

Princeton University

COMPILATION OF TURBULENCE DATA
FOR A REATTACHING SHEAR LAYER AT MACH 2.9

by

K. Hayakawa and A. J. Smits
Gas Dynamics Laboratory

Report MAE-1601



Department of
Mechanical and
Aerospace Engineering

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ABSTRACT

This report presents measurements of the longitudinal component of the mass-flow fluctuations for a reattaching shear layer at Mach 2.9. The configuration is similar to a backward facing step, but it was specifically designed such that the free shear layer developed with a well-defined upstream history. A constant-temperature hot-wire anemometer was used for the measurements.

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NOMENCLATURE

$C_{f_{ref}}$	skin friction coefficient = $\tau_w / \frac{1}{2} \rho_{ref} u_{ref}^2$
M	Mach number
p	pressure
R	gas constant
Re	Reynolds number
T	temperature
u	streamwise velocity
u_τ	friction velocity = $(\tau_w / \rho_w)^{\frac{1}{2}}$
x	coordinate in the streamwise direction
y	distance away from the test surface
γ	specific heat ratio
δ	boundary layer thickness
δ^*	boundary layer displacement thickness
θ	boundary layer momentum thickness
ρ	density
τ	shear stress

Subscripts

e	boundary layer edge condition
o	stagnation condition
w	wall condition
ref	reference condition —
< >	r.m.s. value of fluctuation

The program printouts in Table 5 use the following variable

names:

$$UT = U_{\tau}$$

$$RHOW = \rho_w$$

$$TW = T_w$$

$$D = \delta$$

$$Y/D = y/\delta$$

$$\frac{(RHO \ U)'}{RHO \ U} = \frac{\langle \rho u \rangle}{\rho u}$$

$$\frac{(RHO \ U)'}{RHOW*UT} = \frac{\langle \rho u \rangle}{\rho_w u_{\tau}}$$

$$\frac{U}{U_{ref}} = \frac{u}{u_{ref}}$$

1. INTRODUCTION

In a recent contribution to the AIAA Journal, Settles, et al., (Ref. 1) described an experimental study of a reattaching turbulent free shear layer in a compressible flow. The test geometry was specifically designed such that the incoming free shear layer developed with a well-defined upstream history. The configuration was similar to a backward facing step, with one important difference. Instead of reattaching on a horizontal plane, the shear layer attached on a ramp, and the ramp was adjusted so that at the point where the upstream boundary layer separated, the flow direction did not change. As a result, no flow expansion or lip shock wave was present to affect the initial shear layer growth, and the reattachment occurred without these additional complications.

The mean flow data, and some preliminary hot-wire measurements of the mass-flow fluctuations were presented by Settles, et al. (Refs. 1 and 2). Recently, these hot-wire measurements were repeated and extended and the results of that work were reported by Hayakawa, et al. (Refs. 3 and 4).

The current report has been prepared to give other research workers ready access to the original hot-wire data, and for reasons of consistency we follow the general layout and notation used by Fernholz and Finley (Ref. 5). [Please note that the mean flow data are available in tabular form in Ref. 6 — available on request.]

Before presenting the data, the experimental apparatus is described in Section 2, and the coordinate system is defined in Section 3. In Section 4 the test conditions are described, and the data analysis is discussed in Section 5. Measurement uncertainties are described in Section 6.

The measurements given in this report were made under the auspices of NASA Headquarters as part of an extensive program to gather turbulence data in compressible flows. Support under Grant Number NAGW-240, monitored by Drs. Clint Brown and Gary Hicks, is gratefully acknowledged.

2. APPARATUS

Unless stated otherwise, all experimental conditions were identical to those used in the mean flow study (Refs. 1, 2 and 6). These conditions are briefly summarized below.

1) Wind Tunnel

The measurements were made in the Princeton University 203 mm x 203 mm (8" x 8") supersonic wind tunnel. The tunnel is of the blow-down type, and a typical run time for a single profile was about one and a half minutes. During a single run the tunnel stagnation temperature usually fell by 5-8°K. The rms freestream mass-flow fluctuation level, expressed as a fraction of the mean freestream mass-flow rate, was about one percent.

2) Test Model

The test model comprised a backward facing step and a 20° ramp located downstream of the step (Fig. 1). The cavity and ramp were inset by 25.4 mm on each side from the entire width of the test model to avoid flowfield interference due to the tunnel side-wall boundary layers. Aerodynamic fences were mounted on the ramp to further improve the two-dimensionality of the flow. The whole model assembly was installed away from and parallel to the tunnel floor.

3) Coordinate Definition and Measurement Locations

The x-coordinate for the flat plate and free shear layer is parallel to the flat plate surface. For the reattaching flow, the x-coordinate is

parallel to the compression ramp. The x-origin for the plate and free shear layer is located at a point 50.8 mm ahead of the separation lip, whereas for the ramp the x-origin is located at the intersection of the ramp with the cavity floor. The y-coordinate is measured from the test surface for the separating and reattaching boundary layers. In the free shear layer the y-origin is located on the geometric extension of the flat plate.

The survey locations are shown in Fig. 2. For convenience, the survey locations will be identified by station numbers. The station numbers are numerically equal to 0.394 times the x distance (mm) (10.0 times the x distance (inch)). The station numbers will be preceded by the symbols, BL, SH and R to represent, respectively, profiles in the flat-plate boundary layer, free shear layer and the ramp boundary layer.

4) Test Conditions

Natural transition occurred within 30 mm of the plate leading edge and no tripping devices were used. An equilibrium flat-plate boundary layer formed the initial condition for the free shear layer. The flow parameters at Station BL10, 12.7 mm upstream of the separation lip, are given in Table 1. The conditions at this station will be designated as the reference conditions.

The wall static pressure and skin-friction distributions on the flat plate and the ramp are given in Tables 2 and 3. The skin-friction coefficients were obtained by first applying the van Driest transformation to the velocity profiles and then fitting them to the standard incompressible logarithmic law. The local skin-friction coefficients have been defined using the reference conditions to avoid ambiguity within the interaction region. The wall conditions were near-adiabatic.

3. DATA ACQUISITION AND REDUCTION

A DISA 55M10 constant-temperature anemometer was used to measure the streamwise component of the mass flow fluctuations. The probes were constructed by welding 5 micron tungsten wires to stainless steel support prongs. Some slack was given to the wire to avoid strain-gaging, and the wire length was typically 1 mm.

The wires were calibrated for mass-flow sensitivity in a small Mach 3 pilot tunnel by changing the tunnel stagnation pressure. The temperature dependence of the mass-flow sensitivity was determined by repeating the calibration at several different resistance ratios. The calibration only applied where the mass-flow sensitivity was independent of Mach number, that is, where the local Mach number exceeds 1.2 (Ref. 7).

Under operating conditions, the system frequency response (deduced from a square-wave test) was typically 150 kHz or better. The operating overheat ratio varied between 1.0 and 1.3. Preliminary tests had shown that at these overheat ratios the contribution of the temperature fluctuations to the total signal was small, and it was subsequently neglected.

Digital analysis was used throughout. The mean and fluctuating components of the hot-wire signal were separated by appropriate filtering and digitized directly at sampling rates of 50 kHz and 500 kHz respectively. The raw data was stored on-line in the memory of a Hewlett-Packard HP1000 minicomputer for further processing. At each measurement point, data were taken as an ensemble of 25 records, each of which contained 1024 sampled points. Satisfactory convergence of fluctuation data was achieved with this record length (within 1% at $y/\delta = 0.5$). The instantaneous values of the anemometer voltage were directly converted to the instantaneous values

of mass flow by inverting the calibration curve, thereby avoiding the use of sensitivity coefficients. The instantaneous mass-flow fluctuations were found by subtracting the time-averaged mass flow from the total instantaneous mass flow.

The data presented in this report are $\langle \rho u \rangle / \sqrt{\rho u}$, $\langle \rho u \rangle / \rho_w u_\tau$, u/u_{ref} and M . The values of u_τ , ρ_w , δ and γ were found as follows.

(a) In finding $u_\tau = \sqrt{\tau_w / \rho_w}$, τ_w was calculated from $\tau_w = \frac{1}{2} \rho_{ref} u_{ref}^2 C_{f_{ref}} = \frac{1}{2} \gamma P_{ref} M_{ref}^2 C_{f_{ref}}$, using $C_{f_{ref}}$ values from Table 3. The density at the wall, ρ_w , was calculated as follows.

$$\rho_w = \frac{P_w}{R T_w} = \left(\frac{P_w}{P_{ref}} \right) \left(\frac{T_o}{T_w} \right) \frac{P_{ref}}{T_o} \frac{1}{R} \quad (1)$$

where $\frac{P_w}{P_{ref}}$ from Table 2,

$$\frac{T_o}{T_w} = \frac{1}{1.04}$$

and $R = 287.227 \text{ J/Kg-K}$

Since T_o varied during a run, the average value of the stagnation temperature was used to evaluate ρ_w .

(b) Definition of boundary layer thickness: The boundary layer thickness and other relevant length scales are given in Table 4.

Fernholz and Finley (Ref. 8) suggest the boundary layer edge be defined as the point where $(P_o - P)/P_{oe} - P_e = 0.99$. For incompressible flows, this corresponds to the $u/u_e = 0.995$ point. This method, however, is not applicable within the reattachment region where large normal pressure gradients lead to the absence of a constant property freestream. Thus,

the boundary layer edge in Tables 4 and 5 was defined as the point where the mean mass flow rate reached a maximum. This definition was similar to that used by Sturek and Danberg (Refs. 9 and 10) for a curved wall boundary layer.

For the boundary layer prior to separation (BL17), the boundary layer edge was taken as the point where $\overline{\rho u} / (\overline{\rho u})_e = 0.99$.

(c) The minimum y value for the profiles taken on the flat plate and the ramp was assumed to be 0.1 mm. This value represents a best estimate for the distance between the model surface and the hot-wire when the probe traverse system sensed the model surface.

In determining the y position for the free shear layer, the probe deflection had to be accounted for. This deflection was measured by using a laser beam to locate the position of the probe tip both before and during a tunnel run.

The mean flow results of Ref. 6 did not allow for this probe deflection. The y values given in Ref. 6 were therefore appropriately adjusted before performing the interpolation to find u/u_{ref} and M.

4. MEASUREMENT UNCERTAINTIES

1) Mean-Flow Measurements

The mean-flow measurement uncertainties were given by Settles et al (Ref. 1). They were:

P_w	$= \pm 2\%$	M	$= \pm 3\%$
$C_{f_{ref}}$	$= \pm 15\%$	y	$= \pm 0.2 \text{ mm}$
u	$= \pm 5\%$	δ	$= \pm 5\%$
p	$= \pm 4\% \rightarrow \pm 10\%$		

2) Turbulence Measurements

The turbulence measurements are subject to both random and systematic errors. The random errors are associated with uncertainties in evaluating the sensitivity from the calibration curve and correcting the sensitivity for changes in stagnation temperature, in addition to the possibility of a drift in the hot-wire characteristics. Systematic errors include neglecting temperature fluctuations and mean stagnation temperature changes through the flowfield, as well as the errors due to the limited spatial and temporal resolution of the hot-wire system. The specific error bounds on the mass-flow fluctuation measurements are given below.

Random errors:	<u>Source</u>	$\Delta <pu>$
(a)	evaluating the sensitivity from the calibration	$\pm 8\%$
(b)	correcting the sensitivity for variations in freestream stagnation temperature	$\pm 1\%$
(c)	drift in sensitivity during run	$\pm 3\%$
(d)	miscellaneous sources of error (end-conduction effects, filter gain variations, etc.)	$\pm 5\%$
The <u>overall</u> uncertainty in the rms mass-flow fluctuation level due to <u>random</u> errors is therefore		$\pm 10\%$

Systematic errors:	<u>Source</u>	$\Delta <pu>$
(a)	neglecting mean stagnation temperature variations through the boundary layer (assume 4% increase in T_0 between freestream and the wall)	
	At $y/\delta = 1$	0%
	At $y/\delta = 0.05$	-2%
(b)	neglecting the contribution to the hot-wire output due to temperature fluctuations (in central portion of the layer, see Ref. 11)	+4%

(c) limitation on spatial and temporal resolution (assume it is constant at a given x-position)

- i) upstream boundary layer -50%
- ii) free shear layer (varies with shear layer thickness, i.e. downstream distance) -50% to 15%
- iii) reattaching flow (varies with downstream distance) -10% to -5%

(d) nonlinearities

Errors due to nonlinearities are important in the reattaching flow region where the turbulence intensities are particularly severe. Although the data reduction scheme minimizes these errors (see Section 4), they are still expected to be significant.

Within the reattachment zone +10%

(e) Mach number effects

Errors accumulate rapidly where the local Mach number is less than approximately 1.2. All the results taken in this region should be ignored.

3) Other Sources of Error

Note that, for u/u_{ref} and M at SH48, SH50 and SH55, the hot-wire probe was traversed normal to the ramp face, whereas the mean flow data was deduced from Pitot profiles measured by traversing normal to the tunnel floor.

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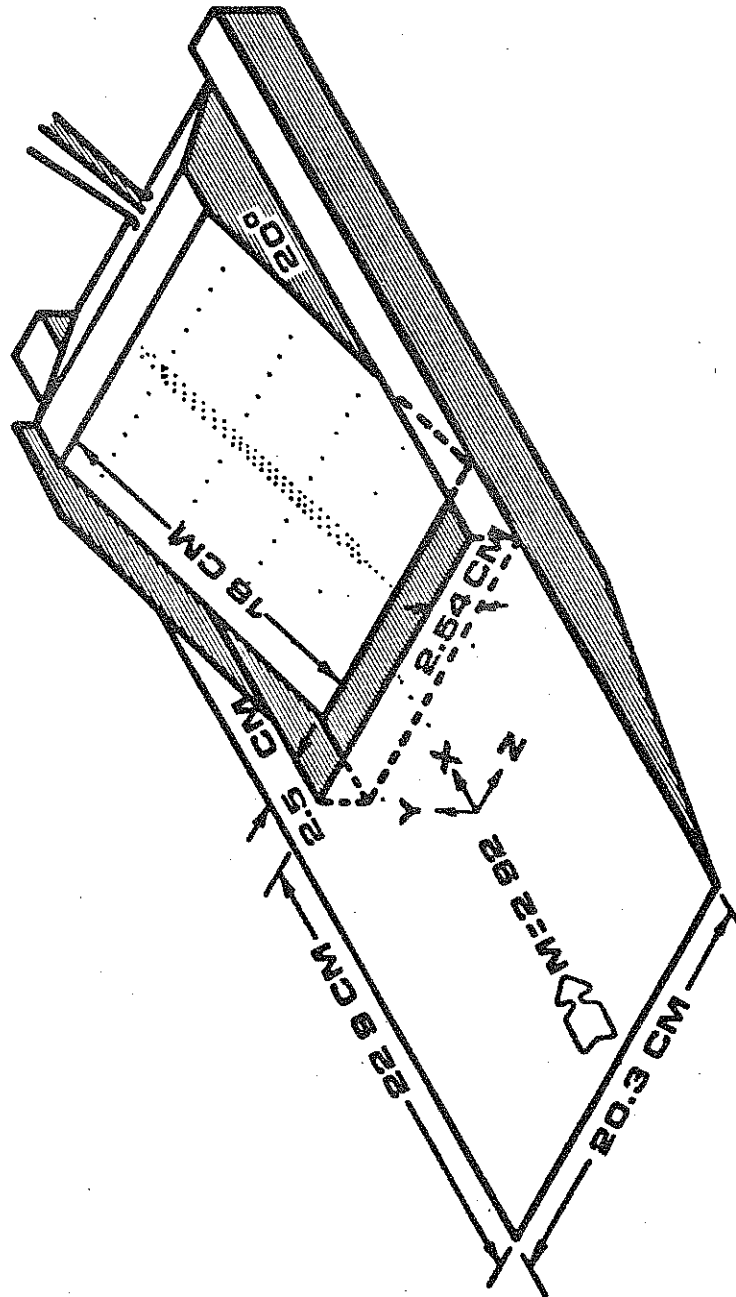


Fig. 1 TEST MODEL

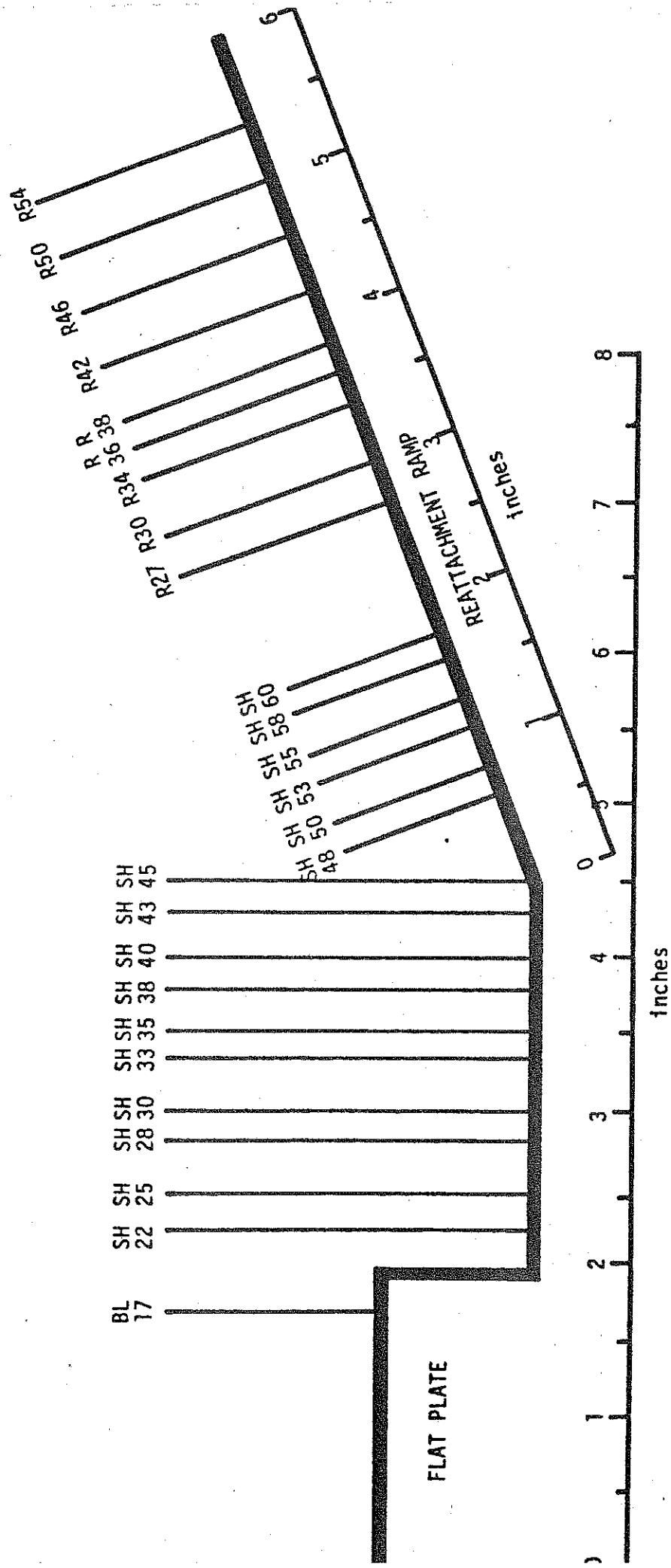


Fig. 2 STATION NUMBERING SCHEME AND LOCATION OF SURVEYS

Re_{ref}	$6.4 \times 10^7/m$
M_{ref}	2.90
P_{ref}	$2.12 \times 10^4 \text{ N/m}^2$
T_w/T_o	1.04
T_{ref}	$98^\circ K$
U_{ref}	572 m/s

TABLE 1. Reference Parameters

STATION	P_w/P_{ref}	
BL17	1.00	
R10	0.97	
R14	0.98	
R16	1.06	
R18	1.17	
R20	1.31	
R21	1.39	
R22	1.48	
R23	1.58	
R24	1.69	
R26	1.96	
R27	2.03	
R28	2.22	
R29	2.30	
R30	2.44	
R31	2.58	
R32	2.69	
R33	2.80	
R34	2.94	
R35	3.06	
R36	3.09	
R37	3.16	
R38	3.29	
R39	3.38	
R40	3.41	
R41	3.45	
R42	3.50	
R44	3.56	
R45	3.57	
R46	3.62	
R47	3.64	(cont'd)

TABLE 2. Wall Static Pressure Distribution.

TABLE 2. Wall Static Pressure Distribution
(cont'd)

STATION	P_w/P_{ref}
R48	3.67
R49	3.75
R50	3.71
R51	3.72
R52	3.67
R53	3.82
R54	3.73

STATION	$C_{f_{ref}}$
BL17	.00135
R27	.00004
R30	.00019
R32	.00039
R34	.00062
R36	.00087
R38	.00117
R42	.00172
R46	.00205
R50	.00229
R54	.00251

TABLE 3. Skin-Friction Distribution

Station	δ mm	δ^* mm	θ mm	$\frac{v_w}{u_\tau}$ mm $\times 10^3$
BL17	3.5			2.18
R27	8.3	5.3	1.0	9.76
R30	7.1	4.3	0.94	4.27
R32	7.5			2.65
R34	7.3	3.4	0.90	2.01
R36	8.2			1.60
R38	8.5	2.9	0.83	1.37
R42	10.0	2.6	0.75	1.15
R46	9.8	2.5	0.75	1.03
R50	10.8	2.3	0.75	0.932
R54	11.6	2.3	0.71	0.907

TABLE 4. Various Boundary Layer Length Scales

BL17 UT= 2.3731E+01 RHOV= 3.1714E-01 TV= 2.5704E+02 D= 3.5000E-03

I	Y (M)	Y/D	(RHO U)' RHO U	(RHO U)' RHOV*UT
1	1.0000E-04	2.8571E-02	4.2630E-02	8.9439E-01
2	2.7070E-04	7.7343E-02	8.1670E-02	1.9240E+00
3	2.8720E-04	8.2057E-02	8.4750E-02	2.0247E+00
4	3.0840E-04	8.8114E-02	8.8350E-02	2.1494E+00
5	3.1630E-04	9.0371E-02	9.4170E-02	2.3098E+00
6	3.1950E-04	9.1286E-02	9.5500E-02	2.3691E+00
7	3.3970E-04	9.7057E-02	9.6060E-02	2.4174E+00
8	3.6520E-04	1.0434E-01	1.0050E-01	2.6520E+00
9	4.0400E-04	1.1543E-01	1.0130E-01	2.7902E+00
10	4.5450E-04	1.2986E-01	1.0290E-01	2.9095E+00
11	4.6530E-04	1.3294E-01	1.0420E-01	2.9933E+00
12	6.0930E-04	1.7409E-01	9.0870E-02	2.8422E+00
13	7.4600E-04	2.1314E-01	7.9890E-02	2.6421E+00
14	8.8610E-04	2.5317E-01	7.9700E-02	2.7555E+00
15	1.0430E-03	2.9800E-01	8.1710E-02	2.9639E+00
16	1.1940E-03	3.4114E-01	8.4980E-02	3.2271E+00
17	1.3340E-03	3.8114E-01	8.2180E-02	3.2911E+00
18	1.4760E-03	4.2171E-01	8.3440E-02	3.5089E+00
19	1.6170E-03	4.6200E-01	8.2670E-02	3.6479E+00
20	1.7740E-03	5.0686E-01	8.0380E-02	3.7177E+00
21	1.9170E-03	5.4771E-01	7.8830E-02	3.8241E+00
22	2.0640E-03	5.8971E-01	7.7070E-02	3.9108E+00
23	2.2080E-03	6.3086E-01	7.4960E-02	3.9750E+00
24	2.3530E-03	6.7229E-01	7.3230E-02	4.0360E+00
25	2.4950E-03	7.1286E-01	7.0070E-02	4.0090E+00
26	2.6450E-03	7.5571E-01	6.3740E-02	3.7959E+00
27	2.7900E-03	7.9714E-01	5.5300E-02	3.3932E+00
28	2.9410E-03	8.4029E-01	4.9380E-02	3.1080E+00
29	3.0890E-03	8.8257E-01	3.9060E-02	2.5130E+00
30	3.2290E-03	9.2257E-01	2.9020E-02	1.8917E+00
31	3.3780E-03	9.6514E-01	2.1420E-02	1.4088E+00
32	3.5450E-03	1.0129E+00	1.5240E-02	1.0066E+00
33	3.7130E-03	1.0609E+00	1.2270E-02	8.1255E-01
34	3.8500E-03	1.1000E+00	9.9350E-03	6.5726E-01
35	3.9990E-03	1.1426E+00	8.8820E-03	5.8772E-01
36	4.1470E-03	1.1849E+00	9.0540E-03	5.9886E-01
37	4.2970E-03	1.2277E+00	8.7350E-03	5.7683E-01
38	4.4490E-03	1.2711E+00	9.2210E-03	6.0843E-01
39	4.5960E-03	1.3131E+00	8.8780E-03	5.8627E-01
40	4.7390E-03	1.3540E+00	8.3130E-03	5.4830E-01
41	4.8780E-03	1.3937E+00	8.2990E-03	5.4682E-01
42	5.0280E-03	1.4366E+00	8.2210E-03	5.4125E-01
43	5.1790E-03	1.4797E+00	8.6590E-03	5.7008E-01
44	5.3270E-03	1.5220E+00	8.4620E-03	5.5689E-01
45	5.4670E-03	1.5620E+00	8.5600E-03	5.6323E-01

SH22

UT= ***** RHOW= 3.0863E-01 TW= 2.5946E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOW*UT
1	-1.0500E-03	*****	8.6650E-02	*****
2	-9.1000E-04	*****	8.2260E-02	*****
3	-7.5000E-04	*****	8.0630E-02	*****
4	-6.1000E-04	*****	7.8200E-02	*****
5	-4.8000E-04	*****	5.0400E-02	*****
6	-3.5000E-04	*****	3.3720E-02	*****
7	-2.3000E-04	*****	3.5590E-02	*****
8	-8.0001E-05	*****	6.5720E-02	*****
9	6.0000E-05	*****	1.0860E-01	*****
10	2.0000E-04	*****	1.3020E-01	*****
11	3.3000E-04	*****	1.1890E-01	*****
12	4.7000E-04	*****	1.0280E-01	*****
13	6.0000E-04	*****	9.7320E-02	*****
14	7.4000E-04	*****	9.7170E-02	*****
15	8.7000E-04	*****	1.0090E-01	*****
16	1.0100E-03	*****	1.0040E-01	*****
17	1.1700E-03	*****	1.0100E-01	*****
18	1.3000E-03	*****	1.0210E-01	*****
19	1.4400E-03	*****	1.0300E-01	*****
20	1.5900E-03	*****	1.0260E-01	*****
21	1.7300E-03	*****	1.0100E-01	*****
22	1.8700E-03	*****	1.0180E-01	*****
23	2.0200E-03	*****	1.0050E-01	*****
24	2.1500E-03	*****	9.9550E-02	*****
25	2.3100E-03	*****	9.7410E-02	*****
26	2.4500E-03	*****	9.4070E-02	*****
27	2.5900E-03	*****	9.7150E-02	*****
28	2.7400E-03	*****	9.0930E-02	*****
29	2.8800E-03	*****	7.0550E-02	*****
30	3.0200E-03	*****	4.9190E-02	*****
31	3.1600E-03	*****	4.0500E-02	*****
32	3.2900E-03	*****	2.9600E-02	*****
33	3.4400E-03	*****	2.1910E-02	*****
34	3.5900E-03	*****	1.5810E-02	*****
35	3.7300E-03	*****	1.3320E-02	*****
36	3.8700E-03	*****	1.1060E-02	*****
37	4.0200E-03	*****	1.0270E-02	*****
38	4.1600E-03	*****	9.8440E-03	*****
39	4.3000E-03	*****	9.5850E-03	*****
40	4.4500E-03	*****	9.7790E-03	*****
41	4.5900E-03	*****	9.7170E-03	*****
42	4.7300E-03	*****	8.9410E-03	*****
43	4.8700E-03	*****	9.7800E-03	*****
44	5.0200E-03	*****	9.4790E-03	*****
45	5.1600E-03	*****	9.5980E-03	*****
46	5.3100E-03	*****	9.4690E-03	*****
47	5.4400E-03	*****	9.6450E-03	*****
48	5.5800E-03	*****	9.6040E-03	*****
49	5.7200E-03	*****	9.7860E-03	*****
50	5.8700E-03	*****	9.1220E-03	*****
51	6.0200E-03	*****	9.4200E-03	*****
52	6.1600E-03	*****	9.4050E-03	*****
53	6.2800E-03	*****	9.7660E-03	*****

SH25

UT= ***** RHOW= 2.9060E-01 TW= 2.4622E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOW*UT	U Uref	M
1	-1.3100E-03	*****	5.0890E-02	*****	1.3852E-01	2.5334E-01
2	-1.1622E-03	*****	4.3360E-02	*****	1.9293E-01	3.5508E-01
3	-9.7780E-04	*****	4.7270E-02	*****	2.6082E-01	4.8549E-01
4	-8.1000E-04	*****	7.2210E-02	*****	3.2448E-01	6.1167E-01
5	-6.5320E-04	*****	1.0320E-01	*****	3.8956E-01	7.4718E-01
6	-4.7234E-04	*****	1.3070E-01	*****	4.6481E-01	9.1438E-01
7	-3.1910E-04	*****	1.4400E-01	*****	5.2677E-01	1.0586E+00
8	-1.4190E-04	*****	1.4320E-01	*****	5.8463E-01	1.2079E+00
9	1.9700E-05	*****	1.3030E-01	*****	6.3611E-01	1.3517E+00
10	1.8650E-04	*****	1.1510E-01	*****	6.8749E-01	1.5043E+00
11	3.5050E-04	*****	1.0670E-01	*****	7.2954E-01	1.6460E+00
12	5.2200E-04	*****	1.0300E-01	*****	7.7143E-01	1.7998E+00
13	7.0600E-04	*****	9.9190E-02	*****	8.1204E-01	1.9598E+00
14	8.7400E-04	*****	9.9540E-02	*****	8.3347E-01	2.0552E+00
15	1.0440E-03	*****	9.8600E-02	*****	8.5032E-01	2.1335E+00
16	1.2110E-03	*****	9.6950E-02	*****	8.6437E-01	2.2013E+00
17	1.3890E-03	*****	9.6550E-02	*****	8.7797E-01	2.2718E+00
18	1.5630E-03	*****	9.6350E-02	*****	8.9318E-01	2.3550E+00
19	1.7260E-03	*****	9.3310E-02	*****	9.0778E-01	2.4376E+00
20	1.9050E-03	*****	9.1870E-02	*****	9.2221E-01	2.5250E+00
21	2.0800E-03	*****	8.8120E-02	*****	9.3320E-01	2.5948E+00
22	2.2430E-03	*****	8.2440E-02	*****	9.4185E-01	2.6519E+00
23	2.4080E-03	*****	7.4890E-02	*****	9.4899E-01	2.7014E+00
24	2.5760E-03	*****	6.1960E-02	*****	9.5670E-01	2.7564E+00
25	2.7370E-03	*****	5.0930E-02	*****	9.6361E-01	2.8065E+00
26	2.9030E-03	*****	4.0900E-02	*****	9.6735E-01	2.8344E+00
27	3.0860E-03	*****	2.9670E-02	*****	9.6905E-01	2.8474E+00
28	3.2550E-03	*****	2.2560E-02	*****	9.6963E-01	2.8521E+00
29	3.4230E-03	*****	1.8890E-02	*****	9.7032E-01	2.8575E+00
30	3.6030E-03	*****	1.5890E-02	*****	9.7094E-01	2.8626E+00
31	3.7690E-03	*****	1.4770E-02	*****	9.7136E-01	2.8660E+00
32	3.9360E-03	*****	1.4900E-02	*****	9.7136E-01	2.8660E+00
33	4.1000E-03	*****	1.4140E-02	*****	9.7136E-01	2.8660E+00
34	4.2860E-03	*****	1.3990E-02	*****	9.7136E-01	2.8660E+00
35	4.4450E-03	*****	1.3590E-02	*****	9.7136E-01	2.8660E+00
36	4.6170E-03	*****	1.3600E-02	*****	9.7179E-01	2.8696E+00
37	4.7880E-03	*****	1.2270E-02	*****	9.7221E-01	2.8730E+00
38	4.9520E-03	*****	1.3160E-02	*****	9.7221E-01	2.8730E+00
39	5.1310E-03	*****	1.4510E-02	*****	9.7221E-01	2.8730E+00
40	5.3010E-03	*****	1.4600E-02	*****	9.7187E-01	2.8701E+00
41	5.4590E-03	*****	1.2020E-02	*****	9.7079E-01	2.8613E+00
42	5.6300E-03	*****	1.0930E-02	*****	9.7051E-01	2.8590E+00
43	5.8150E-03	*****	1.0840E-02	*****	9.7070E-01	2.8605E+00

SH28

UT= ***** RHOH= 2.7236E-01 TW= 2.6270E+02 D= *****

I	Y (M)	Y/D	(RHO U)' RHO U	(RHO U)' RHOHUT	U Uref	M
1	-1.8230E-03	*****	5.6880E-02	*****	1.5253E-01	2.8010E-01
2	-1.6690E-03	*****	4.5590E-02	*****	1.9003E-01	3.5045E-01
3	-1.5320E-03	*****	4.5530E-02	*****	2.2097E-01	4.0935E-01
4	-1.3900E-03	*****	5.1440E-02	*****	2.5113E-01	4.6752E-01
5	-1.2435E-03	*****	6.0170E-02	*****	2.9529E-01	5.5526E-01
6	-1.1116E-03	*****	7.7170E-02	*****	3.3945E-01	6.4363E-01
7	-9.7110E-04	*****	9.3780E-02	*****	3.6786E-01	7.0275E-01
8	-8.2260E-04	*****	1.1200E-01	*****	3.9889E-01	7.6870E-01
9	-6.7500E-04	*****	1.3440E-01	*****	4.4196E-01	8.6401E-01
10	-5.2754E-04	*****	1.3910E-01	*****	4.8669E-01	9.6714E-01
11	-3.9020E-04	*****	1.4240E-01	*****	5.3052E-01	1.0732E+00
12	-2.5000E-04	*****	1.4200E-01	*****	5.6778E-01	1.1681E+00
13	-1.0650E-04	*****	1.3660E-01	*****	6.0166E-01	1.2575E+00
14	3.7400E-05	*****	1.3430E-01	*****	6.4217E-01	1.3754E+00
15	1.8340E-04	*****	1.2850E-01	*****	6.8382E-01	1.4999E+00
16	3.4090E-04	*****	1.2410E-01	*****	7.1851E-01	1.6158E+00
17	4.8180E-04	*****	1.1770E-01	*****	7.4931E-01	1.7251E+00
18	6.3000E-04	*****	1.1230E-01	*****	7.8137E-01	1.8477E+00
19	7.7400E-04	*****	1.0930E-01	*****	8.0463E-01	1.9420E+00
20	9.2400E-04	*****	1.0550E-01	*****	8.2447E-01	2.0266E+00
21	1.0750E-03	*****	1.0200E-01	*****	8.4209E-01	2.1092E+00
22	1.2220E-03	*****	9.8870E-02	*****	8.5810E-01	2.1856E+00
23	1.3710E-03	*****	9.7120E-02	*****	8.7050E-01	2.2487E+00
24	1.5220E-03	*****	9.5790E-02	*****	8.8418E-01	2.3220E+00
25	1.6680E-03	*****	9.7140E-02	*****	8.9831E-01	2.4002E+00
26	1.8200E-03	*****	9.4670E-02	*****	9.0990E-01	2.4690E+00
27	1.9660E-03	*****	9.2100E-02	*****	9.2035E-01	2.5323E+00
28	2.1110E-03	*****	9.0030E-02	*****	9.2925E-01	2.5898E+00
29	2.2550E-03	*****	8.6010E-02	*****	9.3709E-01	2.6415E+00
30	2.3940E-03	*****	7.9900E-02	*****	9.4310E-01	2.6832E+00
31	2.5420E-03	*****	7.3030E-02	*****	9.4982E-01	2.7309E+00
32	2.6820E-03	*****	6.5300E-02	*****	9.5641E-01	2.7785E+00

(TO BE CONTINUED)

(CONTINUED)

SH28 UT= ***** RHDW= 2.7236E-01 TW= 2.6270E+02 D= *****

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHDW*UT	U Uref	M
33	2.8370E-03	*****	5.4610E-02	*****	9.6153E-01	2.8164E+00
34	2.9840E-03	*****	4.5320E-02	*****	9.6540E-01	2.8454E+00
35	3.1300E-03	*****	3.4730E-02	*****	9.6645E-01	2.8538E+00
36	3.2720E-03	*****	2.7610E-02	*****	9.6710E-01	2.8590E+00
37	3.4250E-03	*****	2.4090E-02	*****	9.6710E-01	2.8590E+00
38	3.5810E-03	*****	2.0850E-02	*****	9.6746E-01	2.8620E+00
39	3.7210E-03	*****	1.8400E-02	*****	9.6792E-01	2.8658E+00
40	3.8620E-03	*****	1.7340E-02	*****	9.6795E-01	2.8660E+00
41	4.0100E-03	*****	1.6500E-02	*****	9.6805E-01	2.8668E+00
42	4.1580E-03	*****	1.6540E-02	*****	9.6856E-01	2.8710E+00
43	4.3060E-03	*****	1.5900E-02	*****	9.6880E-01	2.8730E+00
44	4.4520E-03	*****	1.6800E-02	*****	9.6880E-01	2.8730E+00
45	4.6020E-03	*****	1.6020E-02	*****	9.6880E-01	2.8730E+00
46	4.7440E-03	*****	1.5600E-02	*****	9.6880E-01	2.8730E+00
47	4.8910E-03	*****	1.5510E-02	*****	9.6880E-01	2.8730E+00
48	5.0380E-03	*****	1.5670E-02	*****	9.6880E-01	2.8730E+00
49	5.1820E-03	*****	1.5810E-02	*****	9.6880E-01	2.8730E+00
50	5.3240E-03	*****	1.5370E-02	*****	9.6880E-01	2.8730E+00
51	5.4700E-03	*****	1.5610E-02	*****	9.6880E-01	2.8730E+00
52	5.6110E-03	*****	1.5100E-02	*****	9.6880E-01	2.8730E+00
53	5.7570E-03	*****	1.5020E-02	*****	9.6880E-01	2.8730E+00
54	5.9060E-03	*****	1.4900E-02	*****	9.6880E-01	2.8730E+00
55	6.0630E-03	*****	1.4690E-02	*****	9.6880E-01	2.8730E+00
56	6.1920E-03	*****	1.4750E-02	*****	9.6880E-01	2.8730E+00
57	6.3360E-03	*****	1.4330E-02	*****	9.6880E-01	2.8730E+00
58	6.4830E-03	*****	1.4200E-02	*****	9.6880E-01	2.8730E+00
59	6.6300E-03	*****	1.4510E-02	*****	9.6880E-01	2.8730E+00
60	6.7820E-03	*****	1.3840E-02	*****	9.6880E-01	2.8730E+00
61	6.9300E-03	*****	1.3600E-02	*****	9.6880E-01	2.8730E+00
62	7.0800E-03	*****	1.3360E-02	*****	9.6901E-01	2.8744E+00
63	7.2340E-03	*****	1.2820E-02	*****	9.6964E-01	2.8787E+00
64	7.3960E-03	*****	1.2190E-02	*****	9.6983E-01	2.8800E+00
65	7.5960E-03	*****	1.2460E-02	*****	9.6983E-01	2.8800E+00

SH30 UT= ***** RHOV= 2.8642E-01 TV= 2.4981E+02 D= *****

I	Y (M)	Y/D	(RHO U)* RHO U	(RHO U)* RHOV*UT	U Uref	M
1	-1.8370E-03	*****	5.3010E-02	*****	1.8777E-01	3.4665E-01
2	-1.6510E-03	*****	5.1360E-02	*****	2.3115E-01	4.2953E-01
3	-1.4670E-03	*****	6.3940E-02	*****	2.8703E-01	5.3938E-01
4	-1.2888E-03	*****	8.0810E-02	*****	3.4095E-01	6.4776E-01
5	-1.1480E-03	*****	1.0070E-01	*****	3.7782E-01	7.2475E-01
6	-9.9740E-04	*****	1.1640E-01	*****	4.1200E-01	7.9826E-01
7	-8.0990E-04	*****	1.3520E-01	*****	4.5106E-01	8.8472E-01
8	-6.1000E-04	*****	1.4430E-01	*****	4.9090E-01	9.7706E-01
9	-4.6523E-04	*****	1.5170E-01	*****	5.3598E-01	1.0895E+00
10	-3.0786E-04	*****	1.4860E-01	*****	5.8492E-01	1.2144E+00
11	-1.4840E-04	*****	1.4930E-01	*****	6.2308E-01	1.3205E+00
12	4.5200E-05	*****	1.4520E-01	*****	6.6207E-01	1.4351E+00
13	2.1920E-04	*****	1.4100E-01	*****	6.9573E-01	1.5418E+00
14	3.6400E-04	*****	1.4010E-01	*****	7.2841E-01	1.6530E+00
15	5.4340E-04	*****	1.3210E-01	*****	7.6816E-01	1.8009E+00
16	7.0600E-04	*****	1.2500E-01	*****	8.0137E-01	1.9309E+00
17	9.0800E-04	*****	1.1800E-01	*****	8.2630E-01	2.0392E+00
18	1.0750E-03	*****	1.0850E-01	*****	8.4242E-01	2.1146E+00
19	1.2220E-03	*****	1.0550E-01	*****	8.5639E-01	2.1822E+00
20	1.3910E-03	*****	1.0020E-01	*****	8.7402E-01	2.2727E+00
21	1.5790E-03	*****	9.4740E-02	*****	8.9174E-01	2.3702E+00
22	1.7790E-03	*****	9.2390E-02	*****	9.0823E-01	2.4657E+00
23	1.9260E-03	*****	9.0640E-02	*****	9.1883E-01	2.5296E+00
24	2.0840E-03	*****	8.7630E-02	*****	9.2696E-01	2.5818E+00
25	2.2520E-03	*****	8.3880E-02	*****	9.3498E-01	2.6350E+00
26	2.4490E-03	*****	7.5990E-02	*****	9.4441E-01	2.6994E+00
27	2.6200E-03	*****	6.8540E-02	*****	9.5301E-01	2.7619E+00
28	2.7670E-03	*****	5.9220E-02	*****	9.5883E-01	2.8046E+00
29	2.9130E-03	*****	4.8520E-02	*****	9.6212E-01	2.8291E+00
30	3.0970E-03	*****	3.8010E-02	*****	9.6461E-01	2.8486E+00
31	3.2800E-03	*****	2.8550E-02	*****	9.6591E-01	2.8590E+00
32	3.4430E-03	*****	2.3770E-02	*****	9.6591E-01	2.8590E+00

(TO BE CONTINUED)

(CONTINUED)

SH30 UT= ***** RHOJ= 2.8642E-01 TW= 2.4981E+02 D= *****

I	Y (M)	Y/D	(RHO U)' RHO U	(RHO U)' RHOJUT	U Uref	M
33	3.6060E-03	*****	1.9960E-02	*****	9.6644E-01	2.8627E+00
34	3.7740E-03	*****	1.8090E-02	*****	9.6708E-01	2.8672E+00
35	3.9520E-03	*****	1.7300E-02	*****	9.6768E-01	2.8722E+00
36	4.1230E-03	*****	1.6700E-02	*****	9.6778E-01	2.8730E+00
37	4.2860E-03	*****	1.6860E-02	*****	9.6760E-01	2.8715E+00
38	4.4560E-03	*****	1.6680E-02	*****	9.6704E-01	2.8669E+00
39	4.6210E-03	*****	1.6490E-02	*****	9.6737E-01	2.8697E+00
40	4.7860E-03	*****	1.5930E-02	*****	9.6778E-01	2.8730E+00
41	4.9620E-03	*****	1.6490E-02	*****	9.6778E-01	2.8730E+00
42	5.1300E-03	*****	1.5990E-02	*****	9.6778E-01	2.8730E+00
43	5.2980E-03	*****	1.5510E-02	*****	9.6778E-01	2.8730E+00
44	5.4640E-03	*****	1.6010E-02	*****	9.6778E-01	2.8730E+00
45	5.6160E-03	*****	1.5810E-02	*****	9.6816E-01	2.8761E+00
46	5.7810E-03	*****	1.5810E-02	*****	9.6856E-01	2.8794E+00
47	5.9620E-03	*****	1.5500E-02	*****	9.6794E-01	2.8743E+00
48	6.1360E-03	*****	1.4900E-02	*****	9.6778E-01	2.8730E+00
49	6.3040E-03	*****	1.5530E-02	*****	9.6790E-01	2.8740E+00
50	6.4550E-03	*****	1.4770E-02	*****	9.6841E-01	2.8782E+00
51	6.6230E-03	*****	1.4830E-02	*****	9.6863E-01	2.8800E+00
52	6.7960E-03	*****	1.4770E-02	*****	9.6863E-01	2.8800E+00
53	6.9750E-03	*****	1.4540E-02	*****	9.6863E-01	2.8800E+00
54	7.1400E-03	*****	1.4110E-02	*****	9.6863E-01	2.8800E+00
55	7.3170E-03	*****	1.4270E-02	*****	9.6863E-01	2.8800E+00
56	7.4900E-03	*****	1.4060E-02	*****	9.6863E-01	2.8800E+00
57	7.6640E-03	*****	1.4230E-02	*****	9.6863E-01	2.8800E+00
58	7.8360E-03	*****	1.4160E-02	*****	9.6863E-01	2.8800E+00
59	8.0130E-03	*****	1.3680E-02	*****	9.6863E-01	2.8800E+00

SH33

UT= ***** RHOV= 2.8714E-01 TV= 2.4918E+02 D= *****

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHO U _{UT}	U U _{ref}	M
1	-2.0430E-03	*****	6.1430E-02	*****	2.2085E-01	4.0905E-01
2	-1.8720E-03	*****	6.6220E-02	*****	2.5713E-01	4.7910E-01
3	-1.7070E-03	*****	7.9280E-02	*****	2.9415E-01	5.5163E-01
4	-1.5410E-03	*****	8.6430E-02	*****	3.2846E-01	6.2092E-01
5	-1.3688E-03	*****	1.1140E-01	*****	3.6691E-01	7.0049E-01
6	-1.2003E-03	*****	1.3300E-01	*****	4.1253E-01	7.9789E-01
7	-1.0367E-03	*****	1.4860E-01	*****	4.4491E-01	8.6957E-01
8	-8.6780E-04	*****	1.5980E-01	*****	4.7597E-01	9.4049E-01
9	-7.0040E-04	*****	1.6530E-01	*****	5.0769E-01	1.0158E+00
10	-5.3694E-04	*****	1.7080E-01	*****	5.4295E-01	1.1034E+00
11	-3.6290E-04	*****	1.6800E-01	*****	5.8218E-01	1.2045E+00
12	-2.0020E-04	*****	1.6330E-01	*****	6.1930E-01	1.3065E+00
13	-3.4300E-05	*****	1.6030E-01	*****	6.5253E-01	1.4037E+00
14	1.3230E-04	*****	1.5380E-01	*****	6.8351E-01	1.4987E+00
15	3.0480E-04	*****	1.5130E-01	*****	7.1397E-01	1.5988E+00
16	4.8590E-04	*****	1.4780E-01	*****	7.4958E-01	1.7259E+00
17	6.5300E-04	*****	1.4180E-01	*****	7.8161E-01	1.8460E+00
18	8.2800E-04	*****	1.3180E-01	*****	8.0929E-01	1.9601E+00
19	9.9900E-04	*****	1.2460E-01	*****	8.2866E-01	2.0452E+00
20	1.1750E-03	*****	1.1860E-01	*****	8.4682E-01	2.1289E+00
21	1.3470E-03	*****	1.1050E-01	*****	8.6465E-01	2.2163E+00
22	1.5200E-03	*****	1.0690E-01	*****	8.8135E-01	2.3048E+00
23	1.6960E-03	*****	1.0400E-01	*****	8.9762E-01	2.3952E+00
24	1.8590E-03	*****	1.0140E-01	*****	9.1205E-01	2.4792E+00
25	2.0420E-03	*****	9.5650E-02	*****	9.2131E-01	2.5360E+00
26	2.2070E-03	*****	9.2680E-02	*****	9.3008E-01	2.5924E+00
27	2.3800E-03	*****	8.6050E-02	*****	9.4074E-01	2.6629E+00
28	2.5400E-03	*****	8.0290E-02	*****	9.4852E-01	2.7180E+00
29	2.7060E-03	*****	7.0840E-02	*****	9.5532E-01	2.7670E+00
30	2.8820E-03	*****	6.0750E-02	*****	9.6072E-01	2.8072E+00
31	3.0520E-03	*****	5.0290E-02	*****	9.6330E-01	2.8264E+00
32	3.2210E-03	*****	4.0730E-02	*****	9.6549E-01	2.8432E+00

(TO BE CONTINUED)

(CONTINUED)

SH33 UT= ***** RHOW= 2.8714E-01 TW= 2.4918E+02 D= *****

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHOW*UT	U Uref	M
33	3.4000E-03	*****	3.0190E-02	*****	9.6744E-01	2.8590E+00
34	3.5680E-03	*****	2.5700E-02	*****	9.6799E-01	2.8635E+00
35	3.7380E-03	*****	2.0970E-02	*****	9.6829E-01	2.8660E+00
36	3.9420E-03	*****	1.9510E-02	*****	9.6829E-01	2.8660E+00
37	4.0990E-03	*****	1.8520E-02	*****	9.6829E-01	2.8660E+00
38	4.2520E-03	*****	1.9050E-02	*****	9.6865E-01	2.8685E+00
39	4.4200E-03	*****	1.8550E-02	*****	9.6931E-01	2.8730E+00
40	4.5910E-03	*****	1.7470E-02	*****	9.6931E-01	2.8730E+00
41	4.7620E-03	*****	1.7820E-02	*****	9.6931E-01	2.8730E+00
42	4.9440E-03	*****	1.7760E-02	*****	9.6931E-01	2.8730E+00
43	5.1500E-03	*****	1.7710E-02	*****	9.6931E-01	2.8730E+00
44	5.3140E-03	*****	1.8650E-02	*****	9.6931E-01	2.8730E+00
45	5.4800E-03	*****	1.6790E-02	*****	9.6931E-01	2.8730E+00
46	5.6450E-03	*****	1.7040E-02	*****	9.6931E-01	2.8730E+00
47	5.8050E-03	*****	1.7370E-02	*****	9.6971E-01	2.8762E+00
48	5.9840E-03	*****	1.7210E-02	*****	9.7017E-01	2.8800E+00
49	6.1500E-03	*****	1.6640E-02	*****	9.7017E-01	2.8800E+00
50	6.3140E-03	*****	1.6910E-02	*****	9.6978E-01	2.8768E+00
51	6.4730E-03	*****	1.6760E-02	*****	9.6931E-01	2.8730E+00
52	6.6450E-03	*****	1.6940E-02	*****	9.6931E-01	2.8730E+00
53	6.8180E-03	*****	1.6370E-02	*****	9.6931E-01	2.8730E+00
54	6.9930E-03	*****	1.6400E-02	*****	9.6931E-01	2.8730E+00
55	7.1620E-03	*****	1.6240E-02	*****	9.6931E-01	2.8730E+00
56	7.3340E-03	*****	1.6410E-02	*****	9.6931E-01	2.8730E+00
57	7.5060E-03	*****	1.6360E-02	*****	9.6931E-01	2.8730E+00
58	7.6890E-03	*****	1.6520E-02	*****	9.6931E-01	2.8730E+00
59	7.8600E-03	*****	1.5900E-02	*****	9.6931E-01	2.8730E+00
60	8.0520E-03	*****	1.6290E-02	*****	9.6931E-01	2.8730E+00

SH35 UT= ***** RHOW= 2.7432E-01 TW= 2.6083E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOW*UT	U Uref	M
1	-2.8560E-03	*****	1.3490E-01	*****	7.1017E-02	1.3011E-01
2	-1.6880E-03	*****	8.5890E-02	*****	3.0502E-01	5.7612E-01
3	-1.5000E-03	*****	1.0670E-01	*****	3.4687E-01	6.6191E-01
4	-1.3410E-03	*****	1.2080E-01	*****	3.8085E-01	7.3313E-01
5	-1.1947E-03	*****	1.2670E-01	*****	4.0944E-01	7.9469E-01
6	-1.0166E-03	*****	1.4490E-01	*****	4.4492E-01	8.7396E-01
7	-8.4950E-04	*****	1.5550E-01	*****	4.7618E-01	9.4542E-01
8	-6.9000E-04	*****	1.6060E-01	*****	5.0108E-01	1.0042E+00
9	-5.3020E-04	*****	1.6540E-01	*****	5.3262E-01	1.0830E+00
10	-3.5957E-04	*****	1.6640E-01	*****	5.6888E-01	1.1760E+00
11	-1.9340E-04	*****	1.6840E-01	*****	6.0526E-01	1.2744E+00
12	-4.4500E-05	*****	1.6230E-01	*****	6.3153E-01	1.3490E+00
13	1.4840E-04	*****	1.6160E-01	*****	6.6025E-01	1.4342E+00
14	3.1190E-04	*****	1.5780E-01	*****	6.8087E-01	1.4990E+00
15	4.9010E-04	*****	1.6030E-01	*****	7.1122E-01	1.6003E+00
16	6.4550E-04	*****	1.5230E-01	*****	7.4114E-01	1.7042E+00
17	8.2200E-04	*****	1.4880E-01	*****	7.7597E-01	1.8373E+00
18	1.0000E-03	*****	1.4200E-01	*****	8.0411E-01	1.9525E+00
19	1.1650E-03	*****	1.4010E-01	*****	8.2504E-01	2.0433E+00
20	1.3490E-03	*****	1.2820E-01	*****	8.4000E-01	2.1134E+00
21	1.5200E-03	*****	1.2030E-01	*****	8.6000E-01	2.2138E+00
22	1.6880E-03	*****	1.1770E-01	*****	8.7977E-01	2.3166E+00
23	1.8540E-03	*****	1.0870E-01	*****	8.9494E-01	2.4016E+00
24	2.0400E-03	*****	1.0260E-01	*****	9.0895E-01	2.4852E+00
25	2.2090E-03	*****	9.9070E-02	*****	9.1991E-01	2.5531E+00
26	2.3660E-03	*****	9.5800E-02	*****	9.2815E-01	2.6064E+00
27	2.5380E-03	*****	8.7260E-02	*****	9.3708E-01	2.6668E+00
28	2.7060E-03	*****	8.0610E-02	*****	9.4554E-01	2.7256E+00
29	2.8730E-03	*****	7.3080E-02	*****	9.5328E-01	2.7824E+00
30	3.0450E-03	*****	6.1070E-02	*****	9.5803E-01	2.8177E+00
31	3.2190E-03	*****	4.9650E-02	*****	9.6101E-01	2.8402E+00
32	3.3920E-03	*****	4.0740E-02	*****	9.6214E-01	2.8495E+00

(TO BE CONTINUED)

(CONTINUED)

SH35 UT= ***** RHOV= 2.7432E-01 TW= 2.6083E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOV*UT	U Uref	M
33	3.5610E-03	*****	3.2370E-02	*****	9.6338E-01	2.8595E+00
34	3.7410E-03	*****	2.6200E-02	*****	9.6443E-01	2.8679E+00
35	3.9090E-03	*****	2.2320E-02	*****	9.6498E-01	2.8724E+00
36	4.0770E-03	*****	2.0430E-02	*****	9.6505E-01	2.8730E+00
37	4.2490E-03	*****	1.8990E-02	*****	9.6505E-01	2.8730E+00
38	4.4130E-03	*****	1.8650E-02	*****	9.6505E-01	2.8730E+00
39	4.5880E-03	*****	1.8670E-02	*****	9.6505E-01	2.8730E+00
40	4.7610E-03	*****	1.9000E-02	*****	9.6505E-01	2.8730E+00
41	4.9270E-03	*****	1.8760E-02	*****	9.6505E-01	2.8730E+00
42	5.1010E-03	*****	1.7810E-02	*****	9.6569E-01	2.8773E+00
43	5.2690E-03	*****	1.7490E-02	*****	9.6579E-01	2.8781E+00
44	5.4370E-03	*****	1.8170E-02	*****	9.6511E-01	2.8734E+00
45	5.6020E-03	*****	1.8540E-02	*****	9.6567E-01	2.8773E+00
46	5.7690E-03	*****	1.7710E-02	*****	9.6608E-01	2.8800E+00
47	5.9390E-03	*****	1.7620E-02	*****	9.6608E-01	2.8800E+00
48	6.1120E-03	*****	1.7760E-02	*****	9.6608E-01	2.8800E+00
49	6.2900E-03	*****	1.6690E-02	*****	9.6576E-01	2.8778E+00
50	6.4420E-03	*****	1.6830E-02	*****	9.6516E-01	2.8738E+00
51	6.6150E-03	*****	1.7250E-02	*****	9.6505E-01	2.8730E+00
52	6.7890E-03	*****	1.7210E-02	*****	9.6534E-01	2.8749E+00
53	6.9690E-03	*****	1.7580E-02	*****	9.6607E-01	2.8800E+00
54	7.1350E-03	*****	1.7050E-02	*****	9.6608E-01	2.8800E+00
55	7.3030E-03	*****	1.6880E-02	*****	9.6608E-01	2.8800E+00
56	7.4880E-03	*****	1.7210E-02	*****	9.6604E-01	2.8798E+00
57	7.6580E-03	*****	1.7090E-02	*****	9.6538E-01	2.8752E+00

SH38

UT= ***** RHOV= 2.8035E-01 TW= 2.5522E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOV*UT	U Uref	M
1	-2.7590E-03	*****	7.2690E-02	*****	1.9197E-01	3.5406E-01
2	-2.5670E-03	*****	6.2580E-02	*****	2.1936E-01	4.0618E-01
3	-2.3440E-03	*****	6.7400E-02	*****	2.6642E-01	4.9689E-01
4	-2.1540E-03	*****	8.0770E-02	*****	2.8741E-01	5.3846E-01
5	-1.9770E-03	*****	8.6590E-02	*****	3.1367E-01	5.9100E-01
6	-1.8010E-03	*****	1.0270E-01	*****	3.4492E-01	6.5464E-01
7	-1.5930E-03	*****	1.1720E-01	*****	3.8957E-01	7.4797E-01
8	-1.3825E-03	*****	1.3250E-01	*****	4.2808E-01	8.3176E-01
9	-1.2294E-03	*****	1.4500E-01	*****	4.5590E-01	8.9463E-01
10	-1.0572E-03	*****	1.5480E-01	*****	4.8477E-01	9.6101E-01
11	-8.4310E-04	*****	1.6310E-01	*****	5.1208E-01	1.0259E+00
12	-6.3710E-04	*****	1.6740E-01	*****	5.4693E-01	1.1131E+00
13	-4.7327E-04	*****	1.6820E-01	*****	5.7973E-01	1.1988E+00
14	-2.8610E-04	*****	1.6630E-01	*****	6.1723E-01	1.3005E+00
15	-7.3000E-05	*****	1.7050E-01	*****	6.5332E-01	1.4054E+00
16	1.2260E-04	*****	1.6700E-01	*****	6.8373E-01	1.4992E+00
17	3.0130E-04	*****	1.6530E-01	*****	7.1313E-01	1.5966E+00
18	4.8910E-04	*****	1.6200E-01	*****	7.4359E-01	1.7031E+00
19	6.9200E-04	*****	1.6310E-01	*****	7.7444E-01	1.8170E+00
20	9.0900E-04	*****	1.5650E-01	*****	8.0477E-01	1.9402E+00
21	1.0980E-03	*****	1.4800E-01	*****	8.2324E-01	2.0205E+00
22	1.2750E-03	*****	1.4030E-01	*****	8.4229E-01	2.1087E+00
23	1.4840E-03	*****	1.3180E-01	*****	8.6790E-01	2.2345E+00
24	1.6930E-03	*****	1.2260E-01	*****	8.9210E-01	2.3641E+00
25	1.8830E-03	*****	1.1010E-01	*****	9.0381E-01	2.4313E+00
26	2.0800E-03	*****	1.0480E-01	*****	9.1450E-01	2.4956E+00
27	2.2850E-03	*****	9.7470E-02	*****	9.2524E-01	2.5631E+00
28	2.4600E-03	*****	8.9070E-02	*****	9.3488E-01	2.6250E+00
29	2.6550E-03	*****	7.9710E-02	*****	9.4764E-01	2.7131E+00
30	2.8360E-03	*****	6.9880E-02	*****	9.5511E-01	2.7667E+00
31	3.0330E-03	*****	5.7220E-02	*****	9.6050E-01	2.8068E+00
32	3.2400E-03	*****	4.4200E-02	*****	9.6469E-01	2.8381E+00
33	3.4320E-03	*****	3.7930E-02	*****	9.6613E-01	2.8489E+00
34	3.6250E-03	*****	2.8840E-02	*****	9.6743E-01	2.8599E+00
35	3.8300E-03	*****	2.3340E-02	*****	9.6812E-01	2.8660E+00
36	4.0230E-03	*****	2.0380E-02	*****	9.6830E-01	2.8672E+00
37	4.2130E-03	*****	1.9470E-02	*****	9.6907E-01	2.8725E+00
38	4.4060E-03	*****	1.9140E-02	*****	9.6914E-01	2.8730E+00
39	4.6040E-03	*****	1.8730E-02	*****	9.6914E-01	2.8730E+00
40	4.7960E-03	*****	1.8500E-02	*****	9.6914E-01	2.8730E+00
41	4.9910E-03	*****	1.8020E-02	*****	9.6914E-01	2.8730E+00
42	5.1870E-03	*****	1.9350E-02	*****	9.6914E-01	2.8730E+00
43	5.3910E-03	*****	1.8530E-02	*****	9.6914E-01	2.8730E+00
44	5.5750E-03	*****	1.8680E-02	*****	9.6914E-01	2.8730E+00
45	5.7660E-03	*****	1.8860E-02	*****	9.6916E-01	2.8732E+00
46	5.9650E-03	*****	1.8380E-02	*****	9.6984E-01	2.8787E+00
47	6.1590E-03	*****	1.7510E-02	*****	9.6951E-01	2.8760E+00
48	6.3910E-03	*****	1.7690E-02	*****	9.6914E-01	2.8730E+00

SH40

UT= ***** RHO= 2.7831E-01 TW= 2.5709E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHO*UT	U Uref	M
1	-3.7060E-03	*****	8.0030E-02	*****	8.4907E-02	1.5437E-01
2	-3.4990E-03	*****	7.2460E-02	*****	1.1430E-01	2.0826E-01
3	-3.2640E-03	*****	7.1340E-02	*****	1.5290E-01	2.7946E-01
4	-3.1080E-03	*****	6.9570E-02	*****	1.7155E-01	3.1415E-01
5	-2.9260E-03	*****	7.7890E-02	*****	2.0803E-01	3.8466E-01
6	-2.7240E-03	*****	7.2130E-02	*****	2.5808E-01	4.7868E-01
7	-2.5120E-03	*****	8.3950E-02	*****	2.9143E-01	5.4387E-01
8	-2.3240E-03	*****	9.7910E-02	*****	3.1348E-01	5.8794E-01
9	-2.1570E-03	*****	1.0970E-01	*****	3.3729E-01	6.3624E-01
10	-1.9680E-03	*****	1.2660E-01	*****	3.6766E-01	6.9868E-01
11	-1.7470E-03	*****	1.4590E-01	*****	4.0817E-01	7.8446E-01
12	-1.5810E-03	*****	1.5340E-01	*****	4.4365E-01	8.6305E-01
13	-1.4099E-03	*****	1.6280E-01	*****	4.7012E-01	9.2252E-01
14	-1.2067E-03	*****	1.7830E-01	*****	4.9720E-01	9.8633E-01
15	-1.0198E-03	*****	1.8340E-01	*****	5.4397E-01	1.1000E+00
16	-8.2240E-04	*****	1.8210E-01	*****	5.7222E-01	1.1721E+00
17	-6.3330E-04	*****	1.9010E-01	*****	6.0070E-01	1.2482E+00
18	-4.5499E-04	*****	1.8820E-01	*****	6.2855E-01	1.3250E+00
19	-2.5800E-04	*****	1.8680E-01	*****	6.5167E-01	1.3924E+00
20	-6.4100E-05	*****	1.8690E-01	*****	6.8222E-01	1.4863E+00
21	1.2490E-04	*****	1.8760E-01	*****	7.1657E-01	1.5991E+00
22	3.2670E-04	*****	1.7930E-01	*****	7.5051E-01	1.7163E+00
23	5.2510E-04	*****	1.7260E-01	*****	7.6989E-01	1.7872E+00
24	7.2200E-04	*****	1.7010E-01	*****	7.9106E-01	1.8712E+00
25	9.1600E-04	*****	1.6230E-01	*****	8.1630E-01	1.9771E+00
26	1.1090E-03	*****	1.5950E-01	*****	8.4260E-01	2.0941E+00
27	1.3160E-03	*****	1.4530E-01	*****	8.6843E-01	2.2188E+00
28	1.5140E-03	*****	1.3630E-01	*****	8.8558E-01	2.3082E+00
29	1.7050E-03	*****	1.2790E-01	*****	8.9832E-01	2.3784E+00
30	1.9070E-03	*****	1.2030E-01	*****	9.1195E-01	2.4578E+00
31	2.0970E-03	*****	1.0910E-01	*****	9.2567E-01	2.5420E+00
32	2.2840E-03	*****	9.7810E-02	*****	9.3989E-01	2.6333E+00

(TO BE CONTINUED)

(CONTINUED)

SH40 UT= ***** RHOV= 2.7831E-01 TW= 2.5709E+02 D= *****

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHOV*UT	U Uref	M
33	2.4760E-03	*****	8.9930E-02	*****	9.4934E-01	2.6978E+00
34	2.6740E-03	*****	7.9370E-02	*****	9.5576E-01	2.7432E+00
35	2.8770E-03	*****	6.6100E-02	*****	9.6089E-01	2.7807E+00
36	3.0640E-03	*****	5.4440E-02	*****	9.6641E-01	2.8217E+00
37	3.2680E-03	*****	4.3840E-02	*****	9.6956E-01	2.8452E+00
38	3.4650E-03	*****	3.3220E-02	*****	9.7081E-01	2.8555E+00
39	3.6630E-03	*****	2.8130E-02	*****	9.7147E-01	2.8613E+00
40	3.8560E-03	*****	2.3830E-02	*****	9.7204E-01	2.8660E+00
41	4.0500E-03	*****	2.1960E-02	*****	9.7204E-01	2.8660E+00
42	4.2410E-03	*****	2.0520E-02	*****	9.7268E-01	2.8703E+00
43	4.4390E-03	*****	1.9800E-02	*****	9.7266E-01	2.8702E+00
44	4.6420E-03	*****	2.0100E-02	*****	9.7225E-01	2.8674E+00
45	4.8300E-03	*****	1.9890E-02	*****	9.7299E-01	2.8725E+00
46	5.0230E-03	*****	1.9320E-02	*****	9.7307E-01	2.8730E+00
47	5.2210E-03	*****	1.8690E-02	*****	9.7307E-01	2.8730E+00
48	5.4070E-03	*****	1.9720E-02	*****	9.7325E-01	2.8745E+00
49	5.6000E-03	*****	1.8950E-02	*****	9.7388E-01	2.8797E+00
50	5.7960E-03	*****	1.9210E-02	*****	9.7392E-01	2.8800E+00
51	5.9970E-03	*****	1.8430E-02	*****	9.7347E-01	2.8763E+00
52	6.1810E-03	*****	1.8390E-02	*****	9.7307E-01	2.8730E+00
53	6.3780E-03	*****	1.8960E-02	*****	9.7309E-01	2.8732E+00
54	6.5650E-03	*****	1.8870E-02	*****	9.7373E-01	2.8785E+00
55	6.7700E-03	*****	1.7870E-02	*****	9.7392E-01	2.8800E+00
56	6.9660E-03	*****	1.8160E-02	*****	9.7392E-01	2.8800E+00
57	7.1640E-03	*****	1.8140E-02	*****	9.7392E-01	2.8800E+00
58	7.3690E-03	*****	1.7820E-02	*****	9.7392E-01	2.8800E+00
59	7.5710E-03	*****	1.8140E-02	*****	9.7392E-01	2.8800E+00
60	7.7580E-03	*****	1.8640E-02	*****	9.7432E-01	2.8833E+00
61	8.0000E-03	*****	1.9450E-02	*****	9.7477E-01	2.8870E+00

SH43

UT= ***** RHO= 2.7372E-01 TW= 2.6140E+02 D= *****

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHO*UT	U Uref	M
1	-3.3190E-03	*****	8.2960E-02	*****	2.0953E-01	3.8585E-01
2	-3.1070E-03	*****	7.5760E-02	*****	2.2601E-01	4.1707E-01
3	-2.9580E-03	*****	7.9760E-02	*****	2.3981E-01	4.4357E-01
4	-2.7650E-03	*****	7.7600E-02	*****	2.6686E-01	4.9571E-01
5	-2.5570E-03	*****	9.0850E-02	*****	2.9850E-01	5.5819E-01
6	-2.3510E-03	*****	9.5840E-02	*****	3.2510E-01	6.1155E-01
7	-2.1730E-03	*****	1.0880E-01	*****	3.4732E-01	6.5683E-01
8	-1.9970E-03	*****	1.2440E-01	*****	3.7050E-01	7.0477E-01
9	-1.8110E-03	*****	1.3960E-01	*****	4.0270E-01	7.7323E-01
10	-1.5990E-03	*****	1.5380E-01	*****	4.3666E-01	8.4732E-01
11	-1.4220E-03	*****	1.6260E-01	*****	4.6406E-01	9.0897E-01
12	-1.2472E-03	*****	1.7970E-01	*****	4.9077E-01	9.7045E-01
13	-1.0482E-03	*****	1.9040E-01	*****	5.1330E-01	1.0240E+00
14	-8.4350E-04	*****	1.9930E-01	*****	5.4874E-01	1.1127E+00
15	-6.7270E-04	*****	1.9820E-01	*****	5.7659E-01	1.1842E+00
16	-4.8360E-04	*****	1.9670E-01	*****	6.0095E-01	1.2485E+00
17	-3.0452E-04	*****	2.0170E-01	*****	6.2549E-01	1.3172E+00
18	-1.1400E-04	*****	1.9910E-01	*****	6.5333E-01	1.3982E+00
19	8.6700E-05	*****	1.9330E-01	*****	6.8409E-01	1.4921E+00
20	2.7300E-04	*****	1.9060E-01	*****	7.1357E-01	1.5877E+00
21	4.6560E-04	*****	1.9470E-01	*****	7.4404E-01	1.6940E+00
22	6.5700E-04	*****	1.9580E-01	*****	7.6288E-01	1.7625E+00
23	8.7400E-04	*****	1.8430E-01	*****	7.8284E-01	1.8395E+00
24	1.0690E-03	*****	1.7960E-01	*****	8.0563E-01	1.9311E+00
25	1.2590E-03	*****	1.7330E-01	*****	8.2954E-01	2.0342E+00
26	1.4600E-03	*****	1.6220E-01	*****	8.4979E-01	2.1285E+00
27	1.6610E-03	*****	1.5370E-01	*****	8.7333E-01	2.2473E+00
28	1.8490E-03	*****	1.4600E-01	*****	8.9393E-01	2.3559E+00
29	2.0440E-03	*****	1.3260E-01	*****	9.0620E-01	2.4249E+00
30	2.2420E-03	*****	1.2280E-01	*****	9.2268E-01	2.5245E+00
31	2.4250E-03	*****	1.1500E-01	*****	9.3533E-01	2.6050E+00
32	2.6160E-03	*****	1.0170E-01	*****	9.4623E-01	2.6775E+00
33	2.7900E-03	*****	8.7090E-02	*****	9.5394E-01	2.7318E+00
34	2.9830E-03	*****	7.5450E-02	*****	9.6025E-01	2.7774E+00
35	3.1820E-03	*****	6.2110E-02	*****	9.6483E-01	2.8114E+00
36	3.4020E-03	*****	4.8560E-02	*****	9.6822E-01	2.8369E+00
37	3.6100E-03	*****	3.7170E-02	*****	9.7030E-01	2.8522E+00
38	3.8050E-03	*****	3.0890E-02	*****	9.7094E-01	2.8582E+00
39	3.9940E-03	*****	2.7850E-02	*****	9.7225E-01	2.8682E+00
40	4.1880E-03	*****	2.3190E-02	*****	9.7289E-01	2.8730E+00
41	4.3900E-03	*****	2.1760E-02	*****	9.7289E-01	2.8730E+00
42	4.5890E-03	*****	2.1490E-02	*****	9.7289E-01	2.8730E+00
43	4.7830E-03	*****	2.1260E-02	*****	9.7289E-01	2.8730E+00
44	4.9740E-03	*****	2.1400E-02	*****	9.7333E-01	2.8766E+00
45	5.1680E-03	*****	2.0390E-02	*****	9.7375E-01	2.8800E+00
46	5.3650E-03	*****	2.0260E-02	*****	9.7375E-01	2.8800E+00
47	5.5540E-03	*****	1.9890E-02	*****	9.7375E-01	2.8800E+00
48	5.7430E-03	*****	2.0590E-02	*****	9.7375E-01	2.8800E+00
49	5.9340E-03	*****	1.9870E-02	*****	9.7375E-01	2.8800E+00
50	6.1420E-03	*****	2.0360E-02	*****	9.7375E-01	2.8800E+00
51	6.3190E-03	*****	1.9640E-02	*****	9.7375E-01	2.8800E+00
52	6.5130E-03	*****	1.8900E-02	*****	9.7375E-01	2.8800E+00
53	6.7110E-03	*****	1.9390E-02	*****	9.7406E-01	2.8825E+00
54	6.9160E-03	*****	1.8670E-02	*****	9.7445E-01	2.8858E+00
55	7.1090E-03	*****	1.8760E-02	*****	9.7382E-01	2.8806E+00
56	7.3100E-03	*****	1.8870E-02	*****	9.7436E-01	2.8858E+00
57	7.5690E-03	*****	1.8490E-02	*****	9.7398E-01	2.8819E+00

SH45 UT= ***** RHOW= 3.0542E-01 TW= 2.6218E+02 D= *****

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHOW*UT
1	-3.2210E-03	*****	7.8860E-02	*****
2	-3.0300E-03	*****	7.9760E-02	*****
3	-2.8470E-03	*****	7.7310E-02	*****
4	-2.6960E-03	*****	8.1830E-02	*****
5	-2.5460E-03	*****	8.2580E-02	*****
6	-2.3720E-03	*****	9.2890E-02	*****
7	-2.1680E-03	*****	9.7330E-02	*****
8	-2.0000E-03	*****	1.1190E-01	*****
9	-1.8530E-03	*****	1.1910E-01	*****
10	-1.6950E-03	*****	1.3410E-01	*****
11	-1.5120E-03	*****	1.4220E-01	*****
12	-1.3270E-03	*****	1.5780E-01	*****
13	-1.1690E-03	*****	1.6420E-01	*****
14	-1.0207E-03	*****	1.6890E-01	*****
15	-8.7090E-04	*****	1.7620E-01	*****
16	-6.7350E-04	*****	1.7870E-01	*****
17	-4.8800E-04	*****	1.8510E-01	*****
18	-3.4381E-04	*****	1.8710E-01	*****
19	-1.8320E-04	*****	1.9080E-01	*****
20	-2.8700E-05	*****	1.8880E-01	*****
21	1.5670E-04	*****	1.9010E-01	*****
22	3.3500E-04	*****	1.9040E-01	*****
23	4.8560E-04	*****	1.9400E-01	*****
24	6.4530E-04	*****	1.8660E-01	*****
25	8.2900E-04	*****	1.8190E-01	*****
26	1.0320E-03	*****	1.8080E-01	*****
27	1.1760E-03	*****	1.8100E-01	*****
28	1.3410E-03	*****	1.7620E-01	*****
29	1.5000E-03	*****	1.6850E-01	*****
30	1.6950E-03	*****	1.6260E-01	*****
31	1.8560E-03	*****	1.5310E-01	*****
32	2.0140E-03	*****	1.5100E-01	*****

(TO BE CONTINUED)

(CONTINUED)

SH45 UT= ***** RHOW= 3.0542E-01 TW= 2.6210E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOW*UT
33	2.1830E-03	*****	1.3950E-01	*****
34	2.3540E-03	*****	1.3020E-01	*****
35	2.5220E-03	*****	1.2310E-01	*****
36	2.6770E-03	*****	1.1230E-01	*****
37	2.8530E-03	*****	1.0120E-01	*****
38	3.0220E-03	*****	8.6500E-02	*****
39	3.1830E-03	*****	7.6410E-02	*****
40	3.3600E-03	*****	6.4670E-02	*****
41	3.5320E-03	*****	5.3130E-02	*****
42	3.7010E-03	*****	4.2880E-02	*****
43	3.8810E-03	*****	3.5500E-02	*****
44	4.0440E-03	*****	3.0080E-02	*****
45	4.2000E-03	*****	2.6640E-02	*****
46	4.3720E-03	*****	2.4510E-02	*****
47	4.5560E-03	*****	2.3500E-02	*****
48	4.7250E-03	*****	2.3010E-02	*****
49	4.8880E-03	*****	2.2720E-02	*****
50	5.0560E-03	*****	2.2510E-02	*****
51	5.2290E-03	*****	2.1790E-02	*****
52	5.3980E-03	*****	2.2550E-02	*****
53	5.5710E-03	*****	2.2260E-02	*****
54	5.7320E-03	*****	2.1810E-02	*****
55	5.9030E-03	*****	2.1450E-02	*****
56	6.0630E-03	*****	2.1550E-02	*****
57	6.2380E-03	*****	2.2270E-02	*****
58	6.4130E-03	*****	2.2320E-02	*****
59	6.5690E-03	*****	2.1430E-02	*****
60	6.7460E-03	*****	2.1380E-02	*****
61	6.9100E-03	*****	2.0840E-02	*****
62	7.0930E-03	*****	2.1290E-02	*****
63	7.2550E-03	*****	2.0300E-02	*****
64	7.4320E-03	*****	2.1060E-02	*****
65	7.6100E-03	*****	2.1170E-02	*****
66	7.7920E-03	*****	2.1020E-02	*****
67	7.9630E-03	*****	2.0890E-02	*****
68	8.1330E-03	*****	2.1230E-02	*****
69	8.3090E-03	*****	2.1430E-02	*****
70	8.5170E-03	*****	2.1490E-02	*****

SH48

UT= ***** RHOV= 2.7150E-01 TW= 2.6354E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOV*UT	U Uref	M
1	-4.7400E-03	*****	1.0880E-01	*****	2.2287E-02	4.0577E-02
2	-4.4600E-03	*****	9.5890E-02	*****	5.3759E-02	9.8114E-02
3	-4.1700E-03	*****	9.4250E-02	*****	1.1135E-01	2.0362E-01
4	-3.8600E-03	*****	8.9990E-02	*****	1.4742E-01	2.7034E-01
5	-3.5900E-03	*****	9.5540E-02	*****	1.8329E-01	3.3758E-01
6	-3.2900E-03	*****	9.5380E-02	*****	1.9965E-01	3.6836E-01
7	-3.0000E-03	*****	8.8010E-02	*****	2.3986E-01	4.4535E-01
8	-2.7200E-03	*****	9.5680E-02	*****	2.7184E-01	5.0755E-01
9	-2.4300E-03	*****	1.0600E-01	*****	2.9806E-01	5.5964E-01
10	-2.1400E-03	*****	1.2810E-01	*****	3.4252E-01	6.4956E-01
11	-1.8500E-03	*****	1.2750E-01	*****	3.7930E-01	7.2623E-01
12	-1.5600E-03	*****	1.4860E-01	*****	4.1645E-01	8.0598E-01
13	-1.2800E-03	*****	1.6010E-01	*****	4.4205E-01	8.6242E-01
14	-9.8000E-04	*****	1.7050E-01	*****	4.8656E-01	9.6470E-01
15	-6.9000E-04	*****	1.8080E-01	*****	5.1948E-01	1.0437E+00
16	-4.0000E-04	*****	1.8180E-01	*****	5.5508E-01	1.1330E+00
17	-1.0000E-04	*****	1.8210E-01	*****	5.9686E-01	1.2438E+00
18	1.9000E-04	*****	1.7980E-01	*****	6.3273E-01	1.3443E+00
19	4.7000E-04	*****	1.8630E-01	*****	6.7000E-01	1.4561E+00
20	7.6000E-04	*****	1.9370E-01	*****	7.0099E-01	1.5540E+00
21	1.0400E-03	*****	1.9420E-01	*****	7.3674E-01	1.6762E+00
22	1.3300E-03	*****	1.9010E-01	*****	7.7079E-01	1.8024E+00
23	1.6200E-03	*****	1.8140E-01	*****	7.9708E-01	1.9082E+00
24	1.9000E-03	*****	1.7730E-01	*****	8.2640E-01	2.0350E+00
25	2.1800E-03	*****	1.6560E-01	*****	8.5449E-01	2.1662E+00
26	2.4700E-03	*****	1.5470E-01	*****	8.7977E-01	2.2961E+00
27	2.7500E-03	*****	1.3750E-01	*****	8.9939E-01	2.4053E+00
28	3.0400E-03	*****	1.2190E-01	*****	9.2443E-01	2.5556E+00
29	3.3100E-03	*****	1.0250E-01	*****	9.4056E-01	2.6617E+00
30	3.6000E-03	*****	8.5370E-02	*****	9.4788E-01	2.7144E+00
31	3.8700E-03	*****	6.1360E-02	*****	9.5778E-01	2.7858E+00
32	4.1500E-03	*****	4.7500E-02	*****	9.6378E-01	2.8303E+00
33	4.4300E-03	*****	3.5630E-02	*****	9.6601E-01	2.8471E+00
34	4.7100E-03	*****	2.8450E-02	*****	9.6659E-01	2.8510E+00
35	4.9900E-03	*****	2.4050E-02	*****	9.6713E-01	2.8561E+00
36	5.2800E-03	*****	2.3820E-02	*****	9.6812E-01	2.8646E+00
37	5.5700E-03	*****	2.2800E-02	*****	9.6829E-01	2.8660E+00
38	5.8600E-03	*****	2.2240E-02	*****	9.6837E-01	2.8665E+00
39	6.1600E-03	*****	2.2850E-02	*****	9.6931E-01	2.8730E+00
40	6.4400E-03	*****	2.1570E-02	*****	9.6931E-01	2.8730E+00
41	6.7300E-03	*****	2.1460E-02	*****	9.6931E-01	2.8730E+00
42	7.0100E-03	*****	2.0930E-02	*****	9.6931E-01	2.8730E+00
43	7.2900E-03	*****	2.1110E-02	*****	9.6990E-01	2.8778E+00
44	7.5800E-03	*****	2.0180E-02	*****	9.7017E-01	2.8800E+00
45	7.8700E-03	*****	2.0380E-02	*****	9.7017E-01	2.8800E+00
46	8.1500E-03	*****	2.0730E-02	*****	9.7017E-01	2.8800E+00
47	8.4500E-03	*****	2.0910E-02	*****	9.7040E-01	2.8819E+00
48	8.7300E-03	*****	1.9890E-02	*****	9.7102E-01	2.8870E+00
49	9.0200E-03	*****	2.0250E-02	*****	9.7102E-01	2.8870E+00

SH50

UT= ***** RHOV= 2.7669E-01 TW= 2.5860E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOV*UT	U Uref	M
1	-2.4040E-03	*****	1.1710E-01	*****	2.9951E-01	5.6323E-01
2	-2.3970E-03	*****	1.1050E-01	*****	2.9988E-01	5.6397E-01
3	-2.1840E-03	*****	1.2110E-01	*****	3.1373E-01	5.9178E-01
4	-1.9850E-03	*****	1.2030E-01	*****	3.3137E-01	6.2761E-01
5	-1.7890E-03	*****	1.2220E-01	*****	3.5442E-01	6.7516E-01
6	-1.5860E-03	*****	1.4160E-01	*****	3.8902E-01	7.4840E-01
7	-1.3890E-03	*****	1.5280E-01	*****	4.1472E-01	8.0385E-01
8	-1.2000E-03	*****	1.5790E-01	*****	4.3340E-01	8.4492E-01
9	-1.0030E-03	*****	1.6500E-01	*****	4.4912E-01	8.8011E-01
10	-8.0500E-04	*****	1.6860E-01	*****	4.7005E-01	9.2803E-01
11	-5.9400E-04	*****	1.8560E-01	*****	5.0039E-01	1.0002E+00
12	-4.0600E-04	*****	1.9250E-01	*****	5.2355E-01	1.0564E+00
13	-2.1300E-04	*****	1.9510E-01	*****	5.4432E-01	1.1079E+00
14	-1.5000E-05	*****	2.0540E-01	*****	5.6727E-01	1.1665E+00
15	1.8200E-04	*****	2.0480E-01	*****	5.9026E-01	1.2286E+00
16	3.8400E-04	*****	2.0630E-01	*****	6.1510E-01	1.2972E+00
17	5.8400E-04	*****	2.1190E-01	*****	6.3975E-01	1.3679E+00
18	7.8800E-04	*****	2.1710E-01	*****	6.6435E-01	1.4419E+00
19	9.9300E-04	*****	2.1030E-01	*****	6.9015E-01	1.5223E+00
20	1.1870E-03	*****	2.1480E-01	*****	7.0967E-01	1.5871E+00
21	1.3800E-03	*****	2.1430E-01	*****	7.2935E-01	1.6548E+00
22	1.5820E-03	*****	2.1360E-01	*****	7.5084E-01	1.7320E+00
23	1.7810E-03	*****	2.0710E-01	*****	7.7297E-01	1.8160E+00
24	1.9740E-03	*****	2.1430E-01	*****	7.9469E-01	1.9032E+00
25	2.1650E-03	*****	2.0460E-01	*****	8.1355E-01	1.9831E+00
26	2.3670E-03	*****	2.0110E-01	*****	8.3284E-01	2.0693E+00
27	2.5650E-03	*****	2.0520E-01	*****	8.5220E-01	2.1612E+00
28	2.7620E-03	*****	1.9580E-01	*****	8.7235E-01	2.2635E+00
29	2.9590E-03	*****	1.8620E-01	*****	8.8144E-01	2.3118E+00
30	3.1450E-03	*****	1.8230E-01	*****	8.9373E-01	2.3813E+00
31	3.3440E-03	*****	1.7950E-01	*****	9.1040E-01	2.4785E+00
32	3.5380E-03	*****	1.7080E-01	*****	9.2414E-01	2.5628E+00
33	3.7330E-03	*****	1.5310E-01	*****	9.3510E-01	2.6353E+00

(TO BE CONTINUED)

(CONTINUED)

SH50 UT= ***** RHOH= 2.7669E-01 TW= 2.5860E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOH*UT	U Uref	M
34	3.9290E-03	*****	1.4260E-01	*****	9.4379E-01	2.6952E+00
35	4.1250E-03	*****	1.2690E-01	*****	9.5063E-01	2.7440E+00
36	4.3160E-03	*****	1.1640E-01	*****	9.5579E-01	2.7818E+00
37	4.5060E-03	*****	9.3560E-02	*****	9.5942E-01	2.8084E+00
38	4.7030E-03	*****	8.3010E-02	*****	9.6195E-01	2.8275E+00
39	4.8951E-03	*****	6.8100E-02	*****	9.6318E-01	2.8370E+00
40	5.0844E-03	*****	5.8280E-02	*****	9.6328E-01	2.8378E+00
41	5.2792E-03	*****	4.8260E-02	*****	9.6469E-01	2.8483E+00
42	5.4638E-03	*****	3.8710E-02	*****	9.6505E-01	2.8510E+00
43	5.6656E-03	*****	3.2110E-02	*****	9.6534E-01	2.8537E+00
44	5.8542E-03	*****	2.7760E-02	*****	9.6583E-01	2.8583E+00
45	6.0426E-03	*****	2.6360E-02	*****	9.6521E-01	2.8525E+00
46	6.2370E-03	*****	2.5870E-02	*****	9.6555E-01	2.8557E+00
47	6.4376E-03	*****	2.6000E-02	*****	9.6629E-01	2.8616E+00
48	6.6365E-03	*****	2.4780E-02	*****	9.6678E-01	2.8650E+00
49	6.8360E-03	*****	2.4160E-02	*****	9.6596E-01	2.8594E+00
50	7.0370E-03	*****	2.3390E-02	*****	9.6667E-01	2.8642E+00
51	7.2400E-03	*****	2.3450E-02	*****	9.6693E-01	2.8660E+00
52	7.4320E-03	*****	2.3360E-02	*****	9.6693E-01	2.8660E+00
53	7.6310E-03	*****	2.2380E-02	*****	9.6700E-01	2.8666E+00
54	7.8410E-03	*****	2.3750E-02	*****	9.6769E-01	2.8722E+00
55	8.0320E-03	*****	2.2920E-02	*****	9.6723E-01	2.8685E+00
56	8.2340E-03	*****	2.3460E-02	*****	9.6732E-01	2.8692E+00
57	8.4160E-03	*****	2.2040E-02	*****	9.6778E-01	2.8730E+00
58	8.6160E-03	*****	2.1680E-02	*****	9.6778E-01	2.8730E+00
59	8.8080E-03	*****	2.1730E-02	*****	9.6778E-01	2.8730E+00
60	9.0060E-03	*****	2.1600E-02	*****	9.6778E-01	2.8730E+00
61	9.2060E-03	*****	2.2410E-02	*****	9.6778E-01	2.8730E+00
62	9.4010E-03	*****	2.0820E-02	*****	9.6782E-01	2.8733E+00
63	9.6000E-03	*****	2.1770E-02	*****	9.6850E-01	2.8789E+00
64	9.8060E-03	*****	2.1540E-02	*****	9.6809E-01	2.8755E+00
65	9.9950E-03	*****	2.1050E-02	*****	9.6778E-01	2.8730E+00
66	1.0192E-02	*****	2.1190E-02	*****	9.6778E-01	2.8730E+00
67	1.0393E-02	*****	2.1620E-02	*****	9.6778E-01	2.8730E+00
68	1.0589E-02	*****	2.1040E-02	*****	9.6778E-01	2.8730E+00
69	1.0784E-02	*****	2.1000E-02	*****	9.6778E-01	2.8730E+00

SH53 UT= ***** RHOW= 3.0420E-01 TW= 2.6323E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOW*UT
1	-2.8300E-03	*****	1.2830E-01	*****
2	-2.5900E-03	*****	1.3210E-01	*****
3	-2.3500E-03	*****	1.3810E-01	*****
4	-2.1100E-03	*****	1.4150E-01	*****
5	-1.8000E-03	*****	1.5310E-01	*****
6	-1.6300E-03	*****	1.6630E-01	*****
7	-1.3900E-03	*****	1.6690E-01	*****
8	-1.1500E-03	*****	1.7670E-01	*****
9	-9.0000E-04	*****	1.9190E-01	*****
10	-6.7000E-04	*****	1.9110E-01	*****
11	-4.4000E-04	*****	1.9880E-01	*****
12	-1.9000E-04	*****	1.9970E-01	*****
13	4.9997E-05	*****	1.9840E-01	*****
14	2.8000E-04	*****	2.0140E-01	*****
15	5.2000E-04	*****	1.9750E-01	*****
16	7.6000E-04	*****	2.0130E-01	*****
17	1.0000E-03	*****	2.0110E-01	*****
18	1.2400E-03	*****	1.9420E-01	*****
19	1.4800E-03	*****	1.9560E-01	*****
20	1.7200E-03	*****	1.9330E-01	*****
21	1.9600E-03	*****	1.9340E-01	*****
22	2.2000E-03	*****	1.8670E-01	*****
23	2.4400E-03	*****	1.8630E-01	*****
24	2.6800E-03	*****	1.7140E-01	*****
25	2.9200E-03	*****	1.6530E-01	*****
26	3.1600E-03	*****	1.5600E-01	*****
27	3.3900E-03	*****	1.4010E-01	*****
28	3.6300E-03	*****	1.3040E-01	*****
29	3.8700E-03	*****	1.1220E-01	*****
30	4.1000E-03	*****	8.6420E-02	*****
31	4.3400E-03	*****	7.6520E-02	*****
32	4.5700E-03	*****	5.5090E-02	*****
33	4.8200E-03	*****	4.5580E-02	*****
34	5.0500E-03	*****	3.6200E-02	*****
35	5.2800E-03	*****	3.4240E-02	*****
36	5.5100E-03	*****	2.9530E-02	*****
37	5.7500E-03	*****	2.7760E-02	*****
38	5.9800E-03	*****	2.7810E-02	*****
39	6.2100E-03	*****	2.5450E-02	*****
40	6.4400E-03	*****	2.6520E-02	*****
41	6.6700E-03	*****	2.5190E-02	*****
42	6.9100E-03	*****	2.5240E-02	*****
43	7.1400E-03	*****	2.4990E-02	*****
44	7.3800E-03	*****	2.3740E-02	*****
45	7.6200E-03	*****	2.5290E-02	*****
46	7.8500E-03	*****	2.3850E-02	*****
47	8.1000E-03	*****	2.3660E-02	*****
48	8.3400E-03	*****	2.3510E-02	*****
49	8.5800E-03	*****	2.2360E-02	*****
50	8.8200E-03	*****	2.1800E-02	*****
51	9.0500E-03	*****	2.2210E-02	*****
52	9.2900E-03	*****	2.1910E-02	*****
53	9.5400E-03	*****	2.1490E-02	*****

SH55

UT= ***** RHO= 2.7155E-01 TW= 2.6348E+02 D= *****

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHO*UT	U Uref	M
1	-5.3300E-03	*****	1.2830E-01	*****	1.4352E-01	2.6320E-01
2	-5.0200E-03	*****	1.2670E-01	*****	1.5640E-01	2.8722E-01
3	-4.7200E-03	*****	1.2330E-01	*****	1.8527E-01	3.4120E-01
4	-4.4300E-03	*****	1.2560E-01	*****	2.1126E-01	3.9065E-01
5	-4.1300E-03	*****	1.2620E-01	*****	2.5123E-01	4.6750E-01
6	-3.8300E-03	*****	1.2420E-01	*****	2.5461E-01	4.7396E-01
7	-3.5600E-03	*****	1.2220E-01	*****	3.0003E-01	5.6350E-01
8	-3.2700E-03	*****	1.3070E-01	*****	3.3766E-01	6.3985E-01
9	-2.9800E-03	*****	1.3890E-01	*****	3.8083E-01	7.2963E-01
10	-2.6900E-03	*****	1.4720E-01	*****	3.9052E-01	7.5024E-01
11	-2.3900E-03	*****	1.6890E-01	*****	4.1650E-01	8.0646E-01
12	-2.1100E-03	*****	1.6230E-01	*****	4.4917E-01	8.7915E-01
13	-1.8100E-03	*****	1.7690E-01	*****	4.7469E-01	9.3748E-01
14	-1.5200E-03	*****	1.8280E-01	*****	5.1074E-01	1.0230E+00
15	-1.2300E-03	*****	1.9330E-01	*****	5.3457E-01	1.0815E+00
16	-9.5000E-04	*****	2.0510E-01	*****	5.6792E-01	1.1669E+00
17	-6.6000E-04	*****	2.0710E-01	*****	5.9782E-01	1.2466E+00
18	-3.7000E-04	*****	2.0810E-01	*****	6.3037E-01	1.3383E+00
19	-7.0000E-05	*****	2.2260E-01	*****	6.6554E-01	1.4430E+00
20	2.1000E-04	*****	2.1970E-01	*****	6.8621E-01	1.5072E+00
21	5.0000E-04	*****	2.1480E-01	*****	7.1248E-01	1.5929E+00
22	8.0000E-04	*****	2.1610E-01	*****	7.5485E-01	1.7433E+00
23	1.0900E-03	*****	2.2260E-01	*****	7.7808E-01	1.8328E+00
24	1.3800E-03	*****	2.1180E-01	*****	8.0539E-01	1.9449E+00
25	1.6700E-03	*****	2.1670E-01	*****	8.3459E-01	2.0731E+00
26	1.9600E-03	*****	2.1180E-01	*****	8.5828E-01	2.1863E+00
27	2.2400E-03	*****	2.0400E-01	*****	8.7388E-01	2.2657E+00
28	2.5300E-03	*****	2.0180E-01	*****	8.9948E-01	2.4066E+00
29	2.8100E-03	*****	1.9060E-01	*****	9.1775E-01	2.5168E+00
30	3.1000E-03	*****	1.7250E-01	*****	9.2959E-01	2.5920E+00
31	3.3900E-03	*****	1.6160E-01	*****	9.4266E-01	2.6797E+00
32	3.6700E-03	*****	1.3920E-01	*****	9.5101E-01	2.7386E+00
33	3.9700E-03	*****	1.1850E-01	*****	9.5733E-01	2.7846E+00
34	4.2600E-03	*****	8.9740E-02	*****	9.6084E-01	2.8112E+00
35	4.5500E-03	*****	7.3120E-02	*****	9.6241E-01	2.8224E+00
36	4.8400E-03	*****	5.4990E-02	*****	9.6253E-01	2.8233E+00
37	5.1200E-03	*****	4.5520E-02	*****	9.6335E-01	2.8300E+00
38	5.4100E-03	*****	3.4840E-02	*****	9.6335E-01	2.8300E+00
39	5.6900E-03	*****	3.3350E-02	*****	9.6335E-01	2.8300E+00
40	5.9800E-03	*****	2.9670E-02	*****	9.6390E-01	2.8330E+00
41	6.2700E-03	*****	2.9950E-02	*****	9.6437E-01	2.8370E+00
42	6.5400E-03	*****	2.9770E-02	*****	9.6437E-01	2.8370E+00
43	6.8300E-03	*****	2.9540E-02	*****	9.6437E-01	2.8370E+00
44	7.1300E-03	*****	2.8690E-02	*****	9.6437E-01	2.8370E+00
45	7.4100E-03	*****	2.7260E-02	*****	9.6437E-01	2.8370E+00
46	7.7000E-03	*****	2.8190E-02	*****	9.6464E-01	2.8392E+00
47	7.9900E-03	*****	2.6730E-02	*****	9.6522E-01	2.8440E+00
48	8.2700E-03	*****	2.6590E-02	*****	9.6522E-01	2.8440E+00
49	8.5600E-03	*****	2.5240E-02	*****	9.6593E-01	2.8488E+00
50	8.8500E-03	*****	2.6320E-02	*****	9.6625E-01	2.8510E+00
51	9.1300E-03	*****	2.4310E-02	*****	9.6625E-01	2.8510E+00
52	9.4200E-03	*****	2.4850E-02	*****	9.6631E-01	2.8516E+00
53	9.7000E-03	*****	2.4700E-02	*****	9.6710E-01	2.8590E+00
54	9.9800E-03	*****	2.3290E-02	*****	9.6710E-01	2.8590E+00
55	1.0320E-02	*****	2.2640E-02	*****	9.6710E-01	2.8590E+00

SH58 UT= ***** RHOW= 3.0329E-01 TW= 2.6402E+02 D= *****

I	Y (M)	Y/D	(RHO U)* RHO U	(RHO U)* RHOW*UT
1	-4.7020E-03	*****	1.4400E-01	*****
2	-4.4160E-03	*****	1.4960E-01	*****
3	-4.1140E-03	*****	1.5360E-01	*****
4	-3.8250E-03	*****	1.5420E-01	*****
5	-3.5420E-03	*****	1.6980E-01	*****
6	-3.2520E-03	*****	1.7180E-01	*****
7	-2.9610E-03	*****	1.8430E-01	*****
8	-2.6670E-03	*****	1.8650E-01	*****
9	-2.3620E-03	*****	2.0500E-01	*****
10	-2.0800E-03	*****	2.1260E-01	*****
11	-1.7800E-03	*****	2.2180E-01	*****
12	-1.4900E-03	*****	2.2860E-01	*****
13	-1.2100E-03	*****	2.3990E-01	*****
14	-9.1000E-04	*****	2.5310E-01	*****
15	-6.3000E-04	*****	2.4720E-01	*****
16	-3.4000E-04	*****	2.4700E-01	*****
17	-4.0002E-05	*****	2.4440E-01	*****
18	2.5000E-04	*****	2.4790E-01	*****
19	5.4000E-04	*****	2.4900E-01	*****
20	8.4000E-04	*****	2.5870E-01	*****
21	1.1300E-03	*****	2.5170E-01	*****
22	1.4300E-03	*****	2.4150E-01	*****
23	1.7200E-03	*****	2.4250E-01	*****
24	2.0000E-03	*****	2.3210E-01	*****
25	2.3000E-03	*****	2.1780E-01	*****
26	2.5800E-03	*****	2.0990E-01	*****
27	2.8700E-03	*****	1.8450E-01	*****
28	3.1600E-03	*****	1.6780E-01	*****
29	3.4500E-03	*****	1.5170E-01	*****
30	3.7400E-03	*****	1.1370E-01	*****
31	4.0300E-03	*****	9.8520E-02	*****
32	4.3200E-03	*****	7.9270E-02	*****
33	4.6100E-03	*****	6.1240E-02	*****
34	4.9000E-03	*****	5.1500E-02	*****
35	5.1900E-03	*****	4.2800E-02	*****
36	5.4800E-03	*****	4.2070E-02	*****
37	5.7600E-03	*****	3.6230E-02	*****
38	6.0500E-03	*****	3.6680E-02	*****
39	6.3400E-03	*****	3.4080E-02	*****
40	6.6200E-03	*****	3.3320E-02	*****
41	6.9100E-03	*****	3.1620E-02	*****
42	7.2000E-03	*****	3.1620E-02	*****
43	7.5000E-03	*****	3.0490E-02	*****
44	7.7900E-03	*****	3.0980E-02	*****
45	8.0800E-03	*****	3.1140E-02	*****
46	8.3700E-03	*****	2.9760E-02	*****
47	8.6600E-03	*****	2.8760E-02	*****
48	8.9400E-03	*****	2.8830E-02	*****
49	9.2400E-03	*****	2.8280E-02	*****
50	9.5200E-03	*****	2.6990E-02	*****
51	9.8000E-03	*****	2.6630E-02	*****
52	1.0090E-02	*****	2.5940E-02	*****
53	1.0380E-02	*****	2.6580E-02	*****
54	1.0660E-02	*****	2.4980E-02	*****
55	1.0980E-02	*****	2.5110E-02	*****

SH60 UT= ***** RHO= 3.0120E-01 TW= 2.6586E+02 D= *****

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHO U
1	-1.7550E-03	*****	1.8700E-01	*****
2	-1.4510E-03	*****	1.9500E-01	*****
3	-1.1530E-03	*****	2.0460E-01	*****
4	-8.7000E-04	*****	2.1770E-01	*****
5	-5.7000E-04	*****	2.3420E-01	*****
6	-2.8000E-04	*****	2.3930E-01	*****
7	1.0001E-05	*****	2.4570E-01	*****
8	2.9000E-04	*****	2.5080E-01	*****
9	5.7000E-04	*****	2.6010E-01	*****
10	8.8000E-04	*****	2.7010E-01	*****
11	1.1700E-03	*****	2.6210E-01	*****
12	1.4600E-03	*****	2.5940E-01	*****
13	1.7600E-03	*****	2.6590E-01	*****
14	2.0500E-03	*****	2.6410E-01	*****
15	2.3400E-03	*****	2.5300E-01	*****
16	2.6300E-03	*****	2.4880E-01	*****
17	2.9200E-03	*****	2.5930E-01	*****
18	3.2100E-03	*****	2.2940E-01	*****
19	3.5000E-03	*****	2.2140E-01	*****
20	3.7800E-03	*****	2.0360E-01	*****
21	4.0700E-03	*****	1.8850E-01	*****
22	4.3600E-03	*****	1.7640E-01	*****
23	4.6500E-03	*****	1.3860E-01	*****
24	4.9400E-03	*****	1.1510E-01	*****
25	5.2300E-03	*****	1.0300E-01	*****
26	5.5200E-03	*****	8.0020E-02	*****
27	5.8200E-03	*****	6.7600E-02	*****
28	6.1000E-03	*****	5.4690E-02	*****
29	6.3900E-03	*****	4.8100E-02	*****
30	6.6700E-03	*****	4.2900E-02	*****
31	6.9600E-03	*****	3.9630E-02	*****
32	7.2500E-03	*****	4.0350E-02	*****
33	7.5400E-03	*****	3.7230E-02	*****
34	7.8300E-03	*****	3.6200E-02	*****
35	8.1200E-03	*****	3.4480E-02	*****
36	8.4100E-03	*****	3.3450E-02	*****
37	8.7000E-03	*****	3.1910E-02	*****
38	8.9900E-03	*****	3.2440E-02	*****
39	9.2800E-03	*****	3.0980E-02	*****
40	9.6100E-03	*****	3.0300E-02	*****

R27 UT= 2.9625E+00 RHOV= 5.7147E-01 TW= 2.5854E+02 D= 8.3000E-03

Y/D	(RHO U)* RHO U	(RHO U)* RHO U	U Uref	M	U* UT	U* Uref
1	1.0000E-04	1.2048E-02	1.8780E-01	1.5230E+01	NM	NM
2	5.8600E-04	7.0602E-02	1.9700E-01	1.7070E+01	1.1591E-01	2.1802E-01
3	1.0850E-03	1.3072E-01	2.0140E-01	1.7796E+01	1.4199E-01	2.6776E-01
4	1.5890E-03	1.9145E-01	2.1160E-01	1.9660E+01	1.5498E-01	2.9287E-01
5	2.0810E-03	2.5072E-01	2.3520E-01	2.3339E+01	2.0217E-01	3.8444E-01
6	2.5820E-03	3.1108E-01	2.5290E-01	2.6500E+01	2.5340E-01	4.8654E-01
7	3.0670E-03	3.6952E-01	2.8390E-01	3.1039E+01	2.8914E-01	5.5906E-01
8	3.5510E-03	4.2783E-01	3.1720E-01	3.7865E+01	3.2890E-01	6.4229E-01
9	4.0410E-03	4.8687E-01	3.5350E-01	4.7397E+01	4.0262E-01	8.0305E-01
10	4.5130E-03	5.4374E-01	3.7670E-01	5.6070E+01	4.5533E-01	9.2542E-01
11	5.0210E-03	6.0494E-01	3.9260E-01	6.4629E+01	5.3793E-01	1.1331E+00
12	5.4950E-03	6.6205E-01	4.1010E-01	7.8022E+01	5.8066E-01	1.2499E+00
13	5.9780E-03	7.2024E-01	3.9120E-01	8.5772E+01	6.4413E-01	1.4414E+00
14	6.4700E-03	7.7952E-01	3.6640E-01	9.4358E+01	7.0425E-01	1.6427E+00
15	6.9610E-03	8.3867E-01	3.1250E-01	9.0168E+01	7.6221E-01	1.8667E+00
16	7.4450E-03	8.9699E-01	2.6590E-01	8.6413E+01	8.1456E-01	2.1016E+00
17	7.9450E-03	9.5723E-01	2.1110E-01	7.2731E+01	8.4790E-01	2.2736E+00
18	8.4380E-03	1.0166E+00	1.4820E-01	5.3309E+01	8.7695E-01	2.4403E+00
19	8.9070E-03	1.0731E+00	1.1900E-01	4.2834E+01	8.9885E-01	2.5793E+00
20	9.3870E-03	1.1310E+00	9.2890E-02	3.3260E+01	9.1250E-01	2.6725E+00
21	9.8770E-03	1.1900E+00	8.0840E-02	2.8296E+01	9.1921E-01	2.7216E+00
22	1.0367E-02	1.2490E+00	8.2290E-02	2.8118E+01	9.2314E-01	2.7508E+00
23	1.0847E-02	1.3069E+00	8.1690E-02	2.7276E+01	9.2564E-01	2.7696E+00
24	1.1337E-02	1.3659E+00	7.9570E-02	2.5657E+01	9.2913E-01	2.7968E+00
25	1.1817E-02	1.4237E+00	7.7040E-02	2.4013E+01	9.3222E-01	2.8201E+00
26	1.2297E-02	1.4816E+00	8.0550E-02	2.4236E+01	9.3634E-01	2.8531E+00
27	1.2787E-02	1.5406E+00	7.6140E-02	2.2320E+01	9.4047E-01	2.8867E+00
28	1.3277E-02	1.5996E+00	7.3940E-02	2.0850E+01	9.3647E-01	2.8550E+00
29	1.3757E-02	1.6575E+00	6.8850E-02	1.8926E+01	9.3522E-01	2.8440E+00
30	1.4247E-02	1.7165E+00	6.0820E-02	1.6468E+01	9.3221E-01	2.8208E+00
31	1.4717E-02	1.7731E+00	5.5140E-02	1.4637E+01	9.2896E-01	2.7954E+00
32	1.5197E-02	1.8310E+00	4.4860E-02	1.1701E+01	9.2721E-01	2.7822E+00
33	1.5677E-02	1.8888E+00	4.0030E-02	1.0354E+01	9.2867E-01	2.7930E+00
34	1.6167E-02	1.9478E+00	3.7550E-02	9.6502E+00	9.2861E-01	2.7925E+00
35	1.6647E-02	2.0057E+00	3.4570E-02	8.8047E+00	9.2704E-01	2.7810E+00
36	1.7127E-02	2.0635E+00	3.1310E-02	7.9356E+00	9.2667E-01	2.7780E+00
37	1.7607E-02	2.1213E+00	2.8700E-02	7.2470E+00	9.2516E-01	2.7660E+00
38	1.8077E-02	2.1780E+00	2.9860E-02	7.5116E+00	9.2516E-01	2.7660E+00
39	1.8567E-02	2.2370E+00	2.7840E-02	7.0035E+00	9.2507E-01	2.7653E+00
40	1.9037E-02	2.2936E+00	2.6030E-02	6.5328E+00	9.2431E-01	2.7590E+00
41	1.9527E-02	2.3527E+00	2.4480E-02	6.1366E+00	9.2516E-01	2.7660E+00
42	2.0017E-02	2.4117E+00	2.3820E-02	5.9514E+00	9.2516E-01	2.7660E+00
43	2.0487E-02	2.4683E+00	2.2320E-02	5.5819E+00	9.2585E-01	2.7713E+00
44	2.0967E-02	2.5261E+00	2.2940E-02	5.7193E+00	9.2618E-01	2.7740E+00
45	2.1447E-02	2.5840E+00	2.2540E-02	5.6050E+00	9.2704E-01	2.7810E+00
46	2.1917E-02	2.6406E+00	2.1900E-02	5.4394E+00	9.2704E-01	2.7810E+00
47	2.2387E-02	2.6972E+00	2.1820E-02	5.4130E+00	9.2718E-01	2.7820E+00
48	2.2857E-02	2.7539E+00	2.0160E-02	4.9810E+00	9.2806E-01	2.7880E+00
49	2.3327E-02	2.8105E+00	1.9850E-02	4.8892E+00	9.2806E-01	2.7880E+00
50	2.3797E-02	2.8671E+00	1.9720E-02	4.8641E+00	9.2833E-01	2.7902E+00

R30

UT= 5.9917E+00 RHO= 6.6362E-01 TW= 2.6728E+02 D= 7.1000E-03

	(RHO U) RHO U	(RHO U) RHO*UT	U Uref	M	U UT	U Uref
1	1.0000E-04	1.4085E-02	2.1840E-01	9.6945E+00	2.7177E-01	5.1982E-01
2	1.0260E-04	1.4451E-02	2.3900E-01	1.1408E+01	2.7191E-01	5.2010E-01
3	3.8710E-04	5.4521E-02	2.4630E-01	1.2283E+01	2.8540E-01	5.4780E-01
4	1.0271E-03	1.4466E-01	2.8150E-01	1.5533E+01	3.2746E-01	6.3497E-01
5	1.6738E-03	2.3575E-01	3.2450E-01	1.9162E+01	3.8459E-01	7.5808E-01
6	2.2955E-03	3.2331E-01	3.7720E-01	2.5310E+01	4.5240E-01	9.1237E-01
7	2.8985E-03	4.0824E-01	4.0470E-01	3.0819E+01	5.2674E-01	1.0955E+00
8	3.5165E-03	4.9528E-01	4.1450E-01	3.6475E+01	6.0405E-01	1.3074E+00
9	4.1355E-03	5.8246E-01	3.9320E-01	4.1829E+01	6.7136E-01	1.5157E+00
10	4.7625E-03	6.7077E-01	3.3890E-01	4.1729E+01	7.4816E-01	1.7929E+00
11	5.3615E-03	7.5514E-01	2.8340E-01	3.8759E+01	8.0022E-01	2.0123E+00
12	5.9895E-03	8.4359E-01	2.8740E-01	3.0733E+01	8.4017E-01	2.2071E+00
13	6.5985E-03	9.2937E-01	1.6180E-01	2.4948E+01	8.6871E-01	2.3624E+00
14	7.1875E-03	1.0123E+00	1.0710E-01	1.6751E+01	8.8089E-01	2.4343E+00
15	7.8065E-03	1.0995E+00	8.1230E-02	1.2505E+01	8.8479E-01	2.4576E+00
16	8.4095E-03	1.1844E+00	7.9310E-02	1.1914E+01	8.9172E-01	2.5013E+00
17	9.0095E-03	1.2689E+00	8.1900E-02	1.1876E+01	8.9693E-01	2.5344E+00
18	9.6245E-03	1.3556E+00	8.1380E-02	1.1289E+01	9.0337E-01	2.5756E+00
19	1.0230E-02	1.4408E+00	8.6980E-02	1.1537E+01	9.0436E-01	2.5820E+00
20	1.0837E-02	1.5264E+00	9.3710E-02	1.1734E+01	9.1045E-01	2.6235E+00
21	1.1448E-02	1.6123E+00	9.5770E-02	1.1412E+01	9.1624E-01	2.6641E+00
22	1.2047E-02	1.6968E+00	8.5790E-02	9.6228E+00	9.2101E-01	2.6981E+00
23	1.2658E-02	1.7827E+00	8.3200E-02	8.8991E+00	9.2419E-01	2.7208E+00
24	1.3247E-02	1.8658E+00	7.0130E-02	7.3195E+00	9.2550E-01	2.7310E+00
25	1.3867E-02	1.9532E+00	5.1880E-02	5.2255E+00	9.2465E-01	2.7240E+00
26	1.4457E-02	2.0363E+00	4.1960E-02	4.1968E+00	9.2682E-01	2.7400E+00
27	1.5058E-02	2.1208E+00	3.7070E-02	3.6676E+00	9.3213E-01	2.7809E+00
28	1.5668E-02	2.2067E+00	3.2390E-02	3.1851E+00	9.3215E-01	2.7810E+00
29	1.6277E-02	2.2926E+00	2.9860E-02	2.9318E+00	9.3130E-01	2.7740E+00
30	1.6877E-02	2.3771E+00	2.7850E-02	2.7316E+00	9.3130E-01	2.7740E+00
31	1.7467E-02	2.4602E+00	2.6530E-02	2.6028E+00	9.3130E-01	2.7740E+00
32	1.8078E-02	2.5461E+00	2.6610E-02	2.6334E+00	9.3130E-01	2.7740E+00
33	1.8668E-02	2.6292E+00	2.4710E-02	2.4684E+00	9.3130E-01	2.7740E+00
34	1.9277E-02	2.7151E+00	2.3330E-02	2.3417E+00	9.3215E-01	2.7810E+00
35	1.9867E-02	2.7982E+00	2.1550E-02	2.1635E+00	9.3312E-01	2.7877E+00

R32 UT= 7.9887E+00 RHOV= 8.0848E-01 TW= 2.7069E+02 D= 7.5000E-03

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHOVUT
1	1.0000E-04	1.3333E-02	2.6280E-01	8.7034E+00
2	3.0180E-04	4.0240E-02	2.2980E-01	7.9165E+00
3	9.5080E-04	1.2677E-01	2.4820E-01	8.7348E+00
4	1.5648E-03	2.0864E-01	2.9910E-01	1.1679E+01
5	2.1668E-03	2.8891E-01	3.3100E-01	1.3499E+01
6	2.7018E-03	3.7091E-01	3.6990E-01	1.6947E+01
7	3.4018E-03	4.5357E-01	4.0070E-01	1.9921E+01
8	4.0248E-03	5.3664E-01	4.2570E-01	2.4075E+01
9	4.6388E-03	6.1051E-01	4.0790E-01	2.7302E+01
10	5.2608E-03	7.0144E-01	3.7360E-01	2.8459E+01
11	5.8718E-03	7.8291E-01	3.2880E-01	2.8111E+01
12	6.4588E-03	8.6117E-01	2.4910E-01	2.3480E+01
13	7.0648E-03	9.4197E-01	1.8180E-01	1.8122E+01
14	7.6718E-03	1.0229E+00	1.4410E-01	1.4571E+01
15	8.2688E-03	1.1025E+00	1.0440E-01	1.0476E+01
16	8.8978E-03	1.1864E+00	7.6520E-02	7.5694E+00
17	9.5038E-03	1.2672E+00	7.6620E-02	7.3847E+00
18	1.0108E-02	1.3477E+00	7.4730E-02	7.0059E+00
19	1.0718E-02	1.4290E+00	8.0540E-02	7.2725E+00
20	1.1298E-02	1.5064E+00	8.6430E-02	7.4564E+00
21	1.1918E-02	1.5890E+00	9.5670E-02	7.8106E+00
22	1.2518E-02	1.6690E+00	1.0410E-01	7.9928E+00
23	1.3128E-02	1.7504E+00	1.1130E-01	7.9011E+00
24	1.3728E-02	1.8304E+00	9.2690E-02	6.2298E+00
25	1.4328E-02	1.9104E+00	7.8550E-02	5.1043E+00
26	1.4938E-02	1.9917E+00	5.7700E-02	3.6655E+00
27	1.5538E-02	2.0717E+00	5.2050E-02	3.2816E+00
28	1.6148E-02	2.1530E+00	3.8880E-02	2.4230E+00
29	1.6748E-02	2.2330E+00	3.3150E-02	2.0607E+00
30	1.7348E-02	2.3130E+00	3.0150E-02	1.8728E+00
31	1.7938E-02	2.3917E+00	2.8930E-02	1.7975E+00
32	1.8548E-02	2.4730E+00	2.5460E-02	1.5784E+00
33	1.9138E-02	2.5517E+00	2.5110E-02	1.5609E+00
34	1.9738E-02	2.6317E+00	2.3920E-02	1.4088E+00
35	2.0328E-02	2.7104E+00	2.3340E-02	1.4563E+00
36	2.0928E-02	2.7904E+00	2.2230E-02	1.3847E+00
37	2.1528E-02	2.8704E+00	2.2020E-02	1.3777E+00
38	2.2128E-02	2.9504E+00	2.1100E-02	1.3224E+00
39	2.2718E-02	3.0290E+00	2.1540E-02	1.3493E+00
40	2.3318E-02	3.1090E+00	2.2050E-02	1.3816E+00
41	2.3908E-02	3.1877E+00	2.0050E-02	1.2594E+00
42	2.4488E-02	3.2650E+00	1.9420E-02	1.2202E+00
43	2.5078E-02	3.3437E+00	1.8810E-02	1.1850E+00
44	2.5658E-02	3.4210E+00	1.9570E-02	1.2305E+00
45	2.6238E-02	3.4984E+00	1.8830E-02	1.1851E+00
46	2.6828E-02	3.5770E+00	1.9090E-02	1.2041E+00
47	2.7398E-02	3.6530E+00	1.8730E-02	1.1800E+00
48	2.8008E-02	3.7344E+00	1.8800E-02	1.1861E+00
49	2.8608E-02	3.8144E+00	1.9090E-02	1.2053E+00
50	2.9208E-02	3.8944E+00	1.8960E-02	1.1998E+00
51	2.9778E-02	3.9704E+00	1.8680E-02	1.1809E+00
52	3.0378E-02	4.0504E+00	1.8420E-02	1.1656E+00
53	3.0978E-02	4.1304E+00	1.8260E-02	1.1558E+00
54	3.1568E-02	4.2090E+00	1.8150E-02	1.1479E+00
55	3.2158E-02	4.2877E+00	1.8980E-02	1.2013E+00
56	3.2778E-02	4.3704E+00	1.3360E-01	8.4582E+00

R34

UT= 9.6138E+00 RHO= 8.4114E-01 TW= 2.5392E+02 D= 7.3000E-03

I	Y (M)	Y/D	(RHO U)' RHO U	(RHO U)' RHO U	U Uref	M
1	1.0000E-04	1.3699E-02	2.5920E-01	8.6608E+00	NM	NM
2	7.3140E-04	1.0019E-01	2.6340E-01	9.5438E+00	3.6985E-01	7.2587E-01
3	1.3234E-03	1.0129E-01	3.2610E-01	1.2550E+01	4.0053E-01	7.9412E-01
4	1.9449E-03	2.6642E-01	3.6060E-01	1.5175E+01	4.3535E-01	8.7418E-01
5	2.5559E-03	3.5012E-01	3.9340E-01	1.7088E+01	4.7689E-01	9.7329E-01
6	3.1789E-03	4.3547E-01	4.1650E-01	2.1117E+01	5.3798E-01	1.1283E+00
7	3.8089E-03	5.2177E-01	4.1670E-01	2.4570E+01	5.8243E-01	1.2498E+00
8	4.4259E-03	6.0629E-01	3.9160E-01	2.6523E+01	6.4666E-01	1.4418E+00
9	5.0319E-03	6.8930E-01	3.7070E-01	2.7372E+01	7.0913E-01	1.6522E+00
10	5.6409E-03	7.7273E-01	3.1580E-01	2.5915E+01	7.6350E-01	1.8622E+00
11	6.2439E-03	8.5533E-01	2.5260E-01	2.2410E+01	8.0631E-01	2.0503E+00
12	6.8629E-03	9.4012E-01	1.9580E-01	1.8124E+01	8.3017E-01	2.1657E+00
13	7.4529E-03	1.0209E+00	1.4670E-01	1.4040E+01	8.4188E-01	2.2258E+00
14	8.0739E-03	1.1060E+00	1.2150E-01	1.1587E+01	8.5003E-01	2.2695E+00
15	8.6779E-03	1.1888E+00	8.9310E-02	8.4389E+00	8.5311E-01	2.2862E+00
16	9.2949E-03	1.2733E+00	7.1080E-02	6.5933E+00	8.5822E-01	2.3143E+00
17	9.9139E-03	1.3581E+00	7.1240E-02	6.4654E+00	8.6302E-01	2.3424E+00
18	1.0506E-02	1.4392E+00	7.7730E-02	6.8632E+00	8.6839E-01	2.3726E+00
19	1.1116E-02	1.5227E+00	8.3080E-02	7.0787E+00	8.7552E-01	2.4146E+00
20	1.1726E-02	1.6063E+00	9.3530E-02	7.5400E+00	8.7820E-01	2.4307E+00
21	1.2336E-02	1.6898E+00	1.1500E-01	8.6422E+00	8.8494E-01	2.4721E+00
22	1.2936E-02	1.7720E+00	1.3090E-01	8.9824E+00	8.8890E-01	2.4962E+00
23	1.3536E-02	1.8542E+00	1.2120E-01	7.6633E+00	8.9410E-01	2.5301E+00
24	1.4156E-02	1.9392E+00	1.0000E-01	5.8962E+00	9.0208E-01	2.5818E+00
25	1.4766E-02	2.0227E+00	7.1810E-02	4.0307E+00	9.1104E-01	2.6429E+00
26	1.5366E-02	2.1049E+00	5.0880E-02	2.8081E+00	9.2092E-01	2.7136E+00
27	1.5966E-02	2.1871E+00	3.7060E-02	2.0334E+00	9.2403E-01	2.7361E+00
28	1.6566E-02	2.2693E+00	3.2320E-02	1.7674E+00	9.2660E-01	2.7551E+00
29	1.7166E-02	2.3515E+00	2.7690E-02	1.5012E+00	9.2856E-01	2.7707E+00
30	1.7766E-02	2.4337E+00	2.6160E-02	1.4237E+00	9.2891E-01	2.7740E+00
31	1.8376E-02	2.5172E+00	2.3790E-02	1.2950E+00	9.2891E-01	2.7740E+00
32	1.8976E-02	2.5994E+00	2.3770E-02	1.2948E+00	9.2891E-01	2.7740E+00
33	1.9576E-02	2.6816E+00	2.1810E-02	1.1854E+00	9.2994E-01	2.7810E+00
34	2.0176E-02	2.7638E+00	2.3080E-02	1.2558E+00	9.2994E-01	2.7810E+00
35	2.0766E-02	2.8446E+00	2.0850E-02	1.1365E+00	9.3079E-01	2.7880E+00

R36

UT= 1.0990E+01 RHOV= 9.5306E-01 TW= 2.6365E+02 D= 8.2000E-03

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHOV*UT
1	1.0000E-04	1.2195E-02	2.8220E-01	8.7055E+00
2	1.0300E-04	1.2561E-02	2.8360E-01	8.5537E+00
3	1.5600E-04	1.9024E-02	2.7770E-01	8.2750E+00
4	3.8800E-04	4.7317E-02	2.7740E-01	8.4118E+00
5	8.9500E-04	1.0915E-01	2.9600E-01	9.4110E+00
6	1.3980E-03	1.7049E-01	3.1640E-01	1.0353E+01
7	1.8948E-03	2.3107E-01	3.5370E-01	1.2167E+01
8	2.3869E-03	2.9108E-01	3.9690E-01	1.4521E+01
9	2.8677E-03	3.4972E-01	4.3440E-01	1.7577E+01
10	3.3547E-03	4.0911E-01	4.5890E-01	1.9699E+01
11	3.8490E-03	4.6939E-01	4.6940E-01	2.1463E+01
12	4.3300E-03	5.2805E-01	4.8200E-01	2.3461E+01
13	4.8260E-03	5.8854E-01	4.5680E-01	2.4877E+01
14	5.3260E-03	6.4951E-01	4.2140E-01	2.4849E+01
15	5.8090E-03	7.0841E-01	3.8500E-01	2.4423E+01
16	6.3130E-03	7.6988E-01	3.4750E-01	2.3742E+01
17	6.7990E-03	8.2915E-01	2.7860E-01	2.0128E+01
18	7.2980E-03	8.9000E-01	2.4230E-01	1.8093E+01
19	7.7750E-03	9.4817E-01	1.7380E-01	1.3330E+01
20	8.2530E-03	1.0065E+00	1.4950E-01	1.1727E+01
21	8.7520E-03	1.0673E+00	1.0290E-01	8.1259E+00
22	9.2360E-03	1.1263E+00	9.5480E-02	7.5145E+00
23	9.7300E-03	1.1866E+00	8.8700E-02	6.8953E+00
24	1.0216E-02	1.2459E+00	7.0700E-02	5.4097E+00
25	1.0688E-02	1.3034E+00	7.2390E-02	5.4056E+00
26	1.1189E-02	1.3645E+00	7.6400E-02	5.5555E+00
27	1.1672E-02	1.4234E+00	7.8990E-02	5.5764E+00
28	1.2163E-02	1.4833E+00	8.7890E-02	5.9966E+00
29	1.2657E-02	1.5435E+00	9.6440E-02	6.2392E+00
30	1.3127E-02	1.6009E+00	1.1010E-01	6.7729E+00
31	1.3617E-02	1.6606E+00	1.3910E-01	7.9526E+00
32	1.4107E-02	1.7204E+00	1.4770E-01	7.6334E+00
33	1.4587E-02	1.7789E+00	1.4360E-01	6.9170E+00
34	1.5067E-02	1.8374E+00	1.1160E-01	5.0304E+00
35	1.5547E-02	1.8960E+00	8.4800E-02	3.6831E+00
36	1.6037E-02	1.9557E+00	6.4660E-02	2.7528E+00
37	1.6527E-02	2.0155E+00	4.9430E-02	2.0836E+00
38	1.6997E-02	2.0728E+00	3.6610E-02	1.5397E+00
39	1.7487E-02	2.1326E+00	3.3340E-02	1.3949E+00
40	1.7957E-02	2.1899E+00	2.9170E-02	1.2179E+00
41	1.8437E-02	2.2484E+00	2.9580E-02	1.2356E+00
42	1.8937E-02	2.3094E+00	2.7360E-02	1.1418E+00
43	1.9417E-02	2.3679E+00	2.4990E-02	1.0415E+00
44	1.9907E-02	2.4277E+00	2.4510E-02	1.0231E+00
45	2.0407E-02	2.4887E+00	2.3080E-02	9.6518E-01

R38 UT= 1.2421E+01 RHO= 9.5097E-01 TW= 2.5152E+02 D= 8.5000E-03

I	Y (M)	Y/D	(RHO U) RHO U	(RHO U) RHO*UT	U Uref	M
1	1.0000E-04	1.1765E-02	2.4810E-01	6.8874E+00	NM	NM
2	6.9975E-04	8.2324E-02	2.8180E-01	8.5530E+00	4.5604E-01	9.2509E-01
3	1.3038E-03	1.5339E-01	3.0210E-01	9.8699E+00	4.8888E-01	1.0057E+00
4	1.9259E-03	2.2657E-01	3.3020E-01	1.1109E+01	5.2254E-01	1.0917E+00
5	2.5378E-03	2.9857E-01	3.7460E-01	1.3066E+01	5.6393E-01	1.2035E+00
6	3.1589E-03	3.7163E-01	4.0400E-01	1.5371E+01	5.9444E-01	1.2897E+00
7	3.7879E-03	4.4563E-01	4.2510E-01	1.7412E+01	6.4026E-01	1.4290E+00
8	4.3918E-03	5.1669E-01	4.2160E-01	1.9567E+01	6.7494E-01	1.5423E+00
9	5.0079E-03	5.8916E-01	4.0520E-01	2.0713E+01	7.2344E-01	1.7148E+00
10	5.6078E-03	6.5975E-01	3.7000E-01	2.0690E+01	7.6307E-01	1.8715E+00
11	6.2118E-03	7.3081E-01	3.2040E-01	1.9295E+01	7.8855E-01	1.9818E+00
12	6.8129E-03	8.0151E-01	2.8270E-01	1.8168E+01	8.0869E-01	2.0748E+00
13	7.4268E-03	8.7375E-01	2.3030E-01	1.5411E+01	8.1657E-01	2.1130E+00
14	8.0379E-03	9.4563E-01	1.8270E-01	1.2619E+01	8.2359E-01	2.1482E+00
15	8.6569E-03	1.0185E+00	1.4950E-01	1.0498E+01	8.2418E-01	2.1516E+00
16	9.2609E-03	1.0895E+00	9.5420E-02	6.7706E+00	8.2771E-01	2.1688E+00
17	9.8868E-03	1.1632E+00	7.8930E-02	5.8299E+00	8.2833E-01	2.1720E+00
18	1.0468E-02	1.2315E+00	5.9430E-02	4.1575E+00	8.3273E-01	2.1946E+00
19	1.1078E-02	1.3033E+00	6.0600E-02	4.1614E+00	8.3569E-01	2.2098E+00
20	1.1698E-02	1.3762E+00	6.3780E-02	4.2604E+00	8.4069E-01	2.2355E+00
21	1.2308E-02	1.4480E+00	6.9680E-02	4.5070E+00	8.4759E-01	2.2735E+00
22	1.2908E-02	1.5186E+00	8.3880E-02	5.1912E+00	8.5101E-01	2.2920E+00
23	1.3508E-02	1.5892E+00	1.1080E-01	6.3807E+00	8.5501E-01	2.3143E+00
24	1.4118E-02	1.6609E+00	1.5830E-01	8.1605E+00	8.4813E-01	2.2767E+00
25	1.4728E-02	1.7327E+00	1.7940E-01	7.9496E+00	8.4846E-01	2.2781E+00
26	1.5328E-02	1.8033E+00	1.2620E-01	4.9372E+00	8.4812E-01	2.2767E+00
27	1.5928E-02	1.8739E+00	9.2240E-02	3.4845E+00	8.7642E-01	2.4395E+00
28	1.6538E-02	1.9456E+00	6.2420E-02	2.3390E+00	9.0368E-01	2.6157E+00
29	1.7138E-02	2.0162E+00	3.4790E-02	1.3125E+00	9.1633E-01	2.7055E+00
30	1.7738E-02	2.0868E+00	2.9300E-02	1.1011E+00	9.2504E-01	2.7703E+00
31	1.8338E-02	2.1574E+00	2.7170E-02	1.0243E+00	9.2738E-01	2.7880E+00
32	1.8938E-02	2.2280E+00	2.5240E-02	9.5091E-01	9.2738E-01	2.7880E+00
33	1.9538E-02	2.2986E+00	2.3420E-02	8.8274E-01	9.2840E-01	2.7950E+00
34	2.0138E-02	2.3692E+00	2.2070E-02	8.3241E-01	9.2840E-01	2.7950E+00
35	2.0728E-02	2.4386E+00	2.2390E-02	8.4657E-01	9.2925E-01	2.8020E+00

R42 UT= 1.4882E+01 RHOV= 9.7379E-01 TV= 2.6099E+02 D= 1.0000E-02

I	Y (M)	Y/D	(RHO U)* RHO U	(RHO U)* RHOV*UT	U Uref	M
1	1.0000E-04	1.0000E-02	2.2980E-01	5.8512E+00	NM	NM
2	4.6190E-04	4.6190E-02	2.3480E-01	6.2102E+00	5.0091E-01	1.0299E+00
3	1.0794E-03	1.0794E-01	2.5810E-01	7.4712E+00	5.5182E-01	1.1627E+00
4	1.6776E-03	1.6776E-01	2.5950E-01	7.8251E+00	5.8370E-01	1.2516E+00
5	2.2966E-03	2.2966E-01	2.7830E-01	8.7184E+00	6.0507E-01	1.3142E+00
6	2.9136E-03	2.9136E-01	2.9100E-01	9.3954E+00	6.3175E-01	1.3954E+00
7	3.5156E-03	3.5156E-01	3.1490E-01	1.1019E+01	6.5680E-01	1.4749E+00
8	4.1296E-03	4.1296E-01	3.2210E-01	1.1662E+01	6.8484E-01	1.5677E+00
9	4.7516E-03	4.7516E-01	3.1750E-01	1.2917E+01	7.1489E-01	1.6736E+00
10	5.3626E-03	5.3626E-01	3.1480E-01	1.3446E+01	7.4648E-01	1.7931E+00
11	5.9866E-03	5.9866E-01	2.9600E-01	1.3174E+01	7.7241E-01	1.8994E+00
12	6.5916E-03	6.5916E-01	2.6390E-01	1.2811E+01	7.8931E-01	1.9733E+00
13	7.1976E-03	7.1976E-01	2.4230E-01	1.2364E+01	8.0141E-01	2.0277E+00
14	7.8266E-03	7.8266E-01	2.0310E-01	1.0933E+01	8.0623E-01	2.0497E+00
15	8.4396E-03	8.4396E-01	1.7340E-01	9.6320E+00	8.1142E-01	2.0746E+00
16	9.0386E-03	9.0386E-01	1.3480E-01	7.6385E+00	8.1248E-01	2.0800E+00
17	9.6426E-03	9.6426E-01	1.1370E-01	6.4805E+00	8.1401E-01	2.0870E+00
18	1.0265E-02	1.0265E+00	9.6440E-02	5.5567E+00	8.1555E-01	2.0940E+00
19	1.0875E-02	1.0875E+00	7.2290E-02	4.1717E+00	8.1691E-01	2.1010E+00
20	1.1495E-02	1.1495E+00	6.4610E-02	3.6968E+00	8.1805E-01	2.1062E+00
21	1.2095E-02	1.2095E+00	4.3590E-02	2.4764E+00	8.2039E-01	2.1177E+00
22	1.2705E-02	1.2705E+00	3.9880E-02	2.2329E+00	8.2140E-01	2.1223E+00
23	1.3305E-02	1.3305E+00	4.1410E-02	2.2859E+00	8.2476E-01	2.1386E+00
24	1.3915E-02	1.3915E+00	4.3490E-02	2.3467E+00	8.3059E-01	2.1689E+00
25	1.4525E-02	1.4525E+00	4.7660E-02	2.5011E+00	8.3693E-01	2.2012E+00
26	1.5125E-02	1.5125E+00	6.8330E-02	3.4655E+00	8.4277E-01	2.2312E+00
27	1.5735E-02	1.5735E+00	1.7340E-01	7.8061E+00	8.2474E-01	2.1385E+00
28	1.6335E-02	1.6335E+00	2.4400E-01	8.6087E+00	8.1814E-01	2.1065E+00
29	1.6935E-02	1.6935E+00	1.6340E-01	5.0231E+00	8.5178E-01	2.2805E+00
30	1.7545E-02	1.7545E+00	7.7340E-02	2.2542E+00	8.9082E-01	2.5112E+00
31	1.8165E-02	1.8165E+00	3.3650E-02	9.7383E-01	9.2036E-01	2.7110E+00
32	1.8765E-02	1.8765E+00	2.5080E-02	7.2530E-01	9.2775E-01	2.7650E+00
33	1.9365E-02	1.9365E+00	2.4860E-02	7.1602E-01	9.2810E-01	2.7680E+00
34	1.9955E-02	1.9955E+00	1.9550E-02	5.6402E-01	9.2874E-01	2.7740E+00
35	2.0555E-02	2.0555E+00	2.0020E-02	5.7883E-01	9.2970E-01	2.7806E+00
36	2.1145E-02	2.1145E+00	1.8120E-02	5.2227E-01	9.2976E-01	2.7810E+00
37	2.1735E-02	2.1735E+00	1.8630E-02	5.3787E-01	9.3062E-01	2.7880E+00
38	2.2355E-02	2.2355E+00	1.8090E-02	5.2253E-01	9.3164E-01	2.7950E+00

R46 UT= 1.5920E+01 RHOV= 1.0142E+00 TW= 2.5948E+02 D= 9.0000E-03

I	Y (M)	Y/D	(RHO U)' RHO U	(RHO U)' RHO*UT	U Uref	M
1	1.0000E-04	1.0204E-02	2.9150E-01	9.8050E+00	NM	NM
2	1.4000E-04	1.4286E-02	2.8880E-01	9.6319E+00	NM	NM
3	7.6700E-04	7.8265E-02	2.9860E-01	1.0508E+01	5.6981E-01	1.2152E+00
4	1.3870E-03	1.4153E-01	3.1050E-01	1.1271E+01	6.0818E-01	1.3245E+00
5	1.9960E-03	2.0367E-01	3.3080E-01	1.2405E+01	6.2105E-01	1.3626E+00
6	2.6130E-03	2.6663E-01	3.5250E-01	1.3802E+01	6.3698E-01	1.4113E+00
7	3.2320E-03	3.2980E-01	3.5580E-01	1.4650E+01	6.5671E-01	1.4739E+00
8	3.8550E-03	3.9337E-01	3.5840E-01	1.5263E+01	6.7630E-01	1.5379E+00
9	4.4650E-03	4.5561E-01	3.5030E-01	1.5547E+01	6.9531E-01	1.6033E+00
10	5.0770E-03	5.1806E-01	3.4100E-01	1.5956E+01	7.2372E-01	1.7056E+00
11	5.6870E-03	5.8031E-01	3.2560E-01	1.6175E+01	7.4977E-01	1.8058E+00
12	6.2880E-03	6.4163E-01	3.0350E-01	1.5739E+01	7.6666E-01	1.8742E+00
13	6.8890E-03	7.0296E-01	2.6340E-01	1.4124E+01	7.8052E-01	1.9336E+00
14	7.4930E-03	7.6459E-01	2.3230E-01	1.2937E+01	7.8878E-01	1.9700E+00
15	8.1000E-03	8.2653E-01	2.0160E-01	1.1586E+01	7.9884E-01	2.0152E+00
16	8.7100E-03	8.8878E-01	1.7190E-01	1.0122E+01	8.0406E-01	2.0390E+00
17	9.3170E-03	9.5071E-01	1.5040E-01	8.8994E+00	8.0619E-01	2.0488E+00
18	9.9270E-03	1.0130E+00	1.2660E-01	7.6166E+00	8.0681E-01	2.0516E+00
19	1.0537E-02	1.0752E+00	9.4300E-02	5.6798E+00	8.0668E-01	2.0510E+00
20	1.1127E-02	1.1354E+00	7.9530E-02	4.7936E+00	8.0822E-01	2.0580E+00
21	1.1737E-02	1.1977E+00	5.6070E-02	3.3771E+00	8.0668E-01	2.0510E+00
22	1.2337E-02	1.2589E+00	5.1300E-02	3.0539E+00	8.0755E-01	2.0550E+00
23	1.2947E-02	1.3211E+00	4.4210E-02	2.6091E+00	8.0668E-01	2.0510E+00
24	1.3547E-02	1.3823E+00	4.0140E-02	2.3292E+00	8.0668E-01	2.0510E+00
25	1.4147E-02	1.4436E+00	3.8710E-02	2.2114E+00	8.0560E-01	2.0460E+00
26	1.4747E-02	1.5048E+00	4.0040E-02	2.2445E+00	8.0505E-01	2.0435E+00
27	1.5357E-02	1.5670E+00	3.8900E-02	2.1411E+00	8.0361E-01	2.0370E+00
28	1.5967E-02	1.6293E+00	4.1280E-02	2.2227E+00	8.0208E-01	2.0300E+00
29	1.6557E-02	1.6895E+00	5.0900E-02	2.6654E+00	8.0026E-01	2.0217E+00
30	1.7147E-02	1.7497E+00	2.1220E-01	9.7924E+00	7.9271E-01	1.9872E+00
31	1.7747E-02	1.8109E+00	2.9110E-01	1.0242E+01	7.4832E-01	1.8007E+00
32	1.8347E-02	1.8721E+00	1.6390E-01	4.8065E+00	7.0834E-01	1.6497E+00
33	1.8957E-02	1.9344E+00	7.8410E-02	2.2276E+00	7.1061E-01	1.6576E+00
34	1.9547E-02	1.9946E+00	3.4150E-02	9.6446E-01	7.4114E-01	1.7721E+00
35	2.0127E-02	2.0538E+00	2.7090E-02	7.6407E-01	8.1761E-01	2.1051E+00
36	2.0737E-02	2.1160E+00	2.1300E-02	6.0208E-01	8.7412E-01	2.4076E+00
37	2.1337E-02	2.1772E+00	2.0120E-02	5.6848E-01	9.0837E-01	2.6244E+00

R50 UT= 1.6448E+01 RHOV= 1.0614E+00 TW= 2.5386E+02 D= 1.0000E-02

I	Y (M)	Y/D	(RHO U) [*] RHO U	(RHO U) [*] RHOV*UT	U Uref	M
1	1.0000E-04	9.2593E-03	2.6530E-01	9.3488E+00	NM	NM
2	1.0630E-04	9.8426E-03	2.6900E-01	9.6133E+00	NM	NM
3	7.4970E-04	6.9417E-02	2.7710E-01	1.0373E+01	5.9824E-01	1.2978E+00
4	1.3889E-03	1.2060E-01	2.8130E-01	1.0710E+01	6.3181E-01	1.3978E+00
5	2.0139E-03	1.8647E-01	2.9270E-01	1.1753E+01	6.4313E-01	1.4332E+00
6	2.6379E-03	2.4425E-01	3.0950E-01	1.2713E+01	6.5860E-01	1.4823E+00
7	3.2499E-03	3.0092E-01	3.1420E-01	1.3179E+01	6.6994E-01	1.5191E+00
8	3.8529E-03	3.5675E-01	3.0910E-01	1.3569E+01	6.8856E-01	1.5825E+00
9	4.4729E-03	4.1416E-01	2.9890E-01	1.3693E+01	7.0201E-01	1.6292E+00
10	5.1019E-03	4.7240E-01	2.9220E-01	1.3947E+01	7.2091E-01	1.6984E+00
11	5.7169E-03	5.2934E-01	2.8300E-01	1.4007E+01	7.3881E-01	1.7657E+00
12	6.3199E-03	5.8518E-01	2.6670E-01	1.3595E+01	7.5682E-01	1.8373E+00
13	6.9209E-03	6.4082E-01	2.5160E-01	1.3215E+01	7.7211E-01	1.9012E+00
14	7.5259E-03	6.9684E-01	2.1170E-01	1.1650E+01	7.8281E-01	1.9468E+00
15	8.1319E-03	7.5295E-01	2.0960E-01	1.1628E+01	7.9034E-01	1.9811E+00
16	8.7369E-03	8.0897E-01	1.8530E-01	1.0530E+01	7.9478E-01	2.0006E+00
17	9.3399E-03	8.6481E-01	1.5720E-01	9.1485E+00	7.9934E-01	2.0214E+00
18	9.9559E-03	9.2184E-01	1.2660E-01	7.4112E+00	8.0153E-01	2.0314E+00
19	1.0566E-02	9.7832E-01	1.1270E-01	6.6685E+00	8.0276E-01	2.0370E+00
20	1.1176E-02	1.0348E+00	9.0960E-02	5.3925E+00	8.0276E-01	2.0370E+00
21	1.1766E-02	1.0894E+00	6.9220E-02	4.0997E+00	8.0225E-01	2.0347E+00
22	1.2366E-02	1.1450E+00	6.5410E-02	3.8553E+00	8.0123E-01	2.0300E+00
23	1.2976E-02	1.2015E+00	5.2440E-02	3.0698E+00	8.0107E-01	2.0293E+00
24	1.3586E-02	1.2580E+00	4.2070E-02	2.4387E+00	7.9816E-01	2.0160E+00
25	1.4176E-02	1.3126E+00	3.9850E-02	2.2012E+00	7.9662E-01	2.0090E+00
26	1.4776E-02	1.3681E+00	4.2080E-02	2.3812E+00	7.9482E-01	2.0008E+00
27	1.5386E-02	1.4246E+00	3.5310E-02	1.9740E+00	7.9202E-01	1.9880E+00
28	1.5996E-02	1.4811E+00	3.6690E-02	2.0297E+00	7.9202E-01	1.9880E+00
29	1.6596E-02	1.5367E+00	3.3900E-02	1.8532E+00	7.9032E-01	1.9810E+00
30	1.7186E-02	1.5913E+00	3.4460E-02	1.8685E+00	7.8930E-01	1.9764E+00
31	1.7796E-02	1.6478E+00	3.3000E-02	1.7704E+00	7.8888E-01	1.9744E+00
32	1.8396E-02	1.7033E+00	3.3360E-02	1.7662E+00	7.9032E-01	1.9810E+00
33	1.8996E-02	1.7589E+00	6.4040E-02	3.3223E+00	7.9032E-01	1.9810E+00
34	1.9596E-02	1.8144E+00	2.4600E-01	1.0725E+01	7.8354E-01	1.9500E+00
35	2.0196E-02	1.8700E+00	2.5810E-01	8.0173E+00	7.5870E-01	1.8462E+00
36	2.0786E-02	1.9246E+00	1.0990E-01	3.0884E+00	6.9772E-01	1.6147E+00
37	2.1386E-02	1.9802E+00	3.1140E-02	8.6099E-01	7.1338E-01	1.6706E+00
38	2.1976E-02	2.0348E+00	1.9390E-02	5.3700E-01	7.6870E-01	1.8884E+00

R54 UT= 1.7307E+01 RHO= 1.0507E+00 TW= 2.5802E+02 D= 1.1600E-02

I	Y (M)	Y/D	(RHO U)* RHO U	(RHO U)* RHO*UT	U Uref	M
1	1.0000E-04	8.6207E-03	2.2180E-01	6.2839E+00	NM	NM
2	6.8860E-04	5.9362E-02	2.1960E-01	6.6454E+00	NM	NM
3	1.3046E-03	1.1247E-01	2.1870E-01	6.8455E+00	6.5376E-01	1.3704E+00
4	1.9136E-03	1.6497E-01	2.3180E-01	7.6061E+00	6.7764E-01	1.4406E+00
5	2.5246E-03	2.1764E-01	2.3840E-01	7.8895E+00	6.9145E-01	1.4828E+00
6	3.1256E-03	2.6945E-01	2.4390E-01	8.3733E+00	7.0052E-01	1.5115E+00
7	3.7246E-03	3.2109E-01	2.4960E-01	8.8545E+00	7.1013E-01	1.5414E+00
8	4.3316E-03	3.7341E-01	2.5450E-01	9.2984E+00	7.2215E-01	1.5804E+00
9	4.9346E-03	4.2540E-01	2.5370E-01	9.6152E+00	7.3481E-01	1.6224E+00
10	5.5526E-03	4.7867E-01	2.5160E-01	9.9769E+00	7.5144E-01	1.6795E+00
11	6.1776E-03	5.3255E-01	2.3820E-01	9.6683E+00	7.6574E-01	1.7303E+00
12	6.7866E-03	5.8505E-01	2.2500E-01	9.5965E+00	7.8126E-01	1.7874E+00
13	7.3906E-03	6.3712E-01	2.2710E-01	9.8421E+00	7.9143E-01	1.8264E+00
14	8.0106E-03	6.9057E-01	2.0800E-01	9.1494E+00	8.0471E-01	1.8779E+00
15	8.6296E-03	7.4393E-01	1.8690E-01	8.5583E+00	8.1467E-01	1.9186E+00
16	9.2356E-03	7.9617E-01	1.8350E-01	8.5197E+00	8.2117E-01	1.9450E+00
17	9.8406E-03	8.4833E-01	1.4960E-01	7.1169E+00	8.2847E-01	1.9767E+00
18	1.0451E-02	9.0091E-01	1.2470E-01	6.0105E+00	8.3086E-01	1.9865E+00
19	1.1051E-02	9.5264E-01	1.0490E-01	5.1179E+00	8.3318E-01	1.9961E+00
20	1.1661E-02	1.0052E+00	9.7820E-02	4.7848E+00	8.3377E-01	1.9988E+00
21	1.2291E-02	1.0595E+00	7.8540E-02	3.8422E+00	8.3447E-01	2.0020E+00
22	1.2891E-02	1.1113E+00	7.0680E-02	3.4491E+00	8.3447E-01	2.0020E+00
23	1.3501E-02	1.1638E+00	5.5980E-02	2.7333E+00	8.3294E-01	1.9950E+00
24	1.4121E-02	1.2173E+00	5.8500E-02	2.8213E+00	8.3083E-01	1.9864E+00
25	1.4771E-02	1.2733E+00	4.3760E-02	2.1020E+00	8.2782E-01	1.9740E+00
26	1.5471E-02	1.3337E+00	3.1530E-02	1.5026E+00	8.2782E-01	1.9740E+00
27	1.6071E-02	1.3854E+00	2.6560E-02	1.2586E+00	8.2782E-01	1.9740E+00
28	1.6671E-02	1.4371E+00	2.6100E-02	1.2306E+00	8.2629E-01	1.9660E+00
29	1.7241E-02	1.4863E+00	2.9200E-02	1.3673E+00	8.2629E-01	1.9660E+00