REGIONALIZED EARTH MODELS FROM LINEAR PROGRAMMING METHODS

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ABSTRACT

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This study is concerned with the development of possible models of the internal structure of the earth consistent with a given set of observed data. A two stage linear programming procedure was used together with an assumed parameterization to obtain an explicit envelope of possible shear velocity and density values in the mantle and core. This envelope is determined separately for oceanic, shield, and tectonic regions of the upper mantle. The data used in this study consist of the mass and moment of inertia of the earth, periods of free oscillations, including recently available overtones, regionalized phase and group velocities of Rayleigh waves, and phase velocities of Love waves. The results constrain the variations of density and shear velocity in the lower mantle to within about 1.5% from the center of the envelope. The density just below the mantle-core boundary was found to lie between 9.79 and 9.86 grams/cc. A rigid core was needed to satisfy the overtone data with a shear velocity between 3.35 and 3.52 km/sec. The radius of the mantle-core boundary was found to lie between 3476.38 and 3486.42 kilometers. Excellent agreement with recent travel time studies of body waves was found for shear velocity in the lower mantle and for the radius of the mantle-core boundary. Geophysical and petrological interpretations based on these results are discussed.

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Introduction

The general inverse problem for the earth is concerned with the attempt to make positive, definitive statements about possible models of the earth's structure consistent with a particular set of gross earth data. A model is specified by the functions density, compressional velocity, and shear velocity with depth. The set of gross earth data generally consists of some collection of observations, O_j, of such things as mass, moment of inertia, travel times of the body waves, periods of free oscillation, and phase and group velocities of surface waves. A gross earth functional (Backus and Gilbert, 1968) is a rule which associates a given model with a value, C_j, corresponding to a particular element, O_j, of the set of gross earth data. A "successful" model is taken to be one for which the values of all gross earth functionals lie within a given range, σ_j, of the corresponding gross earth data. Backus and Gilbert (1967) have shown that the space of successful models is either empty or of infinite dimension. In this study we will use a collection of simplifying assumptions, such as discrete parameterization and first order Taylor's expansion, to reduce the general inverse problem to a finite dimensioned linear problem. This reduction is discussed in detail by Backus and Gilbert (1967, 1968, 1970), by Backus (1970a, 1970b, 1970c), and by Wiggins (1968, 1972). The set of all possible successful models

within the context of the reduced problem will be systematically examined using linear programming techniques. Hopefully, common features of all successful models will emerge (e.g., the requirement for a low velocity zone) so that meaningful statements about the earth's internal structure can be made.

Two aspects of the discrete, linear inverse problem for the earth have been singled out for special emphasis. They are the problems of non-uniqueness and of lateral regional variations in the upper mantle. Non-uniqueness is concerned with the intrinsic infinite dimensionality of the general inverse problem as well as lack of precision of the gross earth data. The problem of infinite dimensionality is obviated with the assumption of a fixed, discrete parameterization. Parameterization is used here to refer to the set of depths at which the density, shear velocity, or compressional velocity functions of a model are allowed to vary, together with a rule for interpolating parameters between these depths. Non-uniqueness is resolved in terms of this parameterization by using linear programming procedures to select particular models from the set of all those possible, such that the value of one of its parameters at a particular depth is not less (or not greater) than that of any other successful model. This model will be called an "extremal" model with respect to a particular parameter and depth. The

set of extremal models for all parameters and depths can be thought of as forming an envelope of possible solutions. Provided the selection of a suitable parameterization has not been too restrictive, this envelope where it is narrow or well-constrained by the data can be used to judge models formulated on other grounds, such as geochemical, or geological ones. Other authors have proposed similar methods in which an envelope of possible solutions is inferred from a family of acceptable models. Monte Carlo methods have been used to this effect by Keilis-Borok and Yanovskana (1967), Press (1968, 1970a, 1970b), Wiggins (1969), Fairborn (1969), and Worthington, Cleary, and Anderssen (1972). Senata and Anderssen (1971a, 1971b) provide probabalistic methods for determining the reliability of the envelope obtained from a given set of Monte Carlo solutions. A hedge-hog method has been used recently by Knopoff (1972) to obtain families of solution consistent with short period, highly regionalized surface wave phase velocities.

Lateral variations in the upper mantle were examined using regionalized data obtained from regression analysis of great circle paths (Kanamori, 1970; Dziewonski, 1971a). This is an approximation that has been used in inversions by Press (1970b), Kanamori (1970), and Dziewonski (1971a).

Because of the improved data for free oscillations that has recently become available with the inclusion of new overtone data and increased precision, this work represents an

extension and update of the Monte Carlo inversions of Press (1968, 1970a, 1970b). The envelope of possible solutions obtained here is identical to that which would be generated by the Monte Carlo procedure as the number of successful models satisfying the same set of gross earth data approaches infinity.

I. Discrete Linear Inverse Problem

The reduction of the general inverse problem of the earth to the discrete linear inverse problem consists essentially of the assumption of a fixed, discrete parameterization and the expansion of gross earth functionals in terms of a first order Taylor's expansion about some initial, reasonable earth model based on this assumed parameterization. This reduction has been carried out by Wiggins (1968) and this study uses his results. The gross earth functionals for some model sufficiently "near" the initial model can then be expressed as:

$$C_j = \hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} (P_i - \hat{P}_i) \qquad (1)$$

where $\hat{C}_j$ is the value of the j^{th} functional computed exactly for the initial model, P_i is a model parameter (density, compressional velocity, or shear velocity) at some depth, and $\hat{P}_i$ is the corresponding parameter for the initial model. The summation is implied over all model parameters. The meaning of "near" depends upon which functional is being approximated. For mass and moment of inertia the expansion is exact. Periods of free oscillation and phase velocities of surface waves are very nearly linear in terms of the model parameters so that rather large variations on the order of 5 - 10% of the parameter value can be tolerated without

introducing errors greater than about 10% of the observational error in the data. The approximation is invalid for travel times of body waves and group velocities of surface waves except in the immediate vicinity of the initial model.

The parameterization, initial model, and variational parameters used in this study are those given by Wiggins (1968). The inner core was modified to have a uniform shear velocity and the initial periods and variational parameters were recalculated for those modes affected.

Regionalized upper mantle. Recently available regionalized data for phase and group velocities of surface waves have made possible a first approximation of the regional variations in the upper mantle. These data have been obtained for Love waves by Kanamori (1970), and for Rayleigh waves by Dziewonski (1971a) using regression analysis surface wave velocities along great circle paths. Each path is divided into oceanic, shield, and tectonic regions. The phase velocity at a fixed period for a particular great circle path is written as:

$$\frac{1}{C} = \frac{\lambda_o}{C_o} + \frac{\lambda_s}{C_s} + \frac{\lambda_\tau}{C_\tau}$$

where λ_o is the oceanic fraction of the path, and C_o is the unknown phase velocity appropriate for oceanic regions. Regionalized phase velocities result when a regression analysis is performed for a large number of great circles with varying regional fractions. Madariaga (1972) has recently

questioned the reliability of this method when regional variations must be expanded in harmonics of order not much less than the order of the gravest regionalized mode. This situation exists for tectonic regions, so for this region the regression results and consequent tectonic models are subject to serious question. For oceanic and shield regions the regionalized values should be essentially correct.

Two serious problems are encountered when dispersion data for a particular region are used in concert with averaged graver mode data. One problem is conerned with the discontinuity that appears when the regionalized surface wave data are converted to equivalent periods of free oscillation and then plotted as a function of order number on the same graph with unregionalized data for graver modes. The discontinuity occurring at the juncture of these two bodies of data can easily be of about the same magnitude as the observational errors in the data. Since periods calculated for a given model for adjacent modes are by no means independent, the net result is an unwarranted restriction on the envelope of solutions. Even if this situation is handled by arbitrarily increasing the observational errors in the vicinity of the discontinuity, thus throwing away information content for some depth range in the earth, another serious obstacle is encountered. Derr (1967) has shown that the periods calculated for some of the graver modes of free oscillations can vary by as much as 1.0% depending upon

regional differences in the upper mantle structure used for the calculation. Since these modes are generally assigned a tolerance of less than 0.5%, this procedure is equivalent to a systematic biasing of the graver mode data. This problem becomes even more acute if overtone data are included in the inversion.

In this study the problems associated with regionalized data were circumvented by inverting the three regions simultaneously. This was accomplished by replacing all variables above 650 km in equation (1) by three new variables

$$P_i = C_o P_{oi} + C_s P_{si} + C_t P_{ti}$$

where the subscripts o, s, and t refer to oceanic, shield, and tectonic regions respectively. The coefficients are taken to be .67, .23, and .10 when calculating periods of overtones and non-regionalized fundamental modes. The observed values for these periods have been obtained from data averaged for the entire earth, and are therefore sampling an "average" upper mantle. Values of functionals associated with regionalized data are calculated by taking the coefficient for that region as 1.0 and the others as 0. Parameters below 650 kilometers were not regionalized in this manner. During the inversion procedure the structures of these three regions varied within limits primarily imposed by regionalized data, while an average of these three regional structures was simultaneously required to satisfy non-regional data. For functionals associated with average earth data, equation (1) can now

simultaneously be required to satisfy nonregional data. For functionals associated with average earth data, equation (1) can now be written

$$C_j = \hat{C}_j + \sum_i^{\upsilon} \frac{\partial C_j}{\partial P_i}(.67P_{oi} + .23P_{si} + .10P_{ti} - \hat{P}_i) + \sum_i^{\iota} \frac{\partial C_j}{\partial P_i}(P_i - \hat{P}_i). \quad (2a)$$

The summation notation used here indicates that the sum $\sum_i^{\upsilon}$ is to be taken over all parameters in the upper mantle (above 650 km), while $\sum_i^{\iota}$ indicates summation over all remaining parameters below 650 km.

For functionals associated with regionalized data, equation (1) becomes

$$C_{oj} = \hat{C}_j + \sum_i^{\upsilon}(P_{oi} - \hat{P}_i)\frac{\partial C_j}{\partial P_i} + \sum_i^{\iota}(P_i - \hat{P}_i)\frac{\partial C_j}{\partial P_i}, \quad (2b)$$

$$C_{sj} = \hat{C}_j + \sum_i^{\upsilon}(P_{si} - \hat{P}_i)\frac{\partial C_j}{\partial P_i} + \sum_i^{\iota}(P_i - \hat{P}_i)\frac{\partial C_j}{\partial P_i}, \quad \text{and} \quad (2c)$$

$$C_{\tau j} = \hat{C}_j + \sum_i^{\upsilon}(P_{ti} - \hat{P}_i)\frac{\partial C_j}{\partial P_i} + \sum_i^{\iota}(P_i - \hat{P}_i)\frac{\partial C_j}{\partial P_i} \quad (2d)$$

for oceanic, shield, and tectonic regions respectively.

Parameterization and Resolution. The assumptions involved in selecting a suitable parameterization are basic to most inversion schemes and represent a compromise between obtaining realistic, useful solutions and narrowing the

envelope of solutions. As the number of points with depth at which models can vary is increased, the resolving power of the data as indicated by the narrowness of the resulting envelope of possible solutions decreases. Parameterization depths must be more closely spaced at depths where models are expected to change rapidly or where discontinuities may exist. Wiggins (1968) allowed variations at 87 depths. This appears to be more than can be allowed by currently available data. Consequently fewer parameterization depths were used in this study. Essentially this is equivalent to smoothing out fine details of the earth structure. As more data becomes available, the number of parameterization depths can be increased.

Another useful method for restricting the complexity of resulting models is to impose fixed, known relationships between adjacent parameters. An example of this is the requirement that density in the outer core satisfy the Adams-Williamson equation for homogeneous, adiabatic conditions. In this way, there is only one free density variable in the outer core, all others being functionally related to it.

In this study density was allowed to vary independently at the top of the inner core, at the top of the outer core, at six depths in the mantle below 650 km, and as averages over two intervals for each of the three regions of the upper mantle. Additionally, the radius of the core-

mantle boundary was allowed to vary independently. Shear velocity was fixed in the crust and outer core, density was fixed in the crust, and compressional velocity was fixed in the crust and mantle. In the outer core compressional velocity was allowed to vary at four depths over a range consistant with most recently proposed models. Density in the liquid outer core was required to satisfy the Adams-Williamson equation. In the inner core the density gradient was fixed in the same manner. Although this last condition is not strictly true, it was done because free oscillation data do not constrain density near the center of the earth, so that this assumption cannot significantly affect the results. The depth intervals used in the three upper mantle regions were essentially those found by Dziewonski (1971b). For the rest of the earth, the parameterization was taken as that used by Press (1970b) with the addition of a rigid inner core.

Density at depths between parameterization points can be linearly interpolated. Compressional velocity and shear velocity must be interpolated exponentially in our procedures. If V_i is the velocity at some depth, and V_{i+1} is the velocity of the next deeper parameterization point, then velocities between these two depths are given by the power law

$$V = V_i r_i^{-\varepsilon i} r^{\varepsilon i}$$

where

$$\varepsilon_i = \frac{\ln(V_i/V_{i+1})}{\ln(r_i/r_{i+1})}$$

and r_i is the radius of the i^{th} parameterization point.

Weighted averages of models. In the discrete linear inverse problem a weighted average of successful models is also, of necessity, a successful model. For any two successful models with parameters P_i and P_i', the values of their respective gross earth functionals can be written from equation 1 as

$$C_j = \hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} (P_i - \hat{P}_i) \tag{3}$$

$$C_j' = \hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} (P_i' - \hat{P}_i) \tag{4}$$

The parameters of a weighted average model can be written as

$$P_i'' = \alpha P_i + \alpha' P_i' \qquad \alpha + \alpha' = 1.0,\ 0 \leq \alpha \leq 1.$$

The gross earth functionals for this model can be written from equation (1) as

$$C_j'' = \hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} (\alpha P_i + \alpha' P_i' - \hat{P}_i).$$

This equation can be re-written

$$C_j'' = \alpha C_j + \alpha' C_j + \Sigma \frac{\partial C_j}{\partial P_i}(\alpha P_i - \alpha P_i) + \Sigma \frac{\partial C_j}{\partial P_i}(\alpha' P_i' - \alpha' P_i),$$

which can be combined with equations (3) and (4) to give:

$$C_j'' = \alpha C_j + \alpha' C_j'$$

If C_j and C_j' both satisfy the observations within the allowed error, σj, so that $o_j - \sigma_j \leq C_j \leq O_j + \sigma_j$ and $O_j - \sigma_j \leq C_j' O_j + \sigma_j$, then clearly for all functionals we have $o_j - \sigma_j \leq C_j'' \leq o_j + \sigma_j$ and the weighted average model is also a successful model. This concept will be useful in the next section when the linear programming method is discussed in detail.

II. METHOD

Linear programming was applied to the discrete linear inverse problem in a two stage process. During stage I periods of free oscillations, regionalized surface wave phase velocities, the mass, and the moment of inertia were used to find minimum and maximum possible values for shear velocity and density for each parameterization point below the M-discontinuity. These minimum and maximum values were assembled as an explicit Stage I envelope of possible solutions against which geochemical earth models could be compared. Within the context of the linear inverse problem no model exist with the same parameterization, and satisfying the same data, having values of shear velocity or density outside this envelope. Each minimum (or maximum) value comprising the Stage I envelope is associated with an extremal model (not necessarily unique) with the same minimum (or maximum) value for that parameter. During Stage II the extremal models from Stage I were combined with regionalized group velocity data for Rayleigh waves to further narrow the envelope for oceanic, shield, and tectonic regions in the upper mantle. The extremal models making up the Stage II envelope for any one of the three upper mantle regions are weighted averages of the ten Stage I extremal models for that region.

During the remainder of this section, a basic under-

standing of the concepts of linear programming will be assumed. A simple geometric discussion of linear programming and an elementary example are given in Appendix I. A detailed discussion of the implementation of this procedure on an IBM system 370/155 can be found in Appendix II. A thorough and rigorous treatment of linear programming is given by Dantzig (1963).

Method - Stage I. The variables used in this stage were the model parameters discussed previously. A priori bounds were placed on those parameters not fixed at constant values. For all parameters other than those immediately below the M-discontinuity and compressional velocities in the core, the a priori bounds were irrelevant and were only needed to provide a starting point for the linear programming package.

The system of linear constraints was obtained from the linear expansion of the gross earth functionals by requiring that their values agree with observations within a given tolerance, δ_j. This condition can be expressed

$$O_j - \sigma_j \leq C_j \leq O_j + \sigma_j .$$

Each observation leads to two linear inequalities:

$$\hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} (P_i - \hat{P}_i) \geq O_j - \sigma_j$$

$$\hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} (P_i - \hat{P}_i) \leq O_j + \sigma_j \ .$$

Collecting constant terms on the right results in

$$\sum_i \frac{\partial C_j}{\partial P_i} P_i \geq O_j - \sigma_j - \hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} \hat{P}_i \qquad (5a)$$

$$\sum_i \frac{\partial C_j}{\partial P_i} P_i \leq O_j + \sigma_j - \hat{C}_j + \sum_i \frac{\partial C_j}{\partial P_i} \hat{P}_i \qquad (5b)$$

Terms on the left corresponding to fixed parameters can also be collected on the right. The equations for mass and moment were treated similarly, each leading to one equality. Additional equalities were introduced to enforce the Adams-Williamson condition in the core, and to restrict densities and shear velocities in the upper mantle, and shear velocity in the inner core to constant values over given depth intervals. Inequalities were also added to insure that the density gradient in the lower mantle could not assume geophysically unreasonable values.

A set of objective functions were taken as

$$z = \pm P_i .$$

When z is minimized by the linear programming system, the result is a model whose i^{th} parameter is less than (or

greater with a minus sign) that of any other possible successful model. These extremal models, when this procedure is applied to all parameters of interest, define the Stage I envelope of possible solutions tabulated in table 2. The extremal models are given in table 3.

Method - Stage II. This part of the procedure takes advantage of the additivity of successful solutions discussed previously. Stage II was conducted seperately for each of the three regions of the upper mantle. For each region, weighted averages of the Stage I extremal models for that region were required to satisfy regionalized Rayleigh wave group velocities in addition to Stage I constraints. If Q_{ik} is the i^{th} parameter of the K^{th} Stage I extremal model, then the parameters of a weighted average of these models can be written

$$P_i = \sum_k a_k Q_{ik} \quad , \quad \sum_k a_k = 1. \tag{6}$$

The coefficients, a_k, of this weighted average were the variables used in the Stage II linear programming problem. Generally the coefficients in a weighted average are taken to be positive and less than 1.0. If this was required, the models obtained would be drawn from most but not all of the possible upper mantle structures allowed by the Stage I constraints. In hopes of including all possible

Stage I structures, the bounds on the weighting coefficients were taken as -.3 and 1.2. After the linear programming procedure is completed, the results are unambiguous if none of the weighting coefficients is limited by these a priori restrictions. In this case the bounds could be arbitrarily increased without effecting the results. This condition was met for oceanic and shield regions. However, for tectonic regions, the coefficients were limited by the a priori bounds so that for this region the Stage II results are uncertain.

The values of the gross earth functionals of a weighted average of Stage I extremal models can be expressed similarly as

$$C_j = \sum_k a_k D_{jk} \tag{7}$$

where D_{jk} is the value of the j^{th} functional calculated for the k^{th} Stage I extremal model. Since the Stage II envelope is already quite narrow, it was found empirically to be possible to express the group velocity of Rayleigh waves of a weighted average of Stage I extremal models as a similar weighted average of their respective group velocities. Again each imprecise observation leads to two constraints, this time in the form

$$\sum_k a_k D_{jk} \geq O_j - \sigma_j \qquad \text{and}$$

$$\sum_k a_k D_{jk} \leq O_j + \sigma_j .$$

In addition the equation

$$\sum_k a_k = 1.0$$

was included. This single equality replaces all of the equalities of Stage I.

The set of objective functions used in Stage II were taken to be

$$z = \stackrel{+}{-} \sum_k a_k Q_{ik} .$$

As in Stage I, the minimization of this function leads to a model whose i^{th} parameter is less (greater with the minus sign) than that of any other possible successful Stage II model. The Stage II envelope is tabulated in table 2, and the associated extremal models are included at the end of Table 3.

III. DATA AND ASSUMPTIONS

The data and assumptions used to constrain the solutions are as follows: 1) Successful models were required to satisfy Kanamori's (1970) regionalized phase velocity data for love waves and Dziewonski's (1971a) regionalized phase velocity data for Rayleigh waves. Periods of free oscillations for overtones and fundamental modes graver than oS25 or oT23 were required to fit the values given by Dziewonski and Gilbert (1972) to within .2%. The period for oS2 was required to agree with that given by Derr (1969) to within $\pm$4 seconds. Periods and errors used are given in Table 1. Successful models in Stage II were additionally required to satisfy Dziewonski's (1971a) regionalized group velocities for Rayleigh waves. Group velocities were tested at three modes, oS30, oS36, and oS43. For oceanic regions the values and errors used were $3.576\pm.010$, $3.534\pm.008$, and $3.547\pm.016$ respectively. For shield regions these values were taken to be $3.604\pm.018$, $3.608\pm.014$, and $3.669\pm.028$; and for tectonic regions they were $3.707\pm.022$, $3.665\pm.017$, and $3.611\pm.035$.

2) Compressional velocities in the mantle were fixed at values determined by Johnson (1967) using body wave travel time and dT/d^{Δ} data for shields. Suitable modifications were made in the crust and upper mantle appropriate for oceanic and tectonic regions. Although the procedures

described could allow variations in compressional velocity, it is not required as compressional velocities in the mantle are already highly constrained by body wave data. In addition, Worthington, Cleary, and Anderssen (1972) have demonstrated that the variation of compressional velocities in the mantle have minimal effect on the resulting envelope of successful models. Compressional velocity in the outer core was allowed to vary between fixed limits at four depths. These limits were taken to be 8.00-8.30 km./sec. at the top of the outer core, 8.95-9.07 km./sec. at 3471. km., 9.40-9.50 at 3871. km., and 10.0-10.45 km./sec. at 5118. km. just above the inner core boundary. In the inner core compressional velocity was fixed at 11.03 km./sec. just below the inner core boundary, and 11.32 km./sec. at the center of the earth.

3) Shear velocity in the crust was fixed at values appropriate for oceanic, shield, and tectonic regions. Shear velocities immediately below the M- discontinuity were required to fall between 4.6-4.7 km./sec. for oceanic and shield regions, and between 4.4 and 4.6 km./sec. for the tectonic region. Shear velocity in the liquid outer core was assumed to be zero. A priori bounds at all other depths were found to be outside the Stage I envelope, and consequently did not affect the results.

4) Density in the crust was fixed at values appropriate for each region. In the lower mantle, the density gradient was allowed to vary between bounds consistent with

geophysically reasonable temperature gradients and compositional changes. As discussed before, the density in both the outer core and the inner core were required to satisfy the Adams-Williamson equation with a discontinuity permitted at the inner core boundary. The mass of the earth was required to be 5.976×10^{27} grams, and the moment of inertia was taken to be 8.024×10^{44} grams cm^2. The mass constraint was applied independently to each of the three regions, while only the average earth was required to satisfy the moment of inertia.

IV. Discussion of Results

The values defining the envelope of possible solutions are given in Table 2. The Stage I envelope (solid line) and the Stage II envelope (Dashed line) for the three regions in the upper mantle are shown for shear velocity and density in figures 1 and 2 respectively. The stage I envelope for all parameters below a depth of 650 km is shown for shear velocity in figure 3 and for density in figures 4 and 5. All extremal models resulting from both Stage I and Stage II are given in table 3. Models associated with regional parameters are included with the upper mantle structure appropriate to that region, while all other extremal models are shown with their average upper mantle parameters. In addition, all models are numbered sequentially and are divided among seven groups for reference purposes. For example, the group referred to as "Oceanic Mantle/II" contains Stage II extremal models associated with parameters minimized or maximized in the oceanic region of the upper mantle. All models not associate with regionalized parameters fall into a group labelled "Average Mantle Models". These seven groups are graphed in figures 6 - 12 and organized in table 3 as follows:

1) Oceanic Mantle/I, Models 1 - 10, Figure 6
2) Shield Mantle/I, Models 11 - 20, Figure 7
3) Tectonic Mantle/I, Models 21 - 30, Figure 8
4) Average Mantle, Models 31 - 58, Figure 9

5) Oceanic Mantle/II, Models 59 - 68, Figure 10

6) Shield Mantle/II, Models 69 - 78, Figure 11

7) Tectonic Mantle/II, Models 79 - 88, Figure 12.

Oceanic upper mantle (Moho - 621 km). Both the Stage I and Stage II envelopes shown in Figure 1 require the existence of a very pronounced low velocity channel in the upper mantle below oceans. The Stage II results indicate a decrease in shear velocity at the top of the low velocity zone of about 6.0% - 9.0%. Shear velocities within this channel fall within the range 4.26 - 4.37 km/sec. According to Spetzler and Anderson (1968) and Anderson, Sammis and Jordan (1971) velocities in this range could be adequately attributed to a 1.0% melt if partial melting is confined to grain boundaries. Birch (1969) has shown that even for the unlikely case of spherical liquid inclusions, the amount of partial melting need be no higher than about 6%. For both Stage I and Stage II, shear velocity remains quite low down to a depth of about 400 km when compared to velocities above the low velocity zone.

Density in the depth range from the Moho to 400 km is not particularly well constrained by the results of Stage I even though it was varied as a constant over this entire interval. With the inclusion of group velocities during Stage II a considerable narrowing of the density envelope is apparent with densities confined to higher values in the range 3.37 - 3.53 grams/cm^3. It should be remembered that these refer to average values for the range 100-370 km. Clark and Ringwood's (1964) models for eclogite and pyrolite have been superimposed in figure 2 for comparison.

Shield upper mantle (Moho - 621 km). Because regionalized data for shield regions are less accurately known than that for oceanic regions, the width of the envelope of possible solutions is correspondingly greater for both density and shear velocity. Both the Stage I and the Stage II envelopes shown in figure 2 indicate the possibility of a low velocity channel, but do not uniquely require its existence. The Stage II envelope tends to somewhat higher values for shear velocity in the depth range 100 - 400 km than that for the oceanic region.

Density beneath shields is also poorly controlled during Stage I. The Stage II results shown in Figure 2 indicate currently available group velocities for shields are for this region no more constraining than phase velocity with respect to density.

Tectonic upper mantle (Moho - 621 km). As with shield regions, the data for tectonic regions are not precise and the resulting Stage I envelope is rather wide. Figure 1 shows that the Stage I results require a low velocity zone. A surprising feature in this region is the rather high velocities in the depth range 200 - 400 km. For many extremal models the shear velocity gradient usually associate with the olivine-spinel phase transformation was essentially absent. Despite the weakness of the data one might speculate that this indicates that phase changes normally in the transition zone have migrated to shallower depths in tectonic regions, perhaps occuring

within subducted slabs. The narrowness of the Stage II bounds shown in figures 1 and 2 is most likely caused by incompatibility between the phase velocity data used in Stage 1 and the group velocity data of Stage II. Dziewonski (1971a) mentioned this possibility. The cause of this is likely the problem discussed previously of refraction and complex interference patterns on the earth's surface.

Lower mantle (621 - Core). The Stage I envelope for this depth range is shown for shear velocity in figure 3, and for density in figure 4. In figure 3 the shear velocity distributions in the lower mantle, SLUTD1 and SLUTD2, obtained by Hales and Robert's (1970) using body wave travel times are superimposed for comparison. The excellent agreement between their results and the Stage I envelope which was determined independently of travel times represents an important confirmation of the mutual consistency of these two bodies of data, and emphasizes the resolving power of higher mode data.

The density envelope in figure 4 shows that density velues in the lower mantle were constrained to variations of about 3.0%. The Monte-Carlo envelope obtained by Press (1970b) using periods of fundamental modes and the first two overtones is also shown. The affect of periods for higher overtones in the current study is evidenced by the significantly enhanced control over density in the lower mantle. Density near the mantle core boundary tends to be slightly

higher than the Monte Carlo results, though there is considerable overlap at all depths.

Compressional velocity, shear velocity, and the bulk sound velocity for Oceanic mantle/II models are graphed against density in figures 13, 14 and 15 for the entire mantle. Superimposed are Chung's (1971) theoretical-empirical curves which should be representative of ferro-magnesium silicates of various atomic weights. Each figure shows an apparent increase in mean atomic weight of about 1 a.m.u. occurring near the lower part of the transition zone. This increase has also been noted by Press (1970a, 1970b), and by Anderson and Jordan (1970) who suggested iron enrichment of the lower mantle as the cause.

The bulk sound velocity of the "Average Mantle" models of Stage I is graphed as a function of density in figure 16. Since compressional velocity was fixed in the lower mantle, minimum or maximum values of shear velocity correspond to maximum or minimum possible values of bulk sound velocity. The adiabatic curves for twin sisters dunite (M = 20.9) and fayalite (M = 29.1) obtained by Wang (1968) using shock wave data have been superimposed. The mean atomic weight in the lower mantle seems to be about 22.5. Not much can be said about variations within the lower mantle, though a non-unique tendency toward increasing iron content with depth may be noted. The Monte Carlo envelope of Press (1970b) has also been included in figure 15.

Again the augmented control made possible by the use of overtone data is apparent.

Outer Core. The allowable variation in the radius of the core was found to be 3481.4 ±5.0 kilometers. Dziewonski and Gilbert (1972) using essentially the same overtone data reported a core radius of 3482.0 km. Our results are also in rather close agreement with the values obtained by Hales and Roberts (1970) using ovservations of the travel time difference $T_{ScS} - T_S$. They reported a core radius of 3489.92 ±4.66 km for SLUTD1 and 3486.10 ±4.59 km for SLUTD2. Taggart and Engdahl found the radius to be 3477.0 ± 2.0 km using travel times of P_cP. Again it can be noted that free oscillation results are entirely consistent with the results of body wave studies.

Figure 5 shows that density in the outer core is confined to the rather narrow range of 9.79 - 9.88 grams/cm^3 just below the mantle-core boundary. Density is graphed as a function of pressure for Stage I "Average Mantle" models in figure 16 with theoretical curves for iron, nickel, and iron +19.8 wt% silicon superimposed. If silicon is the "lightening" element, then these results are consistent with a mixture of iron and 10 - 15 wt% silicon.

Inner Core. Density in the inner core, as shown in figure 5, were not well controlled by the data used in this study. Density values near the inner core boundary ranged between 12.23 and 13.07 grams/cm^3. Surprisingly, the density

step at the inner core boundary was required to be less than 1.0 gram/cc.

The unique requirement for a rigid inner core in order to satisfy the recently available periods for those overtones which have a large fraction of their energy in the inner core has been discussed by Dziewonski and Gilbert (1971, 1972). They reported a value of shear velocity of 3.534 km/sec.

This is in close agreement with the range 3.36 to 3.52 km/sec obtained in Stage I of this study assuming somewhat greater inner core radius. Using dT/d^{Δ} observations for an event identified as a possible PKJKP arrival, Julian, Davies and Sheppard (1972) reported shear velocities in the inner core of 2.95$\pm$.0 km/sec. This disagreement with body wave results is surprising and requires further study.

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FIGURES

Figure 1 - Stage I (solid lines) and Stage II (dashed lines) upper mantle shear velocity envelope for oceanic, shield, and tectonic regions.

Figure 2 - Stage I (solid lines) and Stage II (dashed lines) upper mantle density envelope for oceanic, shield, and tectonic regions. The Clark and Ringwood (1954) models for pyrolite and eclogite.

Figure 3 - Lower mantle shear velocity envelope (solid lines) compared with the models SLUTD 1 and SLUTD 2 (dashed lines) of Hales and Roberts (1970).

Figure 4 - Lower mantle density envelope (solid lines) compared with the Monte Carlo envelope (dashed lines) of Press (1970b).

Figure 5 - Core density envelope (solid lines) compared with Monte Carlo envelope (dashed lines) of Press (1970b).

Figure 6 - 10 Stage I oceanic extremal models (Models 1-10 of Table 3).

Figure 7 - 10 Stage I shield extremal models (Models 11-20 of Table 3).

Figure 8 - 10 Stage I tectonic extremal models (Models 21 - 30 of Table 3).

Figure 9 - 28 All other Stage I extremal models (Models 31 - 58 of Table 3).

Figure 10 - 10 Stage II oceanic extremal models (Models 59 - 68 of Table 3).

Figure 11 - 10 Stage II shield extremal models (Models 69 - 78 of Table 3).

Figure 12 - 10 Stage II tectonic extremal models (Models 79 - 88 of Table 3).

Figure 13 - Compressional velocity vs density for the 10 Stage II oceanic extremal models compared with the empirical - theoretical results (dashed lines) of Chung (1971) for ferro-magnesium silicates of various mean atomic weights.

Figure 14 - Shear velocity vs density for the 10 Stage II oceanic extremal models compared with the empirical-theoretical results (dashed lines) of Chung (1971) for ferro-magnesium silicates of various mean atomic weights.

Figure 15 - Bulk sound velocity vs density for the 10 Stage II oceanic extremal models compared with the empirical - theoretical results (dashed lines) of Chung (1971) for ferro-magnesium silicates of various mean atomic weights.

Figure 16 - Bulk sound velocity of the 28 average mantle Stage I extremal models compared with Wang's (1968) shock wave results (heavy dashed lines) for twin sisters dunite ($\bar{m}$ = 20.9) and Fayalite ($\bar{m}$ = 29.1).

Figure 17 - Density vs pressure in the core for the 28 average mantle Stage I extremal models compared with theoretical values (dashed lines) for iron, nickel, and iron + 19.8% wt. silicon.

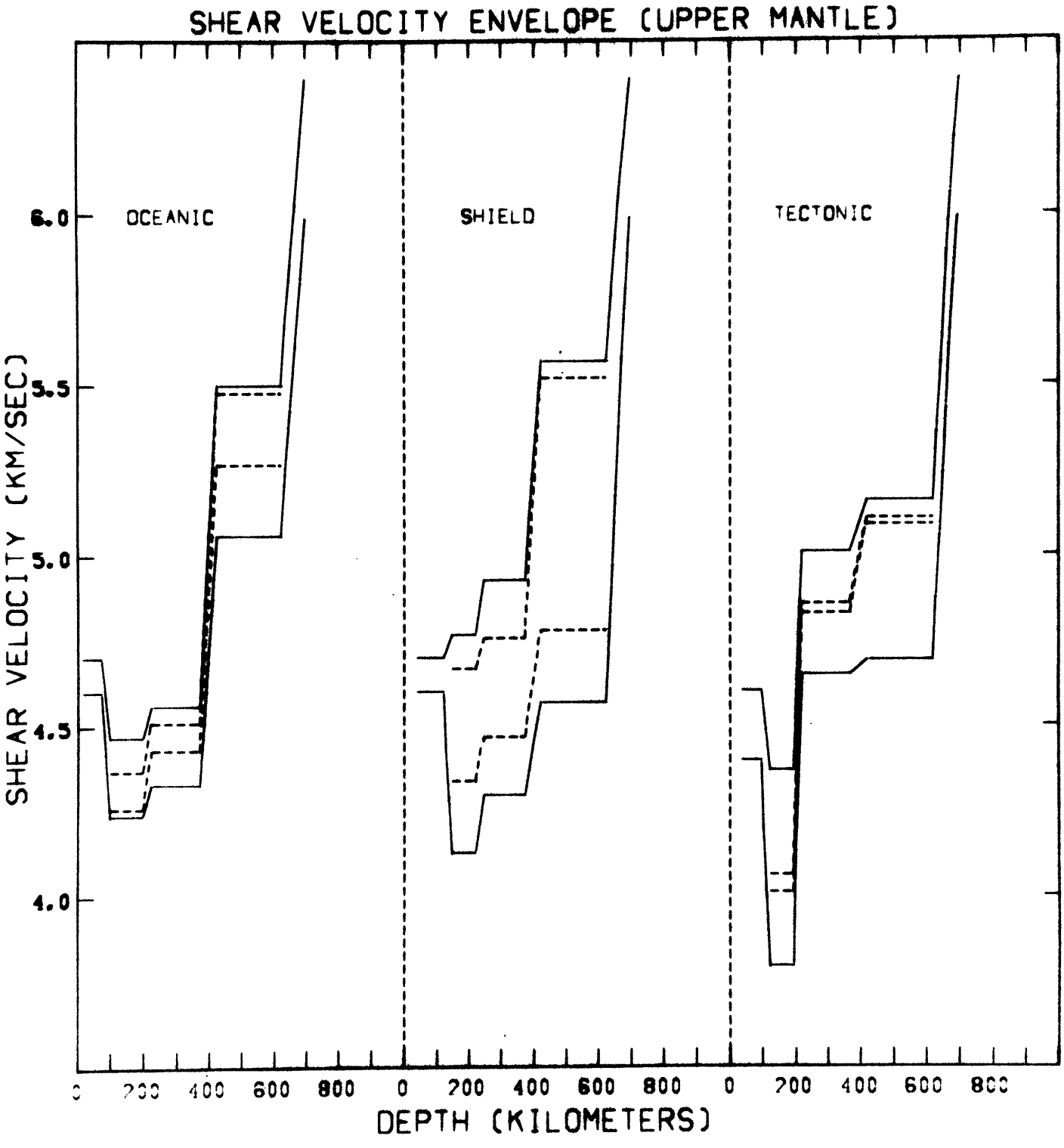

SHEAR VELOCITY ENVELOPE (UPPER MANTLE)
OCEANIC
SHIELD
TECTONIC
SHEAR VELOCITY (KM/SEC)
6.0
5.5
5.0
4.5
4.0
0
200
400
600
800
DEPTH (KILOMETERS)

Figure 1.

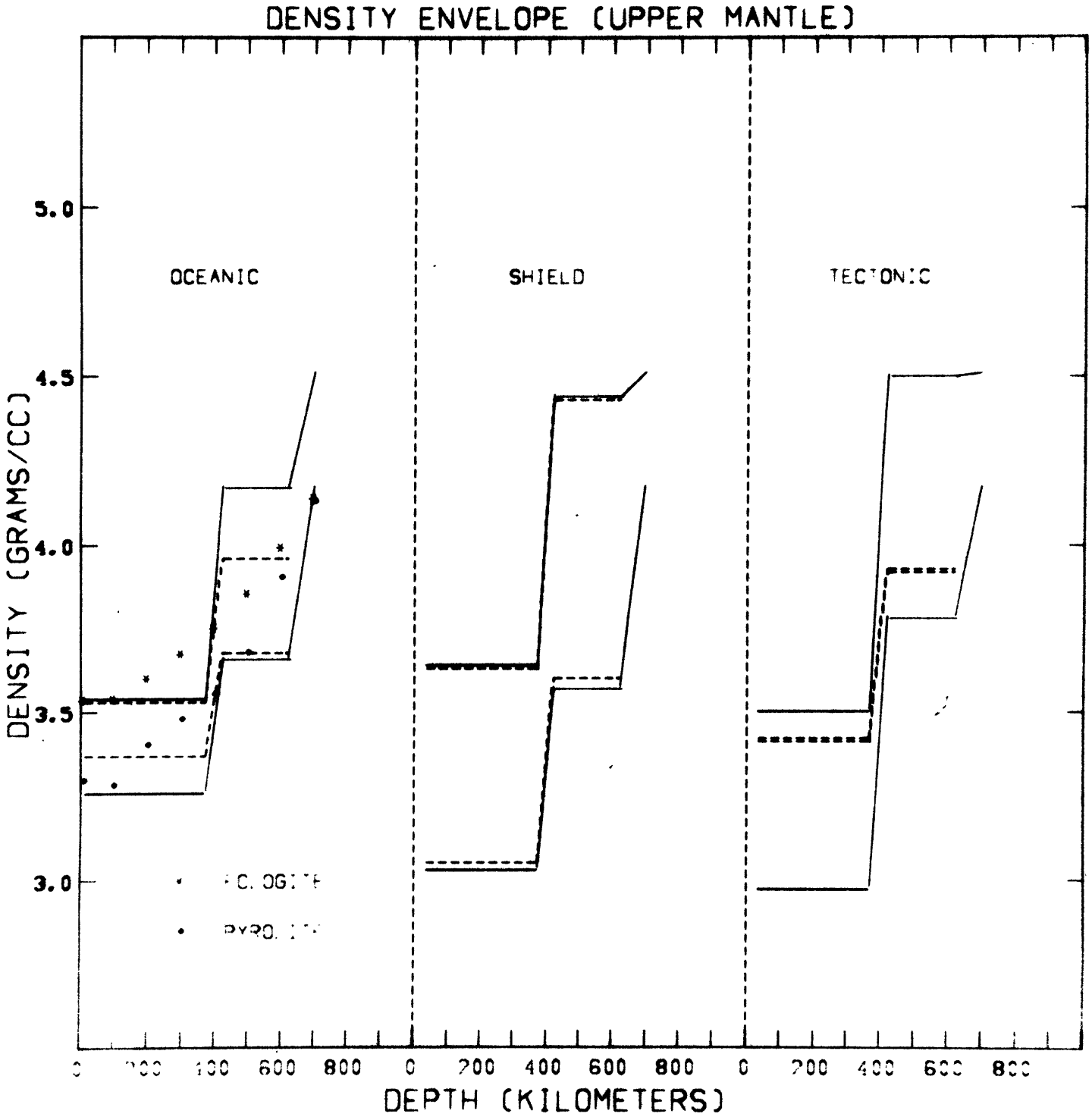

DENSITY ENVELOPE (UPPER MANTLE)
OCEANIC
SHIELD
TECTONIC
5.0
4.5
4.0
3.5
3.0
DENSITY (GRAMS/CC)
0
200
400
600
800
DEPTH (KILOMETERS)

Figure 2

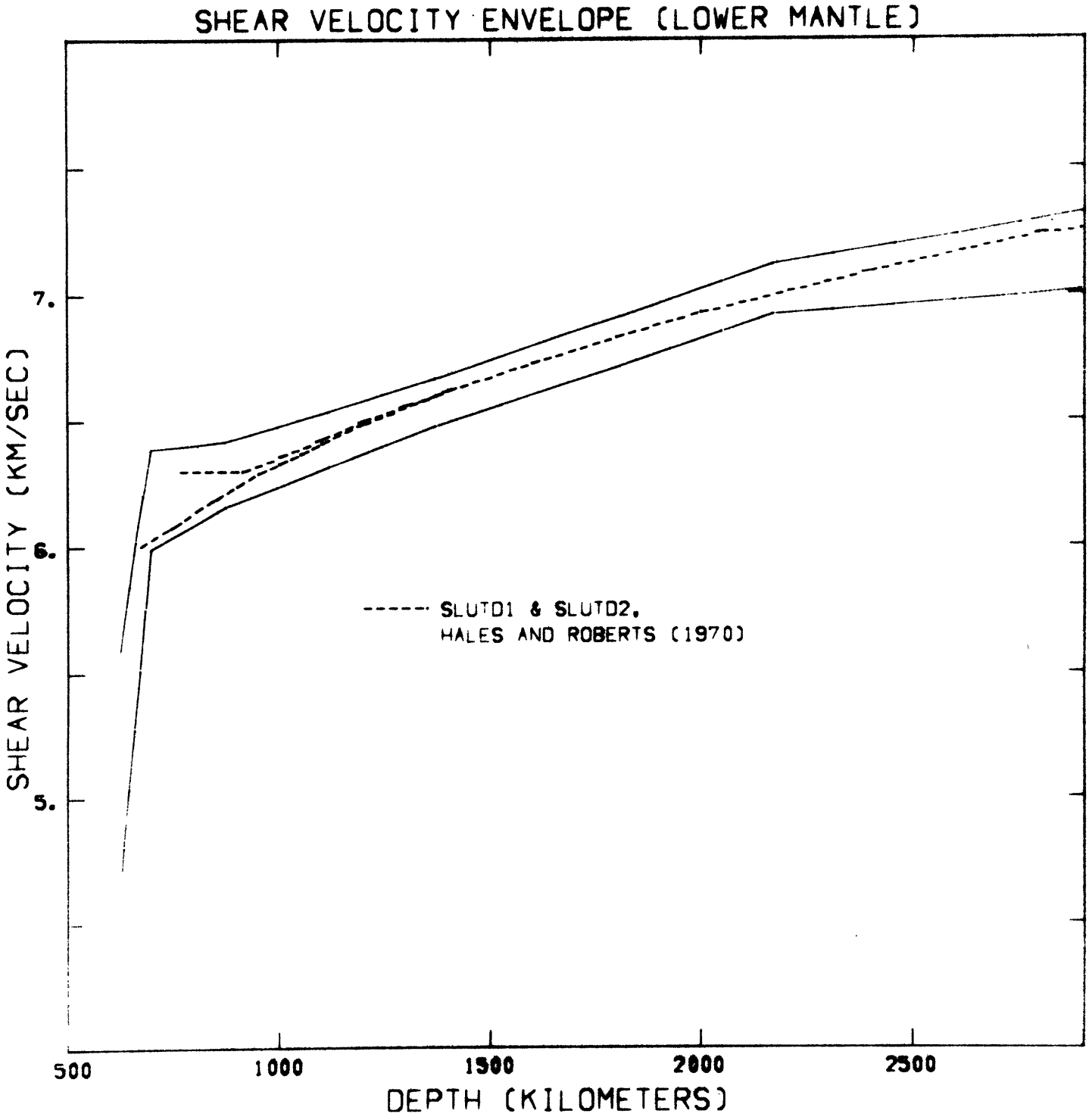

SHEAR VELOCITY ENVELOPE (LOWER MANTLE)
SHEAR VELOCITY (KM/SEC)
7.
6.
5.
----- SLUTD1 & SLUTD2,
HALES AND ROBERTS (1970)
500
1000
1500
2000
2500
DEPTH (KILOMETERS)

Figure 3.

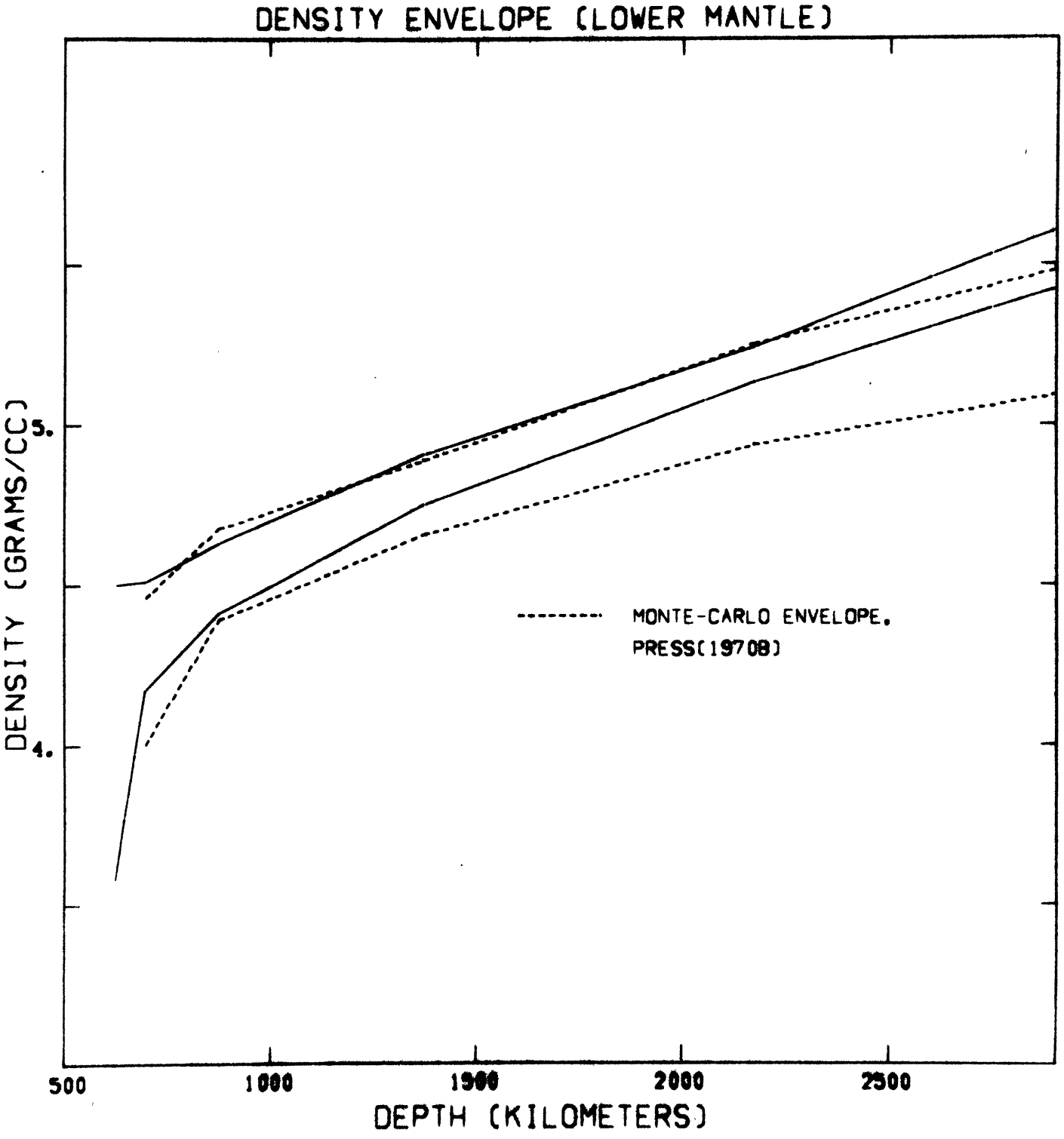

DENSITY ENVELOPE (LOWER MANTLE)
DENSITY (GRAMS/CC)
5.
4.
MONTE-CARLO ENVELOPE,
PRESS(1970B)
500
1000
1500
2000
2500
DEPTH (KILOMETERS)

Figure 4.

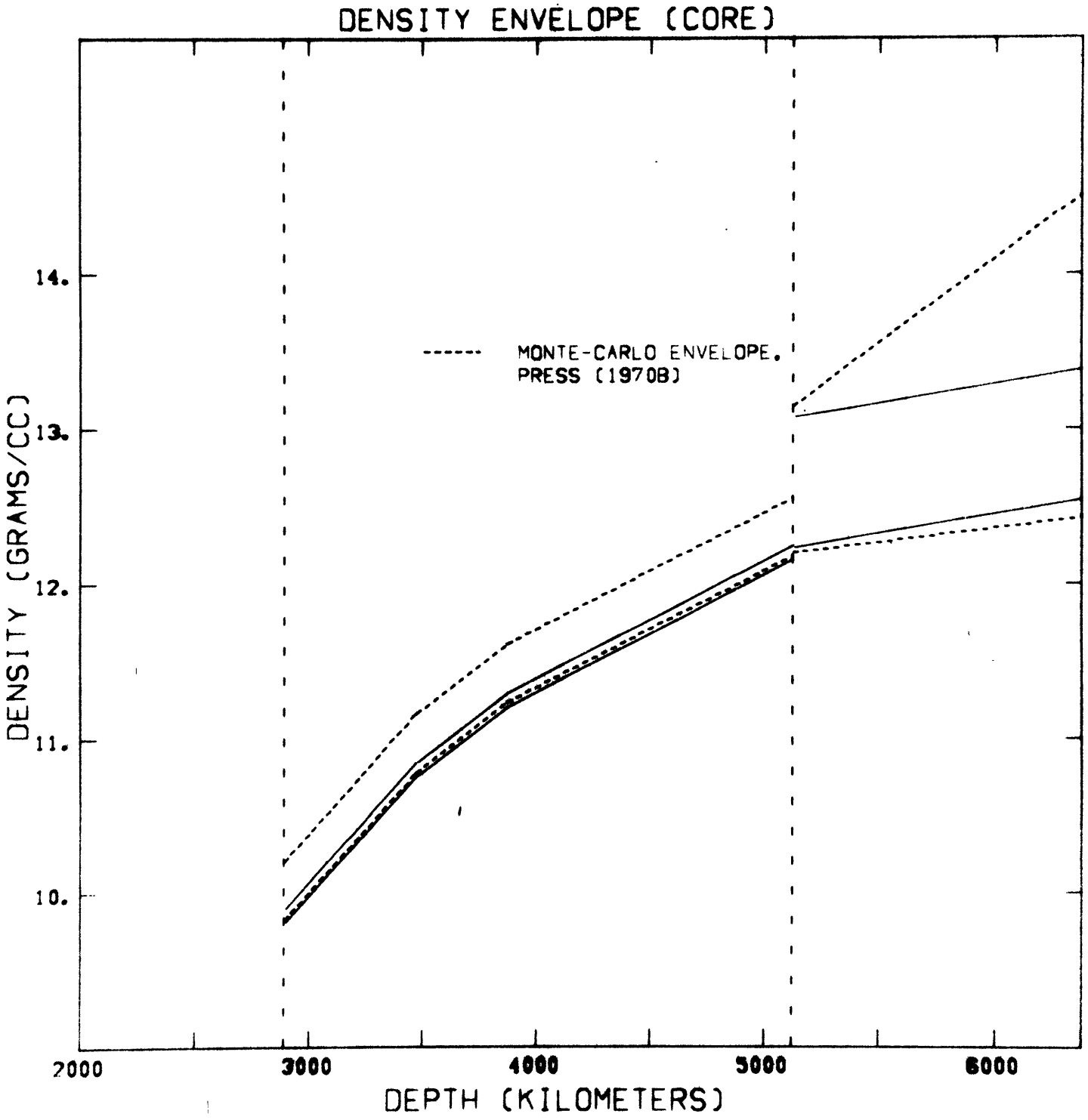

DENSITY ENVELOPE (CORE)
MONTE-CARLO ENVELOPE.
PRESS (1970B)
DENSITY (GRAMS/CC)
14.
13.
12.
11.
10.
2000
3000
4000
5000
6000
DEPTH (KILOMETERS)

Figure 5.

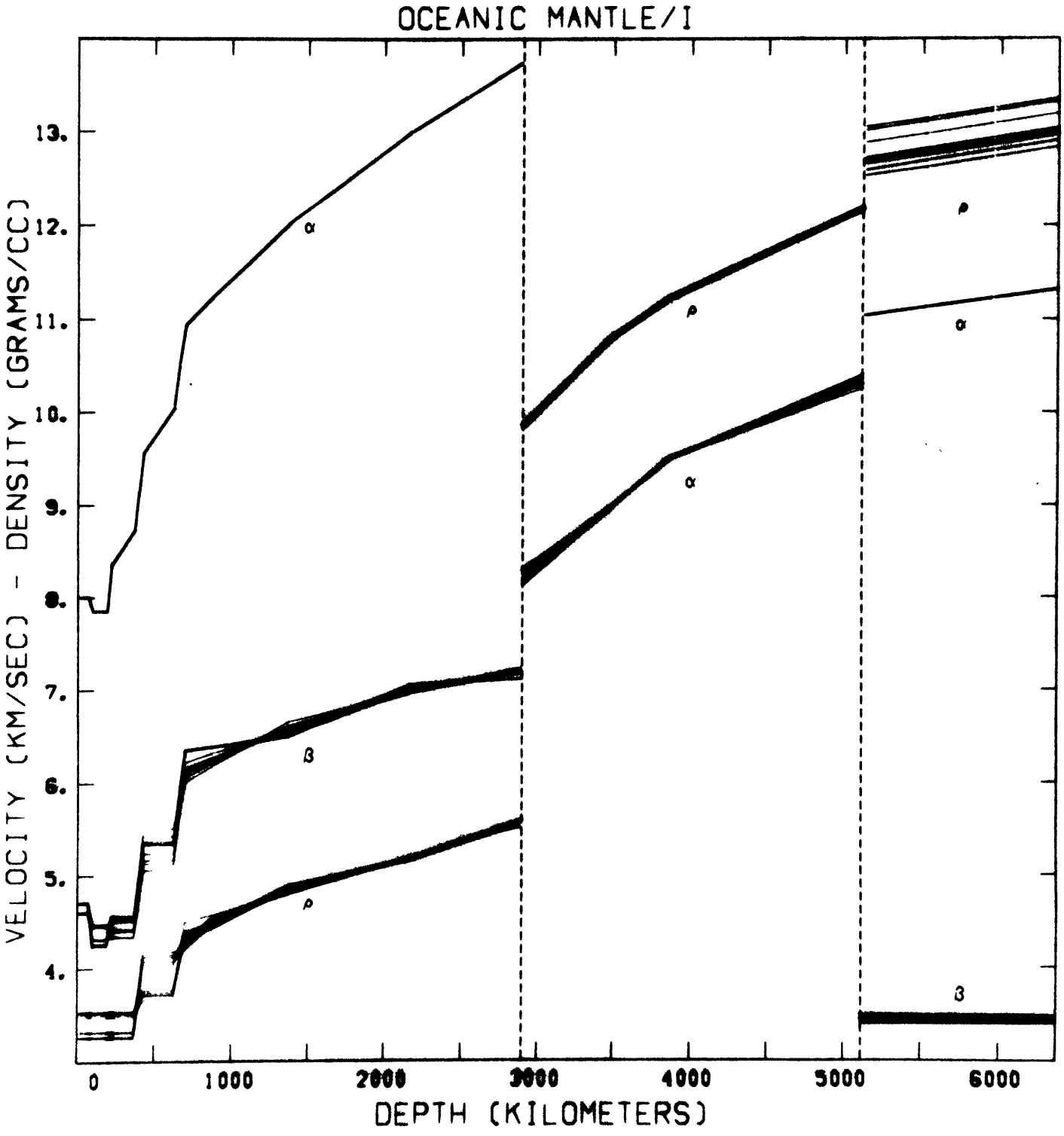

OCEANIC MANTLE/I
VELOCITY (KM/SEC) - DENSITY (GRAMS/CC)
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
α
β
ρ
0
1000
2000
3000
4000
5000
6000
DEPTH (KILOMETERS)

Figure 6.

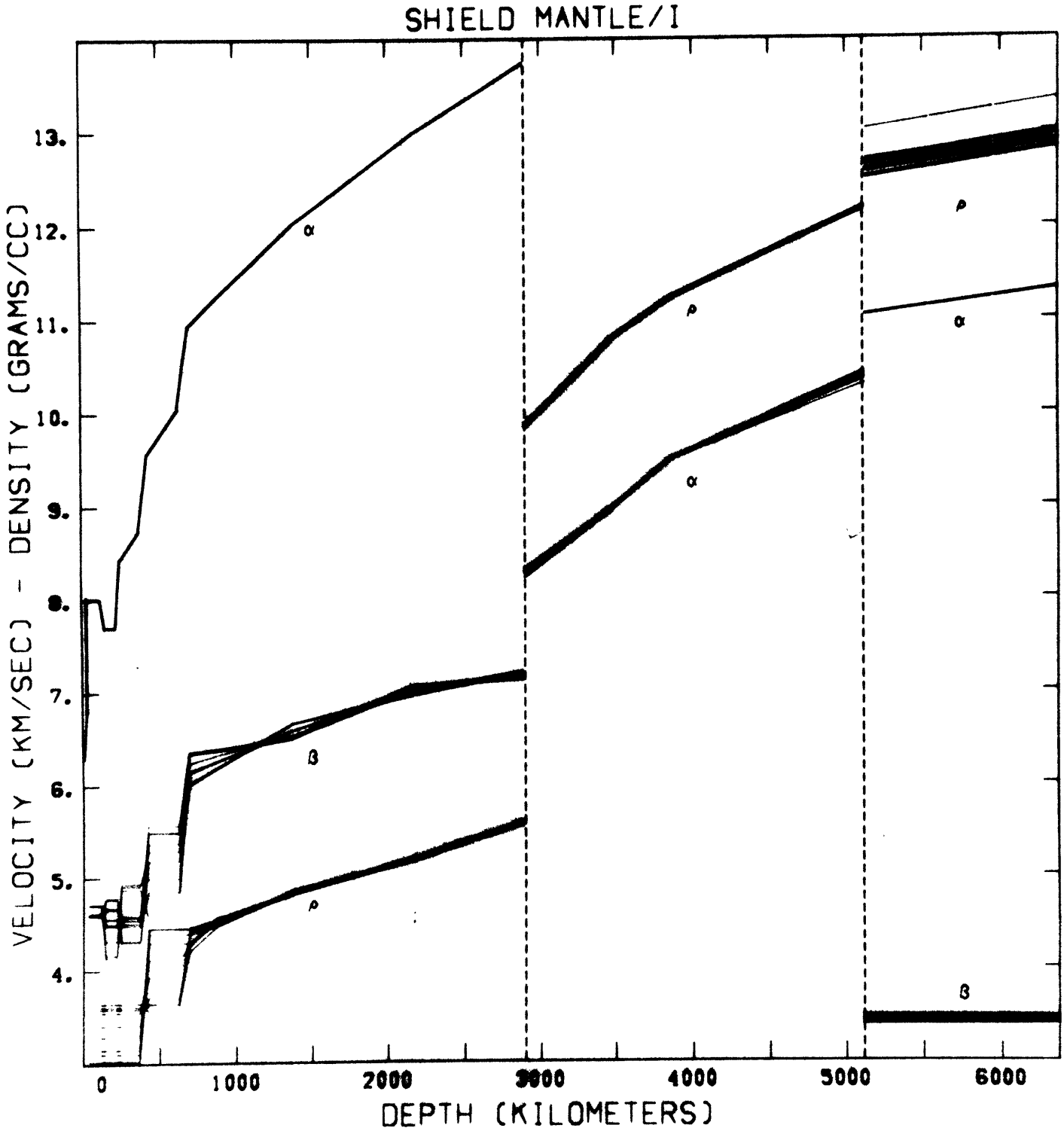

SHIELD MANTLE/I
VELOCITY (KM/SEC) - DENSITY (GRAMS/CC)
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
α
β
ρ
0
1000
2000
3000
4000
5000
6000
DEPTH (KILOMETERS)

Figure 7.

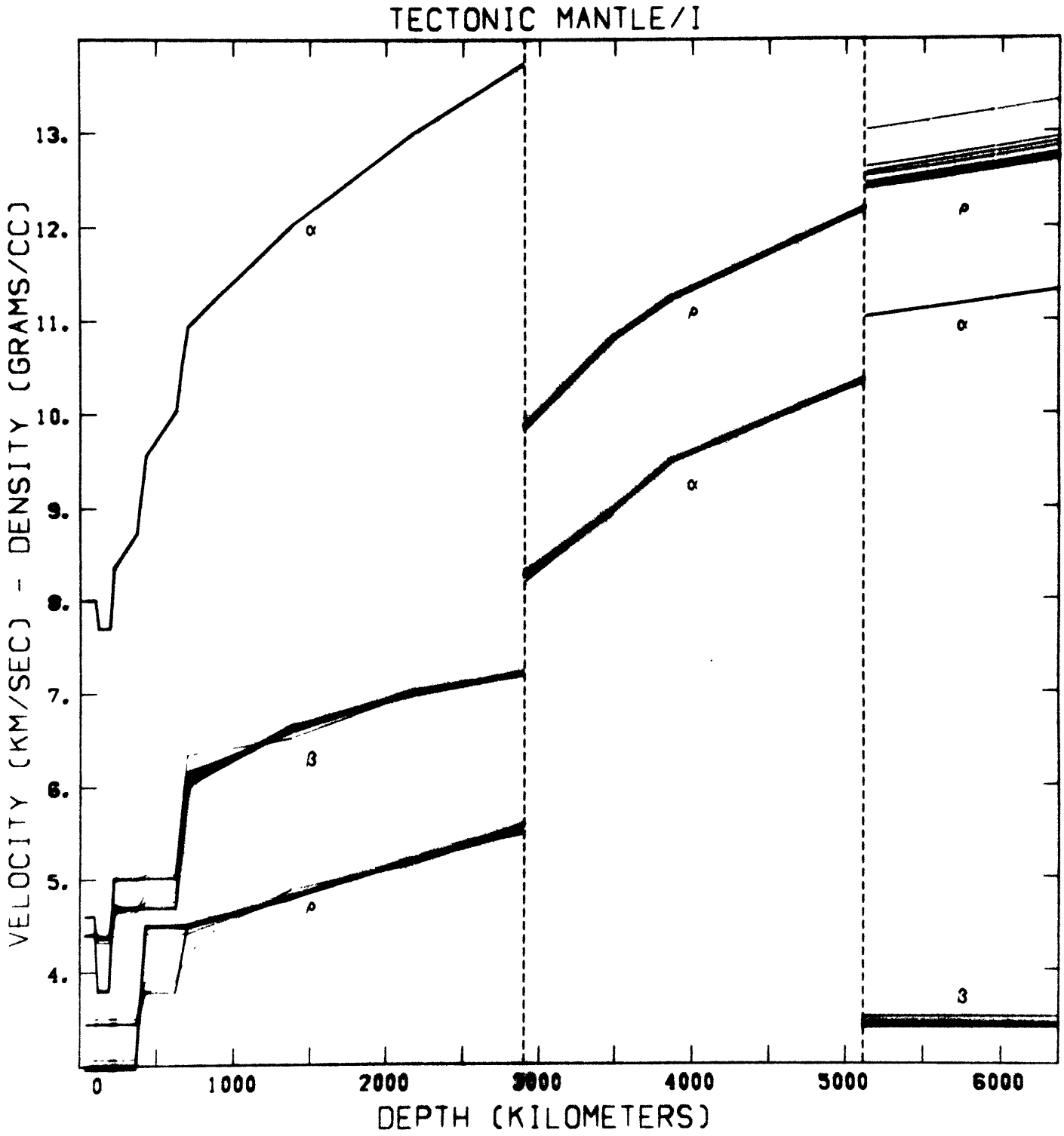

TECTONIC MANTLE/I
VELOCITY (KM/SEC) - DENSITY (GRAMS/CC)
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
α
ρ
ρ
α
α
β
ρ
3
0
1000
2000
3000
4000
5000
6000
DEPTH (KILOMETERS)

Figure 8.

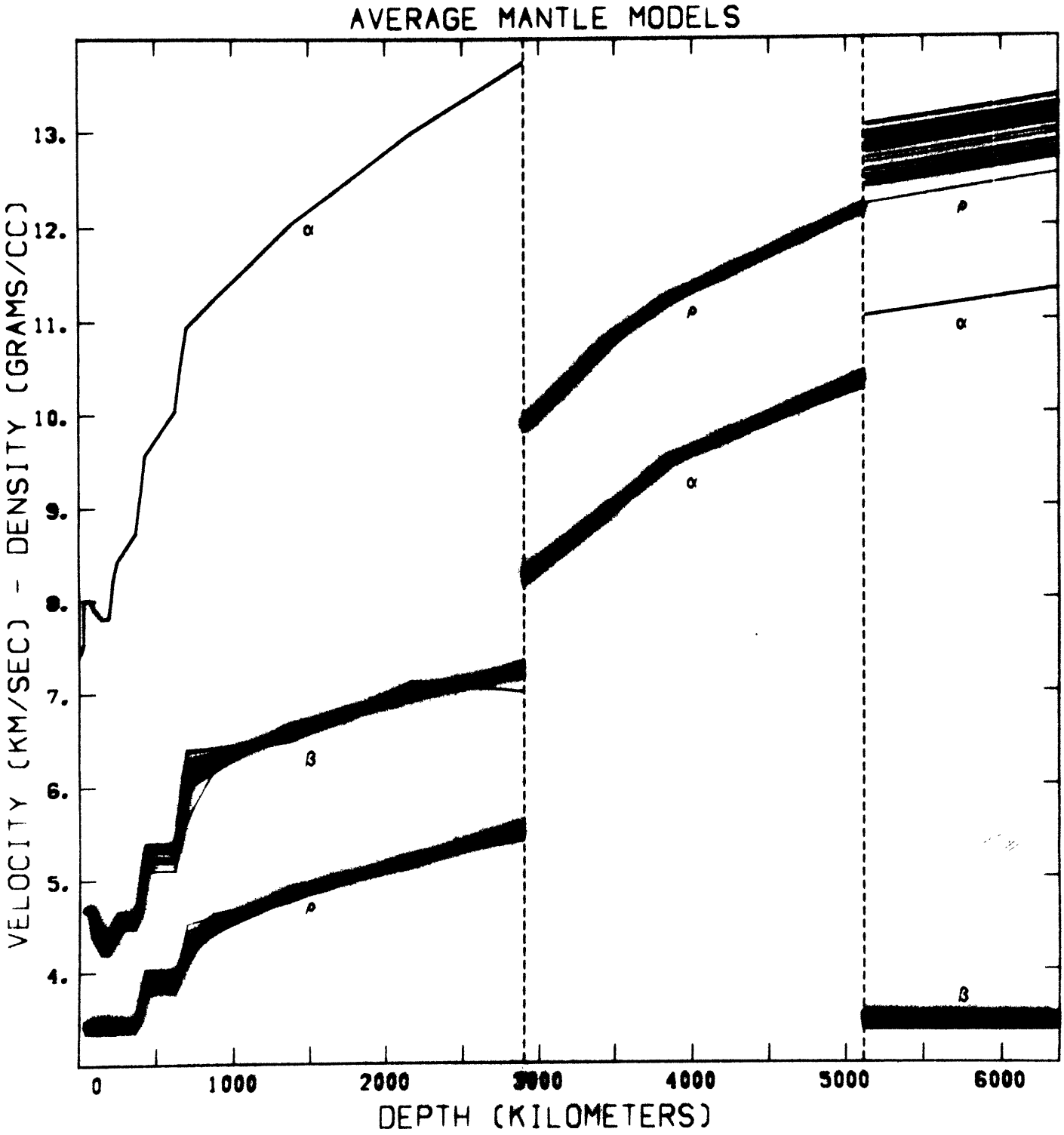

AVERAGE MANTLE MODELS
VELOCITY (KM/SEC) - DENSITY (GRAMS/CC)
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
α
β
ρ
0
1000
2000
3000
4000
5000
6000
DEPTH (KILOMETERS)

Figure 9.

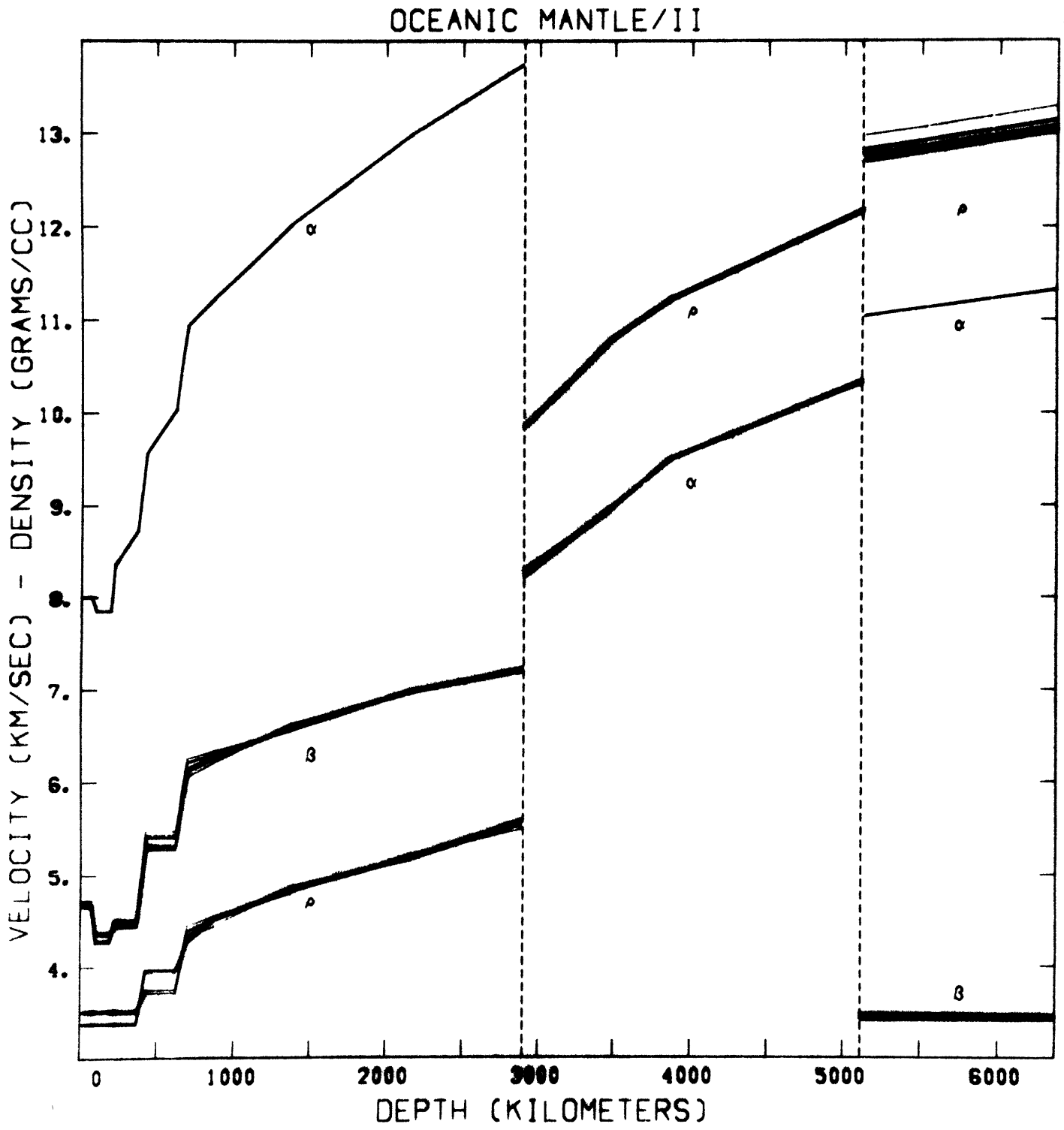
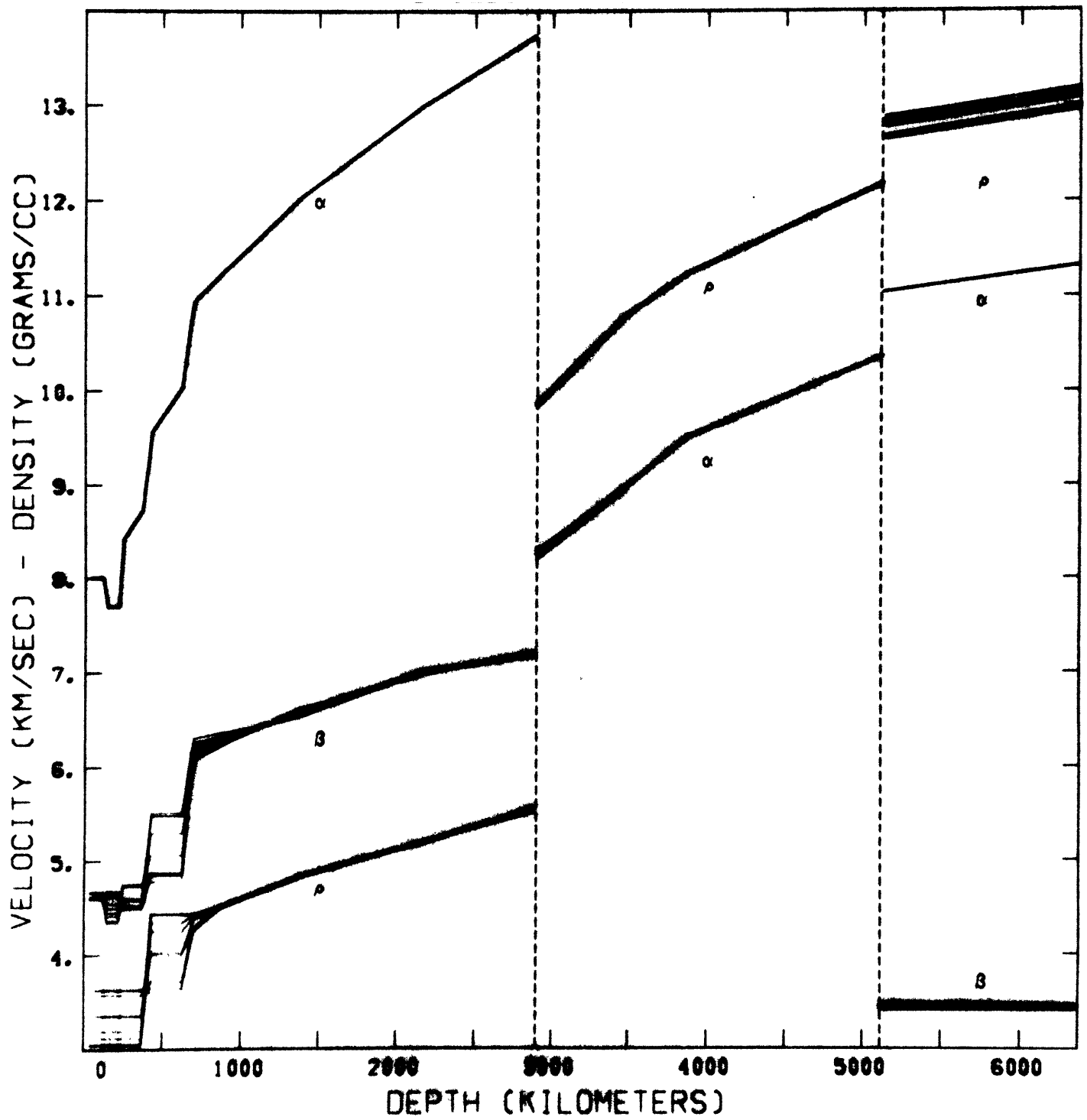
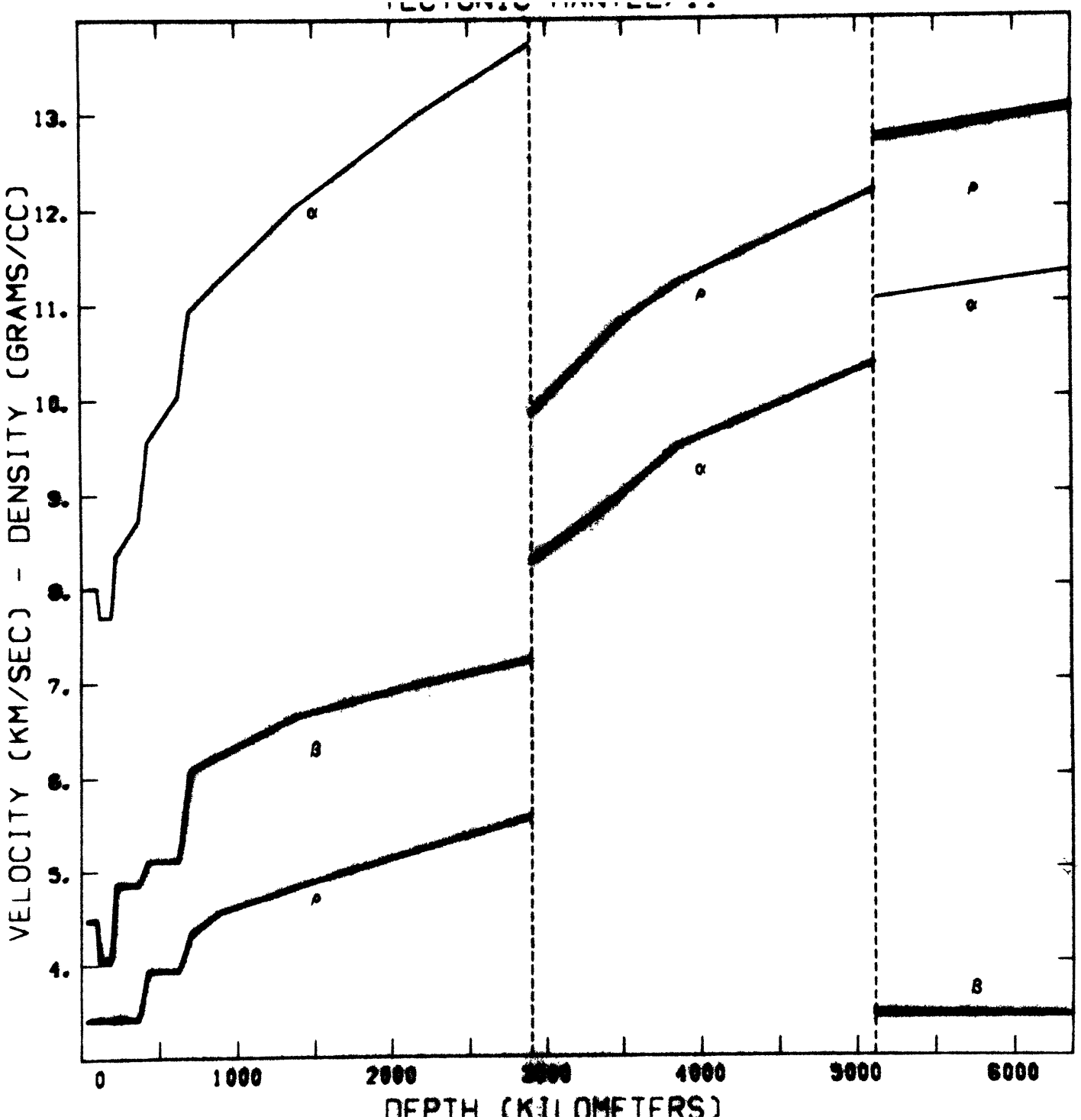

OCEANIC MANTLE/II
VELOCITY (KM/SEC) - DENSITY (GRAMS/CC)
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
α
ρ
ρ
α
α
β
ρ
β
0
1000
2000
3000
4000
5000
6000
DEPTH (KILOMETERS)

Figure 10.


VELOCITY (KM/SEC) - DENSITY (GRAMS/CC)
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
α
ρ
α
α
β
ρ
ρ
β
0
1000
2000
3000
4000
5000
6000
DEPTH (KILOMETERS)


VELOCITY (KM/SEC) - DENSITY (GRAMS/CC)
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
α
β
ρ
0
1000
2000
4000
5000
6000
DEPTH (KILOMETERS)

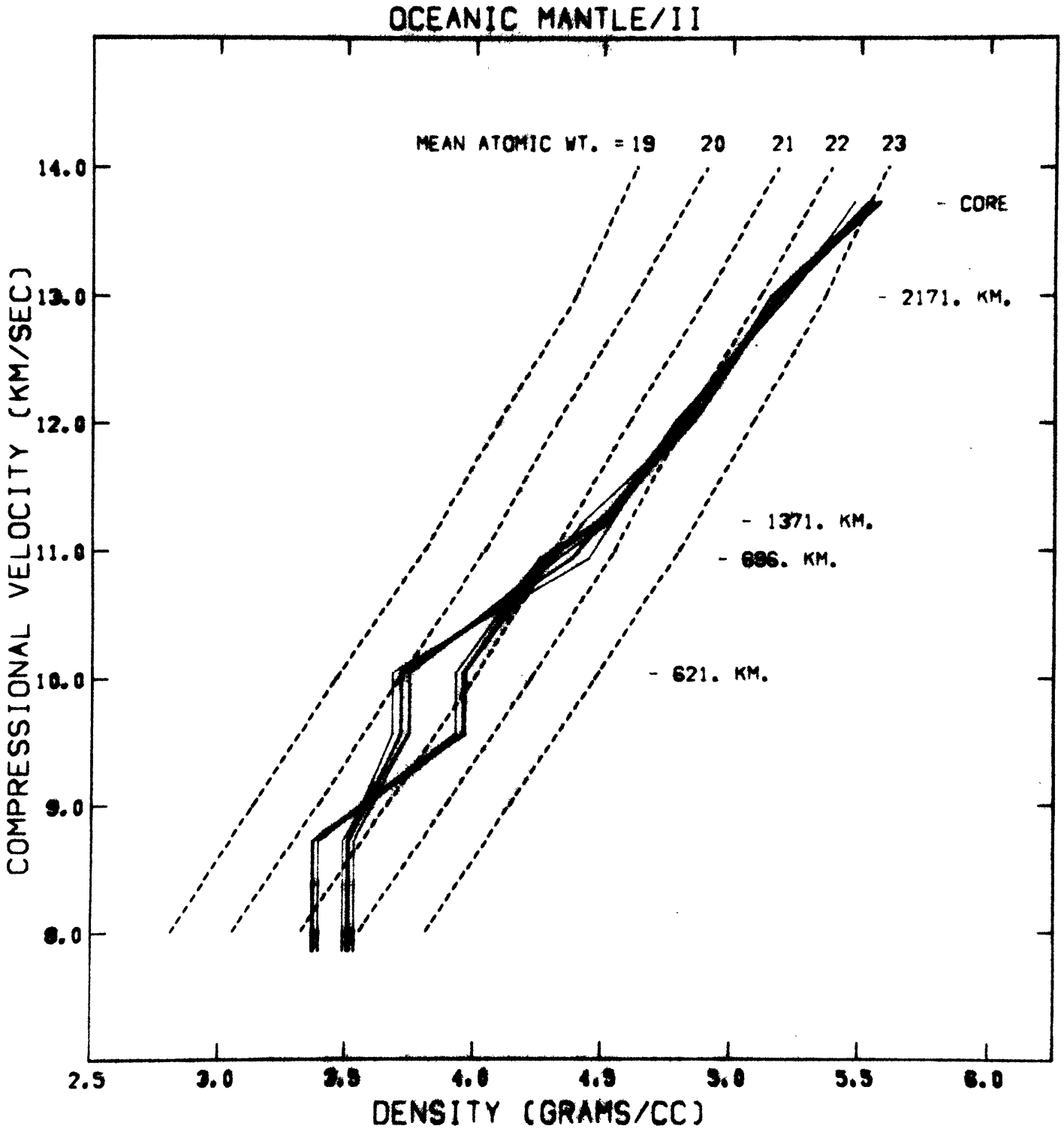

OCEANIC MANTLE/II
MEAN ATOMIC WT. = 19
20
21
22
23
- CORE
- 2171. KM.
- 1371. KM.
- 686. KM.
- 621. KM.
COMPRESSIONAL VELOCITY (KM/SEC)
14.0
13.0
12.0
11.0
10.0
9.0
8.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
DENSITY (GRAMS/CC)

Figure 13.

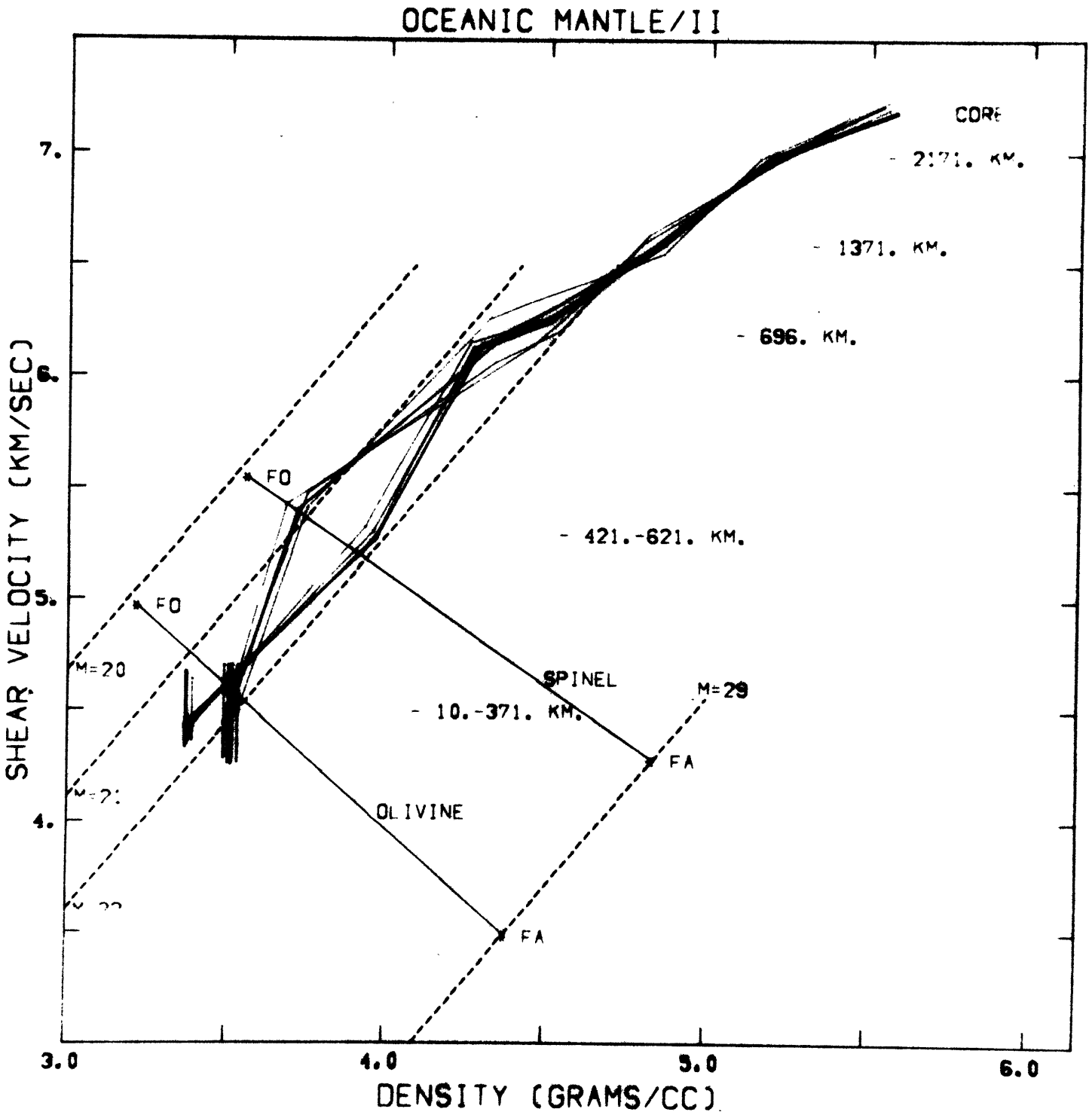

OCEANIC MANTLE/II
CORE
- 2171. KM.
- 1371. KM.
- 696. KM.
- 421.-621. KM.
- 10.-371. KM.
FO
FO
FA
FA
SPINEL
OLIVINE
M=20
M=29
7.
6.
5.
4.
3.0
4.0
5.0
6.0
SHEAR VELOCITY (KM/SEC)
DENSITY (GRAMS/CC)

Figure 14.

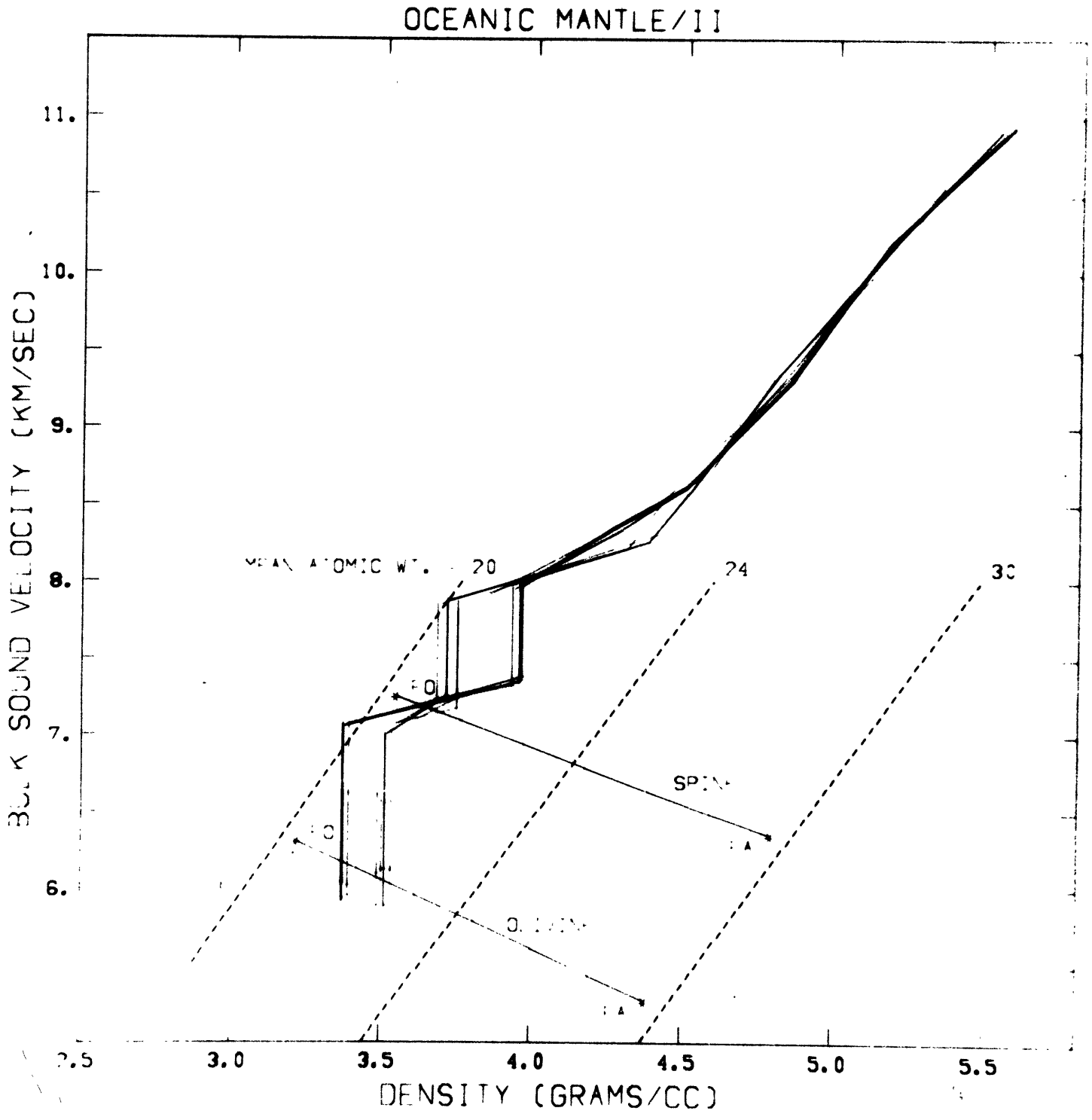

OCEANIC MANTLE/II
BULK SOUND VELOCITY (KM/SEC)
11.
10.
9.
8.
7.
6.
MEAN ATOMIC WT. = 20
24
30
FO
SPINEL
FO
OLIVINE
FA
FA
2.5
3.0
3.5
4.0
4.5
5.0
5.5
DENSITY (GRAMS/CC)

Figure 15.

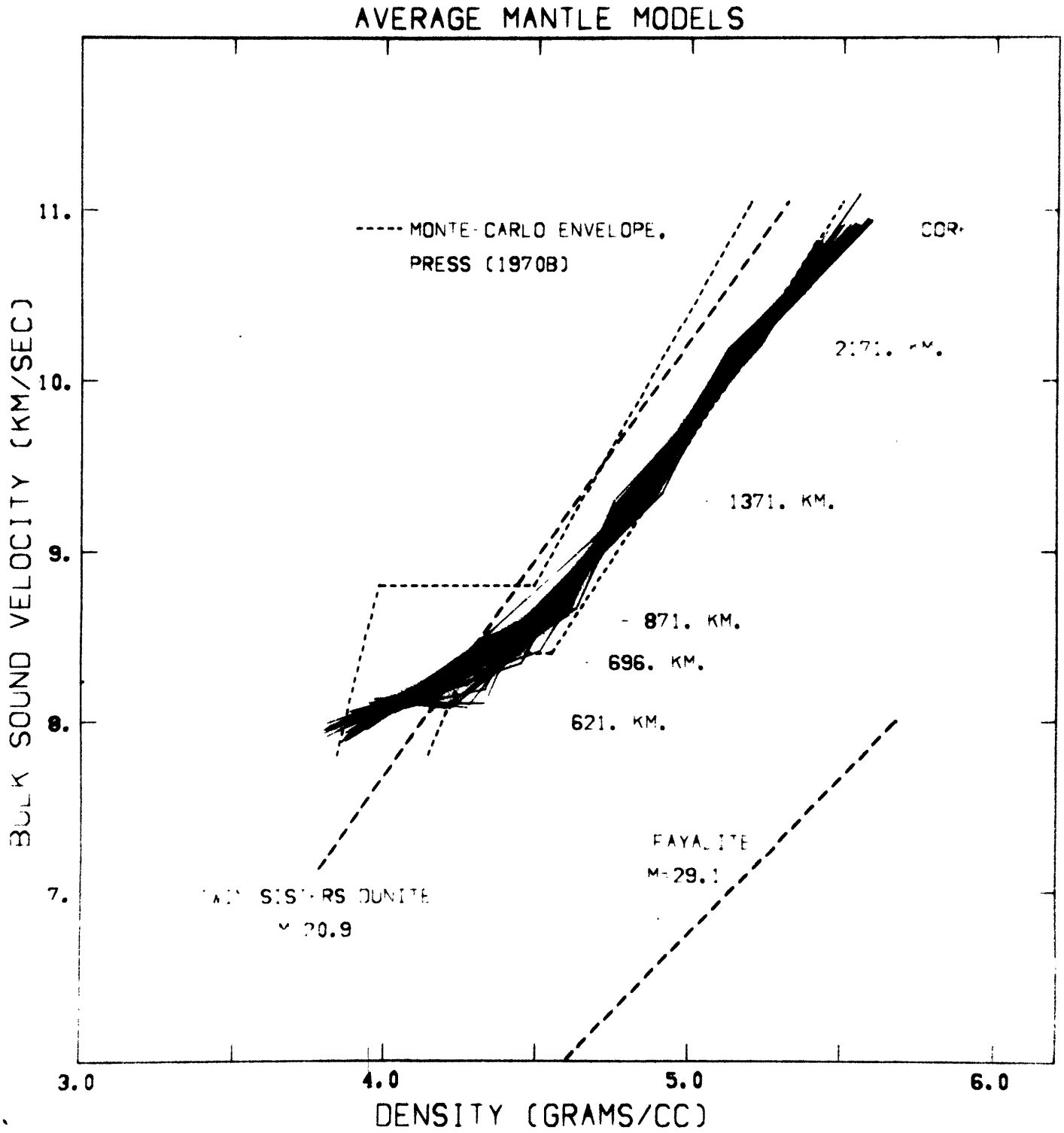

AVERAGE MANTLE MODELS
----- MONTE-CARLO ENVELOPE.
PRESS (1970B)
COR·
2171. KM.
1371. KM.
871. KM.
696. KM.
621. KM.
FAYALITE
M=29.1
M=20.9
11.
10.
9.
8.
7.
3.0
4.0
5.0
6.0
BULK SOUND VELOCITY (KM/SEC)
DENSITY (GRAMS/CC)

Figure 16.

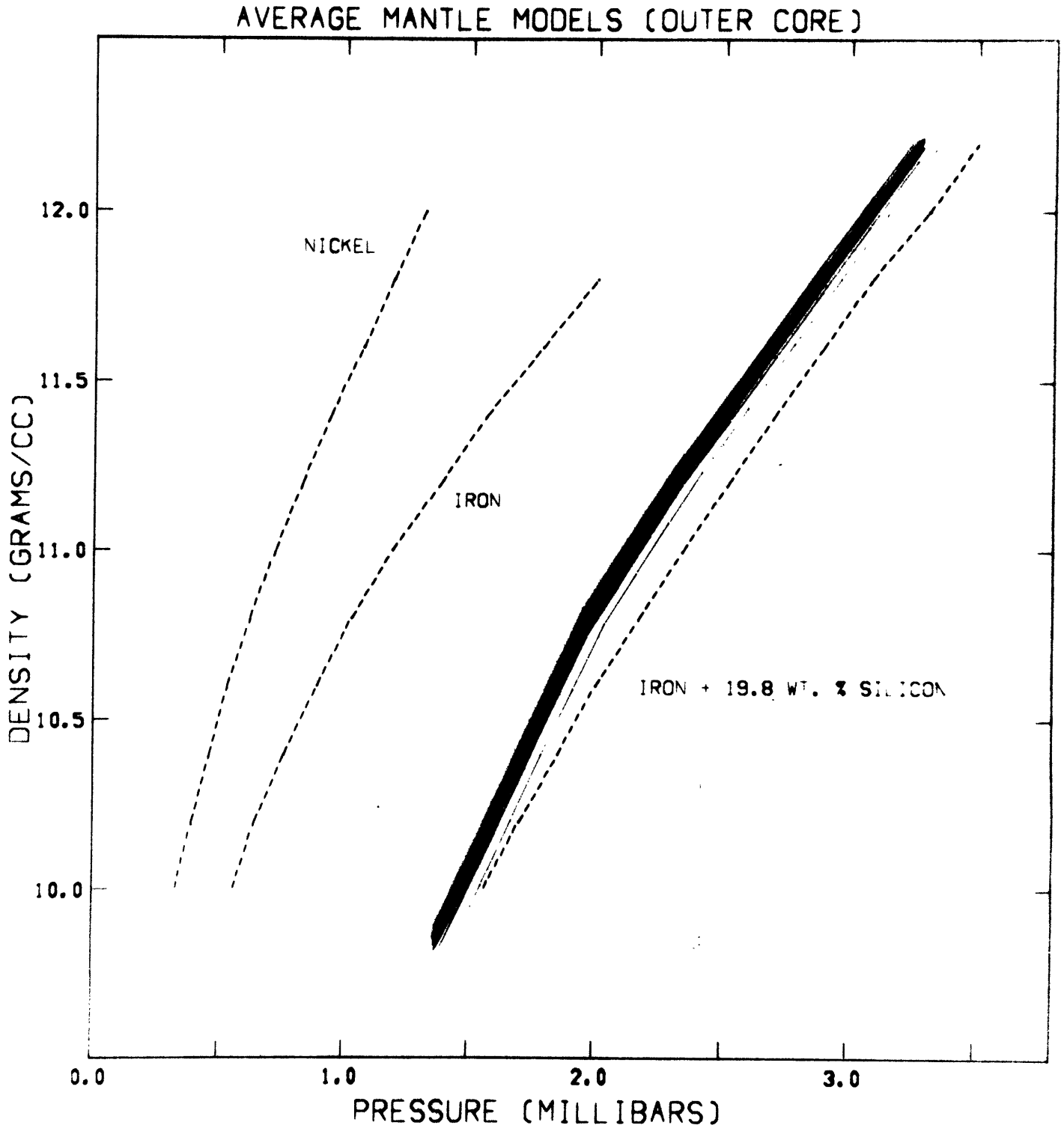

AVERAGE MANTLE MODELS (OUTER CORE)
DENSITY (GRAMS/CC)
12.0
11.5
11.0
10.5
10.0
NICKEL
IRON
IRON + 19.8 WT. % SILICON
0.0
1.0
2.0
3.0
PRESSURE (MILLIBARS)

Figure 17.

TABLE 1

Periods and allowed errors of the free oscillation data are used in this study. The suffixes "o", "s", and "t" refer to periods regionalized for oceanic, shield, and tectonic regions respectively.

MODE	OBSERVED PERIOD (SEC)	MAXIMUM ERROR ALLOWED (SECONDS)
oSo	1227.65	2.40
1So	613.57	1.20
2So	398.54	.80
3So	305.84	.61
4So	243.59	.48
oS2	3233.3	4.00
oS3	2133.56	4.30
oS4	1547.30	3.10
oS6	963.17	2.00
oS9	633.95	1.26
oS12	502.18	1.00
oS15	426.24	.85
oS18	373.89	.75
oS21	336.00	.97
oT3	1705.93	3.40
oT5	1075.97	2.18
oT8	736.86	1.48
oT11	574.62	2.10
oT14	475.73	.95
oT18	390.94	1.20
oT21	345.82	1.05
1S1	2473.06	4.95
1S2	1470.85	2.95
1S4	1060.83	1.70
1S7	603.93	1.21
1S8	555.83	1.11
1S10	465.45	.93
1S14	337.00	.67
2S1	1058.09	2.11
2S2	904.23	1.81
2S5	660.41	1.32
2S6	594.71	1.20
2S8	488.02	.98
2S10	415.67	.83
2S12	365.12	.76
2S13	344.88	.69
2S15	309.20	.62
3S4	439.18	.88
3S8	354.57	.71
3S9	339.14	.68
4S1	505.82	2.02
4S3	460.78	.92
4S4	420.10	.84
4S5	369.72	.80

MODE	OBSERVED PERIOD (SEC)	MAXIMUM ERROR ALLOWED (SECONDS)
4S6	332.11	.66
4S7	303.97	.61
5S2	397.36	.80
5S3	353.52	.71
6S1	348.41	1.00
6S4	293.19	.60
6S5	273.52	.55
7S3	281.37	.56
8S1	272.10	.54
1T2	756.57	1.50
1T4	629.98	1.25
1T6	519.09	1.02
1T8	438.50	.88
1T10	387.58	.78
2T4	421.81	.84
2T7	363.66	.73
2T8	343.34	.68
oS25/o	296.94	.47
oS30/o	261.71	.36
oS36/o	229.73	.31
oS43/o	201.13	.27
oS50/o	178.76	.27
oT25/o	299.89	.50
oT30/o	257.43	.40
oT36/o	220.18	.40
oT43/o	187.99	.40
oT51/o	161.29	.35
oT56/o	148.03	.30
oT61/o	136.63	.30
oS25/s	298.04	.84
oS30/s	262.32	.65
oS36/s	229.79	.56
oS43/s	200.47	.48
oS50/s	177.44	.48
oT25/s	297.74	.90
oT30/s	255.21	.80
oT36/s	217.63	.70
oT43/s	186.30	.60
oT51/s	159.80	.50
oT51/s	146.97	.60
oT61/s	136.16	.60

MODE	OBSERVED PERIOD (SEC)	MAXIMUM ERROR ALLOWED (SECONDS)
oS25/T	299.60	1.05
oS30/T	263.31	.81
oS36/T	229.68	.70
oS43/T	200.44	.60
oS50/T	177.90	.60
oT25/T	304.51	.90
oT30/T	261.63	.80
oT36/T	223.24	.70
oT43/T	191.83	.60
oT51/T	165.19	.50
oT56/T	151.71	.60
oT61/T	140.49	.60

TABLE 2

Envelope of possible solutions including both Stage I and Stage II results. In the "Parameter" column "B" stands for shear velocity, "R" stands for density, and "RAD" is the radius of the core. The suffixes "o", "s", and "t" are used to indicate regional variables in the oceanic, shield, and tectonic regions of the upper mantle.

Parameter	Layer	KM Depth	Stage I Minimum	Stage II Minimum	Stage II Maximum	Stage I Maximum
B/O	10	96.-196.	4.24	4.26	4.37	4.47
B/O	15	221.-371.	4.33	4.43	4.51	4.56
B/O	23	421.-621.	5.06	5.27	5.48	5.50
R/O	5	10.-371.	3.26	3.37	3.53	3.54
R/O	23	421.-621.	3.66	3.68	3.96	4.17
B/S	12	146.-221.	4.13	4.34	4.67	4.77
B/S	16	246.-371.	4.30	4.47	4.76	4.93
B/S	23	421.-621.	4.57	4.78	5.52	5.57
R/S	7	33.-371.	3.03	3.05	3.63	3.64
R/S	23	421.-621.	3.57	3.60	4.43	4.44
B/T	11	121.-196.	3.79	4.01	4.06	4.37
B/T	15	221.-371.	4.65	4.83	4.86	5.01
B/T	23	421.-621.	4.69	5.09	5.01	5.16
R/T	7	33.-371.	2.97	3.41	3.42	3.50
R/T	23	421.-621.	3.78	3.92	3.93	4.50
B	34	696.	5.99			6.39
B	39	871.	6.16			6.43
B	44	1371.	6.48			6.67
B	48	2171.	6.92			7.12
B	58	2898.	7.01			7.32
B	81	5118.-6371.	3.35			3.52
R	74	696.	4.17			4.51
R	39	871.	4.41			4.61
R	44	1371.	4.76			4.91
R	48	2171.	5.13			5.24
R	58	2898.	5.42			5.60
R	59	2898.	9.79			9.86
R	81	5118.	12.43			13.07
RAD			3476.38			3486.42

Table 3

Stage I and Stage II extremal models. N is the layer number, DEPTH is the depth of that layer in km., RADIUS is the radius in km. , VP is the compressional velocity in km./sec., VS is the shear velocity in km./sec., RHO is the density in grams/cc, K is the bulk modulous in 10^{12} dynes/cm.^{2}, MU is the rigidity in 10^{12} dynes/cm.^{2}, K/MU is the ratio of bulk modulous to rigidity, PHI is the seismic parameter in km.^{2}/sec.^{2}, C is the bulk sound velocity (square root of PHI) in km./sec., and P is the pressure in millibars.

MODEL NO. 1

DEPTH 96. KM., MINIMUM SHEAR VELOCITY IS 4.24, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6351.00	8.00	4.70	3.52	1.218	0.779	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.52	1.218	0.779	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.24	3.52	1.328	0.633	2.10	37.69	6.14	0.032
14.	196.00	6175.00	7.85	4.24	3.52	1.328	0.633	2.10	37.69	6.14	0.067
15.	221.00	6150.00	8.36	4.56	3.52	1.488	0.732	2.03	42.20	6.50	0.076
16.	246.00	6125.00	8.42	4.56	3.52	1.523	0.732	2.08	43.21	6.57	0.084
21.	371.00	6000.00	8.72	4.56	3.52	1.704	0.732	2.33	48.35	6.95	0.128
23.	421.00	5950.00	9.56	5.34	3.70	1.973	1.054	1.87	53.39	7.31	0.146
31.	621.00	5750.00	10.04	5.34	3.70	2.321	1.054	2.20	62.80	7.92	0.220
34.	696.00	5675.00	10.94	6.35	4.39	2.895	1.771	1.63	65.92	8.12	0.250
39.	871.00	5500.00	11.24	6.39	4.47	3.217	1.824	1.76	71.95	8.48	0.327
44.	1371.00	5000.00	12.03	6.49	4.83	4.279	2.038	2.10	88.51	9.41	0.559
48.	2171.00	4200.00	13.00	7.06	5.16	5.291	2.577	2.05	102.47	10.12	0.959
58.	2888.93	3482.07	13.73	7.11	5.56	6.736	2.814	2.39	121.07	11.00	1.358
59.	2888.93	3482.07	8.28	0.0	9.84	6.749	0.0	0.0	68.59	8.28	1.358
66.	3471.00	2900.00	8.95	0.0	10.60	8.650	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.25	10.152	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.40	0.0	12.20	13.194	0.0	0.0	108.16	10.40	3.269
81.	5118.00	1253.00	11.03	3.43	12.67	13.431	1.487	9.03	105.01	10.30	3.269
87.	6371.00	0.0	11.32	3.43	12.98	14.600	1.523	9.58	112.49	10.61	3.626

MODEL NO. 2

DEPTH 96. KM., MAXIMUM SHEAR VELOCITY IS 4.47, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.60	3.27	1.170	0.692	1.69	35.79	5.98	0.002
9.	71.00	6300.00	8.00	4.60	3.27	1.170	0.692	1.69	35.79	5.98	0.022
10.	96.00	6275.00	7.85	4.47	3.27	1.142	0.654	1.75	34.95	5.91	0.030
14.	196.00	6175.00	7.85	4.47	3.27	1.142	0.654	1.75	34.95	5.91	0.062
15.	221.00	6150.00	8.36	4.34	3.27	1.463	0.616	2.38	44.76	6.69	0.070
16.	246.00	6125.00	8.42	4.34	3.27	1.496	0.616	2.43	45.77	6.77	0.079
21.	371.00	6000.00	8.72	4.34	3.27	1.664	0.616	2.70	50.91	7.14	0.119
23.	421.00	5950.00	9.36	5.23	4.11	2.257	1.127	2.00	54.85	7.41	0.138
31.	621.00	5750.00	10.04	5.23	4.11	2.644	1.127	2.34	64.26	8.02	0.220
34.	696.00	5675.00	10.94	6.11	4.25	2.971	1.583	1.88	69.97	8.36	0.252
39.	871.00	5500.00	11.24	6.23	4.51	3.357	1.752	1.92	74.50	8.63	0.328
44.	1371.00	5000.00	12.03	6.60	4.88	4.222	2.127	1.98	86.57	9.30	0.562
48.	2171.00	4200.00	13.00	6.98	5.17	5.378	2.521	2.13	104.00	10.20	0.963
58.	2890.84	3480.16	13.73	7.22	5.57	6.631	2.901	2.29	119.07	10.91	1.363
59.	2890.84	3480.16	8.12	0.0	9.80	6.458	0.0	0.0	65.87	8.12	1.363
66.	3471.00	2900.00	8.95	0.0	10.76	8.622	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.21	10.121	0.0	0.0	90.25	9.50	2.342
80.	5118.00	1253.00	10.29	0.0	12.16	12.890	0.0	0.0	105.97	10.29	3.261
81.	5118.00	1253.00	11.03	3.42	12.68	13.448	1.483	9.07	106.07	10.30	3.261
87.	6371.00	0.0	11.32	3.42	12.99	14.619	1.519	9.62	112.55	10.61	3.619

MODEL NO. 3

DEPTH 221. KM., MINIMUM SHEAR VELOCITY IS 4.33, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.60	3.32	1.187	0.702	1.69	35.79	5.98	0.002
9.	71.00	6300.00	8.00	4.60	3.32	1.187	0.702	1.69	35.79	5.98	0.022
10.	96.00	6275.00	7.85	4.46	3.32	1.163	0.661	1.76	35.05	5.92	0.030
14.	196.00	6175.00	7.85	4.46	3.32	1.163	0.661	1.76	35.05	5.92	0.063
15.	221.00	6150.00	8.36	4.33	3.32	1.489	0.622	2.39	44.89	6.70	0.071
16.	246.00	6125.00	8.42	4.33	3.32	1.522	0.622	2.45	45.90	6.77	0.080
21.	371.00	6000.00	8.72	4.33	3.32	1.693	0.622	2.72	51.04	7.14	0.121
23.	421.00	5950.00	9.56	5.33	4.04	2.157	1.149	1.88	53.44	7.31	0.139
31.	621.00	5750.00	10.04	5.33	4.04	2.537	1.149	2.21	62.85	7.93	0.220
34.	696.00	5675.00	10.94	6.06	4.27	3.015	1.570	1.92	70.64	8.40	0.251
39.	871.00	5500.00	11.24	6.21	4.53	3.394	1.745	1.94	74.95	8.66	0.328
44.	1371.00	5000.00	12.03	6.62	4.84	4.177	2.118	1.97	86.34	9.29	0.561
48.	2171.00	4200.00	13.00	6.97	5.17	5.394	2.514	2.15	104.23	10.21	0.961
58.	2889.12	3481.88	13.73	7.22	5.57	6.636	2.905	2.28	119.03	10.91	1.361
59.	2889.12	3481.88	8.19	0.0	9.31	6.582	0.0	0.0	67.06	8.19	1.361
66.	3471.00	2900.00	8.95	0.0	10.77	8.631	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.22	10.131	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.33	0.0	12.17	13.002	0.0	0.0	106.79	10.33	3.264
81.	5118.00	1253.00	11.03	3.41	12.67	13.453	1.474	9.13	106.16	10.30	3.264
87.	6371.00	0.0	11.32	3.41	12.98	14.624	1.510	9.69	112.64	10.61	3.622

MODEL NO. 4

DEPTH 221. KM., MAXIMUM SHEAR VELOCITY IS 4.56, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.52	1.216	0.777	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.52	1.216	0.777	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.24	3.52	1.326	0.632	2.10	37.67	6.14	0.032
14.	196.00	6175.00	7.85	4.24	3.52	1.326	0.632	2.10	37.67	6.14	0.067
15.	221.00	6150.00	8.36	4.56	3.52	1.485	0.731	2.03	42.19	6.50	0.075
16.	246.00	6125.00	8.42	4.56	3.52	1.520	0.731	2.08	43.20	6.57	0.084
21.	371.00	6000.00	8.72	4.56	3.52	1.701	0.731	2.33	48.34	6.95	0.128
23.	421.00	5950.00	9.56	5.33	3.71	1.986	1.052	1.89	53.56	7.32	0.146
31.	621.00	5750.00	10.04	5.33	3.71	2.335	1.052	2.22	62.97	7.94	0.220
34.	696.00	5675.00	10.94	6.35	4.39	2.890	1.773	1.63	65.84	8.11	0.250
39.	871.00	5500.00	11.24	6.39	4.47	3.212	1.825	1.76	71.88	8.48	0.327
44.	1371.00	5000.00	12.03	6.49	4.84	4.282	2.039	2.10	88.53	9.41	0.559
48.	2171.00	4200.00	13.00	7.06	5.16	5.293	2.574	2.06	102.52	10.13	0.959
58.	2889.09	3481.91	13.73	7.12	5.56	6.729	2.819	2.39	120.96	11.00	1.358
59.	2889.09	3481.91	8.27	0.0	9.84	6.734	0.0	0.0	68.46	8.27	1.358
66.	3471.00	2900.00	8.95	0.0	10.80	8.649	0.0	0.0	80.10	8.95	1.558
68.	3871.00	2500.00	9.50	0.0	11.25	10.150	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.39	0.0	12.20	13.172	0.0	0.0	107.99	10.39	3.269
81.	5118.00	1253.00	11.03	3.43	12.70	13.454	1.494	9.01	105.97	10.29	3.269
87.	6371.00	0.0	11.32	3.43	13.01	14.626	1.530	9.56	112.46	10.60	3.628

MODEL NO. 5

DEPTH 421. KM., MINIMUM SHEAR VELOCITY IS 5.06, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.33	1.150	0.735	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.33	1.150	0.735	1.56	34.55	5.88	0.022
10.	96.00	6275.00	7.85	4.31	3.33	1.225	0.620	1.98	36.80	6.07	0.030
14.	196.00	6175.00	7.85	4.31	3.33	1.225	0.620	1.98	36.80	6.07	0.063
15.	221.00	6150.00	8.36	4.51	3.33	1.425	0.677	2.11	42.79	6.54	0.072
16.	246.00	6125.00	8.42	4.51	3.33	1.458	0.677	2.16	43.80	6.62	0.080
21.	371.00	6000.00	8.72	4.51	3.33	1.629	0.677	2.41	48.94	7.00	0.121
23.	421.00	5950.00	9.56	5.06	4.06	2.324	1.041	2.23	57.21	7.56	0.140
31.	621.00	5750.00	10.04	5.06	4.06	2.706	1.041	2.60	66.62	8.16	0.221
34.	696.00	5675.00	10.94	6.35	4.35	2.864	1.753	1.63	65.90	8.12	0.253
39.	871.00	5500.00	11.24	6.39	4.43	3.181	1.808	1.76	71.88	8.48	0.329
44.	1371.00	5000.00	12.03	6.51	4.87	4.299	2.063	2.08	88.25	9.39	0.561
48.	2171.00	4200.00	13.00	7.01	5.15	5.330	2.529	2.11	103.52	10.17	0.961
58.	2890.95	3480.05	13.73	7.22	5.55	6.604	2.893	2.28	119.01	10.91	1.360
59.	2890.95	3480.05	8.17	0.0	9.32	6.553	0.0	0.0	66.70	8.17	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	8.638	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.23	10.139	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.29	0.0	12.18	12.906	0.0	0.0	105.93	10.29	3.277
81.	5118.00	1253.00	11.03	3.47	13.01	13.733	1.571	8.74	105.56	10.27	3.277
87.	6371.00	0.0	11.32	3.47	13.32	14.924	1.608	9.28	112.04	10.58	3.654

MODEL NO. 6

DEPTH 421. KM., MAXIMUM SHEAR VELOCITY IS 5.50, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.47	1.200	0.768	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.47	1.200	0.768	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.30	3.47	1.283	0.643	1.99	36.93	6.08	0.032
14.	196.00	6175.00	7.85	4.30	3.47	1.283	0.643	1.99	36.93	6.08	0.066
15.	221.00	6150.00	8.36	4.42	3.47	1.523	0.679	2.24	43.84	6.62	0.075
16.	246.00	6125.00	8.42	4.42	3.47	1.558	0.679	2.30	44.85	6.70	0.083
21.	371.00	6000.00	8.72	4.42	3.47	1.737	0.679	2.56	49.99	7.07	0.126
23.	421.00	5950.00	9.56	5.50	3.76	1.921	1.138	1.69	51.06	7.15	0.144
31.	621.00	5750.00	10.04	5.50	3.76	2.275	1.138	2.00	60.47	7.78	0.219
34.	696.00	5675.00	10.94	6.01	4.29	3.068	1.550	1.98	71.51	8.46	0.250
39.	871.00	5500.00	11.24	6.18	4.55	3.432	1.738	1.97	75.41	8.68	0.327
44.	1371.00	5000.00	12.03	6.66	4.80	4.107	2.132	1.93	85.53	9.25	0.560
48.	2171.00	4200.00	13.00	6.97	5.19	5.413	2.521	2.15	104.26	10.21	0.959
58.	2886.89	3484.11	13.73	7.18	5.59	6.695	2.885	2.32	119.72	10.94	1.360
59.	2886.89	3484.11	8.28	0.0	9.82	6.736	0.0	0.0	68.62	8.28	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	8.632	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.23	10.131	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.38	0.0	12.18	13.119	0.0	0.0	107.74	10.38	3.263
81.	5118.00	1253.00	11.03	3.39	12.59	13.388	1.452	9.22	106.29	10.31	3.263
87.	6371.00	0.0	11.32	3.39	12.90	14.554	1.487	9.78	112.77	10.62	3.616

MODEL NO. 7

DEPTH 10. KM., MINIMUM DENSITY IS 3.26, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.60	3.26	1.165	0.689	1.69	35.79	5.98	0.002
9.	71.00	6300.00	8.00	4.60	3.26	1.165	0.689	1.69	35.79	5.98	0.022
10.	96.00	6275.00	7.85	4.44	3.26	1.149	0.643	1.79	35.29	5.94	0.030
14.	196.00	6175.00	7.85	4.44	3.26	1.149	0.643	1.79	35.29	5.94	0.062
15.	221.00	6150.00	8.36	4.39	3.26	1.437	0.629	2.28	44.13	6.64	0.070
16.	246.00	6125.00	8.42	4.39	3.26	1.470	0.629	2.34	45.14	6.72	0.078
21.	371.00	6000.00	8.72	4.39	3.26	1.637	0.629	2.60	50.28	7.09	0.119
23.	421.00	5950.00	9.56	5.16	4.14	2.316	1.103	2.10	55.91	7.48	0.137
31.	621.00	5750.00	10.04	5.16	4.14	2.706	1.103	2.45	65.31	8.08	0.220
34.	696.00	5675.00	10.94	6.16	4.23	2.921	1.606	1.82	69.06	8.31	0.252
39.	871.00	5500.00	11.24	6.27	4.49	3.317	1.767	1.88	73.87	8.59	0.328
44.	1371.00	5000.00	12.03	6.59	4.39	4.248	2.123	2.00	86.85	9.32	0.562
48.	2171.00	4200.00	13.00	6.98	5.17	5.373	2.522	2.13	103.95	10.20	0.964
58.	2889.42	3481.58	13.73	7.18	5.57	6.607	2.873	2.32	119.72	10.94	1.362
59.	2889.42	3481.58	8.11	0.0	9.79	6.444	0.0	0.0	65.79	8.11	1.362
66.	3471.00	2900.00	8.95	0.0	10.75	8.615	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.20	10.113	0.0	0.0	90.25	9.50	2.341
80.	5118.00	1253.00	10.29	0.0	12.15	12.868	0.0	0.0	105.86	10.29	3.261
81.	5118.00	1253.00	11.03	3.43	12.73	13.480	1.502	8.98	105.93	10.29	3.261
87.	6371.00	0.0	11.32	3.43	13.04	14.654	1.538	9.53	112.41	10.60	3.622

MODEL NO. 8

DEPTH 10. KM., MAXIMUM DENSITY IS 3.54, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6363.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.54	1.223	0.782	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.54	1.223	0.782	1.56	34.55	5.88	0.024
10.	96.00	6275.00	7.85	4.25	3.54	1.328	0.640	2.08	37.52	6.13	0.032
14.	196.00	6175.00	7.85	4.25	3.54	1.328	0.640	2.08	37.52	6.13	0.067
15.	221.00	6150.00	8.36	4.53	3.54	1.506	0.726	2.08	42.55	6.52	0.076
16.	246.00	6125.00	8.42	4.53	3.54	1.542	0.726	2.12	43.56	6.60	0.085
21.	371.00	6000.00	8.72	4.53	3.54	1.724	0.726	2.38	48.70	6.98	0.128
23.	421.00	5950.00	9.56	5.37	3.73	1.977	1.076	1.84	52.97	7.28	0.146
31.	621.00	5750.00	10.04	5.37	3.73	2.329	1.076	2.16	62.38	7.90	0.221
34.	696.00	5675.00	10.94	6.34	4.34	2.868	1.745	1.64	66.07	8.13	0.251
39.	871.00	5500.00	11.24	6.39	4.42	3.130	1.803	1.76	71.95	8.48	0.328
44.	1371.00	5000.00	12.03	6.52	4.86	4.275	2.065	2.07	88.02	9.38	0.558
48.	2171.00	4200.00	13.00	7.00	5.15	5.342	2.523	2.12	103.70	10.18	0.958
58.	2891.06	3479.94	13.73	7.23	5.55	6.600	2.898	2.28	118.89	10.90	1.358
59.	2891.06	3479.94	8.20	0.0	9.83	6.616	0.0	0.0	67.31	8.20	1.358
66.	3471.00	2900.00	8.95	0.0	10.79	8.643	0.0	0.0	80.10	8.95	1.956
68.	3871.00	2500.00	9.50	0.0	11.24	10.144	0.0	0.0	90.25	9.50	2.343
80.	5118.00	1253.00	10.30	0.0	12.19	12.932	0.0	0.0	106.09	10.30	3.278
81.	5118.00	1253.00	11.03	3.47	13.05	13.772	1.576	8.74	105.56	10.27	3.278
87.	6371.00	0.0	11.32	3.47	13.36	14.965	1.613	9.28	112.04	10.58	3.657

MODEL NO. 9

DEPTH 421. KM., MINIMUM DENSITY IS 3.66, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.50	1.208	0.773	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.50	1.208	0.773	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.26	3.50	1.309	0.635	2.06	37.41	6.12	0.032
14.	196.00	6175.00	7.85	4.26	3.50	1.309	0.635	2.06	37.41	6.12	0.066
15.	221.00	6150.00	8.36	4.51	3.50	1.496	0.711	2.10	42.78	6.54	0.075
16.	246.00	6125.00	8.42	4.51	3.50	1.532	0.711	2.15	43.79	6.62	0.084
21.	371.00	6000.00	8.72	4.51	3.50	1.712	0.711	2.41	48.93	7.00	0.127
23.	421.00	5950.00	9.56	5.42	3.65	1.910	1.073	1.78	52.27	7.23	0.145
31.	621.00	5750.00	10.04	5.42	3.65	2.254	1.073	2.10	61.68	7.85	0.218
34.	696.00	5675.00	10.94	6.15	4.49	3.112	1.697	1.83	69.30	8.32	0.248
39.	871.00	5500.00	11.24	6.26	4.57	3.307	1.790	1.89	74.10	8.61	0.328
44.	1371.00	5000.00	12.03	6.58	4.78	4.161	2.072	2.01	86.97	9.33	0.561
48.	2171.00	4200.00	13.00	7.03	5.19	5.346	2.565	2.08	103.07	10.15	0.959
58.	2887.96	3483.04	13.73	7.18	5.52	6.603	2.843	2.32	119.80	10.95	1.357
59.	2887.96	3483.04	8.27	0.0	9.85	6.735	0.0	0.0	68.36	8.27	1.357
66.	3471.00	2900.00	8.95	0.0	10.81	8.661	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.26	10.164	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.21	13.082	0.0	0.0	107.12	10.35	3.267
81.	5118.00	1253.00	11.03	3.42	12.53	13.293	1.464	9.08	106.08	10.30	3.267
87.	6371.00	0.0	11.32	3.42	12.84	14.455	1.500	9.64	112.57	10.61	3.617

MODEL NO. 10

DEPTH 421. KM., MAXIMUM DENSITY IS 4.17, OCEANIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.60	3.26	1.168	0.690	1.69	35.79	5.98	0.002
9.	71.00	6300.00	8.00	4.60	3.26	1.168	0.690	1.69	35.79	5.98	0.022
10.	96.00	6275.00	7.85	4.45	3.26	1.151	0.645	1.78	35.27	5.94	0.030
14.	196.00	6175.00	7.85	4.45	3.26	1.151	0.645	1.78	35.27	5.94	0.062
15.	221.00	6150.00	8.36	4.40	3.26	1.438	0.632	2.28	44.06	6.64	0.070
16.	246.00	6125.00	8.42	4.40	3.26	1.471	0.632	2.33	45.07	6.71	0.078
21.	371.00	6000.00	8.72	4.40	3.26	1.638	0.632	2.59	50.21	7.09	0.119
23.	421.00	5950.00	9.56	5.13	4.17	2.352	1.096	2.15	56.37	7.51	0.138
31.	621.00	5750.00	10.04	5.13	4.17	2.745	1.096	2.50	65.78	8.11	0.221
34.	696.00	5675.00	10.94	6.23	4.20	2.854	1.631	1.75	67.93	8.24	0.253
39.	871.00	5500.00	11.24	6.32	4.46	3.263	1.780	1.83	73.15	8.55	0.328
44.	1371.00	5000.00	12.03	6.56	4.89	4.271	2.104	2.03	87.34	9.35	0.561
48.	2171.00	4200.00	13.00	6.98	5.16	5.374	2.516	2.14	104.04	10.20	0.963
58.	2891.77	3479.23	13.73	7.22	5.56	6.620	2.903	2.28	118.95	10.91	1.363
59.	2891.77	3479.23	8.12	0.0	9.80	6.464	0.0	0.0	65.95	8.12	1.363
66.	3471.00	2900.00	8.95	0.0	10.76	8.620	0.0	0.0	80.10	8.95	1.957
68.	3671.00	2500.00	9.50	0.0	11.21	10.118	0.0	0.0	90.25	9.50	2.341
80.	5118.00	1253.00	10.25	0.0	12.16	12.777	0.0	0.0	105.06	10.25	3.267
81.	5118.00	1253.00	11.03	3.44	12.88	13.634	1.527	8.93	105.86	10.29	3.267
87.	6371.00	0.0	11.32	3.44	13.19	14.817	1.564	9.48	112.34	10.60	3.636

MODEL NO. 11

DEPTH 146. KM., MINIMUM SHEAR VELOCITY IS 4.13, SHIELD MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	5.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.70	3.59	1.240	0.793	1.56	34.55	5.88	0.009
11.	121.00	6250.00	8.00	4.70	3.59	1.240	0.793	1.56	34.55	5.88	0.040
12.	146.00	6225.00	7.70	4.13	3.59	1.310	0.613	2.14	36.50	6.04	0.049
15.	221.00	6150.00	7.70	4.13	3.59	1.310	0.613	2.14	36.50	6.04	0.076
16.	246.00	6125.00	8.42	4.90	3.59	1.393	0.863	1.61	38.83	6.23	0.084
21.	371.00	6000.00	8.72	4.90	3.59	1.578	0.863	1.83	43.97	6.63	0.129
23.	421.00	5950.00	9.56	5.23	3.63	1.971	1.011	1.95	54.28	7.37	0.147
31.	621.00	5750.00	10.04	5.23	3.63	2.313	1.011	2.29	63.69	7.98	0.219
34.	696.00	5675.00	10.94	6.33	4.41	2.928	1.767	1.66	66.33	8.14	0.249
39.	871.00	5500.00	11.24	6.37	4.49	3.246	1.825	1.78	72.22	8.50	0.327
44.	1371.00	5000.00	12.03	6.50	4.82	4.263	2.039	2.09	88.37	9.40	0.559
48.	2171.00	4200.00	13.00	7.06	5.16	5.293	2.574	2.06	102.52	10.13	0.959
58.	2888.50	3482.50	13.73	7.12	5.56	6.726	2.821	2.38	120.90	11.00	1.358
59.	2888.50	3482.50	8.30	0.0	9.34	6.775	0.0	0.0	68.82	8.30	1.358
66.	3471.00	2900.00	8.95	0.0	10.80	8.654	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.25	10.157	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.43	0.0	12.20	13.266	0.0	0.0	108.70	10.43	3.268
81.	5118.00	1253.00	11.03	3.42	12.60	13.363	1.472	9.08	106.08	10.30	3.268
87.	6371.00	0.0	11.32	3.42	12.91	14.533	1.508	9.64	112.57	10.61	3.621

MODEL NO. 12

DEPTH 146. KM., MAXIMUM SHEAR VELOCITY IS 4.77, SHIELD MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.16	1.131	0.669	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.16	1.131	0.669	1.69	35.79	5.98	0.037
12.	146.00	6225.00	7.70	4.77	3.16	0.915	0.719	1.27	28.94	5.38	0.044
15.	221.00	6150.00	7.70	4.77	3.16	0.915	0.719	1.27	28.94	5.38	0.068
16.	246.00	6125.00	8.42	4.31	3.16	1.458	0.587	2.48	46.14	6.79	0.076
21.	371.00	6000.00	8.72	4.31	3.16	1.621	0.587	2.76	51.28	7.16	0.115
23.	421.00	5950.00	9.56	5.18	4.29	2.389	1.150	2.08	55.67	7.46	0.134
31.	621.00	5750.00	10.04	5.18	4.29	2.793	1.150	2.43	65.08	8.07	0.220
34.	696.00	5675.00	10.94	6.01	4.29	3.008	1.552	1.98	71.48	8.45	0.252
39.	871.00	5500.00	11.24	6.18	4.35	3.431	1.739	1.97	75.40	8.68	0.330
44.	1371.00	5000.00	12.03	6.66	4.80	4.113	2.131	1.93	85.60	9.25	0.563
48.	2171.00	4200.00	13.00	6.97	5.19	5.410	2.523	2.14	104.21	10.21	0.963
58.	2886.89	3484.11	13.73	7.18	5.59	6.695	2.885	2.32	119.72	10.94	1.363
59.	2886.89	3484.11	8.28	0.0	9.81	6.728	0.0	0.0	68.56	8.28	1.363
66.	3471.00	2900.00	8.95	0.0	10.77	8.630	0.0	0.0	80.10	8.95	1.962
68.	3871.00	2500.00	9.50	0.0	11.22	10.130	0.0	0.0	90.25	9.50	2.347
80.	5118.00	1253.00	10.38	0.0	12.17	13.104	0.0	0.0	107.64	10.37	3.265
81.	5118.00	1253.00	11.03	3.40	12.59	13.383	1.453	9.21	106.27	10.31	3.265
87.	6371.00	0.0	11.32	3.40	12.90	14.549	1.489	9.77	112.76	10.62	3.618

MODEL NO. 13

DEPTH 246. KM., MINIMUM SHEAR VELOCITY IS 4.30, SHIELD MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.29	1.179	0.696	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.29	1.178	0.696	1.69	35.79	5.98	0.038
12.	146.00	6225.00	7.70	4.76	3.29	0.957	0.746	1.28	29.08	5.39	0.046
15.	221.00	6150.00	7.70	4.76	3.29	0.957	0.746	1.28	29.08	5.39	0.070
16.	246.00	6125.00	8.42	4.30	3.29	1.522	0.608	2.50	46.25	6.80	0.078
21.	371.00	6000.00	8.72	4.30	3.29	1.691	0.608	2.78	51.40	7.17	0.119
23.	421.00	5950.00	9.56	5.36	4.11	2.185	1.181	1.85	53.12	7.29	0.138
31.	621.00	5750.00	10.04	5.36	4.11	2.572	1.181	2.18	62.52	7.91	0.220
34.	696.00	5675.00	10.94	6.03	4.27	3.042	1.552	1.96	71.23	8.44	0.252
39.	871.00	5500.00	11.24	6.19	4.53	3.409	1.737	1.96	75.23	8.67	0.329
44.	1371.00	5000.00	12.03	6.66	4.81	4.119	2.135	1.93	85.58	9.25	0.562
48.	2171.00	4200.00	13.00	6.96	5.19	5.416	2.514	2.15	104.39	10.22	0.961
58.	2838.77	3482.23	13.73	7.21	5.59	6.665	2.902	2.30	119.28	10.92	1.362
59.	2888.77	3482.23	8.25	0.0	9.82	6.679	0.0	0.0	68.05	8.25	1.362
66.	3471.00	2900.00	8.95	0.0	10.78	8.632	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.23	10.131	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.34	0.0	12.16	13.028	0.0	0.0	107.00	10.34	3.266
81.	5118.00	1253.00	11.03	3.40	12.68	13.476	1.464	9.20	106.27	10.31	3.266
87.	6371.00	0.0	11.32	3.40	12.99	14.647	1.500	9.76	112.75	10.62	3.624

MODEL NO. 14

DEPTH 246. KM., MAXIMUM SHEAR VELOCITY IS 4.93, SHIELD MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.70	3.40	1.176	0.752	1.56	34.55	5.88	0.009
11.	121.00	6250.00	8.00	4.70	3.40	1.176	0.752	1.56	34.55	5.88	0.039
12.	146.00	6225.00	7.70	4.16	3.40	1.234	0.588	2.10	36.26	6.02	0.047
15.	221.00	6150.00	7.70	4.16	3.40	1.234	0.588	2.10	36.26	6.02	0.072
16.	246.00	6125.00	8.42	4.92	3.40	1.312	0.825	1.59	38.56	6.21	0.081
21.	371.00	6000.00	8.72	4.92	3.40	1.487	0.825	1.80	43.70	6.61	0.123
23.	421.00	5950.00	9.56	4.98	3.93	2.289	0.975	2.35	58.30	7.64	0.141
31.	621.00	5750.00	10.04	4.98	3.93	2.659	0.975	2.73	67.71	8.23	0.220
34.	696.00	5675.00	10.94	6.34	4.40	2.909	1.770	1.64	66.07	8.13	0.251
39.	871.00	5500.00	11.24	6.38	4.48	3.229	1.825	1.77	72.05	8.49	0.329
44.	1371.00	5000.00	12.03	6.50	4.83	4.272	2.038	2.10	88.46	9.41	0.561
48.	2171.00	4200.00	13.00	7.06	5.16	5.293	2.575	2.06	102.50	10.12	0.960
58.	2888.81	3482.19	13.73	7.11	5.56	6.733	2.817	2.39	121.02	11.00	1.360
59.	2888.81	3482.19	8.28	0.0	9.84	6.753	0.0	0.0	68.62	8.28	1.360
66.	3471.00	2900.00	8.95	0.0	10.80	8.651	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.25	10.153	0.0	0.0	90.25	9.50	2.347
80.	5118.00	1253.00	10.41	0.0	12.20	13.213	0.0	0.0	108.31	10.41	3.270
81.	5118.00	1253.00	11.03	3.42	12.65	13.414	1.484	9.04	105.02	10.30	3.270
87.	6371.00	0.0	11.32	3.42	12.96	14.582	1.521	9.59	112.50	10.61	3.626

MODEL NO. 15

DEPTH 421. KM., MINIMUM SHEAR VELOCITY IS 4.57, SHIELD MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.70	3.11	1.075	0.687	1.56	34.55	5.88	0.009
11.	121.00	6250.00	8.00	4.70	3.11	1.075	0.687	1.56	34.55	5.88	0.036
12.	146.00	6225.00	7.70	4.31	3.11	1.074	0.578	1.86	34.51	5.87	0.044
15.	221.00	6150.00	7.70	4.31	3.11	1.074	0.578	1.86	34.51	5.87	0.067
16.	246.00	6125.00	8.42	4.87	3.11	1.221	0.739	1.65	39.22	6.26	0.075
21.	371.00	6000.00	8.72	4.87	3.11	1.381	0.739	1.87	44.36	6.66	0.114
23.	421.00	5950.00	9.56	4.57	4.39	2.789	0.915	3.05	63.57	7.97	0.133
31.	621.00	5750.00	10.04	4.57	4.39	3.202	0.915	3.50	72.98	8.54	0.221
34.	696.00	5675.00	10.94	6.36	4.39	2.887	1.773	1.63	65.80	8.11	0.254
39.	871.00	5500.00	11.24	6.39	4.47	3.210	1.825	1.76	71.86	8.48	0.331
44.	1371.00	5000.00	12.03	6.49	4.84	4.284	2.038	2.10	88.54	9.41	0.563
48.	2171.00	4200.00	13.00	7.06	5.16	5.293	2.573	2.06	102.54	10.13	0.962
58.	2889.14	3481.86	13.73	7.12	5.56	6.726	2.820	2.39	120.92	11.00	1.362
59.	2889.14	3481.86	8.27	0.0	9.84	6.728	0.0	0.0	68.39	8.27	1.362
66.	3471.00	2900.00	8.95	0.0	10.80	8.649	0.0	0.0	80.10	8.95	1.962
68.	3871.00	2500.00	9.50	0.0	11.25	10.150	0.0	0.0	90.25	9.50	2.348
80.	5118.00	1253.00	10.39	0.0	12.20	13.162	0.0	0.0	107.91	10.39	3.273
81.	5118.00	1253.00	11.03	3.43	12.71	13.465	1.498	8.99	105.95	10.29	3.273
87.	6371.00	0.0	11.32	3.43	13.02	14.637	1.534	9.54	112.43	10.60	3.632

MODEL NO. 16

DEPTH 421. KM., MAXIMUM SHEAR VELOCITY IS 5.57, SHIELD MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.54	1.268	0.750	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.54	1.268	0.750	1.69	35.79	5.98	0.040
12.	146.00	6225.00	7.70	4.55	3.54	1.124	0.732	1.54	31.74	5.63	0.049
15.	221.00	6150.00	7.70	4.55	3.54	1.124	0.732	1.54	31.74	5.63	0.075
16.	246.00	6125.00	8.42	4.68	3.54	1.565	0.710	2.20	44.17	6.65	0.084
21.	371.00	6000.00	8.72	4.48	3.54	1.747	0.710	2.46	49.31	7.02	0.127
23.	421.00	5950.00	9.56	5.57	3.70	1.852	1.147	1.61	50.06	7.08	0.145
31.	621.00	5750.00	10.04	5.57	3.70	2.200	1.147	1.92	59.46	7.71	0.219
34.	696.00	5675.00	10.94	6.00	4.30	3.079	1.550	1.99	71.62	8.46	0.249
39.	871.00	5500.00	11.24	6.17	4.56	3.442	1.738	1.98	75.50	8.69	0.327
44.	1371.00	5000.00	12.03	6.67	4.80	4.101	2.132	1.92	85.47	9.25	0.560
48.	2171.00	4200.00	13.00	6.97	5.19	5.417	2.520	2.15	104.30	10.21	0.959
53.	2837.20	3483.80	13.73	7.18	5.59	6.696	2.887	2.32	119.70	10.94	1.360
59.	2887.20	3483.80	8.29	0.0	9.82	6.745	0.0	0.0	68.71	8.29	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	8.633	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.23	10.132	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.38	0.0	12.18	13.123	0.0	0.0	107.77	10.38	3.262
81.	5118.00	1253.00	11.03	3.39	12.58	13.379	1.446	9.25	106.34	10.31	3.262
87.	6371.00	0.0	11.32	3.39	12.89	14.545	1.482	9.82	112.82	10.62	3.615

MODEL NO. 17

DEPTH 33. KM., MINIMUM DENSITY IS 3.03, SHIELD UPPER MMANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.03	1.085	0.642	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.03	1.085	0.642	1.69	35.79	5.98	0.035
12.	146.00	6225.00	7.70	4.67	3.03	0.915	0.663	1.38	30.16	5.49	0.043
15.	221.00	6150.00	7.70	4.67	3.03	0.915	0.663	1.38	30.16	5.49	0.066
16.	246.00	6125.00	8.42	4.50	3.03	1.330	0.615	2.16	43.85	6.62	0.073
21.	371.00	6000.00	8.72	4.50	3.03	1.466	0.615	2.41	48.99	7.00	0.111
23.	421.00	5950.00	9.56	4.84	4.44	2.670	1.041	2.56	60.13	7.75	0.130
31.	621.00	5750.00	10.04	4.84	4.44	3.088	1.041	2.97	69.54	8.34	0.219
34.	696.00	5675.00	10.94	6.13	4.44	3.090	1.668	1.85	69.60	8.34	0.253
39.	871.00	5500.00	11.24	6.25	4.52	3.357	1.765	1.90	74.27	8.62	0.331
44.	1371.00	5000.00	12.03	6.59	4.84	4.199	2.103	2.00	86.78	9.32	0.564
48.	2171.00	4200.00	13.00	7.02	5.16	5.332	2.546	2.09	103.26	10.16	0.964
58.	2886.83	3484.17	13.73	7.16	5.56	6.687	2.852	2.34	120.18	10.96	1.362
59.	2886.83	3484.17	8.20	0.0	9.83	6.614	0.0	0.0	67.29	8.20	1.362
66.	3471.00	2900.00	8.95	0.0	10.79	8.642	0.0	0.0	80.10	8.95	1.963
68.	3871.00	2500.00	9.50	0.0	11.24	10.143	0.0	0.0	90.25	9.50	2.349
80.	5118.00	1253.00	10.42	0.0	12.19	13.242	0.0	0.0	108.64	10.42	3.266
81.	5118.00	1253.00	11.03	3.42	12.51	13.274	1.463	9.07	106.07	10.30	3.266
87.	6371.00	0.0	11.32	3.42	12.62	14.434	1.499	9.63	112.56	10.61	3.614

MODEL NO. 18

DEPTH 33. KM., MAXIMUM DENSITY IS 3.64, SHIELD UPPER MMANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.60	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.61	3.64	1.300	0.774	1.68	35.68	5.97	0.009
11.	121.00	6250.00	8.00	4.61	3.64	1.300	0.774	1.68	35.68	5.97	0.041
12.	146.00	6225.00	7.70	4.48	3.64	1.186	0.731	1.62	32.54	5.70	0.050
15.	221.00	6150.00	7.70	4.48	3.64	1.186	0.731	1.62	32.54	5.70	0.077
16.	246.00	6125.00	8.42	4.57	3.64	1.567	0.762	2.06	43.01	6.56	0.086
21.	371.00	6000.00	8.72	4.57	3.64	1.755	0.762	2.30	48.16	6.94	0.131
23.	421.00	5950.00	9.56	5.48	3.65	1.871	1.097	1.71	51.29	7.16	0.149
31.	621.00	5750.00	10.04	5.48	3.65	2.214	1.097	2.02	60.70	7.79	0.221
34.	696.00	5675.00	10.94	6.36	4.20	2.766	1.698	1.63	65.80	8.11	0.251
39.	871.00	5500.00	11.24	6.39	4.46	3.205	1.825	1.76	71.81	8.47	0.326
44.	1371.00	5000.00	12.03	6.50	4.85	4.288	2.054	2.09	88.32	9.40	0.558
48.	2171.00	4200.00	13.00	7.01	5.15	5.331	2.532	2.11	103.48	10.17	0.958
58.	2890.63	3480.37	13.73	7.21	5.55	6.614	2.889	2.29	119.12	10.91	1.358
59.	2890.63	3480.37	8.19	0.0	9.83	6.591	0.0	0.0	67.08	8.19	1.358
66.	3471.00	2900.00	8.95	0.0	10.79	8.640	0.0	0.0	80.10	8.95	1.956
68.	3871.00	2500.00	9.50	0.0	11.24	10.140	0.0	0.0	90.25	9.50	2.343
80.	5118.00	1253.00	10.30	0.0	12.19	12.921	0.0	0.0	106.03	10.30	3.276
81.	5118.00	1253.00	11.03	3.47	13.03	13.758	1.571	8.76	105.59	10.28	3.276
87.	6371.00	0.0	11.32	3.47	13.34	14.950	1.608	9.30	112.07	10.59	3.654

MODEL NO. 19

DEPTH 421. KM., MINIMUM DENSITY IS 3.57, SHIELD UPPER MMANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.61	1.291	0.764	1.69	35.77	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.61	1.291	0.764	1.69	35.77	5.98	0.040
12.	146.00	6225.00	7.70	4.49	3.61	1.169	0.728	1.61	32.39	5.69	0.049
15.	221.00	6150.00	7.70	4.49	3.61	1.169	0.728	1.61	32.39	5.69	0.076
16.	246.00	6125.00	8.42	4.57	3.61	1.553	0.755	2.06	43.01	6.56	0.085
21.	371.00	6000.00	8.72	4.57	3.61	1.738	0.755	2.30	48.16	6.94	0.130
23.	421.00	5950.00	9.56	5.50	3.57	1.821	1.078	1.69	51.07	7.15	0.147
31.	621.00	5750.00	10.04	5.50	3.57	2.157	1.078	2.00	60.48	7.78	0.218
34.	696.00	5675.00	10.94	6.24	4.46	3.022	1.733	1.74	67.82	8.24	0.249
39.	871.00	5500.00	11.24	6.31	4.54	3.320	1.808	1.84	73.20	8.56	0.327
44.	1371.00	5000.00	12.03	6.53	4.80	4.219	2.049	2.06	87.83	9.37	0.560
48.	2171.00	4200.00	13.00	7.06	5.16	5.208	2.573	2.06	102.50	10.12	0.958
58.	2887.62	3483.38	13.73	7.14	5.56	6.704	2.832	2.37	120.60	10.98	1.357
59.	2887.62	3483.38	8.26	0.0	9.85	6.726	0.0	0.0	68.29	8.26	1.357
66.	3471.00	2900.00	8.95	0.0	10.81	8.658	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.26	10.161	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.21	13.079	0.0	0.0	107.12	10.35	3.269
81.	5118.00	1253.00	11.03	3.43	12.60	13.351	1.482	9.01	105.97	10.29	3.269
87.	6371.00	0.0	11.32	3.43	12.91	14.516	1.519	9.56	112.46	10.60	3.622

MODEL NO. 20

DEPTH 421. KM., MAXIMUM DENSITY IS 4.44, SHIELD UPPER MMANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.03	1.086	0.642	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.03	1.086	0.642	1.69	35.79	5.98	0.035
12.	146.00	6225.00	7.70	4.65	3.03	0.923	0.657	1.41	30.44	5.52	0.043
15.	221.00	6150.00	7.70	4.65	3.03	0.923	0.657	1.41	30.44	5.52	0.066
16.	246.00	6125.00	8.42	4.54	3.03	1.317	0.626	2.10	43.40	6.59	0.073
21.	371.00	6000.00	8.72	4.54	3.03	1.473	0.626	2.35	48.54	6.97	0.111
23.	421.00	5950.00	9.56	4.81	4.44	2.638	1.028	2.62	60.53	7.78	0.130
31.	621.00	5750.00	10.04	4.81	4.44	3.106	1.028	3.02	69.94	8.36	0.220
34.	696.00	5675.00	10.94	6.15	4.44	3.076	1.680	1.83	69.25	8.32	0.253
39.	871.00	5500.00	11.24	6.26	4.52	3.378	1.773	1.89	74.05	8.61	0.331
44.	1371.00	5000.00	12.03	6.58	4.84	4.205	2.095	2.01	86.96	9.33	0.564
48.	2171.00	4200.00	13.00	7.03	5.16	5.324	2.551	2.09	103.12	10.16	0.964
58.	2886.88	3484.13	13.73	7.15	5.56	6.693	2.846	2.35	120.31	10.97	1.362
59.	2886.88	3484.13	8.21	0.0	9.83	6.623	0.0	0.0	67.37	8.21	1.362
66.	3471.00	2900.00	8.95	0.0	10.79	8.644	0.0	0.0	80.10	8.95	1.963
68.	3871.00	2500.00	9.50	0.0	11.24	10.145	0.0	0.0	90.25	9.50	2.349
80.	5118.00	1253.00	10.42	0.0	12.19	13.249	0.0	0.0	108.68	10.42	3.267
81.	5118.00	1253.00	11.03	3.42	12.52	13.281	1.466	9.06	106.06	10.30	3.267
87.	6371.00	0.0	11.32	3.42	12.83	14.442	1.502	9.62	112.54	10.61	3.616

MODEL NO. 21

DEPTH 121. KM., MINIMUM SHEAR VELOCITY IS 3.79, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.60	3.44	1.230	0.727	1.69	35.79	5.98	0.009
10.	96.00	6275.00	8.00	4.60	3.44	1.230	0.727	1.69	35.79	5.98	0.030
11.	121.00	6250.00	7.70	3.79	3.44	1.381	0.493	2.80	40.17	6.34	0.039
14.	196.00	6175.00	7.70	3.79	3.44	1.381	0.493	2.80	40.17	6.34	0.064
15.	221.00	6150.00	8.36	5.01	3.44	1.250	0.864	1.45	36.37	6.03	0.073
16.	246.00	6125.00	8.42	5.01	3.44	1.285	0.864	1.49	37.38	6.11	0.081
21.	371.00	6000.00	8.72	5.01	3.44	1.462	0.864	1.69	42.52	6.52	0.124
23.	421.00	5950.00	9.56	5.01	3.79	2.193	0.953	2.30	57.87	7.61	0.142
31.	621.00	5750.00	10.04	5.01	3.79	2.550	0.953	2.68	67.28	8.20	0.218
34.	696.00	5675.00	10.94	6.13	4.50	3.131	1.687	1.86	69.65	8.35	0.249
39.	871.00	5500.00	11.24	6.25	4.58	3.397	1.788	1.90	74.24	8.62	0.328
44.	1371.00	5000.00	12.03	6.61	4.78	4.137	2.086	1.98	86.54	9.30	0.561
48.	2171.00	4200.00	13.00	7.00	5.20	5.396	2.547	2.12	103.72	10.18	0.960
58.	2887.03	3483.97	13.73	7.21	5.48	6.535	2.650	2.29	119.20	10.92	1.357
59.	2887.03	3483.97	8.28	0.0	9.85	6.747	0.0	0.0	68.49	8.28	1.357
66.	3471.00	2900.00	8.95	0.0	10.81	8.660	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.26	10.163	0.0	0.0	90.25	9.50	2.347
80.	5118.00	1253.00	10.35	0.0	12.21	13.031	0.0	0.0	107.12	10.35	3.268
81.	5118.00	1253.00	11.03	3.42	12.54	13.303	1.468	9.06	106.06	10.30	3.268
87.	6371.00	0.0	11.32	3.42	12.85	14.465	1.504	9.62	112.54	10.61	3.618

MODEL NO. 22

DEPTH 121. KM., MAXIMUM SHEAR VELOCITY IS 4.37, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.40	3.00	1.147	0.581	1.97	38.19	6.18	0.009
10.	96.00	6275.00	8.00	4.40	3.00	1.147	0.581	1.97	38.19	6.18	0.027
11.	121.00	6250.00	7.70	4.37	3.00	1.017	0.573	1.77	33.85	5.82	0.035
14.	196.00	6175.00	7.70	4.37	3.00	1.017	0.573	1.77	33.85	5.82	0.057
15.	221.00	6150.00	8.36	4.66	3.00	1.223	0.653	1.88	40.89	6.39	0.065
16.	246.00	6125.00	8.42	4.66	3.00	1.258	0.653	1.93	41.89	6.47	0.072
21.	371.00	6000.00	8.72	4.66	3.00	1.412	0.653	2.16	47.03	6.86	0.110
23.	421.00	5950.00	9.36	4.75	4.47	2.744	1.008	2.72	61.35	7.83	0.129
31.	621.00	5750.00	10.04	4.75	4.47	3.165	1.008	3.14	70.76	8.41	0.219
34.	696.00	5675.00	10.94	6.01	4.47	3.196	1.618	1.98	71.46	8.45	0.253
39.	871.00	5500.00	11.24	6.18	4.55	3.437	1.737	1.98	75.48	8.69	0.332
44.	1371.00	5000.00	12.03	6.64	4.80	4.128	2.119	1.95	85.92	9.27	0.565
48.	2171.00	4200.00	13.00	7.01	5.17	5.356	2.540	2.11	103.54	10.18	0.963
58.	2886.99	3484.01	13.73	7.18	5.57	6.676	2.872	2.32	119.80	10.95	1.362
59.	2886.99	3484.01	8.24	0.0	9.84	6.608	0.0	0.0	67.98	8.24	1.362
66.	3471.00	2900.00	8.95	0.0	10.80	8.649	0.0	0.0	80.10	8.95	1.964
68.	3871.00	2500.00	9.50	0.0	11.25	10.151	0.0	0.0	90.25	9.50	2.350
80.	5118.00	1253.00	10.35	0.0	12.20	13.067	0.0	0.0	107.12	10.35	3.265
81.	5118.00	1253.00	11.03	3.39	12.42	13.210	1.429	9.25	106.33	10.31	3.265
87.	6371.00	0.0	11.32	3.39	12.73	14.365	1.464	9.81	112.81	10.62	3.609

MODEL NO. 23

DEPTH 221. KM., MINIMUM SHEAR VELOCITY IS 4.65, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6333.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.40	3.08	1.176	0.596	1.97	38.19	6.18	0.009
10.	96.00	6275.00	8.00	4.40	3.08	1.176	0.596	1.97	38.19	6.18	0.028
11.	121.00	6250.00	7.70	4.37	3.08	1.043	0.587	1.78	33.87	5.82	0.036
14.	196.00	6175.00	7.70	4.37	3.08	1.043	0.587	1.78	33.87	5.82	0.058
15.	221.00	6150.00	8.36	4.65	3.08	1.265	0.665	1.90	41.07	6.41	0.066
16.	246.00	6125.00	8.42	4.65	3.08	1.296	0.665	1.95	42.08	6.49	0.074
21.	371.00	6000.00	8.72	4.65	3.08	1.454	0.665	2.18	47.22	6.87	0.112
23.	421.00	5950.00	9.56	4.86	4.40	2.660	1.039	2.54	59.94	7.74	0.131
31.	621.00	5750.00	10.04	4.86	4.40	3.054	1.039	2.94	69.35	8.33	0.220
34.	696.00	5675.00	10.94	6.02	4.40	3.139	1.599	1.96	71.28	8.44	0.253
39.	871.00	5500.00	11.24	6.19	4.52	3.400	1.729	1.97	75.28	8.68	0.331
44.	1371.00	5000.00	12.03	6.66	4.31	4.119	2.130	1.93	85.65	9.25	0.563
48.	2171.00	4200.00	13.00	6.97	5.19	5.410	2.518	2.15	104.28	10.21	0.963
58.	2887.41	3483.59	13.73	7.19	5.59	6.678	2.892	2.31	119.51	10.93	1.363
59.	2887.41	3483.59	8.28	0.0	9.32	6.728	0.0	0.0	68.53	8.28	1.363
66.	3471.00	2900.00	6.95	0.0	10.78	8.633	0.0	0.0	80.10	8.95	1.963
68.	3871.00	2500.00	9.50	0.0	11.23	10.133	0.0	0.0	90.25	9.50	2.348
80.	5118.00	1253.00	10.37	0.0	12.18	13.101	0.0	0.0	107.58	10.37	3.268
81.	5118.00	1253.00	11.03	3.40	12.63	13.421	1.463	9.17	106.22	10.31	3.268
87.	6371.00	0.0	11.32	3.40	12.94	14.589	1.499	9.73	112.70	10.62	3.623

MODEL NO. 24

DEPTH 221. KM., MAXIMUM SHEAR VELOCITY IS 5.01, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.60	3.45	1.236	0.731	1.69	35.79	5.98	0.009
10.	96.00	6275.00	8.00	4.60	3.45	1.236	0.731	1.69	35.79	5.98	0.030
11.	121.00	6250.00	7.70	3.79	3.45	1.387	0.496	2.80	40.16	6.34	0.039
14.	196.00	6175.00	7.70	3.79	3.45	1.387	0.496	2.80	40.16	6.34	0.064
15.	221.00	6150.00	8.36	5.01	3.45	1.257	0.869	1.45	36.37	6.03	0.073
16.	246.00	6125.00	8.42	5.01	3.45	1.291	0.869	1.49	37.38	6.11	0.081
21.	371.00	6000.00	8.72	5.01	3.45	1.469	0.869	1.69	42.52	6.52	0.124
23.	421.00	5950.00	9.56	5.01	3.78	2.186	0.950	2.30	57.87	7.61	0.142
31.	621.00	5750.00	10.04	5.01	3.78	2.542	0.950	2.68	67.28	8.20	0.218
34.	696.00	5675.00	10.94	6.17	4.49	3.098	1.711	1.81	68.93	8.30	0.249
39.	871.00	5500.00	11.24	6.27	4.57	3.378	1.801	1.88	73.84	8.59	0.328
44.	1371.00	5000.00	12.03	6.57	4.77	4.155	2.063	2.01	87.08	9.33	0.561
48.	2171.00	4200.00	13.00	7.02	5.19	5.364	2.560	2.10	103.27	10.16	0.959
58.	2888.02	3482.98	13.73	7.19	5.50	6.571	2.845	2.31	119.51	10.93	1.357
59.	2888.02	3482.93	8.29	0.0	9.86	6.776	0.0	0.0	68.74	8.29	1.357
66.	3471.00	2900.00	8.95	0.0	10.82	8.665	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.27	10.168	0.0	0.0	90.25	9.50	2.348
80.	5118.00	1253.00	10.35	0.0	12.22	13.087	0.0	0.0	107.12	10.35	3.271
81.	5118.00	1253.00	11.03	3.42	12.58	13.344	1.474	9.05	106.04	10.30	3.271
87.	6371.00	0.0	11.32	3.42	12.89	14.508	1.511	9.60	112.52	10.61	3.623

MODEL NO. 25

DEPTH 421. KM., MINIMUM SHEAR VELOCITY IS 4.69, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.40	2.97	1.135	0.575	1.97	38.19	6.18	0.009
10.	96.00	6275.00	8.00	4.40	2.97	1.135	0.575	1.97	38.19	6.18	0.027
11.	121.00	6250.00	7.70	4.36	2.97	1.008	0.565	1.78	33.93	5.83	0.035
14.	196.00	6175.00	7.70	4.36	2.97	1.008	0.565	1.78	33.93	5.83	0.057
15.	221.00	6150.00	8.36	4.68	2.97	1.208	0.652	1.85	40.65	6.38	0.064
16.	246.00	6125.00	8.42	4.68	2.97	1.238	0.652	1.90	41.66	6.45	0.072
21.	371.00	6000.00	8.72	4.68	2.97	1.391	0.652	2.13	46.80	6.84	0.109
23.	421.00	5950.00	9.56	4.68	4.50	2.796	0.986	2.83	62.15	7.88	0.128
31.	621.00	5750.00	10.04	4.68	4.50	3.219	0.986	3.26	71.56	8.46	0.219
34.	696.00	5675.00	10.94	6.03	4.50	3.202	1.636	1.96	71.19	8.44	0.252
39.	871.00	5500.00	11.24	6.19	4.58	3.447	1.752	1.97	75.30	8.68	0.332
44.	1371.00	5000.00	12.03	6.63	4.79	4.125	2.108	1.96	86.08	9.28	0.565
48.	2171.00	4200.00	13.00	7.01	5.19	5.374	2.547	2.11	103.55	10.18	0.964
58.	2887.44	3483.56	13.73	7.20	5.53	6.600	2.868	2.30	119.35	10.92	1.362
59.	2887.44	3483.56	8.25	0.0	9.84	6.705	0.0	0.0	68.11	8.25	1.362
66.	3471.00	2900.00	8.95	0.0	10.80	8.654	0.0	0.0	80.10	8.95	1.964
68.	3871.00	2500.00	9.50	0.0	11.25	10.157	0.0	0.0	90.25	9.50	2.350
80.	5118.00	1253.00	10.35	0.0	12.20	13.073	0.0	0.0	107.12	10.35	3.266
81.	5118.00	1253.00	11.03	3.40	12.43	13.202	1.436	9.19	106.25	10.31	3.266
87.	6371.00	0.0	11.32	3.40	12.74	14.357	1.472	9.75	112.73	10.62	3.610

MODEL NO. 26

DEPTH 421. KM., MAXIMUM SHEAR VELOCITY IS 5.16, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.40	3.00	1.146	0.581	1.97	38.19	6.18	0.009
10.	96.00	6275.00	8.00	4.40	3.00	1.146	0.581	1.97	38.19	6.18	0.027
11.	121.00	6250.00	7.70	4.31	3.00	1.034	0.558	1.85	34.48	5.87	0.035
14.	196.00	6175.00	7.70	4.31	3.00	1.034	0.558	1.85	34.48	5.87	0.057
15.	221.00	6150.00	8.36	4.70	3.00	1.212	0.664	1.83	40.40	6.36	0.065
16.	246.00	6125.00	8.42	4.70	3.00	1.242	0.664	1.87	41.41	6.43	0.072
21.	371.00	6000.00	8.72	4.70	3.00	1.396	0.664	2.10	46.55	6.82	0.110
23.	421.00	5950.00	9.56	4.70	4.47	2.770	0.990	2.80	61.90	7.87	0.129
31.	621.00	5750.00	10.04	4.70	4.47	3.190	0.990	3.22	71.31	8.44	0.219
34.	696.00	5675.00	10.94	6.01	4.47	3.196	1.619	1.97	71.44	8.45	0.253
39.	871.00	5500.00	11.24	6.18	4.55	3.437	1.738	1.98	75.46	8.69	0.332
44.	1371.00	5000.00	12.03	6.64	4.81	4.133	2.119	1.95	85.97	9.27	0.565
48.	2171.00	4200.00	13.00	7.01	5.17	5.350	2.543	2.10	103.44	10.17	0.964
58.	2886.97	3484.03	13.73	7.18	5.57	6.677	2.870	2.33	119.83	10.95	1.362
59.	2886.97	3484.03	8.24	0.0	9.84	6.677	0.0	0.0	67.88	8.24	1.362
66.	3471.00	2900.00	8.95	0.0	10.80	8.649	0.0	0.0	80.10	8.95	1.964
68.	3871.00	2500.00	9.50	0.0	11.25	10.150	0.0	0.0	90.25	9.50	2.349
80.	5118.00	1253.00	10.35	0.0	12.20	13.066	0.0	0.0	107.12	10.35	3.264
81.	5118.00	1253.00	11.03	3.39	12.41	13.194	1.428	9.24	106.32	10.31	3.264
87.	6371.00	0.0	11.32	3.39	12.72	14.348	1.464	9.80	112.80	10.62	3.607

MODEL NO. 27

DEPTH 33. KM., MINIMUM DENSITY IS 2.97, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.40	2.97	1.135	0.575	1.97	38.19	6.18	0.009
10.	96.00	6275.00	8.00	4.40	2.97	1.135	0.575	1.97	38.19	6.18	0.027
11.	121.00	6250.00	7.70	4.36	2.97	1.008	0.565	1.78	33.93	5.83	0.035
14.	196.00	6175.00	7.70	4.36	2.97	1.008	0.565	1.78	33.93	5.83	0.057
15.	221.00	6150.00	8.36	4.68	2.97	1.208	0.652	1.85	40.65	6.38	0.064
16.	246.00	6125.00	8.42	4.68	2.97	1.238	0.652	1.90	41.66	6.45	0.072
21.	371.00	6000.00	8.72	4.68	2.97	1.391	0.652	2.13	46.80	6.84	0.109
23.	421.00	5950.00	8.56	4.68	4.50	2.795	0.986	2.83	62.15	7.88	0.128
31.	621.00	5750.00	10.04	4.68	4.50	3.218	0.986	3.26	71.56	8.46	0.218
34.	696.00	5675.00	10.94	6.03	4.50	3.201	1.636	1.96	71.19	8.44	0.252
39.	871.00	5500.00	11.24	6.19	4.58	3.446	1.752	1.97	75.30	8.68	0.332
44.	1371.00	5000.00	12.03	6.63	4.79	4.125	2.108	1.96	86.08	9.28	0.565
48.	2171.00	4200.00	13.00	7.01	5.19	5.374	2.647	2.11	103.55	10.18	0.964
58.	2887.42	3483.58	13.73	7.20	5.53	6.600	2.868	2.30	119.35	10.92	1.362
59.	2887.42	3483.58	8.25	0.0	9.84	6.703	0.0	0.0	68.10	8.25	1.362
66.	3471.00	2900.00	8.95	0.0	10.80	8.654	0.0	0.0	80.10	8.95	1.964
68.	3871.00	2500.00	9.50	0.0	11.25	10.157	0.0	0.0	90.25	9.50	2.350
80.	5118.00	1253.00	10.35	0.0	12.20	13.073	0.0	0.0	107.12	10.35	3.266
81.	5118.00	1253.00	11.03	3.40	12.43	13.202	1.436	9.19	106.25	10.31	3.266
87.	6371.00	0.0	11.32	3.40	12.74	14.357	1.472	9.75	112.73	10.62	3.610

MODEL NO. 26

DEPTH 33. KM., MAXIMUM DENSITY IS 3.50, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.60	3.50	1.253	0.741	1.69	35.79	5.98	0.009
10.	96.00	6275.00	8.00	4.60	3.50	1.253	0.741	1.69	35.79	5.98	0.031
11.	121.00	6250.00	7.70	3.79	3.50	1.404	0.504	2.78	40.09	6.33	0.039
14.	196.00	6175.00	7.70	3.79	3.50	1.404	0.504	2.78	40.09	6.33	0.065
15.	221.00	6150.00	8.36	5.00	3.50	1.280	0.876	1.46	36.54	6.05	0.074
16.	246.00	6125.00	8.42	5.00	3.50	1.315	0.876	1.50	37.55	6.13	0.082
21.	371.00	6000.00	8.72	5.00	3.50	1.495	0.876	1.71	42.69	6.53	0.126
23.	421.00	5950.00	9.56	5.00	3.89	2.257	0.972	2.32	58.05	7.62	0.144
31.	621.00	5750.00	10.04	5.00	3.89	2.623	0.972	2.70	67.45	8.21	0.222
34.	696.00	5675.00	10.94	6.34	4.18	2.762	1.681	1.64	66.07	8.13	0.252
39.	871.00	5500.00	11.24	6.39	4.44	3.195	1.811	1.76	71.96	8.48	0.327
44.	1371.00	5000.00	12.03	6.52	4.88	4.295	2.071	2.07	88.09	9.39	0.559
48.	2171.00	4200.00	13.00	7.00	5.14	5.324	2.521	2.11	103.59	10.18	0.959
58.	2892.13	3478.87	13.73	7.23	5.54	6.586	2.893	2.28	118.87	10.90	1.359
59.	2892.13	3478.87	8.18	0.0	9.84	6.585	0.0	0.0	66.95	8.18	1.359
66.	3471.00	2900.00	8.95	0.0	10.30	8.649	0.0	0.0	80.10	8.95	1.956
68.	3871.00	2500.00	9.50	0.0	11.25	10.144	0.0	0.0	90.19	9.50	2.344
80.	5118.00	1253.00	10.32	0.0	12.20	12.980	0.0	0.0	106.42	10.32	3.279
81.	5118.00	1253.00	11.03	3.50	13.02	13.721	1.594	8.61	105.35	10.26	3.279
87.	6371.00	0.0	11.32	3.50	13.33	14.912	1.632	9.14	111.83	10.57	3.656

MODEL NO. 29

DEPTH 421. KM., MINIMUM DENSITY IS 3.78, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.60	3.44	1.230	0.727	1.69	35.79	5.98	0.009
10.	96.00	6275.00	8.00	4.60	3.44	1.230	0.727	1.69	35.79	5.98	0.030
11.	121.00	6250.00	7.70	3.81	3.44	1.373	0.499	2.75	39.95	6.32	0.039
14.	196.00	6175.00	7.70	3.81	3.44	1.373	0.499	2.75	39.95	6.32	0.064
15.	221.00	6150.00	8.36	4.98	3.44	1.265	0.853	1.48	36.80	6.07	0.073
16.	246.00	6125.00	8.42	4.98	3.44	1.299	0.853	1.52	37.80	6.15	0.081
21.	371.00	6000.00	8.72	4.98	3.44	1.476	0.353	1.73	42.94	6.55	0.124
23.	421.00	5950.00	9.56	5.05	3.78	2.167	0.964	2.25	57.38	7.57	0.142
31.	621.00	5750.00	10.04	5.05	3.78	2.522	0.964	2.62	66.78	8.17	0.217
34.	696.00	5675.00	10.94	6.09	4.51	3.165	1.672	1.89	70.23	8.38	0.249
39.	871.00	5500.00	11.24	6.22	4.59	3.426	1.777	1.93	74.69	8.64	0.328
44.	1371.00	5000.00	12.03	6.60	4.78	4.142	2.088	1.98	86.55	9.30	0.562
48.	2171.00	4200.00	13.00	7.02	5.19	5.366	2.560	2.10	103.29	10.16	0.960
58.	2888.06	3482.94	13.73	7.19	5.51	6.595	2.850	2.31	119.60	10.94	1.359
59.	2888.06	3482.94	8.26	0.0	9.85	6.713	0.0	0.0	68.16	8.26	1.359
66.	3471.00	2900.00	8.95	0.0	10.81	8.657	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.26	10.160	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.21	13.078	0.0	0.0	107.12	10.35	3.264
81.	5118.00	1253.00	11.03	3.40	12.45	13.220	1.442	9.17	106.21	10.31	3.264
87.	6371.00	0.0	11.32	3.40	12.76	14.376	1.478	9.73	112.69	10.62	3.609

MODEL NO. 30

DEPTH 421. KM., MAXIMUM DENSITY IS 4.50, TECTONIC MANTLE/I

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.40	2.97	1.136	0.576	1.97	38.19	6.18	0.009
10.	96.00	6275.00	8.00	4.40	2.97	1.136	0.576	1.97	38.19	6.18	0.027
11.	121.00	6250.00	7.70	4.36	2.97	1.009	0.566	1.78	33.93	5.83	0.035
14.	196.00	6175.00	7.70	4.36	2.97	1.009	0.566	1.78	33.93	5.83	0.057
15.	221.00	6150.00	8.36	4.68	2.97	1.209	0.652	1.85	40.65	6.38	0.064
16.	246.00	6125.00	8.42	4.68	2.97	1.239	0.652	1.90	41.66	6.45	0.072
21.	371.00	6000.00	8.72	4.68	2.97	1.392	0.652	2.13	46.80	6.84	0.109
23.	421.00	5950.00	9.56	4.68	4.50	2.796	0.987	2.83	62.15	7.88	0.128
31.	621.00	5750.00	10.04	4.68	4.50	3.220	0.987	3.26	71.56	8.46	0.219
34.	696.00	5675.00	10.94	6.03	4.50	3.201	1.538	1.95	71.14	8.43	0.252
39.	871.00	5500.00	11.24	6.19	4.58	3.446	1.754	1.96	75.27	8.68	0.332
44.	1371.00	5000.00	12.03	6.63	4.78	4.120	2.104	1.96	86.09	9.28	0.565
48.	2171.00	4200.00	13.00	7.00	5.19	5.385	2.541	2.12	103.74	10.19	0.964
58.	2887.85	3483.15	13.73	7.22	5.52	6.559	2.874	2.29	119.07	10.91	1.362
59.	2887.85	3483.15	8.26	0.0	9.85	6.716	0.0	0.0	68.19	8.26	1.362
66.	3471.00	2900.00	8.95	0.0	10.31	8.658	0.0	0.0	80.10	8.95	1.964
68.	3871.00	2500.00	9.50	0.0	11.26	10.161	0.0	0.0	90.25	9.50	2.350
80.	5118.00	1253.00	10.35	0.0	12.21	13.079	0.0	0.0	107.12	10.35	3.268
81.	5118.00	1253.00	11.03	3.40	12.46	13.240	1.443	9.17	106.22	10.31	3.268
87.	6371.00	0.0	11.32	3.40	12.77	14.398	1.479	9.73	112.70	10.62	3.614

MODEL NO. 31

DEPTH 696. KM., MINIMUM SHEAR VELOCITY IS 5.99, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.16	0.943	0.596	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.19	0.991	0.619	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.41	1.192	0.743	1.61	34.96	5.91	0.010
9.	71.00	6300.00	8.00	4.67	3.41	1.192	0.743	1.61	34.96	5.91	0.022
10.	96.00	6275.00	7.90	4.41	3.41	1.242	0.664	1.87	36.42	6.03	0.031
11.	121.00	6250.00	7.87	4.34	3.41	1.256	0.642	1.96	36.82	6.07	0.039
12.	146.00	6225.00	7.80	4.33	3.41	1.224	0.638	1.92	35.89	5.99	0.048
14.	196.00	6175.00	7.80	4.33	3.41	1.224	0.638	1.92	35.85	5.99	0.064
15.	221.00	6150.00	8.21	4.48	3.41	1.384	0.685	2.02	40.60	6.37	0.073
16.	246.00	6125.00	8.42	4.47	3.41	1.510	0.681	2.22	44.28	6.65	0.081
21.	371.00	6000.00	8.72	4.47	3.41	1.685	0.681	2.48	49.42	7.03	0.124
23.	421.00	5950.00	9.56	5.40	3.85	2.021	1.123	1.80	52.50	7.25	0.142
31.	621.00	5750.00	10.04	5.40	3.85	2.383	1.123	2.12	61.91	7.87	0.219
34.	696.00	5675.00	10.94	5.99	4.33	3.111	1.555	2.00	71.81	8.47	0.250
39.	871.00	5500.00	11.24	6.16	4.59	3.475	1.745	1.99	75.68	8.70	0.328
44.	1371.00	5000.00	12.03	6.66	4.79	4.104	2.124	1.93	85.63	9.25	0.561
48.	2171.00	4200.00	13.00	6.99	5.18	5.380	2.536	2.12	103.78	10.19	0.960
58.	2886.97	3484.03	13.73	7.17	5.58	6.695	2.974	2.33	119.89	10.95	1.360
59.	2886.97	3484.03	8.27	0.0	9.83	6.720	0.0	0.0	68.34	8.27	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.645	0.0	0.0	80.10	8.95	1.961
68.	3871.00	2500.00	9.50	0.0	11.24	10.146	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.44	0.0	12.19	13.286	0.0	0.0	108.97	10.44	3.261
81.	5118.00	1253.00	11.03	3.38	12.43	13.228	1.418	9.33	106.45	10.32	3.261
87.	6371.00	0.0	11.32	3.38	12.74	14.384	1.453	9.90	112.93	10.63	3.605

MODEL NO. 32

DEPTH 696. KM., MAXIMUM SHEAR VELOCITY IS 6.39, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.19	0.954	0.603	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.23	1.002	0.626	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.41	1.190	0.743	1.60	34.92	5.91	0.010
9.	71.00	6300.00	8.00	4.67	3.41	1.190	0.743	1.60	34.92	5.91	0.022
10.	96.00	6275.00	7.90	4.40	3.41	1.248	0.659	1.89	36.62	6.05	0.031
11.	121.00	6250.00	7.87	4.36	3.41	1.246	0.648	1.92	36.56	6.05	0.039
12.	146.00	6225.00	7.80	4.27	3.41	1.245	0.621	2.00	36.53	6.04	0.048
14.	196.00	6175.00	7.80	4.27	3.41	1.245	0.621	2.00	36.53	6.04	0.064
15.	221.00	6150.00	8.21	4.51	3.41	1.370	0.694	1.97	40.20	6.34	0.073
16.	246.00	6125.00	8.42	4.63	3.41	1.440	0.732	1.97	42.26	6.50	0.081
21.	371.00	6000.00	8.72	4.63	3.41	1.616	0.732	2.21	47.41	6.89	0.124
23.	421.00	5950.00	9.56	5.10	3.98	2.258	1.033	2.19	56.77	7.53	0.142
31.	621.00	5750.00	10.04	5.10	3.98	2.632	1.033	2.55	66.18	8.13	0.222
34.	696.00	5675.00	10.94	6.39	4.20	2.742	1.714	1.60	65.27	8.08	0.252
39.	871.00	5500.00	11.24	6.41	4.46	3.188	1.835	1.74	71.49	8.45	0.328
44.	1371.00	5000.00	12.03	6.49	4.87	4.313	2.050	2.10	88.58	9.41	0.560
48.	2171.00	4200.00	13.00	7.03	5.14	5.307	2.539	2.09	103.18	10.16	0.960
58.	2890.77	3480.23	13.73	7.20	5.54	6.614	2.877	2.30	119.32	10.92	1.359
59.	2890.77	3480.23	8.18	0.0	9.83	6.575	0.0	0.0	66.88	8.18	1.359
66.	3471.00	2900.00	8.95	0.0	10.79	8.644	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.48	0.0	11.24	10.102	0.0	0.0	89.87	9.48	2.344
80.	5118.00	1253.00	10.34	0.0	12.19	13.042	0.0	0.0	106.98	10.34	3.276
81.	5118.00	1253.00	11.03	3.48	12.97	13.676	1.574	8.69	105.48	10.27	3.276
87.	6371.00	0.0	11.32	3.48	13.28	14.864	1.611	9.22	111.96	10.58	3.650

MODEL NO. 33

DEPTH 871. KM., MINIMUM SHEAR VELOCITY IS 6.16, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.16	0.943	0.596	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.19	0.991	0.619	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.41	1.192	0.743	1.61	34.96	5.91	0.010
9.	71.00	6300.00	8.00	4.67	3.41	1.192	0.743	1.61	34.96	5.91	0.022
10.	96.00	6275.00	7.90	4.41	3.41	1.242	0.664	1.87	36.42	6.03	0.031
11.	121.00	6250.00	7.87	4.34	3.41	1.256	0.642	1.96	36.82	6.07	0.039
12.	146.00	6225.00	7.80	4.33	3.41	1.224	0.638	1.92	35.89	5.99	0.048
14.	196.00	6175.00	7.80	4.33	3.41	1.224	0.638	1.92	35.89	5.99	0.064
15.	221.00	6150.00	8.21	4.68	3.41	1.384	0.685	2.02	40.60	6.37	0.073
16.	246.00	6125.00	8.42	4.67	3.41	1.510	0.681	2.22	44.28	6.65	0.081
21.	371.00	6000.00	8.72	4.67	3.41	1.685	0.681	2.48	49.42	7.03	0.124
23.	421.00	5950.00	9.56	5.40	3.85	2.021	1.123	1.80	52.50	7.25	0.142
31.	621.00	5750.00	10.04	5.40	3.85	2.383	1.123	2.12	61.91	7.87	0.219
34.	696.00	5675.00	10.94	5.99	4.33	3.111	1.555	2.00	71.81	8.47	0.250
39.	871.00	5500.00	11.24	6.16	4.59	3.475	1.745	1.99	75.68	8.70	0.328
44.	1371.00	5000.00	12.03	6.66	4.79	4.104	2.124	1.93	85.63	9.25	0.561
48.	2171.00	4200.00	13.00	6.99	5.13	5.380	2.536	2.12	103.78	10.19	0.960
58.	2886.97	3484.03	13.73	7.17	5.58	6.695	2.874	2.33	119.89	10.95	1.360
59.	2886.97	3484.03	8.27	0.0	9.83	6.720	0.0	0.0	68.34	8.27	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.645	0.0	0.0	80.10	8.95	1.961
68.	3871.00	2500.00	9.50	0.0	11.24	10.146	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.44	0.0	12.19	13.286	0.0	0.0	108.97	10.44	3.261
81.	5118.00	1253.00	11.03	3.38	12.43	13.228	1.418	9.33	106.45	10.32	3.261
87.	6371.00	0.0	11.32	3.33	12.74	14.384	1.453	9.90	112.93	10.63	3.605

MODEL NO. 34

DEPTH 871. KM., MAXIMUM SHEAR VELOCITY IS 6.42, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.667	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.21	0.960	0.607	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.25	1.009	0.630	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.41	1.192	0.745	1.60	34.92	5.91	0.010
9.	71.00	6300.00	8.00	4.67	3.41	1.192	0.745	1.60	34.92	5.91	0.022
10.	96.00	6275.00	7.90	4.39	3.41	1.253	0.658	1.90	36.70	6.06	0.031
11.	121.00	6250.00	7.87	4.35	3.41	1.251	0.647	1.93	36.64	6.05	0.039
12.	146.00	6225.00	7.80	4.26	3.41	1.250	0.620	2.01	36.61	6.05	0.048
14.	196.00	6175.00	7.80	4.26	3.41	1.250	0.620	2.01	36.61	6.05	0.065
15.	221.00	6150.00	8.21	4.52	3.41	1.370	0.697	1.96	40.13	6.33	0.073
16.	246.00	6125.00	8.42	4.64	3.41	1.439	0.736	1.96	42.15	6.49	0.082
21.	371.00	6000.00	8.72	4.64	3.41	1.615	0.736	2.19	47.30	6.88	0.124
23.	421.00	5950.00	9.56	5.10	3.96	2.248	1.029	2.18	56.75	7.53	0.142
31.	621.00	5750.00	10.04	5.10	3.96	2.621	1.029	2.55	66.16	8.13	0.221
34.	696.00	5675.00	10.94	6.39	4.27	2.787	1.741	1.60	65.29	8.08	0.252
39.	871.00	5500.00	11.24	6.42	4.43	3.169	1.826	1.74	71.45	8.45	0.328
44.	1371.00	5000.00	12.03	6.50	4.86	4.302	2.053	2.10	88.44	9.40	0.560
48.	2171.00	4200.00	13.00	7.01	5.15	5.326	2.532	2.10	103.44	10.17	0.960
58.	2890.77	3480.23	13.73	7.21	5.55	6.610	2.888	2.29	119.12	10.91	1.359
59.	2890.77	3480.23	8.18	0.0	9.83	6.581	0.0	0.0	66.98	8.18	1.359
66.	3471.00	2900.00	8.95	0.0	10.79	8.640	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.24	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.29	0.0	12.19	12.906	0.0	0.0	105.90	10.29	3.278
81.	5118.00	1253.00	11.03	3.48	13.05	13.773	1.573	8.73	105.54	10.27	3.278
87.	6371.00	0.0	11.32	3.48	13.36	14.966	1.615	9.27	112.02	10.58	3.657

MODEL NO. 35

DEPTH 1371. KM., MINIMUM SHEAR VELOCITY IS 6.48, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.20	0.955	0.604	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.23	1.004	0.627	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.40	1.189	0.743	1.60	34.92	5.91	0.010
9.	71.00	6300.00	8.00	4.67	3.40	1.189	0.743	1.60	34.92	5.91	0.022
10.	96.00	6275.00	7.90	4.39	3.40	1.248	0.658	1.90	36.64	6.05	0.031
11.	121.00	6250.00	7.87	4.36	3.40	1.246	0.647	1.93	36.59	6.05	0.039
12.	146.00	6225.00	7.80	4.27	3.40	1.245	0.620	2.01	36.55	6.05	0.048
14.	196.00	6175.00	7.80	4.27	3.40	1.245	0.620	2.01	36.55	6.05	0.064
15.	221.00	6150.00	8.21	4.52	3.40	1.368	0.694	1.97	40.18	6.34	0.073
16.	246.00	6125.00	8.42	4.64	3.40	1.437	0.732	1.96	42.21	6.50	0.081
21.	371.00	6000.00	8.72	4.64	3.40	1.613	0.732	2.20	47.36	6.88	0.124
23.	421.00	5950.00	9.56	5.10	3.96	2.250	1.029	2.19	56.77	7.53	0.142
31.	621.00	5750.00	10.04	5.10	3.96	2.623	1.029	2.55	66.18	8.13	0.221
34.	696.00	5675.00	10.94	6.38	4.22	2.755	1.718	1.60	65.34	8.08	0.252
39.	871.00	5500.00	11.24	6.41	4.48	3.203	1.839	1.74	71.57	8.46	0.328
44.	1371.00	5000.00	12.03	6.48	4.86	4.310	2.042	2.11	88.70	9.42	0.560
48.	2171.00	4200.00	13.00	7.05	5.15	5.291	2.565	2.06	102.65	10.13	0.960
58.	2890.41	3480.59	13.73	7.14	5.55	6.695	2.831	2.36	120.54	10.98	1.360
59.	2890.41	3480.59	8.19	0.0	9.82	6.585	0.0	0.0	67.03	8.19	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	8.639	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.48	0.0	11.23	10.108	0.0	0.0	89.97	9.48	2.344
80.	5118.00	1253.00	10.34	0.0	12.18	13.028	0.0	0.0	106.92	10.34	3.274
81.	5118.00	1253.00	11.03	3.48	12.92	13.640	1.563	8.72	105.53	10.27	3.274
87.	6371.00	0.0	11.32	3.48	13.23	14.825	1.601	9.26	112.01	10.58	3.646

MODEL NO. 36

DEPTH 1371. KM., MAXIMUM SHEAR VELOCITY IS 6.68, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.17	0.946	0.598	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.20	0.994	0.621	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.42	1.186	0.753	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.42	1.186	0.753	1.58	34.67	5.89	0.022
10.	96.00	6275.00	7.90	4.44	3.42	1.236	0.674	1.83	36.12	6.01	0.031
11.	121.00	6250.00	7.87	4.36	3.42	1.250	0.652	1.92	36.53	6.04	0.039
12.	146.00	6225.00	7.80	4.27	3.42	1.251	0.623	2.01	36.55	6.05	0.048
14.	196.00	6175.00	7.80	4.27	3.42	1.251	0.623	2.01	36.55	6.05	0.064
15.	221.00	6150.00	8.21	4.42	3.42	1.416	0.667	2.12	41.37	6.43	0.073
16.	246.00	6125.00	8.42	4.50	3.42	1.501	0.694	2.16	43.87	6.62	0.081
21.	371.00	6000.00	8.72	4.50	3.42	1.677	0.694	2.42	49.01	7.00	0.124
23.	421.00	5950.00	9.56	5.39	3.86	2.032	1.125	1.81	52.59	7.25	0.142
31.	621.00	5750.00	10.04	5.39	3.86	2.396	1.125	2.13	61.99	7.87	0.219
39.	871.00	5500.00	11.24	6.18	4.56	3.437	1.743	1.97	75.38	8.68	0.324
34.	696.00	5675.00	10.94	6.01	4.30	3.074	1.554	1.98	71.49	8.46	0.324
44.	1371.00	5000.00	12.03	6.67	4.79	4.093	2.131	1.92	85.42	9.24	0.629
48.	2171.00	4200.00	13.00	6.96	5.19	5.419	2.514	2.16	104.41	10.22	1.028
58.	2886.99	3484.01	13.73	7.16	5.59	6.692	2.884	2.32	119.72	10.94	1.429
59.	2886.99	3484.01	8.29	0.0	9.82	6.758	0.0	0.0	68.79	8.29	1.429
66.	3471.00	2900.00	8.95	0.0	10.78	8.638	0.0	0.0	80.10	8.95	2.029
68.	3871.00	2500.00	9.50	0.0	11.23	10.139	0.0	0.0	90.25	9.50	2.414
80.	5118.00	1253.00	10.44	0.0	12.18	13.277	0.0	0.0	108.97	10.44	3.333
81.	5118.00	1253.00	11.03	3.38	12.58	13.381	1.440	9.29	106.39	10.31	3.333
87.	6371.00	0.0	11.32	3.38	12.89	14.546	1.476	9.86	112.87	10.62	3.685

MODEL NO. 37

DEPTH 2171. KM., MINIMUM SHEAR VELOCITY IS 6.92, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.667	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.65	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.20	0.955	0.604	1.58	29.87	5.47	0.002
6.	33.00	6339.00	7.54	4.40	3.23	1.003	0.627	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.46	1.200	0.761	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.46	1.200	0.761	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.62	3.46	1.258	0.676	1.86	36.36	6.03	0.031
11.	121.00	6250.00	7.87	4.34	3.46	1.272	0.653	1.95	36.77	6.06	0.040
12.	146.00	6225.00	7.80	4.24	3.46	1.275	0.623	2.05	36.85	6.07	0.048
14.	196.00	6175.00	7.80	4.24	3.46	1.275	0.623	2.05	36.85	6.07	0.065
15.	221.00	6150.00	8.21	4.45	3.46	1.416	0.686	2.06	40.92	6.40	0.074
16.	246.00	6125.00	8.42	4.55	3.46	1.497	0.717	2.09	43.27	6.58	0.082
21.	371.00	6000.00	8.72	4.55	3.46	1.675	0.717	2.34	48.41	6.96	0.125
23.	421.00	5950.00	9.56	5.36	3.79	2.012	1.092	1.84	53.03	7.28	0.143
31.	621.00	5750.00	10.04	5.36	3.79	2.370	1.092	2.17	62.44	7.90	0.219
34.	696.00	5675.00	10.94	6.09	4.33	3.038	1.609	1.89	70.15	8.38	0.250
39.	871.00	5500.00	11.24	6.23	4.59	3.420	1.784	1.92	74.52	8.63	0.328
44.	1371.00	5000.00	12.03	6.63	4.76	4.098	2.093	1.96	86.09	9.28	0.560
48.	2171.00	4200.00	13.00	6.92	5.24	5.505	2.509	2.19	105.11	10.25	0.960
58.	2891.35	3479.65	13.73	7.32	5.42	6.347	2.909	2.18	117.01	10.82	1.358
59.	2891.35	3479.65	8.27	0.0	9.85	6.744	0.0	0.0	68.48	8.27	1.358
66.	3471.00	2900.00	8.95	0.0	10.81	8.658	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.26	10.161	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.34	0.0	12.21	13.043	0.0	0.0	106.83	10.34	3.276
81.	5118.00	1253.00	11.03	3.44	12.86	13.617	1.520	8.96	105.90	10.29	3.276
87.	6371.00	0.0	11.32	3.44	13.17	14.799	1.556	9.51	112.38	10.60	3.644

MODEL NO. 38

DEPTH 2171. KM., MAXIMUM SHEAR VELOCITY IS 7.12, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6363.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.19	0.954	0.603	1.58	29.67	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.23	1.003	0.626	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.68	3.42	1.190	0.747	1.59	34.83	5.90	0.010
9.	71.00	6300.00	8.00	4.68	3.42	1.190	0.747	1.59	34.83	5.90	0.022
10.	96.00	6275.00	7.90	4.40	3.42	1.250	0.661	1.89	36.60	6.05	0.031
11.	121.00	6250.00	7.87	4.35	3.42	1.253	0.647	1.94	36.67	6.06	0.039
12.	146.00	6225.00	7.80	4.26	3.42	1.250	0.621	2.01	36.59	6.05	0.048
14.	196.00	6175.00	7.80	4.26	3.42	1.250	0.621	2.01	36.59	6.05	0.065
15.	221.00	6150.00	8.21	4.51	3.42	1.373	0.696	1.97	40.20	6.34	0.073
16.	246.00	6125.00	8.42	4.62	3.42	1.450	0.729	1.99	42.45	6.52	0.082
21.	371.00	6000.00	8.72	4.62	3.42	1.626	0.729	2.23	47.59	6.90	0.124
23.	421.00	5950.00	9.56	5.19	3.88	2.153	1.045	2.06	55.48	7.45	0.142
31.	621.00	5750.00	10.04	5.19	3.38	2.518	1.045	2.41	64.89	8.06	0.220
34.	696.00	5675.00	10.94	6.25	4.27	2.890	1.667	1.73	67.65	8.22	0.250
39.	871.00	5500.00	11.24	6.32	4.53	3.315	1.808	1.83	73.15	8.55	0.327
44.	1371.00	5000.00	12.03	6.51	4.84	4.271	2.056	2.08	88.14	9.39	0.561
48.	2171.00	4200.00	13.00	7.12	5.16	5.233	2.611	2.00	101.48	10.07	0.960
58.	2890.97	3480.03	13.73	7.01	5.56	6.838	2.728	2.51	123.05	11.09	1.360
59.	2890.97	3480.03	8.23	0.0	9.84	6.667	0.0	0.0	67.73	8.23	1.360
66.	3471.00	2900.00	8.95	0.0	10.80	8.653	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.25	10.156	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.44	0.0	12.20	13.295	0.0	0.0	108.95	10.44	3.266
81.	5118.00	1253.00	11.03	3.49	12.58	13.270	1.530	8.67	105.45	10.27	3.266
87.	6371.00	0.0	11.32	3.49	12.89	14.432	1.568	9.21	111.93	10.58	3.619

MODEL NO. 39

DEPTH 2898. KM., MINIMUM SHEAR VELOCITY IS 7.01, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHJ	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.19	0.954	0.603	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.23	1.002	0.626	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.42	1.191	0.747	1.59	34.86	5.90	0.010
9.	71.00	6300.00	8.00	4.67	3.42	1.191	0.747	1.59	34.86	5.90	0.022
10.	96.00	6275.00	7.90	4.40	3.42	1.251	0.661	1.89	36.62	6.05	0.031
11.	121.00	6250.00	7.87	4.35	3.42	1.254	0.646	1.94	36.70	6.06	0.039
12.	146.00	6225.00	7.80	4.26	3.42	1.251	0.621	2.02	36.62	6.05	0.048
14.	196.00	6175.00	7.80	4.26	3.42	1.251	0.621	2.02	36.62	6.05	0.065
15.	221.00	6150.00	8.21	4.52	3.42	1.373	0.697	1.97	40.18	6.34	0.073
16.	246.00	6125.00	8.42	4.62	3.42	1.450	0.730	1.99	42.42	6.51	0.082
21.	371.00	6000.00	8.72	4.62	3.42	1.625	0.730	2.23	47.57	6.90	0.124
23.	421.00	5950.00	9.56	5.19	3.88	2.150	1.046	2.06	55.44	7.45	0.142
31.	621.00	5750.00	10.04	5.19	3.88	2.515	1.046	2.40	64.85	8.05	0.220
34.	696.00	5675.00	10.94	6.24	4.27	2.893	1.666	1.74	67.70	8.23	0.250
39.	871.00	5500.00	11.24	6.31	4.53	3.317	1.807	1.84	73.18	8.55	0.327
44.	1371.00	5000.00	12.03	6.52	4.84	4.268	2.057	2.08	88.11	9.39	0.561
48.	2171.00	4200.00	13.00	7.11	5.16	5.234	2.611	2.01	101.50	10.07	0.960
58.	2890.98	3480.02	13.73	7.01	5.56	6.839	2.728	2.51	123.07	11.09	1.360
59.	2890.98	3480.02	8.23	0.0	9.84	6.672	0.0	0.0	67.78	8.23	1.360
66.	3471.00	2900.00	8.95	0.0	10.80	8.653	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.25	10.156	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.44	0.0	12.20	13.300	0.0	0.0	108.99	10.44	3.266
81.	5118.00	1253.00	11.03	3.49	12.58	13.264	1.529	8.68	105.46	10.27	3.266
87.	6371.00	0.0	11.32	3.49	12.89	14.427	1.566	9.21	111.94	10.58	3.618

MODEL NO. 40

DEPTH 2898. KM., MAXIMUM SHEAR VELOCITY IS 7.32, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.23	0.965	0.610	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.27	1.014	0.633	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.45	1.198	0.760	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.45	1.198	0.760	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.41	3.45	1.261	0.671	1.88	36.49	6.04	0.031
11.	121.00	6250.00	7.87	4.33	3.45	1.275	0.648	1.97	36.90	6.07	0.040
12.	146.00	6225.00	7.80	4.23	3.45	1.276	0.620	2.06	36.93	6.08	0.048
14.	196.00	6175.00	7.80	4.23	3.45	1.276	0.620	2.06	36.93	6.08	0.065
15.	221.00	6150.00	8.21	4.48	3.45	1.404	0.693	2.02	40.62	6.37	0.074
16.	246.00	6125.00	8.42	4.58	3.45	1.484	0.724	2.05	42.94	6.55	0.082
21.	371.00	6000.00	8.72	4.58	3.45	1.661	0.724	2.29	48.08	6.93	0.125
23.	421.00	5950.00	9.56	5.31	3.79	2.037	1.070	1.90	53.74	7.33	0.143
31.	621.00	5750.00	10.04	5.31	3.79	2.393	1.070	2.24	63.15	7.95	0.219
34.	696.00	5675.00	10.34	6.13	4.45	3.097	1.671	1.85	69.61	8.34	0.250
39.	871.00	5500.00	11.24	6.26	4.53	3.358	1.773	1.89	74.15	8.61	0.328
44.	1371.00	5000.00	12.03	6.62	4.78	4.124	2.098	1.97	86.24	9.29	0.560
48.	2171.00	4200.00	13.00	6.93	5.23	5.488	2.508	2.19	105.02	10.25	0.960
58.	2891.63	3479.37	13.73	7.32	5.43	6.350	2.913	2.18	116.97	10.82	1.358
59.	2891.63	3479.37	8.25	0.0	9.85	6.709	0.0	0.0	68.13	8.25	1.358
66.	3471.00	2900.00	8.95	0.0	10.31	8.657	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.26	10.159	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.32	0.0	12.21	13.003	0.0	0.0	106.52	10.32	3.278
81.	5118.00	1253.00	11.03	3.45	12.92	13.665	1.537	8.89	105.79	10.29	3.278
87.	6371.00	0.0	11.32	3.45	13.23	14.850	1.574	9.43	112.27	10.60	3.649

MODEL NO. 41

DEPTH 5118. KM., MINIMUM SHEAR VELOCITY IS 3.35, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.14	0.937	0.593	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.17	0.985	0.615	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.39	1.176	0.746	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.39	1.176	0.746	1.58	34.67	5.89	0.022
10.	96.00	6275.00	7.90	4.45	3.39	1.222	0.671	1.82	36.03	6.00	0.031
11.	121.00	6250.00	7.87	4.37	3.39	1.235	0.648	1.91	36.44	6.04	0.039
12.	146.00	6225.00	7.80	4.27	3.39	1.237	0.619	2.00	36.48	6.04	0.047
14.	196.00	6175.00	7.80	4.27	3.39	1.237	0.619	2.00	36.48	6.04	0.064
15.	221.00	6150.00	8.21	4.41	3.39	1.403	0.661	2.12	41.38	6.43	0.072
16.	246.00	6125.00	8.42	4.50	3.39	1.486	0.688	2.16	43.84	6.62	0.081
21.	371.00	6000.00	8.72	4.50	3.39	1.661	0.688	2.41	48.98	7.00	0.123
23.	421.00	5950.00	9.56	5.35	3.89	2.071	1.112	1.86	53.26	7.30	0.141
31.	621.00	5750.00	10.04	5.35	3.89	2.437	1.112	2.19	62.67	7.92	0.219
34.	696.00	5675.00	10.94	6.05	4.29	3.043	1.569	1.94	70.93	8.42	0.250
39.	871.00	5500.00	11.24	6.20	4.55	3.419	1.747	1.96	75.13	8.67	0.327
44.	1371.00	5000.00	12.03	6.63	4.83	4.160	2.121	1.96	86.15	9.28	0.561
48.	2171.00	4200.00	13.00	6.99	5.19	5.396	2.535	2.13	103.91	10.19	0.961
58.	2886.85	3484.15	13.73	7.19	5.59	6.687	2.892	2.31	119.57	10.93	1.361
59.	2886.85	3484.15	8.20	0.0	9.81	6.594	0.0	0.0	67.21	8.20	1.361
66.	3471.00	2900.00	9.00	0.0	10.77	8.733	0.0	0.0	81.07	9.00	1.960
68.	3871.00	2500.00	9.50	0.0	11.22	10.128	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.38	0.0	12.17	13.125	0.0	0.0	107.83	10.38	3.256
81.	5118.00	1253.00	11.03	3.35	12.41	13.244	1.390	9.53	106.72	10.33	3.256
87.	6371.00	0.0	11.32	3.35	12.72	14.400	1.425	10.11	113.21	10.64	3.599

MODEL NO. 42

DEPTH 5118. KM., MAXIMUM SHEAR VELOCITY IS 3.52, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.63	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.23	0.966	0.611	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.27	1.015	0.634	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.43	1.188	0.754	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.43	1.188	0.754	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.42	3.43	1.244	0.671	1.85	36.30	6.02	0.031
11.	121.00	6250.00	7.87	4.36	3.43	1.253	0.651	1.92	36.53	6.05	0.039
12.	146.00	6225.00	7.80	4.30	3.43	1.240	0.634	1.96	36.18	6.01	0.048
14.	196.00	6175.00	7.80	4.30	3.43	1.240	0.634	1.96	36.18	6.01	0.065
15.	221.00	6150.00	8.21	4.50	3.43	1.384	0.693	2.00	40.40	6.36	0.073
16.	246.00	6125.00	8.42	4.53	3.43	1.490	0.705	2.11	43.47	6.59	0.082
21.	371.00	6000.00	8.72	4.53	3.43	1.666	0.705	2.36	48.62	6.97	0.124
23.	421.00	5950.00	9.56	5.23	3.97	2.178	1.086	2.01	54.90	7.41	0.143
31.	621.00	5750.00	10.04	5.23	3.97	2.552	1.086	2.35	64.30	8.02	0.222
34.	696.00	5675.00	10.94	6.27	4.18	2.809	1.642	1.71	67.27	8.20	0.252
39.	871.00	5500.00	11.24	6.34	4.44	3.225	1.784	1.81	72.71	8.53	0.328
44.	1371.00	5000.00	12.03	6.55	4.89	4.279	2.094	2.04	87.57	9.36	0.560
48.	2171.00	4200.00	13.00	6.99	5.13	5.324	2.507	2.12	103.82	10.19	0.960
58.	2893.31	3477.69	13.73	7.24	5.53	6.560	2.896	2.27	118.66	10.89	1.359
59.	2893.31	3477.69	8.20	0.0	9.85	6.625	0.0	0.0	67.26	8.20	1.359
66.	3471.00	2900.00	8.95	0.0	10.81	8.660	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.26	10.163	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.35	0.0	12.21	13.086	0.0	0.0	107.16	10.35	3.279
81.	5118.00	1253.00	11.03	3.52	12.95	13.614	1.505	8.48	105.13	10.25	3.279
87.	6371.00	0.0	11.32	3.52	13.26	14.800	1.644	9.00	111.61	10.56	3.652

MODEL NO. 43

DEPTH 696. KM., MINIMUM DENSITY IS 4.17, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.119	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.23	0.965	0.610	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.27	1.014	0.634	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.42	1.188	0.753	1.58	34.68	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.42	1.188	0.753	1.58	34.68	5.89	0.023
10.	96.00	6275.00	7.90	4.42	3.42	1.243	0.671	1.85	36.29	6.02	0.031
11.	121.00	6250.00	7.87	4.36	3.42	1.251	0.652	1.92	36.54	6.04	0.039
12.	146.00	6225.00	7.80	4.30	3.42	1.238	0.634	1.95	36.14	6.01	0.048
14.	196.00	6175.00	7.80	4.30	3.42	1.238	0.634	1.95	36.14	6.01	0.065
15.	221.00	6150.00	8.21	4.50	3.42	1.383	0.694	1.99	40.37	6.35	0.073
16.	246.00	6125.00	8.42	4.54	3.42	1.488	0.705	2.11	43.44	6.59	0.082
21.	371.00	6000.00	8.72	4.54	3.42	1.664	0.705	2.36	48.58	6.97	0.124
23.	421.00	5950.00	9.56	5.22	3.98	2.189	1.084	2.02	55.05	7.42	0.143
31.	621.00	5750.00	10.04	5.22	3.98	2.563	1.084	2.36	64.46	8.03	0.222
34.	696.00	5675.00	10.94	6.28	4.17	2.800	1.646	1.70	67.10	8.19	0.253
39.	871.00	5500.00	11.24	6.35	4.43	3.218	1.787	1.80	72.59	8.52	0.328
44.	1371.00	5000.00	12.03	6.55	4.88	4.277	2.092	2.04	87.59	9.36	0.560
48.	2171.00	4200.00	13.00	6.99	5.13	5.330	2.506	2.13	103.87	10.19	0.960
58.	2893.35	3477.65	13.73	7.24	5.53	6.560	2.900	2.26	113.60	10.89	1.359
59.	2893.35	3477.65	8.20	0.0	9.85	6.616	0.0	0.0	67.17	8.20	1.359
66.	3471.00	2900.00	8.95	0.0	10.81	8.658	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.49	0.0	11.26	10.136	0.0	0.0	90.02	9.49	2.345
80.	5118.00	1253.00	10.35	0.0	12.21	13.086	0.0	0.0	107.18	10.35	3.280
81.	5118.00	1253.00	11.03	3.51	12.98	13.655	1.602	8.52	105.21	10.26	3.280
87.	6371.00	0.0	11.32	3.51	13.29	14.842	1.640	9.05	111.69	10.57	3.654

MODEL NO. 44

DEPTH 696. KM., MAXIMUM DENSITY IS 4.51, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.63	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.13	0.950	0.600	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.21	0.998	0.623	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.43	1.188	0.754	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.43	1.188	0.754	1.58	34.67	5.89	0.022
10.	96.00	6275.00	7.90	4.40	3.43	1.255	0.663	1.89	36.62	6.05	0.031
11.	121.00	6250.00	7.87	4.32	3.43	1.271	0.638	1.99	37.08	6.09	0.039
12.	146.00	6225.00	7.80	4.20	3.43	1.280	0.603	2.12	37.36	6.11	0.048
14.	196.00	6175.00	7.80	4.20	3.43	1.280	0.603	2.12	37.36	6.11	0.065
15.	221.00	6150.00	8.21	4.48	3.43	1.391	0.688	2.02	40.59	6.37	0.073
16.	246.00	6125.00	8.42	4.63	3.43	1.450	0.735	1.97	42.30	6.50	0.082
21.	371.00	6000.00	8.72	4.63	3.43	1.626	0.735	2.21	47.44	6.89	0.124
23.	421.00	5950.00	9.56	5.30	3.75	2.022	1.056	1.92	53.88	7.34	0.142
31.	621.00	5750.00	10.04	5.30	3.75	2.375	1.056	2.25	63.29	7.96	0.217
34.	696.00	5675.00	10.94	6.06	4.51	3.194	1.656	1.93	70.77	8.41	0.248
39.	871.00	5500.00	11.24	6.20	4.59	3.445	1.768	1.95	75.00	8.66	0.328
44.	1371.00	5000.00	12.03	6.63	4.78	4.119	2.100	1.96	86.15	9.28	0.562
48.	2171.00	4200.00	13.00	6.99	5.20	5.404	2.543	2.12	103.83	10.19	0.960
58.	2887.68	3483.32	13.73	7.22	5.49	6.541	2.864	2.28	119.03	10.91	1.358
59.	2887.68	3483.32	8.26	0.0	9.85	6.724	0.0	0.0	68.28	8.26	1.358
66.	3471.00	2900.00	8.95	0.0	10.81	8.657	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.26	10.160	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.21	13.078	0.0	0.0	107.12	10.35	3.264
81.	5118.00	1253.00	11.03	3.40	12.44	13.217	1.440	9.18	106.23	10.31	3.264
87.	6371.00	0.0	11.32	3.40	12.75	14.373	1.476	9.74	112.71	10.62	3.608

MODEL NO. 45

DEPTH 871. KM., MINIMUM DENSITY IS 4.41, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.25	0.971	0.614	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.28	1.020	0.637	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.43	1.189	0.754	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.43	1.189	0.754	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.41	3.43	1.251	0.667	1.88	36.48	6.04	0.031
11.	121.00	6250.00	7.87	4.34	3.43	1.261	0.647	1.95	36.77	6.06	0.040
12.	146.00	6225.00	7.80	4.28	3.43	1.248	0.629	1.98	36.38	6.03	0.048
14.	196.00	6175.00	7.80	4.28	3.43	1.248	0.629	1.98	36.38	6.03	0.065
15.	221.00	6150.00	8.21	4.53	3.43	1.374	0.703	1.96	40.06	6.33	0.073
16.	246.00	6125.00	8.42	4.57	3.43	1.477	0.716	2.06	43.06	6.56	0.082
21.	371.00	6000.00	8.72	4.57	3.43	1.653	0.716	2.31	48.20	6.94	0.124
23.	421.00	5950.00	9.56	5.20	3.93	2.171	1.064	2.04	55.27	7.43	0.143
31.	621.00	5750.00	10.04	5.20	3.93	2.541	1.064	2.39	64.68	8.04	0.221
34.	696.00	5675.00	10.94	6.28	4.33	2.906	1.710	1.70	67.07	8.19	0.252
39.	871.00	5500.00	11.24	6.35	4.41	3.202	1.780	1.80	72.56	8.52	0.329
44.	1371.00	5000.00	12.03	6.55	4.86	4.255	2.087	2.04	87.50	9.35	0.559
48.	2171.00	4200.00	13.00	6.99	5.14	5.346	2.510	2.13	103.93	10.19	0.959
58.	2892.16	3478.84	13.73	7.23	5.54	6.583	2.901	2.27	118.74	10.90	1.359
59.	2892.16	3478.84	8.23	0.0	9.84	6.665	0.0	0.0	67.72	8.23	1.359
66.	3471.00	2900.00	8.95	0.0	10.80	8.653	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.45	0.0	11.25	10.043	0.0	0.0	89.25	9.45	2.345
80.	5118.00	1253.00	10.40	0.0	12.20	13.194	0.0	0.0	108.12	10.40	3.279
81.	5118.00	1253.00	11.03	3.49	12.98	13.679	1.580	8.66	105.42	10.27	3.279
87.	6371.00	0.0	11.32	3.49	13.29	14.867	1.618	9.19	111.90	10.58	3.654

MODEL NO. 46

DEPTH 871. KM., MAXIMUM DENSITY IS 4.63, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.17	0.948	0.599	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.21	0.996	0.622	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.42	1.135	0.752	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.42	1.185	0.752	1.58	34.67	5.89	0.022
10.	96.00	6275.00	7.90	4.40	3.42	1.249	0.563	1.89	36.55	6.05	0.031
11.	121.00	6250.00	7.87	4.32	3.42	1.266	0.638	1.98	37.03	6.08	0.039
12.	146.00	6225.00	7.80	4.20	3.42	1.274	0.604	2.11	37.28	6.11	0.048
14.	196.00	6175.00	7.80	4.20	3.42	1.274	0.604	2.11	37.28	6.11	0.065
15.	221.00	6150.00	8.21	4.47	3.42	1.391	0.684	2.03	40.69	6.38	0.073
16.	246.00	6125.00	8.42	4.61	3.42	1.453	0.728	2.00	42.50	6.52	0.082
21.	371.00	6000.00	8.72	4.61	3.42	1.629	0.728	2.24	47.64	6.90	0.124
23.	421.00	5950.00	9.56	5.31	3.79	2.038	1.071	1.90	53.73	7.33	0.142
31.	621.00	5750.00	10.04	5.31	3.79	2.395	1.071	2.23	63.14	7.95	0.218
34.	696.00	5675.00	10.94	6.05	4.37	3.095	1.600	1.93	70.85	8.42	0.249
39.	871.00	5500.00	11.24	6.20	4.63	3.474	1.781	1.95	75.05	8.66	0.327
44.	1371.00	5000.00	12.03	6.63	4.78	4.114	2.101	1.96	86.09	9.28	0.562
48.	2171.00	4200.00	13.00	6.99	5.21	5.310	2.541	2.13	103.93	10.19	0.961
58.	2887.78	3483.22	13.73	7.21	5.50	6.551	2.853	2.29	119.10	10.91	1.358
59.	2887.78	3483.22	8.26	0.0	9.84	6.725	0.0	0.0	68.31	8.26	1.358
66.	3471.00	2900.00	8.95	0.0	10.80	8.655	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.25	10.153	0.0	0.0	90.21	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.20	13.074	0.0	0.0	107.12	10.35	3.262
81.	5118.00	1253.00	11.03	3.40	12.42	13.197	1.433	9.21	106.27	10.31	3.262
87.	6371.00	0.0	11.32	3.40	12.73	14.352	1.469	9.77	112.76	10.62	3.605

MODEL NO. 47

DEPTH 1371. KM., MINIMUM DENSITY IS 4.75, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.20	0.957	0.605	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.24	1.006	0.628	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.46	1.200	0.762	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.46	1.200	0.762	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.41	3.46	1.261	0.675	1.87	36.42	6.03	0.031
11.	121.00	6250.00	7.87	4.34	3.46	1.275	0.651	1.96	36.83	6.07	0.040
12.	146.00	6225.00	7.80	4.24	3.46	1.278	0.621	2.06	36.92	6.08	0.048
14.	196.00	6175.00	7.80	4.24	3.46	1.278	0.621	2.06	36.92	6.08	0.065
15.	221.00	6150.00	8.21	4.46	3.46	1.413	0.690	2.05	40.80	6.39	0.074
16.	246.00	6125.00	8.42	4.57	3.46	1.492	0.722	2.07	43.10	6.56	0.082
21.	371.00	6000.00	8.72	4.57	3.46	1.670	0.722	2.31	48.24	6.95	0.125
23.	421.00	5950.00	9.56	5.35	3.78	2.010	1.082	1.86	53.22	7.29	0.143
31.	621.00	5750.00	10.04	5.35	3.78	2.366	1.082	2.19	62.62	7.91	0.219
34.	696.00	5675.00	10.94	6.11	4.34	3.036	1.622	1.87	69.89	8.36	0.249
39.	871.00	5500.00	11.24	6.24	4.60	3.425	1.793	1.91	74.40	8.63	0.328
44.	1371.00	5000.00	12.03	6.61	4.75	4.106	2.079	1.97	86.39	9.29	0.561
48.	2171.00	4200.00	13.00	6.96	5.23	5.463	2.536	2.15	104.39	10.22	0.960
58.	2890.02	3480.98	13.73	7.25	5.45	6.445	2.866	2.25	118.35	10.88	1.358
59.	2890.02	3480.98	8.29	0.0	9.85	6.777	0.0	0.0	68.81	8.29	1.358
66.	3471.00	2900.00	8.95	0.0	10.81	8.658	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.26	10.161	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.37	0.0	12.21	13.139	0.0	0.0	107.62	10.37	3.274
81.	5118.00	1253.00	11.03	3.43	12.77	13.531	1.506	8.98	105.94	10.29	3.274
87.	6371.00	0.0	11.32	3.43	13.08	14.708	1.543	9.53	112.42	10.60	3.637

MODEL NO. 48

DEPTH 1371. KM., MAXIMUM DENSITY IS 4.91, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.14	0.939	0.594	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.18	0.987	0.616	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.36	1.174	0.733	1.60	34.92	5.91	0.010
9.	71.00	6300.00	8.00	4.67	3.36	1.174	0.733	1.60	34.92	5.91	0.022
10.	96.00	6275.00	7.90	4.71	3.36	1.226	0.754	1.87	36.45	6.04	0.030
11.	121.00	6250.00	7.87	4.38	3.36	1.224	0.644	1.90	36.40	6.03	0.039
12.	146.00	6225.00	7.80	4.29	3.36	1.219	0.620	1.97	36.27	6.02	0.047
14.	196.00	6175.00	7.80	4.29	3.36	1.219	0.620	1.97	36.27	6.02	0.064
15.	221.00	6150.00	8.21	4.48	3.36	1.364	0.676	2.02	40.56	6.37	0.072
16.	246.00	6125.00	8.42	4.58	3.36	1.444	0.704	2.05	42.96	6.55	0.080
21.	371.00	6000.00	8.72	4.53	3.36	1.617	0.704	2.30	48.11	6.94	0.122
23.	421.00	5950.00	9.56	5.18	4.01	2.232	1.075	2.08	55.66	7.46	0.141
31.	621.00	5750.00	10.04	5.18	4.01	2.609	1.075	2.43	65.07	8.07	0.221
34.	696.00	5675.00	10.94	6.21	4.20	2.866	1.624	1.77	68.18	8.26	0.251
39.	871.00	5500.00	11.24	6.31	4.46	3.273	1.775	1.84	73.32	8.56	0.327
44.	1371.00	5000.00	12.03	6.57	4.91	4.286	2.119	2.02	87.22	9.34	0.561
48.	2171.00	4200.00	13.00	6.99	5.14	5.333	2.514	2.12	103.78	10.19	0.962
58.	2891.92	3479.08	13.73	7.21	5.54	6.604	2.879	2.29	119.22	10.92	1.361
59.	2891.92	3479.08	8.13	0.0	9.82	6.486	0.0	0.0	66.02	8.12	1.361
66.	3471.00	2900.00	8.95	0.0	10.78	8.639	0.0	0.0	80.10	8.95	1.956
68.	3871.00	2500.00	9.47	0.0	11.23	10.084	0.0	0.0	89.76	9.47	2.342
80.	5118.00	1253.00	10.37	0.0	12.18	13.113	0.0	0.0	107.62	10.37	3.265
81.	5118.00	1253.00	11.03	3.48	12.70	13.401	1.541	8.70	105.49	10.27	3.265
87.	6371.00	0.0	11.32	3.48	13.01	14.571	1.579	9.23	111.97	10.58	3.624

MODEL NO. 49

DEPTH 2171. KM., MINIMUM DENSITY IS 5.13, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.24	0.967	0.612	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.27	1.016	0.635	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.68	3.42	1.190	0.748	1.59	34.82	5.90	0.010
9.	71.00	6300.00	8.00	4.68	3.42	1.190	0.748	1.59	34.82	5.90	0.023
10.	96.00	6275.00	7.90	4.41	3.42	1.246	0.665	1.87	36.44	6.04	0.031
11.	121.00	6250.00	7.87	4.36	3.42	1.251	0.649	1.93	36.59	6.05	0.039
12.	146.00	6225.00	7.80	4.33	3.42	1.224	0.641	1.91	35.82	5.98	0.048
14.	196.00	6175.00	7.80	4.33	3.42	1.224	0.641	1.91	35.82	5.98	0.065
15.	221.00	6150.00	8.21	4.52	3.42	1.372	0.698	1.97	40.14	6.34	0.073
16.	246.00	6125.00	8.42	4.52	3.42	1.492	0.698	2.14	43.66	6.61	0.082
21.	371.00	6000.00	8.72	4.52	3.42	1.668	0.698	2.39	48.80	6.99	0.124
23.	421.00	5950.00	9.56	5.23	3.96	2.177	1.084	2.01	54.92	7.41	0.142
31.	621.00	5750.00	10.04	5.23	3.96	2.549	1.084	2.35	64.33	8.02	0.222
34.	696.00	5675.00	10.94	6.28	4.22	2.830	1.662	1.70	67.12	8.19	0.252
39.	871.00	5500.00	11.24	6.34	4.44	3.225	1.787	1.80	72.66	8.52	0.328
44.	1371.00	5000.00	12.03	6.53	4.89	4.291	2.087	2.06	87.78	9.37	0.560
48.	2171.00	4200.00	13.00	7.00	5.13	5.313	2.511	2.12	103.67	10.18	0.960
58.	2893.08	3477.92	13.73	7.24	5.52	6.557	2.894	2.27	118.68	10.89	1.359
59.	2893.08	3477.92	8.18	0.0	9.85	6.589	0.0	0.0	66.88	8.18	1.359
66.	3471.00	2900.00	8.95	0.0	10.81	8.661	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.26	10.164	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.36	0.0	12.21	13.099	0.0	0.0	107.27	10.36	3.278
81.	5118.00	1253.00	11.03	3.51	12.92	13.588	1.596	8.51	105.19	10.26	3.278
87.	6371.00	0.0	11.32	3.51	13.23	14.772	1.634	9.04	111.67	10.57	3.649

MODEL NO. 50

DEPTH 2171. KM., MAXIMUM DENSITY IS 5.24, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.19	0.954	0.603	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.23	1.003	0.626	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.45	1.196	0.759	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.45	1.196	0.759	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.40	3.45	1.252	0.667	1.89	36.59	6.05	0.031
11.	121.00	6250.00	7.87	4.32	3.45	1.278	0.643	1.99	37.06	6.09	0.040
12.	146.00	6225.00	7.80	4.20	3.45	1.283	0.608	2.12	37.33	6.11	0.048
14.	196.00	6175.00	7.80	4.20	3.45	1.288	0.608	2.12	37.33	6.11	0.065
15.	221.00	6150.00	8.21	4.48	3.45	1.401	0.692	2.02	40.61	6.37	0.074
16.	246.00	6125.00	8.42	4.63	3.45	1.461	0.738	1.98	42.36	6.51	0.082
21.	371.00	6000.00	8.72	4.63	3.45	1.638	0.738	2.22	47.51	6.89	0.125
23.	421.00	5950.00	9.56	5.30	3.80	2.047	1.069	1.91	53.87	7.34	0.143
31.	621.00	5750.00	10.04	5.30	3.80	2.405	1.069	2.25	63.28	7.95	0.219
34.	696.00	5675.00	10.94	6.11	4.33	3.027	1.619	1.87	69.86	8.36	0.249
39.	871.00	5500.00	11.24	6.25	4.59	3.414	1.792	1.91	74.32	8.62	0.328
44.	1371.00	5000.00	12.03	6.63	4.77	4.108	2.093	1.96	86.18	9.28	0.561
48.	2171.00	4200.00	13.00	6.92	5.24	5.507	2.513	2.19	105.08	10.25	0.960
58.	2891.52	3479.48	13.73	7.32	5.42	6.344	2.904	2.18	117.07	10.82	1.359
59.	2891.52	3479.48	8.26	0.0	9.84	6.720	0.0	0.0	66.26	8.26	1.359
66.	3471.00	2900.00	8.95	0.0	10.80	8.655	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.25	10.158	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.33	0.0	12.20	13.019	0.0	0.0	106.67	10.33	3.274
81.	5118.00	1253.00	11.03	3.43	12.83	13.591	1.514	8.98	105.93	10.29	3.274
87.	6371.00	0.0	11.32	3.43	13.14	14.771	1.550	9.53	112.41	10.60	3.640

MODEL NO. 51

DEPTH 2898. KM., MINIMUM DENSITY IS 5.42, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	5.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.20	0.955	0.604	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.23	1.003	0.627	1.60	31.05	5.57	0.010
7.	33.00	6333.00	8.00	4.69	3.45	1.197	0.760	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.45	1.197	0.760	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.40	3.45	1.264	0.668	1.89	36.60	6.05	0.031
11.	121.00	6250.00	7.87	4.32	3.45	1.280	0.644	1.99	37.07	6.09	0.040
12.	146.00	6225.00	7.80	4.20	3.45	1.290	0.608	2.12	37.35	6.11	0.048
14.	196.00	6175.00	7.80	4.20	3.45	1.290	0.608	2.12	37.35	6.11	0.065
15.	221.00	6150.00	8.21	4.48	3.45	1.401	0.694	2.02	40.59	6.37	0.074
16.	246.00	6125.00	8.42	4.63	3.45	1.462	0.740	1.98	42.33	6.51	0.082
21.	371.00	6000.00	8.72	4.63	3.45	1.639	0.740	2.22	47.47	6.89	0.125
23.	421.00	5950.00	9.56	5.30	3.81	2.056	1.068	1.93	54.00	7.35	0.143
31.	621.00	5750.00	10.04	5.30	3.81	2.414	1.068	2.26	63.40	7.96	0.219
34.	696.00	5675.00	10.94	6.13	4.32	3.003	1.625	1.85	69.53	8.34	0.250
39.	871.00	5500.00	11.24	6.26	4.58	3.393	1.794	1.89	74.10	8.61	0.328
44.	1371.00	5000.00	12.03	6.62	4.78	4.125	2.092	1.97	86.34	9.29	0.560
48.	2171.00	4200.00	13.00	6.93	5.23	5.490	2.510	2.19	104.99	10.25	0.960
58.	2892.14	3478.86	13.73	7.32	5.42	6.345	2.899	2.19	117.15	10.82	1.358
59.	2892.14	3478.86	8.27	0.0	9.85	6.739	0.0	0.0	68.39	8.27	1.358
66.	3471.00	2900.00	8.95	0.0	10.81	8.661	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.47	0.0	11.26	10.099	0.0	0.0	89.66	9.47	2.345
80.	5118.00	1253.00	10.38	0.0	12.21	13.166	0.0	0.0	107.81	10.38	3.275
81.	5118.00	1253.00	11.03	3.45	12.82	13.561	1.529	8.87	105.76	10.28	3.275
87.	6371.00	0.0	11.32	3.45	13.13	14.740	1.566	9.41	112.24	10.59	3.641

MODEL NO. 52

DEPTH 2898. KM., MAXIMUM DENSITY IS 5.60, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.16	0.944	0.597	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.20	0.992	0.620	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.41	1.182	0.750	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.41	1.182	0.750	1.58	34.67	5.89	0.022
10.	96.00	6275.00	7.90	4.44	3.41	1.232	0.671	1.84	36.14	6.01	0.031
11.	121.00	6250.00	7.87	4.36	3.41	1.246	0.649	1.92	36.55	6.05	0.039
12.	146.00	6225.00	7.80	4.25	3.41	1.251	0.617	2.03	36.71	6.06	0.048
14.	196.00	6175.00	7.80	4.25	3.41	1.251	0.617	2.03	36.71	6.06	0.064
15.	221.00	6150.00	8.21	4.41	3.41	1.414	0.662	2.13	41.46	6.44	0.073
16.	246.00	6125.00	8.42	4.52	3.41	1.486	0.698	2.13	43.60	6.60	0.081
21.	371.00	6000.00	8.72	4.52	3.41	1.661	0.698	2.38	48.74	6.98	0.124
23.	421.00	5950.00	9.56	5.37	3.86	2.046	1.114	1.84	52.96	7.28	0.142
31.	621.00	5750.00	10.04	5.37	3.86	2.409	1.114	2.16	62.37	7.90	0.219
34.	696.00	5675.00	10.94	6.01	4.30	3.076	1.557	1.98	71.46	8.45	0.250
39.	871.00	5500.00	11.24	6.18	4.56	3.462	1.744	1.97	75.40	8.68	0.327
44.	1371.00	5000.00	12.03	6.66	4.80	4.110	2.129	1.93	85.60	9.25	0.561
48.	2171.00	4200.00	13.00	6.97	5.20	5.416	2.527	2.14	104.19	10.21	0.961
58.	2885.99	3485.01	13.73	7.18	5.60	6.705	2.886	2.32	119.78	10.94	1.361
59.	2885.99	3485.01	8.26	0.0	9.81	6.697	0.0	0.0	68.26	8.26	1.361
66.	3471.00	2900.00	8.98	0.0	10.77	8.678	0.0	0.0	80.57	8.98	1.961
68.	3871.00	2500.00	9.50	0.0	11.22	10.127	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.39	0.0	12.17	13.129	0.0	0.0	107.87	10.39	3.260
81.	5118.00	1253.00	11.03	3.37	12.52	13.332	1.425	9.35	106.48	10.32	3.260
87.	6371.00	0.0	11.32	3.37	12.83	14.493	1.461	9.92	112.96	10.63	3.609

MODEL NO. 53

DEPTH 2898. KM., MINIMUM DENSITY IS 9.79, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.12	0.931	0.589	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.15	0.978	0.611	1.60	31.05	5.57	0.009
7.	33.00	6338.00	8.00	4.67	3.34	1.166	0.728	1.60	34.92	5.91	0.009
9.	71.00	6300.00	8.00	4.67	3.34	1.166	0.728	1.60	34.92	5.91	0.022
10.	96.00	6275.00	7.90	4.41	3.34	1.216	0.651	1.87	36.40	6.03	0.030
11.	121.00	6250.00	7.87	4.38	3.34	1.212	0.642	1.89	36.30	6.02	0.038
12.	146.00	6225.00	7.80	4.29	3.34	1.212	0.615	1.97	36.30	6.03	0.047
14.	196.00	6175.00	7.80	4.29	3.34	1.212	0.615	1.97	36.30	6.03	0.063
15.	221.00	6150.00	8.21	4.46	3.34	1.362	0.666	2.05	40.79	6.39	0.071
16.	246.00	6125.00	8.42	4.55	3.34	1.446	0.691	2.09	43.32	6.58	0.080
21.	371.00	6000.00	8.72	4.55	3.34	1.613	0.691	2.34	48.46	6.96	0.121
23.	421.00	5950.00	9.56	5.20	4.03	2.229	1.088	2.05	55.35	7.44	0.140
31.	621.00	5750.00	10.04	5.20	4.03	2.608	1.088	2.40	64.76	8.05	0.220
34.	696.00	5675.00	10.94	6.18	4.22	2.900	1.515	1.80	68.69	8.29	0.251
39.	871.00	5500.00	11.24	6.29	4.48	3.301	1.771	1.86	73.65	8.58	0.327
44.	1371.00	5000.00	12.03	6.58	4.89	4.257	2.116	2.01	87.03	9.33	0.561
48.	2171.00	4200.00	13.00	6.98	5.18	5.386	2.522	2.14	104.04	10.20	0.963
58.	2890.86	3480.14	13.73	7.21	5.58	6.649	2.898	2.29	119.22	10.92	1.363
59.	2890.86	3480.14	8.12	0.0	9.79	6.459	0.0	0.0	66.00	8.12	1.363
66.	3471.00	2900.00	8.95	0.0	10.75	8.609	0.0	0.0	80.10	8.95	1.956
68.	3871.00	2500.00	9.50	0.0	11.20	10.105	0.0	0.0	90.25	9.50	2.340
80.	5118.00	1253.00	10.24	0.0	12.15	12.742	0.0	0.0	104.90	10.24	3.261
81.	5118.00	1253.00	11.03	3.44	12.80	13.550	1.513	8.95	105.89	10.29	3.261
87.	6371.00	0.0	11.32	3.44	13.11	14.728	1.550	9.50	112.37	10.60	3.625

MODEL NO. 54

DEPTH 2898. KM., MAXIMUM DENSITY IS 9.88, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.24	0.967	0.611	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.27	1.016	0.634	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.46	1.201	0.762	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.46	1.201	0.762	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.41	3.46	1.261	0.675	1.87	36.42	6.03	0.031
11.	121.00	6250.00	7.87	4.34	3.46	1.276	0.652	1.96	36.83	6.07	0.040
12.	146.00	6225.00	7.80	4.24	3.46	1.276	0.624	2.04	36.82	6.07	0.048
14.	196.00	6175.00	7.80	4.24	3.46	1.276	0.624	2.04	36.82	6.07	0.065
15.	221.00	6150.00	8.21	4.47	3.46	1.412	0.691	2.04	40.77	6.38	0.074
16.	246.00	6125.00	8.42	4.56	3.46	1.495	0.721	2.07	43.16	6.57	0.083
21.	371.00	6000.00	8.72	4.56	3.46	1.673	0.721	2.32	48.30	6.95	0.126
23.	421.00	5950.00	9.56	5.32	3.84	2.059	1.089	1.89	53.59	7.32	0.144
31.	621.00	5750.00	10.04	5.32	3.84	2.420	1.089	2.22	62.99	7.94	0.220
34.	696.00	5675.00	10.94	6.17	4.26	2.932	1.623	1.81	68.86	8.30	0.251
39.	871.00	5500.00	11.24	6.28	4.52	3.331	1.782	1.87	73.74	8.59	0.327
44.	1371.00	5000.00	12.03	6.59	4.83	4.198	2.098	2.00	86.85	9.32	0.560
48.	2171.00	4200.00	13.00	6.97	5.14	5.357	2.496	2.15	104.24	10.21	0.958
58.	2893.54	3477.46	13.73	7.25	5.53	6.546	2.905	2.25	118.43	10.88	1.359
59.	2893.54	3477.46	8.30	0.0	9.88	6.804	0.0	0.0	68.89	8.30	1.359
66.	3471.00	2900.00	8.95	0.0	10.84	8.681	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.29	10.187	0.0	0.0	90.25	9.50	2.347
80.	5118.00	1253.00	10.35	0.0	12.24	13.109	0.0	0.0	107.12	10.35	3.275
81.	5118.00	1253.00	11.03	3.48	12.66	13.365	1.531	8.73	105.54	10.27	3.275
87.	6371.00	0.0	11.32	3.48	12.97	14.533	1.568	9.27	112.02	10.58	3.632

MODEL NO. 55

DEPTH 5118. KM., MINIMUM DENSITY IS 12.23, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.13	0.936	0.592	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.17	0.984	0.614	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.37	1.170	0.742	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.37	1.170	0.742	1.58	34.67	5.89	0.022
10.	96.00	6275.00	7.90	4.65	3.37	1.215	0.668	1.82	36.00	6.00	0.030
11.	121.00	6250.00	7.87	4.38	3.37	1.227	0.647	1.90	36.37	6.03	0.039
12.	146.00	6225.00	7.80	4.28	3.37	1.228	0.618	1.99	36.40	6.03	0.047
14.	196.00	6175.00	7.80	4.28	3.37	1.228	0.618	1.99	36.40	6.03	0.064
15.	221.00	6150.00	8.21	4.41	3.37	1.398	0.656	2.13	41.44	6.44	0.072
16.	246.00	6125.00	8.42	4.50	3.37	1.481	0.683	2.17	43.90	6.63	0.081
21.	371.00	6000.00	8.72	4.50	3.37	1.655	0.683	2.42	49.04	7.00	0.122
23.	421.00	5950.00	9.56	5.32	3.93	2.108	1.115	1.89	53.59	7.32	0.141
31.	621.00	5750.00	10.04	5.32	3.93	2.478	1.115	2.22	62.99	7.94	0.219
34.	696.00	5675.00	10.96	6.07	4.27	3.009	1.574	1.91	70.51	8.40	0.250
39.	871.00	5500.00	11.24	6.21	4.53	3.389	1.748	1.94	74.85	8.65	0.327
44.	1371.00	5000.00	12.03	6.61	4.85	4.188	2.121	1.97	86.33	9.29	0.561
48.	2171.00	4200.00	13.00	6.99	5.19	5.389	2.533	2.13	103.89	10.19	0.962
58.	2889.14	3481.86	13.73	7.19	5.59	6.681	2.888	2.31	119.58	10.94	1.362
59.	2889.14	3481.86	8.24	0.0	9.83	6.673	0.0	0.0	67.91	8.24	1.362
66.	3471.00	2900.00	8.95	0.0	10.79	8.640	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.49	0.0	11.24	10.115	0.0	0.0	90.02	9.49	2.344
80.	5118.00	1253.00	10.35	0.0	12.19	13.054	0.0	0.0	107.12	10.35	3.251
81.	5118.00	1253.00	11.03	3.36	12.23	13.033	1.384	9.42	106.57	10.32	3.251
87.	6371.00	0.0	11.32	3.36	12.54	14.176	1.419	9.99	113.05	10.63	3.584

MODEL NO. 56

DEPTH 5118. KM., MAXIMUM DENSITY IS 13.07, AVERAGE UPPER MANTLE

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.22	0.963	0.609	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.26	1.012	0.632	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.42	1.185	0.752	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.42	1.185	0.752	1.58	34.67	5.89	0.023
10.	96.00	6275.00	7.90	4.41	3.42	1.248	0.664	1.88	36.51	6.04	0.031
11.	121.00	6250.00	7.87	4.33	3.42	1.262	0.641	1.97	36.92	6.08	0.039
12.	146.00	6225.00	7.80	4.27	3.42	1.249	0.623	2.01	36.55	6.05	0.048
14.	196.00	6175.00	7.80	4.27	3.42	1.249	0.623	2.01	36.55	6.05	0.065
15.	221.00	6150.00	8.21	4.55	3.42	1.359	0.708	1.92	39.76	6.31	0.073
16.	246.00	6125.00	8.42	4.60	3.42	1.458	0.724	2.02	42.67	6.53	0.082
21.	371.00	6000.00	8.72	4.60	3.42	1.634	0.724	2.26	47.81	6.91	0.124
23.	421.00	5950.00	9.56	5.13	3.95	2.220	1.040	2.13	56.25	7.50	0.142
31.	621.00	5750.00	10.04	5.13	3.95	2.591	1.040	2.49	65.66	8.10	0.221
34.	696.00	5675.00	10.94	6.36	4.33	2.846	1.755	1.62	65.68	8.10	0.252
39.	871.00	5500.00	11.24	6.40	4.41	3.166	1.809	1.75	71.71	8.47	0.329
44.	1371.00	5000.00	12.03	6.51	4.86	4.294	2.060	2.08	88.27	9.40	0.560
48.	2171.00	4200.00	13.00	7.00	5.15	5.333	2.525	2.11	103.59	10.18	0.960
58.	2890.97	3480.03	13.73	7.23	5.55	6.596	2.897	2.28	118.89	10.90	1.359
59.	2890.97	3480.03	8.18	0.0	9.83	6.580	0.0	0.0	66.96	8.18	1.359
66.	3471.00	2900.00	8.95	0.0	10.79	8.641	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.24	10.141	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.29	0.0	12.19	12.902	0.0	0.0	105.86	10.29	3.279
81.	5118.00	1253.00	11.03	3.48	13.07	13.792	1.583	8.71	105.51	10.27	3.279
87.	6371.00	0.0	11.32	3.48	13.38	14.986	1.620	9.25	112.00	10.58	3.659

MODEL NO. 57

MANTLE - CORE BOUNDARY, MINIMUM RADIUS IS 3476.38 KM.

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.16	0.944	0.597	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.19	0.992	0.620	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.67	3.42	1.194	0.746	1.60	34.92	5.91	0.010
9.	71.00	6300.00	8.00	4.67	3.42	1.194	0.746	1.60	34.92	5.91	0.022
10.	96.00	6275.00	7.90	4.39	3.42	1.257	0.658	1.91	30.74	6.06	0.031
11.	121.00	6250.00	7.87	4.35	3.42	1.255	0.647	1.94	36.70	6.06	0.039
12.	146.00	6225.00	7.80	4.23	3.42	1.264	0.612	2.07	36.97	6.08	0.048
14.	196.00	6175.00	7.80	4.23	3.42	1.264	0.612	2.07	36.97	6.08	0.065
15.	221.00	6150.00	8.21	4.47	3.42	1.394	0.683	2.04	40.75	6.38	0.073
16.	246.00	6125.00	8.42	4.61	3.42	1.455	0.727	2.00	42.55	6.52	0.082
21.	371.00	6000.00	8.72	4.61	3.42	1.631	0.727	2.24	47.69	6.91	0.124
23.	421.00	5950.00	9.56	5.22	3.95	2.177	1.078	2.02	55.05	7.42	0.142
31.	621.00	5750.00	10.04	5.22	3.95	2.549	1.078	2.36	64.46	8.03	0.221
34.	696.00	5675.00	10.94	6.23	4.19	2.850	1.628	1.75	67.93	8.24	0.252
39.	871.00	5500.00	11.24	6.32	4.45	3.257	1.778	1.83	73.11	8.55	0.327
44.	1371.00	5000.00	12.03	6.57	4.89	4.262	2.111	2.02	87.17	9.34	0.560
48.	2171.00	4200.00	13.00	6.97	5.14	5.359	2.497	2.15	104.24	10.21	0.960
58.	2894.62	3476.38	13.73	7.25	5.51	6.525	2.900	2.25	118.37	10.88	1.360
59.	2894.62	3476.38	8.18	0.0	9.85	6.598	0.0	0.0	66.99	8.18	1.360
66.	3471.00	2900.00	8.95	0.0	10.81	8.657	0.0	0.0	80.10	8.95	1.956
68.	3871.00	2500.00	9.50	0.0	11.26	10.160	0.0	0.0	90.25	9.50	2.343
80.	5118.00	1253.00	10.34	0.0	12.21	13.055	0.0	0.0	106.94	10.34	3.275
81.	5118.00	1253.00	11.03	3.51	12.87	13.546	1.584	8.55	105.25	10.26	3.275
87.	6371.00	0.0	11.32	3.51	13.18	14.727	1.622	9.08	111.73	10.57	3.643

MODEL NO. 58

MANTLE - CORE BOUNDARY, MAXIMUM RADIUS IS 3486.42 KM.

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	3.04	1.18	1.58	0.117	0.022	5.30	7.39	2.72	0.0
2.	3.00	6368.00	3.05	1.19	1.58	0.118	0.022	5.29	7.44	2.73	0.000
3.	3.00	6368.00	6.42	3.68	2.80	0.647	0.380	1.70	23.14	4.81	0.000
4.	10.00	6361.00	6.45	3.70	2.80	0.655	0.383	1.71	23.35	4.83	0.002
5.	10.00	6361.00	7.42	4.35	3.20	0.956	0.605	1.58	29.87	5.47	0.002
6.	33.00	6338.00	7.54	4.40	3.23	1.005	0.627	1.60	31.05	5.57	0.010
7.	33.00	6338.00	8.00	4.69	3.40	1.178	0.748	1.58	34.67	5.89	0.010
9.	71.00	6300.00	8.00	4.69	3.40	1.178	0.748	1.58	34.67	5.89	0.022
10.	96.00	6275.00	7.90	4.43	3.40	1.229	0.669	1.84	36.17	6.01	0.031
11.	121.00	6250.00	7.87	4.38	3.40	1.237	0.651	1.90	36.40	6.03	0.039
12.	146.00	6225.00	7.80	4.32	3.40	1.223	0.633	1.93	35.99	6.00	0.048
14.	196.00	6175.00	7.80	4.32	3.40	1.223	0.633	1.93	35.99	6.00	0.064
15.	221.00	6150.00	8.21	4.47	3.40	1.384	0.580	2.04	40.71	6.38	0.073
16.	246.00	6125.00	8.42	4.50	3.40	1.492	0.588	2.17	43.91	6.63	0.081
21.	371.00	6000.00	8.72	4.50	3.40	1.667	0.688	2.42	49.05	7.00	0.123
23.	421.00	5950.00	9.56	5.34	3.87	2.065	1.102	1.87	53.40	7.31	0.142
31.	621.00	5750.00	10.04	5.34	3.87	2.429	1.102	2.20	62.81	7.93	0.219
34.	696.00	5675.00	10.94	6.05	4.30	3.049	1.573	1.94	70.90	8.42	0.250
39.	871.00	5500.00	11.24	6.20	4.56	3.425	1.752	1.95	75.10	8.67	0.327
44.	1371.00	5000.00	12.03	6.63	4.82	4.148	2.116	1.96	86.13	9.28	0.561
48.	2171.00	4200.00	13.00	7.00	5.19	5.384	2.544	2.12	103.69	10.18	0.961
58.	2884.58	3486.42	13.73	7.18	5.59	6.698	2.884	2.32	119.76	10.94	1.360
59.	2884.58	3486.42	8.21	0.0	9.81	6.610	0.0	0.0	67.39	8.21	1.360
66.	3471.00	2900.00	9.00	0.0	10.77	8.731	0.0	0.0	81.07	9.00	1.961
68.	3871.00	2500.00	9.50	0.0	11.22	10.125	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.39	0.0	12.17	13.144	0.0	0.0	108.01	10.39	3.259
81.	5118.00	1253.00	11.03	3.38	12.49	13.297	1.424	9.34	106.46	10.32	3.259
87.	6371.00	0.0	11.32	3.38	12.80	14.457	1.459	9.91	112.95	10.63	3.606

MODEL NO. 59

DEPTH 96. KM., MINIMUM SHEAR VELOCITY IS 4.26, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	C.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.51	1.213	0.776	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.51	1.213	0.776	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.26	3.51	1.314	0.637	2.06	37.43	6.12	0.032
14.	196.00	6175.00	7.85	4.26	3.51	1.314	0.637	2.06	37.43	6.12	0.067
15.	221.00	6150.00	8.36	4.51	3.51	1.502	0.714	2.10	42.78	6.54	0.075
16.	246.00	6125.00	8.42	4.51	3.51	1.537	0.714	2.15	43.79	6.62	0.084
21.	371.00	6000.00	8.72	4.51	3.51	1.718	0.714	2.41	48.93	7.00	0.127
23.	421.00	5950.00	9.56	5.40	3.71	1.948	1.083	1.80	52.50	7.25	0.145
31.	621.00	5750.00	10.04	5.40	3.71	2.297	1.083	2.12	61.91	7.87	0.219
34.	696.00	5675.00	10.94	6.21	4.38	2.987	1.692	1.77	68.18	8.26	0.250
39.	871.00	5500.00	11.24	6.31	4.51	3.304	1.793	1.84	73.30	8.56	0.328
44.	1371.00	5000.00	12.03	6.57	4.81	4.189	2.075	2.02	87.17	9.34	0.559
48.	2171.00	4200.00	13.00	6.99	5.19	5.387	2.537	2.12	103.82	10.19	0.959
58.	2888.86	3482.14	13.73	7.22	5.53	6.587	2.883	2.28	119.05	10.91	1.358
59.	2888.86	3482.14	8.28	0.0	9.83	6.741	0.0	0.0	68.56	8.28	1.358
66.	3471.00	2900.00	8.95	0.0	10.79	8.645	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.24	10.146	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.35	C.0	12.19	13.060	0.0	0.0	107.12	10.35	3.273
81.	5118.00	1253.00	11.03	3.44	12.83	13.579	1.523	8.92	105.84	10.29	3.273
87.	6371.00	0.0	11.32	3.44	13.14	14.759	1.559	9.46	112.32	10.60	3.639

MODEL NO. 60

DEPTH 96. KM., MAXIMUM SHEAR VELOCITY IS 4.37, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.64	3.39	1.198	0.728	1.64	35.34	5.95	0.002
9.	71.00	6300.00	8.00	4.64	3.39	1.198	0.728	1.64	35.34	5.95	0.023
10.	96.00	6275.00	7.85	4.37	3.39	1.225	0.647	1.89	36.16	6.01	0.031
14.	196.00	6175.00	7.85	4.37	3.39	1.225	0.647	1.89	36.16	6.01	0.064
15.	221.00	6150.00	8.36	4.43	3.39	1.482	0.665	2.23	43.73	6.61	0.073
16.	246.00	6125.00	8.42	4.43	3.39	1.516	0.665	2.28	44.74	6.69	0.081
21.	371.00	6000.00	8.72	4.43	3.39	1.691	0.665	2.54	49.88	7.06	0.123
23.	421.00	5950.00	9.56	5.33	3.93	2.104	1.115	1.89	53.56	7.32	0.142
31.	621.00	5750.00	10.04	5.33	3.93	2.473	1.115	2.22	62.97	7.94	0.220
34.	696.00	5675.00	10.94	6.15	4.25	2.941	1.611	1.83	69.17	8.32	0.251
39.	871.00	5500.00	11.24	6.27	4.50	3.327	1.769	1.88	73.94	8.60	0.327
44.	1371.00	5000.00	12.03	6.59	4.86	4.214	2.113	1.99	86.73	9.31	0.561
48.	2171.00	4200.00	13.00	6.98	5.18	5.384	2.522	2.13	104.02	10.20	0.961
58.	2888.82	3482.18	13.73	7.20	5.57	6.658	2.886	2.31	119.47	10.93	1.361
59.	2888.82	3482.18	8.18	0.0	9.80	6.567	0.0	0.0	66.98	8.18	1.361
66.	3471.00	2900.00	8.95	0.0	10.76	8.622	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.21	10.121	0.0	0.0	90.25	9.50	2.342
80.	5118.00	1253.00	10.31	0.0	12.16	12.930	0.0	0.0	106.30	10.31	3.264
81.	5118.00	1253.00	11.03	3.43	12.75	13.507	1.501	9.00	105.97	10.29	3.264
87.	6371.00	0.0	11.32	3.43	13.06	14.682	1.537	9.55	112.45	10.60	3.626

MODEL NO. 61

DEPTH 221. KM., MINIMUM SHEAR VELOCITY IS 4.43, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.66	3.37	1.181	0.732	1.61	35.05	5.92	0.002
9.	71.00	6300.00	8.00	4.66	3.37	1.181	0.732	1.61	35.05	5.92	0.023
10.	96.00	6275.00	7.85	4.36	3.37	1.224	0.640	1.91	36.31	6.03	0.031
14.	196.00	6175.00	7.85	4.36	3.37	1.224	0.640	1.91	36.31	6.03	0.064
15.	221.00	6150.00	8.36	4.43	3.37	1.475	0.660	2.23	43.77	6.62	0.072
16.	246.00	6125.00	8.42	4.43	3.37	1.509	0.660	2.29	44.78	6.69	0.081
21.	371.00	6000.00	8.72	4.43	3.37	1.663	0.660	2.55	49.92	7.07	0.123
23.	421.00	5950.00	9.56	5.31	3.95	2.129	1.113	1.91	53.86	7.34	0.141
31.	621.00	5750.00	10.04	5.31	3.95	2.501	1.113	2.25	63.26	7.95	0.220
34.	696.00	5675.00	10.94	6.12	4.26	2.975	1.596	1.86	69.78	8.35	0.251
39.	871.00	5500.00	11.24	6.25	4.50	3.347	1.758	1.90	74.30	8.62	0.328
44.	1371.00	5000.00	12.03	6.61	4.85	4.190	2.122	1.97	86.39	9.29	0.561
48.	2171.00	4200.00	13.00	6.98	5.18	5.389	2.521	2.14	104.08	10.20	0.961
58.	2888.51	3482.49	13.73	7.19	5.38	6.673	2.982	2.32	119.62	10.94	1.361
59.	2888.51	3482.49	8.19	0.0	9.81	6.585	0.0	0.0	67.14	8.19	1.361
66.	3471.00	2900.00	8.95	0.0	10.77	8.625	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.22	10.123	0.0	0.0	90.25	9.50	2.343
80.	5118.00	1253.00	10.32	0.0	12.17	12.966	0.0	0.0	106.56	10.32	3.264
81.	5118.00	1253.00	11.03	3.42	12.72	13.487	1.490	9.05	106.04	10.30	3.264
87.	6371.00	0.0	11.32	3.42	13.03	14.660	1.527	9.60	112.52	10.61	3.624

MODEL NO. 62

DEPTH 221. KM., MAXIMUM SHEAR VELOCITY IS 4.51, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.51	1.213	0.776	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.51	1.213	0.776	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.26	3.51	1.314	0.637	2.06	37.41	6.12	0.032
14.	196.00	6175.00	7.85	4.26	3.51	1.314	0.637	2.06	37.41	6.12	0.067
15.	221.00	6150.00	8.36	4.51	3.51	1.502	0.714	2.10	42.78	6.54	0.075
16.	246.00	6125.00	8.42	4.51	3.51	1.537	0.714	2.15	43.79	6.62	0.084
21.	371.00	6000.00	8.72	4.51	3.51	1.718	0.714	2.41	48.93	7.00	0.127
23.	421.00	5950.00	9.56	5.40	3.71	1.950	1.082	1.80	52.53	7.25	0.145
31.	621.00	5750.00	10.04	5.40	3.71	2.299	1.082	2.12	61.94	7.87	0.219
34.	696.00	5675.00	10.94	6.22	4.38	2.985	1.695	1.76	68.12	8.25	0.250
39.	871.00	5500.00	11.24	6.31	4.51	3.301	1.794	1.84	73.27	8.56	0.328
44.	1371.00	5000.00	12.03	6.57	4.81	4.191	2.073	2.02	87.20	9.34	0.559
48.	2171.00	4200.00	13.00	6.99	5.19	5.386	2.536	2.12	103.82	10.19	0.959
58.	2888.88	3482.12	13.73	7.22	5.53	6.586	2.883	2.28	119.03	10.91	1.358
59.	2888.88	3482.12	8.28	0.0	9.83	6.744	0.0	0.0	68.59	8.28	1.358
66.	3471.00	2900.00	8.95	0.0	10.79	8.645	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.24	10.146	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.35	0.0	12.19	13.060	0.0	0.0	107.12	10.35	3.273
81.	5118.00	1253.00	11.03	3.45	12.84	13.585	1.524	8.91	105.83	10.29	3.273
87.	6371.00	0.0	11.32	3.45	13.15	14.765	1.561	9.46	112.31	10.60	3.640

MODEL NO. 63

DEPTH 421. KM., MINIMUM SHEAR VELOCITY IS 5.27, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	PHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.67	3.37	1.175	0.735	1.60	34.88	5.91	0.002
9.	71.00	6300.00	8.00	4.67	3.37	1.175	0.735	1.60	34.88	5.91	0.022
10.	96.00	6275.00	7.85	4.34	3.37	1.230	0.634	1.94	36.53	6.04	0.031
14.	196.00	6175.00	7.85	4.34	3.37	1.230	0.634	1.94	36.53	6.04	0.064
15.	221.00	6150.00	8.36	4.45	3.37	1.466	0.666	2.20	43.53	6.60	0.072
16.	246.00	6125.00	8.42	4.45	3.37	1.500	0.666	2.25	44.54	6.67	0.081
21.	371.00	6000.00	8.72	4.45	3.37	1.673	0.666	2.51	49.68	7.05	0.123
23.	421.00	5950.00	9.56	5.27	3.96	2.153	1.099	1.96	54.38	7.37	0.141
31.	621.00	5750.00	10.04	5.27	3.96	2.525	1.099	2.30	63.79	7.99	0.220
34.	696.00	5675.00	10.94	6.14	4.29	2.974	1.620	1.84	69.34	8.33	0.251
39.	871.00	5500.00	11.24	6.26	4.50	3.332	1.766	1.89	74.04	8.60	0.328
44.	1371.00	5000.00	12.03	6.60	4.84	4.195	2.111	1.99	86.61	9.31	0.561
48.	2171.00	4200.00	13.00	6.98	5.18	5.381	2.525	2.13	103.96	10.20	0.961
58.	2888.34	3482.66	13.73	7.19	5.57	6.668	2.881	2.31	119.60	10.94	1.361
59.	2888.34	3482.66	8.21	0.0	9.81	6.617	0.0	0.0	67.44	8.21	1.361
66.	3471.00	2900.00	3.95	0.0	10.77	8.629	0.0	0.0	80.10	8.95	1.959
68.	3671.00	2500.00	9.50	0.0	11.22	10.128	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.33	0.0	12.17	12.996	0.0	0.0	106.77	10.33	3.267
81.	5118.00	1253.00	11.03	3.43	12.74	13.505	1.498	9.01	105.98	10.29	3.267
87.	6371.00	0.0	11.32	3.43	13.05	14.680	1.535	9.56	112.46	10.60	3.628

MODEL NO. 64

DEPTH 421. KM., MAXIMUM SHEAR VELOCITY IS 5.47, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.49	1.204	0.770	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.49	1.204	0.770	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.29	3.49	1.292	0.642	2.01	37.06	6.09	0.032
14.	196.00	6175.00	7.85	4.29	3.49	1.292	0.642	2.01	37.06	6.09	0.066
15.	221.00	6150.00	8.36	4.44	3.49	1.518	0.688	2.21	43.56	6.60	0.075
16.	246.00	6125.00	8.42	4.44	3.49	1.554	0.688	2.26	44.56	6.68	0.083
21.	371.00	6000.00	8.72	4.44	3.49	1.733	0.688	2.52	49.71	7.05	0.127
23.	421.00	5950.00	9.56	5.47	3.74	1.926	1.123	1.72	51.43	7.17	0.145
31.	621.00	5750.00	10.04	5.47	3.74	2.278	1.123	2.03	60.83	7.80	0.219
34.	696.00	5675.00	10.94	6.06	4.33	3.057	1.590	1.92	70.67	8.41	0.250
39.	871.00	5500.00	11.24	6.21	4.54	3.397	1.750	1.94	74.89	8.65	0.327
44.	1371.00	5000.00	12.03	6.64	4.80	4.128	2.119	1.95	85.92	9.27	0.560
48.	2171.00	4200.00	13.00	6.97	5.20	5.420	2.526	2.15	104.23	10.21	0.960
58.	2888.78	3482.22	13.73	7.20	5.55	6.627	2.881	2.30	119.34	10.92	1.360
59.	2888.78	3482.22	8.25	0.0	9.82	6.693	0.0	0.0	68.14	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	8.636	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.23	10.136	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.18	13.046	0.0	0.0	107.10	10.35	3.266
81.	5118.00	1253.00	11.03	3.41	12.70	13.480	1.479	9.12	106.14	10.30	3.266
87.	6371.00	0.0	11.32	3.41	13.01	14.652	1.515	9.67	112.62	10.61	3.625

MODEL NO. 65

DEPTH 10. KM., MINIMUM DENSITY IS 3.37, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.67	3.37	1.176	0.734	1.60	34.93	5.91	0.002
9.	71.00	6300.00	8.00	4.67	3.37	1.176	0.734	1.60	34.93	5.91	0.022
10.	96.00	6275.00	7.85	4.34	3.37	1.228	0.635	1.93	36.46	6.04	0.031
14.	196.00	6175.00	7.85	4.34	3.37	1.228	0.635	1.93	36.46	6.04	0.064
15.	221.00	6150.00	8.36	4.44	3.37	1.467	0.665	2.21	43.56	6.60	0.072
16.	246.00	6125.00	8.42	4.44	3.37	1.500	0.665	2.26	44.56	6.68	0.081
21.	371.00	6000.00	8.72	4.44	3.37	1.674	0.665	2.52	49.71	7.05	0.123
23.	421.00	5950.00	9.56	5.27	3.96	2.154	1.100	1.96	54.38	7.37	0.141
31.	621.00	5750.00	10.04	5.27	3.96	2.527	1.100	2.30	63.79	7.99	0.220
34.	696.00	5675.00	10.94	6.15	4.28	2.970	1.619	1.84	69.32	8.33	0.251
39.	871.00	5500.00	11.24	6.26	4.50	3.330	1.765	1.89	74.02	8.60	0.328
44.	1371.00	5000.00	12.03	6.60	4.85	4.200	2.113	1.99	86.62	9.31	0.561
48.	2171.00	4200.00	13.00	6.98	5.17	5.380	2.524	2.13	103.96	10.20	0.961
58.	2888.44	3482.56	13.73	7.19	5.57	6.670	2.878	2.32	119.66	10.94	1.361
59.	2883.44	3482.56	8.20	0.0	9.81	6.598	0.0	0.0	67.26	8.20	1.361
66.	3471.00	2900.00	8.95	0.0	10.77	8.627	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.22	10.126	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.33	0.0	12.17	12.986	0.0	0.0	106.71	10.33	3.266
81.	5118.00	1253.00	11.03	3.43	12.74	13.502	1.498	9.01	105.98	10.29	3.266
87.	6371.00	0.0	11.32	3.43	13.05	14.677	1.534	9.56	112.46	10.60	3.627

MODEL NO. 66

DEPTH 10. KM., MAXIMUM DENSITY IS 3.53, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.53	1.220	0.780	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.53	1.220	0.780	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.27	3.53	1.318	0.644	2.05	37.31	6.11	0.032
14.	196.00	6175.00	7.85	4.27	3.53	1.318	0.644	2.05	37.31	6.11	0.067
15.	221.00	6150.00	8.36	4.49	3.53	1.519	0.712	2.13	43.00	6.56	0.076
16.	246.00	6125.00	8.42	4.49	3.53	1.554	0.712	2.18	44.00	6.63	0.084
21.	371.00	6000.00	8.72	4.49	3.53	1.736	0.712	2.44	49.15	7.01	0.128
23.	421.00	5950.00	9.56	5.41	3.75	1.960	1.098	1.78	52.31	7.23	0.146
31.	621.00	5750.00	10.04	5.41	3.75	2.312	1.098	2.11	61.72	7.86	0.221
34.	696.00	5675.00	10.94	6.26	4.31	2.906	1.690	1.72	67.42	8.21	0.251
39.	871.00	5500.00	11.24	6.34	4.43	3.226	1.780	1.81	72.79	8.53	0.327
44.	1371.00	5000.00	12.03	6.56	4.86	4.244	2.088	2.03	87.40	9.35	0.559
48.	2171.00	4200.00	13.00	6.98	5.15	5.355	2.512	2.13	103.96	10.20	0.958
58.	2891.55	3479.45	13.73	7.23	5.55	6.588	2.905	2.27	118.72	10.90	1.358
59.	2891.55	3479.45	8.21	0.0	9.83	6.637	0.0	0.0	67.49	8.21	1.358
66.	3471.00	2900.00	8.95	0.0	10.79	8.647	0.0	0.0	80.10	8.95	1.956
68.	3871.00	2500.00	9.50	0.0	11.24	10.149	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.32	0.0	12.19	12.983	0.0	0.0	106.46	10.32	3.277
81.	5118.00	1253.00	11.03	3.47	12.98	13.705	1.567	8.75	105.57	10.27	3.277
87.	6371.00	0.0	11.32	3.47	13.29	14.894	1.604	9.28	112.05	10.59	3.652

MODEL NO. 67

DEPTH 421. KM., MINIMUM DENSITY IS 3.68, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.70	3.50	1.210	0.774	1.56	34.55	5.88	0.002
9.	71.00	6300.00	8.00	4.70	3.50	1.210	0.774	1.56	34.55	5.88	0.023
10.	96.00	6275.00	7.85	4.27	3.50	1.307	0.638	2.05	37.33	6.11	0.032
14.	196.00	6175.00	7.85	4.27	3.50	1.307	0.638	2.05	37.33	6.11	0.066
15.	221.00	6150.00	8.36	4.49	3.50	1.505	0.707	2.13	42.97	6.56	0.075
16.	246.00	6125.00	8.42	4.49	3.50	1.540	0.707	2.18	43.98	6.63	0.084
21.	371.00	6000.00	8.72	4.49	3.50	1.720	0.707	2.43	49.12	7.01	0.127
23.	421.00	5950.00	9.56	5.43	3.68	1.917	1.085	1.77	52.08	7.22	0.145
31.	621.00	5750.00	10.04	5.43	3.68	2.263	1.085	2.09	61.49	7.84	0.218
34.	696.00	5675.00	10.94	6.14	4.45	3.065	1.678	1.84	69.37	8.33	0.249
39.	871.00	5500.00	11.24	6.26	4.54	3.364	1.780	1.89	74.07	8.61	0.328
44.	1371.00	5000.00	12.03	6.60	4.79	4.147	2.086	1.99	86.62	9.31	0.560
48.	2171.00	4200.00	13.00	6.98	5.22	5.426	2.546	2.13	103.96	10.20	0.960
58.	2890.42	3480.58	13.73	7.22	5.48	6.518	2.854	2.28	119.03	10.91	1.358
59.	2890.42	3480.58	8.25	0.0	9.84	6.702	0.0	0.0	68.13	8.25	1.358
66.	3471.00	2900.00	8.95	0.0	10.80	8.649	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.25	10.150	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.20	13.066	0.0	0.0	107.12	10.35	3.271
81.	5118.00	1253.00	11.03	3.44	12.77	13.528	1.510	8.96	105.90	10.29	3.271
87.	6371.00	0.0	11.32	3.44	13.08	14.704	1.547	9.51	112.38	10.60	3.634

MODEL NO. 68

DEPTH 421. KM., MAXIMUM DENSITY IS 3.96, OCEANIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.0
2.	3.00	6368.00	1.52	0.0	1.03	0.024	0.0	0.0	2.31	1.52	0.000
3.	3.00	6368.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.000
4.	10.00	6361.00	6.55	3.73	2.84	0.692	0.395	1.75	24.35	4.93	0.002
5.	10.00	6361.00	8.00	4.65	3.37	1.184	0.729	1.63	35.16	5.93	0.002
9.	71.00	6300.00	8.00	4.65	3.37	1.184	0.729	1.63	35.16	5.93	0.022
10.	96.00	6275.00	7.85	4.36	3.37	1.223	0.639	1.91	36.32	6.03	0.031
14.	196.00	6175.00	7.85	4.36	3.37	1.223	0.639	1.91	36.32	6.03	0.064
15.	221.00	6150.00	8.36	4.43	3.37	1.472	0.662	2.22	43.70	6.61	0.072
16.	246.00	6125.00	8.42	4.43	3.37	1.506	0.662	2.28	44.71	6.69	0.081
21.	371.00	6000.00	8.72	4.43	3.37	1.679	0.662	2.54	49.85	7.06	0.123
23.	421.00	5950.00	9.56	5.29	3.96	2.140	1.110	1.93	54.03	7.35	0.141
31.	621.00	5750.00	10.04	5.29	3.96	2.513	1.110	2.26	63.43	7.96	0.220
34.	696.00	5675.00	10.94	6.13	4.26	2.959	1.602	1.85	69.52	8.34	0.251
39.	871.00	5500.00	11.24	6.26	4.51	3.341	1.764	1.89	74.14	8.61	0.328
44.	1371.00	5000.00	12.03	6.61	4.85	4.195	2.117	1.98	86.52	9.30	0.561
48.	2171.00	4200.00	13.00	6.98	5.18	5.389	2.521	2.14	104.08	10.20	0.961
58.	2888.60	3482.40	13.73	7.19	5.58	6.665	2.888	2.31	119.49	10.93	1.361
59.	2888.60	3482.40	8.20	0.0	9.81	6.600	0.0	0.0	67.31	8.20	1.361
66.	3471.00	2900.00	8.95	0.0	10.77	8.624	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.22	10.122	0.0	0.0	90.25	9.50	2.343
80.	5118.00	1253.00	10.32	0.0	12.17	12.952	0.0	0.0	106.46	10.32	3.264
81.	5118.00	1253.00	11.03	3.43	12.73	13.499	1.495	9.03	106.01	10.30	3.264
87.	6371.00	0.0	11.32	3.43	13.04	14.674	1.531	9.58	112.49	10.61	3.625

MODEL NO. 69

DEPTH 146. KM., MINIMUM SHEAR VELOCITY IS 4.34, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.67	3.35	1.169	0.732	1.60	34.88	5.91	0.009
11.	121.00	6250.00	8.00	4.67	3.35	1.169	0.732	1.60	34.88	5.91	0.038
12.	146.00	6225.00	7.70	4.34	3.35	1.144	0.632	1.81	34.13	5.84	0.046
15.	221.00	6150.00	7.70	4.34	3.35	1.144	0.632	1.81	34.13	5.84	0.071
16.	246.00	6125.00	8.42	4.73	3.35	1.375	0.751	1.83	41.03	6.41	0.080
21.	371.00	6000.00	8.72	4.73	3.35	1.547	0.751	2.06	46.17	6.79	0.121
23.	421.00	5950.00	9.56	5.06	4.01	2.298	1.029	2.23	57.23	7.56	0.140
31.	621.00	5750.00	10.04	5.06	4.01	2.675	1.029	2.60	66.64	8.16	0.220
34.	696.00	5675.00	10.24	6.25	4.37	2.958	1.706	1.73	67.67	8.23	0.252
39.	871.00	5500.00	11.24	6.33	4.50	3.283	1.800	1.82	72.98	8.54	0.329
44.	1371.00	5000.00	12.03	6.56	4.81	4.205	2.070	2.03	87.38	9.35	0.561
48.	2171.00	4200.00	13.00	7.00	5.18	5.378	2.537	2.12	103.74	10.19	0.961
58.	2888.78	3482.22	13.73	7.21	5.53	6.597	2.878	2.29	119.18	10.92	1.360
59.	2888.78	3482.22	8.27	0.0	9.83	6.732	0.0	0.0	68.48	8.27	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.644	0.0	0.0	80.10	8.95	1.960
68.	3871.00	2500.00	9.50	0.0	11.24	10.145	0.0	0.0	90.25	9.50	2.347
80.	5118.00	1253.00	10.35	0.0	12.19	13.052	0.0	0.0	107.06	10.35	3.275
81.	5118.00	1253.00	11.03	3.45	12.86	13.598	1.532	8.88	105.77	10.28	3.275
87.	6371.00	0.0	11.32	3.45	13.17	14.779	1.569	9.42	112.25	10.59	3.643

MODEL NO. 70

DEPTH 146. KM., MAXIMUM SHEAR VELOCITY IS 4.67, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.06	1.095	0.647	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.06	1.095	0.647	1.69	35.79	5.98	0.036
12.	146.00	6225.00	7.70	4.67	3.06	0.923	0.668	1.38	30.19	5.49	0.043
15.	221.00	6150.00	7.70	4.67	3.06	0.923	0.668	1.38	30.19	5.49	0.066
16.	246.00	6125.00	8.42	4.50	3.06	1.342	0.620	2.16	43.87	6.62	0.074
21.	371.00	6000.00	8.72	4.50	3.06	1.499	0.620	2.42	49.01	7.00	0.112
23.	421.00	5950.00	9.56	4.87	4.42	2.640	1.049	2.52	59.73	7.73	0.131
31.	621.00	5750.00	10.04	4.87	4.42	3.055	1.049	2.91	69.14	8.32	0.220
34.	696.00	5675.00	10.94	6.12	4.41	3.079	1.653	1.86	69.76	8.35	0.253
39.	871.00	5500.00	11.24	6.24	4.51	3.354	1.758	1.91	74.37	8.62	0.331
44.	1371.00	5000.00	12.03	6.60	4.83	4.192	2.104	1.99	86.71	9.31	0.564
48.	2171.00	4200.00	13.00	7.01	5.18	5.363	2.547	2.11	103.48	10.17	0.964
58.	2889.69	3481.31	13.73	7.17	5.56	6.664	2.857	2.33	119.95	10.95	1.364
59.	2889.69	3481.31	8.19	0.0	9.82	6.598	0.0	0.0	67.09	8.19	1.364
66.	3471.00	2900.00	8.95	0.0	10.78	8.634	0.0	0.0	80.10	8.95	1.961
68.	3871.00	2500.00	9.50	0.0	11.23	10.134	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.18	13.046	0.0	0.0	107.12	10.35	3.267
81.	5118.00	1253.00	11.03	3.42	12.65	13.418	1.483	9.05	106.04	10.30	3.267
87.	6371.00	0.0	11.32	3.42	12.96	14.587	1.519	9.60	112.52	10.61	3.623

MODEL NO. 71

DEPTH 246. KM., MINIMUM SHEAR VELOCITY IS 4.47, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.36	1.204	0.712	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.36	1.204	0.712	1.69	35.79	5.98	0.038
12.	146.00	6225.00	7.70	4.61	3.36	1.042	0.714	1.46	30.99	5.57	0.047
15.	221.00	6150.00	7.70	4.61	3.36	1.042	0.714	1.46	30.99	5.57	0.072
16.	246.00	6125.00	8.42	4.47	3.36	1.487	0.673	2.21	44.21	6.65	0.080
21.	371.00	6000.00	8.72	4.47	3.36	1.660	0.673	2.47	49.35	7.02	0.122
23.	421.00	5950.00	9.56	5.30	4.00	2.159	1.123	1.92	53.95	7.35	0.140
31.	621.00	5750.00	10.04	5.30	4.00	2.535	1.123	2.26	63.36	7.96	0.220
34.	696.00	5675.00	10.94	6.08	4.29	3.020	1.583	1.91	70.44	8.39	0.251
39.	871.00	5500.00	11.24	6.22	4.52	3.380	1.750	1.93	74.74	8.65	0.328
44.	1371.00	5000.00	12.03	6.63	4.82	4.152	2.121	1.96	86.09	9.28	0.561
48.	2171.00	4200.00	13.00	6.97	5.18	5.397	2.519	2.14	104.17	10.21	0.961
58.	2889.19	3481.81	13.73	7.21	5.58	6.652	2.900	2.29	119.22	10.92	1.361
59.	2889.19	3481.81	8.23	0.0	9.82	6.645	0.0	0.0	67.67	8.23	1.361
66.	3471.00	2900.00	8.95	0.0	10.78	8.643	0.0	0.0	80.17	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.23	10.135	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.35	0.0	12.18	13.045	0.0	0.0	107.10	10.35	3.267
81.	5118.00	1253.00	11.03	3.41	12.69	13.474	1.472	9.15	106.19	10.31	3.267
87.	6371.00	0.0	11.32	3.41	13.00	14.645	1.508	9.71	112.67	10.61	3.625

MODEL NO. 72

DEPTH 246. KM., MAXIMUM SHEAR VELOCITY IS 4.76, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.53	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.67	3.19	1.115	0.697	1.60	34.90	5.91	0.009
11.	121.00	6250.00	8.00	4.67	3.19	1.115	0.697	1.60	34.90	5.91	0.037
12.	146.00	6225.00	7.70	4.36	3.19	1.086	0.606	1.79	33.99	5.83	0.045
15.	221.00	6150.00	7.70	4.36	3.19	1.086	0.606	1.79	33.99	5.83	0.068
16.	246.00	6125.00	8.42	4.76	3.19	1.301	0.722	1.80	40.74	6.38	0.076
21.	371.00	6000.00	8.72	4.76	3.19	1.465	0.722	2.03	45.88	6.77	0.116
23.	421.00	5950.00	9.56	4.85	4.24	2.544	0.998	2.55	60.00	7.75	0.135
31.	621.00	5750.00	10.04	4.85	4.24	2.942	0.998	2.95	69.41	8.33	0.220
34.	696.00	5675.00	10.94	6.22	4.40	2.999	1.700	1.76	68.17	8.26	0.253
39.	871.00	5500.00	11.24	6.31	4.50	3.302	1.792	1.84	73.30	8.56	0.330
44.	1371.00	5000.00	12.03	6.57	4.81	4.195	2.076	2.02	87.19	9.34	0.562
48.	2171.00	4200.00	13.00	6.99	5.19	5.387	2.537	2.12	103.82	10.19	0.962
58.	2888.86	3482.14	13.73	7.22	5.53	6.583	2.880	2.29	119.07	10.91	1.361
59.	2888.86	3482.14	8.27	0.0	9.83	6.722	0.0	0.0	68.38	8.27	1.361
66.	3471.00	2900.00	8.95	0.0	10.79	8.644	0.0	0.0	80.10	8.95	1.961
68.	3871.00	2500.00	9.50	0.0	11.24	10.145	0.0	0.0	90.25	9.50	2.348
80.	5118.00	1253.00	10.35	0.0	12.19	13.059	0.0	0.0	107.12	10.35	3.275
81.	5118.00	1253.00	11.03	3.45	12.81	13.559	1.522	8.91	105.82	10.29	3.275
87.	6371.00	0.0	11.32	3.45	13.12	14.737	1.559	9.45	112.30	10.60	3.640

MODEL NO. 73

DEPTH 421. KM., MINIMUM SHEAR VELOCITY IS 4.78, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.66	3.12	1.093	0.678	1.61	35.03	5.92	0.009
11.	121.00	6250.00	8.00	4.66	3.12	1.093	0.678	1.61	35.03	5.92	0.036
12.	146.00	6225.00	7.70	4.41	3.12	1.040	0.607	1.71	33.34	5.77	0.044
15.	221.00	6150.00	7.70	4.41	3.12	1.040	0.607	1.71	33.34	5.77	0.067
16.	246.00	6125.00	8.42	4.73	3.12	1.281	0.698	1.84	41.07	6.41	0.075
21.	371.00	6000.00	8.72	4.73	3.12	1.462	0.698	2.07	46.21	6.80	0.114
23.	421.00	5950.00	9.56	4.78	4.34	2.644	0.990	2.67	60.95	7.81	0.133
31.	621.00	5750.00	10.04	4.78	4.34	3.052	0.990	3.08	70.36	8.39	0.220
34.	696.00	5675.00	10.94	6.20	4.42	3.025	1.702	1.78	68.38	8.27	0.253
39.	871.00	5500.00	11.24	6.30	4.50	3.309	1.787	1.85	73.45	8.57	0.331
44.	1371.00	5000.00	12.03	6.57	4.82	4.201	2.080	2.02	87.17	9.34	0.563
48.	2171.00	4200.00	13.00	7.00	5.19	5.380	2.542	2.12	103.69	10.18	0.963
58.	2689.26	3481.74	13.73	7.21	5.52	6.507	2.869	2.30	119.26	10.92	1.362
59.	2889.26	3481.74	8.24	0.0	9.83	6.678	0.0	0.0	67.93	8.24	1.362
66.	3471.00	2900.00	8.95	0.0	10.79	8.643	0.0	0.0	80.10	8.95	1.961
68.	3871.00	2500.00	9.50	0.0	11.24	10.144	0.0	0.0	90.25	9.50	2.348
80.	5118.00	1253.00	10.35	0.0	12.19	13.058	0.0	0.0	107.12	10.35	3.273
81.	5118.00	1253.00	11.03	3.45	12.78	13.522	1.517	8.91	105.83	10.29	3.273
87.	6371.00	0.0	11.32	3.45	13.09	14.698	1.554	9.46	112.31	10.60	3.637

MODEL NO. 74

DEPTH 421. KM., MAXIMUM SHEAR VELOCITY IS 5.52, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.57	1.277	0.755	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.57	1.277	0.755	1.69	35.79	5.98	0.040
12.	146.00	6225.00	7.70	4.54	3.57	1.133	0.737	1.54	31.76	5.64	0.049
15.	221.00	6150.00	7.70	4.54	3.57	1.133	0.737	1.54	31.76	5.64	0.075
16.	246.00	6125.00	8.42	4.50	3.57	1.566	0.722	2.17	43.91	6.63	0.084
21.	371.00	6000.00	8.72	4.50	3.57	1.750	0.722	2.42	49.05	7.00	0.128
23.	421.00	5950.00	9.56	5.52	3.71	1.885	1.129	1.67	50.81	7.13	0.146
31.	621.00	5750.00	10.04	5.52	3.71	2.234	1.129	1.98	60.22	7.76	0.220
34.	696.00	5675.00	10.94	6.16	4.26	2.943	1.619	1.82	69.04	8.31	0.250
39.	871.00	5500.00	11.24	6.27	4.51	3.333	1.776	1.88	73.85	8.59	0.327
44.	1371.00	5000.00	12.03	6.59	4.82	4.182	2.095	2.00	86.76	9.31	0.559
48.	2171.00	4200.00	13.00	6.99	5.17	5.378	2.526	2.13	103.93	10.19	0.959
58.	2889.27	3481.73	13.73	7.21	5.57	6.650	2.895	2.30	119.28	10.92	1.359
59.	2889.27	3481.73	8.24	0.0	9.83	6.668	0.0	0.0	67.86	8.24	1.359
66.	3471.00	2900.00	8.96	0.0	10.79	8.653	0.0	0.0	80.23	8.96	1.958
68.	3871.00	2500.00	9.50	0.0	11.24	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.19	13.051	0.0	0.0	107.10	10.35	3.269
81.	5118.00	1253.00	11.03	3.42	12.78	13.549	1.496	9.06	106.05	10.30	3.269
87.	6371.00	0.0	11.32	3.42	13.09	14.726	1.532	9.61	112.53	10.61	3.633

MODEL NO. 75

DEPTH 33. KM., MINIMUM DENSITY IS 3.04, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.53	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.04	1.090	0.644	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.04	1.090	0.644	1.69	35.79	5.98	0.036
12.	146.00	6225.00	7.70	4.66	3.04	0.923	0.662	1.39	30.31	5.51	0.043
15.	221.00	6150.00	7.70	4.66	3.04	0.923	0.662	1.39	30.31	5.51	0.066
16.	246.00	6125.00	8.42	4.52	3.04	1.329	0.622	2.14	43.66	6.61	0.073
21.	371.00	6000.00	8.72	4.52	3.04	1.486	0.622	2.39	48.80	6.99	0.112
23.	421.00	5950.00	9.56	4.85	4.43	2.662	1.041	2.56	60.07	7.75	0.130
31.	621.00	5750.00	10.04	4.85	4.43	3.079	1.041	2.96	69.48	8.34	0.220
34.	696.00	5675.00	10.94	6.13	4.43	3.087	1.662	1.86	69.66	8.35	0.253
39.	871.00	5500.00	11.24	6.25	4.51	3.353	1.760	1.91	74.32	8.62	0.331
44.	1371.00	5000.00	12.03	6.59	4.84	4.198	2.101	2.00	86.80	9.32	0.564
48.	2171.00	4200.00	13.00	7.01	5.18	5.360	2.551	2.10	103.39	10.17	0.964
58.	2889.36	3481.14	13.73	7.17	5.55	6.660	2.852	2.34	120.01	10.95	1.364
59.	2889.86	3481.14	8.18	0.0	9.82	6.579	0.0	0.0	66.99	8.18	1.364
66.	3471.00	2900.00	8.95	0.0	10.78	8.635	0.0	0.0	80.10	8.95	1.961
68.	3871.00	2500.00	9.50	0.0	11.23	10.135	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.18	13.048	0.0	0.0	107.12	10.35	3.267
81.	5118.00	1253.00	11.03	3.42	12.65	13.410	1.484	9.04	106.02	10.30	3.267
87.	6371.00	0.0	11.32	3.42	12.96	14.579	1.520	9.59	112.50	10.61	3.623

MODEL NO. 76

DEPTH 33. KM., MAXIMUM DENSITY IS 3.63, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.61	3.63	1.295	0.769	1.68	35.71	5.98	0.009
11.	121.00	6250.00	8.00	4.61	3.63	1.295	0.769	1.68	35.71	5.98	0.041
12.	146.00	6225.00	7.70	4.49	3.63	1.177	0.730	1.61	32.46	5.70	0.049
15.	221.00	6150.00	7.70	4.49	3.63	1.177	0.730	1.61	32.46	5.70	0.076
16.	246.00	6125.00	8.42	4.57	3.63	1.561	0.757	2.06	43.05	6.56	0.085
21.	371.00	6000.00	8.72	4.57	3.63	1.747	0.757	2.31	48.19	6.94	0.130
23.	421.00	5950.00	9.56	5.49	3.65	1.869	1.099	1.70	51.24	7.16	0.148
31.	621.00	5750.00	10.04	5.49	3.65	2.212	1.099	2.01	60.64	7.79	0.221
34.	696.00	5675.00	10.94	6.30	4.24	2.827	1.685	1.68	66.70	8.17	0.250
39.	871.00	5500.00	11.24	6.36	4.49	3.249	1.816	1.79	72.39	8.51	0.327
44.	1371.00	5000.00	12.03	6.52	4.83	4.250	2.057	2.07	87.95	9.38	0.559
48.	2171.00	4200.00	13.00	7.01	5.16	5.342	2.535	2.11	103.50	10.17	0.958
58.	2889.43	3481.57	13.73	7.21	5.56	6.624	2.891	2.29	119.16	10.92	1.358
59.	2889.43	3481.57	8.22	0.0	9.83	6.648	0.0	0.0	67.60	8.22	1.358
66.	3471.00	2900.00	8.96	0.0	10.79	8.675	0.0	0.0	80.37	8.96	1.958
68.	3871.00	2500.00	9.50	0.0	11.24	10.148	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.19	13.063	0.0	0.0	107.12	10.35	3.274
81.	5118.00	1253.00	11.03	3.45	12.88	13.628	1.534	8.88	105.78	10.29	3.274
87.	6371.00	0.0	11.32	3.45	13.19	14.811	1.571	9.43	112.26	10.60	3.644

MODEL NO. 77

DEPTH 421. KM., MINIMUM DENSITY IS 3.60, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.62	3.62	1.285	0.772	1.66	35.53	5.96	0.009
11.	121.00	6250.00	8.00	4.62	3.62	1.285	0.772	1.66	35.53	5.96	0.040
12.	146.00	6225.00	7.70	4.44	3.62	1.192	0.715	1.67	32.95	5.74	0.049
15.	221.00	6150.00	7.70	4.44	3.62	1.192	0.715	1.67	32.95	5.74	0.076
16.	246.00	6125.00	8.42	4.60	3.62	1.544	0.765	2.02	42.68	6.53	0.085
21.	371.00	6000.00	8.72	4.60	3.62	1.730	0.765	2.26	47.83	6.92	0.130
23.	421.00	5950.00	9.56	5.48	3.60	1.849	1.082	1.71	51.32	7.16	0.148
31.	621.00	5750.00	10.04	5.48	3.60	2.188	1.082	2.02	60.73	7.79	0.219
34.	696.00	5675.00	10.94	6.26	4.38	2.951	1.720	1.72	67.35	8.21	0.249
39.	871.00	5500.00	11.24	6.33	4.49	3.274	1.804	1.81	72.83	8.53	0.327
44.	1371.00	5000.00	12.03	6.58	4.82	4.229	2.060	2.05	87.74	9.37	0.559
48.	2171.00	4200.00	13.00	7.03	5.18	5.342	2.556	2.09	103.18	10.16	0.958
58.	2889.59	3481.41	13.73	7.16	5.55	6.672	2.844	2.35	120.20	10.96	1.358
59.	2889.59	3481.41	8.24	0.0	9.83	6.682	0.0	0.0	67.98	8.24	1.358
66.	3471.00	2900.00	8.95	0.0	10.79	8.642	0.0	0.0	80.10	8.95	1.957
68.	3871.00	2500.00	9.50	0.0	11.24	10.143	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.19	13.055	0.0	0.0	107.10	10.35	3.271
81.	5118.00	1253.00	11.03	3.45	12.84	13.584	1.527	8.89	105.80	10.29	3.271
87.	6371.00	0.0	11.32	3.45	13.15	14.764	1.564	9.44	112.28	10.60	3.638

MODEL NO. 78

DEPTH 421. KM., MAXIMUM DENSITY IS 4.43, SHIELD MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.10	3.58	2.70	0.543	0.346	1.57	20.12	4.49	0.0
5.	10.00	6361.00	6.26	3.65	2.75	0.589	0.366	1.61	21.42	4.63	0.003
6.	33.00	6338.00	6.80	3.90	2.90	0.753	0.441	1.71	25.96	5.10	0.009
7.	33.00	6338.00	8.00	4.60	3.05	1.091	0.645	1.69	35.79	5.98	0.009
11.	121.00	6250.00	8.00	4.60	3.05	1.091	0.645	1.69	35.79	5.98	0.036
12.	146.00	6225.00	7.70	4.67	3.05	0.922	0.664	1.39	30.26	5.50	0.043
15.	221.00	6150.00	7.70	4.67	3.05	0.922	0.664	1.39	30.26	5.50	0.066
16.	246.00	6125.00	8.42	4.52	3.05	1.332	0.622	2.14	43.70	6.61	0.073
21.	371.00	6000.00	8.72	4.52	3.05	1.489	0.622	2.40	48.85	6.99	0.112
23.	421.00	5950.00	9.56	4.84	4.43	2.667	1.039	2.57	60.16	7.76	0.131
31.	621.00	5750.00	10.04	4.84	4.43	3.085	1.039	2.97	69.57	8.34	0.220
34.	696.00	5675.00	10.94	6.14	4.42	3.071	1.668	1.84	69.42	8.33	0.253
39.	871.00	5500.00	11.24	6.25	4.51	3.343	1.763	1.90	74.17	8.61	0.331
44.	1371.00	5000.00	12.03	6.58	4.84	4.204	2.097	2.00	86.90	9.32	0.564
48.	2171.00	4200.00	13.00	7.02	5.18	5.357	2.551	2.10	103.37	10.17	0.964
58.	2889.78	3481.22	13.73	7.17	5.55	6.660	2.853	2.33	119.99	10.95	1.364
59.	2889.78	3481.22	8.19	0.0	9.82	6.583	0.0	0.0	67.03	8.19	1.364
66.	3471.00	2900.00	8.95	0.0	10.78	8.636	0.0	0.0	80.10	8.95	1.961
68.	3871.00	2500.00	9.50	0.0	11.23	10.136	0.0	0.0	90.25	9.50	2.346
80.	5118.00	1253.00	10.35	0.0	12.18	13.049	0.0	0.0	107.12	10.35	3.268
81.	5118.00	1253.00	11.03	3.43	12.67	13.426	1.489	9.02	105.99	10.30	3.268
87.	6371.00	0.0	11.32	3.43	12.98	14.596	1.525	9.57	112.47	10.61	3.625

MODEL NO. 79

DEPTH 21. KM., MINIMUM SHEAR VELOCITY IS 4.01, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.48	3.41	1.267	0.685	1.85	37.19	6.10	0.009
10.	96.00	6275.00	8.00	4.48	3.41	1.267	0.685	1.85	37.19	6.10	0.030
11.	121.00	6250.00	7.70	4.01	3.41	1.289	0.549	2.35	37.83	6.15	0.038
14.	196.00	6175.00	7.70	4.01	3.41	1.289	0.549	2.35	37.83	6.15	0.064
15.	221.00	6150.00	8.36	4.86	3.41	1.308	0.805	1.62	38.38	6.20	0.072
16.	246.00	6125.00	8.42	4.86	3.41	1.342	0.805	1.67	39.39	6.28	0.081
21.	371.00	6000.00	8.72	4.86	3.41	1.518	0.805	1.88	44.53	6.67	0.123
23.	421.00	5950.00	9.56	5.09	3.92	2.226	1.016	2.19	56.81	7.54	0.141
31.	621.00	5750.00	10.04	5.09	3.92	2.594	1.016	2.55	66.22	8.14	0.219
34.	696.00	5675.00	10.94	6.07	4.34	3.057	1.599	1.91	70.51	8.40	0.250
39.	871.00	5500.00	11.24	6.22	4.53	3.390	1.754	1.93	74.77	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.81	4.132	2.118	1.95	85.97	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.422	2.522	2.15	104.32	10.21	0.960
53.	2889.51	3481.49	13.73	7.22	5.54	6.599	2.887	2.29	119.07	10.91	1.360
59.	2889.51	3481.49	8.25	0.0	9.82	6.684	0.0	0.0	68.03	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	9.639	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.23	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.18	13.043	0.0	0.0	107.04	10.35	3.268
81.	5118.00	1253.00	11.03	3.42	12.72	13.498	1.485	9.09	106.10	10.30	3.268
87.	6371.00	0.0	11.32	3.42	13.03	14.672	1.521	9.65	112.58	10.61	3.628

MODEL NO. 80

DEPTH 121. KM., MAXIMUM SHEAR VELOCITY IS 4.06, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.06	3.41	1.277	0.677	1.89	37.49	6.12	0.009
10.	96.00	6275.00	8.00	4.06	3.41	1.277	0.677	1.89	37.49	6.12	0.030
11.	121.00	6250.00	7.70	4.06	3.41	1.273	0.560	2.27	37.36	6.11	0.038
14.	196.00	6175.00	7.70	4.06	3.41	1.273	0.560	2.27	37.36	6.11	0.064
15.	221.00	6150.00	8.36	4.83	3.41	1.320	0.796	1.66	38.73	6.22	0.072
16.	246.00	6125.00	8.42	4.83	3.41	1.354	0.796	1.70	39.74	6.30	0.080
21.	371.00	6000.00	8.72	4.83	3.41	1.529	0.796	1.92	44.88	6.70	0.123
23.	421.00	5950.00	9.56	5.11	3.93	2.223	1.026	2.17	56.58	7.52	0.141
31.	621.00	5750.00	10.04	5.11	3.93	2.593	1.026	2.53	65.99	8.12	0.220
34.	696.00	5675.00	10.94	6.06	4.31	3.047	1.586	1.92	70.65	8.41	0.251
39.	871.00	5500.00	11.24	6.21	4.54	3.397	1.751	1.94	74.87	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.80	4.127	2.118	1.95	85.92	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.422	2.519	2.15	104.36	10.22	0.960
58.	2889.78	3481.22	13.73	7.22	5.55	6.605	2.889	2.29	119.07	10.91	1.360
59.	2889.78	3481.22	8.25	0.0	9.83	6.688	0.0	0.0	68.06	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.640	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.24	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.19	13.044	0.0	0.0	107.04	10.35	3.268
81.	5113.00	1253.00	11.03	3.41	12.73	13.509	1.483	9.11	106.13	10.30	3.268
87.	6371.00	0.0	11.32	3.41	13.04	14.683	1.519	9.67	112.61	10.61	3.629

MODEL NO. 81

DEPTH 221. KM., MINIMUM SHEAR VELOCITY IS 4.83, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6333.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.46	3.41	1.277	0.677	1.89	37.49	6.12	0.009
10.	96.00	6275.00	8.00	4.46	3.41	1.277	0.677	1.89	37.49	6.12	0.030
11.	121.00	6250.00	7.70	4.06	3.41	1.273	0.560	2.27	37.36	6.11	0.038
14.	196.00	6175.00	7.70	4.06	3.41	1.273	0.560	2.27	37.36	6.11	0.064
15.	221.00	6150.00	8.36	4.83	3.41	1.320	0.796	1.66	36.73	6.22	0.072
16.	246.00	6125.00	8.42	4.83	3.41	1.354	0.796	1.70	39.74	6.30	0.080
21.	371.00	6000.00	8.72	4.83	3.41	1.529	0.796	1.92	44.88	6.70	0.123
23.	421.00	5950.00	9.56	5.11	3.93	2.223	1.026	2.17	56.58	7.52	0.141
31.	621.00	5750.00	10.04	5.11	3.93	2.593	1.026	2.53	65.99	8.12	0.220
34.	696.00	5675.00	10.94	6.06	4.31	3.097	1.586	1.92	70.65	8.41	0.251
39.	871.00	5500.00	11.24	6.21	4.54	3.397	1.751	1.94	74.87	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.80	4.127	2.118	1.95	85.92	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.422	2.519	2.15	104.36	10.22	0.960
58.	2889.78	3481.22	13.73	7.22	5.55	6.605	2.889	2.29	119.07	10.91	1.360
59.	2889.78	3481.22	8.25	0.0	9.83	6.688	0.0	0.0	68.06	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.640	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.24	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.19	13.044	0.0	0.0	107.04	10.35	3.268
81.	5118.00	1253.00	11.03	3.41	12.73	13.509	1.483	9.11	106.13	10.30	3.268
87.	6371.00	0.0	11.32	3.41	13.04	14.683	1.519	9.67	112.61	10.61	3.629

MODEL NO. 82

DEPTH 221. KM., MAXIMUM SHEAR VELOCITY IS 4.86, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.48	3.41	1.267	0.685	1.85	37.19	6.10	0.009
10.	96.00	6275.00	8.00	4.48	3.41	1.267	0.685	1.85	37.19	6.10	0.030
11.	121.00	6250.00	7.70	4.01	3.41	1.269	0.549	2.35	37.83	6.15	0.038
14.	196.00	6175.00	7.70	4.01	3.41	1.289	0.549	2.35	37.83	6.15	0.064
15.	221.00	6150.00	8.36	4.86	3.41	1.308	0.805	1.62	38.38	6.20	0.072
16.	246.00	6125.00	8.42	4.86	3.41	1.342	0.805	1.67	39.39	6.28	0.081
21.	371.00	6000.00	8.72	4.86	3.41	1.518	0.805	1.88	44.53	6.67	0.123
23.	421.00	5950.00	9.56	5.09	3.92	2.226	1.016	2.19	56.81	7.54	0.141
31.	621.00	5750.00	10.04	5.09	3.92	2.594	1.016	2.55	66.22	8.14	0.219
34.	696.00	5675.00	10.94	6.07	4.34	3.057	1.599	1.91	70.51	8.40	0.250
39.	871.00	5500.00	11.24	6.22	4.53	3.390	1.754	1.93	74.77	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.81	4.132	2.118	1.95	85.97	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.422	2.522	2.15	104.32	10.21	0.960
58.	2889.51	3481.49	13.73	7.22	5.54	6.599	2.887	2.29	119.07	10.91	1.360
59.	2889.51	3481.49	8.25	0.0	9.82	6.684	0.0	0.0	68.03	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	8.639	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.23	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.18	13.043	0.0	0.0	107.04	10.35	3.268
81.	5118.00	1253.00	11.03	3.42	12.72	13.458	1.485	9.09	106.10	10.30	3.268
87.	6371.00	0.0	11.32	3.42	13.03	14.672	1.521	9.65	112.58	10.61	3.628

MODEL NO. 83

DEPTH 421. KM., MINIMUM SHEAR VELOCITY IS 5.09, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHJ	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.48	3.41	1.267	0.685	1.85	37.19	6.10	0.009
10.	96.00	6275.00	8.00	4.48	3.41	1.267	0.685	1.85	37.19	6.10	0.030
11.	121.00	6250.00	7.70	4.01	3.41	1.289	0.549	2.35	37.83	6.15	0.038
14.	196.00	6175.00	7.70	4.01	3.41	1.289	0.549	2.35	37.83	6.15	0.064
15.	221.00	6150.00	8.36	4.86	3.41	1.308	0.805	1.62	38.38	6.20	0.072
16.	246.00	6125.00	8.42	4.86	3.41	1.342	0.805	1.67	39.39	6.28	0.081
21.	371.00	6000.00	8.72	4.86	3.41	1.518	0.805	1.88	44.53	6.67	0.123
23.	421.00	5950.00	9.56	5.09	3.92	2.226	1.016	2.19	56.81	7.54	0.141
31.	621.00	5750.00	10.04	5.09	3.92	2.594	1.016	2.55	66.22	8.14	0.219
34.	696.00	5675.00	10.94	6.07	4.34	3.057	1.599	1.91	70.51	8.40	0.250
39.	871.00	5500.00	11.24	6.22	4.53	3.390	1.754	1.93	74.77	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.81	4.132	2.118	1.95	85.97	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.422	2.522	2.15	104.32	10.21	0.960
58.	2889.51	3481.49	13.73	7.22	5.54	6.599	2.887	2.29	119.07	10.91	1.360
59.	2889.51	3481.49	8.25	0.0	9.82	6.684	0.0	0.0	68.03	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.78	8.639	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.23	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.18	13.043	0.0	0.0	107.04	10.35	3.268
81.	5118.00	1253.00	11.03	3.42	12.72	13.498	1.485	9.09	106.10	10.30	3.268
87.	6371.00	0.0	11.32	3.42	13.03	14.672	1.521	9.65	112.58	10.61	3.628

MODEL NO. 84

DEPTH 421. KM., MAXIMUM SHEAR VELOCITY IS 5.11, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.46	3.41	1.277	0.677	1.89	37.49	6.12	0.009
10.	96.00	6275.00	8.00	4.46	3.41	1.277	0.677	1.89	37.49	6.12	0.030
11.	121.00	6250.00	7.70	4.06	3.41	1.273	0.560	2.27	37.36	6.11	0.038
14.	196.00	6175.00	7.70	4.06	3.41	1.273	0.560	2.27	37.36	6.11	0.064
15.	221.00	6150.00	8.36	4.83	3.41	1.320	0.796	1.66	38.73	6.22	0.072
16.	246.00	6125.00	8.42	4.83	3.41	1.354	0.796	1.70	39.74	6.30	0.080
21.	371.00	6000.00	8.72	4.83	3.41	1.529	0.796	1.92	44.88	6.70	0.123
23.	421.00	5950.00	9.56	5.11	3.93	2.223	1.026	2.17	56.58	7.52	0.141
31.	621.00	5750.00	10.04	5.11	3.93	2.593	1.026	2.53	65.99	8.12	0.220
34.	696.00	5675.00	10.94	6.06	4.31	3.047	1.586	1.92	70.65	8.41	0.251
39.	871.00	5500.00	11.24	6.21	4.54	3.397	1.751	1.94	74.87	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.80	4.127	2.118	1.95	85.92	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.422	2.519	2.15	104.36	10.22	0.960
58.	2889.78	3481.22	13.73	7.22	5.55	6.605	2.889	2.29	119.07	10.91	1.360
59.	2889.78	3481.22	8.25	0.0	9.83	6.688	0.0	0.0	68.06	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.640	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.24	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.35	0.0	12.19	13.044	0.0	0.0	107.04	10.35	3.268
81.	5118.00	1253.00	11.03	3.41	12.73	13.509	1.483	9.11	106.13	10.30	3.268
87.	6371.00	0.0	11.32	3.41	13.04	14.683	1.519	9.67	112.61	10.61	3.629

MODEL NO. 85

DEPTH 33. KM., MINIMUM DENSITY IS 3.40, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.46	3.40	1.277	0.677	1.89	37.49	6.12	0.009
10.	96.00	6275.00	8.00	4.46	3.40	1.277	0.677	1.89	37.49	6.12	0.030
11.	121.00	6250.00	7.70	4.06	3.40	1.272	0.560	2.27	37.36	6.11	0.038
14.	196.00	6175.00	7.70	4.06	3.40	1.272	0.560	2.27	37.36	6.11	0.064
15.	221.00	6150.00	8.36	4.83	3.40	1.318	0.796	1.66	38.72	6.22	0.072
16.	246.00	6125.00	8.42	4.83	3.40	1.353	0.796	1.70	39.73	6.30	0.080
21.	371.00	6000.00	8.72	4.83	3.40	1.528	0.796	1.92	44.87	6.70	0.123
23.	421.00	5950.00	9.56	5.11	3.93	2.225	1.025	2.17	56.62	7.52	0.141
31.	621.00	5750.00	10.04	5.11	3.93	2.595	1.025	2.53	66.03	8.13	0.220
34.	696.00	5675.00	10.94	6.06	4.31	3.047	1.567	1.92	70.64	8.40	0.251
39.	871.00	5500.00	11.24	6.21	4.54	3.397	1.752	1.94	74.65	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.80	4.127	2.117	1.95	85.93	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.423	2.520	2.15	104.36	10.22	0.960
58.	2889.80	3481.20	13.73	7.22	5.54	6.602	2.888	2.29	119.07	10.91	1.360
59.	2889.80	3481.20	8.25	0.0	9.83	6.688	0.0	0.0	68.06	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.641	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.24	10.141	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.35	0.0	12.19	13.045	0.0	0.0	107.04	10.35	3.269
81.	5118.00	1253.00	11.03	3.41	12.73	13.510	1.483	9.11	106.13	10.30	3.269
87.	6371.00	0.0	11.32	3.41	13.04	14.684	1.519	9.67	112.61	10.61	3.629

MODEL NO. 86

DEPTH 33. KM., MAXIMUM DENSITY IS 3.42, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.47	3.42	1.275	0.683	1.87	37.33	6.11	0.009
10.	96.00	6275.00	8.00	4.47	3.42	1.275	0.683	1.87	37.33	6.11	0.030
11.	121.00	6250.00	7.70	4.03	3.42	1.284	0.556	2.31	37.59	6.13	0.038
14.	196.00	6175.00	7.70	4.03	3.42	1.284	0.556	2.31	37.59	6.13	0.064
15.	221.00	6150.00	8.36	4.85	3.42	1.318	0.802	1.64	38.58	6.21	0.072
16.	246.00	6125.00	8.42	4.85	3.42	1.352	0.802	1.69	39.58	6.29	0.081
21.	371.00	6000.00	8.72	4.85	3.42	1.528	0.802	1.90	44.73	6.69	0.123
23.	421.00	5950.00	9.56	5.10	3.93	2.231	1.024	2.18	56.70	7.53	0.141
31.	621.00	5750.00	10.04	5.10	3.93	2.601	1.024	2.54	66.11	8.13	0.220
34.	696.00	5675.00	10.94	6.09	4.29	3.009	1.592	1.89	70.18	8.38	0.251
39.	871.00	5500.00	11.24	6.23	4.52	3.372	1.756	1.92	74.57	8.64	0.328
44.	1371.00	5000.00	12.03	6.63	4.81	4.146	2.115	1.96	86.13	9.28	0.560
48.	2171.00	4200.00	13.00	6.96	5.19	5.411	2.515	2.15	104.34	10.21	0.960
58.	2890.04	3480.96	13.73	7.22	5.55	6.601	2.896	2.28	118.93	10.91	1.360
59.	2890.04	3480.96	8.24	0.0	9.83	6.675	0.0	0.0	67.91	8.24	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.641	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.24	10.142	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.34	0.0	12.19	13.036	0.0	0.0	106.96	10.34	3.270
81.	5118.00	1253.00	11.03	3.42	12.77	13.541	1.496	9.05	106.04	10.30	3.270
87.	6371.00	0.0	11.32	3.42	13.08	14.718	1.533	9.60	112.52	10.61	3.633

MODEL NO. 87

DEPTH 421. KM., MINIMUM DENSITY IS 3.91, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.48	3.41	1.271	0.684	1.86	37.28	6.11	0.009
10.	96.00	6275.00	8.00	4.48	3.41	1.271	0.684	1.86	37.28	6.11	0.030
11.	121.00	6250.00	7.70	4.02	3.41	1.287	0.552	2.33	37.72	6.14	0.038
14.	196.00	6175.00	7.70	4.02	3.41	1.287	0.552	2.33	37.72	6.14	0.064
15.	221.00	6150.00	8.36	4.86	3.41	1.311	0.805	1.63	38.42	6.20	0.072
16.	246.00	6125.00	8.42	4.86	3.41	1.345	0.805	1.67	39.43	6.28	0.081
21.	371.00	6000.00	8.72	4.86	3.41	1.520	0.805	1.89	44.57	6.68	0.123
23.	421.00	5950.00	9.56	5.10	3.91	2.222	1.017	2.18	56.75	7.53	0.141
31.	621.00	5750.00	10.04	5.10	3.91	2.590	1.017	2.55	66.16	8.13	0.220
34.	696.00	5675.00	10.94	6.07	4.33	3.052	1.598	1.91	70.48	8.40	0.250
39.	871.00	5500.00	11.24	6.22	4.56	3.394	1.755	1.93	74.77	8.65	0.328
44.	1371.00	5000.00	12.03	6.64	4.80	4.129	2.114	1.95	86.01	9.27	0.561
48.	2171.00	4200.00	13.00	6.96	5.20	5.425	2.523	2.15	104.32	10.21	0.960
58.	2889.89	3481.11	13.73	7.22	5.54	6.590	2.884	2.28	119.05	10.91	1.360
59.	2889.89	3481.11	8.25	0.0	9.83	6.689	0.0	0.0	68.06	8.25	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.641	0.0	0.0	80.10	8.95	1.959
68.	3871.00	2500.00	9.50	0.0	11.24	10.142	0.0	0.0	90.25	9.50	2.345
80.	5118.00	1253.00	10.35	0.0	12.19	13.046	0.0	0.0	107.04	10.35	3.269
81.	5118.00	1253.00	11.03	3.42	12.74	13.512	1.487	9.09	106.09	10.30	3.269
87.	6371.00	0.0	11.32	3.42	13.05	14.686	1.523	9.64	112.57	10.61	3.630

MODEL NO. 88

DEPTH 421. KM., MAXIMUM DENSITY IS 3.93, TECTONIC MANTLE/II

N	DEPTH	RADIUS	VP	VS	RHO	K	MU	K/MU	PHI	C	P
1.	0.0	6371.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.0
6.	33.00	6338.00	6.20	3.58	2.70	0.576	0.346	1.67	21.35	4.62	0.009
7.	33.00	6338.00	8.00	4.47	3.41	1.276	0.682	1.87	37.36	6.11	0.009
10.	96.00	6275.00	8.00	4.47	3.41	1.276	0.682	1.87	37.36	6.11	0.030
11.	121.00	6250.00	7.70	4.04	3.41	1.282	0.557	2.30	37.55	6.13	0.038
14.	196.00	6175.00	7.70	4.04	3.41	1.282	0.557	2.30	37.55	6.13	0.064
15.	221.00	6150.00	8.36	4.84	3.41	1.318	0.801	1.65	38.60	6.21	0.072
16.	246.00	6125.00	8.42	4.84	3.41	1.353	0.801	1.69	39.61	6.29	0.081
21.	371.00	6000.00	8.72	4.84	3.41	1.528	0.801	1.91	44.75	6.69	0.123
23.	421.00	3950.00	9.56	5.10	3.93	2.230	1.024	2.18	56.67	7.53	0.141
31.	621.00	5750.00	10.04	5.10	3.93	2.600	1.024	2.54	66.08	8.13	0.220
34.	696.00	5675.00	10.94	6.09	4.28	3.007	1.590	1.89	70.20	8.38	0.251
39.	871.00	5500.00	11.24	6.23	4.52	3.372	1.756	1.92	74.57	8.64	0.328
44.	1371.00	5000.00	12.03	6.63	4.82	4.149	2.116	1.96	86.15	9.28	0.560
48.	2171.00	4200.00	13.00	6.97	5.18	5.406	2.517	2.15	104.26	10.21	0.960
58.	2889.92	3481.08	13.73	7.22	5.56	6.616	2.893	2.29	119.09	10.91	1.360
59.	2889.92	3481.08	8.24	0.0	9.83	6.672	0.0	0.0	67.90	8.24	1.360
66.	3471.00	2900.00	8.95	0.0	10.79	8.640	0.0	0.0	80.10	8.95	1.958
68.	3871.00	2500.00	9.50	0.0	11.24	10.140	0.0	0.0	90.25	9.50	2.344
80.	5118.00	1253.00	10.34	0.0	12.19	13.034	0.0	0.0	106.96	10.34	3.269
81.	5118.00	1253.00	11.03	3.42	12.76	13.532	1.494	9.06	106.05	10.30	3.269
87.	6371.00	0.0	11.32	3.42	13.07	14.708	1.531	9.61	112.53	10.61	3.632

APPENDIX I

This section is intended as a brief, rather intuitive introduction to the method of linear programming. The discussion and short sample problem following should provide a basic understanding of the mechanics of the method as well as some feeling for the sort of problems to which it might be applied. Since excellent application level linear programming packages exist on most medium to large scale computer systems, this discussion should be sufficient for our purposes. A mathematically precise development of the assertions following as well as a theoretical justification of the geometric analog used below is given by Dantzig (1963).

Linear programming was developed primarily within the field of economics to examine solutions to systems of linear equations and inequalities. Generally a linear programming problem is composed of four parts. These are 1) a set of N initially independent variables, 2) a priori bounds on these variables, 3) a set of constraints in the form of linear equations and inequalities, and 4) a linear function, called the objective function, which is to be minimized subject to these constraints. The variables can be thought of as defining an N-dimensional cartesian coordinate system. The a priori bounds are generally optional

and are assummed infinite if absent. Some linear programming systems require all variables to be positive. In any case, if upper and lower bounds are provided for all variables, the result is a parallelpiped in N dimensions. Only points within this region are considered as possible solutions.

The linear inequality constraints can be expressed in the form

$$\sum_{n=1}^{N} a_{nj}x_n \left\{\begin{matrix} = \\ \leq \\ \geq \end{matrix}\right\} b \ , \qquad \text{(I.1)}$$

where X_n is the n^{th} variable and any one of the bracketed relations may pertain. Typically, constraints are obtained from imprecise observations of some physical parameter such that its value is known within some tolerance, e.g. the standard deviation. In this case two constraints

$$\sum_{n=1}^{N} a_{nj}x_n \geq b_j - \sigma_j \ , \text{ and} \qquad \text{(I.2a)}$$

$$\sum_{n=1}^{N} a_{nj}x_n \leq b_j + \sigma_j \qquad \text{(I.2b)}$$

would result from each data value, where o_j is the standard error of the j^{th} observable. The a priori bounds could be considered to be of the above form with all coefficients

but one set to zero. Each imprecise observable restricts possible solutions to the space sandwiched between the planes defined by the equations:

$$\sum_{n=1}^{N} a_{nj} x_n = b_j - \sigma_j \qquad \text{(I.3a)}$$

$$\sum_{n=1}^{N} a_{nj} x_n = b_j + \sigma_j. \qquad \text{(I.3b)}$$

The region of space containing points satisfying all of the constraints will be the intersection of all of these sandwiched regions and the parallelpiped representing the a priori variable bounds. This intersection will be referred to as the solution region. The solution region does not exist if any of the constraints are inconsistent. Otherwise the set of solution points can be thought of as being contained within an N-M dimensional polyhedron, where M is the number of linearly independent equality constraints. The faces of the polyhedron are the "planes" defined by the equations I.3a & I3b, and the vertices are the intersection of M-N of these equations. This polyhedron is convex in the sense that all points lying on a line joining any two interior points also must lie within the polyhedron, and consequently must also satisfy all of the constraints. As an extension of this concept, all points obtained as a weighted average of points within the polyhedron are also within the polyhedron. Specifically, if $\bar{X}_k$ represents a point inside the polyhedron

associated with a particular solution, then the point expressed as the weighted average of any K points as

$$\bar{w} = \sum_{k=1}^{K} c_k \bar{x}_k \quad , \quad \sum_{k=1}^{K} c_k = 1.0$$

is also a solution.

The objective function is the means by which questions as to the nature and extent of the solution region can be asked. It can be expressed as

$$z = \sum_{n=1}^{N} c_n x_n \quad . \tag{I.4}$$

An interesting special case is obtained by considering objective functions in the form

$$z = \pm x_n \quad . \tag{I.5}$$

Minimization of this function results in finding the minimum (or maximum with minus sign) value of the n^{th} variable consistent with all constraints and a priori variable bounds. Taking all 2N permutations of this form of the objective function results in finding the minimum and maximum possible values for each variable subject to the constraints. This set of values is often said to be the "envelope" of possible solutions. Other questions that may be asked in the form of an objective function are for example; "What is the greatest difference possible between two variables?", or "What is the greatest or least value of a weighted average of variables."

The linear programming methods uses two procedures in minimizing an objective function. First it systematically

takes combinations of the constraints and calculates the intersections which is also a vertex of the polyhedron. If a vertex is already known, such as the solution for a preceeding objective function, then this first step will be skipped. After a vertex has been found, the linear programming method applies the simplex algorithm, which can be thought of as a method of steepest descent from vertex to vertex along the edges of the polyhedron, until a vertex can be associated with the minimum value for the objective function. It is always true that the objective function is minimized at a vertex, though points on edges, faces and other vertices may also give the same minimum value. Most linear programming packages are designed to indicate whether or not the point minimizing the objective function is unique. In addition, many linear programming systems print out the effect on the value of the objective function of changing any of the constraints. This is expressed as a partial derivitive and is called either the "dual activity" or the "slack activity". This derivitive can be used to determine the upper limit for the change to be expected in the objective function caused by any single change in the data or assumptions.

Sample Problem. As a simple example consider a 2 dimensional problem with a priori bounds given as $3.0 \leq x \leq 7.0$ and $3.0 \leq x \leq 8.0$. These bounds define the solid rectangle in figure I.1. The constraints are assumed to be $-x + y = 1 \pm 2$,

$3x - 4 = 5 \pm 7$, and $x + 3y = 21 \pm 4$. These constraints can be written in the form of equations 2a and 2b as

$$-x + y \geq -1$$

$$-x + y \leq 3$$

$$3x - y \geq -2$$

$$3x - y \leq 12$$

$$x + 3y \geq 25$$

$$x + 3y \leq 17.$$

These six constraints are graphed in figure I.1 with tick marks indicating on which side solutions must lie. The shaded area within the polygon ABCDEF represents the set of all possible solutions to the above system of inequalities.

In order to find the point within the polygon having the greatest x value (point D), the objective function is taken to be $Z = -X$. If point A represents the solution for a previous objective function, than starting with point A the linear programming procedure, using a process analogous to the method of steepest descent called the simplex algorith (Dantzig, 1963), moves from vertex to vertex taking steps A - B, B - C, and C - D, finally arriving at a minimum for the objective function at point D.

Note that point D also minimizes all other objective function of the form $Z = mx + y$, as long as $-1/3 \leq m \leq 3$. In addition, the objective function $Z = X$, is minimized by points A and F as well as all points on the line joining them. The envelope of possible solutions that would be obtained for this problem are shown as a dashed rectangle in figure I.1.

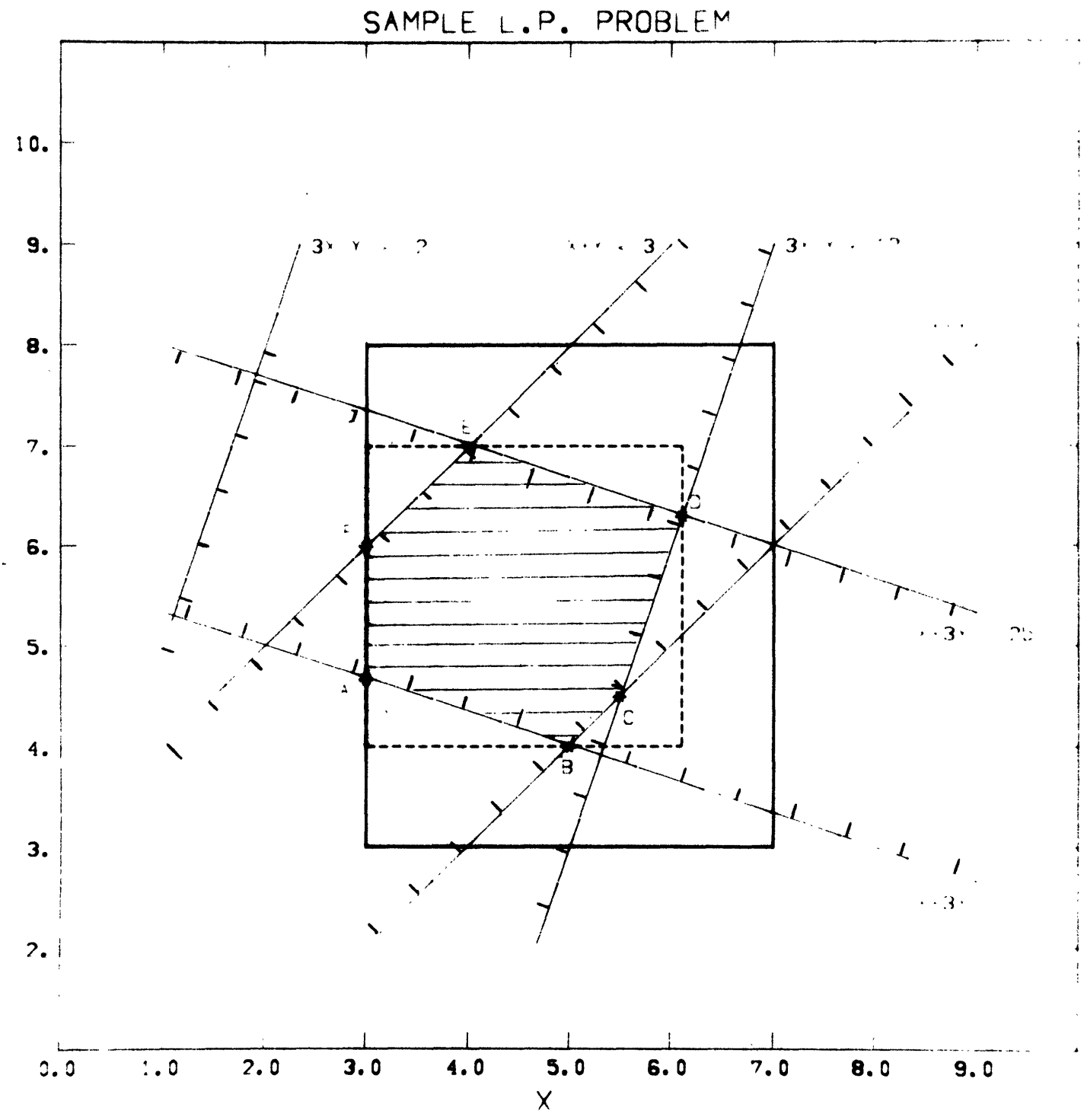

SAMPLE L.P. PROBLEM
10.
9.
8.
7.
6.
5.
4.
3.
2.
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
X
A
B
C
D
E

Figure I.1.

APPENDIX II

The following discussion is concerned with the details of implementation of the linear programming method discussed previously on an I.B.M. System 370/155 computer. A general knowledge of the I.B.M. Mathematical Programming System (MPSX) will be assumed. A detailed description of this system can be found in the I.B.M. manuals Introduction to Mathematical Programming System Extended - MPSX (GH20-0849-1) and Linear and Seperable Programming Description (SH20-0968-0). The impementation details discussed in the following are primarily suitable for a card oriented approach. Where appropriate specific suggestions for performance improvement and easier usage will be mentioned, but will not be discussed in detail because of installation differences.

Program. The control deck listed in table II.1 was used for both Stage I and Stage II. It consists of a set of commands describing the linear programming problem and sets up a solution strategy to be used by the linear programming package, MPSX. The control program's three functions are to 1) generate a sequential series of objective function IDs, "OBJ.nnn", beginning with "OBJ.001" to be minimized by MPSX, 2) to request MPSX to minimize each of these objective functions in turn, and 3) to print and punch the results for each. The program terminates upon generating an objective function ID that is not in the

data set.

For large scale usage the "PROBLEM FILE" generated by the command "CONVERT" can be maintained on a direct access device to save input costs. If this is done a basis (successful model) can be saved and used as a starting point for each successive run using the commands "SAVE" and "RESTORE". This eliminates the time consuming process of finding an initial feasible solution. Another advantage to this approach is that modifications to the input such as changing the objective functions can be made directly to the "PROBLEM FILE" using the "REVISE" command with an input data set containing only the required changes.

Stage I Input. The input data set used in Stage I is given in table II.2. It contains all of the information necessary to define the linear inverse problem in a form suitable for input to MPSX. This includes the coefficients and constants defining the linear constraints such as the linear expansions associated with the free oscillation data, the observational errors in the data, the coefficients of any objective functions included, and the a priori variable bounds. The input data set is divided into 5 sections titled "ROWS", "COLUMNS", "RHS", "RANGES", and "BOUNDS".

The "ROWS" section is used to assign an 8 character label and a type to each constraint included in the problem. A single letter preceeding the label is given a "G" for inequality constraints, "E" for equalities such as mass

or moment of inertia, and "N" for non-constraining linear functions such as the objective functions. The first two constraints in the "ROWS" section prevent a density reversal at 696. kilometers for tectonic and shield regions. This was not needed for the oceanic models since the data constrained the models so that a reversal could not occur. Labels of the form "R.mm.nn" refer to inequality constraints enforcing a nearly homogeneous, adiabatic density gradient between the layers "mm" and "nn" (as given in table 3) in the lower mantle. The labels of the form "T.nTm" or "T.nSm" refer to the inequalities associated with free oscillation modes ${}_nT_m$ or ${}_nS_m$. The suffixes "O", "S", and "T" indicate regionalized periods for oceanic, shield, and tectonic regions respectively. Objective functions must be labelled in the form "OBJ.nnn" where "nnn" is a sequential number beginning with "001".

The "COLUMNS" section assigns a label to each variable and gives values for the coefficeints of all constraints including the objective functions. For computational accuracy some of the constraints were normalized by division by a power of ten. For mass and moment of inertia this factor was 10^{27} and 10^{44} respectively. A factor of 10. was used for ${}_0S_0$, ${}_3S_0$, ${}_4S_0$, ${}_4S_4$, ${}_4S_5$, ${}_4S_6$, and ${}_4S_7$. A factor of 1000. was used for ${}_0S_2$, ${}_0S_3$, ${}_1S_1$, and ${}_1S_2$. All other constraints associated with free oscillation of surface wave data were divided by 100. This normalization procedure also effects the values

given in the "RHS" and "RANGES" sections. The variable labels in the left-most column of the "COLUMNS" section have been encoded with respect to parameter type, layer number (from table 3), and regionalization. The first letter of the variable label is "A", "B", or "R" for compressional velocity, shear velocity, and density respectively. The suffixes "O", "S", and "T" refer to oceanic, shield and tectonic regions for variables above 650 km. (n less than 34). The variable labelled "RADIUS" refers to the radius of the core. The signed values in columns 3 & 5 of the "COLUMNS" section are the coefficients of the variables in column 1 for the constraints indicated by the labels in columns 2 and 4 respectively. For free oscillation constraints these are simply the partial derivatives of equations 5a and 5b normalized as discussed above. For example, the first entry in the "COLUMNS" section of table II.2 (line S-I0122) indicates that the partial derivative of the period of the mode ${}_0S_0$ with respect to variations in shear velocity at a depth of 10 kilometers in the mantle is -.01041 x 10 or -.10410. A value of +1. or -1. is used for objective functions depending upon whether a minimum or maximum possible value for a particular parameter is being sought. In line S-I0196 of table II.2 the objective function "OBJ.001" has been set up to find the minimum shear velocity in the low velocity zone beneath oceans.

The "RHS" section beginning on line S-I1701 gives the normalized values of the right hand side of equation 5a. Terms corresponding to fixed parameters were included in this value. The label "MINIMUM" is a vector name used for reference purposes in the MPSX control program discussed previously.

The values given in the "RANGES" section beginning at line S-I1755 is twice the obsevational error divided by the normalization factor for each inequality constraint. "SIGMA" is a vector label for programmatic reference.

The "BOUNDS" section beginning on line S-I1807 contains the a priori bounds for each variable. The two character code on the left is specified as "LO" for lower bounds and as "UP" for upper bounds. "LIMITS" is a vector label for programmatic reference.

After minimizing each objective function, the resulting parameter values are punched on cards and both the parameter values and the constraint values are printed out. The printed results can be converted to an earth model by inserting each parameter value into the appropriate model structure given in Table 3. A simple program can be written to do these insertions from the punched results. The actual values associated with a particular constraint (e.g. the period of a free oscillation mode in seconds) required in Stage II can be calculated from the printed output

and the values given in Table 1. The printed output also gives in a column headed "SLACK ACTIVITY" the difference between the value for a linear constraint calculated at the solution and the lower limit given in the "RHS" section. If this "SLACK ACTIVITY" is multiplied by the normalization factor and then added to the period minus the standard deviation for the associated mode given in Table 1, the result is the period for that mode in seconds calculated at the solution. This process can be facilitated by using a "READCOMM" subroutine to punch values of the "SLACK ACTIVITY" for each objective function. A subsequent program can be written to convert these punched values into a form suitable for input to Stage II.

The following method can be used to change the observed periods and errors of the free oscillation data used in Stage I. If RHS_i and $RANGES_i$ are associated with the i^{th} free oscillation period, then the new values resulting from changing the observational data from a period of T_i with error e_i to T_i' and e_i' can be written

$$RHS_i = RHS_i + \frac{(T_i' - T_i - e_i' + e_i)}{F_i}$$

$$RANGES_i = \frac{2e_i'}{F_i}$$

where F_i is the normalization factor.

Stage II Input. The structure of the Stage II input data set is so nearly the same as that of Stage I that a brief discussion of the differences should be sufficient. As discussed previously, Stage II is conducted independently for each of the three regions of the upper mantle. For each region the variables are the 10 coefficients of a weighted average of the extremal models for that region found in Stage I. Each constraint and each a priori variable bound of Stage I becomes a constraint of Stage II. The equality constraints are replaced by the single condition that the sum of the weighting coefficients be 1. The "ROWS" section contains an entry for each Stage I inequality, an entry for each introduced group velocity constraint, an entry for each Stage I a priori variable bound, and entry for the sum of the weighting coefficients, and an entry for each objective function in the form "OBJ.nnn". The values in the "COLUMNS" section are now the constant coefficients in equations 6 and 7. These coefficients are the variable values and constraint values (e.g. free oscillation periods) from Stage I. The coefficients for the regional group velocity constraints introduced in Stage II are simply the values of group velocity for each mode calculated for each of the Stage I extremal models for the particular region. This calculation must be done in an external program. The lower limits specified in the "RHS" section is either the a priori lower bound from Stage I for variables or the

observed periods less the observational error obtained from Table 1 for free oscillation constraints. The "RANGES" section contains the differences between the a priori upper bounds and lower bounds from the Stage 1 input for variable constraints or twice the observational error for free oscillation constraints. The upper and lower bounds in the "BOUNDS" section are set to the values -.3 and 1.2. The control program is the same as that used in Stage I.

Table II.1

Stage I and Stage II MPSX Control Program.

```
         PROGRAM('MD')                                                    PROG0001
         INITIALZ                                                         PROG0002
         MOVE(XPBNAME,'PBFILE')                                           PROG0003
         MOVE(XDATA,'EARTH')                                              PROG0004
         CONVERT                                                          PROG0005
         SETUP('RANGE','SIGMA','BOUND','LIMITS')                         PROG0006
         MOVE(XRHS,'MINIMUM')                                             PROG0007
         MVADR(ADD1,A)                                                    PROG0008
         MVADR(ADD2,A)                                                    PROG0009
         ADD2=ADD2+7                                                      PROG0010
         MVADR(ADD3,OBJ)                                                  PROG0011
         MVADR(ADD4,BLANK)                                                PROG0012
DONE     I=0                                                              PROG0013
TOP      I=I+10                                                           PROG0014
         BCD(A,I,'0')                                                     PROG0015
         MVIND2(ADD1,ADD3,4)                                              PROG0016
         MVIND2(ADD2,ADD4,1)                                              PROG0017
         MOVE(XOBJ,A)                                                     PROG0018
         MVADR(XMAJERR,END)                                               PROG0019
         PRIMAL                                                           PROG0020
         SOLUTION                                                         PROG0021
         PUNCH('BINARY')                                                  PROG0022
         GOTO(TOP)                                                        PROG0023
END      EXIT                                                             PROG0024
I        DC(0)                                                            PROG0025
A        DC('00000000')                                                   PROG0026
ADD1     DC(0)                                                            PROG0027
ADD2     DC(0)                                                            PROG0028
ADD3     DC(0)                                                            PROG0029
ADD4     DC(0)                                                            PROG0030
OBJ      DC('OBJ.')                                                       PROG0031
BLANK    DC(' ')                                                          PROG0032
         PEND                                                             PROG0033
```

Table II.2

Stage I Input Data Set

```
NAME          EARTH                                                  S-I0001
ROWS                                                                 S-I0002
 G  R.23.S.1                                                         S-I0003
 G  R.23.T.M                                                         S-I0004
 G  B.23.T.1                                                         S-I0005
 E  B.39.FIX                                                         S-I0006
 G  R.39.34                                                          S-I0007
 G  R.44.39                                                          S-I0008
 G  R.48.44                                                          S-I0009
 G  R.58.48                                                          S-I0010
 N  MASS                                                             S-I0011
 E  MASS.0                                                           S-I0012
 E  MASS.S                                                           S-I0013
 E  MASS.T                                                           S-I0014
 E  MOMENT                                                           S-I0015
 N  OBJX                                                             S-I0016
 N  OBJ.001                                                          S-I0017
 E  R.10.0X                                                          S-I0018
 E  R.15.0X                                                          S-I0019
 E  R.12.SX                                                          S-I0020
 E  R.16.SX                                                          S-I0021
 E  R.11.TX                                                          S-I0022
 E  R.15.TX                                                          S-I0023
 G  T.0S0                                                            S-I0024
 G  T.1S0                                                            S-I0025
 G  T.2S0                                                            S-I0026
 G  T.3S0                                                            S-I0027
 G  T.4S0                                                            S-I0028
 G  T.0S02                                                           S-I0029
 G  T.0S03                                                           S-I0030
 G  T.0S04                                                           S-I0031
 G  T.0S06                                                           S-I0032
 G  T.0S09                                                           S-I0033
 G  T.0S12                                                           S-I0034
 G  T.0S15                                                           S-I0035
 G  T.0S18                                                           S-I0036
```

```
G  T.0S21                                                    S-I0037
G  T.0T03                                                    S-I0038
G  T.0T05                                                    S-I0039
G  T.0T08                                                    S-I0040
G  T.0T11                                                    S-I0041
G  T.0T14                                                    S-I0042
G  T.0T18                                                    S-I0043
G  T.0T21                                                    S-I0044
G  T.1S01                                                    S-I0045
G  T.1S02                                                    S-I0046
G  T.1S04                                                    S-I0047
G  T.1S07                                                    S-I0048
G  T.1S08                                                    S-I0049
G  T.1S10                                                    S-I0050
G  T.1S14                                                    S-I0051
G  T.2S01                                                    S-I0052
G  T.2S02                                                    S-I0053
G  T.2S05                                                    S-I0054
G  T.2S06                                                    S-I0055
G  T.2S08                                                    S-I0056
G  T.2S10                                                    S-I0057
G  T.2S12                                                    S-I0058
G  T.2S13                                                    S-I0059
G  T.2S15                                                    S-I0060
G  T.3S04                                                    S-I0061
G  T.3S08                                                    S-I0062
G  T.3S09                                                    S-I0063
G  T.4S01                                                    S-I0064
G  T.4S03                                                    S-I0065
G  T.4S04                                                    S-I0066
G  T.4S05                                                    S-I0067
G  T.4S06                                                    S-I0068
G  T.4S07                                                    S-I0069
G  T.5S02                                                    S-I0070
G  T.5S03                                                    S-I0071
G  T.6S01                                                    S-I0072
```

G	T.6S04	S-I0073
G	T.6S05	S-I0074
G	T.7S03	S-I0075
G	T.8S01	S-I0076
G	T.1T02	S-I0077
G	T.1T04	S-I0078
G	T.1T06	S-I0079
G	T.1T08	S-I0080
G	T.1T10	S-I0081
G	T.2T04	S-I0082
G	T.2T07	S-I0083
G	T.2T08	S-I0084
G	T.0S25.0	S-I0085
G	T.0S30.0	S-I0086
G	T.0S36.0	S-I0087
G	T.0S43.0	S-I0088
G	T.0S50.0	S-I0089
G	T.0T25.0	S-I0090
G	T.0T30.0	S-I0091
G	T.0T36.0	S-I0092
G	T.0T43.0	S-I0093
G	T.0T51.0	S-I0094
G	T.0T56.0	S-I0095
G	T.0T61.0	S-I0096
G	T.0S25.S	S-I0097
G	T.0S30.S	S-I0098
G	T.0S36.S	S-I0099
G	T.0S43.S	S-I0100
G	T.0S50.S	S-I0101
G	T.0T25.S	S-I0102
G	T.0T30.S	S-I0103
G	T.0T36.S	S-I0104
G	T.0T43.S	S-I0105
G	T.0T51.S	S-I0106
G	T.0T56.S	S-I0107
G	T.0T61.S	S-I0108

```
 G  T.0S25.T                                                                  S-I0109
 G  T.0S30.T                                                                  S-I0110
 G  T.0S36.T                                                                  S-I0111
 G  T.0S43.T                                                                  S-I0112
 G  T.0S50.T                                                                  S-I0113
 G  T.0T25.T                                                                  S-I0114
 G  T.0T30.T                                                                  S-I0115
 G  T.0T36.T                                                                  S-I0116
 G  T.0T43.T                                                                  S-I0117
 G  T.0T51.T                                                                  S-I0118
 G  T.0T56.T                                                                  S-I0119
 G  T.0T61.T                                                                  S-I0120
COLUMNS                                                                       S-I0121
    B.5.0     T.0S0     -     .01041    T.1S0          .00014                S-I0122
    B.5.0     T.2S0           .00025    T.3S0          .00230                S-I0123
    B.5.0     T.4S0           .00210    T.0S02    -    .00121                S-I0124
    B.5.0     T.0S03    -     .00171    T.0S04    -    .01732                S-I0125
    B.5.0     T.0S06    -     .01483    T.0S09    -    .01652                S-I0126
    B.5.0     T.0S12    -     .01692    T.0S15    -    .01568                S-I0127
    B.5.0     T.0S18    -     .01424    T.0S21    -    .01300                S-I0128
    B.5.0     T.0T03    -     .00562    T.0T05    -    .00533                S-I0129
    B.5.0     T.0T08    -     .05895    T.0T11    -    .06482                S-I0130
    B.5.0     T.0T14    -     .06935    T.0T18    -    .07315                S-I0131
    B.5.0     T.0T21    -     .07461    T.1S01    -    .00104                S-I0132
    B.5.0     T.1S02    -     .00202    T.1S04    -    .01338                S-I0133
    B.5.0     T.1S07    -     .00018    T.1S08    -    .00034                S-I0134
    B.5.0     T.1S10          .00006    T.1S14    -    .00198                S-I0135
    B.5.0     T.2S01    -     .00199    T.2S02    -    .00418                S-I0136
    B.5.0     T.2S05    -     .02287    T.2S06    -    .02799                S-I0137
    B.5.0     T.2S08    -     .02650    T.2S10    -    .02449                S-I0138
    B.5.0     T.2S12    -     .02229    T.2S13    -    .02087                S-I0139
    B.5.0     T.2S15    -     .01173    T.3S04    -    .00262                S-I0140
    B.5.0     T.3S08    -     .00663    T.3S09    -    .00773                S-I0141
    B.5.0     T.4S01    -     .00000    T.4S03    -    .00234                S-I0142
    B.5.0     T.4S04    -     .00939    T.4S05    -    .00446                S-I0143
    B.5.0     T.4S06    -     .00069    T.4S07         .00334                S-I0144
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B.5.0	T.5S02	-	.00080	T.5S03	-	.00101	S-I0145
B.5.0	T.6S01		.00014	T.6S04	-	.00058	S-I0146
B.5.0	T.6S05	-	.00003	T.7S03	-	.00003	S-I0147
B.5.0	T.8S01		.00013	T.1T02	-	.00243	S-I0148
B.5.0	T.1T04	-	.00504	T.1T06	-	.00607	S-I0149
B.5.0	T.1T08	-	.00703	T.1T10	-	.00799	S-I0150
B.5.0	T.2T04	-	.00307	T.2T07	-	.00396	S-I0151
B.5.0	T.2T08	-	.00391	T.0S25.0	-	.01753	S-I0152
B.5.0	T.0S30.0	-	.01624	T.0S36.0	-	.01570	S-I0153
B.5.0	T.0S43.0	-	.01579	T.0S50.0	-	.01659	S-I0154
B.5.0	T.0T25.0	-	.11227	T.0T30.0	-	.11132	S-I0155
B.5.0	T.0T36.0	-	.10850	T.0T43.0	-	.10413	S-I0156
B.5.0	T.0T51.0	-	.09884	T.0T56.0	-	.09558	S-I0157
B.5.0	T.0T61.0	-	.09245				S-I0158
B.10.0	T.0S0		.00317	T.1S0		.00129	S-I0159
B.10.0	T.2S0		.00153	T.3S0		.01262	S-I0160
B.10.0	T.4S0		.01057	T.0S02	-	.00249	S-I0161
B.10.0	T.0S03	-	.00306	T.0S04	-	.02791	S-I0162
B.10.0	T.0S06	-	.01960	T.0S09	-	.01442	S-I0163
B.10.0	T.0S12	-	.00913	T.0S15	-	.00467	S-I0164
B.10.0	T.0S18	-	.00220	T.0S21	-	.00205	S-I0165
B.10.0	T.0T03	-	.00939	T.0T05	-	.00895	S-I0166
B.10.0	T.0T08	-	.09869	T.0T11	-	.10735	S-I0167
B.10.0	T.0T14	-	.11322	T.0T18	-	.11696	S-I0168
B.10.0	T.0T21	-	.11741	T.1S01	-	.00258	S-I0169
B.10.0	T.1S02	-	.00418	T.1S04	-	.03130	S-I0170
B.10.0	T.1S07		.00186	T.1S08		.00149	S-I0171
B.10.0	T.1S10		.00036	T.1S14	-	.00765	S-I0172
B.10.0	T.2S01	-	.00396	T.2S02	-	.00817	S-I0173
B.10.0	T.2S05	-	.04425	T.2S06	-	.05928	S-I0174
B.10.0	T.2S08	-	.06269	T.2S10	-	.06281	S-I0175
B.10.0	T.2S12	-	.06158	T.2S13	-	.05971	S-I0176
B.10.0	T.2S15	-	.03470	T.3S04	-	.01050	S-I0177
B.10.0	T.3S08	-	.01556	T.3S09	-	.01652	S-I0178
B.10.0	T.4S01	-	.00127	T.4S03	-	.01320	S-I0179
B.10.0	T.4S04	-	.06261	T.4S05	-	.03592	S-I0180

B.10.0	T.4S06	-	.01568	T.4S07		.00919	S-I0181
B.10.0	T.5S02	-	.00931	T.5S03	-	.00985	S-I0182
B.10.0	T.6S01	-	.00002	T.6S04	-	.00701	S-I0183
B.10.0	T.6S05	-	.00128	T.7S03	-	.00142	S-I0184
B.10.0	T.8S01		.00022	T.1T02	-	.01190	S-I0185
B.10.0	T.1T04	-	.01540	T.1T06	-	.01719	S-I0186
B.10.0	T.1T08	-	.01968	T.1T10	-	.02224	S-I0187
B.10.0	T.2T04	-	.02188	T.2T07	-	.01970	S-I0188
B.10.0	T.2T08	-	.01849	T.0S25.0	-	.00759	S-I0189
B.10.0	T.0S30.0	-	.01852	T.0S36.0	-	.03537	S-I0190
B.10.0	T.0S43.0	-	.05560	T.0S50.0	-	.07346	S-I0191
B.10.0	T.0T25.0	-	.17305	T.0T30.0	-	.16740	S-I0192
B.10.0	T.0T36.0	-	.15867	T.0T43.0	-	.14785	S-I0193
B.10.0	T.0T51.0	-	.13589	T.0T56.0	-	.12893	S-I0194
B.10.0	T.0T61.0	-	.12242				S-I0195
B.10.0	JBJ.001		1.00000				S-I0196
B.15.0	T.0S0		.09435	T.1S0		.00450	S-I0197
B.15.0	T.2S0		.00432	T.3S0		.03009	S-I0198
B.15.0	T.4S0		.01975	T.0S02	-	.00255	S-I0199
B.15.0	T.0S03	-	.00263	T.0S04	-	.02186	S-I0200
B.15.0	T.0S06	-	.00856	T.0S09		.00643	S-I0201
B.15.0	T.0S12		.00956	T.0S15		.00205	S-I0202
B.15.0	T.0S18	-	.01203	T.0S21	-	.02974	S-I0203
B.15.0	T.0T03	-	.01484	T.0T05	-	.01407	S-I0204
B.15.0	T.0T08	-	.14980	T.0T11	-	.15502	S-I0205
B.15.0	T.0T14	-	.15458	T.0T18	-	.14770	S-I0206
B.15.0	T.0T21	-	.13988	T.1S01	-	.00380	S-I0207
B.15.0	T.1S02	-	.00697	T.1S04	-	.06308	S-I0208
B.15.0	T.1S07		.00285	T.1S08		.00242	S-I0209
B.15.0	T.1S10	-	.00179	T.1S14	-	.01868	S-I0210
B.15.0	T.2S01	-	.00454	T.2S02	-	.01164	S-I0211
B.15.0	T.2S05	-	.06150	T.2S06	-	.09380	S-I0212
B.15.0	T.2S08	-	.10914	T.2S10	-	.11331	S-I0213
B.15.0	T.2S12	-	.11338	T.2S13	-	.11049	S-I0214
B.15.0	T.2S15	-	.06200	T.3S04	-	.03091	S-I0215
B.15.0	T.3S03	-	.02938	T.3S09	-	.02767	S-I0216

B.15.0	T.4S01	-	.00636	T.4S03	-	.04435	S-I0217
B.15.0	T.4S04	-	.23043	T.4S05	-	.14570	S-I0218
B.15.0	T.4S06	-	.08876	T.4S07	-	.02290	S-I0219
B.15.0	T.5S02	-	.03405	T.5S03	-	.03292	S-I0220
B.15.0	T.6S01	-	.00133	T.6S04	-	.01910	S-I0221
B.15.0	T.6S05	-	.00380	T.7S03	-	.00512	S-I0222
B.15.0	T.8S01		.00001	T.1T02	-	.04553	S-I0223
B.15.0	T.1T04	-	.04617	T.1T06	-	.04679	S-I0224
B.15.0	T.1T08	-	.05041	T.1T10	-	.05374	S-I0225
B.15.0	T.2T04	-	.07616	T.2T07	-	.05841	S-I0226
B.15.0	T.2T03	-	.05214	T.0S25.0	-	.08083	S-I0227
B.15.0	T.0S30.0	-	.11882	T.0S36.0	-	.14688	S-I0228
B.15.0	T.0S43.0	-	.15743	T.0S50.0	-	.15177	S-I0229
B.15.0	T.0T25.0	-	.19111	T.0T30.0	-	.16878	S-I0230
B.15.0	T.0T36.0	-	.14423	T.0T43.0	-	.11991	S-I0231
B.15.0	T.0T51.0	-	.09754	T.0T56.0	-	.08606	S-I0232
B.15.0	T.0T61.0	-	.07617				S-I0233
B.23.0	T.0S0		.24370	T.1S0		.00907	S-I0234
B.23.0	T.2S0		.00653	T.3S0		.02902	S-I0235
B.23.0	T.4S0		.00464	T.0S02	-	.00364	S-I0236
B.23.0	T.0S03	-	.00252	T.0S04	-	.01730	S-I0237
B.23.0	T.0S06		.00054	T.0S09		.01044	S-I0238
B.23.0	T.0S12	-	.01126	T.0S15	-	.04256	S-I0239
B.23.0	T.0S18	-	.07092	T.0S21	-	.09104	S-I0240
B.23.0	T.0T03	-	.02409	T.0T05	-	.02118	S-I0241
B.23.0	T.0T08	-	.19799	T.0T11	-	.17847	S-I0242
B.23.0	T.0T14	-	.15484	T.0T18	-	.12329	S-I0243
B.23.0	T.0T21	-	.10222	T.1S01	-	.00632	S-I0244
B.23.0	T.1S02	-	.01153	T.1S04	-	.11033	S-I0245
B.23.0	T.1S07	-	.01035	T.1S08	-	.00897	S-I0246
B.23.0	T.1S10	-	.01082	T.1S14	-	.02398	S-I0247
B.23.0	T.2S01	-	.00385	T.2S02	-	.01254	S-I0248
B.23.0	T.2S05	-	.06027	T.2S06	-	.10646	S-I0249
B.23.0	T.2S08	-	.12679	T.2S10	-	.12439	S-I0250
B.23.0	T.2S12	-	.11490	T.2S13	-	.10654	S-I0251
B.23.0	T.2S15	-	.05036	T.3S04	-	.03921	S-I0252

B.23.0	T.3S08	-	.03550	T.3S09	-	.03391	S-I0253
B.23.0	T.4S01	-	.00798	T.4S03	-	.05993	S-I0254
B.23.0	T.4S04	-	.35077	T.4S05	-	.21795	S-I0255
B.23.0	T.4S06	-	.14340	T.4S07	-	.08517	S-I0256
B.23.0	T.5S02	-	.03972	T.5S03	-	.03140	S-I0257
B.23.0	T.6S01		.00005	T.6S04	-	.01410	S-I0258
B.23.0	T.6S05	-	.00597	T.7S03	-	.00099	S-I0259
B.23.0	T.8S01		.00098	T.1T02	-	.09042	S-I0260
B.23.0	T.1T04	-	.07841	T.1T06	-	.06861	S-I0261
B.23.0	T.1T08	-	.06437	T.1T10	-	.06081	S-I0262
B.23.0	T.2T04	-	.09361	T.2T07	-	.05856	S-I0263
B.23.0	T.2T08	-	.04807	T.0S25.0	-	.15359	S-I0264
B.23.0	T.0S30.0	-	.14779	T.0S36.0	-	.12077	S-I0265
B.23.0	T.0S43.0	-	.08503	T.0S50.0	-	.05602	S-I0266
B.23.0	T.0T25.0	-	.11762	T.0T30.0	-	.08452	S-I0267
B.23.0	T.0T36.0	-	.05705	T.0T43.0	-	.03652	S-I0268
B.23.0	T.0T51.0	-	.02237	T.0T56.0	-	.01664	S-I0269
B.23.0	T.0T61.0	-	.01248				S-I0270
B.7.S	T.0S0	-	.00378	T.1S0		.00016	S-I0271
B.7.S	T.2S0		.00023	T.3S0		.00201	S-I0272
B.7.S	T.4S0		.00177	T.0S02	-	.00068	S-I0273
B.7.S	T.0S03	-	.00089	T.0S04	-	.00860	S-I0274
B.7.S	T.0S05	-	.00684	T.0S09	-	.00677	S-I0275
B.7.S	T.0S12	-	.00617	T.0S15	-	.00504	S-I0276
B.7.S	T.0S18	-	.00399	T.0S21	-	.00320	S-I0277
B.7.S	T.0T03	-	.00267	T.0T05	-	.00253	S-I0278
B.7.S	T.0T08	-	.02801	T.0T11	-	.03072	S-I0279
B.7.S	T.0T14	-	.03275	T.0T18	-	.03437	S-I0280
B.7.S	T.0T21	-	.03492	T.1S01	-	.00062	S-I0281
B.7.S	T.1S02	-	.00107	T.1S04	-	.00733	S-I0282
B.7.S	T.1S07		.00015	T.1S08		.00006	S-I0283
B.7.S	T.1S10		.00008	T.1S14	-	.00137	S-I0284
B.7.S	T.2S01	-	.00107	T.2S02	-	.00217	S-I0285
B.7.S	T.2S05	-	.01179	T.2S06	-	.01491	S-I0286
B.7.S	T.2S08	-	.01477	T.2S10	-	.01415	S-I0287
B.7.S	T.2S12	-	.01334	T.2S13	-	.01270	S-I0288

B.7.S	T.2S15	-	.00728	T.3S04	-	.00169	S-I0289
B.7.S	T.3S08	-	.00354	T.3S09	-	.00402	S-I0290
B.7.S	T.4S01	-	.00006	T.4S03	-	.00179	S-I0291
B.7.S	T.4S04	-	.00802	T.4S05	-	.00417	S-I0292
B.7.S	T.4S06	-	.00116	T.4S07		.00243	S-I0293
B.7.S	T.5S02	-	.00097	T.5S03	-	.00110	S-I0294
B.7.S	T.6S01		.00007	T.6S04	-	.00071	S-I0295
B.7.S	T.6S05	-	.00008	T.7S03	-	.00010	S-I0296
B.7.S	T.8S01		.00008	T.1T02	-	.00170	S-I0297
B.7.S	T.1T04	-	.00288	T.1T06	-	.00338	S-I0298
B.7.S	T.1T08	-	.00390	T.1T10	-	.00443	S-I0299
B.7.S	T.2T04	-	.00266	T.2T07	-	.00284	S-I0300
B.7.S	T.2T08	-	.00274	T.0S25.S	-	.01127	S-I0301
B.7.S	T.0S30.S	-	.01088	T.0S36.S	-	.01336	S-I0302
B.7.S	T.0S43.S	-	.01870	T.0S50.S	-	.02541	S-I0303
B.7.S	T.0T25.S	-	.15229	T.0T30.S	-	.15009	S-I0304
B.7.S	T.0T36.S	-	.14528	T.0T43.S	-	.13840	S-I0305
B.7.S	T.0T51.S	-	.13031	T.0T56.S	-	.12541	S-I0306
B.7.S	T.0T61.S	-	.12072				S-I0307
B.12.S	T.0S0		.00439	T.1S0		.00047	S-I0308
B.12.S	T.2S0		.00053	T.3S0		.00424	S-I0309
B.12.S	T.4S0		.00343	T.0S02	-	.00065	S-I0310
B.12.S	T.0S03	-	.00077	T.0S04	-	.00682	S-I0311
B.12.S	T.0S06	-	.00438	T.0S09	-	.00232	S-I0312
B.12.S	T.0S12	-	.00067	T.0S15		.00024	S-I0313
B.12.S	T.0S18		.00030	T.0S21	-	.00047	S-I0314
B.12.S	T.0T03	-	.00257	T.0T05	-	.00245	S-I0315
B.12.S	T.0T08	-	.02697	T.0T11	-	.02913	S-I0316
B.12.S	T.0T14	-	.03045	T.0T18	-	.03105	S-I0317
B.12.S	T.0T21	-	.03086	T.1S01	-	.00073	S-I0318
B.12.S	T.1S02	-	.00119	T.1S04	-	.00935	S-I0319
B.12.S	T.1S07		.00066	T.1S08		.00055	S-I0320
B.12.S	T.1S10		.00007	T.1S14	-	.00252	S-I0321
B.12.S	T.2S01	-	.00107	T.2S02	-	.00226	S-I0322
B.12.S	T.2S05	-	.01218	T.2S06	-	.01687	S-I0323
B.12.S	T.2S08	-	.01842	T.2S10	-	.01878	S-I0324

B.12.S	T.2S12	-	.01868	T.2S13	-	.01823	S-I0325
B.12.S	T.2S15	-	.01061	T.3S04	-	.00374	S-I0326
B.12.S	T.3S08	-	.00476	T.3S09	-	.00486	S-I0327
B.12.S	T.4S01	-	.00058	T.4S03	-	.00493	S-I0328
B.12.S	T.4S04	-	.02375	T.4S05	-	.01410	S-I0329
B.12.S	T.4S06	-	.00694	T.4S07		.00184	S-I0330
B.12.S	T.5S02	-	.00366	T.5S03	-	.00380	S-I0331
B.12.S	T.6S01	-	.00008	T.6S04	-	.00270	S-I0332
B.12.S	T.6S05	-	.00053	T.7S03	-	.00060	S-I0333
B.12.S	T.8S01		.00003	T.1T02	-	.00445	S-I0334
B.12.S	T.1T04	-	.00526	T.1T06	-	.00574	S-I0335
B.12.S	T.1T08	-	.00652	T.1T10	-	.00732	S-I0336
B.12.S	T.2T04	-	.00837	T.2T07	-	.00719	S-I0337
B.12.S	T.2T08	-	.00668	T.0S25.S	-	.01097	S-I0338
B.12.S	T.0S30.S	-	.02608	T.0S36.S	-	.04542	S-I0339
B.12.S	T.0S43.S	-	.06520	T.0S50.S	-	.07981	S-I0340
B.12.S	T.0T25.S	-	.13075	T.0T30.S	-	.12447	S-I0341
B.12.S	T.0T36.S	-	.11585	T.0T43.S	-	.10579	S-I0342
B.12.S	T.0T51.S	-	.09514	T.0T56.S	-	.08909	S-I0343
B.12.S	T.0T61.S	-	.08353				S-I0344
B.16.S	T.0S0		.03026	T.1S0		.00140	S-I0345
B.16.S	T.2S0		.00132	T.3S0		.00910	S-I0346
B.16.S	T.4S0		.00583	T.0S02	-	.00073	S-I0347
B.16.S	T.0S03	-	.00074	T.0S04	-	.00606	S-I0348
B.16.S	T.0S06	-	.00211	T.0S09		.00240	S-I0349
B.16.S	T.0S12		.00307	T.0S15		.00041	S-I0350
B.16.S	T.0S18	-	.00422	T.0S21	-	.00987	S-I0351
B.16.S	T.0T03	-	.00445	T.0T05	-	.00421	S-I0352
B.16.S	T.0T08	-	.04465	T.0T11	-	.04597	S-I0353
B.16.S	T.0T14	-	.04557	T.0T18	-	.04319	S-I0354
B.16.S	T.0T21	-	.04064	T.1S01	-	.00113	S-I0355
B.16.S	T.1S02	-	.00209	T.1S04	-	.01914	S-I0356
B.16.S	T.1S07		.00079	T.1S08		.00067	S-I0357
B.16.S	T.1S10	-	.00061	T.1S14	-	.00568	S-I0358
B.16.S	T.2S01	-	.00131	T.2S02	-	.00344	S-I0359
B.16.S	T.2S05	-	.01811	T.2S06	-	.02789	S-I0360

B.16.S	T.2S08	-	.03263	T.2S10	-	.03390	S-I0361
B.16.S	T.2S12	-	.03391	T.2S13	-	.03302	S-I0362
B.16.S	T.2S15	-	.01844	T.3S04	-	.00947	S-I0363
B.16.S	T.3S08	-	.00880	T.3S09	-	.00822	S-I0364
B.16.S	T.4S01	-	.00198	T.4S03	-	.01366	S-I0365
B.16.S	T.4S04	-	.07144	T.4S05	-	.04534	S-I0366
B.16.S	T.4S06	-	.02796	T.4S07	-	.00800	S-I0367
B.16.S	T.5S02	-	.01049	T.5S03	-	.01008	S-I0368
B.16.S	T.6S01	-	.00042	T.6S04	-	.00572	S-I0369
B.16.S	T.6S05	-	.00114	T.7S03	-	.00156	S-I0370
B.16.S	T.8S01		.00000	T.1T02	-	.01420	S-I0371
B.16.S	T.1T04	-	.01425	T.1T06	-	.01436	S-I0372
B.16.S	T.1T08	-	.01539	T.1T10	-	.01632	S-I0373
B.16.S	T.2T04	-	.02346	T.2T07	-	.01782	S-I0374
B.16.S	T.2T08	-	.01585	T.0S25.S	-	.07573	S-I0375
B.16.S	T.0S33.S	-	.10858	T.0S36.S	-	.13098	S-I0376
B.16.S	T.0S43.S	-	.13672	T.0S50.S	-	.12839	S-I0377
B.16.S	T.0T25.S	-	.16037	T.0T30.S	-	.14011	S-I0378
B.16.S	T.0T35.S	-	.11817	T.0T43.S	-	.09675	S-I0379
B.16.S	T.0T51.S	-	.07732	T.0T56.S	-	.06746	S-I0380
B.16.S	T.0T61.S	-	.05904				S-I0381
B.23.S	T.0S0		.08366	T.1S0		.00311	S-I0382
B.23.S	T.2S0		.00224	T.3S0		.00996	S-I0383
B.23.S	T.4S0		.00159	T.0S02	-	.00125	S-I0384
B.23.S	T.0S03	-	.00087	T.0S04	-	.00594	S-I0385
B.23.S	T.0S05		.00019	T.0S09		.00358	S-I0386
B.23.S	T.0S12	-	.00387	T.0S15	-	.01461	S-I0387
B.23.S	T.0S18	-	.02435	T.0S21	-	.03125	S-I0388
B.23.S	T.0T03	-	.00827	T.0T05	-	.00727	S-I0389
B.23.S	T.0T08	-	.06797	T.0T11	-	.06126	S-I0390
B.23.S	T.0T14	-	.05315	T.0T18	-	.04232	S-I0391
B.23.S	T.0T21	-	.03509	T.1S01	-	.00217	S-I0392
B.23.S	T.1S02	-	.00396	T.1S04	-	.03788	S-I0393
B.23.S	T.1S07	-	.00355	T.1S08	-	.00308	S-I0394
B.23.S	T.1S10	-	.00371	T.1S14	-	.00823	S-I0395
B.23.S	T.2S01	-	.00132	T.2S02	-	.00431	S-I0396

B.23.S	T.2S05	-	.02069	T.2S06	-	.03655	S-I0397
B.23.S	T.2S08	-	.04352	T.2S10	-	.04270	S-I0398
B.23.S	T.2S12	-	.03944	T.2S13	-	.03657	S-I0399
B.23.S	T.2S15	-	.01729	T.3S04	-	.01346	S-I0400
B.23.S	T.3S08	-	.01219	T.3S09	-	.01164	S-I0401
B.23.S	T.4S01	-	.00274	T.4S03	-	.02057	S-I0402
B.23.S	T.4S04	-	.12041	T.4S05	-	.07482	S-I0403
B.23.S	T.4S06	-	.04923	T.4S07	-	.02924	S-I0404
B.23.S	T.5S02	-	.01364	T.5S03	-	.01078	S-I0405
B.23.S	T.6S01		.00002	T.6S04	-	.00484	S-I0406
B.23.S	T.6S05	-	.00205	T.7S03	-	.00034	S-I0407
B.23.S	T.8S01		.00033	T.1T02	-	.03104	S-I0408
B.23.S	T.1T04	-	.02692	T.1T06	-	.02355	S-I0409
B.23.S	T.1T08	-	.02210	T.1T10	-	.02088	S-I0410
B.23.S	T.2T04	-	.03213	T.2T07	-	.02010	S-I0411
B.23.S	T.2T08	-	.01650	T.0S25.S	-	.15359	S-I0412
B.23.S	T.0S30.S	-	.14779	T.0S36.S	-	.12077	S-I0413
B.23.S	T.0S43.S	-	.08503	T.0S50.S	-	.05602	S-I0414
B.23.S	T.0T25.S	-	.11762	T.0T30.S	-	.08452	S-I0415
B.23.S	T.0T36.S	-	.05705	T.0T43.S	-	.03652	S-I0416
B.23.S	T.0T51.S	-	.02237	T.0T56.S	-	.01664	S-I0417
B.23.S	T.0T61.S	-	.01248				S-I0418
B.7.T	T.0S0	-	.00149	T.1S0		.00004	S-I0419
B.7.T	T.2S0		.00006	T.3S0		.00055	S-I0420
B.7.T	T.4S0		.00049	T.0S02	-	.00022	S-I0421
B.7.T	T.0S03	-	.00029	T.0S04	-	.00285	S-I0422
B.7.T	T.0S06	-	.00232	T.0S09	-	.00240	S-I0423
B.7.T	T.0S12	-	.00228	T.0S15	-	.00195	S-I0424
B.7.T	T.0S18	-	.00161	T.0S21	-	.00134	S-I0425
B.7.T	T.0T03	-	.00088	T.0T05	-	.00083	S-I0426
B.7.T	T.0T08	-	.00922	T.0T11	-	.01013	S-I0427
B.7.T	T.0T14	-	.01082	T.0T18	-	.01138	S-I0428
B.7.T	T.0T21	-	.01158	T.1S01	-	.00020	S-I0429
B.7.T	T.1S02	-	.00034	T.1S04	-	.00231	S-I0430
B.7.T	T.1S07		.00002	T.1S08	-	.00001	S-I0431
B.7.T	T.1S10		.00002	T.1S14	-	.00040	S-I0432

B.7.T	T.2S01	-	.00035	T.2S02	-	.00070	S-I0433
B.7.T	T.2S05	-	.00381	T.2S06	-	.00476	S-I0434
B.7.T	T.2S08	-	.00464	T.2S10	-	.00439	S-I0435
B.7.T	T.2S12	-	.00409	T.2S13	-	.00388	S-I0436
B.7.T	T.2S15	-	.00221	T.3S04	-	.00049	S-I0437
B.7.T	T.3S08	-	.00112	T.3S09	-	.00129	S-I0438
B.7.T	T.4S01	-	.00001	T.4S03	-	.00049	S-I0439
B.7.T	T.4S04	-	.00212	T.4S05	-	.00106	S-I0440
B.7.T	T.4S06	-	.00024	T.4S07		.00073	S-I0441
B.7.T	T.5S02	-	.00023	T.5S03	-	.00027	S-I0442
B.7.T	T.6S01		.00003	T.6S04	-	.00016	S-I0443
B.7.T	T.6S05	-	.00001	T.7S03	-	.00002	S-I0444
B.7.T	T.8S01		.00003	T.1T02	-	.00048	S-I0445
B.7.T	T.1T04	-	.00087	T.1T06	-	.00104	S-I0446
B.7.T	T.1T08	-	.00120	T.1T10	-	.00136	S-I0447
B.7.T	T.2T04	-	.00069	T.2T07	-	.00079	S-I0448
B.7.T	T.2T08	-	.00077	T.0S25.T	-	.01081	S-I0449
B.7.T	T.0S30.T	-	.00941	T.0S36.T	-	.00964	S-I0450
B.7.T	T.0S43.T	-	.01161	T.0S50.T	-	.01479	S-I0451
B.7.T	T.0T25.T	-	.11640	T.0T30.T	-	.11503	S-I0452
B.7.T	T.0T35.T	-	.11168	T.0T43.T	-	.10673	S-I0453
B.7.T	T.0T51.T	-	.10084	T.0T56.T	-	.09724	S-I0454
B.7.T	T.0T61.T	-	.09379				S-I0455
B.11.T	T.0S0		.00083	T.1S0		.00017	S-I0456
B.11.T	T.2S0		.00020	T.3S0		.00163	S-I0457
B.11.T	T.4S0		.00135	T.0S02	-	.00029	S-I0458
B.11.T	T.0S03	-	.00036	T.0S04	-	.00323	S-I0459
B.11.T	T.0S05	-	.00220	T.0S09	-	.00147	S-I0460
B.11.T	T.0S12	-	.00079	T.0S15	-	.00027	S-I0461
B.11.T	T.0S18	-	.00003	T.0S21	-	.00011	S-I0462
B.11.T	T.0T03	-	.00112	T.0T05	-	.00107	S-I0463
B.11.T	T.0T08	-	.01174	T.0T11	-	.01274	S-I0464
B.11.T	T.0T14	-	.01341	T.0T18	-	.01380	S-I0465
B.11.T	T.0T21	-	.01381	T.1S01	-	.00031	S-I0466
B.11.T	T.1S02	-	.00051	T.1S04	-	.00385	S-I0467
B.11.T	T.1S07		.00025	T.1S08		.00021	S-I0468

B.11.T	T.1S10		.00004	T.1S14	-	.00098	S-I0469
B.11.T	T.2S01	-	.00047	T.2S02	-	.00098	S-I0470
B.11.T	T.2S05	-	.00530	T.2S06	-	.00718	S-I0471
B.11.T	T.2S08	-	.00768	T.2S10	-	.00775	S-I0472
B.11.T	T.2S12	-	.00765	T.2S13	-	.00743	S-I0473
B.11.T	T.2S15	-	.00433	T.3S04	-	.00137	S-I0474
B.11.T	T.3S08	-	.00193	T.3S09	-	.00202	S-I0475
B.11.T	T.4S01	-	.00018	T.4S03	-	.00176	S-I0476
B.11.T	T.4S04	-	.00836	T.4S05	-	.00485	S-I0477
B.11.T	T.4S06	-	.00219	T.4S07		.00107	S-I0478
B.11.T	T.5S02	-	.00126	T.5S03	-	.00133	S-I0479
B.11.T	T.6S01	-	.00001	T.6S04	-	.00096	S-I0480
B.11.T	T.6S05	-	.00018	T.7S03	-	.00020	S-I0481
B.11.T	T.8S01		.00002	T.1T02	-	.00158	S-I0482
B.11.T	T.1T04	-	.00197	T.1T06	-	.00219	S-I0483
B.11.T	T.1T08	-	.00250	T.1T10	-	.00282	S-I0484
B.11.T	T.2T04	-	.00294	T.2T07	-	.00260	S-I0485
B.11.T	T.2T08	-	.00244	T.0S25.T	-	.00635	S-I0486
B.11.T	T.0S30.T	-	.01730	T.0S36.T	-	.03325	S-I0487
B.11.T	T.0S43.T	-	.05157	T.0S50.T	-	.06705	S-I0488
B.11.T	T.0T25.T	-	.13590	T.0T30.T	-	.13086	S-I0489
B.11.T	T.0T36.T	-	.12338	T.0T43.T	-	.11429	S-I0490
B.11.T	T.0T51.T	-	.10438	T.0T56.T	-	.09866	S-I0491
B.11.T	T.0T61.T	-	.09333				S-I0492
B.15.T	T.0S0		.01408	T.1S0		.00067	S-I0493
B.15.T	T.2S0		.00064	T.3S0		.00449	S-I0494
B.15.T	T.4S0		.00295	T.0S02	-	.00038	S-I0495
B.15.T	T.0S03	-	.00039	T.0S04	-	.00326	S-I0496
B.15.T	T.0S05	-	.00128	T.0S09		.00096	S-I0497
B.15.T	T.0S12		.00143	T.0S15		.00031	S-I0498
B.15.T	T.0S18	-	.00179	T.0S21	-	.00444	S-I0499
B.15.T	T.0T03	-	.00222	T.0T05	-	.00210	S-I0500
B.15.T	T.0T08	-	.02236	T.0T11	-	.02314	S-I0501
B.15.T	T.0T14	-	.02307	T.0T18	-	.02205	S-I0502
B.15.T	T.0T21	-	.02088	T.1S01	-	.00057	S-I0503
B.15.T	T.1S02	-	.00104	T.1S04	-	.00942	S-I0504

B.15.T	T.1S07		.00043	T.1S08		.00036	S-I0505
B.15.T	T.1S13	-	.00027	T.1S14	-	.00279	S-I0506
B.15.T	T.2S01	-	.00068	T.2S02	-	.00174	S-I0507
B.15.T	T.2S05	-	.00918	T.2S06	-	.01400	S-I0508
B.15.T	T.2S08	-	.01629	T.2S10	-	.01691	S-I0509
B.15.T	T.2S12	-	.01692	T.2S13	-	.01649	S-I0510
B.15.T	T.2S15	-	.00925	T.3S04	-	.00461	S-I0511
B.15.T	T.3S08	-	.00438	T.3S09	-	.00413	S-I0512
B.15.T	T.4S01	-	.00095	T.4S03	-	.00662	S-I0513
B.15.T	T.4S04	-	.03439	T.4S05	-	.02175	S-I0514
B.15.T	T.4S06	-	.01325	T.4S07	-	.00342	S-I0515
B.15.T	T.5S02	-	.00508	T.5S03	-	.00491	S-I0516
B.15.T	T.6S01	-	.00020	T.6S04	-	.00285	S-I0517
B.15.T	T.6S05	-	.00057	T.7S03	-	.00076	S-I0518
B.15.T	T.8S01		.00000	T.1T02	-	.00680	S-I0519
B.15.T	T.1T04	-	.00689	T.1T06	-	.00698	S-I0520
B.15.T	T.1T08	-	.00752	T.1T10	-	.00802	S-I0521
B.15.T	T.2T04	-	.01137	T.2T07	-	.00872	S-I0522
B.15.T	T.2T08	-	.00778	T.0S25.T	-	.08083	S-I0523
B.15.T	T.0S30.T	-	.11882	T.0S36.T	-	.14688	S-I0524
B.15.T	T.0S43.T	-	.15743	T.0S50.T	-	.15177	S-I0525
B.15.T	T.0T25.T	-	.19111	T.0T30.T	-	.16878	S-I0526
B.15.T	T.0T36.T	-	.14423	T.0T43.T	-	.11991	S-I0527
B.15.T	T.0T51.T	-	.09754	T.0T56.T	-	.08606	S-I0528
B.15.T	T.0T61.T	-	.07617	B.23.T.M	-	1.00000	S-I0529
B.23.T	T.0S0		.03637	T.1S0		.00135	S-I0530
B.23.T	T.2S0		.00097	T.3S0		.00433	S-I0531
B.23.T	T.4S0		.00069	T.0S02	-	.00054	S-I0532
B.23.T	T.0S03	-	.00038	T.0S04	-	.00258	S-I0533
B.23.T	T.0S05		.00008	T.0S09		.00156	S-I0534
B.23.T	T.0S12	-	.00168	T.0S15	-	.00635	S-I0535
B.23.T	T.0S18	-	.01059	T.0S21	-	.01359	S-I0536
B.23.T	T.0T03	-	.00360	T.0T05	-	.00316	S-I0537
B.23.T	T.0T08	-	.02955	T.0T11	-	.02664	S-I0538
B.23.T	T.0T14	-	.02311	T.0T18	-	.01840	S-I0539
B.23.T	T.0T21	-	.01526	T.1S01	-	.00094	S-I0540

B.23.T	T.1S02	-	.00172	T.1S04	-	.01647	S-I0541
B.23.T	T.1S07	-	.00154	T.1S08	-	.00134	S-I0542
B.23.T	T.1S13	-	.00162	T.1S14	-	.00358	S-I0543
B.23.T	T.2S01	-	.00057	T.2S02	-	.00187	S-I0544
B.23.T	T.2S05	-	.00900	T.2S06	-	.01589	S-I0545
B.23.T	T.2S08	-	.01892	T.2S10	-	.01857	S-I0546
B.23.T	T.2S12	-	.01715	T.2S13	-	.01590	S-I0547
B.23.T	T.2S15	-	.00752	T.3S04	-	.00585	S-I0548
B.23.T	T.3S08	-	.00530	T.3S09	-	.00506	S-I0549
B.23.T	T.4S01	-	.00119	T.4S03	-	.00894	S-I0550
B.23.T	T.4S04	-	.05235	T.4S05	-	.03253	S-I0551
B.23.T	T.4S06	-	.02140	T.4S07	-	.01271	S-I0552
B.23.T	T.5S02	-	.00593	T.5S03	-	.00469	S-I0553
B.23.T	T.6S01		.00001	T.6S04	-	.00210	S-I0554
B.23.T	T.6S05	-	.00089	T.7S03	-	.00015	S-I0555
B.23.T	T.8S01		.00015	T.1T02	-	.01350	S-I0556
B.23.T	T.1T04	-	.01170	T.1T06	-	.01024	S-I0557
B.23.T	T.1T08	-	.00961	T.1T10	-	.00908	S-I0558
B.23.T	T.2T04	-	.01397	T.2T07	-	.00874	S-I0559
B.23.T	T.2T08	-	.00717	T.0S25.T	-	.15359	S-I0560
B.23.T	T.0S30.T	-	.14779	T.0S36.T	-	.12077	S-I0561
B.23.T	T.0S43.T	-	.08503	T.0S50.T	-	.05602	S-I0562
B.23.T	T.0T25.T	-	.11762	T.0T30.T	-	.08452	S-I0563
B.23.T	T.0T36.T	-	.05705	T.0T43.T	-	.03652	S-I0564
B.23.T	T.0T51.T	-	.02237	T.0T56.T	-	.01664	S-I0565
B.23.T	T.0T61.T	-	.01248	B.23.T.M		1.00000	S-I0566
B.34	T.0S0		.23317	T.1S0		.00744	S-I0567
B.34	T.2S0		.00372	T.3S0		.00437	S-I0568
B.34	T.4S0	-	.01007	T.0S02	-	.00333	S-I0569
B.34	T.0S03	-	.00182	T.0S04	-	.01205	S-I0570
B.34	T.0S06	-	.00218	T.0S09	-	.00934	S-I0571
B.34	T.0S12	-	.03594	T.0S15	-	.05523	S-I0572
B.34	T.0S18	-	.06295	T.0S21	-	.06096	S-I0573
B.34	T.0T03	-	.01813	T.0T05	-	.01463	S-I0574
B.34	T.0T08	-	.11803	T.0T11	-	.09094	S-I0575
B.34	T.0T14	-	.06709	T.0T18	-	.04287	S-I0576

B.34	T.0T21	-	.03010	T.1S01	-	.00531	S-I0577
B.34	T.1S02	-	.00889	T.1S04	-	.08459	S-I0578
B.34	T.1S07	-	.02082	T.1S08	-	.01740	S-I0579
B.34	T.1S10	-	.01235	T.1S14	-	.01061	S-I0580
B.34	T.2S01	-	.00050	T.2S02	-	.00513	S-I0581
B.34	T.2S05	-	.02202	T.2S06	-	.04907	S-I0582
B.34	T.2S08	-	.05839	T.2S10	-	.05092	S-I0583
B.34	T.2S12	-	.03985	T.2S13	-	.03326	S-I0584
B.34	T.2S15	-	.01091	T.3S04	-	.02237	S-I0585
B.34	T.3S08	-	.02826	T.3S09	-	.02911	S-I0586
B.34	T.4S01	-	.00287	T.4S03	-	.03183	S-I0587
B.34	T.4S04	-	.19236	T.4S05	-	.10412	S-I0588
B.34	T.4S06	-	.05934	T.4S07	-	.04081	S-I0589
B.34	T.5S02	-	.01300	T.5S03	-	.00624	S-I0590
B.34	T.5S01		.00164	T.6S04	-	.00928	S-I0591
B.34	T.6S05	-	.00614	T.7S03		.00269	S-I0592
B.34	T.3S01		.00022	T.1T02	-	.07248	S-I0593
B.34	T.1T04	-	.05502	T.1T06	-	.04203	S-I0594
B.34	T.1T08	-	.03540	T.1T10	-	.03208	S-I0595
B.34	T.2T04	-	.03799	T.2T07	-	.01997	S-I0596
B.34	T.2T08	-	.01567	T.0S25.0	-	.04985	S-I0597
B.34	T.0S30.0	-	.03307	T.0S36.0	-	.01765	S-I0598
B.34	T.0S43.0	-	.00766	T.0S50.0	-	.00313	S-I0599
B.34	T.0T25.0	-	.01854	T.0T30.0	-	.01007	S-I0600
B.34	T.0T35.0	-	.00486	T.0T43.0	-	.00210	S-I0601
B.34	T.0T51.0	-	.00082	T.0T56.0	-	.00046	S-I0602
B.34	T.0T61.0	-	.00026	T.0S25.S	-	.04985	S-I0603
B.34	T.0S30.S	-	.03307	T.0S36.S	-	.01765	S-I0604
B.34	T.0S43.S	-	.00766	T.0S50.S	-	.00313	S-I0605
B.34	T.0T25.S	-	.01854	T.0T30.S	-	.01007	S-I0606
B.34	T.0T35.S	-	.00486	T.0T43.S	-	.00210	S-I0607
B.34	T.0T51.S	-	.00082	T.0T56.S	-	.00046	S-I0608
B.34	T.0T61.S	-	.00026	T.0S25.T	-	.04985	S-I0609
B.34	T.0S30.T	-	.03307	T.0S36.T	-	.01765	S-I0610
B.34	T.0S43.T	-	.00766	T.0S50.T	-	.00313	S-I0611
B.34	T.0T25.T	-	.01854	T.0T30.T	-	.01007	S-I0612

B.34	T.0T36.T	-	.00486	T.0T43.T	-	.00210	S-I0613
B.34	T.0T51.T	-	.00082	T.0T56.T	-	.00046	S-I0614
B.34	T.0T51.T	-	.00026	B.39.FIX		.50000	S-I0615
B.39	T.0S0		.84983	T.1S0		.02080	S-I0616
B.39	T.2S0		.00389	T.3S0	-	.03405	S-I0617
B.39	T.4S0	-	.02613	T.0S02	-	.01250	S-I0618
B.39	T.0S03	-	.00741	T.0S04	-	.06178	S-I0619
B.39	T.0S05	-	.04793	T.0S09	-	.09603	S-I0620
B.39	T.0S12	-	.14928	T.0S15	-	.15237	S-I0621
B.39	T.0S18	-	.12886	T.0S21	-	.09716	S-I0622
B.39	T.0T03	-	.04624	T.0T05	-	.03348	S-I0623
B.39	T.0T08	-	.22547	T.0T11	-	.14474	S-I0624
B.39	T.0T14	-	.08946	T.0T18	-	.04571	S-I0625
B.39	T.0T21	-	.02741	T.1S01	-	.01673	S-I0626
B.39	T.1S02	-	.02403	T.1S04	-	.22323	S-I0627
B.39	T.1S07	-	.09922	T.1S08	-	.07887	S-I0628
B.39	T.1S10	-	.04140	T.1S14	-	.01462	S-I0629
B.39	T.2S01		.00475	T.2S02	-	.00622	S-I0630
B.39	T.2S05	-	.01502	T.2S06	-	.06102	S-I0631
B.39	T.2S08	-	.07366	T.2S10	-	.05310	S-I0632
B.39	T.2S12	-	.03145	T.2S13	-	.02203	S-I0633
B.39	T.2S15	-	.00405	T.3S04	-	.05995	S-I0634
B.39	T.3S08	-	.07863	T.3S09	-	.07748	S-I0635
B.39	T.4S01	-	.00368	T.4S03	-	.06713	S-I0636
B.39	T.4S04	-	.30215	T.4S05	-	.09857	S-I0637
B.39	T.4S06	-	.01300	T.4S07	-	.01767	S-I0638
B.39	T.5S02	-	.00299	T.5S03		.00312	S-I0639
B.39	T.6S01		.00251	T.6S04	-	.03133	S-I0640
B.39	T.6S05	-	.01128	T.7S03	-	.00005	S-I0641
B.39	T.8S01	-	.00432	T.1T02	-	.22009	S-I0642
B.39	T.1T04	-	.14666	T.1T06	-	.10211	S-I0643
B.39	T.1T08	-	.08612	T.1T10	-	.08531	S-I0644
B.39	T.2T04	-	.04196	T.2T07	-	.03147	S-I0645
B.39	T.2T08	-	.03017	T.0S25.0	-	.05945	S-I0646
B.39	T.0S30.0	-	.02878	T.0S36.0	-	.01107	S-I0647
B.39	T.0S43.0	-	.00344	T.0S50.0	-	.00105	S-I0648

B.39	T.0T25.0	-	.01390	T.0T30.0	-	.00602	S-I0649
B.39	T.0T36.0	-	.00226	T.0T43.0	-	.00075	S-I0650
B.39	T.0T51.0	-	.00022	T.0T56.0	-	.00010	S-I0651
B.39	T.0T61.0	-	.00005	T.0S25.S	-	.05945	S-I0652
B.39	T.0S30.S	-	.02878	T.0S36.S	-	.01107	S-I0653
B.39	T.0S43.S	-	.00344	T.0S50.S	-	.00105	S-I0654
B.39	T.0T25.S	-	.01390	T.0T30.S	-	.00602	S-I0655
B.39	T.0T36.S	-	.00226	T.0T43.S	-	.00075	S-I0656
B.39	T.0T51.S	-	.00022	T.0T56.S	-	.00010	S-I0657
B.39	T.0T61.S	-	.00005	T.0S25.T	-	.05945	S-I0658
B.39	T.0S30.T	-	.02878	T.0S36.T	-	.01107	S-I0659
B.39	T.0S43.T	-	.00344	T.0S50.T	-	.00105	S-I0660
B.39	T.0T25.T	-	.01390	T.0T30.T	-	.00602	S-I0661
B.39	T.0T36.T	-	.00226	T.0T43.T	-	.00075	S-I0662
B.39	T.0T51.T	-	.00022	T.0T56.T	-	.00010	S-I0663
B.39	T.0T61.T	-	.00005	B.39.FIX	-	.67500	S-I0664
B.44	T.0S0		2.17696	T.1S0		.02326	S-I0665
B.44	T.2S0	-	.01415	T.3S0	-	.04630	S-I0666
B.44	T.4S0		.03284	T.0S02	-	.04376	S-I0667
B.44	T.0S03	-	.03360	T.0S04	-	.31928	S-I0668
B.44	T.0S05	-	.27506	T.0S09	-	.26578	S-I0669
B.44	T.0S12	-	.21196	T.0S15	-	.13413	S-I0670
B.44	T.0S18	-	.07601	T.0S21	-	.04026	S-I0671
B.44	T.0T03	-	.06843	T.0T05	-	.03906	S-I0672
B.44	T.0T08	-	.18232	T.0T11	-	.08301	S-I0673
B.44	T.0T14	-	.03734	T.0T18	-	.01298	S-I0674
B.44	T.0T21	-	.00599	T.1S01	-	.04229	S-I0675
B.44	T.1S02	-	.04044	T.1S04	-	.32585	S-I0676
B.44	T.1S07	-	.25392	T.1S08	-	.19893	S-I0677
B.44	T.1S10	-	.10487	T.1S14	-	.03370	S-I0678
B.44	T.2S01		.02054	T.2S02	-	.03161	S-I0679
B.44	T.2S05	-	.02707	T.2S06	-	.02372	S-I0680
B.44	T.2S08	-	.02165	T.2S10	-	.01067	S-I0681
B.44	T.2S12	-	.00787	T.2S13	-	.00949	S-I0682
B.44	T.2S15	-	.01553	T.3S04	-	.09287	S-I0683
B.44	T.3S08	-	.05485	T.3S09	-	.05199	S-I0684

B.44	T.4S01	-	.03214	T.4S03	-	.10485	S-I0685
B.44	T.4S04	-	.01472	T.4S05		.06680	S-I0686
B.44	T.4S06	-	.04670	T.4S07	-	.34345	S-I0687
B.44	T.5S02	-	.02458	T.5S03	-	.03441	S-I0688
B.44	T.5S01	-	.01800	T.6S04	-	.04591	S-I0689
B.44	T.6S05	-	.03552	T.7S03	-	.02103	S-I0690
B.44	T.8S01	-	.00266	T.1T02	-	.38739	S-I0691
B.44	T.1T04	-	.24496	T.1T06	-	.18234	S-I0692
B.44	T.1T08	-	.16888	T.1T10	-	.16589	S-I0693
B.44	T.2T04	-	.09769	T.2T07	-	.09761	S-I0694
B.44	T.2T08	-	.09420	T.0S25.0	-	.01621	S-I0695
B.44	T.0S30.0	-	.00495	T.0S36.0	-	.00117	S-I0696
B.44	T.0S43.0	-	.00022	T.0S50.0	-	.00004	S-I0697
B.44	T.0T25.0	-	.00220	T.0T30.0	-	.00066	S-I0698
B.44	T.0T36.0	-	.00016	T.0T43.0	-	.00003	S-I0699
B.44	T.0T51.0	-	.00001	T.0T56.0	-	.00000	S-I0700
B.44	T.0T61.0	-	.00000	T.0S25.S	-	.01621	S-I0701
B.44	T.0S30.S	-	.00495	T.0S36.S	-	.00117	S-I0702
B.44	T.0S43.S	-	.00022	T.0S50.S	-	.00004	S-I0703
B.44	T.0T25.S	-	.00220	T.0T30.S	-	.00066	S-I0704
B.44	T.0T36.S	-	.00016	T.0T43.S	-	.00003	S-I0705
B.44	T.0T51.S	-	.00001	T.0T56.S	-	.00000	S-I0706
B.44	T.0T61.S	-	.00000	T.0S25.T	-	.01621	S-I0707
B.44	T.0S30.T	-	.00495	T.0S36.T	-	.00117	S-I0708
B.44	T.0S43.T	-	.00022	T.0S50.T	-	.00004	S-I0709
B.44	T.0T25.T	-	.00220	T.0T30.T	-	.00066	S-I0710
B.44	T.0T36.T	-	.00016	T.0T43.T	-	.00003	S-I0711
B.44	T.0T51.T	-	.00001	T.0T56.T	-	.00000	S-I0712
B.44	T.0T61.T	-	.00000	B.39.FIX		.17500	S-I0713
B.48	T.0S0		2.76817	T.1S0	-	.01951	S-I0714
B.48	T.2S0	-	.01048	T.3S0		.08442	S-I0715
B.48	T.4S0	-	.03175	T.0S02	-	.08752	S-I0716
B.48	T.0S03	-	.06642	T.0S04	-	.55740	S-I0717
B.48	T.0S06	-	.39941	T.0S09	-	.18619	S-I0718
B.48	T.0S12	-	.06290	T.0S15	-	.02075	S-I0719
B.48	T.0S18	-	.00659	T.0S21	-	.00201	S-I0720

B.48	T.0T03	-	.04856	T.0T05	-	.01814	S-I0721
B.48	T.0T08	-	.04443	T.0T11	-	.01116	S-I0722
B.48	T.0T14	-	.00288	T.0T18	-	.00050	S-I0723
B.48	T.0T21	-	.00014	T.1S01	-	.06739	S-I0724
B.48	T.1S02	-	.03340	T.1S04	-	.17982	S-I0725
B.48	T.1S07	-	.23634	T.1S08	-	.23340	S-I0726
B.48	T.1S10	-	.23205	T.1S14	-	.15822	S-I0727
B.48	T.2S01		.00595	T.2S02	-	.15642	S-I0728
B.48	T.2S05	-	.10841	T.2S06	-	.04158	S-I0729
B.48	T.2S08	-	.01757	T.2S10	-	.01710	S-I0730
B.48	T.2S12	-	.02166	T.2S13	-	.02671	S-I0731
B.48	T.2S15	-	.08789	T.3S04	-	.09425	S-I0732
B.48	T.3S08	-	.10251	T.3S09	-	.10474	S-I0733
B.48	T.4S01	-	.05866	T.4S03	-	.09065	S-I0734
B.48	T.4S04		.08114	T.4S05	-	.09828	S-I0735
B.48	T.4S06	-	.23807	T.4S07	-	.36280	S-I0736
B.48	T.5S02	-	.07312	T.5S03	-	.05092	S-I0737
B.48	T.5S01	-	.00315	T.6S04	-	.10186	S-I0738
B.48	T.6S05	-	.07172	T.7S03		.01096	S-I0739
B.48	T.8S01		.00263	T.1T02	-	.23518	S-I0740
B.48	T.1T04	-	.23000	T.1T06	-	.20381	S-I0741
B.48	T.1T08	-	.15733	T.1T10	-	.10833	S-I0742
B.48	T.2T04	-	.17481	T.2T07	-	.15232	S-I0743
B.48	T.2T08	-	.14903	T.0S25.0	-	.00040	S-I0744
B.48	T.0S30.0	-	.00005	T.0S36.0	-	.00000	S-I0745
B.48	T.0T25.0	-	.00003	T.0T30.0	-	.00000	S-I0746
B.48	T.0T36.0	-	.00000	T.0S25.S	-	.00040	S-I0747
B.48	T.0S30.S	-	.00005	T.0S36.S	-	.00000	S-I0748
B.48	T.0T25.S	-	.00003	T.0T30.S	-	.00000	S-I0749
B.48	T.0T36.S	-	.00000	T.0S25.T	-	.00040	S-I0750
B.48	T.0S30.T	-	.00005	T.0S36.T	-	.00000	S-I0751
B.48	T.0T25.T	-	.00003	T.0T30.T	-	.00000	S-I0752
B.48	T.0T36.T	-	.00000				S-I0753
B.58	T.0S0		1.24085	T.1S0	-	.02373	S-I0754
B.58	T.2S0		.00653	T.3S0		.00181	S-I0755
B.58	T.4S0	-	.01611	T.0S02	-	.05563	S-I0756

B.58	T.0S03	-	.03973	T.0S04	-	.26873	S-10757
B.58	T.0S06	-	.13115	T.0S09	-	.03520	S-10758
B.58	T.0S12	-	.00456	T.0S15	-	.00054	S-10759
B.58	T.0S18	-	.00006	T.0S21	-	.00001	S-10760
B.58	T.0T03	-	.01464	T.0T05	-	.00358	S-10761
B.58	T.0T08	-	.00382	T.0T11	-	.00038	S-10762
B.58	T.0T14	-	.00004	T.0T18	-	.00000	S-10763
B.58	T.1S01	-	.03905	T.1S02	-	.01153	S-10764
B.58	T.1S04	-	.03306	T.1S07	-	.04561	S-10765
B.58	T.1S08	-	.05691	T.1S10	-	.08171	S-10766
B.58	T.1S14	-	.08191	T.2S01	-	.02346	S-10767
B.58	T.2S02	-	.12243	T.2S05	-	.03739	S-10768
B.58	T.2S06	-	.01345	T.2S08	-	.00559	S-10769
B.58	T.2S10	-	.00519	T.2S12	-	.00678	S-10770
B.58	T.2S13	-	.00956	T.2S15	-	.05077	S-10771
B.58	T.3S04	-	.08912	T.3S08	-	.06401	S-10772
B.58	T.3S09	-	.05088	T.4S01	-	.00952	S-10773
B.58	T.4S03	-	.05233	T.4S04		.02605	S-10774
B.58	T.4S05	-	.02998	T.4S06	-	.01210	S-10775
B.58	T.4S07		.00400	T.5S02	-	.01768	S-10776
B.58	T.5S03	-	.00468	T.6S01		.01058	S-10777
B.58	T.6S04	-	.03558	T.6S05	-	.01786	S-10778
B.58	T.7S03		.00647	T.8S01	-	.00412	S-10779
B.58	T.1T02	-	.05077	T.1T04	-	.09419	S-10780
B.58	T.1T06	-	.08035	T.1T08	-	.04505	S-10781
B.58	T.1T10	-	.01915	T.2T04	-	.04802	S-10782
B.58	T.2T07	-	.07290	T.2T08	-	.07553	S-10783
B.58	T.0S25.0	-	.00000	T.0S25.S	-	.00000	S-10784
B.58	T.0S25.T	-	.00000				S-10785
B.81	T.0S0		.24624	T.1S0		.05078	S-10786
B.81	T.2S0		.03569	T.3S0		.27199	S-10787
B.81	T.4S0		.13004	T.0S02	-	.00056	S-10788
B.81	T.0S03	-	.00004	T.1S01		.00003	S-10789
B.81	T.1S02	-	.00190	T.2S01		.00156	S-10790
B.81	T.2S02	-	.15535	T.3S04	-	.00102	S-10791
B.81	T.4S01	-	.01495	T.4S03	-	.00268	S-10792

B.81	T.4S04	-	.00209	T.4S05	-	.00028	S-I0793
B.81	T.4S06	-	.00007	T.4S07	-	.00002	S-I0794
B.81	T.5S02	-	.03797	T.5S03	-	.04574	S-I0795
B.81	T.6S01	-	.00127	T.6S04	-	.00504	S-I0796
B.81	T.6S05	-	.00065	T.7S03	-	.01315	S-I0797
B.81	T.8S01	-	.01136				S-I0798
R.5.0	MASS		.01969	MOMENT		.07869	S-I0799
R.5.0	T.0S0		.39006	T.1S0		.01268	S-I0800
R.5.0	T.2S0		.01291	T.3S0		.10497	S-I0801
R.5.0	T.4S0		.08971	T.0S02		.00258	S-I0802
R.5.0	T.0S03		.00174	T.0S04		.01345	S-I0803
R.5.0	T.0S06		.01332	T.0S09		.02136	S-I0804
R.5.0	T.0S12		.02515	T.0S15		.02688	S-I0805
R.5.0	T.0S18		.02891	T.0S21		.03081	S-I0806
R.5.0	T.0T03		.00664	T.0T05		.00524	S-I0807
R.5.0	T.0T08		.04369	T.0T11		.03744	S-I0808
R.5.0	T.0T14		.03220	T.0T18		.02633	S-I0809
R.5.0	T.0T21		.02266	T.1S01		.00572	S-I0810
R.5.0	T.1S02		.00558	T.1S04		.03757	S-I0811
R.5.0	T.1S07		.01718	T.1S08		.01224	S-I0812
R.5.0	T.1S10		.00493	T.1S14		.00470	S-I0813
R.5.0	T.2S01		.04658	T.2S02		.03545	S-I0814
R.5.0	T.2S05		.03653	T.2S06		.03723	S-I0815
R.5.0	T.2S08		.03333	T.2S10		.02982	S-I0816
R.5.0	T.2S12		.02648	T.2S13		.02444	S-I0817
R.5.0	T.2S15		.01226	T.3S04		.02474	S-I0818
R.5.0	T.3S08		.01951	T.3S09		.01862	S-I0819
R.5.0	T.4S01		.01853	T.4S03		.02904	S-I0820
R.5.0	T.4S04		.19723	T.4S05		.17757	S-I0821
R.5.0	T.4S06		.16866	T.4S07		.16125	S-I0822
R.5.0	T.5S02		.01577	T.5S03		.01336	S-I0823
R.5.0	T.6S01		.01321	T.6S04		.01497	S-I0824
R.5.0	T.6S05		.01070	T.7S03		.01113	S-I0825
R.5.0	T.3S01		.00894	T.1T02		.04375	S-I0826
R.5.0	T.1T04		.03092	T.1T06		.02373	S-I0827
R.5.0	T.1T08		.02101	T.1T10		.01953	S-I0828

R.5.0	T.2T04	.03023	T.2T07	.01993	S-I0829
R.5.0	T.2T08	.01693	T.0S25.0	.04878	S-I0830
R.5.0	T.0S30.0	.05040	T.0S36.0	.05041	S-I0831
R.5.0	T.0S43.0	.04912	T.0S50.0	.04709	S-I0832
R.5.0	T.0T25.0	.02782	T.0T30.0	.02202	S-I0833
R.5.0	T.0T36.0	.01691	T.0T43.0	.01272	S-I0834
R.5.0	T.0T51.0	.00944	T.0T56.0	.00793	S-I0835
R.5.0	T.0T61.0	.00671	R.15.0X	1.00000	S-I0836
R.5.0	R.10.0X	1.00000	MASS.0	.02939	S-I0837
R.10.0	MASS	.03257	MOMENT	.12526	S-I0838
R.10.0	T.0S0	.65166	T.1S0	.02015	S-I0839
R.10.0	T.2S0	.01876	T.3S0	.13563	S-I0840
R.10.0	T.4S0	.09608	T.0S02	.00441	S-I0841
R.10.0	T.0S03	.00315	T.0S04	.02517	S-I0842
R.10.0	T.0S06	.02473	T.0S09	.03902	S-I0843
R.10.0	T.0S12	.04652	T.0S15	.04969	S-I0844
R.10.0	T.0S18	.05228	T.0S21	.05378	S-I0845
R.10.0	T.0T03	.01047	T.0T05	.00807	S-I0846
R.10.0	T.0T08	.06467	T.0T11	.05332	S-I0847
R.10.0	T.0T14	.04418	T.0T18	.03447	S-I0848
R.10.0	T.0T21	.02871	T.1S01	.00885	S-I0849
R.10.0	T.1S02	.00865	T.1S04	.05832	S-I0850
R.10.0	T.1S07	.02738	T.1S08	.01938	S-I0851
R.10.0	T.1S10	.00750	T.1S14	.00571	S-I0852
R.10.0	T.2S01	.07199	T.2S02	.05275	S-I0853
R.10.0	T.2S05	.05091	T.2S06	.05161	S-I0854
R.10.0	T.2S08	.04538	T.2S10	.03910	S-I0855
R.10.0	T.2S12	.03292	T.2S13	.02939	S-I0856
R.10.0	T.2S15	.01350	T.3S04	.02666	S-I0857
R.10.0	T.3S08	.01778	T.3S09	.01656	S-I0858
R.10.0	T.4S01	.02523	T.4S03	.03124	S-I0859
R.10.0	T.4S04	.26404	T.4S05	.23973	S-I0860
R.10.0	T.4S06	.22474	T.4S07	.20835	S-I0861
R.10.0	T.5S02	.01578	T.5S03	.01178	S-I0862
R.10.0	T.6S01	.01739	T.6S04	.01071	S-I0863
R.10.0	T.6S05	.00975	T.7S03	.01245	S-I0864

R.10.0	T.8S01		.01018	T.1T02		.06010	S-I0865
R.10.0	T.1T04		.04007	T.1T06		.02793	S-I0866
R.10.0	T.1T08		.02176	T.1T10		.01737	S-I0867
R.10.0	T.2T04		.02717	T.2T07		.01445	S-I0868
R.10.0	T.2T08		.01089	T.0S25.0		.07992	S-I0869
R.10.0	T.0S30.0		.07487	T.0S36.0		.06462	S-I0870
R.10.0	T.0S43.0		.05045	T.0S50.0		.03647	S-I0871
R.10.0	T.0T25.0		.03380	T.0T30.0		.02547	S-I0872
R.10.0	T.0T36.0		.01850	T.0T43.0		.01304	S-I0873
R.10.0	T.0T51.0		.00901	T.0T56.0		.00725	S-I0874
R.10.0	T.0T61.0		.00588	R.10.0X	-	1.00000	S-I0875
R.10.0	MASS.0		.04860				S-I0876
R.15.0	MASS		.04629	MOMENT		.17023	S-I0877
R.15.0	T.0S0		.91413	T.1S0		.02390	S-I0878
R.15.0	T.2S0		.01461	T.3S0		.03640	S-I0879
R.15.0	T.4S0	-	.04887	T.0S02		.00604	S-I0880
R.15.0	T.0S03		.00446	T.0S04		.03624	S-I0881
R.15.0	T.0S06		.03553	T.0S09		.05279	S-I0882
R.15.0	T.0S12		.05670	T.0S15		.05114	S-I0883
R.15.0	T.0S18		.04218	T.0S21		.03101	S-I0884
R.15.0	T.0T03		.01185	T.0T05		.00806	S-I0885
R.15.0	T.0T08		.05092	T.0T11		.03110	S-I0886
R.15.0	T.0T14		.01730	T.0T18		.00540	S-I0887
R.15.0	T.0T21	-	.00015	T.1S01		.01068	S-I0888
R.15.0	T.1S02		.00999	T.1S04		.06321	S-I0889
R.15.0	T.1S07		.03235	T.1S08		.02193	S-I0890
R.15.0	T.1S10		.00697	T.1S14		.00045	S-I0891
R.15.0	T.2S01		.08426	T.2S02		.05466	S-I0892
R.15.0	T.2S05		.03707	T.2S06		.03338	S-I0893
R.15.0	T.2S08		.02375	T.2S10		.01424	S-I0894
R.15.0	T.2S12		.00570	T.2S13		.00184	S-I0895
R.15.0	T.2S15	-	.00279	T.3S04	-	.00356	S-I0896
R.15.0	T.3S08	-	.01253	T.3S09	-	.01291	S-I0897
R.15.0	T.4S01		.01688	T.4S03	-	.00646	S-I0898
R.15.0	T.4S04		.10528	T.4S05		.09166	S-I0899
R.15.0	T.4S06		.06771	T.4S07		.04566	S-I0900

R.15.0	T.5S02	-	.00988	T.5S03	-	.01323	S-I0901
R.15.0	T.6S01		.00683	T.6S04	-	.01288	S-I0902
R.15.0	T.6S05	-	.00457	T.7S03	-	.00325	S-I0903
R.15.0	T.3S01	-	.00197	T.1T02		.04079	S-I0904
R.15.0	T.1T04		.01677	T.1T06		.00044	S-I0905
R.15.0	T.1T08	-	.01087	T.1T10	-	.01923	S-I0906
R.15.0	T.2T04	-	.02873	T.2T07	-	.02814	S-I0907
R.15.0	T.2T08	-	.02688	T.0S25.0		.02232	S-I0908
R.15.0	T.0S30.0	-	.00496	T.0S36.0	-	.02888	S-I0909
R.15.0	T.0S43.0	-	.04415	T.0S50.0	-	.04927	S-I0910
R.15.0	T.0T25.0	-	.00693	T.0T30.0	-	.01103	S-I0911
R.15.0	T.0T36.0	-	.01263	T.0T43.0	-	.01239	S-I0912
R.15.0	T.0T51.0	-	.01113	T.0T56.0	-	.01019	S-I0913
R.15.0	T.0T61.0	-	.00926	R.15.0X	-	1.00000	S-I0914
R.15.0	MASS.0		.06908				S-I0915
R.23.0	MASS		.06007	MOMENT		.20523	S-I0916
R.23.0	T.0S0		1.09462	T.1S0		.02021	S-I0917
R.23.0	T.2S0	-	.00195	T.3S0	-	.14835	S-I0918
R.23.0	T.4S0	-	.18190	T.0S02		.00549	S-I0919
R.23.0	T.0S03		.00417	T.0S04		.03636	S-I0920
R.23.0	T.0S06		.03935	T.0S09		.05175	S-I0921
R.23.0	T.0S12		.03861	T.0S15		.01533	S-I0922
R.23.0	T.0S18	-	.00707	T.0S21	-	.02484	S-I0923
R.23.0	T.0T03		.00792	T.0T05		.00337	S-I0924
R.23.0	T.0T08	-	.00230	T.0T11	-	.02011	S-I0925
R.23.0	T.0T14	-	.02738	T.0T18	-	.02850	S-I0926
R.23.0	T.0T21	-	.02638	T.1S01		.00835	S-I0927
R.23.0	T.1S02		.00712	T.1S04		.03675	S-I0928
R.23.0	T.1S07		.02528	T.1S08		.01449	S-I0929
R.23.0	T.1S10		.00076	T.1S14	-	.00731	S-I0930
R.23.0	T.2S01		.07361	T.2S02		.03576	S-I0931
R.23.0	T.2S05	-	.00338	T.2S06	-	.01523	S-I0932
R.23.0	T.2S08	-	.02422	T.2S10	-	.02992	S-I0933
R.23.0	T.2S12	-	.03224	T.2S13	-	.03155	S-I0934
R.23.0	T.2S15	-	.01601	T.3S04	-	.03001	S-I0935
R.23.0	T.3S08	-	.02889	T.3S09	-	.02804	S-I0936

R.23.0	T.4S01	-	.00056	T.4S03	-	.04206	S-I0937
R.23.0	T.4S04	-	.19317	T.4S05	-	.19751	S-I0938
R.23.0	T.4S06	-	.23242	T.4S07	-	.26160	S-I0939
R.23.0	T.5S02	-	.02575	T.5S03	-	.01968	S-I0940
R.23.0	T.6S01	-	.01212	T.6S04	-	.01093	S-I0941
R.23.0	T.6S05	-	.01441	T.7S03	-	.01630	S-I0942
R.23.0	T.3S01	-	.01503	T.1T02	-	.01625	S-I0943
R.23.0	T.1T04	-	.03096	T.1T06	-	.03831	S-I0944
R.23.0	T.1T08	-	.04099	T.1T10	-	.03857	S-I0945
R.23.0	T.2T04	-	.06008	T.2T07	-	.03293	S-I0946
R.23.0	T.2T08	-	.02391	T.0S25.0	-	.05840	S-I0947
R.23.0	T.0S30.0	-	.06572	T.0S36.0	-	.05835	S-I0948
R.23.0	T.0S43.0	-	.04305	T.0S50.0	-	.02907	S-I0949
R.23.0	T.0T25.0	-	.03327	T.0T30.0	-	.02560	S-I0950
R.23.0	T.0T35.0	-	.01811	T.0T43.0	-	.01195	S-I0951
R.23.0	T.0T51.0	-	.00745	T.0T56.0	-	.00558	S-I0952
R.23.0	T.0T61.0	-	.00420	MASS.0		.08966	S-I0953
R.7.S	MASS		.00916	MOMENT		.03599	S-I0954
R.7.S	T.0S0		.18180	T.1S0		.00584	S-I0955
R.7.S	T.2S0		.00582	T.3S0		.04612	S-I0956
R.7.S	T.4S0		.03790	T.0S02		.00119	S-I0957
R.7.S	T.0S03		.00081	T.0S04		.00633	S-I0958
R.7.S	T.0S06		.00631	T.0S09		.01020	S-I0959
R.7.S	T.0S12		.01220	T.0S15		.01323	S-I0960
R.7.S	T.0S18		.01433	T.0S21		.01532	S-I0961
R.7.S	T.0T03		.00303	T.0T05		.00238	S-I0962
R.7.S	T.0T08		.01961	T.0T11		.01664	S-I0963
R.7.S	T.0T14		.01417	T.0T18		.01144	S-I0964
R.7.S	T.0T21		.00976	T.1S01		.00258	S-I0965
R.7.S	T.1S02		.00252	T.1S04		.01711	S-I0966
R.7.S	T.1S07		.00791	T.1S08		.00563	S-I0967
R.7.S	T.1S10		.00225	T.1S14		.00202	S-I0968
R.7.S	T.2S01		.02117	T.2S02		.01591	S-I0969
R.7.S	T.2S05		.01600	T.2S06		.01631	S-I0970
R.7.S	T.2S08		.01459	T.2S10		.01294	S-I0971
R.7.S	T.2S12		.01135	T.2S13		.01038	S-I0972

R.7.S	T.2S15	.00509	T.3S04	.01033	S-I0973
R.7.S	T.3S08	.00784	T.3S09	.00743	S-I0974
R.7.S	T.4S01	.00819	T.4S03	.01216	S-I0975
R.7.S	T.4S04	.08766	T.4S05	.07916	S-I0976
R.7.S	T.4S05	.07493	T.4S07	.07085	S-I0977
R.7.S	T.5S02	.00657	T.5S03	.00545	S-I0978
R.7.S	T.6S01	.00583	T.6S04	.00579	S-I0979
R.7.S	T.6S05	.00431	T.7S03	.00476	S-I0980
R.7.S	T.8S01	.00383	T.1T02	.01938	S-I0981
R.7.S	T.1T04	.01352	T.1T06	.01016	S-I0982
R.7.S	T.1T08	.00877	T.1T10	.00793	S-I0983
R.7.S	T.2T04	.01231	T.2T07	.00783	S-I0984
R.7.S	T.2T08	.00654	T.0S25.S	.07053	S-I0985
R.7.S	T.0S30.S	.07236	T.0S36.S	.07115	S-I0986
R.7.S	T.0S43.S	.06703	T.0S50.S	.06142	S-I0987
R.7.S	T.0T25.S	.03451	T.0T30.S	.02692	S-I0988
R.7.S	T.0T36.S	.02034	T.0T43.S	.01499	S-I0989
R.7.S	T.0T51.S	.01086	T.0T56.S	.00898	S-I0990
R.7.S	T.0T61.S	.00749	R.16.SX	1.00000	S-I0991
R.7.S	R.12.SX	1.00000	MASS.S	.03981	S-I0992
R.12.S	MASS	.00883	MOMENT	.03360	S-I0993
R.12.S	T.0S0	.17715	T.1S0	.00532	S-I0994
R.12.S	T.2S0	.00466	T.3S0	.03071	S-I0995
R.12.S	T.4S0	.01805	T.0S02	.00121	S-I0996
R.12.S	T.0S03	.00088	T.0S04	.00707	S-I0997
R.12.S	T.0S06	.00691	T.0S09	.01076	S-I0998
R.12.S	T.0S12	.01268	T.0S15	.01326	S-I0999
R.12.S	T.0S18	.01351	T.0S21	.01335	S-I1000
R.12.S	T.0T03	.00275	T.0T05	.00208	S-I1001
R.12.S	T.0T08	.01612	T.0T11	.01283	S-I1002
R.12.S	T.0T14	.01025	T.0T18	.00760	S-I1003
R.12.S	T.0T21	.00609	T.1S01	.00234	S-I1004
R.12.S	T.1S02	.00227	T.1S04	.01518	S-I1005
R.12.S	T.1S07	.00723	T.1S08	.00509	S-I1006
R.12.S	T.1S10	.00191	T.1S14	.00124	S-I1007
R.12.S	T.2S01	.01885	T.2S02	.01352	S-I1008

R.12.S	T.2S05	.01245	T.2S06	.01250	S-I1009
R.12.S	T.2S08	.01077	T.2S10	.00900	S-I1010
R.12.S	T.2S12	.00727	T.2S13	.00631	S-I1011
R.12.S	T.2S15	.00269	T.3S04	.00526	S-I1012
R.12.S	T.3S08	.00286	T.3S09	.00258	S-I1013
R.12.S	T.4S01	.00605	T.4S03	.00610	S-I1014
R.12.S	T.4S04	.06106	T.4S05	.05561	S-I1015
R.12.S	T.4S06	.05158	T.4S07	.04707	S-I1016
R.12.S	T.5S02	.00274	T.5S03	.00167	S-I1017
R.12.S	T.6S01	.00400	T.6S04	.00112	S-I1018
R.12.S	T.6S05	.00162	T.7S03	.00244	S-I1019
R.12.S	T.8S01	.00205	T.1T02	.01451	S-I1020
R.12.S	T.1T04	.00922	T.1T06	.00588	S-I1021
R.12.S	T.1T08	.00398	T.1T10	.00254	S-I1022
R.12.S	T.2T04	.00408	T.2T07	.00131	S-I1023
R.12.S	T.2T08	.00057	T.0S25.S	.05408	S-I1024
R.12.S	T.0S30.S	.04560	T.0S36.S	.03309	S-I1025
R.12.S	T.0S43.S	.01859	T.0S50.S	.00618	S-I1026
R.12.S	T.0T25.S	.01974	T.0T30.S	.01378	S-I1027
R.12.S	T.0T35.S	.00904	T.0T43.S	.00554	S-I1028
R.12.S	T.0T51.S	.00311	T.0T56.S	.00211	S-I1029
R.12.S	T.0T61.S	.00138	R.12.SX -	1.00000	S-I1030
R.12.S	MASS.S	.03840			S-I1031
R.16.S	MASS	.01371	MOMENT	.05026	S-I1032
R.16.S	T.0S0	.27011	T.1S0	.00694	S-I1033
R.16.S	T.2S0	.00400	T.3S0	.00667	S-I1034
R.16.S	T.4S0 -	.01898	T.0S02	.00178	S-I1035
R.16.S	T.0S03	.00131	T.0S04	.01068	S-I1036
R.16.S	T.0S06	.01048	T.0S09	.01547	S-I1037
R.16.S	T.0S12	.01640	T.0S15	.01445	S-I1038
R.16.S	T.0S18	.01146	T.0S21	.00784	S-I1039
R.16.S	T.0T03	.00342	T.0T05	.00229	S-I1040
R.16.S	T.0T08	.01397	T.0T11	.00803	S-I1041
R.16.S	T.0T14	.00396	T.0T18	.00053	S-I1042
R.16.S	T.0T21 -	.00102	T.1S01	.00311	S-I1043
R.16.S	T.1S02	.00289	T.1S04	.01816	S-I1044

R.15.S	T.1S07		.00939	T.1S08		.00633	S-I 1045
R.16.S	T.1S10		.00196	T.1S14	-	.00006	S-I 1046
R.16.S	T.2S01		.02447	T.2S02		.01565	S-I 1047
R.15.S	T.2S05		.01006	T.2S06		.00883	S-I 1048
R.16.S	T.2S08		.00596	T.2S10		.00315	S-I 1049
R.16.S	T.2S12		.00066	T.2S13	-	.00044	S-I 1050
R.16.S	T.2S15	-	.00134	T.3S04	-	.00199	S-I 1051
R.16.S	T.3S08	-	.00450	T.3S09	-	.00457	S-I 1052
R.15.S	T.4S01		.00452	T.4S03	-	.00308	S-I 1053
R.16.S	T.4S04		.02415	T.4S05		.02053	S-I 1054
R.16.S	T.4S06		.01331	T.4S07		.00683	S-I 1055
R.16.S	T.5S02	-	.00365	T.5S03	-	.00455	S-I 1056
R.16.S	T.6S01		.00156	T.6S04	-	.00427	S-I 1057
R.16.S	T.6S05	-	.00172	T.7S03	-	.00146	S-I 1058
R.15.S	T.3S01	-	.00098	T.1T02		.01092	S-I 1059
R.16.S	T.1T04		.00395	T.1T06	-	.00083	S-I 1060
R.16.S	T.1T08	-	.00419	T.1T10	-	.00665	S-I 1061
R.16.S	T.2T04	-	.00999	T.2T07	-	.00931	S-I 1062
R.15.S	T.2T08	-	.00876	T.0S25.S		.01210	S-I 1063
R.15.S	T.0S30.S	-	.01202	T.0S36.S	-	.03203	S-I 1064
R.16.S	T.0S43.S	-	.04343	T.0S50.S	-	.04578	S-I 1065
R.16.S	T.0T25.S	-	.00962	T.0T30.S	-	.01246	S-I 1066
R.16.S	T.0T35.S	-	.01314	T.0T43.S	-	.01230	S-I 1067
R.16.S	T.0T51.S	-	.01069	T.0T56.S	-	.00963	S-I 1068
R.15.S	T.0T61.S	-	.00862	R.16.SX	-	1.00000	S-I 1069
R.16.S	MASS.S		.05960				S-I 1070
R.23.S	MASS		.02062	MOMENT		.07045	S-I 1071
R.23.S	T.0S0		.37576	T.1S0		.00694	S-I 1072
R.23.S	T.2S0	-	.00067	T.3S0	-	.05093	S-I 1073
R.23.S	T.4S0	-	.06244	T.0S02		.00188	S-I 1074
R.23.S	T.0S03		.00143	T.0S04		.01248	S-I 1075
R.23.S	T.0S06		.01351	T.0S09		.01776	S-I 1076
R.23.S	T.0S12		.01326	T.0S15		.00526	S-I 1077
R.23.S	T.0S18	-	.00243	T.0S21	-	.00853	S-I 1078
R.23.S	T.0T03		.00272	T.0T05		.00116	S-I 1079
R.23.S	T.0T08	-	.00079	T.0T11	-	.00690	S-I 1080

R.23.S	T.0T14	-	.00940	T.0T18	-	.00978	S-I1081
R.23.S	T.0T21	-	.00905	T.1S01		.00287	S-I1082
R.23.S	T.1S02		.00244	T.1S04		.01262	S-I1083
R.23.S	T.1S07		.00868	T.1S08		.00497	S-I1084
R.23.S	T.1S10		.00026	T.1S14	-	.00251	S-I1085
R.23.S	T.2S01		.02527	T.2S02		.01227	S-I1086
R.23.S	T.2S05	-	.00116	T.2S06	-	.00523	S-I1087
R.23.S	T.2S08	-	.00832	T.2S10	-	.01027	S-I1088
R.23.S	T.2S12	-	.01107	T.2S13	-	.01083	S-I1089
R.23.S	T.2S15	-	.00550	T.3S04	-	.01030	S-I1090
R.23.S	T.3S08	-	.00992	T.3S09	-	.00963	S-I1091
R.23.S	T.4S01	-	.00019	T.4S03	-	.01444	S-I1092
R.23.S	T.4S04	-	.06631	T.4S05	-	.06780	S-I1093
R.23.S	T.4S06	-	.07979	T.4S07	-	.08980	S-I1094
R.23.S	T.5S02	-	.00884	T.5S03	-	.00676	S-I1095
R.23.S	T.6S01	-	.00416	T.6S04	-	.00375	S-I1096
R.23.S	T.6S05	-	.00495	T.7S03	-	.00560	S-I1097
R.23.S	T.8S01	-	.00516	T.1T02	-	.00558	S-I1098
R.23.S	T.1T04	-	.01063	T.1T06	-	.01315	S-I1099
R.23.S	T.1T08	-	.01407	T.1T10	-	.01324	S-I1100
R.23.S	T.2T04	-	.02062	T.2T07	-	.01131	S-I1101
R.23.S	T.2T08	-	.00821	T.0S25.S	-	.05840	S-I1102
R.23.S	T.0S30.S	-	.06572	T.0S36.S	-	.05835	S-I1103
R.23.S	T.0S43.S	-	.04305	T.0S50.S	-	.02907	S-I1104
R.23.S	T.0T25.S	-	.03327	T.0T30.S	-	.02560	S-I1105
R.23.S	T.0T36.S	-	.01811	T.0T43.S	-	.01195	S-I1106
R.23.S	T.0T51.S	-	.00745	T.0T56.S	-	.00558	S-I1107
R.23.S	T.0T61.S	-	.00420	MASS.S		.08966	S-I1108
R.23.S	R.23.S.M	-	1.00000				S-I1109
R.7.T	MASS		.00300	MOMENT		.01186	S-I1110
R.7.T	T.0S0		.05946	T.1S0		.00192	S-I1111
R.7.T	T.2S0		.00194	T.3S0		.01552	S-I1112
R.7.T	T.4S0		.01299	T.0S02		.00039	S-I1113
R.7.T	T.0S03		.00026	T.0S04		.00201	S-I1114
R.7.T	T.0S05		.00202	T.0S09		.00327	S-I1115
R.7.T	T.0S12		.00391	T.0S15		.00424	S-I1116

R.7.T	T.0S18	.00460	T.0S21	.00494	S-I1117
R.7.T	T.0T03	.00100	T.0T05	.00078	S-I1118
R.7.T	T.0T08	.00648	T.0T11	.00551	S-I1119
R.7.T	T.0T14	.00471	T.0T18	.00381	S-I1120
R.7.T	T.0T21	.00326	T.1S01	.00085	S-I1121
R.7.T	T.1S02	.00083	T.1S04	.00564	S-I1122
R.7.T	T.1S07	.00260	T.1S08	.00185	S-I1123
R.7.T	T.1S10	.00074	T.1S14	.00068	S-I1124
R.7.T	T.2S01	.00699	T.2S02	.00527	S-I1125
R.7.T	T.2S05	.00532	T.2S06	.00543	S-I1126
R.7.T	T.2S08	.00486	T.2S10	.00433	S-I1127
R.7.T	T.2S12	.00382	T.2S13	.00351	S-I1128
R.7.T	T.2S15	.00173	T.3S04	.00354	S-I1129
R.7.T	T.3S08	.00272	T.3S09	.00259	S-I1130
R.7.T	T.4S01	.00274	T.4S03	.00417	S-I1131
R.7.T	T.4S04	.02938	T.4S05	.02650	S-I1132
R.7.T	T.4S06	.02512	T.4S07	.02384	S-I1133
R.7.T	T.5S02	.00227	T.5S03	.00190	S-I1134
R.7.T	T.6S01	.00196	T.6S04	.00206	S-I1135
R.7.T	T.6S05	.00150	T.7S03	.00162	S-I1136
R.7.T	T.8S01	.00130	T.1T02	.00648	S-I1137
R.7.T	T.1T04	.00455	T.1T06	.00345	S-I1138
R.7.T	T.1T08	.00301	T.1T10	.00276	S-I1139
R.7.T	T.2T04	.00428	T.2T07	.00277	S-I1140
R.7.T	T.2T08	.00233	T.0S25.T	.05275	S-I1141
R.7.T	T.0S30.T	.05476	T.0S36.T	.05479	S-I1142
R.7.T	T.0S43.T	.05290	T.0S50.T	.04986	S-I1143
R.7.T	T.0T25.T	.02651	T.0T30.T	.02071	S-I1144
R.7.T	T.0T36.T	.01565	T.0T43.T	.01153	S-I1145
R.7.T	T.0T51.T	.00833	T.0T56.T	.00688	S-I1146
R.7.T	T.0T61.T	.00572	R.15.TX	1.00000	S-I1147
R.7.T	R.11.TX	1.00000	MASS.T	.03001	S-I1148
R.11.T	MASS	.00387	MOMENT	.01484	S-I1149
R.11.T	T.0S0	.07761	T.1S0	.00238	S-I1150
R.11.T	T.2S0	.00218	T.3S0	.01536	S-I1151
R.11.T	T.4S0	.01038	T.0S02	.00053	S-I1152

R.11.T	T.0S03	.00038	T.0S04	.00305	S-I1153
R.11.T	T.0S06	.00298	T.0S09	.00469	S-I1154
R.11.T	T.0S12	.00558	T.0S15	.00593	S-I1155
R.11.T	T.0S18	.00619	T.0S21	.00630	S-I1156
R.11.T	T.0T03	.00124	T.0T05	.00095	S-I1157
R.11.T	T.0T08	.00753	T.0T11	.00615	S-I1158
R.11.T	T.0T14	.00505	T.0T18	.00390	S-I1159
R.11.T	T.0T21	.00321	T.1S01	.00104	S-I1160
R.11.T	T.1S02	.00102	T.1S04	.00686	S-I1161
R.11.T	T.1S07	.00323	T.1S08	.00229	S-I1162
R.11.T	T.1S10	.00088	T.1S14	.00064	S-I1163
R.11.T	T.2S01	.00847	T.2S02	.00617	S-I1164
R.11.T	T.2S05	.00589	T.2S06	.00595	S-I1165
R.11.T	T.2S08	.00521	T.2S10	.00445	S-I1166
R.11.T	T.2S12	.00371	T.2S13	.00329	S-I1167
R.11.T	T.2S15	.00148	T.3S04	.00290	S-I1168
R.11.T	T.3S08	.00184	T.3S09	.00170	S-I1169
R.11.T	T.4S01	.00290	T.4S03	.00340	S-I1170
R.11.T	T.4S04	.03007	T.4S05	.02734	S-I1171
R.11.T	T.4S06	.02557	T.4S07	.02359	S-I1172
R.11.T	T.5S02	.00167	T.5S03	.00119	S-I1173
R.11.T	T.5S01	.00198	T.6S04	.00101	S-I1174
R.11.T	T.6S05	.00101	T.7S03	.00136	S-I1175
R.11.T	T.8S01	.00112	T.1T02	.00691	S-I1176
R.11.T	T.1T04	.00455	T.1T06	.00310	S-I1177
R.11.T	T.1T08	.00233	T.1T10	.00177	S-I1178
R.11.T	T.2T04	.00279	T.2T07	.00136	S-I1179
R.11.T	T.2T08	.00096	T.0S25.T	.06164	S-I1180
R.11.T	T.0S30.T	.05614	T.0S36.T	.04630	S-I1181
R.11.T	T.0S43.T	.03343	T.0S50.T	.02123	S-I1182
R.11.T	T.0T25.T	.02505	T.0T30.T	.01857	S-I1183
R.11.T	T.0T36.T	.01322	T.0T43.T	.00909	S-I1184
R.11.T	T.0T51.T	.00608	T.0T56.T	.00478	S-I1185
R.11.T	T.0T61.T	.00378	R.11.TX -	1.00000	S-I1186
R.11.T	MASS.T	.03872	OBJX	1.00000	S-I1187
R.15.T	MASS	.00691	MOMENT	.02541	S-I1188

R.15.T	T.0S0	.13644	T.1S0	.00357	S-I1189
R.15.T	T.2S0	.00218	T.3S0	.00543	S-I1190
R.15.T	T.4S0	- .00729	T.0S02	.00090	S-I1191
R.15.T	T.0S03	.00067	T.0S04	.00541	S-I1192
R.15.T	T.0S05	.00530	T.0S09	.00788	S-I1193
R.15.T	T.0S12	.00846	T.0S15	.00763	S-I1194
R.15.T	T.0S18	.00629	T.0S21	.00463	S-I1195
R.15.T	T.0T03	.00177	T.0T05	.00120	S-I1196
R.15.T	T.0T08	.00760	T.0T11	.00464	S-I1197
R.15.T	T.0T14	.00258	T.0T18	.00081	S-I1198
R.15.T	T.0T21	- .00002	T.1S01	.00159	S-I1199
R.15.T	T.1S02	.00149	T.1S04	.00943	S-I1200
R.15.T	T.1S07	.00483	T.1S08	.00327	S-I1201
R.15.T	T.1S10	.00104	T.1S14	.00007	S-I1202
R.15.T	T.2S01	.01258	T.2S02	.00816	S-I1203
R.15.T	T.2S05	.00553	T.2S06	.00498	S-I1204
R.15.T	T.2S08	.00354	T.2S10	.00213	S-I1205
R.15.T	T.2S12	.00085	T.2S13	.00028	S-I1206
R.15.T	T.2S15	- .00042	T.3S04	- .00053	S-I1207
R.15.T	T.3S08	- .00187	T.3S09	- .00193	S-I1208
R.15.T	T.4S01	.00252	T.4S03	- .00096	S-I1209
R.15.T	T.4S04	.01571	T.4S05	.01368	S-I1210
R.15.T	T.4S06	.01011	T.4S07	.00681	S-I1211
R.15.T	T.5S02	- .00147	T.5S03	- .00197	S-I1212
R.15.T	T.6S01	.00102	T.6S04	- .00192	S-I1213
R.15.T	T.6S05	- .00068	T.7S03	- .00049	S-I1214
R.15.T	T.8S01	- .00029	T.1T02	.00609	S-I1215
R.15.T	T.1T04	.00250	T.1T06	.00007	S-I1216
R.15.T	T.1T08	- .00162	T.1T10	- .00287	S-I1217
R.15.T	T.2T04	- .00429	T.2T07	- .00420	S-I1218
R.15.T	T.2T08	- .00401	T.0S25.T	.02232	S-I1219
R.15.T	T.0S30.T	- .00496	T.0S36.T	- .02888	S-I1220
R.15.T	T.0S43.T	- .04415	T.0S50.T	- .04927	S-I1221
R.15.T	T.0T25.T	- .00693	T.0T30.T	- .01103	S-I1222
R.15.T	T.0T36.T	- .01263	T.0T43.T	- .01239	S-I1223
R.15.T	T.0T51.T	- .01113	T.0T56.T	- .01019	S-I1224

R.15.T	T.0T61.T	-	.00926	R.15.TX	-	1.00000	S-I1225
R.15.T	MASS.T		.06908				S-I1226
R.23.T	MASS		.00897	MOMENT		.03063	S-I1227
R.23.T	T.0S0		.16338	T.1S0		.00302	S-I1228
R.23.T	T.2S0	-	.00029	T.3S0	-	.02214	S-I1229
R.23.T	T.4S0	-	.02715	T.0S02		.00082	S-I1230
R.23.T	T.0S03		.00062	T.0S04		.00543	S-I1231
R.23.T	T.0S06		.00587	T.0S09		.00772	S-I1232
R.23.T	T.0S12		.00576	T.0S15		.00229	S-I1233
R.23.T	T.0S18	-	.00105	T.0S21	-	.00371	S-I1234
R.23.T	T.0T03		.00118	T.0T05		.00050	S-I1235
R.23.T	T.0T08	-	.00034	T.0T11	-	.00300	S-I1236
R.23.T	T.0T14	-	.00409	T.0T18	-	.00425	S-I1237
R.23.T	T.0T21	-	.00394	T.1S01		.00125	S-I1238
R.23.T	T.1S02		.00106	T.1S04		.00549	S-I1239
R.23.T	T.1S07		.00377	T.1S08		.00216	S-I1240
R.23.T	T.1S10		.00011	T.1S14	-	.00109	S-I1241
R.23.T	T.2S01		.01099	T.2S02		.00534	S-I1242
R.23.T	T.2S05	-	.00050	T.2S06	-	.00227	S-I1243
R.23.T	T.2S08	-	.00362	T.2S10	-	.00447	S-I1244
R.23.T	T.2S12	-	.00481	T.2S13	-	.00471	S-I1245
R.23.T	T.2S15	-	.00239	T.3S04	-	.00448	S-I1246
R.23.T	T.3S08	-	.00431	T.3S09	-	.00418	S-I1247
R.23.T	T.4S01	-	.00008	T.4S03	-	.00628	S-I1248
R.23.T	T.4S04	-	.02883	T.4S05	-	.02948	S-I1249
R.23.T	T.4S06	-	.03469	T.4S07	-	.03905	S-I1250
R.23.T	T.5S02	-	.00384	T.5S03	-	.00294	S-I1251
R.23.T	T.5S01	-	.00181	T.6S04	-	.00163	S-I1252
R.23.T	T.5S05	-	.00215	T.7S03	-	.00243	S-I1253
R.23.T	T.8S01	-	.00224	T.1T02	-	.00243	S-I1254
R.23.T	T.1T04	-	.00462	T.1T06	-	.00572	S-I1255
R.23.T	T.1T08	-	.00612	T.1T10	-	.00576	S-I1256
R.23.T	T.2T04	-	.00897	T.2T07	-	.00492	S-I1257
R.23.T	T.2T08	-	.00357	T.0S25.T	-	.05840	S-I1258
R.23.T	T.0S30.T	-	.06572	T.0S36.T	-	.05835	S-I1259
R.23.T	T.0S43.T	-	.04305	T.0S50.T	-	.02907	S-I1260

R.23.T	T.0T25.T	-	.03327	T.0T30.T	-	.02560	S-I1261
R.23.T	T.0T35.T	-	.01811	T.0T43.T	-	.01195	S-I1262
R.23.T	T.0T51.T	-	.00745	T.0T56.T	-	.00558	S-I1263
R.23.T	T.0T51.T	-	.00420	MASS.T		.08966	S-I1264
R.23.T	R.23.T.M	-	1.00000				S-I1265
R.34	R.39.34	-	1.00000	MASS		.03979	S-I1266
R.34	MOMENT		.12671	T.0S0		.66151	S-I1267
R.34	T.1S0		.00684	T.2S0	-	.01029	S-I1268
R.34	T.3S0	-	.13157	T.4S0	-	.06576	S-I1269
R.34	T.0S02		.00233	T.0S03		.00214	S-I1270
R.34	T.0S04		.02071	T.0S06		.02289	S-I1271
R.34	T.0S09		.02155	T.0S12		.00319	S-I1272
R.34	T.0S15	-	.01375	T.0S18	-	.02379	S-I1273
R.34	T.0S21	-	.02717	T.0T03		.00153	S-I1274
R.34	T.0T05	-	.00072	T.0T08	-	.02170	S-I1275
R.34	T.0T11	-	.02402	T.0T14	-	.02122	S-I1276
R.34	T.0T18	-	.01551	T.0T21	-	.01159	S-I1277
R.34	T.1S01		.00230	T.1S02		.00164	S-I1278
R.34	T.1S04		.00165	T.1S07		.00469	S-I1279
R.34	T.1S08	-	.00011	T.1S10	-	.00412	S-I1280
R.34	T.1S14	-	.00426	T.2S01		.03129	S-I1281
R.34	T.2S02		.00943	T.2S05	-	.01377	S-I1282
R.34	T.2S06	-	.02205	T.2S08	-	.02387	S-I1283
R.34	T.2S10	-	.02184	T.2S12	-	.01755	S-I1284
R.34	T.2S13	-	.01449	T.2S15	-	.00433	S-I1285
R.34	T.3S04	-	.01525	T.3S08	-	.01355	S-I1286
R.34	T.3S09	-	.01370	T.4S01	-	.00615	S-I1287
R.34	T.4S03	-	.02086	T.4S04	-	.19159	S-I1288
R.34	T.4S05	-	.18901	T.4S06	-	.19883	S-I1289
R.34	T.4S07	-	.20742	T.5S02	-	.00566	S-I1290
R.34	T.5S03		.00121	T.6S01	-	.01234	S-I1291
R.34	T.6S04	-	.00428	T.6S05	-	.00971	S-I1292
R.34	T.7S03	-	.00735	T.8S01	-	.00841	S-I1293
R.34	T.1T02	-	.03894	T.1T04	-	.03541	S-I1294
R.34	T.1T06	-	.02870	T.1T08	-	.02059	S-I1295
R.34	T.1T10	-	.01133	T.2T04	-	.01282	S-I1296

R.34	T.2T07	.00430	T.2T08	.00826	S-I1297
R.34	T.0S25.0 -	.02481	T.0S30.0 -	.01769	S-I1298
R.34	T.0S36.0 -	.00990	T.0S43.0 -	.00443	S-I1299
R.34	T.0S50.0 -	.00184	T.0T25.0 -	.00756	S-I1300
R.34	T.0T30.0 -	.00430	T.0T36.0 -	.00215	S-I1301
R.34	T.0T43.0 -	.00096	T.0T51.0 -	.00038	S-I1302
R.34	T.0T56.0 -	.00022	T.0T61.0 -	.00012	S-I1303
R.34	T.0S25.S -	.02481	T.0S30.S -	.01769	S-I1304
R.34	T.0S36.S -	.00990	T.0S43.S -	.00443	S-I1305
R.34	T.0S50.S -	.00184	T.0T25.S -	.00756	S-I1306
R.34	T.0T30.S -	.00430	T.0T36.S -	.00215	S-I1307
R.34	T.0T43.S -	.00096	T.0T51.S -	.00038	S-I1308
R.34	T.0T56.S -	.00022	T.0T61.S -	.00012	S-I1309
R.34	T.0S25.T -	.02481	T.0S30.T -	.01769	S-I1310
R.34	T.0S36.T -	.00990	T.0S43.T -	.00443	S-I1311
R.34	T.0S50.T -	.00184	T.0T25.T -	.00756	S-I1312
R.34	T.0T30.T -	.00430	T.0T36.T -	.00215	S-I1313
R.34	T.0T43.T -	.00096	T.0T51.T -	.00038	S-I1314
R.34	T.0T56.T -	.00022	T.0T61.T -	.00012	S-I1315
R.34	MASS.T	.03979	MASS.S	.03979	S-I1316
R.34	MASS.0	.03979	R.23.T.M	1.00000	S-I1317
R.34	R.23.S.M	1.00000			S-I1318
R.39	R.39.34	1.00000	R.44.39 -	1.00000	S-I1319
R.39	MASS	.09818	MOMENT	.28640	S-I1320
R.39	T.0S0	1.42755	T.1S0 -	.00516	S-I1321
R.39	T.2S0 -	.04038	T.3S0 -	.20950	S-I1322
R.39	T.4S0	.08969	T.0S02	.00351	S-I1323
R.39	T.0S03	.00471	T.0S04	.04336	S-I1324
R.39	T.0S06	.03627	T.0S09	.00131	S-I1325
R.39	T.0S12 -	.04595	T.0S15 -	.06351	S-I1326
R.39	T.0S18 -	.06105	T.0S21 -	.04955	S-I1327
R.39	T.0T03 -	.00252	T.0T05 -	.00557	S-I1328
R.39	T.0T08 -	.06205	T.0T11 -	.04909	S-I1329
R.39	T.0T14 -	.03406	T.0T18 -	.01909	S-I1330
R.39	T.0T21 -	.01197	T.1S01 -	.00143	S-I1331
R.39	T.1S02 -	.00186	T.1S04 -	.03955	S-I1332

R.39	T.1S07	-	.02955	T.1S08	-	.03054	S-I1333
R.39	T.1S10	-	.01966	T.1S14	-	.00405	S-I1334
R.39	T.2S01		.03642	T.2S02	-	.00345	S-I1335
R.39	T.2S05	-	.03607	T.2S06	-	.04712	S-I1336
R.39	T.2S08	-	.04162	T.2S10	-	.02887	S-I1337
R.39	T.2S12	-	.01503	T.2S13	-	.00850	S-I1338
R.39	T.2S15		.00044	T.3S04	-	.02155	S-I1339
R.39	T.3S08	-	.01627	T.3S09	-	.01455	S-I1340
R.39	T.4S01	-	.02535	T.4S03	-	.01609	S-I1341
R.39	T.4S04	-	.38843	T.4S05	-	.34954	S-I1342
R.39	T.4S06	-	.29004	T.4S07	-	.22253	S-I1343
R.39	T.5S02		.01623	T.5S03		.01961	S-I1344
R.39	T.6S01	-	.02963	T.6S04	-	.01282	S-I1345
R.39	T.6S05	-	.00237	T.7S03	-	.00796	S-I1346
R.39	T.8S01	-	.00529	T.1T02	-	.14459	S-I1347
R.39	T.1T04	-	.09418	T.1T06	-	.04905	S-I1348
R.39	T.1T08	-	.01440	T.1T10		.00952	S-I1349
R.39	T.2T04		.04450	T.2T07		.04154	S-I1350
R.39	T.2T08		.03541	T.0S25.0	-	.03222	S-I1351
R.39	T.0S30.0	-	.01633	T.0S36.0	-	.00648	S-I1352
R.39	T.0S43.0	-	.00205	T.0S50.0	-	.00063	S-I1353
R.39	T.0T25.0	-	.00634	T.0T30.0	-	.00284	S-I1354
R.39	T.0T36.0	-	.00110	T.0T43.0	-	.00037	S-I1355
R.39	T.0T51.0	-	.00011	T.0T56.0	-	.00005	S-I1356
R.39	T.0T61.0	-	.00003	T.0S25.S	-	.03222	S-I1357
R.39	T.0S30.S	-	.01633	T.0S36.S	-	.00648	S-I1358
R.39	T.0S43.S	-	.00205	T.0S50.S	-	.00063	S-I1359
R.39	T.0T25.S	-	.00634	T.0T30.S	-	.00284	S-I1360
R.39	T.0T36.S	-	.00110	T.0T43.S	-	.00037	S-I1361
R.39	T.0T51.S	-	.00011	T.0T56.S	-	.00005	S-I1362
R.39	T.0T61.S	-	.00003	T.0S25.T	-	.03222	S-I1363
R.39	T.0S30.T	-	.01633	T.0S36.T	-	.00648	S-I1364
R.39	T.0S43.T	-	.00205	T.0S50.T	-	.00063	S-I1365
R.39	T.0T25.T	-	.00634	T.0T30.T	-	.00284	S-I1366
R.39	T.0T36.T	-	.00110	T.0T43.T	-	.00037	S-I1367
R.39	T.0T51.T	-	.00011	T.0T56.T	-	.00005	S-I1368

R.39	T.0T51.T	-	.00003	MASS.T		.09818	S-I 1369
R.39	MASS.S		.09818	MASS.0		.09818	S-I 1370
R.44	R.44.39		1.00000	R.48.44	-	1.00000	S-I 1371
R.44	MASS		.15653	MOMENT		.38137	S-I 1372
R.44	T.0S0		1.46402	T.1S0	-	.06690	S-I 1373
R.44	T.2S0	-	.03779	T.3S0		.26104	S-I 1374
R.44	T.4S0		.12798	T.0S02	-	.00571	S-I 1375
R.44	T.0S03		.00008	T.0S04	-	.01644	S-I 1376
R.44	T.0S06	-	.04725	T.0S09	-	.10019	S-I 1377
R.44	T.0S12	-	.10258	T.0S15	-	.07049	S-I 1378
R.44	T.0S18	-	.04177	T.0S21	-	.02274	S-I 1379
R.44	T.0T03	-	.01439	T.0T05	-	.01163	S-I 1380
R.44	T.0T08	-	.06956	T.0T11	-	.03564	S-I 1381
R.44	T.0T14	-	.01722	T.0T18	-	.00636	S-I 1382
R.44	T.0T21	-	.00303	T.1S01	-	.02190	S-I 1383
R.44	T.1S02	-	.01446	T.1S04	-	.12659	S-I 1384
R.44	T.1S07	-	.13313	T.1S08	-	.10525	S-I 1385
R.44	T.1S10	-	.04792	T.1S14	-	.00586	S-I 1386
R.44	T.2S01	-	.02818	T.2S02	-	.06116	S-I 1387
R.44	T.2S05	-	.07010	T.2S06	-	.04773	S-I 1388
R.44	T.2S08	-	.02471	T.2S10	-	.01043	S-I 1389
R.44	T.2S12	-	.00313	T.2S13	-	.00212	S-I 1390
R.44	T.2S15	-	.00701	T.3S04	-	.00901	S-I 1391
R.44	T.3S08		.04991	T.3S09		.05548	S-I 1392
R.44	T.4S01	-	.06792	T.4S03		.00616	S-I 1393
R.44	T.4S04		.04986	T.4S05		.11585	S-I 1394
R.44	T.4S06		.23581	T.4S07		.32789	S-I 1395
R.44	T.5S02	-	.00548	T.5S03	-	.02008	S-I 1396
R.44	T.6S01	-	.00449	T.6S04		.02617	S-I 1397
R.44	T.6S05		.01623	T.7S03		.01590	S-I 1398
R.44	T.8S01		.02356	T.1T02	-	.18390	S-I 1399
R.44	T.1T04	-	.05630	T.1T06		.01630	S-I 1400
R.44	T.1T08		.04092	T.1T10		.03775	S-I 1401
R.44	T.2T04		.02225	T.2T07	-	.01936	S-I 1402
R.44	T.2T08	-	.02713	T.0S25.0	-	.00929	S-I 1403
R.44	T.0S30.0	-	.00278	T.0S36.0	-	.00058	S-I 1404

R.44	T.0S43.0	-	.00006	T.0S50.0		.00001	S-I 1405
R.44	T.0T25.0	-	.00115	T.0T30.0	-	.00035	S-I 1406
R.44	T.0T36.0	-	.00009	T.0T43.0	-	.00002	S-I 1407
R.44	T.0T51.0	-	.00000	T.0T56.0	-	.00000	S-I 1408
R.44	T.0T61.0	-	.00000	T.0S25.S	-	.00929	S-I 1409
R.44	T.0S30.S	-	.00278	T.0S36.S	-	.00058	S-I 1410
R.44	T.0S43.S	-	.00006	T.0S50.S		.00001	S-I 1411
R.44	T.0T25.S	-	.00115	T.0T30.S	-	.00035	S-I 1412
R.44	T.0T36.S	-	.00009	T.0T43.S	-	.00002	S-I 1413
R.44	T.0T51.S	-	.00000	T.0T56.S	-	.00000	S-I 1414
R.44	T.0T61.S	-	.00000	T.0S25.T	-	.00929	S-I 1415
R.44	T.0S30.T	-	.00278	T.0S36.T	-	.00058	S-I 1416
R.44	T.0S43.T	-	.00006	T.0S50.T		.00001	S-I 1417
R.44	T.0T25.T	-	.00115	T.0T30.T	-	.00035	S-I 1418
R.44	T.0T36.T	-	.00009	T.0T43.T	-	.00002	S-I 1419
R.44	T.0T51.T	-	.00000	T.0T56.T	-	.00000	S-I 1420
R.44	T.0T61.T	-	.00000	MASS.T		.15653	S-I 1421
R.44	MASS.S		.15653	MASS.0		.15653	S-I 1422
R.48	R.48.44		1.00000	R.58.48	-	1.00000	S-I 1423
R.48	MASS		.13699	MOMENT		.25112	S-I 1424
R.48	T.0S0		.09431	T.1S0	-	.07724	S-I 1425
R.48	T.2S0		.05104	T.3S0		.03393	S-I 1426
R.48	T.4S0	-	.14834	T.0S02	-	.03636	S-I 1427
R.48	T.0S03	-	.02152	T.0S04	-	.17630	S-I 1428
R.48	T.0S06	-	.14418	T.0S09	-	.08780	S-I 1429
R.48	T.0S12	-	.03425	T.0S15	-	.01109	S-I 1430
R.48	T.0S18	-	.00295	T.0S21	-	.00043	S-I 1431
R.48	T.0T03	-	.01730	T.0T05	-	.00762	S-I 1432
R.48	T.0T08	-	.02177	T.0T11	-	.00592	S-I 1433
R.48	T.0T14	-	.00160	T.0T18	-	.00029	S-I 1434
R.48	T.0T21	-	.00008	T.1S01	-	.04623	S-I 1435
R.48	T.1S02	-	.01894	T.1S04	-	.09931	S-I 1436
R.48	T.1S07	-	.11504	T.1S08	-	.10031	S-I 1437
R.48	T.1S10	-	.08608	T.1S14	-	.05911	S-I 1438
R.48	T.2S01	-	.08779	T.2S02	-	.13587	S-I 1439
R.48	T.2S05	-	.08973	T.2S06	-	.03970	S-I 1440

R.48	T.2S08	-	.01622	T.2S10	-	.01260	S-I1441
R.48	T.2S12	-	.01332	T.2S13	-	.01523	S-I1442
R.48	T.2S15	-	.03973	T.3S04		.03568	S-I1443
R.48	T.3S08	-	.00033	T.3S09	-	.00793	S-I1444
R.48	T.4S01	-	.01689	T.4S03		.02480	S-I1445
R.48	T.4S04		.20880	T.4S05		.14655	S-I1446
R.48	T.4S06		.06749	T.4S07	-	.00620	S-I1447
R.48	T.5S02	-	.02045	T.5S03		.00414	S-I1448
R.48	T.6S01		.04374	T.6S04	-	.03120	S-I1449
R.48	T.6S05	-	.01348	T.7S03		.00417	S-I1450
R.48	T.8S01	-	.01753	T.1T02		.09831	S-I1451
R.48	T.1T04		.07725	T.1T06		.04285	S-I1452
R.48	T.1T08		.01365	T.1T10	-	.00249	S-I1453
R.48	T.2T04	-	.05075	T.2T07	-	.01200	S-I1454
R.48	T.2T08	-	.00065	T.0S25.0		.00028	S-I1455
R.48	T.0S30.0		.00027	T.0S36.0		.00015	S-I1456
R.48	T.0S43.0		.00007	T.0S50.0		.00003	S-I1457
R.48	T.0T25.0	-	.00002	T.0T30.0	-	.00000	S-I1458
R.48	T.0T35.0	-	.00000	T.0S25.S		.00028	S-I1459
R.48	T.0S30.S		.00027	T.0S36.S		.00015	S-I1460
R.48	T.0S43.S		.00007	T.0S50.S		.00003	S-I1461
R.48	T.0T25.S	-	.00002	T.0T30.S	-	.00000	S-I1462
R.48	T.0T35.S	-	.00000	T.0S25.T		.00028	S-I1463
R.48	T.0S30.T		.00027	T.0S36.T		.00015	S-I1464
R.48	T.0S43.T		.00007	T.0S50.T		.00003	S-I1465
R.48	T.0T25.T	-	.00002	T.0T30.T	-	.00000	S-I1466
R.48	T.0T35.T	-	.00000	MASS.T		.13699	S-I1467
R.48	MASS.S		.13699	MASS.0		.13699	S-I1468
R.58	R.58.48		1.00000	MASS		.05028	S-I1469
R.58	MOMENT		.07016	T.0S0	-	.35282	S-I1470
R.58	T.1S0	-	.01590	T.2S0		.02473	S-I1471
R.58	T.3S0	-	.20755	T.4S0		.13909	S-I1472
R.58	T.0S02	-	.03367	T.0S03	-	.02345	S-I1473
R.58	T.0S04	-	.15652	T.0S06	-	.07382	S-I1474
R.58	T.0S09	-	.01960	T.0S12	-	.00182	S-I1475
R.58	T.0S15		.00037	T.0S18		.00044	S-I1476

R.58	T.0S21		.00033	T.0T03	-	.00667	S-I 1477
R.58	T.0T05	-	.00176	T.0T08	-	.00207	S-I 1478
R.58	T.0T11	-	.00022	T.0T14	-	.00002	S-I 1479
R.58	T.0T18	-	.00000	T.1S01	-	.02837	S-I 1480
R.58	T.1S02	-	.00752	T.1S04	-	.01900	S-I 1481
R.58	T.1S07	-	.01034	T.1S08	-	.01525	S-I 1482
R.58	T.1S10	-	.03045	T.1S14	-	.03702	S-I 1483
R.58	T.2S01	-	.06103	T.2S02	-	.09165	S-I 1484
R.58	T.2S05	-	.02196	T.2S06	-	.00833	S-I 1485
R.58	T.2S08	-	.00385	T.2S10	-	.00332	S-I 1486
R.58	T.2S12	-	.00380	T.2S13	-	.00497	S-I 1487
R.58	T.2S15	-	.02383	T.3S04	-	.00589	S-I 1488
R.58	T.3S08	-	.03351	T.3S09	-	.02791	S-I 1489
R.58	T.4S01		.04021	T.4S03		.01675	S-I 1490
R.58	T.4S04	-	.03893	T.4S05	-	.04764	S-I 1491
R.58	T.4S06	-	.05165	T.4S07	-	.04921	S-I 1492
R.58	T.5S02		.02048	T.5S03		.02066	S-I 1493
R.58	T.6S01		.00134	T.6S04		.02040	S-I 1494
R.58	T.6S05		.01602	T.7S03	-	.01675	S-I 1495
R.58	T.8S01	-	.00649	T.1T02		.09394	S-I 1496
R.58	T.1T04		.02990	T.1T06	-	.00050	S-I 1497
R.58	T.1T08	-	.00672	T.1T10	-	.00466	S-I 1498
R.58	T.2T04		.03954	T.2T07		.02002	S-I 1499
R.58	T.2T08		.01323	T.0S25.0		.00020	S-I 1500
R.58	T.0S30.0		.00011	T.0S36.0		.00005	S-I 1501
R.58	T.0S43.0		.00002	T.0S50.0		.00001	S-I 1502
R.58	T.0S25.S		.00020	T.0S30.S		.00011	S-I 1503
R.58	T.0S36.S		.00005	T.0S43.S		.00002	S-I 1504
R.58	T.0S50.S		.00001	T.0S25.T		.00020	S-I 1505
R.58	T.0S30.T		.00011	T.0S36.T		.00005	S-I 1506
R.58	T.0S43.T		.00002	T.0S50.T		.00001	S-I 1507
R.58	MASS.T		.05028	MASS.S		.05028	S-I 1508
R.58	MASS.0		.05028				S-I 1509
R.59	MASS		.13308	MOMENT		.10044	S-I 1510
R.59	T.0S0	-	.74966	T.1S0		.11159	S-I 1511
R.59	T.2S0		.01010	T.3S0		.22324	S-I 1512

R.59	T.4S0	-	.00738	T.0S02	-	.02118	S-I1513
R.59	T.0S03	-	.00502	T.0S04		.02085	S-I1514
R.59	T.0S06		.03664	T.0S09		.01131	S-I1515
R.59	T.0S12		.00335	T.0S15		.00196	S-I1516
R.59	T.0S18		.00129	T.0S21		.00088	S-I1517
R.59	T.1S01		.02419	T.1S02		.00296	S-I1518
R.59	T.1S04		.00503	T.1S07		.06247	S-I1519
R.59	T.1S08		.06680	T.1S10		.06705	S-I1520
R.59	T.1S14		.04727	T.2S01	-	.03114	S-I1521
R.59	T.2S02		.06469	T.2S05		.05024	S-I1522
R.59	T.2S06		.01927	T.2S08		.00417	S-I1523
R.59	T.2S10		.00258	T.2S12		.00354	S-I1524
R.59	T.2S13		.00540	T.2S15		.02952	S-I1525
R.59	T.3S04	-	.00249	T.3S08		.01152	S-I1526
R.59	T.3S09		.01036	T.4S01		.01014	S-I1527
R.59	T.4S03	-	.01015	T.4S04	-	.00211	S-I1528
R.59	T.4S05	-	.00203	T.4S06	-	.00247	S-I1529
R.59	T.4S07		.00030	T.5S02		.00515	S-I1530
R.59	T.5S03	-	.00280	T.6S01	-	.00953	S-I1531
R.59	T.5S04		.00053	T.6S05	-	.00228	S-I1532
R.59	T.7S03		.00615	T.8S01		.01546	S-I1533
R.59	T.0S25.0		.00053	T.0S30.0		.00029	S-I1534
R.59	T.0S36.0		.00014	T.0S43.0		.00006	S-I1535
R.59	T.0S50.0		.00002	T.0S25.S		.00053	S-I1536
R.59	T.0S30.S		.00029	T.0S36.S		.00014	S-I1537
R.59	T.0S43.S		.00006	T.0S50.S		.00002	S-I1538
R.59	T.0S25.T		.00053	T.0S30.T		.00029	S-I1539
R.59	T.0S36.T		.00014	T.0S43.T		.00006	S-I1540
R.59	T.0S50.T		.00002	MASS.T		.13308	S-I1541
R.59	MASS.S		.13308	MASS.0		.13308	S-I1542
R.81	MASS		.00656	MOMENT		.00062	S-I1543
R.81	T.0S0	-	.14117	T.1S0	-	.03776	S-I1544
R.81	T.2S0	-	.02277	T.3S0	-	.11875	S-I1545
R.81	T.4S0	-	.00535	T.0S02	-	.00343	S-I1546
R.81	T.0S03	-	.00105	T.0S04	-	.00428	S-I1547
R.81	T.0S06	-	.00098	T.0S09		.00009	S-I1548

R.81	T.0S12		.00014	T.0S15		.00009	S-I 1549
R.81	T.0S18		.00006	T.0S21		.00004	S-I 1550
R.81	T.1S01		.00164	T.1S02	-	.00036	S-I 1551
R.81	T.1S04	-	.00075	T.1S07	-	.00090	S-I 1552
R.81	T.1S08	-	.00088	T.1S10	-	.00073	S-I 1553
R.81	T.1S14	-	.00035	T.2S01		.01315	S-I 1554
R.81	T.2S02	-	.00539	T.2S05	-	.00044	S-I 1555
R.81	T.2S06	-	.00025	T.2S08	-	.00017	S-I 1556
R.81	T.2S10	-	.00014	T.2S12	-	.00012	S-I 1557
R.81	T.2S13	-	.00011	T.2S15	-	.00022	S-I 1558
R.81	T.3S04	-	.00011	T.3S08	-	.00004	S-I 1559
R.81	T.3S09	-	.00003	T.4S01		.00708	S-I 1560
R.81	T.4S03		.00010	T.4S04		.00022	S-I 1561
R.81	T.4S05	-	.00006	T.4S06	-	.00018	S-I 1562
R.81	T.4S07	-	.00019	T.5S02		.00329	S-I 1563
R.81	T.5S03		.00082	T.6S01	-	.00022	S-I 1564
R.81	T.6S04		.00005	T.6S05		.00004	S-I 1565
R.81	T.7S03		.00142	T.8S01	-	.00533	S-I 1566
R.81	T.0S25.0		.00002	T.0S30.0		.00001	S-I 1567
R.81	T.0S36.0		.00000	T.0S43.0		.00000	S-I 1568
R.81	T.0S25.S		.00002	T.0S30.S		.00001	S-I 1569
R.81	T.0S36.S		.00000	T.0S43.S		.00000	S-I 1570
R.81	T.0S25.T		.00002	T.0S30.T		.00001	S-I 1571
R.81	T.0S36.T		.00000	T.0S43.T		.00000	S-I 1572
R.81	MASS.T		.00656	MASS.S		.00656	S-I 1573
R.81	MASS.0		.00656				S-I 1574
A.59	T.0S0	-	1.46881	T.1S0	-	.01572	S-I 1575
A.59	T.2S0	-	.03702	T.3S0	-	.16259	S-I 1576
A.59	T.4S0	-	.17827	T.0S02	-	.00001	S-I 1577
A.59	T.0S03	-	.00011	T.0S04	-	.00321	S-I 1578
A.59	T.0S05	-	.00507	T.0S09	-	.00137	S-I 1579
A.59	T.0S12	-	.00007	T.0S15	-	.00000	S-I 1580
A.59	T.1S01	-	.00552	T.1S02	-	.00117	S-I 1581
A.59	T.1S04	-	.00670	T.1S07	-	.02348	S-I 1582
A.59	T.1S08	-	.02369	T.1S10	-	.02378	S-I 1583
A.59	T.1S14	-	.01894	T.2S01	-	.15547	S-I 1584

A.59	T.2S02	-	.11141	T.2S05	-	.02775	S-I1585
A.59	T.2S06	-	.01067	T.2S08	-	.00329	S-I1586
A.59	T.2S10	-	.00224	T.2S12	-	.00236	S-I1587
A.59	T.2S13	-	.00301	T.2S15	-	.01286	S-I1588
A.59	T.3S04	-	.03364	T.3S08	-	.01671	S-I1589
A.59	T.3S09	-	.01210	T.4S01	-	.00570	S-I1590
A.59	T.4S03	-	.03455	T.4S04	-	.08109	S-I1591
A.59	T.4S05	-	.03673	T.4S06	-	.03016	S-I1592
A.59	T.4S07	-	.04508	T.5S02	-	.00692	S-I1593
A.59	T.5S03	-	.01857	T.6S01	-	.04165	S-I1594
A.59	T.6S04	-	.00257	T.6S05	-	.01318	S-I1595
A.59	T.7S03	-	.01434	T.8S01	-	.00514	S-I1596
A.66	T.0S0	-	2.21709	T.1S0	-	.00939	S-I1597
A.66	T.2S0	-	.06938	T.3S0	-	.13802	S-I1598
A.66	T.4S0	-	.34893	T.0S02	-	.00001	S-I1599
A.66	T.0S03	-	.00007	T.0S04	-	.00177	S-I1600
A.66	T.0S06	-	.00220	T.0S09	-	.00043	S-I1601
A.66	T.0S12	-	.00002	T.0S15	-	.00000	S-I1602
A.66	T.1S01	-	.00530	T.1S02	-	.00099	S-I1603
A.66	T.1S04	-	.00410	T.1S07	-	.00963	S-I1604
A.66	T.1S08	-	.00864	T.1S10	-	.00710	S-I1605
A.66	T.1S14	-	.00412	T.2S01	-	.17375	S-I1606
A.66	T.2S02	-	.09736	T.2S05	-	.01522	S-I1607
A.66	T.2S06	-	.00512	T.2S08	-	.00125	S-I1608
A.66	T.2S10	-	.00069	T.2S12	-	.00061	S-I1609
A.66	T.2S13	-	.00072	T.2S15	-	.00263	S-I1610
A.66	T.3S04	-	.03027	T.3S08	-	.00747	S-I1611
A.66	T.3S09	-	.00474	T.4S01	-	.04290	S-I1612
A.66	T.4S03	-	.04144	T.4S04	-	.07727	S-I1613
A.66	T.4S05	-	.03091	T.4S06	-	.02240	S-I1614
A.66	T.4S07	-	.02943	T.5S02	-	.04515	S-I1615
A.66	T.5S03	-	.06326	T.6S01	-	.03503	S-I1616
A.66	T.6S04	-	.01163	T.6S05	-	.03203	S-I1617
A.66	T.7S03	-	.01290	T.8S01	-	.03451	S-I1618
A.68	T.0S0	-	2.93744	T.1S0	-	.14931	S-I1619
A.68	T.2S0	-	.03806	T.3S0	-	.63792	S-I1620

A.68	T.4S0	-	.34081	T.0S02	-	.00002	S-I1621
A.68	T.0S03	-	.00002	T.0S04	-	.00025	S-I1622
A.68	T.0S06	-	.00016	T.0S09	-	.00001	S-I1623
A.68	T.0S12	-	.00000	T.1S01	-	.00289	S-I1624
A.68	T.1S02	-	.00045	T.1S04	-	.00070	S-I1625
A.68	T.1S07	-	.00056	T.1S08	-	.00036	S-I1626
A.68	T.1S10	-	.00015	T.1S14	-	.00002	S-I1627
A.68	T.2S01	-	.12022	T.2S02	-	.03544	S-I1628
A.68	T.2S05	-	.00192	T.2S06	-	.00045	S-I1629
A.68	T.2S08	-	.00006	T.2S10	-	.00002	S-I1630
A.68	T.2S12	-	.00001	T.2S13	-	.00001	S-I1631
A.68	T.2S15	-	.00001	T.3S04	-	.00929	S-I1632
A.68	T.3S08	-	.00047	T.3S09	-	.00021	S-I1633
A.68	T.4S01	-	.14404	T.4S03	-	.02127	S-I1634
A.68	T.4S04	-	.02551	T.4S05	-	.00753	S-I1635
A.68	T.4S06	-	.00404	T.4S07	-	.00390	S-I1636
A.68	T.5S02	-	.10330	T.5S03	-	.08279	S-I1637
A.68	T.6S01	-	.04146	T.6S04	-	.01476	S-I1638
A.68	T.6S05	-	.02217	T.7S03	-	.07867	S-I1639
A.68	T.8S01	-	.04506				S-I1640
A.80	T.0S0	-	1.08697	T.1S0	-	.12375	S-I1641
A.80	T.2S0	-	.02782	T.3S0	-	.13722	S-I1642
A.80	T.4S0	-	.18335	T.0S02	-	.00004	S-I1643
A.80	T.0S03	-	.00000	T.0S04	-	.00001	S-I1644
A.80	T.0S06	-	.00000	T.0S09	-	.00000	S-I1645
A.80	T.1S01	-	.00051	T.1S02	-	.00010	S-I1646
A.80	T.1S04	-	.00003	T.1S07	-	.00001	S-I1647
A.80	T.1S08	-	.00000	T.1S10	-	.00000	S-I1648
A.80	T.1S14	-	.00000	T.2S01	-	.02432	S-I1649
A.80	T.2S02	-	.00278	T.2S05	-	.00007	S-I1650
A.80	T.2S06	-	.00001	T.2S08	-	.00000	S-I1651
A.80	T.2S10	-	.00000	T.2S12	-	.00000	S-I1652
A.80	T.2S13	-	.00000	T.2S15	-	.00000	S-I1653
A.80	T.3S04	-	.00059	T.3S08	-	.00001	S-I1654
A.80	T.3S09	-	.00000	T.4S01	-	.05642	S-I1655
A.80	T.4S03	-	.00218	T.4S04	-	.00171	S-I1656

A.80	T.4S05	-	.00036	T.4S06	-	.00014	S-I1657
A.80	T.4S07	-	.00010	T.5S02	-	.02539	S-I1658
A.80	T.5S03	-	.01437	T.6S01	-	.04776	S-I1659
A.80	T.6S04	-	.00207	T.6S05	-	.00188	S-I1660
A.80	T.7S03	-	.02237	T.8S01	-	.03106	S-I1661
RADIUS	MASS		.00038	MOMENT		.00060	S-I1662
RADIUS	T.0S0		.01022	T.1S0		.00083	S-I1663
RADIUS	T.2S0		.00032	T.3S0		.00256	S-I1664
RADIUS	T.4S0		.00226	T.0S02		.00072	S-I1665
RADIUS	T.0S03		.00066	T.0S04		.00517	S-I1666
RADIUS	T.0S06		.00267	T.0S09		.00063	S-I1667
RADIUS	T.0S12		.00006	T.0S15		.00001	S-I1668
RADIUS	T.0S18		.00000	T.0S21		.00000	S-I1669
RADIUS	T.0T03		.00009	T.0T05		.00002	S-I1670
RADIUS	T.0T08		.00002	T.0T11		.00000	S-I1671
RADIUS	T.1S01		.00042	T.1S02		.00006	S-I1672
RADIUS	T.1S04	-	.00010	T.1S07		.00021	S-I1673
RADIUS	T.1S08		.00063	T.1S10		.00111	S-I1674
RADIUS	T.1S14		.00107	T.2S01	-	.00071	S-I1675
RADIUS	T.2S02	-	.00031	T.2S05	-	.00025	S-I1676
RADIUS	T.2S06	-	.00010	T.2S08	-	.00004	S-I1677
RADIUS	T.2S10	-	.00003	T.2S12	-	.00003	S-I1678
RADIUS	T.2S13	-	.00005	T.2S15		.00025	S-I1679
RADIUS	T.3S04	-	.00051	T.3S08	-	.00030	S-I1680
RADIUS	T.3S09	-	.00020	T.4S01		.00011	S-I1681
RADIUS	T.4S03	-	.00065	T.4S04		.00162	S-I1682
RADIUS	T.4S05		.00127	T.4S06		.00067	S-I1683
RADIUS	T.4S07	-	.00008	T.5S02		.00028	S-I1684
RADIUS	T.5S03		.00030	T.6S01		.00019	S-I1685
RADIUS	T.6S04	-	.00029	T.6S05		.00011	S-I1686
RADIUS	T.7S03		.00018	T.8S01		.00027	S-I1687
RADIUS	T.1T02	-	.00120	T.1T04	-	.00024	S-I1688
RADIUS	T.1T06		.00012	T.1T08		.00012	S-I1689
RADIUS	T.1T10		.00006	T.2T04	-	.00070	S-I1690
RADIUS	T.2T07	-	.00020	T.2T08	-	.00008	S-I1691
RADIUS	T.0S25.0		.00000	T.0S30.0		.00000	S-I1692

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    RADIJS    T.0S36.0        .00000   T.0S43.0        .00000   S-I1693
    RADIUS    T.0S50.0        .00000   T.0S25.S        .00000   S-I1694
    RADIJS    T.0S30.S        .00000   T.0S36.S        .00000   S-I1695
    RADIJS    T.0S43.S        .00000   T.0S50.S        .00000   S-I1696
    RADIJS    T.0S25.T        .00000   T.0S30.T        .00000   S-I1697
    RADIJS    T.0S36.T        .00000   T.0S43.T        .00000   S-I1698
    RADIJS    T.0S50.T        .00000   MASS.T          .00038   S-I1699
    RADIJS    MASS.S          .00038   MASS.0          .00038   S-I1700
RHS                                                             S-I1701
    MINIMUM   R.39.34         .08000   R.44.39         .15000   S-I1702
    MINIMUM   R.48.44         .21000   R.58.48         .14000   S-I1703
    MINIMUM   MASS           4.59488   MOMENT          9.42674   S-I1704
    MINIMUM   T.0S0          3.32753   T.1S0     -     2.41223   S-I1705
    MINIMUM   T.2S0     -    1.41120   T.3S0     -     8.59515   S-I1706
    MINIMUM   T.4S0     -    9.25857   T.0S02    -     2.00367   S-I1707
    MINIMUM   T.0S03    -    1.30323   T.0S04    -     9.82957   S-I1708
    MINIMUM   T.0S06    -    6.38058   T.0S09    -     4.02875   S-I1709
    MINIMUM   T.0S12    -    3.20660   T.0S15    -     2.78295   S-I1710
    MINIMUM   T.0S18    -    2.50127   T.0S21    -     2.29570   S-I1711
    MINIMUM   T.0T03    -    1.69412   T.0T05    -     1.07259   S-I1712
    MINIMUM   T.0T08    -    7.32645   T.0T11    -     5.70956   S-I1713
    MINIMUM   T.0T14    -    4.73132   T.0T18    -     3.87265   S-I1714
    MINIMUM   T.0T21    -    3.41632   T.1S01    -     1.46438   S-I1715
    MINIMUM   T.1S02    -    1.02266   T.1S04    -     7.61124   S-I1716
    MINIMUM   T.1S07    -    5.02641   T.1S08    -     4.53598   S-I1717
    MINIMUM   T.1S10    -    3.79821   T.1S14    -     2.74372   S-I1718
    MINIMUM   T.2S01    -    3.64808   T.2S02    -     5.23511   S-I1719
    MINIMUM   T.2S05    -    3.21744   T.2S06    -     3.50423   S-I1720
    MINIMUM   T.2S08    -    3.59774   T.2S10    -     3.31885   S-I1721
    MINIMUM   T.2S12    -    3.02517   T.2S13    -     2.88245   S-I1722
    MINIMUM   T.2S15    -    2.50425   T.3S04    -     3.70497   S-I1723
    MINIMUM   T.3S08    -    3.06946   T.3S09    -     2.88193   S-I1724
    MINIMUM   T.4S01    -    3.13709   T.4S03    -     4.08752   S-I1725
    MINIMUM   T.4S04    -    8.75843   T.4S05    -     5.44308   S-I1726
    MINIMUM   T.4S06    -    4.98104   T.4S07    -     6.71763   S-I1727
    MINIMUM   T.5S02    -    3.27487   T.5S03    -     2.94334   S-I1728
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    MINIMUM   T.6S01   -   1.56054   T.6S04   -   2.12913   S-I1729
    MINIMUM   T.5S05   -   1.66952   T.7S03   -   1.29449   S-I1730
    MINIMUM   T.8S01   -   1.17610   T.1T02   -   7.59309   S-I1731
    MINIMUM   T.1T04   -   6.27948   T.1T06   -   5.14726   S-I1732
    MINIMUM   T.1T08   -   4.34069   T.1T10   -   3.77958   S-I1733
    MINIMUM   T.2T04   -   4.13897   T.2T07   -   3.58212   S-I1734
    MINIMUM   T.2T08   -   3.38910   T.0S25.0 -   2.08876   S-I1735
    MINIMUM   T.0S30.0 -   1.89686   T.0S36.0 -   1.71880   S-I1736
    MINIMUM   T.0S43.0 -   1.54812   T.0S50.0 -   1.40384   S-I1737
    MINIMUM   T.0T25.0 -   2.97816   T.0T30.0 -   2.55992   S-I1738
    MINIMUM   T.0T36.0 -   2.19297   T.0T43.0 -   1.88354   S-I1739
    MINIMUM   T.0T51.0 -   1.61876   T.0T56.0 -   1.48858   S-I1740
    MINIMUM   T.0T61.0 -   1.37942   T.0S25.S -   2.11171   S-I1741
    MINIMUM   T.0S30.S -   1.92323   T.0S36.S -   1.74768   S-I1742
    MINIMUM   T.0S43.S -   1.58114   T.0S50.S -   1.44207   S-I1743
    MINIMUM   T.0T25.S -   2.91168   T.0T30.S -   2.48853   S-I1744
    MINIMUM   T.0T36.S -   2.12147   T.0T43.S -   1.80221   S-I1745
    MINIMUM   T.0T51.S -   1.53695   T.0T56.S -   1.40579   S-I1746
    MINIMUM   T.0T61.S -   1.29258   T.0S25.T -   2.10350   S-I1747
    MINIMUM   T.0S30.T -   1.92147   T.0S36.T -   1.75759   S-I1748
    MINIMUM   T.0S43.T -   1.58905   T.0S50.T -   1.44441   S-I1749
    MINIMUM   T.0T25.T -   2.85440   T.0T30.T -   2.43467   S-I1750
    MINIMUM   T.0T36.T -   2.07517   T.0T43.T -   1.75626   S-I1751
    MINIMUM   T.0T51.T -   1.49276   T.0T56.T -   1.36778   S-I1752
    MINIMUM   T.0T61.T -   1.25905   MASS.T       4.57577   S-I1753
    MINIMUM   MASS.S       4.57534   MASS.0       4.60328   S-I1754
RANGES                                                      S-I1755
    SIGMA     R.39.34      .18000    R.44.39      .30000    S-I1756
    SIGMA     R.48.44      .44000    R.58.48      .26000    S-I1757
    SIGMA     T.0S0        .48001    T.1S0        .02400    S-I1758
    SIGMA     T.2S0        .01600    T.3S0        .12200    S-I1759
    SIGMA     T.4S0        .09600    T.0S02       .00800    S-I1760
    SIGMA     T.0S03       .00860    T.0S04       .06200    S-I1761
    SIGMA     T.0S06       .04000    T.0S09       .02520    S-I1762
    SIGMA     T.0S12       .02000    T.0S15       .01700    S-I1763
    SIGMA     T.0S18       .01300    T.0S21       .01340    S-I1764
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SIGMA    T.0T03      .00680    T.0T05      .00428    S-I1765
SIGMA    T.0T08      .02960    T.0T11      .02100    S-I1766
SIGMA    T.0T14      .01900    T.0T18      .02400    S-I1767
SIGMA    T.0T21      .02100    T.1S01      .00988    S-I1768
SIGMA    T.1S02      .00588    T.1S04      .03400    S-I1769
SIGMA    T.1S07      .02420    T.1S08      .02220    S-I1770
SIGMA    T.1S10      .01860    T.1S14      .01340    S-I1771
SIGMA    T.2S01      .04220    T.2S02      .03620    S-I1772
SIGMA    T.2S05      .02640    T.2S06      .02400    S-I1773
SIGMA    T.2S08      .01960    T.2S10      .01660    S-I1774
SIGMA    T.2S12      .01520    T.2S13      .01380    S-I1775
SIGMA    T.2S15      .01240    T.3S04      .01760    S-I1776
SIGMA    T.3S08      .01420    T.3S09      .01360    S-I1777
SIGMA    T.4S01      .04040    T.4S03      .01840    S-I1778
SIGMA    T.4S04      .16800    T.4S05      .16000    S-I1779
SIGMA    T.4S06      .13200    T.4S07      .12200    S-I1780
SIGMA    T.5S02      .01600    T.5S03      .01420    S-I1781
SIGMA    T.6S01      .02000    T.6S04      .01200    S-I1782
SIGMA    T.6S05      .01100    T.7S03      .01120    S-I1783
SIGMA    T.8S01      .01080    T.1T02      .03000    S-I1784
SIGMA    T.1T04      .02500    T.1T06      .02040    S-I1785
SIGMA    T.1T08      .01760    T.1T10      .01560    S-I1786
SIGMA    T.2T04      .01680    T.2T07      .01460    S-I1787
SIGMA    T.2T08      .01360    T.0S25.0    .00940    S-I1788
SIGMA    T.0S30.0    .00720    T.0S36.0    .00620    S-I1789
SIGMA    T.0S43.0    .00540    T.0S50.0    .00540    S-I1790
SIGMA    T.0T25.0    .01000    T.0T30.0    .00800    S-I1791
SIGMA    T.0T36.0    .00800    T.0T43.0    .00800    S-I1792
SIGMA    T.0T51.0    .00700    T.0T56.0    .00600    S-I1793
SIGMA    T.0T61.0    .00600    T.0S25.S    .01680    S-I1794
SIGMA    T.0S30.S    .01300    T.0S36.S    .01120    S-I1795
SIGMA    T.0S43.S    .00960    T.0S50.S    .00960    S-I1796
SIGMA    T.0T25.S    .01800    T.0T30.S    .01600    S-I1797
SIGMA    T.0T36.S    .01400    T.0T43.S    .01200    S-I1798
SIGMA    T.0T51.S    .01000    T.0T56.S    .01200    S-I1799
SIGMA    T.0T61.S    .01200    T.0S25.T    .02100    S-I1800
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    SIGMA     T.0S30.T      .01620   T.0S36.T      .01400                 S-I1801
    SIGMA     T.0S43.T      .01200   T.0S50.T      .01200                 S-I1802
    SIGMA     T.0T25.T      .01800   T.0T30.T      .01600                 S-I1803
    SIGMA     T.0T35.T      .01400   T.0T43.T      .01200                 S-I1804
    SIGMA     T.0T51.T      .01000   T.0T56.T      .01200                 S-I1805
    SIGMA     T.0T61.T      .01200                                        S-I1806
BOUNDS                                                                   S-I1807
 LO LIMITS    B.5.0         4.60000                                       S-I1808
 UP LIMITS    B.5.0         4.70000                                       S-I1809
 LO LIMITS    B.10.0        3.90000                                       S-I1810
 UP LIMITS    B.10.0        4.80000                                       S-I1811
 LO LIMITS    B.15.0        4.05000                                       S-I1812
 UP LIMITS    B.15.0        5.20000                                       S-I1813
 LO LIMITS    B.23.0        4.80000                                       S-I1814
 UP LIMITS    B.23.0        5.80000                                       S-I1815
 LO LIMITS    B.7.S         4.60000                                       S-I1816
 UP LIMITS    B.7.S         4.70000                                       S-I1817
 LO LIMITS    B.12.S        3.90000                                       S-I1818
 UP LIMITS    B.12.S        4.80000                                       S-I1819
 LO LIMITS    B.15.S        4.00000                                       S-I1820
 UP LIMITS    B.16.S        5.20000                                       S-I1821
 LO LIMITS    B.23.S        4.50000                                       S-I1822
 UP LIMITS    B.23.S        5.80000                                       S-I1823
 LO LIMITS    B.7.T         4.40000                                       S-I1824
 UP LIMITS    B.7.T         4.60000                                       S-I1825
 LO LIMITS    B.11.T        3.60000                                       S-I1826
 UP LIMITS    B.11.T        4.80000                                       S-I1827
 LO LIMITS    B.15.T        4.00000                                       S-I1828
 UP LIMITS    B.15.T        5.20000                                       S-I1829
 LO LIMITS    B.23.T        4.40000                                       S-I1830
 UP LIMITS    B.23.T        5.80000                                       S-I1831
 LO LIMITS    B.34          5.65000                                       S-I1832
 UP LIMITS    B.34          6.40000                                       S-I1833
 LO LIMITS    B.39          6.01000                                       S-I1834
 UP LIMITS    B.39          6.55000                                       S-I1835
 LO LIMITS    B.44          6.35000                                       S-I1836
```

UP LIMITS	B.44	6.87000	S-I1837
LO LIMITS	B.48	6.74000	S-I1838
UP LIMITS	B.48	7.26000	S-I1839
LO LIMITS	B.58	6.98000	S-I1840
UP LIMITS	B.58	7.53000	S-I1841
LO LIMITS	B.81	2.80000	S-I1842
UP LIMITS	B.81	4.00000	S-I1843
LO LIMITS	R.5.D	3.10000	S-I1844
UP LIMITS	R.5.D	3.90000	S-I1845
LO LIMITS	R.10.D	3.20000	S-I1846
UP LIMITS	R.10.D	3.90000	S-I1847
LO LIMITS	R.15.D	3.20000	S-I1848
UP LIMITS	R.15.D	3.90000	S-I1849
LO LIMITS	R.23.D	3.50000	S-I1850
UP LIMITS	R.23.D	4.25000	S-I1851
LO LIMITS	R.7.S	2.90000	S-I1852
UP LIMITS	R.7.S	3.90000	S-I1853
LO LIMITS	R.12.S	2.90000	S-I1854
UP LIMITS	R.12.S	3.90000	S-I1855
LO LIMITS	R.16.S	2.90000	S-I1856
UP LIMITS	R.15.S	3.90000	S-I1857
LO LIMITS	R.23.S	3.30000	S-I1858
UP LIMITS	R.23.S	4.65000	S-I1859
LO LIMITS	R.7.T	2.00000	S-I1860
UP LIMITS	R.7.T	3.90000	S-I1861
LO LIMITS	R.11.T	2.00000	S-I1862
UP LIMITS	R.11.T	3.90000	S-I1863
LO LIMITS	R.15.T	2.00000	S-I1864
UP LIMITS	R.15.T	3.90000	S-I1865
LO LIMITS	R.23.T	3.30000	S-I1866
UP LIMITS	R.23.T	4.65000	S-I1867
LO LIMITS	R.34	3.75000	S-I1868
UP LIMITS	R.34	4.65000	S-I1869
LO LIMITS	R.39	3.95000	S-I1870
UP LIMITS	R.39	4.85000	S-I1871
LO LIMITS	R.44	4.25000	S-I1872

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 UP LIMITS     R.44          5.15000                              S-I1873
 LO LIMITS     R.48          4.75000                              S-I1874
 UP LIMITS     R.48          5.65000                              S-I1875
 LO LIMITS     R.58          4.95000                              S-I1876
 UP LIMITS     R.58          5.85000                              S-I1877
 LO LIMITS     R.59          9.62000                              S-I1878
 UP LIMITS     R.59         10.04000                              S-I1879
 LO LIMITS     R.81         12.00000                              S-I1880
 UP LIMITS     R.81         14.00000                              S-I1881
 LO LIMITS     A.59          8.00000                              S-I1882
 UP LIMITS     A.59          8.30000                              S-I1883
 LO LIMITS     A.66          8.95000                              S-I1884
 UP LIMITS     A.66          9.07000                              S-I1885
 LO LIMITS     A.68          9.40000                              S-I1886
 UP LIMITS     A.68          9.50000                              S-I1887
 LO LIMITS     A.80         10.00000                              S-I1888
 UP LIMITS     A.80         10.45000                              S-I1889
 LO LIMITS     RADIUS    -   2.00000                              S-I1890
 UP LIMITS     RADIUS       22.00000                              S-I1891
ENDATA                                                           S-I1892
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