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Evolution of a Planar Wake in Adverse Pressure Gradient

David M. Driver
Ames Research Center
Moffett Field, California

George G. Mateer
MCAT Institute
Los Gatos, California

February 2016

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National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035-1000

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Evolution of a Planar Wake in Adverse Pressure Gradient

David M. Driver
NASA Ames Research Center, Moffett Field, CA 94035, USA

George G. Mateer
MCAT Institute, Los Gatos, CA 95030, USA

In the interest of improving the predictability of high-lift systems at maximum lift conditions, a series of fundamental experiments were conducted to study the effects of adverse pressure gradient on a wake flow. Mean and fluctuating velocities were measured with a two-component laser-Doppler velocimeter. Data were obtained for several cases of adverse pressure gradient, producing flows ranging from no reversed flow to massively reversed flow. While the turbulent Reynolds stresses increase with increasing size of the reversed flow region, the gradient of Reynolds stress ($-\partial uv/\partial y$) does not. Computations using various turbulence models were unable to reproduce the reversed flow.

Nomenclature

C_f	=	Skin Friction coefficient	C_p	=	$(p-p_{static})/(p_{stagnation} - p_{static})$
d	=	LDV fringe spacing	H	=	distance between top and bottom tunnel walls
q	=	dynamic pressure ($\frac{1}{2}\rho U^2_{ref}$)	T	=	Temperature (K)
$p_{stagnation}$	=	pressure measured at upstream pitot probe	P_{static}	=	pressure at x= –393.7mm
x	=	axial distance from short trailing edge	u,v	=	axial and normal components of velocity
y	=	vertical distance, y=0 at tunnel centerline	u^2,v^2,uv	=	Reynolds stress components
z	=	spanwise distance from symmetry plane	U_{ref}	=	57.2 m/s, axial velocity at x = –89mm
$y_{\phi o}(x)$	=	y location where ϕ = 2.08 m²/s	β	=	LDV pointing angle
δ^*	=	displacement thickness	Θ	=	LDV beam angle
ϕ	=	$\int_0^y u\, dy$, stream function, ϕ=0 at y=0	$(\ )_{ref}$	=	normalization station (x= –89mm)

I. Introduction and Motivation

The maximum lift developed by multi-element airfoils can be limited by flow reversals in the wake of the main element as seen by Brune & Sikavi (1983), Rogers (1993) and Chin *et. al.* (1993). The off-body separation can lead to de-cambering of the multi-element airfoil system and an associated loss of lift. Turbulent mixing in the wake controls the growth of the wake and dictates the extent to which the wake experiences flow reversal. Consequently, subtle differences in turbulence models make a significant difference in the prediction of wake growth. Failure to accurately predict the wake spreading rate can lead to inaccuracies in the prediction of maximum lift.

In an effort to understand the spreading rate of wakes in adverse pressure gradient, there have been several experiments in simplified geometrical flow fields by Hoffenberg & Sullivan (1998), Roos (1997), Xianfeng et. al. (1999), Pot (1979), Adaire & Horne (1988) and Tummers et. al. (1997). These wake flow experiments have been conducted on a variety of zero and "mildly" adverse pressure gradient flows. This paper presents experimental results on a wake flow with flow reversals using a simplified geometry in which an adverse pressure gradient (streamline divergence) is developed without the complication of lift, curvature and transition effects. Symmetry of the test section and flow field make it easier to analyze and understand "off-body" separation (as it is often called). Later in the study, curvature and Reynolds number effects were added without significantly complicating the flow field. The variable known as the "overhang" region to the high lift community was also studied by virtue of varying the length of the trailing edge into the pressure gradient. This is part of an overall effort to improve predictions of maximum lift for multi-element airfoils. The data are intended for use in guiding turbulence modeling for such flows.

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[1] Senior Research Scientist, Aerothermodynamics Branch, MS 230-2.
[2] Senior Research Scientist, Retired.

II. Experiments

Experiments were performed in the High Reynolds Channel Number 1, a pressurized wind tunnel at NASA Ames Research Center.

Overview of Experiment

The test section (Fig. 1) consisted of a straight section of duct, 108 mm tall x 381mm wide duct (450mm long), followed by a variable angle 2D divergent section which exhausted into an adjacent straight section. A flat plate 6.35mm thick, 381 mm wide and 419mm long with a cylindrically rounded leading edge was mounted in the center of the upstream parallel section of duct so as to equally split the flow in the top and bottom halves of the 108mm tall channel. The trailing edge of the splitter plate is linearly and symmetrically tapered to near zero (0.4mm) over the last 38-mm of the splitter plate. During some of the runs a longer version of the splitter plate (457mm long) was used and is referred to as a long trailing edge (LTE) case and enumerated in the tables as a +38mm trailing edge (as opposed to the standard trailing edge case (STE) which is referred to as the +0mm trailing edge).

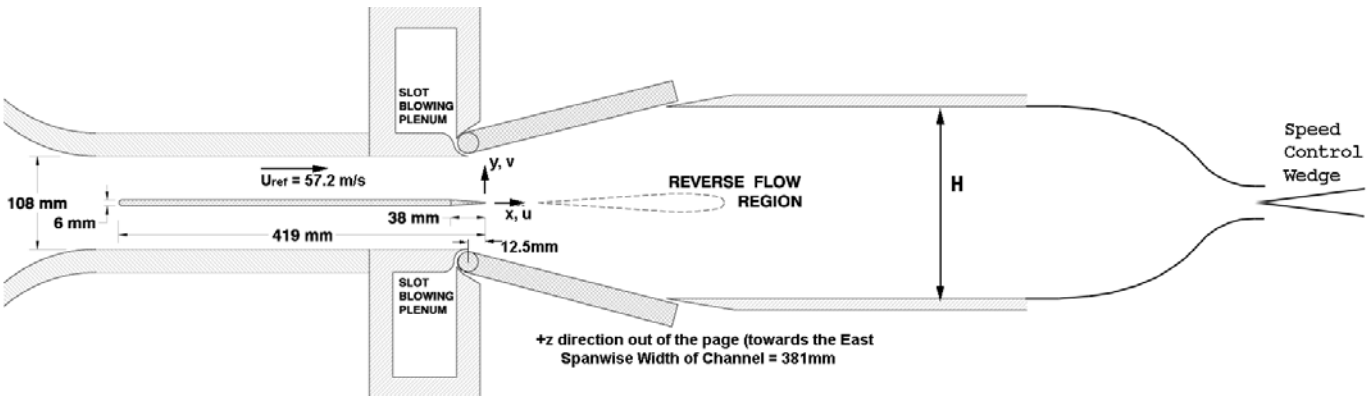


Figure 1. Test Section Geometry

The test section is uniform in the span-wise direction in an effort to develop a two-dimensional flow. The tunnel wall boundary layers were prevented from separating with jets issuing tangentially from slots on all four walls of the tunnel at the beginning of the divergent portion of the duct. Flow in the upstream portion of the duct was held constant at Mach ~0.175 by virtue of a choked convergent nozzle downstream. The stagnation temperature of the flow for most of the runs ranged between +3 and –5ºC (after a short duration initial transient). The tunnel was pressurized to 5.4 atmospheres which produced a Reynolds Number based on plate length of 10 million.

Several configurations were tested in which the wake was passed through a variety of symmetric diffusers as well as an asymmetric diffuser. The spacing of the test section walls downstream of the divergent section, *H*, is one parameter that was varied during the test campaign. Flow fields ranged from strong adverse pressure gradient without reversed flow, to flows with small and massive reversed flow regions. A straight wall case was also measured in order to provide a baseline for the divergent cases. Each case has been well documented with LDV measurements. The cases described in this report and in Driver & Mateer (2002) are summarized in Table 1. Columns 5 and 6 will be discussed later.

Table 1 Test cases and their attributes

Case Letter	Run #	$H_{x=343}$ (mm)	Trailing Edge	Hinge Slot gap (mm)	Injection Pressure (Atm)	Comment Description
(A)	46	108	STE	0	11.2	Parallel wall case
(B)	64	175	STE	0.20	10.5	Attached flow adverse pressure gradient
(C)	55	201	STE	0.20	9.2	Separated flow case
(D)	66	211	STE	0.13	11.2	Massively Separated
(E)	48	201	LTE	0.20	10.5	Separated, Long Trailing Edge
(F)	44	206	STE	0.20	11.2	Separated wake with curvature

Velocity surveys performed in the straight section of duct, well ahead of the divergent section, indicate that the boundary layer on the splitter plate (330 mm downstream of plate leading edge) is turbulent and approximately 5 mm thick. Here the momentum thickness was determined to be 0.55mm. These measurements serve as initial conditions (or conditions that were matched) for CFD calculations.

Data were obtained with a 2-component LDV system with a 100 micron interrogation volume operating in back scatter and using Fourier transform signal processing. Uncertainties in velocity are estimated to be ±1% of freestream and uncertainty in the Reynolds shear stress ($-uv$) is estimated to be $\pm 0.025(u^2 + v^2)$. Uncertainties in the normal Reynolds stress components (u^2 and v^2) were estimated to be ±15% of the locally measured values. Pressures and skin friction were measured on some of the wind tunnel surfaces with uncertainties of ±0.02 for C_p and ±0.0004 for C_f.

Two dimensionality of each flow field was checked with:

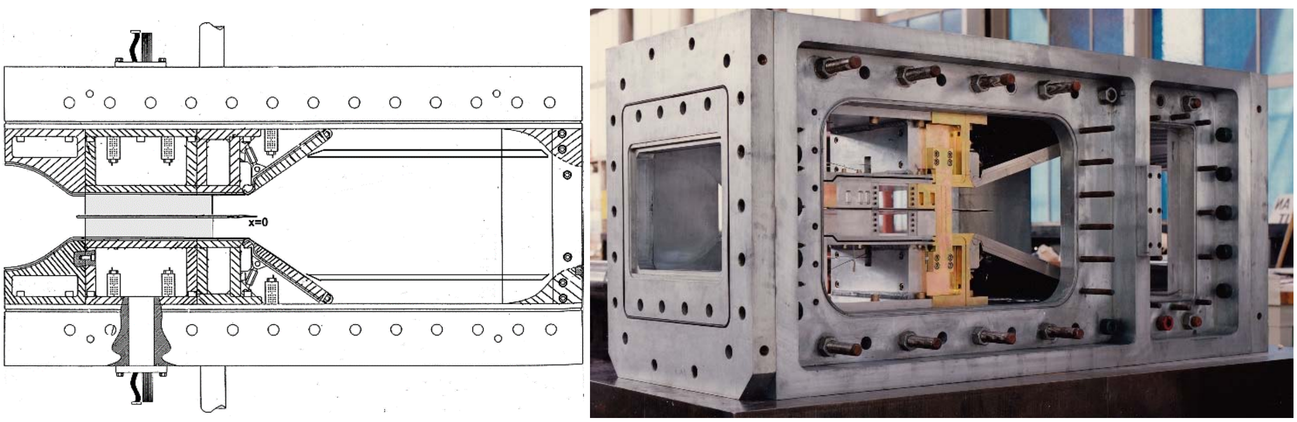
1) oil flow visualization of the trailing edge,
2) spanwise measurements of pressure at the trailing edge,
3) spanwise profiles of U-velocity were measured at the location of greatest velocity defect (x=190mm) for cases B,C,D, E & F,
4) and mass balance on the z=0 symmetry plane.

In each case two-dimensionality was found to be excellent over the central 2/3 of the test section, with the exception of the massively separated test case.

Boundary layer control was accomplished with tangentially blowing jets built into the wall hinges and the side walls. The jet mass flow rate was adjusted to the minimum amount necessary to achieve attached flow on all four walls as determined from oil flow visualizations. The side wall jets were sufficiently energetic to prevent separation on the side walls as seen in oil flow visualization and LDV measurements.

Test Section Details

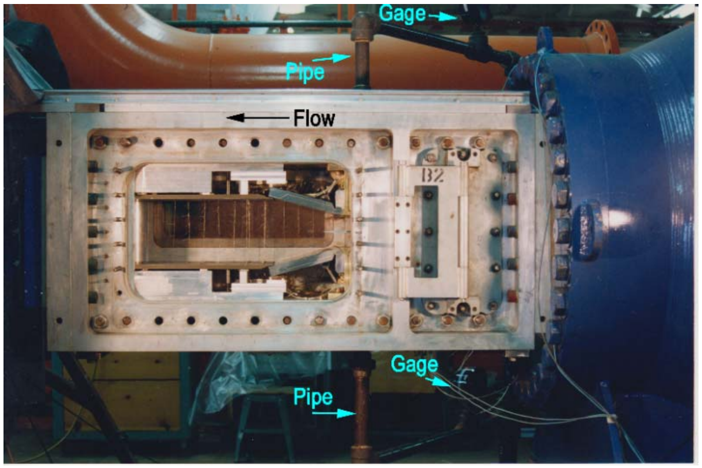
The test section (briefly described above) was contained in an oversized duct (30” long 17” high and 15” wide) which serves as the air tight outer shell of the pressure vessel – this duct was designed to withstand high pressures associated with varying the Reynolds number. Inside the pressure vessel is a set of thinner walls that defines the duct through which the air flows. The shape of these internal walls is portrayed in the schematic shown in figure 2a, and the upstream portion of the test section can be seen (through the side panel access port) in Figs. 2b. The left and right side panels were normally mounted with the access ports at the downstream end of the test section, but the panels were configured this way for the purpose of the picture (side wall access ports mounted upstream). The thick walls are necessary to safely contain the high pressure air (5.4 atmosphere flow).

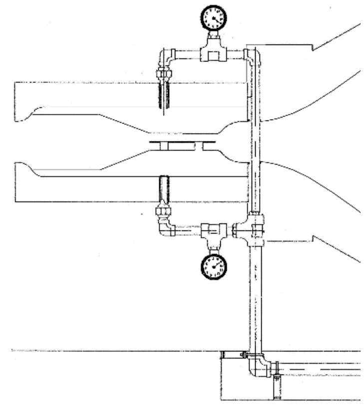


a) Schematic of Test Section b) Photo of test section (Long Trailing Edge Shown)

Fig. 2 Side view of test section (Flow from Left to Right)

The test section installed in the High Reynolds I channel is shown in Fig 3a. Note that there are pipes carrying injection air to wall jet blowing slots that are built into the test section. Pressure gages are used to monitor the pressure in the pipe just upstream of the air injection plenum, these gages can be seen in the photo (Fig 3a) and in the schematic (Fig 3b).



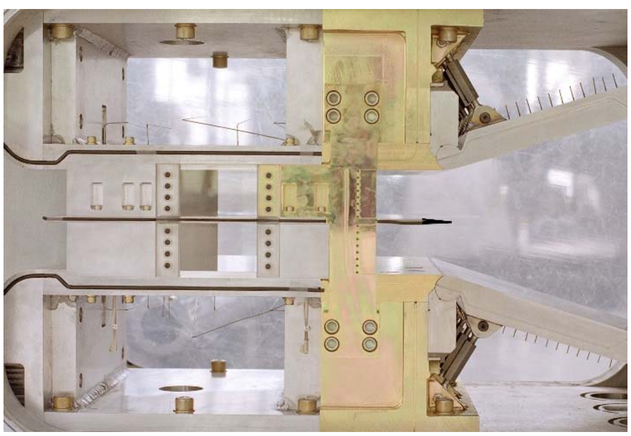


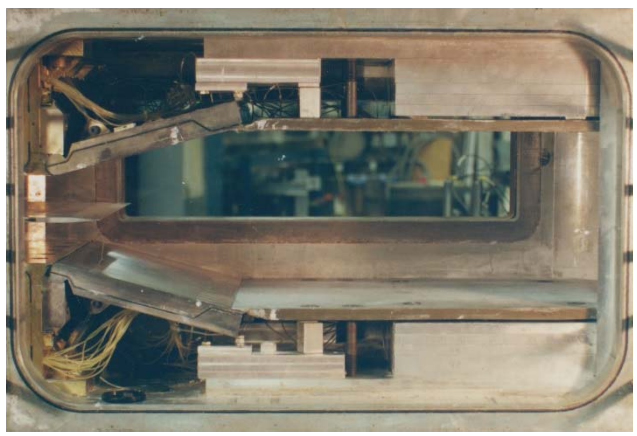
a) Photo of test section (viewed from the West side, flow right to left) b) Schematic of air injection plumbing

Fig 3. Test section installed in HRC-I showing plumbing with gages feeding the test section's slot blowing chambers

Close up views of the test section can be seen in Fig. 4a & b. Figure 4a shows that upstream portion of the test section containing the splitter plate which is supported in the center portion of the 108mm tall duct. Figure 4b shows the long tapered trailing edge version of the splitter plate extending into the divergent wall portion of the test section.

Downstream of the divergent walls are a set of parallel walls designed to provide a zero pressure gradient recovery section. The divergent wall portion of the duct is actuated by turnbuckles to the desired deflection angle. The aft parallel walls are adjusted with shims so as to sit in close proximity to the divergent walls. This design offered the possibility of forming a gap (~ 0.5mm) between the divergent wall and adjacent parallel wall junction so that boundary layer suction could be employed (if necessary). The slot would vent to the relatively low pressure of the larger external test box providing a means of scooping off the lethargic inner portion of the wall boundary layer (most prone to separate). Suction was not necessary and the slot was closed.





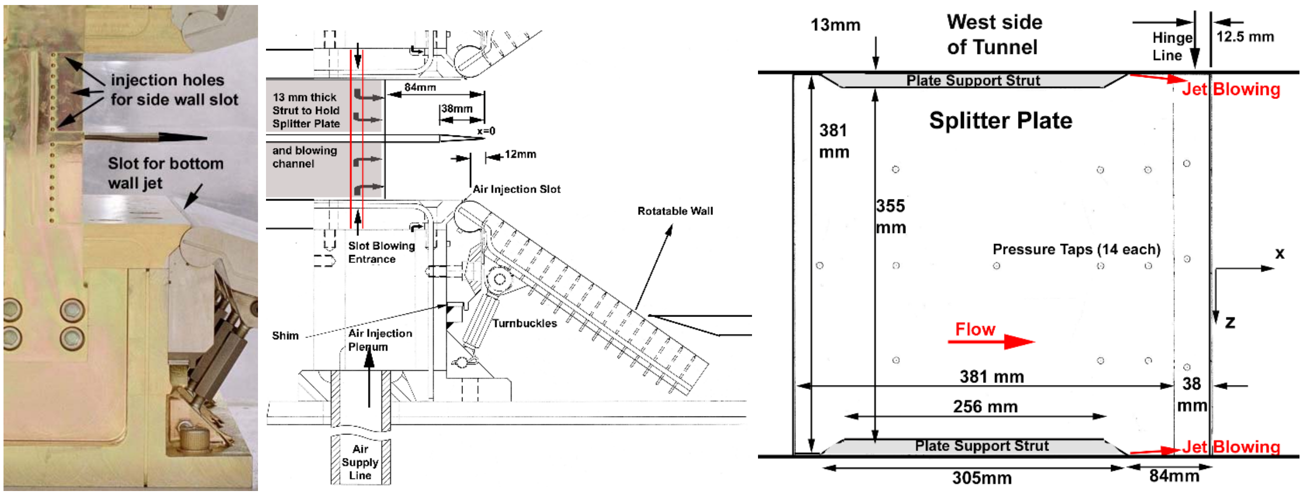
a) Upstream Splitter Plate portion of test section b) Downstream Wake region of test section

Fig 4 Side view of test section (viewed from the East, flow left to right)

Fig 4b also shows a large number of pressure tubes associated with the surface pressure measurement system. Also seen in the photograph is the quartz window on the opposite side of the test section through which the Laser Doppler Velocimeter can view the wake portion of the flow – note that optical access is limited to the top 2/3's of the channel.

Geometry of Wall Jet Blowing

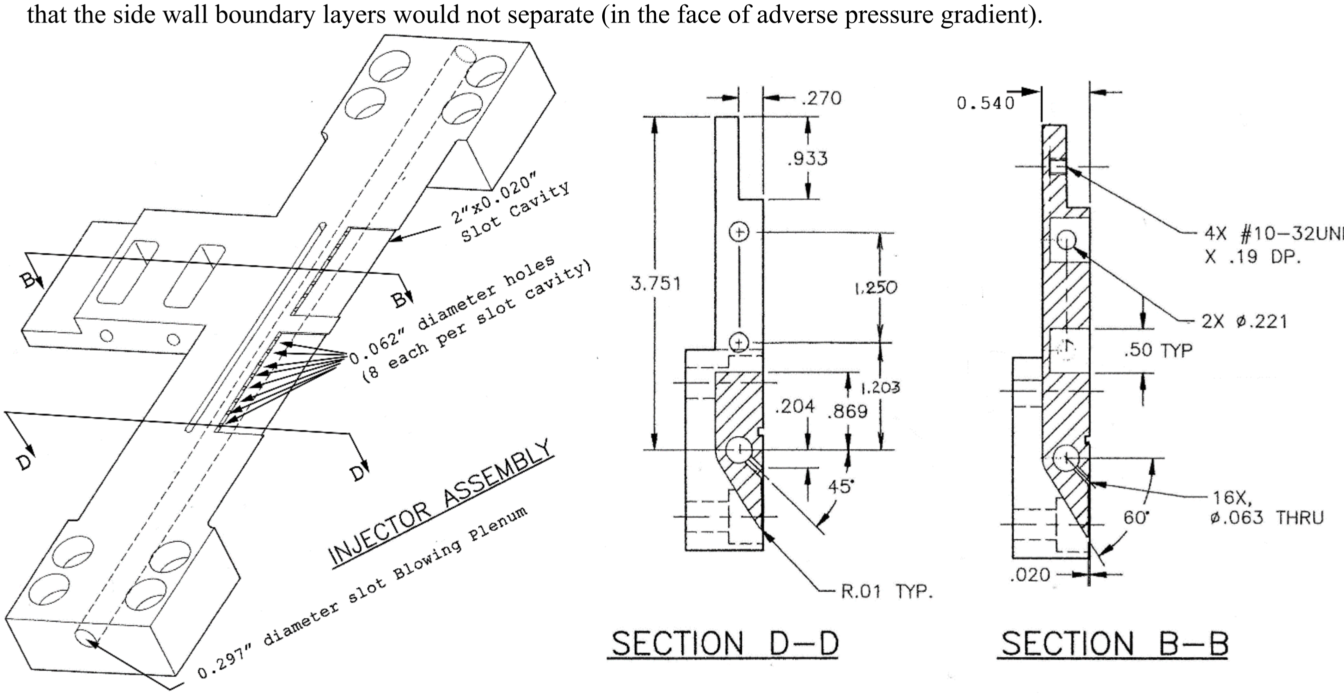
In the interest of eliminating boundary layer separation from the tunnel walls, high speed jets were designed to blow air tangential through slots in the top and bottom walls formed by a gap in the hinge (Fig 5). The gap was adjusted to be 0.2mm wide for most of the runs. The gap width was controlled by shims along the span of the hinge, and the spanwise uniformity of the gap was controlled to better than +/– 10%. Plenum chambers upstream of each slot (one on top and another on bottom) were built into the test section walls to allow the flow to settle before passing through the slot (bottom plenum shown in Fig 5a). Air was supplied to each plenum from a single air supply line so that both plenums would be maintained at the same pressure; Fig. 5b shows the lower plenum being fed by the lower branch of the air supply piping system. A regulator (upstream in the piping system) held the air supply pressure at the desired set point to better than +/–3%. The set point was varied in a range between 9.2 to 11.2 atm depending on the test case. The pressure set point along with the top and bottom wall gap widths are reported in Table 1 for each test case.



a) Side wall injector b) Schematic of blowing design c) Schematic of Splitter Plate Plan View

Fig 5 Tangential blowing hardware design details

In addition to top and bottom wall jets, there were also side wall jets built into the support struts that hold the splitter plate in place. Figure 5a shows a close up photo of one of the struts. Visible in the photo is a row of sixteen 1.6 mm holes that supply air to the side wall slot cavity. Fig 5b shows a schematic of the path along which the air travels to get from the air injection plenum to the side wall slots. The side wall slot cavity is created by machining a recess in the aft portion of the strut (see Fig. 6) so as to create a gap between the strut and the side wall of the test section. The gap between the side wall and the strut through which the jet exits is fixed at 0.51mm (0.020 in) +/–0.03mm. The side wall slots were made relatively large (relative to the top and bottom wall slots) to provide sufficient blowing that would ensure that the side wall boundary layers would not separate (in the face of adverse pressure gradient).



a) Isometric View b) Cross section D-D c) Cross section B-B

Fig. 6 More details of side wall Injector Assembly (dimension shown in inches)

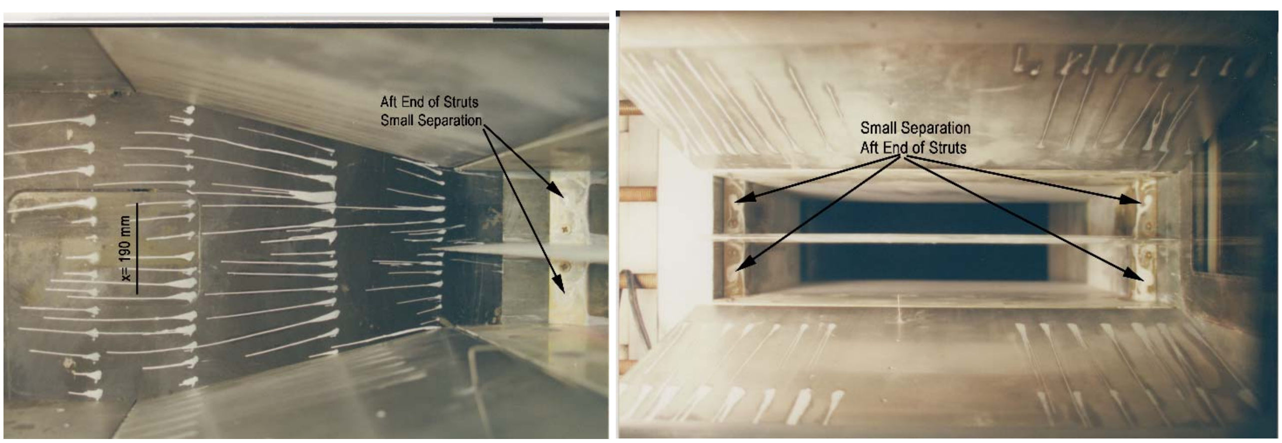
While the injection mass flow was not measured directly, it was possible to estimate the maximum mass flow from the pressure differential across the choke points associated with each of the injection slots. The injector plenum pressure (~11.2 atm) was about twice that of the test section pressure (5.4 atm) making it likely that the flow is sonic at the choke points of the air injection system. For the side wall injection the choke point is upstream of the slot due to the restrictive path through which the air travels to get to the slot. For each of the four side wall slots, the air passes through eight relatively small holes (1.57mm in diameter, see Fig. 6a) whose total cross-sectional area is 15.5 mm^2 which was smaller than the area of the side wall slot itself (cross sectional area 0.51mm*50.8mm = 26 mm^2). Any choking of the flow would take place upstream of the slot in these holes. For the top and bottom wall jets, the path is less restrictive between the plenum and the slot. Based on the area of the choke points and assuming the flow is sonic through the choke points, the mass flow of all four jets combined was determined to be on the order about 3.5% of the tunnel's total mass flow (with top and bottom wall slot gaps set to 0.20mm).

A crude measure of the total jet mass flow rate (side walls plus top and bottom walls) was obtained by turning on and off the wall jet blowing during a run in which the tunnel mass flow controller was working to maintain a constant total pressure. Holding total pressure constant is tantamount to holding the total mass flow rate constant (jets plus tunnel inlet mass flow); this is a result of the flow being chocked at the outlet of the tunnel. Mach number was measured in the upstream channel (ahead of the jets) and was used to estimate the air mass flow rate entering the inlet of the tunnel. When the jet blowing was on the Mach number measured about 3.8% less than when the jet blowing was turned off, which is an indication that the mass flow rate of the jets was about 3.8% of the total mass flow rate through the tunnel. This agrees reasonably well with the predicted mass flow rate (3.5%) based on the assumption of sonic flow at the choke points in the jet blowing delivery system.

Assessment of Jet Effectiveness and 3D Effects

Conventional oil flows were performed to check for the existence of separation on the four walls of the divergent portion of the duct, as well as looking for 3D effects in the trailing edge region of the flow. Close attention was paid to the uniformity of the gap in the top and bottom wall slots. Non-uniformities in these slots had the potential of creating 3 dimensional flow.

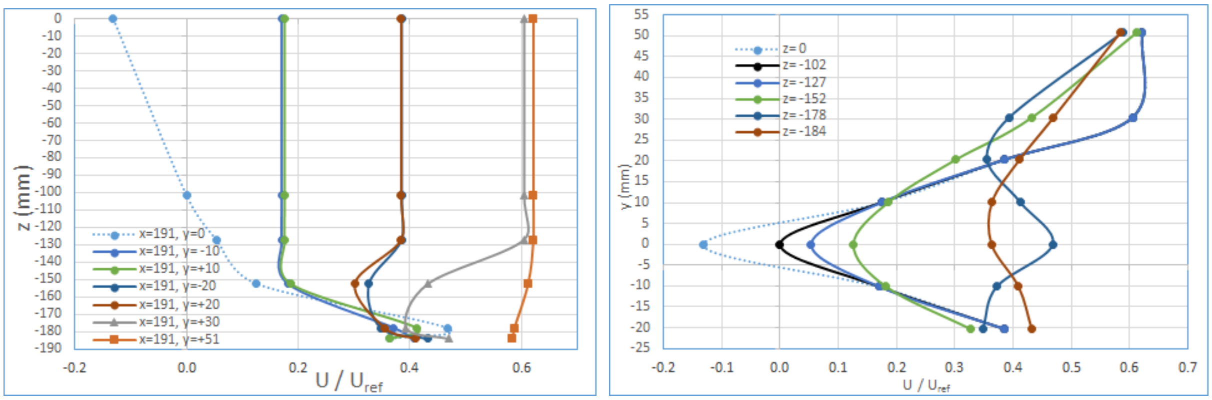
The effectiveness of the jet blowing (at avoiding boundary layer separation) was assessed during each run by looking at oil flow patterns on the top, bottom, and side walls of the duct as well as the trailing edge of the splitter plate see Fig 7. There was no evidence of separation anywhere except for a very small region on the aft end of the side wall struts where tapering of the struts forms a backward facing ramp; the extent of this separation is small with the help of the side wall jets. Everywhere else the flow appears to be firmly attached to the tunnel walls as evidenced by the oil flow seen in Fig 7.



(a) side wall (b) Top and Bottom walls

Fig. 7 Oil Flow visualization of separated wake flow case (Run 56)

The effectiveness of the side wall jet blowing was also assessed with velocity measurements (from the LDV). Side wall surveys of the west wall of the test section were performed to assess the effects of blowing on the side wall boundary layer. Fig. 8a shows the u-velocity distribution normal to the West side wall at x=190mm (the location in the wake where the separation bubble is the largest). Surveys normal to the side wall were done along the center plane and along lines that were 10, 20, 30 and 50mm above and below the center plane. Note z=0 is the centerline and z = –190.5 mm is the location of the side wall. The jet effect is most pronounced along the y=0 symmetry plane; the flow near the wall is firmly attached (U>0) while the flow in the middle half of the channel shows reverse flow (U<0). Above and below the center plane the positive jet velocity is more comparable to the velocity of the free stream. It would have been desirable to have the center plane velocity remain negative over the full span of the channel, but this was difficult to accomplish without creating problems elsewhere (separation on top and bottom walls).



a)Velocity profile normal to the side wall (at *y*=0) b) Velocity profiles in *y* direction at various *z* stations

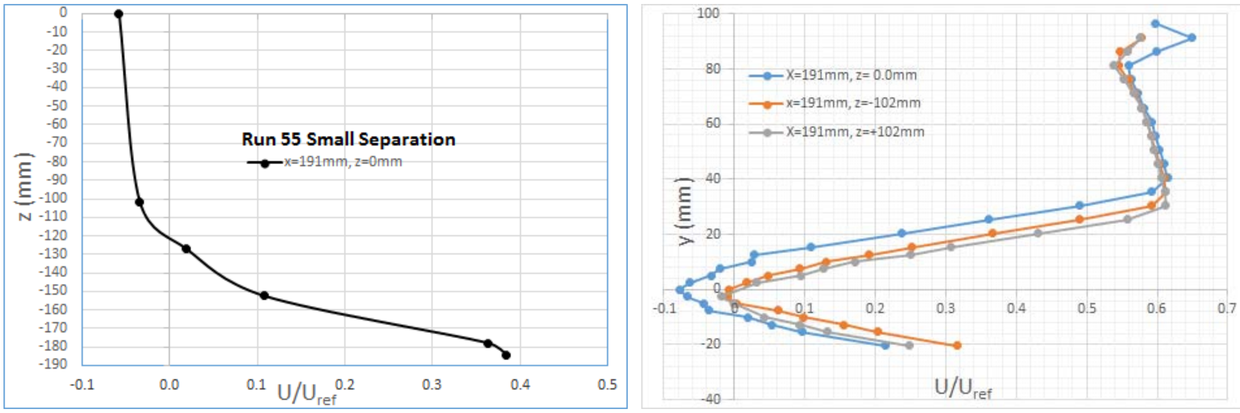
Fig. 8 Run 56 Small Separation, measurements at the *x*=191 mm station

One attempt to allow the separation to extend all the way to the side walls involved blocking the side wall jets at locations adjacent to the splitter plate (Fig. 9a shows shims blocking the slot on either side of the splitter plate). The oil flow looks very similar to that of Fig 7 (side wall slots not blocked). One difference is that the case with slots blocked (Fig 9a) seems to indicate that the flow along the centerline of the side wall is a little less energetic (if the length of the streaks are any indication).

(a) side wall (b) Top and Bottom walls

Fig. 9 Oil Flow visualization of separated wake flow (Run 55) case C.

The corresponding velocity profiles for partially blocked slot blowing are shown in Fig 10. The uniformity of the central 2/3 portion of the flow seems better with the partially blocked slot as compared to the fully open slot case (Fig. 7 & 8). Consequently the case with partially blocked slots (Run 55) was adopted for the small separation case (case C).



a)Velocity profile normal to the side wall (at y=0) b) Velocity Profiles in y direction at 3 z stations

Fig. 10 Run 55 Small Separation case C, measurements at the x=191mm station.

Another factor which can contribute to 3D effects is the fact that the channel width narrows at the upstream end of the splitter plate (from 381mm to 355mm wide) and then re-expands near the aft end of the splitter plate (from 355 mm to 381mm wide). Figure 5c shows a plan view of the splitter plate and a profile view of the side wall struts. The side wall struts (each 13mm thick) cause the channel to narrow from 381mm to 355mm wide. This changing cross-sectional area of the channel creates a pressure gradient that contributes to the overall pressure gradient induced on the flow. An additional pressure gradient is generated by the expansion associated with the 6.35 mm thick splitter plate tapering to zero at its trailing edge. Consequently there is an adverse pressure gradient associated with these two effects that is present in the channel ahead of any divergence due to angling the top and bottom walls.

The expansion due to these two geometrical features is also present in the case with parallel walls (un-deflected top and bottom wall). The pressure along the channel varies due to the combination of these two geometric expansions (see Fig. 11). The expansion due to geometry is offset to some extent by the mass addition from the side wall jets, estimated to be about 1% of the total mass flow for this case – note that for the parallel wall case, the top and bottom wall slots were closed and only the side wall slots were actively blowing (slot plenum pressure 11.2 atm). Mach was ~0.179 for this case.

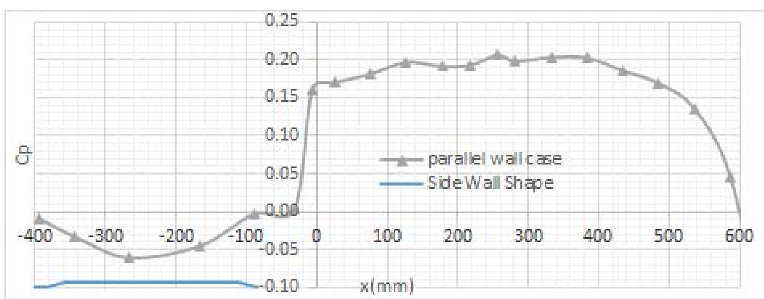


Fig. 11 Pressure distribution for Parallel wall Duct Case

Later in the report we propose a way of incorporating this expansion effect into a modified outer streamline that includes the effect of lateral expansion and side wall blowing, making it possible to obtain a realistic representation of the flow in a 2D CFD simulation (on a 2D grid) as will be seen later in the report. Adopting this outer streamline as the boundary condition also eliminates the need to simulate the complexity of the top and bottom wall slot blowing.

LDV System Details

A two component laser Doppler velocimeter (LDV) system was built for the purpose of measuring mean and fluctuating u and v components of velocity. The LDV is seen sitting in front of the west side of the test section in Fig. 12. Also seen is the vertical strut that carries the sending (and receiving) optics of the LDV system. The LDV optics were attached to a vertical traverse on this strut which was in turn attached to axial and lateral traverses so as to provide an automated 3D traverse capability. The LDV system was programmed to survey the entire flow field automatically (under computer control) within a single run. The LDV system was traversed to the trailing edge of the standard length splitter plate (short trailing edge) where the position of the traverse was zeroed (x=0, y=0, z=0). The zero position was checked at the end of each run to verify that the traverse system had worked properly. The difference was typically less than 0.02mm. These small differences are perhaps due to uncertainty in alignment or possibly due to thermal expansion or contraction differences between the test section and the lead screws driving the traverse. Only on one occasion did the position differ by 0.1mm (in the *x*-direction). Keep in mind that the LDV measuring volume is 0.1mm in diameter.

The LDV system was constructed using a Spectra Physics 2020 Argon Ion Laser to provide blue (488nm) and green (514.5nm) laser light. An Aerometrics color separator and bragg shifting unit was used to separate the green(514.5nm) and blue(488nm) beams and split each color into two beams (one beam 40MHz bragg shifted and the other not). The laser beams (488nm, 488nm+braggShift and 514.5nm, 514.5nm+braggShift) were coupled into four 3.5μm single mode, polarization preserving fibers (path length matched) using Aerometrics fiber couplers. The output of each of the fibers was focused to a 100 μm diameter spot at a single point in the center of the test section via individual gimbaled lenses on the end of each fiber. The green pair of beams measured the horizontal component of velocity and the blue pair of beams measured the vertical component of velocity. Scattered light from 0.5μm seed particles (introduced into the flow upstream) was collected in a slightly off axis back-scatter collection system (lens on the left in the photograph). Collection lens focused the scattered light onto a 2mm diameter fiber optic cable which carried the light to a color separator (dichroic high pass filter) which passed the green and reflected the blue light into their respective photo multiplier tubes.

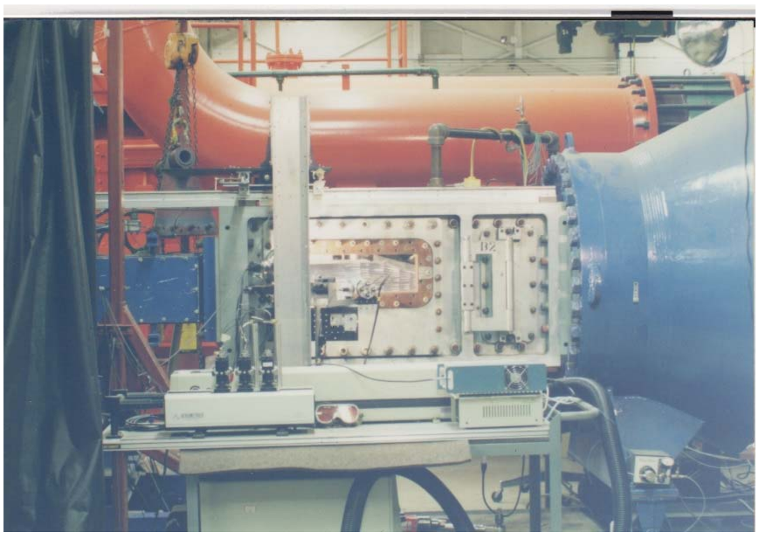


Fig. 12 Photo of west side of test section showing LDV installed (flow from right to left)

The electrical signals from the PM Tubes were recorded by a 2 channel high speed A/D converter (Tektronix RTD 720A) seen in the lower left corner of Fig 13. The A/D converter sampled the signal at 512×10^6 Samples/sec for a duration of 1 μs. At each given location, the LDV was programmed to detect 1024 events (seed particles entering the scattering volume of the LDV). Typically there were less than 1024 valid velocity pairs due to noise on the signal. Each data record was processed in software with a fast Fourier transform to obtain the Doppler shift associated with the scattered light from each seed particle (entering the scattering volume). An ensemble average was performed to compute statistics (*U,V,uu,vv,uv*).

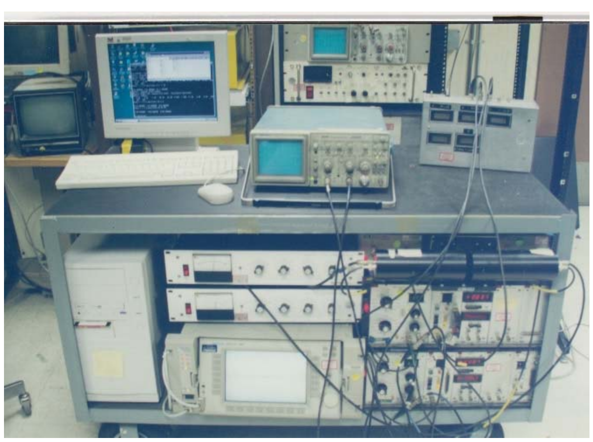
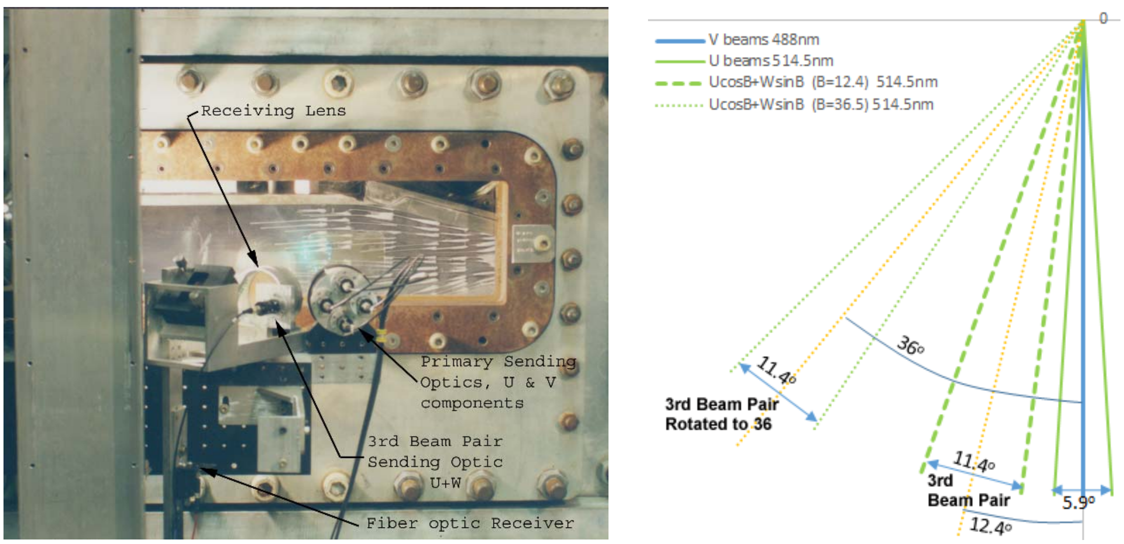


Fig. 13 Data acquisition system for LDV

To overcome optical access limitations (due to limited size window), there was a 3rd set of beams designed to enter the test section from downstream and point upstream so as to intersect with the green (*U*) and blue (*V*) beam pairs. This was not an attempt to measure the *W* component of velocity (which is nominally zero), but rather an attempt to get a measure of $U\cos\beta$ where optical access to a purely *U* component of velocity was not possible (i.e., the trailing edge of the splitter plate). This 3rd beam pair made it possible to traverse the LDV system further upstream before being blocked by the window frame. The 3rd beam pair straddled the receiving lens (one of the fiber/lens optic can be seen in Fig. 14a). When it was time to obtain measurements in the far upstream end of the test section, the green laser light from the *U*-component was temporarily piped (via fiber) into this 3rd set of sending optics. This was accomplished by feeding the fibers from this 3rd set of optics into the collimators for the green beams emanating from the Aerometrics beam splitting system (fibers feeding the *U* component of the system were temporarily removed). This typically occurred at the end of each run and took only a few minutes to make the switch. This 3rd pair of beams measured a component of velocity $V_1 = U\cos\beta + W\sin\beta$ where $\beta \sim 12.4^o$. For a flow that is 2D (W=0), one can determine the *U* velocity with $U = V_1/\cos\beta$.

In the interest of obtaining measurements even further upstream yet (x = –89mm), this 3rd set of beams was physically rotated from β=12.4^o to β=36^o so as to point the LDV system even further upstream, see the LDV beam layout in Fig. 14b. Beam pointing angles were measured before and after the system was rotated, and the most recently measured angles were used in the determination of the calibration coefficients used to analyze the data.



(a) LDV System (b) LDV system optical layout

Fig 14 Details of the LDV optics system.

We verified the accuracy of the assumption that W=0 and $U=V_1/\cos\beta$ by comparing the *U* velocity measured in the three different configurations with β=0^o, β=12.4^o and β=36^o. The massively separated case (D) is used to demonstrate the good accuracy of this approach (see Fig. 15). The *U*-velocity component measured each way is compared at a series of locations along the centerline of the tunnel and a second set of points along a path that approximately follows a streamline outside the shear layer. Good agreement is seen between the *U*-velocity components measured in these three different configurations, this is an indication the *W* component of velocity is small.

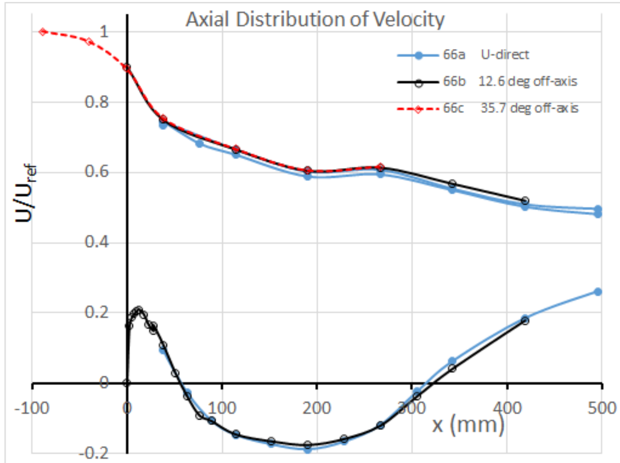


Fig 15 Axial velocity distributions along the centerline and in the free stream.

Keep in mind we were not trying to measure the *W* component of velocity (which ideally is zero), but rather this was done so that we could measure the *U*-velocity upstream on the splitter plate where the optics from the standard LDV system (β=0°) were blocked by the window frame. This good comparison gives us confidence in using the rotated version of the LDV system (β=36°) to obtain a measure of the *U* component of velocity.

Pressure Measurement System Details

Pressure was measured with three Pressure System Incorporated modules (model ESP-32, with 32 channels +/– 15 psid) whose temperature was held constant with a thermostatically controlled baseplate heating element and the module and baseplate were encased in insulation. Calibrations were performed on each of the 96 pressure sensors in advance of each run using a ScaniValve automatic calibration unit.

Absolute pressure was measured with a ParoScientific 200 psia pressure transducer at the furthest upstream pressure tap on the top wall of the channel (x= – 394 mm). Additional pressure taps were located along the top and bottom walls of the test section and along the upper and lower surface of the splitter plate. In addition there were a set of pressure taps on the east side wall of the test section. One of the ESP-32 pressure sensing modules was dedicated to measuring the 32 top wall pressure taps. A second ESP-32 module was dedicated to measuring the 32 pressures along the bottom wall. And a third ESP-32 module was used to measure the pressures along the splitter plate, tunnel side wall, and various pitot probes. The reference pressure side of each of the differential ESP-32 modules was supplied by the same pressure tap as the ParoScientific pressure transducer (i.e., the upstream top wall pressure tap at x= – 394 mm). Stagnation pressure was measured with two pitot tubes; one located upstream of splitter plate and a second one downstream of the splitter plate. Pressures measured by both tubes were in good agreement. We compute a coefficient of pressure which we define as $C_p = (p - p_{static}) / (p_{stag} - p_{static})$, where p_{static} is the static pressure measured on the bottom wall at (x= –394mm). C_p is computed and tabulated for all 96 measured pressure taps. When comparing different data sets, a smaller subset of pressures is used (described as follows);

1) in the upstream channel ($x <$ – 75mm) an average of the top and bottom wall pressure,
2) near the trailing edge ($-75 < x < 35$mm) the pressure measured on the splitter plate,
3) in the near field wake ($38 < x < 250$mm) the pressure measured along the side wall of the tunnel, and
4) in the far field wake ($x > 250$mm) an average of the top and bottom wall pressure.

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Skin Friction Measurements

Oil film interferometry was used to obtain a rough estimate of the skin friction on the upper and lower surfaces of the splitter plate (see Fig. 16), primarily for the purpose of determining the state of the boundary layer (turbulent vs laminar). The skin friction shown in Fig. 16 is for a case without any trip elements, and the flow appears to be turbulent everywhere. The need for roughness elements on the splitter plate was ruled out as a result of these measurements comparing well to the expected levels of skin-friction for a turbulent boundary layer (black dashed line in Fig. 16).

The trailing edge in this case is longer than the standard trailing edge and extends 38mm beyond the x=0 location defined by the short trailing edge. The precipitous drop in skin friction seen at the trailing edge is in large part due to the adverse pressure gradient associated with the tapering of the trailing edge and to some extent the divergence of the tunnel walls. As a word of caution, the absolute value of the skin friction may have a bias error of as much as 20% (applied to all measurements equally) due to some ambiguity in the temperature (and therefor viscosity of the oil), but the relative skin-friction levels are typically much more accurate. We cannot explain the scatter in the data near x= –130mm (other than uncertainty due to poor fringe visibility).

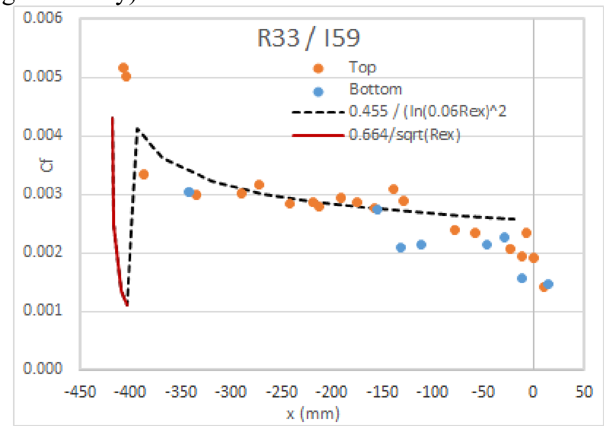


Fig 16. Skin Friction coefficient for Long Trailing edge case with mild adverse pressure gradient

The high Reynolds number associated with the pressurized wind tunnel (~10 million based on splitter plate length) was more than sufficient to produce transition without trip elements. It would appear that the flow is turbulent at the first measurement point (x= – 406mm), given that there are no signs of a local drop in skin-friction associated with laminar flow (red line in Fig 16) followed by a steep rise in skin-friction (characteristic of the "natural" transition to turbulence). Note that the leading edge of the plate (x_{LE} = – 419mm). The running length Reynolds number at the first measurement station is 300,000 which is a little less than the expected Re_x=500,000 criteria for flat plate boundary layer transition (perhaps the flow is undergoing "by-pass transition"). Independent of the mechanism causing transition, the boundary layer at the downstream station (x = –89mm) is similar to the typical turbulent boundary layer profile (as will be seen in the next section).

Inlet Velocity Profile

LDV profiles were obtained on the flat plate portion of the splitter plate at a location upstream of the trailing edge (x= –89mm). This is well upstream of the top and bottom wall divergence as well as ahead of all 4 wall jets in a region of the flow where the pressure gradient is minimal.

The inlet profiles for three of the six test cases (described in the Results section) are shown in Fig. 17. Cases A,B, and D collapse on each other and are symmetric about the centerline (velocity measurements were normalized by the velocity at y=30mm for all cases. Case C and E didn't have their own dedicated set of upstream inlet profiles so we used the profiles at x= – 88.9 mm and – 40.6mm from case D to represent the inlet conditions for case C and E.

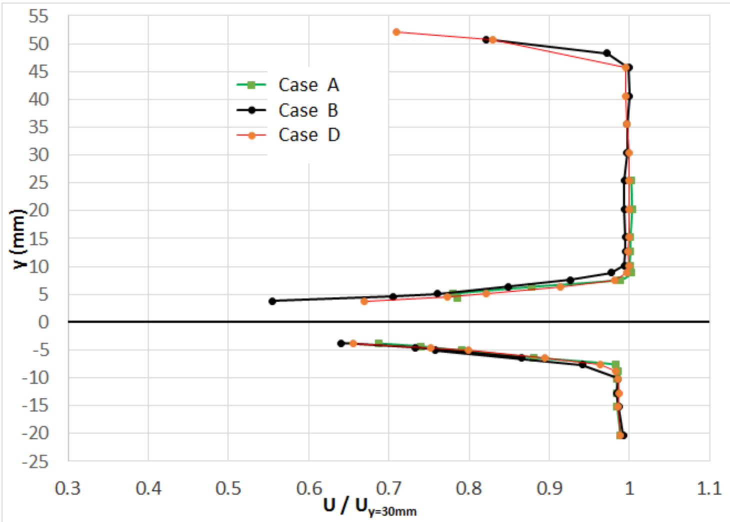
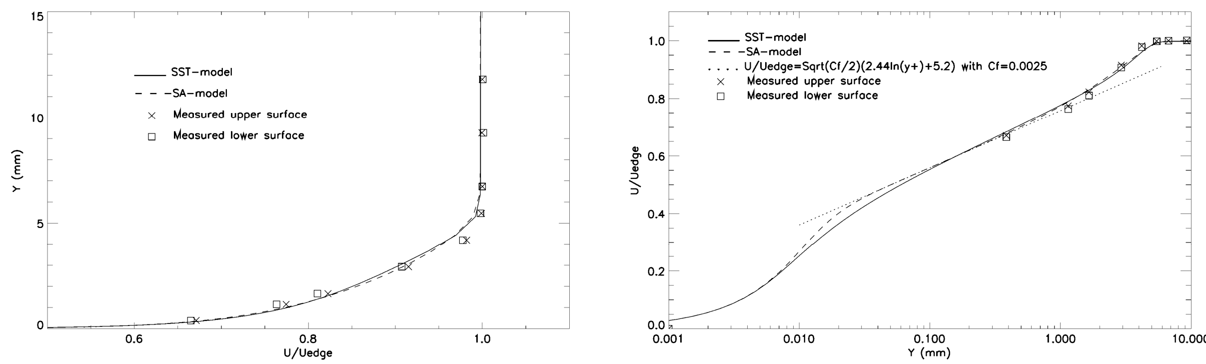


Fig 17 Inlet Profiles measured for cases A, B, D at x = – 88.9mm

The boundary layer on top and bottom of the splitter plate (see Fig. 18) are very similar and both are about 5 mm thick. The measurements in the log layer appear to agree reasonably well with the level of skin-friction (C_f=0.0025) that was measured with oil film interferometry. Future CFD simulations should try to match these profiles (upper and lower) in the interest of obtaining a reasonable match to the LDV data in the adverse pressure gradient portion of the wake. The CFD simulations done for this paper (described in the next section) did not require any altering of the length of the plate to match these profiles.

Tunnel runs with relatively large trip elements created an unwanted artificial thick boundary layer that exhibited a wake behind the trip elements that persisted over the length of the plate. So it was deemed unnecessary and undesirable to use trips on the leading edge of the splitter plate.



a) Velocity Profile b) Log-linear Velocity profile

Fig. 18 Boundary Layer Velocity Profile on the Splitter plate at x = –88.9mm

III. Computations

Computations were performed on each of the experimental test cases using the INS2D code of Rogers et. a.l.(1991). This code solves the incompressible Navier-Stokes equations in two-dimensional generalized coordinates for both steady-state and time varying flow using a pseudo-compressibility method. The convective terms are differenced using an upwind biased flux-difference splitting. The equations are solved using an implicit line-relaxation scheme. The turbulence models of Spalart & Allmaras (1994) (SA) and Menter (1993) (SST) were used in the computations. Symmetric flows were calculated over the upper half of the channel only using a 120x81 grid shown in Fig. 19. Note that the figure is expanded in the vertical direction. It should be noted that Menter's (1993) SST model is a blend of k-ω near surfaces and k-ε away from surfaces, consequently, in the region of interest (the wake) the model is essentially a k-ε turbulence model.

In the computations, the length of inlet duct was adjusted so that the boundary layer momentum thickness in the computation matched that of the experiment (Θ =0.55mm at x= –88.9mm). The upper boundary in the computation was obtained by imposing a "slip" condition on a measured streamline. A streamline was chosen which was far enough from the tunnel wall so as to be outside the wall jet and also outside the viscous region of the wake. A "no slip" condition was imposed on the splitter plate and symmetry conditions were imposed on the centerline of the wake. To verify that the symmetry boundary condition was working properly, a calculation was performed on the full channel (240 x162 grid) and compared to a calculation of the upper half channel only (120 x81 grid), showing no differences.

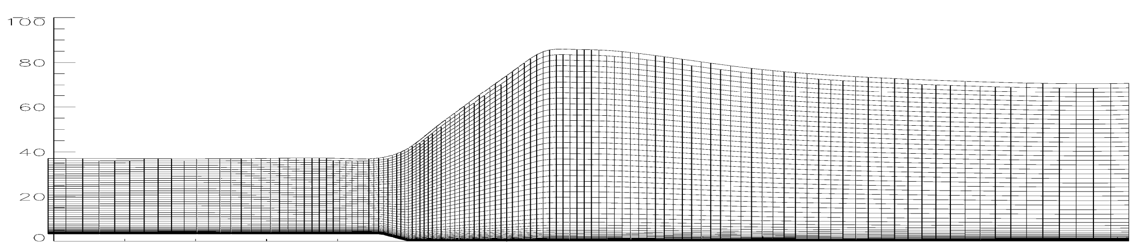


Fig. 19: Grid of 120x81 used in INS2D solutions.

A grid resolution study was performed on the strongly adverse pressure gradient test case shown in Fig. 19. Grids of 60x41, 90x54, 120x81, and 240x162 were used in computations of this test case, employing the Spalart-Allmaras turbulence model. Velocity profiles and $-uv$ Reynolds stress profiles are shown at a series of stream-wise locations (Fig. 20). The computations using the 90x54, 120x81, and 240x162 grids are virtually identical. Only the computation using the 60x41 grid differs from the other three computations. Subsequent calculations presented in this paper were performed on grids of 120x81 (for symmetric cases). It should be noted that the grid resolution study was performed on an early version of geometry that was not used in any of the six test cases reported here.

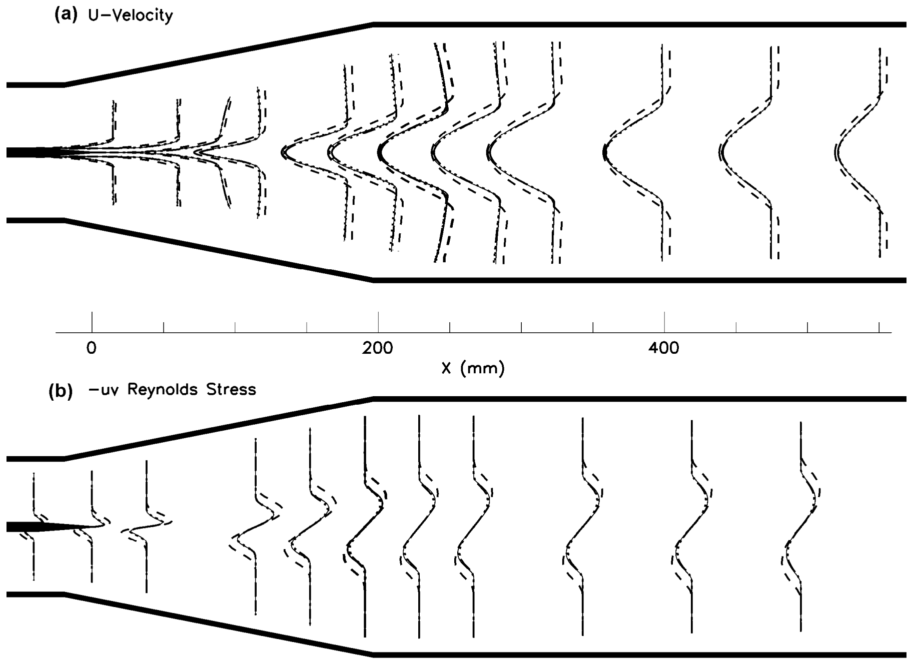


Fig. 20 Computed velocity and –uv Reynolds stress profiles performed on grids of 60x41 (– – –), 90x54 (—— • • •), 120x81 (• • • • •), and 240x162 (——).

IV. Results

Each of the six experimental test cases are described here and the corresponding measurements are tabulated in the appendix. Throughout this report we refer to each of the different geometries by their corresponding case letters (A-F) listed in Table 1. Note that in Driver & Mateer (2002) the different cases were designated by their outer stream line expansion ratio derived from $y_{\phi o}(x=343)/(y_{\phi o}(x=-89) - h/2)$ which is described below.

The spacing of the test section walls downstream of the divergent section, $H_{x=343}$, was varied during the test campaign, while holding the upstream channel height (H_o=108mm) and the splitter plate thickness (h=6.35mm) constant. The degree to which the flow is expanded (ratio of area downstream to area upstream) plays a significant role in the development of the wake. Here we define the expansion ratio, A/A_o, as $W*H_{x=343} / (W_o*(H_o-h))$, where W_o=355.6mm and W=381mm are the spanwise widths of the channel upstream and downstream (respectively) of the side wall jet blowing injector. Recall that the spanwise narrowing of the duct (upstream) is due to the presence of side wall struts that hold the splitter plate and house the side wall jet blowing system.

Streamlines are shown in Fig. 21 for cases A-D, with velocity profiles overlaid on the streamlines. The streamlines were determined experimentally by evaluating stream functions using the velocity measurements and assuming that the flow is 2D. The geometric centerline was assumed to be the zero stream function. Velocity measurements were obtained only in the upper 60% of the channel due to optical access limitations. Velocities in the lower third of the channel were assumed to be the same as the upper third of the channel for the purpose of computing stream function. To the extent that data exists below the symmetry plane, good symmetry can be seen.

Velocity profiles at several span-wise stations (z=0, z = +0.27W, and z = –0.27W) are shown for the x=190 mm location, indicating good two-dimensionality of the flow where z is the distance from the tunnel centerline and W is the width of the tunnel. Good mass conservation is evident by virtue of the outer most streamline conforming to the tunnel wall. The massively separated case (case D) is the exception – here the effects of three-dimensionality are probably causing the deviation of the outer streamline with respect to the tunnel wall. While the massively separated case is probably not a good test case for CFD validation, it is useful for understanding turbulent transport and will be discussed in that vein.

The tangential jet blowing along the upper wall of the wind tunnel can be seen in the velocity profiles. Note that there was no top and bottom wall jet blowing used in the straight wall test case.

Computations using either the SST or SA turbulence models have no difficulty predicting the straight wall test case. However, in the strong adverse pressure gradient cases the computations produce less velocity deficit than that seen in the experiment. No reversed flow is seen in the small separation case (Case C) and there is only a minimal region of reversed flow produced by the SST model in the case with massive separation (Case D).

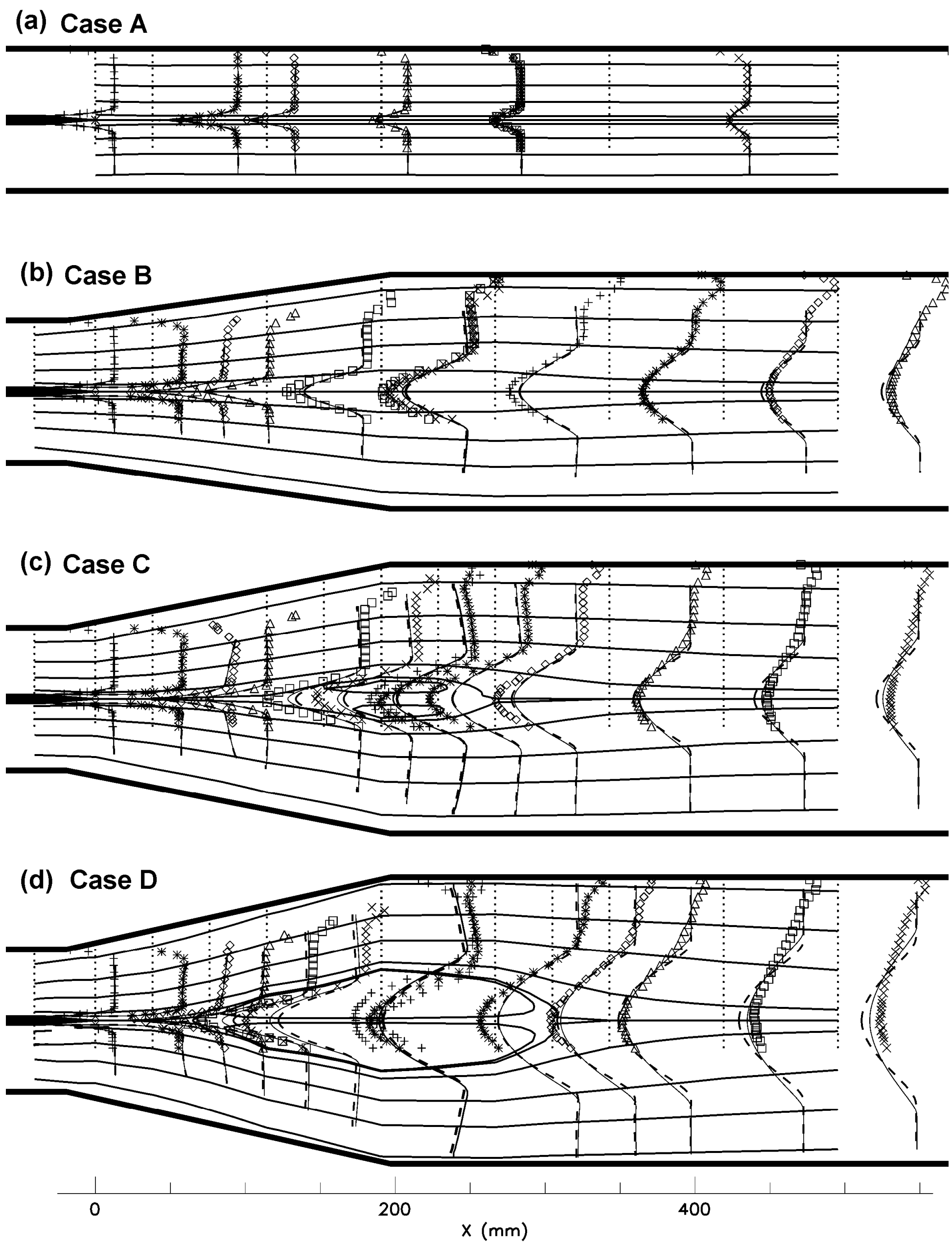


Fig. 21 Measured and computed velocity profiles for various tunnel geometries, streamlines overlaid. SST (——), SA (– – –) models, experiment (symbols).

Streamwise distributions of U-velocity are shown in Fig. 22 for cases B, C, and D (increasing expansion ratio); multiple data sets are included for each case (repeat runs with different LDV configurations). A region of negative velocity along the centerline defines the streamwise extent of the separation for cases C & D. The "free stream" velocity data for these two cases collapse on each other in the upstream region of the flow. Free stream is in quotes because the chosen locus of points may have been in the boundary layer to some extent (not knowing in advance the location of the boundary layer edge).

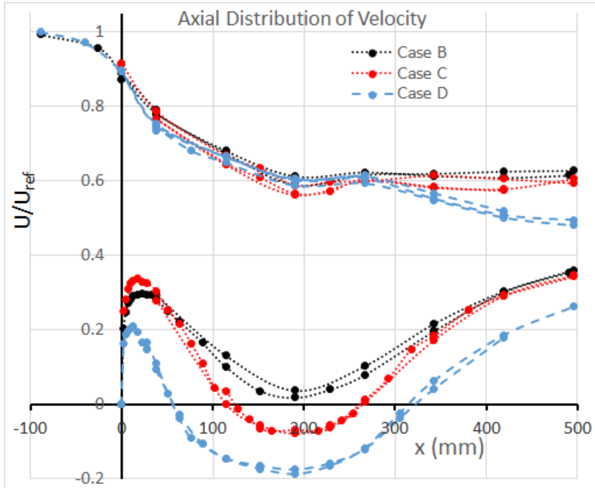


Fig. 22 Streamwise distribution of velocity along centerline and in the “free stream”

The computations shown in Fig. 21 were obtained by adopting one of the experimentally determined streamlines (stream function, ϕ=2.08 m^2/s) as the outer boundary location. The experimentally determined stream function stops short of the top and bottom wall jets, eliminating the need to include the complicated interaction between the jet and the free-stream. Table 2 gives the outer streamline position for each of the test cases described in this paper; these streamlines were used in the computations. Key parameters for each flow are also included in this table. The numbers in italics in the table were not measured, they were extrapolated values used to extend the computational domain. Also no data was obtained where a dash appears in the table.

Table 2. Outer edge streamline coordinates used in computations.

Geometry	Symmetric Cases					Asymmetric Case	
Case	(A)	(B)	(C)	(D)	(E)	(F)	
Description	Parallel	No Sep	Small Sep	Massive Sep	Long TE	Wake with Curvature	
Run#	46	64	55	66	48	44	
X_{TE}(mm)	0	0	0	0	+38	0	
JetSlot(mm)	0	0.20	0.20	0.1	0.20	0.20	
P_{plenum}(atm)	11.2	10.5	9.2	11.2	10.5	11.2	
A/A_o	1.14	1.85	2.12	2.22	2.12	2.17	
$y_{\phi o}(x{=}343)/(y_{\phi o}(x{=}-89)-h/2)$	1.1	2.0	2.25	2.4	2.25	-	
	Upper Wall Location at x>193mm (downstream section)					Upper	Lower
Y_{wall}	53.2	87.6	100.3	105.4	100.3	152.0	-54.0
	Outer Streamline Location					Streamline Location	
	Upper	Upper	Upper	Upper	Upper	Upper	Lower
x(mm)	y(mm)	y(mm)	y(mm)	y(mm)	y(mm)	y(mm)	y(mm)
-723.9	*40.6*	*40.6*	*40.6*	*40.6*	*40.6*	*28.7*	*-32.8*
-469.9	*40.6*	*40.6*	*40.6*	*40.6*	*40.6*	*28.7*	*-32.8*
-215.9	*40.6*	*40.6*	*40.6*	*40.6*	*40.6*	*28.7*	*-32.8*
-88.9	40.6	40.6	40.6	40.6	40.6	28.7	-32.8
-40.6	-	41.7	41.7	41.7	-	-	-
-25.4	-	-	-	-	43.2	29.7	-33.3
0.0	40.9	45.5	43.7	46.5	45.7	34.5	-33.8
38.1	40.1	49.5	51.1	54.9	52.8	44.7	-34.0
76.2	-	-	-	65.8	62.5	-	-
114.3	40.6	61.7	68.3	78.2	72.9	70.4	-34.5
152.4	-	-	77.0	-	-	87.9	-35.6
190.5	40.9	72.9	85.1	100.8	90.2	99.1	-35.8
228.6	-	-	86.4	-	-	-	-
266.7	-	74.9	85.9	101.3	90.2	114.6	-36.6
304.8	-	-	-	99.8	-	116.8	-36.6
342.9	41.1	74.2	84.3	99.1	89.2	115.3	-36.6
419.1	-	74.2	82.6	97.3	87.9	114.0	-36.6
495.3	40.4	75.4	81.3	97.3	86.9	109.5	-35.8
1054.1	*40.4*	*74.2*	*81.3*	*95.5*	*86.9*	*104.1*	*-35.8*

It should be noted that the expansion ratio quoted for each test case in Driver & Mateer (2002) is computed using $y_{\phi o}(x=343)/(y_{\phi o}(x=-89) - h/2)$. An expansion ratio greater than one for the straight wall test case is attributable to the tapering of the splitter plate and the widening of the test section from W_o=356mm to W=381 mm where the sidewall struts end. The expansion ratio derived from streamlines is very nearly the same as that derived from tunnel geometry.

Reynolds shear stress (–*uv*) was also measured for each test case (see Fig. 23). For the parallel wall case (case A) the Reynolds shear stress decays rapidly with distance from the splitter plate trailing edge. Both calculations agree well with the data for this case. As the channel divergence increases so does the shear stress. Both calculations under-predict the magnitude of the shear stress for the strong adverse pressure gradient cases. Good spanwise uniformity is seen again at the x=190mm station where profiles at stations z=0, z=+0.27W, and z=–0.27W can be seen. The exception once again being the massively separated case (case D). Also, for the massively separated case the tangential wall jet blowing has merged with the wake at the downstream measurement location.

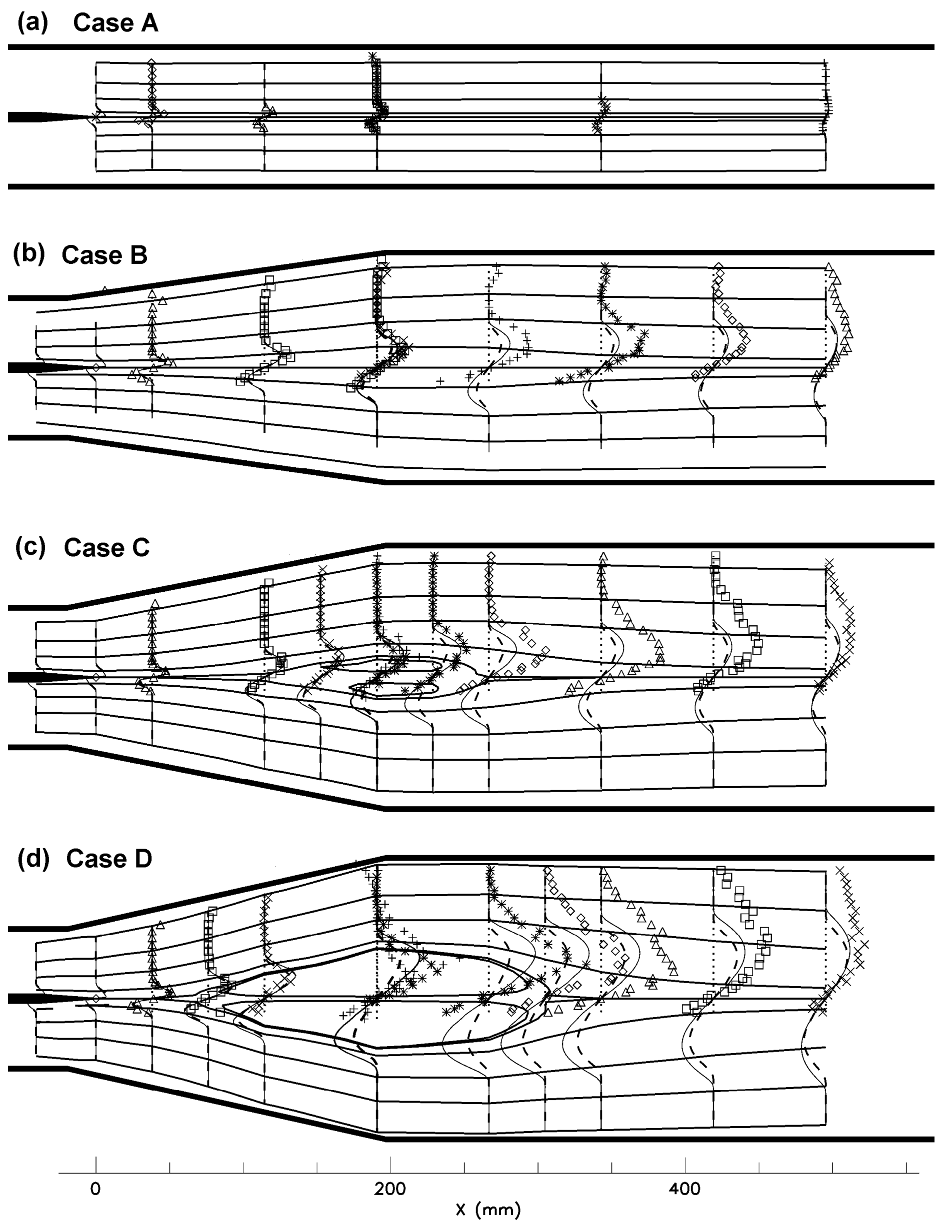


Fig. 23 Measured and computed –*uv* Reynolds shear stress profiles for various tunnel geometries, streamlines overlaid. SST (——), SA (– – –) turbulence models and experiment (symbols).

The pressure distributions corresponding to the divergent wall cases do not differ very much from one to another (see Fig. 24). The pressure distribution is obtained from pressure taps on the splitter plate and pressure taps on the side-wall of the test section.

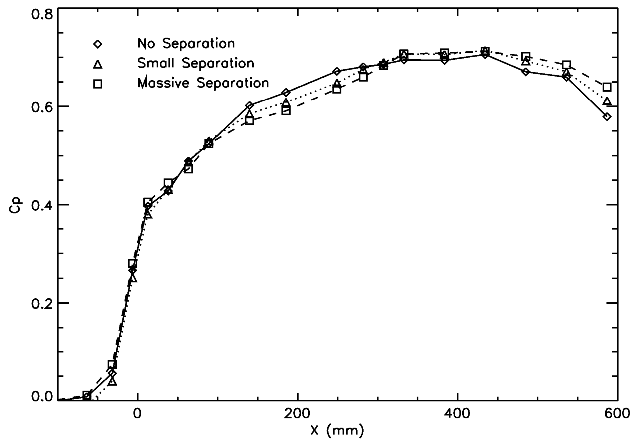


Fig. 24 Pressure distributions. ◊ Case B, Δ Case C, and □ Case D

The pressure distributions are similar between each case due to the displacement effect of the wake (see Fig. 25). The displacement thickness of the wake appears to increase somewhat proportionally to increases in the tunnel divergence. The maximum *–uv* Reynolds shear stress (a measure of the turbulent mixing) increases with distance into the adverse pressure gradient (see Fig. 26).

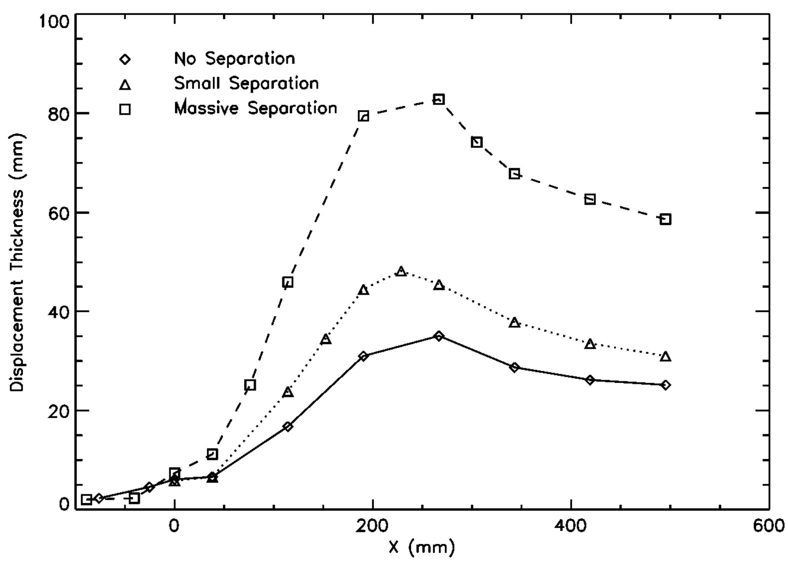


Fig. 25: Displacement thickness distribution. ◊ Case B, Δ Case C, and □ Case D

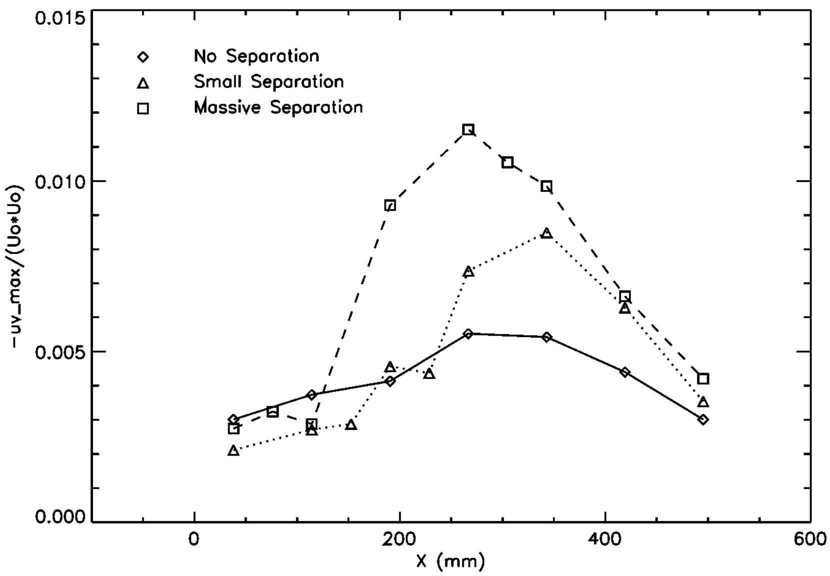


Fig. 26 – uv|$_{max}$ Reynolds stress distribution. ◊ Case B, Δ Case C, and □ Case D

The *–uv* Reynolds shear stress counteracts the adverse pressure gradient to prevent/postpone flow separation. In lethargic regions of the flow, such as along the centerline of the separated flow, the x-momentum equation ($U\partial U/\partial x + V\partial U/\partial y = -(1/\rho)\partial p/\partial x - \partial uv/\partial y$) reduces to $0 = -(1/\rho)\partial p/\partial x - \partial uv/\partial y\,|_{y=0}$ by virtue of the convective term being near zero (V=0 by symmetry and $U << U_\delta$). To illustrate this, terms in the x-momentum equation were evaluated along the centerline of the wake for test case C (see Fig. 27). In the separation bubble (x = 100 to 250mm) the convective term ($U\partial U/\partial x + V\partial U/\partial y$) is near zero and the shear stress term ($-\partial uv/\partial y\,|_{y=0}$) is equal and opposite to the pressure gradient term $-(1/\rho)\partial p/\partial x$. In other words the shear stress term helps to promote pressure recovery despite the flow being separated.

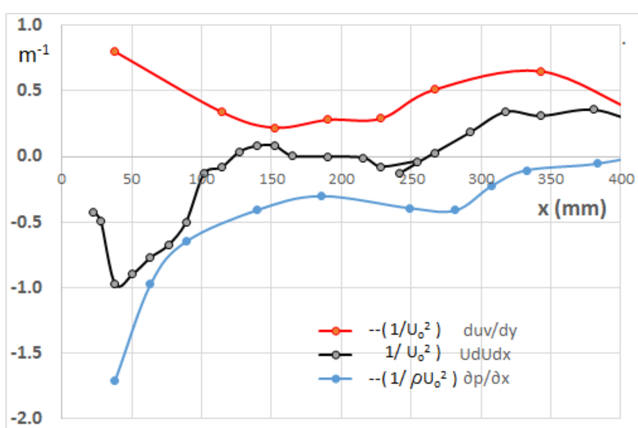


Fig. 27 Terms in the x-momentum equation evaluated along the centerline of the wake.

Similarly the shear stress gradient term was computed along the centerline of the wake for cases B and D and compared to case C (see Fig. 28). The $-\partial uv/\partial y\,|_{y=0}$ term is non zero in all cases; and since $-\partial uv/\partial y$ is not zero, neither is the pressure gradient (whether the flow is separated or not). Consequently, there is no pressure "plateau" region (i.e., $\partial p/\partial x=0$) seen in the separated flow regions of cases C and D (see Fig. 24). The greater the Reynolds shear stress gradient the greater the flow's ability to negotiate the adverse pressure gradient without separating.

It is interesting to note that for the two separated cases (C and D) the shear stress gradient ($-\partial uv/\partial y\,|_{y=0}$) is very nearly the same, despite the relatively large difference in the magnitude of the peak Reynolds shear stress (see Fig. 26). Another interesting point is that the separating cases (C and D) appear to have a reduced level of $-\partial uv/\partial y\,|_{y=0}$ in the near wake region relative to the non-separated case (case B); this is largely due to divergence of the flow (streamlines getting further away from each other); this stretches out the shear stress profile in the y direction (more so in the separated cases than in the non-separated case). In other words the peak Reynolds shear stress is getting pushed further and further away from the centerline with increasing divergence (separation) of the flow, resulting in a reduced $-uv$ gradient.

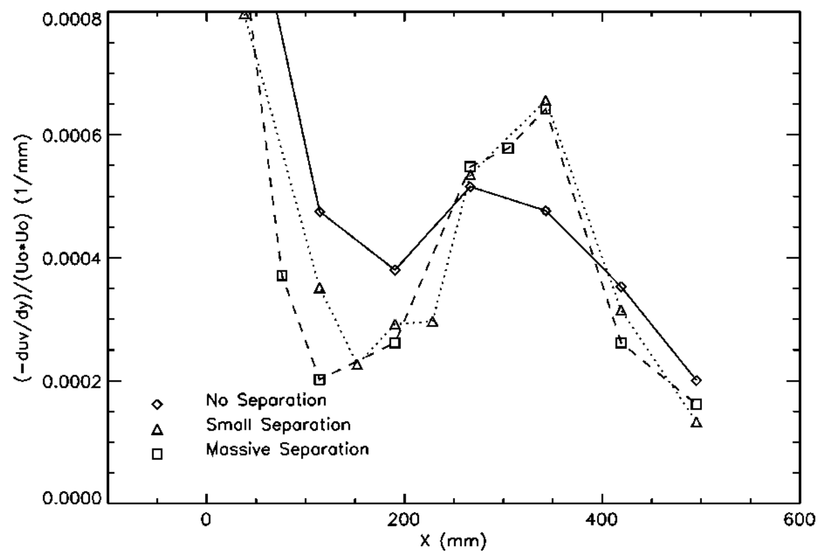


Fig. 28 $-\partial uv/\partial y\,|_{y=0}$ distribution. ◊ Case B, Δ Case C, and □ Case D

A comparison of the experimental data and the computations are shown for the small separation case (case C see Fig. 29). For this small separation case neither computation (SST or SA turbulence model) are able to reproduce the flow reversals seen in the experiment. The computed pressure rise (Fig. 29a) is over-predicted by each turbulence model.

The velocity along the centerline (y=0) predicted by each of the models is higher than in the experiment (Fig. 29b). The stream-wise distribution of local maximum in ($-uv$) Reynolds shear stress is also shown (Fig. 29c). The Reynolds shear stress ($-uv$) computed by each model compares very well in the upstream region of the flow, but downstream neither model is capable of generating the high levels of $-uv$ stress seen in the experiment. These high levels of stress seen in the experiment are responsible for the rapid recovery of the centerline velocity in the downstream region.

The failure to predict the displacement effects of the reversed flow region causes the computed pressures to be too high. This overly optimistic prediction of pressure recovery can in turn lead to unrealistically high predictions of lift, as is often the case for computations of high lift multi-element systems of airfoils. Overly optimistic predictions of maximum lift may be in part due to the turbulence model's failure to predict flow reversals in the near-wake as is the case with this experiment.

An additional calculation was performed in which the turbulence model was modified to slow the growth of the Reynolds shear stress (eddy viscosity actually), see Fig. 29 (– • – SST Modified). An ad hoc modification to INS2D was made in which the eddy viscosity computed by the SST model was multiplied by 0.3 prior to use in the mean flow solver. This modification was applied in a region of the flow between x=0 and 130 mm (smoothly phased in and out). The factor of 0.3 was chosen to obtain a good match to the data. Interestingly, reducing the eddy-viscosity in the upstream region of the flow caused the SST model to produce higher levels of eddy viscosity in the downstream region of the flow where the modification was phased out. This is due to a steeper velocity gradient developed in the wake as a result of a larger velocity deficit. The conclusion is that the biggest deficiency in existing turbulence models is their tendency to over-predict the turbulent eddy-viscosity (Reynolds Stress) in the early stages of flow development. Models fail to sufficiently lag the development of the Reynolds stress in response to changes in the mean flow field brought on by adverse pressure gradient.

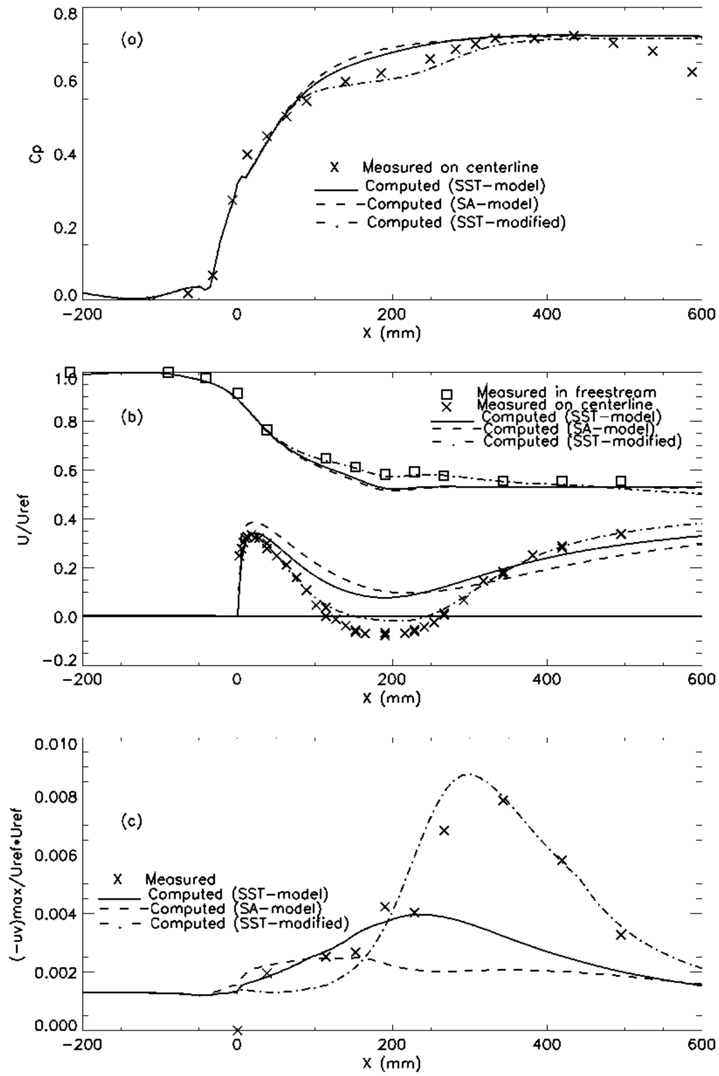


Fig. 29 Pressure, velocity and *–uv* stress evolution for the small separation case C.

We also studied a case in which the splitter plate was made longer (38mm longer) so that the trailing edge extended downstream into the diffuser, further into the adverse pressure gradient region of the flow (see Fig. 30). This was done in the interest of simulating the effects of over-hang in a multi-element airfoil system. The expansion ratio was the same as the shorter trailing edge case (case E). The separation is similar, but slightly more extensive than the shorter trailing edge case. The larger separation (larger than case C) can probably be attributed to the longer length of run that the boundary layer spends in contact with the wall and its associated skin friction. The models compare a little better with this case, probably due to near wall terms in the models persisting further downstream.

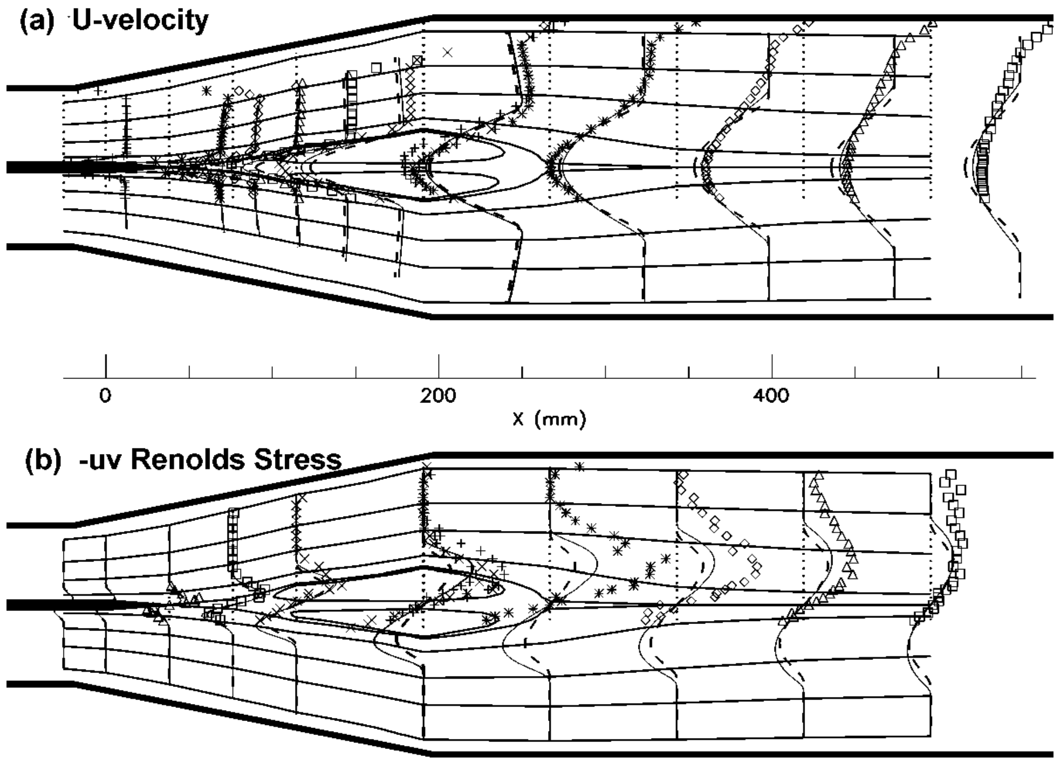


Fig. 30 Extended trailing edge (Case E). Velocity and Reynolds stress measurements (symbols), SST (——), SA (– – –) turbulence models.

Additional tests were performed on wakes with curvature and pressure gradient (Fig. 31). The geometric expansion ratio is approximately 2.17, which is similar to the small separated symmetric case. In this case the plate developed lift with the flow on top of the plate being 1.07 times the nominal reference speed and flow on the bottom of the plate being 0.93 times the nominal reference speed (see Fig. 31). Here the flow shows less of a velocity deficit in the wake. In the curved case the divergent portion of test section is about 10% longer than in the symmetric case, possibly explaining why there is less of a velocity deficit in the curved case than in the symmetric case. The *–uv* stress shown in Fig. 27b is measured in the laboratory frame of reference (*x,y*), in this reference frame one sees small differences between the top and bottom half of the wake layer. Rotating to a streamline-oriented frame of reference (not shown) would be more appropriate for drawing conclusions. The computations with the Spalart-Allmaras (1994) turbulence model were run on a 120x162 grid, which covered the full channel (both the top and bottom halves). The inflow condition specified the inlet velocity on top of the splitter plate to be 1.07 U_{ref} and while an inlet velocity of 0.93 U_{ref} was specified on the underside of the splitter plate. The computations do not obtain as large a velocity deficit as seen in the experiment in the reversed flow region, also the computations do not generate as large levels of Reynolds shear stress compared to the experiment. This model deficiency is similar to that of the symmetric test cases.

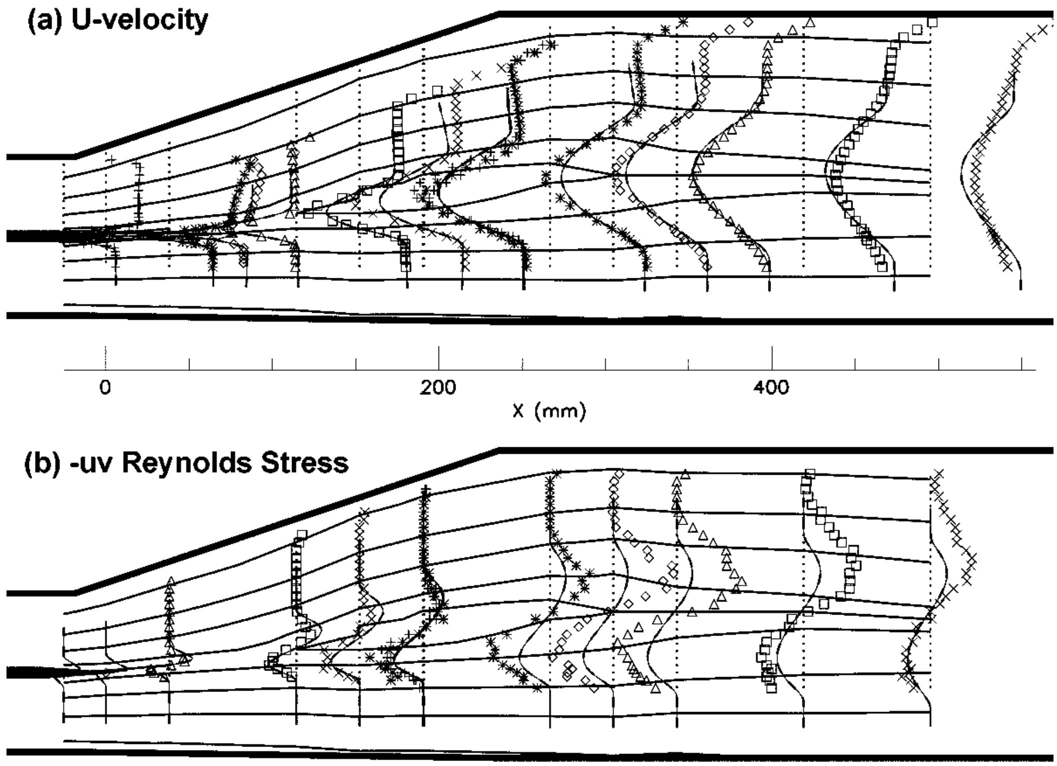


Fig. 31 Wake in an adverse pressure gradient with curvature (Case F).
Velocity and Reynolds stress measurements (symbols), SA (—–) turbulence models.

The inlet profiles for Case F (shown in Fig 32) exhibit asymmetry about the centerline, which is due to the downstream channel being asymmetric, which in turn causes the plate to produce lift. The upper side of the channel diverges downstream of the hinge line, the associated flow turning (about the hinge) creates a low pressure that induces the flow to accelerate in the vicinity of the hinge. Given that mass flow through the test section is controlled by the sonic throat constriction at the exit of the test section, the mass flow through the test section is nearly the same between all 6 test cases. As a consequence of conservation of mass, any augmentation to the mass flow in the upper half of the channel results in a lower mass flow through the lower half of the channel (relative to the other five cases).

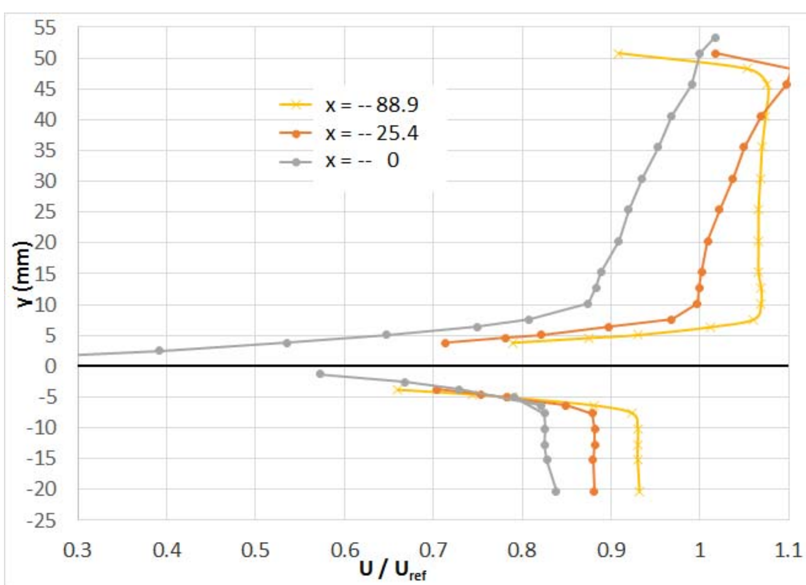


Fig. 32 Inlet profiles for Case F at $x = -88.9$, -25.4, & 0.0 mm

V. Conclusions

Unique, high quality data were obtained on a nominally two-dimensional wake with flow reversals. Laser Doppler velocimetry was used to survey velocities and Reynolds stresses in the flow as it encountered various degrees of adverse pressure gradient. Data on flows with varying degrees of reversed flow were obtained and tabulated in the appendix. The flows were demonstrated to have good span-wise uniformity and two-dimensionality.

The test cases provide an excellent test bed for CFD validation and turbulence model development. Computations with the Spalart-Allmaras and the SST(k-ω) turbulence models fail to capture the flow reversals and the associated displacement effects seen in the experiment. Introducing more "lag" into the turbulence model (in an ad hoc way) provided better agreement with the data.

Turbulent Reynolds stresses are seen to increase with increasing wake velocity deficit, however the gradient of $-uv$ Reynolds shear stress is not significantly altered by the presence of separation.

VI. References

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VII. Appendix of Data Tables

The data described in this report are tabulated in the tables that follow. The tables are constructed with minimal punctuation so that the tables are machine readable . The column headings are only printed at the top of each table and not repeated on subsequent pages, to facilitate machine reading of the tables. Each table is written to this pdf file in a way that the data can be cut and pasted into a text file which in turn can be imported into Excel or read with a free format Fortran READ statement. In the case of the LDV data tables it is only necessary to remove the page numbers that appear between each page of data.

The LDV data was normalized by the nominal value of conditions at the reference station ($x = -89$ mm). A reference velocity of U_{ref}=57.2m/s was used for the LDV data and no attempt was made to correct for small run to run variations due to calibration, temperature effects, or slot blowing variations which appeared to be small on the order of +/–0.6 m/s. This same nominal reference velocity was used in normalizing the wake with curvature (case F), which had a higher than normal reference velocity on the top of the splitter plate and a lower than normal reference velocity on the underside of the plate (due to the plate experiencing lift). The columns in the LDV data tables contain the following headings
X(mm) Y(mm) z(mm) U/Uref V/Uref uu/Uref^2 vv/Uref^2 uv/Uref^2 #u #v #uv YearMoDa.HrMnSc

The first 3 columns (x,y,z) are the spatial location of the measurement, the 4th and 5th column are the mean velocities U and V normalized by U_{ref} and columns 6,7 and 8 are the Reynolds stresses normalized by U_{ref}^2. Columns 9 and 10 are the number of events acquired for the U and V velocities respectively, while column 11 is the number of events when both U and V were recorded at the same time. The last column (12) is the date and time of the data acquisition. Columns 9,10 and 11 are tabulated for use in assessing the uncertainty with each measurement.

The pressure data was normalized by the pitot pressure minus the static pressure on the bottom wall at the far upstream location ($x = -393.7$ mm) using $C_p = (p - p_{x=-394}) / (p_{stag} - p_{x=-394})$. The pressure at $x = -393.7$ mm station was similar to the pressure at the $x = -89$mm location, but the $x = -393.7$ mm station was chosen for normalization because it is further away from any residual effects of downstream divergence on the pressure at the $x = -89$ mm station. Furthermore the quantity ($p_{stag} - p_{x=-394}$) was measured each run where U_{ref} was not. In Driver & Mateer (2002) the coefficient of pressure was calculated using $p_{x=-89}$ as the reference pressure which can be computed from the C_p values reported here by performing the following operation $C_{p(2002)} = (C_p + 0.032)/1.032$.

Module 1 recorded the pressures on the top wall of the tunnel, Module2 recorded the pressures on the bottom wall, and Module 3 recorded the pressures on the splitter plate, pitot pressures and side wall. Module 3 used channels 0-13 to measure the top of the splitter plate, channels 14-19 were used to measure the bottom of the splitter plate, channel 22 was used to measure the pitot pressure and channels 25-31 were used to record the pressures on the side wall of the tunnel.

When comparing different data sets, a smaller subset of pressures is used (described as follows);

1) in the upstream channel ($x < -75$mm) an average of the top and bottom wall pressure,
2) near the trailing edge ($-75 < x < 35$mm) the pressure measured on the splitter plate,
3) in the near field wake ($38 < x < 250$mm) the pressure measured along the side wall of the tunnel, and
4) in the far field wake ($x > 250$mm) an average of the top and bottom wall pressure.

This smaller subset of pressures is also reported in the table, with the heading "Composite of Channel walls, Splitter Plate and Side Wall."

<u>List of Tables included in this appendix</u>

Table 3 Skin Friction Distribution on splitter plate

These measurements are from runs 27 and 33 which are cases that are closely related to cases D and B respectively. The skin friction is normalized by $\frac{1}{2} \rho U_{ref}^2$ where U_{ref} =57.2 m/s

Run 27 Long Trailing Edge, Symmetric Diffuser, *H*=216 mm

Top of Plate x(mm)	Cf	Bottom of Plate x(mm)	Cf
-314.3	0.00325	-393.7	0.00330
-288.9	0.00303	-362.0	0.00279
-260.4	0.00270	-336.6	0.00279
-171.5	0.00286	-279.4	0.00248
-127.0	0.00242	-244.5	0.00249
-117.5	0.00248	-187.3	0.00249
-85.7	0.00220	-123.8	0.00245
-60.3	0.00220	-101.6	0.00212
-34.9	0.00198	-50.8	0.00217
-	-	-34.9	0.00184

Run 33 Long Trailing Edge, Symmetric Diffuser, *H*=179mm

Top of Plate x(mm)	Cf	Bottom of Plate x(mm)	Cf
-406.4	0.00517	-341.6	0.00304
-403.9	0.00503	-154.9	0.00276
-387.4	0.00333	-132.1	0.00210
-334.8	0.00301	-111.8	0.00215
-289.6	0.00302	-45.7	0.00215
-271.8	0.00316	-29.2	0.00226
-241.3	0.00283	-11.4	0.00157
-218.4	0.00286	14.7	0.00147
-213.4	0.00280		
-191.8	0.00295		
-175.3	0.00287		
-157.5	0.00277		
-139.7	0.00310		
-129.5	0.00289		
-77.5	0.00239		
-58.4	0.00234		
-22.9	0.00207		
-11.4	0.00194		
-7.6	0.00234		
0.0	0.00192		
10.2	0.00142		

Table 4 Pressure coefficient for Case A – Parallel Wall Case $M_{x=-343mm} \sim 0.179$

Module 1 (Top Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.019
1	-342.9	0	-0.042
2	-266.7	0	-0.052
3	-165.1	0	-0.051
4	-88.9	0	-0.019
5	0.0	0	0.138
6	12.7	0	0.142
7	25.4	0	0.168
8	38.1	0	0.170
9	50.8	0	0.180
10	63.5	0	0.178
11	76.2	0	0.178
12	88.9	0	0.178
13	101.6	0	0.186
14	114.3	0	0.173
15	127.0	0	0.195
16	139.7	0	0.179
17	152.4	0	0.195
18	165.1	0	0.194
19	177.8	0	0.186
20	190.5	0	0.166
21	218.4	0	0.193
22	231.1	0	0.210
23	256.5	0	0.198
24	281.9	0	0.198
25	332.7	0	0.198
26	383.5	0	0.195
27	434.3	0	0.184
28	485.1	0	0.169
29	535.9	0	0.137
30	586.7	0	0.045
31	637.5	0	-0.179

Module 2 (Bottom Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	0.000
1	-342.9	0	-0.024
2	-266.7	0	-0.070
3	-165.1	0	-0.039
4	-88.9	0	0.014
5	0.0	0	0.164
6	12.7	0	0.158
7	25.4	0	0.172
8	38.1	0	0.171
9	50.8	0	0.180
10	63.5	0	0.184
11	76.2	0	0.185
12	88.9	0	0.172
13	101.6	0	0.169
14	114.3	0	0.194
15	127.0	0	0.198
16	139.7	0	0.196
17	152.4	0	0.196
18	165.1	0	0.197
19	177.8	0	0.197
20	190.5	0	0.197
21	218.4	0	0.194
22	231.1	0	0.181
23	256.5	0	0.214
24	281.9	0	0.198
25	332.7	0	0.209
26	383.5	0	0.211
27	434.3	0	0.188
28	485.1	0	0.169
29	535.9	0	0.135
30	586.7	0	0.049
31	637.5	0	-0.154

Module 3 (Splitter,Side)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.048
1	-317.5	-101.6	-0.082
2	-317.5	0	-0.056
3	-317.5	101.6	-0.071
4	-215.9	0	-0.066
5	-111.1	-101.6	-0.042
6	-111.1	0	-0.030
7	-111.1	101.6	-0.055
8	-63.5	-101.6	0.010
9	-63.5	0	-0.006
10	-63.5	101.6	-0.006
11	-6.4	-101.6	0.176
12	-6.4	-6.35	0.162
13	-6.4	101.6	0.175
14	-317.5	0	-0.043
15	-111.1	0	-0.016
16	-63.5	0	0.017
17	-6.4	96.5	0.188
18	-31.8	7.6	0.004
19	-6.4	-94	0.187
20	-		-
21	-		-
22	Pitot		1.000
23	-		-
24	-		-
25	12.7	190.5	0.148
26	38.1	190.5	0.239
27	63.5	190.5	0.131
28	88.9	190.5	0.208
29	139.7	190.5	0.211
30	185.4	190.5	0.211
31	248.9	190.5	0.198

Composite of Channel walls, Splitter Plate and Side Wall   Representing centerline pressures along plate & Wake

x(mm)	Cp	
-393.7	-0.010	Top&Bottom
-342.9	-0.033	Top&Bottom
-266.7	-0.061	Top&Bottom
-165.1	-0.045	Top&Bottom
-88.9	-0.003	Top&Bottom
-31.8	0.004	Splitter
-6.4	0.162	Splitter
25.4	0.170	Top&Bottom
76.2	0.182	Top&Bottom
127.0	0.197	Top&Bottom
177.8	0.192	Top&Bottom
218.4	0.193	Top&Bottom
256.5	0.206	Top&Bottom
281.9	0.198	Top&Bottom
332.7	0.203	Top&Bottom
383.5	0.203	Top&Bottom
434.3	0.186	Top&Bottom
485.1	0.169	Top&Bottom
535.9	0.136	Top&Bottom
586.7	0.047	Top&Bottom
637.5	-0.166	Top&Bottom

Table 5 Pressure coefficient for Case B – Moderate Adverse Pressure Gradient

Module 1 (Top Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.033
1	-342.9	0	-0.042
2	-266.7	0	-0.063
3	-165.1	0	-0.080
4	-88.9	0	-0.030
5	0.0	0	0.077
6	12.7	0	0.182
7	25.4	0	0.350
8	38.1	0	0.369
9	50.8	0	0.421
10	63.5	0	0.444
11	76.2	0	0.479
12	88.9	0	0.481
13	101.6	0	0.541
14	114.3	0	0.533
15	127.0	0	0.586
16	139.7	0	0.577
17	152.4	0	0.626
18	165.1	0	0.643
19	177.8	0	0.689
20	190.5	0	0.762
21	218.4	0	0.675
22	231.1	0	0.702
23	256.5	0	0.661
24	281.9	0	0.665
25	307.3	0	0.670
26	332.7	0	0.679
27	383.5	0	0.683
28	434.3	0	0.700
29	485.1	0	0.666
30	535.9	0	0.631
31	586.7	0	0.562

Module 2 (Bottom Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	0.000
1	-342.9	0	-0.032
2	-266.7	0	-0.071
3	-165.1	0	-0.048
4	-88.9	0	-0.003
5	0.0	0	0.276
6	12.7	0	0.298
7	25.4	0	0.372
8	38.1	0	0.394
9	50.8	0	0.444
10	63.5	0	0.474
11	76.2	0	0.502
12	88.9	0	0.502
13	101.6	0	0.542
14	114.3	0	0.607
15	127.0	0	0.623
16	139.7	0	0.638
17	152.4	0	0.647
18	165.1	0	0.657
19	177.8	0	0.710
20	190.5	0	0.811
21	218.4	0	0.691
22	231.1	0	0.699
23	256.5	0	0.654
24	281.9	0	0.693
25	307.3	0	0.681
26	332.7	0	0.676
27	383.5	0	0.695
28	434.3	0	0.691
29	485.1	0	0.721
30	535.9	0	0.647
31	586.7	0	0.578

Module 3 (Splitter,Side)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.050
1	-317.5	-101.6	-0.094
2	-317.5	0	-0.060
3	-317.5	101.6	-0.078
4	-215.9	0	-0.051
5	-111.1	-101.6	-0.054
6	-111.1	0	-0.041
7	-111.1	101.6	-0.144
8	-63.5	-101.6	0.007
9	-63.5	0	-0.031
10	-63.5	101.6	-0.021
11	-6.4	-101.6	0.247
12	-6.4	-6.35	0.235
13	-6.4	101.6	0.243
14	-317.5	0	-0.028
15	-111.1	0	-0.006
16	-63.5	0	0.000
17	-6.4	96.5	0.250
18	-31.8	7.6	0.018
19	-6.4	-94	0.252
20	-		-
21	-		-
22	Pitot		1.000
23	-		-
24	-		-
25	12.7	190.5	0.373
26	38.1	190.5	0.405
27	63.5	190.5	0.466
28	88.9	190.5	0.507
29	139.7	190.5	0.576
30	185.4	190.5	0.605
31	248.9	190.5	0.664

Composite of Channel walls, Splitter Plate and Side Wall Representing centerline pressures along plate & Wake

x(mm)	Cp	
-393.7	-0.016	Top&Bottom
-342.9	-0.037	Top&Bottom
-266.7	-0.067	Top&Bottom
-165.1	-0.064	Top&Bottom
-88.9	-0.016	Top&Bottom
-31.8	0.018	Splitter
-6.4	0.235	Splitter
38.1	0.405	Side
63.5	0.466	Side
88.9	0.507	Side
139.7	0.576	Side
185.4	0.605	Side
248.9	0.664	Side
281.9	0.679	Top&Bottom
307.3	0.676	Top&Bottom
332.7	0.677	Top&Bottom
383.5	0.689	Top&Bottom
434.3	0.695	Top&Bottom
485.1	0.694	Top&Bottom
535.9	0.639	Top&Bottom
586.7	0.570	Top&Bottom

Table 6 Pressure coefficient for Case C – Small Separation

Module 1 (Top Wall)				Module 2 (Bottom Wall)				Module 3 (Splitter,Side)			
#	x(mm)	z(mm)	Cp	#	x(mm)	z(mm)	Cp	#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.014	0	-393.7	0	0.000	0	-393.7	0	-0.076
1	-342.9	0	-0.037	1	-342.9	0	-0.033	1	-317.5	-101.6	-0.087
2	-266.7	0	-0.056	2	-266.7	0	-0.074	2	-317.5	0	-0.051
3	-165.1	0	-0.059	3	-165.1	0	-0.051	3	-317.5	101.6	-0.068
4	-88.9	0	-0.039	4	-88.9	0	-0.007	4	-215.9	0	-0.048
5	0.0	0	0.064	5	0.0	0	0.210	5	-111.1	-101.6	-0.064
6	12.7	0	0.213	6	12.7	0	0.282	6	-111.1	0	-0.047
7	25.4	0	0.343	7	25.4	0	0.364	7	-111.1	101.6	-0.064
8	38.1	0	0.390	8	38.1	0	0.421	8	-63.5	-101.6	-0.003
9	50.8	0	0.447	9	50.8	0	0.462	9	-63.5	0	-0.029
10	63.5	0	0.468	10	63.5	0	0.490	10	-63.5	101.6	-0.021
11	76.2	0	0.490	11	76.2	0	0.516	11	-6.4	-101.6	0.253
12	88.9	0	0.516	12	88.9	0	0.516	12	-6.4	-6.35	0.240
13	101.6	0	0.550	13	101.6	0	0.553	13	-6.4	101.6	0.256
14	114.3	0	0.549	14	114.3	0	0.586	14	-317.5	0	-0.059
15	127.0	0	0.591	15	127.0	0	0.598	15	-111.1	0	-0.038
16	139.7	0	0.591	16	139.7	0	0.626	16	-63.5	0	-0.007
17	152.4	0	0.629	17	152.4	0	0.647	17	-6.4	96.5	0.263
18	165.1	0	0.645	18	165.1	0	0.657	18	-31.8	7.6	0.026
19	177.8	0	0.686	19	177.8	0	0.699	19	-6.4	-94	0.260
20	190.5	0	0.736	20	190.5	0	0.749	20	-		-
21	218.4	0	0.694	21	218.4	0	0.709	21	-		-
22	231.1	0	0.680	22	231.1	0	0.689	22	Pitot		1.000
23	256.5	0	0.662	23	256.5	0	0.691	23	-		-
24	281.9	0	0.671	24	281.9	0	0.684	24	-		-
25	307.3	0	0.688	25	307.3	0	0.696	25	12.7	190.5	0.372
26	332.7	0	0.703	26	332.7	0	0.696	26	38.1	190.5	0.423
27	383.5	0	0.701	27	383.5	0	0.715	27	63.5	190.5	0.479
28	434.3	0	0.714	28	434.3	0	0.709	28	88.9	190.5	0.522
29	485.1	0	0.687	29	485.1	0	0.707	29	139.7	190.5	0.578
30	535.9	0	0.668	30	535.9	0	0.676	30	185.4	190.5	0.601
31	586.7	0	0.612	31	586.7	0	0.614	31	248.9	190.5	0.644

Composite of Channel walls, Splitter Plate and Side Wall Representing centerline pressures along plate & Wake

x(mm)	Cp	
-393.7	-0.007	Top&Bottom
-342.9	-0.035	Top&Bottom
-266.7	-0.065	Top&Bottom
-165.1	-0.055	Top&Bottom
-88.9	-0.023	Top&Bottom
-31.8	0.026	Splitter
-6.4	0.240	Splitter
38.1	0.423	Side
63.5	0.479	Side
88.9	0.522	Side
139.7	0.578	Side
185.4	0.601	Side
248.9	0.644	Side
281.9	0.677	Top&Bottom
307.3	0.692	Top&Bottom
332.7	0.700	Top&Bottom
383.5	0.708	Top&Bottom
434.3	0.711	Top&Bottom
485.1	0.697	Top&Bottom
535.9	0.672	Top&Bottom
586.7	0.613	Top&Bottom

Table 7 Pressure coefficient for Case D – Massive Separation

Module 1 (Top Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.027
1	-342.9	0	-0.027
2	-266.7	0	-0.053
3	-165.1	0	-0.053
4	-88.9	0	-0.058
5	0.0	0	0.094
6	12.7	0	0.247
7	25.4	0	0.367
8	38.1	0	0.410
9	50.8	0	0.453
10	63.5	0	0.463
11	76.2	0	0.495
12	88.9	0	0.483
13	101.6	0	0.535
14	114.3	0	0.540
15	127.0	0	0.574
16	139.7	0	0.559
17	152.4	0	0.603
18	165.1	0	0.617
19	177.8	0	0.660
20	190.5	0	0.726
21	218.4	0	0.684
22	231.1	0	0.654
23	256.5	0	0.623
24	281.9	0	0.647
25	307.3	0	0.674
26	332.7	0	0.695
27	383.5	0	0.697
28	434.3	0	0.709
29	485.1	0	0.681
30	535.9	0	0.688
31	586.7	0	0.627

Module 2 (Bottom Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	0.000
1	-342.9	0	-0.033
2	-266.7	0	-0.063
3	-165.1	0	-0.048
4	-88.9	0	-0.006
5	0.0	0	0.178
6	12.7	0	0.310
7	25.4	0	0.378
8	38.1	0	0.422
9	50.8	0	0.458
10	63.5	0	0.478
11	76.2	0	0.509
12	88.9	0	0.507
13	101.6	0	0.543
14	114.3	0	0.556
15	127.0	0	0.570
16	139.7	0	0.592
17	152.4	0	0.617
18	165.1	0	0.626
19	177.8	0	0.674
20	190.5	0	0.714
21	218.4	0	0.689
22	231.1	0	0.668
23	256.5	0	0.662
24	281.9	0	0.654
25	307.3	0	0.675
26	332.7	0	0.681
27	383.5	0	0.705
28	434.3	0	0.705
29	485.1	0	0.709
30	535.9	0	0.652
31	586.7	0	0.625

Module 3 (Splitter,Side)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.068
1	-317.5	-101.6	-0.086
2	-317.5	0	-0.059
3	-317.5	101.6	-0.067
4	-215.9	0	-0.066
5	-111.1	-101.6	-0.084
6	-111.1	0	-0.015
7	-111.1	101.6	-0.074
8	-63.5	-101.6	-0.002
9	-63.5	0	-0.012
10	-63.5	101.6	-0.013
11	-6.4	-101.6	0.256
12	-6.4	-6.35	0.251
13	-6.4	101.6	0.281
14	-317.5	0	-0.031
15	-111.1	0	-0.023
16	-63.5	0	0.012
17	-6.4	96.5	0.275
18	-31.8	7.6	0.051
19	-6.4	-94	0.270
20	-		-
21	-		-
22	Pitot		1.000
23	-		-
24	-		-
25	12.7	190.5	0.395
26	38.1	190.5	0.429
27	63.5	190.5	0.461
28	88.9	190.5	0.519
29	139.7	190.5	0.560
30	185.4	190.5	0.575
31	248.9	190.5	0.623

Composite of Channel walls, Splitter Plate and Side Wall Representing centerline pressures along plate & Wake

x(mm)	Cp	
-393.7	-0.013	Top&Bottom
-342.9	-0.030	Top&Bottom
-266.7	-0.058	Top&Bottom
-165.1	-0.050	Top&Bottom
-88.9	-0.032	Top&Bottom
-31.8	0.051	Splitter
-6.4	0.251	Splitter
38.1	0.429	Side
63.5	0.461	Side
88.9	0.519	Side
139.7	0.560	Side
185.4	0.575	Side
248.9	0.623	Side
281.9	0.650	Top&Bottom
307.3	0.674	Top&Bottom
332.7	0.688	Top&Bottom
383.5	0.701	Top&Bottom
434.3	0.707	Top&Bottom
485.1	0.695	Top&Bottom
535.9	0.670	Top&Bottom
586.7	0.626	Top&Bottom

Table 8 Pressure coefficient for Case E – Long Trailing Edge

Module 1 (Top Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.022
1	-342.9	0	-0.046
2	-266.7	0	-0.062
3	-165.1	0	-0.055
4	-88.9	0	-0.029
5	0.0	0	-0.022
6	12.7	0	0.145
7	25.4	0	0.322
8	38.1	0	0.378
9	50.8	0	0.429
10	63.5	0	0.439
11	76.2	0	0.445
12	88.9	0	0.461
13	101.6	0	0.499
14	114.3	0	0.478
15	127.0	0	0.555
16	139.7	0	0.534
17	152.4	0	0.585
18	165.1	0	0.609
19	177.8	0	0.646
20	190.5	0	0.723
21	218.4	0	0.657
22	231.1	0	0.647
23	256.5	0	0.617
24	281.9	0	0.649
25	307.3	0	0.679
26	332.7	0	0.688
27	383.5	0	0.696
28	434.3	0	0.701
29	485.1	0	0.679
30	535.9	0	0.664
31	586.7	0	0.602

Module 2 (Bottom Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	0.000
1	-342.9	0	-0.022
2	-266.7	0	-0.061
3	-165.1	0	-0.027
4	-88.9	0	0.011
5	0.0	0	0.289
6	12.7	0	0.270
7	25.4	0	0.353
8	38.1	0	0.406
9	50.8	0	0.440
10	63.5	0	0.464
11	76.2	0	0.483
12	88.9	0	0.454
13	101.6	0	0.483
14	114.3	0	0.537
15	127.0	0	0.546
16	139.7	0	0.574
17	152.4	0	0.594
18	165.1	0	0.615
19	177.8	0	0.667
20	190.5	0	0.754
21	218.4	0	0.675
22	231.1	0	0.654
23	256.5	0	0.649
24	281.9	0	0.669
25	307.3	0	0.672
26	332.7	0	0.679
27	383.5	0	0.694
28	434.3	0	0.699
29	485.1	0	0.689
30	535.9	0	0.668
31	586.7	0	0.599

Module 3 (Splitter,Side)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.052
1	-317.5	-101.6	-0.094
2	-317.5	0	-0.065
3	-317.5	101.6	-0.078
4	-215.9	0	-0.026
5	-111.1	-101.6	-0.059
6	-111.1	0	-0.038
7	-111.1	101.6	-0.075
8	-63.5	-101.6	0.014
9	-63.5	0	-0.003
10	-63.5	101.6	-0.002
11	25.4	-101.6	0.400
12	25.4	-6.35	0.399
13	25.4	101.6	0.382
14	-317.5	0	-0.044
15	-111.1	0	-0.003
16	-63.5	0	0.040
17	25.4	96.5	0.400
18	-12.7	7.6	0.137
19	25.4	-94	0.405
20	-		-
21	-		-
22	Pitot		1.000
23	-		-
24	-		-
25	12.7	190.5	0.311
26	38.1	190.5	0.406
27	63.5	190.5	0.466
28	88.9	190.5	0.493
29	139.7	190.5	0.538
30	185.4	190.5	0.571
31	248.9	190.5	0.626

Composite of Channel walls, Splitter Plate and Side Wall   Representing centerline pressures along plate & Wake

x(mm)	Cp	
-393.7	-0.011	Top&Bottom
-342.9	-0.034	Top&Bottom
-266.7	-0.061	Top&Bottom
-165.1	-0.041	Top&Bottom
-88.9	-0.009	Top&Bottom
-12.7	0.137	Splitter
25.4	0.382	Splitter
38.1	0.406	Side
63.5	0.466	Side
88.9	0.493	Side
139.7	0.538	Side
185.4	0.571	Side
248.9	0.626	Side
281.9	0.659	Top&Bottom
307.3	0.675	Top&Bottom
332.7	0.683	Top&Bottom
383.5	0.695	Top&Bottom
434.3	0.700	Top&Bottom
485.1	0.684	Top&Bottom
535.9	0.666	Top&Bottom
586.7	0.600	Top&Bottom

Table 9 Pressure coefficient for Case F – Curved Wake

Module 1 (Top Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.234
1	-342.9	0	-0.265
2	-266.7	0	-0.289
3	-165.1	0	-0.282
4	-88.9	0	-0.257
5	0.0	0	-0.182
6	12.7	0	0.060
7	25.4	0	0.265
8	38.1	0	0.338
9	50.8	0	0.411
10	63.5	0	0.416
11	76.2	0	0.429
12	88.9	0	0.450
13	101.6	0	0.497
14	114.3	0	0.479
15	127.0	0	0.563
16	139.7	0	0.525
17	152.4	0	0.583
18	165.1	0	0.599
19	177.8	0	0.599
20	190.5	0	0.588
21	218.4	0	0.686
22	231.1	0	0.886
23	256.5	0	0.750
24	281.9	0	0.684
25	307.3	0	0.663
26	332.7	0	0.679
27	383.5	0	0.682
28	434.3	0	0.683
29	485.1	0	0.688
30	535.9	0	0.667
31	586.7	0	0.624

Module 2 (Bottom Wall)

#	x(mm)	z(mm)	Cp
0	-393.7	0	0.000
1	-342.9	0	-0.010
2	-266.7	0	-0.057
3	-165.1	0	-0.031
4	-88.9	0	0.030
5	0.0	0	0.396
6	12.7	0	0.294
7	25.4	0	0.360
8	38.1	0	0.371
9	50.8	0	0.416
10	63.5	0	0.440
11	76.2	0	0.451
12	88.9	0	0.411
13	101.6	0	0.434
14	114.3	0	0.517
15	127.0	0	0.530
16	139.7	0	0.540
17	152.4	0	0.544
18	165.1	0	0.552
19	177.8	0	0.566
20	190.5	0	0.574
21	218.4	0	0.584
22	231.1	0	0.625
23	256.5	0	0.603
24	281.9	0	0.609
25	332.7	0	0.654
26	383.5	0	0.687
27	434.3	0	0.679
28	485.1	0	0.688
29	535.9	0	0.677
30	586.7	0	0.640
31	637.5	0	0.535

Module 3 (Splitter,Side)

#	x(mm)	z(mm)	Cp
0	-393.7	0	-0.293
1	-317.5	-101.6	-0.323
2	-317.5	0	-0.285
3	-317.5	101.6	-0.305
4	-215.9	0	-0.302
5	-111.1	-101.6	-0.279
6	-111.1	0	-0.258
7	-111.1	101.6	-0.287
8	-63.5	-101.6	-0.208
9	-63.5	0	-0.221
10	-63.5	101.6	-0.209
11	-6.4	-101.6	0.177
12	-6.4	-6.35	0.170
13	-6.4	101.6	0.202
14	-317.5	0	-0.028
15	-111.1	0	0.006
16	-63.5	0	0.031
17	-6.4	96.5	0.228
18	-31.8	7.6	-0.124
19	-6.4	-94	0.224
20	-		-
21	-		-
22	Pitot		1.000
23	-		-
24	-		-
25	12.7	190.5	0.340
26	38.1	190.5	0.388
27	63.5	190.5	0.376
28	88.9	190.5	0.482
29	139.7	190.5	0.517
30	185.4	190.5	0.576
31	248.9	190.5	0.607

Table 10 LDV Data for Case A – Parallel Wall Case   Run 46

For this case the upstream velocity was a little higher than the nominal value of 57.2 m/s, due to the top and bottom wall slot blowing being turned off. Never-the-less we normalized this data set with the nominal value of 57.2 m/s for consistency with the other data sets. For this reason the normalized velocity seen in this table measures greater than 1 at the upstream station. See the end of the section on <u>Geometry of Wall Jet Blowing</u> on page 6 for an explanation of the effects of slot blowing on the upstream flow.

X(mm)	Y(mm)	z(mm)	U/Uref	V/Uref	uu/Uref^2	vv/Uref^2	uv/Uref^2	#u	#v	#uv	YearMoDa.HrMnSc
-88.9	-20.320	0.0	1.030	0.000	0.00000	0.00000	0.00000	1	24	0	19990922.160700
-88.9	-15.240	0.0	1.026	0.000	0.00002	0.00000	0.00000	2	0	0	19990922.160700
-88.9	-12.700	0.0	1.026	0.000	0.00001	0.00000	0.00000	13	0	0	19990922.160700
-88.9	-10.160	0.0	1.025	0.000	0.00000	0.00000	0.00000	2	0	0	19990922.160700
-88.9	-8.890	0.0	1.027	0.000	0.00000	0.00000	0.00000	1	0	0	19990922.160700
-88.9	-7.620	0.0	1.024	0.000	0.00008	0.00000	0.00000	5	0	0	19990922.160700
-88.9	-6.350	0.0	0.918	0.000	0.00322	0.00000	0.00000	19	0	0	19990922.160700
-88.9	-5.080	0.0	0.824	0.000	0.00457	0.00000	0.00000	29	0	0	19990922.160700
-88.9	-4.318	0.0	0.770	0.000	0.00518	0.00000	0.00000	56	0	0	19990922.160700
-88.9	-3.810	0.0	0.716	0.000	0.00523	0.00000	0.00000	30	0	0	19990922.160700
-88.9	4.318	0.0	0.206	0.000	0.00133	0.00000	0.00000	8	0	25	19990922.160700
-88.9	4.318	0.0	0.818	0.000	0.00230	0.00000	0.00000	3	0	28	19990922.160700
-88.9	4.318	0.0	0.818	0.000	0.00230	0.00000	0.00000	3	0	30	19990922.160700
-88.9	4.318	0.0	0.885	0.000	0.00000	0.00000	0.00000	1	0	0	19990922.160700
-88.9	5.080	0.0	0.842	0.000	0.00193	0.00000	0.00000	3	0	30	19990922.160700
-88.9	5.080	0.0	0.812	0.000	0.00407	0.00000	0.00000	4	0	28	19990922.160700
-88.9	5.080	0.0	0.872	0.000	0.00009	0.00000	0.00000	2	0	0	19990922.160700
-88.9	6.350	0.0	0.914	0.000	0.00219	0.00000	0.00000	3	0	28	19990922.160700
-88.9	6.350	0.0	0.948	0.000	0.00004	0.00000	0.00000	2	0	0	19990922.160700
-88.9	7.620	0.0	1.030	0.000	0.00002	0.00000	0.00000	3	0	0	19990922.160700
-88.9	8.890	0.0	1.044	0.000	0.00004	0.00000	0.00000	12	0	0	19990922.160700
-88.9	10.160	0.0	1.042	0.000	0.00004	0.00000	0.00000	11	0	0	19990922.160700
-88.9	12.700	0.0	1.043	0.000	0.00003	0.00000	0.00000	23	20	0	19990922.160700
-88.9	15.240	0.0	1.043	0.000	0.00002	0.00000	0.00000	14	21	0	19990922.160700
-88.9	20.320	0.0	1.045	0.000	0.00002	0.00000	0.00000	14	0	0	19990922.160700
-88.9	25.400	0.0	1.044	0.000	0.00002	0.00000	0.00000	15	0	0	19990922.160700
0.0	-17.780	0.0	0.935	0.000	0.00000	0.00000	0.00000	1	0	0	19990901.144119
0.0	-15.240	0.0	0.938	0.000	0.00000	0.00000	0.00000	1	0	0	19990901.144128
0.0	-10.160	0.0	0.927	0.000	0.00001	0.00000	0.00000	14	0	0	19990901.144203
0.0	-7.620	0.0	0.921	0.000	0.00006	0.00000	0.00000	30	0	0	19990901.144211
0.0	-5.080	0.0	0.829	0.000	0.00217	0.00000	0.00000	618	0	0	19990901.144217
0.0	-2.540	0.0	0.687	0.000	0.00482	0.00000	0.00000	967	0	0	19990901.144222
0.0	-3.810	0.0	0.762	0.000	0.00372	0.00000	0.00000	930	0	0	19990901.144247
0.0	-1.270	0.0	0.561	0.000	0.00619	0.00000	0.00000	1004	0	0	19990901.144304
0.0	1.270	0.0	0.574	0.000	0.00637	0.00000	0.00000	1010	0	0	19990901.144317
0.0	2.540	0.0	0.688	0.000	0.00497	0.00000	0.00000	996	0	0	19990901.144331
0.0	3.810	0.0	0.767	0.000	0.00344	0.00000	0.00000	940	0	0	19990901.144346
0.0	5.080	0.0	0.831	0.000	0.00204	0.00000	0.00000	754	0	0	19990901.144358
0.0	7.620	0.0	0.915	0.000	0.00064	0.00000	0.00000	37	0	0	19990901.144413
0.0	10.160	0.0	0.933	0.000	0.00001	0.00000	0.00000	7	0	0	19990901.144431
0.0	12.700	0.0	0.935	0.000	0.00000	0.00000	0.00000	2	0	0	19990901.144500
0.0	15.240	0.0	0.940	0.000	0.00000	0.00000	0.00000	1	0	0	19990901.144525
190.5	0.000	0.0	0.752	-0.007	0.00177	0.00195	0.00014	1017	731	730	19990901.140028
38.1	-20.320	0.0	0.944	0.000	0.00006	0.00000	0.00000	1020	0	0	19990901.140057
38.1	-15.240	0.0	0.943	0.000	0.00006	0.00000	0.00000	1020	0	0	19990901.140102
38.1	-12.700	0.0	0.942	0.000	0.00006	0.00000	0.00000	1022	0	0	19990901.140107
38.1	-10.160	0.0	0.941	-0.004	0.00005	0.00017	-0.00001	1020	591	591	19990901.140112
38.1	-7.620	0.0	0.940	-0.005	0.00014	0.00023	0.00004	1021	802	801	19990901.140117
38.1	-5.080	0.0	0.889	-0.002	0.00207	0.00103	0.00055	1023	817	817	19990901.140122
38.1	-2.540	0.0	0.738	-0.002	0.00566	0.00267	0.00184	1021	769	768	19990901.140127
38.1	0.000	0.0	0.623	0.000	0.00323	0.00249	-0.00012	1015	667	666	19990901.140132
38.1	2.540	0.0	0.744	-0.012	0.00518	0.00255	-0.00157	1019	407	407	19990901.140137
38.1	5.080	0.0	0.886	-0.013	0.00178	0.00088	-0.00045	1021	502	501	19990901.140142
38.1	7.620	0.0	0.936	-0.011	0.00011	0.00019	-0.00001	1020	748	748	19990901.140146
38.1	10.160	0.0	0.938	-0.011	0.00007	0.00011	0.00000	1023	843	843	19990901.140151
38.1	12.700	0.0	0.939	-0.010	0.00006	0.00008	0.00000	1020	843	843	19990901.140156
38.1	15.240	0.0	0.939	-0.009	0.00005	0.00009	0.00000	1018	783	782	19990901.140201
38.1	20.320	0.0	0.941	-0.008	0.00005	0.00009	0.00000	1022	815	814	19990901.140207
38.1	25.400	0.0	0.940	-0.007	0.00005	0.00012	-0.00001	1020	778	778	19990901.140212
38.1	30.480	0.0	0.940	-0.003	0.00006	0.00014	0.00000	1020	719	719	19990901.140217

38.1	35.560	0.0	0.941	-0.002	0.00006	0.00021	0.00000	1018	701	701	19990901.140223
38.1	40.640	0.0	0.940	-0.003	0.00023	0.00026	0.00006	1016	656	656	19990901.140230
38.1	45.720	0.0	0.936	0.000	0.00052	0.00000	0.00000	1017	0	0	19990901.140238
38.1	50.800	0.0	0.749	0.000	0.00780	0.00000	0.00000	1002	0	0	19990901.140253
114.3	-20.320	0.0	0.928	0.000	0.00004	0.00000	0.00000	1023	0	0	19990901.140330
114.3	-15.240	0.0	0.927	0.000	0.00006	0.00000	0.00000	1020	0	0	19990901.140336
114.3	-12.700	0.0	0.927	0.000	0.00006	0.00000	0.00000	1021	0	0	19990901.140341
114.3	-10.160	0.0	0.927	-0.008	0.00009	0.00029	0.00000	1022	600	599	19990901.140346
114.3	-7.620	0.0	0.920	-0.007	0.00045	0.00053	0.00014	1023	818	818	19990901.140351
114.3	-5.080	0.0	0.850	-0.006	0.00274	0.00153	0.00092	1020	769	768	19990901.140356
114.3	-2.540	0.0	0.753	-0.005	0.00326	0.00193	0.00102	1021	750	749	19990901.140401
114.3	0.000	0.0	0.698	-0.003	0.00233	0.00199	0.00012	1019	673	671	19990901.140406
114.3	2.540	0.0	0.746	-0.007	0.00330	0.00222	-0.00119	1018	584	583	19990901.140411
114.3	5.080	0.0	0.844	-0.009	0.00304	0.00173	-0.00107	1020	586	586	19990901.140416
114.3	7.620	0.0	0.912	-0.008	0.00074	0.00055	-0.00017	1020	609	608	19990901.140421
114.3	10.160	0.0	0.926	-0.009	0.00011	0.00023	-0.00001	1020	695	695	19990901.140426
114.3	12.700	0.0	0.927	-0.008	0.00007	0.00014	0.00000	1019	762	760	19990901.140431
114.3	15.240	0.0	0.928	-0.007	0.00007	0.00016	0.00000	1019	741	741	19990901.140436
114.3	20.320	0.0	0.930	-0.007	0.00005	0.00012	0.00000	1020	737	737	19990901.140441
114.3	25.400	0.0	0.929	-0.007	0.00006	0.00012	0.00000	1021	736	736	19990901.140447
114.3	30.480	0.0	0.931	-0.004	0.00007	0.00020	-0.00001	1018	685	685	19990901.140453
114.3	35.560	0.0	0.930	-0.004	0.00012	0.00027	0.00001	1021	659	658	19990901.140459
114.3	40.640	0.0	0.929	-0.003	0.00008	0.00016	0.00000	1016	615	614	19990901.140506
114.3	45.720	0.0	0.915	0.000	0.00134	0.00000	0.00000	1016	0	0	19990901.140514
114.3	50.800	0.0	0.759	0.000	0.00544	0.00000	0.00000	1005	0	0	19990901.140527
190.5	-20.320	0.0	0.924	0.000	0.00005	0.00000	0.00000	1023	0	0	19990901.140605
190.5	-15.240	0.0	0.923	0.000	0.00007	0.00000	0.00000	1023	0	0	19990901.140610
190.5	-12.700	0.0	0.924	0.000	0.00010	0.00000	0.00000	1024	0	0	19990901.140615
190.5	-10.160	0.0	0.920	-0.008	0.00032	0.00036	0.00008	1020	624	623	19990901.140620
190.5	-7.620	0.0	0.898	-0.006	0.00117	0.00090	0.00040	1019	800	796	19990901.140625
190.5	-5.080	0.0	0.836	-0.005	0.00243	0.00165	0.00101	1021	744	743	19990901.140630
190.5	-2.540	0.0	0.776	-0.004	0.00221	0.00186	0.00078	1022	696	696	19990901.140635
190.5	0.000	0.0	0.745	-0.005	0.00192	0.00208	0.00000	1020	688	687	19990901.140640
190.5	2.540	0.0	0.765	-0.011	0.00248	0.00219	-0.00083	1019	624	623	19990901.140645
190.5	5.080	0.0	0.829	-0.009	0.00280	0.00187	-0.00100	1024	641	641	19990901.140650
190.5	7.620	0.0	0.885	-0.009	0.00167	0.00125	-0.00068	1023	591	590	19990901.140656
190.5	10.160	0.0	0.917	-0.009	0.00033	0.00053	-0.00006	1023	662	662	19990901.140701
190.5	12.700	0.0	0.923	-0.009	0.00011	0.00021	0.00000	1024	704	704	19990901.140706
190.5	15.240	0.0	0.923	-0.009	0.00008	0.00014	0.00000	1022	684	684	19990901.140711
190.5	20.320	0.0	0.923	-0.008	0.00007	0.00014	0.00000	1023	703	703	19990901.140717
190.5	25.400	0.0	0.923	-0.007	0.00008	0.00016	0.00000	1024	660	660	19990901.140723
190.5	30.480	0.0	0.923	-0.006	0.00008	0.00017	-0.00001	1023	736	736	19990901.140729
190.5	35.560	0.0	0.922	-0.002	0.00014	0.00022	0.00001	1019	596	594	19990901.140736
190.5	40.640	0.0	0.919	-0.004	0.00039	0.00032	0.00009	1023	591	591	19990901.140744
190.5	45.720	0.0	0.891	0.000	0.00260	0.00000	0.00000	1023	0	0	19990901.140754
190.5	50.800	0.0	0.746	0.000	0.00490	0.00000	0.00000	1019	0	0	19990901.140812
190.5	52.070	0.0	0.693	0.000	0.00570	0.00000	0.00000	1011	0	0	19990901.140854
342.9	-20.320	0.0	0.912	0.000	0.00005	0.00000	0.00000	1024	0	0	19990901.140931
342.9	-15.240	0.0	0.910	0.000	0.00017	0.00000	0.00000	1022	0	0	19990901.140937
342.9	-12.700	0.0	0.902	0.000	0.00054	0.00000	0.00000	1024	0	0	19990901.140944
342.9	-10.160	0.0	0.883	-0.007	0.00113	0.00115	0.00055	1024	768	768	19990901.140949
342.9	-7.620	0.0	0.858	-0.005	0.00158	0.00138	0.00068	1023	859	859	19990901.140955
342.9	-5.080	0.0	0.824	-0.003	0.00168	0.00163	0.00070	1024	909	909	19990901.141001
342.9	-2.540	0.0	0.798	-0.005	0.00142	0.00188	0.00049	1024	862	862	19990901.141007
342.9	0.000	0.0	0.790	-0.004	0.00133	0.00180	0.00000	1024	851	851	19990901.141012
342.9	2.540	0.0	0.799	-0.008	0.00152	0.00186	-0.00045	1024	837	837	19990901.141018
342.9	5.080	0.0	0.825	-0.003	0.00174	0.00178	-0.00073	1024	793	793	19990901.141024
342.9	7.620	0.0	0.857	-0.008	0.00147	0.00159	-0.00066	1024	735	735	19990901.141030
342.9	10.160	0.0	0.887	-0.004	0.00099	0.00114	-0.00052	1023	769	768	19990901.141035
342.9	12.700	0.0	0.904	-0.007	0.00047	0.00059	-0.00014	1024	735	735	19990901.141041
342.9	15.240	0.0	0.911	-0.007	0.00017	0.00041	-0.00005	1024	703	703	19990901.141047
342.9	20.320	0.0	0.913	-0.007	0.00006	0.00017	0.00000	1024	743	743	19990901.141053
342.9	25.400	0.0	0.912	-0.007	0.00005	0.00013	0.00000	1024	687	687	19990901.141100
342.9	30.480	0.0	0.912	-0.005	0.00008	0.00018	0.00001	1024	643	643	19990901.141107
342.9	35.560	0.0	0.912	-0.004	0.00009	0.00016	0.00001	1024	565	565	19990901.141115
342.9	40.640	0.0	0.910	-0.004	0.00025	0.00031	0.00004	1023	652	652	19990901.141124
342.9	45.720	0.0	0.855	0.000	0.00255	0.00000	0.00000	1023	0	0	19990901.141137
342.9	50.800	0.0	0.732	0.000	0.00442	0.00000	0.00000	1022	0	0	19990901.141200
495.3	-20.320	0.0	0.931	0.000	0.00010	0.00000	0.00000	1024	0	0	19990901.141232
495.3	-15.240	0.0	0.920	0.000	0.00041	0.00000	0.00000	1024	0	0	19990901.141237
495.3	-12.700	0.0	0.909	0.000	0.00062	0.00000	0.00000	1024	0	0	19990901.141243
495.3	-10.160	0.0	0.892	-0.003	0.00105	0.00098	0.00045	1022	798	798	19990901.141249
495.3	-7.620	0.0	0.872	-0.003	0.00116	0.00120	0.00041	1023	899	899	19990901.141254
495.3	-5.080	0.0	0.853	-0.003	0.00099	0.00140	0.00038	1022	903	902	19990901.141300
495.3	-2.540	0.0	0.837	-0.007	0.00103	0.00142	0.00022	1022	909	908	19990901.141305

495.3	0.000	0.0	0.834	-0.007	0.00105	0.00143	-0.00003	1024	891	891	19990901.141311
495.3	2.540	0.0	0.840	-0.004	0.00109	0.00153	-0.00036	1022	840	840	19990901.141316
495.3	5.080	0.0	0.853	-0.004	0.00111	0.00148	-0.00037	1024	823	823	19990901.141322
495.3	7.620	0.0	0.874	-0.005	0.00111	0.00137	-0.00041	1024	835	835	19990901.141328
495.3	10.160	0.0	0.896	-0.007	0.00098	0.00104	-0.00035	1024	811	811	19990901.141333
495.3	12.700	0.0	0.911	-0.007	0.00064	0.00083	-0.00027	1024	815	815	19990901.141339
495.3	15.240	0.0	0.922	-0.004	0.00037	0.00058	-0.00017	1023	761	761	19990901.141344
495.3	20.320	0.0	0.931	-0.006	0.00012	0.00025	-0.00001	1023	744	744	19990901.141351
495.3	25.400	0.0	0.931	-0.005	0.00007	0.00019	-0.00001	1024	731	731	19990901.141358
495.3	30.480	0.0	0.931	-0.003	0.00008	0.00021	0.00001	1024	669	669	19990901.141406
495.3	35.560	0.0	0.930	-0.003	0.00011	0.00021	0.00000	1023	670	670	19990901.141413
495.3	40.640	0.0	0.910	-0.004	0.00089	0.00059	0.00022	1024	669	669	19990901.141423
495.3	45.720	0.0	0.847	0.000	0.00237	0.00000	0.00000	1024	0	0	19990901.141434
495.3	50.800	0.0	0.729	0.000	0.00443	0.00000	0.00000	1024	0	0	19990901.141450
190.5	-20.320	101.6	0.917	0.000	0.00005	0.00000	0.00000	1024	0	0	19990901.141555
190.5	-15.240	101.6	0.916	0.000	0.00008	0.00000	0.00000	1024	0	0	19990901.141603
190.5	-12.700	101.6	0.914	0.000	0.00024	0.00000	0.00000	1023	0	0	19990901.141612
190.5	-10.160	101.6	0.900	0.000	0.00087	0.00000	0.00000	1024	0	0	19990901.141620
190.5	-7.620	101.6	0.855	0.000	0.00221	0.00000	0.00000	1024	0	0	19990901.141628
190.5	-5.080	101.6	0.791	-0.007	0.00271	0.00199	0.00109	1023	477	476	19990901.141635
190.5	-2.540	101.6	0.749	-0.008	0.00227	0.00202	0.00055	1024	697	697	19990901.141642
190.5	0.000	101.6	0.754	-0.008	0.00216	0.00206	-0.00068	1024	615	615	19990901.141650
190.5	2.540	101.6	0.796	-0.012	0.00264	0.00187	-0.00105	1024	518	518	19990901.141658
190.5	5.080	101.6	0.862	-0.014	0.00203	0.00161	-0.00090	1024	422	422	19990901.141706
190.5	7.620	101.6	0.905	-0.015	0.00064	0.00079	-0.00019	1024	363	363	19990901.141714
190.5	10.160	101.6	0.914	-0.013	0.00017	0.00029	0.00001	1024	414	414	19990901.141722
190.5	12.700	101.6	0.915	-0.014	0.00008	0.00017	-0.00001	1023	502	502	19990901.141730
190.5	15.240	101.6	0.915	-0.015	0.00005	0.00016	0.00000	1024	555	555	19990901.141738
190.5	20.320	101.6	0.916	-0.015	0.00008	0.00025	0.00000	1024	504	504	19990901.141748
190.5	25.400	101.6	0.917	-0.011	0.00008	0.00023	0.00000	1023	545	545	19990901.141800
190.5	30.480	101.6	0.917	-0.009	0.00011	0.00029	0.00002	1023	482	481	19990901.141819
190.5	35.560	101.6	0.913	-0.007	0.00033	0.00039	0.00004	1023	493	493	19990901.141843
190.5	40.640	101.6	0.906	0.000	0.00105	0.00000	0.00000	998	0	0	19990901.141913
190.5	45.720	101.6	0.870	0.000	0.00407	0.00000	0.00000	852	0	0	19990901.141931
190.5	50.800	101.6	0.728	0.000	0.00573	0.00000	0.00000	802	0	0	19990901.141956
190.5	0.000	0.0	0.736	-0.004	0.00186	0.00185	0.00005	1024	690	690	19990901.142027
190.5	-20.320	-101.6	0.918	0.000	0.00005	0.00000	0.00000	1024	0	0	19990901.142101
190.5	-15.240	-101.6	0.918	-0.007	0.00007	0.00010	0.00000	1024	769	769	19990901.142107
190.5	-12.700	-101.6	0.918	-0.007	0.00011	0.00016	0.00001	1024	821	821	19990901.142113
190.5	-10.160	-101.6	0.913	-0.007	0.00031	0.00037	0.00009	1024	828	828	19990901.142118
190.5	-7.620	-101.6	0.888	-0.007	0.00142	0.00099	0.00054	1022	796	795	19990901.142124
190.5	-5.080	-101.6	0.833	-0.005	0.00263	0.00165	0.00122	1024	823	823	19990901.142130
190.5	-2.540	-101.6	0.771	-0.004	0.00252	0.00173	0.00094	1024	797	797	19990901.142137
190.5	0.000	-101.6	0.737	-0.007	0.00168	0.00180	0.00002	1022	766	766	19990901.142143
190.5	2.540	-101.6	0.757	-0.007	0.00232	0.00205	-0.00083	1023	762	762	19990901.142149
190.5	5.080	-101.6	0.811	-0.008	0.00265	0.00172	-0.00097	1023	797	797	19990901.142155
190.5	7.620	-101.6	0.874	-0.009	0.00183	0.00135	-0.00073	1024	807	807	19990901.142200
190.5	10.160	-101.6	0.911	-0.007	0.00052	0.00062	-0.00021	1023	785	785	19990901.142207
190.5	12.700	-101.6	0.917	-0.007	0.00013	0.00018	-0.00001	1024	794	794	19990901.142213
190.5	15.240	-101.6	0.917	-0.007	0.00008	0.00011	0.00000	1024	805	805	19990901.142219
190.5	20.320	-101.6	0.919	-0.007	0.00005	0.00010	0.00000	1024	766	766	19990901.142226
190.5	25.400	-101.6	0.918	-0.007	0.00006	0.00009	-0.00001	1023	798	798	19990901.142233
190.5	30.480	-101.6	0.918	-0.006	0.00009	0.00013	0.00001	1024	753	753	19990901.142244
190.5	35.560	-101.6	0.918	-0.006	0.00011	0.00011	0.00001	1024	808	808	19990901.142258
190.5	40.640	-101.6	0.909	-0.006	0.00093	0.00038	0.00020	1024	777	777	19990901.142316
190.5	45.720	-101.6	0.871	-0.006	0.00375	0.00115	0.00066	1023	800	800	19990901.142341
190.5	50.800	-101.6	0.735	0.000	0.00507	0.00000	0.00000	1017	0	0	19990901.142421

38.1	40.640	0.0	0.926	-0.006	0.00008	0.00019	0.00001	1023	711	711	19990901.142603
114.3	40.640	0.0	0.918	-0.005	0.00008	0.00013	0.00000	1024	750	750	19990901.142625
190.5	40.640	0.0	0.913	-0.007	0.00011	0.00021	0.00001	1024	711	711	19990901.142646
266.7	40.640	0.0	0.905	-0.004	0.00023	0.00029	0.00004	1024	789	789	19990901.142707
342.9	40.640	0.0	0.900	-0.006	0.00036	0.00032	0.00006	1024	790	790	19990901.142727
419.1	40.640	0.0	0.901	-0.004	0.00065	0.00042	0.00014	1024	843	843	19990901.142750
495.3	40.640	0.0	0.911	-0.002	0.00091	0.00041	0.00017	1023	800	800	19990901.142815
495.3	0.000	0.0	0.828	-0.008	0.00096	0.00138	-0.00004	1024	936	936	19990901.142825
419.1	0.000	0.0	0.802	-0.003	0.00112	0.00167	-0.00001	1024	916	916	19990901.142843
342.9	0.000	0.0	0.782	-0.004	0.00132	0.00180	-0.00007	1024	906	906	19990901.142858
266.7	0.000	0.0	0.761	-0.003	0.00161	0.00206	0.00008	1023	823	822	19990901.142913
190.5	0.000	0.0	0.731	-0.004	0.00181	0.00195	0.00014	1023	771	771	19990901.142928
114.3	0.000	0.0	0.690	-0.007	0.00196	0.00187	0.00004	1024	866	866	19990901.142942
38.1	0.000	0.0	0.613	-0.004	0.00355	0.00251	0.00022	1024	834	834	19990901.142957

2.5	0.000	0.0	0.373	0.000	0.00532	0.00000	0.00000	1014	0	0	19990901.144640
5.1	0.000	0.0	0.440	0.000	0.00474	0.00000	0.00000	1017	0	0	19990901.144650
7.6	0.000	0.0	0.472	0.000	0.00445	0.00000	0.00000	1016	0	0	19990901.144704
12.7	0.000	0.0	0.514	0.000	0.00383	0.00000	0.00000	1019	0	0	19990901.144718
25.4	0.000	0.0	0.571	0.000	0.00300	0.00000	0.00000	1010	567	565	19990901.144731
38.1	0.000	0.0	0.602	0.000	0.00279	0.00000	0.00000	1011	621	619	19990901.144740
63.5	0.000	0.0	0.641	0.000	0.00256	0.00000	0.00000	1014	675	672	19990901.144752
114.3	0.000	0.0	0.683	0.000	0.00175	0.00000	0.00000	999	638	631	19990901.144806
190.5	0.000	0.0	0.728	0.000	0.00143	0.00000	0.00000	1000	648	640	19990901.144825
266.7	0.000	0.0	0.753	0.000	0.00137	0.00000	0.00000	1003	673	660	19990901.144846
342.9	0.000	0.0	0.774	0.000	0.00107	0.00000	0.00000	989	730	717	19990901.144909
419.1	0.000	0.0	0.797	0.000	0.00099	0.00000	0.00000	969	727	704	19990901.144933
495.3	0.000	0.0	0.815	0.000	0.00079	0.00000	0.00000	663	702	486	19990901.145011
190.5	40.640	0.0	0.904	0.000	0.00050	0.00000	0.00000	14	417	0	19990901.145213
190.5	25.400	-177.8	0.874	0.000	0.00078	0.00000	0.00000	41	393	24	19990901.145550
190.5	25.400	-165.1	0.904	0.000	0.00069	0.00000	0.00000	58	560	42	19990901.145629
190.5	25.400	-152.4	0.915	0.000	0.00002	0.00000	0.00000	30	505	20	19990901.145700

Table 11 LDV Data for Case B – Moderate Adverse Pressure Gradient Run 64

X(mm)	Y(mm)	z(mm)	U/Uref	V/Uref	uu/Uref^2	vv/Uref^2	uv/Uref^2	#u	#v	#uv	YearMoDa.HrMnSc
-88.9	-20.320	0.0	0.992	0.000	0.00005	0.00000	0.00000	10	0	0	19991215.144200
-88.9	-15.240	0.0	0.987	0.000	0.00006	0.00000	0.00000	51	0	0	19991215.144220
-88.9	-12.700	0.0	0.984	0.000	0.00004	0.00000	0.00000	68	0	0	19991215.144237
-88.9	-10.160	0.0	0.986	0.000	0.00016	0.00000	0.00000	95	0	0	19991215.144249
-88.9	-7.620	0.0	0.941	0.000	0.00218	0.00000	0.00000	129	0	0	19991215.144300
-88.9	-5.080	0.0	0.758	0.000	0.00894	0.00000	0.00000	109	0	0	19991215.144312
-88.9	-6.350	0.0	0.865	0.000	0.00434	0.00000	0.00000	132	0	0	19991215.144331
-88.9	-4.572	0.0	0.733	0.000	0.00997	0.00000	0.00000	121	0	0	19991215.144350
-88.9	-3.810	0.0	0.640	0.000	0.01113	0.00000	0.00000	96	0	0	19991215.144410
-88.9	3.810	0.0	0.554	0.000	0.01632	0.00000	0.00000	52	0	0	19991215.144436
-88.9	4.572	0.0	0.705	0.000	0.01098	0.00000	0.00000	132	0	0	19991215.144455
-88.9	5.080	0.0	0.760	0.000	0.00954	0.00000	0.00000	203	0	0	19991215.144504
-88.9	6.350	0.0	0.849	0.000	0.00634	0.00000	0.00000	238	0	0	19991215.144515
-88.9	7.620	0.0	0.926	0.000	0.00373	0.00000	0.00000	397	0	0	19991215.144524
-88.9	8.890	0.0	0.977	0.000	0.00102	0.00000	0.00000	413	0	0	19991215.144537
-88.9	10.160	0.0	0.994	0.000	0.00025	0.00000	0.00000	366	0	0	19991215.144547
-88.9	12.700	0.0	0.995	0.000	0.00004	0.00000	0.00000	351	0	0	19991215.144557
-88.9	15.240	0.0	0.995	0.000	0.00004	0.00000	0.00000	402	0	0	19991215.144606
-88.9	20.320	0.0	0.994	0.000	0.00004	0.00000	0.00000	391	0	0	19991215.144614
-88.9	25.400	0.0	0.994	0.000	0.00004	0.00000	0.00000	370	0	0	19991215.144622
-88.9	30.480	0.0	0.997	0.000	0.00006	0.00000	0.00000	476	0	0	19991215.144633
-88.9	35.560	0.0	0.997	0.000	0.00005	0.00000	0.00000	545	0	0	19991215.144651
-88.9	40.640	0.0	1.000	0.000	0.00007	0.00000	0.00000	552	0	0	19991215.144729
-88.9	45.720	0.0	0.999	0.000	0.00022	0.00000	0.00000	461	0	0	19991215.144744
-88.9	48.260	0.0	0.972	0.000	0.00221	0.00000	0.00000	181	0	0	19991215.144826
-88.9	50.800	0.0	0.821	0.000	0.00806	0.00000	0.00000	260	0	0	19991215.144758
-25.4	-20.320	0.0	0.952	0.000	0.00010	0.00000	0.00000	22	0	0	19991215.144856
-25.4	-15.240	0.0	0.938	0.000	0.00013	0.00000	0.00000	98	0	0	19991215.144910
-25.4	-12.700	0.0	0.937	0.000	0.00015	0.00000	0.00000	140	0	0	19991215.144923
-25.4	-10.160	0.0	0.929	0.000	0.00039	0.00000	0.00000	136	0	0	19991215.144930
-25.4	-7.620	0.0	0.875	0.000	0.00280	0.00000	0.00000	234	0	0	19991215.144941
-25.4	-6.350	0.0	0.794	0.000	0.00678	0.00000	0.00000	242	0	0	19991215.144956
-25.4	-5.080	0.0	0.717	0.000	0.00759	0.00000	0.00000	216	0	0	19991215.145006
-25.4	-3.810	0.0	0.621	0.000	0.01122	0.00000	0.00000	164	0	0	19991215.145020
-25.4	-2.540	0.0	0.539	0.000	0.00000	0.00000	0.00000	1	0	0	19991215.145024
-25.4	-3.048	0.0	0.543	0.000	0.01372	0.00000	0.00000	145	0	0	19991215.145053
-25.4	3.048	0.0	0.489	0.000	0.01627	0.00000	0.00000	57	0	0	19991215.145105
-25.4	3.810	0.0	0.602	0.000	0.01192	0.00000	0.00000	350	0	0	19991215.145121
-25.4	5.080	0.0	0.724	0.000	0.00821	0.00000	0.00000	468	0	0	19991215.145135
-25.4	6.350	0.0	0.795	0.000	0.00696	0.00000	0.00000	439	0	0	19991215.145151
-25.4	7.620	0.0	0.870	0.000	0.00440	0.00000	0.00000	405	0	0	19991215.145159
-25.4	10.160	0.0	0.943	0.000	0.00106	0.00000	0.00000	301	0	0	19991215.145205
-25.4	12.700	0.0	0.952	0.000	0.00014	0.00000	0.00000	326	0	0	19991215.145212
-25.4	15.240	0.0	0.952	0.000	0.00012	0.00000	0.00000	322	0	0	19991215.145217
-25.4	20.320	0.0	0.953	0.000	0.00010	0.00000	0.00000	284	0	0	19991215.145223
-25.4	25.400	0.0	0.958	0.000	0.00008	0.00000	0.00000	249	0	0	19991215.145229
-25.4	30.480	0.0	0.965	0.000	0.00011	0.00000	0.00000	323	0	0	19991215.145237
-25.4	35.560	0.0	0.972	0.000	0.00006	0.00000	0.00000	430	0	0	19991215.145251
-25.4	40.640	0.0	0.981	0.000	0.00011	0.00000	0.00000	504	0	0	19991215.145312
-25.4	45.720	0.0	0.995	0.000	0.00060	0.00000	0.00000	372	0	0	19991215.145323
-25.4	48.260	0.0	0.981	0.000	0.00256	0.00000	0.00000	334	0	0	19991215.145411
-25.4	50.800	0.0	0.867	0.000	0.00755	0.00000	0.00000	340	0	0	19991215.145338
0.0	-20.320	0.0	0.860	0.000	0.00019	0.00000	0.00000	542	0	0	19991215.110355
0.0	-15.240	0.0	0.845	0.000	0.00018	0.00000	0.00000	848	0	0	19991215.110400
0.0	-12.700	0.0	0.849	0.000	0.00025	0.00000	0.00000	1013	0	0	19991215.110410
0.0	-10.160	0.0	0.842	0.000	0.00041	0.00000	0.00000	996	0	0	19991215.110417
0.0	-7.620	0.0	0.782	0.000	0.00287	0.00000	0.00000	991	0	0	19991215.110425
0.0	-5.080	0.0	0.640	0.000	0.00659	0.00000	0.00000	1014	0	0	19991215.110436
0.0	-3.810	0.0	0.551	0.000	0.00804	0.00000	0.00000	1011	0	0	19991215.110456
0.0	-2.540	0.0	0.453	0.000	0.00981	0.00000	0.00000	1007	0	0	19991215.110517
0.0	-1.270	0.0	0.338	0.000	0.01037	0.00000	0.00000	996	0	0	19991215.110546
0.0	1.270	0.0	0.371	0.000	0.01063	0.00000	0.00000	1003	0	0	19991215.110615
0.0	2.540	0.0	0.473	0.000	0.00968	0.00000	0.00000	1005	0	0	19991215.110626
0.0	3.810	0.0	0.580	0.000	0.00756	0.00000	0.00000	1005	0	0	19991215.110643
0.0	5.080	0.0	0.657	0.000	0.00561	0.00000	0.00000	1004	0	0	19991215.110649
0.0	7.620	0.0	0.784	0.000	0.00244	0.00000	0.00000	993	0	0	19991215.110654
0.0	10.160	0.0	0.842	0.000	0.00045	0.00000	0.00000	961	37	37	19991215.110659
0.0	12.700	0.0	0.846	0.000	0.00020	0.00000	0.00000	979	33	33	19991215.110704

0.0	15.240	0.0	0.851	0.000	0.00019	0.00000	0.00000	966	35	35	19991215.110708
0.0	20.320	0.0	0.855	0.000	0.00017	0.00000	0.00000	984	31	31	19991215.110714
0.0	25.400	0.0	0.856	0.000	0.00017	0.00000	0.00000	997	33	33	19991215.110722
0.0	30.480	0.0	0.865	0.000	0.00020	0.00000	0.00000	993	34	34	19991215.110730
0.0	35.560	0.0	0.870	0.000	0.00023	0.00000	0.00000	1004	29	29	19991215.110740
0.0	40.640	0.0	0.874	0.000	0.00029	0.00000	0.00000	1002	28	28	19991215.110752
0.0	45.720	0.0	0.875	0.000	0.00060	0.00000	0.00000	1009	32	32	19991215.110802
0.0	50.800	0.0	0.910	0.000	0.00621	0.00000	0.00000	1017	22	22	19991215.110817
0.0	53.340	0.0	0.933	0.000	0.00936	0.00000	0.00000	711	0	0	19991215.110925
38.1	-20.320	0.0	0.777	0.000	0.00015	0.00000	0.00000	1022	0	0	19991216.102650
38.1	-15.240	0.0	0.774	0.000	0.00011	0.00000	0.00000	1017	0	0	19991216.102657
38.1	-12.700	0.0	0.772	0.000	0.00019	0.00000	0.00000	1017	0	0	19991216.102704
38.1	-10.160	0.0	0.752	-0.037	0.00135	0.00055	0.00030	1018	61	61	19991216.102709
38.1	-7.620	0.0	0.644	-0.032	0.00634	0.00205	0.00138	1016	732	728	19991216.102714
38.1	-5.080	0.0	0.504	-0.017	0.01046	0.00331	0.00279	1022	809	808	19991216.102720
38.1	-2.540	0.0	0.363	-0.004	0.00789	0.00333	0.00217	1019	737	735	19991216.102725
38.1	0.000	0.0	0.295	-0.006	0.00479	0.00325	-0.00016	1016	667	664	19991216.102732
38.1	2.540	0.0	0.369	-0.003	0.00808	0.00400	-0.00283	1019	579	575	19991216.102738
38.1	5.080	0.0	0.526	0.003	0.00930	0.00310	-0.00211	1020	527	526	19991216.102743
38.1	7.620	0.0	0.668	0.018	0.00551	0.00182	-0.00144	1016	487	481	19991216.102749
38.1	10.160	0.0	0.758	0.029	0.00093	0.00053	-0.00021	1012	531	527	19991216.102753
38.1	12.700	0.0	0.775	0.035	0.00017	0.00012	-0.00001	1016	665	661	19991216.102758
38.1	15.240	0.0	0.777	0.038	0.00016	0.00006	-0.00003	1017	716	716	19991216.102802
38.1	20.320	0.0	0.778	0.046	0.00016	0.00006	-0.00002	1009	662	654	19991216.102807
38.1	25.400	0.0	0.778	0.056	0.00012	0.00005	-0.00001	1019	560	557	19991216.102813
38.1	30.480	0.0	0.778	0.066	0.00011	0.00006	-0.00001	1017	481	480	19991216.102819
38.1	35.560	0.0	0.776	0.075	0.00011	0.00013	-0.00001	1018	496	495	19991216.102826
38.1	40.640	0.0	0.779	0.084	0.00015	0.00017	0.00000	1023	489	489	19991216.102834
38.1	45.720	0.0	0.780	0.092	0.00040	0.00047	-0.00006	1022	481	481	19991216.102844
38.1	50.800	0.0	0.815	0.098	0.00450	0.00292	-0.00142	1022	551	550	19991216.102856
38.1	55.880	0.0	0.914	0.000	0.00968	0.00000	0.00000	1022	0	0	19991216.102908
38.1	58.420	0.0	0.945	0.918	0.00865	0.00611	0.00638	1024	23	23	19991216.102931
114.3	-20.320	0.0	0.661	0.000	0.00067	0.00000	0.00000	1019	0	0	19991216.102329
114.3	-15.240	0.0	0.565	0.000	0.00584	0.00000	0.00000	1018	0	0	19991216.102335
114.3	-12.700	0.0	0.481	0.000	0.00898	0.00000	0.00000	1020	0	0	19991216.102341
114.3	-10.160	0.0	0.385	-0.032	0.00966	0.00358	0.00326	1013	44	43	19991216.102348
114.3	-7.620	0.0	0.299	-0.019	0.00873	0.00391	0.00270	1020	684	682	19991216.102355
114.3	-5.080	0.0	0.225	-0.008	0.00750	0.00377	0.00200	1015	690	687	19991216.102402
114.3	-2.540	0.0	0.160	-0.001	0.00526	0.00395	0.00100	1021	699	699	19991216.102410
114.3	0.000	0.0	0.132	-0.002	0.00463	0.00420	-0.00002	1022	698	697	19991216.102419
114.3	2.540	0.0	0.160	-0.001	0.00571	0.00508	-0.00145	1016	670	665	19991216.102427
114.3	5.080	0.0	0.213	0.004	0.00770	0.00454	-0.00245	1020	686	685	19991216.102434
114.3	7.620	0.0	0.282	0.009	0.01033	0.00502	-0.00353	1018	693	689	19991216.102441
114.3	10.160	0.0	0.393	0.017	0.00992	0.00481	-0.00307	1024	673	673	19991216.102448
114.3	12.700	0.0	0.479	0.030	0.00933	0.00369	-0.00281	1017	661	661	19991216.102454
114.3	15.240	0.0	0.568	0.043	0.00613	0.00244	-0.00172	1021	676	675	19991216.102459
114.3	20.320	0.0	0.664	0.059	0.00060	0.00062	-0.00016	1015	725	720	19991216.102504
114.3	25.400	0.0	0.666	0.065	0.00017	0.00014	-0.00001	1014	699	694	19991216.102510
114.3	30.480	0.0	0.668	0.068	0.00011	0.00008	0.00000	1020	660	658	19991216.102515
114.3	35.560	0.0	0.668	0.072	0.00011	0.00004	0.00001	1014	548	544	19991216.102520
114.3	40.640	0.0	0.666	0.076	0.00008	0.00007	0.00000	1023	574	574	19991216.102527
114.3	45.720	0.0	0.665	0.080	0.00008	0.00012	0.00001	1020	611	610	19991216.102533
114.3	50.800	0.0	0.666	0.087	0.00014	0.00019	-0.00004	1021	601	599	19991216.102542
114.3	55.880	0.0	0.675	0.088	0.00068	0.00060	-0.00024	1020	580	577	19991216.102551
114.3	60.960	0.0	0.735	0.094	0.00363	0.00179	-0.00087	1022	616	615	19991216.102605
114.3	66.040	0.0	0.825	0.097	0.00444	0.00255	-0.00071	1022	43	43	19991216.102617
114.3	71.120	0.0	0.819	0.000	0.00339	0.00000	0.00000	1024	0	0	19991216.102628
190.5	-20.320	0.0	0.471	0.000	0.00799	0.00000	0.00000	1018	0	0	19991216.103207
190.5	-15.240	0.0	0.323	0.000	0.01027	0.00000	0.00000	1019	0	0	19991216.103217
190.5	-12.700	0.0	0.266	0.000	0.00979	0.00000	0.00000	1014	0	0	19991216.103226
190.5	-10.160	0.0	0.166	0.000	0.00931	0.00000	0.00000	1008	0	0	19991216.103235
190.5	-7.620	0.0	0.136	0.008	0.00798	0.00596	0.00210	1008	557	554	19991216.103244
190.5	-5.080	0.0	0.085	0.012	0.00726	0.00496	0.00210	1010	635	630	19991216.103253
190.5	-2.540	0.0	0.057	0.008	0.00584	0.00515	0.00111	1007	670	664	19991216.103302
190.5	0.000	0.0	0.037	0.008	0.00530	0.00580	-0.00015	1008	663	660	19991216.103311
190.5	2.540	0.0	0.047	0.008	0.00517	0.00483	-0.00070	1004	651	645	19991216.103320
190.5	5.080	0.0	0.082	0.001	0.00794	0.00626	-0.00205	1011	672	667	19991216.103329
190.5	7.620	0.0	0.119	0.000	0.00891	0.00614	-0.00325	1016	652	649	19991216.103337
190.5	10.160	0.0	0.164	0.005	0.01023	0.00601	-0.00356	1015	639	636	19991216.103344
190.5	12.700	0.0	0.242	-0.002	0.01130	0.00646	-0.00365	1002	626	617	19991216.103351
190.5	15.240	0.0	0.292	-0.002	0.01210	0.00633	-0.00435	1010	634	629	19991216.103357
190.5	20.320	0.0	0.411	0.012	0.01069	0.00550	-0.00367	1010	676	669	19991216.103403
190.5	25.400	0.0	0.519	0.021	0.00722	0.00347	-0.00205	1008	692	686	19991216.103408
190.5	30.480	0.0	0.601	0.032	0.00184	0.00152	-0.00062	1008	656	650	19991216.103414

190.5	35.560	0.0	0.614	0.038	0.00053	0.00067	-0.00007	1011	623	618	19991216.103419
190.5	40.640	0.0	0.608	0.037	0.00018	0.00022	0.00001	1011	625	621	19991216.103427
190.5	45.720	0.0	0.601	0.037	0.00012	0.00013	0.00001	1011	598	593	19991216.103435
190.5	50.800	0.0	0.596	0.038	0.00009	0.00008	0.00001	1011	599	597	19991216.103443
190.5	55.880	0.0	0.592	0.042	0.00013	0.00013	-0.00001	1021	609	607	19991216.103452
190.5	60.960	0.0	0.590	0.042	0.00051	0.00053	-0.00008	1019	513	511	19991216.103502
190.5	66.040	0.0	0.620	0.049	0.00260	0.00127	-0.00060	1014	571	570	19991216.103512
190.5	71.120	0.0	0.704	0.055	0.00572	0.00256	-0.00138	1014	576	573	19991216.103521
190.5	76.200	0.0	0.783	0.061	0.00571	0.00292	-0.00118	1015	530	528	19991216.103529
190.5	81.280	0.0	0.781	0.000	0.00340	0.00000	0.00000	1015	0	0	19991216.103538
190.5	83.820	0.0	0.761	0.000	0.00425	0.00000	0.00000	1012	0	0	19991216.103556
266.7	-20.320	0.0	0.344	0.000	0.01133	0.00000	0.00000	1012	0	0	19991216.103618
266.7	-15.240	0.0	0.250	0.000	0.01090	0.00000	0.00000	994	0	0	19991216.103625
266.7	-12.700	0.0	0.219	0.000	0.01070	0.00000	0.00000	991	0	0	19991216.103633
266.7	-10.160	0.0	0.177	0.062	0.00869	0.00695	0.00659	1009	31	30	19991216.103643
266.7	-7.620	0.0	0.135	0.027	0.00808	0.00923	0.00276	995	516	505	19991216.103651
266.7	-5.080	0.0	0.126	0.020	0.00792	0.00924	0.00252	980	569	560	19991216.103658
266.7	-2.540	0.0	0.096	0.005	0.00637	0.00965	0.00106	993	642	636	19991216.103706
266.7	0.000	0.0	0.103	0.007	0.00703	0.01028	-0.00031	999	606	601	19991216.103715
266.7	2.540	0.0	0.095	0.005	0.00764	0.01283	-0.00186	995	606	600	19991216.103723
266.7	5.080	0.0	0.115	-0.004	0.00783	0.01045	-0.00290	993	616	609	19991216.103732
266.7	7.620	0.0	0.132	-0.002	0.00978	0.01089	-0.00392	1000	611	604	19991216.103740
266.7	10.160	0.0	0.177	-0.017	0.01052	0.01082	-0.00523	1001	617	610	19991216.103749
266.7	12.700	0.0	0.208	-0.019	0.01116	0.01048	-0.00471	996	627	620	19991216.103757
266.7	15.240	0.0	0.250	-0.025	0.01155	0.00948	-0.00543	985	594	584	19991216.103804
266.7	20.320	0.0	0.335	-0.031	0.01146	0.00863	-0.00519	987	603	596	19991216.103811
266.7	25.400	0.0	0.408	-0.032	0.01099	0.00819	-0.00500	976	638	623	19991216.103817
266.7	30.480	0.0	0.497	-0.024	0.00796	0.00627	-0.00339	993	618	605	19991216.103823
266.7	35.560	0.0	0.557	-0.011	0.00388	0.00337	-0.00140	988	652	637	19991216.103829
266.7	40.640	0.0	0.584	-0.012	0.00164	0.00167	-0.00041	997	621	614	19991216.103837
266.7	45.720	0.0	0.589	-0.009	0.00066	0.00096	0.00004	997	598	588	19991216.103845
266.7	50.800	0.0	0.587	-0.009	0.00043	0.00037	0.00005	1013	607	606	19991216.103855
266.7	55.880	0.0	0.585	-0.011	0.00030	0.00026	0.00003	993	585	577	19991216.103905
266.7	60.960	0.0	0.588	-0.008	0.00038	0.00034	0.00001	1005	573	565	19991216.103916
266.7	66.040	0.0	0.617	-0.007	0.00191	0.00142	-0.00064	986	526	513	19991216.103926
266.7	71.120	0.0	0.695	-0.009	0.00425	0.00265	-0.00136	971	524	504	19991216.103934
266.7	76.200	0.0	0.790	-0.016	0.00362	0.00240	-0.00107	989	555	544	19991216.103941
266.7	81.280	0.0	0.830	0.000	0.00289	0.00000	0.00000	968	0	0	19991216.103949
266.7	83.820	0.0	0.832	0.000	0.00373	0.00000	0.00000	994	0	0	19991216.104002
342.9	-20.320	0.0	0.350	0.000	0.01015	0.00000	0.00000	948	0	0	19991216.104026
342.9	-15.240	0.0	0.297	0.000	0.01018	0.00000	0.00000	957	0	0	19991216.104032
342.9	-12.700	0.0	0.274	0.000	0.01006	0.00000	0.00000	934	0	0	19991216.104038
342.9	-10.160	0.0	0.261	0.052	0.00936	0.01480	0.00567	925	24	22	19991216.104044
342.9	-7.620	0.0	0.227	0.048	0.00930	0.01474	0.00420	916	367	344	19991216.104050
342.9	-5.080	0.0	0.234	0.023	0.00777	0.01735	0.00277	909	442	420	19991216.104056
342.9	-2.540	0.0	0.223	0.027	0.00721	0.01607	0.00181	908	525	496	19991216.104101
342.9	0.000	0.0	0.217	0.008	0.00631	0.01291	-0.00098	929	503	474	19991216.104107
342.9	2.540	0.0	0.222	-0.002	0.00720	0.01293	-0.00116	916	560	527	19991216.104113
342.9	5.080	0.0	0.241	-0.007	0.00729	0.01403	-0.00221	918	516	500	19991216.104119
342.9	7.620	0.0	0.243	-0.005	0.00726	0.01190	-0.00296	917	521	500	19991216.104125
342.9	10.160	0.0	0.262	-0.017	0.00810	0.01270	-0.00448	911	479	462	19991216.104130
342.9	12.700	0.0	0.286	-0.022	0.00944	0.01154	-0.00516	916	542	513	19991216.104136
342.9	15.240	0.0	0.311	-0.028	0.00918	0.01113	-0.00514	922	538	517	19991216.104142
342.9	20.320	0.0	0.363	-0.019	0.00998	0.01095	-0.00535	926	567	527	19991216.104148
342.9	25.400	0.0	0.413	-0.027	0.01002	0.00925	-0.00590	930	575	548	19991216.104153
342.9	30.480	0.0	0.474	-0.025	0.00791	0.00664	-0.00408	945	558	530	19991216.104159
342.9	35.560	0.0	0.530	-0.019	0.00446	0.00421	-0.00225	945	535	514	19991216.104204
342.9	40.640	0.0	0.548	-0.011	0.00302	0.00319	-0.00151	933	512	490	19991216.104209
342.9	45.720	0.0	0.570	-0.005	0.00167	0.00180	-0.00061	951	533	514	19991216.104215
342.9	50.800	0.0	0.571	-0.006	0.00087	0.00101	-0.00003	958	483	473	19991216.104221
342.9	55.880	0.0	0.574	-0.010	0.00061	0.00053	0.00001	964	497	480	19991216.104229
342.9	60.960	0.0	0.583	-0.010	0.00076	0.00057	-0.00019	954	463	443	19991216.104239
342.9	66.040	0.0	0.620	-0.012	0.00173	0.00109	-0.00058	970	558	544	19991216.104249
342.9	71.120	0.0	0.682	-0.016	0.00218	0.00149	-0.00075	967	517	499	19991216.104258
342.9	76.200	0.0	0.734	-0.017	0.00203	0.00125	-0.00049	966	528	509	19991216.104306
342.9	81.280	0.0	0.738	0.000	0.00233	0.00000	0.00000	970	0	0	19991216.104315
342.9	83.820	0.0	0.704	0.000	0.00340	0.00000	0.00000	976	0	0	19991216.104330
342.9	86.360	0.0	0.611	0.000	0.00631	0.00000	0.00000	979	0	0	19991216.104344
419.1	-20.320	0.0	0.390	0.000	0.00778	0.00000	0.00000	969	0	0	19991216.104402
419.1	-15.240	0.0	0.356	0.000	0.00754	0.00000	0.00000	947	0	0	19991216.104409
419.1	-12.700	0.0	0.353	0.000	0.00669	0.00000	0.00000	936	0	0	19991216.104414
419.1	-10.160	0.0	0.333	0.017	0.00632	0.01627	0.00000	925	20	0	19991216.104420
419.1	-7.620	0.0	0.323	0.023	0.00636	0.01288	0.00249	938	364	346	19991216.104426

419.1	-5.080	0.0	0.315	0.016	0.00681	0.01362	0.00247	925	466	439	19991216.104431
419.1	-2.540	0.0	0.304	0.014	0.00610	0.01542	0.00133	983	583	572	19991216.104438
419.1	0.000	0.0	0.304	0.005	0.00590	0.01353	0.00079	994	623	612	19991216.104446
419.1	2.540	0.0	0.301	0.009	0.00580	0.01328	-0.00041	991	617	610	19991216.104454
419.1	5.080	0.0	0.308	0.003	0.00653	0.01450	-0.00174	974	614	602	19991216.104503
419.1	7.620	0.0	0.319	-0.009	0.00637	0.01327	-0.00212	986	610	593	19991216.104511
419.1	10.160	0.0	0.328	-0.008	0.00660	0.01274	-0.00301	996	620	611	19991216.104520
419.1	12.700	0.0	0.337	-0.009	0.00703	0.01293	-0.00381	997	629	614	19991216.104528
419.1	15.240	0.0	0.354	-0.014	0.00774	0.01127	-0.00384	989	621	610	19991216.104536
419.1	20.320	0.0	0.394	-0.018	0.00752	0.01003	-0.00450	997	579	571	19991216.104544
419.1	25.400	0.0	0.422	-0.010	0.00800	0.00976	-0.00413	1002	662	653	19991216.104552
419.1	30.480	0.0	0.465	-0.012	0.00660	0.00779	-0.00355	985	637	623	19991216.104600
419.1	35.560	0.0	0.496	-0.017	0.00508	0.00611	-0.00252	998	644	636	19991216.104607
419.1	40.640	0.0	0.521	-0.006	0.00467	0.00464	-0.00193	988	621	610	19991216.104614
419.1	45.720	0.0	0.539	-0.002	0.00365	0.00390	-0.00150	985	607	594	19991216.104621
419.1	50.800	0.0	0.554	-0.004	0.00255	0.00204	-0.00073	996	586	576	19991216.104629
419.1	55.880	0.0	0.565	0.001	0.00182	0.00178	-0.00073	986	541	529	19991216.104638
419.1	60.960	0.0	0.582	-0.004	0.00139	0.00101	-0.00033	1003	561	557	19991216.104649
419.1	66.040	0.0	0.626	-0.006	0.00195	0.00127	-0.00067	1007	648	639	19991216.104703
419.1	71.120	0.0	0.683	-0.013	0.00258	0.00150	-0.00092	1009	638	632	19991216.104717
419.1	76.200	0.0	0.739	-0.012	0.00221	0.00141	-0.00069	1009	573	568	19991216.104731
419.1	81.280	0.0	0.730	0.000	0.00241	0.00000	0.00000	1007	0	0	19991216.104744
419.1	86.360	0.0	0.533	0.000	0.00682	0.00000	0.00000	972	0	0	19991216.104758
419.1	83.820	0.0	0.662	0.000	0.00370	0.00000	0.00000	967	0	0	19991216.104813
495.3	-20.320	0.0	0.418	0.000	0.00587	0.00000	0.00000	951	0	0	19991216.104831
495.3	-15.240	0.0	0.390	0.000	0.00579	0.00000	0.00000	971	0	0	19991216.104838
495.3	-12.700	0.0	0.377	0.000	0.00525	0.00000	0.00000	966	0	0	19991216.104845
495.3	-10.160	0.0	0.370	0.027	0.00495	0.01012	0.00000	967	44	41	19991216.104852
495.3	-7.620	0.0	0.368	0.001	0.00490	0.01105	0.00140	961	418	403	19991216.104858
495.3	-5.080	0.0	0.353	0.007	0.00501	0.01026	0.00126	1007	616	610	19991216.104907
495.3	-2.540	0.0	0.361	-0.004	0.00486	0.01136	0.00036	1008	604	602	19991216.104916
495.3	0.000	0.0	0.361	-0.008	0.00462	0.01026	-0.00038	1002	668	660	19991216.104926
495.3	2.540	0.0	0.352	-0.001	0.00489	0.01143	-0.00060	1003	677	669	19991216.104936
495.3	5.080	0.0	0.355	0.000	0.00529	0.01089	-0.00125	1008	679	670	19991216.104945
495.3	7.620	0.0	0.361	0.000	0.00517	0.01069	-0.00133	1002	693	687	19991216.104955
495.3	10.160	0.0	0.368	-0.003	0.00498	0.00937	-0.00139	1001	672	663	19991216.105004
495.3	12.700	0.0	0.380	-0.013	0.00525	0.01008	-0.00244	1006	657	651	19991216.105015
495.3	15.240	0.0	0.386	-0.007	0.00550	0.01027	-0.00299	1003	646	636	19991216.105025
495.3	20.320	0.0	0.397	0.007	0.00578	0.00988	-0.00256	997	676	669	19991216.105036
495.3	25.400	0.0	0.431	0.005	0.00609	0.00900	-0.00313	1006	631	624	19991216.105045
495.3	30.480	0.0	0.451	0.013	0.00628	0.00770	-0.00281	1003	660	655	19991216.105053
495.3	35.560	0.0	0.476	-0.002	0.00569	0.00704	-0.00263	999	614	603	19991216.105101
495.3	40.640	0.0	0.496	0.007	0.00543	0.00609	-0.00252	992	617	603	19991216.105108
495.3	45.720	0.0	0.512	0.011	0.00483	0.00571	-0.00199	998	574	563	19991216.105116
495.3	50.800	0.0	0.538	0.012	0.00394	0.00436	-0.00149	995	608	595	19991216.105125
495.3	55.880	0.0	0.561	0.009	0.00318	0.00379	-0.00119	1005	568	560	19991216.105134
495.3	60.960	0.0	0.583	0.007	0.00273	0.00251	-0.00093	1012	600	597	19991216.105146
495.3	66.040	0.0	0.628	-0.002	0.00285	0.00244	-0.00157	987	584	571	19991216.105155
495.3	71.120	0.0	0.683	-0.006	0.00245	0.00184	-0.00104	989	534	524	19991216.105203
495.3	76.200	0.0	0.719	-0.008	0.00176	0.00121	-0.00040	996	477	465	19991216.105212
495.3	81.280	0.0	0.714	0.000	0.00234	0.00000	0.00000	1003	0	0	19991216.105226
495.3	86.360	0.0	0.455	0.000	0.00854	0.00000	0.00000	963	0	0	19991216.105245
495.3	83.820	0.0	0.650	0.000	0.00410	0.00000	0.00000	965	0	0	19991216.105301

190.5	0.000	0.0	0.066	0.002	0.00501	0.00501	0.00011	1014	659	655	19991216.102038
190.5	0.000	-101.6	0.054	-0.002	0.00544	0.00521	-0.00016	1015	694	691	19991216.102115
190.5	0.000	0.0	0.064	0.002	0.00550	0.00476	-0.00017	1013	678	670	19991216.102153
190.5	0.000	101.6	0.119	-0.005	0.00538	0.00460	-0.00117	1014	538	537	19991216.102235

190.5	-20.320	-101.6	0.315	0.000	0.01246	0.00000	0.00000	998	0	0	19991215.104117
190.5	-15.240	-101.6	0.208	-0.007	0.00998	0.00551	0.00355	1006	65	65	19991215.104129
190.5	-12.700	-101.6	0.139	0.007	0.00993	0.00406	0.00276	1002	430	426	19991215.104140
190.5	-10.160	-101.6	0.092	0.002	0.00869	0.00456	0.00242	1005	521	518	19991215.104151
190.5	-7.620	-101.6	0.058	0.004	0.00749	0.00380	0.00155	995	545	539	19991215.104202
190.5	-5.080	-101.6	0.020	-0.002	0.00480	0.00340	0.00086	1003	612	607	19991215.104212
190.5	-2.540	-101.6	0.010	-0.002	0.00493	0.00355	0.00011	990	592	589	19991215.104222
190.5	0.000	-101.6	0.006	0.002	0.00481	0.00315	-0.00046	986	609	605	19991215.104231
190.5	2.540	-101.6	0.015	-0.006	0.00509	0.00383	-0.00122	993	595	590	19991215.104239
190.5	5.080	-101.6	0.063	-0.004	0.00744	0.00454	-0.00224	1004	559	556	19991215.104248
190.5	7.620	-101.6	0.092	-0.004	0.00891	0.00456	-0.00252	998	570	566	19991215.104256
190.5	10.160	-101.6	0.144	-0.002	0.01071	0.00519	-0.00329	999	551	545	19991215.104304
190.5	12.700	-101.6	0.189	-0.002	0.01151	0.00503	-0.00375	987	539	536	19991215.104311
190.5	15.240	-101.6	0.251	-0.008	0.01201	0.00428	-0.00330	1000	576	568	19991215.104318
190.5	20.320	-101.6	0.397	0.006	0.01065	0.00368	-0.00255	1009	613	611	19991215.104324
190.5	25.400	-101.6	0.492	0.017	0.00745	0.00231	-0.00139	1000	642	636	19991215.104329

190.5	30.480	-101.6	0.573	0.041	0.00432	0.00177	-0.00080	1006	694	686	19991215.104334
190.5	35.560	-101.6	0.615	0.048	0.00103	0.00078	-0.00026	1004	685	678	19991215.104340
190.5	40.640	-101.6	0.616	0.052	0.00034	0.00042	0.00000	1007	685	678	19991215.104348
190.5	45.720	-101.6	0.612	0.049	0.00017	0.00015	0.00002	996	666	658	19991215.104355
190.5	50.800	-101.6	0.606	0.050	0.00012	0.00011	0.00003	1004	682	675	19991215.104402
190.5	55.880	-101.6	0.600	0.051	0.00012	0.00009	0.00003	1006	673	666	19991215.104411
190.5	60.960	-101.6	0.593	0.054	0.00012	0.00010	0.00003	1011	692	687	19991215.104419
190.5	66.040	-101.6	0.584	0.057	0.00020	0.00011	0.00003	1009	699	691	19991215.104430
190.5	71.120	-101.6	0.585	0.060	0.00086	0.00060	-0.00012	1018	676	674	19991215.104445
190.5	76.200	-101.6	0.657	0.071	0.00460	0.00151	-0.00086	1020	712	711	19991215.104504
190.5	81.280	-101.6	0.751	0.092	0.00440	0.00188	-0.00064	1021	726	725	19991215.104520
190.5	83.820	-101.6	0.776	0.000	0.00335	0.00000	0.00000	1023	0	0	19991215.104548
190.5	-20.320	101.6	0.357	0.000	0.00976	0.00000	0.00000	956	0	0	19991215.104705
190.5	-15.240	101.6	0.238	0.000	0.00862	0.00000	0.00000	942	0	0	19991215.104718
190.5	-12.700	101.6	0.186	0.000	0.00831	0.00000	0.00000	964	0	0	19991215.104730
190.5	-10.160	101.6	0.124	0.000	0.00719	0.00000	0.00000	977	0	0	19991215.104743
190.5	-7.620	101.6	0.090	0.000	0.00578	0.00000	0.00000	948	0	0	19991215.104754
190.5	-5.080	101.6	0.055	0.000	0.00477	0.00000	0.00000	951	0	0	19991215.104804
190.5	-2.540	101.6	0.053	0.007	0.00387	0.00323	0.00017	964	116	113	19991215.104814
190.5	0.000	101.6	0.054	-0.002	0.00456	0.00350	-0.00034	938	328	319	19991215.104823
190.5	2.540	101.6	0.092	-0.001	0.00612	0.00302	-0.00118	943	400	388	19991215.104832
190.5	5.080	101.6	0.116	-0.002	0.00658	0.00316	-0.00143	941	331	316	19991215.104840
190.5	7.620	101.6	0.166	-0.006	0.00806	0.00394	-0.00243	940	351	338	19991215.104848
190.5	10.160	101.6	0.209	-0.002	0.00846	0.00422	-0.00310	937	321	306	19991215.104855
190.5	12.700	101.6	0.267	-0.002	0.00808	0.00453	-0.00311	945	336	326	19991215.104902
190.5	15.240	101.6	0.333	0.000	0.00866	0.00434	-0.00327	960	449	438	19991215.104908
190.5	20.320	101.6	0.448	0.009	0.00762	0.00258	-0.00224	939	427	407	19991215.104914
190.5	25.400	101.6	0.557	0.025	0.00398	0.00148	-0.00071	940	437	427	19991215.104919
190.5	30.480	101.6	0.612	0.036	0.00091	0.00072	-0.00017	936	426	417	19991215.104924
190.5	35.560	101.6	0.618	0.039	0.00027	0.00029	0.00001	957	450	440	19991215.104928
190.5	40.640	101.6	0.615	0.042	0.00015	0.00019	0.00001	954	381	367	19991215.104934
190.5	45.720	101.6	0.610	0.043	0.00011	0.00015	0.00002	967	294	290	19991215.104943
190.5	50.800	101.6	0.607	0.047	0.00015	0.00018	0.00004	926	292	277	19991215.104957
190.5	55.880	101.6	0.601	0.047	0.00017	0.00020	0.00004	917	269	247	19991215.105011
190.5	60.960	101.6	0.593	0.052	0.00018	0.00021	0.00004	898	267	246	19991215.105024
190.5	66.040	101.6	0.583	0.052	0.00022	0.00024	0.00005	918	266	241	19991215.105039
190.5	71.120	101.6	0.580	0.056	0.00098	0.00066	0.00013	915	255	236	19991215.105055
190.5	76.200	101.6	0.636	0.000	0.00431	0.00000	0.00000	934	0	0	19991215.105107
190.5	81.280	101.6	0.738	0.000	0.00627	0.00000	0.00000	953	0	0	19991215.105122
190.5	83.820	101.6	0.784	0.000	0.00533	0.00000	0.00000	903	0	0	19991215.105145

0.0	0.000	0.0	0.000	0.000	0.00000	0.00000	0.00000	724	0	0	19991215.111114
2.5	0.000	0.0	0.205	0.000	0.00638	0.00000	0.00000	724	0	0	19991215.111114
5.1	0.000	0.0	0.248	0.000	0.00607	0.00000	0.00000	789	0	0	19991215.111127
7.6	0.000	0.0	0.274	0.000	0.00612	0.00000	0.00000	804	0	0	19991215.111139
10.2	0.000	0.0	0.283	0.000	0.00625	0.00000	0.00000	796	0	0	19991215.111150
12.7	0.000	0.0	0.290	0.000	0.00590	0.00000	0.00000	764	0	0	19991215.111201
17.8	0.000	0.0	0.294	0.000	0.00644	0.00000	0.00000	778	0	0	19991215.111214
22.9	0.000	0.0	0.298	0.000	0.00575	0.00000	0.00000	790	0	0	19991215.111229
27.9	0.000	0.0	0.295	0.000	0.00602	0.00000	0.00000	786	0	0	19991215.111244
33.0	0.000	0.0	0.293	0.000	0.00556	0.00000	0.00000	772	0	0	19991215.111255
38.1	0.000	0.0	0.282	0.000	0.00583	0.00000	0.00000	738	0	0	19991215.111306
50.8	0.000	0.0	0.252	0.000	0.00541	0.00000	0.00000	712	0	0	19991215.111318
63.5	0.000	0.0	0.224	0.000	0.00469	0.00000	0.00000	715	0	0	19991215.111330
88.9	0.000	0.0	0.166	0.000	0.00522	0.00000	0.00000	664	0	0	19991215.111342
114.3	0.000	0.0	0.102	0.000	0.00553	0.00000	0.00000	658	0	0	19991215.111355
152.4	0.000	0.0	0.036	0.000	0.00451	0.00000	0.00000	692	0	0	19991215.111410
190.5	0.000	0.0	0.018	0.000	0.00488	0.00000	0.00000	750	0	0	19991215.111426
228.6	0.000	0.0	0.040	0.000	0.00544	0.00000	0.00000	762	0	0	19991215.111445
266.7	0.000	0.0	0.079	0.000	0.00711	0.00000	0.00000	758	0	0	19991215.111508
342.9	0.000	0.0	0.197	0.000	0.00864	0.00000	0.00000	854	0	0	19991215.111543
419.1	0.000	0.0	0.301	0.000	0.00844	0.00000	0.00000	740	0	0	19991215.111608
490.2	0.000	0.0	0.354	0.000	0.00676	0.00000	0.00000	694	0	0	19991215.111636
0.0	40.640	0.0	0.890	0.000	0.00019	0.00000	0.00000	882	0	0	19991215.111930
38.1	40.640	0.0	0.783	0.000	0.00012	0.00000	0.00000	817	0	0	19991215.111908
114.3	50.800	0.0	0.682	0.000	0.00013	0.00000	0.00000	841	0	0	19991215.111847
190.5	60.960	0.0	0.613	0.000	0.00018	0.00000	0.00000	806	0	0	19991215.111826
266.7	66.040	0.0	0.624	0.000	0.00055	0.00000	0.00000	794	0	0	19991215.111803
342.9	66.040	0.0	0.614	0.000	0.00095	0.00000	0.00000	815	0	0	19991215.111741
419.1	66.040	0.0	0.609	0.000	0.00178	0.00000	0.00000	792	0	0	19991215.111722
490.2	66.040	0.0	0.615	0.000	0.00312	0.00000	0.00000	780	0	0	19991215.111652

Table 12 LDV Data for Case C – Small Separation   Run 55

X(mm)	Y(mm)	z(mm)	U/Uref	V/Uref	uu/Uref^2	vv/Uref^2	uv/Uref^2	#u	#v	#uv	YearMoDa.HrMnSc
-88.9	-20.320	0.0	0.988	0.000	0.00006	0.00000	0.00000	396	0	0	19991217.134418
-88.9	-15.240	0.0	0.986	0.000	0.00006	0.00000	0.00000	554	0	0	19991217.134431
-88.9	-12.700	0.0	0.987	0.000	0.00005	0.00000	0.00000	548	0	0	19991217.134442
-88.9	-10.160	0.0	0.986	0.000	0.00007	0.00000	0.00000	472	0	0	19991217.134455
-88.9	-8.890	0.0	0.983	0.000	0.00020	0.00000	0.00000	426	0	0	19991217.134509
-88.9	-7.620	0.0	0.964	0.000	0.00114	0.00000	0.00000	571	0	0	19991217.134522
-88.9	-6.350	0.0	0.894	0.000	0.00373	0.00000	0.00000	567	0	0	19991217.134539
-88.9	-5.080	0.0	0.799	0.000	0.00673	0.00000	0.00000	532	0	0	19991217.134549
-88.9	-4.572	0.0	0.752	0.000	0.00833	0.00000	0.00000	514	0	0	19991217.134608
-88.9	-3.810	0.0	0.655	0.000	0.00950	0.00000	0.00000	467	0	0	19991217.134629
-88.9	3.810	0.0	0.670	0.000	0.00946	0.00000	0.00000	514	0	0	19991217.134652
-88.9	4.572	0.0	0.773	0.000	0.00790	0.00000	0.00000	567	0	0	19991217.134706
-88.9	5.080	0.0	0.821	0.000	0.00562	0.00000	0.00000	550	0	0	19991217.134718
-88.9	6.350	0.0	0.914	0.000	0.00354	0.00000	0.00000	494	0	0	19991217.134730
-88.9	7.620	0.0	0.981	0.000	0.00085	0.00000	0.00000	532	0	0	19991217.134737
-88.9	8.890	0.0	0.997	0.000	0.00013	0.00000	0.00000	408	0	0	19991217.134751
-88.9	10.160	0.0	0.999	0.000	0.00006	0.00000	0.00000	463	0	0	19991217.134758
-88.9	12.700	0.0	0.998	0.000	0.00005	0.00000	0.00000	447	0	0	19991217.134806
-88.9	15.240	0.0	0.999	0.000	0.00004	0.00000	0.00000	436	0	0	19991217.134812
-88.9	20.320	0.0	1.000	0.000	0.00005	0.00000	0.00000	460	0	0	19991217.134819
-88.9	25.400	0.0	1.000	0.000	0.00005	0.00000	0.00000	535	0	0	19991217.134831
-88.9	30.480	0.0	0.999	0.000	0.00005	0.00000	0.00000	547	0	0	19991217.134848
-88.9	35.560	0.0	0.997	0.000	0.00010	0.00000	0.00000	510	0	0	19991217.134909
-88.9	40.640	0.0	0.995	0.000	0.00013	0.00000	0.00000	383	0	0	19991217.134921
-88.9	45.720	0.0	0.995	0.000	0.00039	0.00000	0.00000	387	0	0	19991217.134930
-88.9	50.800	0.0	0.829	0.000	0.00682	0.00000	0.00000	243	0	0	19991217.134942
-88.9	52.070	0.0	0.710	0.000	0.00000	0.00000	0.00000	1	0	0	19991217.135000
-40.6	-20.320	0.0	0.947	0.000	0.00011	0.00000	0.00000	219	0	0	19991217.135023
-40.6	-15.240	0.0	0.947	0.000	0.00011	0.00000	0.00000	367	0	0	19991217.135031
-40.6	-12.700	0.0	0.947	0.000	0.00010	0.00000	0.00000	377	0	0	19991217.135039
-40.6	-10.160	0.0	0.950	0.000	0.00013	0.00000	0.00000	439	0	0	19991217.135048
-40.6	-8.890	0.0	0.946	0.000	0.00049	0.00000	0.00000	476	0	0	19991217.135104
-40.6	-7.620	0.0	0.908	0.000	0.00214	0.00000	0.00000	567	0	0	19991217.135114
-40.6	-6.350	0.0	0.841	0.000	0.00501	0.00000	0.00000	586	0	0	19991217.135136
-40.6	-5.080	0.0	0.754	0.000	0.00710	0.00000	0.00000	605	0	0	19991217.135150
-40.6	-4.572	0.0	0.701	0.000	0.00794	0.00000	0.00000	551	0	0	19991217.135208
-40.6	-3.810	0.0	0.631	0.000	0.01052	0.00000	0.00000	384	0	0	19991217.135221
-40.6	3.810	0.0	0.641	0.000	0.01105	0.00000	0.00000	543	0	0	19991217.135236
-40.6	4.572	0.0	0.728	0.000	0.00818	0.00000	0.00000	544	0	0	19991217.135251
-40.6	5.080	0.0	0.784	0.000	0.00746	0.00000	0.00000	530	0	0	19991217.135300
-40.6	6.350	0.0	0.873	0.000	0.00434	0.00000	0.00000	529	0	0	19991217.135313
-40.6	7.620	0.0	0.931	0.000	0.00239	0.00000	0.00000	443	0	0	19991217.135319
-40.6	8.890	0.0	0.965	0.000	0.00058	0.00000	0.00000	369	0	0	19991217.135332
-40.6	10.160	0.0	0.973	0.000	0.00015	0.00000	0.00000	380	0	0	19991217.135337
-40.6	12.700	0.0	0.973	0.000	0.00010	0.00000	0.00000	478	0	0	19991217.135346
-40.6	15.240	0.0	0.970	0.000	0.00011	0.00000	0.00000	509	0	0	19991217.135355
-40.6	20.320	0.0	0.969	0.000	0.00014	0.00000	0.00000	571	0	0	19991217.135411
-40.6	25.400	0.0	0.972	0.000	0.00011	0.00000	0.00000	585	0	0	19991217.135429
-40.6	30.480	0.0	0.974	0.000	0.00010	0.00000	0.00000	580	0	0	19991217.135447
-40.6	35.560	0.0	0.978	0.000	0.00012	0.00000	0.00000	527	0	0	19991217.135505
-40.6	40.640	0.0	0.983	0.000	0.00014	0.00000	0.00000	454	0	0	19991217.135521
-40.6	45.720	0.0	0.981	0.000	0.00040	0.00000	0.00000	571	0	0	19991217.135544
-40.6	48.260	0.0	0.937	0.000	0.00302	0.00000	0.00000	429	0	0	19991217.135625
-40.6	50.800	0.0	0.834	0.000	0.00641	0.00000	0.00000	358	0	0	19991217.135602
-40.6	52.070	0.0	0.655	0.000	0.01070	0.00000	0.00000	198	0	0	19991217.135715
0.0	-17.780	0.0	0.899	0.000	0.00003	0.00000	0.00000	15	0	0	19990930.135552
0.0	-15.240	0.0	0.898	0.000	0.00003	0.00000	0.00000	29	0	0	19990930.135608
0.0	-12.700	0.0	0.892	0.000	0.00002	0.00000	0.00000	92	0	0	19990930.135631
0.0	-10.160	0.0	0.889	0.000	0.00004	0.00000	0.00000	362	0	0	19990930.135648
0.0	-7.620	0.0	0.861	0.000	0.00103	0.00000	0.00000	562	0	0	19990930.135659
0.0	-5.080	0.0	0.747	0.000	0.00360	0.00000	0.00000	896	0	0	19990930.135706
0.0	-3.810	0.0	0.661	0.000	0.00516	0.00000	0.00000	939	0	0	19990930.135721
0.0	-2.540	0.0	0.562	0.000	0.00709	0.00000	0.00000	950	0	0	19990930.135738
0.0	-1.270	0.0	0.438	0.000	0.00816	0.00000	0.00000	998	0	0	19990930.135754
0.0	1.270	0.0	0.392	0.000	0.00810	0.00000	0.00000	1008	0	0	19990930.135812
0.0	2.540	0.0	0.548	0.000	0.00733	0.00000	0.00000	1004	0	0	19990930.135823
0.0	3.810	0.0	0.653	0.000	0.00462	0.00000	0.00000	993	0	0	19990930.135845
0.0	5.080	0.0	0.730	0.000	0.00399	0.00000	0.00000	952	0	0	19990930.135903
0.0	7.620	0.0	0.857	0.000	0.00104	0.00000	0.00000	596	0	0	19990930.135922
0.0	10.160	0.0	0.888	0.000	0.00004	0.00000	0.00000	494	0	0	19990930.135941
0.0	12.700	0.0	0.892	0.000	0.00002	0.00000	0.00000	289	0	0	19990930.135951

0.0	15.240	0.0	0.897	0.000	0.00002	0.00000	0.00000	213	0	0	19990930.140000
0.0	20.320	0.0	0.906	0.000	0.00002	0.00000	0.00000	97	0	0	19990930.140009
0.0	25.400	0.0	0.912	0.000	0.00002	0.00000	0.00000	50	0	0	19990930.140018
0.0	30.480	0.0	0.918	0.000	0.00002	0.00000	0.00000	29	0	0	19990930.140028
0.0	35.560	0.0	0.924	0.000	0.00002	0.00000	0.00000	7	0	0	19990930.140039
0.0	40.640	0.0	0.921	0.000	0.00006	0.00000	0.00000	2	0	0	19990930.140053
0.0	45.720	0.0	0.875	0.000	0.00025	0.00000	0.00000	2	0	0	19990930.140106
0.0	50.800	0.0	0.805	0.000	0.00415	0.00000	0.00000	156	0	0	19990930.140127
0.0	53.340	0.0	0.798	0.000	0.00367	0.00000	0.00000	78	0	0	19990930.140150
0.0	54.610	0.0	0.770	0.000	0.00534	0.00000	0.00000	48	0	0	19990930.140214
38.1	-20.320	0.0	0.768	0.000	0.00007	0.00000	0.00000	967	0	0	19990929.085902
38.1	-15.240	0.0	0.763	0.000	0.00006	0.00000	0.00000	1024	0	0	19990929.085910
38.1	-12.700	0.0	0.760	0.000	0.00007	0.00000	0.00000	1024	0	0	19990929.085917
38.1	-10.160	0.0	0.750	-0.055	0.00053	0.00083	0.00017	1022	248	248	19990929.085923
38.1	-7.620	0.0	0.663	-0.045	0.00387	0.00131	0.00094	1022	904	903	19990929.085929
38.1	-5.080	0.0	0.525	-0.028	0.00719	0.00262	0.00167	1020	878	877	19990929.085934
38.1	-2.540	0.0	0.368	-0.008	0.00726	0.00290	0.00181	1022	850	850	19990929.085940
38.1	0.000	0.0	0.279	-0.002	0.00404	0.00261	-0.00019	1022	865	864	19990929.085947
38.1	2.540	0.0	0.377	0.007	0.00747	0.00290	-0.00197	1024	829	829	19990929.085954
38.1	5.080	0.0	0.544	0.019	0.00682	0.00252	-0.00178	1023	765	764	19990929.090000
38.1	7.620	0.0	0.673	0.038	0.00326	0.00124	-0.00075	1024	753	753	19990929.090006
38.1	10.160	0.0	0.751	0.048	0.00045	0.00036	-0.00009	1024	793	793	19990929.090013
38.1	12.700	0.0	0.760	0.053	0.00009	0.00008	-0.00001	1024	839	839	19990929.090019
38.1	15.240	0.0	0.762	0.059	0.00008	0.00008	0.00000	1024	832	832	19990929.090024
38.1	20.320	0.0	0.766	0.069	0.00007	0.00010	0.00000	1024	823	823	19990929.090031
38.1	25.400	0.0	0.766	0.083	0.00005	0.00005	0.00000	1023	794	794	19990929.090038
38.1	30.480	0.0	0.768	0.095	0.00006	0.00013	0.00001	1023	711	711	19990929.090045
38.1	35.560	0.0	0.768	0.108	0.00005	0.00013	0.00000	1024	716	716	19990929.090053
38.1	40.640	0.0	0.769	0.118	0.00006	0.00016	0.00000	1024	719	719	19990929.090100
38.1	45.720	0.0	0.767	0.131	0.00008	0.00011	0.00001	1024	671	671	19990929.090109
38.1	50.800	0.0	0.765	0.141	0.00017	0.00028	-0.00002	1024	673	673	19990929.090120
38.1	55.880	0.0	0.777	0.158	0.00217	0.00189	-0.00042	1023	499	498	19990929.090132
38.1	60.960	0.0	0.921	0.000	0.00953	0.00000	0.00000	1024	0	0	19990929.090156
38.1	62.230	0.0	0.946	0.000	0.00840	0.00000	0.00000	1024	0	0	19990929.090233
114.3	-20.320	0.0	0.606	0.000	0.00413	0.00000	0.00000	980	0	0	19990929.090309
114.3	-15.240	0.0	0.422	0.000	0.01130	0.00000	0.00000	1016	0	0	19990929.090320
114.3	-12.700	0.0	0.335	0.000	0.01274	0.00000	0.00000	1023	0	0	19990929.090331
114.3	-10.160	0.0	0.242	-0.017	0.01144	0.00442	0.00186	1022	155	155	19990929.090341
114.3	-7.620	0.0	0.151	-0.015	0.01169	0.00446	0.00161	1022	890	890	19990929.090351
114.3	-5.080	0.0	0.074	-0.007	0.01099	0.00352	0.00131	1019	888	887	19990929.090402
114.3	-2.540	0.0	0.003	-0.002	0.00843	0.00323	0.00044	1020	904	904	19990929.090413
114.3	0.000	0.0	0.001	0.004	0.00668	0.00398	-0.00009	1021	884	884	19990929.090424
114.3	2.540	0.0	0.015	0.005	0.00931	0.00390	-0.00105	1016	880	876	19990929.090434
114.3	5.080	0.0	0.079	0.010	0.01191	0.00450	-0.00212	1023	885	885	19990929.090444
114.3	7.620	0.0	0.151	0.017	0.01331	0.00496	-0.00212	1021	847	846	19990929.090453
114.3	10.160	0.0	0.245	0.028	0.01327	0.00459	-0.00253	1022	843	842	19990929.090501
114.3	12.700	0.0	0.373	0.046	0.01139	0.00373	-0.00217	1024	822	822	19990929.090508
114.3	15.240	0.0	0.454	0.063	0.01013	0.00340	-0.00231	1021	812	811	19990929.090515
114.3	20.320	0.0	0.623	0.097	0.00272	0.00137	-0.00061	1021	808	808	19990929.090522
114.3	25.400	0.0	0.653	0.104	0.00020	0.00026	-0.00001	1022	857	856	19990929.090530
114.3	30.480	0.0	0.653	0.111	0.00011	0.00016	0.00000	1019	768	768	19990929.090540
114.3	35.560	0.0	0.653	0.111	0.00006	0.00010	0.00001	1022	767	767	19990929.090553
114.3	40.640	0.0	0.653	0.112	0.00006	0.00010	0.00000	1020	737	737	19990929.090600
114.3	45.720	0.0	0.651	0.120	0.00005	0.00008	0.00001	1020	693	693	19990929.090607
114.3	50.800	0.0	0.650	0.122	0.00007	0.00008	0.00001	1022	661	661	19990929.090615
114.3	55.880	0.0	0.650	0.126	0.00008	0.00008	0.00001	1023	680	680	19990929.090623
114.3	60.960	0.0	0.648	0.130	0.00013	0.00011	0.00001	1023	655	655	19990929.090632
114.3	66.040	0.0	0.649	0.134	0.00025	0.00023	-0.00004	1023	696	696	19990929.090642
114.3	71.120	0.0	0.694	0.146	0.00317	0.00137	-0.00058	1021	699	699	19990929.090658
114.3	76.200	0.0	0.801	0.000	0.00462	0.00000	0.00000	1015	0	0	19990929.090714
114.3	78.740	0.0	0.830	0.000	0.00355	0.00000	0.00000	1014	0	0	19990929.090743
152.4	-20.320	0.0	0.425	0.000	0.01004	0.00000	0.00000	1014	0	0	19990929.095639
152.4	-15.240	0.0	0.250	0.000	0.01296	0.00000	0.00000	1012	0	0	19990929.095646
152.4	-12.700	0.0	0.199	0.000	0.01185	0.00000	0.00000	1010	0	0	19990929.095653
152.4	-10.160	0.0	0.115	-0.003	0.01189	0.00442	0.00167	1008	118	117	19990929.095700
152.4	-7.620	0.0	0.049	-0.004	0.01207	0.00402	0.00218	1005	759	757	19990929.095707
152.4	-5.080	0.0	0.005	-0.002	0.00662	0.00316	0.00081	1006	766	763	19990929.095713
152.4	-2.540	0.0	-0.037	-0.002	0.00662	0.00369	0.00063	1000	788	785	19990929.095720
152.4	0.000	0.0	-0.056	0.005	0.00516	0.00307	0.00016	1005	792	788	19990929.095726
152.4	2.540	0.0	-0.042	-0.002	0.00590	0.00354	-0.00091	1004	769	766	19990929.095733
152.4	5.080	0.0	-0.043	0.008	0.00775	0.00349	-0.00111	1003	778	775	19990929.095739
152.4	7.620	0.0	0.030	0.010	0.00998	0.00470	-0.00197	1010	790	784	19990929.095746

152.4	10.160	0.0	0.093	0.014	0.01137	0.00541	-0.00268	1008	758	754	19990929.095752
152.4	12.700	0.0	0.192	0.017	0.01139	0.00481	-0.00215	1010	738	736	19990929.095757
152.4	15.240	0.0	0.258	0.026	0.01651	0.00567	-0.00243	1015	781	780	19990929.095803
152.4	20.320	0.0	0.408	0.051	0.01267	0.00403	-0.00240	1015	767	765	19990929.095808
152.4	25.400	0.0	0.544	0.080	0.00714	0.00243	-0.00117	1019	800	800	19990929.095814
152.4	30.480	0.0	0.626	0.095	0.00093	0.00061	-0.00020	1022	801	801	19990929.095819
152.4	35.560	0.0	0.629	0.098	0.00024	0.00030	-0.00001	1019	832	831	19990929.095824
152.4	40.640	0.0	0.625	0.097	0.00011	0.00017	0.00001	1022	814	813	19990929.095830
152.4	45.720	0.0	0.622	0.098	0.00006	0.00008	0.00001	1019	782	782	19990929.095835
152.4	50.800	0.0	0.620	0.103	0.00008	0.00011	0.00001	1017	712	710	19990929.095841
152.4	55.880	0.0	0.616	0.103	0.00005	0.00006	0.00001	1018	747	746	19990929.095846
152.4	60.960	0.0	0.613	0.106	0.00005	0.00009	0.00001	1020	730	730	19990929.095852
152.4	66.040	0.0	0.609	0.115	0.00006	0.00005	0.00001	1018	759	759	19990929.095858
152.4	71.120	0.0	0.605	0.117	0.00014	0.00012	-0.00001	1015	780	776	19990929.095904
152.4	76.200	0.0	0.615	0.124	0.00081	0.00060	-0.00022	1016	800	798	19990929.095910
152.4	81.280	0.0	0.684	0.139	0.00318	0.00116	-0.00035	1016	807	807	19990929.095917
152.4	86.360	0.0	0.737	0.000	0.00221	0.00000	0.00000	1015	0	0	19990929.095924
152.4	88.900	0.0	0.699	0.000	0.00332	0.00000	0.00000	1014	0	0	19990929.095939
190.5	-20.320	0.0	0.217	0.000	0.01667	0.00000	0.00000	857	0	0	19990929.090850
190.5	-15.240	0.0	0.097	0.000	0.01670	0.00000	0.00000	797	0	0	19990929.090903
190.5	-12.700	0.0	0.053	0.000	0.01271	0.00000	0.00000	831	0	0	19990929.090914
190.5	-10.160	0.0	0.019	0.026	0.01125	0.00608	0.00278	901	76	76	19990929.090924
190.5	-7.620	0.0	-0.037	0.004	0.00969	0.00618	0.00209	881	561	555	19990929.090934
190.5	-5.080	0.0	-0.044	0.007	0.00685	0.00571	0.00145	894	572	564	19990929.090942
190.5	-2.540	0.0	-0.067	0.008	0.00606	0.00500	0.00093	879	581	579	19990929.090951
190.5	0.000	0.0	-0.078	-0.002	0.00601	0.00455	0.00014	914	603	598	19990929.091000
190.5	2.540	0.0	-0.064	0.007	0.00606	0.00505	-0.00045	903	567	564	19990929.091008
190.5	5.080	0.0	-0.033	0.012	0.00672	0.00453	-0.00057	914	578	575	19990929.091017
190.5	7.620	0.0	-0.021	0.010	0.00903	0.00506	-0.00122	894	571	567	19990929.091025
190.5	10.160	0.0	0.025	0.006	0.01264	0.00750	-0.00379	902	575	571	19990929.091034
190.5	12.700	0.0	0.028	0.007	0.01414	0.00792	-0.00299	915	555	554	19990929.091050
190.5	15.240	0.0	0.109	0.003	0.01734	0.00908	-0.00574	915	543	540	19990929.091057
190.5	20.320	0.0	0.239	0.009	0.01621	0.00766	-0.00410	940	583	578	19990929.091105
190.5	25.400	0.0	0.364	0.021	0.01644	0.00632	-0.00317	960	606	604	19990929.091111
190.5	30.480	0.0	0.494	0.039	0.01313	0.00500	-0.00298	984	680	679	19990929.091117
190.5	35.560	0.0	0.596	0.055	0.00438	0.00256	-0.00089	986	659	658	19990929.091123
190.5	40.640	0.0	0.619	0.065	0.00111	0.00120	-0.00033	983	666	665	19990929.091129
190.5	45.720	0.0	0.613	0.068	0.00118	0.00106	-0.00045	964	588	586	19990929.091136
190.5	50.800	0.0	0.607	0.063	0.00021	0.00028	-0.00002	940	584	581	19990929.091143
190.5	55.880	0.0	0.601	0.067	0.00018	0.00027	0.00003	949	597	596	19990929.091150
190.5	60.960	0.0	0.596	0.069	0.00018	0.00022	0.00003	951	556	553	19990929.091157
190.5	66.040	0.0	0.585	0.068	0.00011	0.00010	0.00001	948	579	577	19990929.091204
190.5	71.120	0.0	0.577	0.072	0.00010	0.00010	0.00001	937	568	564	19990929.091212
190.5	76.200	0.0	0.567	0.074	0.00019	0.00015	0.00002	878	541	540	19990929.091221
190.5	81.280	0.0	0.562	0.076	0.00048	0.00031	-0.00006	884	547	545	19990929.091231
190.5	86.360	0.0	0.603	0.084	0.00252	0.00087	-0.00031	847	576	573	19990929.091241
190.5	91.440	0.0	0.655	0.095	0.00247	0.00133	-0.00009	823	63	63	19990929.091253
190.5	96.520	0.0	0.601	0.000	0.00286	0.00000	0.00000	772	0	0	19990929.091320
228.6	-20.320	0.0	0.212	0.000	0.01461	0.00000	0.00000	1000	0	0	19990929.100006
228.6	-15.240	0.0	0.105	0.000	0.01355	0.00000	0.00000	985	0	0	19990929.100015
228.6	-12.700	0.0	0.060	0.000	0.01208	0.00000	0.00000	995	0	0	19990929.100022
228.6	-10.160	0.0	0.016	0.030	0.00957	0.00843	0.00376	993	193	193	19990929.100029
228.6	-7.620	0.0	-0.013	0.012	0.00854	0.00787	0.00206	989	756	750	19990929.100036
228.6	-5.080	0.0	-0.040	0.002	0.00620	0.00714	0.00161	990	754	749	19990929.100042
228.6	-2.540	0.0	-0.054	0.009	0.00540	0.00768	0.00037	978	743	732	19990929.100048
228.6	0.000	0.0	-0.056	0.002	0.00543	0.00744	0.00012	989	744	738	19990929.100054
228.6	2.540	0.0	-0.055	0.002	0.00555	0.00661	-0.00088	998	784	779	19990929.100101
228.6	5.080	0.0	-0.037	0.001	0.00656	0.00762	-0.00060	1008	779	775	19990929.100107
228.6	7.620	0.0	-0.026	0.005	0.00903	0.00908	-0.00286	1006	776	771	19990929.100113
228.6	10.160	0.0	0.019	-0.002	0.01166	0.01018	-0.00314	1002	768	761	19990929.100120
228.6	12.700	0.0	0.080	-0.008	0.01243	0.00936	-0.00328	1008	773	773	19990929.100126
228.6	15.240	0.0	0.113	-0.011	0.01277	0.00903	-0.00320	1011	774	769	19990929.100132
228.6	20.320	0.0	0.232	-0.007	0.01410	0.00893	-0.00453	1020	806	805	19990929.100138
228.6	25.400	0.0	0.336	-0.008	0.01444	0.00731	-0.00417	1020	823	822	19990929.100144
228.6	30.480	0.0	0.456	0.002	0.01058	0.00578	-0.00353	1024	845	845	19990929.100149
228.6	35.560	0.0	0.561	0.008	0.00556	0.00341	-0.00180	1022	849	848	19990929.100155
228.6	40.640	0.0	0.591	0.017	0.00236	0.00180	-0.00068	1020	862	861	19990929.100200
228.6	45.720	0.0	0.597	0.019	0.00047	0.00054	-0.00003	1021	847	845	19990929.100205
228.6	50.800	0.0	0.596	0.020	0.00030	0.00031	0.00004	1023	855	854	19990929.100211
228.6	55.880	0.0	0.591	0.018	0.00044	0.00031	-0.00001	1024	821	821	19990929.100217
228.6	60.960	0.0	0.587	0.019	0.00017	0.00016	0.00001	1022	824	824	19990929.100224
228.6	66.040	0.0	0.582	0.019	0.00014	0.00014	0.00001	1023	837	837	19990929.100230
228.6	71.120	0.0	0.576	0.019	0.00014	0.00010	0.00001	1023	846	846	19990929.100237
228.6	76.200	0.0	0.572	0.016	0.00014	0.00010	0.00004	1023	845	844	19990929.100244
228.6	81.280	0.0	0.573	0.015	0.00020	0.00018	-0.00001	1023	876	876	19990929.100251

228.6	86.360	0.0	0.602	0.014	0.00139	0.00066	-0.00011	1021	893	892 19990929.100258
228.6	91.440	0.0	0.668	0.008	0.00200	0.00098	-0.00025	1024	619	619 19990929.100307
228.6	96.520	0.0	0.683	0.000	0.00208	0.00000	0.00000	1022	0	0 19990929.100316
228.6	99.060	0.0	0.623	0.000	0.00377	0.00000	0.00000	1021	0	0 19990929.100330
266.7	-20.320	0.0	0.219	0.000	0.01495	0.00000	0.00000	592	0	0 19990929.091421
266.7	-15.240	0.0	0.139	0.000	0.01347	0.00000	0.00000	811	0	0 19990929.091433
266.7	-12.700	0.0	0.100	0.000	0.01283	0.00000	0.00000	822	0	0 19990929.091443
266.7	-10.160	0.0	0.059	0.017	0.01236	0.01048	0.00387	857	87	86 19990929.091453
266.7	-7.620	0.0	0.041	0.023	0.01022	0.01560	0.00333	1004	775	775 19990929.091505
266.7	-5.080	0.0	0.019	0.021	0.00888	0.01303	0.00227	931	646	641 19990929.091513
266.7	-2.540	0.0	0.009	0.007	0.00791	0.01426	0.00046	909	633	630 19990929.091521
266.7	0.000	0.0	0.006	0.002	0.00753	0.01581	-0.00108	912	630	623 19990929.091530
266.7	2.540	0.0	0.018	0.007	0.00970	0.01746	-0.00261	919	660	656 19990929.091538
266.7	5.080	0.0	0.034	-0.006	0.01019	0.01663	-0.00437	907	574	573 19990929.091546
266.7	7.620	0.0	0.035	-0.001	0.01183	0.01457	-0.00449	925	609	608 19990929.091554
266.7	10.160	0.0	0.076	-0.002	0.01314	0.01945	-0.00623	942	609	607 19990929.091602
266.7	12.700	0.0	0.135	-0.026	0.01336	0.01759	-0.00647	937	619	615 19990929.091609
266.7	15.240	0.0	0.158	-0.028	0.01532	0.01647	-0.00723	941	582	578 19990929.091617
266.7	20.320	0.0	0.239	-0.034	0.01627	0.01470	-0.00773	960	603	599 19990929.091623
266.7	25.400	0.0	0.332	-0.034	0.01351	0.01167	-0.00575	987	662	662 19990929.091630
266.7	30.480	0.0	0.422	-0.030	0.01308	0.00934	-0.00469	979	658	655 19990929.091636
266.7	35.560	0.0	0.482	-0.026	0.01158	0.00787	-0.00491	1002	692	691 19990929.091642
266.7	40.640	0.0	0.558	-0.017	0.00582	0.00432	-0.00173	1020	772	772 19990929.091649
266.7	45.720	0.0	0.586	-0.006	0.00248	0.00291	-0.00068	1021	745	745 19990929.091658
266.7	50.800	0.0	0.589	-0.005	0.00192	0.00224	-0.00040	1024	755	755 19990929.091708
266.7	55.880	0.0	0.589	-0.002	0.00112	0.00125	-0.00026	1024	726	726 19990929.091719
266.7	60.960	0.0	0.585	-0.002	0.00047	0.00045	0.00001	1018	704	702 19990929.091731
266.7	66.040	0.0	0.583	-0.001	0.00040	0.00031	-0.00001	1020	706	706 19990929.091745
266.7	71.120	0.0	0.581	0.000	0.00028	0.00022	0.00001	1020	720	720 19990929.091757
266.7	76.200	0.0	0.581	0.000	0.00025	0.00016	0.00003	1018	731	730 19990929.091812
266.7	81.280	0.0	0.581	0.002	0.00031	0.00025	0.00004	1016	754	754 19990929.091829
266.7	86.360	0.0	0.606	0.002	0.00097	0.00059	-0.00019	1017	765	765 19990929.091850
266.7	91.440	0.0	0.670	0.002	0.00158	0.00094	-0.00030	855	491	488 19990929.091901
266.7	96.520	0.0	0.690	0.000	0.00219	0.00000	0.00000	829	0	0 19990929.091913
266.7	99.060	0.0	0.641	0.000	0.00349	0.00000	0.00000	749	0	0 19990929.091947
342.9	-20.320	0.0	0.278	0.000	0.01201	0.00000	0.00000	343	0	0 19990929.092025
342.9	-15.240	0.0	0.232	0.000	0.01238	0.00000	0.00000	678	0	0 19990929.092040
342.9	-12.700	0.0	0.217	0.000	0.01085	0.00000	0.00000	737	0	0 19990929.092052
342.9	-10.160	0.0	0.214	0.053	0.01091	0.02149	0.00434	925	175	175 19990929.092108
342.9	-7.620	0.0	0.199	0.024	0.01077	0.02615	0.00410	977	820	820 19990929.092123
342.9	-5.080	0.0	0.192	0.024	0.00885	0.02793	0.00305	995	813	812 19990929.092135
342.9	-2.540	0.0	0.182	0.005	0.01111	0.02556	0.00014	994	835	835 19990929.092148
342.9	0.000	0.0	0.174	-0.018	0.01014	0.02474	-0.00123	970	773	772 19990929.092159
342.9	2.540	0.0	0.185	-0.010	0.01082	0.02542	-0.00271	962	745	744 19990929.092211
342.9	5.080	0.0	0.208	-0.012	0.00955	0.02718	-0.00420	976	767	766 19990929.092221
342.9	7.620	0.0	0.197	-0.026	0.00988	0.02143	-0.00468	968	763	761 19990929.092233
342.9	10.160	0.0	0.219	-0.026	0.01253	0.02433	-0.00651	969	775	772 19990929.092243
342.9	12.700	0.0	0.239	-0.040	0.01324	0.02153	-0.00795	964	741	740 19990929.092254
342.9	15.240	0.0	0.265	-0.041	0.01317	0.02284	-0.00795	989	798	798 19990929.092304
342.9	20.320	0.0	0.313	-0.045	0.01207	0.01849	-0.00790	980	748	747 19990929.092313
342.9	25.400	0.0	0.347	-0.036	0.01389	0.01597	-0.00783	991	748	747 19990929.092322
342.9	30.480	0.0	0.402	-0.025	0.01191	0.01378	-0.00677	995	727	726 19990929.092330
342.9	35.560	0.0	0.441	-0.028	0.01086	0.01157	-0.00569	998	735	733 19990929.092339
342.9	40.640	0.0	0.485	-0.023	0.00919	0.00861	-0.00392	1006	674	673 19990929.092347
342.9	45.720	0.0	0.511	-0.011	0.00806	0.00688	-0.00351	991	663	662 19990929.092356
342.9	50.800	0.0	0.537	-0.004	0.00655	0.00569	-0.00247	985	695	695 19990929.092406
342.9	55.880	0.0	0.544	0.000	0.00435	0.00513	-0.00207	989	685	685 19990929.092416
342.9	60.960	0.0	0.555	-0.003	0.00266	0.00257	-0.00043	977	635	633 19990929.092427
342.9	66.040	0.0	0.558	-0.002	0.00159	0.00148	-0.00029	962	629	627 19990929.092439
342.9	71.120	0.0	0.558	-0.002	0.00087	0.00070	0.00001	973	642	640 19990929.092452
342.9	76.200	0.0	0.561	-0.002	0.00064	0.00033	-0.00002	956	641	640 19990929.092504
342.9	81.280	0.0	0.562	-0.001	0.00064	0.00029	0.00000	976	689	689 19990929.092515
342.9	86.360	0.0	0.585	0.000	0.00084	0.00053	-0.00020	956	724	723 19990929.092528
342.9	91.440	0.0	0.637	-0.002	0.00121	0.00067	-0.00028	936	503	501 19990929.092543
342.9	96.520	0.0	0.644	0.000	0.00165	0.00000	0.00000	955	0	0 19990929.092600
342.9	99.060	0.0	-0.001	0.000	0.00002	0.00000	0.00000	248	0	0 19990929.092628
342.9	99.060	0.0	0.569	0.000	0.00431	0.00000	0.00000	832	0	0 19990929.092656
419.1	-20.320	0.0	0.342	0.000	0.00777	0.00000	0.00000	440	0	0 19990929.092733
419.1	-15.240	0.0	0.312	0.000	0.00831	0.00000	0.00000	835	0	0 19990929.092749
419.1	-12.700	0.0	0.314	0.000	0.00840	0.00000	0.00000	856	0	0 19990929.092759
419.1	-10.160	0.0	0.301	0.036	0.00751	0.01736	0.00203	913	196	194 19990929.092807
419.1	-7.620	0.0	0.301	0.025	0.00651	0.02206	0.00212	923	737	736 19990929.092815
419.1	-5.080	0.0	0.289	0.009	0.00726	0.02135	0.00127	914	718	717 19990929.092822

419.1	-2.540	0.0	0.286	0.007	0.00764	0.02147	0.00085	927	723	719	19990929.092829
419.1	0.000	0.0	0.292	0.005	0.00636	0.02120	0.00036	937	756	755	19990929.092837
419.1	2.540	0.0	0.282	0.008	0.00714	0.01963	-0.00066	946	712	711	19990929.092844
419.1	5.080	0.0	0.303	-0.009	0.00752	0.02064	-0.00264	968	732	724	19990929.092849
419.1	7.620	0.0	0.303	-0.030	0.00782	0.01858	-0.00356	975	741	729	19990929.092854
419.1	10.160	0.0	0.308	-0.021	0.00794	0.01940	-0.00436	1005	829	827	19990929.092901
419.1	12.700	0.0	0.323	-0.019	0.00813	0.01964	-0.00330	1024	903	903	19990929.092908
419.1	15.240	0.0	0.329	-0.019	0.00797	0.01668	-0.00453	1024	900	900	19990929.092916
419.1	20.320	0.0	0.353	-0.026	0.00916	0.01628	-0.00585	1024	923	923	19990929.092924
419.1	25.400	0.0	0.392	-0.022	0.00896	0.01515	-0.00608	1024	918	918	19990929.092931
419.1	30.480	0.0	0.414	-0.013	0.00968	0.01391	-0.00570	1024	894	894	19990929.092938
419.1	35.560	0.0	0.441	-0.009	0.00870	0.01186	-0.00539	1023	902	902	19990929.092945
419.1	40.640	0.0	0.466	-0.005	0.00864	0.00956	-0.00406	1024	904	904	19990929.092953
419.1	45.720	0.0	0.492	0.000	0.00765	0.00825	-0.00345	1022	886	884	19990929.093000
419.1	50.800	0.0	0.501	0.011	0.00689	0.00683	-0.00338	1022	883	882	19990929.093007
419.1	55.880	0.0	0.510	0.015	0.00627	0.00640	-0.00328	1024	834	834	19990929.093014
419.1	60.960	0.0	0.527	0.012	0.00431	0.00442	-0.00166	1023	853	853	19990929.093021
419.1	66.040	0.0	0.537	0.013	0.00297	0.00326	-0.00102	1024	874	874	19990929.093029
419.1	71.120	0.0	0.547	0.009	0.00217	0.00211	-0.00029	1021	852	852	19990929.093037
419.1	76.200	0.0	0.544	0.007	0.00194	0.00131	-0.00027	1023	842	841	19990929.093046
419.1	81.280	0.0	0.554	0.004	0.00094	0.00053	-0.00009	1022	877	876	19990929.093055
419.1	86.360	0.0	0.579	0.002	0.00098	0.00063	-0.00030	1024	882	882	19990929.093105
419.1	91.440	0.0	0.616	0.000	0.00122	0.00075	-0.00030	1024	189	189	19990929.093117
419.1	96.520	0.0	0.609	0.000	0.00197	0.00000	0.00000	1024	0	0	19990929.093129
419.1	99.060	0.0	0.510	0.000	0.00396	0.00000	0.00000	1024	0	0	19990929.093154
495.3	-20.320	0.0	0.370	0.000	0.00679	0.00000	0.00000	1024	0	0	19990929.093251
495.3	-15.240	0.0	0.357	0.000	0.00565	0.00000	0.00000	1024	0	0	19990929.093309
495.3	-12.700	0.0	0.353	0.000	0.00575	0.00000	0.00000	1020	0	0	19990929.093321
495.3	-10.160	0.0	0.346	-0.005	0.00575	0.01455	0.00081	1021	501	500	19990929.093332
495.3	-7.620	0.0	0.350	-0.007	0.00598	0.01538	0.00076	1021	941	940	19990929.093341
495.3	-5.080	0.0	0.351	-0.002	0.00537	0.01561	0.00099	1024	923	923	19990929.093348
495.3	-2.540	0.0	0.341	-0.006	0.00586	0.01436	0.00032	1021	936	934	19990929.093356
495.3	0.000	0.0	0.347	-0.003	0.00541	0.01550	-0.00043	1024	948	948	19990929.093404
495.3	2.540	0.0	0.349	-0.008	0.00570	0.01503	-0.00105	1022	932	930	19990929.093412
495.3	5.080	0.0	0.352	-0.005	0.00543	0.01545	-0.00112	1023	922	921	19990929.093420
495.3	7.620	0.0	0.355	-0.015	0.00580	0.01459	-0.00149	1022	930	929	19990929.093428
495.3	10.160	0.0	0.362	-0.016	0.00619	0.01392	-0.00211	1024	937	937	19990929.093435
495.3	12.700	0.0	0.366	-0.007	0.00562	0.01447	-0.00274	1024	924	924	19990929.093444
495.3	15.240	0.0	0.372	-0.003	0.00619	0.01303	-0.00227	1023	940	939	19990929.093452
495.3	20.320	0.0	0.388	-0.015	0.00716	0.01176	-0.00319	1023	948	948	19990929.093501
495.3	25.400	0.0	0.407	-0.007	0.00656	0.01115	-0.00324	1024	928	928	19990929.093509
495.3	30.480	0.0	0.425	-0.004	0.00752	0.01105	-0.00342	1024	925	925	19990929.093517
495.3	35.560	0.0	0.442	-0.001	0.00657	0.01029	-0.00279	1024	926	926	19990929.093525
495.3	40.640	0.0	0.460	0.005	0.00647	0.00929	-0.00343	1022	901	900	19990929.093533
495.3	45.720	0.0	0.470	0.013	0.00595	0.00902	-0.00321	1024	901	901	19990929.093541
495.3	50.800	0.0	0.489	0.016	0.00588	0.00733	-0.00324	1024	914	914	19990929.093549
495.3	55.880	0.0	0.496	0.026	0.00518	0.00733	-0.00235	1024	887	887	19990929.093557
495.3	60.960	0.0	0.516	0.015	0.00448	0.00595	-0.00197	1024	868	868	19990929.093605
495.3	66.040	0.0	0.526	0.016	0.00450	0.00412	-0.00124	1024	860	860	19990929.093613
495.3	71.120	0.0	0.530	0.017	0.00368	0.00349	-0.00115	1024	862	862	19990929.093622
495.3	76.200	0.0	0.542	0.016	0.00273	0.00253	-0.00066	1024	860	860	19990929.093631
495.3	81.280	0.0	0.552	0.012	0.00213	0.00181	-0.00041	1024	892	892	19990929.093641
495.3	86.360	0.0	0.574	0.009	0.00178	0.00099	-0.00052	1024	912	912	19990929.093652
495.3	91.440	0.0	0.606	0.000	0.00146	0.00000	0.00000	1024	0	0	19990929.093702
495.3	96.520	0.0	0.589	0.000	0.00258	0.00000	0.00000	1024	0	0	19990929.093716
495.3	99.060	0.0	0.464	0.000	0.00431	0.00000	0.00000	1024	0	0	19990929.093737

190.5	-20.320	101.6	0.251	0.000	0.01185	0.00000	0.00000	935	0	0	19990929.094551
190.5	-15.240	101.6	0.133	0.000	0.01081	0.00000	0.00000	938	0	0	19990929.094606
190.5	-12.700	101.6	0.093	0.000	0.00885	0.00000	0.00000	988	0	0	19990929.094621
190.5	-10.160	101.6	0.044	0.000	0.00757	0.00000	0.00000	967	0	0	19990929.094633
190.5	-7.620	101.6	0.000	0.000	0.00550	0.00000	0.00000	968	0	0	19990929.094644
190.5	-5.080	101.6	-0.001	0.017	0.00481	0.00373	-0.00020	956	73	73	19990929.094652
190.5	-2.540	101.6	-0.019	-0.002	0.00392	0.00387	0.00008	977	643	631	19990929.094700
190.5	0.000	101.6	0.000	-0.001	0.00611	0.00489	-0.00135	970	640	633	19990929.094709
190.5	2.540	101.6	0.032	-0.002	0.00688	0.00417	-0.00110	967	626	617	19990929.094716
190.5	5.080	101.6	0.096	-0.014	0.00988	0.00591	-0.00235	1008	702	699	19990929.094725
190.5	7.620	101.6	0.127	-0.008	0.01016	0.00577	-0.00269	1000	702	702	19990929.094733
190.5	10.160	101.6	0.172	-0.005	0.01079	0.00640	-0.00340	1010	700	697	19990929.094741
190.5	12.700	101.6	0.252	-0.002	0.01020	0.00577	-0.00259	1019	789	787	19990929.094749
190.5	15.240	101.6	0.309	0.005	0.01208	0.00625	-0.00388	1021	783	781	19990929.094757
190.5	20.320	101.6	0.434	0.021	0.01123	0.00391	-0.00217	1020	807	807	19990929.094805
190.5	25.400	101.6	0.561	0.036	0.00473	0.00230	-0.00129	1023	827	827	19990929.094812
190.5	30.480	101.6	0.616	0.044	0.00103	0.00109	-0.00037	1023	831	831	19990929.094819
190.5	35.560	101.6	0.616	0.045	0.00025	0.00034	-0.00001	1021	821	820	19990929.094827

190.5	40.640	101.6	0.610	0.046	0.00015	0.00014	0.00001	1021	784	784	19990929.094834
190.5	45.720	101.6	0.605	0.048	0.00009	0.00008	0.00001	1020	767	765	19990929.094842
190.5	50.800	101.6	0.599	0.050	0.00007	0.00009	0.00001	1021	699	699	19990929.094850
190.5	55.880	101.6	0.595	0.053	0.00008	0.00012	0.00000	1021	706	706	19990929.094859
190.5	60.960	101.6	0.589	0.054	0.00008	0.00013	0.00000	1023	648	648	19990929.094910
190.5	66.040	101.6	0.582	0.057	0.00014	0.00014	0.00001	1021	658	657	19990929.094922
190.5	71.120	101.6	0.570	0.060	0.00029	0.00019	0.00007	1021	669	669	19990929.094939
190.5	76.200	101.6	0.556	0.062	0.00058	0.00033	0.00006	979	556	550	19990929.094949
190.5	81.280	101.6	0.542	0.065	0.00110	0.00071	0.00017	964	602	593	19990929.095001
190.5	86.360	101.6	0.561	0.075	0.00189	0.00081	-0.00001	960	358	353	19990929.095014
190.5	91.440	101.6	0.580	0.000	0.00246	0.00000	0.00000	941	0	0	19990929.095029
190.5	0.000	0.0	-0.070	0.002	0.00496	0.00379	0.00031	940	673	661	19990929.095111
190.5	-20.320	-101.6	0.318	0.000	0.01116	0.00000	0.00000	1004	0	0	19990929.095147
190.5	-15.240	-101.6	0.205	0.008	0.01029	0.00475	0.00154	1000	239	238	19990929.095153
190.5	-12.700	-101.6	0.157	0.001	0.00979	0.00562	0.00321	1017	817	815	19990929.095201
190.5	-10.160	-101.6	0.098	0.007	0.00974	0.00491	0.00215	1021	819	818	19990929.095210
190.5	-7.620	-101.6	0.063	0.006	0.00709	0.00460	0.00175	1020	803	803	19990929.095219
190.5	-5.080	-101.6	0.003	0.007	0.00579	0.00408	0.00103	1021	773	773	19990929.095228
190.5	-2.540	-101.6	-0.010	0.003	0.00423	0.00396	0.00037	1015	830	829	19990929.095238
190.5	0.000	-101.6	-0.007	-0.001	0.00409	0.00405	-0.00032	1015	774	772	19990929.095247
190.5	2.540	-101.6	0.017	0.001	0.00556	0.00414	-0.00107	1016	757	757	19990929.095255
190.5	5.080	-101.6	0.049	-0.007	0.00847	0.00422	-0.00184	1010	742	740	19990929.095303
190.5	7.620	-101.6	0.093	-0.003	0.00892	0.00500	-0.00294	1011	739	736	19990929.095310
190.5	10.160	-101.6	0.131	0.002	0.00926	0.00539	-0.00245	1013	757	754	19990929.095317
190.5	12.700	-101.6	0.192	0.003	0.01117	0.00595	-0.00358	1014	780	776	19990929.095324
190.5	15.240	-101.6	0.253	0.002	0.01073	0.00606	-0.00325	1016	772	770	19990929.095330
190.5	20.320	-101.6	0.370	0.022	0.01089	0.00496	-0.00307	1020	785	784	19990929.095337
190.5	25.400	-101.6	0.493	0.031	0.00769	0.00355	-0.00167	1022	804	803	19990929.095342
190.5	30.480	-101.6	0.596	0.045	0.00251	0.00146	-0.00077	1023	817	817	19990929.095348
190.5	35.560	-101.6	0.616	0.051	0.00042	0.00057	-0.00009	1024	855	855	19990929.095355
190.5	40.640	-101.6	0.613	0.051	0.00019	0.00021	0.00000	1024	861	861	19990929.095402
190.5	45.720	-101.6	0.607	0.054	0.00011	0.00012	0.00001	1024	869	869	19990929.095409
190.5	50.800	-101.6	0.600	0.055	0.00008	0.00005	0.00001	1022	854	853	19990929.095416
190.5	55.880	-101.6	0.596	0.056	0.00008	0.00005	0.00001	1022	831	831	19990929.095422
190.5	60.960	-101.6	0.589	0.060	0.00008	0.00005	0.00001	1021	852	851	19990929.095429
190.5	66.040	-101.6	0.582	0.062	0.00009	0.00009	0.00001	1018	846	845	19990929.095438
190.5	71.120	-101.6	0.572	0.064	0.00014	0.00011	0.00003	1019	846	844	19990929.095448
190.5	76.200	-101.6	0.563	0.067	0.00030	0.00012	0.00006	1018	883	882	19990929.095500
190.5	81.280	-101.6	0.548	0.070	0.00060	0.00023	0.00006	1019	914	912	19990929.095512
190.5	86.360	-101.6	0.552	0.079	0.00149	0.00058	0.00006	1016	894	891	19990929.095525
190.5	91.440	-101.6	0.582	0.090	0.00222	0.00077	0.00004	1022	890	889	19990929.095539

190.5	0.000	0.0	-0.057	0.005	0.00476	0.00468	0.00027	1007	740	735	19990929.085047
190.5	0.000	-101.6	-0.034	-0.002	0.00513	0.00457	-0.00033	973	703	701	19990929.085137
190.5	0.000	-127.0	0.019	0.004	0.00600	0.00584	-0.00051	949	646	644	19990929.085212
190.5	0.000	-152.4	0.108	0.002	0.00624	0.00447	-0.00029	912	605	603	19990929.085253
190.5	0.000	-177.8	0.362	0.010	0.00579	0.00452	-0.00015	302	158	158	19990929.085318
190.5	0.000	-184.1	0.383	0.033	0.00494	0.00513	-0.00053	204	120	117	19990929.085351

495.3	99.060	0.0	0.464	0.000	0.00431	0.00000	0.00000	1024	0	0	19990929.093737
419.1	86.360	0.0	0.575	0.003	0.00100	0.00051	-0.00024	1023	899	899	19990929.093803
342.9	86.360	0.0	0.583	0.001	0.00080	0.00048	-0.00017	1024	905	905	19990929.093827
266.7	86.360	0.0	0.601	0.003	0.00080	0.00043	-0.00012	1024	929	929	19990929.093848
190.5	76.200	0.0	0.563	0.072	0.00016	0.00011	0.00002	1024	873	873	19990929.093910
114.3	60.960	0.0	0.644	0.126	0.00008	0.00006	0.00001	1024	861	861	19990929.093933
38.1	45.720	0.0	0.767	0.129	0.00008	0.00007	0.00000	1024	841	841	19990929.093956

Table 13 LDV Data for Case D – Massive Separation Run 66

X(mm)	Y(mm)	z(mm)	U/Uref	V/Uref	uu/Uref^2	vv/Uref^2	uv/Uref^2	#u	#v	#uv	YearMoDa.HrMnSc
-88.9	-20.320	0.0	0.988	0.000	0.00006	0.00000	0.00000	396	0	0	19991217.134418
-88.9	-15.240	0.0	0.986	0.000	0.00006	0.00000	0.00000	554	0	0	19991217.134431
-88.9	-12.700	0.0	0.987	0.000	0.00005	0.00000	0.00000	548	0	0	19991217.134442
-88.9	-10.160	0.0	0.986	0.000	0.00007	0.00000	0.00000	472	0	0	19991217.134455
-88.9	-8.890	0.0	0.983	0.000	0.00020	0.00000	0.00000	426	0	0	19991217.134509
-88.9	-7.620	0.0	0.964	0.000	0.00114	0.00000	0.00000	571	0	0	19991217.134522
-88.9	-6.350	0.0	0.894	0.000	0.00373	0.00000	0.00000	567	0	0	19991217.134539
-88.9	-5.080	0.0	0.799	0.000	0.00673	0.00000	0.00000	532	0	0	19991217.134549
-88.9	-4.572	0.0	0.752	0.000	0.00833	0.00000	0.00000	514	0	0	19991217.134608
-88.9	-3.810	0.0	0.655	0.000	0.00950	0.00000	0.00000	467	0	0	19991217.134629
-88.9	3.810	0.0	0.670	0.000	0.00946	0.00000	0.00000	514	0	0	19991217.134652
-88.9	4.572	0.0	0.773	0.000	0.00790	0.00000	0.00000	567	0	0	19991217.134706
-88.9	5.080	0.0	0.821	0.000	0.00562	0.00000	0.00000	550	0	0	19991217.134718
-88.9	6.350	0.0	0.914	0.000	0.00354	0.00000	0.00000	494	0	0	19991217.134730
-88.9	7.620	0.0	0.981	0.000	0.00085	0.00000	0.00000	532	0	0	19991217.134737
-88.9	8.890	0.0	0.997	0.000	0.00013	0.00000	0.00000	408	0	0	19991217.134751
-88.9	10.160	0.0	0.999	0.000	0.00006	0.00000	0.00000	463	0	0	19991217.134758
-88.9	12.700	0.0	0.998	0.000	0.00005	0.00000	0.00000	447	0	0	19991217.134806
-88.9	15.240	0.0	0.999	0.000	0.00004	0.00000	0.00000	436	0	0	19991217.134812
-88.9	20.320	0.0	1.000	0.000	0.00005	0.00000	0.00000	460	0	0	19991217.134819
-88.9	25.400	0.0	1.000	0.000	0.00005	0.00000	0.00000	535	0	0	19991217.134831
-88.9	30.480	0.0	0.999	0.000	0.00005	0.00000	0.00000	547	0	0	19991217.134848
-88.9	35.560	0.0	0.997	0.000	0.00010	0.00000	0.00000	510	0	0	19991217.134909
-88.9	40.640	0.0	0.995	0.000	0.00013	0.00000	0.00000	383	0	0	19991217.134921
-88.9	45.720	0.0	0.995	0.000	0.00039	0.00000	0.00000	387	0	0	19991217.134930
-88.9	50.800	0.0	0.829	0.000	0.00682	0.00000	0.00000	243	0	0	19991217.134942
-88.9	52.070	0.0	0.710	0.000	0.00000	0.00000	0.00000	1	0	0	19991217.135000
-40.6	-20.320	0.0	0.947	0.000	0.00011	0.00000	0.00000	219	0	0	19991217.135023
-40.6	-15.240	0.0	0.947	0.000	0.00011	0.00000	0.00000	367	0	0	19991217.135031
-40.6	-12.700	0.0	0.947	0.000	0.00010	0.00000	0.00000	377	0	0	19991217.135039
-40.6	-10.160	0.0	0.950	0.000	0.00013	0.00000	0.00000	439	0	0	19991217.135048
-40.6	-8.890	0.0	0.946	0.000	0.00049	0.00000	0.00000	476	0	0	19991217.135104
-40.6	-7.620	0.0	0.908	0.000	0.00214	0.00000	0.00000	567	0	0	19991217.135114
-40.6	-6.350	0.0	0.841	0.000	0.00501	0.00000	0.00000	586	0	0	19991217.135136
-40.6	-5.080	0.0	0.754	0.000	0.00710	0.00000	0.00000	605	0	0	19991217.135150
-40.6	-4.572	0.0	0.701	0.000	0.00794	0.00000	0.00000	551	0	0	19991217.135208
-40.6	-3.810	0.0	0.631	0.000	0.01052	0.00000	0.00000	384	0	0	19991217.135221
-40.6	3.810	0.0	0.641	0.000	0.01105	0.00000	0.00000	543	0	0	19991217.135236
-40.6	4.572	0.0	0.728	0.000	0.00818	0.00000	0.00000	544	0	0	19991217.135251
-40.6	5.080	0.0	0.784	0.000	0.00746	0.00000	0.00000	530	0	0	19991217.135300
-40.6	6.350	0.0	0.873	0.000	0.00434	0.00000	0.00000	529	0	0	19991217.135313
-40.6	7.620	0.0	0.931	0.000	0.00239	0.00000	0.00000	443	0	0	19991217.135319
-40.6	8.890	0.0	0.965	0.000	0.00058	0.00000	0.00000	369	0	0	19991217.135332
-40.6	10.160	0.0	0.973	0.000	0.00015	0.00000	0.00000	380	0	0	19991217.135337
-40.6	12.700	0.0	0.973	0.000	0.00010	0.00000	0.00000	478	0	0	19991217.135346
-40.6	15.240	0.0	0.970	0.000	0.00011	0.00000	0.00000	509	0	0	19991217.135355
-40.6	20.320	0.0	0.969	0.000	0.00014	0.00000	0.00000	571	0	0	19991217.135411
-40.6	25.400	0.0	0.972	0.000	0.00011	0.00000	0.00000	585	0	0	19991217.135429
-40.6	30.480	0.0	0.974	0.000	0.00010	0.00000	0.00000	580	0	0	19991217.135447
-40.6	35.560	0.0	0.978	0.000	0.00012	0.00000	0.00000	527	0	0	19991217.135505
-40.6	40.640	0.0	0.983	0.000	0.00014	0.00000	0.00000	454	0	0	19991217.135521
-40.6	45.720	0.0	0.981	0.000	0.00040	0.00000	0.00000	571	0	0	19991217.135544
-40.6	48.260	0.0	0.937	0.000	0.00302	0.00000	0.00000	429	0	0	19991217.135625
-40.6	50.800	0.0	0.834	0.000	0.00641	0.00000	0.00000	358	0	0	19991217.135602
-40.6	52.070	0.0	0.655	0.000	0.01070	0.00000	0.00000	198	0	0	19991217.135715
0.0	-20.320	0.0	0.862	0.000	0.00031	0.00000	0.00000	190	0	0	19991217.130256
0.0	-15.240	0.0	0.829	0.000	0.00014	0.00000	0.00000	899	0	0	19991217.130302
0.0	-12.700	0.0	0.826	0.000	0.00014	0.00000	0.00000	914	0	0	19991217.130308
0.0	-10.160	0.0	0.821	0.000	0.00018	0.00000	0.00000	874	0	0	19991217.130313
0.0	-7.620	0.0	0.786	0.000	0.00133	0.00000	0.00000	856	0	0	19991217.130318
0.0	-5.080	0.0	0.655	0.000	0.00559	0.00000	0.00000	844	0	0	19991217.130323
0.0	-2.540	0.0	0.461	0.000	0.00885	0.00000	0.00000	797	0	0	19991217.130329
0.0	-6.350	0.0	0.729	0.000	0.00335	0.00000	0.00000	903	0	0	19991217.130354
0.0	-3.810	0.0	0.557	0.000	0.00742	0.00000	0.00000	949	0	0	19991217.130408
0.0	-1.270	0.0	0.336	0.000	0.00978	0.00000	0.00000	895	0	0	19991217.130423
0.0	1.270	0.0	0.259	0.000	0.01270	0.00000	0.00000	910	0	0	19991217.130439
0.0	2.540	0.0	0.427	0.000	0.01012	0.00000	0.00000	933	0	0	19991217.130451
0.0	3.810	0.0	0.542	0.000	0.00786	0.00000	0.00000	959	0	0	19991217.130504
0.0	5.080	0.0	0.645	0.000	0.00567	0.00000	0.00000	973	0	0	19991217.130511
0.0	6.350	0.0	0.714	0.000	0.00392	0.00000	0.00000	967	0	0	19991217.130522
0.0	7.620	0.0	0.777	0.000	0.00180	0.00000	0.00000	967	0	0	19991217.130530

0.0	10.160	0.0	0.822	0.000	0.00024	0.00000	0.00000	958	32	32	19991217.130536
0.0	12.700	0.0	0.829	0.000	0.00021	0.00000	0.00000	960	40	40	19991217.130542
0.0	15.240	0.0	0.832	0.000	0.00021	0.00000	0.00000	960	36	36	19991217.130549
0.0	20.320	0.0	0.842	0.000	0.00018	0.00000	0.00000	960	46	46	19991217.130556
0.0	25.400	0.0	0.854	0.000	0.00012	0.00000	0.00000	972	33	33	19991217.130605
0.0	30.480	0.0	0.862	0.000	0.00013	0.00000	0.00000	979	41	41	19991217.130619
0.0	35.560	0.0	0.872	0.000	0.00013	0.00000	0.00000	994	41	41	19991217.130633
0.0	40.640	0.0	0.884	0.000	0.00017	0.00000	0.00000	987	43	43	19991217.130649
0.0	45.720	0.0	0.894	0.000	0.00020	0.00000	0.00000	1001	50	50	19991217.130704
0.0	50.800	0.0	0.880	0.000	0.00255	0.00000	0.00000	1015	53	53	19991217.130724
0.0	55.880	0.0	0.898	0.000	0.00121	0.00000	0.00000	3	0	0	19991217.130728
38.1	-20.320	0.0	0.726	0.000	0.00029	0.00000	0.00000	1017	0	0	19991217.122731
38.1	-15.240	0.0	0.717	0.000	0.00028	0.00000	0.00000	1013	0	0	19991217.122737
38.1	-12.700	0.0	0.705	0.000	0.00100	0.00000	0.00000	1016	0	0	19991217.122744
38.1	-10.160	0.0	0.638	-0.072	0.00559	0.00046	0.00054	1009	48	48	19991217.122750
38.1	-7.620	0.0	0.509	-0.056	0.01001	0.00249	0.00199	1016	751	746	19991217.122756
38.1	-5.080	0.0	0.345	-0.030	0.01241	0.00369	0.00283	1014	726	722	19991217.122803
38.1	-2.540	0.0	0.232	-0.003	0.01198	0.00340	0.00198	1020	716	714	19991217.122811
38.1	0.000	0.0	0.139	0.001	0.01001	0.00445	-0.00017	1016	663	660	19991217.122820
38.1	2.540	0.0	0.205	0.012	0.01056	0.00396	-0.00215	1022	624	624	19991217.122828
38.1	5.080	0.0	0.341	0.025	0.01359	0.00406	-0.00258	1019	597	594	19991217.122835
38.1	7.620	0.0	0.497	0.052	0.01257	0.00272	-0.00227	1017	558	557	19991217.122841
38.1	10.160	0.0	0.654	0.072	0.00485	0.00097	-0.00084	1010	600	593	19991217.122847
38.1	12.700	0.0	0.706	0.090	0.00129	0.00062	-0.00045	1011	686	684	19991217.122851
38.1	15.240	0.0	0.720	0.097	0.00023	0.00029	-0.00013	1016	676	673	19991217.122856
38.1	20.320	0.0	0.726	0.106	0.00019	0.00017	-0.00009	1015	630	627	19991217.122901
38.1	25.400	0.0	0.734	0.112	0.00015	0.00016	-0.00007	1006	594	588	19991217.122907
38.1	30.480	0.0	0.736	0.121	0.00014	0.00010	-0.00004	1014	523	521	19991217.122914
38.1	35.560	0.0	0.740	0.133	0.00017	0.00011	-0.00004	1015	526	523	19991217.122922
38.1	40.640	0.0	0.744	0.140	0.00016	0.00019	-0.00003	1008	538	532	19991217.122931
38.1	45.720	0.0	0.744	0.154	0.00017	0.00012	-0.00003	1014	532	528	19991217.122939
38.1	50.800	0.0	0.744	0.163	0.00029	0.00017	0.00000	1021	472	470	19991217.122948
38.1	55.880	0.0	0.770	0.169	0.00393	0.00232	-0.00112	1019	495	492	19991217.122958
38.1	60.960	0.0	0.894	0.000	0.00811	0.00000	0.00000	1023	0	0	19991217.123007
38.1	63.500	0.0	0.866	0.000	0.00650	0.00000	0.00000	1024	0	0	19991217.123035
38.1	66.040	0.0	1.683	0.000	0.00445	0.00000	0.00000	4	0	0	19991217.123011
76.2	-20.320	0.0	0.634	0.000	0.00462	0.00000	0.00000	1007	0	0	19991217.122244
76.2	-15.240	0.0	0.478	0.000	0.01696	0.00000	0.00000	1014	0	0	19991217.122252
76.2	-12.700	0.0	0.391	0.000	0.02094	0.00000	0.00000	1018	0	0	19991217.122300
76.2	-10.160	0.0	0.244	-0.025	0.02648	0.00629	-0.00162	1020	53	53	19991217.122310
76.2	-7.620	0.0	0.135	-0.025	0.02355	0.00645	0.00234	1019	735	732	19991217.122320
76.2	-5.080	0.0	0.025	-0.004	0.02011	0.00569	0.00189	1016	758	756	19991217.122328
76.2	-2.540	0.0	-0.044	-0.001	0.01366	0.00498	0.00088	1013	759	754	19991217.122337
76.2	0.000	0.0	-0.056	0.002	0.01192	0.00506	0.00043	1015	769	766	19991217.122346
76.2	2.540	0.0	-0.050	0.003	0.01465	0.00519	-0.00062	1016	798	796	19991217.122355
76.2	5.080	0.0	0.019	0.016	0.02083	0.00576	-0.00170	1011	768	761	19991217.122405
76.2	7.620	0.0	0.146	0.025	0.02590	0.00561	-0.00220	1013	732	727	19991217.122413
76.2	10.160	0.0	0.249	0.046	0.02638	0.00627	-0.00307	1017	722	720	19991217.122421
76.2	12.700	0.0	0.389	0.071	0.02158	0.00454	-0.00222	1015	740	734	19991217.122427
76.2	15.240	0.0	0.509	0.098	0.01721	0.00328	-0.00224	1019	743	740	19991217.122433
76.2	20.320	0.0	0.646	0.141	0.00293	0.00104	-0.00052	1006	767	758	19991217.122438
76.2	25.400	0.0	0.669	0.150	0.00087	0.00066	-0.00023	1015	741	738	19991217.122443
76.2	30.480	0.0	0.676	0.152	0.00024	0.00040	-0.00006	1020	693	691	19991217.122448
76.2	35.560	0.0	0.677	0.149	0.00014	0.00022	-0.00002	1015	639	635	19991217.122454
76.2	40.640	0.0	0.680	0.154	0.00011	0.00015	0.00001	1017	613	609	19991217.122501
76.2	45.720	0.0	0.679	0.156	0.00011	0.00017	0.00000	1016	566	562	19991217.122509
76.2	50.800	0.0	0.682	0.158	0.00012	0.00015	0.00002	1019	529	529	19991217.122519
76.2	55.880	0.0	0.683	0.161	0.00015	0.00015	0.00002	1016	536	530	19991217.122530
76.2	60.960	0.0	0.688	0.162	0.00068	0.00053	-0.00005	1019	567	566	19991217.122541
76.2	66.040	0.0	0.739	0.173	0.00328	0.00161	-0.00058	1024	582	582	19991217.122552
76.2	71.120	0.0	0.789	0.000	0.00356	0.00000	0.00000	1024	0	0	19991217.122603
76.2	73.660	0.0	0.779	0.000	0.00408	0.00000	0.00000	1020	0	0	19991217.122649
76.2	73.660	0.0	0.811	0.000	0.00410	0.00000	0.00000	1020	0	0	19991217.122659
114.3	-20.320	0.0	0.228	0.000	0.04139	0.00000	0.00000	976	0	0	19991217.121824
114.3	-15.240	0.0	0.110	0.000	0.03673	0.00000	0.00000	999	0	0	19991217.121830
114.3	-12.700	0.0	0.019	0.000	0.02372	0.00000	0.00000	997	0	0	19991217.121837
114.3	-10.160	0.0	-0.061	0.007	0.02273	0.00404	0.00079	1011	32	32	19991217.121845
114.3	-7.620	0.0	-0.102	-0.006	0.01315	0.00573	0.00160	1007	689	681	19991217.121853
114.3	-5.080	0.0	-0.128	0.000	0.00960	0.00581	0.00074	1013	730	725	19991217.121900
114.3	-2.540	0.0	-0.138	-0.003	0.00717	0.00560	0.00025	1012	756	750	19991217.121908
114.3	0.000	0.0	-0.135	0.000	0.00751	0.00438	-0.00013	1018	737	736	19991217.121915
114.3	2.540	0.0	-0.135	-0.002	0.00888	0.00593	-0.00053	1014	721	720	19991217.121923

114.3	5.080	0.0	-0.107	0.007	0.01105	0.00542	-0.00032	1011	765	756	19991217.121931
114.3	7.620	0.0	-0.089	0.010	0.01397	0.00681	-0.00209	1014	749	745	19991217.121939
114.3	10.160	0.0	-0.040	0.012	0.01991	0.00777	-0.00170	1007	740	737	19991217.121946
114.3	12.700	0.0	0.051	0.015	0.02697	0.00902	-0.00355	1010	705	699	19991217.121953
114.3	15.240	0.0	0.111	0.028	0.03456	0.00922	-0.00265	1014	686	685	19991217.122000
114.3	20.320	0.0	0.326	0.072	0.03741	0.00661	-0.00370	1015	736	734	19991217.122006
114.3	25.400	0.0	0.463	0.102	0.02498	0.00580	-0.00174	1011	708	703	19991217.122012
114.3	30.480	0.0	0.588	0.140	0.01292	0.00411	-0.00054	1014	730	723	19991217.122017
114.3	35.560	0.0	0.647	0.156	0.00260	0.00146	-0.00041	1015	684	679	19991217.122022
114.3	40.640	0.0	0.653	0.160	0.00098	0.00105	-0.00033	1011	657	650	19991217.122027
114.3	45.720	0.0	0.655	0.166	0.00052	0.00062	0.00002	1012	629	624	19991217.122033
114.3	50.800	0.0	0.655	0.162	0.00025	0.00041	0.00003	1015	567	562	19991217.122039
114.3	55.880	0.0	0.655	0.157	0.00029	0.00030	0.00005	1015	577	573	19991217.122047
114.3	60.960	0.0	0.650	0.156	0.00021	0.00024	0.00005	1018	574	571	19991217.122057
114.3	66.040	0.0	0.650	0.160	0.00020	0.00017	0.00003	1017	576	573	19991217.122108
114.3	71.120	0.0	0.666	0.163	0.00105	0.00060	-0.00017	1019	580	578	19991217.122118
114.3	76.200	0.0	0.717	0.173	0.00303	0.00126	-0.00046	1018	609	605	19991217.122130
114.3	81.280	0.0	0.773	0.000	0.00307	0.00000	0.00000	1023	0	0	19991217.122140
114.3	83.820	0.0	0.721	0.000	0.00356	0.00000	0.00000	183	0	0	19991217.122204
114.3	83.820	0.0	0.690	0.000	0.00340	0.00000	0.00000	1022	0	0	19991217.122220
190.5	-20.320	0.0	-0.053	0.000	0.02283	0.00000	0.00000	1005	0	0	19991217.121334
190.5	-15.240	0.0	-0.101	0.000	0.01805	0.00000	0.00000	1010	0	0	19991217.121341
190.5	-12.700	0.0	-0.124	0.000	0.01454	0.00000	0.00000	1015	0	0	19991217.121348
190.5	-10.160	0.0	-0.143	0.020	0.01281	0.00493	0.00122	1011	49	49	19991217.121355
190.5	-7.620	0.0	-0.160	-0.002	0.00940	0.00817	0.00149	1022	725	724	19991217.121403
190.5	-5.080	0.0	-0.156	0.000	0.00870	0.00843	0.00147	1021	706	705	19991217.121411
190.5	-2.540	0.0	-0.165	0.002	0.00875	0.00848	0.00159	1020	714	712	19991217.121419
190.5	0.000	0.0	-0.166	0.002	0.00754	0.00842	-0.00024	1017	690	689	19991217.121426
190.5	2.540	0.0	-0.180	0.006	0.00757	0.00733	-0.00027	1021	720	718	19991217.121434
190.5	5.080	0.0	-0.167	0.005	0.00861	0.00788	-0.00028	1011	672	671	19991217.121441
190.5	7.620	0.0	-0.166	0.016	0.00942	0.00942	-0.00163	1019	672	671	19991217.121449
190.5	10.160	0.0	-0.153	0.005	0.01172	0.00898	-0.00242	1017	668	662	19991217.121456
190.5	12.700	0.0	-0.123	0.011	0.01349	0.01142	-0.00309	1017	680	675	19991217.121503
190.5	15.240	0.0	-0.102	0.011	0.01691	0.01321	-0.00487	1018	681	679	19991217.121511
190.5	20.320	0.0	-0.064	0.018	0.02172	0.01181	-0.00498	1015	665	663	19991217.121519
190.5	25.400	0.0	0.071	0.005	0.03777	0.01602	-0.00890	1016	665	662	19991217.121527
190.5	30.480	0.0	0.172	0.022	0.03871	0.01530	-0.01108	1021	671	670	19991217.121533
190.5	35.560	0.0	0.312	0.028	0.03478	0.01298	-0.00625	1013	695	687	19991217.121539
190.5	40.640	0.0	0.446	0.046	0.03261	0.01165	-0.00542	1017	734	731	19991217.121545
190.5	45.720	0.0	0.506	0.058	0.02173	0.00940	-0.00476	1019	695	692	19991217.121550
190.5	50.800	0.0	0.562	0.076	0.01652	0.00798	-0.00368	1018	660	659	19991217.121555
190.5	55.880	0.0	0.601	0.087	0.00736	0.00397	-0.00161	1010	651	643	19991217.121601
190.5	60.960	0.0	0.601	0.092	0.00585	0.00407	-0.00174	1011	681	674	19991217.121607
190.5	66.040	0.0	0.610	0.094	0.00324	0.00223	-0.00051	1013	660	654	19991217.121615
190.5	71.120	0.0	0.603	0.099	0.00210	0.00288	-0.00109	1020	642	641	19991217.121623
190.5	76.200	0.0	0.600	0.092	0.00100	0.00089	0.00019	1014	587	584	19991217.121633
190.5	81.280	0.0	0.588	0.096	0.00091	0.00094	0.00004	1019	594	590	19991217.121645
190.5	86.360	0.0	0.583	0.095	0.00089	0.00057	-0.00002	1014	624	619	19991217.121657
190.5	91.440	0.0	0.604	0.097	0.00211	0.00091	-0.00015	1023	672	671	19991217.121711
190.5	96.520	0.0	0.659	0.118	0.00300	0.00114	-0.00022	1023	600	599	19991217.121724
190.5	101.600	0.0	0.665	0.000	0.00321	0.00000	0.00000	1019	0	0	19991217.121744
190.5	104.140	0.0	0.567	0.000	0.00569	0.00000	0.00000	668	0	0	19991217.121807
266.7	-20.320	0.0	0.022	0.000	0.02184	0.00000	0.00000	1019	0	0	19991217.120832
266.7	-15.240	0.0	-0.017	0.000	0.01764	0.00000	0.00000	1014	0	0	19991217.120842
266.7	-12.700	0.0	-0.044	0.000	0.01593	0.00000	0.00000	1018	0	0	19991217.120851
266.7	-10.160	0.0	-0.068	0.064	0.01571	0.01069	0.00565	1015	80	79	19991217.120859
266.7	-7.620	0.0	-0.074	0.025	0.01396	0.01987	0.00456	1014	686	683	19991217.120907
266.7	-5.080	0.0	-0.089	0.014	0.01168	0.01774	0.00394	1017	682	681	19991217.120914
266.7	-2.540	0.0	-0.098	0.009	0.01098	0.01607	0.00079	1015	682	679	19991217.120922
266.7	0.000	0.0	-0.099	0.004	0.01077	0.01611	0.00097	1015	663	661	19991217.120930
266.7	2.540	0.0	-0.087	0.017	0.01171	0.01792	0.00073	1014	688	686	19991217.120938
266.7	5.080	0.0	-0.097	-0.006	0.01245	0.01801	-0.00207	1016	682	679	19991217.120946
266.7	7.620	0.0	-0.076	-0.008	0.01277	0.01747	-0.00296	1017	660	660	19991217.120954
266.7	10.160	0.0	-0.054	-0.022	0.01578	0.02214	-0.00524	1020	671	671	19991217.121003
266.7	12.700	0.0	-0.052	-0.009	0.01612	0.01992	-0.00555	1014	675	668	19991217.121012
266.7	15.240	0.0	-0.022	-0.029	0.01984	0.02132	-0.00704	1015	665	660	19991217.121021
266.7	20.320	0.0	0.053	-0.036	0.02290	0.01973	-0.00898	1016	639	638	19991217.121030
266.7	25.400	0.0	0.099	-0.040	0.02792	0.02219	-0.01300	1012	644	640	19991217.121038
266.7	30.480	0.0	0.169	-0.060	0.02643	0.02021	-0.01055	1013	666	662	19991217.121046
266.7	35.560	0.0	0.250	-0.054	0.02778	0.01849	-0.01029	1018	673	671	19991217.121054
266.7	40.640	0.0	0.350	-0.040	0.02374	0.01643	-0.00791	1007	679	672	19991217.121101
266.7	45.720	0.0	0.411	-0.030	0.02236	0.01436	-0.00616	1010	669	664	19991217.121107
266.7	50.800	0.0	0.471	-0.032	0.01832	0.01226	-0.00680	1012	659	656	19991217.121114
266.7	55.880	0.0	0.531	-0.017	0.01250	0.00810	-0.00437	1017	653	651	19991217.121121
266.7	60.960	0.0	0.540	-0.020	0.01120	0.00837	-0.00337	1015	601	597	19991217.121128

266.7	66.040	0.0	0.564	-0.006	0.00938	0.00679	-0.00258	1011	653	648	19991217.121136
266.7	71.120	0.0	0.581	0.002	0.00638	0.00481	-0.00169	1009	540	535	19991217.121144
266.7	76.200	0.0	0.590	-0.004	0.00346	0.00273	-0.00070	1009	572	567	19991217.121153
266.7	81.280	0.0	0.594	0.001	0.00381	0.00270	-0.00073	1004	563	555	19991217.121207
266.7	86.360	0.0	0.595	0.001	0.00209	0.00190	-0.00027	1013	590	584	19991217.121220
266.7	91.440	0.0	0.611	0.000	0.00166	0.00082	-0.00010	1014	617	611	19991217.121235
266.7	96.520	0.0	0.652	-0.002	0.00172	0.00090	-0.00020	1010	604	597	19991217.121245
266.7	101.600	0.0	0.707	0.000	0.00215	0.00000	0.00000	1012	0	0	19991217.121255
266.7	104.140	0.0	0.683	0.000	0.00346	0.00000	0.00000	1015	0	0	19991217.121312
304.8	-20.320	0.0	0.120	0.000	0.01995	0.00000	0.00000	1003	0	0	19991217.120317
304.8	-15.240	0.0	0.064	0.000	0.01557	0.00000	0.00000	1007	0	0	19991217.120325
304.8	-12.700	0.0	0.030	0.000	0.01577	0.00000	0.00000	1005	0	0	19991217.120333
304.8	-10.160	0.0	0.020	0.068	0.01533	0.01504	0.00453	1007	108	107	19991217.120340
304.8	-7.620	0.0	0.003	0.042	0.01394	0.02114	0.00427	1007	640	634	19991217.120347
304.8	-5.080	0.0	-0.006	0.023	0.01258	0.02010	0.00260	1009	642	638	19991217.120355
304.8	-2.540	0.0	0.003	0.027	0.01191	0.02071	0.00223	1004	656	651	19991217.120402
304.8	0.000	0.0	-0.010	-0.004	0.01286	0.01929	-0.00022	1013	668	667	19991217.120409
304.8	2.540	0.0	-0.004	0.007	0.01198	0.02204	-0.00052	1013	669	664	19991217.120417
304.8	5.080	0.0	-0.011	0.001	0.01263	0.01890	-0.00157	1010	666	663	19991217.120425
304.8	7.620	0.0	0.009	-0.003	0.01343	0.01996	-0.00321	1013	637	635	19991217.120432
304.8	10.160	0.0	0.018	-0.019	0.01501	0.02041	-0.00434	1011	642	639	19991217.120440
304.8	12.700	0.0	0.054	-0.037	0.01642	0.02364	-0.00846	1009	639	636	19991217.120448
304.8	15.240	0.0	0.076	-0.042	0.01813	0.02438	-0.00884	1010	652	649	19991217.120455
304.8	20.320	0.0	0.112	-0.044	0.01933	0.02263	-0.01042	1012	618	615	19991217.120502
304.8	25.400	0.0	0.173	-0.061	0.02196	0.02043	-0.00968	1009	622	620	19991217.120509
304.8	30.480	0.0	0.221	-0.059	0.02463	0.01777	-0.01072	1005	640	634	19991217.120516
304.8	35.560	0.0	0.289	-0.058	0.02201	0.01777	-0.00941	1004	640	630	19991217.120523
304.8	40.640	0.0	0.338	-0.060	0.01993	0.01679	-0.00778	1008	628	621	19991217.120529
304.8	45.720	0.0	0.384	-0.047	0.02184	0.01490	-0.00920	1012	623	617	19991217.120536
304.8	50.800	0.0	0.449	-0.047	0.01749	0.01165	-0.00543	1010	624	618	19991217.120542
304.8	55.880	0.0	0.481	-0.035	0.01381	0.01002	-0.00530	1014	575	572	19991217.120549
304.8	60.960	0.0	0.507	-0.015	0.01165	0.00953	-0.00480	1015	610	604	19991217.120556
304.8	66.040	0.0	0.528	-0.012	0.00868	0.00738	-0.00339	1008	553	544	19991217.120604
304.8	71.120	0.0	0.550	-0.007	0.00739	0.00665	-0.00273	1019	544	541	19991217.120613
304.8	76.200	0.0	0.567	-0.004	0.00514	0.00508	-0.00217	1013	567	561	19991217.120624
304.8	81.280	0.0	0.571	0.000	0.00448	0.00384	-0.00119	1009	532	526	19991217.120637
304.8	86.360	0.0	0.578	0.005	0.00328	0.00341	-0.00099	1018	383	381	19991217.120650
304.8	91.440	0.0	0.601	-0.005	0.00226	0.00134	-0.00057	1017	601	599	19991217.120705
304.8	96.520	0.0	0.636	-0.007	0.00163	0.00094	-0.00028	1023	650	650	19991217.120720
304.8	101.600	0.0	0.649	0.000	0.00239	0.00000	0.00000	1019	0	0	19991217.120737
304.8	104.140	0.0	0.653	0.000	0.00377	0.00000	0.00000	1020	0	0	19991217.120809
342.9	-20.320	0.0	0.170	0.000	0.01649	0.00000	0.00000	937	0	0	19991217.115853
342.9	-15.240	0.0	0.131	0.000	0.01568	0.00000	0.00000	972	0	0	19991217.115859
342.9	-12.700	0.0	0.112	0.000	0.01360	0.00000	0.00000	977	0	0	19991217.115905
342.9	-10.160	0.0	0.106	0.117	0.01428	0.01627	0.00709	975	65	65	19991217.115911
342.9	-7.620	0.0	0.106	0.061	0.01384	0.02179	0.00574	976	602	591	19991217.115918
342.9	-5.080	0.0	0.082	0.029	0.01262	0.02128	0.00306	961	583	562	19991217.115924
342.9	-2.540	0.0	0.080	0.028	0.01212	0.02075	0.00273	980	575	566	19991217.115930
342.9	0.000	0.0	0.085	0.011	0.01144	0.02109	0.00015	980	546	540	19991217.115936
342.9	2.540	0.0	0.094	0.004	0.01230	0.02473	-0.00193	963	551	534	19991217.115943
342.9	5.080	0.0	0.109	0.002	0.01238	0.02494	-0.00334	983	563	552	19991217.115949
342.9	7.620	0.0	0.096	-0.017	0.01168	0.02523	-0.00392	974	520	510	19991217.115955
342.9	10.160	0.0	0.104	-0.030	0.01272	0.02253	-0.00687	972	554	537	19991217.120001
342.9	12.700	0.0	0.120	-0.017	0.01349	0.02408	-0.00638	989	538	531	19991217.120008
342.9	15.240	0.0	0.112	-0.032	0.01490	0.01912	-0.00693	987	528	513	19991217.120014
342.9	20.320	0.0	0.160	-0.048	0.01732	0.02294	-0.00971	1000	584	576	19991217.120021
342.9	25.400	0.0	0.219	-0.062	0.01914	0.01829	-0.00950	995	570	565	19991217.120027
342.9	30.480	0.0	0.248	-0.051	0.01770	0.01882	-0.00867	1005	546	539	19991217.120034
342.9	35.560	0.0	0.274	-0.040	0.01827	0.01855	-0.00799	1002	581	573	19991217.120041
342.9	40.640	0.0	0.330	-0.064	0.01718	0.01335	-0.00725	1004	582	579	19991217.120047
342.9	45.720	0.0	0.371	-0.042	0.01775	0.01548	-0.00705	997	592	585	19991217.120053
342.9	50.800	0.0	0.411	-0.036	0.01802	0.01233	-0.00822	1006	547	542	19991217.120059
342.9	55.880	0.0	0.451	-0.017	0.01362	0.01231	-0.00669	1006	557	548	19991217.120105
342.9	60.960	0.0	0.472	-0.011	0.01324	0.01014	-0.00538	1004	508	500	19991217.120112
342.9	66.040	0.0	0.492	-0.008	0.01083	0.01002	-0.00532	1000	474	470	19991217.120119
342.9	71.120	0.0	0.520	-0.004	0.00926	0.00870	-0.00405	1004	503	500	19991217.120127
342.9	76.200	0.0	0.540	0.001	0.00730	0.00538	-0.00216	1011	455	452	19991217.120135
342.9	81.280	0.0	0.549	0.002	0.00543	0.00431	-0.00191	1009	509	505	19991217.120143
342.9	86.360	0.0	0.562	-0.006	0.00399	0.00264	-0.00090	1012	525	517	19991217.120154
342.9	91.440	0.0	0.581	0.001	0.00257	0.00218	-0.00083	1006	588	578	19991217.120204
342.9	96.520	0.0	0.615	-0.006	0.00179	0.00116	-0.00029	1016	562	559	19991217.120216
342.9	101.600	0.0	0.630	0.000	0.00287	0.00000	0.00000	1017	0	0	19991217.120231
342.9	104.140	0.0	0.595	0.000	0.00462	0.00000	0.00000	1014	0	0	19991217.120257

419.1	-20.320	0.0	0.250	0.000	0.01146	0.00000	0.00000	1015	0	0	19991217.115344
419.1	-15.240	0.0	0.241	0.000	0.01020	0.00000	0.00000	1018	0	0	19991217.115354
419.1	-12.700	0.0	0.221	0.000	0.01146	0.00000	0.00000	1019	0	0	19991217.115403
419.1	-10.160	0.0	0.215	0.059	0.01098	0.01501	0.00225	1019	140	140	19991217.115412
419.1	-7.620	0.0	0.208	0.034	0.00952	0.01787	0.00356	1020	630	628	19991217.115420
419.1	-5.080	0.0	0.218	0.042	0.01001	0.01880	0.00261	1019	592	589	19991217.115428
419.1	-2.540	0.0	0.208	0.033	0.00966	0.01852	0.00146	1016	588	587	19991217.115437
419.1	0.000	0.0	0.206	0.031	0.00969	0.01872	0.00075	1017	642	640	19991217.115446
419.1	2.540	0.0	0.196	0.018	0.01084	0.01815	0.00032	1019	640	638	19991217.115456
419.1	5.080	0.0	0.199	0.016	0.00996	0.01763	-0.00147	1019	588	586	19991217.115506
419.1	7.620	0.0	0.205	0.004	0.00989	0.02046	-0.00253	1016	607	601	19991217.115516
419.1	10.160	0.0	0.206	-0.007	0.01073	0.01761	-0.00298	1021	604	603	19991217.115526
419.1	12.700	0.0	0.217	-0.007	0.01053	0.01796	-0.00451	1015	580	576	19991217.115536
419.1	15.240	0.0	0.225	-0.009	0.01059	0.01821	-0.00395	1020	591	591	19991217.115545
419.1	20.320	0.0	0.244	-0.007	0.01150	0.01909	-0.00474	1020	619	617	19991217.115555
419.1	25.400	0.0	0.265	-0.026	0.01217	0.01650	-0.00612	1016	634	630	19991217.115604
419.1	30.480	0.0	0.295	-0.030	0.01322	0.01406	-0.00625	1011	621	615	19991217.115611
419.1	35.560	0.0	0.311	-0.012	0.01388	0.01586	-0.00701	1012	631	626	19991217.115619
419.1	40.640	0.0	0.326	-0.015	0.01441	0.01452	-0.00639	1011	627	624	19991217.115627
419.1	45.720	0.0	0.360	-0.009	0.01350	0.01402	-0.00716	1006	631	626	19991217.115634
419.1	50.800	0.0	0.379	-0.011	0.01457	0.01320	-0.00679	1010	629	625	19991217.115641
419.1	55.880	0.0	0.409	0.005	0.01385	0.01039	-0.00479	1006	619	613	19991217.115649
419.1	60.960	0.0	0.438	-0.012	0.01109	0.00848	-0.00419	1009	604	597	19991217.115657
419.1	66.040	0.0	0.452	0.008	0.01196	0.01113	-0.00526	1003	559	556	19991217.115706
419.1	71.120	0.0	0.471	0.007	0.00979	0.00839	-0.00432	1008	522	516	19991217.115716
419.1	76.200	0.0	0.492	0.012	0.00840	0.00747	-0.00339	1006	536	531	19991217.115726
419.1	81.280	0.0	0.502	0.017	0.00865	0.00743	-0.00352	1006	515	508	19991217.115737
419.1	86.360	0.0	0.527	0.004	0.00606	0.00407	-0.00173	1001	535	523	19991217.115747
419.1	91.440	0.0	0.560	0.009	0.00539	0.00447	-0.00192	953	506	486	19991217.115755
419.1	96.520	0.0	0.604	0.001	0.00296	0.00233	-0.00100	973	496	479	19991217.115803
419.1	101.600	0.0	0.611	0.000	0.00310	0.00000	0.00000	963	0	0	19991217.115813
419.1	104.140	0.0	0.565	0.000	0.00658	0.00000	0.00000	966	0	0	19991217.115828
495.3	-20.320	0.0	0.321	0.000	0.00785	0.00000	0.00000	1019	0	0	19991217.114805
495.3	-15.240	0.0	0.304	0.000	0.00828	0.00000	0.00000	1009	0	0	19991217.114812
495.3	-12.700	0.0	0.301	0.000	0.00795	0.00000	0.00000	1018	0	0	19991217.114818
495.3	-10.160	0.0	0.293	0.037	0.00788	0.01139	0.00043	1014	143	142	19991217.114825
495.3	-7.620	0.0	0.282	0.031	0.00703	0.01159	0.00181	1014	641	635	19991217.114831
495.3	-5.080	0.0	0.295	0.022	0.00722	0.01562	0.00093	1015	687	682	19991217.114836
495.3	-2.540	0.0	0.270	0.027	0.00755	0.01262	0.00160	1017	704	700	19991217.114843
495.3	0.000	0.0	0.276	0.023	0.00780	0.01366	0.00044	1021	700	699	19991217.114850
495.3	2.540	0.0	0.277	0.014	0.00670	0.01373	-0.00031	1015	681	677	19991217.114858
495.3	5.080	0.0	0.288	0.015	0.00701	0.01456	-0.00009	1022	701	700	19991217.114905
495.3	7.620	0.0	0.282	0.011	0.00762	0.01312	-0.00085	1018	658	655	19991217.114913
495.3	10.160	0.0	0.285	0.012	0.00726	0.01353	-0.00141	1017	666	663	19991217.114921
495.3	12.700	0.0	0.291	-0.005	0.00849	0.01292	-0.00283	1021	682	681	19991217.114928
495.3	15.240	0.0	0.289	0.013	0.00802	0.01291	-0.00205	1019	685	682	19991217.114936
495.3	20.320	0.0	0.300	0.002	0.00872	0.01415	-0.00331	1019	697	693	19991217.114944
495.3	25.400	0.0	0.307	0.001	0.00947	0.01352	-0.00464	1020	677	673	19991217.114952
495.3	30.480	0.0	0.315	-0.009	0.01071	0.01189	-0.00434	1018	678	676	19991217.115001
495.3	35.560	0.0	0.330	0.002	0.01085	0.01174	-0.00432	1022	675	675	19991217.115009
495.3	40.640	0.0	0.350	-0.003	0.01062	0.01170	-0.00522	1021	634	631	19991217.115018
495.3	45.720	0.0	0.361	0.002	0.01030	0.01080	-0.00348	1016	635	630	19991217.115027
495.3	50.800	0.0	0.378	0.012	0.01054	0.01069	-0.00453	1021	629	629	19991217.115037
495.3	55.880	0.0	0.397	0.008	0.01051	0.01062	-0.00390	1023	612	611	19991217.115047
495.3	60.960	0.0	0.410	0.008	0.01181	0.00985	-0.00361	1020	582	581	19991217.115057
495.3	66.040	0.0	0.422	0.007	0.01021	0.00971	-0.00397	1018	527	527	19991217.115108
495.3	71.120	0.0	0.440	0.012	0.01083	0.00929	-0.00343	1017	491	489	19991217.115122
495.3	76.200	0.0	0.455	0.011	0.01056	0.00782	-0.00310	1018	539	537	19991217.115134
495.3	81.280	0.0	0.481	0.010	0.00938	0.00801	-0.00294	1016	548	546	19991217.115148
495.3	86.360	0.0	0.503	0.013	0.00925	0.00618	-0.00278	1017	541	538	19991217.115202
495.3	91.440	0.0	0.534	0.016	0.00753	0.00523	-0.00252	1021	562	562	19991217.115219
495.3	96.520	0.0	0.571	0.007	0.00542	0.00326	-0.00194	1020	365	364	19991217.115236
495.3	101.600	0.0	0.578	0.000	0.00478	0.00000	0.00000	1018	0	0	19991217.115255
495.3	104.140	0.0	0.526	0.000	0.00694	0.00000	0.00000	1013	0	0	19991217.115318

190.5	0.000	0.0	-0.178	0.003	0.00806	0.00796	0.00086	1020	676	675	19991217.123104
190.5	-20.320	101.6	0.116	0.000	0.02510	0.00000	0.00000	982	0	0	19991217.123148
190.5	-15.240	101.6	0.031	0.000	0.02339	0.00000	0.00000	976	0	0	19991217.123159
190.5	-12.700	101.6	-0.009	0.000	0.01973	0.00000	0.00000	1002	0	0	19991217.123209
190.5	-10.160	101.6	-0.045	0.000	0.01386	0.00000	0.00000	993	0	0	19991217.123219
190.5	-7.620	101.6	-0.058	0.000	0.01419	0.00000	0.00000	1000	0	0	19991217.123228
190.5	-5.080	101.6	-0.080	0.000	0.01195	0.00000	0.00000	992	0	0	19991217.123236
190.5	-2.540	101.6	-0.078	0.003	0.01122	0.00932	0.00017	991	498	495	19991217.123244
190.5	0.000	101.6	-0.073	0.004	0.01124	0.01101	0.00098	988	517	509	19991217.123252
190.5	2.540	101.6	-0.078	-0.005	0.01241	0.00915	-0.00158	1003	514	512	19991217.123259

190.5	5.080	101.6	-0.049	-0.002	0.01258	0.01093	-0.00355	985	505	496	19991217.123307
190.5	7.620	101.6	-0.047	0.003	0.01466	0.00927	-0.00229	988	500	496	19991217.123315
190.5	10.160	101.6	-0.014	0.001	0.01823	0.01160	-0.00469	988	518	512	19991217.123322
190.5	12.700	101.6	0.034	-0.011	0.02223	0.01217	-0.00442	988	542	531	19991217.123330
190.5	15.240	101.6	0.059	0.004	0.02232	0.01283	-0.00604	982	526	513	19991217.123338
190.5	20.320	101.6	0.139	-0.001	0.03041	0.01415	-0.00804	971	556	539	19991217.123345
190.5	25.400	101.6	0.251	-0.005	0.02566	0.01388	-0.00717	973	546	530	19991217.123352
190.5	30.480	101.6	0.374	0.014	0.02416	0.01156	-0.00621	989	556	542	19991217.123358
190.5	35.560	101.6	0.508	0.028	0.02143	0.00661	-0.00374	979	568	556	19991217.123403
190.5	40.640	101.6	0.587	0.043	0.01115	0.00387	-0.00160	972	553	533	19991217.123408
190.5	45.720	101.6	0.600	0.059	0.00972	0.00550	-0.00186	987	528	515	19991217.123414
190.5	50.800	101.6	0.633	0.067	0.00215	0.00238	-0.00047	984	471	459	19991217.123420
190.5	55.880	101.6	0.632	0.076	0.00267	0.00257	-0.00083	987	374	365	19991217.123429
190.5	60.960	101.6	0.626	0.075	0.00188	0.00127	-0.00019	987	426	411	19991217.123442
190.5	66.040	101.6	0.618	0.074	0.00092	0.00084	-0.00014	965	388	376	19991217.123453
190.5	71.120	101.6	0.609	0.078	0.00043	0.00047	0.00012	949	334	319	19991217.123506
190.5	76.200	101.6	0.600	0.078	0.00055	0.00032	0.00007	963	357	342	19991217.123521
190.5	81.280	101.6	0.588	0.082	0.00054	0.00033	0.00018	956	366	349	19991217.123533
190.5	86.360	101.6	0.574	0.087	0.00062	0.00026	0.00015	975	339	325	19991217.123546
190.5	91.440	101.6	0.564	0.090	0.00129	0.00055	0.00014	991	294	285	19991217.123603
190.5	96.520	101.6	0.583	0.000	0.00274	0.00000	0.00000	980	0	0	19991217.123616
190.5	101.600	101.6	0.590	0.000	0.00239	0.00000	0.00000	985	0	0	19991217.123632
190.5	0.000	0.0	-0.167	-0.001	0.00770	0.00815	-0.00032	967	462	453	19991217.123719
190.5	-20.320	-101.6	0.264	0.000	0.02096	0.00000	0.00000	996	0	0	19991217.123756
190.5	-15.240	-101.6	0.151	0.021	0.01876	0.00501	0.00165	1002	57	57	19991217.123804
190.5	-12.700	-101.6	0.107	0.016	0.01847	0.00908	0.00447	999	541	537	19991217.123813
190.5	-10.160	-101.6	0.076	0.016	0.01584	0.00812	0.00363	990	546	541	19991217.123823
190.5	-7.620	-101.6	0.012	0.011	0.01227	0.00791	0.00313	1007	569	565	19991217.123832
190.5	-5.080	-101.6	0.000	0.012	0.01030	0.00734	0.00220	1002	575	569	19991217.123841
190.5	-2.540	-101.6	-0.030	0.012	0.00937	0.00643	0.00133	1006	587	583	19991217.123849
190.5	0.000	-101.6	-0.026	0.010	0.00979	0.00726	-0.00010	1009	613	606	19991217.123858
190.5	2.540	-101.6	-0.029	-0.002	0.00921	0.00787	-0.00110	1008	570	565	19991217.123906
190.5	5.080	-101.6	0.003	0.000	0.01102	0.00693	-0.00260	1007	593	587	19991217.123915
190.5	7.620	-101.6	0.027	0.002	0.01196	0.00715	-0.00297	999	575	569	19991217.123923
190.5	10.160	-101.6	0.081	-0.002	0.01390	0.00744	-0.00475	996	544	539	19991217.123932
190.5	12.700	-101.6	0.130	-0.013	0.01536	0.00895	-0.00465	1006	564	562	19991217.123940
190.5	15.240	-101.6	0.192	-0.006	0.01593	0.00760	-0.00385	1008	579	575	19991217.123948
190.5	20.320	-101.6	0.272	0.000	0.01925	0.00771	-0.00376	1009	580	576	19991217.123955
190.5	25.400	-101.6	0.376	0.012	0.01669	0.00754	-0.00313	1003	597	590	19991217.124002
190.5	30.480	-101.6	0.506	0.022	0.01318	0.00503	-0.00196	1005	635	627	19991217.124008
190.5	35.560	-101.6	0.577	0.042	0.01210	0.00381	-0.00158	1012	667	663	19991217.124014
190.5	40.640	-101.6	0.613	0.056	0.00793	0.00325	-0.00155	1009	634	629	19991217.124021
190.5	45.720	-101.6	0.631	0.062	0.00320	0.00191	-0.00067	1000	617	609	19991217.124030
190.5	50.800	-101.6	0.634	0.062	0.00099	0.00070	-0.00009	1005	673	667	19991217.124038
190.5	55.880	-101.6	0.628	0.062	0.00030	0.00020	0.00003	998	658	648	19991217.124046
190.5	60.960	-101.6	0.619	0.063	0.00018	0.00010	0.00004	1004	620	615	19991217.124054
190.5	66.040	-101.6	0.614	0.069	0.00018	0.00010	0.00003	1001	658	645	19991217.124100
190.5	71.120	-101.6	0.607	0.070	0.00020	0.00011	0.00004	1002	639	634	19991217.124108
190.5	76.200	-101.6	0.595	0.071	0.00027	0.00016	0.00007	1019	670	669	19991217.124117
190.5	81.280	-101.6	0.579	0.072	0.00095	0.00038	0.00026	1013	659	653	19991217.124128
190.5	86.360	-101.6	0.554	0.074	0.00187	0.00086	0.00064	1011	702	696	19991217.124142
190.5	91.440	-101.6	0.501	0.077	0.00366	0.00143	0.00107	1015	692	686	19991217.124156
190.5	96.520	-101.6	0.420	0.070	0.00543	0.00209	0.00153	1011	687	680	19991217.124213
190.5	101.600	-101.6	0.308	0.076	0.00719	0.00228	0.00282	1013	42	42	19991217.124232
190.5	104.140	-101.6	0.244	0.000	0.00685	0.00000	0.00000	802	0	0	19991217.124258
190.5	0.000	0.0	-0.173	0.015	0.00821	0.00960	0.00093	1000	531	526	19991217.124332
38.1	0.000	0.0	0.093	0.003	0.01047	0.00467	0.00092	1009	604	598	19991217.124358
63.5	0.000	0.0	-0.027	0.001	0.01262	0.00704	-0.00036	996	676	670	19991217.124409
88.9	0.000	0.0	-0.106	0.006	0.00887	0.00474	-0.00006	1003	715	710	19991217.124422
114.3	0.000	0.0	-0.146	0.002	0.00744	0.00517	0.00049	998	654	648	19991217.124434
152.4	0.000	0.0	-0.173	0.009	0.00804	0.00737	0.00038	1001	601	597	19991217.124447
190.5	0.000	0.0	-0.187	0.004	0.00776	0.00791	-0.00049	1009	568	561	19991217.124459
228.6	0.000	0.0	-0.165	0.003	0.01066	0.01158	0.00011	1009	574	570	19991217.124514
266.7	0.000	0.0	-0.118	0.002	0.01139	0.01794	-0.00071	1007	609	605	19991217.124529
304.8	0.000	0.0	-0.024	0.006	0.01514	0.02278	-0.00089	1004	588	582	19991217.124547
342.9	0.000	0.0	0.064	-0.005	0.01245	0.02722	0.00011	999	600	593	19991217.124607
419.1	0.000	0.0	0.186	0.012	0.00986	0.02234	-0.00009	988	553	542	19991217.124629
495.3	0.000	0.0	0.262	0.005	0.00805	0.01454	-0.00063	989	559	545	19991217.124653
495.3	81.280	0.0	0.496	0.004	0.00864	0.00663	-0.00271	992	556	544	19991217.124708
419.1	81.280	0.0	0.509	0.002	0.00901	0.00706	-0.00310	993	581	572	19991217.124728
342.9	81.280	0.0	0.553	-0.004	0.00729	0.00558	-0.00244	996	560	546	19991217.124748

266.7	81.280	0.0	0.607	0.001	0.00447	0.00357	-0.00136	996	539	528	19991217.124806
190.5	81.280	0.0	0.602	0.095	0.00106	0.00065	0.00009	994	582	572	19991217.124825
114.3	66.040	0.0	0.665	0.167	0.00024	0.00018	0.00003	996	518	507	19991217.124847
38.1	45.720	0.0	0.744	0.160	0.00020	0.00010	-0.00001	999	455	445	19991217.124904
2.5	0.000	0.0	0.162	0.000	0.00527	0.00000	0.00000	801	0	0	19991217.130826
5.1	0.000	0.0	0.187	0.000	0.00642	0.00000	0.00000	984	0	0	19991217.130845
7.6	0.000	0.0	0.197	0.000	0.00585	0.00000	0.00000	959	0	0	19991217.130905
10.2	0.000	0.0	0.205	0.000	0.00750	0.00000	0.00000	951	0	0	19991217.130927
12.7	0.000	0.0	0.210	0.000	0.00650	0.00000	0.00000	947	0	0	19991217.130945
17.8	0.000	0.0	0.196	0.000	0.00719	0.00000	0.00000	933	0	0	19991217.131007
22.9	0.000	0.0	0.166	0.000	0.00807	0.00000	0.00000	869	0	0	19991217.131024
27.9	0.000	0.0	0.149	0.000	0.00992	0.00000	0.00000	845	0	0	19991217.131042
27.9	0.000	0.0	0.165	0.000	0.00909	0.00000	0.00000	853	0	0	19991217.131130
38.1	0.000	0.0	0.110	0.000	0.01103	0.00000	0.00000	832	0	0	19991217.131148
50.8	0.000	0.0	0.030	0.000	0.01354	0.00000	0.00000	859	0	0	19991217.131206
63.5	0.000	0.0	-0.038	0.000	0.01362	0.00000	0.00000	838	0	0	19991217.131220
76.2	0.000	0.0	-0.091	0.000	0.01037	0.00000	0.00000	828	0	0	19991217.131234
88.9	0.000	0.0	-0.107	0.000	0.00897	0.00000	0.00000	837	0	0	19991217.131248
114.3	0.000	0.0	-0.145	0.000	0.00813	0.00000	0.00000	831	0	0	19991217.131304
152.4	0.000	0.0	-0.165	0.000	0.00692	0.00000	0.00000	866	0	0	19991217.131323
190.5	0.000	0.0	-0.175	0.000	0.00888	0.00000	0.00000	880	0	0	19991217.131341
228.6	0.000	0.0	-0.158	0.000	0.00988	0.00000	0.00000	866	0	0	19991217.131401
266.7	0.000	0.0	-0.120	0.000	0.01174	0.00000	0.00000	898	0	0	19991217.131425
304.8	0.000	0.0	-0.038	0.000	0.01282	0.00000	0.00000	854	0	0	19991217.131500
342.9	0.000	0.0	0.042	0.000	0.01323	0.00000	0.00000	755	0	0	19991217.131521
419.1	0.000	0.0	0.179	0.000	0.01120	0.00000	0.00000	442	0	0	19991217.131602
419.1	81.280	0.0	0.519	0.000	0.00962	0.00000	0.00000	601	0	0	19991217.131659
342.9	81.280	0.0	0.567	0.000	0.00649	0.00000	0.00000	614	0	0	19991217.131715
266.7	81.280	0.0	0.613	0.000	0.00440	0.00000	0.00000	912	0	0	19991217.131734
190.5	81.280	0.0	0.604	0.000	0.00090	0.00000	0.00000	898	0	0	19991217.131759
114.3	66.040	0.0	0.665	0.000	0.00016	0.00000	0.00000	921	0	0	19991217.131820
38.1	45.720	0.0	0.749	0.000	0.00006	0.00000	0.00000	924	0	0	19991217.131839
0.0	45.720	0.0	0.899	0.000	0.00023	0.00000	0.00000	942	22	22	19991217.131856
-88.9	25.400	0.0	1.000	0.000	0.00005	0.00000	0.00000	535	0	0	19991217.134831
-40.6	25.400	0.0	0.972	0.000	0.00011	0.00000	0.00000	585	0	0	19991217.135429
0.0	40.640	0.0	0.894	0.000	0.00022	0.00000	0.00000	306	0	0	19991217.135740
38.1	45.720	0.0	0.754	0.000	0.00022	0.00000	0.00000	230	0	0	19991217.135757
114.3	66.040	0.0	0.667	0.000	0.00044	0.00000	0.00000	224	0	0	19991217.135820
190.5	81.280	0.0	0.606	0.000	0.00101	0.00000	0.00000	201	0	0	19991217.135839
266.7	81.280	0.0	0.617	0.000	0.00211	0.00000	0.00000	208	0	0	19991217.135900

Table 14 LDV Data for Case E – Long Trailing Edge Run 48

X(mm)	Y(mm)	z(mm)	U/Uref	V/Uref	uu/Uref^2	vv/Uref^2	uv/Uref^2	#u	#v	#uv	YearMoDa.HrMnSc
-88.9	-20.320	0.0	0.988	0.000	0.00006	0.00000	0.00000	396	0	0	19991217.134418
-88.9	-15.240	0.0	0.986	0.000	0.00006	0.00000	0.00000	554	0	0	19991217.134431
-88.9	-12.700	0.0	0.987	0.000	0.00005	0.00000	0.00000	548	0	0	19991217.134442
-88.9	-10.160	0.0	0.986	0.000	0.00007	0.00000	0.00000	472	0	0	19991217.134455
-88.9	-8.890	0.0	0.983	0.000	0.00020	0.00000	0.00000	426	0	0	19991217.134509
-88.9	-7.620	0.0	0.964	0.000	0.00114	0.00000	0.00000	571	0	0	19991217.134522
-88.9	-6.350	0.0	0.894	0.000	0.00373	0.00000	0.00000	567	0	0	19991217.134539
-88.9	-5.080	0.0	0.799	0.000	0.00673	0.00000	0.00000	532	0	0	19991217.134549
-88.9	-4.572	0.0	0.752	0.000	0.00833	0.00000	0.00000	514	0	0	19991217.134608
-88.9	-3.810	0.0	0.655	0.000	0.00950	0.00000	0.00000	467	0	0	19991217.134629
-88.9	3.810	0.0	0.670	0.000	0.00946	0.00000	0.00000	514	0	0	19991217.134652
-88.9	4.572	0.0	0.773	0.000	0.00790	0.00000	0.00000	567	0	0	19991217.134706
-88.9	5.080	0.0	0.821	0.000	0.00562	0.00000	0.00000	550	0	0	19991217.134718
-88.9	6.350	0.0	0.914	0.000	0.00354	0.00000	0.00000	494	0	0	19991217.134730
-88.9	7.620	0.0	0.981	0.000	0.00085	0.00000	0.00000	532	0	0	19991217.134737
-88.9	8.890	0.0	0.997	0.000	0.00013	0.00000	0.00000	408	0	0	19991217.134751
-88.9	10.160	0.0	0.999	0.000	0.00006	0.00000	0.00000	463	0	0	19991217.134758
-88.9	12.700	0.0	0.998	0.000	0.00005	0.00000	0.00000	447	0	0	19991217.134806
-88.9	15.240	0.0	0.999	0.000	0.00004	0.00000	0.00000	436	0	0	19991217.134812
-88.9	20.320	0.0	1.000	0.000	0.00005	0.00000	0.00000	460	0	0	19991217.134819
-88.9	25.400	0.0	1.000	0.000	0.00005	0.00000	0.00000	535	0	0	19991217.134831
-88.9	30.480	0.0	0.999	0.000	0.00005	0.00000	0.00000	547	0	0	19991217.134848
-88.9	35.560	0.0	0.997	0.000	0.00010	0.00000	0.00000	510	0	0	19991217.134909
-88.9	40.640	0.0	0.995	0.000	0.00013	0.00000	0.00000	383	0	0	19991217.134921
-88.9	45.720	0.0	0.995	0.000	0.00039	0.00000	0.00000	387	0	0	19991217.134930
-88.9	50.800	0.0	0.829	0.000	0.00682	0.00000	0.00000	243	0	0	19991217.134942
-88.9	52.070	0.0	0.710	0.000	0.00000	0.00000	0.00000	1	0	0	19991217.135000
-40.6	-20.320	0.0	0.947	0.000	0.00011	0.00000	0.00000	219	0	0	19991217.135023
-40.6	-15.240	0.0	0.947	0.000	0.00011	0.00000	0.00000	367	0	0	19991217.135031
-40.6	-12.700	0.0	0.947	0.000	0.00010	0.00000	0.00000	377	0	0	19991217.135039
-40.6	-10.160	0.0	0.950	0.000	0.00013	0.00000	0.00000	439	0	0	19991217.135048
-40.6	-8.890	0.0	0.946	0.000	0.00049	0.00000	0.00000	476	0	0	19991217.135104
-40.6	-7.620	0.0	0.908	0.000	0.00214	0.00000	0.00000	567	0	0	19991217.135114
-40.6	-6.350	0.0	0.841	0.000	0.00501	0.00000	0.00000	586	0	0	19991217.135136
-40.6	-5.080	0.0	0.754	0.000	0.00710	0.00000	0.00000	605	0	0	19991217.135150
-40.6	-4.572	0.0	0.701	0.000	0.00794	0.00000	0.00000	551	0	0	19991217.135208
-40.6	-3.810	0.0	0.631	0.000	0.01052	0.00000	0.00000	384	0	0	19991217.135221
-40.6	3.810	0.0	0.641	0.000	0.01105	0.00000	0.00000	543	0	0	19991217.135236
-40.6	4.572	0.0	0.728	0.000	0.00818	0.00000	0.00000	544	0	0	19991217.135251
-40.6	5.080	0.0	0.784	0.000	0.00746	0.00000	0.00000	530	0	0	19991217.135300
-40.6	6.350	0.0	0.873	0.000	0.00434	0.00000	0.00000	529	0	0	19991217.135313
-40.6	7.620	0.0	0.931	0.000	0.00239	0.00000	0.00000	443	0	0	19991217.135319
-40.6	8.890	0.0	0.965	0.000	0.00058	0.00000	0.00000	369	0	0	19991217.135332
-40.6	10.160	0.0	0.973	0.000	0.00015	0.00000	0.00000	380	0	0	19991217.135337
-40.6	12.700	0.0	0.973	0.000	0.00010	0.00000	0.00000	478	0	0	19991217.135346
-40.6	15.240	0.0	0.970	0.000	0.00011	0.00000	0.00000	509	0	0	19991217.135355
-40.6	20.320	0.0	0.969	0.000	0.00014	0.00000	0.00000	571	0	0	19991217.135411
-40.6	25.400	0.0	0.972	0.000	0.00011	0.00000	0.00000	585	0	0	19991217.135429
-40.6	30.480	0.0	0.974	0.000	0.00010	0.00000	0.00000	580	0	0	19991217.135447
-40.6	35.560	0.0	0.978	0.000	0.00012	0.00000	0.00000	527	0	0	19991217.135505
-40.6	40.640	0.0	0.983	0.000	0.00014	0.00000	0.00000	454	0	0	19991217.135521
-40.6	45.720	0.0	0.981	0.000	0.00040	0.00000	0.00000	571	0	0	19991217.135544
-40.6	48.260	0.0	0.937	0.000	0.00302	0.00000	0.00000	429	0	0	19991217.135625
-40.6	50.800	0.0	0.834	0.000	0.00641	0.00000	0.00000	358	0	0	19991217.135602
-40.6	52.070	0.0	0.655	0.000	0.01070	0.00000	0.00000	198	0	0	19991217.135715
0.0	-17.780	0.0	0.876	0.000	0.00001	0.00000	0.00000	2	0	0	19990909.151833
0.0	-15.240	0.0	0.878	0.000	0.00004	0.00000	0.00000	254	0	0	19990909.151906
0.0	-12.700	0.0	0.877	0.000	0.00005	0.00000	0.00000	287	0	0	19990909.151922
0.0	-10.160	0.0	0.865	0.000	0.00066	0.00000	0.00000	272	0	0	19990909.151932
0.0	-7.620	0.0	0.766	0.000	0.00306	0.00000	0.00000	747	0	0	19990909.151941
0.0	-6.350	0.0	0.694	0.000	0.00460	0.00000	0.00000	875	0	0	19990909.152015
0.0	-5.080	0.0	0.614	0.000	0.00552	0.00000	0.00000	998	0	0	19990909.152031
0.0	-3.810	0.0	0.509	0.000	0.00607	0.00000	0.00000	1015	0	0	19990909.152050
0.0	-4.318	0.0	0.542	0.000	0.00562	0.00000	0.00000	1018	0	0	19990909.152115
0.0	3.810	0.0	0.519	0.000	0.00625	0.00000	0.00000	1015	0	0	19990909.152135
0.0	4.318	0.0	0.575	0.000	0.00615	0.00000	0.00000	1008	0	0	19990909.152157
0.0	5.080	0.0	0.627	0.000	0.00548	0.00000	0.00000	1006	0	0	19990909.152220
0.0	6.350	0.0	0.706	0.000	0.00402	0.00000	0.00000	972	0	0	19990909.152248

0.0	7.620	0.0	0.775	0.000	0.00319	0.00000	0.00000	759	0	0	19990909.152305
0.0	10.160	0.0	0.855	0.000	0.00153	0.00000	0.00000	81	0	0	19990909.152313
0.0	12.700	0.0	0.885	0.000	0.00005	0.00000	0.00000	45	0	0	19990909.152322
0.0	15.240	0.0	0.886	0.000	0.00005	0.00000	0.00000	55	0	0	19990909.152331
0.0	20.320	0.0	0.889	0.000	0.00005	0.00000	0.00000	88	0	0	19990909.152340
0.0	25.400	0.0	0.895	0.000	0.00003	0.00000	0.00000	58	0	0	19990909.152351
0.0	30.480	0.0	0.900	0.000	0.00003	0.00000	0.00000	43	0	0	19990909.152405
0.0	35.560	0.0	0.905	0.000	0.00003	0.00000	0.00000	33	0	0	19990909.152421
0.0	40.640	0.0	0.906	0.000	0.00020	0.00000	0.00000	13	0	0	19990909.152440
0.0	45.720	0.0	0.915	0.000	0.00000	0.00000	0.00000	1	0	0	19990909.152504
0.0	48.260	0.0	0.855	0.000	0.00157	0.00000	0.00000	16	0	0	19990909.152612
0.0	50.800	0.0	0.791	0.000	0.00480	0.00000	0.00000	151	0	0	19990909.152534
0.0	53.340	0.0	1.132	0.000	0.00031	0.00000	0.00000	28	0	0	19990909.152640
38.1	-20.320	0.0	0.771	0.000	0.00006	0.00000	0.00000	1007	0	0	19990909.140555
38.1	-15.240	0.0	0.762	0.000	0.00013	0.00000	0.00000	1008	0	0	19990909.140600
38.1	-12.700	0.0	0.750	0.000	0.00071	0.00000	0.00000	1013	0	0	19990909.140606
38.1	-10.160	0.0	0.686	-0.063	0.00327	0.00118	0.00067	1008	454	454	19990909.140611
38.1	-7.620	0.0	0.543	-0.039	0.00836	0.00228	0.00135	994	588	586	19990909.140617
38.1	-5.080	0.0	0.401	-0.012	0.01021	0.00340	0.00213	994	519	517	19990909.140623
38.1	-2.540	0.0	0.213	0.007	0.01147	0.00378	0.00263	995	442	440	19990909.140630
38.1	-1.270	0.0	0.130	0.016	0.00985	0.00246	0.00197	962	500	494	19990909.140654
38.1	-3.810	0.0	0.296	0.001	0.01121	0.00377	0.00276	1007	492	490	19990909.140706
38.1	1.270	0.0	0.078	-0.003	0.01202	0.00332	-0.00206	978	504	499	19990909.140724
38.1	2.540	0.0	0.198	-0.002	0.01389	0.00365	-0.00293	1001	428	428	19990909.140735
38.1	3.810	0.0	0.303	0.005	0.01195	0.00431	-0.00299	1003	377	376	19990909.140748
38.1	5.080	0.0	0.368	0.009	0.01395	0.00368	-0.00350	1007	442	442	19990909.140755
38.1	7.620	0.0	0.560	0.033	0.00751	0.00217	-0.00151	1015	454	454	19990909.140801
38.1	10.160	0.0	0.688	0.054	0.00294	0.00111	-0.00062	1013	475	475	19990909.140807
38.1	12.700	0.0	0.746	0.073	0.00070	0.00051	-0.00018	1013	590	590	19990909.140813
38.1	15.240	0.0	0.757	0.082	0.00010	0.00021	-0.00003	1018	654	654	19990909.140819
38.1	20.320	0.0	0.765	0.091	0.00008	0.00024	-0.00003	1023	660	660	19990909.140825
38.1	25.400	0.0	0.772	0.100	0.00007	0.00020	0.00000	1020	549	549	19990909.140831
38.1	30.480	0.0	0.776	0.111	0.00005	0.00016	0.00000	1013	486	486	19990909.140837
38.1	35.560	0.0	0.781	0.120	0.00006	0.00023	-0.00001	1005	485	484	19990909.140845
38.1	40.640	0.0	0.784	0.130	0.00008	0.00025	-0.00001	1006	483	482	19990909.140852
38.1	45.720	0.0	0.784	0.145	0.00008	0.00020	0.00000	1006	418	417	19990909.140901
38.1	50.800	0.0	0.780	0.154	0.00011	0.00049	0.00001	998	403	403	19990909.140909
38.1	55.880	0.0	0.792	0.000	0.00250	0.00000	0.00000	973	0	0	19990909.141014
38.1	60.960	0.0	1.067	0.000	0.01829	0.00000	0.00000	957	0	0	19990909.140954
76.2	-20.320	0.0	0.702	0.000	0.00035	0.00000	0.00000	807	0	0	19990909.150451
76.2	-15.240	0.0	0.591	0.000	0.00651	0.00000	0.00000	1010	0	0	19990909.150457
76.2	-12.700	0.0	0.473	0.000	0.01350	0.00000	0.00000	1019	0	0	19990909.150504
76.2	-10.160	0.0	0.372	-0.045	0.01293	0.00422	0.00148	1016	639	639	19990909.150511
76.2	-7.620	0.0	0.238	-0.018	0.01640	0.00552	0.00198	1013	765	764	19990909.150519
76.2	-5.080	0.0	0.127	-0.003	0.01464	0.00565	0.00284	1010	770	770	19990909.150527
76.2	-2.540	0.0	0.023	0.002	0.01300	0.00584	0.00183	1005	826	824	19990909.150537
76.2	0.000	0.0	-0.035	0.010	0.00995	0.00565	0.00006	1004	836	832	19990909.150546
76.2	2.540	0.0	-0.007	0.011	0.01317	0.00497	-0.00098	1007	835	834	19990909.150556
76.2	5.080	0.0	0.087	0.017	0.01702	0.00650	-0.00310	1004	792	790	19990909.150605
76.2	7.620	0.0	0.216	0.017	0.01846	0.00556	-0.00327	1011	761	760	19990909.150613
76.2	10.160	0.0	0.308	0.044	0.01811	0.00632	-0.00387	1015	736	736	19990909.150620
76.2	12.700	0.0	0.456	0.062	0.01761	0.00465	-0.00247	1019	756	755	19990909.150627
76.2	15.240	0.0	0.575	0.089	0.01140	0.00266	-0.00172	1019	748	748	19990909.150633
76.2	20.320	0.0	0.698	0.120	0.00124	0.00067	-0.00044	1022	792	792	19990909.150639
76.2	25.400	0.0	0.706	0.125	0.00019	0.00039	-0.00004	1021	787	785	19990909.150645
76.2	30.480	0.0	0.709	0.127	0.00008	0.00016	-0.00002	1018	735	735	19990909.150651
76.2	35.560	0.0	0.710	0.132	0.00013	0.00020	-0.00002	1020	641	641	19990909.150658
76.2	40.640	0.0	0.710	0.136	0.00005	0.00010	0.00000	1017	620	620	19990909.150705
76.2	45.720	0.0	0.710	0.140	0.00006	0.00009	0.00001	1014	604	604	19990909.150714
76.2	50.800	0.0	0.710	0.146	0.00007	0.00018	0.00001	1019	602	602	19990909.150724
76.2	55.880	0.0	0.710	0.149	0.00008	0.00013	0.00001	1015	564	564	19990909.150733
76.2	60.960	0.0	0.711	0.152	0.00061	0.00079	-0.00009	1010	560	560	19990909.150744
76.2	66.040	0.0	0.853	0.000	0.01170	0.00000	0.00000	1006	0	0	19990909.150801
76.2	71.120	0.0	1.098	0.000	0.00832	0.00000	0.00000	978	0	0	19990909.150829
114.3	-20.320	0.0	0.497	0.000	0.01452	0.00000	0.00000	1014	0	0	19990909.141948
114.3	-15.240	0.0	0.298	0.000	0.02275	0.00000	0.00000	1017	0	0	19990909.141954
114.3	-12.700	0.0	0.211	0.000	0.02072	0.00000	0.00000	1018	0	0	19990909.142001
114.3	-10.160	0.0	0.130	-0.002	0.01948	0.00979	0.00436	1012	479	477	19990909.142008
114.3	-7.620	0.0	0.050	0.007	0.01997	0.00809	0.00354	1002	659	655	19990909.142015
114.3	-5.080	0.0	-0.048	-0.002	0.01645	0.00820	0.00230	1000	712	708	19990909.142023
114.3	-2.540	0.0	-0.062	0.003	0.01205	0.00701	0.00197	1001	757	755	19990909.142031
114.3	0.000	0.0	-0.084	0.003	0.00985	0.00645	0.00060	1007	771	766	19990909.142040
114.3	2.540	0.0	-0.104	0.009	0.00871	0.00683	-0.00009	1008	758	757	19990909.142049
114.3	5.080	0.0	-0.075	0.016	0.01222	0.00727	-0.00137	1009	713	711	19990909.142058
114.3	7.620	0.0	-0.019	0.012	0.01743	0.00789	-0.00155	1012	672	670	19990909.142106

114.3	10.160	0.0	0.028	0.012	0.02335	0.01057	-0.00393	1012	665	664	19990909.142115
114.3	12.700	0.0	0.172	0.024	0.02337	0.01085	-0.00546	1016	602	602	19990909.142122
114.3	15.240	0.0	0.252	0.039	0.02237	0.00916	-0.00356	1010	608	605	19990909.142129
114.3	20.320	0.0	0.391	0.057	0.02495	0.00767	-0.00358	1016	635	634	19990909.142135
114.3	25.400	0.0	0.572	0.102	0.01894	0.00546	-0.00273	1017	636	636	19990909.142140
114.3	30.480	0.0	0.667	0.129	0.00494	0.00218	-0.00101	1021	608	608	19990909.142146
114.3	35.560	0.0	0.682	0.136	0.00110	0.00081	-0.00022	1023	605	605	19990909.142152
114.3	40.640	0.0	0.682	0.138	0.00029	0.00050	-0.00001	1021	593	593	19990909.142158
114.3	45.720	0.0	0.682	0.140	0.00017	0.00044	0.00001	1017	567	565	19990909.142205
114.3	50.800	0.0	0.680	0.137	0.00011	0.00023	0.00002	1021	564	564	19990909.142212
114.3	55.880	0.0	0.679	0.140	0.00008	0.00021	0.00001	1019	563	563	19990909.142219
114.3	60.960	0.0	0.679	0.142	0.00008	0.00016	0.00001	1019	515	515	19990909.142227
114.3	66.040	0.0	0.676	0.142	0.00017	0.00022	0.00001	1012	594	593	19990909.142236
114.3	71.120	0.0	0.719	0.156	0.00321	0.00147	-0.00067	1016	625	625	19990909.142248
114.3	76.200	0.0	0.901	0.000	0.00775	0.00000	0.00000	1018	0	0	19990909.142300
190.5	-20.320	0.0	0.176	0.000	0.02443	0.00000	0.00000	993	0	0	19990909.142352
190.5	-15.240	0.0	0.069	0.000	0.02817	0.00000	0.00000	980	0	0	19990909.142401
190.5	-12.700	0.0	-0.002	0.000	0.01945	0.00000	0.00000	973	0	0	19990909.142409
190.5	-10.160	0.0	-0.045	0.000	0.01724	0.00000	0.00000	982	0	0	19990909.142417
190.5	-20.320	0.0	0.165	0.000	0.02893	0.00000	0.00000	982	0	0	19990909.142533
190.5	-15.240	0.0	0.046	0.000	0.02796	0.00000	0.00000	985	0	0	19990909.142541
190.5	-12.700	0.0	0.000	0.000	0.02419	0.00000	0.00000	980	0	0	19990909.142550
190.5	-10.160	0.0	-0.044	0.013	0.02061	0.01335	0.00390	982	544	541	19990909.142558
190.5	-7.620	0.0	-0.073	0.013	0.01856	0.01247	0.00351	994	669	663	19990909.142605
190.5	-5.080	0.0	-0.104	0.008	0.01261	0.01306	0.00247	976	700	692	19990909.142613
190.5	-2.540	0.0	-0.111	0.007	0.01187	0.01193	0.00158	987	681	674	19990909.142620
190.5	0.000	0.0	-0.106	0.012	0.01349	0.01249	0.00088	991	688	685	19990909.142627
190.5	2.540	0.0	-0.121	0.015	0.01119	0.01109	-0.00004	991	695	691	19990909.142634
190.5	5.080	0.0	-0.108	0.019	0.01214	0.01110	-0.00040	975	666	660	19990909.142641
190.5	7.620	0.0	-0.112	0.015	0.01301	0.01191	-0.00236	985	662	659	19990909.142647
190.5	10.160	0.0	-0.065	0.007	0.01748	0.01257	-0.00366	986	650	644	19990909.142654
190.5	12.700	0.0	-0.050	0.025	0.01915	0.01338	-0.00458	982	614	610	19990909.142701
190.5	15.240	0.0	0.003	0.017	0.02461	0.01532	-0.00556	983	600	598	19990909.142708
190.5	20.320	0.0	0.130	0.007	0.02778	0.01910	-0.00967	985	548	545	19990909.142714
190.5	25.400	0.0	0.225	-0.002	0.02840	0.01817	-0.00942	1003	559	557	19990909.142720
190.5	30.480	0.0	0.336	0.015	0.02719	0.01401	-0.00831	1012	597	596	19990909.142726
190.5	35.560	0.0	0.458	0.026	0.02229	0.01228	-0.00688	1014	606	605	19990909.142732
190.5	40.640	0.0	0.551	0.036	0.01484	0.00772	-0.00453	1017	624	623	19990909.142737
190.5	45.720	0.0	0.616	0.058	0.00757	0.00549	-0.00143	1021	619	617	19990909.142743
190.5	50.800	0.0	0.628	0.069	0.00517	0.00470	-0.00189	1017	643	643	19990909.142748
190.5	55.880	0.0	0.632	0.079	0.00287	0.00308	-0.00055	1017	596	595	19990909.142754
190.5	60.960	0.0	0.625	0.075	0.00155	0.00152	-0.00022	1019	625	625	19990909.142800
190.5	66.040	0.0	0.618	0.076	0.00061	0.00064	0.00006	1014	555	553	19990909.142807
190.5	71.120	0.0	0.604	0.078	0.00061	0.00057	0.00009	1011	544	543	19990909.142815
190.5	76.200	0.0	0.597	0.080	0.00055	0.00038	0.00009	1010	570	568	19990909.142823
190.5	81.280	0.0	0.588	0.084	0.00084	0.00068	-0.00003	1008	651	650	19990909.142832
190.5	86.360	0.0	0.656	0.097	0.00542	0.00233	-0.00095	1005	611	609	19990909.142841
190.5	91.440	0.0	0.777	0.000	0.00772	0.00000	0.00000	997	0	0	19990909.142921
190.5	96.520	0.0	0.843	0.000	0.00435	0.00000	0.00000	976	0	0	19990909.142907
266.7	-20.320	0.0	0.163	0.000	0.02304	0.00000	0.00000	993	0	0	19990909.142946
266.7	-15.240	0.0	0.111	0.000	0.02213	0.00000	0.00000	980	0	0	19990909.142954
266.7	-12.700	0.0	0.088	0.000	0.02160	0.00000	0.00000	978	0	0	19990909.143001
266.7	-10.160	0.0	0.042	0.055	0.01740	0.02173	0.00763	985	523	521	19990909.143008
266.7	-7.620	0.0	0.038	0.055	0.01935	0.02239	0.00654	990	671	669	19990909.143015
266.7	-5.080	0.0	0.010	0.025	0.01781	0.02540	0.00493	994	673	670	19990909.143022
266.7	-2.540	0.0	0.010	0.015	0.01477	0.02461	0.00200	1003	702	697	19990909.143030
266.7	0.000	0.0	0.000	0.017	0.01367	0.02217	0.00058	1010	695	691	19990909.143038
266.7	2.540	0.0	0.007	0.000	0.01472	0.02517	-0.00141	1006	678	674	19990909.143046
266.7	5.080	0.0	0.010	0.014	0.01510	0.02690	-0.00069	1003	647	645	19990909.143054
266.7	7.620	0.0	0.032	-0.003	0.01916	0.02547	-0.00583	1007	666	665	19990909.143101
266.7	10.160	0.0	0.051	-0.018	0.01840	0.02389	-0.00741	1007	631	629	19990909.143109
266.7	12.700	0.0	0.073	-0.025	0.01941	0.02714	-0.00999	1004	622	617	19990909.143117
266.7	15.240	0.0	0.103	-0.026	0.01974	0.02878	-0.01007	1005	600	600	19990909.143125
266.7	20.320	0.0	0.175	-0.051	0.02087	0.02958	-0.01196	1004	587	585	19990909.143132
266.7	25.400	0.0	0.245	-0.040	0.02010	0.02540	-0.01209	1009	576	574	19990909.143138
266.7	30.480	0.0	0.316	-0.047	0.02357	0.02304	-0.01388	1014	613	610	19990909.143144
266.7	35.560	0.0	0.411	-0.064	0.01859	0.01622	-0.00810	1008	552	550	19990909.143150
266.7	40.640	0.0	0.443	-0.033	0.02023	0.01556	-0.00902	1014	598	597	19990909.143156
266.7	45.720	0.0	0.495	-0.035	0.01617	0.01411	-0.00774	1013	610	609	19990909.143202
266.7	50.800	0.0	0.542	-0.008	0.01050	0.01260	-0.00492	1017	607	607	19990909.143208
266.7	55.880	0.0	0.563	-0.017	0.00866	0.00958	-0.00304	1019	618	618	19990909.143214
266.7	60.960	0.0	0.589	-0.007	0.00591	0.00554	-0.00188	1013	612	612	19990909.143220
266.7	66.040	0.0	0.596	-0.002	0.00483	0.00400	-0.00120	1018	581	580	19990909.143227

266.7	71.120	0.0	0.599	-0.002	0.00275	0.00220	0.00001	1013	617	617 19990909.143234
266.7	76.200	0.0	0.602	-0.001	0.00180	0.00150	-0.00014	1016	599	597 19990909.143242
266.7	81.280	0.0	0.605	-0.002	0.00153	0.00091	-0.00004	1009	598	597 19990909.143251
266.7	86.360	0.0	0.655	0.001	0.00280	0.00181	-0.00066	1013	624	624 19990909.143300
266.7	91.440	0.0	0.766	-0.024	0.00428	0.00551	-0.00351	1012	41	41 19990909.143310
266.7	96.520	0.0	0.869	0.000	0.00345	0.00000	0.00000	997	0	0 19990909.143324
342.9	-20.320	0.0	0.252	0.000	0.01475	0.00000	0.00000	1005	0	0 19990909.143348
342.9	-15.240	0.0	0.212	0.000	0.01401	0.00000	0.00000	1014	0	0 19990909.143358
342.9	-12.700	0.0	0.199	0.000	0.01235	0.00000	0.00000	1008	0	0 19990909.143406
342.9	-10.160	0.0	0.185	0.037	0.01298	0.02288	0.00379	1009	607	606 19990909.143415
342.9	-7.620	0.0	0.179	0.023	0.01272	0.02504	0.00191	1007	716	715 19990909.143427
342.9	-5.080	0.0	0.172	0.026	0.01299	0.02521	0.00347	1016	729	728 19990909.143435
342.9	-2.540	0.0	0.174	0.016	0.01206	0.02578	0.00037	1001	729	729 19990909.143444
342.9	0.000	0.0	0.175	0.013	0.01256	0.02796	0.00207	1010	715	714 19990909.143451
342.9	2.540	0.0	0.166	0.001	0.01167	0.02516	-0.00169	1010	692	692 19990909.143500
342.9	5.080	0.0	0.185	0.001	0.01211	0.02528	-0.00452	1007	696	694 19990909.143508
342.9	7.620	0.0	0.189	-0.005	0.01336	0.02638	-0.00477	1012	682	681 19990909.143516
342.9	10.160	0.0	0.194	-0.024	0.01413	0.02415	-0.00574	1007	650	648 19990909.143524
342.9	12.700	0.0	0.208	-0.018	0.01428	0.02299	-0.00662	1011	658	656 19990909.143531
342.9	15.240	0.0	0.232	-0.031	0.01547	0.02483	-0.00807	1007	669	668 19990909.143539
342.9	20.320	0.0	0.260	-0.034	0.01595	0.02408	-0.00936	1012	631	631 19990909.143546
342.9	25.400	0.0	0.294	-0.037	0.01608	0.02137	-0.00962	1007	616	615 19990909.143553
342.9	30.480	0.0	0.315	-0.031	0.01643	0.02161	-0.00898	1017	603	602 19990909.143600
342.9	35.560	0.0	0.370	-0.042	0.01515	0.01634	-0.00667	1008	603	602 19990909.143606
342.9	40.640	0.0	0.400	-0.024	0.01693	0.01660	-0.00805	1011	567	566 19990909.143613
342.9	45.720	0.0	0.438	-0.020	0.01231	0.01340	-0.00600	1015	572	571 19990909.143619
342.9	50.800	0.0	0.468	-0.021	0.01177	0.01194	-0.00442	1019	575	575 19990909.143625
342.9	55.880	0.0	0.500	-0.008	0.01081	0.01085	-0.00456	1011	583	581 19990909.143632
342.9	60.960	0.0	0.537	-0.001	0.00806	0.00837	-0.00299	1017	591	591 19990909.143639
342.9	66.040	0.0	0.554	0.000	0.00625	0.00593	-0.00184	1017	583	583 19990909.143647
342.9	71.120	0.0	0.561	0.001	0.00525	0.00473	-0.00206	1014	612	611 19990909.143655
342.9	76.200	0.0	0.572	-0.001	0.00336	0.00243	-0.00055	1010	604	604 19990909.143702
342.9	81.280	0.0	0.584	0.003	0.00261	0.00219	-0.00024	1008	607	607 19990909.143711
342.9	86.360	0.0	0.634	-0.004	0.00269	0.00149	-0.00076	1008	634	634 19990909.143721
342.9	91.440	0.0	0.717	0.000	0.00331	0.00000	0.00000	1005	0	0 19990909.143733
342.9	96.520	0.0	0.785	0.000	0.00226	0.00000	0.00000	1006	0	0 19990909.143747
419.1	-20.320	0.0	0.304	0.000	0.01070	0.00000	0.00000	1001	0	0 19990909.143812
419.1	-15.240	0.0	0.284	0.000	0.00926	0.00000	0.00000	1004	0	0 19990909.143823
419.1	-12.700	0.0	0.272	0.000	0.00947	0.00000	0.00000	1008	0	0 19990909.143832
419.1	-10.160	0.0	0.266	0.019	0.00991	0.01788	0.00256	1010	550	550 19990909.143841
419.1	-7.620	0.0	0.258	0.009	0.00922	0.01832	0.00125	1000	671	670 19990909.143849
419.1	-5.080	0.0	0.258	0.017	0.00828	0.01880	0.00139	1009	663	662 19990909.143857
419.1	-2.540	0.0	0.252	-0.003	0.00939	0.01870	0.00050	1007	651	650 19990909.143905
419.1	0.000	0.0	0.262	-0.005	0.00880	0.01892	-0.00066	1017	673	673 19990909.143913
419.1	2.540	0.0	0.260	0.005	0.00929	0.01828	-0.00153	1007	688	686 19990909.143921
419.1	5.080	0.0	0.255	0.001	0.00864	0.01888	-0.00237	1010	679	679 19990909.143930
419.1	7.620	0.0	0.269	-0.015	0.00965	0.01685	-0.00310	1010	672	672 19990909.143938
419.1	10.160	0.0	0.276	-0.021	0.00925	0.01755	-0.00356	1008	681	680 19990909.143946
419.1	12.700	0.0	0.279	-0.021	0.01075	0.01652	-0.00425	1014	681	680 19990909.143954
419.1	15.240	0.0	0.282	-0.010	0.00995	0.01577	-0.00447	1013	686	685 19990909.144002
419.1	20.320	0.0	0.298	-0.017	0.01132	0.01665	-0.00590	1014	701	701 19990909.144010
419.1	25.400	0.0	0.331	-0.026	0.01057	0.01580	-0.00518	1011	678	677 19990909.144017
419.1	30.480	0.0	0.356	-0.023	0.01253	0.01426	-0.00597	1005	678	676 19990909.144025
419.1	35.560	0.0	0.380	-0.017	0.01145	0.01524	-0.00566	980	583	579 19990909.144031
419.1	40.640	0.0	0.398	-0.015	0.01094	0.01297	-0.00531	988	590	588 19990909.144040
419.1	45.720	0.0	0.421	-0.003	0.01138	0.01245	-0.00456	979	563	561 19990909.144046
419.1	50.800	0.0	0.448	-0.004	0.01005	0.01048	-0.00397	998	529	525 19990909.144052
419.1	55.880	0.0	0.459	0.006	0.00926	0.00949	-0.00361	993	516	514 19990909.144059
419.1	60.960	0.0	0.495	-0.009	0.00885	0.00750	-0.00250	985	512	510 19990909.144105
419.1	66.040	0.0	0.505	0.004	0.00803	0.00764	-0.00251	981	473	469 19990909.144112
419.1	71.120	0.0	0.523	0.013	0.00752	0.00677	-0.00209	983	473	472 19990909.144118
419.1	76.200	0.0	0.544	0.007	0.00601	0.00451	-0.00144	986	529	525 19990909.144126
419.1	81.280	0.0	0.580	0.007	0.00557	0.00420	-0.00119	970	509	509 19990909.144133
419.1	86.360	0.0	0.633	0.005	0.00563	0.00351	-0.00186	962	531	528 19990909.144140
419.1	91.440	0.0	0.718	0.000	0.00492	0.00000	0.00000	942	0	0 19990909.144149
419.1	96.520	0.0	0.767	0.000	0.00343	0.00000	0.00000	910	0	0 19990909.144200
495.3	-20.320	0.0	0.322	0.000	0.00782	0.00000	0.00000	951	0	0 19990909.144234
495.3	-15.240	0.0	0.315	0.000	0.00747	0.00000	0.00000	969	0	0 19990909.144241
495.3	-12.700	0.0	0.308	0.000	0.00681	0.00000	0.00000	970	0	0 19990909.144248
495.3	-10.160	0.0	0.310	0.009	0.00708	0.01275	0.00189	982	606	605 19990909.144255
495.3	-7.620	0.0	0.305	0.015	0.00708	0.01254	0.00135	979	693	692 19990909.144301
495.3	-5.080	0.0	0.309	0.016	0.00656	0.01270	0.00030	982	701	697 19990909.144308
495.3	-2.540	0.0	0.299	-0.002	0.00603	0.01167	-0.00040	985	699	697 19990909.144314
495.3	0.000	0.0	0.308	0.007	0.00727	0.01282	-0.00030	988	696	692 19990909.144320
495.3	2.540	0.0	0.310	0.003	0.00792	0.01293	-0.00104	973	679	676 19990909.144327

495.3	5.080	0.0	0.313	0.007	0.00728	0.01250	-0.00090	982	679	678	19990909.144333
495.3	7.620	0.0	0.310	0.001	0.00770	0.01049	-0.00094	974	659	658	19990909.144339
495.3	10.160	0.0	0.304	-0.007	0.00857	0.01142	-0.00182	974	633	629	19990909.144346
495.3	12.700	0.0	0.323	-0.010	0.00789	0.01181	-0.00265	984	678	677	19990909.144352
495.3	15.240	0.0	0.319	-0.004	0.00798	0.01112	-0.00273	979	663	659	19990909.144359
495.3	20.320	0.0	0.335	-0.007	0.00885	0.01303	-0.00353	983	602	602	19990909.144405
495.3	25.400	0.0	0.360	-0.011	0.00856	0.01131	-0.00271	985	631	629	19990909.144411
495.3	30.480	0.0	0.355	-0.005	0.00950	0.01111	-0.00318	978	604	603	19990909.144418
495.3	35.560	0.0	0.395	-0.004	0.00922	0.01167	-0.00317	982	545	544	19990909.144424
495.3	40.640	0.0	0.397	-0.005	0.00986	0.00999	-0.00387	979	555	552	19990909.144430
495.3	45.720	0.0	0.415	-0.002	0.00966	0.00995	-0.00356	982	535	534	19990909.144436
495.3	50.800	0.0	0.433	0.014	0.00954	0.00944	-0.00297	964	518	515	19990909.144443
495.3	55.880	0.0	0.462	0.006	0.00913	0.00798	-0.00254	992	556	555	19990909.144449
495.3	60.960	0.0	0.468	0.006	0.00903	0.00972	-0.00341	989	552	549	19990909.144455
495.3	66.040	0.0	0.486	0.015	0.00839	0.00749	-0.00273	977	515	514	19990909.144502
495.3	71.120	0.0	0.512	0.016	0.00750	0.00580	-0.00214	986	528	526	19990909.144508
495.3	76.200	0.0	0.535	0.017	0.00871	0.00698	-0.00362	967	542	537	19990909.144515
495.3	81.280	0.0	0.579	0.012	0.00738	0.00452	-0.00171	966	507	505	19990909.144523
495.3	86.360	0.0	0.630	0.010	0.00783	0.00506	-0.00238	982	531	527	19990909.144530
495.3	91.440	0.0	0.697	0.000	0.00775	0.00000	0.00000	942	0	0	19990909.144539
495.3	96.520	0.0	0.729	0.000	0.00515	0.00000	0.00000	898	0	0	19990909.144550
190.5	-20.320	-101.6	0.178	0.000	0.02357	0.00000	0.00000	931	0	0	19990909.145344
190.5	-15.240	-101.6	0.060	0.026	0.02247	0.01497	0.00866	893	372	369	19990909.145351
190.5	-12.700	-101.6	0.017	0.029	0.01962	0.01246	0.00670	914	542	534	19990909.145359
190.5	-10.160	-101.6	-0.026	0.018	0.01868	0.01435	0.00613	946	574	565	19990909.145406
190.5	-7.620	-101.6	-0.032	0.009	0.01364	0.01226	0.00342	948	584	579	19990909.145414
190.5	-5.080	-101.6	-0.044	0.013	0.01344	0.01356	0.00299	948	568	561	19990909.145422
190.5	-2.540	-101.6	-0.059	0.017	0.01325	0.00938	0.00107	951	594	587	19990909.145430
190.5	0.000	-101.6	-0.064	0.008	0.01219	0.01089	0.00055	942	589	576	19990909.145437
190.5	2.540	-101.6	-0.043	0.009	0.01317	0.01190	-0.00177	954	580	577	19990909.145445
190.5	5.080	-101.6	-0.010	-0.002	0.01702	0.01110	-0.00315	955	540	533	19990909.145453
190.5	7.620	-101.6	0.022	-0.005	0.01981	0.01379	-0.00530	946	536	530	19990909.145500
190.5	10.160	-101.6	0.071	-0.001	0.02588	0.01372	-0.00834	964	512	508	19990909.145508
190.5	12.700	-101.6	0.125	-0.005	0.02488	0.01511	-0.00849	956	495	491	19990909.145515
190.5	15.240	-101.6	0.177	-0.002	0.02270	0.01478	-0.00665	963	487	485	19990909.145522
190.5	20.320	-101.6	0.283	-0.007	0.02114	0.01241	-0.00835	980	518	514	19990909.145528
190.5	25.400	-101.6	0.405	0.002	0.02075	0.01081	-0.00693	988	526	525	19990909.145534
190.5	30.480	-101.6	0.532	0.027	0.01267	0.00653	-0.00425	992	604	599	19990909.145540
190.5	35.560	-101.6	0.585	0.033	0.01129	0.00592	-0.00258	997	599	597	19990909.145545
190.5	40.640	-101.6	0.625	0.045	0.00659	0.00377	-0.00122	994	625	624	19990909.145551
190.5	45.720	-101.6	0.635	0.053	0.00283	0.00215	-0.00075	998	607	602	19990909.145557
190.5	50.800	-101.6	0.636	0.055	0.00091	0.00117	-0.00009	995	608	607	19990909.145604
190.5	55.880	-101.6	0.631	0.057	0.00054	0.00059	0.00005	988	616	612	19990909.145611
190.5	60.960	-101.6	0.623	0.063	0.00047	0.00051	0.00014	960	570	569	19990909.145619
190.5	66.040	-101.6	0.613	0.063	0.00027	0.00018	0.00004	954	609	606	19990909.145630
190.5	71.120	-101.6	0.602	0.066	0.00030	0.00013	0.00005	943	601	599	19990909.145641
190.5	76.200	-101.6	0.592	0.069	0.00028	0.00016	0.00004	927	578	577	19990909.145657
190.5	81.280	-101.6	0.586	0.074	0.00074	0.00051	-0.00006	857	527	520	19990909.145708
190.5	86.360	-101.6	0.635	0.088	0.00339	0.00163	-0.00048	814	502	499	19990909.145722
190.5	91.440	-101.6	0.717	0.107	0.00450	0.00191	-0.00044	819	525	521	19990909.145734
190.5	96.520	-101.6	0.715	0.000	0.00316	0.00000	0.00000	760	0	0	19990909.145748
190.5	-20.320	101.6	0.157	0.000	0.02278	0.00000	0.00000	836	0	0	19990909.145853
190.5	-15.240	101.6	0.056	0.000	0.02469	0.00000	0.00000	878	0	0	19990909.145903
190.5	-12.700	101.6	0.015	0.000	0.01870	0.00000	0.00000	871	0	0	19990909.145913
190.5	-10.160	101.6	-0.009	0.000	0.01644	0.00000	0.00000	869	0	0	19990909.145923
190.5	-7.620	101.6	-0.023	0.000	0.01437	0.00000	0.00000	883	0	0	19990909.145932
190.5	-5.080	101.6	-0.047	0.011	0.01445	0.00822	0.00131	876	399	395	19990909.145942
190.5	-2.540	101.6	-0.064	0.008	0.01172	0.01138	0.00030	879	535	526	19990909.145951
190.5	0.000	101.6	-0.029	0.009	0.01452	0.01186	-0.00123	940	586	580	19990909.150002
190.5	2.540	101.6	-0.029	0.014	0.01511	0.01167	-0.00232	917	559	553	19990909.150011
190.5	5.080	101.6	-0.003	-0.002	0.01889	0.01288	-0.00518	918	498	493	19990909.150021
190.5	7.620	101.6	0.031	-0.002	0.01846	0.01124	-0.00501	938	524	514	19990909.150030
190.5	10.160	101.6	0.091	0.005	0.02048	0.01439	-0.00773	927	516	512	19990909.150040
190.5	12.700	101.6	0.131	-0.007	0.02357	0.01450	-0.00890	926	492	487	19990909.150049
190.5	15.240	101.6	0.193	-0.012	0.02274	0.01433	-0.00817	944	489	479	19990909.150057
190.5	20.320	101.6	0.324	-0.012	0.01987	0.01128	-0.00616	969	531	527	19990909.150105
190.5	25.400	101.6	0.425	0.003	0.01881	0.00957	-0.00567	977	576	570	19990909.150112
190.5	30.480	101.6	0.527	0.014	0.01511	0.00686	-0.00381	984	586	585	19990909.150119
190.5	35.560	101.6	0.587	0.031	0.01072	0.00582	-0.00230	992	598	598	19990909.150126
190.5	40.640	101.6	0.623	0.044	0.00555	0.00352	-0.00153	986	571	569	19990909.150133
190.5	45.720	101.6	0.624	0.060	0.00474	0.00423	-0.00192	981	541	541	19990909.150140
190.5	50.800	101.6	0.636	0.056	0.00090	0.00115	0.00001	974	465	465	19990909.150148
190.5	55.880	101.6	0.628	0.056	0.00054	0.00067	0.00005	986	474	472	19990909.150156

190.5	60.960	101.6	0.622	0.060	0.00039	0.00044	0.00002	937	475	473	19990909.150208
190.5	66.040	101.6	0.612	0.062	0.00031	0.00039	0.00004	910	467	464	19990909.150222
190.5	71.120	101.6	0.601	0.064	0.00039	0.00028	0.00007	911	422	421	19990909.150237
190.5	76.200	101.6	0.589	0.065	0.00046	0.00029	0.00006	869	489	485	19990909.150257
190.5	81.280	101.6	0.580	0.070	0.00115	0.00072	-0.00004	868	517	514	19990909.150316
190.5	86.360	101.6	0.645	0.000	0.00547	0.00000	0.00000	632	0	0	19990909.150336
190.5	91.440	101.6	0.745	0.000	0.00715	0.00000	0.00000	486	0	0	19990909.150349
190.5	96.520	101.6	0.772	0.000	0.00360	0.00000	0.00000	35	0	0	19990909.150405

0.0	45.720	0.0	0.915	0.000	0.00000	0.00000	0.00000	1	0	0	19990909.152504
38.1	45.720	0.0	0.778	0.000	0.00005	0.00000	0.00000	747	330	271	19990909.152705
114.3	60.960	0.0	0.681	0.000	0.00009	0.00000	0.00000	972	389	380	19990909.152727
190.5	71.120	0.0	0.612	0.000	0.00047	0.00000	0.00000	981	421	415	19990909.152748
266.7	76.200	0.0	0.604	0.000	0.00177	0.00000	0.00000	983	393	386	19990909.152808
342.9	76.200	0.0	0.563	0.000	0.00411	0.00000	0.00000	978	380	378	19990909.152826
419.1	76.200	0.0	0.540	0.000	0.00606	0.00000	0.00000	991	430	423	19990909.152844
495.3	76.200	0.0	0.517	0.000	0.00775	0.00000	0.00000	900	428	394	19990909.152913

Table 15 LDV Data for Case F – Curved Wake Run 44

X(mm)	Y(mm)	z(mm)	U/Uref	V/Uref	uu/Uref^2	vv/Uref^2	uv/Uref^2	#u	#v	#uv	YearMoDa.HrMnSc
-88.9	-20.320	0.0	0.932	0.000	0.00004	0.00000	0.00000	730	0	0	19991214.142453
-88.9	-15.240	0.0	0.930	0.000	0.00004	0.00000	0.00000	777	0	0	19991214.142500
-88.9	-12.700	0.0	0.930	0.000	0.00004	0.00000	0.00000	759	0	0	19991214.142506
-88.9	-10.160	0.0	0.930	0.000	0.00006	0.00000	0.00000	739	0	0	19991214.142511
-88.9	-7.620	0.0	0.924	0.000	0.00042	0.00000	0.00000	703	0	0	19991214.142517
-88.9	-6.350	0.0	0.881	0.000	0.00211	0.00000	0.00000	685	0	0	19991214.142630
-88.9	-5.080	0.0	0.789	0.000	0.00472	0.00000	0.00000	673	0	0	19991214.142523
-88.9	-4.572	0.0	0.744	0.000	0.00509	0.00000	0.00000	427	0	0	19991214.143035
-88.9	-3.810	0.0	0.660	0.000	0.00697	0.00000	0.00000	667	0	0	19991214.142607
-88.9	3.810	0.0	0.789	0.000	0.00968	0.00000	0.00000	99	0	0	19991214.142729
-88.9	4.572	0.0	0.875	0.000	0.00548	0.00000	0.00000	270	0	0	19991214.143054
-88.9	5.080	0.0	0.931	0.000	0.00562	0.00000	0.00000	496	0	0	19991214.142745
-88.9	6.350	0.0	1.012	0.000	0.00260	0.00000	0.00000	596	0	0	19991214.142757
-88.9	7.620	0.0	1.061	0.000	0.00051	0.00000	0.00000	852	0	0	19991214.142805
-88.9	10.160	0.0	1.069	0.000	0.00004	0.00000	0.00000	811	0	0	19991214.142812
-88.9	12.700	0.0	1.069	0.000	0.00004	0.00000	0.00000	834	0	0	19991214.142820
-88.9	15.240	0.0	1.066	0.000	0.00004	0.00000	0.00000	796	0	0	19991214.142828
-88.9	20.320	0.0	1.066	0.000	0.00005	0.00000	0.00000	742	0	0	19991214.142836
-88.9	25.400	0.0	1.066	0.000	0.00004	0.00000	0.00000	672	0	0	19991214.142845
-88.9	30.480	0.0	1.068	0.000	0.00008	0.00000	0.00000	590	0	0	19991214.142856
-88.9	35.560	0.0	1.070	0.000	0.00012	0.00000	0.00000	604	0	0	19991214.142909
-88.9	40.640	0.0	1.074	0.000	0.00015	0.00000	0.00000	692	0	0	19991214.142925
-88.9	45.720	0.0	1.076	0.000	0.00032	0.00000	0.00000	699	0	0	19991214.142949
-88.9	48.260	0.0	1.054	0.000	0.00158	0.00000	0.00000	508	0	0	19991214.143022
-88.9	50.800	0.0	0.909	0.000	0.00793	0.00000	0.00000	416	0	0	19991214.143007
-25.4	-20.320	0.0	0.881	0.000	0.00006	0.00000	0.00000	454	0	0	19991214.143129
-25.4	-15.240	0.0	0.880	0.000	0.00005	0.00000	0.00000	519	0	0	19991214.143136
-25.4	-12.700	0.0	0.882	0.000	0.00005	0.00000	0.00000	678	0	0	19991214.143147
-25.4	-10.160	0.0	0.882	0.000	0.00006	0.00000	0.00000	629	0	0	19991214.143155
-25.4	-7.620	0.0	0.879	0.000	0.00031	0.00000	0.00000	534	0	0	19991214.143202
-25.4	-6.350	0.0	0.849	0.000	0.00163	0.00000	0.00000	511	0	0	19991214.143216
-25.4	-5.080	0.0	0.782	0.000	0.00335	0.00000	0.00000	534	0	0	19991214.143241
-25.4	-4.572	0.0	0.754	0.000	0.00401	0.00000	0.00000	539	0	0	19991214.143228
-25.4	-3.810	0.0	0.704	0.000	0.00496	0.00000	0.00000	493	0	0	19991214.143257
-25.4	3.810	0.0	0.714	0.000	0.00804	0.00000	0.00000	615	0	0	19991214.143316
-25.4	4.572	0.0	0.781	0.000	0.00581	0.00000	0.00000	636	0	0	19991214.143329
-25.4	5.080	0.0	0.821	0.000	0.00527	0.00000	0.00000	683	0	0	19991214.143340
-25.4	6.350	0.0	0.898	0.000	0.00338	0.00000	0.00000	653	0	0	19991214.143355
-25.4	7.620	0.0	0.968	0.000	0.00114	0.00000	0.00000	700	0	0	19991214.143407
-25.4	10.160	0.0	0.997	0.000	0.00031	0.00000	0.00000	615	0	0	19991214.143418
-25.4	12.700	0.0	0.999	0.000	0.00024	0.00000	0.00000	583	0	0	19991214.143429
-25.4	15.240	0.0	1.002	0.000	0.00025	0.00000	0.00000	538	0	0	19991214.143439
-25.4	20.320	0.0	1.009	0.000	0.00017	0.00000	0.00000	458	0	0	19991214.143449
-25.4	25.400	0.0	1.022	0.000	0.00011	0.00000	0.00000	615	0	0	19991214.143500
-25.4	30.480	0.0	1.037	0.000	0.00009	0.00000	0.00000	420	0	0	19991214.143516
-25.4	35.560	0.0	1.050	0.000	0.00007	0.00000	0.00000	436	0	0	19991214.143537
-25.4	40.640	0.0	1.069	0.000	0.00015	0.00000	0.00000	326	0	0	19991214.143553
-25.4	45.720	0.0	1.097	0.000	0.00044	0.00000	0.00000	324	0	0	19991214.143613
-25.4	48.260	0.0	1.104	0.000	0.00166	0.00000	0.00000	243	0	0	19991214.143648
-25.4	50.800	0.0	1.018	0.000	0.00581	0.00000	0.00000	241	0	0	19991214.143628
0.0	-20.320	0.0	0.838	0.000	0.00016	0.00000	0.00000	13	0	0	19991214.143715
0.0	-15.240	0.0	0.828	0.000	0.00017	0.00000	0.00000	119	0	0	19991214.143724
0.0	-12.700	0.0	0.825	0.000	0.00008	0.00000	0.00000	216	0	0	19991214.143737
0.0	-10.160	0.0	0.826	0.000	0.00014	0.00000	0.00000	215	0	0	19991214.143744
0.0	-7.620	0.0	0.825	0.000	0.00011	0.00000	0.00000	159	0	0	19991214.143751
0.0	-5.080	0.0	0.791	0.000	0.00123	0.00000	0.00000	131	0	0	19991214.143757
0.0	-6.350	0.0	0.821	0.000	0.00027	0.00000	0.00000	136	0	0	19991214.143808
0.0	-3.810	0.0	0.729	0.000	0.00370	0.00000	0.00000	136	0	0	19991214.143822
0.0	-2.540	0.0	0.668	0.000	0.00480	0.00000	0.00000	165	0	0	19991214.143832
0.0	-1.270	0.0	0.572	0.000	0.00490	0.00000	0.00000	173	0	0	19991214.143851
0.0	1.270	0.0	0.213	0.000	0.01436	0.00000	0.00000	138	0	0	19991214.143911
0.0	2.540	0.0	0.392	0.000	0.01842	0.00000	0.00000	172	0	0	19991214.143927
0.0	3.810	0.0	0.535	0.000	0.01460	0.00000	0.00000	195	0	0	19991214.143948
0.0	5.080	0.0	0.647	0.000	0.00879	0.00000	0.00000	193	0	0	19991214.144000
0.0	6.350	0.0	0.749	0.000	0.00504	0.00000	0.00000	191	0	0	19991214.144012
0.0	7.620	0.0	0.808	0.000	0.00275	0.00000	0.00000	200	0	0	19991214.144020
0.0	10.160	0.0	0.874	0.000	0.00055	0.00000	0.00000	159	0	0	19991214.144026
0.0	12.700	0.0	0.883	0.000	0.00047	0.00000	0.00000	158	0	0	19991214.144033
0.0	15.240	0.0	0.889	0.000	0.00040	0.00000	0.00000	172	0	0	19991214.144039

0.0	20.320	0.0	0.909	0.000	0.00035	0.00000	0.00000	141	0	0	19991214.144044
0.0	25.400	0.0	0.920	0.000	0.00035	0.00000	0.00000	180	0	0	19991214.144050
0.0	30.480	0.0	0.935	0.000	0.00035	0.00000	0.00000	184	0	0	19991214.144055
0.0	35.560	0.0	0.953	0.000	0.00032	0.00000	0.00000	167	0	0	19991214.144101
0.0	40.640	0.0	0.968	0.000	0.00035	0.00000	0.00000	171	0	0	19991214.144105
0.0	45.720	0.0	0.991	0.000	0.00039	0.00000	0.00000	336	0	0	19991214.144115
0.0	50.800	0.0	1.000	0.000	0.00186	0.00000	0.00000	254	0	0	19991214.144132
0.0	53.340	0.0	1.017	0.000	0.01049	0.00000	0.00000	191	0	0	19991214.144156

0.0	-17.780	0.0	0.818	0.000	0.00003	0.00000	0.00000	902	0	0	19990811.143042
0.0	-15.240	0.0	0.819	0.000	0.00003	0.00000	0.00000	885	0	0	19990811.143052
0.0	-12.700	0.0	0.819	0.000	0.00003	0.00000	0.00000	884	0	0	19990811.143108
0.0	-10.160	0.0	0.820	0.000	0.00003	0.00000	0.00000	876	0	0	19990811.143116
0.0	-7.620	0.0	0.819	0.000	0.00008	0.00000	0.00000	876	0	0	19990811.143130
0.0	-5.080	0.0	0.761	0.000	0.00183	0.00000	0.00000	933	0	0	19990811.143136
0.0	-2.540	0.0	0.629	0.000	0.00355	0.00000	0.00000	991	0	0	19990811.143141
0.0	-1.270	0.0	0.529	0.000	0.00491	0.00000	0.00000	1012	0	0	19990811.143210
0.0	1.270	0.0	0.232	0.000	0.01119	0.00000	0.00000	1001	0	0	19990811.143223
0.0	2.540	0.0	0.354	0.000	0.01187	0.00000	0.00000	1006	0	0	19990811.143228
0.0	5.080	0.0	0.587	0.000	0.00712	0.00000	0.00000	1013	0	0	19990811.143233
0.0	7.620	0.0	0.751	0.000	0.00321	0.00000	0.00000	961	0	0	19990811.143252
0.0	10.160	0.0	0.838	0.000	0.00029	0.00000	0.00000	855	0	0	19990811.143241
0.0	12.700	0.0	0.851	0.000	0.00005	0.00000	0.00000	785	0	0	19990811.143305
0.0	15.240	0.0	0.860	0.000	0.00004	0.00000	0.00000	760	0	0	19990811.143312
0.0	17.780	0.0	0.867	0.000	0.00003	0.00000	0.00000	707	0	0	19990811.143326
0.0	20.320	0.0	0.874	0.000	0.00004	0.00000	0.00000	652	0	0	19990811.143333
0.0	25.400	0.0	0.889	0.000	0.00003	0.00000	0.00000	550	0	0	19990811.143342
0.0	30.480	0.0	0.903	0.000	0.00004	0.00000	0.00000	347	0	0	19990811.143354
0.0	35.560	0.0	0.916	0.000	0.00003	0.00000	0.00000	164	0	0	19990811.143406
0.0	40.640	0.0	0.926	0.000	0.00005	0.00000	0.00000	42	0	0	19990811.143419
0.0	45.720	0.0	0.907	0.000	0.00079	0.00000	0.00000	9	0	0	19990811.143441
0.0	50.800	0.0	0.876	0.000	0.00259	0.00000	0.00000	94	0	0	19990811.143514
0.0	55.880	0.0	1.125	0.000	0.00065	0.00000	0.00000	54	0	0	19990811.143543
25.4	-20.320	0.0	0.767	0.000	0.00003	0.00000	0.00000	946	0	0	19990811.143707
25.4	-15.240	0.0	0.767	0.000	0.00003	0.00000	0.00000	947	0	0	19990811.143715
25.4	-10.160	0.0	0.767	0.000	0.00003	0.00000	0.00000	974	501	483	19990811.143723
25.4	-5.080	0.0	0.754	0.000	0.00040	0.00000	0.00000	979	700	685	19990811.143730
25.4	-7.620	0.0	0.767	0.000	0.00005	0.00000	0.00000	968	644	612	19990811.143742
25.4	-2.540	0.0	0.657	0.000	0.00263	0.00000	0.00000	998	702	695	19990811.143757
25.4	0.000	0.0	0.501	0.000	0.00623	0.00000	0.00000	1006	639	636	19990811.143802
25.4	2.540	0.0	0.307	0.000	0.00505	0.00000	0.00000	1013	515	513	19990811.143808
25.4	5.080	0.0	0.320	0.000	0.00843	0.00000	0.00000	1005	460	459	19990811.143813
25.4	10.160	0.0	0.625	0.000	0.00601	0.00000	0.00000	1000	514	508	19990811.143819
25.4	15.240	0.0	0.768	0.000	0.00007	0.00000	0.00000	980	606	589	19990811.143825
25.4	20.320	0.0	0.774	0.000	0.00003	0.00000	0.00000	939	637	606	19990811.143831
25.4	25.400	0.0	0.781	0.000	0.00003	0.00000	0.00000	917	616	577	19990811.143837
25.4	30.480	0.0	0.785	0.000	0.00003	0.00000	0.00000	956	587	563	19990811.143844
25.4	35.560	0.0	0.785	0.000	0.00003	0.00000	0.00000	932	513	478	19990811.143852
25.4	40.640	0.0	0.783	0.000	0.00003	0.00000	0.00000	947	499	483	19990811.143900
25.4	45.720	0.0	0.779	0.000	0.00006	0.00000	0.00000	936	486	466	19990811.143909
25.4	50.800	0.0	0.773	0.000	0.00004	0.00000	0.00000	952	539	512	19990811.143917
25.4	55.880	0.0	0.762	0.000	0.00030	0.00000	0.00000	952	578	544	19990811.143926
25.4	60.960	0.0	0.754	0.000	0.00337	0.00000	0.00000	885	0	0	19990811.143939
25.4	63.500	0.0	0.779	0.000	0.00554	0.00000	0.00000	271	0	0	19990811.144012
25.4	66.040	0.0	1.127	0.000	0.00074	0.00000	0.00000	75	0	0	19990811.144033

38.1	-20.320	0.0	0.751	0.000	0.00005	0.00000	0.00000	1024	0	0	19990811.132920
38.1	-15.240	0.0	0.750	0.000	0.00006	0.00000	0.00000	1024	0	0	19990811.132926
38.1	-10.160	0.0	0.750	0.036	0.00005	0.00008	0.00001	1024	690	690	19990811.132931
38.1	-5.080	0.0	0.746	0.044	0.00017	0.00025	0.00001	1023	828	828	19990811.132937
38.1	-7.620	0.0	0.750	0.040	0.00007	0.00010	0.00001	1024	751	751	19990811.132952
38.1	-2.540	0.0	0.687	0.047	0.00191	0.00097	0.00058	1024	871	871	19990811.133004
38.1	0.000	0.0	0.548	0.046	0.00549	0.00260	0.00181	1024	864	864	19990811.133009
38.1	2.540	0.0	0.375	0.041	0.00631	0.00386	0.00224	1021	831	829	19990811.133015
38.1	5.080	0.0	0.278	0.033	0.00448	0.00396	-0.00017	1022	742	742	19990811.133021
38.1	7.620	0.0	0.346	0.046	0.00951	0.00349	-0.00181	1024	668	668	19990811.133033
38.1	10.160	0.0	0.495	0.072	0.01044	0.00327	-0.00173	1024	631	631	19990811.133038
38.1	15.240	0.0	0.717	0.137	0.00136	0.00073	-0.00024	1024	693	693	19990811.133043
38.1	20.320	0.0	0.743	0.154	0.00005	0.00008	0.00000	1024	807	807	19990811.133049
38.1	25.400	0.0	0.744	0.169	0.00005	0.00011	0.00001	1023	755	754	19990811.133054
38.1	30.480	0.0	0.745	0.184	0.00004	0.00007	0.00001	1023	730	730	19990811.133059
38.1	35.560	0.0	0.745	0.198	0.00005	0.00013	0.00001	1023	737	737	19990811.133105
38.1	40.640	0.0	0.744	0.214	0.00004	0.00005	0.00001	1024	638	638	19990811.133110
38.1	45.720	0.0	0.740	0.228	0.00006	0.00007	0.00000	1023	643	643	19990811.133117
38.1	50.800	0.0	0.735	0.242	0.00007	0.00012	0.00001	1023	655	655	19990811.133123

38.1	55.880	0.0	0.729	0.256	0.00010	0.00012	0.00000	1021	582	581	19990811.133129
38.1	60.960	0.0	0.723	0.273	0.00064	0.00070	-0.00017	1024	641	641	19990811.133137
38.1	66.040	0.0	0.836	0.000	0.01405	0.00000	0.00000	1021	0	0	19990811.133149
114.3	-20.320	0.0	0.653	0.000	0.00004	0.00000	0.00000	1024	0	0	19990811.133208
114.3	-15.240	0.0	0.650	0.000	0.00006	0.00000	0.00000	1024	0	0	19990811.133213
114.3	-10.160	0.0	0.649	0.004	0.00010	0.00014	0.00001	1024	672	672	19990811.133219
114.3	-7.620	0.0	0.648	0.005	0.00015	0.00023	0.00001	1024	863	863	19990811.133229
114.3	-5.080	0.0	0.648	0.007	0.00038	0.00048	0.00003	1023	846	845	19990811.133235
114.3	-2.540	0.0	0.636	0.010	0.00127	0.00131	0.00055	1024	839	839	19990811.133240
114.3	0.000	0.0	0.591	0.016	0.00353	0.00192	0.00108	1024	831	831	19990811.133246
114.3	2.540	0.0	0.493	0.020	0.00684	0.00351	0.00226	1023	819	819	19990811.133251
114.3	5.080	0.0	0.395	0.022	0.00839	0.00524	0.00325	1024	792	792	19990811.133257
114.3	7.620	0.0	0.298	0.024	0.00816	0.00553	0.00280	1023	756	755	19990811.133308
114.3	10.160	0.0	0.216	0.029	0.00808	0.00522	0.00269	1022	774	774	19990811.133315
114.3	15.240	0.0	0.074	0.012	0.00648	0.00472	0.00122	1022	795	794	19990811.133323
114.3	20.320	0.0	0.126	0.025	0.00875	0.00359	-0.00056	1022	768	767	19990811.133330
114.3	25.400	0.0	0.273	0.064	0.00996	0.00413	-0.00171	1024	749	749	19990811.133337
114.3	30.480	0.0	0.421	0.116	0.01029	0.00316	-0.00107	1024	775	775	19990811.133342
114.3	35.560	0.0	0.547	0.163	0.00528	0.00191	-0.00072	1023	737	737	19990811.133348
114.3	40.640	0.0	0.606	0.196	0.00070	0.00068	-0.00014	1024	756	756	19990811.133353
114.3	45.720	0.0	0.613	0.202	0.00011	0.00018	0.00001	1024	719	719	19990811.133358
114.3	50.800	0.0	0.610	0.205	0.00008	0.00014	0.00000	1024	729	729	19990811.133404
114.3	55.880	0.0	0.612	0.204	0.00005	0.00007	0.00001	1024	733	733	19990811.133410
114.3	60.960	0.0	0.609	0.213	0.00005	0.00010	0.00001	1024	709	709	19990811.133415
114.3	66.040	0.0	0.608	0.214	0.00004	0.00012	0.00001	1023	707	707	19990811.133422
114.3	71.120	0.0	0.604	0.218	0.00005	0.00011	0.00001	1023	660	660	19990811.133428
114.3	76.200	0.0	0.602	0.222	0.00006	0.00008	0.00001	1024	690	690	19990811.133434
114.3	81.280	0.0	0.601	0.226	0.00010	0.00014	0.00001	1024	649	649	19990811.133441
114.3	86.360	0.0	0.603	0.231	0.00096	0.00092	-0.00030	1023	715	714	19990811.133449
114.3	91.440	0.0	0.686	0.270	0.00812	0.00308	-0.00073	1023	696	696	19990811.133457
114.3	96.520	0.0	0.838	0.000	0.01289	0.00000	0.00000	1024	0	0	19990811.133508
152.4	-20.320	0.0	0.628	0.000	0.00012	0.00000	0.00000	1014	0	0	19990811.140138
152.4	-15.240	0.0	0.627	0.000	0.00014	0.00000	0.00000	1017	0	0	19990811.140143
152.4	-10.160	0.0	0.627	-0.007	0.00040	0.00046	0.00001	1019	528	528	19990811.140148
152.4	-5.080	0.0	0.609	-0.007	0.00202	0.00154	0.00055	1020	762	761	19990811.140153
152.4	-2.540	0.0	0.580	0.000	0.00404	0.00270	0.00138	1023	753	753	19990811.140159
152.4	0.000	0.0	0.519	0.002	0.00733	0.00427	0.00254	1022	729	728	19990811.140204
152.4	2.540	0.0	0.427	0.012	0.01365	0.00667	0.00433	1015	689	689	19990811.140210
152.4	5.080	0.0	0.356	0.017	0.01386	0.00673	0.00397	1017	700	700	19990811.140216
152.4	10.160	0.0	0.209	0.020	0.01436	0.00820	0.00383	1014	697	696	19990811.140222
152.4	15.240	0.0	0.079	0.010	0.01279	0.00748	0.00424	1012	695	694	19990811.140231
152.4	20.320	0.0	-0.024	-0.001	0.00937	0.00551	0.00200	1010	763	761	19990811.140241
152.4	25.400	0.0	-0.039	0.000	0.00755	0.00444	0.00018	1000	754	752	19990811.140251
152.4	30.480	0.0	0.017	0.013	0.01097	0.00475	-0.00011	1012	739	738	19990811.140259
152.4	35.560	0.0	0.164	0.047	0.01432	0.00451	-0.00142	1018	698	698	19990811.140306
152.4	40.640	0.0	0.275	0.079	0.01445	0.00507	-0.00134	1018	705	705	19990811.140313
152.4	45.720	0.0	0.413	0.122	0.01179	0.00383	-0.00053	1020	702	702	19990811.140319
152.4	50.800	0.0	0.505	0.167	0.01001	0.00274	-0.00050	1018	659	659	19990811.140324
152.4	55.880	0.0	0.569	0.196	0.00255	0.00129	-0.00046	1017	668	668	19990811.140330
152.4	60.960	0.0	0.585	0.203	0.00055	0.00042	-0.00001	1017	651	649	19990811.140336
152.4	66.040	0.0	0.585	0.205	0.00019	0.00023	-0.00001	1019	616	616	19990811.140342
152.4	71.120	0.0	0.582	0.206	0.00009	0.00014	0.00000	1018	619	619	19990811.140349
152.4	76.200	0.0	0.580	0.208	0.00009	0.00011	0.00001	1021	658	658	19990811.140356
152.4	81.280	0.0	0.576	0.210	0.00005	0.00014	0.00002	1012	603	600	19990811.140404
152.4	86.360	0.0	0.572	0.209	0.00006	0.00010	0.00001	1018	637	637	19990811.140415
152.4	91.440	0.0	0.569	0.212	0.00008	0.00010	0.00002	1004	623	623	19990811.140426
152.4	96.520	0.0	0.566	0.216	0.00018	0.00026	-0.00001	995	612	612	19990811.140444
152.4	101.600	0.0	0.587	0.227	0.00287	0.00142	-0.00048	966	647	645	19990811.140509
152.4	106.680	0.0	0.695	0.269	0.00982	0.00443	-0.00057	997	683	683	19990811.140528
152.4	111.760	0.0	0.844	0.000	0.01323	0.00000	0.00000	1008	0	0	19990811.140542
190.5	-20.320	0.0	0.611	0.000	0.00015	0.00000	0.00000	1024	0	0	19990811.133528
190.5	-15.240	0.0	0.611	0.000	0.00030	0.00000	0.00000	1024	0	0	19990811.133535
190.5	-10.160	0.0	0.609	-0.010	0.00100	0.00120	0.00042	1023	689	688	19990811.133541
190.5	-5.080	0.0	0.590	-0.003	0.00312	0.00221	0.00107	1024	898	898	19990811.133546
190.5	-2.540	0.0	0.572	0.004	0.00364	0.00262	0.00123	1024	893	893	19990811.133552
190.5	0.000	0.0	0.508	0.007	0.00810	0.00509	0.00267	1023	882	882	19990811.133558
190.5	2.540	0.0	0.445	0.012	0.01245	0.00643	0.00387	1024	866	866	19990811.133604
190.5	5.080	0.0	0.400	0.017	0.01110	0.00716	0.00416	1022	819	819	19990811.133609
190.5	10.160	0.0	0.274	0.019	0.01242	0.00755	0.00384	1024	772	772	19990811.133616
190.5	15.240	0.0	0.145	0.023	0.01434	0.00970	0.00491	1022	811	810	19990811.133624
190.5	20.320	0.0	0.039	0.001	0.01164	0.00741	0.00384	1021	823	822	19990811.133633
190.5	25.400	0.0	-0.037	-0.006	0.00736	0.00582	0.00173	1024	823	823	19990811.133642
190.5	30.480	0.0	-0.052	-0.007	0.00674	0.00486	-0.00009	1021	846	846	19990811.133651

190.5	35.560	0.0	-0.017	-0.002	0.00985	0.00538	-0.00082	1023	805	804	19990811.133700
190.5	40.640	0.0	0.072	0.019	0.01266	0.00537	-0.00086	1024	757	757	19990811.133708
190.5	45.720	0.0	0.175	0.041	0.01399	0.00582	-0.00191	1021	702	702	19990811.133716
190.5	50.800	0.0	0.284	0.064	0.01341	0.00559	-0.00134	1022	715	715	19990811.133722
190.5	55.880	0.0	0.403	0.103	0.01153	0.00377	-0.00151	1024	712	712	19990811.133728
190.5	60.960	0.0	0.490	0.131	0.00763	0.00265	-0.00078	1024	721	721	19990811.133733
190.5	66.040	0.0	0.554	0.157	0.00299	0.00143	-0.00048	1024	711	711	19990811.133739
190.5	71.120	0.0	0.571	0.164	0.00045	0.00046	-0.00006	1024	705	705	19990811.133744
190.5	76.200	0.0	0.567	0.166	0.00018	0.00025	0.00001	1023	707	707	19990811.133750
190.5	81.280	0.0	0.561	0.166	0.00012	0.00016	0.00001	1024	702	702	19990811.133756
190.5	86.360	0.0	0.555	0.167	0.00008	0.00016	0.00001	1023	673	673	19990811.133802
190.5	91.440	0.0	0.549	0.169	0.00008	0.00013	0.00001	1024	685	685	19990811.133808
190.5	96.520	0.0	0.542	0.171	0.00006	0.00010	0.00001	1024	678	678	19990811.133815
190.5	101.600	0.0	0.535	0.175	0.00011	0.00013	0.00002	1024	674	674	19990811.133822
190.5	106.680	0.0	0.528	0.178	0.00015	0.00016	0.00000	1021	689	688	19990811.133830
190.5	111.760	0.0	0.528	0.186	0.00070	0.00058	-0.00002	1024	703	703	19990811.133838
190.5	116.840	0.0	0.582	0.211	0.00484	0.00191	-0.00027	1023	708	707	19990811.133846
190.5	121.920	0.0	0.679	0.253	0.00829	0.00293	-0.00038	1024	730	730	19990811.133856
190.5	127.000	0.0	0.781	0.000	0.00820	0.00000	0.00000	1024	0	0	19990811.133907
266.7	-20.320	0.0	0.578	0.000	0.00137	0.00000	0.00000	1024	0	0	19990811.133933
266.7	-15.240	0.0	0.575	0.000	0.00175	0.00000	0.00000	1024	0	0	19990811.133939
266.7	-10.160	0.0	0.554	0.005	0.00440	0.00388	0.00154	1024	741	741	19990811.133945
266.7	-5.080	0.0	0.509	0.011	0.00847	0.00553	0.00319	1023	877	876	19990811.133951
266.7	-2.540	0.0	0.474	0.016	0.00976	0.00651	0.00316	1023	865	865	19990811.133957
266.7	0.000	0.0	0.448	0.024	0.01192	0.00826	0.00390	1023	883	883	19990811.134003
266.7	2.540	0.0	0.429	0.026	0.01245	0.00829	0.00479	1024	870	870	19990811.134010
266.7	5.080	0.0	0.368	0.031	0.01504	0.01068	0.00563	1022	833	833	19990811.134016
266.7	10.160	0.0	0.278	0.027	0.01640	0.01233	0.00674	1024	838	838	19990811.134023
266.7	15.240	0.0	0.212	0.042	0.01515	0.01319	0.00656	1023	815	815	19990811.134031
266.7	20.320	0.0	0.119	0.028	0.01591	0.01446	0.00707	1024	834	834	19990811.134039
266.7	25.400	0.0	0.062	0.021	0.01189	0.01381	0.00516	1022	860	860	19990811.134048
266.7	30.480	0.0	0.000	0.010	0.01017	0.01104	0.00276	1023	850	850	19990811.134057
266.7	35.560	0.0	-0.026	0.009	0.00875	0.01106	0.00173	1020	835	834	19990811.134107
266.7	40.640	0.0	-0.023	-0.007	0.00773	0.01197	-0.00040	1023	835	835	19990811.134117
266.7	45.720	0.0	0.000	-0.003	0.00926	0.01025	-0.00245	1022	786	786	19990811.134127
266.7	50.800	0.0	0.055	-0.002	0.01029	0.00964	-0.00291	1019	774	772	19990811.134136
266.7	55.880	0.0	0.122	-0.006	0.01302	0.01032	-0.00420	1023	738	738	19990811.134144
266.7	60.960	0.0	0.218	-0.007	0.01229	0.00917	-0.00380	1024	706	706	19990811.134151
266.7	66.040	0.0	0.291	-0.003	0.01296	0.00832	-0.00479	1024	708	708	19990811.134157
266.7	71.120	0.0	0.377	0.008	0.01162	0.00669	-0.00312	1024	712	712	19990811.134203
266.7	76.200	0.0	0.459	0.019	0.00827	0.00512	-0.00217	1022	714	714	19990811.134209
266.7	81.280	0.0	0.519	0.036	0.00519	0.00325	-0.00166	1022	727	727	19990811.134215
266.7	86.360	0.0	0.541	0.036	0.00282	0.00255	-0.00087	1024	744	744	19990811.134221
266.7	91.440	0.0	0.546	0.039	0.00204	0.00178	-0.00053	1024	758	758	19990811.134226
266.7	96.520	0.0	0.546	0.039	0.00070	0.00075	-0.00005	1021	754	753	19990811.134233
266.7	101.600	0.0	0.538	0.038	0.00051	0.00044	0.00002	1023	737	736	19990811.134239
266.7	106.680	0.0	0.535	0.036	0.00027	0.00026	0.00002	1024	705	705	19990811.134246
266.7	111.760	0.0	0.526	0.033	0.00027	0.00023	0.00004	1023	717	717	19990811.134253
266.7	116.840	0.0	0.521	0.031	0.00021	0.00018	0.00003	1024	702	702	19990811.134301
266.7	121.920	0.0	0.518	0.027	0.00030	0.00019	0.00003	1024	756	756	19990811.134310
266.7	127.000	0.0	0.522	0.026	0.00071	0.00075	-0.00001	1024	788	788	19990811.134319
266.7	132.080	0.0	0.584	0.024	0.00317	0.00174	-0.00076	1024	173	173	19990811.134329
266.7	137.160	0.0	0.687	0.000	0.00456	0.00000	0.00000	1024	0	0	19990811.134343
266.7	142.240	0.0	0.793	0.000	0.00387	0.00000	0.00000	1018	0	0	19990811.134413
304.8	-20.320	0.0	0.557	0.000	0.00280	0.00000	0.00000	1021	0	0	19990811.140623
304.8	-15.240	0.0	0.539	0.000	0.00416	0.00000	0.00000	1019	0	0	19990811.140628
304.8	-10.160	0.0	0.511	0.013	0.00675	0.00568	0.00238	1020	751	751	19990811.140634
304.8	-5.080	0.0	0.466	0.033	0.01022	0.00775	0.00330	1022	873	872	19990811.140639
304.8	-2.540	0.0	0.422	0.036	0.01444	0.00982	0.00556	1021	884	883	19990811.140645
304.8	0.000	0.0	0.409	0.039	0.01224	0.01042	0.00546	1018	875	874	19990811.140650
304.8	2.540	0.0	0.371	0.047	0.01437	0.01097	0.00497	1017	860	859	19990811.140656
304.8	5.080	0.0	0.360	0.048	0.01279	0.01310	0.00535	1015	864	863	19990811.140703
304.8	10.160	0.0	0.273	0.041	0.01573	0.01645	0.00728	1018	842	842	19990811.140709
304.8	15.240	0.0	0.229	0.046	0.01627	0.01581	0.00646	1019	865	864	19990811.140717
304.8	20.320	0.0	0.172	0.054	0.01499	0.01682	0.00613	1011	861	860	19990811.140724
304.8	25.400	0.0	0.117	0.060	0.01352	0.01804	0.00556	1016	837	834	19990811.140732
304.8	30.480	0.0	0.040	0.026	0.01174	0.01922	0.00412	1011	846	846	19990811.140740
304.8	35.560	0.0	0.024	0.021	0.01084	0.01668	0.00311	1014	836	834	19990811.140749
304.8	40.640	0.0	0.015	0.017	0.00956	0.01625	0.00060	1006	825	823	19990811.140759
304.8	45.720	0.0	0.017	0.001	0.01023	0.01596	-0.00181	1012	823	820	19990811.140810
304.8	50.800	0.0	0.050	-0.007	0.01134	0.01561	-0.00387	1001	789	789	19990811.140824
304.8	55.880	0.0	0.097	-0.030	0.01358	0.01565	-0.00638	1003	741	740	19990811.140834
304.8	60.960	0.0	0.168	-0.028	0.01370	0.01438	-0.00602	1013	738	738	19990811.140844
304.8	66.040	0.0	0.233	-0.032	0.01464	0.01388	-0.00715	1010	765	765	19990811.140855
304.8	71.120	0.0	0.303	-0.032	0.01251	0.01284	-0.00701	1008	719	717	19990811.140907

304.8	76.200	0.0	0.371	-0.028	0.01209	0.00885	-0.00426	1010	672	671	19990811.140920
304.8	81.280	0.0	0.448	-0.016	0.00947	0.00757	-0.00405	996	681	680	19990811.140936
304.8	86.360	0.0	0.495	-0.010	0.00731	0.00543	-0.00248	1020	740	740	19990811.140943
304.8	91.440	0.0	0.523	0.002	0.00472	0.00453	-0.00174	1021	720	720	19990811.140951
304.8	96.520	0.0	0.546	0.002	0.00168	0.00198	-0.00034	1019	711	711	19990811.140957
304.8	101.600	0.0	0.548	0.002	0.00154	0.00129	-0.00022	1020	717	717	19990811.141003
304.8	106.680	0.0	0.547	0.004	0.00123	0.00103	0.00009	1014	730	725	19990811.141008
304.8	111.760	0.0	0.541	0.007	0.00065	0.00057	0.00005	1019	715	715	19990811.141014
304.8	116.840	0.0	0.539	0.007	0.00074	0.00079	-0.00007	1010	694	692	19990811.141020
304.8	121.920	0.0	0.536	0.007	0.00053	0.00029	0.00004	1012	718	718	19990811.141027
304.8	127.000	0.0	0.544	0.009	0.00085	0.00069	-0.00010	1018	752	751	19990811.141034
304.8	132.080	0.0	0.595	0.004	0.00240	0.00179	-0.00073	1012	129	128	19990811.141041
304.8	137.160	0.0	0.692	0.000	0.00368	0.00000	0.00000	1010	0	0	19990811.141050
304.8	142.240	0.0	0.803	0.000	0.00330	0.00000	0.00000	1014	0	0	19990811.141103
342.9	-20.320	0.0	0.535	0.000	0.00413	0.00000	0.00000	1024	0	0	19990811.134443
342.9	-15.240	0.0	0.516	0.000	0.00577	0.00000	0.00000	1024	0	0	19990811.134452
342.9	-10.160	0.0	0.486	0.014	0.00834	0.00712	0.00253	1024	783	783	19990811.134500
342.9	-5.080	0.0	0.454	0.024	0.00891	0.00846	0.00366	1024	923	923	19990811.134507
342.9	-2.540	0.0	0.432	0.026	0.01030	0.00954	0.00430	1024	909	909	19990811.134514
342.9	0.000	0.0	0.400	0.032	0.01192	0.00992	0.00483	1023	910	909	19990811.134522
342.9	2.540	0.0	0.391	0.032	0.01222	0.01139	0.00520	1023	917	917	19990811.134529
342.9	5.080	0.0	0.370	0.037	0.01214	0.01282	0.00539	1024	911	911	19990811.134537
342.9	10.160	0.0	0.317	0.045	0.01336	0.01295	0.00587	1024	889	889	19990811.134545
342.9	15.240	0.0	0.253	0.046	0.01342	0.01487	0.00643	1023	882	881	19990811.134554
342.9	20.320	0.0	0.215	0.050	0.01386	0.01668	0.00713	1024	931	931	19990811.134604
342.9	25.400	0.0	0.161	0.035	0.01190	0.02151	0.00590	1023	887	886	19990811.134615
342.9	30.480	0.0	0.129	0.033	0.01126	0.02161	0.00452	1024	871	871	19990811.134625
342.9	35.560	0.0	0.101	0.014	0.00890	0.02094	0.00232	1022	879	879	19990811.134637
342.9	40.640	0.0	0.096	-0.004	0.00969	0.02221	-0.00181	1021	862	861	19990811.134648
342.9	45.720	0.0	0.118	-0.024	0.00969	0.02227	-0.00444	1023	847	846	19990811.134659
342.9	50.800	0.0	0.136	-0.039	0.01042	0.01781	-0.00532	1022	824	824	19990811.134709
342.9	55.880	0.0	0.185	-0.058	0.01201	0.01662	-0.00706	1024	770	770	19990811.134719
342.9	60.960	0.0	0.227	-0.048	0.01309	0.01650	-0.00778	1024	795	795	19990811.134727
342.9	66.040	0.0	0.280	-0.057	0.01106	0.01435	-0.00684	1024	743	743	19990811.134735
342.9	71.120	0.0	0.327	-0.056	0.01062	0.01151	-0.00599	1023	743	743	19990811.134743
342.9	76.200	0.0	0.379	-0.048	0.01062	0.00988	-0.00597	1024	739	739	19990811.134750
342.9	81.280	0.0	0.423	-0.036	0.01019	0.00952	-0.00588	1024	732	732	19990811.134757
342.9	86.360	0.0	0.465	-0.022	0.00800	0.00776	-0.00435	1024	746	746	19990811.134804
342.9	91.440	0.0	0.494	-0.019	0.00650	0.00707	-0.00312	1024	716	716	19990811.134810
342.9	96.520	0.0	0.521	-0.012	0.00447	0.00468	-0.00189	1024	703	703	19990811.134817
342.9	101.600	0.0	0.535	-0.007	0.00293	0.00249	-0.00071	1024	737	737	19990811.134824
342.9	106.680	0.0	0.540	0.002	0.00218	0.00199	-0.00024	1024	734	734	19990811.134831
342.9	111.760	0.0	0.539	-0.001	0.00148	0.00135	0.00009	1024	738	738	19990811.134841
342.9	116.840	0.0	0.540	-0.002	0.00125	0.00068	0.00001	1024	701	701	19990811.134851
342.9	121.920	0.0	0.538	0.000	0.00123	0.00054	0.00001	1024	702	702	19990811.134902
342.9	127.000	0.0	0.543	0.003	0.00114	0.00076	-0.00003	1024	832	832	19990811.134913
342.9	132.080	0.0	0.603	-0.009	0.00279	0.00187	-0.00103	1024	158	158	19990811.134925
342.9	137.160	0.0	0.689	0.000	0.00365	0.00000	0.00000	1014	0	0	19990811.134936
342.9	142.240	0.0	0.795	0.000	0.00333	0.00000	0.00000	1022	0	0	19990811.135000
419.1	-20.320	0.0	0.467	0.000	0.00904	0.00000	0.00000	1022	0	0	19990811.135028
419.1	-15.240	0.0	0.453	0.000	0.00920	0.00000	0.00000	1004	0	0	19990811.135037
419.1	-10.160	0.0	0.426	0.006	0.01057	0.00889	0.00383	999	677	676	19990811.135044
419.1	-5.080	0.0	0.400	0.015	0.01157	0.00944	0.00409	1014	851	851	19990811.135052
419.1	-2.540	0.0	0.378	0.008	0.01112	0.01058	0.00446	1014	884	883	19990811.135059
419.1	0.000	0.0	0.373	0.017	0.01035	0.01007	0.00425	1012	852	851	19990811.135107
419.1	2.540	0.0	0.359	0.025	0.00998	0.01102	0.00387	1012	889	888	19990811.135115
419.1	5.080	0.0	0.343	0.024	0.01115	0.01223	0.00449	1017	848	848	19990811.135122
419.1	10.160	0.0	0.308	0.022	0.01004	0.01483	0.00507	1013	843	842	19990811.135130
419.1	15.240	0.0	0.273	0.036	0.01085	0.01614	0.00466	1016	846	846	19990811.135138
419.1	20.320	0.0	0.260	0.018	0.00946	0.01945	0.00449	1010	853	851	19990811.135147
419.1	25.400	0.0	0.230	0.018	0.00855	0.01850	0.00333	1011	851	851	19990811.135157
419.1	30.480	0.0	0.202	0.011	0.00871	0.01865	0.00168	1002	846	845	19990811.135207
419.1	35.560	0.0	0.195	-0.002	0.00803	0.01804	0.00137	1020	840	839	19990811.135215
419.1	40.640	0.0	0.189	0.006	0.00783	0.01959	-0.00050	1014	810	810	19990811.135223
419.1	45.720	0.0	0.202	-0.007	0.00788	0.01852	-0.00246	1011	800	797	19990811.135230
419.1	50.800	0.0	0.221	-0.022	0.00770	0.02023	-0.00443	1018	826	825	19990811.135238
419.1	55.880	0.0	0.242	-0.028	0.00836	0.01772	-0.00545	1020	825	825	19990811.135246
419.1	60.960	0.0	0.270	-0.028	0.00830	0.01639	-0.00555	1016	811	811	19990811.135254
419.1	66.040	0.0	0.303	-0.043	0.00855	0.01414	-0.00551	1019	788	788	19990811.135301
419.1	71.120	0.0	0.325	-0.034	0.00956	0.01431	-0.00631	1022	728	728	19990811.135309
419.1	76.200	0.0	0.357	-0.024	0.00936	0.01226	-0.00569	1016	735	735	19990811.135316
419.1	81.280	0.0	0.399	-0.030	0.01007	0.01167	-0.00599	1020	691	691	19990811.135323
419.1	86.360	0.0	0.433	-0.028	0.00878	0.00884	-0.00456	1021	750	750	19990811.135330

419.1	91.440	0.0	0.461	-0.017	0.00705	0.00794	-0.00366	1016	697	697	19990811.135337
419.1	96.520	0.0	0.481	-0.014	0.00652	0.00612	-0.00299	1018	690	689	19990811.135343
419.1	101.600	0.0	0.501	-0.003	0.00561	0.00474	-0.00203	1018	682	682	19990811.135350
419.1	106.680	0.0	0.510	0.007	0.00565	0.00476	-0.00209	1015	679	679	19990811.135358
419.1	111.760	0.0	0.518	0.006	0.00359	0.00281	-0.00097	1013	656	656	19990811.135408
419.1	116.840	0.0	0.522	0.003	0.00295	0.00256	-0.00055	1012	654	654	19990811.135417
419.1	121.920	0.0	0.526	0.003	0.00262	0.00120	-0.00025	1014	746	745	19990811.135425
419.1	127.000	0.0	0.547	0.003	0.00201	0.00124	-0.00034	1015	770	770	19990811.135434
419.1	132.080	0.0	0.596	-0.002	0.00283	0.00296	-0.00086	994	57	57	19990811.135451
419.1	137.160	0.0	0.675	0.000	0.00377	0.00000	0.00000	846	0	0	19990811.135509
419.1	142.240	0.0	0.766	0.000	0.00345	0.00000	0.00000	432	0	0	19990811.135524
495.3	-20.320	0.0	0.459	0.000	0.00731	0.00000	0.00000	908	0	0	19990811.135551
495.3	-15.240	0.0	0.436	0.000	0.00755	0.00000	0.00000	941	0	0	19990811.135559
495.3	-10.160	0.0	0.428	0.011	0.00702	0.00651	0.00199	959	672	672	19990811.135605
495.3	-5.080	0.0	0.398	0.016	0.00766	0.00809	0.00238	988	830	829	19990811.135611
495.3	-2.540	0.0	0.388	0.010	0.00821	0.00920	0.00339	996	822	822	19990811.135616
495.3	0.000	0.0	0.377	0.017	0.00839	0.00849	0.00264	1009	851	849	19990811.135622
495.3	2.540	0.0	0.363	0.010	0.00741	0.00982	0.00234	1005	817	817	19990811.135628
495.3	5.080	0.0	0.360	0.022	0.00819	0.00915	0.00274	1003	803	802	19990811.135634
495.3	10.160	0.0	0.337	0.022	0.00826	0.01076	0.00290	1009	814	812	19990811.135640
495.3	15.240	0.0	0.320	0.020	0.00694	0.01269	0.00293	1001	784	781	19990811.135646
495.3	20.320	0.0	0.299	0.030	0.00575	0.01294	0.00209	999	785	781	19990811.135652
495.3	25.400	0.0	0.289	0.032	0.00716	0.01314	0.00173	1013	761	760	19990811.135657
495.3	30.480	0.0	0.267	0.031	0.00587	0.01209	0.00172	999	757	756	19990811.135703
495.3	35.560	0.0	0.263	0.003	0.00582	0.01385	-0.00021	1007	772	769	19990811.135709
495.3	40.640	0.0	0.268	0.004	0.00587	0.01509	0.00003	1003	747	747	19990811.135716
495.3	45.720	0.0	0.270	0.006	0.00533	0.01517	-0.00115	995	777	773	19990811.135722
495.3	50.800	0.0	0.276	0.007	0.00620	0.01564	-0.00185	993	744	743	19990811.135728
495.3	55.880	0.0	0.295	-0.002	0.00603	0.01364	-0.00271	995	723	721	19990811.135734
495.3	60.960	0.0	0.305	-0.012	0.00754	0.01292	-0.00431	1003	724	722	19990811.135740
495.3	66.040	0.0	0.326	-0.006	0.00725	0.01256	-0.00420	999	732	732	19990811.135747
495.3	71.120	0.0	0.358	-0.015	0.00788	0.01220	-0.00487	998	691	689	19990811.135753
495.3	76.200	0.0	0.365	-0.005	0.00791	0.01205	-0.00491	997	726	725	19990811.135800
495.3	81.280	0.0	0.394	-0.003	0.00855	0.01055	-0.00427	1009	702	701	19990811.135806
495.3	86.360	0.0	0.424	-0.022	0.00736	0.00738	-0.00318	1011	706	705	19990811.135811
495.3	91.440	0.0	0.428	-0.016	0.00716	0.00725	-0.00310	1003	684	681	19990811.135816
495.3	96.520	0.0	0.450	0.002	0.00783	0.00750	-0.00294	1014	660	660	19990811.135821
495.3	101.600	0.0	0.471	-0.002	0.00619	0.00623	-0.00244	1011	654	654	19990811.135827
495.3	106.680	0.0	0.488	0.007	0.00494	0.00507	-0.00164	1007	673	673	19990811.135832
495.3	111.760	0.0	0.505	0.007	0.00518	0.00415	-0.00151	1002	676	673	19990811.135838
495.3	116.840	0.0	0.510	0.012	0.00387	0.00398	-0.00101	1003	671	664	19990811.135844
495.3	121.920	0.0	0.517	0.010	0.00424	0.00238	-0.00048	1012	734	734	19990811.135849
495.3	127.000	0.0	0.548	0.011	0.00273	0.00185	-0.00053	1006	729	726	19990811.135855
495.3	132.080	0.0	0.597	-0.001	0.00402	0.00332	-0.00096	1000	63	61	19990811.135902
495.3	137.160	0.0	0.667	0.000	0.00431	0.00000	0.00000	994	0	0	19990811.135909
495.3	142.240	0.0	0.748	0.000	0.00352	0.00000	0.00000	996	0	0	19990811.135918
190.5	-20.320	101.6	0.613	0.000	0.00024	0.00000	0.00000	1022	0	0	19990811.141140
190.5	-15.240	101.6	0.613	0.000	0.00049	0.00000	0.00000	1022	0	0	19990811.141146
190.5	-10.160	101.6	0.602	0.000	0.00270	0.00000	0.00000	1019	0	0	19990811.141152
190.5	-5.080	101.6	0.538	-0.006	0.00966	0.00560	0.00394	1022	567	567	19990811.141158
190.5	-2.540	101.6	0.508	0.011	0.01066	0.00548	0.00317	1019	802	801	19990811.141203
190.5	0.000	101.6	0.460	0.009	0.01182	0.00653	0.00370	1016	818	816	19990811.141209
190.5	2.540	101.6	0.405	0.021	0.01329	0.00774	0.00469	1011	800	795	19990811.141214
190.5	5.080	101.6	0.334	0.018	0.01422	0.00899	0.00520	1016	763	763	19990811.141221
190.5	10.160	101.6	0.212	0.018	0.01548	0.01101	0.00644	1012	758	755	19990811.141227
190.5	15.240	101.6	0.113	0.014	0.01251	0.00925	0.00411	1002	751	748	19990811.141233
190.5	20.320	101.6	0.024	0.007	0.00948	0.00705	0.00257	1011	807	804	19990811.141241
190.5	25.400	101.6	-0.006	-0.007	0.00734	0.00524	0.00062	1002	820	816	19990811.141248
190.5	30.480	101.6	0.012	0.007	0.00850	0.00502	-0.00030	1001	770	767	19990811.141255
190.5	35.560	101.6	0.080	0.008	0.01233	0.00605	-0.00235	1002	755	750	19990811.141301
190.5	40.640	101.6	0.165	0.021	0.01533	0.00709	-0.00160	1014	723	722	19990811.141307
190.5	45.720	101.6	0.250	0.043	0.01367	0.00612	-0.00240	1009	711	709	19990811.141313
190.5	50.800	101.6	0.367	0.080	0.01279	0.00461	-0.00132	1019	731	729	19990811.141319
190.5	55.880	101.6	0.481	0.115	0.00890	0.00335	-0.00091	1017	727	727	19990811.141324
190.5	60.960	101.6	0.525	0.135	0.00730	0.00245	-0.00065	1015	725	721	19990811.141330
190.5	66.040	101.6	0.568	0.155	0.00311	0.00141	-0.00057	1017	720	718	19990811.141336
190.5	71.120	101.6	0.575	0.155	0.00036	0.00044	0.00001	1018	700	698	19990811.141341
190.5	76.200	101.6	0.570	0.159	0.00023	0.00033	0.00000	1014	747	745	19990811.141347
190.5	81.280	101.6	0.567	0.165	0.00017	0.00028	0.00002	1018	664	662	19990811.141353
190.5	86.360	101.6	0.561	0.164	0.00010	0.00016	0.00003	1015	640	638	19990811.141359
190.5	91.440	101.6	0.555	0.166	0.00011	0.00027	0.00002	1016	626	626	19990811.141405
190.5	96.520	101.6	0.545	0.165	0.00011	0.00010	0.00001	1022	604	603	19990811.141412
190.5	101.600	101.6	0.539	0.171	0.00010	0.00015	0.00002	1019	624	623	19990811.141419
190.5	106.680	101.6	0.531	0.174	0.00016	0.00018	0.00003	1016	643	640	19990811.141427

190.5	111.760	101.6	0.523	0.180	0.00051	0.00037	0.00000	1011	664	658	19990811.141436
190.5	116.840	101.6	0.556	0.200	0.00334	0.00141	-0.00024	1015	674	668	19990811.141447
190.5	121.920	101.6	0.657	0.000	0.00787	0.00000	0.00000	1019	0	0	19990811.141501
190.5	127.000	101.6	0.755	0.000	0.00762	0.00000	0.00000	1016	0	0	19990811.141514

190.5	-20.320	-101.6	0.609	0.000	0.00011	0.00000	0.00000	1024	0	0	19990811.141807
190.5	-15.240	-101.6	0.609	0.000	0.00020	0.00024	0.00001	1024	741	741	19990811.141813
190.5	-10.160	-101.6	0.609	0.002	0.00056	0.00079	0.00006	1024	904	904	19990811.141819
190.5	-5.080	-101.6	0.595	0.002	0.00202	0.00211	0.00087	1024	905	905	19990811.141825
190.5	-2.540	-101.6	0.563	0.005	0.00486	0.00367	0.00176	1024	873	873	19990811.141831
190.5	0.000	-101.6	0.531	0.011	0.00627	0.00409	0.00221	1024	886	886	19990811.141836
190.5	2.540	-101.6	0.466	0.014	0.01021	0.00650	0.00421	1022	878	878	19990811.141842
190.5	5.080	-101.6	0.385	0.017	0.01149	0.00824	0.00441	1023	820	820	19990811.141848
190.5	10.160	-101.6	0.284	0.026	0.01223	0.00818	0.00440	1023	854	854	19990811.141855
190.5	15.240	-101.6	0.147	0.017	0.01038	0.00734	0.00309	1018	841	840	19990811.141902
190.5	20.320	-101.6	0.055	0.009	0.00823	0.00652	0.00253	1021	891	891	19990811.141911
190.5	25.400	-101.6	0.034	0.004	0.00641	0.00516	0.00050	1024	906	906	19990811.141919
190.5	30.480	-101.6	0.063	0.008	0.00772	0.00436	-0.00027	1021	891	889	19990811.141928
190.5	35.560	-101.6	0.136	0.013	0.00900	0.00416	-0.00153	1021	865	864	19990811.141935
190.5	40.640	-101.6	0.220	0.034	0.01007	0.00401	-0.00173	1022	850	849	19990811.141942
190.5	45.720	-101.6	0.334	0.063	0.01136	0.00478	-0.00148	1023	863	862	19990811.141948
190.5	50.800	-101.6	0.419	0.089	0.00916	0.00338	-0.00109	1024	882	882	19990811.141955
190.5	55.880	-101.6	0.505	0.122	0.00571	0.00241	-0.00048	1022	850	850	19990811.142001
190.5	60.960	-101.6	0.563	0.142	0.00230	0.00112	-0.00024	1023	878	878	19990811.142006
190.5	66.040	-101.6	0.575	0.153	0.00086	0.00066	-0.00023	1024	867	867	19990811.142012
190.5	71.120	-101.6	0.574	0.156	0.00021	0.00027	-0.00004	1024	868	868	19990811.142018
190.5	76.200	-101.6	0.570	0.160	0.00011	0.00012	0.00003	1024	863	863	19990811.142024
190.5	81.280	-101.6	0.562	0.159	0.00008	0.00008	0.00001	1024	844	844	19990811.142030
190.5	86.360	-101.6	0.556	0.161	0.00006	0.00006	0.00001	1024	842	842	19990811.142037
190.5	91.440	-101.6	0.549	0.163	0.00005	0.00003	0.00001	1024	858	858	19990811.142043
190.5	96.520	-101.6	0.542	0.166	0.00005	0.00005	0.00001	1023	824	824	19990811.142052
190.5	101.600	-101.6	0.535	0.169	0.00007	0.00005	0.00001	1024	812	812	19990811.142101
190.5	106.680	-101.6	0.528	0.174	0.00008	0.00008	0.00002	1024	828	828	19990811.142112
190.5	111.760	-101.6	0.520	0.179	0.00023	0.00021	0.00001	1024	786	786	19990811.142124
190.5	116.840	-101.6	0.542	0.193	0.00229	0.00103	-0.00008	1018	765	763	19990811.142139
190.5	121.920	-101.6	0.618	0.233	0.00611	0.00173	-0.00023	1017	738	738	19990811.142148
190.5	127.000	-101.6	0.708	0.275	0.00634	0.00216	-0.00004	1013	736	735	19990811.142158
190.5	132.080	-101.6	0.750	0.000	0.00425	0.00000	0.00000	1002	0	0	19990811.142209