline{v'^2}$, $\overline{w'^2}$, $\overline{u'v'}$, $\overline{v'w'}$ and $\overline{u'w'}$. In practice, however, $\overline{v'w'}$ and $\overline{u'w'}$ will not be treated as unknowns, but put equal to zero from reasons of symmetry. This a priori knowledge of $\overline{v'w'}$ and $\overline{u'w'}$ permits elimination of an error that would occur if the probe axis of rotation accidentally were slightly misaligned with the x-y plane of the flow (see Section 5 for details).

Two hot-wire probes with different geometries were used:

1) A horizontal, $\phi = \frac{\pi}{2}$ wire (hot-wire along z-axis) was used for the measurement of $\overline{u'^2}$. For $\phi = \frac{\pi}{2}$ Eq. (A-7) becomes

$$\overline{u_i'^2} = \overline{u'^2} + O(3) \qquad \text{(A-8)}$$

The horizontal hot-wire thus measures $\overline{u_i'^2}$ directly.

2) A rotatable hot-wire probe that permitted measurement at six different $\theta = \theta_m$ (i.e. $\theta_m = (m-1)\frac{\pi}{6}$; m = 1, 2..6) was used for the measurement of $\overline{v'^2}$, $\overline{w'^2}$ and $\overline{u'v'}$. Using six measurements rather than the minimum required three, gives a degree of redundancy that is exploited to reduce the statis-

tical uncertainty. Furthermore, by averaging the 'symmetric' measurements, the error due to a slight misalignment of the probe axis with the x-y plane of the flow is practically eliminated (see Section 5).

The unknowns $\overline{v'^2}$, $\overline{w'^2}$ and $\overline{u'v'}$ are computed as follows:

Equation (A-7) is written for the angles $\theta = \theta_m$, $m = 1,2..6$. Then, putting $\overline{u'w'} = \overline{u'w'} = 0$ and adding Eq. 1 to Eq. 2 and Eq. 4 to Eq. 2 gives

$$\begin{bmatrix} D_m^2 & F_m^2 & D_m \\ \overline{4A} & \overline{4A} & \end{bmatrix} \begin{Bmatrix} \overline{v'^2} \\ \overline{w'^2} \\ \overline{u'v'} \end{Bmatrix} = \begin{Bmatrix} \overline{u_{i1}'^2} \\ (\overline{u_{i2}'^2} + \overline{u_{i6}'^2})/2 \\ \overline{u_{i3}'^2} + \overline{u_{i5}'^2})/2 \\ \overline{u_{i4}'} \end{Bmatrix} - A \begin{Bmatrix} \overline{u'^2} \\ \overline{u'^2} \\ \overline{u'^2} \\ \overline{u'^2} \end{Bmatrix} \quad ; \; m=1,2..4. \tag{A-9}$$

In these equations $\overline{u'^2}$ is considered a known quantity (since it has been measured by the horizontal hot-wire).

Note that $\overline{u'v'}$ may be computed in two different ways from this set of equations, namely as

$$\overline{u'v'}_{(2)} = (\overline{u_{i1}'^2} - \overline{u'^2_{i4}})/2D_1 \qquad \text{or} \tag{A-10}$$

$$\overline{u'v'}_{(4)} = (\overline{u_{i2}'^2} + \overline{u_{i6}'^2} - \overline{u_{i3}'^2} - \overline{u_{i5}'^2})/4D_2 \; . \tag{A-11}$$

It was found that in general the difference between $\overline{u'v'}_{(2)}$ and $\overline{u'v'}_{(4)}$ is very small (less than 1%) and of random sign; but for the flows with the highest blowing rates

the difference becomes of somewhat greater magnitude ($\simeq$ 10% for Run 112871-1).

Furthermore, for these flows it was found consistently that $\overline{u'v'}_{(4)} > \overline{u'v'}_{(2)}$ for the measurements close to the wall. The reason for this is probably the neglect of the $0(3)$ terms in Eq. (A-7). Section 6 will discuss this point in detail.

Since no reason was found for preferring either $\overline{u'v'}_{(2)}$ or $\overline{u'v'}_{(4)}$ the average of the two was used i.e.,

$$\overline{u'v'}_{(6)} = (\overline{u_{i1}'^2} + \overline{u_{i2}'^2} + \overline{u_{i6}'^2} - \overline{u_{i3}'^2} - \overline{u_{i5}'^2} - \overline{u_{i4}'^2})/4D_1 \ .$$

Inserting the known values of $\overline{u'^2}$ and $\overline{u'v'}$ into the $m = 1$ and $m = 2$ equations of the system (A-9) one obtains:

$$\begin{bmatrix} D_1^2 & F_1^2 \\ D_2^2 & F_2^2 \end{bmatrix} \begin{Bmatrix} \overline{v'^2} \\ \overline{w'^2} \end{Bmatrix} /4A = \begin{Bmatrix} \overline{u_{i1}'^2} \\ \overline{u_{i2}'^2} \end{Bmatrix} - \overline{u'^2} \begin{Bmatrix} A \\ A \end{Bmatrix} - \overline{u'v'} \begin{Bmatrix} D_1 \\ D_2 \end{Bmatrix} , \tag{A-13}$$

from which $\overline{v'^2}$ and $\overline{w'^2}$ may be computed.

5. Error Due to Misalignment of Probe

In this section it will be assumed that the axis of the probe is not perfectly aligned with the mean flow vector. Thus we shall assume that the probe axis is turned a small angle, β , around the y_1-axis and γ around the z_1-axis (see Fig. (A-2)). Here, as previously defined (x_1,y_1,z_1) is the 'mean flow' frame of reference. It will be shown that the measured values of $\overline{v'^2}$, $\overline{w'^2}$ and $\overline{u'v'}$ are independent of β . (This is because of the averaging of 'symmetric' measurements made possible by the postulate of

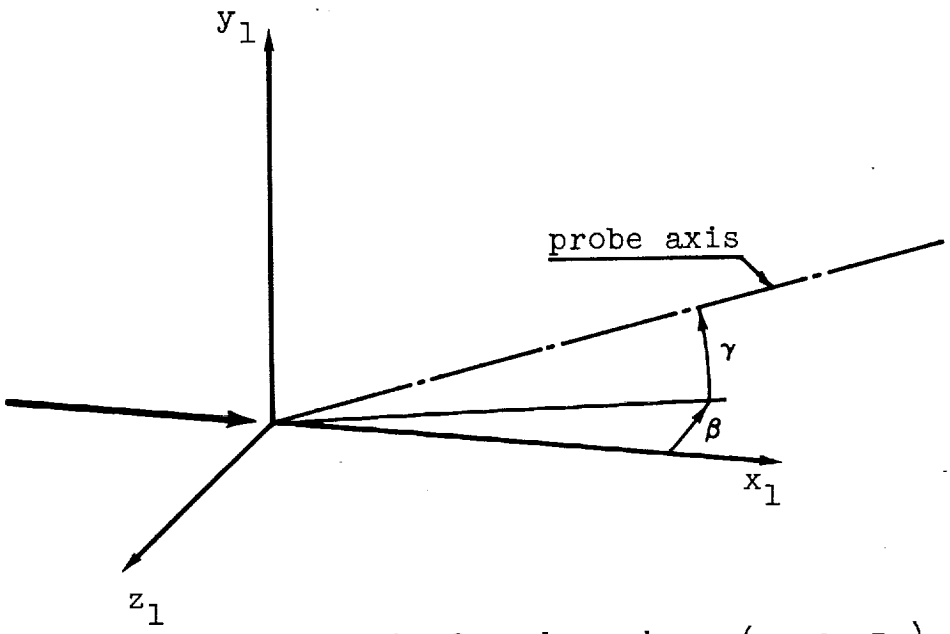

Fig. A-2 Misalignment of probe axis - (x_1,y_1,z_1) is the 'mean flow' coordinate system

$\overline{v'w} = \overline{u'w} = 0$). It will also be shown that the error in the measured value of $\overline{u'v'}$ is $\simeq \gamma(\overline{u'^2} - \overline{v'^2})$. The effect of γ on $\overline{v'^2}$ and w'^2 has not been worked out.

Because of the assumed misalignment the velocity vector (u_1,v_1,w_1) in Eq. (A-2) should be replaced by

$$u' + \gamma v' + \beta w'$$

$$v' - \gamma u'$$

$$w' - \beta u'$$

(to a first order approximation). The coefficients in Eq. (A-3) must as a consequence be modified to

$$
\begin{aligned}
A' &= A - \gamma D - \beta F \\
B' &= B + \gamma D \\
C' &= C + \beta F \\
D' &= D + 2\gamma(A-B) - \beta F \\
E' &= E + \beta D + \gamma F \\
F' &= F + 2\beta(A-C) - \gamma E
\end{aligned}
\qquad \text{(A-14)}
$$

With these new coefficients the equations (A 9) which form the basis for the computation of $\overline{u'^2}$, $\overline{v'^2}$ and $\overline{w'^2}$ become (terms of 2nd order in β and γ have been neglected).

$$
\left([c] + 2\gamma\left[\left(\frac{D_n}{A}(A-B_n) + \frac{D_n^3}{4A^2}\right)\left(\frac{D_2F_2^2}{A^2} - \frac{2E_2F_2}{A}\right)(A-B_n)\right]\right)\begin{Bmatrix} \overline{u'^2} + \overline{\Delta v'^2} \\ \overline{w'^2} + \overline{\Delta w'^2} \\ \overline{u'v'} + \overline{\Delta u'v'} \end{Bmatrix}
$$

$$
= \begin{Bmatrix} \overline{u_{i1}'^2} \\ (\overline{u_{i2}'^2} + \overline{u_{i6}'^2})/2 \\ (\overline{u_{i3}'^2} + \overline{u_{i5}'^2})/2 \\ \overline{u_{i4}'^2} \end{Bmatrix} - (A - \gamma[D_n]) \begin{Bmatrix} \overline{u'^2} \\ \overline{u'^2} \\ \overline{u'^2} \\ \overline{u'^2} \end{Bmatrix} \qquad \text{(A-15)}
$$

; n = 1,2...4

Here [c] is the coefficient matrix from Eqs. (A-9). $\overline{\Delta v'^2}$, $\overline{\Delta w'^2}$ and $\overline{\Delta u'v'}$ represent the changes in the measured correlations due to the correction for misalignment. Note that the angle β (the rotation around y_1) does not appear in this system of equations. Thus the measured correlations are independent of β to a first order approximation.

We shall now evaluate $\Delta\overline{u'v'}$ by manipulating Eqs. (A-15) in a manner analogous to the treatment of Eqs. (A-7). Thus we obtain

$$\Delta\overline{u'v'}_{(2)} \doteq \gamma\left[\overline{u'^2} - \left(\frac{1 - k_1^2}{1 + k_1^2}\right)^2 \overline{v'^2}\right] \qquad \text{and}$$

$$\Delta\overline{u'v'}_{(4)} \doteq \gamma\left\{\overline{u'^2} - \left[\frac{3}{4} + \left(\frac{1-k_1^2}{1 + k_2^2}\right)^2 \frac{1}{4} - \frac{3k_2^2}{2(1 + k_1^2)}\right]v'^2\right\} \tag{A-17}$$

To a sufficient degree of accuracy for the error estimate, we have $k_1^2 = 0$ and $k_2^2 = 1$, therefore

$$\Delta\overline{u'v'}_{(2)} \doteq \gamma[\overline{u'^2} - \overline{v'^2}] \tag{A-16a}$$

$$\Delta\overline{u'v'}_{(4)} \doteq \gamma[\overline{u'^2} - \frac{1}{3}\overline{v'^2}] \tag{A-17a}$$

For $\gamma = .5^o$ (probably the greatest error of alignment in the present experiments) and $\overline{u'^2}/u_\infty^2 = .008$, $\overline{v'^2}/u_\infty^2 = .003$ (typical values close to the wall) we have

$$\Delta\overline{u'v'}/u_\infty^2 \simeq .00006$$

This may be considered to be the greatest error in the measured Reynolds stress, due to misalignment of the probe.

6. Error on $\overline{u'v'}$ Due to the Neglect of the Triple Correlations

The third order term, $0(3)$, in Eq. (A-7) contains the non-zero triple correlations ($\overline{u'v'w'} = \overline{u'^2w'} = \overline{v'^2w'} = 0$ for symmetry reasons):

$$O(3) = \frac{1}{\overline{u}}\left[\overline{u'v'^2}B + \overline{u'w'^2}C + \overline{u'^2v'}D + \overline{v'^3}\left(\frac{BD}{2A} - \frac{D^3}{8A^2}\right)\right.$$

$$\left. + \overline{v'w'^2}\left(\frac{DC}{2A} - \frac{DF^2}{8A^2} + \frac{EF}{2A}\right)\right] \qquad \text{(A-18)}$$

If the $O(3)$ - terms are retained Eqs. (A-11) and (A-12), which are used for the evaluation of $\overline{u'v'}$, would be corrected by

$$\Delta\overline{u'v'}_{(2)} = -\left[O_1(3) - O_4(3)\right]/2D_1 \quad \text{and} \qquad \text{(A-19)}$$

$$\Delta\overline{u'v'}_{(4)} = -\left[O_2(3) + O_6(3) - O_3(3) - O_5(3)\right]/4D_2 \qquad \text{(A-20)}$$

where $O_n(3)$ means the third order terms from Eq. (A-18) evaluated at $\theta = \theta_n$. Note that in general the error introduced by ignoring the triple correlations is not the same for $\overline{u'v'}_{(2)}$ and $\overline{u'v'}_{(4)}$.

As an example let us choose $\phi = \frac{\pi}{4}$ and $k_1^2 = .04$ (values corresponding to the probe used for the measurement of $\overline{u'v'}$). We then obtain

$$\Delta\overline{u'v'}_{(2)} = (\overline{u'^2v'} + .044\ \overline{v'^3} + .996\ \overline{v'w'^2})/\overline{u} \qquad \text{(A-19a)}$$

$$\Delta\overline{u'v'}_{(4)} = (\overline{u'^2v'} + .758\ \overline{v'^3} + .258\ \overline{v'w'^2})/\overline{u} \qquad \text{(A-20a)}$$

Since the triple correlations were not measured in the present experiments, we can only arrive at a very crude estimate of their importance.

Laufer [26] reports triple correlations for pipe flow. To get a very rough estimate of the upper limit of the error

we shall take the largest value of the largest of the three correlations as measured by Laufer. Thus

$$\frac{\overline{u'^2 v'}}{\bar{u}} < (0.1)\, \frac{\overline{u'^2}\,\sqrt{\overline{v'^2}}}{\bar{u}}$$

so that the error becomes

$$\Delta\overline{u'v'}/u_\infty^2 < (0.1)\, \frac{\overline{u'^2}}{u_\infty^2}\, \frac{\sqrt{\overline{v'^2}}}{u_\infty}\, \frac{u_\infty}{\bar{u}} \qquad \text{(A-21)}$$

As a first example let us consider a flow with zero pressure gradient and no transpiration (Run 120771-1). For $x = 70$ inches the measured friction coefficient is $c_f/2 = 0.00180$. $c_f/2$ has been evaluated on the basis of a Reynolds stress measurement at $y = 0.125$ inches for which we obtain

$$\Delta\overline{u'v'}/u_\infty^2 < 0.00005$$

The relative error on the friction coefficient due to the neglect of the triple correlations is therefore $< 3\%$.

Examination of a few more cases shows that the error unfortunately tends to increase with decreasing friction coefficient. It is therefore appropriate as our next example to consider the run with the lowest $c_f/2$ for which the measured Reynolds stress has been used for determination of skin friction. This is Run 101371-2 ($m = -0.15$, $F_1 = 0.002$, $m_F = 0$). For $x = 70$ inches we have $c_f/2 = .00053$. The Reynolds stress measurement at $y = 0.120$ inches is used to determine the wall shear. The error is:

$$\Delta\overline{u'v'}/u_\infty^2 < 0.00011$$

Thus under the most unfavorable circumstances and assumptions, the relative error on $c_f/2$ due to the neglected 3rd order correlation is $< 20\%$.

APPENDIX B

Description of the Computer Program "SLOT"

The basic feature of the computer program, SLOT, is an analytical modeling of the potential flow in the test section. The program serves three purposes:

a. SLOT predicts slot-width distribution and rotameter settings required for a given set of free-stream velocity and transpiration boundary conditions. This makes the program an invaluable tool in setting up a new run. It accepts as input the measured dynamic pressure distribution and rotameter settings; from this it computes a measured velocity distribution and a measured distribution of the blowing fraction. These are then compared with the desired boundary conditions and necessary changes in slot widths and rotameter settings are computed.

b. The program performs an analytical fit of the measured free-stream velocities. The velocity gradient is computed as the derivative of this fit.

c. SLOT served as an aid in the initial design of the slots, in particular of their spacing.

1. Principles of the Program

The predictive capability of SLOT is based on the following model of the physical situation:

The "real" flow is approximated by two-dimensional potential flow between infinitely long walls separated by a distance of $h = 6$ inches (the height of the test section). The effect of the slots is modeled by 23 line sinks in the upper wall.

The assumption of two-dimensional flow completely disregards the boundary layers on the bottom and side walls of the test-section. (The boundary layer on the top wall never develops because of the effect of the slots). Note, however, that the displacement thickness of the bottom wall boundary layer is never more than $\simeq 1.5$ inches thick i.e. only a fraction of the height of the test section. Moreover, the function of the program is primarily to predict a correction to the slot-widths; a correction for the presence of the boundary layers would therefore amount to a correction on a correction.

The nominal free-stream velocity distribution is given by Eq. (2-12) as

$$u = u_1\left(\frac{x - x_o}{x_1 - x_o}\right)^m \qquad \text{(B-1)}$$

This "ideal" distribution can obviously not be maintained upstream of the first slot (at $x = x$): A transitional length is required to permit establishment of the velocity distribution described by Eq. (B-1). It turns out that even maintaining the ideal velocity distribution only downstream from the first slot would require that the first slot be opened more than the slot design permits. It is therefore necessary to define a "modified" velocity distribution which can be approached in practice and which is identical to the "ideal" distribution a short distance downstream of the first slot. This "modified" distribution will be defined shortly.

The potential flow problem is solved by superposition of the contributions to the velocity field from each of the line sinks on a constant velocity. The sink strength distribution is obtained by requiring that the x-derivative of the potential flow velocity at $y = 1$ inch equals the derivative of the "modified" velocity distribution at the x-position of the 23 slots.

The derivative of the modified velocity distribution will be taken to be

$$\frac{du}{dx} = \frac{mu_1}{x_1-x_o}\left[\left(\frac{x-x_o}{x_1-x_o}\right)^{m-1} - \frac{1}{2}\exp\left(6\,\frac{x_1-x}{x_1-x_o}\right)\right] . \qquad \text{(B-2)}$$

Note that the modification of the derivative of the "ideal" velocity distribution, Eq. (B-1), is represented by the term containing the exponential. By integrating the derivative expressed by Eq. (B-2) one obtains the "modified" velocity distribution:

$$u = u_1\left[\left(\frac{x-x_o}{x_1-x_o}\right)^{m} + \frac{1}{12}m\,\exp\left(6\frac{x_1-x}{x_1-x_o}\right)\right] \qquad \text{(B-3)}$$

The effect of the modification of the "ideal" velocity distribution is negligible a few inches downstream of the first slot.

Because it is required to have available a very realistic theoretical velocity distribution also upstream of the first slot it has been necessary to introduce the "practical" velocity distribution. It is defined as the distribution computed from the potential flow solution described above, and can presumably be approached very closely in practice. The "practical" velocity distribution therefore serves as a natural yardstick for the measured velocity distribution. The analytical expression for the "practical" velocity distribution is:

$$u = C + \frac{1}{2h}\sum_{i=1}^{23} Q_1 \frac{\cosh\frac{\pi}{2h}(x-\xi_1)\sinh\frac{\pi}{2h}(x-\xi_1)}{\cosh^2\frac{\pi}{2h}(x-\xi_1) - \cos^2\frac{\pi}{2h}(h-y)}; \quad y = 1 \text{ inch} \qquad \text{(B-4)}$$

In this equation Q_i and ξ_i represent the sink strengths and positions respectively. h is the height of the test-section and C is a constant which is determined such that the velocity distribution from Eq. (B-4) matches the "modified" velocity distribution, Eq. (B-3), at $x = x_1$. The sink strengths, Q_i , are determined such that the x-derivative of u is equal to the derivative of the "modified" velocity distribution, Eq. (B-2), for $x = \xi_i$; i = 1, 2...23 .

2. Fit of the Measured Velocity

The "practical" velocity distribution Eq. (B-4) is subtracted from the 47 measured velocities. The resulting difference is then least square fitted by a fourth order polynomial. The sum of this fit and the practical velocity distribution represents a fit of the measured velocities. The x-derivative of this fit is obtained analytically.

3. Correction of Slot-Widths

The polynomial fit of the difference between the measured velocities and the "practical" velocity distribution represents the error, $\Delta u(x)$, in the measured velocity distribution. Elimination of this error is attempted by computing the change in sink strengths, ΔQ_i , that will produce a change in the velocity distribution equal to $-\Delta u(x)$. The 23 ΔQ_i then correspond to the change in slot widths, $\Delta t_{u,i}$, required to make the measured velocity distribution equal to the "practical" distribution, Eq. (B-3). $\Delta t_{u,i}$ is computed as

$$\Delta t_{u,i} = \frac{\Delta Q_i}{u_{slot,i}} \text{ , where } u_{slot,i} = \sqrt{\frac{2P_i}{K\rho}} \quad . \qquad \text{(B-5)}$$

The equation for the air velocity in the slot, $u_{slot,i}$, is based on the static pressure above ambient, p_i , at the location of the slot. K is an empirical loss coefficient (= 1.8) .

An error, ΔF, in the blowing fraction is corrected by readjusting the rotameter settings according to the calibration curve. This adjustment of the transpiration flow rate will require a correction in the slot widths to avoid an effect on the velocity distribution in the test-section. This correction, $\Delta t_{F,i}$, is simply obtained by associating each porous plate with the two slots located just upstream and downstream of that plate. Therefore

$$\Delta t_{F,i} = \frac{\Delta F_{i-1} u_{i-1} + \Delta F_i u_i}{2 u_{slot,i}} L, \qquad \text{(B-6)}$$

where ΔF_i corresponds to the porous plate located between slots numbers i and i + 1; u_i represents the free-stream velocity at the center of that plate and L is the plate width.

4. Potential Flow Field in Test Section

The "practical" velocity distributions for $y = 0$ and $y = 3$ inches are almost identical: there are no visible non-uniformities in the free-stream velocity due to the slots where the experimental boundary layer is formed on the floor of the test-section.