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Model Atmospheres for Cool Stars

Hollis R. Johnson
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HIGH ALTITUDE OBSERVATORY

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FOREWORD

This report contains an extensive series of model atmospheres for cool stars having a wide range in chemical composition. Model atmospheres (temperature, pressure, density, etc.) in the range $5000^{o}K \geq T_{eff} \geq 2000^{o}K$ and $4.0 \geq \log g \geq -2.0$ are tabulated, along with emergent energy flux distributions, limb darkening, and information on convection for selected models. The models are calculated under the usual assumptions of hydrostatic equilibrium, constancy of total energy flux (including transport both by radiation and convection) and local thermodynamic equilibrium. Some molecular and atomic line opacity is accounted for as a straight mean. While cool-star atmospheres are regimes of complicated physical conditions, and these atmospheres are necessarily approximate, they should be useful for a number of kinds of spectral and atmospheric analysis.

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The models in this study were calculated with a computer code which is a version of code ATLAS (Kurucz, 1970) from Smithsonian Astrophysical Observatory, modified as indicated for cool stars. I am grateful for the use of that code. Major additions and modifications have been carried out by Reta Beebe and David Alexander. Some supplementary calculations were carried out at the Wrubel Computing Center, Indiana University.

This research has been greatly aided by helpful discussions with or comments from Dimitri Mihalas, Ted Fay, Grant Athay, Rodger Thompson, and Icko Iben. Much programming help was given by W. Frye. Special thanks are due to Dimitri Mihalas, Paul Mutschlecner and Chris Sneden for reading the manuscript, and to Ruby Fulk for typing it.

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I. INTRODUCTION

Red giant and supergiant stars have fascinated scientists for a long time both as severe tests to astrophysical theory and as storehouses of astrophysical information. Yet despite their obvious interest, cool stars (cooler than the sun) have often been neglected in the past in favor of hotter stars, which are much easier to interpret. A recent surge of interest in cool stars has now altered the picture considerably, however, and it appears that both observational and theoretical research on cool stars will be a major activity in the coming years.

It is now feasible to observe the entire spectral energy distribution of cool stars from the violet to the far infrared. Polarimetric measurements are revealing entirely new information. Excess emission near 10 microns from many stars is interpreted to imply a circumstellar envelope of grains. High dispersion spectra make possible the identification of new molecules and the derivation of chemical composition and even isotropic abundance ratios. Ultraviolet observations show emission lines and emission cores in the H and K lines of CaII and MgII, both of which seem to imply a temperature reversal and a hot chromosphere. Several molecular lines have been detected in the microwave region, and some of these indicate circumstellar laser action.

Great theoretical interest attaches to the atmospheres (as well as interiors) of cool stars. Their enormous size, the interpretation of emission lines, energy balance and possible existence of chromospheres and coronas, cause of the observed variability of some stars, generation and propagation of shock waves, mechanisms for laser actions, grain formation, possible departures from hydrostatic equilibrium, formation

of line and continuous spectra, possible stellar winds, effects of mass loss, molecular spectra and opacity and the determination of chemical composition provide a series of challenging problems for investigation.

Yet the study of cool stars has barely begun. For example, one would now be hard pressed to state with confidence such important quantities as the C/H ratio or the existence of a corona for any particular star. A comprehensive study must begin with the stellar photosphere, so that photospheric models have a sort of logical priority. Yet these models have been very slow in arriving - probably because the difficulties with convection, atomic and especially molecular line blanketing, and uncertain composition are so well known that they have deterred the attempt.

Recent summaries of previous computations of cool-star atmospheres have been given by Vardya (1970) and Johnson (1972). Pioneering work was done by Gingerich, Latham, Linsky and Kumar (1967), who calculated four models with effective temperature of 2,500°K; log g = 5, 3, 1; and solar composition (plus 1 with a metal-deficient mixture). Opacity sources were H, H^-, He^-, H_2^-, electron scattering, and Rayleigh scattering from H_2. At the same time a group in Japan (Tsuji, 1967) computed a model with T_{eff} = 3,000°K, log g = 1, and solar composition, with the usual hydrogen opacities (including Rayleigh scattering) and mean opacities from the bound-bound transitions of the molecules H_2O, CO and OH. These workers were also the first to make a comparison between their predicted fluxes and observations of a real star. Auman (1967) calculated the opacity of the molecule H_2O, and then (Auman, 1969a) calculated a grid of models with $2{,}000 \leq T_{eff} \leq 4{,}000$°K and $-2.0 \leq \log g \leq 5.0$, in which H_2O opacity was included both as a straight mean and as a harmonic mean. Some pre-

dicted emergent fluxes were also given although no attempt was made to compare these with observations. Several models for red dwarf stars have recently appeared. Eight idealized models ($1{,}500 \leq T_{eff} \leq 3{,}500$) for solar composition with the opacity of H_2O, but without convection have been computed by Carbon, Gingerich, and Latham (1969). A model with (3,000|4.8|solar) including several molecular opacities was constructed by Tsuji (1969), who also compared predicted fluxes and observations. Auman (1969b) described models with T_{eff} = 3,000 and 4,000°K. A K-dwarf model (4,000|4.5) was constructed by Berg, Hershey, and Kumar (1969). Some of the cooler models in the extensive grid (down to T_{eff} = 4,000°K) by Carbon and Gingerich (1969) are of interest here. Their models have no molecular opacity but are atomic line blanketed and include the transport of energy by both radiation and convection according to the mixing-length theory. These authors also tabulate emergent surface fluxes and limb darkening as well as profiles of the H_γ line. Seven models of cool supergiant stars with a range of chemical composition have been given by Alexander and Johnson (1972). These last models included for the first time the opacity of CN as well as CO and H_2O. Finally we mention the work of Parsons (1969) even though his atmospheres are generally hotter than we are concerned with here. He computed a grid of 15 non-gray models, including atomic line blanketing but no molecules, for effective temperatures in the range 5,400-6,600°K and for surface gravities log g = 1.2, 1.8, and 2.4.

Consideration of the factors included and neglected in previous calculations as noted above gives us some idea of the great difficulties involved in calculating realistic atmospheres for stars cooler than the

sun. It is important to recognize and bear in mind these difficulties even though one is not yet in a position to attack them. For the sake of comprehensiveness we therefore consider each briefly here.

The problems with convection have been mentioned many times previously. If one uses the simplest mixing-length theory, a difficulty arises over the choice of the value to be used for the ratio of the mixing length to the pressure scale height. The consequences of various choices for this ratio have been illustrated for cool stars by Carbon and Gingerich (1969). However, our concerns go much deeper than this: there is at present no guarantee that convection can even be treated in these stars by anything like the mixing-length theory. Alternate theories have unfortunately been very slow in arriving, but a non-local convection theory called the plume theory (based on an analogy with plumes in the earth's atmosphere) has recently appeared (Ulrich, 1970, 1972). Models for cool stars are still too scanty to allow even a comparison between these two methods, much less detailed comparisons with observations. Fortunately, convection is not important in fixing the temperature-pressure structure in the outer atmospheric models for giant and supergiant stars, but it does become very important for dwarf stars. (Of course convection is vitally important in determining the composition of giants and supergiants, since it is the mechanism by which processed material is brought from the core to the surface, but the mode of transport will not concern us in this paper.)

The sources of opacity in cool stars are still somewhat uncertain. Analysis of the Stratoscope observations (Woolf, Schwarzschild, and Rose, 1964) led to the conclusion that H_2O was the dominant opacity source.

From a re-examination of the question, Wing and Spinrad (1970) proposed that most of the near infrared bands are due instead to CN in most cool stars. The molecule CO is very important in the infrared (Yamashita, 1962). The effect of these opacities has been discussed by Alexander and Johnson (1972). Several other molecules have been proposed from time to time as significant opacity sources, including C_2, TiO, SiO, HCN, CH_2, HCO, NaCl, OH, ZrO, and likely many more. (Spinrad and Wing, 1969, review the infrared opacities.) Atomic line blanketing is also important, and has been treated by several workers for stars in the middle range of temperatures: Parsons (1969), Mutschlecner and Keller (1970, 1972), and Carbon and Gingerich (1969). Comparisons of these methods have been made for Procyon (Mutschlecner and Keller, 1972), the sun (Mutschlecner and Keller, 1972) and the G8 giant ε Vir (Morgan, 1970). Unfortunately, while all the methods give reasonably concordant results for stars hotter than the sun, for cooler stars they depart dramatically from each other. Until much more study of atomic line blanketing for cool stars has been done, this will remain a major uncertainty.

Perhaps a bigger problem is connected with chemical composition. One can either assume that cool stars have a composition like the sun, or else different. There is, in fact, overwhelming evidence that some stars have compositions which must have resulted from nucleosynthesis in their interiors and the subsequent transport of this material to the surface. But if not solar, then what? We do not know, and can therefore only attempt to bracket the actual composition in a parametric way.

Beyond these problems, there are additional worries about homogeneity in the atmospheres of the cool stars - particularly giants and super-

giants, where there is evidence from some stars of clumpiness in the atmosphere. Since the extent of supergiant atmospheres may be comparable with the radius of star, one must be concerned about possible departures from plane-parallel geometry (Auman, 1969, discusses this point briefly), and one must eventually do models with spherical geometry. There is great uncertainty about the possible role of microturbulent velocities, particularly in view of the fact that some determinations give velocities which are essentially sonic or supersonic (cf. Beer, et al. 1972). One must also be concerned about possible departures from LTE in view of the very low densities which exist in the outer atmospheres of these stars (Alexander and Johnson, 1972). Finally, because of the appearance of circumstellar shells and the possibility of shock waves and mass loss, one must also be concerned about the possibility that hydrostatic equilibrium does not hold. If these stars have chromospheres, for which there is considerable evidence, then it may well be that radiative equilibrium also falls by the wayside. The problems are truly challenging, but one must make a beginning somewhere. We shall begin with theoretical approaches which have been found useful for hotter stars. Comparison with observations or more general theories (as these become available) will show how these methods need to be improved.

Our goal here is to present the details of a large number of model atmospheres to show the effect of temperature, surface gravity, composition, opacities, and turbulent velocity. These atmospheres will all be based upon the usual assumptions of hydrostatic equilibrium, energy conservation, and local thermodynamic equilibrium in plane-parallel atmospheres. We give details of atmospheric structure, limb darkening data and emergent fluxes in the hopes that these will be useful to subsequent investigators.

II. PROCEDURE

These model atmospheres were computed under what have become almost the classical assumptions of stellar atmospheres. That is, they obey the equations of hydrostatic equilibrium, conservation of energy, and local thermodynamic equilibrium in the usual case where the geometry is assumed to be plane-parallel and horizontally homogeneous. The pressure term in the equation of hydrostatic equilibrium includes gas pressure, radiation pressure, and turbulent pressure. Although the radiation pressure term is not generally important in cool stars (in contrast to hot stars), turbulent pressure can be significant. Energy transport by both radiation and convection is included, the convective part being treated with the usual Bohm-Vitense mixing length theory. Almost all of these equations are subject to uncertainty and many of them may in fact be wrong for certain types of cool stars. Nevertheless, the only way to test their validity is to use them and then to compare their predictions with observations, changing our assumptions as necessary. In any case, we consider later the possible effect of some of these assumptions. Clearly the calculation of cool star model atmospheres is still in a pioneering stage and we expect many of these assumptions to be improved with work over the next decade.

Through the kindness of Dr. R. Kurucz, we have obtained a copy of his code ATLAS which solves the equations described above. At Indiana University ATLAS was considerably modified by D. Alexander in order to permit the calculation of atmospheres for very cool stars, where molecular effects were important or even dominant. Since program ATLAS has been widely distributed and is documented in great detail (both the physical equations and a complete listing of the code) in the literature (Kurucz,

1970) we will not re-describe it here. There are of course several versions of this code, corresponding to different levels of development, and we are not sure that our original version corresponds in every detail to that listing printed in the code, but it is certainly very similar.

The substantial changes which we have made in the code include the effects of molecules in the treatment of convection (in the calculation of the thermodynamic quantities used), in the equation of state, and most importantly in the calculation of the opacity. Some atmospheres using this code have already appeared (Alexander and Johnson, 1972).

The thermodynamic quantities C_p, Q, and ∇_{ad} used in the calculation of the convective flux are calculated using a program written by Grossman (1970) which follows the formulation of Vardya (1965; see also Mihalas, case i.i., page 25, 1967). The ionization of H and H^-, the dissociation of H_2 and H_2^+, the ionization of He, the ionization of thirteen most abundant and most easily ionized elements (at their solar abundance), and radiation pressure are included.

The program computes the equation of state and the enthalpy per gram, H, as functions of electron pressure and temperature. The contribution of H_2 to the enthalpy is

$$H\,(H_2) = \left[- 4.476 + \Delta E\,(H_2) - 2\,X(H) \right]\; N\,(H_2) \,/\, \rho \quad (1)$$

where

$$\Delta E(H_2) = kT \left[2.6757 - 1.4772\theta + 0.60602\theta^2 - 0.12427\theta^3 + 0.0097503\theta^4 \right]$$

is the interpolation formula for the energy of rotation and vibration given by Vardya (1965). Here X(H) is the ionization energy of hydrogen, $N(H_2)$ is the number density of H_2 and $\theta = 5040/T$. The contribution of H_2^+ is handled in a similar fashion. The enthalpy of each atomic species is

$$H_i' = - X_i N_i / \rho$$

where X_i is the ionization energy of the ith species and N_i is the number density of the ith species.

Then, the total enthalpy is

$$H = \frac{5}{2}\frac{P_g}{\rho} + 4\frac{P_r}{\rho} + \sum_i H_i' + H(H_2) \qquad (2)$$

Then the thermodynamic quantities are calculated by evaluating numerically the derivatives in the following formulas:

$$C_p = \left(\frac{\partial H}{\partial T}\right)_{p_e} - \left(\frac{\partial H}{\partial p_e}\right)_T \left(\frac{\partial p}{\partial T}\right)_{p_e} / \left(\frac{\partial p}{\partial p_e}\right)_T \qquad (3)$$

$$Q = - (T/\rho) \left[\left(\frac{\partial \rho}{\partial T}\right)_{p_e} - \left(\frac{\partial \rho}{\partial p_e}\right)_T \left(\frac{\partial p_g}{\partial T}\right)_{p_e} / \left(\frac{\partial p_g}{\partial p_e}\right)_T\right]$$

$$\nabla_{ad} = - (p/\rho^2) \left[\left(\frac{\partial \zeta}{\partial T}\right)_{p_e} - \left(\frac{\partial \zeta}{\partial p_e}\right)_T \left(\frac{\partial p}{\partial T}\right)_{p_e} / \left(\frac{\partial p}{\partial p_a}\right)_T / C_p\right]$$

The numerical derivatives were calculated with a step size of 0.01 in log p_e and in θ. Larger step sizes decreased the accuracy of the results by markedly increasing the numerical noise.

The lower limits of the data tables, at Pe = 10 dynes cm^{-2} and $T = 1650^{o}K$, were reached occasionally during the model calculations. Since this always occurred at small optical depths ($\tau < 10^{-3}$) where convection cannot be an efficient means of transporting flux because of the very low density in the outer layers of these atmospheres, convection was turned off when the table limits were exceeded.

Equation-of-state calculations are performed by a subroutine (STATEH) written by R. Beebe (1972). The subroutine calculates electron density in an outer loop by solving the equations of ionization equilibrium for the neutral atom and first ion of the 13 elements H, He, C, N, O, Na, Mg, Al, Si, S, K, Ca, and Fe. Molecular concentrations are calculated in an inner loop from the solution of the equations of molecular dissociative equilibrium

$$\frac{N_A N_B}{N_{AB}} = K(t) \qquad (4)$$

where N_A, N_B and N_{AB} are, in order, the concentrations (no. cm^{-3}) of atoms A, B, and molecules AB. For increased accuracy, equation (4) is used in a logarithmic form. Logarithm K (t), the dissociation constant, is fitted by a fourth-order polynomial in θ (= 5040/T) from standard tables. STATEH includes at present all 21 diatomic molecules of H, C, N, O, Si, and S; the molecules MgH, MgN, MgO, TiO, TiO_2, ZrH, ZrC, ZrO, and ZrO_2; and the 24 polyatomic molecules and radicals: H_2O, HCN, HCO, HNO, NH_2, NH_3, CH_2, CH_3, CH_4, C_4, C_3, C_2N_2, C_2H_2, CH_2O, CHNO, HNC, NCO, C_2H, C_2N, N_2H, NCN, N_3,

N_2O, and SiC_2. The JANAF thermochemical tables (1960) were used as sources for all equilibrium constants except for SiO (Vardya, 1965) and C_3, HCN, NCO, C_2H, C_2N, N_2H, NCN, N_3, N_2O, and SiC_2 (Morris and Wyller, 1967). Complete listings of the fitting parameters for K (t) can be obtained from Dr. R. Beebe or the author. In order to account in a crude way for the depletion of carbon by the possible formation of carbon grains in the outer atmospheric layers, the partial pressure of carbon is fixed at the saturation pressure whenever it exceeds the value.

One of the most significant differences between hot and cool stars is the opacity of the atmosphere. In fact, cool stars could be defined as those stars which have significant molecular line blanketing in their spectrum. Our copy of the ATLAS code already contains the bound-free and free-free absorption of H and H^- and Rayleigh scattering from H. We have added free-free absorption of H_2^- (Somerville, 1964; Carbon et al., 1967) and Rayleigh scattering of H_2. The code ATLAS also includes the bound-free opacity due to low-lying states of Mg I and Si I, but these are of minor importance in most of the atmospheres which we will consider. In our code we include as molecular opacities - taken as straight mean opacities over wave number intervals of 100 cm^{-1} - the red and infrared opacity of H_2O, the red system of CN and the fundamental and first three overtone vibration-rotation bands of CO. For H_2O we have used the opacities of Auman (1967) and Burch and Grynak (1966); for CO the opacities of Beebe (1969), and for CN the results of Johnson, Marenin and Price (1972). These 3 molecular opacities plus the hydrogenic opacities described earlier constitute our standard opacities (often abbreviated

SO). In addition we have included a more approximate opacity for the polyatomic radicals HCO, HCN, NH_2, CH_2, and C_3 (Main and Bauer, 1967). This opacity is abbreviated (P).

There is still considerable controversy over the question of whether the straight-mean or the harmonic-mean opacity should be used, and undoubtedly one should use a picket representation of the opacity rather than either. However picket opacities are not generally available, and there is no easy way to combine picket opacities from different molecules which happen to occur at the same wavelengths. The straight mean has the great advantage of simplicity, especially when one changes from one composition to another. Distribution function opacities have been computed recently for two wavenumber intervals for the molecules CN, C_2, and CO (Querci, Querci and Kunde, 1971). Unfortunately these were computed for the mass absorption coefficient, and therefore they are tied to a fixed composition, which in their case is extremely carbon-rich. More recently, distribution function opacities and picket opacities have been computed for the CN red system (Carbon, 1973). Because of the simplicity of the straight mean opacity and the excellent agreement between models computed using straight-mean opacities and observations of Betelgeuse (Fay and Johnson, 1973), we have chosen to use the straight mean (over intervals of 100 cm^{-1}) for these calculations. We have, however, tried to test the possible effects of our opacity smoothing by various schemes which will be described later.

The amount of atomic line blanketing to be used is also uncertain. Very little work has been done in trying to determine the line blocking statistics for any star much cooler than the sun. The exception to this

is the work now under way on Arcturus (Edmonds and Morgan, 1971; Morgan and Collins, 1972). We have chosen to use the MK method (Mutschlecner and Keller, 1970, 1972) derived from the sun. Other methods available (Parsons, 1969; Carbon and Gingerich, 1969) have much less line blanketing in the ultraviolet, and calculations for the G8 giant ε Vir (Morgan, 1970) and the M2 supergiant Betelgeuse (Fay and Johnson, 1972) show that even the MK line blanketing may be insufficient to match the steep ultraviolet falloff in these stars. We have therefore chosen to use this method although we have experimented widely with variations to determine the effects of possible changes in the method.

III. RESULTS

Out of many models constructed, we have selected about 40 for tabulation, and these are indexed in Table 1. The columns there list for each model the model number, the effective temperature, logarithm of the surface gravity (in cgs units), chemical composition of the star (C/H, N/H, O/H), opacities used in the calculation (abbreviated), and the sequence number (the number of the computer run).

The models themselves are given in Table 2, and these constitute the heart of the paper. The columns in Table 2 give, in order: τ (optical depth at 1 micron), T (temperature (^{o}K)), P (pressure (dyne cm^{-2})), XNE (number density of electrons (cm^{-3})), ρ (density (g cm^{-3})), κ (mass absorption coefficient at 1 micron (cm^{2} g^{-1})), and H (physical height scale (km)) measured from the depth at which τ = 1.00.

Monochromatic surface fluxes are given for many of the models in Table 3. The quantity shown is actually logarithm of the flux (called both F_ν and πF_ν in astronomical literature) in cgs units (erg s^{-1} cm^{-2} hz^{-1}). Although the models were computed with 57 frequency points, fluxes are given for only 50 points, which fit snugly on a page. The neglected frequencies are eight higher (2), where the flux is very low, or else doubled up (5) near expected spectral "discontinuities" which in fact do not occur and where one value of a pair is therefore redundant. For the sake of economy we have not tabulated the surface flux for all models, especially when several had almost identical flux values (as when, for example, the models differ only in log g).

To facilitate study of the effects of convection on the models, we give in Table 4 data on the convective velocities (V_{conv}) and the fraction of the total flux carried by convection (F_c/F) for a few representative models.

Table 5 gives limb darkening coefficients for selected models. The values of $I_\nu(\mu)/I_\nu(\mu=1)$ are tabulated at μ = 0.60, 0.40, 0.20, and 0.10 for 4 different values of wavelength (4,240; 5,400; 9,950; and 20,300 A).

Often in our discussion we will find it convenient to describe a model by (T_{eff}/log g/chemical composition/opacity). Thus model J1 would be designated as (5000|4.0|L|SO,P,MKII). In the chemical composition box L refers to solar composition (Lambert, 1968; Lambert and Warner, 1968a, b, c; Warner, 1958; Lambert and Mallia, 1968). In the opacity box, SO refers to the standard opacities - the opacity of all forms of hydrogen plus H_2O, CO, and CN; P refers to the polyatomic free radicals (although always included, their opacity is never really important); MK refers to

Mutschlecner-Keller atomic line blanketing. For most stars, the MK plus CN overblankets the star in the infrared, because many of the lines counted by MK were really CN lines, and CN opacity is separately included. Rough counts indicated that perhaps only 10% of the lines in the region 1-2 micron were atomic. We therefore usually use a revised MK opacity (MKII) which is identical to MK except at wavelengths of 1 micron or greater, where it has only 0.1 MK line blanketing. A more extreme case occasionally used is MKC, which has 0.5 MK except it has no blanketing at, or redward of, 1 micron.

IV. DISCUSSION

We illustrate some of the features of the models by a few figures. Energy fluxes from the series of models in Figure 1 show not only the changes in the shape of the curves but also the changes in the appearance of the strongest molecular bands for models of different temperatures. All these models have (T|2.0|L|SO, P, MKII) with T_{eff} ranging from 2500 to 5000^{o}K except model J32 which has (2500|1.0|L|SO, P, MK). The difference in gravity has practically no effect on the surface flux, but the additional atomic line blanketing at 1-2μ in this model slightly reduces the flux there and forces more flux out in the visual compared to MK II.

Only a few small spectral features can be seen on the curve for 5000^{o}K. These are the CO fundamental vibration-rotation bands ($0.20\mu^{-1}$), the CO first overtone ($0.415\mu^{-1}$), and the CN $\Delta v = -1$ ($0.69\mu^{-1}$), $\Delta v = 0$ ($0.90\mu^{-1}$), and $\Delta v = +1$ ($1.075\mu^{-1}$) band sequences. All of these are considerably stronger in the 4000^{o}K model, and the 2.7μ band of H_2O has appeared (at about $0.365\mu^{-1}$). Between 4000^{o}K and 3000^{o}K a drastic change occurs: at 3000^{o}K the CN bands have disappeared, and the H_2O features are very strong. The

CO fundamental still appears at about the same strength as before, but the first overtone is blended into the stronger H_2O feature at 2.7μ. Other H_2O bands appear at $0.54\mu^{-1}$ (the 1.9μ band) and at $0.70\mu^{-1}$ (the 1.4μ band). The H_2O bands are much stronger in the 2500°K model. The change in slope of the energy curve at $1.6\mu^{-1}$ in all the models is caused by the onset of strong atomic line blanketing.

In Figure 2 are plotted flux curves of 4 carbon stars which differ only in effective temperature. All have compositions characteristic of material rather completely processed through the CNO bi-cycle. The identifiable spectral features are the same as those in the models with solar composition but generally their strengths are greatly different. One sees the fundamental vibration-rotation bands of CO ($0.20\mu^{-1}$), the first overtone of CO ($0.415\mu^{-1}$), and the CN $\Delta v = -2$ ($0.49\mu^{-1}$), $\Delta v = -1$ ($0.69\mu^{-1}$), $\Delta v = 0$ ($0.90\mu^{-1}$), $\Delta v = +1$ ($1.075\mu^{-1}$) band sequences. The $\Delta v = +2$ ($1.22\mu^{-1}$) is present but does not show well due to the coarseness of the frequency grid of 57 points. With 270 points this feature is clearly present. A change in slope again appears at $1.6\mu^{-1}$, but is smaller than in the models of Figure 1.

To study the effect of varying chemical composition in stars, we have computed a series of models with (3500/0.0/CC/SO,P,MKC) and have varied the chemical composition over wide ranges. These values were chosen to be fairly representative of supergiants of classes M0-3 and of several of the hotter irregularly variable carbon supergiants. As a matter of fact, it is particularly in the giants and supergiants where we expect to see extensive changes in the chemical composition from that of the sun because of nuclear processing and mixing. As has already been pointed out, the

models are sensitive to the amount of atomic line blanketing adopted. For reasons given elsewhere, we have consistently adopted the line blanketing scheme of Mutschlecner and Keller (1970, 1972). These statistics of course were taken from the sun, and their applicability to cool stars is still an open question, since very little has been done in the way of determining precise line blanketing parameters for these objects. There is some evidence (Milford, 1950) that line blanketing for supergiants may even be greater than that for dwarfs; at least, that is the case at F5, the lowest temperature at which Milford has statistics for both the giant and dwarf of the same spectral type. Most previous models for cool stars have no atomic line blanketing. Clearly it is a step toward the truth to apply some blanketing, but we must be careful not to overblanket the star, since this might produce some spurious effects. For this series of models, we have therefore proceeded to use only one-half of the MK blanketing, except longward of 1 micron, where we have dropped all atomic blanketing since most of the blanketing in the sun and elsewhere is probably molecular in this region. This scheme may of course underblanket the model but at least will be nearer to the truth than previous models, and will run no danger of leading to false conclusions by overblanketing. In any case, since we hold the blanketing the same for all of these models, we can observe the differential effects of chemical composition.

The series of models described here can perhaps best be visualized if one imagines an arrangement of chemical composition by the ratios C/H and C/O as shown in Table 6. We investigate then the consequences of separately reducing the ratio C/H and O/H from the solar value and of either decreasing the ratio C/O or increasing it to the region where

C/O > 1.0. We also investigate the possibility that C/H may exceed the solar value by as much as a factor of 10-100, which is at the extreme of the range suggested (Tsuji, 1967; Querci, Querci and Kunde, 1971) for carbon stars. In most cases we have converted the carbon or oxygen depleted from the solar value into nitrogen as might be expected through CNO processing although we have run some cases where nitrogen was left at an arbitrarily low or high value or carbon was added to simulate material processed through the triple-alpha mechanism (3He → C). In all cases we have kept the abundance of the other chemical elements equal to the solar (L) value.

In Figure 3 we display temperature-pressure relations for a series of models which differ only in the ratios of C/H and N/H; all have (3500|0.0|S0, P, LBC). Besides a model with solar composition (K1), there are models with C/H reduced from the sun by a factor of 10 (K3) and by a factor of 100 (K4). In each case the C depleted has been converted to N, as in the CN cycle.

In Figure 4 are shown temperature-pressure structure for models which have C/H = 0.10 of the solar value but differ in the ratio C/O. Table 1 gives the chemical composition for these objects. These models span the range from a C deficient supergiant to the values expected in a carbon supergiant.

Two important effects are occurring in these models. Deep in the photosphere all models agree since H^- is the most important source of opacity in all of them. Since H_2O is not an important source of opacity in any of these stars (they are all fairly warm and all but K3 are oxygen deficient), the atmospheres are fairly transparent. As one

progresses from model K3 through K12, the only parameter changing is the oxygen abundance, which is systematically decreasing. This reduction in the oxygen allows increasing formation of CN, an important opacity source. Therefore models K3 to K12 are in the order of progressively more CN opacity and hence lower pressures for the same temperature. This same depletion in oxygen decreases the amount of CO in the atmosphere and therefore decreases the surface cooling due to CO (Johnson, 1973) Thus the stars have a monotonic change in the surface temperature. fact, Model K12 is so severely depleted in both C and O that the molecule CO is essentially negligible as a cooling agent in the outer atmosphere.

An interesting question concerns the structure of carbon stars as one changes the C/H ratio. This ratio is unfortunately poorly known -- it is not even known whether it is greater than or less than the solar value -- and it is necessary therefore to span a wide range in this parameter. We have therefore chosen a series of models with the ratio C/O = 2.00, about what would be expected in a carbon star. We have then varied the C/H ratio from 0.10 to 10.0 times the solar value. The ratio N/H has also been varied, as given in Table 1. The temperature-pressure structures of several such models are shown in Figure 5. There are three important comments to make here. In the first place, these models do not agree even in the photosphere. The reason is that CN has now become so important in some of these models that it dominates over H^- even into the photosphere and therefore the structure is changed even as deep as $\tau(1\mu) = 10$. In some ways this series of models forms a continuation of the series of models shown in Figure 4. That is, whereas Model K12 has the lowest pressure of those atmospheres, in these atmospheres it

has the highest pressure. The reason for this is simple: as one goes along the sequence from K12 to K15 to K18 one is holding the ratio C/O constant but increasing the ratio C/H. That is, one is increasing the amount of carbon and oxygen in the star although keeping their ratio constant. The change in the structure which appears throughout most of the atmosphere is due to the increasing importance of the molecule CN as it was in the other models. In the extreme outer layers of these stars the opacity due to CO produces some interesting effects. As has already been noted Model K12 contains so little C and O that there is almost no cooling due to the molecules CO. However, as one increases both C and O in going from K12 to K18 the cooling of CO starts to become important again and these models therefore cross over each other near the outer boundary. The boundary temperatures for models K15 and K18 are written on the figure since the temperature is still falling at the edge of the graph. Other models between K12 and K18 fall nicely in a sequence bracketed by the temperature-pressure structure of these two models.

Changes in the surface flux due to carbon depletion (as would result from processing by the CN cycle and mixing) are shown in Figure 6 for the same models whose T-p structure is illustrated in Figure 3. As the carbon abundance is lowered, the CO bands are weakened, and the resulting increase in flux in the infrared causes a slight decrease in flux in the visual.

Figure 7 shows the effect on the surface flux of varying the C/O ratio, starting with model K3, a carbon deficient model. As the C/O ratio is raised from 0.96 (K3) to 2.00 (K12), the CN bands become very strong. The CO fundamental is relatively unaffected by the change while

the CO first overtone ($0.4\mu^{-1}$) is weakened by the presence of CN. As the CN bands bite into the spectrum near the maximum of the flux peak, significantly more flux is pushed out in the visual and ultraviolet. These changes in C/O were produced by lowering O/H while holding C/H constant (as if material processed through the CNO bi-cycle were being mixed to the surface). However, essentially the same effect occurs if C/H is raised while O/H is held fixed (as if material processed by 3-α were being mixed to the surface), because the basic parameter is C/O.

The spectral distribution of the surface energy flux for the two models K12 and K18 is shown in Figure 8, where it can be seen that the two models differ in enormous ways. The two most striking differences are the CN bands which dominate the region between 0.5 and $1.5\mu^{-1}$, where it is seen that model K18, as expected, has greater CN bands than model K12. In addition, model K18 has much higher flux (by a factor of 30) in the visual region. Now it has already been pointed out (Alexander and Johnson, 1972) that the CN bands for a model like K12 are considerably stronger than those observed in the carbon stars for which these parameters are thought to be characteristic (for example, TX Psc). Possible reasons for the discrepancy between these calculations and observations have already been discussed (Alexander and Johnson, 1972) but it would seem to be difficult to explain such enormous features as shown in model K18. In addition, one of the problems for all cool stars is to force the ultraviolet flux down to values observed. Thus it would seem a serious disadvantage to model K18 that its ultraviolet flux is so much higher than K12. Either a large amount of additional line blanketing or circumstellar reddening in the visual region would be required to force the flux of K18 down to a value similar to K12, which

is much nearer observations of such carbon stars as 19 Psc (Willstrop, 1965; Wing, 1968, Fay and Honeycutt, 1971). Yet we cannot completely rule out such a composition as K18, for it is just possible that C_2 opacity may provide both the weakening of the CN bands (by the C_2 Phillips system) and the additional blue and ultraviolet opacity (by the C_2 Swan system) to produce agreement with observations even for K18.

Because of the known cooling effect of CO in the very outer layers of cool star atmospheres (Johnson, 1973), we desire to investigate the effect of CO molecules in these models. The results are indicated in Table 7 which gives the boundary temperatures for a number of models. The changes are smooth and monotonic in the sense that as the abundance of C or O is decreased in the star the cooling effect of CO is decreased and the boundary temperature is higher.

The values of convective velocity and fraction of flux carried by convection (Table 4) show the importance of convection at a glance, to the extent that the mixing-length theory is to be trusted. In all of these calculations, the mixing length was taken equal to the pressure scale height. Our results confirm the conclusions of Auman (1969) and Alexander and Johnson (1972) that convection plays a minor role in fixing the temperature-pressure structure (above $\tau \approx 5$) of giants and supergiants, but is very important in dwarfs.

Since molecular (and atomic) lines are too numerous to be included individually in any blanketing scheme, it is necessary to take account of them as some sort of mean opacity. Short of treating individual lines, a picket opacity recommends itself -- the more pickets, the better. Unfortunately molecular picket opacities (or distribution function opacities)

have been calculated for only a few special cases (Querci, Querci and Kunde, 1971; Carbon, 1972). Worse, no one has yet shown how to combine picket opacities for several molecules in the same wavelength region, especially when one desires the freedom to vary the chemical composition. In his work on cool stars, Auman (1969) used a harmonic mean. For simplicity and flexibility, then, we have consistently used straight mean opacities (one-picket) averaged over intervals of 100 cm^{-1}. Now a straight mean opacity errs in failing to take account of the narrow "windows" in the molecular opacity through which flux can escape. We can estimate the possible error involved in the use of the straight mean by comparing the results of a calculation with a straight mean opacity and a "real" opacity. As described elsewhere (Johnson, 1973), one can simulate a real absorber by setting the CN opacity to zero at a small fraction of the wavenumber intervals. We have made such a comparison for a set of models with (3,500|0.0|C/H = 0.10 solar; C/O = 2.00|SO, P, MKC) where α(CN) was set to zero at 5, 10, 20, and 40 frequency points (in models with 270 frequency points). The points were chosen to include some of the strongest CN absorptions. Even with CN transparent at 40 frequency points, the maximum change (from the model with full CN) was less than $75^{o}K$, and there was <u>no</u> threshold effect (no effect due to making a few frequencies transparent). Even the relatively small change of $75^{o}K$ is due not so much to the failure of the straight mean as it is to the fact that we have simply reduced the overall absorption in the atmosphere. The decisive test is the lack of a threshold effect, from which we can only conclude that the straight mean opacity represents CN fairly well. A similar conclusion for CO was reached earlier (Johnson, 1973).

In fact, another independent and probably more stringent test of the opacity was inadvertently performed. By mistake, we read the CN opacities into the machine program backwards (large wavenumbers switched for small) at an early stage of the work. The resultant curve of surface flux was utterly fantastic, but the temperature-pressure relation was very close to the correct value! Apparently the atmosphere senses the opacity in some global way. Even though these evidences are encouraging, however, we must expect straight-mean opacities (single-picket) to be superceded by multipicket opacities or opacity distribution functions within a few years. We therefore regard these models as exploratory results which show the most important features of cool stellar atmospheres of various compositions.

The models in this grid have been computed with no turbulent pressure. Yet is is well known that analyses of spectral lines in cool giant and supergiant stars often yield fairly high turbulent velocities (sometimes even supersonic). Adding turbulence has the effect of decreasing the gas pressure, but the opacities (because they are straight means) are unchanged. This change in gas pressure can be seen from comparing models L3 and L4, which are identical except that L4 includes the pressure due to turbulence with the turbulent velocity equal to the sound velocity. Although the pressure is greatly changed by the addition of turbulence, the T-τ relation is affected only slightly, and the emergent flux distribution of the two models is virtually identical (differences are generally less than 5%).

Many theoretical models of cooler stars contain a density inversion deep in the atmosphere (for example, several of the models of Auman (1969)

and Carbon and Gingerich (1969)), and this is also true of some of the present models. The appearance of such inversions was noted by Vardya (1970), but whether these actually exist in stellar atmospheres or are an artifact of the theoretical models (perhaps due to an improper treatment or convention) is still unsettled.

Some of the effects of hydrogen deficiency in a stellar atmosphere can be simulated by increasing He, C, N, and O relative to H. In a rough way we have done this in models K23 through K27. In this series N/H is held constant (at approximately 10 times its solar value) and C and O are increased. As this occurs, CN becomes the strongest opacity even in the photosphere. Between K26 and K27 the He/H ratio is increased by a factor 30. This increase of He tends to decrease slightly the strength of the CN features and to depress slightly the ultraviolet flux, both of which happen to be in the direction of better agreement with observation, but we attach little significance to this fact without much more study.

In view of the cooling effects of CO in the outer atmosphere, one cannot help wondering whether other molecules produce similar results. To settle that question would require a considerable effort though the answer might easily be worth the exertion. We have begun to provide a partial answer by looking at the effect of H_2O alone. In the one pair of models studied, with the parameters (3000/2.0/L), one model has only the usual hydrogenic opacities (SO minus molecules) while the other model has H_2O in addition. The model without H_2O has a boundary temperature of 2460 ^{o}K, whereas the one with H_2O has 1490 ^{o}K and considerable photospheric backwarming. It appears, then, that other molecules besides CO may also produce large effects in the outer atmosphere, and these should be

carefully studied. Such a study should include a better representation of the spectral lines than a mean opacity, which averages out the strongest lines and therefore underestimates the cooling at the surface.

While the study of cool stellar atmospheres is still in a pioneering stage, the model atmospheres given here correctly reproduce several observed aspects of real stars. Much more work needs to be done on molecular and atomic opacities -- both on the identification of spectral features and the theoretical representation of these absorbers. A spherical geometry is desirable for supergiants. A better treatment of convection is needed. Many other improvements are also desirable (Johnson, 1972), but the series of exploratory models given in this report represent a definite step forward. We hope they find wide use.

Cool stars are objects of great interest nowadays, and several valuable papers have appeared during the preparation of this work for publication (see Supplementary References, page 95). The plume theory of convection has now been applied to N and S stars (Scalo and Ulrich, 1973) as a mechanism for mixing processed material to the stellar surface. tmospheric models for carbon stars have been computed by two groups using opacity distribution functions for CN (Carbon, 1974) and CN, C_2, and CO (Querci, Querci, and Tsuji, 1974).

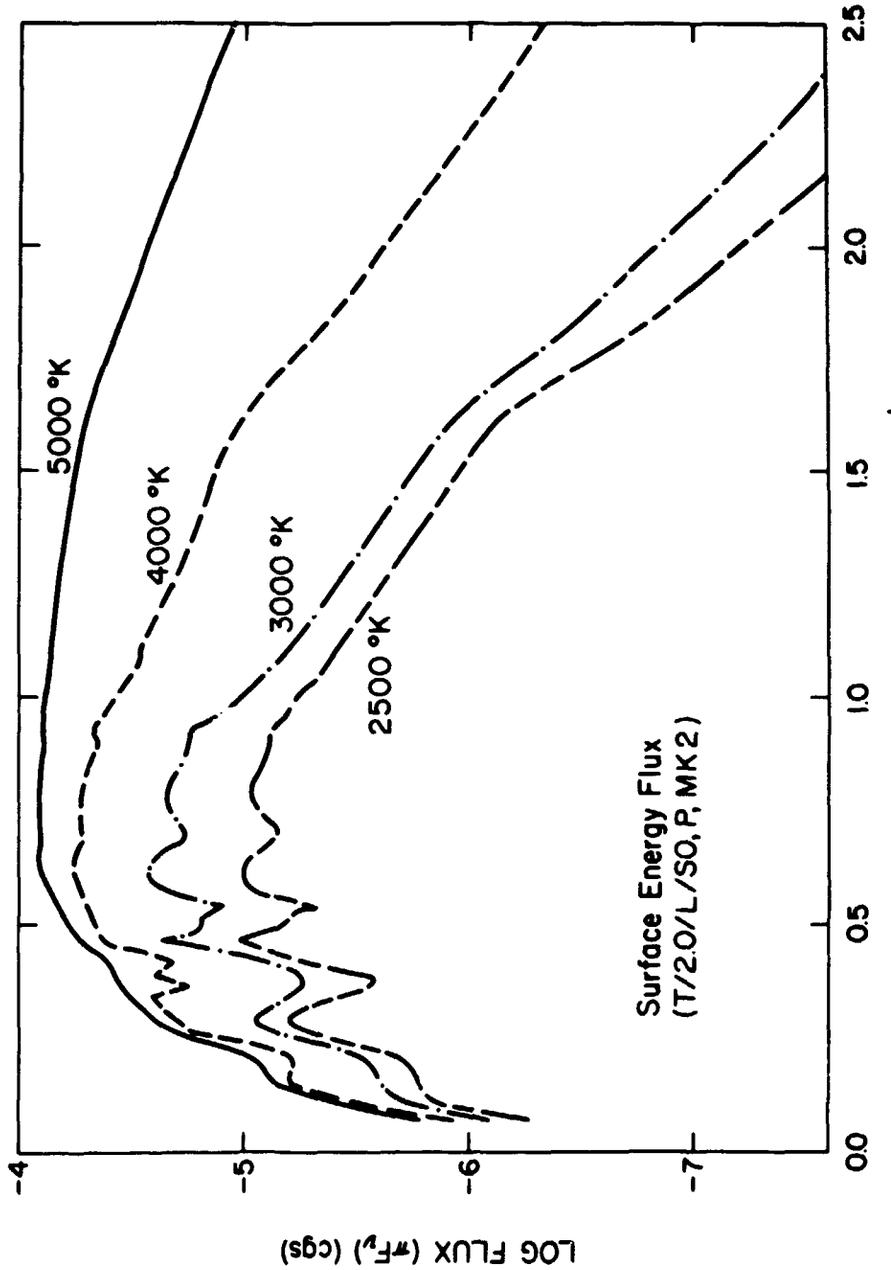

Figure 1. Surface energy fluxes for several models with solar composition but differing in effective temperature. (The models are further identified in Table 1.)

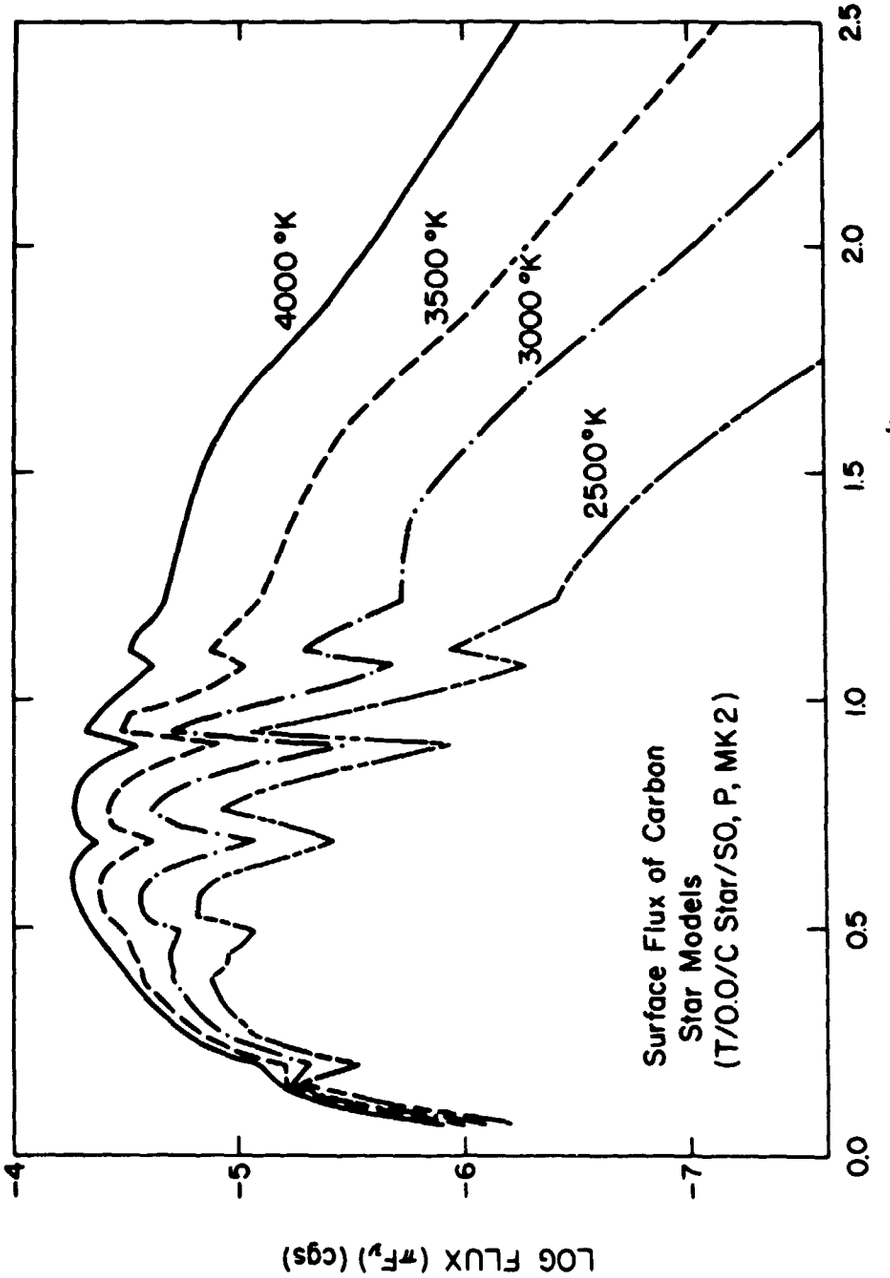

Figure 2. Surface energy fluxes for models of carbon stars at various temperatures.

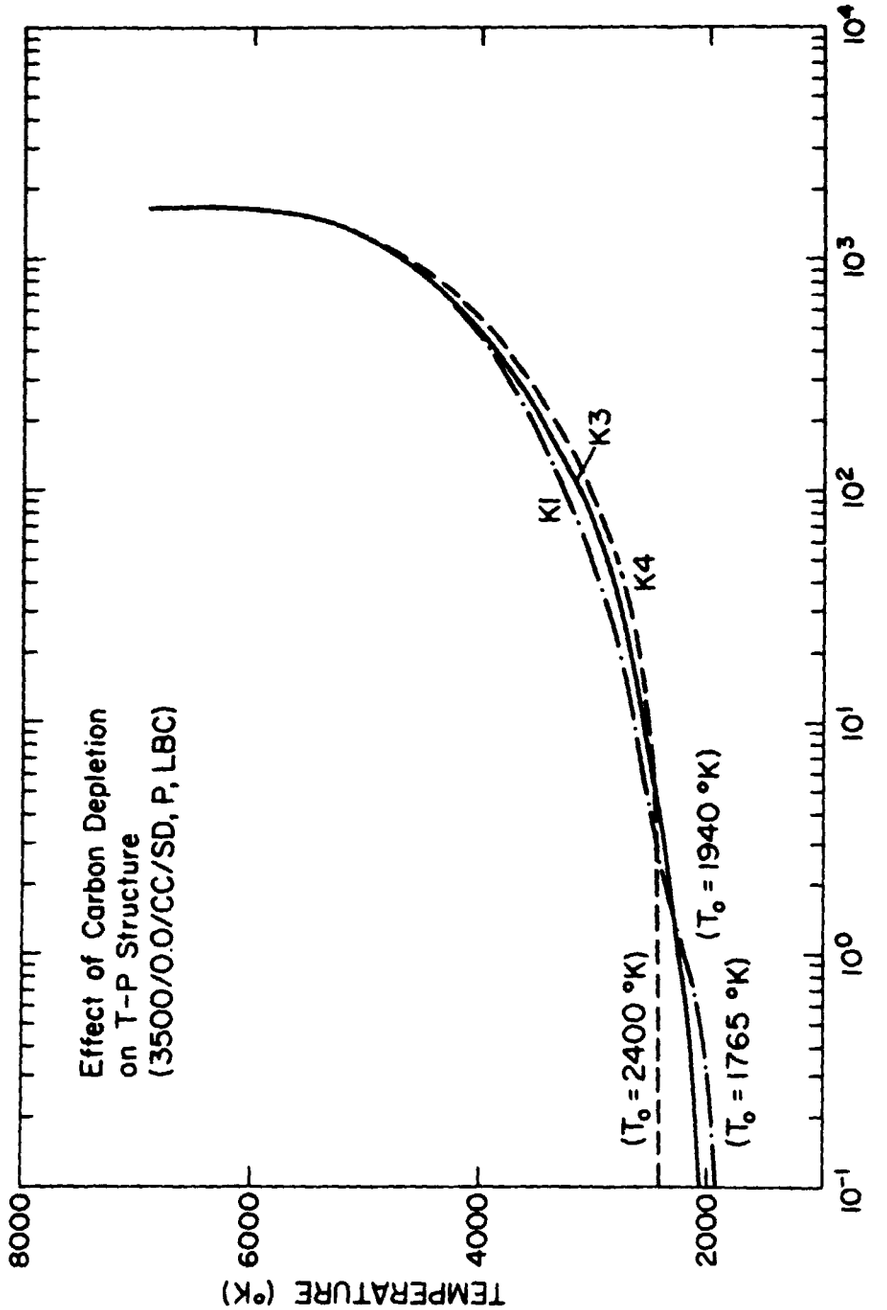

Figure 3. Effect of changing the C/H ratio on the temperature-pressure structure of models with (3500|0.0).

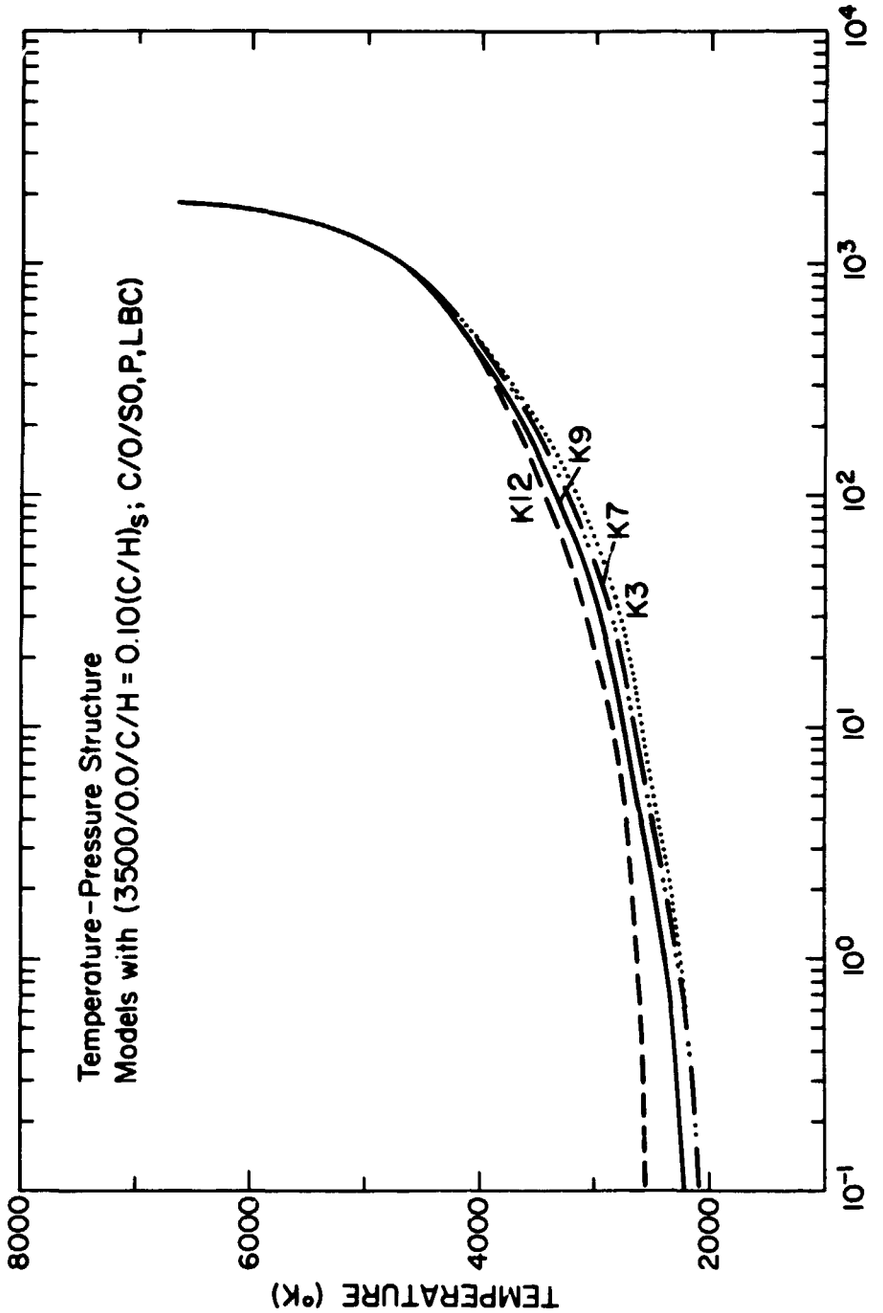

Figure 4. Effect of the C/O ratio on the temperature-pressure structure of models with (3500|0.0). The ratio C/O ranges from 0.06 (K3) through 1.00 (K9)to 2.00 (K12).

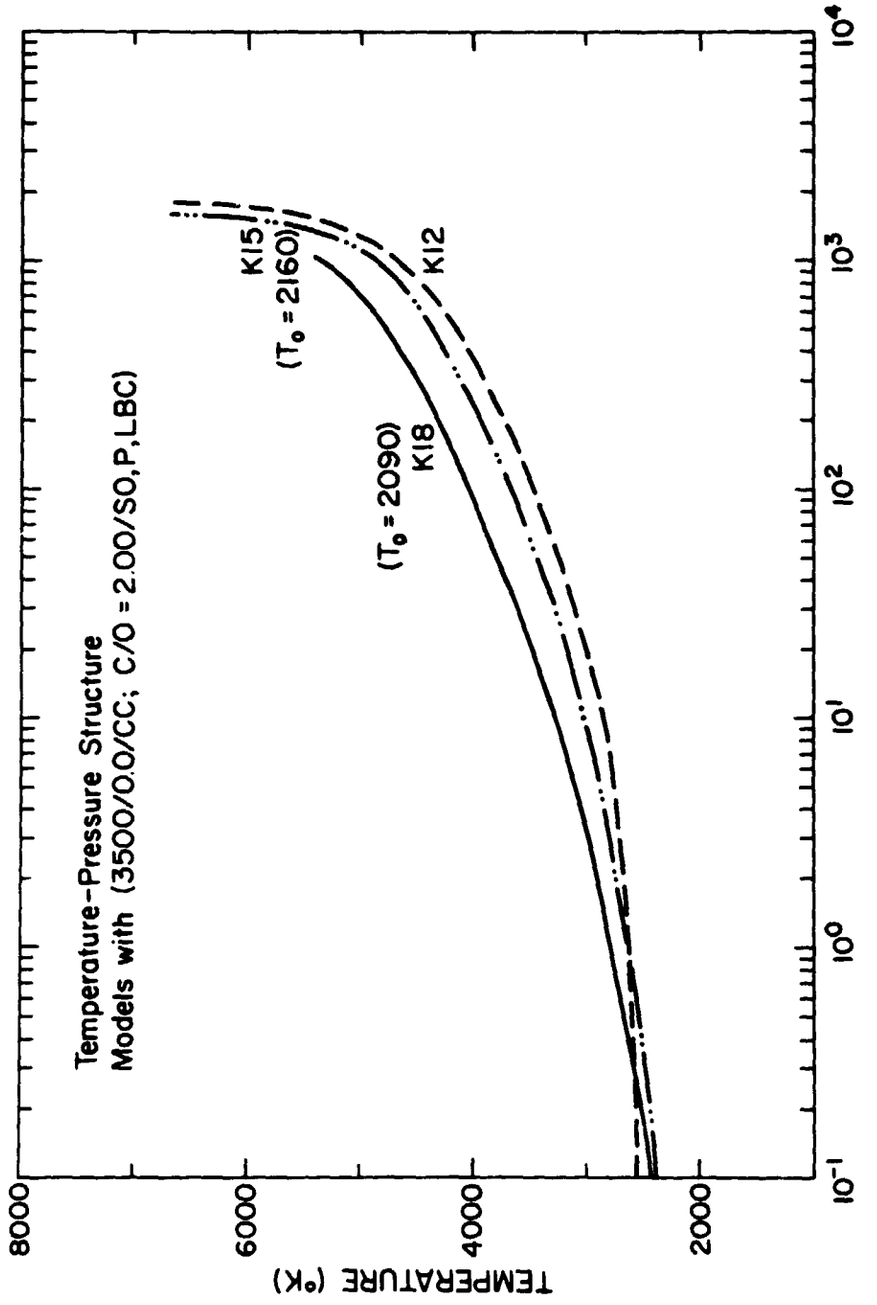

Figure 5. Effect of the C/H ratio on the temperature-pressure structure of models for carbon stars with (3500/0.0).

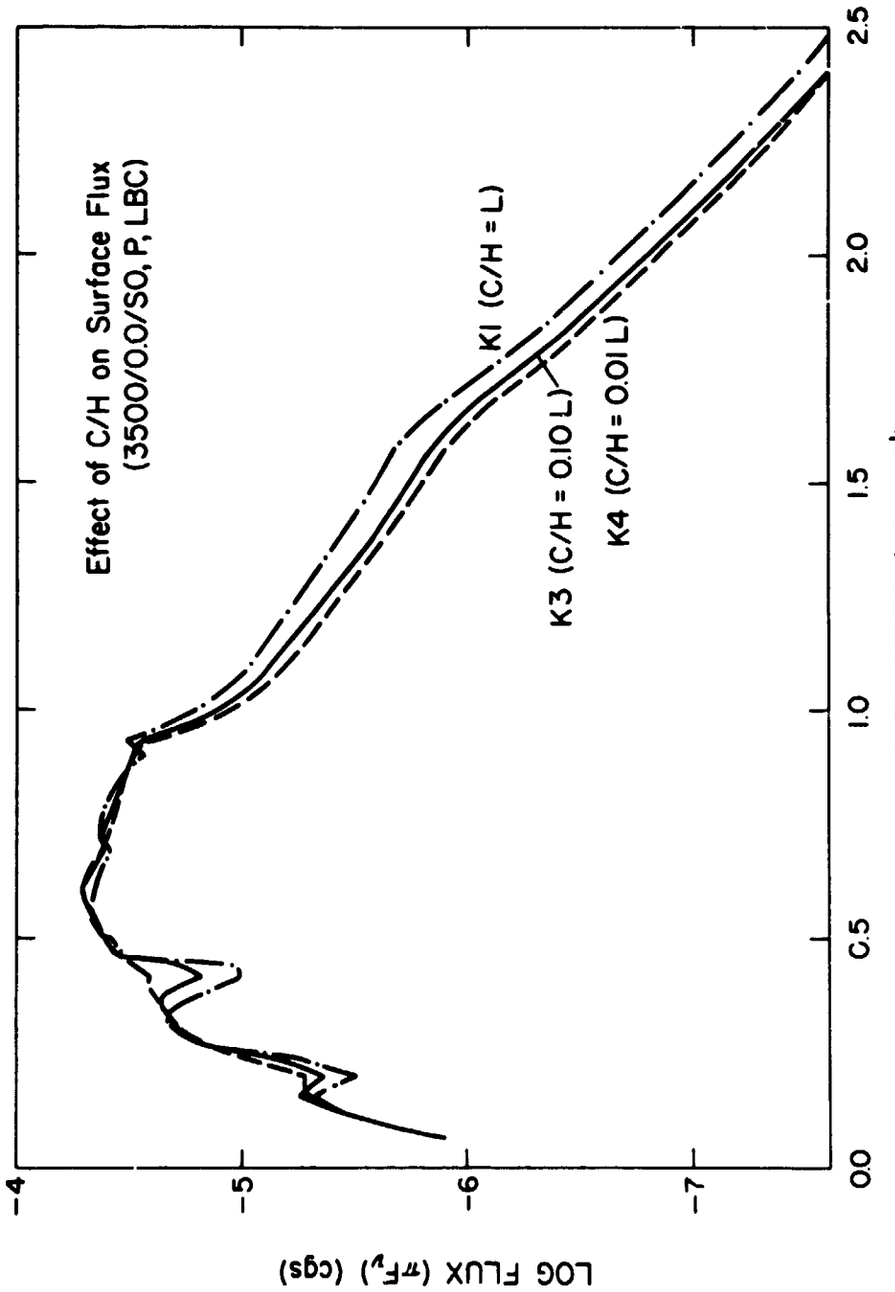

Figure 6. Effect of the C/H ratio on the surface flux of models with (3500|0.0).

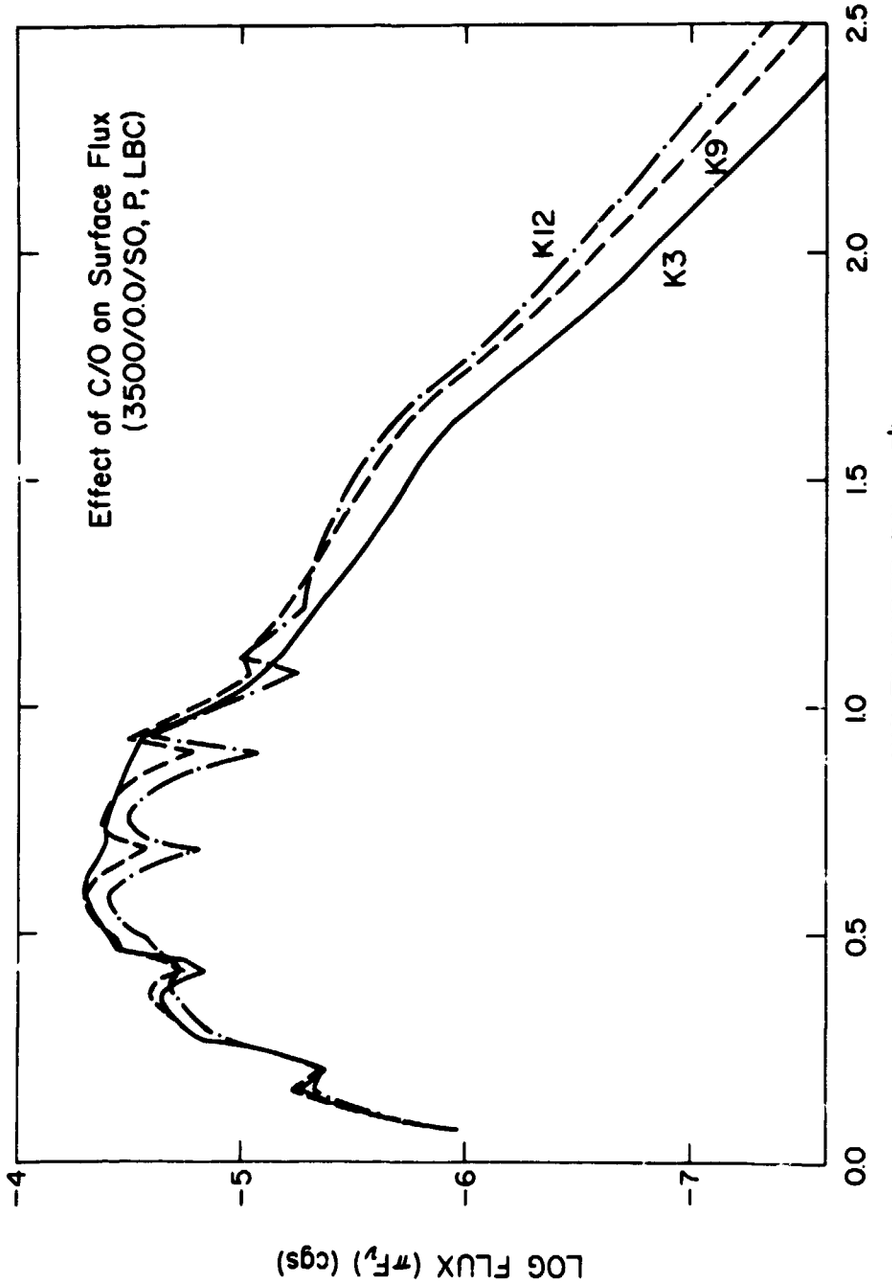

Figure 7. Effect of the C/O ratio on the surface flux of models already deficient in carbon (C/H = 0.10 C/H(sun)).

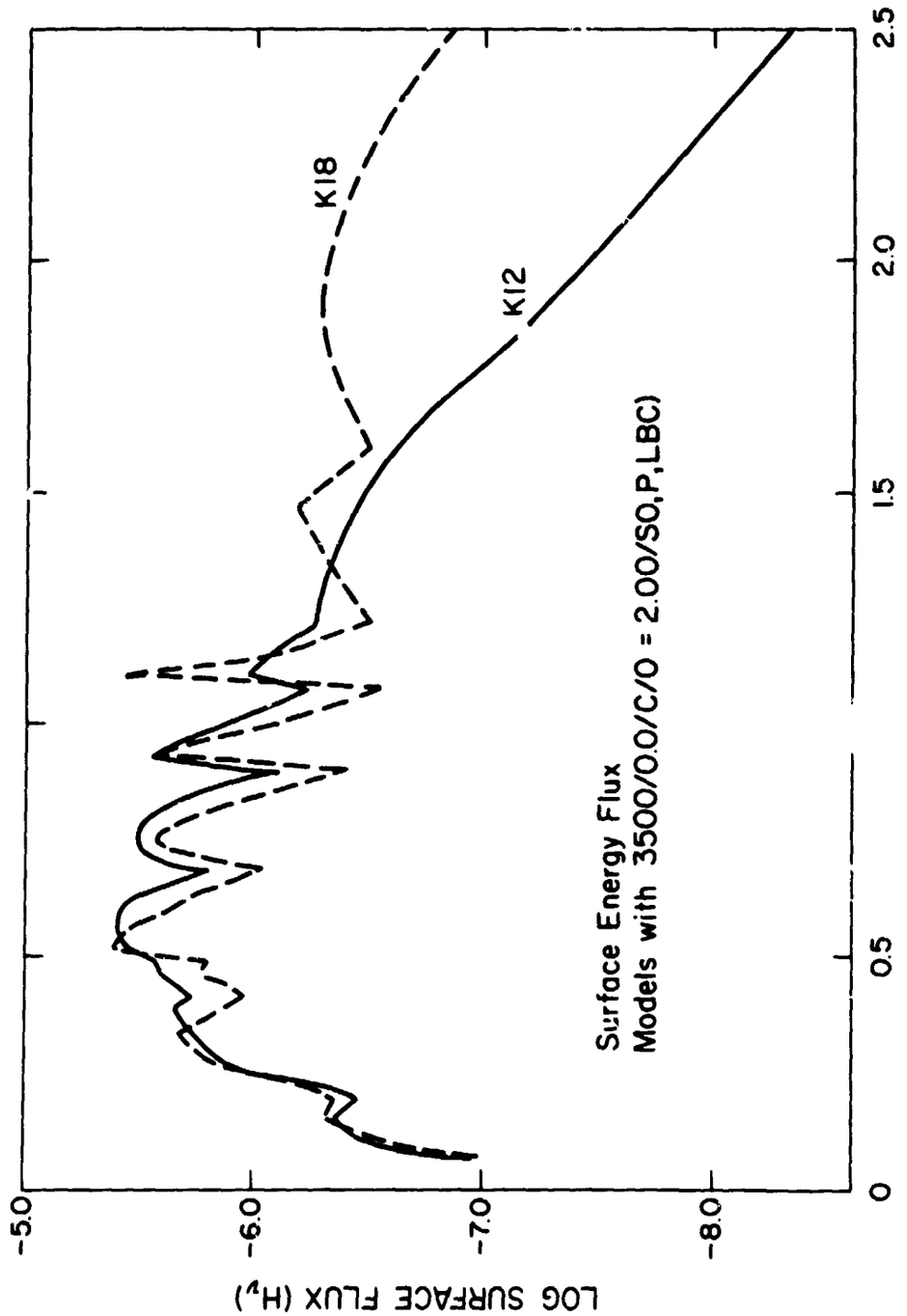

Figure 8. Effect of the C/H ratio on the surface flux of carbon stars (C/O = 2.00).

Table 1

Characteristics of Selected Model Atmospheres

Model No.	T_{eff} (^{o}K)	Log g	Chemical Composition	Opacities	Seq. No.
J1	5000	4.0	L	SO,P,MK II	214052
J2	5000	2.0	L	SO,P,MK II	213160
J3	5000	0.0	L	SO,P,MK II	745457
J4	4000	4.0	L	SO,P,MK II	214091
J5	4000	2.0	L	SO,P,MK II	214101R
J6	4000	0.0	L	SO,P,MK II	214106
J7	4000	-2.0	L	SO,P,MK II	214871
J8	3500	4.0	L	SO,P,MK II	215776
J9	3000	2.0	L	SO,P,MK II	214879
J10	3000	0.0	L	SO,P,MK II	V0112
J13	3500	0.0	C/H=3.55E-5, N/H=4.04E-4 O/H=5.89E-4, C/O=0.060	SO,P,MK II	745456
J14	3000	0.0	C/H=3.55E-5, N/H=4.04E-4 O/H=5.89E-4, C/O=0.060	SO,P,MK II	214050
J15	3000	-2.0	C/H=3.55E-5, N/H=4.04E-4 O/H=5.89E-4, C/O=0.060	SO,P,MK II	214053
J16	3500	0.0	C/H=3.55E-5, N/H=9.57E-4 O/H=3.55E-5, C/O=1.00	SO,P,MK II	215450R
J17	3000	0.0	C/H=3.55E-5, N/H=9.57E-4 O/H=3.55E-5, C/O=1.00	SO,P,MK II	215462
J18	3500	0.0	C/H=3.55E-5, N/H=9.57E-4 O/H=3.55E-5, C/O=1.00	SO,P,MKC	671223R
J19	3500	2.0	C/H=3.55E-5, N/H=9.86E-4 O/H=7.10E-6, C/O=5.00	SO,P,MK II	214072R
J20	3500	0.0	C/H=3.55E-5, N/H=9.86E-4 O/H=7.10E-6, C/O=5.00	SO,P,MK II	214051R
J21	3000	2.0	C/H=3.55E-5, N/H=9.86E-4 O/H=7.10E-6, C/O=5.00	SO,P,MK II	214102R
J22	3000	0.0	C/H=3.55E-5, N/H=9.86E-4 O/H=7.10E-6, C/O=5.00	SO,P,MK II	214107R
J23	2500	0.0	C/H=3.55E-5, N/H=9.86E-4 O/H=7.10E-6, C/O=5.00	SO,P,MK II	V0508
J24	2000	0.0	C/H=3.55E-5, N/H=9.86E-4 O/H=7.10E-6, C/O=5.00	SO,P,MK II	V0510

Table 1 (Continued)

Model No.	T_{eff} (^{o}K)	Log g	Chemical Composition	Opacities	Seq. No.
J30	3000	1.0	L*	SO,P,MK	156121
J31	2800	1.0	L*	SO,P,MK	156139
J32	2500	1.0	L*	SO,P,MK	167390
J35	2300	1.0	L*	SO,P,MK	156719
K1	3500	0.0	L	SO,P,MKC	V1526
K3	3500	0.0	C/H=3.55E-5, N/H=4.04E-4 O/H=5.89E-4, C/O=0.06	SO,P,MKC	213344
K4	3500	0.0	C/H=3.55E-6, N/H=4.04E-4 O/H=5.89E-4, C/O=0.006	SO,P,MKC	213376
K9	3500	0.0	C/H=3.55E-5, N/H=9.57E-4 O/H=3.55E-5, C/O=1.00	SO,P,MKC	156197 213012
K12	3500	0.0	C/H=3.55E-5, N/H=9.75E-4 O/H=1.78E-5, C/O=2.00	SO,P,MKC	155124 213041
K15	3500	0.0	C/H=3.55E-4, N/H=4.96E-4 O/H=1.78E-4, C/O=2.00	SO,P,MKC	670638
K16	3500	0.0	C/H=7.10E-4, N/H=9.92E-4 O/H=3.55E-4, C/O=2.00	SO,P,MKC	670646
K18	3500	0.0	C/H=3.55E-3, N/H=4.96E-3 O/H=1.78E-3, C/O=2.00	SO,P,MKC	157903
K20	3500	0.0	C/H=3.55E-3, N/H=1.00E-2 O/H=1.78E-3, C/O=2.00	SO,P,MKC	159379R
K23	3500	0.0	C/H=3.55E-4, N/H=8.15E-4 O/H=7.10E-5, C/O=5.00	SO,P,MKC	213112
K24	3500	0.0	C/H=3.55E-3, N/H=8.15E-4 O/H=7.10E-4, C/O=5.00	SO,P,MKC	213173
K26	3500	0.0	C/H=3.55E-2, N/H=8.15E-4 O/H=7.10E-4, C/O=50.0	SO,P,MKC	213381
K27**	3500	0.0	C/H=3.55E-2, N/H=8.15E-4 O/H=7.10E-4, C/O=50.0	SO,P,MKC	215725
K28	3500	4.0	C/H=3.55E-5, N/H=9.86E-4 O/H=7.10E-6, C/O=5.00	SO,P,MK II	214092

*These models have L only for C, N, and O. Metal abundances are as in: Goldberg, Müller, and Aller, 1960 (see Supplementary References, page 95).

**K27 has exactly the same parameters as K26 except He/H=3.00 in K27.

Table 2

Details of Selected Model At..spheres

TEFF 5000 LOG G 4.000 WAVE 10000 J 1

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	3548.4	2.834E+01	3.194E+09	1.243E-10	2.963E-03	2.142E+03
2	1.000E-05	3640.6	5.667E+01	6.265E+09	2.424E-10	3.529E-03	1.948E+03
3	1.259E-05	3656.4	6.377E+01	7.023E+09	2.716E-10	3.650E-03	1.920E+03
4	1.585E-05	3673.7	7.239E+01	7.942E+09	3.068E-10	3.786E-03	1.890E+03
5	1.995E-05	3692.8	8.281E+01	9.045E+09	3.492E-10	3.947E-03	1.857E+03
6	2.512E-05	3711.7	9.558E+01	1.039E+10	4.009E-	4.125E-03	1.823E+03
7	3.162E-05	3732.5	1.109E+02	1.208E+10	4.628E	4.329E-03	1.787E+03
8	3.981E-05	3754.5	1.295E+02	1.394E+10	5.370(	4.5.5E-03	1.751E+03
9	5.012E-05	3776.3	1.514E+02	1.621E+10	6.244E-10	4.815E-03	1.713E+03
10	6.310E-05	3798.7	1.776E+02	1.890E+10	7.279E-10	5.106E-03	1.674E+03
11	7.943E-05	3821.9	2.089E+02	2.206E+10	8.496E-10	5.428E-03	1.635E+03
12	1.000E-04	3845.0	2.453E+02	2.580E+10	9.933E-10	5.786E-03	1.595E+03
13	1.259E-04	3867.5	2.885E+02	3.012E+10	1.161E-09	6.195E-03	1.554E+03
14	1.585E-04	3889.9	3.392E+02	3.515E+10	1.358E-09	6.652E-03	1.514E+03
15	1.995E-04	3912.5	3.985E+02	4.099E+10	1.586E-09	7.156E-03	1.474E+03
16	2.512E-04	3934.5	4.680E+02	4.773E+10	1.852E-09	7.720E-03	1.433E+03
17	3.162E-04	3955.9	5.489E+02	5.545E+10	2.161E-09	8.356E-03	1.393E+03
18	3.981E-04	3976.2	6.429E+02	6.430E+10	2.518E-09	9.060E-03	1.353E+03
19	5.012E-04	3995.8	7.519E+02	7.438E+10	2.930E-09	9.849E-03	1.313E+03
20	6.310E-04	4013.8	8.779E+02	8.575E+10	3.406E-09	1.074E-02	1.273E+03
21	7.943E-04	4032.6	1.023E+03	9.879E+10	3.952E-09	1.169E-02	1.233E+03
22	1.000E-03	4056.3	1.192E+03	1.143E+11	4.576E-09	1.268E-02	1.194E+03
23	1.259E-03	4070.4	1.388E+03	1.308E+11	5.310E-09	1.392E-02	1.154E+03
24	1.585E-03	4084.1	1.609E+03	1.492E+11	6.138E-09	1.525E-02	1.115E+03
25	1.995E-03	4100.5	1.867E+03	1.706E+11	7.094E-09	1.669E-02	1.076E+03
26	2.512E-03	4120.9	2.162E+03	1.956E+11	8.173E-09	1.819E-02	1.037E+03
27	3.162E-03	4133.8	2.505E+03	2.225E+11	9.442E-09	1.999E-02	9.986E+02
28	3.981E-03	4147.8	2.892E+03	2.525E+11	1.086E-08	2.190E-02	9.601E+02
29	5.012E-03	4169.8	3.345E+03	2.880E+11	1.291E-08	2.398E-02	9.216E+02
30	6.310E-03	4179.7	3.858E+03	3.268E+11	1.438E-08	2.628E-02	8.832E+02
31	7.943E-03	4195.0	4.453E+03	3.711E+11	1.654E-08	2.883E-02	8.446E+02
32	1.000E-02	4211.9	5.130E+03	4.215E+11	1.898E-08	3.157E-02	8.065E+02
33	1.259E-02	4228.5	5.916E+03	4.786E+11	2.181E-08	3.463E-02	7.681E+02
34	1.585E-02	4246.5	6.810E+03	5.438E+11	2.500E-08	3.795E-02	7.297E+02
35	1.995E-02	4265.9	7.845E+03	6.189E+11	2.867E-08	4.162E-02	6.912E+02
36	2.512E-02	4286.8	9.024E+03	7.046E+11	3.282E-08	4.563E-02	6.527E+02
37	3.162E-02	4310.8	1.039E+04	8.045E+11	3.750E-08	5.007E-02	6.141E+02
38	3.981E-02	4335.6	1.194E+04	9.198E+11	4.295E-08	5.493E-02	5.753E+02
39	5.012E-02	4364.5	1.373E+04	1.055E+12	4.987E-08	6.032E-02	5.364E+02
40	6.310E-02	4396.9	1.578E+04	1.214E+12	5.596E-08	6.625E-02	4.973E+02
41	7.943E-02	4433.6	1.813E+04	1.403E+12	6.370E-08	7.284E-02	4.581E+02
42	1.000E-01	4475.3	2.081E+04	1.627E+12	7.253E-08	8.011E-02	4.186E+02
43	1.259E-01	4522.7	2.389E+04	1.895E+12	8.239E-08	8.819E-02	3.789E+02
44	1.585E-01	4576.6	2.740E+04	2.217E+12	9.338E-08	9.712E-02	3.388E+02
45	1.995E-01	4637.8	3.143E+04	2.606E+12	1.057E-07	1.070E-01	2.984E+02
46	2.512E-01	4707.3	3.601E+04	3.076E+12	1.193E-07	1.179E-01	2.576E+02
47	3.162E-01	4786.3	4.128E+04	3.648E+12	1.344E-07	1.300E-01	2.162E+02
48	3.981E-01	4875.7	4.724E+04	4.345E+12	1.510E-07	1.434E-01	1.742E+02
49	5.012E-01	4977.2	5.408E+04	5.205E+12	1.693E-07	1.583E-01	1.316E+02
50	6.310E-01	5092.0	6.185E+04	6.284E+12	1.892E-07	1.754E-01	8.815E+01
51	7.943E-01	5221.9	7.066E+04	7.697E+12	2.107E-07	1.963E-01	4.414E+01
52	1.000E+00	5368.0	8.046E+04	9.667E+12	2.334E-07	2.245E-01	0.0
53	1.259E+00	5531.9	9.107E+04	1.265E+13	2.563E-07	2.665E-01	-4.338E+01
54	1.585E+00	5715.0	1.020E+05	1.750E+13	2.778E-07	3.333E-01	-8.433E+01
55	1.995E+00	5918.6	1.127E+05	2.567E+13	2.964E-07	4.410E-01	-1.217E+02
56	2.512E+00	6144.0	1.226E+05	3.966E+13	3.105E-07	6.166E-01	-1.544E+02
57	3.162E+00	6409.4	1.315E+05	6.561E+13	3.190E-07	9.078E-01	-1.822E+02
58	3.981E+00	6706.2	1.387E+05	1.122E+14	3.215E-07	1.390E+00	-2.049E+02
59	5.012E+00	6979.8	1.447E+05	1.792E+14	3.222E-07	2.034E+00	-2.237E+02
60	6.310E+00	7231.1	1.502E+05	2.691E+14	3.227E-07	2.953E+00	-2.403E+02
61	7.943E+00	7456.6	1.551E+05	3.799E+14	3.228E-07	3.930E+00	-2.555E+02
62	1.000E+01	7670.5	1.597E+05	5.185E+14	3.230E-07	5.034E+00	-2.699E+02
63	1.259E+01	7864.8	1.642E+05	6.791E+14	3.235E-07	6.429E+00	-2.839E+02
64	1.585E+01	8053.1	1.688E+05	8.727E+14	3.244E-07	8.130E+00	-2.978E+02
65	1.999E+01	8231.6	1.733E+05	1.096E+15	3.253E-07	1.014E+01	-3.116E+02

Table 2 (Continued)

TEFF 5000 LOG G 2.000 MAVE 1.0000 J2

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	3094.9	5.815E-01	7.116E+07	2.926E-12	1.633E-03	2.35
2	1.000E-05	3172.9	1.163E+00	1.417E+08	5.708E-12	1.719E-03	2.195E+05
3	1.259E-05	3187.2	1.313E+00	1.599E+08	6.412E-12	1.734E-03	2.17
4	1.585E-05	3203.4	1.499E+00	1.826E+08	7.288E-12	1.748E-03	2.143E+05
5	1.995E-05	3221.5	1.733E+00	2.112E+08	8.374E-12	1.761E-03	2.113E+05
6	2.512E-05	3241.6	2.025E+00	2.471E+08	9.728E-12	1.773E-03	2.08
7	3.162E-05	3263.8	2.391E+00	2.923E+08	1.141E-11	1.783E-03	2.046E+05
8	3.981E-05	3288.3	2.849E+00	3.494E+08	1.349E-11	1.788E-03	2.009E+05
9	5.012E-05	3315.3	3.425E+00	4.218E+08	1.608E-11	1.789E-03	1.970E+05
10	6.31	3345.0	4.151E+00	5.141E+08	1.932E-11	1.784E-03	1.929E+05
11	7.943E-05	3377.7	5.069E+00	6.326E+08	2.337E-11	1.771E-03	1.885E+05
12	1.000E-04	3413.9	6.238E+00	7.856E+08	2.845E-11	1.749E-03	1.84
13	1.259E-04	3454.1	7.731E+00	9.845E+08	3.484E-11	1.717E-03	1.793E+05
14	1.585E-04	3499.2	9.654E+00	1.246E+09	4.295E-11	1.673E-03	1.743E+05
15	1.995E-04	3549.5	1.215E+01	1.591E+09	5.327E-11	1.618E-03	1.691E+05
16	2.512E-04	3605.7	1.540E+01	2.050E+09	6.649E-11	1.555E-03	1.637E+05
17	3.162E-04	3668.4	1.960E+01	2.662E+09	8.351E-11	1.485E-03	1.579E+05
18	3.981E-04	3738.3	2.534E+01	3.478E+09	1.055E-10	1.412E-03	1.519E+05
19	5.012E-04	3819.9	3.282E+01	4.549E+09	1.340E-10	1.340E-03	1.457E+05
20	6.310E-04	3879.0	4.237E+01	5.901E+09	1.699E-10	1.354E-03	1.394E+05
21	7.943E-04	3942.5	5.435E+01	7.575E+09	2.145E-10	1.384E-03	1.331E+05
22	1.000E-03	3999.9	6.883E+01	9.578E+09	2.677E-10	1.448E-03	1.27
23	1.259E-03	4026.0	8.577E+01	1.182E+10	3.314E-10	1.636E-03	1.214E+05
24	1.585E-03	4051.3	1.065E+02	1.427E+10	4.013E-10	1.824E-03	1.162E+05
25	1.995E-03	4075.1	1.258E+02	1.705E+10	4.804E-10	2.027E-03	1.114E+05
26	2.512E-03	4110.0	1.502E+02	2.024E+10	5.679E-10	2.187E-03	1.067E+05
27	3.162E-03	4124.1	1.782E+02	2.379E+10	6.721E-10	2.406E-03	1.022E+05
28	3.981E-03	4144.3	2.095E+02	2.770E+10	7.862E-10	2.727E-03	9.789E+04
29	5.012E-03	4165.8	2.455E+02	3.229E+10	9.169E-10	3.064E-03	9.366E+04
30	6.310E-03	4181.7	2.863E+02	3.733E+10	1.065E-09	3.337E-03	8.952E+04
31	7.943E-03	4199.3	3.327E+02	4.303E+10	1.233E-09	3.688E-03	8.548E+04
32	1.000E-02	4217.7	3.859E+02	4.952E+10	1.424E-09	4.066E-03	8.148E+04
33	1.259E-02	4234.8	4.464E+02	5.682E+10	1.640E-09	4.489E-03	7.753E+04
34	1.585E-02	4253.9	5.154E+02	6.512E+10	1.885E-09	4.938E-03	7.36
35	1.995E-02	4274.3	5.940E+02	7.460E+10	2.165E-09	5.429E-03	6.969E+04
36	2.512E-02	4296.1	6.852E+02	8.544E+10	2.482E-09	5.954E-03	6.578E+04
37	3.162E-02	4320.3	7.895E+02	9.794E+10	2.844E-09	6.522E-03	6.187E+04
38	3.981E-02	4347.4	9.091E+02	1.123E+11	3.254E-09	7.128E-03	5.793E+04
39	5.012E-02	4377.9	1.047E+03	1.291E+11	3.723E-09	7.786E-03	5.397E+04
+0	6.31	4412.2	1.207E+03	1.486E+11	4.256E-09	8.478E-03	4.996E+04
+1	7.943E-02	4451.0	1.391E+03	1.714E+11	4.864E-09	9.229E-03	4.592E+04
+2	1.000E-01	4494.7	1.604E+03	1.983E+11	5.554E-09	1.004E-02	4.182E+04
+3	1.259E-01	4544.2	1.852E+03	2.302E+11	6.340E-09	1.092E-02	3.766E+04
+4	1.585E-01	4601.0	2.137E+03	2.682E+11	7.229E-09	1.188E-02	3.344E+04
+5	1.995E-01	4662.9	2.466E+03	3.141E+11	8.234E-09	1.295E-02	2.916E+04
+6	2.512E-01	4733.9	2.848E+03	3.707E+11	9.36	1.419E-02	2.483E+04
+7	3.162E-01	4814.0	3.288E+03	4.392E+11	1.081E-08	1.567E-02	2.047E+04
+8	3.981E-01	4904.3	3.797E+03	5.217E+11	1.298E-08	1.755E-02	1.609E+04
+9	5.012E-01	5006.5	4.387E+03	6.207E+11	1.544E-08	2.001E-02	1.178E+04
50	6.31E-01	5122.3	4.921E+03	8.026E+11	1.994E-08	2.377E-02	7.588E+03
51	7.943E-01	5252.8	5.541E+03	1.102E+12	1.641E-08	2.926E-02	3.632E+03
52	1.000E+00	5399.2	6.186E+03	1.640E+12	1.774E-08	3.765E-02	0.0
53	1.259E+00	5562.0	6.753E+03	2.42	1.888E-08	5.059E-02	-3.242E+03
54	1.585E+00	5746.4	7.299E+03	3.727E+12	1.975E-08	7.670E-02	-6.864E+03
55	1.995E+00	5951.9	7.781E+03	5.946E+12	2.032E-08	1.023E-01	-8.47
56	2.512E+00	6182.0	8.195E+03	9.704E+12	2.06	1.527E-01	-1.049E+04
57	3.162E+00	6438.1	8.539E+03	1.637E+13	2.059E-08	2.341E-01	-1.215E+04
58	3.981E+00	6696.5	8.819E+03	2.66	2.043E-08	3.547E-01	-1.353E+04
59	5.012E+00	7044.7	9.054E+03	4.03	1.983E-08	6.091E-01	-1.464E+04
60	6.31E+00	7402.4	9.213E+03	8.405E+13	1.92	1.054E+00	-1.547E+04
61	7.943E+00	7680.4	9.337E+03	1.299E+14	1.866E-08	1.635E+00	-1.612E+04
62	1.000E+01	7906.8	9.438E+03	1.689E+14	1.825E-08	2.307E+00	-1.668E+04
63	1.259E+01	8099.3	9.534E+03	2.15	1.792E-08	3.122E+00	-1.721E+04
64	1.585E+01	8268.3	9.623E+03	2.645E+14	1.762E-08	4.073E+00	-1.772E+04
65	1.995E+01	8416.8	9.713E+03	3.140E+14	1.739E-08	5.143E+00	-1.823E+04

Table 2 (Continued)

TEFF 4000 LOG G 4.000 WAVE 10000 J4

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2729.0	8.049E+00	1.609E+08	4.606E-11	1.185E-02	1.852E+03
2	1.000E-05	2750.2	1.610E+01	2.897E+08	9.152E-11	1.242E-02	1.716E+03
3	1.259E-05	2753.9	1.817E+01	3.212E+08	1.032E-10	1.252E-02	1.695E+03
4	1.585E-05	2757.8	2.076E+01	3.597E+08	1.177E-10	1.263E-02	1.672E+03
5	1.995E-05	2762.2	2.398E+01	4.069E+08	1.359E-10	1.274E-02	1.646E+03
6	2.512E-05	2767.5	2.802E+01	4.655E+08	1.586E-10	1.287E-02	1.619E+03
7	3.162E-05	2773.8	3.305E+01	5.367E+08	1.868E-10	1.300E-02	1.589E+03
8	3.981E-05	2778.5	3.932E+01	6.230E+08	2.219E-10	1.314E-02	1.559E+03
9	5.012E-05	2785.4	4.711E+01	7.296E+08	2.654E-10	1.329E-02	1.527E+03
10	6.310E-05	2792.7	5.682E+01	8.594E+08	3.195E-10	1.345E-02	1.493E+03
11	7.943E-05	2800.4	6.888E+01	1.017E+09	3.867E-10	1.362E-02	1.459E+03
12	1.000E-04	2809.7	8.387E+01	1.212E+09	4.698E-10	1.382E-02	1.424E+03
13	1.259E-04	2819.5	1.025E+02	1.449E+09	5.727E-10	1.403E-02	1.388E+03
14	1.585E-04	2830.8	1.255E+02	1.740E+09	6.997E-10	1.426E-02	1.352E+03
15	1.995E-04	2843.3	1.540E+02	2.097E+09	8.560E-10	1.452E-02	1.315E+03
16	2.512E-04	2856.8	1.893E+02	2.533E+09	1.049E-09	1.480E-02	1.278E+03
17	3.162E-04	2872.9	2.327E+02	3.076E+09	1.284E-09	1.513E-02	1.241E+03
18	3.981E-04	2889.6	2.861E+02	3.737E+09	1.572E-09	1.549E-02	1.203E+03
19	5.012E-04	2908.0	3.518E+02	4.553E+09	1.924E-09	1.589E-02	1.165E+03
20	6.310E-04	2928.6	4.323E+02	5.562E+09	2.350E-09	1.635E-02	1.128E+03
21	7.943E-04	2950.1	5.307E+02	6.797E+09	2.868E-09	1.685E-02	1.090E+03
22	1.000E-03	2973.0	6.507E+02	8.316E+09	3.494E-09	1.741E-02	1.052E+03
23	1.259E-03	2998.3	7.967E+02	1.020E+10	4.247E-09	1.804E-02	1.014E+03
24	1.585E-03	3023.6	9.738E+02	1.249E+10	5.153E-09	1.873E-02	9.763E+02
25	1.995E-03	3049.2	1.189E+03	1.528E+10	6.243E-09	1.948E-02	9.386E+02
26	2.512E-03	3077.1	1.448E+03	1.873E+10	7.543E-09	2.034E-02	9.008E+02
27	3.162E-03	3104.4	1.760E+03	2.289E+10	9.098E-09	2.126E-02	8.632E+02
28	3.981E-03	3130.7	2.136E+03	2.787E+10	1.096E-08	2.227E-02	8.256E+02
29	5.012E-03	3156.3	2.588E+03	3.399E+10	1.318E-08	2.340E-02	7.881E+02
30	6.310E-03	3185.0	3.126E+03	4.120E+10	1.581E-08	2.463E-02	7.508E+02
31	7.943E-03	3210.3	3.773E+03	4.978E+10	1.895E-08	2.597E-02	7.136E+02
32	1.000E-02	3235.8	4.543E+03	6.005E+10	2.267E-08	2.747E-02	6.765E+02
33	1.259E-02	3260.6	5.457E+03	7.219E+10	2.708E-08	2.912E-02	6.397E+02
34	1.585E-02	3284.0	6.542E+03	8.640E+10	3.229E-08	3.092E-02	6.031E+02
35	1.995E-02	3307.9	7.827E+03	1.033E+11	3.844E-08	3.294E-02	5.667E+02
36	2.512E-02	3331.8	9.342E+03	1.232E+11	4.565E-08	3.519E-02	5.305E+02
37	3.162E-02	3355.8	1.113E+04	1.466E+11	5.469E-08	3.769E-02	4.947E+02
38	3.981E-02	3381.6	1.322E+04	1.747E+11	6.390E-08	4.053E-02	4.592E+02
39	5.012E-02	3409.0	1.566E+04	2.082E+11	7.522E-08	4.374E-02	4.239E+02
40	6.310E-02	3439.1	1.851E+04	2.487E+11	8.821E-08	4.742E-02	3.891E+02
41	7.943E-02	3472.6	2.181E+04	2.980E+11	1.038E-07	5.166E-02	3.545E+02
42	1.000E-01	3509.6	2.561E+04	3.583E+11	1.196E-07	5.655E-02	3.203E+02
43	1.259E-01	3552.2	2.997E+04	4.339E+11	1.381E-07	6.233E-02	2.865E+02
44	1.585E-01	3599.4	3.493E+04	5.282E+11	1.585E-07	6.908E-02	2.530E+02
45	1.995E-01	3653.5	4.054E+04	6.494E+11	1.807E-07	7.717E-02	2.199E+02
46	2.512E-01	3714.5	4.684E+04	8.060E+11	2.045E-07	8.686E-02	1.871E+02
47	3.162E-01	3783.8	5.388E+04	1.013E+12	2.298E-07	9.862E-02	1.548E+02
48	3.981E-01	3861.7	6.161E+04	1.289E+12	2.563E-07	1.129E-01	1.229E+02
49	5.012E-01	3950.4	7.009E+04	1.666E+12	2.836E-07	1.305E-01	9.151E+01
50	6.310E-01	4050.2	7.928E+04	2.190E+12	3.114E-07	1.520E-01	6.060E+01
51	7.943E-01	4162.9	8.920E+04	2.886E+12	3.394E-07	1.779E-01	3.013E+01
52	1.000E+00	4291.4	9.984E+04	3.860E+12	3.670E-07	2.088E-01	0.0
53	1.259E+00	4433.6	1.113E+05	5.154E+12	3.946E-07	2.434E-01	-3.006E+01
54	1.585E+00	4591.7	1.237E+05	6.842E+12	4.225E-07	2.803E-01	-6.049E+01
55	1.995E+00	4763.2	1.374E+05	8.948E+12	4.515E-07	3.171E-01	-9.186E+01
56	2.512E+00	4949.7	1.528E+05	1.154E+13	4.824E-07	3.536E-01	-1.248E+02
57	3.162E+00	5159.7	1.703E+05	1.483E+13	5.149E-07	3.916E-01	-1.598E+02
58	3.981E+00	5381.0	1.901E+05	1.916E+13	5.506E-07	4.395E-01	-1.968E+02
59	5.012E+00	5637.2	2.117E+05	2.452E+13	5.851E-07	5.251E-01	-2.348E+02
60	6.310E+00	5927.8	2.332E+05	4.137E+13	6.125E-07	7.054E-01	-2.707E+02
61	7.943E+00	6207.6	2.526E+05	6.738E+13	6.332E-07	1.010E+00	-3.018E+02
62	1.000E+01	6451.9	2.695E+05	1.049E+14	6.500E-07	1.420E+00	-3.284E+02
63	1.259E+01	6673.9	2.854E+05	1.563E+14	6.652E-07	1.944E+00	-3.519E+02
64	1.585E+01	6873.7	2.997E+05	2.215E+14	6.781E-07	2.569E+00	-3.735E+02
65	1.995E+01	7066.2	3.130E+05	3.064E+14	6.904E-07	3.343E+00	-3.937E+02

Table 2 (Continued)

TEFF 4000. LOG G 2.000 WAVE 10000. J5

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 9.5100E-05 O 5.9900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2500.8	1.122E-01	3.256E+06	6.996E-13	8.370E-03	2.115E+05
2	1.000E-05	2531.1	2.244E-01	6.027E+06	1.383E-12	8.911E-03	1.989E+05
3	1.259E-05	2536.3	2.532E-01	6.707E+06	1.557E-12	9.006E-03	1.970E+05
4	1.585E-05	2542.4	2.890E-01	7.552E+06	1.773E-12	9.108E-03	1.948E+05
5	1.995E-05	2549.1	3.336E-01	8.590E+06	2.041E-12	9.219E-03	1.925E+05
6	2.512E-05	2556.4	3.895E-01	9.874E+06	2.376E-12	9.340E-03	1.899E+05
7	3.162E-05	2564.5	4.587E-01	1.145E+07	2.789E-12	9.466E-03	1.872E+05
8	3.981E-05	2573.6	5.445E-01	1.341E+07	3.300E-12	9.597E-03	1.844E+05
9	5.012E-05	2583.0	6.510E-01	1.579E+07	3.931E-12	9.735E-03	1.815E+05
10	6.310E-05	2593.4	7.833E-01	1.874E+07	4.711E-12	9.878E-03	1.784E+05
11	7.943E-05	2605.4	9.474E-01	2.243E+07	5.672E-12	1.002E-02	1.752E+05
12	1.000E-04	2617.8	1.151E+00	2.697E+07	6.859E-12	1.018E-02	1.720E+05
13	1.259E-04	2631.5	1.403E+00	3.262E+07	8.319E-12	1.033E-02	1.686E+05
14	1.585E-04	2647.1	1.716E+00	3.975E+07	1.011E-11	1.049E-02	1.652E+05
15	1.995E-04	2663.6	2.104E+00	4.865E+07	1.232E-11	1.066E-02	1.618E+05
16	2.512E-04	2682.0	2.585E+00	5.992E+07	1.504E-11	1.083E-02	1.582E+05
17	3.162E-04	2702.4	3.181E+00	7.430E+07	1.836E-11	1.099E-02	1.547E+05
18	3.981E-04	2724.7	3.919E+00	9.269E+07	2.249E-11	1.117E-02	1.510E+05
19	5.012E-04	2748.8	4.835E+00	1.163E+08	2.745E-11	1.134E-02	1.473E+05
20	6.310E-04	2775.2	5.971E+00	1.457E+08	3.357E-11	1.150E-02	1.436E+05
21	7.943E-04	2803.6	7.381E+00	1.829E+08	4.108E-11	1.166E-02	1.398E+05
22	1.000E-03	2833.9	9.132E+00	2.290E+08	5.028E-11	1.181E-02	1.360E+05
23	1.259E-03	2866.7	1.131E+01	3.081E+08	6.157E-11	1.194E-02	1.321E+05
24	1.585E-03	2900.9	1.403E+01	3.988E+08	7.544E-11	1.206E-02	1.281E+05
25	1.995E-03	2936.7	1.741E+01	5.186E+08	9.251E-11	1.216E-02	1.240E+05
26	2.512E-03	2974.3	2.164E+01	6.777E+08	1.135E-10	1.224E-02	1.199E+05
27	3.162E-03	3012.4	2.694E+01	8.862E+08	1.395E-10	1.231E-02	1.157E+05
28	3.981E-03	3050.7	3.357E+01	1.158E+09	1.717E-10	1.239E-02	1.115E+05
29	5.012E-03	3089.0	4.187E+01	1.510E+09	2.115E-10	1.245E-02	1.071E+05
30	6.310E-03	3125.9	5.225E+01	1.957E+09	2.608E-10	1.256E-02	1.027E+05
31	7.943E-03	3160.4	6.519E+01	2.512E+09	3.218E-10	1.271E-02	9.824E+04
32	1.000E-02	3193.0	8.123E+01	3.197E+09	3.969E-10	1.292E-02	9.376E+04
33	1.259E-02	3222.1	1.011E+02	4.018E+09	4.893E-10	1.321E-02	8.928E+04
34	1.585E-02	3250.0	1.254E+02	5.016E+09	6.019E-10	1.355E-02	8.480E+04
35	1.995E-02	3276.2	1.553E+02	6.216E+09	7.394E-10	1.395E-02	8.030E+04
36	2.512E-02	3302.8	1.917E+02	7.689E+09	9.057E-10	1.437E-02	7.579E+04
37	3.162E-02	3331.0	2.363E+02	9.529E+09	1.107E-09	1.481E-02	7.145E+04
38	3.981E-02	3361.7	2.907E+02	1.186E+10	1.350E-09	1.525E-02	6.701E+04
39	5.012E-02	3395.8	3.573E+02	1.485E+10	1.642E-09	1.570E-02	6.254E+04
40	6.310E-02	3434.1	4.386E+02	1.875E+10	1.994E-09	1.616E-02	5.806E+04
41	7.943E-02	3476.9	5.383E+02	2.387E+10	2.416E-09	1.662E-02	5.353E+04
42	1.000E-01	3524.9	6.601E+02	3.066E+10	2.923E-09	1.710E-02	4.895E+04
43	1.259E-01	3578.5	8.093E+02	3.973E+10	3.529E-09	1.761E-02	4.432E+04
44	1.585E-01	3638.1	9.914E+02	5.189E+10	4.252E-09	1.816E-02	3.962E+04
45	1.995E-01	3704.5	1.214E+03	6.827E+10	5.111E-09	1.877E-02	3.487E+04
46	2.512E-01	3777.9	1.484E+03	9.026E+10	6.126E-09	1.947E-02	3.005E+04
47	3.162E-01	3859.0	1.811E+03	1.197E+11	7.317E-09	2.029E-02	2.519E+04
48	3.981E-01	3948.5	2.205E+03	1.59CE+11	8.705E-09	2.125E-02	2.025E+04
49	5.012E-01	4046.9	2.677E+03	2.107E+11	1.031E-08	2.236E-02	1.527E+04
50	6.310E-01	4154.5	3.241E+03	2.778E+11	1.216E-08	2.363E-02	1.024E+04
51	7.943E-01	4273.2	3.912E+03	3.640E+11	1.426E-08	2.504E-02	5.155E+03
52	1.000E+00	4402.7	4.708E+03	4.722E+11	1.665E-08	2.661E-02	0.E+00
53	1.259E+00	4543.5	5.649E+03	6.054E+11	1.936E-08	2.837E-02	-5.233E+03
54	1.585E+00	4700.8	6.759E+03	7.715E+11	2.238E-08	3.037E-02	-1.056E+04
55	1.995E+00	4867.4	8.056E+03	9.871E+11	2.575E-08	3.321E-02	-1.594E+04
56	2.512E+00	5050.9	9.515E+03	1.311E+12	2.931E-08	3.801E-02	-2.124E+04
57	3.162E+00	5253.5	1.106E+04	1.885E+12	3.275E-08	4.735E-02	-2.620E+04
58	3.981E+00	5469.2	1.253E+04	2.938E+12	3.564E-08	6.453E-02	-3.056E+04
59	5.012E+00	5712.8	1.385E+04	5.003E+12	3.771E-08	9.612E-02	-3.414E+04
60	6.310E+00	5980.8	1.492E+04	8.964E+12	3.879E-08	1.513E-01	-3.695E+04
61	7.943E+00	6267.3	1.579E+04	1.627E+13	3.916E-08	2.435E-01	-3.913E+04
62	1.000E+01	6615.9	1.644E+04	3.171E+13	3.859E-08	4.220E-01	-4.079E+04
63	1.259E+01	6931.3	1.692E+04	5.52CE+13	3.785E-08	6.800E-01	-4.203E+04
64	1.585E+01	7180.9	1.732E+04	8.306E+13	3.735E-08	9.849E-01	-4.308E+04
65	1.995E+01	7400.1	1.767E+04	1.164E+14	3.691E-08	1.36CE+00	-4.401E+04

Table 2 (Continued)

TEFF 4000 LOG G 0.000 WAVE 10300 J6

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2284.8	1.602E-03	6.165E+04	1.093E-14	5.799E-03	2.419E+07
2	1.000E-05	2316.7	3.204E-03	1.173E+05	2.156E-14	6.181E-03	2.303E+07
3	1.259E-05	2322.5	3.616E-03	1.313E+05	2.427E-14	6.247E-03	2.285E+07
4	1.585E-05	2329.1	4.127E-03	1.486E+05	2.762E-14	6.319E-03	2.265E+07
5	1.995E-05	2336.2	4.763E-03	1.701E+05	3.178E-14	6.397E-03	2.243E+07
6	2.512E-05	2344.5	5.560E-03	1.972E+05	3.697E-14	6.476E-03	2.220E+07
7	3.162E-05	2353.5	6.549E-03	2.307E+05	4.338E-14	6.560E-03	2.195E+07
8	3.981E-05	2363.0	7.775E-03	2.722E+05	5.130E-14	6.648E-03	2.168E+07
9	5.012E-05	2373.8	9.297E-03	3.243E+05	6.106E-14	6.734E-03	2.141E+07
10	6.310E-05	2385.6	1.119E-02	3.898E+05	7.315E-14	6.818E-03	2.112E+07
11	7.943E-05	2398.2	1.355E-02	4.721E+05	8.809E-14	6.902E-03	2.083E+07
12	1.000E-04	2412.3	1.648E-02	5.768E+05	1.065E-13	6.979E-03	2.052E+07
13	1.259E-04	2427.6	2.013E-02	7.105E+05	1.293E-13	7.049E-03	2.021E+07
14	1.585E-04	2444.4	2.469E-02	8.827E+05	1.575E-13	7.109E-03	1.989E+07
15	1.995E-04	2462.9	3.038E-02	1.106E+06	1.923E-13	7.155E-03	1.956E+07
16	2.512E-04	2483.2	3.751E-02	1.400E+06	2.355E-13	7.184E-03	1.922E+07
17	3.162E-04	2505.6	4.646E-02	1.789E+06	2.891E-13	7.188E-03	1.887E+07
18	3.981E-04	2530.1	5.775E-02	2.310E+06	3.558E-13	7.165E-03	1.852E+07
19	5.012E-04	2557.1	7.204E-02	3.018E+06	4.392E-13	7.104E-03	1.815E+07
20	6.310E-04	2586.8	9.025E-02	3.992E+06	5.439E-13	6.998E-03	1.778E+07
21	7.943E-04	2619.5	1.136E-01	5.351E+06	6.761E-13	6.839E-03	1.739E+07
22	1.000E-03	2655.5	1.439E-01	7.275E+06	8.446E-13	6.615E-03	1.699E+07
23	1.259E-03	2695.2	1.836E-01	1.004E+07	1.062E-12	6.319E-03	1.657E+07
24	1.585E-03	2739.0	2.363E-01	1.408E+07	1.344E-12	5.944E-03	1.612E+07
25	1.995E-03	2787.6	3.075E-01	2.009E+07	1.719E-12	5.488E-03	1.565E+07
26	2.512E-03	2841.2	4.058E-01	2.916E+07	2.225E-12	4.967E-03	1.515E+07
27	3.162E-03	2899.7	5.440E-01	4.299E+07	2.923E-12	4.407E-03	1.460E+07
28	3.981E-03	2961.8	7.419E-01	6.401E+07	3.903E-12	3.870E-03	1.402E+07
29	5.012E-03	3023.3	1.025E+00	9.498E+07	5.282E-12	3.439E-03	1.339E+07
30	6.310E-03	3078.7	1.420E+00	1.379E+08	7.183E-12	3.174E-03	1.275E+07
31	7.943E-03	3122.6	1.943E+00	1.924E+08	9.690E-12	3.102E-03	1.213E+07
32	1.000E-02	3159.0	2.603E+00	2.594E+08	1.283E-11	3.123E-03	1.154E+07
33	1.259E-02	3191.0	3.420E+00	3.409E+08	1.669E-11	3.187E-03	1.098E+07
34	1.585E-02	3222.4	4.428E+00	4.418E+08	2.140E-11	3.245E-03	1.045E+07
35	1.995E-02	3254.3	5.682E+00	5.685E+08	2.719E-11	3.293E-03	9.928E+06
36	2.512E-02	3287.7	7.237E+00	7.284E+08	3.428E-11	3.321E-03	9.418E+06
37	3.162E-02	3323.1	9.188E+00	9.331E+08	4.306E-11	3.330E-03	8.911E+06
38	3.981E-02	3360.6	1.164E+01	1.196E+09	5.394E-11	3.324E-03	8.402E+06
39	5.012E-02	3401.3	1.474E+01	1.537E+09	6.751E-11	3.297E-03	7.888E+06
40	6.310E-02	3445.4	1.869E+01	1.984E+09	8.450E-11	3.254E-03	7.365E+06
41	7.943E-02	3493.6	2.375E+01	2.574E+09	1.059E-10	3.194E-03	6.831E+06
42	1.000E-01	3546.4	3.025E+01	3.357E+09	1.328E-10	3.120E-03	6.283E+06
43	1.259E-01	3604.6	3.865E+01	4.403E+09	1.669E-10	3.035E-03	5.719E+06
44	1.585E-01	3668.6	4.953E+01	5.802E+09	2.102E-10	2.943E-03	5.139E+06
45	1.995E-01	3739.1	6.368E+01	7.675E+09	2.651E-10	2.850E-03	4.540E+06
46	2.512E-01	3816.6	8.207E+01	1.017E+10	3.347E-10	2.762E-03	3.923E+06
47	3.162E-01	3901.3	1.059E+02	1.347E+10	4.226E-10	2.686E-03	3.290E+06
48	3.981E-01	3995.2	1.367E+02	1.778E+10	5.326E-10	2.619E-03	2.640E+06
49	5.012E-01	4095.4	1.764E+02	2.334E+10	6.702E-10	2.596E-03	1.980E+06
50	6.310E-01	4203.1	2.261E+02	3.033E+10	8.368E-10	2.610E-03	1.315E+06
51	7.943E-01	4320.5	2.881E+02	3.929E+10	1.037E-09	2.676E-03	6.527E+05
52	1.000E+00	4449.8	3.629E+02	5.104E+10	1.269E-09	2.813E-03	0.0
53	1.259E+00	4595.8	4.513E+02	6.833E+10	1.527E-09	3.096E-03	-6.307E+05
54	1.585E+00	4755.7	5.486E+02	9.675E+10	1.792E-09	3.677E-03	-1.216E+06
55	1.995E+00	4928.1	6.461E+02	1.475E+11	2.039E-09	4.787E-03	-1.730E+06
56	2.512E+00	5116.4	7.359E+02	2.416E+11	2.237E-09	6.783E-03	-2.155E+06
57	3.162E+00	5318.4	8.143E+02	4.147E+11	2.381E-09	1.019E-02	-2.494E+06
58	3.981E+00	5540.9	8.788E+02	7.395E+11	2.465E-09	1.602E-02	-2.759E+06
59	5.012E+00	5786.7	9.291E+02	1.353E+12	2.494E-09	2.606E-02	-2.962E+06
60	6.310E+00	6055.5	9.668E+02	2.494E+12	2.477E-09	4.352E-02	-3.116E+06
61	7.943E+00	6341.0	9.949E+02	4.534E+12	2.430E-09	7.370E-02	-3.233E+06
62	1.000E+01	6692.8	1.015E+03	8.822E+12	2.342E-09	1.396E-01	-3.319E+06
63	1.259E+01	7093.4	1.026E+03	1.733E+13	2.218E-09	2.917E-01	-3.376E+06
64	1.585E+01	7336.7	1.034E+03	2.519E+13	2.146E-09	4.610E-01	-3.415E+06
65	1.995E+01	7522.3	1.042E+03	3.298E+13	2.094E-09	6.561E-01	-3.449E+06

Table 2 (Continued)

TEFF 4000 LOG G -2.000 MAVE 1.0000 J7

H 1.0000E+00 He 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2032.0	7.0050E-06	3.3330E+02	5.4350E-17	3.7020E-03	4.7550E+09
2	1.0000E-05	2060.9	1.4170E-05	6.4830E+02	1.0720E-16	4.0000E-03	4.3950E+09
3	1.2590E-05	2066.1	1.5970E-05	7.2810E+02	1.2050E-16	4.0370E-03	4.3480E+09
4	1.5850E-05	2072.0	1.8190E-05	8.2600E+02	1.3690E-16	4.0750E-03	4.2760E+09
5	1.9950E-05	2078.6	2.0930E-05	9.4900E+02	1.5730E-16	4.1130E-03	4.2070E+09
6	2.5120E-05	2085.9	2.4370E-05	1.1040E+03	1.8210E-16	4.1530E-03	4.1340E+09
7	3.1620E-05	2093.9	2.8570E-05	1.2950E+03	2.1270E-16	4.1920E-03	4.0650E+09
8	3.9810E-05	2102.9	3.3760E-05	1.5350E+03	2.5020E-16	4.2260E-03	3.9970E+09
9	5.0120E-05	2112.5	4.0170E-05	1.8300E+03	2.9640E-16	4.2590E-03	3.8810E+09
10	6.3100E-05	2123.2	4.8170E-05	2.2200E+03	3.5360E-16	4.2850E-03	3.7880E+09
11	7.9430E-05	2135.0	5.8140E-05	2.6710E+03	4.2450E-16	4.3030E-03	3.6980E+09
12	1.0000E-04	2148.0	7.0080E-05	3.3540E+03	5.1300E-16	4.3110E-03	3.5880E+09
13	1.2590E-04	2162.5	8.6560E-05	4.1990E+03	6.4460E-16	4.3000E-03	3.4820E+09
14	1.5850E-04	2178.4	1.0690E-04	5.3220E+03	7.6500E-16	4.2860E-03	3.3720E+09
15	1.9950E-04	2196.3	1.3330E-04	6.8740E+03	9.4500E-16	4.2450E-03	3.2590E+09
16	2.5120E-04	2216.3	1.6800E-04	9.0200E+03	1.1820E-15	4.1820E-03	3.1430E+09
17	3.1620E-04	2238.7	2.1450E-04	1.2210E+04	1.4940E-15	4.0800E-03	3.0250E+09
18	3.9810E-04	2264.1	2.7850E-04	1.6030E+04	1.9170E-15	3.9570E-03	2.9050E+09
19	5.0120E-04	2292.8	3.6030E-04	2.3470E+04	2.5040E-15	3.7860E-03	2.7840E+09
20	6.3100E-04	2325.7	4.9810E-04	3.4240E+04	3.3380E-15	3.5650E-03	2.6620E+09
21	7.9430E-04	2363.6	6.9210E-04	5.1710E+04	4.5630E-15	3.2860E-03	2.5400E+09
22	1.0000E-03	2407.7	9.9300E-04	8.1490E+04	6.4270E-15	2.9460E-03	2.4180E+09
23	1.2590E-03	2459.6	1.4480E-03	1.3490E+05	9.3970E-15	2.5450E-03	2.2970E+09
24	1.5850E-03	2521.4	2.3190E-03	2.3580E+05	1.4330E-14	2.0930E-03	2.1760E+09
25	1.9950E-03	2595.3	3.0220E-03	4.3670E+05	2.2940E-14	1.6240E-03	2.0530E+09
26	2.5120E-03	2680.5	6.0270E-03	8.4670E+05	3.8500E-14	1.2070E-03	1.9290E+09
27	3.1620E-03	2787.5	1.1740E-02	1.6350E+06	6.6070E-14	9.2380E-04	1.8070E+09
28	3.9810E-03	2842.2	2.0160E-02	2.9450E+06	1.1040E-13	7.8260E-04	1.6940E+09
29	5.0120E-03	2907.7	3.2620E-02	4.9140E+06	1.8740E-13	6.9720E-04	1.5940E+09
30	6.3100E-03	2971.7	5.0460E-02	7.8120E+06	2.6430E-13	6.2150E-04	1.5030E+09
31	7.9430E-03	3038.1	7.6150E-02	1.2100E+07	3.9020E-13	5.4800E-04	1.4160E+09
32	1.0000E-02	3103.0	1.1320E-01	1.8300E+07	5.8760E-13	4.9300E-04	1.3320E+09
33	1.2590E-02	3163.0	1.6400E-01	2.6890E+07	8.1070E-13	4.5730E-04	1.2520E+09
34	1.5850E-02	3217.7	2.3430E-01	3.8360E+07	1.1330E-12	4.3560E-04	1.1760E+09
35	1.9950E-02	3267.3	3.2570E-01	5.3200E+07	1.5510E-12	4.2440E-04	1.1040E+09
36	2.5120E-02	3313.1	4.4330E-01	7.2310E+07	2.0080E-12	4.1820E-04	1.0360E+09
37	3.1620E-02	3356.8	5.9350E-01	9.6430E+07	2.7510E-12	4.1510E-04	9.7110E+08
38	3.9810E-02	3399.7	7.8390E-01	1.2680E+08	3.5880E-12	4.1260E-04	9.0840E+08
39	5.0120E-02	3443.4	1.0260E+00	1.6930E+08	4.6370E-12	4.0840E-04	8.4710E+08
40	6.3100E-02	3489.6	1.3360E+00	2.1420E+08	5.9550E-12	4.0110E-04	7.8640E+08
41	7.9430E-02	3538.6	1.7350E+00	2.7710E+08	7.6200E-12	3.9140E-04	7.2590E+08
42	1.0000E-01	3592.2	2.2530E+00	3.5790E+08	9.7560E-12	3.7790E-04	6.6370E+08
43	1.2590E-01	3653.0	2.9350E+00	4.6360E+08	1.2500E-11	3.5940E-04	6.0030E+08
44	1.5850E-01	3721.6	3.8460E+00	6.0410E+08	1.6070E-11	3.3850E-04	5.3450E+08
45	1.9950E-01	3795.0	5.0160E+00	7.9900E+08	2.0760E-11	3.2120E-04	4.6650E+08
46	2.5120E-01	3873.7	6.6090E+00	1.0330E+09	2.6780E-11	3.0770E-04	3.9760E+08
47	3.1620E-01	3959.1	8.7770E+00	1.3900E+09	3.4400E-11	2.9050E-04	3.2640E+08
48	3.9810E-01	4054.8	1.1490E+01	1.8090E+09	4.4060E-11	2.9360E-04	2.5500E+08
49	5.0120E-01	4160.6	1.4930E+01	2.4470E+09	5.5810E-11	2.9870E-04	1.8540E+08
50	6.3100E-01	4278.0	1.9050E+01	3.4190E+09	6.9260E-11	3.1930E-04	1.1780E+08
51	7.9430E-01	4409.3	2.3700E+01	5.0210E+09	8.3880E-11	3.6750E-04	5.5090E+07
52	1.0000E+00	4557.4	2.8610E+01	8.0920E+09	9.7620E-11	4.6650E-04	0.0
53	1.2590E+00	4725.1	3.3140E+01	1.3830E+10	1.0960E-10	6.5470E-04	-4.5370E+07
54	1.5850E+00	4896.6	3.6980E+01	2.4080E+10	1.1740E-10	9.6920E-04	-8.1680E+07
55	1.9950E+00	5068.9	4.0170E+01	4.1350E+10	1.2310E-10	1.4030E-03	-1.1020E+08
56	2.5120E+00	5253.8	4.2700E+01	7.1080E+10	1.2620E-10	2.2770E-03	-1.3290E+08
57	3.1620E+00	5460.0	4.4620E+01	1.2710E+11	1.2680E-10	3.6950E-03	-1.5060E+08
58	3.9810E+00	5685.1	4.5880E+01	2.2600E+11	1.2500E-10	6.1990E-03	-1.6420E+08
59	5.0120E+00	6012.7	4.6590E+01	4.0570E+11	1.1950E-10	1.3040E-02	-1.7300E+08
60	6.3100E+00	6275.4	4.6640E+01	8.4240E+11	1.1400E-10	2.3780E-02	-1.8000E+08
61	7.9430E+00	6570.4	4.6920E+01	1.4790E+12	1.0710E-10	4.7210E-02	-1.8440E+08
62	1.0000E+01	6868.1	4.7040E+01	2.4620E+12	9.9420E-11	9.4840E-02	-1.8740E+08
63	1.2590E+01	7165.3	4.7080E+01	3.8860E+12	9.1040E-11	1.8840E-01	-1.8940E+08
64	1.5850E+01	7468.0	4.7040E+01	5.8670E+12	8.1580E-11	3.6680E-01	-1.9080E+08
65	1.9950E+01	7783.0	4.6800E+01	8.5030E+12	7.0940E-11	6.9340E-01	-1.9180E+08

Table 2 (Continued)

TEFF 3500 LOG G 4.000 MAVE 1.000 J8

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2107.2	1.319E+01	6.486E+07	1.314E-10	7.365E-03	1.101E+03
2	1.000E-05	2121.1	2.619E+01	1.167E+08	2.734E-10	7.635E-03	1.025E+03
3	1.259E-05	2123.4	2.957E+01	1.289E+08	3.111E-10	7.678E-03	1.013E+03
4	1.585E-05	2126.2	3.379E+01	1.446E+08	3.585E-10	7.725E-03	1.000E+03
5	1.995E-05	2129.0	3.908E+01	1.626E+08	4.183E-10	7.773E-03	9.868E+02
6	2.512E-05	2132.7	4.571E+01	1.842E+08	4.933E-10	7.829E-03	9.722E+02
7	3.162E-05	2136.7	5.399E+01	2.111E+08	5.875E-10	7.888E-03	9.569E+02
8	3.981E-05	2140.7	6.433E+01	2.431E+08	7.062E-10	7.946E-03	9.409E+02
9	5.012E-05	2145.8	7.724E+01	2.824E+08	8.542E-10	8.015E-03	9.243E+02
10	6.310E-05	2151.8	9.335E+01	3.304E+08	1.039E-09	8.092E-03	9.072E+02
11	7.943E-05	2158.4	1.134E+02	3.885E+08	1.276E-09	8.175E-03	8.897E+02
12	1.000E-04	2166.2	1.384E+02	4.602E+08	1.556E-09	8.271E-03	8.720E+02
13	1.259E-04	2175.4	1.695E+02	5.487E+08	1.911E-09	8.386E-03	8.541E+02
14	1.585E-04	2186.2	2.081E+02	6.593E+08	2.346E-09	8.526E-03	8.358E+02
15	1.995E-04	2198.7	2.566E+02	7.931E+08	2.881E-09	8.692E-03	8.174E+02
16	2.512E-04	2212.8	3.151E+02	9.725E+08	3.534E-09	8.878E-03	7.989E+02
17	3.162E-04	2229.4	3.884E+02	1.196E+09	4.326E-09	9.113E-03	7.803E+02
18	3.981E-04	2248.4	4.777E+02	1.483E+09	5.281E-09	9.241E-03	7.616E+02
19	5.012E-04	2269.8	5.877E+02	1.852E+09	6.427E-09	9.502E-03	7.428E+02
20	6.310E-04	2294.3	7.221E+02	2.334E+09	7.787E-09	9.807E-03	7.238E+02
21	7.943E-04	2321.3	8.857E+02	2.958E+09	9.394E-09	1.016E-02	7.047E+02
22	1.000E-03	2351.3	1.084E+03	3.774E+09	1.126E-08	1.056E-02	6.855E+02
23	1.259E-03	2384.7	1.324E+03	4.844E+09	1.346E-08	1.103E-02	6.661E+02
24	1.585E-03	2420.2	1.612E+03	6.210E+09	1.598E-08	1.157E-02	6.465E+02
25	1.995E-03	2458.5	1.958E+03	7.977E+09	1.887E-08	1.218E-02	6.266E+02
26	2.512E-03	2499.3	2.376E+03	1.024E+10	2.216E-08	1.288E-02	6.065E+02
27	3.162E-03	2541.7	2.866E+03	1.308E+10	2.589E-08	1.367E-02	5.861E+02
28	3.981E-03	2585.0	3.446E+03	1.680E+10	3.014E-08	1.455E-02	5.654E+02
29	5.012E-03	2629.2	4.125E+03	2.151E+10	3.495E-08	1.554E-02	5.443E+02
30	6.310E-03	2672.8	4.932E+03	2.755E+10	4.044E-08	1.663E-02	5.229E+02
31	7.943E-03	2715.4	5.880E+03	3.481E+10	4.676E-08	1.782E-02	5.011E+02
32	1.000E-02	2756.5	6.992E+03	4.357E+10	5.405E-08	1.913E-02	4.790E+02
33	1.259E-02	2795.9	8.297E+03	4.984E+10	6.250E-08	2.055E-02	4.566E+02
34	1.585E-02	2832.7	9.826E+03	6.075E+10	7.230E-08	2.206E-02	4.339E+02
35	1.995E-02	2868.3	1.162E+04	7.372E+10	8.386E-08	2.373E-02	4.109E+02
36	2.512E-02	2902.9	1.371E+04	8.908E+10	9.713E-08	2.556E-02	3.877E+02
37	3.162E-02	2936.6	1.616E+04	1.073E+11	1.125E-07	2.757E-02	3.643E+02
38	3.981E-02	2970.7	1.901E+04	1.289E+11	1.301E-07	2.984E-02	3.408E+02
39	5.012E-02	3005.2	2.232E+04	1.546E+11	1.501E-07	3.240E-02	3.172E+02
40	6.310E-02	3041.0	2.616E+04	1.853E+11	1.727E-07	3.531E-02	2.934E+02
41	7.943E-02	3078.2	3.057E+04	2.219E+11	1.981E-07	3.865E-02	2.695E+02
42	1.000E-01	3118.6	3.564E+04	2.659E+11	2.260E-07	4.255E-02	2.456E+02
43	1.259E-01	3158.3	4.142E+04	3.173E+11	2.573E-07	4.686E-02	2.216E+02
44	1.585E-01	3207.9	4.803E+04	3.824E+11	2.898E-07	5.236E-02	1.976E+02
45	1.995E-01	3266.0	5.536E+04	4.623E+11	3.225E-07	5.909E-02	1.736E+02
46	2.512E-01	3317.7	6.359E+04	5.534E+11	3.599E-07	6.609E-02	1.494E+02
47	3.162E-01	3379.0	7.296E+04	6.682E+11	3.984E-07	7.476E-02	1.250E+02
48	3.981E-01	3446.4	8.314E+04	8.095E+11	4.371E-07	8.498E-02	1.004E+02
49	5.012E-01	3520.3	9.446E+04	9.887E+11	4.772E-07	9.718E-02	7.568E+01
50	6.310E-01	3580.7	1.069E+05	1.194E+12	5.229E-07	1.101E-01	5.063E+01
51	7.943E-01	3670.6	1.209E+05	1.499E+12	5.651E-07	1.281E-01	2.535E+01
52	1.000E+00	3760.0	1.357E+05	1.864E+12	6.112E-07	1.478E-01	0.0
53	1.259E+00	3950.9	1.521E+05	2.378E+12	6.974E-07	1.732E-01	-2.548E+01
54	1.585E+00	3956.1	1.694E+05	3.046E+12	7.647E-07	2.032E-01	-5.094E+01
55	1.995E+00	4082.1	1.879E+05	4.034E+12	7.474E-07	2.445E-01	-7.626E+01
56	2.512E+00	4194.2	2.072E+05	5.342E+12	7.953E-07	2.879E-01	-1.014E+02
57	3.162E+00	4351.5	2.281E+05	7.343E+12	8.357E-07	3.503E-01	-1.265E+02
58	3.981E+00	4496.3	2.495E+05	9.726E+12	8.794E-07	4.128E-01	-1.515E+02
59	5.012E+00	4678.2	2.747E+05	1.322E+13	9.187E-07	4.871E-01	-1.77 E+02
60	6.310E+00	4870.4	2.974E+05	1.751E+13	9.586E-07	5.593E-01	-2.033E+02
61	7.943E+00	5084.3	3.250E+05	2.294E+13	1.001E-06	6.501E-01	-2.313E+02
62	1.000E+01	5325.5	3.555E+05	2.986E+13	1.043E-06	7.539E-01	-2.615E+02
63	1.259E+01	5563.2	3.903E+05	3.971E+13	1.090E-06	8.764E-01	-2.937E+02
64	1.585E+01	5848.3	4.269E+05	5.241E+13	1.138E-06	9.960E-01	-3.266E+02
65	1.995E+01	6195.5	4.629E+05	8.219E+13	1.183E-06	1.291E+00	-3.58 E+02

Table 2 (Continued)

TEFF 3000 LOG G 2.000 WAVE 10000 J9

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1636.1	2.715E-01	3.707E+05	4.439E-12	3.620E-03	9.673E+04
2	1.000E-05	1644.2	5.430E-01	6.395E+05	8.967E-12	3.682E-03	9.211E+04
3	1.259E-05	1645.9	6.132E-01	7.055E+05	1.014E-11	3.695E-03	9.137E+04
4	1.585E-05	1648.0	7.012E-01	7.870E+05	1.160E-11	3.710E-03	9.056E+04
5	1.995E-05	1650.5	8.114E-01	8.880E+05	1.343E-11	3.729E-03	8.968E+04
6	2.512E-05	1653.5	9.495E-01	1.014E+06	1.572E-11	3.753E-03	8.873E+04
7	3.162E-05	1657.1	1.122E+00	1.169E+06	1.856E-11	3.780E-03	8.772E+04
8	3.981E-05	1661.4	1.338E+00	1.362E+06	2.213E-11	3.813E-03	8.666E+04
9	5.012E-05	1666.5	1.607E+00	1.602E+06	2.654E-11	3.852E-03	8.555E+04
10	6.310E-05	1672.5	1.942E+00	1.901E+06	3.200E-11	3.898E-03	8.440E+04
11	7.943E-05	1679.7	2.358E+00	2.278E+06	3.873E-11	3.953E-03	8.322E+04
12	1.000E-04	1688.1	2.873E+00	2.752E+06	4.699E-11	4.019E-03	8.202E+04
13	1.259E-04	1697.9	3.512E+00	3.354E+06	5.711E-11	4.095E-03	8.079E+04
14	1.585E-04	1709.4	4.299E+00	4.126E+06	6.943E-11	4.185E-03	7.954E+04
15	1.995E-04	1722.7	5.267E+00	5.123E+06	8.435E-11	4.290E-03	7.828E+04
16	2.512E-04	1738.0	6.454E+00	6.425E+06	1.023E-10	4.413E-03	7.700E+04
17	3.162E-04	1755.5	7.904E+00	8.142E+06	1.238E-10	4.554E-03	7.572E+04
18	3.981E-04	1775.4	9.670E+00	1.044E+07	1.493E-10	4.716E-03	7.442E+04
19	5.012E-04	1797.8	1.181E+01	1.355E+07	1.795E-10	4.901E-03	7.311E+04
20	6.310E-04	1822.7	1.440E+01	1.781E+07	2.148E-10	5.110E-03	7.180E+04
21	7.943E-04	1850.5	1.753E+01	2.374E+07	2.558E-10	5.346E-03	7.047E+04
22	1.000E-03	1880.8	2.128E+01	3.205E+07	3.030E-10	5.607E-03	6.912E+04
23	1.259E-03	1913.8	2.578E+01	4.377E+07	3.571E-10	5.895E-03	6.776E+04
24	1.585E-03	1949.4	3.116E+01	6.033E+07	4.184E-10	6.210E-03	6.637E+04
25	1.995E-03	1987.0	3.759E+01	8.353E+07	4.876E-10	6.549E-03	6.495E+04
26	2.512E-03	2026.9	4.526E+01	1.158E+08	5.651E-10	6.912E-03	6.349E+04
27	3.162E-03	2068.3	5.441E+01	1.598E+08	6.518E-10	7.293E-03	6.198E+04
28	3.981E-03	2111.0	6.533E+01	2.185E+08	7.486E-10	7.690E-03	6.042E+04
29	5.012E-03	2154.8	7.838E+01	2.953E+08	8.569E-10	8.096E-03	5.880E+04
30	6.310E-03	2198.9	9.400E+01	3.926E+08	9.793E-10	8.504E-03	5.709E+04
31	7.943E-03	2243.3	1.127E+02	5.147E+08	1.119E-09	8.913E-03	5.531E+04
32	1.000E-02	2287.2	1.353E+02	6.650E+08	1.279E-09	9.314E-03	5.342E+04
33	1.259E-02	2330.3	1.625E+02	8.495E+08	1.468E-09	9.708E-03	5.144E+04
34	1.585E-02	2372.4	1.954E+02	1.077E+09	1.691E-09	1.010E-02	4.936E+04
35	1.995E-02	2412.9	2.352E+02	1.357E+09	1.950E-09	1.050E-02	4.717E+04
36	2.512E-02	2451.8	2.835E+02	1.704E+09	2.279E-09	1.090E-02	4.489E+04
37	3.162E-02	2489.4	3.420E+02	2.134E+09	2.664E-09	1.132E-02	4.252E+04
38	3.981E-02	2526.2	4.128E+02	2.667E+09	3.124E-09	1.177E-02	4.006E+04
39	5.012E-02	2562.2	4.986E+02	3.328E+09	3.675E-09	1.225E-02	3.754E+04
40	6.310E-02	2598.2	6.023E+02	4.150E+09	4.329E-09	1.277E-02	3.494E+04
41	7.943E-02	2634.5	7.274E+02	5.172E+09	5.103E-09	1.334E-02	3.229E+04
42	1.000E-01	2671.5	8.780E+02	6.441E+09	6.014E-09	1.397E-02	2.957E+04
43	1.259E-01	2709.3	1.059E+03	8.018E+09	7.083E-09	1.466E-02	2.681E+04
44	1.585E-01	2748.6	1.275E+03	9.979E+09	8.329E-09	1.543E-02	2.399E+04
45	1.995E-01	2789.6	1.534E+03	1.242E+10	9.774E-09	1.631E-02	2.113E+04
46	2.512E-01	2832.8	1.841E+03	1.546E+10	1.144E-08	1.729E-02	1.823E+04
47	3.162E-01	2878.6	2.205E+03	1.924E+10	1.334E-08	1.841E-02	1.529E+04
48	3.981E-01	2927.8	2.635E+03	2.398E+10	1.550E-08	1.969E-02	1.230E+04
49	5.012E-01	2981.2	3.140E+03	2.995E+10	1.793E-08	2.117E-02	9.284E+03
50	6.310E-01	3040.3	3.729E+03	3.758E+10	2.063E-08	2.288E-02	6.226E+03
51	7.943E-01	3106.2	4.413E+03	4.751E+10	2.361E-08	2.488E-02	3.131E+03
52	1.000E+00	3180.7	5.203E+03	6.081E+10	2.685E-08	2.722E-02	0.0
53	1.259E+00	3265.8	6.107E+03	7.939E+10	3.034E-08	3.002E-02	-3.165E+03
54	1.585E+00	3363.4	7.136E+03	1.068E+11	3.407E-08	3.338E-02	-6.360E+03
55	1.995E+00	3475.9	8.295E+03	1.494E+11	3.798E-08	3.748E-02	-9.577E+03
56	2.512E+00	3606.3	9.588E+03	2.187E+11	4.202E-08	4.250E-02	-1.281E+04
57	3.162E+00	3757.8	1.102E+04	3.336E+11	4.609E-08	4.852E-02	-1.605E+04
58	3.981E+00	3933.4	1.259E+04	5.201E+11	5.015E-08	5.541E-02	-1.933E+04
59	5.012E+00	4135.7	1.434E+04	8.053E+11	5.417E-08	6.241E-02	-2.267E+04
60	6.310E+00	4361.6	1.631E+04	1.197E+12	5.835E-08	6.810E-02	-2.619E+04
61	7.943E+00	4609.8	1.864E+04	1.688E+12	6.302E-08	7.206E-02	-3.002E+04
62	1.000E+01	4877.8	2.143E+04	2.276E+12	6.842E-08	7.551E-02	-3.427E+04
63	1.259E+01	5157.5	2.474E+04	3.129E+12	7.465E-08	8.373E-02	-3.885E+04
64	1.585E+01	5456.9	2.822E+04	4.948E+12	8.045E-08	1.092E-01	-4.330E+04
65	1.995E+01	5761.5	3.130E+04	8.903E+12	8.450E-08	1.662E-01	-4.703E+04

Table 2 (Continued)

TEFF 3000 LOG G 0.000 WAVE 10000 J10

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.	1682.9	2.753E-03	1.649E+04	2.830E-14	3.374E-03	1.300E+07
2	1.000E-05	1709.2	5.507E-03	3.236E+04	5.660E-14	3.605E-03	1.223E+07
3	1.259E-05	1713.8	6.213E-03	3.438E+04	6.387E-14	3.647E-03	1.211E+07
4	1.585E-05	1719.0	7.098E-03	4.136E+04	7.290E-14	3.694E-03	1.198E+07
5	1.995E-05	1724.6	8.179E-03	4.753E+04	8.411E-14	3.744E-03	1.184E+07
6	2.512E-05	1730.7	9.545E-03	5.523E+04	9.816E-14	3.800E-03	1.169E+07
7	3.162E-05	1737.3	1.123E-02	6.470E+04	1.155E-13	3.860E-03	1.153E+07
8	3.981E-05	1744.3	1.332E-02	7.640E+04	1.370E-13	3.923E-03	1.136E+07
9	5.012E-05	1751.8	1.589E-02	9.081E+04	1.634E-13	3.989E-03	1.119E+07
10	6.310E-05	1759.8	1.909E-02	1.087E+05	1.962E-13	4.060E-03	1.101E+07
11	7.943E-05	1768.4	2.305E-02	1.307E+05	2.365E-13	4.133E-03	1.083E+07
12	1.000E-04	1777.6	2.794E-02	1.580E+05	2.861E-13	4.209E-03	1.064E+07
13	1.259E-04	1787.4	3.397E-02	1.919E+05	3.469E-13	4.288E-03	1.044E+07
14	1.585E-04	1798.1	4.143E-02	2.339E+05	4.214E-13	4.371E-03	1.025E+07
15	1.995E-04	1809.5	5.069E-02	2.861E+05	5.123E-13	4.456E-03	1.005E+07
16	2.512E-04	1821.9	6.203E-02	3.513E+05	6.230E-13	4.545E-03	9.844E+06
17	3.162E-04	1835.3	7.607E-02	4.326E+05	7.574E-13	4.637E-03	9.639E+06
18	3.981E-04	1849.8	9.340E-02	5.342E+05	9.202E-13	4.732E-03	9.430E+06
19	5.012E-04	1865.5	1.148E-01	6.614E+05	1.117E-12	4.831E-03	9.218E+06
20	6.310E-04	1882.4	1.411E-01	8.209E+05	1.354E-12	4.935E-03	9.002E+06
21	7.943E-04	1900.4	1.736E-01	1.021E+06	1.640E-12	5.044E-03	8.783E+06
22	1.000E-03	1919.7	2.137E-01	1.272E+06	1.983E-12	5.159E-03	8.560E+06
23	1.259E-03	1940.1	2.630E-01	1.588E+06	2.396E-12	5.282E-03	8.333E+06
24	1.585E-03	1961.7	3.238E-01	1.986E+06	2.891E-12	5.413E-03	8.102E+06
25	1.995E-03	1984.4	3.980E-01	2.489E+06	3.484E-12	5.555E-03	7.867E+06
26	2.512E-03	2008.2	4.893E-01	3.127E+06	4.194E-12	5.711E-03	7.628E+06
27	3.162E-03	2033.3	6.011E-01	3.940E+06	5.042E-12	5.881E-03	7.384E+06
28	3.981E-03	2059.6	7.376E-01	4.982E+06	6.053E-12	6.069E-03	7.137E+06
29	5.012E-03	2088.1	9.041E-01	6.335E+06	7.248E-12	6.282E-03	6.885E+06
30	6.310E-03	2119.1	1.106E+00	8.110E+06	8.694E-12	6.524E-03	6.630E+06
31	7.943E-03	2151.8	1.351E+00	1.043E+07	1.031E-11	6.793E-03	6.371E+06
32	1.000E-02	2184.6	1.647E+00	1.340E+07	1.229E-11	7.075E-03	6.108E+06
33	1.259E-02	2215.9	2.005E+00	1.711E+07	1.466E-11	7.355E-03	5.842E+06
34	1.585E-02	2244.2	2.440E+00	2.162E+07	1.755E-11	7.616E-03	5.571E+06
35	1.995E-02	2269.7	2.969E+00	2.708E+07	2.107E-11	7.857E-03	5.296E+06
36	2.512E-02	2292.8	3.616E+00	3.367E+07	2.537E-11	8.081E-03	5.016E+06
37	3.162E-02	2314.7	4.409E+00	4.171E+07	3.062E-11	8.297E-03	4.732E+06
38	3.981E-02	2337.1	5.382E+00	5.172E+07	3.698E-11	8.521E-03	4.443E+06
39	5.012E-02	2360.4	6.573E+00	6.424E+07	4.469E-11	8.757E-03	4.150E+06
40	6.310E-02	2386.1	8.032E+00	8.015E+07	5.394E-11	9.021E-03	3.854E+06
41	7.943E-02	2414.0	9.811E+00	1.003E+08	6.503E-11	9.312E-03	3.554E+06
42	1.000E-01	2444.0	1.198E+01	1.259E+08	7.828E-11	9.631E-03	3.250E+06
43	1.259E-01	2476.7	1.462E+01	1.584E+08	9.405E-11	9.982E-03	2.943E+06
44	1.585E-01	2512.1	1.782E+01	1.999E+08	1.128E-10	1.037E-02	2.633E+06
45	1.995E-01	2550.4	2.169E+01	2.527E+08	1.349E-10	1.079E-02	2.319E+06
46	2.512E-01	2592.2	2.637E+01	3.203E+08	1.610E-10	1.126E-02	2.002E+06
47	3.162E-01	2637.9	3.201E+01	4.075E+08	1.916E-10	1.177E-02	1.681E+06
48	3.981E-01	2688.1	3.879E+01	5.212E+08	2.274E-10	1.233E-02	1.357E+06
49	5.012E-01	2743.4	4.694E+01	6.721E+08	2.690E-10	1.293E-02	1.028E+06
50	6.310E-01	2804.8	5.672E+01	8.788E+08	3.174E-10	1.355E-02	6.930E+05
51	7.943E-01	2873.3	6.849E+01	1.175E+09	3.735E-10	1.415E-02	3.515E+05
52	1.000E+00	2950.1	8.273E+01	1.625E+09	4.388E-10	1.466E-02	0.
53	1.259E+00	3037.2	1.001E+02	2.348E+09	5.154E-10	1.496E-02	-3.662E+05
54	1.585E+00	3136.8	1.219E+02	3.564E+09	6.068E-10	1.487E-02	-7.550E+05
55	1.995E+00	3253.0	1.500E+02	5.698E+09	7.194E-10	1.417E-02	-1.180E+06
56	2.512E+00	3391.3	1.882E+02	9.550E+09	8.654E-10	1.267E-02	-1.666E+06
57	3.162E+00	3559.3	2.442E+02	1.663E+10	1.069E-09	1.050E-02	-2.250E+06
58	3.981E+00	3763.5	3.320E+02	2.948E+10	1.374E-09	8.375E-03	-2.971E+06
59	5.012E+00	3999.2	4.685E+02	5.094E+10	1.824E-09	6.912E-03	-3.831E+06
60	6.310E+00	4261.3	6.695E+02	8.240E+10	2.445E-09	6.122E-03	-4.781E+06
61	7.943E+00	4544.3	9.489E+02	1.298E+11	3.221E-09	6.005E-03	-5.748E+06
62	1.000E+01	4836.3	1.259E+03	2.060E+11	4.050E-09	7.187E-03	-6.627E+06
63	1.259E+01	5135.3	1.557E+03	4.021E+11	4.715E-09	1.104E-02	-7.305E+06
64	1.585E+01	5449.4	1.779E+03	8.775E+11	5.075E-09	1.974E-02	-7.759E+06
65	1.995E+01	5769.7	1.934E+03	1.912E+12	5.208E-09	3.647E-02	-8.045E+06

Table 2 (Continued)

TEFF 3500 LOG G 0.000 WAVE 10000 JI3

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 4.0400E-04 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2405.1	2.127E-03	1.370E+05	1.379E-14	4.135E-03	1.933E+07
2	1.000E-05	2431.9	4.253E-03	2.502E+05	2.727E-14	4.696E-03	1.804E+07
3	1.259E-05	2436.5	4.793E-03	2.773E+05	3.067E-14	4.798E-03	1.787E+07
4	1.585E-05	2441.4	5.456E-03	3.100E+05	3.485E-14	4.911E-03	1.767E+07
5	1.995E-05	2446.6	6.271E-03	3.493E+05	3.996E-14	5.035E-03	1.745E+07
6	2.512E-05	2452.4	7.291E-03	3.977E+05	4.636E-14	5.168E-03	1.721E+07
7	3.162E-05	2458.3	8.532E-03	4.548E+05	5.411E-14	5.312E-03	1.694E+07
8	3.981E-05	2464.2	1.005E-02	5.224E+05	6.357E-14	5.467E-03	1.670E+07
9	5.012E-05	2470.4	1.189E-02	6.031E+05	7.507E-14	5.626E-03	1.644E+07
10	6.310E-05	2476.8	1.417E-02	6.991E+05	8.919E-14	5.796E-03	1.614E+07
11	7.943E-05	2483.0	1.694E-02	8.122E+05	1.064E-13	5.974E-03	1.587E+07
12	1.000E-04	2489.4	2.032E-02	9.461E+05	1.273E-13	6.157E-03	1.559E+07
13	1.259E-04	2495.8	2.445E-02	1.104E+06	1.528E-13	6.345E-03	1.529E+07
14	1.585E-04	2502.1	2.950E-02	1.291E+06	1.838E-13	6.540E-03	1.499E+07
15	1.995E-04	2508.3	3.566E-02	1.509E+06	2.213E-13	6.741E-03	1.469E+07
16	2.512E-04	2514.8	4.309E-02	1.770E+06	2.674E-13	6.949E-03	1.437E+07
17	3.162E-04	2521.2	5.241E-02	2.077E+06	3.242E-13	7.163E-03	1.404E+07
18	3.981E-04	2527.4	6.368E-02	2.438E+06	3.929E-13	7.350E-03	1.374E+07
19	5.012E-04	2533.8	7.747E-02	2.867E+06	4.768E-13	7.555E-03	1.342E+07
20	6.310E-04	2540.6	9.438E-02	3.379E+06	5.793E-13	7.757E-03	1.310E+07
21	7.943E-04	2547.2	1.151E-01	3.984E+06	7.048E-13	7.961E-03	1.278E+07
22	1.000E-03	2554.0	1.404E-01	4.706E+06	8.585E-13	8.162E-03	1.245E+07
23	1.259E-03	2561.5	1.718E-01	5.578E+06	1.046E-12	8.357E-03	1.212E+07
24	1.585E-03	2569.0	2.103E-01	6.620E+06	1.277E-12	8.552E-03	1.179E+07
25	1.995E-03	2577.0	2.576E-01	7.877E+06	1.559E-12	8.743E-03	1.145E+07
26	2.512E-03	2585.9	3.159E-01	9.411E+06	1.905E-12	8.928E-03	1.111E+07
27	3.162E-03	2595.3	3.878E-01	1.127E+07	2.331E-12	9.111E-03	1.077E+07
28	3.981E-03	2605.4	4.765E-01	1.355E+07	2.854E-12	9.289E-03	1.044E+07
29	5.012E-03	2616.7	5.862E-01	1.636E+07	3.494E-12	9.463E-03	1.009E+07
30	6.310E-03	2628.9	7.217E-01	1.983E+07	4.282E-12	9.635E-03	9.731E+06
31	7.943E-03	2642.3	8.893E-01	2.413E+07	5.250E-12	9.804E-03	9.377E+06
32	1.000E-02	2657.2	1.097E+00	2.953E+07	6.439E-12	9.970E-03	9.021E+06
33	1.259E-02	2673.3	1.354E+00	3.628E+07	7.900E-12	1.013E-02	8.660E+06
34	1.585E-02	2691.0	1.672E+00	4.480E+07	9.693E-12	1.029E-02	8.297E+06
35	1.995E-02	2710.3	2.066E+00	5.562E+07	1.190E-11	1.045E-02	7.929E+06
36	2.512E-02	2731.3	2.554E+00	6.942E+07	1.460E-11	1.060E-02	7.558E+06
37	3.162E-02	2754.1	3.163E+00	8.713E+07	1.792E-11	1.075E-02	7.182E+06
38	3.981E-02	2778.9	3.914E+00	1.100E+08	2.200E-11	1.089E-02	6.802E+06
39	5.012E-02	2805.6	4.857E+00	1.398E+08	2.701E-11	1.101E-02	6.417E+06
40	6.310E-02	2834.6	6.024E+00	1.789E+08	3.317E-11	1.112E-02	6.024E+06
41	7.943E-02	2866.3	7.485E+00	2.309E+08	4.075E-11	1.121E-02	5.629E+06
42	1.000E-01	2900.8	9.311E+00	3.006E+08	5.008E-11	1.126E-02	5.225E+06
43	1.259E-01	2938.9	1.160E+01	3.958E+08	6.160E-11	1.126E-02	4.812E+06
44	1.585E-01	2981.3	1.456E+01	5.281E+08	7.587E-11	1.120E-02	4.389E+06
45	1.995E-01	3028.8	1.818E+01	7.158E+08	9.362E-11	1.104E-02	3.953E+06
46	2.512E-01	3082.4	2.290E+01	9.877E+08	1.159E-10	1.076E-02	3.499E+06
47	3.162E-01	3143.3	2.905E+01	1.390E+09	1.441E-10	1.033E-02	3.023E+06
48	3.981E-01	3212.7	3.719E+01	1.998E+09	1.805E-10	9.707E-03	2.518E+06
49	5.012E-01	3291.9	4.824E+01	2.936E+09	2.285E-10	8.903E-03	1.974E+06
50	6.310E-01	3382.3	6.363E+01	4.407E+09	2.933E-10	7.950E-03	1.380E+06
51	7.943E-01	3485.9	8.562E+01	6.754E+09	3.828E-10	6.926E-03	7.248E+05
52	1.000E+00	3604.5	1.177E+02	1.051E+10	5.088E-10	5.955E-03	0.0
53	1.259E+00	3740.7	1.647E+02	1.660E+10	6.857E-10	5.152E-03	-7.914E+05
54	1.585E+00	3898.3	2.322E+02	2.605E+10	9.274E-10	4.575E-03	-1.634E+06
55	1.995E+00	4072.0	3.258E+02	3.965E+10	1.246E-09	4.260E-03	-2.500E+06
56	2.512E+00	4260.9	4.488E+02	5.755E+10	1.639E-09	4.127E-03	-3.361E+06
57	3.162E+00	4466.7	6.062E+02	8.119E+10	2.112E-09	4.210E-03	-4.200E+06
58	3.981E+00	4699.2	7.917E+02	1.108E+11	2.622E-09	4.699E-03	-4.984E+06
59	5.012E+00	4946.5	9.845E+02	1.488E+11	3.097E-09	6.292E-03	-5.659E+06
60	6.310E+00	5213.2	1.150E+03	3.843E+11	3.432E-09	1.003E-02	-6.164E+06
61	7.943E+00	5493.4	1.273E+03	7.887E+11	3.606E-09	1.740E-02	-6.517E+06
62	1.000E+01	5787.6	1.362E+03	1.624E+12	3.658E-09	3.098E-02	-6.760E+06
63	1.259E+01	6096.4	1.425E+03	3.271E+12	3.632E-09	5.541E-02	-6.931E+06
64	1.585E+01	6431.9	1.466E+03	6.520E+12	3.548E-09	1.010E-01	-7.051E+06
65	1.995E+01	6768.2	1.496E+03	1.216E+13	3.418E-09	1.844E-01	-7.135E+06

Table 2 (Continued)

TEFF 3000 LOG G -2.000 MAVE 10000 JIS

H 1.0000E+00 HE 1.0400E-01 C 3.5500E-05 N 4.0400E-04 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1888.1	2.055E-04	4.616E+02	1.697E-16	4.500E-03	1.627E+09
2	1.000E-05	1891.4	4.109E-05	8.831E+02	3.389E-16	4.548E-03	1.530E+09
3	1.259E-05	1891.7	4.641E-05	9.891E+02	3.827E-16	4.554E-03	1.514E+09
4	1.585E-05	1892.5	5.310E-05	1.121E+03	4.377E-16	4.563E-03	1.496E+09
5	1.995E-05	1893.4	6.154E-05	1.285E+03	5.067E-16	4.572E-03	1.477E+09
6	2.512E-05	1893.7	7.204E-05	1.487E+03	5.934E-16	4.578E-03	1.457E+09
7	3.162E-05	1894.7	8.530E-05	1.738E+03	7.023E-16	4.588E-03	1.435E+09
8	3.981E-05	1895.9	1.019E-04	2.047E+03	8.388E-16	4.599E-03	1.411E+09
9	5.012E-05	1896.8	1.229E-04	2.426E+03	1.010E-15	4.608E-03	1.387E+09
10	6.310E-05	1898.4	1.491E-04	2.894E+03	1.226E-15	4.622E-03	1.362E+09
11	7.943E-05	1900.2	1.821E-04	3.468E+03	1.495E-15	4.637E-03	1.336E+09
12	1.000E-04	1901.6	2.234E-04	4.165E+03	1.833E-15	4.649E-03	1.309E+09
13	1.259E-04	1904.3	2.754E-04	5.042E+03	2.256E-15	4.671E-03	1.282E+09
14	1.585E-04	1907.2	3.403E-04	6.080E+03	2.784E-15	4.694E-03	1.254E+09
15	1.995E-04	1909.6	4.217E-04	7.353E+03	3.446E-15	4.713E-03	1.226E+09
16	2.512E-04	1914.0	5.237E-04	8.943E+03	4.270E-15	4.748E-03	1.198E+09
17	3.162E-04	1918.6	6.509E-04	1.088E+04	5.295E-15	4.784E-03	1.169E+09
18	3.981E-04	1923.2	8.099E-04	1.324E+04	6.574E-15	4.820E-03	1.140E+09
19	5.012E-04	1930.1	1.008E-03	1.621E+04	8.156E-15	4.873E-03	1.111E+09
20	6.310E-04	1937.3	1.255E-03	1.986E+04	1.011E-14	4.930E-03	1.082E+09
21	7.943E-04	1945.5	1.562E-03	2.438E+04	1.253E-14	4.994E-03	1.053E+09
22	1.000E-03	1955.6	1.942E-03	3.007E+04	1.551E-14	5.073E-03	1.024E+09
23	1.259E-03	1966.9	2.413E-03	3.717E+04	1.916E-14	5.163E-03	9.946E+08
24	1.585E-03	1980.0	2.994E-03	4.612E+04	2.362E-14	5.267E-03	9.653E+08
25	1.995E-03	1994.6	3.710E-03	5.736E+04	2.905E-14	5.385E-03	9.360E+08
26	2.512E-03	2011.2	4.590E-03	7.154E+04	3.564E-14	5.519E-03	9.066E+08
27	3.162E-03	2029.5	5.669E-03	8.942E+04	4.362E-14	5.669E-03	8.772E+08
28	3.981E-03	2049.6	6.989E-03	1.119E+05	5.325E-14	5.834E-03	8.477E+08
29	5.012E-03	2071.8	8.601E-03	1.402E+05	6.482E-14	6.018E-03	8.182E+08
30	6.310E-03	2095.2	1.057E-02	1.754E+05	7.873E-14	6.213E-03	7.886E+08
31	7.943E-03	2120.1	1.296E-02	2.193E+05	9.542E-14	6.423E-03	7.588E+08
32	1.000E-02	2146.6	1.587E-02	2.741E+05	1.154E-13	6.645E-03	7.289E+08
33	1.259E-02	2173.6	1.941E-02	3.417E+05	1.394E-13	6.870E-03	6.988E+08
34	1.585E-02	2201.4	2.373E-02	4.253E+05	1.682E-13	7.100E-03	6.684E+08
35	1.995E-02	2230.0	2.899E-02	5.311E+05	2.029E-13	7.341E-03	6.377E+08
36	2.512E-02	2258.3	3.542E-02	6.625E+05	2.447E-13	7.593E-03	6.066E+08
37	3.162E-02	2286.7	4.329E-02	8.284E+05	2.954E-13	7.768E-03	5.751E+08
38	3.981E-02	2315.2	5.294E-02	1.039E+06	3.568E-13	7.972E-03	5.432E+08
39	5.012E-02	2343.0	6.481E-02	1.307E+06	4.315E-13	8.160E-03	5.107E+08
40	6.310E-02	2370.7	7.944E-02	1.649E+06	5.228E-13	8.334E-03	4.776E+08
41	7.943E-02	2398.5	9.752E-02	2.091E+06	6.343E-13	8.495E-03	4.440E+08
42	1.000E-01	2426.3	1.199E-01	2.661E+06	7.709E-13	8.642E-03	4.098E+08
43	1.259E-01	2455.0	1.476E-01	3.409E+06	9.381E-13	8.773E-03	3.749E+08
44	1.585E-01	2485.5	1.821E-01	4.407E+06	1.143E-12	8.885E-03	3.394E+08
45	1.995E-01	2518.5	2.250E-01	5.767E+06	1.394E-12	8.967E-03	3.034E+08
46	2.512E-01	2554.8	2.787E-01	7.668E+06	1.702E-12	9.003E-03	2.668E+08
47	3.162E-01	2595.4	3.463E-01	1.041E+07	2.081E-12	8.966E-03	2.275E+08
48	3.981E-01	2641.0	4.324E-01	1.447E+07	2.553E-12	8.822E-03	1.877E+08
49	5.012E-01	2692.5	5.436E-01	2.067E+07	3.149E-12	8.532E-03	1.459E+08
50	6.310E-01	2750.7	6.906E-01	3.040E+07	3.915E-12	8.051E-03	1.015E+08
51	7.943E-01	2816.6	8.908E-01	4.666E+07	4.931E-12	7.347E-03	5.336E+07
52	1.000E+00	2891.6	1.174E+00	7.197E+07	6.332E-12	6.422E-03	0.0
53	1.259E+00	2977.7	1.597E+00	1.162E+08	8.359E-12	5.322E-03	-6.065E+07
54	1.585E+00	3077.1	2.268E+00	1.948E+08	1.148E-11	4.164E-03	-1.312E+08
55	1.995E+00	3193.9	3.394E+00	3.407E+08	1.655E-11	3.061E-03	-2.144E+08
56	2.512E+00	3332.9	5.392E+00	6.237E+08	2.519E-11	2.140E-03	-3.132E+08
57	3.162E+00	3502.3	9.080E+00	1.187E+09	4.037E-11	1.448E-03	-4.292E+08
58	3.981E+00	3712.1	1.600E+01	2.275E+09	6.708E-11	9.747E-04	-5.620E+08
59	5.012E+00	3955.1	2.845E+01	4.151E+09	1.120E-10	7.144E-04	-7.058E+08
60	6.310E+00	4227.4	4.814E+01	7.217E+09	1.772E-10	6.190E-04	-8.463E+08
61	7.943E+00	4534.7	7.271E+01	1.416E+10	2.495E-10	7.411E-04	-9.636E+08
62	1.000E+01	4860.2	9.415E+01	3.575E+10	3.014E-10	1.323E-03	-1.042E+09
63	1.259E+01	5192.1	1.071E+02	9.554E+10	3.203E-10	2.772E-03	-1.085E+09
64	1.585E+01	5533.4	1.147E+02	2.443E+11	3.221E-10	5.963E-03	-1.110E+09
65	1.995E+01	5874.2	1.188E+02	5.664E+11	3.147E-10	1.247E-02	-1.124E+09

Table 2 (Continued)

TEFF 3500. LOG G 0.000 WAVE 10000. J16

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.5700E-04 O 3.5500E-05

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2430.8	2.323E-03	1.643E+05	1.489E-14	3.772E-03	1.940E+07
2	1.000E-05	2459.9	4.646E-03	3.029E+05	2.943E-14	4.298E-03	1.811E+07
3	1.259E-05	2464.8	5.235E-03	3.362E+05	3.309E-14	4.397E-03	1.792E+07
4	1.585E-05	2470.0	5.959E-03	3.762E+05	3.758E-14	4.507E-03	1.771E+07
5	1.995E-05	2475.5	6.844E-03	4.242E+05	4.308E-14	4.628E-03	1.749E+07
6	2.512E-05	2481.6	7.954E-03	4.833E+05	4.994E-14	4.760E-03	1.725E+07
7	3.162E-05	2487.7	9.299E-03	5.528E+05	5.825E-14	4.903E-03	1.700E+07
8	3.981E-05	2493.9	1.094E-02	6.351E+05	6.835E-14	5.058E-03	1.674E+07
9	5.012E-05	2500.4	1.293E-02	7.331E+05	8.060E-14	5.216E-03	1.647E+07
10	6.310E-05	2506.9	1.538E-02	8.492E+05	9.560E-14	5.390E-03	1.620E+07
11	7.943E-05	2513.4	1.835E-02	9.859E+05	1.138E-13	5.57[illegible]-03	1.591E+07
12	1.000E-04	2520.1	2.198E-02	1.148E+06	1.359E-13	5.757E-03	1.562E+07
13	1.259E-04	2526.7	2.639E-02	1.338E+06	1.627E-13	5.951E-03	1.532E+07
14	1.585E-04	2533.2	3.17[illegible]-02	1.562E+06	1.954E-13	6.153E-03	1.502E+07
15	1.995E-04	2539.7	3.830E-02	1.825E+06	2.350E-13	6.361E-03	1.472E+07
16	2.512E-04	2546.5	4.627E-02	2.137E+06	2.832E-13	6.567E-03	1.441E+07
17	3.162E-04	2553.1	5.600E-02	2.503E+06	3.418E-13	6.781E-03	1.409E+07
18	3.981E-04	2559.6	6.785E-02	2.932E+06	4.131E-13	6.999E-03	1.378E+07
19	5.012E-04	2566.4	8.231E-02	3.442E+06	4.998E-13	7.215E-03	1.346E+07
20	6.310E-04	2573.3	9.999E-02	4.046E+06	6.056E-13	7.433E-03	1.314E+07
21	7.943E-04	2580.2	1.216E-01	4.759E+06	7.344E-13	7.651E-03	1.281E+07
22	1.000E-03	2587.3	1.480E-01	5.607E+06	8.916E-13	7.869E-03	1.249E+07
23	1.259E-03	2594.9	1.804E-01	6.623E+06	1.083E-12	8.082E-03	1.216E+07
24	1.585E-03	2602.6	2.201E-01	7.834E+06	1.318E-12	8.295E-03	1.183E+07
25	1.995E-03	2610.8	2.688E-01	9.290E+06	1.605E-12	8.503E-03	1.149E+07
26	2.512E-03	2619.8	3.287E-01	1.106E+07	1.955E-12	8.705E-03	1.115E+07
27	3.162E-03	2629.2	4.023E-01	1.320E+07	2.385E-12	8.906E-03	1.081E+07
28	3.981E-03	2639.4	4.930E-01	1.580E+07	2.911E-12	9.101E-03	1.047E+07
29	5.012E-03	2650.7	6.047E-01	1.901E+07	3.556E-12	9.290E-03	1.012E+07
30	6.310E-03	2662.8	7.426E-01	2.295E+07	4.348E-12	9.477E-03	9.770E+06
31	7.943E-03	2676.	9.128E-01	2.784E+07	5.318E-12	9.658E-03	9.416E+06
32	1.000E-02	2690.8	1.123E+00	3.394E+07	6.508E-12	9.833E-03	9.058E+06
33	1.259E-02	2706.8	1.384E+00	4.157E+07	7.969E-12	1.000E-02	8.696E+06
34	1.585E-02	2724.3	1.706E+00	5.120E+07	9.762E-12	1.017E-02	8.331E+06
35	1.995E-02	2743.5	2.105E+00	6.341E+07	1.196E-11	1.033E-02	7.962E+06
36	2.512E-02	2764.5	2.600E+00	7.902E+07	1.466E-11	1.048E-02	7.588E+06
37	3.162E-02	2787.3	3.214E+00	9.904E+07	1.798E-11	1.063E-02	7.209E+06
38	3.981E-02	2812.1	3.977E+00	1.249E+08	2.205E-11	1.076E-02	6.826E+06
39	5.012E-02	2839.0	4.927E+00	1.587E+08	2.706E-11	1.088E-02	[illegible]437E+06
40	6.310E-02	2868.4	6.110E+00	2.031E+08	3.321E-11	1.098E-02	[illegible]042E+06
41	7.943E-02	2900.5	7.587E+00	2.622E+08	4.079E-11	1.106E-02	5.641E+06
42	1.000E-01	2935.7	9.438E+00	3.417E+08	5.012E-11	1.110E-02	5.232E+06
43	1.259E-01	2974.7	1.176E+01	4.505E+08	6.165E-11	1.109E-02	4.813E+06
44	1.585E-01	3018.2	1.470E+01	6.019E+08	7.594E-11	1.102E-02	4.384E+06
45	1.995E-01	3067.1	1.844E+01	8.166E+08	9.373E-11	1.086E-02	3.940E+06
46	2.512E-01	3122.3	2.325E+01	1.127E+09	1.160E-10	1.058E-02	3.480E+06
47	3.162E-01	3185.1	2.949E+01	1.584E+09	1.443E-10	1.017E-02	2.997E+06
48	3.981E-01	3256.7	3.774E+01	2.269E+09	1.806E-10	9.620E-03	2.486E+06
49	5.012E-01	3338.7	4.883E+01	3.314E+09	2.279E-10	8.923E-03	1.939E+06
50	6.310E-01	3432.4	6.404E+01	4.924E+09	2.906E-10	8.117E-03	1.348E+06
51	7.943E-01	3539.1	8.531E+01	7.419E+09	3.754E-10	7.243E-03	7.050E+05
52	1.000E+00	3660.2	1.156E+02	1.130E+10	4.918E-10	6.336E-03	0.E+00
53	1.259E+00	3795.3	1.597E+02	1.728E+10	6.547E-10	5.477E-03	-7.736E+05
54	1.585E+00	3946.2	2.238E+02	2.634E+10	8.823E-10	4.757E-03	-1.614E+06
55	1.995E+00	4113.5	3.154E+02	3.945E+10	1.193E-09	4.291E-03	-2.501E+06
56	2.512E+00	4291.1	4.390E+02	5.701E+10	1.591E-09	4.131E-03	-3.393E+06
57	3.162E+00	4491.1	5.949E+02	8.060E+10	2.060E-09	4.189E-03	-4.257E+06
58	3.981E+00	4711.7	7.806E+02	1.189E+11	2.576E-09	4.719E-03	-5.061E+06
59	5.012E+00	4957.4	9.726E+02	2.010E+11	3.050E-09	6.348E-03	-5.740E+06
60	6.310E+00	5226.4	1.136E+03	3.932E+11	3.379E-09	1.019E-02	-6.248E+06
61	7.943E+00	5502.7	1.258E+03	8.007E+11	3.552E-09	1.759E-02	-6.600E+06
62	1.000E+01	5798.0	1.345E+03	1.652E+12	3.604E-09	3.139E-02	-6.844E+06
63	1.259E+01	6104.0	1.407E+03	3.302E+12	3.574E-09	5.583E-02	-7.015E+06
64	1.585E+01	6438.2	1.451E+03	6.559E+12	3.491E-09	1.021E-01	-7.137E+06
65	1.995E+01	6773.6	1.478E+03	1.220E+13	3.371E-09	1.853E-01	-7.221E+06

Table 2 (Continued)

J18

TEFF 3500. LOG G 0.000 MAVE 10000.

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.5700E-04 O 3.5500E-05

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2430.8	2.323E-03	1.643E+05	1.499E-14	3.772E-03	1.940E+07
2	1.000E-05	2459.9	4.646E-03	3.029E+05	2.943E-14	4.298E-03	1.811E+07
3	1.259E-05	2467.1	5.235E-03	3.362E+05	3.309E-14	4.397E-03	1.792E+07
4	1.585E-05	2470.[illegible]	5.950E-03	3.762E+05	3.758E-14	4.507E-03	1.771E+07
5	1.995E-05	2475.5	6.844E-03	4.242E+05	4.308E-14	4.628E-03	1.749E+07
6	2.512E-05	2481.6	7.954E-03	4.833E+05	4.994E-14	4.760E-03	1.725E+07
7	3.162E-05	2487.7	9.299E-03	5.528E+05	5.825E-14	4.903E-03	1.700E+07
8	3.981E-05	2493.9	1.094E-02	6.351E+05	6.835E-14	5.058E-03	1.674E+07
9	5.012E-05	2500.4	1.293E-02	7.331E+05	8.060E-14	5.218E-03	1.647E+07
10	6.310E-05	2506.9	1.538E-02	8.492E+05	9.560E-14	5.390E-03	1.620E+07
11	7.943E-05	2513.4	1.835E-02	9.853E+05	1.138E-13	5.571E-03	1.591E+07
12	1.000E-04	2520.1	2.199E-02	1.148E+06	1.359E-13	5.757E-03	1.562E+07
13	1.259E-04	2526.7	2.639E-02	1.338E+06	1.627E-13	5.951E-03	1.532E+07
14	1.585E-04	2533.2	3.176E-02	1.562E+06	1.954E-13	6.153E-03	1.502E+07
15	1.995E-04	2539.7	3.830E-02	1.825E+06	2.350E-13	6.361E-03	1.472E+07
16	2.512E-04	2546.5	4.627E-02	2.137E+06	2.832E-13	6.567E-03	1.441E+07
17	3.162E-04	2553.1	5.600E-02	2.503E+06	3.418E-13	6.781E-03	1.409E+07
18	3.981E-04	2559.6	6.785E-02	2.932E+06	4.131E-13	6.999E-03	1.378E+07
19	5.012E-04	2566.4	8.231E-02	3.442E+06	4.998E-13	7.215E-03	1.346E+07
20	6.310E-04	2573.3	9.998E-02	4.046E+06	6.056E-13	7.433E-03	1.314E+07
21	7.943E-04	2580.2	1.216E-01	4.759E+06	7.344E-13	7.651E-03	1.281E+07
22	1.000E-03	2587.3	1.480E-01	5.607E+06	8.916E-13	7.869E-03	1.249E+07
23	1.259E-03	2594.9	1.804E-01	6.623E+06	1.083E-12	8.082E-03	1.216E+07
24	1.585E-03	2602.6	2.201E-01	7.834E+06	1.318E-12	8.295E-03	1.183E+07
25	1.995E-03	2610.8	2.688E-01	9.290E+06	1.605E-12	8.503E-03	1.149E+07
26	2.512E-03	2619.8	3.287E-01	1.106E+07	1.955E-12	8.705E-03	1.115E+07
27	3.162E-03	2629.2	4.023E-01	1.320E+07	2.385E-12	8.906E-03	1.081E+07
28	3.981E-03	2639.4	4.930E-01	1.580E+07	2.911E-12	9.101E-03	1.047E+07
29	5.012E-03	2650.7	6.047E-01	1.901E+07	3.556E-12	9.290E-03	1.012E+07
30	6.310E-03	2662.8	7.426E-01	2.295E+07	4.348E-12	9.477E-03	9.770E+06
31	7.943E-03	2676.1	9.128E-01	2.784E+07	5.318E-12	9.659E-03	9.416E+06
32	1.000E-02	2690.8	1.123E+00	3.394E+07	6.508E-12	9.833E-03	9.058E+06
33	1.259E-02	2706.8	1.384E+00	4.157E+07	7.969E-12	1.000E-02	8.696E+06
34	1.585E-02	2724.3	1.706E+00	5.12CE+07	9.762E-12	1.017E-02	8.331E+06
35	1.995E-02	2743.5	2.105E+00	6.341E+07	1.196E-11	1.033E-02	7.962E+06
36	2.512E-02	2764.5	2.60CE+00	7.902E+07	1.466E-11	1.048E-02	7.588E+06
37	3.162E-02	2787.3	3.214E+00	9.904E+07	1.798E-11	1.063E-02	7.209E+06
38	3.981E-02	2812.2	3.977E+00	1.249E+08	2.205E-11	1.076E-02	6.826E+06
39	5.012E-02	2839.0	4.927E+00	1.587E+08	2.706E-11	1.088E-02	6.437E+06
40	6.310E-02	2868.9	6.110E+00	2.031E+08	3.321E-11	1.098E-02	6.042E+06
41	7.943E-02	2900.5	7.587E+00	2.622E+08	4.079E-11	1.106E-02	5.641E+06
42	1.000E-01	2935.7	9.438E+00	3.417E+08	5.012E-11	1.110E-02	5.232E+06
43	1.259E-01	2974.7	1.176E+01	4.505E+08	6.165E-11	1.109E-02	4.813E+06
44	1.585E-01	3018.2	1.470E+01	6.019E+08	7.594E-11	1.102E-02	4.384E+06
45	1.995E-01	3067.1	1.844E+01	8.166E+08	9.373E-11	1.086E-02	3.940E+06
46	2.512E-01	3122.3	2.325E+01	1.127E+09	1.16CE-10	1.058E-02	3.480E+06
47	3.162E-01	3185.1	2.949E+01	1.584E+09	1.443E-10	1.017E-02	2.997E+06
48	3.981E-01	3256.7	3.774E+01	2.263E+09	1.806E-10	9.620E-03	2.486E+06
49	5.012E-01	3338.7	4.883E+01	3.314E+09	2.279E-10	8.923E-03	1.939E+06
50	6.310E-01	3432.4	6.404E+01	4.924E+09	2.906E-10	8.117E-03	1.348E+06
51	7.943E-01	3539.1	8.531E+01	7.419E+09	3.754E-10	7.243E-03	7.050E+05
52	1.000E+00	3660.2	1.156E+02	1.130E+10	4.918E-10	6.336E-03	0.E+00
53	1.259E+00	3795.3	1.597E+02	1.728E+10	6.547E-10	5.477E-03	-7.736E+05
54	1.585E+00	3946.2	2.238E+02	2.634E+10	8.823E-10	4.757E-03	-1.614E+06
55	1.995E+00	4113.5	3.154E+02	3.945E+10	1.193E-09	4.291E-03	-2.501E+06
56	2.512E+00	4291.1	4.390E+02	5.701E+10	1.559E-09	4.131E-03	-3.393E+06
57	3.162E+00	4491.1	5.949E+02	8.060E+10	2.060E-09	4.189E-03	-4.257E+06
58	3.981E+00	4711.7	7.806E+02	1.189E+11	2.576E-09	4.719E-03	-5.061E+06
59	5.012E+00	4957.4	9.726E+02	2.010E+11	3.050E-09	6.348E-03	-5.740E+06
60	6.310E+00	5226.4	1.136E+03	3.932E+11	3.379E-09	1.019E-02	-6.248E+06
61	7.943E+00	5502.7	1.258E+03	8.007E+11	3.552E-09	1.759E-02	-6.600E+06
62	1.000E+01	5798.0	1.345E+03	1.652E+12	3.604E-09	3.139E-02	-6.844E+06
63	1.259E+01	6104.0	1.407E+03	3.302E+12	3.578E-09	5.593E-02	-7.015E+06
64	1.585E+01	6438.2	1.451E+03	6.559E+12	3.491E-09	1.021E-01	-7.137E+06
65	1.995E+01	6773.6	1.479E+03	1.220E+13	3.371E-09	1.853E-01	-7.221E+06

Table 2 (Continued)

TEFF 3500. LOG G 2.000 WAVE 10000. J19

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.8600E-04 O 7.1000E-06

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2729.4	1.330E-01	9.143E+06	7.589E-13	5.762E-03	1.836E+05
2	1.000E-05	2734.1	2.659E-01	1.500E+07	1.515E-12	7.521E-03	1.678E+05
3	1.259E-05	2734.5	2.990E-01	1.627E+07	1.704E-12	7.844E-03	1.657E+05
4	1.585E-05	2734.7	3.388E-01	1.772E+07	1.930E-12	8.200E-03	1.635E+05
5	1.995E-05	2734.9	3.867E-01	1.939E+07	2.203E-12	8.590E-03	1.611E+05
6	2.512E-05	2734.9	4.453E-01	2.134E+07	2.537E-12	8.996E-03	1.586E+05
7	3.162E-05	2734.8	5.157E-01	2.355E+07	2.939E-12	9.435E-03	1.560E+05
8	3.981E-05	2734.5	6.010E-01	2.608E+07	3.425E-12	9.901E-03	1.534E+05
9	5.012E-05	2733.9	7.023E-01	2.890E+07	4.003E-12	1.039E-02	1.506E+05
10	6.310E-05	2733.1	8.241E-01	3.211E+07	4.700E-12	1.089E-02	1.478E+05
11	7.943E-05	2732.3	9.703E-01	3.576E+07	5.535E-12	1.141E-02	1.449E+05
12	1.000E-04	2731.1	1.147E+00	3.990E+07	6.544E-12	1.195E-02	1.420E+05
13	1.259E-04	2729.6	1.358E+00	4.456E+07	7.756E-12	1.251E-02	1.391E+05
14	1.585E-04	2728.0	1.613E+00	4.989E+07	9.216E-12	1.309E-02	1.361E+05
15	1.995E-04	2726.2	1.919E+00	5.596E+07	1.097E-11	1.368E-02	1.330E+05
16	2.512E-04	2724.0	2.289E+00	6.289E+07	1.310E-11	1.429E-02	1.299E+05
17	3.162E-04	2721.8	2.733E+00	7.087E+07	1.566E-11	1.493E-02	1.268E+05
18	3.981E-04	2719.4	3.270E+00	8.007E+07	1.875E-11	1.558E-02	1.237E+05
19	5.012E-04	2716.6	3.916E+00	9.063E+07	2.249E-11	1.627E-02	1.206E+05
20	6.310E-04	2713.6	4.696E+00	1.030E+08	2.700E-11	1.699E-02	1.174E+05
21	7.943E-04	2711.2	5.636E+00	1.173E+08	3.244E-11	1.775E-02	1.142E+05
22	1.000E-03	2708.4	6.769E+00	1.340E+08	3.902E-11	1.855E-02	1.111E+05
23	1.259E-03	2706.4	8.133E+00	1.538E+08	4.693E-11	1.938E-02	1.079E+05
24	1.585E-03	2704.3	9.777E+00	1.769E+08	5.649E-11	2.027E-02	1.047E+05
25	1.995E-03	2702.5	1.175E+01	2.039E+08	6.798E-11	2.123E-02	1.015E+05
26	2.512E-03	2702.1	1.413E+01	2.361E+08	9.179E-11	2.222E-02	9.833E+04
27	3.162E-03	2702.2	1.699E+01	2.739E+08	9.840E-11	2.328E-02	9.515E+04
28	3.981E-03	2703.3	2.042E+01	3.185E+08	1.183E-10	2.439E-02	9.198E+04
29	5.012E-03	2706.3	2.455E+01	3.719E+08	1.422E-10	2.554E-02	8.880E+04
30	6.310E-03	2710.6	2.951E+01	4.354E+08	1.708E-10	2.673E-02	8.562E+04
31	7.943E-03	2716.5	3.548E+01	5.111E+08	2.052E-10	2.795E-02	8.244E+04
32	1.000E-02	2724.6	4.267E+01	6.026E+08	2.463E-10	2.917E-02	7.925E+04
33	1.259E-02	2734.8	5.136E+01	7.135E+08	2.956E-10	3.038E-02	7.603E+04
34	1.585E-02	2747.1	6.189E+01	8.484E+08	3.549E-10	3.156E-02	7.279E+04
35	1.995E-02	2761.8	7.464E+01	1.014E+09	4.262E-10	3.269E-02	6.952E+04
36	2.512E-02	2779.9	9.018E+01	1.218E+09	5.121E-10	3.375E-02	6.620E+04
37	3.162E-02	2798.7	1.091E+02	1.472E+09	6.158E-10	3.473E-02	6.282E+04
38	3.981E-02	2821.3	1.324E+02	1.791E+09	7.414E-10	3.561E-02	5.939E+04
39	5.012E-02	2846.8	1.610E+02	2.193E+09	9.939E-10	3.639E-02	5.589E+04
40	6.310E-02	2875.4	1.963E+02	2.706E+09	1.079E-09	3.706E-02	5.229E+04
41	7.943E-02	2907.8	2.400E+02	3.367E+09	1.305E-09	3.763E-02	4.862E+04
42	1.000E-01	2942.9	2.943E+02	4.226E+09	1.580E-09	3.811E-02	4.494E+04
43	1.259E-01	2982.3	3.619E+02	5.357E+09	1.916E-09	3.850E-02	4.097E+04
44	1.585E-01	3026.1	4.462E+02	6.869E+09	2.326E-09	3.879E-02	3.698E+04
45	1.995E-01	3074.9	5.516E+02	8.926E+09	2.828E-09	3.900E-02	3.288E+04
46	2.512E-01	3129.5	6.838E+02	1.179E+10	3.441E-09	3.911E-02	2.865E+04
47	3.162E-01	3190.7	8.499E+02	1.586E+10	4.190E-09	3.915E-02	2.429E+04
48	3.981E-01	3259.7	1.059E+03	2.181E+10	5.104E-09	3.911E-02	1.977E+04
49	5.012E-01	3337.7	1.323E+03	3.074E+10	6.218E-09	3.900E-02	1.510E+04
50	6.310E-01	3425.9	1.656E+03	4.448E+10	7.575E-09	3.885E-02	1.026E+04
51	7.943E-01	3525.6	2.078E+03	6.582E+10	9.223E-09	3.867E-02	5.225E+03
52	1.000E+00	3638.3	2.611E+03	9.945E+10	1.122E-08	3.852E-02	0.E+00
53	1.259E+00	3764.9	3.283E+03	1.519E+11	1.362E-08	3.849E-02	-5.427E+03
54	1.585E+00	3906.2	4.128E+03	2.321E+11	1.649E-08	3.867E-02	-1.105E+04
55	1.995E+00	4067.7	5.184E+03	3.529E+11	1.987E-08	3.898E-02	-1.688E+04
56	2.512E+00	4249.5	6.501E+03	5.368E+11	2.393E-08	3.966E-02	-2.290E+04
57	3.162E+00	4442.1	8.112E+03	7.569E+11	2.844E-08	4.129E-02	-2.907E+04
58	3.981E+00	4657.7	1.003E+04	1.051E+12	3.352E-08	4.362E-02	-3.530E+04
59	5.012E+00	4893.9	1.232E+04	1.433E+12	3.916E-08	4.725E-02	-4.157E+04
60	6.310E+00	5155.4	1.489E+04	2.058E+12	4.491E-08	5.532E-02	-4.765E+04
61	7.943E+00	5441.1	1.745E+04	3.414E+12	4.988E-08	7.621E-02	-5.303E+04
62	1.000E+01	5731.6	1.963E+04	6.253E+12	5.324E-08	1.188E-01	-5.725E+04
63	1.259E+01	6033.2	2.130E+04	1.189E+13	5.489E-08	1.955E-01	-6.039E+04
64	1.585E+01	6360.3	2.262E+04	2.314E+13	5.526E-08	3.327E-01	-6.270E+04
65	1.995E+01	6657.0	2.357E+04	4.060E+13	5.898E-08	5.287E-01	-6.441E+04

Table 2 (Continued)

TEFF 3500. LOG G 0.000 WAVE 10000. J20

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.8600E-04 O 7.1000E-06

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2625.7	4.639E-03	5.537E+05	2.751E-14	1.664E-03	1.835E+07
2	1.000E-05	2650.8	9.277E-03	1.014E+06	5.450E-14	2.154E-03	1.743E+07
3	1.259E-05	2654.6	1.043E-02	1.121E+06	6.116E-14	2.255E-03	1.723E+07
4	1.585E-05	2658.5	1.180E-02	1.246E+06	6.914E-14	2.369E-03	1.701E+07
5	1.995E-05	2662.5	1.345E-02	1.392E+06	7.866E-14	2.495E-03	1.679E+07
6	2.512E-05	2666.7	1.545E-02	1.565E+06	9.024E-14	2.637E-03	1.655E+07
7	3.162E-05	2670.9	1.784E-02	1.765E+06	1.040E-13	2.793E-03	1.630E+07
8	3.981E-05	2674.9	2.071E-02	1.997E+06	1.206E-13	2.969E-03	1.605E+07
9	5.012E-05	2678.9	2.405E-02	2.266E+06	1.398E-13	3.154E-03	1.579E+07
10	6.310E-05	2682.7	2.804E-02	2.561E+06	1.629E-13	3.359E-03	1.552E+07
11	7.943E-05	2686.4	3.272E-02	2.902E+06	1.897E-13	3.577E-03	1.526E+07
12	1.000E-04	2689.9	3.830E-02	3.292E+06	2.218E-13	3.815E-03	1.499E+07
13	1.259E-04	2693.2	4.485E-02	3.731E+06	2.594E-13	4.069E-03	1.471E+07
14	1.585E-04	2696.5	5.260E-02	4.231E+06	3.039E-13	4.337E-03	1.444E+07
15	1.995E-04	2699.5	6.173E-02	4.793E+06	3.562E-13	4.624E-03	1.416E+07
16	2.512E-04	2702.3	7.254E-02	5.427E+06	4.182E-13	4.930E-03	1.388E+07
17	3.162E-04	2705.2	8.528E-02	6.145E+06	4.911E-13	5.245E-03	1.360E+07
18	3.981E-04	2707.9	1.004E-01	6.957E+06	5.776E-13	5.580E-03	1.331E+07
19	5.012E-04	2710.3	1.182E-01	7.865E+06	6.797E-13	5.933E-03	1.303E+07
20	6.310E-04	2712.9	1.394E-01	8.900E+06	8.007E-13	6.295E-03	1.274E+07
21	7.943E-04	2715.5	1.646E-01	1.007E+07	9.442E-13	6.669E-03	1.245E+07
22	1.000E-03	2717.9	1.945E-01	1.140E+07	1.115E-12	7.060E-03	1.216E+07
23	1.259E-03	2720.4	2.300E-01	1.290E+07	1.317E-12	7.461E-03	1.187E+07
24	1.585E-03	2723.3	2.724E-01	1.464E+07	1.559E-12	7.863E-03	1.157E+07
25	1.995E-03	2726.0	3.232E-01	1.660E+07	1.847E-12	8.283E-03	1.127E+07
26	2.512E-03	2729.1	3.839E-01	1.887E+07	2.191E-12	8.703E-03	1.097E+07
27	3.162E-03	2732.7	4.565E-01	2.152E+07	2.603E-12	9.124E-03	1.067E+07
28	3.981E-03	2736.6	5.439E-01	2.458E+07	3.098E-12	9.550E-03	1.036E+07
29	5.012E-03	2741.0	6.492E-01	2.816E+07	3.691E-12	9.977E-03	1.005E+07
30	6.310E-03	2746.4	7.761E-01	3.243E+07	4.404E-12	1.039E-02	9.732E+06
31	7.943E-03	2752.4	9.297E-01	3.747E+07	5.269E-12	1.081E-02	9.413E+06
32	1.000E-02	2759.6	1.116E+00	4.354E+07	6.301E-12	1.122E-02	9.090E+06
33	1.259E-02	2768.1	1.342E+00	5.091E+07	7.555E-12	1.161E-02	8.762E+06
34	1.585E-02	2778.1	1.617E+00	5.993E+07	9.071E-12	1.199E-02	8.429E+06
35	1.995E-02	2790.0	1.953E+00	7.112E+07	1.091E-11	1.235E-02	8.091E+06
36	2.512E-02	2803.9	2.364E+00	8.512E+07	1.314E-11	1.268E-02	7.747E+06
37	3.162E-02	2820.3	2.869E+00	1.029E+08	1.586E-11	1.297E-02	7.397E+06
38	3.981E-02	2839.4	3.492E+00	1.257E+08	1.917E-11	1.322E-02	7.039E+06
39	5.012E-02	2861.7	4.262E+00	1.555E+08	2.322E-11	1.342E-02	6.674E+06
40	6.310E-02	2887.4	5.220E+00	1.948E+08	2.819E-11	1.356E-02	6.299E+06
41	7.943E-02	2917.0	6.417E+00	2.476E+08	3.429E-11	1.362E-02	5.913E+06
42	1.000E-01	2951.0	7.922E+00	3.196E+08	4.185E-11	1.359E-02	5.515E+06
43	1.259E-01	2989.7	9.830E+00	4.194E+08	5.125E-11	1.345E-02	5.103E+06
44	1.585E-01	3033.9	1.227E+01	5.603E+08	6.303E-11	1.317E-02	4.673E+06
45	1.995E-01	3084.2	1.542E+01	7.629E+08	7.794E-11	1.274E-02	4.223E+06
46	2.512E-01	3141.2	1.956E+01	1.059E+09	9.703E-11	1.215E-02	3.747E+06
47	3.162E-01	3205.7	2.507E+01	1.498E+09	1.219E-10	1.138E-02	3.240E+06
48	3.981E-01	3278.6	3.254E+01	2.161E+09	1.546E-10	1.047E-02	2.695E+06
49	5.012E-01	3360.8	4.289E+01	3.173E+09	1.968E-10	9.436E-03	2.105E+06
50	6.310E-01	3453.1	5.749E+01	4.735E+09	2.593E-10	8.355E-03	1.463E+06
51	7.943E-01	3556.5	7.841E+01	7.165E+09	3.433E-10	7.296E-03	7.623E+05
52	1.000E+00	3671.8	1.088E+02	1.095E+10	4.613E-10	6.291E-03	0.E+00
53	1.259E+00	3799.8	1.532E+02	1.68CE+10	6.275E-10	5.427E-03	-8.221E+05
54	1.585E+00	3943.7	2.175E+02	2.568E+10	8.582E-10	4.760E-03	-1.695E+06
55	1.995E+00	4106.3	3.088E+02	3.858E+10	1.170E-09	4.311E-03	-2.600E+06
56	2.512E+00	4286.3	4.321E+02	5.611E+10	1.568E-09	4.120E-03	-3.506E+06
57	3.162E+00	4481.6	5.991E+02	7.958E+10	2.044E-09	4.199E-03	-4.390E+06
58	3.981E+00	4702.4	7.753E+02	1.171E+11	2.564E-09	4.693E-03	-5.199E+06
59	5.012E+00	4947.3	9.694E+02	1.969E+11	3.047E-09	6.271E-03	-5.876E+06
60	6.310E+00	5216.6	1.135E+03	3.843E+11	3.393E-09	1.003E-02	-6.392E+06
61	7.943E+00	5499.4	1.259E+03	7.948E+11	3.557E-09	1.749E-02	-6.747E+06
62	1.000E+01	5792.4	1.348E+03	1.633E+12	3.615E-09	3.110E-02	-6.992E+06
63	1.259E+01	6100.5	1.411E+03	3.282E+12	3.589E-09	5.555E-02	-7.164E+06
64	1.585E+01	6434.1	1.453E+03	6.512E+12	3.439E-09	1.015E-01	-7.286E+06
65	1.995E+01	6770.7	1.481E+03	1.215E+13	3.379E-09	1.844E-01	-7.370E+06

Table 2 (Continued)

TEFF 3000. .0G 0 2.000 WAVE 10000. J21

H 1.00000E+00 HE 1.00000E-01 C 3.55000E-05 N 9.96300E-04 O 7.10000E-06

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2185.9	6.408E-02	9.804E+05	9.578E-13	1.236E-02	1.196E+05
2	1.000E-05	2174.3	1.282E-01	1.697E+06	9.228E-13	1.561E-02	1.073E+05
3	1.259E-05	2172.8	1.439E-01	1.858E+06	1.037E-12	1.648E-02	1.056E+05
4	1.585E-05	2171.0	1.624E-01	2.040E+06	1.173E-12	1.759E-02	1.039E+05
5	1.995E-05	2169.7	1.842E-01	2.249E+06	1.332E-12	1.891E-02	1.021E+05
6	2.512E-05	2168.3	2.102E-01	2.492E+06	1.523E-12	2.062E-02	1.003E+05
7	3.162E-05	2166.7	2.401E-01	2.759E+06	1.743E-12	2.276E-02	9.843E+04
8	3.981E-05	2165.2	2.742E-01	3.053E+06	1.994E-12	2.539E-02	9.661E+04
9	5.012E-05	2164.5	3.125E-01	3.381E+06	2.277E-12	2.838E-02	9.481E+04
10	6.310E-05	2163.4	3.557E-01	3.733E+06	2.597E-12	3.211E-02	9.305E+04
11	7.943E-05	2162.4	4.030E-01	4.109E+06	2.950E-12	3.649E-02	9.133E+04
12	1.000E-04	2162.1	4.560E-01	4.526E+06	3.345E-12	4.134E-02	8.965E+04
13	1.259E-04	2161.7	5.146E-01	4.974E+06	3.784E-12	4.706E-02	8.800E+04
14	1.585E-04	2161.3	5.794E-01	5.455E+06	4.271E-12	5.367E-02	8.640E+04
15	1.995E-04	2161.0	6.508E-01	5.975E+06	4.811E-12	6.116E-02	8.482E+04
16	2.512E-04	2161.0	7.299E-01	6.543E+06	5.410E-12	6.939E-02	9.327E+04
17	3.162E-04	2161.2	8.180E-01	7.166E+06	6.080E-12	7.847E-02	8.174E+04
18	3.981E-04	2161.4	9.160E-01	7.845E+06	6.830E-12	8.861E-02	9.022E+04
19	5.012E-04	2161.7	1.025E+00	8.590E+06	7.671E-12	9.972E-02	7.871E+04
20	6.310E-04	2162.1	1.148E+00	9.413E+06	8.619E-12	1.118E-01	7.720E+04
21	7.943E-04	2162.6	1.286E+00	1.033E+07	9.693E-12	1.248E-01	7.569E+04
22	1.000E-03	2163.3	1.442E+00	1.135E+07	1.091E-11	1.384E-01	7.418E+04
23	1.259E-03	2164.1	1.620E+00	1.25CE+07	1.231E-11	1.528E-01	7.265E+04
24	1.585E-03	2165.0	1.823E+00	1.379E+07	1.392E-11	1.678E-01	7.110E+04
25	1.995E-03	2166.2	2.057E+00	1.527E+07	1.578E-11	1.827E-01	6.952E+04
26	2.512E-03	2167.5	2.329E+00	1.696E+07	1.796E-11	1.979E-01	6.791E+04
27	3.162E-03	2169.0	2.644E+00	1.891E+07	2.052E-11	2.129E-01	6.626E+04
28	3.981E-03	2170.8	3.016E+00	2.119E+07	2.355E-11	2.271E-01	6.458E+04
29	5.012E-03	2173.0	3.456E+00	2.387E+07	2.716E-11	2.402E-01	6.294E+04
30	6.310E-03	2175.[illegible]	3.983E+00	2.704E+07	3.152E-11	2.524E-01	6.104E+04
31	7.943E-03	2178.4	4.615E+00	3.083E+07	3.678E-11	2.628E-01	5.918E+04
32	1.000E-02	2181.9	5.385E+00	3.540E+07	4.324E-11	2.714E-01	5.725E+04
33	1.259E-02	2186.0	6.326E+00	4.095E+07	5.118E-11	2.782E-01	5.526E+04
34	1.585E-02	2190.8	7.466E+00	4.773E+07	6.104E-11	2.831E-01	5.318E+04
35	1.995E-02	2196.5	8.926E+00	5.617E+07	7.332E-11	2.862E-01	5.103E+04
36	2.512E-02	2203.2	1.073E+01	6.663E+07	8.874E-11	2.877E-01	4.881E+04
37	3.162E-02	2211.1	1.298E+01	7.972E+07	1.081E-10	2.878E-01	4.651E+04
38	3.981E-02	2220.3	1.583E+01	9.619E+07	1.325E-10	2.869E-01	4.413E+04
39	5.012E-02	2231.0	1.944E+01	1.170E+08	1.634E-10	2.852E-01	4.159E+04
40	6.310E-02	2243.6	2.400E+01	1.436E+08	2.021E-10	2.831E-01	3.918E+04
41	7.943E-02	2258.2	2.980E+01	1.775E+08	2.508E-10	2.808E-01	3.661E+04
42	1.000E-01	2275.1	3.715E+01	2.212E+08	3.117E-10	2.785E-01	3.399E+04
43	1.259E-01	2294.6	4.648E+01	2.776E+08	3.875E-10	2.762E-01	3.131E+04
44	1.585E-01	2317.2	5.834E+01	3.512E+08	4.813E-10	2.737E-01	2.857E+04
45	1.995E-01	2343.1	7.341E+01	4.477E+08	5.969E-10	2.706E-01	2.577E+04
46	2.512E-01	2372.8	9.265E+01	5.759E+08	7.392E-10	2.659E-01	2.289E+04
47	3.162E-01	2406.9	1.174E+02	7.492E+08	9.151E-10	2.581E-01	1.987E+04
48	3.981E-01	2446.0	1.499E+02	9.888E+08	1.135E-09	2.456E-01	1.659E+04
49	5.012E-01	2491.1	1.935E+02	1.331E+09	1.418E-09	2.263E-01	1.326E+04
50	6.310E-01	2543.2	2.543E+02	1.842E+09	1.795E-09	1.997E-01	9.451E+03
51	7.943E-01	2604.1	3.434E+02	2.641E+09	2.325E-09	1.674E-01	5.093E+03
52	1.000E+00	2675.5	4.809E+02	3.959E+09	3.111E-09	1.343E-01	0.E+00
53	1.259E+00	2759.9	6.996E+02	6.220E+09	4.309E-09	1.[illegible]3E-01	-5.949E+03
54	1.585E+00	2859.6	1.050E+03	1.019E+10	6.133E-09	8.397E-02	-1.271E+04
55	1.995E+00	2975.1	1.590E+03	1.711E+10	8.775E-09	7.071E-02	-1.999E+04
56	2.512E+00	3109.7	2.368E+03	2.923E+10	1.231E-08	6.303E-02	-2.744E+04
57	3.162E+00	3264.1	3.440E+03	5.154E+10	1.682E-08	5.891E-02	-3.485E+04
58	3.981E+00	3443.8	4.856E+03	9.629E+10	2.229E-08	5.690E-02	-4.213E+04
59	5.012E+00	3654.5	6.680E+03	1.917E+11	2.871E-08	5.688E-02	-4.928E+04
60	6.310E+00	3902.1	9.025E+03	3.896E+11	3.578E-08	5.868E-02	-5.626E+04
61	7.943E+00	4188.5	1.164E+04	7.51CE+11	4.337E-08	6.133E-02	-6.315E+04
62	1.000E+01	4509.7	1.492E+04	1.300E+12	5.153E-08	6.410E-02	-7.006E+04
63	1.259E+01	4851.5	1.885E+04	2.006E+12	6.048E-08	6.853E-02	-7.705E+04
64	1.585E+01	5204.3	2.332E+04	3.087E+12	6.970E-08	8.012E-02	-8.397E+04
65	1.995E+01	5552.3	2.769E+04	5.590E+12	7.756E-08	1.160E-01	-9.977E+04

Table 2 (Continued)

TEFF 3000. LOG G 0.000 WAVE 10000. J22

H 1.00000E+00 HE 1.00000E-01 C 3.55000E-05 N 9.86000E-04 O 7.10000E-06

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2244.3	1.330E-03	4.433E+04	3.234E-15	6.674E-03	1.558E+07
2	1.000E-05	2239.2	2.659E-03	7.275E+04	1.851E-14	7.515E-03	1.441E+07
3	1.259E-05	2237.6	2.999E-03	7.936E+04	2.088E-14	7.656E-03	1.424E+07
4	1.585E-05	2236.0	3.416E-03	8.744E+04	2.381E-14	7.806E-03	1.405E+07
5	1.995E-05	2233.8	3.931E-03	9.711E+04	2.743E-14	7.967E-03	1.384E+07
6	2.512E-05	2231.1	4.577E-03	1.089E+05	3.197E-14	8.140E-03	1.353E+07
7	3.162E-05	2228.3	5.367E-03	1.232E+05	3.754E-14	8.319E-03	1.340E+07
8	3.981E-05	2224.7	6.338E-03	1.404E+05	4.441E-14	8.508E-03	1.316E+07
9	5.012E-05	2220.6	7.531E-03	1.611E+05	5.287E-14	8.707E-03	1.292E+07
10	6.310E-05	2216.7	9.004E-03	1.864E+05	6.332E-14	8.915E-03	1.266E+07
11	7.943E-05	2212.2	1.081E-02	2.168E+05	7.620E-14	9.139E-03	1.240E+07
12	1.000E-04	2207.6	1.303E-02	2.536E+05	9.204E-14	9.376E-03	1.214E+07
13	1.259E-04	2202.8	1.575E-02	2.975E+05	1.115E-13	9.633E-03	1.187E+07
14	1.585E-04	2198.7	1.907E-02	3.503E+05	1.353E-13	9.911E-03	1.160E+07
15	1.995E-04	2194.4	2.315E-02	4.128E+05	1.646E-13	1.022E-02	1.133E+07
16	2.512E-04	2191.0	2.812E-02	4.870E+05	2.002E-13	1.055E-02	1.105E+07
17	3.162E-04	2187.7	3.417E-02	5.740E+05	2.437E-13	1.092E-02	1.078E+07
18	3.981E-04	2185.2	4.152E-02	6.763E+05	2.966E-13	1.132E-02	1.050E+07
19	5.012E-04	2183.4	5.044E-02	7.961E+05	3.606E-13	1.178E-02	1.023E+07
20	6.310E-04	2182.1	6.120E-02	9.357E+05	4.380E-13	1.230E-02	9.962E+06
21	7.943E-04	2181.9	7.415E-02	1.099E+06	5.310E-13	1.288E-02	9.694E+06
22	1.000E-03	2182.2	8.970E-02	1.289E+06	6.426E-13	1.354E-02	9.428E+06
23	1.259E-03	2183.6	1.083E-01	1.512E+06	7.756E-13	1.427E-02	9.164E+06
24	1.585E-03	2185.7	1.305E-01	1.771E+06	9.340E-13	1.509E-02	8.904E+06
25	1.995E-03	2188.5	1.568E-01	2.073E+06	1.122E-12	1.599E-02	8.647E+06
26	2.512E-03	2192.5	1.881E-01	2.429E+06	1.344E-12	1.695E-02	8.392E+06
27	3.162E-03	2197.2	2.252E-01	2.845E+06	1.607E-12	1.799E-02	8.139E+06
28	3.981E-03	2202.8	2.693E-01	3.336E+06	1.919E-12	1.905E-02	7.988E+06
29	5.012E-03	2209.2	3.217E-01	3.915E+06	2.287E-12	2.015E-02	7.638E+06
30	6.310E-03	2216.6	3.842E-01	4.605E+06	2.724E-12	2.124E-02	7.387E+06
31	7.943E-03	2225.1	4.591E-01	5.432E+06	3.244E-12	2.229E-02	7.136E+06
32	1.000E-02	2234.5	5.490E-01	6.427E+06	3.866E-12	2.329E-02	6.882E+06
33	1.259E-02	2245.2	6.576E-01	7.638E+06	4.612E-12	2.419E-02	6.624E+06
34	1.585E-02	2257.3	7.899E-01	9.127E+06	5.512E-12	2.495E-02	6.362E+06
35	1.995E-02	2270.8	9.518E-01	1.097E+07	6.606E-12	2.556E-02	6.093E+06
36	2.512E-02	2286.0	1.151E+00	1.328E+07	7.940E-12	2.601E-02	5.817E+06
37	3.162E-02	2303.1	1.399E+00	1.619E+07	9.581E-12	2.626E-02	5.533E+06
38	3.981E-02	2322.2	1.710E+00	1.992E+07	1.161E-11	2.636E-02	5.239E+06
39	5.012E-02	2343.5	2.100E+00	2.470E+07	1.413E-11	2.631E-02	4.934E+06
40	6.310E-02	2367.3	2.593E+00	3.092E+07	1.727E-11	2.614E-02	4.618E+06
41	7.943E-02	2393.5	3.220E+00	3.902E+07	2.119E-11	2.591E-02	4.290E+06
42	1.000E-01	2422.4	4.015E+00	4.963E+07	2.610E-11	2.564E-02	3.952E+06
43	1.259E-01	2454.0	5.029E+00	6.357E+07	3.225E-11	2.538E-02	3.603E+06
44	1.585E-01	2488.5	6.316E+00	8.194E+07	3.991E-11	2.513E-02	3.244E+06
45	1.995E-01	2526.2	7.953E+00	1.063E+08	4.947E-11	2.490E-02	2.876E+06
46	2.512E-01	2567.6	1.003E+01	1.388E+08	6.134E-11	2.467E-02	2.499E+06
47	3.162E-01	2613.2	1.269E+01	1.826E+08	7.608E-11	2.443E-02	2.112E+06
48	3.981E-01	2663.6	1.604E+01	2.428E+08	9.436E-11	2.416E-02	1.715E+06
49	5.012E-01	2719.5	2.032E+01	3.276E+08	1.17CE-10	2.394E-02	1.308E+06
50	6.310E-01	2781.8	2.580E+01	4.512E+08	1.451E-10	2.344E-02	8.876E+05
51	7.943E-01	2851.6	3.283E+01	6.399E+08	1.800E-10	2.293E-02	4.529E+05
52	1.000E+00	2930.3	4.192E+01	9.429E+08	2.234E-10	2.223E-02	0.E+00
53	1.259E+00	3019.3	5.379E+01	1.451E+09	2.781E-10	2.125E-02	-4.762E+05
54	1.585E+00	3120.8	6.960E+01	2.337E+09	3.479E-10	1.984E-02	-9.844E+05
55	1.995E+00	3237.3	9.129E+01	3.921E+09	4.397E-10	1.799E-02	-1.539E+06
56	2.512E+00	3372.0	1.223E+02	6.795E+09	5.654E-10	1.532E-02	-2.162E+06
57	3.162E+00	3528.3	1.693E+02	1.203E+10	7.474E-10	1.245E-02	-2.884E+06
58	3.981E+00	3709.3	2.437E+02	2.153E+10	1.023E-09	9.754E-03	-3.733E+06
59	5.012E+00	3917.7	3.642E+02	3.833E+10	1.447E-09	7.643E-03	-4.717E+06
60	6.310E+00	4156.4	5.514E+02	6.573E+10	2.064E-09	6.400E-03	-5.796E+06
61	7.943E+00	4430.4	8.181E+02	1.052E+11	2.872E-09	5.967E-03	-6.888E+06
62	1.000E+01	4735.7	1.152E+03	1.685E+11	3.782E-09	6.506E-03	-7.899E+06
63	1.259E+01	5052.2	1.492E+03	3.227E+11	4.593E-09	9.429E-03	-8.711E+06
64	1.585E+01	5380.5	1.754E+03	7.242E+11	5.067E-09	1.697E-02	-9.252E+06
65	1.995E+01	5713.3	1.926E+03	1.646E+12	5.238E-09	3.226E-02	-9.579E+06

Table 2 (Continued)

TEFF 2500. LOG G 0.000 WAVE 10000. J23

H 1.00000E+00 HE 1.00000E-01 C 3.55000E-05 N 9.86000E-04 O 7.10000E-06

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	1767.1	1.455E-03	1.084E+04	1.213E-14	7.415E-03	9.714E+06
2	1.000E-05	1767.6	2.710E-03	1.945E+04	2.459E-14	7.376E-03	8.882E+06
3	1.259E-05	1766.8	3.466E-03	2.163E+04	2.752E-14	7.285E-03	8.747E+06
4	1.585E-05	1766.7	3.522E-03	2.440E+04	3.221E-14	7.163E-03	8.597E+06
5	1.995E-05	1766.6	4.108E-03	2.793E+04	3.778E-14	7.001E-03	8.431E+06
6	2.512E-05	1766.3	4.858E-03	3.238E+04	4.498E-14	6.793E-03	8.250E+06
7	3.162E-05	1765.8	5.826E-03	3.804E+04	5.442E-14	6.541E-03	8.053E+06
8	3.981E-05	1765.5	7.144E-03	4.542E+04	6.706E-14	6.268E-03	7.841E+06
9	5.012E-05	1765.1	8.791E-03	5.496E+04	8.408E-14	5.573E-03	7.617E+06
10	6.310E-05	1764.0	1.143E-02	6.726E+04	1.073E-13	5.649E-03	7.382E+06
11	7.943E-05	1763.1	1.400E-02	8.326E+04	1.390E-13	5.350E-03	7.139E+06
12	1.000E-04	1762.4	1.755E-02	1.035E+05	1.823E-13	5.087E-03	6.892E+06
13	1.259E-04	1761.0	2.316E-02	1.289E+05	2.417E-13	4.837E-03	6.643E+06
14	1.585E-04	1759.7	3.007E-02	1.605E+05	3.232E-13	4.629E-03	6.397E+06
15	1.995E-04	1758.9	3.910E-02	1.992E+05	4.330E-13	4.467E-03	6.157E+06
16	2.512E-04	1757.7	5.085E-02	2.452E+05	5.810E-13	4.325E-03	5.923E+06
17	3.162E-04	1756.8	6.612E-02	3.001E+05	7.790E-13	4.212E-03	5.697E+06
18	3.981E-04	1756.3	8.577E-02	3.651E+05	1.040E-12	4.123E-03	5.479E+06
19	5.012E-04	1756.1	1.110E-01	4.415E+05	1.382E-12	4.052E-03	5.269E+06
20	6.310E-04	1756.4	1.432E-01	5.318E+05	1.828E-12	3.998E-03	5.067E+06
21	7.943E-04	1757.0	1.843E-01	6.386E+05	2.404E-12	3.956E-03	4.872E+06
22	1.000E-03	1758.0	2.365E-01	7.634E+05	3.145E-12	3.924E-03	4.683E+06
23	1.259E-03	1759.6	3.027E-01	9.125E+05	4.093E-12	3.904E-03	4.499E+06
24	1.585E-03	1761.9	3.863E-01	1.093E+06	5.257E-12	3.894E-03	4.320E+06
25	1.995E-03	1764.9	4.917E-01	1.310E+06	6.820E-12	3.895E-03	4.145E+06
26	2.512E-03	1768.4	6.241E-01	1.571E+06	8.741E-12	3.903E-03	3.974E+06
27	3.162E-03	1772.7	7.904E-01	1.883E+06	1.115E-11	3.920E-03	3.806E+06
28	3.981E-03	1777.9	9.965E-01	2.280E+06	1.417E-11	3.948E-03	3.641E+06
29	5.012E-03	1784.1	1.258E+00	2.765E+06	1.791E-11	3.986E-03	3.478E+06
30	6.310E-03	1791.1	1.582E+00	3.362E+06	2.256E-11	4.033E-03	3.318E+06
31	7.943E-03	1799.4	1.984E+00	4.114E+06	2.829E-11	4.094E-03	3.159E+06
32	1.000E-02	1808.8	2.481E+00	5.057E+06	3.531E-11	4.168E-03	3.002E+06
33	1.259E-02	1819.4	3.096E+00	6.246E+06	4.390E-11	4.254E-03	2.847E+06
34	1.585E-02	1831.1	3.853E+00	7.752E+06	5.436E-11	4.354E-03	2.692E+06
35	1.995E-02	1844.3	4.783E+00	9.680E+06	6.701E-11	4.471E-03	2.538E+06
36	2.512E-02	1858.6	5.921E+00	1.213E+07	8.225E-11	4.604E-03	2.385E+06
37	3.162E-02	1874.1	7.311E+00	1.527E+07	1.006E-10	4.755E-03	2.233E+06
38	3.981E-02	1891.0	9.001E+00	1.930E+07	1.224E-10	4.926E-03	2.081E+06
39	5.012E-02	1909.1	1.105E+01	2.449E+07	1.484E-10	5.123E-03	1.929E+06
40	6.310E-02	1928.5	1.353E+01	3.118E+07	1.790E-10	5.345E-03	1.777E+06
41	7.943E-02	1949.5	1.651E+01	3.988E+07	2.150E-10	5.603E-03	1.626E+06
42	1.000E-01	1972.0	2.009E+01	5.116E+07	2.567E-10	5.903E-03	1.474E+06
43	1.259E-01	1996.2	2.435E+01	6.584E+07	3.048E-10	6.256E-03	1.322E+06
44	1.585E-01	2022.2	2.939E+01	8.493E+07	3.595E-10	6.678E-03	1.170E+06
45	1.995E-01	2050.2	3.531E+01	1.097E+08	4.208E-10	7.191E-03	1.018E+06
46	2.512E-01	2080.2	4.219E+01	1.417E+08	4.884E-10	7.822E-03	8.667E+05
47	3.162E-01	2112.6	5.011E+01	1.826E+08	5.612E-10	8.623E-03	7.156E+05
48	3.981E-01	2147.5	5.908E+01	2.343E+08	6.372E-10	9.653E-03	5.661E+05
49	5.012E-01	2185.6	6.906E+01	2.987E+08	7.132E-10	1.105E-02	4.184E+05
50	6.310E-01	2227.4	7.989E+01	3.769E+08	7.845E-10	1.302E-02	2.739E+05
51	7.943E-01	2272.9	9.130E+01	4.694E+08	8.469E-10	1.574E-02	1.340E+05
52	1.000E+00	2322.5	1.030E+02	5.734E+08	8.961E-10	1.963E-02	0.E+00
53	1.259E+00	2376.4	1.147E+02	6.841E+08	9.307E-10	2.498E-02	-1.276E+05
54	1.585E+00	2435.6	1.262E+02	8.397E+08	9.526E-10	3.161E-02	-2.501E+05
55	1.995E+00	2501.8	1.379E+02	1.027E+09	9.677E-10	3.815E-02	-3.721E+05
56	2.512E+00	2577.2	1.506E+02	1.291E+09	9.857E-10	4.228E-02	-5.025E+05
57	3.162E+00	2663.8	1.658E+02	1.629E+09	1.018E-09	4.285E-02	-6.540E+05
58	3.981E+00	2764.3	1.853E+02	2.127E+09	1.074E-09	4.048E-02	-8.414E+05
59	5.012E+00	2882.7	2.121E+02	2.916E+09	1.163E-09	3.652E-02	-1.081E+06
60	6.310E+00	3021.9	2.499E+02	4.112E+09	1.297E-09	3.236E-02	-1.389E+06
61	7.943E+00	3193.5	3.038E+02	7.771E+09	1.487E-09	2.828E-02	-1.778E+06
62	1.000E+01	3398.2	3.837E+02	1.568E+10	1.762E-09	2.345E-02	-2.270E+06
63	1.259E+01	3645.9	5.117E+02	3.329E+10	2.167E-09	1.751E-02	-2.920E+06
64	1.585E+01	3946.2	7.377E+02	6.923E+10	2.910E-09	1.215E-02	-3.812E+06
65	1.995E+01	4274.1	1.122E+03	1.300E+11	4.066E-09	9.670E-03	-4.934E+06

Table 2 (Continued)

TEFF 2000. LOG G 0.000 WAVE 10000. J24

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.8600E-04 O 7.1000E-06

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	1191.5	1.346E-02	7.993E+02	3.226E-13	7.378E-04	4.748E+06
2	1.000E-05	1193.1	2.693E-02	1.172E+03	6.444E-13	7.427E-04	4.433E+06
3	1.259E-05	1193.3	3.042E-02	1.251E+03	7.279E-13	7.433E-04	4.382E+06
4	1.585E-05	1193.6	3.440E-02	1.347E+03	8.327E-13	7.442E-04	4.326E+06
5	1.995E-05	1194.0	4.032E-02	1.462E+03	9.642E-13	7.454E-04	4.264E+06
6	2.512E-05	1194.6	4.723E-02	1.601E+03	1.129E-12	7.472E-04	4.198E+06
7	3.162E-05	1195.0	5.592E-02	1.757E+03	1.336E-12	7.484E-04	4.127E+06
8	3.981E-05	1195.7	6.686E-02	1.947E+03	1.597E-12	7.505E-04	4.053E+06
9	5.012E-05	1196.7	8.056E-02	2.178E+03	1.923E-12	7.536E-04	3.975E+06
10	6.310E-05	1197.6	9.774E-02	2.440E+03	2.331E-12	7.564E-04	3.894E+06
11	7.943E-05	1198.6	1.193E-01	2.746E+03	2.843E-12	7.594E-04	3.810E+06
12	1.000E-04	1200.2	1.463E-01	3.131E+03	3.482E-12	7.643E-04	3.724E+06
13	1.259E-04	1201.7	1.800E-01	3.569E+03	4.279E-12	7.690E-04	3.637E+06
14	1.585E-04	1203.4	2.223E-01	4.089E+03	5.276E-12	7.742E-04	3.548E+06
15	1.995E-04	1205.8	2.751E-01	4.747E+03	6.516E-12	7.817E-04	3.459E+06
16	2.512E-04	1208.2	3.408E-01	5.513E+03	8.056E-12	7.892E-04	3.368E+06
17	3.162E-04	1210.9	4.220E-01	6.440E+03	9.973E-12	7.977E-04	3.277E+06
18	3.981E-04	1214.1	5.207E-01	7.586E+03	1.235E-11	8.079E-04	3.185E+06
19	5.012E-04	1217.6	6.519E-01	8.982E+03	1.52[illegible]E-11	8.190E-04	3.093E+06
20	6.310E-04	1221.5	8.066E-01	1.070E+04	1.89[illegible].E-11	8.316E-04	3.001E+06
21	7.943E-04	1225.8	1.003E+00	1.283E+04	2.348E-11	8.456E-04	2.909E+06
22	1.000E-03	1230.6	1.244E+00	1.550E+04	2.888E-11	8.614E-04	2.816E+06
23	1.259E-03	1235.8	1.542E+00	1.883E+04	3.564E-11	8.786E-04	2.724E+06
24	1.585E-03	1241.5	1.909E+00	2.303E+04	4.392E-11	8.978E-04	2.631E+06
25	1.995E-03	1247.5	2.360E+00	2.846E+04	5.403E-11	9.196E-04	2.539E+06
26	2.512E-03	1254.9	2.914E+00	3.534E+04	6.634E-11	9.448E-04	2.446E+06
27	3.162E-03	1262.5	3.594E+00	4.448E+04	8.131E-11	9.705E-04	2.354E+06
28	3.981E-03	1271.0	4.425E+00	5.649E+04	9.944E-11	1.001E-03	2.262E+06
29	5.012E-03	1280.5	5.437E+00	7.266E+04	1.213E-10	1.035E-03	2.170E+06
30	6.310E-03	1291.1	6.666E+00	9.474E+04	1.475E-10	1.075E-03	2.078E+06
31	7.943E-03	1302.9	8.155E+00	1.253E+05	1.788E-10	1.119E-03	1.987E+06
32	1.000E-02	1316.4	9.951E+00	1.691E+05	2.159E-10	1.172E-03	1.895E+06
33	1.259E-02	1331.8	1.210E+01	2.331E+05	2.596E-10	1.233E-03	1.805E+06
34	1.585E-02	1349.5	1.467E+01	3.296E+05	3.105E-10	1.305E-03	1.714E+06
35	1.995E-02	1369.9	1.771E+01	4.792E+05	3.693E-10	1.392E-03	1.625E+06
36	2.512E-02	1393.0	2.129E+01	7.136E+05	4.365E-10	1.494E-03	1.536E+06
37	3.162E-02	1419.1	2.548E+01	1.089E+06	5.126E-10	1.613E-03	1.448E+06
38	3.981E-02	1447.9	3.034E+01	1.690E+06	5.983E-10	1.751E-03	1.360E+06
39	5.012E-02	1478.1	3.598E+01	2.616E+06	6.948E-10	1.901E-03	1.273E+06
40	6.310E-02	1509.3	4.253E+01	4.019E+06	8.039E-10	2.063E-03	1.185E+06
41	7.943E-02	1540.8	5.013E+01	6.077E+06	9.278E-10	2.233E-03	1.097E+06
42	1.000E-01	1571.2	5.899E+01	8.925E+06	1.070E-09	2.403E-03	1.008E+06
43	1.259E-01	1600.5	6.939E+01	1.277E+07	1.235E-09	2.574E-03	9.192E+05
44	1.585E-01	1628.4	8.169E+01	1.781E+07	1.427E-09	2.741E-03	8.250E+05
45	1.995E-01	1654.6	9.6.6E+01	2.421E+07	1.653E-09	2.903E-03	7.316E+05
46	2.512E-01	1679.9	1.135E+02	3.238E+07	1.920E-09	3.064E-03	6.346E+05
47	3.162E-01	1704.4	1.341E+02	4.273E+07	2.235E-09	3.225E-03	5.350E+05
48	3.981E-01	1729.3	1.589E+02	5.616E+07	2.606E-09	3.392E-03	4.326E+05
49	5.012E-01	1755.5	1.685E+02	7.391E+07	3.042E-09	3.573E-03	3.277E+05
50	6.310E-01	1783.9	2.238E+02	9.782E+07	3.550E-09	3.776E-03	2.205E+05
51	7.943E-01	1815.6	2.657E+02	1.307E+08	4.134E-09	4.010E-03	1.111E+05
52	1.000E+00	1851.4	3.153E+02	1.766E+08	4.798E-09	4.286E-03	0.E+00
53	1.259E+00	1892.4	3.735E+02	2.422E+08	5.540E-09	4.621E-03	-1.126E+05
54	1.585E+00	1940.1	4.410E+02	3.393E+08	6.347E-09	5.041E-03	-2.262E+05
55	1.995E+00	1996.4	5.184E+02	4.919E+08	7.189E-09	5.593E-03	-3.404E+05
56	2.512E+00	2065.8	6.050E+02	7.568E+08	7.994E-09	6.404E-03	-4.541E+05
57	3.162E+00	2156.5	6.976E+02	1.277E+09	8.592E-09	7.838E-03	-5.650E+05
58	3.981E+00	2260.9	7.880E+02	2.176E+09	8.844E-09	1.044E-02	-6.688E+05
59	5.012E+00	2337.9	8.738E+02	3.103E+09	9.084E-09	1.349E-02	-7.651E+05
60	6.310E+00	2403.1	9.589E+02	4.050E+09	9.299E-09	1.724E-02	-8.574E+05
61	7.943E+00	2465.4	1.042E+03	5.047E+09	9.423E-09	2.221E-02	-9.462E+05
62	1.000E+01	2512.8	1.124E+03	5.932E+09	9.637E-09	2.700E-02	-1.034E+06
63	1.259E+01	2562.3	1.211E+03	6.930E+09	9.815E-09	3.306E-02	-1.123E+06
64	1.585E+01	2613.8	1.299E+03	8.053E+09	9.935E-09	4.032E-02	-1.213E+06
65	1.995E+01	2663.8	1.393E+03	9.304E+09	1.009E-08	4.770E-02	-1.305E+06

Table 2 (Continued)

TEFF 3000 LOG G 1.000 WAVE 10000 J30

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1780.8	1.031E-02	7.764E+04	9.592E-14	9.189E-03	1.395E+06
2	1.000E-05	1815.1	2.863E-02	1.519E+05	1.919E-13	9.690E-03	1.311E+06
3	1.259E-05	1819.8	2.328E-02	1.787E+05	2.165E-13	9.782E-03	1.298E+06
4	1.585E-05	1825.8	2.650E-02	1.941E+05	2.473E-13	9.885E-03	1.284E+06
5	1.995E-05	1838.6	3.869E-02	2.231E+05	2.856E-13	9.998E-03	1.268E+06
6	2.512E-05	1836.9	3.583E-02	2.592E+05	3.336E-13	1.012E-02	1.252E+06
7	3.162E-05	1843.6	4.221E-02	3.038E+05	3.933E-13	1.026E-02	1.234E+06
8	3.981E-05	1850.6	5.013E-02	3.588E+05	4.672E-13	1.040E-02	1.216E+06
9	5.012E-05	1858.2	5.995E-02	4.268E+05	5.589E-13	1.056E-02	1.196E+06
10	6.310E-05	1866.1	7.214E-02	5.107E+05	6.729E-13	1.072E-02	1.176E+06
11	7.943E-05	1874.4	8.724E-02	6.142E+05	8.142E-13	1.089E-02	1.156E+06
12	1.000E-04	1883.3	1.060E-01	7.419E+05	9.887E-13	1.107E-02	1.135E+06
13	1.259E-04	1892.3	1.291E-01	8.990E+05	1.205E-12	1.126E-02	1.114E+06
14	1.585E-04	1902.8	1.578E-01	1.093E+06	1.472E-12	1.146E-02	1.093E+06
15	1.995E-04	1912.2	1.932E-01	1.333E+06	1.801E-12	1.167E-02	1.071E+06
16	2.512E-04	1923.0	2.370E-01	1.628E+06	2.205E-12	1.189E-02	1.049E+06
17	3.162E-04	1934.7	2.911E-01	1.994E+06	2.701E-12	1.212E-02	1.027E+06
18	3.981E-04	1947.1	3.579E-01	2.447E+06	3.307E-12	1.236E-02	1.004E+06
19	5.012E-04	1960.7	4.403E-01	3.009E+06	4.045E-12	1.262E-02	9.819E+05
20	6.310E-04	1975.6	5.418E-01	3.707E+06	4.939E-12	1.291E-02	9.592E+05
21	7.943E-04	1991.8	6.668E-01	4.576E+06	6.020E-12	1.321E-02	9.363E+05
22	1.000E-03	2009.6	8.204E-01	5.658E+06	7.316E-12	1.353E-02	9.132E+05
23	1.259E-03	2029.2	1.009E+00	7.005E+06	8.868E-12	1.389E-02	8.899E+05
24	1.585E-03	2050.6	1.240E+00	8.685E+06	1.071E-11	1.428E-02	8.662E+05
25	1.995E-03	2074.7	1.523E+00	1.079E+07	1.289E-11	1.472E-02	8.422E+05
26	2.512E-03	2101.1	1.868E+00	1.342E+07	1.545E-11	1.520E-02	8.177E+05
27	3.162E-03	2129.9	2.288E+00	1.673E+07	1.846E-11	1.575E-02	7.929E+05
28	3.981E-03	2163.2	2.797E+00	2.097E+07	2.192E-11	1.640E-02	7.677E+05
29	5.012E-03	2201.4	3.410E+00	2.645E+07	2.588E-11	1.717E-02	7.420E+05
30	6.310E-03	2243.1	4.146E+00	3.354E+07	3.046E-11	1.806E-02	7.158E+05
31	7.943E-03	2285.5	5.027E+00	4.254E+07	3.583E-11	1.900E-02	6.891E+05
32	1.000E-02	2326.6	6.082E+00	5.372E+07	4.224E-11	1.993E-02	6.621E+05
33	1.259E-02	2365.0	7.350E+00	6.735E+07	4.993E-11	2.084E-02	6.345E+05
34	1.585E-02	2400.1	8.881E+00	8.379E+07	5.921E-11	2.168E-02	6.063E+05
35	1.995E-02	2431.9	1.074E+01	1.036E+08	7.047E-11	2.246E-02	5.776E+05
36	2.512E-02	2460.2	1.300E+01	1.273E+08	8.420E-11	2.317E-02	5.483E+05
37	3.162E-02	2485.7	1.576E+01	1.560E+08	1.010E-10	2.382E-02	5.184E+05
38	3.981E-02	2510.2	1.915E+01	1.909E+08	1.215E-10	2.445E-02	4.878E+05
39	5.012E-02	2534.1	2.331E+01	2.337E+08	1.464E-10	2.508E-02	4.567E+05
40	6.310E-02	2558.3	2.842E+01	2.865E+08	1.760E-10	2.572E-02	4.250E+05
41	7.943E-02	2585.3	3.468E+01	3.526E+08	2.133E-10	2.645E-02	3.928E+05
42	1.000E-01	2615.1	4.233E+01	4.354E+08	2.572E-10	2.725E-02	3.602E+05
43	1.259E-01	2649.2	5.167E+01	5.406E+08	3.095E-10	2.818E-02	3.272E+05
44	1.585E-01	2687.9	6.301E+01	6.745E+08	3.714E-10	2.923E-02	2.938E+05
45	1.995E-01	2732.8	7.676E+01	8.473E+08	4.443E-10	3.042E-02	2.600E+05
46	2.512E-01	2782.3	9.337E+01	1.074E+09	5.295E-10	3.173E-02	2.258E+05
47	3.162E-01	2839.7	1.134E+02	1.380E+09	6.287E-10	3.314E-02	1.911E+05
48	3.981E-01	2905.2	1.375E+02	1.813E+09	7.436E-10	3.457E-02	1.559E+05
49	5.012E-01	2980.2	1.668E+02	2.460E+09	8.773E-10	3.584E-02	1.197E+05
50	6.310E-01	3065.7	2.024E+02	3.484E+09	1.033E-09	3.669E-02	8.230E+04
51	7.943E-01	3163.5	2.468E+02	5.179E+09	1.219E-09	3.667E-02	4.281E+04
52	1.000E+00	3274.9	3.036E+02	8.041E+09	1.448E-09	3.528E-02	0.0
53	1.259E+00	3401.7	3.800E+02	1.290E+10	1.743E-09	3.213E-02	-4.815E+04
54	1.585E+00	3545.2	4.893E+02	2.109E+10	2.153E-09	2.743E-02	-1.046E+05
55	1.995E+00	3707.1	6.554E+02	3.486E+10	2.757E-09	2.232E-02	-1.727E+05
56	2.512E+00	3885.6	9.143E+02	5.787E+10	3.668E-09	1.826E-02	-2.534E+05
57	3.162E+00	4077.2	1.302E+03	9.479E+10	4.978E-09	1.573E-02	-3.436E+05
58	3.981E+00	4280.7	1.849E+03	1.499E+11	6.732E-09	1.442E-02	-4.378E+05
59	5.012E+00	4485.4	2.575E+03	2.256E+11	8.943E-09	1.426E-02	-5.306E+05
60	6.310E+00	4703.4	3.458E+03	3.334E+11	1.146E-08	1.508E-02	-6.181E+05
61	7.943E+00	4929.5	4.461E+03	5.168E+11	1.410E-08	1.800E-02	-6.966E+05
62	1.000E+01	5163.4	5.446E+03	8.128E+11	1.643E-08	2.463E-02	-7.613E+05
63	1.259E+01	5411.7	6.304E+03	1.593E+12	1.814E-08	3.755E-02	-8.107E+05
64	1.585E+01	5671.5	6.983E+03	2.994E+12	1.918E-08	6.031E-02	-8.474E+05
65	1.995E+01	5944.8	7.526E+03	5.648E+12	1.972E-08	9.894E-02	-8.741E+05

Table 2 (Continued)

TEFF 2500 LOG G 1.000 WAVE 10000 J32

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8300E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1342.7	2.756E-02	6.461E+03	5.820E-13	3.564E-03	7.370E+05
2	1.000E-05	1348.3	5.511E-02	1.061E+04	1.162E-12	3.628E-03	7.011E+05
3	1.259E-05	1349.5	6.223E-02	1.159E+04	1.312E-12	3.642E-03	6.953E+05
4	1.585E-05	1350.9	7.115E-02	1.277E+04	1.498E-12	3.658E-03	6.889E+05
5	1.995E-05	1352.6	8.232E-02	1.422E+04	1.731E-12	3.678E-03	6.820E+05
6	2.512E-05	1354.8	9.631E-02	1.601E+04	2.023E-12	3.703E-03	6.745E+05
7	3.162E-05	1357.4	1.138E-01	1.820E+04	2.386E-12	3.733E-03	6.666E+05
8	3.981E-05	1360.4	1.356E-01	2.090E+04	2.838E-12	3.768E-03	6.582E+05
9	5.012E-05	1364.0	1.628E-01	2.426E+04	3.397E-12	3.811E-03	6.495E+05
10	6.310E-05	1368.4	1.966E-01	2.847E+04	4.090E-12	3.863E-03	6.404E+05
11	7.943E-05	1373.5	2.385E-01	3.379E+04	4.945E-12	3.924E-03	6.311E+05
12	1.000E-04	1379.5	2.904E-01	4.056E+04	5.995E-12	3.996E-03	6.216E+05
13	1.259E-04	1386.6	3.545E-01	4.934E+04	7.279E-12	4.083E-03	6.119E+05
14	1.585E-04	1395.0	4.333E-01	6.082E+04	8.843E-12	4.185E-03	6.021E+05
15	1.995E-04	1404.6	5.299E-01	7.603E+04	1.074E-11	4.306E-03	5.922E+05
16	2.512E-04	1415.8	6.478E-01	9.642E+04	1.302E-11	4.447E-03	5.822E+05
17	3.162E-04	1428.7	7.913E-01	1.241E+05	1.576E-11	4.612E-03	5.722E+05
18	3.981E-04	1443.4	9.651E-01	1.628E+05	1.902E-11	4.804E-03	5.622E+05
19	5.012E-04	1460.1	1.175E+00	2.145E+05	2.288E-11	5.026E-03	5.522E+05
20	6.310E-04	1478.8	1.426E+00	2.873E+05	2.740E-11	5.282E-03	5.422E+05
21	7.943E-04	1499.7	1.727E+00	3.889E+05	3.269E-11	5.574E-03	5.321E+05
22	1.000E-03	1522.8	2.085E+00	5.308E+05	3.883E-11	5.904E-03	5.221E+05
23	1.259E-03	1548.1	2.510E+00	7.293E+05	4.590E-11	6.277E-03	5.120E+05
24	1.585E-03	1575.8	3.012E+00	1.009E+06	5.400E-11	6.694E-03	5.020E+05
25	1.995E-03	1605.4	3.604E+00	1.404E+06	6.325E-11	7.154E-03	4.919E+05
26	2.512E-03	1637.2	4.301E+00	1.976E+06	7.375E-11	7.661E-03	4.817E+05
27	3.162E-03	1670.7	5.119E+00	2.814E+06	8.560E-11	8.212E-03	4.714E+05
28	3.981E-03	1706.0	6.081E+00	4.066E+06	9.897E-11	8.809E-03	4.610E+05
29	5.012E-03	1742.7	7.208E+00	5.943E+06	1.139E-10	9.447E-03	4.503E+05
30	6.310E-03	1780.7	8.533E+00	8.759E+06	1.307E-10	1.013E-02	4.395E+05
31	7.943E-03	1819.9	1.009E+01	1.295E+07	1.493E-10	1.084E-02	4.284E+05
32	1.000E-02	1860.3	1.192E+01	1.911E+07	1.700E-10	1.160E-02	4.169E+05
33	1.259E-02	1901.6	1.408E+01	2.806E+07	1.928E-10	1.239E-02	4.050E+05
34	1.585E-02	1944.0	1.662E+01	4.079E+07	2.179E-10	1.322E-02	3.926E+05
35	1.995E-02	1987.8	1.962E+01	5.867E+07	2.451E-10	1.409E-02	3.797E+05
36	2.512E-02	2032.6	2.317E+01	8.295E+07	2.747E-10	1.500E-02	3.660E+05
37	3.162E-02	2079.1	2.737E+01	1.152E+08	3.066E-10	1.594E-02	3.516E+05
38	3.981E-02	2126.6	3.234E+01	1.564E+08	3.411E-10	1.690E-02	3.362E+05
39	5.012E-02	2175.2	3.826E+01	2.071E+08	3.791E-10	1.787E-02	3.197E+05
40	6.310E-02	2223.6	4.532E+01	2.670E+08	4.221E-10	1.883E-02	3.021E+05
41	7.943E-02	2271.5	5.378E+01	3.374E+08	4.722E-10	1.976E-02	2.832E+05
42	1.000E-01	2318.1	6.394E+01	4.204E+08	5.310E-10	2.069E-02	2.629E+05
43	1.259E-01	2363.4	7.617E+01	5.202E+08	6.035E-10	2.162E-02	2.413E+05
44	1.585E-01	2405.8	9.091E+01	6.408E+08	6.913E-10	2.255E-02	2.185E+05
45	1.995E-01	2446.2	1.087E+02	7.869E+08	7.982E-10	2.349E-02	1.945E+05
46	2.512E-01	2487.5	1.302E+02	9.733E+08	9.244E-10	2.450E-02	1.695E+05
47	3.162E-01	2531.5	1.562E+02	1.206E+09	1.071E-09	2.563E-02	1.435E+05
48	3.981E-01	2579.2	1.873E+02	1.500E+09	1.241E-09	2.691E-02	1.165E+05
49	5.012E-01	2632.5	2.246E+02	1.876E+09	1.434E-09	2.840E-02	8.864E+04
50	6.310E-01	2692.9	2.689E+02	2.361E+09	1.652E-09	3.014E-02	5.989E+04
51	7.943E-01	2761.9	3.213E+02	2.990E+09	1.896E-09	3.219E-02	3.033E+04
52	1.000E+00	2840.6	3.829E+02	3.827E+09	2.169E-09	3.454E-02	0.0
53	1.259E+00	2930.5	4.551E+02	4.997E+09	2.473E-09	3.713E-02	-3.112E+04
54	1.585E+00	3029.9	5.397E+02	6.784E+09	2.812E-09	3.971E-02	-6.320E+04
55	1.995E+00	3149.4	6.401E+02	9.816E+09	3.194E-09	4.174E-02	-9.668E+04
56	2.512E+00	3281.0	7.622E+02	1.527E+10	3.638E-09	4.235E-02	-1.325E+05
57	3.162E+00	3429.3	9.179E+02	2.507E+10	4.183E-09	4.054E-02	-1.725E+05
58	3.981E+00	3595.7	1.131E+03	4.208E+10	4.909E-09	3.591E-02	-2.196E+05
59	5.012E+00	3779.4	1.446E+03	7.023E+10	5.967E-09	2.985E-02	-2.777E+05
60	6.310E+00	3978.7	1.929E+03	1.157E+11	7.558E-09	2.481E-02	-3.490E+05
61	7.943E+00	4188.5	2.639E+03	1.860E+11	9.819E-09	2.192E-02	-4.388E+05
62	1.000E+01	4405.9	3.606E+03	2.864E+11	1.275E-08	2.080E-02	-5.472E+05
63	1.259E+01	4628.1	4.847E+03	4.233E+11	1.632E-08	2.119E-02	-6.830E+05
64	1.585E+01	4856.5	6.316E+03	6.277E+11	2.027E-08	2.358E-02	-8.635E+05
65	1.995E+01	5087.4	7.887E+03	9.911E+11	2.415E-08	2.976E-02	-7.538E+05

Table 2 (Continued)

TEFF 2800 LOG G 1.000 WAVE 10000 J31

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1697.2	1.155E-02	6.764E+04	1.311E-13	8.340E-03	1.144E+06
2	1.000E-05	1708.6	2.310E-02	1.215E+05	2.744E-13	8.647E-03	1.077E+06
3	1.259E-05	1710.3	2.608E-02	1.342E+05	3.126E-13	8.694E-03	1.067E+06
4	1.585E-05	1712.3	2.981E-02	1.497E+05	3.606E-13	8.745E-03	1.056E+06
5	1.995E-05	1714.5	3.448E-02	1.683E+05	4.212E-13	8.798E-03	1.044E+06
6	2.512E-05	1716.9	4.033E-02	1.911E+05	4.978E-13	8.855E-03	1.031E+06
7	3.162E-05	1719.6	4.764E-02	2.186E+05	5.943E-13	8.916E-03	1.018E+06
8	3.981E-05	1722.5	5.677E-02	2.517E+05	7.160E-13	8.980E-03	1.004E+06
9	5.012E-05	1725.9	6.819E-02	2.919E+05	8.687E-13	9.051E-03	9.891E+05
10	6.310E-05	1729.8	8.245E-02	3.407E+05	1.060E-12	9.128E-03	9.743E+05
11	7.943E-05	1734.3	1.002E-01	4.004E+05	1.300E-12	9.215E-03	9.591E+05
12	1.000E-04	1739.5	1.224E-01	4.740E+05	1.598E-12	9.313E-03	9.437E+05
13	1.259E-04	1745.4	1.500E-01	5.644E+05	1.969E-12	9.422E-03	9.282E+05
14	1.585E-04	1752.5	1.843E-01	6.784E+05	2.427E-12	9.551E-03	9.125E+05
15	1.995E-04	1760.7	2.269E-01	8.220E+05	2.989E-12	9.700E-03	8.967E+05
16	2.512E-04	1770.2	2.796E-01	1.004E+06	3.678E-12	9.870E-03	8.808E+05
17	3.162E-04	1781.4	3.448E-01	1.240E+06	4.513E-12	1.007E-02	8.649E+05
18	3.981E-04	1794.1	4.250E-01	1.546E+06	5.520E-12	1.030E-02	8.488E+05
19	5.012E-04	1808.8	5.237E-01	1.947E+06	6.725E-12	1.056E-02	8.326E+05
20	6.310E-04	1825.6	6.446E-01	2.478E+06	8.153E-12	1.086E-02	8.163E+05
21	7.943E-04	1844.6	7.925E-01	3.184E+06	9.831E-12	1.121E-02	7.998E+05
22	1.000E-03	1866.0	9.726E-01	4.124E+06	1.178E-11	1.159E-02	7.831E+05
23	1.259E-03	1889.8	1.192E+00	5.373E+06	1.403E-11	1.202E-02	7.661E+05
24	1.585E-03	1915.9	1.457E+00	7.021E+06	1.661E-11	1.249E-02	7.488E+05
25	1.995E-03	1944.7	1.778E+00	9.184E+06	1.953E-11	1.300E-02	7.309E+05
26	2.512E-03	1975.2	2.167E+00	1.194E+07	2.285E-11	1.354E-02	7.126E+05
27	3.162E-03	2007.5	2.637E+00	1.542E+07	2.664E-11	1.409E-02	6.935E+05
28	3.981E-03	2041.4	3.206E+00	1.973E+07	3.097E-11	1.466E-02	6.737E+05
29	5.012E-03	2076.4	3.895E+00	2.501E+07	3.598E-11	1.524E-02	6.531E+05
30	6.310E-03	2111.7	4.729E+00	3.141E+07	4.186E-11	1.583E-02	6.316E+05
31	7.943E-03	2147.7	5.740E+00	3.926E+07	4.878E-11	1.645E-02	6.093E+05
32	1.000E-02	2184.3	6.964E+00	4.893E+07	5.693E-11	1.712E-02	5.861E+05
33	1.259E-02	2220.5	8.444E+00	6.091E+07	6.666E-11	1.782E-02	5.621E+05
34	1.585E-02	2254.3	1.024E+01	7.560E+07	7.849E-11	1.851E-02	5.373E+05
35	1.995E-02	2285.0	1.241E+01	9.355E+07	9.299E-11	1.917E-02	5.119E+05
36	2.512E-02	2312.5	1.506E+01	1.153E+08	1.108E-10	1.979E-02	4.858E+05
37	3.162E-02	2337.5	1.830E+01	1.418E+08	1.326E-10	2.037E-02	4.591E+05
38	3.981E-02	2362.0	2.226E+01	1.744E+08	1.592E-10	2.095E-02	4.319E+05
39	5.012E-02	2386.0	2.710E+01	2.144E+08	1.914E-10	2.154E-02	4.042E+05
40	6.310E-02	2411.4	3.304E+01	2.642E+08	2.303E-10	2.217E-02	3.760E+05
41	7.943E-02	2439.4	4.029E+01	3.267E+08	2.766E-10	2.287E-02	3.473E+05
42	1.000E-01	2470.3	4.913E+01	4.053E+08	3.314E-10	2.366E-02	3.182E+05
43	1.259E-01	2504.6	5.986E+01	5.046E+08	3.961E-10	2.455E-02	2.886E+05
44	1.585E-01	2542.5	7.286E+01	6.298E+08	4.719E-10	2.556E-02	2.586E+05
45	1.995E-01	2584.6	8.856E+01	7.885E+08	5.603E-10	2.670E-02	2.281E+05
46	2.512E-01	2631.4	1.074E+02	9.901E+08	6.628E-10	2.800E-02	1.972E+05
47	3.162E-01	2684.0	1.301E+02	1.248E+09	7.809E-10	2.948E-02	1.658E+05
48	3.981E-01	2743.4	1.570E+02	1.582E+09	9.161E-10	3.116E-02	1.340E+05
49	5.012E-01	2810.7	1.891E+02	2.025E+09	1.070E-09	3.304E-02	1.016E+05
50	6.310E-01	2887.1	2.272E+02	2.637E+09	1.244E-09	3.506E-02	6.868E+04
51	7.943E-01	2974.2	2.724E+02	3.549E+09	1.442E-09	3.703E-02	3.494E+04
52	1.000E+00	3073.2	3.266E+02	5.028E+09	1.667E-09	3.859E-02	0.0
53	1.259E+00	3186.1	3.929E+02	7.582E+09	1.930E-09	3.912E-02	-3.696E+04
54	1.585E+00	3314.0	4.770E+02	1.208E+10	2.249E-09	3.788E-02	-7.735E+04
55	1.995E+00	3459.1	5.900E+02	1.994E+10	2.662E-09	3.427E-02	-1.236E+05
56	2.512E+00	3622.1	7.537E+02	3.331E+10	3.246E-09	2.876E-02	-1.794E+05
57	3.162E+00	3802.3	1.007E+03	5.561E+10	4.129E-09	2.324E-02	-2.483E+05
58	3.981E+00	3999.6	1.399E+03	9.246E+10	5.453E-09	1.923E-02	-3.303E+05
59	5.012E+00	4203.5	1.971E+03	1.489E+11	7.308E-09	1.717E-02	-4.206E+05
60	6.310E+00	4418.0	2.747E+03	2.293E+11	9.689E-09	1.638E-02	-5.128E+05
61	7.943E+00	4637.0	3.741E+03	3.407E+11	1.257E-08	1.687E-02	-6.021E+05
62	1.000E+01	4863.5	4.892E+03	5.136E+11	1.567E-08	1.916E-02	-6.839E+05
63	1.259E+01	5100.4	6.093E+03	8.418E+11	1.861E-08	2.501E-02	-7.537E+05
64	1.585E+01	5345.0	7.175E+03	1.495E+12	2.091E-08	3.683E-02	-8.084E+05
65	1.995E+01	5600.5	8.052E+03	2.771E+12	2.240E-08	5.807E-02	-8.487E+05

Table 2 (Continued)

TEFF 2300 LOG G 1.000 MAVE 10000 J35

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1195.4	4.663E-02	1.076E+03	1.114E-12	2.087E-03	5.988E+05
2	1.000E-05	1201.9	9.327E-02	1.716E+03	2.216E-12	2.143E-03	5.668E+05
3	1.259E-05	1203.2	1.053E-01	1.869E+03	2.499E-12	2.155E-03	5.617E+05
4	1.585E-05	1204.9	1.203E-01	2.059E+03	2.852E-12	2.170E-03	5.560E+05
5	1.995E-05	1206.9	1.391E-01	2.296E+03	3.291E-12	2.188E-03	5.499E+05
6	2.512E-05	1209.4	1.626E-01	2.591E+03	3.840E-12	2.209E-03	5.433E+05
7	3.162E-05	1212.3	1.919E-01	2.963E+03	4.521E-12	2.235E-03	5.362E+05
8	3.981E-05	1215.7	2.283E-01	3.431E+03	5.362E-12	2.266E-03	5.289E+05
9	5.012E-05	1219.8	2.734E-01	4.029E+03	6.400E-12	2.303E-03	5.212E+05
10	6.310E-05	1224.6	3.292E-01	4.804E+03	7.676E-12	2.347E-03	5.132E+05
11	7.943E-05	1230.4	3.980E-01	5.821E+03	9.237E-12	2.400E-03	5.051E+05
12	1.000E-04	1237.0	4.826E-01	7.171E+03	1.114E-11	2.462E-03	4.967E+05
13	1.259E-04	1244.8	5.861E-01	8.987E+03	1.345E-11	2.536E-03	4.883E+05
14	1.585E-04	1253.9	7.124E-01	1.149E+04	1.623E-11	2.623E-03	4.798E+05
15	1.995E-04	1264.3	8.658E-01	1.497E+04	1.955E-11	2.726E-03	4.712E+05
16	2.512E-04	1276.2	1.051E+00	1.990E+04	2.352E-11	2.846E-03	4.625E+05
17	3.162E-04	1289.8	1.274E+00	2.700E+04	2.820E-11	2.986E-03	4.539E+05
18	3.981E-04	1305.2	1.541E+00	3.738E+04	3.371E-11	3.148E-03	4.453E+05
19	5.012E-04	1322.4	1.859E+00	5.278E+04	4.013E-11	3.336E-03	4.366E+05
20	6.310E-04	1341.5	2.235E+00	7.586E+04	4.756E-11	3.550E-03	4.280E+05
21	7.943E-04	1362.6	2.680E+00	1.108E+05	5.614E-11	3.794E-03	4.194E+05
22	1.000E-03	1385.7	3.203E+00	1.639E+05	6.595E-11	4.071E-03	4.109E+05
23	1.259E-03	1410.7	3.815E+00	2.448E+05	7.714E-11	4.382E-03	4.023E+05
24	1.585E-03	1437.6	4.530E+00	3.677E+05	8.986E-11	4.727E-03	3.937E+05
25	1.995E-03	1466.2	5.364E+00	5.527E+05	1.043E-10	5.110E-03	3.851E+05
26	2.512E-03	1496.5	6.334E+00	8.272E+05	1.205E-10	5.528E-03	3.765E+05
27	3.162E-03	1528.3	7.463E+00	1.228E+06	1.389E-10	5.984E-03	3.678E+05
28	3.981E-03	1561.3	8.776E+00	1.802E+06	1.597E-10	6.474E-03	3.589E+05
29	5.012E-03	1595.5	1.031E+01	2.612E+06	1.831E-10	7.000E-03	3.500E+05
30	6.310E-03	1630.7	1.209E+01	3.744E+06	2.096E-10	7.557E-03	3.409E+05
31	7.943E-03	1666.8	1.416E+01	5.343E+06	2.396E-10	8.149E-03	3.317E+05
32	1.000E-02	1703.8	1.659E+01	7.634E+06	2.735E-10	8.773E-03	3.222E+05
33	1.259E-02	1741.6	1.944E+01	1.097E+07	3.118E-10	9.429E-03	3.125E+05
34	1.585E-02	1780.5	2.277E+01	1.592E+07	3.549E-10	1.013E-02	3.025E+05
35	1.995E-02	1820.3	2.667E+01	2.325E+07	4.035E-10	1.086E-02	2.922E+05
36	2.512E-02	1861.6	3.126E+01	3.419E+07	4.577E-10	1.163E-02	2.815E+05
37	3.162E-02	1904.2	3.666E+01	5.039E+07	5.180E-10	1.246E-02	2.704E+05
38	3.981E-02	1948.5	4.300E+01	7.426E+07	5.846E-10	1.334E-02	2.589E+05
39	5.012E-02	1994.4	5.046E+01	1.089E+08	6.574E-10	1.427E-02	2.469E+05
40	6.310E-02	2042.0	5.925E+01	1.583E+08	7.365E-10	1.525E-02	2.343E+05
41	7.943E-02	2091.4	6.959E+01	2.270E+08	8.214E-10	1.630E-02	2.210E+05
42	1.000E-01	2142.1	8.179E+01	3.191E+08	9.126E-10	1.739E-02	2.070E+05
43	1.259E-01	2193.7	9.620E+01	4.374E+08	1.011E-09	1.851E-02	1.920E+05
44	1.585E-01	2246.1	1.133E+02	5.838E+08	1.119E-09	1.964E-02	1.759E+05
45	1.995E-01	2299.5	1.335E+02	7.597E+08	1.237E-09	2.080E-02	1.587E+05
46	2.512E-01	2353.7	1.577E+02	9.674E+08	1.370E-09	2.197E-02	1.402E+05
47	3.162E-01	2408.6	1.865E+02	1.213E+09	1.522E-09	2.316E-02	1.203E+05
48	3.981E-01	2462.4	2.209E+02	1.508E+09	1.702E-09	2.439E-02	9.891E+04
49	5.012E-01	2516.8	2.620E+02	1.870E+09	1.915E-09	2.569E-02	7.614E+04
50	6.310E-01	2573.3	3.111E+02	2.325E+09	2.160E-09	2.715E-02	5.202E+04
51	7.943E-01	2635.2	3.695E+02	2.907E+09	2.436E-09	2.884E-02	2.661E+04
52	1.000E+00	2704.1	4.384E+02	3.656E+09	2.745E-09	3.085E-02	0.0
53	1.259E+00	2781.6	5.192E+02	4.630E+09	3.089E-09	3.321E-02	-2.773E+04
54	1.585E+00	2869.1	6.135E+02	5.924E+09	3.472E-09	3.593E-02	-5.648E+04
55	1.995E+00	2968.2	7.230E+02	7.742E+09	3.898E-09	3.893E-02	-8.623E+04
56	2.512E+00	3080.2	8.504E+02	1.057E+10	4.374E-09	4.193E-02	-1.171E+05
57	3.162E+00	3206.7	1.001E+03	1.547E+10	4.910E-09	4.427E-02	-1.495E+05
58	3.981E+00	3349.1	1.183E+03	2.443E+10	5.535E-09	4.495E-02	-1.845E+05
59	5.012E+00	3508.4	1.416E+03	4.049E+10	6.309E-09	4.288E-02	-2.240E+05
60	6.310E+00	3684.6	1.736E+03	6.772E+10	7.353E-09	3.794E-02	-2.710E+05
61	7.943E+00	3876.7	2.206E+03	1.115E+11	8.877E-09	3.203E-02	-3.291E+05
62	1.000E+01	4083.1	2.908E+03	1.799E+11	1.110E-08	2.754E-02	-3.991E+05
63	1.259E+01	4300.2	3.900E+03	2.817E+11	1.414E-08	2.522E-02	-4.779E+05
64	1.585E+01	4521.1	5.209E+03	4.213E+11	1.795E-08	2.479E-02	-5.601E+05
65	1.995E+01	4741.9	6.827E+03	6.107E+11	2.243E-08	2.620E-02	-6.405E+05

Table 2 (Continued)

TEFF 3500. LOG G 0.000 WAVE 10000. K1

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 9.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	HI(KM)
1	0.E+00	1739.7	5.615E-03	3.501E+04	5.452E-14	1.662E-03	1.523E+07
2	1.000E-05	1781.5	1.123E-02	7.066E+04	1.062E-13	1.771E-03	1.441E+07
3	1.259E-05	1788.2	1.267E-02	7.975E+04	1.194E-13	1.792E-03	1.428E+07
4	1.585E-05	1795.2	1.446E-02	9.098E+04	1.359E-13	1.815E-03	1.414E+07
5	1.995E-05	1802.4	1.668E-02	1.048E+05	1.563E-13	1.841E-03	1.398E+07
6	2.512E-05	1810.4	1.946E-02	1.222E+05	1.818E-13	1.869E-03	1.382E+07
7	3.162E-05	1818.9	2.289E-02	1.436E+05	2.132E-13	1.899E-03	1.364E+07
8	3.981E-05	1828.1	2.714E-02	1.702E+05	2.518E-13	1.931E-03	1.346E+07
9	5.012E-05	1838.0	3.239E-02	2.031E+05	2.992E-13	1.965E-03	1.327E+07
10	6.310E-05	1848.7	3.890E-02	2.442E+05	3.575E-13	2.000E-03	1.307E+07
11	7.943E-05	1860.0	4.695E-02	2.950E+05	4.291E-13	2.037E-03	1.286E+07
12	1.000E-04	1872.1	5.689E-02	3.583E+05	5.168E-13	2.074E-03	1.265E+07
13	1.259E-04	1884.8	6.918E-02	4.369E+05	6.241E-13	2.114E-03	1.243E+07
14	1.585E-04	1898.4	8.437E-02	5.351E+05	7.552E-13	2.154E-03	1.221E+07
15	1.995E-04	1912.9	1.031E-01	6.577E+05	9.151E-13	2.196E-03	1.198E+07
16	2.512E-04	1928.3	1.263E-01	8.112E+05	1.110E-12	2.239E-03	1.175E+07
17	3.162E-04	1944.8	1.549E-01	1.004E+06	1.347E-12	2.284E-03	1.152E+07
18	3.981E-04	1962.5	1.902E-01	1.247E+06	1.634E-12	2.332E-03	1.128E+07
19	5.012E-04	1981.5	2.337E-01	1.555E+06	1.981E-12	2.383E-03	1.104E+07
20	6.310E-04	2002.0	2.873E-01	1.948E+06	2.400E-12	2.439E-03	1.079E+07
21	7.943E-04	2024.2	3.532E-01	2.450E+06	2.903E-12	2.500E-03	1.054E+07
22	1.000E-03	2047.9	4.341E-01	3.096E+06	3.507E-12	2.569E-03	1.029E+07
23	1.259E-03	2074.0	5.331E-01	3.937E+06	4.226E-12	2.647E-03	1.003E+07
24	1.585E-03	2102.8	6.539E-01	5.044E+06	5.078E-12	2.739E-03	9.769E+06
25	1.995E-03	2134.4	8.005E-01	6.507E+06	6.083E-12	2.844E-03	9.505E+06
26	2.512E-03	2169.2	9.780E-01	8.454E+06	7.263E-12	2.967E-03	9.238E+06
27	3.162E-03	2206.3	1.192E+00	1.101E+07	8.649E-12	3.104E-03	8.969E+06
28	3.981E-03	2244.3	1.449E+00	1.430E+07	1.029E-11	3.251E-03	8.696E+06
29	5.012E-03	2281.3	1.758E+00	1.846E+07	1.223E-11	3.399E-03	8.420E+06
30	6.310E-03	2316.9	2.131E+00	2.347E+07	1.456E-11	3.545E-03	8.141E+06
31	7.943E-03	2351.5	2.582E+00	2.972E+07	1.735E-11	3.690E-03	7.858E+06
32	1.000E-02	2384.9	3.128E+00	3.739E+07	2.068E-11	3.832E-03	7.570E+06
33	1.259E-02	2419.1	3.790E+00	4.699E+07	2.468E-11	3.980E-03	7.277E+06
34	1.585E-02	2454.4	4.592E+00	5.900E+07	2.943E-11	4.134E-03	6.980E+06
35	1.995E-02	2491.7	5.564E+00	7.418E+07	3.509E-11	4.299E-03	6.677E+06
36	2.512E-02	2531.7	6.740E+00	9.349E+07	4.178E-11	4.475E-03	6.371E+06
37	3.162E-02	2574.8	8.162E+00	1.183E+08	4.970E-11	4.662E-03	6.059E+06
38	3.981E-02	2620.3	9.880E+00	1.503E+08	5.906E-11	4.854E-03	5.742E+06
39	5.012E-02	2666.1	1.196E+01	1.915E+08	7.021E-11	5.039E-03	5.419E+06
40	6.310E-02	2710.6	1.449E+01	2.445E+08	3.361E-11	5.210E-03	5.090E+06
41	7.943E-02	2754.9	1.757E+01	3.136E+08	9.974E-11	5.369E-03	4.752E+06
42	1.000E-01	2801.2	2.134E+01	4.064E+08	1.191E-10	5.519E-03	4.407E+06
43	1.259E-01	2850.7	2.597E+01	5.343E+08	1.423E-10	5.655E-03	4.052E+06
44	1.585E-01	2904.2	3.166E+01	7.146E+08	1.703E-10	5.770E-03	3.696E+06
45	1.995E-01	2962.5	3.871E+01	9.75CE+08	2.04CE-10	5.850E-03	3.309E+06
46	2.512E-01	3026.7	4.750E+01	1.360E+09	2.450E-10	5.879E-03	2.916E+06
47	3.162E-01	3097.5	5.857E+01	1.94CE+09	2.951E-10	5.84CE-03	2.504E+06
48	3.981E-01	3175.8	7.211E+01	2.826E+09	3.572E-10	5.717E-03	2.069E+06
49	5.012E-01	3262.0	9.103E+01	4.186E+09	4.353E-10	5.512E-03	1.605E+06
50	6.310E-01	3356.6	1.151E+02	6.275E+09	5.348E-10	5.250E-03	1.106E+06
51	7.943E-01	3460.7	1.471E+02	9.467E+09	6.626E-10	4.982E-03	5.705E+05
52	1.000E+00	3577.1	1.894E+02	1.432E+10	8.250E-10	4.762E-03	0.E+00
53	1.259E+00	3710.0	2.446E+02	2.161E+10	1.027E-09	4.617E-03	-5.991E+05
54	1.585E+00	3860.9	3.158E+02	3.215E+10	1.274E-09	4.531E-03	-1.221E+06
55	1.995E+00	4023.1	4.069E+02	4.627E+10	1.574E-09	4.497E-03	-1.862E+06
56	2.512E+00	4201.0	5.216E+02	6.423E+10	1.932E-09	4.477E-03	-2.520E+06
57	3.162E+00	4400.4	6.667E+02	8.684E+10	2.357E-09	4.519E-03	-3.197E+06
58	3.981E+00	4622.8	8.434E+02	1.195E+11	2.878E-09	4.841E-03	-3.876E+06
59	5.012E+00	4865.4	1.037E+03	1.349E+11	3.314E-09	6.074E-03	-4.504E+06
60	6.310E+00	5124.6	1.215E+03	1.357E+11	3.687E-09	9.076E-03	-5.013E+06
61	7.943E+00	5399.5	1.354E+03	6.698E+11	3.898E-09	1.532E-02	-5.3[illegible]E+06
62	1.000E+01	5693.6	1.455E+03	1.384E+12	3.973E-09	2.724E-02	-5.633E+06
63	1.259E+01	6000.0	1.527E+03	2.803E+12	3.951E-09	4.860E-02	-5.814E+06
64	1.585E+01	6336.3	1.577E+03	5.678E+12	3.858E-09	8.922E-02	-5.941E+06
65	1.995E+01	6679.0	1.607E+03	1.087E+13	3.721E-09	1.630E-01	-6.028E+06

Table 2 (Continued)

TEFF 3500 LOG G 0.000 MAVE 10000 K3

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 4.0400E-04 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1938.9	4.585E-03	5.697E+04	3.701E-14	2.119E-03	1.590E+07
2	1.000E-05	1956.6	9.171E-03	1.051E+05	7.349E-14	2.179E-03	1.495E+07
3	1.259E-05	1960.6	1.035E-02	1.173E+05	8.202E-14	2.193E-03	1.480E+07
4	1.585E-05	1965.2	1.183E-02	1.325E+05	9.445E-14	2.209E-03	1.463E+07
5	1.995E-05	1970.6	1.367E-02	1.514E+05	1.089E-13	2.227E-03	1.445E+07
6	2.512E-05	1977.0	1.599E-02	1.752E+05	1.270E-13	2.249E-03	1.425E+07
7	3.162E-05	1983.9	1.886E-02	2.046E+05	1.498E-13	2.273E-03	1.404E+07
8	3.981E-05	1991.5	2.244E-02	2.411E+05	1.771E-13	2.300E-03	1.382E+07
9	5.012E-05	2001.1	2.688E-02	2.866E+05	2.114E-13	2.330E-03	1.359E+07
10	6.310E-05	2009.3	3.241E-02	3.428E+05	2.538E-13	2.362E-03	1.335E+07
11	7.943E-05	2018.7	3.927E-02	4.122E+05	3.063E-13	2.395E-03	1.311E+07
12	1.000E-04	2029.1	4.779E-02	4.985E+05	3.709E-13	2.432E-03	1.286E+07
13	1.259E-04	2040.8	5.833E-02	6.054E+05	4.506E-13	2.471E-03	1.260E+07
14	1.585E-04	2051.1	7.140E-02	7.371E+05	5.489E-13	2.512E-03	1.234E+07
15	1.995E-04	2063.8	8.758E-02	9.008E+05	6.698E-13	2.555E-03	1.207E+07
16	2.512E-04	2075.4	1.076E-01	1.104E+06	8.184E-13	2.601E-03	1.180E+07
17	3.162E-04	2088.3	1.324E-01	1.355E+06	1.001E-12	2.648E-03	1.153E+07
18	3.981E-04	2101.8	1.629E-01	1.667E+06	1.223E-12	2.699E-03	1.125E+07
19	5.012E-04	2116.0	2.007E-01	2.055E+06	1.500E-12	2.752E-03	1.097E+07
20	6.310E-04	2130.8	2.473E-01	2.538E+06	1.836E-12	2.808E-03	1.069E+07
21	7.943E-04	2146.4	3.049E-01	3.140E+06	2.247E-12	2.867E-03	1.041E+07
22	1.000E-03	2162.8	3.757E-01	3.891E+06	2.749E-12	2.930E-03	1.012E+07
23	1.259E-03	2180.2	4.630E-01	4.830E+06	3.360E-12	2.997E-03	9.837E+06
24	1.585E-03	2198.3	5.703E-01	6.003E+06	4.105E-12	3.068E-03	9.549E+06
25	1.995E-03	2217.6	7.023E-01	7.477E+06	5.011E-12	3.144E-03	9.256E+06
26	2.512E-03	2238.2	8.644E-01	9.328E+06	6.108E-12	3.225E-03	8.966E+06
27	3.162E-03	2260.2	1.063E+00	1.166E+07	7.437E-12	3.313E-03	8.671E+06
28	3.981E-03	2283.8	1.306E+00	1.460E+07	9.039E-12	3.409E-03	8.375E+06
29	5.012E-03	2309.1	1.604E+00	1.832E+07	1.097E-11	3.513E-03	8.077E+06
30	6.310E-03	2336.2	1.967E+00	2.303E+07	1.328E-11	3.625E-03	7.776E+06
31	7.943E-03	2365.1	2.418E+00	2.897E+07	1.606E-11	3.747E-03	7.474E+06
32	1.000E-02	2395.2	2.949E+00	3.642E+07	1.939E-11	3.876E-03	7.169E+06
33	1.259E-02	2426.3	3.604E+00	4.574E+07	2.338E-11	4.010E-03	6.861E+06
34	1.585E-02	2457.6	4.402E+00	5.732E+07	2.817E-11	4.148E-03	6.550E+06
35	1.995E-02	2488.8	5.374E+00	7.166E+07	3.394E-11	4.286E-03	6.236E+06
36	2.512E-02	2519.4	6.559E+00	8.937E+07	4.089E-11	4.424E-03	5.919E+06
37	3.162E-02	2549.5	8.005E+00	1.113E+08	4.930E-11	4.561E-03	5.597E+06
38	3.981E-02	2579.1	9.772E+00	1.383E+08	5.947E-11	4.697E-03	5.271E+06
39	5.012E-02	2608.6	1.193E+01	1.719E+08	7.178E-11	4.835E-03	4.941E+06
40	6.310E-02	2638.8	1.457E+01	2.139E+08	8.665E-11	4.977E-03	4.607E+06
41	7.943E-02	2670.6	1.781E+01	2.671E+08	1.046E-10	5.126E-03	4.268E+06
42	1.000E-01	2704.7	2.175E+01	3.350E+08	1.261E-10	5.285E-03	3.925E+06
43	1.259E-01	2742.5	2.657E+01	4.235E+08	1.518E-10	5.455E-03	3.577E+06
44	1.585E-01	2784.7	3.244E+01	5.410E+08	1.825E-10	5.637E-03	3.225E+06
45	1.995E-01	2832.3	3.959E+01	7.013E+08	2.188E-10	5.825E-03	2.868E+06
46	2.512E-01	2886.0	4.831E+01	9.265E+08	2.619E-10	6.010E-03	2.504E+06
47	3.162E-01	2946.6	5.896E+01	1.254E+09	3.129E-10	6.177E-03	2.132E+06
48	3.981E-01	3014.9	7.205E+01	1.747E+09	3.735E-10	6.301E-03	1.750E+06
49	5.012E-01	3091.8	8.830E+01	2.510E+09	4.461E-10	6.352E-03	1.352E+06
50	6.310E-01	3178.0	1.088E+02	3.713E+09	5.343E-10	6.296E-03	9.333E+05
51	7.943E-01	3274.2	1.350E+02	5.628E+09	6.436E-10	6.106E-03	4.857E+05
52	1.000E+00	3380.7	1.695E+02	8.661E+09	7.824E-10	5.795E-03	0.0
53	1.259E+00	3500.2	2.158E+02	1.348E+10	9.613E-10	5.405E-03	-5.322E+05
54	1.585E+00	3638.1	2.785E+02	2.117E+10	1.193E-09	5.023E-03	-1.116E+06
55	1.995E+00	3796.1	3.626E+02	3.300E+10	1.480E-09	4.801E-03	-1.744E+06
56	2.512E+00	3976.5	4.705E+02	5.002E+10	1.843E-09	4.786E-03	-2.394E+06
57	3.162E+00	4186.6	6.057E+02	7.255E+10	2.253E-09	4.825E-03	-3.057E+06
58	3.981E+00	4425.0	7.743E+02	9.991E+10	2.724E-09	4.859E-03	-3.738E+06
59	5.012E+00	4683.5	9.790E+02	1.404E+11	3.253E-09	5.270E-03	-4.425E+06
60	6.310E+00	4966.6	1.195E+03	2.364E+11	3.745E-09	7.100E-03	-5.043E+06
61	7.943E+00	5262.9	1.376E+03	4.796E+11	4.969E-09	1.186E-02	-5.507E+06
62	1.000E+01	5576.8	1.504E+03	1.051E+12	4.195E-09	2.187E-02	-5.817E+06
63	1.259E+01	5903.8	1.598E+03	2.284E+12	4.186E-09	4.184E-02	-6.022E+06
64	1.585E+01	6254.5	1.650E+03	4.882E+12	4.096E-09	7.809E-02	-6.160E+06
65	1.995E+01	6612.4	1.686E+03	9.794E+12	3.950E-09	1.471E-01	-6.252E+06

Table 2 (Continued)

TEFF 3500 LOG G 0.000 MASS 10000 K4

P 1.0000E+00 HE 1.0000E-01 C 3.5500E-06 N 4.0400E-04 O 5.8500E-04

	TAU	T	P	XNE	RHO	KAPPA	R(KM)
1	0.0	2389.5	3.758E-03	1.886E+05	2.478E-14	2.206E-03	1.753E+07
2	1.000E-05	2399.0	7.597E-03	3.169E+05	4.937E-14	2.632E-03	1.626E+07
3	1.259E-05	2400.4	8.560E-03	3.461E+05	5.555E-14	2.652E-03	1.607E+07
4	1.585E-05	2401.8	9.744E-03	3.805E+05	6.325E-14	2.756E-03	1.587E+07
5	1.995E-05	2403.2	1.120E-02	4.222E+05	7.265E-14	2.824E-03	1.565E+07
6	2.512E-05	2404.8	1.302E-02	4.722E+05	8.442E-14	2.896E-03	1.542E+07
7	3.162E-05	2406.2	1.524E-02	5.305E+05	9.879E-14	2.969E-03	1.518E+07
8	3.981E-05	2407.6	1.796E-02	5.993E+05	1.163E-13	3.043E-03	1.493E+07
9	5.012E-05	2409.0	2.129E-02	6.803E+05	1.378E-13	3.118E-03	1.466E+07
10	6.310E-05	2410.3	2.541E-02	7.766E+05	1.644E-13	3.192E-03	1.439E+07
11	7.943E-05	2411.6	3.047E-02	8.906E+05	1.970E-13	3.266E-03	1.411E+07
12	1.000E-04	2412.8	3.670E-02	1.025E+06	2.372E-13	3.334E-03	1.382E+07
13	1.259E-04	2414.0	4.437E-02	1.186E+06	2.866E-13	3.402E-03	1.352E+07
14	1.585E-04	2415.1	5.368E-02	1.378E+06	3.478E-13	3.466E-03	1.323E+07
15	1.995E-04	2416.2	6.559E-02	1.604E+06	4.233E-13	3.526E-03	1.292E+07
16	2.512E-04	2417.3	8.011E-02	1.865E+06	5.169E-13	3.582E-03	1.261E+07
17	3.162E-04	2418.4	9.812E-02	2.169E+06	6.328E-13	3.636E-03	1.230E+07
18	3.981E-04	2419.5	1.205E-01	2.522E+06	7.767E-13	3.683E-03	1.198E+07
19	5.012E-04	2420.7	1.482E-01	3.111E+06	9.555E-13	3.725E-03	1.166E+07
20	6.310E-04	2421.9	1.829E-01	3.706E+06	1.178E-12	3.767E-03	1.133E+07
21	7.943E-04	2423.3	2.260E-01	4.329E+06	1.455E-12	3.803E-03	1.100E+07
22	1.000E-03	2424.8	2.790E-01	5.311E+06	1.801E-12	3.837E-03	1.067E+07
23	1.259E-03	2426.6	3.470E-01	6.387E+06	2.231E-12	3.868E-03	1.034E+07
24	1.585E-03	2428.6	4.309E-01	7.702E+06	2.769E-12	3.897E-03	9.995E+06
25	1.995E-03	2431.0	5.357E-01	9.304E+06	3.441E-12	3.925E-03	9.660E+06
26	2.512E-03	2433.9	6.668E-01	1.126E+07	4.278E-12	3.953E-03	9.319E+06
27	3.162E-03	2437.3	8.316E-01	1.365E+07	5.324E-12	3.980E-03	8.976E+06
28	3.981E-03	2441.3	1.035E+00	1.658E+07	6.629E-12	4.009E-03	8.632E+06
29	5.012E-03	2446.1	1.291E+00	2.015E+07	8.254E-12	4.041E-03	8.287E+06
30	6.310E-03	2451.9	1.611E+00	2.453E+07	1.028E-11	4.074E-03	7.941E+06
31	7.943E-03	2458.7	2.010E+00	2.991E+07	1.279E-11	4.113E-03	7.594E+06
32	1.000E-02	2466.7	2.507E+00	3.651E+07	1.592E-11	4.156E-03	7.246E+06
33	1.259E-02	2476.1	3.126E+00	4.466E+07	1.978E-11	4.205E-03	6.898E+06
34	1.585E-02	2487.1	3.899E+00	5.471E+07	2.459E-11	4.260E-03	6.549E+06
35	1.995E-02	2499.7	4.861E+00	6.716E+07	3.056E-11	4.324E-03	6.200E+06
36	2.512E-02	2514.2	6.035E+00	8.263E+07	3.784E-11	4.397E-03	5.852E+06
37	3.162E-02	2530.7	7.500E+00	1.019E+08	4.655E-11	4.480E-03	5.503E+06
38	3.981E-02	2549.3	9.307E+00	1.260E+08	5.737E-11	4.573E-03	5.154E+06
39	5.012E-02	2570.5	1.153E+01	1.562E+08	7.053E-11	4.679E-03	4.805E+06
40	6.310E-02	2594.3	1.427E+01	1.942E+08	8.647E-11	4.799E-03	4.455E+06
41	7.943E-02	2621.6	1.762E+01	2.424E+08	1.057E-10	4.934E-03	4.105E+06
42	1.000E-01	2651.4	2.173E+01	3.037E+08	1.298E-10	5.086E-03	3.754E+06
43	1.259E-01	2685.6	2.673E+01	3.825E+08	1.593E-10	5.257E-03	3.402E+06
44	1.585E-01	2724.1	3.282E+01	4.849E+08	1.891E-10	5.445E-03	3.049E+06
45	1.995E-01	2767.5	4.022E+01	6.199E+08	2.279E-10	5.651E-03	2.693E+06
46	2.512E-01	2816.3	4.916E+01	8.020E+08	2.783E-10	5.871E-03	2.335E+06
47	3.162E-01	2871.3	6.002E+01	1.055E+09	3.474E-10	6.057E-03	1.973E+06
48	3.981E-01	2933.1	7.319E+01	1.419E+09	3.905E-10	6.313E-03	1.605E+06
49	5.012E-01	3002.7	8.925E+01	1.984E+09	4.647E-10	6.500E-03	1.229E+06
50	6.310E-01	3081.3	1.088E+02	2.816E+09	5.528E-10	6.623E-03	8.401E+05
51	7.943E-01	3170.0	1.335E+02	4.160E+09	6.577E-10	6.642E-03	4.330E+05
52	1.000E+00	3269.7	1.647E+02	6.341E+09	7.861E-10	6.517E-03	0.0
53	1.259E+00	3380.3	2.041E+02	9.843E+09	9.469E-10	6.240E-03	-4.659E+05
54	1.585E+00	3504.5	2.551E+02	1.546E+10	1.153E-09	5.848E-03	-9.842E+05
55	1.995E+00	3652.7	3.221E+02	2.472E+10	1.417E-09	5.385E-03	-1.555E+06
56	2.512E+00	3821.7	4.112E+02	3.904E+10	1.758E-09	5.079E-03	-2.182E+06
57	3.162E+00	4014.9	5.608E+02	5.985E+10	2.175E-09	5.023E-03	-2.841E+06
58	3.981E+00	4253.2	7.230E+02	8.770E+10	2.646E-09	5.059E-03	-3.516E+06
59	5.012E+00	4537.3	9.248E+02	1.224E+11	3.176E-09	5.169E-03	-4.215E+06
60	6.310E+00	4833.6	1.158E+03	1.678E+11	3.722E-09	6.185E-03	-4.[illegible]E
61	7.943E+00	5151.1	1.372E+03	3.723E+11	4.145E-09	9.846E-03	-5. [illegible]E+06
62	1.000E+01	5487.2	1.525E+03	8.563E+11	4.322E-09	1.864E-02	-5.798E+06
63	1.259E+01	5823.5	1.624E+03	1.929E+12	4.334E-09	3.578E-02	-6.[illegible]E+06
64	1.585E+01	6187.8	1.685E+03	4.305E+12	4.239E-09	7.012E-02	-6.175E+06
65	1.995E+01	6557.4	1.730E+03	8.563E+12	4.084E-09	1.350E-01	-6.[illegible]E+06

Table 2 (Continued)

TEFF 3500 LOG G 5.000 MAVE 1.0000 K9

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.5700E-04 O 3.5500E-03

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.00	2146.6	3.516E-03	7.189E+04	2.554E-14	2.790E-03	1.735E+07
2	1.000E-05	2153.4	7.032E-03	1.348E+05	5.092E-14	2.842E-03	1.631E+07
3	1.259E-05	2154.3	7.942E-03	1.534E+05	5.749E-14	2.849E-03	1.614E+07
4	1.585E-05	2156.5	9.002E-03	1.731E+05	6.567E-14	2.861E-03	1.595E+07
5	1.995E-05	2159.1	1.051E-02	1.945E+05	7.559E-14	2.875E-03	1.575E+07
6	2.512E-05	2158.2	1.23UE-02	2.23UE+05	8.891E-14	2.875E-03	1.553E+07
7	3.162E-05	2162.7	1.456E-02	2.61UE+05	1.05UE-13	2.894E-03	1.53UE+07
8	3.981E-05	2166.9	1.738E-02	3.041E+05	1.254E-13	2.892E-03	1.505E+07
9	5.012E-05	2164.8	2.095E-02	3.605E+05	1.51UE-13	2.909E-03	1.479E+07
10	6.310E-05	2171.3	2.537E-02	4.307E+05	1.823E-13	2.935E-03	1.453E+07
11	7.943E-05	2172.5	3.092E-02	5.124E+05	2.221E-13	2.943E-03	1.425E+07
12	1.000E-04	2175.5	3.79UE-02	6.141E+05	2.719E-13	2.957E-03	1.397E+07
13	1.259E-04	2181.1	4.601E-02	7.41UE+05	3.336E-13	2.980E-03	1.368E+07
14	1.585E-04	2186.3	5.748E-02	8.949E+05	4.106E-13	3.001E-03	1.339E+07
15	1.995E-04	2192.0	7.118E-02	1.084E+06	5.066E-13	3.025E-03	1.309E+07
16	2.512E-04	2199.6	8.80UE-02	1.319E+06	6.256E-13	3.056E-03	1.279E+07
17	3.162E-04	2207.0	1.092E-01	1.607E+06	7.732E-13	3.088E-03	1.248E+07
18	3.981E-04	2218.9	1.355E-01	1.972E+06	9.549E-13	3.133E-03	1.218E+07
19	5.012E-04	2228.2	1.681E-01	2.488E+06	1.180E-12	3.171E-03	1.187E+07
20	6.310E-04	2241.7	2.088E-01	2.968E+06	1.457E-12	3.225E-03	1.156E+07
21	7.943E-04	2256.8	2.588E-01	3.605E+06	1.794E-12	3.286E-03	1.125E+07
22	1.000E-03	2272.5	3.208E-01	4.529E+06	2.208E-12	3.356E-03	1.094E+07
23	1.259E-03	2289.8	3.971E-01	5.608E+06	2.714E-12	3.421E-03	1.063E+07
24	1.585E-03	2309.6	4.913E-01	6.97UE+06	3.328E-12	3.502E-03	1.032E+07
25	1.995E-03	2332.2	6.067E-01	8.693E+06	4.071E-12	3.595E-03	1.000E+07
26	2.512E-03	2358.3	7.481E-01	1.089E+07	4.963E-12	3.703E-03	9.696E+06
27	3.162E-03	2369.4	9.213E-01	1.324E+07	6.085E-12	3.753E-03	9.373E+06
28	3.981E-03	2412.7	1.135E+00	1.738E+07	7.350E-12	3.93UE-03	9.055E+06
29	5.012E-03	2435.8	1.393E+00	2.114E+07	8.94UE-12	4.029E-03	8.737E+06
30	6.310E-03	2461.6	711E+00	2.630E+07	1.087E-11	4.139E-03	8.415E+06
31	7.943E-03	2494.3	2.097E+00	3.307E+07	1.314E-11	4.275E-03	8.091E+06
32	1.000E-02	2522.5	2.571E+00	4.125E+07	1.593E-11	4.394E-03	7.764E+06
33	1.259E-02	2553.4	3.152E+00	5.175E+07	1.929E-11	4.523E-03	7.434E+06
34	1.585E-02	2583.2	3.861E+00	6.478E+07	2.335E-11	4.648E-03	7.100E+06
35	1.995E-02	2613.5	4.731E+00	8.127E+07	2.829E-11	4.773E-03	6.762E+06
36	2.512E-02	2643.4	5.797E+00	1.02UE+08	3.426E-11	4.898E-03	6.419E+06
37	3.162E-02	2673.5	7.10UE+00	1.282E+08	4.155E-11	5.022E-03	6.073E+06
38	3.981E-02	2703.5	8.715E+00	1.613E+08	5.035E-11	5.148E-03	5.722E+06
39	5.012E-02	2734.2	1.069E+01	2.034E+08	6.107E-11	5.275E-03	5.366E+06
40	6.310E-02	2766.1	1.312E+01	2.576E+08	7.406E-11	5.406E-03	5.006E+06
41	7.943E-02	2799.9	1.610E+01	3.260E+08	8.979E-11	5.542E-03	4.641E+06
42	1.000E-01	2836.4	1.976E+01	4.212E+08	1.088E-10	5.681E-03	4.271E+06
43	1.259E-01	2876.9	2.425E+01	5.473E+08	1.316E-10	5.823E-03	3.895E+06
44	1.585E-01	2921.8	2.977E+01	7.21UE+08	1.591E-10	5.964E-03	3.514E+06
45	1.995E-01	2972.3	3.657E+01	9.667E+08	1.92UE-10	6.097E-03	3.126E+06
46	2.512E-01	3029.0	4.495E+01	1.321E+09	2.315E-10	6.212E-03	2.729E+06
47	3.162E-01	3092.8	5.532E+01	1.843E+09	2.791E-10	6.297E-03	2.321E+06
48	3.981E-01	3164.4	6.825E+01	2.623E+09	3.364E-10	6.341E-03	1.90UE+06
49	5.012E-01	3245.1	8.448E+01	3.805E+09	4.059E-10	6.333E-03	1.461E+06
50	6.310E-01	3335.8	1.050E+02	5.599E+09	4.906E-10	6.268E-03	1.001E+06
51	7.943E-01	3437.8	1.313E+02	8.316E+09	5.952E-10	6.147E-03	5.155E+05
52	1.000E+00	3550.9	1.652E+02	1.235E+10	7.247E-10	5.967E-03	0.00
53	1.259E+00	3677.7	2.095E+02	1.829E+10	8.870E-10	5.673E-03	-5.5[illegible]+05
54	1.585E+00	3817.8	2.691E+02	2.691E+10	[illegible]97E-09	5.258E-03	-1.156E 06
55	1.995E+00	3974.5	3.508E+02	3.926E+10	[illegible]3E-09	4.813E-03	-1.82UE+06
56	2.512E+00	4138.6	4.611E+02	5.672E+10	[illegible]E-09	4.591E-03	-2.534E+06
57	3.162E+00	4327.2	6.034E+02	7.791E+10	2.19E-09	4.520E-03	-3.27UE+06
58	3.981E+00	4541.4	7.818E+02	1.055E+11	2.677E-09	4.647E-03	-4.01UE+06
59	5.012E+00	4789.5	9.97UE+02	1.57UE+11	3.284E-09	5.471E-03	-4.71UE+06
60	6.310E+00	5062.1	1.190E+03	2.826E+11	3.854E-09	7.979E-03	-5.294E+06
61	7.943E+00	5340.3	1.340E+03	5.748E+11	3.910E-09	1.356E-02	-5.713E+06
62	1.000E+01	5648.9	1.460E+03	1.225E+12	4.[illegible]7E-09	2.462E-02	-5.997E+06
63	1.259E+01	5962.6	1.538E+03	2.555E+12	4.607E-09	4.492E-02	-6.189E+06
64	1.585E+01	6305.1	1.593E+03	5.306E+12	3.919E-09	8.399E-02	-6.325E+06
65	1.995E+01	6655.5	1.626E+03	1.038E+13	3.781E-09	1.596E-01	-6.413E+06

Table 2 (Continued)

TEFF 3500 LOG G 0.000 MASS 10000 K12

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.7500E-04 O 1.7800E-05

	TAU	T	P	XNE	RHO	KAPPA	R(KM)
1	0.0	2429.5	3.853E-03	2.316E+05	2.471E-14	2.256E-03	1.865E+07
2	1.000E-05	2455.7	7.706E-03	4.280E+05	4.898E-14	2.593E-03	1.736E+07
3	1.259E-05	2459.9	8.682E-03	4.645E+05	5.499E-14	2.657E-03	1.717E+07
4	1.585E-05	2464.4	9.877E-03	5.179E+05	6.245E-14	2.728E-03	1.697E+07
5	1.995E-05	2469.1	1.134E-02	5.813E+05	7.256E-14	2.807E-03	1.674E+07
6	2.512E-05	2474.2	1.315E-02	6.580E+05	8.580E-14	2.893E-03	1.651E+07
7	3.162E-05	2479.4	1.537E-02	7.495E+05	9.863E-14	2.987E-03	1.626E+07
8	3.981E-05	2484.5	1.806E-02	8.561E+05	1.133E-13	3.089E-03	1.601E+07
9	5.012E-05	2489.8	2.133E-02	9.815E+05	1.335E-13	3.196E-03	1.574E+07
10	6.310E-05	2495.2	2.531E-02	1.130E+06	1.581E-13	3.309E-03	1.547E+07
11	7.943E-05	2500.4	3.016E-02	1.303E+06	1.886E-13	3.430E-03	1.518E+07
12	1.000E-04	2505.5	3.604E-02	1.505E+06	2.242E-13	3.558E-03	1.488E+07
13	1.259E-04	2510.7	4.317E-02	1.742E+06	2.680E-13	3.689E-03	1.461E+07
14	1.585E-04	2515.8	5.183E-02	2.019E+06	3.211E-13	3.827E-03	1.431E+07
15	1.995E-04	2520.8	6.234E-02	2.341E+06	3.854E-13	3.971E-03	1.401E+07
16	2.512E-04	2525.8	7.508E-02	2.717E+06	4.633E-13	4.122E-03	1.371E+07
17	3.162E-04	2530.7	9.054E-02	3.159E+06	5.577E-13	4.275E-03	1.341E+07
18	3.981E-04	2535.5	1.093E-01	3.675E+06	6.726E-13	4.435E-03	1.310E+07
19	5.012E-04	2540.1	1.321E-01	4.274E+06	8.105E-13	4.602E-03	1.279E+07
20	6.310E-04	2545.2	1.597E-01	4.985E+06	9.781E-13	4.771E-03	1.248E+07
21	7.943E-04	2550.2	1.933E-01	5.819E+06	1.181E-12	4.946E-03	1.217E+07
22	1.000E-03	2555.1	2.340E-01	6.795E+06	1.428E-12	5.129E-03	1.186E+07
23	1.259E-03	2560.4	2.835E-01	7.955E+06	1.726E-12	5.315E-03	1.154E+07
24	1.585E-03	2565.9	3.436E-01	9.326E+06	2.088E-12	5.507E-03	1.123E+07
25	1.995E-03	2571.9	4.167E-01	1.096E+07	2.526E-12	5.703E-03	1.091E+07
26	2.512E-03	2578.3	5.055E-01	1.291E+07	3.057E-12	5.904E-03	1.059E+07
27	3.162E-03	2585.2	6.135E-01	1.525E+07	3.699E-12	6.110E-03	1.027E+07
28	3.981E-03	2593.5	7.450E-01	1.810E+07	4.475E-12	6.314E-03	9.945E+06
29	5.012E-03	2601.6	9.052E-01	2.148E+07	5.426E-12	6.531E-03	9.621E+06
30	6.310E-03	2612.2	1.100E+00	2.560E+07	6.568E-12	6.735E-03	9.294E+06
31	7.943E-03	2623.2	1.339E+00	3.078E+07	7.959E-12	6.947E-03	8.964E+06
32	1.000E-02	2635.6	1.629E+00	3.703E+07	9.642E-12	7.156E-03	8.632E+06
33	1.259E-02	2650.3	1.980E+00	4.489E+07	1.169E-11	7.353E-03	8.297E+06
34	1.585E-02	2666.5	2.422E+00	5.465E+07	1.417E-11	7.547E-03	7.958E+06
35	1.995E-02	2685.0	2.958E+00	6.702E+07	1.718E-11	7.726E-03	7.614E+06
36	2.512E-02	2705.8	3.610E+00	8.277E+07	2.086E-11	7.892E-03	7.266E+06
37	3.162E-02	2729.1	4.432E+00	1.036E+08	2.533E-11	8.039E-03	6.912E+06
38	3.981E-02	2755.1	5.441E+00	1.295E+08	3.080E-11	8.165E-03	6.551E+06
39	5.012E-02	2784.0	6.691E+00	1.643E+08	3.750E-11	8.267E-03	6.183E+06
40	6.310E-02	2816.0	8.250E+00	2.107E+08	4.570E-11	8.341E-03	5.807E+06
41	7.943E-02	2851.3	1.026E+01	2.734E+08	5.586E-11	8.383E-03	5.421E+06
42	1.000E-01	2890.2	1.285E+01	3.591E+08	6.825E-11	8.388E-03	5.024E+06
43	1.259E-01	2933.1	1.597E+01	4.791E+08	8.365E-11	8.349E-03	4.616E+06
44	1.585E-01	2980.5	1.965E+01	6.481E+08	1.028E-10	8.261E-03	4.194E+06
45	1.995E-01	3032.9	2.465E+01	8.912E+08	1.267E-10	8.114E-03	3.756E+06
46	2.512E-01	3091.1	3.108E+01	1.217E+09	1.568E-10	7.902E-03	3.306E+06
47	3.162E-01	3155.9	3.945E+01	1.774E+09	1.945E-10	7.620E-03	2.822E+06
48	3.981E-01	3228.2	5.043E+01	2.566E+09	2.435E-10	7.274E-03	2.318E+06
49	5.012E-01	3308.7	6.458E+01	3.765E+09	3.060E-10	6.883E-03	1.788E+06
50	6.310E-01	3397.9	8.440E+01	5.577E+09	3.870E-10	6.480E-03	1.223E+06
51	7.943E-01	3496.4	1.104E+02	8.301E+09	4.919E-10	6.083E-03	6.276E+05
52	1.000E+00	3604.5	1.453E+02	1.235E+10	6.279E-10	5.690E-03	0.0
53	1.259E+00	3722.7	1.925E+02	1.831E+10	8.050E-10	5.288E-03	-6.622E+05
54	1.585E+00	3855.3	2.567E+02	2.708E+10	1.036E-09	4.875E-03	-1.363E+06
55	1.995E+00	4007.4	3.444E+02	3.974E+10	1.337E-09	4.524E-03	-2.105E+06
56	2.512E+00	4172.5	4.614E+02	5.679E+10	1.720E-09	4.389E-03	-2.876E+06
57	3.162E+00	4358.5	6.093E+02	7.859E+10	2.174E-09	4.412E-03	-3.634E+06
58	3.981E+00	4566.4	7.907E+02	1.079E+11	2.693E-09	4.669E-03	-4.381E+06
59	5.012E+00	4800.6	9.963E+02	1.615E+11	3.223E-09	5.550E-03	-5.673E+06
60	6.310E+00	5077.6	1.193E+03	2.922E+11	3.652E-09	8.163E-03	-5.644E+06
61	7.943E+00	5363.7	1.347E+03	5.985E+11	3.903E-09	1.398E-02	-6.052E+06
62	1.000E+01	5662.2	1.455E+03	1.261E+12	3.994E-09	2.519E-02	-6.329E+06
63	1.259E+01	5973.9	1.531E+03	2.612E+12	3.980E-09	4.575E-02	-6.519E+06
64	1.585E+01	6314.6	1.585E+03	5.393E+12	3.892E-09	8.521E-02	-6.652E+06
65	1.995E+01	6661.3	1.618E+03	1.048E+13	3.758E-09	1.574E-01	-6.741E+06

Table 2 (Continued)

TEFF 3500. LOG G 0.000 MAVE 10000. KIS

H 1.00000E+00 HE 1.00000E-01 C 3.55000E-04 N 4.96000E-04 O 1.78000E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2167.6	1.282E-03	3.169E+14	9.217E-15	6.729E-03	1.882E+07
2	1.000E-05	2196.1	2.564E-03	6.107E+04	1.819E-14	7.757E-03	1.766E+07
3	1.259E-05	2201.0	2.888E-03	6.855E+04	2.045E-14	7.955E-03	1.748E+07
4	1.585E-05	2206.5	3.285E-03	7.723E+04	2.321E-14	8.172E-03	1.730E+07
5	1.995E-05	2212.3	3.771E-03	8.860E+04	2.656E-14	8.416E-03	1.710E+07
6	2.512E-05	2218.4	4.370E-03	1.011E+05	3.070E-14	8.691E-03	1.689E+07
7	3.162E-05	2225.2	5.107E-03	1.173E+05	3.577E-14	8.985E-03	1.667E+07
8	3.981E-05	2232.3	5.998E-03	1.366E+05	4.187E-14	9.300E-03	1.644E+07
9	5.012E-05	2239.4	7.077E-03	1.596E+05	4.925E-14	9.647E-03	1.620E+07
10	6.310E-05	2246.3	8.386E-03	1.877E+05	5.816E-14	1.001E-02	1.595E+07
11	7.943E-05	2255.0	9.973E-03	2.216E+05	6.896E-14	1.040E-02	1.570E+07
12	1.000E-04	2263.0	1.191E-02	2.621E+05	8.200E-14	1.081E-02	1.544E+07
13	1.259E-04	2271.2	1.424E-02	3.106E+05	9.769E-14	1.125E-02	1.518E+07
14	1.585E-04	2280.0	1.705E-02	3.692E+05	1.166E-13	1.170E-02	1.491E+07
15	1.995E-04	2289.0	2.047E-02	4.397E+05	1.394E-13	1.218E-02	1.464E+07
16	2.512E-04	2298.1	2.459E-02	5.241E+05	1.668E-13	1.268E-02	1.437E+07
17	3.162E-04	2307.8	2.958E-02	6.260E+05	1.998E-13	1.319E-02	1.410E+07
18	3.981E-04	2317.9	3.562E-02	7.490E+05	2.395E-13	1.372E-02	1.382E+07
19	5.012E-04	2328.3	4.293E-02	8.971E+05	2.874E-13	1.426E-02	1.354E+07
20	6.310E-04	2339.4	5.179E-02	1.077E+06	3.450E-13	1.480E-02	1.326E+07
21	7.943E-04	2351.0	6.254E-02	1.295E+06	4.146E-13	1.536E-02	1.297E+07
22	1.000E-03	2363.2	7.558E-02	1.560E+06	4.985E-13	1.591E-02	1.268E+07
23	1.259E-03	2376.4	9.145E-02	1.885E+06	5.999E-13	1.644E-02	1.239E+07
24	1.585E-03	2390.5	1.108E-01	2.284E+06	7.226E-13	1.695E-02	1.210E+07
25	1.995E-03	2405.7	1.345E-01	2.775E+06	8.714E-13	1.744E-02	1.180E+07
26	2.512E-03	2422.2	1.635E-01	3.394E+06	1.052E-12	1.788E-02	1.149E+07
27	3.162E-03	2440.2	1.992E-01	4.168E+06	1.272E-12	1.827E-02	1.118E+07
28	3.981E-03	2459.8	2.432E-01	5.150E+06	1.541E-12	1.860E-02	1.086E+07
29	5.012E-03	2481.4	2.978E-01	6.411E+06	1.871E-12	1.885E-02	1.054E+07
30	6.310E-03	2505.0	3.658E-01	8.048E+06	2.276E-12	1.902E-02	1.021E+07
31	7.943E-03	2530.8	4.508E-01	1.020E+07	2.777E-12	1.911E-02	9.871E+06
32	1.000E-02	2558.9	5.578E-01	1.306E+07	3.397E-12	1.912E-02	9.521E+06
33	1.259E-02	2589.2	6.922E-01	1.690E+07	4.167E-12	1.907E-02	9.162E+06
34	1.585E-02	2621.4	8.625E-01	2.208E+07	5.123E-12	1.896E-02	8.792E+06
35	1.995E-02	2655.2	1.078E+00	2.909E+07	6.330E-12	1.882E-02	8.411E+06
36	2.512E-02	2689.9	1.352E+00	3.854E+07	7.856E-12	1.870E-02	8.021E+06
37	3.162E-02	2725.4	1.689E+00	5.126E+07	9.718E-12	1.857E-02	7.622E+06
38	3.981E-02	2760.9	2.139E+00	6.813E+07	1.208E-11	1.849E-02	7.215E+06
39	5.012E-02	2796.9	2.694E+00	9.074E+07	1.501E-11	1.842E-02	6.802E+06
40	6.310E-02	2833.6	3.357E+00	1.209E+08	1.869E-11	1.835E-02	6.381E+06
41	7.943E-02	2871.6	4.286E+00	1.615E+08	2.326E-11	1.823E-02	5.954E+06
42	1.000E-01	2912.0	5.415E+00	2.172E+08	2.898E-11	1.804E-02	5.519E+06
43	1.259E-01	2955.3	6.855E+00	2.942E+08	3.615E-11	1.774E-02	5.073E+06
44	1.585E-01	3002.4	8.708E+00	4.027E+08	4.519E-11	1.730E-02	4.614E+06
45	1.995E-01	3053.6	1.111E+01	5.575E+08	5.665E-11	1.672E-02	4.138E+06
46	2.512E-01	3110.3	1.426E+01	7.812E+08	7.142E-11	1.593E-02	3.643E+06
47	3.162E-01	3172.5	1.843E+01	1.109E+09	9.052E-11	1.508E-02	3.124E+06
48	3.981E-01	3241.1	2.416E+01	1.593E+09	1.155E-10	1.405E-02	2.575E+06
49	5.012E-01	3316.8	3.168E+01	2.317E+09	1.487E-10	1.290E-02	1.993E+06
50	6.310E-01	3400.4	4.222E+01	3.405E+09	1.933E-10	1.170E-02	1.371E+06
51	7.943E-01	3492.5	5.695E+01	5.051E+09	2.539E-10	1.050E-02	7.076E+05
52	1.000E+00	3593.6	7.767E+01	7.536E+09	3.364E-10	9.378E-03	0.E+00
53	1.259E+00	3704.8	1.070E+02	1.126E+10	4.493E-10	8.322E-03	-7.522E+05
54	1.585E+00	3827.6	1.487E+02	1.688E+10	6.045E-10	7.319E-03	-1.551E+06
55	1.995E+00	3967.0	2.039E+02	2.527E+10	8.132E-10	6.326E-03	-2.406E+06
56	2.512E+00	4124.0	2.973E+02	3.768E+10	1.121E-09	5.489E-03	-3.320E+06
57	3.162E+00	4301.9	4.252E+02	5.553E+10	1.530E-09	4.908E-03	-4.278E+06
58	3.981E+00	4514.3	5.962E+02	8.239E+10	2.053E-09	4.663E-03	-5.246E+06
59	5.012E+00	4761.7	8.084E+02	1.321E+11	2.633E-09	5.179E-03	-6.157E+06
60	6.310E+00	5033.7	1.024E+03	2.484E+11	3.162E-09	7.381E-03	-6.897E+06
61	7.943E+00	5317.5	1.155E+03	5.146E+11	3.493E-09	1.246E-02	-7.414E+06
62	1.000E+01	5623.2	1.318E+03	1.115E+12	3.640E-09	2.273E-02	-7.756E+06
63	1.259E+01	5952.2	1.400E+03	2.418E+12	3.651E-09	4.280E-02	-7.982E+06
64	1.585E+01	6304.1	1.457E+03	5.119E+12	3.581E-09	8.140E-02	-8.134E+06
65	1.995E+01	6647.6	1.492E+03	9.692E+12	3.468E-09	1.497E-01	-8.235E+06

Table 2 (Continued)

TEFF 3500. LOG G 0.000 MAVE 10000. KI6

H 1.00000E+00 HE 2.50000E-01 C 7.10000E-04 N 9.92000E-04 O 3.55000E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2153.7	9.016E-04	2.049E+04	8.211E-15	9.366E-02	1.476E+07
2	1.000E-05	2181.9	1.863E-03	3.345E+04	1.621E-14	1.101E-02	1.383E+07
3	1.259E-05	2186.7	2.030E-03	4.412E+04	1.821E-14	1.133E-02	1.369E+07
4	1.585E-05	2192.0	2.358E-03	4.380E+04	2.065E-14	1.168E-02	1.354E+07
5	1.995E-05	2197.6	2.645E-03	5.664E+04	2.361E-14	1.207E-02	1.339E+07
6	2.512E-05	2203.7	3.062E-03	6.503E+04	2.725E-14	1.250E-02	1.322E+07
7	3.162E-05	2210.3	3.573E-03	7.528E+04	3.171E-14	1.297E-02	1.305E+07
8	3.981E-05	2217.1	4.186E-03	8.747E+04	3.704E-14	1.348E-02	1.287E+07
9	5.012E-05	2223.8	4.927E-03	1.026E+05	4.346E-14	1.404E-02	1.268E+07
10	6.310E-05	2231.2	5.822E-03	1.195E+05	5.118E-14	1.462E-02	1.249E+07
11	7.943E-05	2238.8	6.908E-03	1.406E+05	6.053E-14	1.525E-02	1.229E+07
12	1.000E-04	2246.5	8.216E-03	1.657E+05	7.174E-14	1.591E-02	1.209E+07
13	1.259E-04	2254.5	9.793E-03	1.958E+05	8.521E-14	1.661E-02	1.189E+07
14	1.585E-04	2262.8	1.169E-02	2.319E+05	1.014E-13	1.734E-02	1.169E+07
15	1.995E-04	2271.3	1.398E-02	2.751E+05	1.208E-13	1.812E-02	1.148E+07
16	2.512E-04	2280.2	1.674E-02	3.269E+05	1.441E-13	1.891E-02	1.127E+07
17	3.162E-04	2289.3	2.008E-02	3.891E+05	1.720E-13	1.974E-02	1.105E+07
18	3.981E-04	2298.8	2.409E-02	4.636E+05	2.056E-13	2.060E-02	1.084E+07
19	5.012E-04	2308.8	2.894E-02	5.536E+05	2.459E-13	2.147E-02	1.062E+07
20	6.310E-04	2319.4	3.479E-02	6.624E+05	2.943E-13	2.236E-02	1.040E+07
21	7.943E-04	2330.5	4.168E-02	7.941E+05	3.526E-13	2.323E-02	1.018E+07
22	1.000E-03	2342.2	5.046E-02	9.539E+05	4.227E-13	2.412E-02	9.954E+06
23	1.259E-03	2354.8	6.089E-02	1.149E+06	5.073E-13	2.498E-02	9.727E+06
24	1.585E-03	2368.3	7.358E-02	1.389E+06	6.095E-13	2.580E-02	9.496E+06
25	1.995E-03	2382.8	8.906E-02	1.686E+06	7.333E-13	2.658E-02	9.263E+06
26	2.512E-03	2398.7	1.080E-01	2.055E+06	8.834E-13	2.728E-02	9.025E+06
27	3.162E-03	2415.9	1.313E-01	2.519E+06	1.066E-12	2.791E-02	8.783E+06
28	3.981E-03	2434.6	1.600E-01	3.106E+06	1.289E-12	2.844E-02	8.536E+06
29	5.012E-03	2455.3	1.956E-01	3.861E+06	1.563E-12	2.883E-02	8.283E+06
30	6.310E-03	2478.9	2.399E-01	4.841E+06	1.899E-12	2.911E-02	8.023E+06
31	7.943E-03	2502.6	2.952E-01	6.126E+06	2.314E-12	2.925E-02	7.757E+06
32	1.000E-02	2529.6	3.647E-01	7.837E+06	2.829E-12	2.926E-02	7.483E+06
33	1.259E-02	2558.5	4.525E-01	1.014E+07	3.469E-12	2.915E-02	7.201E+06
34	1.585E-02	2590.2	5.636E-01	1.326E+07	4.269E-12	2.895E-02	6.910E+06
35	1.995E-02	2623.5	7.047E-01	1.751E+07	5.270E-12	2.867E-02	6.610E+06
36	2.512E-02	2658.3	8.844E-01	2.332E+07	6.527E-12	2.837E-02	6.302E+06
37	3.162E-02	2694.3	1.113E+00	3.124E+07	8.104E-12	2.806E-02	5.986E+06
38	3.981E-02	2731.0	1.404E+00	4.196E+07	1.009E-11	2.778E-02	5.662E+06
39	5.012E-02	2768.5	1.774E+00	5.649E+07	1.257E-11	2.751E-02	5.332E+06
40	6.310E-02	2806.7	2.245E+00	7.612E+07	1.569E-11	2.726E-02	4.996E+06
41	7.943E-02	2846.1	2.843E+00	1.028E+08	1.953E-11	2.698	4.653E+06
42	1.000E-01	2887.3	3.606E+00	1.393E+08	2.450E-11	2.662	4.304E+06
43	1.259E-01	2931.0	4.581E+00	1.899E+08	3.066E-11	2.614	3.947E+06
44	1.585E-01	2977.7	5.836E+00	2.606E+08	3.844E-11	2.552E-	3.580E+06
45	1.995E-01	3028.0	7.460E+00	3.604E+08	4.832E-11	2.473E-02	3.202E+06
46	2.512E-01	3082.5	9.582E+00	5.025E+08	6.096E-11	2.375E-02	2.811E+06
47	3.162E-01	3142.0	1.238E+01	7.084E+08	7.723E-11	2.258E-02	2.403E+06
48	3.981E-01	3206.7	1.610E+01	1.007E+09	9.845E-11	2.124E-02	1.975E+06
49	5.012E-01	3277.8	2.111E+01	1.444E+09	1.263E-10	1.971E-02	1.525E+06
50	6.310E-01	3355.5	2.797E+01	2.091E+09	1.634E-10	1.809E-02	1.047E+06
51	7.943E-01	3440.9	3.743E+01	3.050E+09	2.132E-10	1.638E-02	5.403E+05
52	1.000E+00	3534.6	5.068E+01	4.483E+09	2.810E-10	1.469E-02	0.E+00
53	1.259E+00	3637.5	6.934E+01	6.622E+09	3.735E-10	1.305E-02	-5.757E+05
54	1.585E+00	3750.6	9.597E+01	9.806E+09	5.012E-10	1.146E-02	-1.190E+06
55	1.995E+00	3875.6	1.349E+02	1.454E+10	6.794E-10	9.858E-03	-1.849E+06
56	2.512E+00	4015.9	1.918E+02	2.165E+10	9.351E-10	8.217E-03	-2.567E+06
57	3.162E+00	4175.7	2.738E+02	3.256E+10	1.312E-09	6.644E-03	-3.359E+06
58	3.981E+00	4362.1	4.164E+02	5.017E+10	1.878E-09	5.331E-03	-4.236E+06
59	5.012E+00	4586.3	6.302E+02	8.210E+10	2.690E-09	4.504E-03	-5.177E+06
60	6.310E+00	4864.5	9.173E+02	1.576E+11	3.691E-09	4.698E-03	-6.087E+06
61	7.943E+00	5185.7	1.211E+03	3.651E+11	4.570E-09	7.167E-03	-6.795E+06
62	1.000E+01	5521.5	1.421E+03	8.755E+11	5.035E-09	1.342E-02	-7.236E+06
63	1.259E+01	5867.6	1.559E+03	2.024E+12	5.194E-09	1.609E-02	-7.504E+06
64	1.585E+01	6239.5	1.648E+03	4.551E+12	5.157E-09	5.157E-02	-7.674E+06
65	1.995E+01	6613.3	1.705E+03	9.414E+12	5.024E-09	9.997E-02	-7.782E+06

Table 2 (Continued)

TEFF 3500. LOG G 0.000 MAVE 10000. K18

H 1.0000E 00 HE 5.0000E-01 C 3.5500E-03 N 9.9600E-03 O 1.7800E-03

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2087.6	2.321E-04	4.677E+13	2.800E-15	3.463E-02	1.098E+07
2	1.000E-05	2114.2	4.642E-04	8.996E+03	5.531E-15	4.207E-02	1.025E+07
3	1.259E-05	2118.7	5.224E-04	1.006E+14	6.211E-15	4.351E-02	1.015E+07
4	1.585E-05	2123.5	5.930E-04	1.133E+04	7.034E-15	4.513E-02	1.004E+07
5	1.995E-05	2128.8	6.784E-04	1.287E+04	8.027E-15	4.687E-02	9.921E+06
6	2.512E-05	2134.4	7.834E-04	1.474E+04	9.245E-15	4.883E-02	9.796E+06
7	3.162E-05	2140.3	9.102E-04	1.698E+04	1.071E-14	5.097E-02	9.665E+06
8	3.981E-05	2146.6	1.064E-03	1.969E+04	1.249E-14	5.326E-02	9.529E+06
9	5.012E-05	2153.0	1.248E-03	2.291E+04	1.460E-14	5.573E-02	9.389E+06
10	6.310E-05	2159.6	1.469E-03	2.672E+04	1.713E-14	5.838E-02	9.246E+06
11	7.943E-05	2166.4	1.734E-03	3.127E+04	2.016E-14	6.120E-02	9.099E+06
12	1.000E-04	2173.6	2.053E-03	3.673E+04	2.379E-14	6.414E-02	8.950E+06
13	1.259E-04	2180.8	2.435E-03	4.319E+04	2.812E-14	6.731E-02	8.798E+06
14	1.585E-04	2188.2	2.893E-03	5.089E+04	3.330E-14	7.064E-02	8.643E+06
15	1.995E-04	2195.9	3.441E-03	6.007E+04	3.949E-14	7.411E-02	8.487E+06
16	2.512E-04	2203.9	4.100E-03	7.104E+04	4.686E-14	7.771E-02	8.330E+06
17	3.162E-04	2212.0	4.889E-03	8.405E+04	5.568E-14	8.152E-02	8.170E+06
18	3.981E-04	2220.5	5.836E-03	9.976E+04	6.620E-14	8.542E-02	8.009E+06
19	5.012E-04	2229.3	6.974E-03	1.194E+05	7.880E-14	8.945E-02	7.846E+06
20	6.310E-04	2238.4	8.339E-03	1.408E+05	9.385E-14	9.361E-02	7.682E+06
21	7.943E-04	2248.0	9.963E-03	1.677E+05	1.119E-13	9.779E-02	7.515E+06
22	1.000E-03	2258.0	1.196E-02	2.001E+05	1.335E-13	1.021E-01	7.347E+06
23	1.259E-03	2268.6	1.435E-02	2.394E+05	1.594E-13	1.063E-01	7.177E+06
24	1.585E-03	2279.8	1.724E-02	2.871E+05	1.905E-13	1.105E-01	7.005E+06
25	1.995E-03	2291.7	2.074E-02	3.452E+05	2.288E-13	1.146E-01	6.831E+06
26	2.512E-03	2304.5	2.499E-02	4.166E+05	2.732E-13	1.185E-01	6.654E+06
27	3.162E-03	2318.3	3.018E-02	5.043E+05	3.279E-13	1.221E-01	6.473E+06
28	3.981E-03	2333.2	3.653E-02	6.140E+05	3.944E-13	1.254E-01	6.290E+06
29	5.012E-03	2349.5	4.432E-02	7.532E+05	4.752E-13	1.282E-01	6.103E+06
30	6.310E-03	2367.4	5.386E-02	9.296E+05	5.742E-13	1.304E-01	5.911E+06
31	7.943E-03	2387.2	6.532E-02	1.157E+06	6.956E-13	1.319E-01	5.714E+06
32	1.000E-02	2409.1	8.087E-02	1.456E+06	8.456E-13	1.327E-01	5.512E+06
33	1.259E-02	2433.4	9.965E-02	1.853E+06	1.032E-12	1.327E-01	5.304E+06
34	1.585E-02	2460.4	1.234E-01	2.393E+06	1.264E-12	1.318E-01	5.089E+06
35	1.995E-02	2490.2	1.537E-01	3.136E+06	1.555E-12	1.302E-01	4.866E+06
36	2.512E-02	2522.6	1.925E-01	4.172E+06	1.922E-12	1.280E-01	4.635E+06
37	3.162E-02	2557.6	2.423E-01	5.629E+06	2.386E-12	1.254E-01	4.396E+06
38	3.981E-02	2594.5	3.066E-01	7.678E+06	2.976E-12	1.227E-01	4.149E+06
39	5.012E-02	2632.8	3.894E-01	1.054E+07	3.725E-12	1.202E-01	3.894E+06
40	6.310E-02	2672.1	4.960E-01	1.453E+07	4.675E-12	1.179E-01	3.634E+06
41	7.943E-02	2712.2	6.329E-01	2.006E+07	5.877E-12	1.158E-01	3.368E+06
42	1.000E-01	2752.9	8.086E-01	2.765E+07	7.398E-12	1.139E-01	3.097E+06
43	1.259E-01	2794.9	1.033E+00	3.814E+07	9.313E-12	1.120E-01	2.821E+06
44	1.585E-01	2838.5	1.322E+00	5.267E+07	1.173E-11	1.100E-01	2.541E+06
45	1.995E-01	2884.4	1.693E+00	7.292E+07	1.478E-11	1.076E-01	2.255E+06
46	2.512E-01	2933.1	2.173E+00	1.013E+08	1.866E-11	1.049E-01	1.963E+06
47	3.162E-01	2984.9	2.795E+00	1.413E+08	2.357E-11	1.015E-01	1.663E+06
48	3.981E-01	3040.4	3.606E+00	1.976E+08	2.966E-11	9.776E-02	1.355E+06
49	5.012E-01	3099.7	4.672E+00	2.779E+08	3.794E-11	9.357E-02	1.035E+06
50	6.310E-01	3163.2	6.079E+00	3.914E+08	4.838E-11	8.895E-02	7.044E+05
51	7.943E-01	3231.5	7.953E+00	5.533E+08	6.135E-11	8.387E-02	3.599E+05
52	1.000E+00	3304.5	1.047E+01	7.843E+08	7.972E-11	7.841E-02	0.E+00
53	1.259E+00	3383.9	1.368E+01	1.115E+09	1.032E-10	7.265E-02	-3.772E+05
54	1.585E+00	3469.1	1.853E+01	1.587E+09	1.344E-10	6.670E-02	-7.738E+05
55	1.995E+00	3560.9	2.495E+01	2.263E+09	1.762E-10	6.077E-02	-1.192E+06
56	2.512E+00	3660.4	3.386E+01	3.223E+09	2.326E-10	5.492E-02	-1.632E+06
57	3.162E+00	3768.5	4.633E+01	4.583E+09	3.059E-10	4.917E-02	-2.098E+06
58	3.981E+00	3886.6	6.412E+01	6.514E+09	4.138E-10	4.324E-02	-2.593E+06
59	5.012E+00	4016.1	8.971E+01	9.338E+09	5.610E-10	3.696E-02	-3.126E+06
60	6.310E+00	4156.7	1.262E+02	1.375E+10	7.744E-10	3.061E-02	-3.709E+06
61	7.943E+00	4312.3	1.882E+02	2.144E+10	1.095E-09	2.443E-02	-4.356E+06
62	1.000E+01	4490.3	2.849E+02	3.691E+10	1.592E-09	1.871E-02	-5.082E+06
63	1.259E+01	4710.8	4.401E+02	7.495E+10	2.392E-09	1.353E-02	-5.913E+06
64	1.585E+01	5036.2	7.435E+02	2.101E+11	3.703E-09	9.257E-03	-6.857E+06
65	1.995E+01	5545.5	1.171E+03	8.890E+11	5.291E-09	1.101E-02	-7.881E+06

Table 2 (Continued)

TEFF 3500. LOG G 0.000 WAVE 10000. K20

H 1.0000E+00 HE 5.0000E-01 C 3.5500E-03 N 1.0000E-02 O 1.7800E-03

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2098.1	1.340E-04	4.238E+03	2.378E-15	4.088E-02	1.061E+07
2	1.000E-05	2122.7	3.881E-04	6.054E+03	4.700E-15	5.021E-02	9.880E+06
3	1.259E-05	2126.9	4.366E-04	8.984E+03	5.279E-15	5.202E-02	9.770E+06
4	1.585E-05	2131.3	4.954E-04	1.009E+04	5.975E-15	5.406E-02	9.668E+06
5	1.995E-05	2136.0	5.663E-04	1.142E+04	6.817E-15	5.631E-02	9.552E+06
6	2.512E-05	2141.2	6.534E-04	1.305E+04	7.845E-15	5.877E-02	9.429E+06
7	3.162E-05	2146.5	7.564E-04	1.496E+04	9.083E-15	6.150E-02	9.302E+06
8	3.981E-05	2152.1	8.854E-04	1.729E+04	1.058E-14	6.446E-02	9.169E+06
9	5.012E-05	2157.8	1.036E-03	2.001E+04	1.235E-14	6.762E-02	9.033E+06
10	6.310E-05	2163.7	1.218E-03	2.325E+04	1.447E-14	7.102E-02	8.893E+06
11	7.943E-05	2169.8	1.435E-03	2.706E+04	1.700E-14	7.463E-02	8.750E+06
12	1.000E-04	2176.1	1.695E-03	3.164E+04	2.003E-14	7.843E-02	8.605E+06
13	1.259E-04	2182.5	2.005E-03	3.703E+04	2.362E-14	8.257E-02	8.457E+06
14	1.585E-04	2189.1	2.377E-03	4.341E+04	2.792E-14	8.686E-02	8.308E+06
15	1.995E-04	2195.9	2.821E-03	5.097E+04	3.302E-14	9.140E-02	8.157E+06
16	2.512E-04	2202.9	3.351E-03	5.996E+04	3.911E-14	9.617E-02	8.004E+06
17	3.162E-04	2210.1	3.985E-03	7.066E+04	4.636E-14	1.011E-01	7.849E+06
18	3.981E-04	2217.7	4.744E-03	8.336E+04	5.500E-14	1.063E-01	7.693E+06
19	5.012E-04	2225.4	5.652E-03	9.836E+04	6.530E-14	1.117E-01	7.536E+06
20	6.310E-04	2233.6	6.739E-03	1.164E+05	7.757E-14	1.171E-01	7.377E+06
21	7.943E-04	2242.2	8.043E-03	1.373E+05	9.223E-14	1.228E-01	7.216E+06
22	1.000E-03	2251.2	9.608E-03	1.618E+05	1.097E-13	1.285E-01	7.054E+06
23	1.259E-03	2260.8	1.149E-02	1.909E+05	1.307E-13	1.342E-01	6.890E+06
24	1.585E-03	2270.9	1.376E-02	2.324E+05	1.558E-13	1.400E-01	6.724E+06
25	1.995E-03	2281.8	1.650E-02	2.781E+05	1.859E-13	1.456E-01	6.555E+06
26	2.512E-03	2293.5	1.982E-02	3.338E+05	2.222E-13	1.511E-01	6.384E+06
27	3.162E-03	2306.1	2.385E-02	4.023E+05	2.659E-13	1.563E-01	6.211E+06
28	3.981E-03	2319.9	2.876E-02	4.872E+05	3.189E-13	1.610E-01	6.034E+06
29	5.012E-03	2334.9	3.478E-02	5.932E+05	3.830E-13	1.653E-01	5.853E+06
30	6.310E-03	2351.5	4.217E-02	7.273E+05	4.611E-13	1.688E-01	5.669E+06
31	7.943E-03	2369.8	5.132E-02	8.990E+05	5.568E-13	1.716E-01	5.480E+06
32	1.000E-02	2390.2	6.268E-02	1.122E+06	6.743E-13	1.734E-01	5.286E+06
33	1.259E-02	2412.8	7.692E-02	1.417E+06	8.197E-13	1.742E-01	5.086E+06
34	1.585E-02	2437.9	9.464E-02	1.811E+06	1.000E-12	1.739E-01	4.880E+06
35	1.995E-02	2465.7	1.176E-01	2.350E+06	1.226E-12	1.725E-01	4.667E+06
36	2.512E-02	2496.1	1.465E-01	3.094E+06	1.509E-12	1.704E-01	4.446E+06
37	3.162E-02	2529.3	1.836E-01	4.136E+06	1.867E-12	1.674E-01	4.217E+06
38	3.981E-02	2564.7	2.314E-01	5.600E+06	2.320E-12	1.641E-01	3.980E+06
39	5.012E-02	2602.2	2.929E-01	7.665E+06	2.894E-12	1.605E-01	3.735E+06
40	6.310E-02	2641.1	3.724E-01	1.056E+07	3.625E-12	1.572E-01	3.484E+06
41	7.943E-02	2681.1	4.746E-01	1.466E+07	4.551E-12	1.540E-01	3.226E+06
42	1.000E-01	2721.9	6.062E-01	2.020E+07	5.725E-12	1.513E-01	2.962E+06
43	1.259E-01	2763.4	7.749E-01	2.792E+07	7.208E-12	1.488E-01	2.694E+06
44	1.585E-01	2806.1	9.912E-01	3.857E+07	9.080E-12	1.463E-01	2.422E+06
45	1.995E-01	2850.5	1.269E+00	5.331E+07	1.144E-11	1.436E-01	2.145E+06
46	2.512E-01	2897.2	1.626E+00	7.386E+07	1.442E-11	1.406E-01	1.863E+06
47	3.162E-01	2946.6	2.086E+00	1.026E+08	1.820E-11	1.370E-01	1.574E+06
48	3.981E-01	2999.2	2.684E+00	1.423E+08	2.299E-11	1.330E-01	1.279E+06
49	5.012E-01	3054.3	3.461E+00	1.995E+08	2.911E-11	1.283E-01	9.746E+05
50	6.310E-01	3115.1	4.480E+00	2.793E+08	3.695E-11	1.233E-01	6.609E+05
51	7.943E-01	3179.1	5.820E+00	3.918E+08	4.703E-11	1.177E-01	3.365E+05
52	1.000E+00	3247.8	7.595E+00	5.507E+08	6.006E-11	1.117E-01	0.E+00
53	1.259E+00	3321.4	9.961E+00	7.752E+08	7.701E-11	1.053E-01	-3.500E+05
54	1.585E+00	3400.5	1.313E+01	1.092E+09	9.914E-11	9.874E-02	-7.148E+05
55	1.995E+00	3485.6	1.741E+01	1.538E+09	1.262E-10	9.210E-02	-1.096E+06
56	2.512E+00	3577.1	2.320E+01	2.162E+09	1.663E-10	8.564E-02	-1.493E+06
57	3.162E+00	3675.8	3.105E+01	3.024E+09	2.166E-10	7.940E-02	-1.908E+06
58	3.981E+00	3782.3	4.174E+01	4.205E+09	2.828E-10	7.313E-02	-2.340E+06
59	5.012E+00	3897.9	5.648E+01	5.832E+09	3.712E-10	6.606E-02	-2.796E+06
60	6.310E+00	4023.6	7.737E+01	8.163E+09	4.973E-10	5.777E-02	-3.285E+06
61	7.943E+00	4159.4	1.081E+02	1.173E+10	6.651E-10	4.858E-02	-3.822E+06
62	1.000E+01	4307.7	1.551E+02	1.807E+10	9.211E-10	3.930E-02	-4.422E+06
63	1.259E+01	4477.0	2.304E+02	3.066E+10	1.316E-09	3.038E-02	-5.101E+06
64	1.585E+01	4678.9	3.564E+02	6.001E+10	1.948E-09	2.236E-02	-5.879E+06
65	1.995E+01	4951.2	5.813E+02	1.487E+11	3.001E-09	1.525E-02	-6.793E+06

Table 2 (Continued)

TEFF 3500. LOG G 0.000 MAVE 10000. K25

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-04 N 9.1500E-04 O 7.1000E-05

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2338.0	1.407E-03	7.421E+04	9.392E-15	5.840E-03	1.819E+07
2	1.000E-05	2362.9	2.814E-03	1.35CE+05	1.859E-14	7.C83E-03	1.69CE+C7
3	1.259E-05	2366.9	3.166E-03	1.493E+05	2.088E-14	7.329E-03	1.672E+07
4	1.585E-05	2371.1	3.594E-03	1.662E+05	2.366E-14	7.607E-03	1.652E+C7
5	1.995E-05	2375.6	4.111E-03	1.862E+05	2.701E-14	7.912E-03	1.631E+C7
6	2.512E-05	2380.3	4.746E-03	2.102E+05	3.112E-14	8.257E-03	1.609E+07
7	3.162E-05	2385.C	5.512E-03	2.383E+05	3.6C7E-14	8.639E-03	1.586E+C7
8	3.981E-05	2390.0	6.440E-03	2.716E+05	4.205E-14	9.C53E-03	1.563E+07
9	5.012E-05	2394.9	7.543E-03	3.099E+05	4.916E-14	9.502E-03	1.538E+C7
10	6.310E-05	2399.6	8.868E-03	3.543E+05	5.768E-14	9.999E-03	1.513E+C7
11	7.943E-05	2404.4	1.045E-02	4.C58E+05	6.783E-14	1.053E-02	1.488E+C7
12	1.000E-04	2409.4	1.235E-02	4.661E+05	7.998E-14	1.109E-02	1.462E+07
13	1.259E-04	2414.0	1.460E-02	5.350E+05	9.443E-14	1.171E-02	1.436E+07
14	1.585E-04	2418.6	1.729E-02	6.146E+05	1.116E-13	1.238E-02	1.41CE+C7
15	1.995E-04	2423.4	2.050E-02	7.073E+05	1.320E-13	1.309E-02	1.383E+07
16	2.512E-04	2428.1	2.432E-02	8.143E+05	1.563E-13	1.383E-02	1.356E+07
17	3.162E-04	2432.8	2.886E-02	9.38CE+C5	1.852E-13	1.463E-02	1.33CE+C7
18	3.981E-04	2437.5	3.426E-02	1.C81E+06	2.194E-13	1.549E-02	1.303E+07
19	5.012E-04	2442.6	4.069E-02	1.249E+06	2.60CE-13	1.638E-02	1.276E+C7
20	6.310E-04	2447.7	4.834E-02	1.443E+06	3.083E-13	1.733E-02	1.249E+07
21	7.943E-04	2453.2	5.743E-C2	1.671E+06	3.655E-13	1.832E-C2	1.221E+07
22	1.000E-03	2459.0	6.828E-02	1.938E+06	4.335E-13	1.935E-02	1.194E+07
23	1.2>9E-03	2465.4	8.12CE-C2	2.254E+06	5.142E-13	2.041E-02	1.167E+C7
24	1.585E-03	2472.3	9.664E-02	2.629E+06	6.103E-13	2.150E-02	1.139E+07
25	1.995E-03	2480.2	1.151E-01	3.C78E+06	7.244E-13	2.259E-02	1.111E+C7
26	2.512E-03	2489.1	1.372E-01	3.620E+06	8.609E-13	2.367E-02	1.083E+07
27	3.162E-03	2498.9	1.639E-01	4.267E+06	1.024E-12	2.480E-02	1.054E+07
28	3.981E-03	2509.7	1.959E-C1	5.067E+06	1.218E-12	2.582E-02	1.C25E+C7
29	5.012E-03	2521.9	2.347E-01	6.045E+06	1.453E-12	2.684E-02	9.959E+06
30	6.310E-03	2536.0	2.817E-01	7.269E+06	1.734E-12	2.775E-02	9.661E+06
31	7.943E-03	2551.8	3.393E-01	8.796E+06	2.C76E-12	2.859E-02	9.356E+06
32	1.000E-02	2569.3	4.095E-C1	1.C73E+07	2.489E-12	2.933E-C2	9.045E+C6
33	1.259E-02	2589.3	4.962E-01	1.322E+07	2.992E-12	2.990E-02	8.725E+06
34	1.585E-02	2611.4	6.033E-01	1.646E+07	3.607E-12	3.036E-C2	8.397E+06
35	1.995E-02	2635.8	7.366E-01	2.069E+07	4.363E-12	3.067E-02	8.059E+06
36	2.512E-02	2662.7	9.031E-01	2.632E+07	5.295E-12	3.083E-02	7.71CE+C6
37	3.162E-02	2692.1	1.112E+00	3.386E+07	6.450E-12	3.085E-02	7.350E+06
38	3.981E-02	2724.C	1.376E+00	4.405E+07	7.886E-12	3.074E-02	6.978E+C6
39	5.012E-02	2758.5	1.710E+00	5.796E+07	9.678E-12	3.049E-02	6.594E+06
40	6.310E-02	2795.5	2.135E+00	7.706E+07	1.192E-11	3.013E-C2	6.196E+06
41	7.943E-02	2834.9	2.678E+00	1.034E+08	1.474E-11	2.967E-02	5.785E+06
42	1.000E-01	2876.8	3.373E+00	1.4CCE+C8	1.83CE-11	2.911E-C2	5.36CE+C6
43	1.259E-01	2921.0	4.267E+00	1.908E+08	2.280E-11	2.847E-02	4.921E+06
44	1.585E-01	2967.9	5.420E+00	2.618E+08	2.85CE-11	2.773E-02	4.467E+C6
45	1.995E-01	3017.8	6.916E+00	3.619E+08	3.577E-11	2.686E-02	3.998E+C6
46	2.512E-01	3071.2	8.866E+00	5.038E+08	4.505E-11	2.584E-02	3.511E+06
47	3.162E-01	3128.9	1.143E+01	7.072E+C8	5.701E-11	2.465E-C2	3.CC4E+C6
48	3.981E-01	3191.7	1.484E+01	1.002E+09	7.253E-11	2.324E-02	2.473E+06
49	5.012E-01	3260.6	1.942E+01	1.434E+09	9.290E-11	2.160E-02	1.914E+06
50	6.310E-01	3336.5	2.568E+01	2.C75E+C9	1.2CCE-10	1.975E-C2	1.321E+C6
51	7.943E-01	3420.6	3.439E+01	3.039E+09	1.568E-10	1.769C-02	6.862E+05
52	1.000E+00	3514.0	4.677E+01	4.506E+09	2.075E-10	1.552E-02	C.E+0C
53	1.259E+00	36[8.1	6.476E+01	6.768E+09	2.79CE-10	1.33CE-C2	-7.47CE+C5
54	1.585E+00	3734.7	9.151E+01	1.030E+10	3.819E-10	1.115E-02	-1.565E+06
55	1.995E+00	3866.8	1.322E+02	1.586E+10	5.327E-10	9.125E-03	-2.465E+06
56	2.512E+00	4018.2	1.955E+C2	2.465E+10	7.578E-10	7.351E-03	-3.457E+06
57	3.162E+00	4192.1	2.943E+C2	3.842E+10	1.C93E-C9	5.994E-C3	-4.[34E+C6
58	3.981E+00	4398.0	4.436E+02	5.993E+10	1.571E-09	5.108E-03	-5.666E+06
59	5.012E+00	4643.6	6.51CE+C2	9.734E+10	2.183E-09	4.929E-C3	-6.784E+C6
60	6.310E+00	4928.5	8.911E+02	1.842E+11	2.815E-09	6.237E-03	-7.747E+06
61	7.943E+00	5230.8	1.099E+03	4.005E+11	3.272E-09	1.036E-02	-8.430E+06
62	1.000E+01	5553.7	1.244E+03	9.[9CE+11	3.485E-09	1.95CE-02	-8.859E+C6
63	1.259E+01	5891.2	1.339E+03	2.067E+12	3.534E-09	3.752E-02	-9.129E+06
64	1.5[5E+01	6252.6	1.401E+03	4.529E+12	3.479E-09	7.306E-02	-9.[06E+C6
65	1.995E+01	6617.6	1.441E+03	9.205E+12	3.372E-09	1.401E-01	-9.419E+06

Table 2 (Continued)

TEFF 3500 LOG G 0.000 WAVE 1000 K24

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-03 N 8.1500E-04 O 7.1000E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2146.4	2.0706E-04	7.0846E+03	1.5526E-15	3.8336E-02	1.746E+07
2	1.0000E-05	2172.4	4.1406E-04	1.3396E+04	3.0676E-15	4.7116E-02	1.625E+07
3	1.2589E-05	2178.9	4.6586E-04	1.4926E+04	3.4436E-15	4.8886E-02	1.609E+07
4	1.5849E-05	2181.6	5.2846E-04	1.6756E+04	3.8986E-15	5.0716E-02	1.591E+07
5	1.9953E-05	2180.6	6.0416E-04	1.8936E+04	4.4476E-15	5.2836E-02	1.572E+07
6	2.5119E-05	2192.1	6.9706E-04	2.1796E+04	5.1176E-15	5.5166E-02	1.552E+07
7	3.1623E-05	2197.8	8.0886E-04	2.4756E+04	5.9236E-15	5.7736E-02	1.531E+07
8	3.9811E-05	2203.7	9.4436E-04	2.8536E+04	6.8966E-15	6.0556E-02	1.509E+07
9	5.0119E-05	2209.8	1.1056E-03	3.2976E+04	8.0486E-15	6.3546E-02	1.487E+07
10	6.3100E-05	2216.1	1.2986E-03	3.8266E+04	9.4286E-15	6.6746E-02	1.464E+07
11	7.9433E-05	2222.5	1.5296E-03	4.4476E+04	1.1076E-14	7.0216E-02	1.441E+07
12	1.0000E-04	2229.2	1.8066E-03	5.1876E+04	1.3046E-14	7.3876E-02	1.417E+07
13	1.2589E-04	2236.0	2.1366E-03	6.0666E+04	1.5376E-14	7.7776E-02	1.393E+07
14	1.5849E-04	2243.0	2.5306E-03	7.0916E+04	1.8166E-14	8.1906E-02	1.369E+07
15	1.9953E-04	2250.3	3.0016E-03	8.3146E+04	2.1466E-14	8.6236E-02	1.344E+07
16	2.5119E-04	2257.6	3.5646E-03	9.7596E+04	2.5406E-14	9.0836E-02	1.319E+07
17	3.1623E-04	2265.2	4.2346E-03	1.1476E+05	3.0086E-14	9.5656E-02	1.294E+07
18	3.9811E-04	2273.2	5.0376E-03	1.3516E+05	3.5666E-14	1.0066E-01	1.268E+07
19	5.0119E-04	2281.3	5.9956E-03	1.5936E+05	4.2386E-14	1.0596E-01	1.243E+07
20	6.3100E-04	2289.8	7.1416E-03	1.8806E+05	5.0266E-14	1.1136E-01	1.217E+07
21	7.9433E-04	2298.7	8.5126E-03	2.2246E+05	5.9606E-14	1.1686E-01	1.191E+07
22	1.0000E-03	2307.9	1.0116E-02	2.6366E+05	7.0836E-14	1.2256E-01	1.164E+07
23	1.2589E-03	2317.7	1.2136E-02	3.1336E+05	8.4236E-14	1.2826E-01	1.138E+07
24	1.5849E-03	2328.0	1.4506E-02	3.7276E+05	1.0036E-13	1.3406E-01	1.111E+07
25	1.9953E-03	2338.9	1.7366E-02	4.4486E+05	1.1956E-13	1.3986E-01	1.083E+07
26	2.5119E-03	2350.5	2.0816E-02	5.3276E+05	1.4256E-13	1.4546E-01	1.056E+07
27	3.1623E-03	2363.0	2.4996E-02	6.4056E+05	1.7026E-13	1.5086E-01	1.028E+07
28	3.9811E-03	2376.3	3.0066E-02	7.7336E+05	2.0356E-13	1.5596E-01	9.989E+06
29	5.0119E-03	2390.9	3.6266E-02	9.3806E+05	2.4416E-13	1.6056E-01	9.690E+06
30	6.3100E-03	2406.6	4.3856E-02	1.1476E+06	2.9336E-13	1.6466E-01	9.400E+06
31	7.9433E-03	2423.8	5.3186E-02	1.4106E+06	3.5326E-13	1.6806E-01	9.096E+06
32	1.0000E-02	2442.7	6.4756E-02	1.7506E+06	4.2666E-13	1.7066E-01	8.784E+06
33	1.2589E-02	2463.5	7.9136E-02	2.1916E+06	5.1706E-13	1.7236E-01	8.463E+06
34	1.5849E-02	2486.5	9.7156E-02	2.7776E+06	6.2896E-13	1.7296E-01	8.133E+06
35	1.9953E-02	2511.9	1.1996E-01	3.5626E+06	7.6806E-13	1.7266E-01	7.792E+06
36	2.5119E-02	2540.1	1.4876E-01	4.6346E+06	9.4266E-13	1.7126E-01	7.440E+06
37	3.1623E-02	2571.8	1.8546E-01	6.1166E+06	1.1616E-12	1.6896E-01	7.075E+06
38	3.9811E-02	2606.6	2.3256E-01	8.1836E+06	1.4376E-12	1.6596E-01	6.697E+06
39	5.0119E-02	2646.7	2.9326E-01	1.1086E+07	1.7876E-12	1.6246E-01	6.306E+06
40	6.3100E-02	2678.9	3.7166E-01	1.5156E+07	2.2326E-12	1.5876E-01	5.902E+06
41	7.9433E-02	2710.9	4.7206E-01	2.0846E+07	2.7986E-12	1.5506E-01	5.486E+06
42	1.0000E-01	2760.2	6.0366E-01	2.8776E+07	3.5196E-12	1.5136E-01	5.059E+06
43	1.2589E-01	2802.8	7.7266E-01	3.9776E+07	4.4356E-12	1.4786E-01	4.622E+06
44	1.5849E-01	2846.9	9.9106E-01	5.5056E+07	5.6016E-12	1.4416E-01	4.175E+06
45	1.9953E-01	2893.6	1.2746E+00	7.6366E+07	7.0756E-12	1.4006E-01	3.718E+06
46	2.5119E-01	2941.7	1.6426E+00	1.0636E+08	8.9806E-12	1.3526E-01	3.248E+06
47	3.1623E-01	2993.5	2.1246E+00	1.4866E+08	1.1426E-11	1.2986E-01	2.765E+06
48	3.9811E-01	3049.1	2.7616E+00	2.0896E+08	1.4566E-11	1.2336E-01	2.264E+06
49	5.0119E-01	3109.0	3.6116E+00	2.9556E+08	1.8686E-11	1.1586E-01	1.743E+06
50	6.3100E-01	3173.7	4.7606E+00	4.2096E+08	2.4126E-11	1.0726E-01	1.196E+06
51	7.9433E-01	3244.1	6.3396E+00	6.0466E+08	3.1426E-11	9.7556E-02	6.176E+05
52	1.0000E+00	3320.7	8.5506E+00	8.7706E+08	4.1396E-11	8.6866E-02	0.0
53	1.2589E+00	3404.6	1.1726E+01	1.2886E+09	5.5346E-11	7.5416E-02	-6.664E+05
54	1.5849E+00	3496.9	1.6046E+01	1.9186E+09	7.5356E-11	6.3636E-02	-1.393E+06
55	1.9953E+00	3598.6	2.1496E+01	2.9036E+09	1.0496E-10	5.2196E-02	-2.192E+06
56	2.5119E+00	3711.3	3.0536E+01	4.4666E+09	1.4956E-10	4.1756E-02	-3.074E+06
57	3.1623E+00	3836.9	5.2126E+01	6.9826E+09	2.1826E-10	3.2786E-02	-4.046E+06
58	3.9811E+00	3977.9	8.3566E+01	1.1086E+10	3.2526E-10	2.5376E-02	-5.111E+06
59	5.0119E+00	4138.7	1.2746E+02	1.8026E+10	4.9426E-10	1.9356E-02	-6.269E+06
60	6.3100E+00	4330.5	2.0626E+02	3.0946E+10	7.6426E-10	1.4256E-02	-7.537E+06
61	7.9433E+00	4567.0	3.4166E+02	6.0536E+10	1.2006E-09	1.0436E-02	-8.937E+06
62	1.0000E+01	4902.6	5.6026E+02	1.5856E+11	1.8336E-09	8.7056E-03	-1.041E+07
63	1.2589E+01	5342.8	8.1446E+02	5.4186E+11	2.4426E-09	1.4126E-02	-1.160E+07
64	1.5849E+01	5798.5	9.7036E+02	1.6606E+12	2.6746E-09	3.1786E-02	-1.221E+07
65	1.9953E+01	6253.1	1.0956E+03	4.3036E+12	2.6836E-09	7.1006E-02	-1.250E+07

Table 2 (Continued)

TEFF 3560 LOG G 5.000 MASS 100.0 K 26

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-02 N 8.1500E-04 O 7.1000E-04

	TAU	T	P	XNE	RHO	KAPPA	H (KM)
1	0.0	2219.6	5.823E-05	4.335E+03	5.160E-16	1.242E-01	1.420E+07
2	1.000E-05	2235.4	1.165E-04	7.652E+03	1.022E-15	1.633E-01	1.322E+07
3	1.259E-05	2238.2	1.365E-04	8.420E+03	1.152E-15	1.709E-01	1.308E+07
4	1.585E-05	2241.1	1.601E-04	9.315E+03	1.302E-15	1.794E-01	1.293E+07
5	1.995E-05	2244.1	1.888E-04	1.035E+04	1.481E-15	1.889E-01	1.277E+07
6	2.512E-05	2247.6	1.937E-04	1.160E+04	1.698E-15	1.992E-01	1.260E+07
7	3.162E-05	2251.2	2.235E-04	1.305E+04	1.955E-15	2.106E-01	1.243E+07
8	3.981E-05	2254.9	2.592E-04	1.475E+04	2.265E-15	2.230E-01	1.225E+07
9	5.012E-05	2259.0	3.010E-04	1.678E+04	2.629E-15	2.361E-01	1.206E+07
10	6.310E-05	2263.2	3.507E-04	1.897E+04	3.053E-15	2.501E-01	1.188E+07
11	7.943E-05	2267.6	4.093E-04	2.155E+04	3.557E-15	2.650E-01	1.168E+07
12	1.000E-04	2272.4	4.791E-04	2.467E+04	4.154E-15	2.807E-01	1.145E+07
13	1.259E-04	2277.3	5.614E-04	2.823E+04	4.857E-15	2.974E-01	1.125E+07
14	1.585E-04	2282.5	6.588E-04	3.237E+04	5.687E-15	3.151E-01	1.105E+07
15	1.995E-04	2288.0	7.738E-04	3.721E+04	6.664E-15	3.335E-01	1.088E+07
16	2.512E-04	2293.8	9.103E-04	4.287E+04	7.815E-15	3.529E-01	1.067E+07
17	3.162E-04	2299.8	1.072E-03	4.946E+04	9.180E-15	3.733E-01	1.046E+07
18	3.981E-04	2306.2	1.263E-03	5.721E+04	1.079E-14	3.945E-01	1.026E+07
19	5.012E-04	2312.8	1.489E-03	6.628E+04	1.268E-14	4.166E-01	1.003E+07
20	6.310E-04	2319.8	1.757E-03	7.695E+04	1.492E-14	4.397E-01	9.812E+06
21	7.943E-04	2327.1	2.075E-03	8.951E+04	1.757E-14	4.636E-01	9.590E+06
22	1.000E-03	2334.7	2.451E-03	1.043E+05	2.069E-14	4.883E-01	9.364E+06
23	1.259E-03	2342.7	2.900E-03	1.219E+05	2.439E-14	5.137E-01	9.135E+06
24	1.585E-03	2351.2	3.424E-03	1.426E+05	2.878E-14	5.398E-01	8.902E+06
25	1.995E-03	2360.0	4.045E-03	1.676E+05	3.397E-14	5.666E-01	8.665E+06
26	2.512E-03	2369.4	4.827E-03	1.974E+05	4.015E-14	5.937E-01	8.424E+06
27	3.162E-03	2379.3	5.734E-03	2.331E+05	4.745E-14	6.211E-01	8.180E+06
28	3.981E-03	2389.8	6.821E-03	2.762E+05	5.624E-14	6.486E-01	7.931E+06
29	5.012E-03	2400.9	8.127E-03	3.288E+05	6.670E-14	6.758E-01	7.677E+06
30	6.310E-03	2412.8	9.702E-03	3.925E+05	7.924E-14	7.028E-01	7.419E+06
31	7.943E-03	2425.4	1.161E-02	4.710E+05	9.430E-14	7.291E-01	7.156E+06
32	1.000E-02	2438.9	1.392E-02	5.681E+05	1.135E-13	7.542E-01	6.887E+06
33	1.259E-02	2453.3	1.674E-02	6.891E+05	1.344E-13	7.782E-01	6.613E+06
34	1.585E-02	2468.8	2.015E-02	8.410E+05	1.612E-13	8.007E-01	6.333E+06
35	1.995E-02	2485.4	2.441E-02	1.033E+06	1.933E-13	8.213E-01	6.048E+06
36	2.512E-02	2503.2	2.958E-02	1.278E+06	2.336E-13	8.401E-01	5.758E+06
37	3.162E-02	2522.3	3.618E-02	1.591E+06	2.827E-13	8.568E-01	5.465E+06
38	3.981E-02	2542.6	4.428E-02	1.996E+06	3.432E-13	8.715E-01	5.169E+06
39	5.012E-02	2564.3	5.425E-02	2.522E+06	4.175E-13	8.842E-01	4.869E+06
40	6.310E-02	2587.1	6.708E-02	3.203E+06	5.108E-13	8.951E-01	4.566E+06
41	7.943E-02	2612.0	8.295E-02	4.107E+06	6.253E-13	9.042E-01	4.260E+06
42	1.000E-01	2638.9	1.027E-01	5.191E+06	7.705E-13	9.445E-01	3.949E+06
43	1.259E-01	2643.6	1.269E-01	6.224E+06	9.425E-13	9.561E-01	3.578E+06
44	1.585E-01	2688.3	1.567E-01	8.594E+06	1.148E-12	9.267E-01	3.255E+06
45	1.995E-01	2739.8	1.985E-01	1.228E+07	1.427E-12	8.554E-01	2.855E+06
46	2.512E-01	2781.3	2.540E-01	1.680E+07	1.804E-12	8.223E-01	2.513E+06
47	3.162E-01	2825.7	3.276E-01	2.334E+07	2.284E-12	8.039E-01	2.152E+06
48	3.981E-01	2870.9	4.242E-01	3.229E+07	2.910E-12	7.786E-01	1.771E+06
49	5.012E-01	2918.5	5.502E-01	4.472E+07	3.713E-12	7.492E-01	1.372E+06
50	6.310E-01	2969.4	7.171E-01	6.226E+07	4.759E-12	7.141E-01	8.912E+05
51	7.943E-01	3024.5	9.402E-01	8.727E+07	6.121E-12	6.716E-01	4.555E+05
52	1.000E+00	3085.2	1.244E+00	1.237E+08	7.942E-12	6.201E-01	0.0
53	1.259E+00	3152.2	1.667E+00	1.774E+08	1.041E-11	5.587E-01	-4.821E+05
54	1.585E+00	3227.2	2.270E+00	2.588E+08	1.384E-11	4.886E-01	-1.000E+06
55	1.995E+00	3309.6	3.159E+00	3.838E+08	1.878E-11	4.145E-01	-1.564E+06
56	2.512E+00	3400.9	4.510E+00	5.813E+08	2.610E-11	3.399E-01	-2.184E+06
57	3.162E+00	3504.5	6.646E+00	9.054E+08	3.732E-11	2.666E-01	-2.875E+06
58	3.981E+00	3614.8	1.011E+01	1.444E+09	5.500E-11	2.082E-01	-3.642E+06
59	5.012E+00	3738.6	1.576E+01	2.366E+09	8.307E-11	1.577E-01	-4.481E+06
60	6.310E+00	3881.9	2.547E+01	4.195E+09	1.291E-10	1.148E-01	-5.411E+06
61	7.943E+00	4044.3	4.245E+01	8.083E+09	2.064E-10	8.189E-02	-6.442E+06
62	1.000E+01	4228.1	7.255E+01	1.732E+10	3.375E-10	5.806E-02	-7.571E+06
63	1.259E+01	4446.1	1.276E+02	4.231E+10	5.612E-10	3.958E-02	-8.801E+06
64	1.585E+01	4725.1	2.283E+02	1.249E+11	9.473E-10	2.661E-02	-1.017E+07
65	1.995E+01	5238.7	4.060E+02	6.055E+11	1.491E-09	2.216E-02	-1.166E+07

Table 2 (Continued)

TEFF 3500 GRAV 5.000 WAVE 10000 K27

H 1.0000E+00 HE 3.0000E+00 C 3.5500E-02 N 8.1500E-04 O 7.1000E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2313.4	4.474E-04	1.172E+14	7.775E-15	1.669E-02	6.691E+06
2	1.000E-05	2325.6	8.949E-04	2.072E+14	1.545E-14	2.219E-02	6.616E+06
3	1.259E-05	2327.8	1.005E-03	2.274E+14	1.734E-14	2.330E-02	6.090E+06
4	1.585E-05	2330.3	1.137E-03	2.511E+14	1.959E-14	2.454E-02	6.016E+06
5	1.995E-05	2332.6	1.294E-03	2.782E+14	2.220E-14	2.594E-02	5.939E+06
6	2.512E-05	2335.1	1.485E-03	3.102E+14	2.554E-14	2.751E-02	5.858E+06
7	3.162E-05	2337.7	1.712E-03	3.471E+14	2.946E-14	2.922E-02	5.774E+06
8	3.981E-05	2340.3	1.984E-03	3.896E+14	3.403E-14	3.112E-02	5.688E+06
9	5.012E-05	2342.7	2.299E-03	4.367E+14	3.940E-14	3.320E-02	5.601E+06
10	6.310E-05	2345.5	2.673E-03	4.913E+14	4.576E-14	3.540E-02	5.512E+06
11	7.943E-05	2348.1	3.114E-03	5.534E+14	5.324E-14	3.781E-02	5.422E+06
12	1.000E-04	2350.7	3.634E-03	6.232E+14	6.207E-14	4.043E-02	5.331E+06
13	1.259E-04	2353.7	4.245E-03	7.035E+14	7.241E-14	4.319E-02	5.239E+06
14	1.585E-04	2356.7	4.966E-03	7.952E+14	8.459E-14	4.615E-02	5.145E+06
15	1.995E-04	2359.9	5.812E-03	8.994E+14	9.887E-14	4.932E-02	5.052E+06
16	2.512E-04	2363.5	6.810E-03	1.020E+15	1.157E-13	5.265E-02	4.957E+06
17	3.162E-04	2367.3	7.986E-03	1.159E+15	1.354E-13	5.618E-02	4.862E+06
18	3.981E-04	2371.4	9.373E-03	1.319E+15	1.587E-13	5.992E-02	4.766E+06
19	5.012E-04	2376.0	1.101E-02	1.506E+15	1.861E-13	6.379E-02	4.669E+06
20	6.310E-04	2381.0	1.294E-02	1.724E+15	2.183E-13	6.785E-02	4.571E+06
21	7.943E-04	2386.5	1.523E-02	1.979E+15	2.562E-13	7.209E-02	4.473E+06
22	1.000E-03	2392.5	1.794E-02	2.279E+15	3.011E-13	7.645E-02	4.373E+06
23	1.259E-03	2399.1	2.116E-02	2.634E+15	3.541E-13	8.095E-02	4.273E+06
24	1.585E-03	2406.4	2.499E-02	3.055E+15	4.169E-13	8.553E-02	4.171E+06
25	1.995E-03	2414.2	2.954E-02	3.557E+15	4.913E-13	9.022E-02	4.068E+06
26	2.512E-03	2422.9	3.498E-02	4.160E+15	5.797E-13	9.491E-02	3.964E+06
27	3.162E-03	2432.3	4.154E-02	4.886E+15	6.859E-13	9.962E-02	3.858E+06
28	3.981E-03	2442.5	4.931E-02	5.766E+15	8.166E-13	1.043E-01	3.751E+06
29	5.012E-03	2453.6	5.872E-02	6.841E+15	9.809E-13	1.088E-01	3.641E+06
30	6.310E-03	2465.8	7.009E-02	8.163E+15	1.141E-12	1.132E-01	3.530E+06
31	7.943E-03	2479.0	8.386E-02	9.798E+15	1.358E-12	1.173E-01	3.416E+06
32	1.000E-02	2493.4	1.006E-01	1.184E+16	1.626E-12	1.211E-01	3.301E+06
33	1.259E-02	2509.1	1.211E-01	1.441E+16	1.938E-12	1.245E-01	3.182E+06
34	1.585E-02	2526.3	1.462E-01	1.768E+16	2.324E-12	1.275E-01	3.060E+06
35	1.995E-02	2545.0	1.772E-01	2.187E+16	2.796E-12	1.299E-01	2.936E+06
36	2.512E-02	2565.4	2.156E-01	2.729E+16	3.374E-12	1.318E-01	2.807E+06
37	3.162E-02	2587.7	2.634E-01	3.437E+16	4.087E-12	1.331E-01	2.676E+06
38	3.981E-02	2612.1	3.232E-01	4.374E+16	4.968E-12	1.337E-01	2.540E+06
39	5.012E-02	2638.7	3.984E-01	5.577E+16	6.066E-12	1.347E-01	2.400E+06
40	6.310E-02	2664.2	4.920E-01	7.189E+16	7.415E-12	1.346E-01	2.257E+06
41	7.943E-02	2696.1	6.118E-01	9.452E+16	9.111E-12	1.327E-01	2.109E+06
42	1.000E-01	2735.4	7.657E-01	1.277E+17	1.124E-11	1.279E-01	1.953E+06
43	1.259E-01	2773.8	9.674E-01	1.723E+17	1.400E-11	1.248E-01	1.790E+06
44	1.585E-01	2813.9	1.226E+00	2.329E+17	1.749E-11	1.215E-01	1.621E+06
45	1.995E-01	2856.2	1.565E+00	3.171E+17	2.200E-11	1.180E-01	1.447E+06
46	2.512E-01	2901.3	2.003E+00	4.333E+17	2.771E-11	1.138E-01	1.267E+06
47	3.162E-01	2949.2	2.581E+00	5.957E+17	3.513E-11	1.091E-01	1.080E+06
48	3.981E-01	3000.8	3.339E+00	8.236E+17	4.467E-11	1.034E-01	8.863E+05
49	5.012E-01	3056.5	4.361E+00	1.149E+18	5.728E-11	9.684E-02	6.832E+05
50	6.310E-01	3116.8	5.739E+00	1.614E+18	7.392E-11	8.931E-02	4.694E+05
51	7.943E-01	3182.0	7.649E+00	2.291E+18	9.649E-11	8.097E-02	2.427E+05
52	1.000E+00	3253.2	1.032E+01	3.287E+18	1.274E-10	7.172E-02	0.0
53	1.259E+00	3330.9	1.419E+01	4.738E+18	1.710E-10	6.201E-02	-2.623E+05
54	1.585E+00	3416.4	1.989E+01	7.087E+18	2.337E-10	5.199E-02	-5.486E+05
55	1.995E+00	3511.1	2.863E+01	1.073E+19	3.273E-10	4.232E-02	-8.642E+05
56	2.512E+00	3616.0	4.239E+01	1.666E+19	4.765E-10	3.353E-02	-1.213E+06
57	3.162E+00	3732.8	6.457E+01	2.674E+19	6.943E-10	2.591E-02	-1.598E+06
58	3.981E+00	3864.5	1.012E+02	4.546E+19	1.052E-09	1.952E-02	-2.024E+06
59	5.012E+00	4014.3	1.634E+02	8.108E+19	1.634E-09	1.436E-02	-2.492E+06
60	6.310E+00	4188.3	2.716E+02	1.647E+20	2.603E-09	1.025E-02	-3.010E+06
61	7.943E+00	4400.1	4.078E+02	3.850E+20	4.266E-09	6.973E-03	-3.588E+06
62	1.000E+01	4677.7	8.424E+02	1.116E+21	7.225E-09	4.489E-03	-4.249E+06
63	1.259E+01	5126.4	1.550E+03	4.852E+21	1.212E-08	3.097E-03	-5.002E+06
64	1.585E+01	5717.8	2.444E+03	2.284E+22	1.711E-08	5.486E-03	-5.612E+06
65	1.995E+01	6313.4	2.923E+03	7.491E+22	1.847E-08	1.290E-02	-5.865E+06

Table 2 (Continued)

TEFF 3500 LOG G 4.000 WAVE 10000 K28

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.8600E-04 O 7.1300E-06

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	2787.3	5.209E+00	1.388E+08	2.914E-11	1.590E-02	1.569E+03
2	1.000E-05	2[illegible].8	1.042E+01	2.155E+08	5.882E-11	1.920E-02	1.417E+03
3	1.259E-05	2700.1	1.172E+01	2.429E+08	6.633E-11	1.984E-02	1.395E+03
4	1.585E-05	2754.9	1.331E+01	2.534E+08	7.540E-11	2.057E-02	1.372E+03
5	1.995E-05	2749.2	1.523E+01	2.776E+08	8.659E-11	.139E-02	1.348E+03
6	2.512E-05	2742.7	1.759E+01	3.063E+08	1.003E-10	2.233E-02	1.323E+03
7	3.162E-05	2735.4	2.043E+01	3.397E+08	1.169E-10	2.349E-02	1.297E+03
8	3.981E-05	2727.9	2.387E+01	3.790E+08	1.370E-10	2.460E-02	1.270E+03
9	5.012E-05	2721.0	2.793E+01	4.246E+08	1.610E-10	2.592E-02	1.242E+03
10	6.310E-05	2713.0	3.280E+01	4.764E+08	1.898E-10	2.746E-02	1.215E+03
11	7.943E-05	2705.7	3.855E+01	5.462E+08	2.241E-10	2.919E-02	1.187E+03
12	1.000E-04	2698.9	4.538E+01	6.051E+08	2.651E-10	3.116E-02	1.159E+03
13	1.259E-04	2692.0	5.339E+01	6.823E+08	3.135E-10	3.345E-02	1.131E+03
14	1.585E-04	2686.6	6.277E+01	7.709E+08	3.703E-10	3.605E-02	1.104E+03
15	1.995E-04	2681.5	7.370E+01	8.707E+08	4.372E-10	3.908E-02	1.076E+03
16	2.512E-04	2677.1	8.634E+01	9.824E+08	5.151E-10	4.263E-02	1.050E+03
17	3.162E-04	2673.8	1.009E+02	1.108E+09	6.053E-10	4.668E-02	1.024E+03
18	3.981E-04	2671.2	1.176E+02	1.249E+09	7.098E-10	5.136E-02	9.983E+02
19	5.012E-04	2669.4	1.367E+02	1.407E+09	8.298E-10	5.666E-02	9.735E+02
20	6.310E-04	2668.4	1.585E+02	1.583E+09	9.679E-10	6.260E-02	9.493E+02
21	7.943E-04	2667.9	1.832E+02	1.780E+09	1.126E-09	6.931E-02	9.256E+02
22	1.000E-03	2668.1	2.114E+02	2.000E+09	1.308E-09	7.662E-02	9.024E+02
23	1.259E-03	2669.0	2.435E+02	2.247E+09	1.516E-09	8.452E-02	8.796E+02
24	1.585E-03	2670.3	2.802E+02	2.525E+09	1.757E-09	9.309E-02	8.572E+02
25	1.995E-03	2672.2	3.222E+02	2.838E+09	2.034E-09	1.022E-01	8.350E+02
26	2.512E-03	2674.5	3.705E+02	3.194E+09	2.355E-09	1.117E-01	8.130E+02
27	3.162E-03	2677.4	4.261E+02	3.599E+09	2.728E-09	1.216E-01	7.910E+02
28	3.981E-03	2681.0	4.900E+02	4.065E+09	3.164E-09	1.316E-01	7.691E+02
29	5.012E-03	2685.8	5.661E+02	4.602E+09	3.675E-09	1.418E-01	7.470E+02
30	6.310E-03	2689.8	6.544E+02	5.225E+09	4.279E-09	1.518E-01	7.248E+02
31	7.943E-03	2695.5	7.585E+02	5.957E+09	4.993E-09	1.615E-01	7.023E+02
32	1.000E-02	2702.1	8.823E+02	6.821E+09	5.846E-09	1.706E-01	6.794E+02
33	1.259E-02	2709.7	1.030E+03	7.847E+09	6.868E-09	1.791E-01	6.561E+02
34	1.585E-02	2718.7	1.206E+03	9.084E+09	8.098E-09	1.866E-01	6.323E+02
35	1.995E-02	2729.1	1.424E+03	1.058E+10	9.590E-09	1.932E-01	6.078E+02
36	2.512E-02	2741.3	1.687E+03	1.242E+10	1.140E-08	1.986E-01	5.827E+02
37	3.162E-02	2755.5	2.011E+03	1.469E+10	1.362E-08	2.029E-01	5.567E+02
38	3.981E-02	2772.1	2.411E+03	1.752E+10	1.633E-08	2.059E-01	5.300E+02
39	5.012E-02	2791.4	2.909E+03	2.109E+10	1.967E-08	2.077E-01	5.022E+02
40	6.310E-02	2813.7	3.534E+03	2.564E+10	2.379E-08	2.082E-01	4.735E+02
41	7.943E-02	2839.7	4.310E+03	3.152E+10	2.888E-08	2.075E-01	4.436E+02
42	1.000E-01	2869.7	5.314E+03	3.913E+10	3.519E-08	2.053E-01	4.124E+02
43	1.259E-01	2904.1	6.585E+03	4.918E+10	4.303E-08	2.018E-01	3.798E+02
44	1.585E-01	2943.6	8.220E+03	6.258E+10	5.280E-08	1.969E-01	3.456E+02
45	1.995E-01	2988.5	1.034E+04	8.065E+10	6.505E-08	1.906E-01	3.095E+02
46	2.512E-01	3039.3	1.310E+04	1.053E+11	8.046E-08	1.834E-01	2.714E+02
47	3.162E-01	3096.4	1.673E+04	1.392E+11	9.992E-08	1.757E-01	2.311E+02
48	3.981E-01	3160.2	2.149E+04	1.864E+11	1.244E-07	1.684E-01	1.885E+02
49	5.012E-01	3231.4	2.774E+04	2.523E+11	1.551E-07	1.624E-01	1.437E+02
50	6.310E-01	3310.9	3.584E+04	3.452E+11	1.929E-07	1.585E-01	9.705E+01
51	7.943E-01	3400.2	4.619E+04	4.776E+11	2.383E-07	1.578E-01	4.894E+01
52	1.000E+00	3501.8	5.913E+04	6.700E+11	2.910E-07	1.610E-01	0.0
53	1.259E+00	3617.7	7.484E+04	9.581E+11	3.499E-07	1.694E-01	-4.907E+01
54	1.585E+00	3750.8	9.329E+04	1.405E+12	4.128E-07	1.848E-01	-9.749E+01
55	1.995E+00	3903.6	1.142E+05	2.123E+12	4.770E-07	2.099E-01	-1.444E+02
56	2.512E+00	4076.6	1.368E+05	3.282E+12	5.395E-07	2.477E-01	-1.890E+02
57	3.162E+00	4273.0	1.606E+05	5.132E+12	5.975E-07	3.001E-01	-2.309E+02
58	3.981E+00	4489.8	1.852E+05	7.895E+12	6.508E-07	3.639E-01	-2.704E+02
59	5.012E+00	4727.2	2.112E+05	1.173E+13	7.010E-07	4.321E-01	-3.087E+02
60	6.310E+00	4989.6	2.390E+05	1.674E+13	7.492E-07	4.987E-01	-3.470E+02
61	7.943E+00	5265.8	2.690E+05	2.298E+13	7.995E-07	5.655E-01	-3.866E+02
62	1.000E+01	5570.8	3.036E+05	3.229E+13	8.494E-07	6.620E-01	-4.275E+02
63	1.259E+01	5874.2	3.384E+05	4.479E+13	8.970E-07	8.528E-01	-4.672E+02
64	1.585E+01	6148.3	3.710E+05	7.652E+13	9.392E-07	1.175E+00	-5.027E+02
65	1.995E+01	6391.9	4.008E+05	1.176E+14	9.744E-07	1.627E+00	-5.334E+02

Table 2 (Continued)

TEFF 3000. LOG G 0.000 WAVE 10000. LI

H 1.0000E+00 HE 1.0000E-01 C 7.1000E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	1878.6	2.757E-04	4.726E+03	2.296E-15	3.169E-02	1.777E+07
2	1.000E-05	1906.6	5.515E-04	9.160E+03	4.526E-15	3.587E-02	1.677E+07
3	1.259E-05	1911.5	6.215E-04	1.027E+04	5.087E-15	3.665E-02	1.662E+07
4	1.585E-05	1916.9	7.076E-04	1.162E+04	5.776E-15	3.749E-02	1.646E+07
5	1.995E-05	1922.7	8.133E-04	1.327E+04	6.613E-15	3.843E-02	1.629E+07
6	2.512E-05	1929.1	9.456E-04	1.533E+04	7.671E-15	3.942E-02	1.610E+07
7	3.162E-05	1935.8	1.107E-03	1.781E+04	8.946E-15	4.049E-02	1.590E+07
8	3.981E-05	1942.7	1.303E-03	2.082E+04	1.050E-14	4.173E-02	1.570E+07
9	5.012E-05	1950.1	1.543E-03	2.446E+04	1.238E-14	4.287E-02	1.549E+07
10	6.310E-05	1957.8	1.839E-03	2.892E+04	1.470E-14	4.414E-02	1.526E+07
11	7.943E-05	1965.7	2.197E-03	3.429E+04	1.750E-14	4.546E-02	1.504E+07
12	1.000E-04	1973.8	2.638E-03	4.082E+04	2.093E-14	4.690E-02	1.481E+07
13	1.259E-04	1982.4	3.173E-03	4.873E+04	2.506E-14	4.814E-02	1.457E+07
14	1.585E-04	1991.0	3.835E-03	5.839E+04	3.016E-14	4.957E-02	1.433E+07
15	1.995E-04	1999.9	4.632E-03	6.997E+04	3.627E-14	5.106E-02	1.408E+07
16	2.512E-04	2009.1	5.622E-03	8.424E+04	4.382E-14	5.253E-02	1.383E+07
17	3.162E-04	2018.6	6.818E-03	1.014E+05	5.290E-14	5.383E-02	1.358E+07
18	3.981E-04	2028.2	8.307E-03	1.225E+05	6.416E-14	5.538E-02	1.332E+07
19	5.012E-04	2038.2	1.010E-02	1.48CE+05	7.765E-14	5.663E-02	1.306E+07
20	6.310E-04	2048.4	1.235E-02	1.795E+05	9.448E-14	5.809E-02	1.280E+07
21	7.943E-04	2059.1	1.506E-02	2.176E+05	1.146E-13	5.913E-02	1.253E+07
22	1.000E-03	2070.0	1.846E-02	2.648E+05	1.398E-13	6.036E-02	1.226E+07
23	1.259E-03	2081.4	2.262E-02	3.226E+05	1.70[E-13	6.130E-02	1.198E+07
24	1.585E-03	2093.1	2.796E-02	3.947E+05	2.086E-13	6.236E-02	1.170E+07
25	1.995E-03	2105.5	3.425E-02	4.831E+05	2.550E-13	6.287E-02	1.142E+07
26	2.512E-03	2118.3	4.236E-02	5.945E+05	3.136E-13	6.352E-02	1.113E+07
27	3.162E-03	2132.0	5.241E-02	7.333E+05	3.855E-13	6.358E-02	1.084E+07
28	3.981E-03	2146.5	6.515E-02	9.094E+05	4.761E-13	6.341E-02	1.054E+07
29	5.012E-03	2162.5	8.115E-02	1.133E+06	5.887E-13	6.234E-02	1.023E+07
30	6.310E-03	2180.0	1.021E-01	1.427E+06	7.345E-13	6.088E-02	9.912E+06
31	7.943E-03	2200.1	1.289E-01	1.814E+06	9.192E-13	5.812E-02	9.579E+06
32	1.000E-02	2223.0	1.653E-01	2.346E+06	1.166E-12	5.472E-02	9.228E+06
33	1.259E-02	2249.1	2.139E-01	3.076E+06	1.492E-12	5.055E-02	8.855E+06
34	1.585E-02	2277.5	2.809E-01	4.094E+06	1.934E-12	4.657E-02	8.460E+06
35	1.995E-02	2306.9	3.714E-01	5.483E+06	2.525E-12	4.319E-02	8.047E+06
36	2.512E-02	2335.6	4.943E-01	7.364E+06	3.319E-12	4.09[E-02	7.622E+06
37	3.162E-02	2362.8	6.544E-01	9.809E+06	4.344E-12	3.952E-02	7.197E+06
38	3.981E-02	2388.5	8.634E-01	1.298E+07	5.670E-12	3.880E-02	6.776E+06
39	5.012E-02	2413.5	1.128E+00	1.700E+07	7.330E-12	3.826E-02	6.363E+06
40	6.310E-02	2438.9	1.469E+00	2.222E+07	9.449E-12	3.773E-02	5.954E+06
41	7.943E-02	2465.9	1.902E+00	2.897E+07	1.210E-11	3.679E-02	5.546E+06
42	1.000E-01	2495.6	2.471E+00	3.803E+07	1.553E-11	3.546E-02	5.132E+06
43	1.259E-01	2528.4	3.213E+00	5.023E+07	1.993E-11	3.371E-02	4.708E+06
44	1.585E-01	2564.6	4.209E+00	6.717E+07	2.574E-11	3.176E-02	4.269E+06
45	1.995E-01	2604.8	5.537E+00	8.086E+07	3.333E-11	2.958E-02	3.814E+06
46	2.512E-01	2649.5	7.355E+00	1.252E+08	4.353E-11	2.736E-02	3.338E+06
47	3.162E-01	2699.3	9.824E+00	1.756E+08	5.705E-11	2.507E-02	2.841E+06
48	3.981E-01	2754.9	1.325E+01	2.525E+08	7.537E-11	2.287E-02	2.321E+06
49	5.012E-01	2816.[	1.796E+01	3.724E+08	9.989E-11	2.076E-02	1.777E+06
50	6.310E-01	2885.7	2.454E+01	5.658E+08	1.332E-10	1.883E-02	1.209E+06
51	7.943E-01	2962.3	3.364E+01	8.853E+08	1.778E-10	1.700E-02	6.176E+05
52	1.000E+00	3047.3	4.642E+01	1.4 [E+09	2.384E-10	1.530E-02	0.E+00
53	1.259E+00	3142.1	6.429E+01	2.360E+09	3.201E-10	1.365E-02	-6.464E+05
54	1.585E+00	3248.7	8.977E+01	4.001E+09	4.322E-10	1.202E-02	-1.329E+06
55	1.995E+00	3369.8	1.264E+02	6.911E+09	5.865E-10	1.043E-02	-2.055E+06
56	2.512E+00	3508.8	1.799E+02	1.208E+10	8.016E-10	9.016E-03	-2.831E+06
57	3.162E+00	3668.1	2.572E+02	2.101E+10	1.096E-09	[illegible]939E-03	-3.650E+06
58	3.981E+00	3851.2	3.659E+02	3.570E+10	1.484E-[illegible]	[illegible]-03	-4.497E+06
59	5.012E+00	4066.0	5.129E+02	5.813E+10	1.969[illegible]	[illegible]-03	-5.357E+06
60	6.310E+00	4313.3	7.107E+02	8.912E+10	2.571[illegible]	[illegible]-03	-6.235E+06
61	7.943E+00	4591.8	9.717E+02	1.340E+11	3.301[illegible]	[illegible]E-03	-7.130E+06
62	1.000E+01	4892.3	1.276E+03	2.304E+11	4.068E-[illegible]	[illegible]57E-03	-7.957E+06
63	1.259E+01	5190.7	1.551E+03	4.639E+11	4.658E-09	1.214E-02	-8.587E+06
64	1.585E+01	5493.4	1.752E+03	9.876E+11	4.971E-09	2.146E-02	-9.007E+06
65	1.995E+01	5799.1	1.894E+03	2.061E+12	5.088E-09	3.849E-02	-9.281E+06

Table 2 (Continued)

TEFF 3000. LOG G 2.000 WAVE 10000. L2

H 1.0000E+00 HE 1.0000E-01 C 7.1000E-04 N 8.5100E-05 O 5.8900E-04

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.E+00	2050.9	1.359E-02	1.955E+05	1.038E-13	6.085E-02	1.729E+05
2	1.000E-05	2079.7	2.717E-02	3.731E+05	2.049E-13	7.359E-02	1.617E+05
3	1.259E-05	2084.6	3.458E-02	4.764E+05	2.611E-13	7.612E-02	1.601E+05
4	1.585E-05	2089.7	3.471E-02	4.681E+05	2.606E-13	7.909E-02	1.584E+05
5	1.995E-05	2095.0	3.969E-02	5.297E+05	2.973E-13	8.253E-02	1.565E+05
6	2.512E-05	2100.8	4.579E-02	6.046E+05	3.421E-13	8.622E-02	1.546E+05
7	3.162E-05	2106.6	5.313E-02	6.932E+05	3.960E-13	9.057E-02	1.526E+05
8	3.981E-05	2112.5	6.198E-02	7.982E+05	4.605E-13	9.549E-02	1.506E+05
9	5.012E-05	2118.2	7.244E-02	9.199E+05	5.374E-13	1.011E-01	1.485E+05
10	6.310E-05	2123.9	8.487E-02	1.062E+06	6.282E-13	1.074E-01	1.463E+05
11	7.943E-05	2129.3	9.957E-02	1.226E+06	7.355E-13	1.147E-01	1.442E+05
12	1.000E-04	2134.3	1.169E-01	1.414E+06	8.618E-13	1.232E-01	1.420E+05
13	1.259E-04	2138.7	1.371E-01	1.627E+06	1.009E-12	1.333E-01	1.398E+05
14	1.585E-04	2142.2	1.604E-01	1.864E+06	1.181E-12	1.457E-01	1.377E+05
15	1.995E-04	2145.1	1.872E-01	2.126E+06	1.377E-12	1.600E-01	1.356E+05
16	2.512E-04	2145.0	2.178E-01	2.397E+06	1.604E-12	1.820E-01	1.336E+05
17	3.162E-04	2144.7	2.513E-01	2.681E+06	1.854E-12	2.055E-01	1.316E+05
18	3.981E-04	2132.3	2.870E-01	2.867E+06	2.137E-12	2.646E-01	1.298E+05
19	5.012E-04	2105.9	3.199E-01	2.875E+06	2.432E-12	3.685E-01	1.284E+05
20	6.310E-04	2086.2	3.516E-01	2.913E+06	2.721E-12	4.287E-01	1.271E+05
21	7.943E-04	2073.5	3.888E-01	3.039E+06	3.053E-12	4.446E-01	1.259E+05
22	1.000E-03	2068.3	4.349E-01	3.279E+06	3.447E-12	4.393E-01	1.244E+05
23	1.259E-03	2076.1	4.942E-01	3.722E+06	3.908E-12	4.399E-01	1.228E+05
24	1.585E-03	2086.0	5.617E-01	4.283E+06	4.465E-12	4.417E-01	1.211E+05
25	1.995E-03	2102.8	6.597E-01	5.080E+06	5.140E-12	4.462E-01	1.191E+05
26	2.512E-03	2122.2	7.743E-01	6.115E+06	5.960E-12	4.450E-01	1.170E+05
27	3.162E-03	2145.0	9.221E-01	7.516E+06	6.996E-12	4.338E-01	1.148E+05
28	3.981E-03	2168.6	1.114E+00	9.365E+06	8.338E-12	4.141E-01	1.122E+05
29	5.012E-03	2193.2	1.371E+00	1.165E+07	1.012E-11	3.892E-01	1.094E+05
30	6.310E-03	2217.1	1.715E+00	1.516E+07	1.250E-11	3.666E-01	1.064E+05
31	7.943E-03	2239.5	2.171E+00	1.946E+07	1.566E-11	3.503E-01	1.031E+05
32	1.000E-02	2261.6	2.768E+00	2.506E+07	1.978E-11	3.370E-01	9.974E+04
33	1.259E-02	2285.1	3.552E+00	3.254E+07	2.512E-11	3.223E-01	9.622E+04
34	1.585E-02	2309.8	4.590E+00	4.254E+07	3.211E-11	3.071E-01	9.258E+04
35	1.995E-02	2337.2	5.963E+00	5.616E+07	4.121E-11	2.878E-01	8.880E+04
36	2.512E-02	2366.6	7.832E+00	7.503E+07	5.342E-11	2.679E-01	8.484E+04
37	3.162E-02	2398.0	1.035E+01	1.010E+08	6.961E-11	2.473E-01	8.071E+04
38	3.981E-02	2431.5	1.382E+01	1.374E+08	9.159E-11	2.273E-01	7.640E+04
39	5.012E-02	2467.0	1.854E+01	1.882E+08	1.211E-10	2.078E-01	7.190E+04
40	6.310E-02	2504.5	2.511E+01	2.599E+08	1.613E-10	1.899E-01	6.724E+04
41	7.943E-02	2543.9	3.410E+01	3.604E+08	2.155E-10	1.732E-01	6.242E+04
42	1.000E-01	2585.2	4.659E+01	5.027E+08	2.895E-10	1.582E-01	5.745E+04
43	1.259E-01	2628.2	6.366E+01	7.020E+08	3.888E-10	1.447E-01	5.236E+04
44	1.585E-01	2673.0	8.730E+01	9.839E+08	5.238E-10	1.328E-01	4.716E+04
45	1.995E-01	2720.1	1.195E+02	1.380E+09	7.039E-10	1.215E-01	4.186E+04
46	2.512E-01	2770.2	1.642E+02	1.948E+09	9.487E-10	1.110E-01	3.643E+04
47	3.162E-01	2823.9	2.255E+02	2.761E+09	1.277E-09	1.008E-01	3.086E+04
48	3.981E-01	2882.1	3.115E+02	3.958E+09	1.725E-09	9.107E-02	2.511E+04
49	5.012E-01	2945.3	4.306E+02	5.727E+09	2.330E-09	8.183E-02	1.917E+04
50	6.310E-01	3014.6	5.990E+02	8.428E+09	3.161E-09	7.331E-02	1.302E+04
51	7.943E-01	3090.6	8.345E+02	1.260E+10	4.287E-09	6.554E-02	6.630E+03
52	1.000E+00	3175.8	1.168E+03	1.733E+10	5.828E-09	5.848E-02	0.E+00
53	1.259E+00	3272.3	1.637E+03	3.134E+10	7.910E-09	5.225E-02	-6.883E+03
54	1.585E+00	3381.6	2.297E+03	4.783E+10	1.072E-08	4.727E-02	-1.400E+04
55	1.995E+00	3506.0	3.202E+03	8.371E+10	1.438E-08	4.373E-02	-2.126E+04
56	2.512E+00	3646.6	4.416E+03	1.433E+11	1.903E-08	4.221E-02	-2.853E+04
57	3.162E+00	3803.9	5.945E+03	2.447E+11	2.452E-08	4.312E-02	-3.558E+04
58	3.981E+00	3979.3	7.779E+03	4.084E+11	3.063E-08	4.635E-02	-4.226E+04
59	5.012E+00	4172.2	9.884E+03	6.524E+11	3.708E-08	5.122E-02	-4.851E+04
60	6.310E+00	4386.2	1.229E+04	9.953E+11	4.378E-08	5.687E-02	-5.445E+04
61	7.943E+00	4632.0	1.502E+04	1.445E+12	5.066E-08	6.210E-02	-6.025E+04
62	1.000E+01	4902.5	1.822E+04	2.026E+12	5.802E-08	6.706E-02	-6.611E+04
63	1.259E+01	5194.4	2.183E+04	2.968E+12	6.557E-08	7.781E-02	-7.195E+04
64	1.585E+01	5500.5	2.548E+04	5.029E+12	7.225E-08	1.079E-01	-7.719E+04
65	1.995E+01	5801.1	2.853E+04	9.241E+12	7.670E-08	1.683E-01	-8.128E+04

Table 2 (Continued)

TEFF 3000 LOG G 1.000 WAVE 10000 L3

H 1.0000E+00 HE 1.0000E-01 C 3.5500E-05 N 9.7500E-04 O 1.7800E-03

	TAU	T	P	XNE	RHO	KAPPA	MCKM
1	0.0	2019.0	9.100E-03	1.149E+05	7.037E-14	7.156E-03	1.300E+06
2	1.000E-05	2027.3	1.820E-02	2.117E+05	1.404E-13	1.099E-02	1.168E+06
3	1.259E-05	2028.9	2.037E-02	2.338E+05	1.571E-13	1.194E-02	1.153E+06
4	1.585E-05	2030.3	2.287E-02	2.588E+05	1.763E-13	1.309E-02	1.138E+06
5	1.995E-05	2032.0	2.572E-02	2.870E+05	1.982E-13	1.440E-02	1.122E+06
6	2.512E-05	2033.9	2.910E-02	3.200E+05	2.241E-13	1.598E-02	1.105E+06
7	3.162E-05	2035.8	3.294E-02	3.570E+05	2.537E-13	1.778E-02	1.089E+06
8	3.981E-05	2037.8	3.729E-02	3.983E+05	2.870E-13	1.986E-02	1.073E+06
9	5.012E-05	2040.0	4.221E-02	4.445E+05	3.248E-13	2.218E-02	1.057E+06
10	6.310E-05	2042.1	4.773E-02	4.955E+05	3.671E-13	2.487E-02	1.041E+06
11	7.943E-05	2044.2	5.390E-02	5.519E+05	4.145E-13	2.796E-02	1.025E+06
12	1.000E-04	2046.5	6.082E-02	6.144E+05	4.676E-13	3.152E-02	1.010E+06
13	1.259E-04	2049.0	6.865E-02	6.844E+05	5.276E-13	3.561E-02	9.939E+05
14	1.585E-04	2051.8	7.741E-02	7.616E+05	5.948E-13	3.938E-02	9.783E+05
15	1.995E-04	2053.6	8.721E-02	8.467E+05	6.700E-13	4.429E-02	9.628E+05
16	2.512E-04	2056.1	9.819E-02	9.415E+05	7.544E-13	4.955E-02	9.473E+05
17	3.162E-04	2058.7	1.106E-01	1.048E+06	8.498E-13	5.540E-02	9.318E+05
18	3.981E-04	2061.2	1.245E-01	1.165E+06	9.568E-13	6.201E-02	9.164E+05
19	5.012E-04	2063.7	1.402E-01	1.296E+06	1.078E-12	6.949E-02	9.010E+05
20	6.310E-04	2066.2	1.578E-01	1.441E+06	1.213E-12	7.754E-02	8.859E+05
21	7.943E-04	2069.0	1.778E-01	1.604E+06	1.367E-12	8.620E-02	8.701E+05
22	1.000E-03	2071.8	2.004E-01	1.787E+06	1.541E-12	9.583E-02	8.545E+05
23	1.259E-03	2074.4	2.260E-01	1.992E+06	1.739E-12	1.067E-01	8.389E+05
24	1.585E-03	2077.2	2.548E-01	2.220E+06	1.962E-12	1.183E-01	8.233E+05
25	1.995E-03	2080.1	2.878E-01	2.480E+06	2.218E-12	1.306E-01	8.075E+05
26	2.512E-03	2083.2	3.255E-01	2.774E+06	2.510E-12	1.437E-01	7.915E+05
27	3.162E-03	2086.2	3.686E-01	3.107E+06	2.846E-12	1.580E-01	7.754E+05
28	3.981E-03	2089.4	4.179E-01	3.485E+06	3.230E-12	1.726E-01	7.591E+05
29	5.012E-03	2092.8	4.752E-01	3.921E+06	3.678E-12	1.881E-01	7.426E+05
30	6.310E-03	2096.6	5.412E-01	4.421E+06	4.194E-12	2.032E-01	7.257E+05
31	7.943E-03	2100.5	6.188E-01	5.005E+06	4.802E-12	2.188E-01	7.085E+05
32	1.000E-02	2104.9	7.091E-01	5.683E+06	5.510E-12	2.334E-01	6.909E+05
33	1.259E-02	2109.7	8.171E-01	6.489E+06	6.357E-12	2.478E-01	6.727E+05
34	1.585E-02	2115.1	9.444E-01	7.437E+06	7.355E-12	2.602E-01	6.540E+05
35	1.995E-02	2121.2	1.099E+00	8.589E+06	8.570E-12	2.716E-01	6.346E+05
36	2.512E-02	2128.1	1.285E+00	9.970E+06	1.002E-11	2.802E-01	6.149E+05
37	3.162E-02	2136.0	1.515E+00	1.168E+07	1.182E-11	2.869E-01	5.935E+05
38	3.981E-02	2145.1	1.797E+00	1.378E+07	1.400E-11	2.901E-01	5.715E+05
39	5.012E-02	2155.6	2.153E+00	1.643E+07	1.675E-11	2.907E-01	5.483E+05
40	6.310E-02	2167.7	2.599E+00	1.977E+07	2.018E-11	2.873E-01	5.240E+05
41	7.943E-02	2181.7	3.176E+00	2.412E+07	2.454E-11	2.809E-01	4.982E+05
42	1.000E-01	2198.0	3.918E+00	2.979E+07	3.009E-11	2.702E-01	4.708E+05
43	1.259E-01	2216.7	4.905E+00	3.731E+07	3.738E-11	2.559E-01	4.415E+05
44	1.585E-01	2238.5	6.220E+00	4.753E+07	4.694E-11	2.372E-01	4.100E+05
45	1.995E-01	2263.6	8.040E+00	6.183E+07	5.995E-11	2.153E-01	3.759E+05
46	2.512E-01	2292.8	1.038E+01	8.220E+07	7.776E-11	1.894E-01	3.385E+05
47	3.162E-01	2326.6	1.431E+01	1.126E+08	1.033E-10	1.617E-01	2.972E+05
48	3.981E-01	2366.2	1.991E+01	1.592E+08	1.408E-10	1.329E-01	2.510E+05
49	5.012E-01	2412.5	2.868E+01	2.340E+08	1.980E-10	1.052E-01	1.989E+05
50	6.310E-01	2467.0	4.289E+01	3.588E+08	2.880E-10	8.047E-02	1.399E+05
51	7.943E-01	2531.6	6.660E+01	5.744E+08	4.331E-10	6.017E-02	7.350E+04
52	1.000E+00	2608.1	1.085E+02	9.541E+08	6.674E-10	4.512E-02	0.0
53	1.259E+00	2696.7	1.722E+02	1.616E+09	1.035E-09	3.538E-02	-7.817E+04
54	1.585E+00	2796.0	2.739E+02	2.726E+09	1.575E-09	2.973E-02	-1.570E+05
55	1.995E+00	2904.3	4.209E+02	4.530E+09	2.311E-09	2.644E-02	-2.336E+05
56	2.512E+00	3023.0	6.251E+02	7.527E+09	3.277E-09	2.435E-02	-3.074E+05
57	3.162E+00	3154.8	9.014E+02	1.286E+10	4.503E-09	2.279E-02	-3.790E+05
58	3.981E+00	3304.2	1.272E+03	2.312E+10	6.042E-09	2.160E-02	-4.494E+05
59	5.012E+00	3478.0	1.759E+03	4.375E+10	7.916E-09	2.078E-02	-5.195E+05
60	6.310E+00	3688.6	2.391E+03	8.538E+10	1.012E-08	2.047E-02	-5.896E+05
61	7.943E+00	3936.7	3.186E+03	1.599E+11	1.262E-08	2.050E-02	-6.598E+05
62	1.000E+01	4237.3	4.205E+03	2.826E+11	1.546E-08	1.976E-02	-7.325E+05
63	1.259E+01	4583.5	5.523E+03	4.590E+11	1.877E-08	1.964E-02	-8.050E+05
64	1.585E+01	4959.3	7.084E+03	7.556E+11	2.225E-08	2.285E-02	-8.861E+05
65	1.995E+01	5331.0	8.551E+03	1.583E+12	2.498E-08	3.716E-02	-9.484E+05

Table 2 (Continued)

IERR 3000 LOG G 1.000 WAVE 10000 L4

M 1.0300E+00 ME 1.8000E-01 C 3.5500E-05 N 9.7500E-04 O 1.7800E-05

	TAU	T	P	XNE	RHO	KAPPA	H(KM)
1	0.0	1392.9	5.460E-03	7.[illegible]E+04	4.276E-14	6.997E-03	2.551E+06
2	1.000E-05	2004.3	1.092E-02	1.381E+05	8.514E-14	1.014E-02	2.326E+06
3	1.259E-05	2006.2	1.224E-02	1.439E+05	9.535E-14	1.091E-02	2.299E+06
4	1.585E-05	2008.3	1.378E-02	1.688E+05	1.073E-13	1.179E-02	2.270E+06
5	1.995E-05	2010.3	1.555E-02	1.781E+05	1.210E-13	1.284E-02	2.241E+06
6	2.512E-05	2012.6	1.765E-02	1.893E+05	1.372E-13	1.407E-02	2.211E+06
7	3.162E-05	2015.[illegible]	2.004E-02	2.234E+05	1.557E-13	1.544E-02	2.181E+06
8	3.981E-05	2017.[illegible]	2.280E-02	2.5[illegible]E+05	1.770E-13	1.705E-02	2.151E+06
9	5.012E-05	2020.1	2.593E-02	2.809E+05	2.012E-13	1.889E-02	2.120E+06
10	6.310E-05	2022.7	2.949E-02	3.152E+05	2.286[illegible]13	2.096E-02	2.090E+06
11	7.943E-05	2025.4	3.352E-02	3.534E+05	2.596E-13	2.323E-02	2.060E+06
12	1.000E-04	2028.2	3.810E-02	3.964E+05	2.950E-13	2.586E-02	2.030E+06
13	1.259E-04	2030.9	4.325E-02	4.441E+05	3.346E-13	2.879E-02	1.999E+06
14	1.585E-04	2033.9	4.911E-02	4.979E+05	3.798E-13	3.203E-02	1.969E+06
15	1.995E-04	2036.9	5.572E-02	5.577E+05	4.305E-13	3.559E-02	1.939E+06
16	2.512E-04	2040.8	6.326E-02	6.254E+05	4.885E-13	3.957E-02	1.910E+06
17	3.162E-04	2043.0	7.170E-02	7.001E+05	5.534E-13	4.405E-02	1.880E+06
18	3.981E-04	2046.2	8.136E-02	7.[illegible]9E+05	6.276E-13	4.887E-02	1.850E+06
19	5.012E-04	2049.5	9.224E-02	8.794E+05	7.111E-13	5.414E-02	1.820E+06
20	6.310E-04	2052.9	1.049E-[illegible]	9.879E+05	8.038E-13	6.009E-02	1.790E+06
21	7.943E-04	2056.1	1.187E-[illegible]	1.[illegible]86E+06	9.146E-13	6.646E-02	1.760E+06
22	1.000E-03	2059.2	1.349E-[illegible]	[illegible].3E+06	1.039E-12	7.335E-02	1.730E+06
23	1.259E-03	2063.3	1.531E-[illegible]	[illegible].[illegible]34E+06	1.178E-12	8.088E-02	1.700E+06
24	1.585E-03	2067.1	1.743E-01	1.978E+06	1.341E-12	8.894E-02	1.669E+06
25	1.995E-03	2070.8	1.979E-01	1.765E+06	1.523E-12	9.751E-02	1.638E+06
26	2.512E-03	2074.8	2.259E-01	1.992E+06	[illegible].738E-12	1.870E-01	[illegible].607E+06
27	3.162E-03	2078.8	2.571E-01	2.245E+06	1.978E-12	1.166E-01	1.576E+06
28	3.981E-03	2083.2	2.940E-01	2.541E+06	2.261E-12	1.267E-01	1.544E+06
29	5.012E-03	2087.6	3.[illegible]42E-01	2.878E+06	[illegible].586E-12	1.374E-01	1.512E+06
30	6.310E-03	2092.5	3.[illegible]25E-01	3.274E+06	2.970E-12	1.482E-01	1.479E+06
31	7.943E-03	2097.5	4.439E-01	3.729E+06	3.413E-12	1.589E-01	1.446E+06
32	1.000E-02	2103.1	5.125E-01	4.268E+06	3.940E-12	1.695E-01	1.412E+06
33	1.259E-02	2109.0	5.928E-01	4.837E+06	4.556E-12	1.794E-01	1.377E+06
34	1.585E-02	2115.6	6.899E-01	5.655E+06	5.[illegible]99E-12	1.885E-01	1.341E+06
35	1.995E-02	2122.9	8.055E-01	6.557E+06	6.152E-12	1.963E-01	1.304E+06
36	2.512E-02	2131.1	9.472E-01	7.663E+06	7.260E-12	2.024E-01	1.265E+06
37	3.162E-02	2140.2	1.1[illegible]8E+00	8.996E+06	8.558E-12	2.062E-01	1.225E+06
38	3.981E-02	2150.7	1.3[illegible]5E+00	1.078E+07	1.019E-11	2.079E-01	1.183E+06
39	5.012E-02	2162.5	1.603E+00	1.281E+07	1.218E-11	2.065E-01	1.138E+06
40	6.310E-02	2176.2	1.952E+00	1.557E+07	1.478E-11	2.025E-01	1.091E+06
41	7.943E-02	2192.0	2.401E+00	1.91[illegible]E+07	1.806E-11	1.946E-01	1.041E+06
42	1.000E-01	2210.3	2.996E+00	2.395[illegible]+07	2.237E-11	1.834E-01	9.868E+05
43	1.259E-01	2231.7	3.800E+00	3.051E+07	2.810E-11	1.684E-01	9.282E+05
44	1.58[illegible]-01	2256.6	4.918E+00	3.978E+07	3.594E-11	1.504E-01	8.640E+05
45	1.995E-01	2286.0	6.520E+00	5.331E+07	4.697E-11	1.299E-01	7.927E+05
46	2.512E-01	23[illegible].8	8.891E+00	7.376E+07	6.295E-11	1.078E-01	7.127E+05
47	3.162E-01	2362.5	1.257E+01	1.063E+08	8.714E-11	8.605E-02	6.217E+05
48	3.981E-01	2412.6	1.849E+01	1.602E+08	1.258E-10	6.621E-02	5.179E+05
49	5.012E-01	2472.5	2.834E+01	2.531E+08	1.861E-10	5.002E-02	4.004E+05
50	6.310E-01	2543.4	4.479E+01	4.149E+08	2.844E-10	3.827E-02	2.713E+05
51	7.943E-01	2623.9	7.119E+01	6.888E+08	4.354E-10	3.074E-02	1.356E+05
52	1.000E+00	2711.7	1.112E+02	1.133E+09	6.543E-10	2.634E-02	0.0
53	1.259E+00	2805.6	1.679E+02	1.824E+09	9.501E-10	2.364E-02	-1.314E+05
54	1.585E+00	2906.4	2.467E+02	2.922E+09	1.341E-09	2.182E-02	-2.581E+05
55	1.995E+00	3015.3	3.526E+02	4.729E+09	1.841E-09	2.039E-02	-3.814E+05
56	2.512E+00	3135.7	4.956E+02	7.930E+09	2.480E-09	1.916E-02	-5.032E+05
57	3.162E+00	3270.3	6.863E+02	1.387E+10	3.285E-09	1.805E-02	-6.252E+05
58	3.981E+00	3424.4	9.417E+02	2.525E+10	4.297E-09	1.705E-02	-7.498E+05
59	5.012E+00	3605.7	1.281E+03	4.637E+10	5.542E-09	1.625E-02	-8.755E+05
60	6.310E+00	3820.7	1.727[illegible]03	8.540E+10	7.037E-09	1.564E-02	-1.005E+06
61	7.943E+00	4072.4	2.310E+03	1.486E+11	8.841E-[illegible]	1.472E-02	-1.141E+06
62	1.000E+01	4374.3	3.104E+03	2.468E+11	1.105E-08	1.389[illegible]-02	-1.287E+06
63	1.259E+01	4711.5	4.[illegible]03	3.860E+11	1.363E-08	1.447E-02	-1.437E+06
64	1.585E+01	5069.9	5.[illegible]E+03	7.827E+11	1.607E-08	1.959E-02	-1.570E+06
65	1.995E+01	5427.0	6.[illegible]37E+03	1.583E+12	1.761E-08	3.517E-02	-1.666E+06

Table 3

Monochromatic Flux from Models

($\log \pi F_\nu$ in erg cm^{-2} s^{-1} $(Hz)^{-1}$)

Wavelength (A)	J2	J4	J5	J6	J7	J8	J9	J10	J13	J14
3054	-6.049	-7.654	-7.801	-7.869	-7.894	-8.592	-10.001	-10.647	-9.052	-10.570
3647	-5.193	-6.582	-6.717	-6.726	-6.719	-7.229	- 8.384	- 8.896	-7.799	- 8.943
3824	-5.042	-6.348	-6.484	-6.487	-6.480	-6.953	- 8.056	- 8.637	-7.523	- 8.600
4019	-4.937	-6.183	-6.312	-6.312	-6.292	-6.760	- 7.809	- 8.360	-7.299	- 8.325
4235	-4.842	-6.017	-6.137	-6.136	-6.106	-6.565	- 7.559	- 8.081	-7.075	- 8.048
4476	-4.747	-5.847	-5.961	-5.957	-5.919	-6.365	- 7.304	- 7.798	-6.849	- 7.767
4746	-4.651	-5.673	-5.780	-5.772	-5.729	-6.159	- 7.042	- 7.509	-6.620	- 7.482
5050	-4.553	-5.491	-5.591	-5.579	-5.533	-5.945	- 6.773	- 7.212	-6.385	- 7.190
5396	-4.459	-5.305	-5.395	-5.379	-5.332	-5.725	- 6.498	- 6.910	-6.146	- 6.894
5792	-4.358	-5.082	-5.150	-5.129	-5.097	-5.467	- 6.177	- 6.558	-5.864	- 6.554
6252	-4.284	-4.901	-4.939	-4.917	-4.897	-5.252	- 5.888	- 6.232	-5.597	- 6.238
6791	-4.242	-4.810	-4.841	-4.818	-4.781	-5.131	- 5.712	- 6.029	-5.443	- 6.033
7431	-4.204	-4.720	-4.744	-4.725	-4.681	-5.012	- 5.536	- 5.823	-5.287	- 5.828
8206	-5.173	-4.630	-4.647	-4.638	-4.598	-4.893	- 5.356	- 5.611	-5.126	- 5.617
8453	-4.162	-4.603	-4.613	-4.598	-4.554	-4.859	- 5.303	- 5.549	-5.078	- 5.556
8714	-4.147	-4.573	-4.576	-4.556	-4.511	-4.824	- 5.248	- 5.484	-5.027	- 5.493
8993	-4.137	-4.545	-4.539	-4.515	-4.471	-4.788	- 5.1[illegible]2	- 5.416	-4.973	- 5.426
9290	-4.142	-4.522	-4.529	-4.542	-4.521	-4.755	- 5.138	- 5.343	-4.918	- 5.355
9607	-4.120	-4.491	-4.483	-4.482	-4.455	-4.717	- 5.069	- 5.260	-4.849	- 5.274
9946	-4.118	-4.458	-4.433	-4.421	-4.394	-4.677	- 4.991	- 5.158	-4.766	- 5.176
10311	-4.108	-4.424	-4.380	-4.360	-4.342	-4.635	- 4.894	- 5.016	-4.658	- 5.040
10703	-4.100	-4.387	-4.324	-4.304	-4.299	-4.589	- 4.763	- 4.771	-4.509	- 4.800
11126	-4.115	-4.380	-4.362	-4.405	-4.412	-4.575	- 4.742	- 4.746	-4.505	- 4.730
11584	-4.102	-4.362	-4.317	-4.319	-4.316	-4.557	- 4.717	- 4.697	-4.467	- 4.707
12082	-4.098	-4.347	-4.299	-4.290	-4.288	-4.536	- 4.688	- 4.674	-4.452	- 4.693
12624	-4.096	-4.333	-4.286	-4.273	-4.272	-4.514	- 4.659	- 4.658	-4.440	- 4.682
13216	-4.094	-4.318	-4.276	-4.263	-4.268	-4.501	- 4.662	- 4.649	-4.431	- 4.674
13868	-4.093	-4.301	-4.268	-4.259	-4.270	-4.510	- 4.724	- 4.650	-4.423	- 4.673
14587	-4.097	-4.284	-4.280	-4.295	-4.307	-4.501	- 4.736	- 4.671	-4.431	- 4.674
15385	-4.089	-4.252	-4.251	-4.260	-4.289	-4.434	- 4.625	- 4.648	-4.407	- 4.652
16033	-4.090	-4.233	-4.239	-4.254	-4.304	-4.391	- 4.579	- 4.651	-4.395	- 4.642
16737	-4.108	-4.240	-4.247	-4.260	-4.311	-4.388	- 4.573	- 4.640	-4.399	- 4.641
17506	-4.135	-4.264	-4.266	-4.272	-4.317	-4.450	- 4.672	- 4.640	-4.414	- 4.655
18349	-4.165	-4.293	-4.289	-4.290	-4.330	-4.578	- 4.905	- 4.664	-4.432	- 4.686
19277	-4.197	-4.320	-4.316	-4.315	-4.352	-4.548	- 4.817	- 4.661	-4.45[illegible]	- 4.682
20305	-4.233	-4.353	-4.350	-4.352	-4.383	-4.569	- 4.806	- 4.672	-4.476	- 4.689
21448	-4.270	-4.385	-4.281	-4.382	-4.411	-4.529	- 4.664	- 4.665	-4.497	- 4.691
22727	-4.341	-4.503	-4.600	-4.712	-4.807	-4.654	- 4.956	- 5.074	-4.658	- 4.847
24097	-4.409	-4.589	-4.682	-4.763	-4.849	-4.816	- 5.082	- 5.103	-4.732	- 4.918
25641	-4.419	-4.555	-4.609	-4.702	-4.770	-4.916	- 5.238	- 5.075	-4.660	- 4.898
27398	-4.449	-4.566	-4.572	-4.617	-4.656	-4.931	- 5.257	- 4.951	-4.650	- 4.900
29412	-4.495	-4.606	-4.590	-4.590	-4.604	-4.925	- 5.191	- 4.886	-4.682	- 4.896
31747	-4.551	-4.659	-4.641	-4.637	-4.649	-4.894	- 5.081	- 4.880	-4.731	- 4.898
34483	-4.614	-4.717	-4.700	-4.696	-4.705	-4.883	- 5.030	- 4.914	-4.785	- 4.930
37736	-4.683	-4.784	-4.766	-4.761	-4.768	-4.954	- 5.116	- 4.971	-4.844	- 4.985
41666	-4.842	-4.987	-5.025	-5.070	-5.140	-5.133	- 5.316	- 5.316	-5.073	- 5.206
50534	-5.063	-5.190	-5.225	-5.281	-5.374	-5.357	- 5.558	- 5.541	-5.281	- 5.425
64517	-5.118	-5.211	-5.203	-5.239	-5.270	-5.403	- 5.594	- 5.394	-5.220	- 5.338
88891	-5.375	-5.475	-5.457	-5.450	-5 443	-5.592	- 5.713	- 5.652	-5.538	- 5.655
142860	-5.784	-5.916	-5.927	-5.932	-5.930	-5.989	- 6.086	- 6.122	-6.020	- 6.115

Table 3 (Continued)

Wavelength (A)	J15	J16	J17	J19	J21	J22	J30	J31	J32	J35
3054	-10.776	-8.956	-10.724	-8.687	-9.700	-10.199	-9.694	-10.184	-10.899	-11.597
3647	-9.066	-7.722	-9.033	-7.439	-8.126	-8.636	-8.169	-8.542	-8.974	-9.396
3824	-8.712	-7.449	-8.381	-7.166	-7.806	-8.301	-7.842	-8.193	-8.594	-8.974
4019	-8.432	-7.229	-8.402	-6.961	-7.665	-8.068	-7.603	-7.938	-8.323	-8.685
4235	-8.149	-7.008	-8.121	-6.752	-7.345	-7.777	-7.361	-7.678	-8.045	-8.389
4476	-7.862	-6.786	-7.836	-6.541	-7.088	-7.509	-7.113	-7.412	-7.760	-8.083
4746	-7.570	-6.560	-7.545	-6.325	-6.913	-7.238	-6.856	-7.137	-7.463	-7.762
5050	-7.270	-6.328	-7.247	-6.102	-6.774	-6.959	-6.586	-6.848	-7.153	-7.424
5396	-6.965	-6.092	-6.944	-5.875	-6.321	-6.670	-6.304	-6.547	-6.832	-7.075
5792	-6.615	-5.808	-6.595	-5.607	-6.046	-6.351	-5.947	-6.168	-6.437	-6.647
6252	-6.289	-5.540	-6.270	-5.388	-5.866	-6.101	-5.626	-5.828	-6.084	-6.273
6791	-6.081	-5.390	-6.063	-5.229	-5.736	-5.854	-5.492	-5.679	-5.913	-6.089
7431	-5.871	-5.243	-5.855	-5.146	-5.966	-5.745	-5.354	-5.525	-5.740	-5.902
8206	-5.655	-5.098	-5.643	-5.130	-5.922	-5.731	-5.213	-5.367	-5.563	-5.713
8453	-5.592	-5.042	-5.579	-5.002	-5.854	-5.548	-5.171	-5.321	-5.511	-5.657
8714	-5.526	-4.986	-5.513	-4.901	-5.781	-5.418	-5.127	-5.274	-5.459	-5.599
8993	-5.457	-4.925	-5.443	-4.805	-5.692	-5.301	-5.084	-5.226	-5.407	-5.545
9290	-5.383	-4.937	-5.385	-5.124	-5.700	-5.693	-5.044	-5.180	-5.368	-5.519
9607	-5.298	-4.851	-5.293	-4.965	-5.554	-5.473	-4.996	-5.128	-5.306	-5.446
9946	-5.195	-4.750	-5.186	-4.782	-5.386	-5.224	-4.945	-5.073	-5.243	-5.373
10311	-5.048	-4.627	-5.037	-4.603	-5.135	-4.954	-4.891	-5.014	-5.176	-5.298
10703	-4.787	-4.483	-4.781	-4.481	-4.879	-4.707	-4.833	-4.950	-5.107	-5.223
11126	-4.765	-4.701	-4.921	-4.995	-5.402	-5.472	-4.826	-4.936	-5.113	-5.266
11584	-4.709	-4.540	-4.772	-4.728	-5.120	-5.145	-4.809	-4.920	-5.090	-5.232
12082	-4.686	-4.471	-4.710	-4.553	-4.891	-4.852	-4.799	-4.906	-5.058	-5.170
12624	-4.671	-4.432	-4.674	-4.452	-4.686	-4.664	-4.791	-4.894	-5.034	-5.141
13216	-4.662	-4.414	-4.657	-4.414	-4.600	-4.605	-4.786	-4.890	-5.051	-5.190
13868	-4.659	-4.418	-4.661	-4.451	-4.741	-4.736	-4.784	-4.897	-5.142	-5.372
14587	-4.679	-4.522	-4.737	-4.703	-5.015	-5.066	-4.783	-4.894	-5.141	-5.360
15385	-4.659	-4.442	-4.678	-4.515	-4.816	-4.805	-4.778	-4.873	-5.025	-5.155
16033	-4.654	-4.393	-4.639	-4.395	-4.616	-4.632	-4.778	-4.867	-4.993	-5.096
16737	-4.651	-4.386	-4.628	-4.367	-4.539	-4.583	-4.777	-4.863	-4.989	-5.094
17506	-4.652	-4.395	-4.628	-4.364	-4.449	-4.563	-4.779	-4.874	-5.071	-5.242
18349	-4.657	-4.413	-4.635	-4.382	-4.505	-4.569	-4.787	-4.920	-5.301	-5.552
19277	-4.664	-4.433	-4.644	-4.405	-4.523	-4.583	-4.785	-4.896	-5.204	-5.445
20305	-4.677	-4.481	-4.677	-4.503	-4.726	-4.727	-4.786	-4.886	-5.133	-5.316
21448	-4.682	-4.499	-4.681	-4.513	-4.704	-4.706	-4.783	-4.856	-4.972	-5.068
22727	-4.912	-4.591	-4.830	-4.517	-4.656	-4.689	-4.916	-4.995	-5.126	-5.250
24097	-4.948	-4.659	-4.888	-4.545	-4.662	-4.713	-4.958	-5.056	-5.280	-5.426
25641	-4.858	-4.609	-4.779	-4.565	-4.659	-4.700	-4.907	-5.112	-5.556	-5.778
27398	-4.817	-4.626	-4.780	-4.604	-4.690	-4.728	-4.909	-5.128	-5.555	-5.746
29412	-4.927	-4.667	-4.815	-4.650	-4.730	-4.769	-4.921	-5.079	-5.425	-5.570
31747	-4.869	-4.718	-4.859	-4.701	-4.779	-4.813	-4.945	-5.037	-5.256	-5.374
34483	-4.915	-4.773	-4.906	-4.760	-4.839	-4.867	-4.983	-5.053	-5.213	-5.326
37736	-4.964	-4.833	-4.957	-4.821	-4.895	-4.919	-5.029	-5.105	-5.296	-5.414
41666	-5.213	-5.050	-5.195	-4.915	-4.990	-5.047	-5.220	-5.295	-5.475	-5.583
50634	-5.441	-5.273	-5.436	-5.154	-5.245	-5.314	-5.455	-5.526	-5.731	-5.844
64517	-5.284	-5.204	-5.242	-5.207	-5.252	-5.228	-5.284	-5.453	-5.771	-5.884
88891	-5.647	-5.527	-5.544	-5.508	-5.567	-5.602	-5.671	-5.721	-5.831	-5.893
142850	-6.128	-6.014	-6.125	-5.993	-6.061	-6.092	-6.132	-6.165	-6.259	-6.310

Table 3 (Continued)

Wavelength (A)	K1	K3	K4	K9	K12	K15	K16	K18	K20	K23
3054	-9.742	-9.898	-9.660	-9.490	-9.043	-8.711	-8.558	-7.651	-7.477	-8.576
3647	-8.186	-8.367	-8.370	-8.050	-7.743	-7.298	-7.078	-6.074	-5.925	-7.145
3824	-7.865	-8.049	-8.074	-7.749	-7.457	-7.002	-6.771	-5.815	-5.678	-6.850
4019	-7.626	-7.800	-7.823	-7.515	-7.236	-6.805	-6.590	-5.742	-5.672	-6.660
4235	-7.383	-7.549	-7.572	-7.278	-7.014	-6.600	-6.391	-5.538	-5.418	-6.462
4476	-7.136	-7.294	-7.321	-7.039	-6.788	-6.391	-6.191	-5.410	-5.311	-6.261
4746	-6.882	-7.035	-7.066	-6.795	-6.558	-6.173	-5.981	-5.286	-5.212	-6.051
5050	-6.619	-6.767	-6.807	-6.543	-6.320	-5.943	-5.760	-5.203	-5.178	-5.829
5396	-6.348	-6.495	-6.543	-6.285	-6.076	-5.711	-5.549	-5.196	-5.226	-5.614
5792	-6.022	-6.173	-6.238	-5.977	-5.785	-5.452	-5.345	-5.279	-5.354	-5.393
6252	-5.722	-5.873	-5.946	-5.689	-5.530	-5.295	-5.265	-5.385	-5.473	-5.286
6791	-5.558	-5.696	-5.763	-5.526	-5.365	-5.108	-5.054	-5.092	-5.150	-5.080
7431	-5.391	-5.517	-5.578	-5.365	-5.245	-5.114	-5.123	-5.242	-5.305	-5.128
8206	-5.215	-5.329	-5.387	-5.207	-5.177	-5.200	-5.246	-5.397	-5.464	-5.240
8453	-5.160	-5.273	-5.330	-5.144	-5.066	-5.012	-5.041	-5.164	-5.221	-5.041
8714	-5.100	-5.213	-5.271	-5.080	-4.975	-4.848	-4.852	-4.946	-4.996	-4.857
8993	-5.036	-5.149	-5.207	-5.010	-4.885	-4.641	-4.541	-4.354	-4.337	-4.598
9290	-4.986	-5.080	-5.137	-5.031	-5.147	-5.257	-5.312	-5.467	-5.527	-5.284
9607	-4.903	-4.997	-5.055	-4.932	-4.978	-5.050	-5.097	-5.230	-5.287	-5.090
9946	-4.800	-4.894	-4.952	-4.814	-4.802	-4.830	-4.872	-4.996	-5.045	-4.870
10311	-4.665	-4.753	-4.808	-4.663	-4.619	-4.564	-4.578	-4.690	-4.732	-4.581
10703	-4.485	-4.543	-4.580	-4.485	-4.466	-4.408	-4.388	-4.454	-4.492	-4.413
11126	-4.575	-4.514	-4 504	-4.769	-5.007	-5.125	-5.173	-5.304	-5.350	-5.141
11584	-4.475	-4.470	- .483	-4.577	-4.703	-4.831	-4.879	-4.998	-5.045	-4.874
12082	-4.427	-4.445	-4.464	-4.476	-4.528	-4.622	-4.674	-4.795	-4.836	-4.666
12624	-4.394	-4.424	-4.445	-4.413	-4.424	-4.447	-4.478	-4.597	-4.632	-4.473
13216	-4.371	-4.403	-4.424	-4.380	-4.381	-4.368	-4.374	-4.470	-4.503	-4.382
13868	-4.361	-4.382	-4.400	-4.386	-4.416	-4.465	-4.506	-4.654	-4.701	-4.901
14587	-4.429	-4.380	-4.368	-4.548	-4.681	-4.795	-4.834	-4.932	-4.970	-4.829
15385	-4.368	-4.329	-4.323	-4.421	-4.484	-4.611	-4.660	-4.757	-4.790	-4.651
16033	-4.362	-4.297	-4.291	-4.328	-4.348	-4.435	-4.491	-4.606	-4.634	-4.462
16737	-4.344	-4.293	-4.290	-4.304	-4.312	-4.361	-4.401	-4.518	-4.545	-4.375
17506	-4.329	-4.312	-4.316	-4.306	-4.307	-4.311	-4.316	-4.382	-4.407	-4.313
18349	-4.335	-4.338	-4.346	-4.327	-4.327	-4.314	-4.307	-4.325	-4.332	-4.317
19277	-4.354	-4.364	-4.373	-4.354	-4.354	-4.337	-4.323	-4.305	-4.251	-4.340
20305	-4.406	-4.402	-4.404	-4.437	-4.468	-4.544	-4.591	-4.697	-4.727	-4.577
21448	-4.433	-4.432	-4.435	-4.460	-4.484	-4.545	-4.586	-4.684	-4.711	-4.573
22727	-4.967	-4.742	-4.524	-4.642	-4.559	-4.761	-4.773	-4.810	-4.807	-4.657
24097	-5.001	-4.823	-4.595	-4.729	-4.622	-4.813	-4.820	-4.849	-4.846	-4.718
25641	-4.875	-4.685	-4.590	-4.600	-4.565	-4.712	-4.727	-4.759	-4.752	-4.615
27398	-4.764	-4.632	-4.618	-4.587	-4.580	-4.621	-4.631	-4.678	-4.663	-4.579
29412	-4.656	-4.648	-4.658	-4.624	-4.622	-4.602	-4.586	-4.566	-4.523	-4.598
31747	-4.682	-4.694	-4.705	-4.677	-4.675	-4.650	-4.630	-4.588	-4.531	-4.650
34483	-4.737	-4.751	-4.761	-4.737	-4.737	-4.716	-4.701	-4.685	-4.672	-4.717
37736	-4.805	-4.818	-4.828	-4.803	-4.802	-4.780	-4.764	-4.747	-4.738	-4.781
41666	-5.251	-5.150	-5.008	-5.110	-5.031	-5.119	-5.123	-5.142	-5.141	-5.063
50634	-5.509	-5.386	-5.291	-5.344	-5.276	-5.332	-5.339	-5.360	-5.360	-5.288
64517	-5.324	-5.259	-5.252	-5.227	-5.217	-5.242	-5.245	-5.263	-5.257	-5.208
88891	-5.484	-5.496	-5.504	-5.477	-5.472	-5.447	-5.428	-5.385	-5.375	-5.445
142860	-5.880	-5.893	-5.900	-5.878	-5.871	-5.846	-5.828	-5.786	-5.778	-5.843

Table 3 (Continued)

Wavelength (A)	K24	K26	K27	K28	L1
3054	-7.673	-6.666	-7.628	-8.280	-9.551
3647	-6.245	-5.628	-6.205	-6.989	-8.087
3824	-5.992	-5.462	-5.963	-6.725	-7.795
4019	-6.095	-8.263	-8.080	-6.586	-7.862
4235	-5.689	-5.588	-5.862	-6.359	-7.453
4476	-5.532	-5.119	-5.531	-6.170	-7.389
4746	-5.387	-5.053	-5.392	-5.981	-7.377
5050	-5.258	-5.049	-5.270	-5.794	-7.248
5396	-5.190	-5.158	-5.215	-5.575	-6.987
5792	-5.221	-5.397	-5.272	-5.359	-6.605
6252	-5.328	-5.578	-5.392	-5.211	-6.111
6791	-5.041	-5.207	-5.088	-5.091	-5.655
7431	-5.215	-5.398	-5.263	-5.184	-5.493
8206	-5.383	-5.521	-5.403	-5.232	-5.506
8453	-5.149	-5.305	-5.188	-5.155	-5.324
8714	-4.920	-5.077	-4.957	-5.078	-5.199
8993	-4.405	-4.328	-4.381	-4.980	-5.092
9290	-5.442	-5.499	-5.414	-5.132	-5.535
9607	-5.219	-5.326	-5.229	-5.000	-5.326
9946	-4.982	-5.113	-5.012	-4.829	-5.132
10311	-4.655	-4.785	-4.689	-4.668	-4.940
10703	-4.423	-4.509	-4.421	-4.565	-4.810
11126	-5.278	-5.311	-5.244	-4.975	-5.359
11584	-4.987	-5.089	-5.004	-4.747	-5.098
12082	-4.778	-4.894	-4.807	-4.594	-4.921
12624	-4.563	-4.673	-4.591	-4.493	-4.788
13216	-4.430	-4.521	-4.443	-4.447	-4.721
13868	-4.618	-4.756	-4.650	-4.476	-4.776
14587	-4.923	-4.998	-4.931	-4.706	-4.995
15385	-4.745	-4.835	-4.767	-4.531	-4.803
16033	-4.576	-4.66	-4.598	-4.391	-4.663
16737	-4.477	-4.558	-4.488	-4.351	-4.584
17506	-4.356	-4.398	-4.340	-4.214	-4.511
18349	-4.324	-4.339	-4.300	-4.362	-4.475
19277	-4.331	-4.327	-4.300	-4.388	-4.476
20305	-4.675	-4.764	-4.699	-4.503	-4.658
21448	-4.661	-4.744	-4.683	-4.516	-4.645
22727	-4.778	-4.737	-4.691	-4.513	-4.987
24097	-4.819	-4.759	-4.718	-4.536	-5.013
25641	-4.738	-4.690	-4.656	-4.562	-4.909
27398	-4.670	-4.638	-4.601	-4.602	-4.824
29412	-4.591	-4.572	-4.550	-4.649	-4.740
31747	-4.625	-4.601	-4.589	-4.702	-4.778
34483	-4.703	-4.705	-4.679	-4.764	-4.838
37736	-4.765	-4.765	-4.741	-4.828	-4.892
41666	-5.122	-5.070	-5.041	-4.907	-5.246
50634	-5.340	-5.296	-5.268	-5.095	-5.435
64517	-5.256	-5.225	-5.206	-5.235	-5.334
38891	-5.415	-5.393	-5.379	-5.508	-5.495
142860	-5.814	-5.791	-5.778	-5.963	-5.889

Table 4

Convective Velocities (VCONV) and Fluxes (FC)

(VCONV in cms^{-1}; FC = convective flux / total flux)

Tau	VCONV	FC	VCONV	FC	VCONV	FC	VCONV	FC
	Model J2		Model J4		Model J5		Model J6	
1.000E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.259E-01								
1.585E-01								
1.995E-01								
2.512E-01								
3.162E-01								
3.981E-01								
5.012E-01								
6.310E-01								
7.943E-01								
1.000E+00			0.0	0.0				
1.259E+00	0.0	0.0	3.54E+02	1.54E-08				
1.585E+00	6.77E+02	1.83E-09	5.95E+02	7.33E-08				
1.995E+00	2.14E+03	6.29E-08	3.89E+02	2.06E-08				
2.512E+00	5.69E+03	1.22E-06	6.67E+02	1.06E-07			0.0	0.0
3.162E+00	1.47E+04	2.33E-05	9.74E+02	3.46E-07			4.52E+02	1.62E-10
3.981E+00	3.73E+04	4.07E-04	3.88E+03	2.28E-05	0.0	0.0	7.93E+02	9.66E-10
5.012E+00	1.10E+05	1.16E-02	2.13E+04	4.02E-03	3.11E+03	8.13E-07	2.07E+03	1.83E-08
6.310E+00	2.33E+05	1.29E-01	4.81E+04	4.84E-02	1.36E+04	7.26E-05	6.35E+03	5.88E-07
7.943E+00	2.97E+05	2.90E-01	6.96E+04	1.53E-01	4.38E+04	2.59E-03	2.14E+04	2.59E-05
1.000E+01	3.36E+05	4.67E-01	8.40E+04	2.81E-01	1.08E+05	4.07E-02	8.98E+04	2.19E-03
1.259E+01	3.55E+05	5.88E-01	9.37E+04	4.04E-01	1.69E+05	1.74E-01	2.95E+05	9.52E-02
1.585E+01	3.70E+05	7.02E-01	1.02E+05	5.38E-01	1.97E+05	2.98E-01	3.89E+05	2.48E-01
1.995E+01	3.66E+05	7.14E-01	1.08E+05	6.61E-01	2.19E+05	4.42E-01	4.06E+05	3.09E-01
	Model J7		Model J9*		Model J10		Model J32**	
1.000E-01	0.0	0.0	1.97E+02	5.64E-10	0.0	0.0	2.41E+02	2.30E-10
1.259E-01			2.01E+02	6.80E-10			2.35E+02	2.31E-10
1.585E-01			2.03E+02	7.80E-10			2.18E+02	1.98E-10
1.995E-01			2.08E+02	9.54E-10			2.13E+02	2.05E-10
2.512E-01			2.38E+02	1.62E-09			2.19E+02	2.53E-10
3.162E-01			3.77E+02	7.60E-09			2.30E+02	3.22E-10
3.981E-01			4.04E+02	1.00E-08			2.36E+02	3.65E-10
5.012E-01			5.62E+02	2.90E-08			2.52E+02	4.76E-10
6.310E-01			1.10E+03	2.41E-07			2.98E+02	8.70E-10
7.943E-01			1.70E+03	9.66E-07			2.88E+02	7.47E-10
1.000E+00			1.92E+03	1.37E-06			2.89E+02	7.38E-10
1.259E+00	0.0	0.0	2.79E+03	4.37E-06			2.79E+02	6.43E-10
1.585E+00	3.82E+02	5.06E-12	2.39E+03	2.63E-06			2.60E+02	4.63E-10
1.995E+00	4.54E+02	4.30E-12	8.92E+02	1.15E-07			2.59E+02	4.37E-10
2.512E+00	5.60E+02	1.95E-11	1.09E+03	1.97E-07			0.0	
3.162E+00	7.37E+02	5.03E-11	9.98E+02	1.39E-07			0.0	
3.981E+00	1.37E+03	3.63E-10	1.93E+03	9.84E-07			0.0	
5.012E+00	1.91E+03	1.26E-06	1.91E+03	9.10E-07			0.0	
6.310E+00	0.0	0.0	1.83E+03	8.15E-07			0.0	
7.943E+00	0.0	0.0	1.43E+02	4.10E-07			0.0	
1.000E+01	0.0	0.0	4.26E+02	1.17E-08			0.0	
1.259E+01	0.0	0.0	7.67E+02	7.42E-08	0.0	0.0	0.0	
1.585E+01	0.0	0.0	9.21E+03	1.39E-04	1.87E+03	7.81E-08	0.0	
1.995E+01	0.0	0.0	3.68E+04	9.45E-03	9.30E+03	1.03E-05	0.0	

*Convection extends up to t=.001 in Model J9

**Convection extends up to t=.00501 in Model J32

Table 4 (Continued)

Tau	VCONV	FC	VCONV	FC	VCONV	FC	VCONV	FC
	Model J16		Model J18		Model J19		Model J20	
1.000E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.259E-01								
1.585E-01								
1.995E-01								
2.512E-01								
3.162E-01								
3.981E-01								
5.012E-01								
6.310E-01								
7.943E-01								
1.000E+00								
1.259E+00								
1.585E+00								
1.995E+00								
2.512E+00								
3.162E+00								
3.981E+00								
5.012E+00	0.0	0.0	0.0	0.0			0.0	0.0
6.310E+00	1.28E+02	2.38E-10	4.18E+02	3.44E-10			4.25E+02	3.20E-10
7.943E+00	.27E+03	9.41E-09	1.48E+03	1.57E-08	0.0	0.0	1.27E+03	9.59E-09
1.000E+01	4.96E+03	6.10E-07	6.77E+03	1.70E-06	7.79E+03	3.06E-05	4.88E+03	5.77E-07
1.259E+01	1.73E+04	2.83E-05	2.82E+04	1.38E-04	3.49E+04	2.97E-03	1.73E+04	2.66E-05
1.585E+01	6.15E+04	1.50E-03	1.19E+05	1.22E-02	8.99E+04	5.44E-02	6.15E+04	1.51E-03
1.995E+01	1.75E+05	3.97E-02	2.89E+05	2.14E-01	1.34E+05	1.90E-01	1.74E+05	3.95E-02

	Model J21		Model J22		Model J23*		Model J35**	
1.000E-01	0.0	0.0	0.0	0.0	1.12E+02	1.53E-11	2.30E+02	4.87E-10
1.259E-01					1.32E+02	2.30E-11	2.77E+02	9.83E-10
1.585E-01					1.42E+02	3.47E-11	3.00E+02	1.33E-09
1.995E-01					1.54E+02	5.19E-11	3.84E+02	3.06E-09
2.512E-01	0.0	0.0			1.65E+02	7.22E-11	5.28E+02	8.24E-09
3.162E-01	1.73E+02	6.58E-11			1.90E+02	1.27E-10	5.21E+02	8.74E-09
3.981E-01	1.81E+02	8.94E-11			2.64E+02	3.88E-10	6.16E+02	1.57E-08
5.012E-01	1.99E+02	1.47E-10			4.88E+02	2.82E-09	7.90E+02	3.64E-08
6.310E-01	2.04E+02	1.88E-10			7.81E+02	1.23E-08	7.73E+02	3.44E-08
7.943E-01	2.01E+02	2.18E-10			1.42E+03	7.76E-08	9.36E+02	6.47E-08
1.000E+00	2.09E+02	3.20E-10			3.01E+03	7.69E-07	1.16E+03	1.28E-07
1.259E+00	0.00	0.0			5.06E+03	3.60E-06	1.05E+03	8.89E-08
1.585E+00	2.03E+02	4.82E-10			6.86E+03	8.43E-06	1.04E+03	8.54E-08
1.995E+00	0.0	0.0			9.31E+03	2.03E-05	7.58E+02	2.96E-08
2.512E+00					7.35E+03	8.48E-06	5.67E+02	1.10E-08
3.162E+00					4.61E+03	1.84E-06	3.47E+02	2.30E-09
3.981E+00					2.27E+03	1.79E-07	0.0	0.0
5.012E+00					9.11E+02	9.56E-09	0.0	0.0
6.310E+00					3.69E+02	5.21E-10	0.0	0.0
7.943E+00					0.0	0.0	0.0	0.0
1.000E+01					0.0	0.0	0.0	0.0
1.259E+01			0.0	0.0	0.0	0.0	0.0	0.0
1.589E+01	0.0	0.0	1.08E+03	1.48E-08	0.0	0.0	0.0	0.0
1.995E+01	5.78E+03	3.35E-05	7.15E+03	4.64E-06	0.0	0.0	0.0	0.0

* ...tion extends up to t=1.07941 in Model J23

** ...ion extends up to t=.00794 in Model J35

Table 4 (Continued)

Tau	VCONV	FC	VCONV	FC	VCONV	FC	VCONV	FC
	K1		K3		K9		K12	
1.000E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.259E-01								
1.585E-01								
1.995E-01								
2.512E-01								
3.162E-01								
3.981E-01								
5.012E-01								
6.310E-01								
7.943E-01								
1.000E+00								
1.259E+00								
1.585E+00								
1.995E+00								
2.512E+00								
3.162E+00								
3.981E+00								
5.012E+00	0.0	0.0						
6.310E+00	4.48E+02	4.30E-10	0.0	0.0	0.0	0.0	0.0	0.0
7.943E+00	1.58E+03	2.03E-08	6.92E+02	1.67E-09	8.18E+02	2.65E-09	8.74E+02	3.22E-09
1.000E+01	6.32E+03	1.39E-06	3.49E+03	2.31E-07	3.82E+03	2.97E-07	3.90E+03	3.15E-07
1.259E+01	2.22E+04	6.72E-05	1.42E+04	1.73E-05	1.50E+04	1.98E-05	1.52E+04	2.08E-05
1.585E+01	7.41E+04	2.84E-03	5.07E+04	8.68E-04	5.34E+04	1.02E-03	5.42E+04	1.06E-03
1.995E+01	1.94E+05	5.91E-02	1.49E+05	2.46E-02	1.53E+05	2.67E-02	1.55E+05	2.78E-02

	K23		K24		K28		K27	
1.000E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.259E-01								
1.585E-01								
1.995E-01								
2.512E-01								
3.162E-01								
3.981E-01					0.0	0.0		
5.012E-01					6.66E+02	2.35E-07		
6.310E-01					3.06E+03	2.79E-05		
7.943E-01					5.67E+02	1.87E-07		
1.000E+00					2.45E+03	1.70E-05		
1.259E+00					3.88E+03	7.32E-05		
1.585E+00					7.72E+03	5.85E-04		
1.995E+00					1.13E+04	1.82E-03		
2.512E+00					1.79E+04	6.84E-03		
3.162E+00					2.25E+04	1.27E-02		
3.981E+00					2.90E+04	2.57E-02		
5.012E+00					2.99E+04	2.61E-02		
6.310E+00					3.25E+04	3.34E-02		
7.943E+00	0.0	0.0			3.62E+04	4.86E-02		
1.000E+01	1.35E+03	1.13E-08			4.37E+04	8.69E-02		
1.259E+01	6.87E+03	1.67E-06	0.0	0.0	5.32E+04	1.64E-01	0.0	0.0
1.585E+01	2.79E+04	1.24E-04	1.49E+03	1.26E-08	6.30E+04	2.85E-01	2.72E+02	1.13E-09
1.995E+01	9.40E+04	5.44E-03	1.05E+04	5.31E-06	7.02E+04	4.16E-01	6.77E+04	2.33E-05

Table 5

Limb Darkening Coefficients (Φ)

$$\Phi \equiv I_\nu(\mu)/I_\nu(\mu=1.0)$$

Wavelength (A)	μ 0.6	0.4	0.2	0.1	0.6	μ 0.4	0.2	0.1
	Model J2				Model J4			
4240	0.60	0.45	0.32	0.26	0.66	0.52	0.38	0.28
5400	0.71	0.57	0.43	0.35	0.68	0.54	0.40	0.32
9950	0.85	0.76	0.65	0.58	0.81	0.69	0.56	0.47
20300	0.91	0.85	0.77	0.70	0.89	0.81	0.69	0.60
	Model J5				Model J6			
4240	.70	.57	.41	.30	68	.53	.36	.24
5400	.70	.57	.43	.33	.68	.54	.38	.28
9950	.81	.69	.54	.44	.80	.68	.54	.44
20300	.89	.81	.69	.60	.89	.81	.69	.59
	Model J7				Model J9			
4240	.69	.52	.33	.19	.66	.47	.25	.13
5400	.69	.54	.37	.25	.71	.55	.35	.21
9950	.80	.67	.52	.42	.78	.65	.50	.39
20300	.88	.80	.68	.59	.72	.56	.40	.31
	Model J21				Model J23			
4240	.63	.44	.24	.14	.63	.46	.30	.22
5400	.69	.52	.33	.21	.65	.48	.32	.24
9950	.74	.61	.48	.40	.77	.63	.47	.36
20300	.80	.69	.57	.49	.82	.72	.60	.51
	Model K3				Model K4			
4240	.69	.52	.32	.19	.77	.65	.53	.47
5400	.72	.57	.39	.26	.76	.65	.52	.45
9950	.73	.59	.43	.33	.74	.60	.45	.36
20300	.90	.82	.72	.63	.89	.82	.71	.62
	Model K9				Model K12			
4240	.70	.53	.34	.22	.69	.54	.39	.30
5400	.72	.57	.40	.28	.71	.56	.41	.32
9950	.76	.62	.46	.36	.76	.63	.48	.39
20300	.88	.79	.67	.58	.86	.75	.61	.50

Table 5 (Continued)

	Model K26				Model K24			
4240	.44	.19	.03	.004	.53	.32	.13	.058
5400	.58	.38	.19	.10	.60	.40	.21	.11
9950	.82	.71	.58	.49	.80	.68	.53	.42
20300	.87	.78	.68	.60	.84	.75	.63	.55

Table 6

An Abundance Grid at (3500|0.0|SO, P, MKC)

C/H (compared to sun)	C/O 0.006	0.06	0.6	1.00	2.00	5.00
100	--	--	--	--	K21	K25
10	--	--	--	--	K18	K24
5	--	--	--	--	K17	--
2	--	--	--	--	K16	--
1	--	--	K1	--	K15	K23
0.5	--	--	--	--	K14	--
0.2	--	--	--	--	K13	--
0.1	--	K3	K7	K9	K12	K22
0.01	K4	--	--	--	--	--

Table 7

Boundary Temperatures of Stellar Models

$C/H = 0.10\ (C/H)_{sun}$			$C/O = 2.00$		
MODEL	C/O	$T_o(^oK)$	MODEL	$\frac{C/H}{(C/H)_{sun}}$	$T_o(^oK)$
K3	0.06	1940	K12	0.10	2430
K6	0.90	2110	K13	0.20	2370
K7	0.60	2040	K14	0.50	2260
K8	0.98	2170	K15	1.00	2160
K9	1.00	2160	K16	2.00	2150
K10	1.06	2250	K17	5.00	2130
K11	1.20	2320	K18	10.0	2090
K12	2.00	2430	K20	10.0	2100

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