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STATIC DIFFUSION MODELS OF THE UPPER ATMOSPHERE WITH EMPIRICAL TEMPERATURE PROFILES

by

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Luigi G. Jacchia[2]

ABSTRACT

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Summary.--Tables of atmospheric density and composition are computed for a wide range of exospheric temperatures, starting from a fixed set of boundary conditions at 120 km. The diffusion equation is integrated following empirical temperature profiles of exponential form capable of reproducing the densities derived from satellite drag over the years. Formulae are given which relate the exospheric temperature to solar and geomagnetic activity and allow for the diurnal and semi-annual variations. The different response of the density at the 200-km level to different types of heating is briefly discussed.

AUTHOR

1. Static and time-dependent models

The first multi-temperature models of the atmosphere above 120 km based on diffusion equilibrium were produced by Nicolet (1961, 1963). These models proceed from a fixed set of boundary conditions, temperature and partial densities, at 120 km. Above this height the partial densities vary according to diffusion theory, except for hydrogen for which diffusion equilibrium is reached only at greater heights (Kockarts and Nicolet, 1962, 1963); thermal diffusion is taken into account for helium. The vertical temperature distribution is computed for the "hottest" model, i.e., the one with the highest exospheric temperature, assuming thermal equilibrium; the other models are obtained from this model by conduction cooling of the atmosphere in the absence of external energy sources. The temperatures which are obtained in this manner at the height of 150 km (a nearly isopycnic layer) are linearly connected with the constant temperature at 120 km. Models can be computed by this procedure for conveniently spaced values of the exospheric temperature. These quasi-static models have proved very practical as a background for deriving and analyzing atmospheric densities from satellite drag (Jacchia and Slowey, 1963).

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Atmospheric models can be constructed only at the expense of over-simplifications. Such are, for example, the invariance of the boundary conditions at 120 km and the constant temperature gradient between 120 and 150 km found in Nicolet's models. Another serious limitation is the assumption of static equilibrium in an atmosphere which is subject to large day-to-night temperature variations, with a period which is not much longer than conduction time in the lower thermosphere.

Atmospheric models which attempt to take into account the diurnal variation at low latitudes have been computed by Harris and Priester (1962a, b). They also assumed fixed boundary conditions at 120 km and diffusion above this height, but the hydrostatic equation and the heat-conduction equation were integrated simultaneously and the heat input varied with a 24-hour cycle. Since the amount of solar EUV necessary to maintain the heat balance gave diurnal density oscillations much in excess of those observed, Harris and Priester were obliged to introduce a second source of heat with a maximum at a different hour. This device may perhaps have a counterpart in the actual heating process, but doubts have been voiced that it may mostly reflect the inadequacy of an over-simplified theory. By suitably varying the "second heat source," the Harris-Priester models can be made to fit the densities from satellite drag with almost any degree of accuracy, and their new version, prepared for the new COSPAR International Reference Atmosphere(CIRA 1964) to be published shortly, is remarkably successful in this respect.

To analyze or predict the motion of satellites under the influence of drag, one requires models which represent atmospheric variations above all points of the globe in a continuous manner. For this purpose, models of the Nicolet type have a considerable advantage over those of Harris and Priester, because with a suitable model for the geographic temperature distribution above the thermopause they can yield atmospheric densities at any given location and height. The Harris-Priester model is confined to low latitudes and does not account for the seasonal migrations of the diurnal bulge; its extension to higher latitudes would engender gross errors and even a discontinuity at the poles. For this reason, it was deemed advisable to produce a set of atmospheric models patterned after those of Nicolet, but based on the most recent data on composition at the boundary level and density at satellite heights. The result is the present tables.

2. Boundary conditions

The boundary conditions selected for the CIRA 1964 tables are the result of a careful weighting of recent data from instrumented rockets and satellites, and it would be difficult to improve on them at this date. Therefore, we have taken them as the basis for our tables with only one change, namely, the helium concentration which was increased by 40 percent to account for the densities derived from satellites at heights greater than 600 km at times of low solar activity. We thus have assumed:

At z = 120 km

$$T = 355^{\circ}K$$

$$n(N_2) = 4.0 \times 10^{11}$$

$$n(O_2) = 7.5 \times 10^{10}$$

$$n(O) = 7.6 \times 10^{10}$$

$$n(He) = 3.4 \times 10^{7}$$

Argon was neglected since its contribution to the total density is only 1 percent at 120 km and becomes rapidly negligible at greater heights. For hydrogen we have followed Kockarts and Nicolet (1962) and fitted the following equation

$$\log_{10} n(H)_{500} = 73.13 - 39.40 \log_{10} T_{\infty} + 5.5 (\log_{10} T_{\infty})^2 \qquad (1)$$

to their concentrations at 500 km, which were used as boundary for the computation of concentrations at greater heights.

Starting from the boundary conditions, the concentrations n_i of each constituent i were computed as a function of the geometric height z by integrating the diffusion equation

$$\frac{dn_i}{n_i} = -\frac{dz}{H_i} - \frac{dT}{T}(1 + \alpha T) . \qquad (2)$$

Here, T is the temperature, α the thermal-diffusion factor, and H_i is the scale height of the individual constituent, defined as

$$H_i = \frac{kT}{m_i g} , \qquad (3)$$

where k is the Boltzmann constant, m_i the molecular (or atomic) mass of the constituent, and g the acceleration of gravity.

For helium, following Nicolet, we used $\alpha = -0.4$; for N_2, O_2 and O, $\alpha = 0$.

3. The temperature profiles

To compute the vertical distribution of temperature on the basis of theory alone, we must know how the heating-energy input varies with height. Since solar EUV is radiated in a discrete number of spectral lines, each of which is absorbed at a different height (Hinteregger, 1962) and each of which varies in intensity with time in a different manner (Purcell et al., 1964), the problem is complicated enough even when we ignore energy sources other than solar EUV. As to temperature and density observations, the lower thermosphere, from 100 to 150 km, is practically terra incognita (or, rather, aer incognitum). Any present-day atmospheric model must introduce a considerable degree of empiricism in constructing temperature profiles in that region; this is also the case of Nicolet's profiles.

Since an inadequate theory may be worse than none when it must fit a great many accurate observations, as is our case, we decided to abandon theory entirely in constructing our temperature profiles. A survey of Nicolet's and of the Harris-Priester temperature profiles showed at once that they can all be represented, with a remarkable degree of approximation, by exponential curves of the form

$$T = T_\infty - (T_\infty - T_{120}) \exp\left[-s(z - 120)\right], \qquad (4)$$

where T_{120} is the temperature at 120 km and T_∞ the asymptotic (exospheric) temperature; z is expressed in kilometers and s is a constant different for each profile. If we decide to use equation (4) to represent our temperature profiles, the problem is reduced to finding the value of s appropriate to each value of T_∞, or, better, an analytical expression for $s(T_\infty)$ which will generate temperature profiles capable of reproducing the observed variations of density with height for any stage of solar activity. For example, Nicolet's (1961) densities are reproduced within a few percent with temperature profiles generated by equation (4), with

$$s = 34.586\, T^{-1} - 4.414 \times 10^{-3} + 5.714 \times 10^{-7}\, T_\infty. \qquad (1000^\circ < T_\infty < 2000^\circ)$$

After a considerable amount of trial-and-error work, we found that the densities derived from satellite drag (Jacchia and Slowey, 1963, plus up-to-date unpublished data) can be satisfactorily represented using temperature profiles generated by the equation

$$\begin{cases} s = 0.0291 \exp\left(-\dfrac{x^2}{2}\right) \\ x = \dfrac{T_\infty - 800}{750 + 1.722 \times 10^{-4} (T_\infty - 800)^2}. \end{cases} \qquad (5)$$

The present tables were computed by the numerical integration of equation (2) starting from the boundary conditions given in Section 2 and following the temperature profiles generated by equation (4) with s given by equation (5). In Fig. 1 these values of s are compared with those which are obtained from the temperature profiles of Nicolet's and the CIRA 1964 models. For the latter, we have selected the curves for 4^h and 14^h local solar time, i.e., the hours of the minimum and of the maximum of the diurnal temperature variation. Since there is no variation of s with the hour of the day in our static models, our s curve must represent an average over the day with a possible drift toward the morning value at the low-temperature end and toward the afternoon values at the high-temperature end.

4. Comparison with Nicolet's models

A revised version (Nicolet II) of Nicolet's original (1961) models, provided to us by the author, has been used by us for the past two years to convert atmospheric densities from satellite drag data into temperatures which are better suited for analysis than the original densities (Jacchia and Slowey, 1963, and various more recent papers in these Special Reports). Different temperatures are obtained from the same densities if we use the present models; the corrections to the system of Nicolet II to obtain the temperatures given by our models are presented in Table 3 and plotted in Fig. 2. As we can see from Fig. 2, the correction curves show a systematic negative trend with increasing temperature in the range between 800° and 1700°K. This is equivalent to saying that if we consider a certain density variation within these general temperature limits, this variation corresponds to a somewhat smaller temperature range in the present models. For satellites at heights between 350 and 750 km (i.e., for all the satellites analyzed in Jacchia and Slowey, 1963) we obtain temperature variations which are, on the average, smaller by 6 percent.

Figure 3 shows the difference in log ρ for a given exospheric temperature and a given height between Nicolet II and the present models. The corresponding numerical values are to be found in Table 4.

5. Formulae for the systematic temperature variations

Formulae for the variation of the exospheric temperature for use with Nicolet's models were given in SAO Special Report No. 150 (Jacchia, 1964). These formulae necessitate some revision if we want to use the present atmospheric models.

a) Variation with the solar cycle. The relation between the exospheric temperature T_∞ and the 10.7-cm solar flux $F_{10.7}$, both smoothed over two or three solar rotations, shows practically no departure from linearity in the new temperature system. In Fig. 4 we have plotted revised values of the

nighttime minimum and daytime maximum temperature from satellite drag data covering the years 1958-1964. As can be seen, the smoothed nighttime minima $\bar{T}_0$ can be represented by

$$\bar{T}_0 = 418^\circ + 3^\circ.60\ \bar{F}_{10.7} \ . \qquad (6)$$

The bar indicates averages over two or three solar rotations. The daytime maxima are represented by

$$T_M = 1.28\ T_0 \ . \qquad (7)$$

The smaller range of the diurnal variation (by a factor of 1.28 instead of 1.30) reflects the overall smaller temperature ranges explained in Section 4. It should be recalled that the same diurnal density variation requires a much larger temperature oscillation according to the time-dependent models of Harris and Priester. Although the latter are probably closer to reality, the density variations are represented equally well with the present static models.

Equation (6) is valid for average quiet geomagnetic conditions ($K_p = 2$, $a_p = 7$). To reduce it to $a_p = 0$ the absolute term should read 357° instead of 418°.

b) Variation within one solar rotation. We can use

$$T_0' = \bar{T}_0 + 1^\circ.8\ (F_{10.7} - \bar{F}_{10.7}) \ , \qquad (8)$$

i.e., the same equation as in SAO Special Report No. 150, but with the numerical coefficient changed from $1^\circ.9$ to $1^\circ.8$. There is some indication that this coefficient might be somewhat smaller ($1^\circ.5$ or so) near sunspot minimum and larger (possibly $2^\circ.4$) near sunspot maximum.

c) Semiannual variation. We can use the formula of SAO Special Report No. 150, with a 6 percent reduction in the amplitudes:

$$T_0 = T_0' + \left(0.37 + 0.14 \sin 2\pi \frac{d - 151}{365}\right) \bar{F}_{10.7} \sin \frac{d - 59}{365} \qquad (9)$$

(d in days counted from January 1).

d) Diurnal variation. The same parameters as in SAO Special Report No. 150 can be used, except for R, which should be changed from 0.30 to 0.28. For convenience we shall repeat the equations with their explanations.

Let the temperature maximum occur at a point on the globe which has the same latitude as the subsolar point, and let the minimum nighttime temperature on the globe be T_0 and the maximum daytime temperature on the globe be RT_0. We shall assume that the daytime maxima T_D and nighttime minima T_N at any point on the globe are given by the equations

$$T_D = T_0(1 + R \cos^m \eta) ,$$
$$T_N = T_0(1 + R \sin^m \theta) , \qquad (10)$$

where

$$\eta = \tfrac{1}{2}(\varphi - \delta_\odot) ,$$
$$\theta = \tfrac{1}{2}(\varphi + \delta_\odot) ,$$

where φ is the geographic latitude and $\delta_\odot$ the declination of the sun.

The temperature T at this given point can be expressed as a function of the hour angle H of the sun (the local solar time). Let us write

$$T = T_N(1 + A \cos^n \tfrac{\tau}{2}) , \qquad (11)$$

with

$$A = \frac{T_D - T_N}{T_N} = R \frac{\cos^m \eta - \sin^m \theta}{1 + R \sin^m \theta} ,$$

and

$$\tau = H + \beta + p \sin (H + \gamma) \quad (-\pi < \tau < \pi) \qquad (12)$$

$$(-\pi < \tau < \pi)$$

where β, γ, and p are constants, and H = 0 corresponds to the sun's upper culmination.

The constant β determines the lag of the temperature maximum with respect to the sun's culmination, while p introduces in the temperature curve an asymmetry whose location is determined by γ. Replacing T_D and T_N from equation

(1), we can write

$$T = T_0(1 + R \sin^m \theta)\left(1 + R\,\frac{\cos^m \eta - \sin^m \theta}{1 + R \sin^m \theta}\cos^n \frac{\tau}{2}\right) . \qquad (13)$$

Although in these equations the exponents m and n, which determine the mode of the longitudinal and the latitudinal temperature variations respectively, are kept distinct, we find that in practice we can take m = n. We shall adopt the following constants:

$$R = 0.28$$

$$m = n = 2.5$$

$$\beta = -45^\circ$$

$$p = 12^\circ$$

$$\gamma = +45^\circ .$$

e) Variation with geomagnetic activity. After the publication of SAO Special Report No. 150, it was found that the relation between the exospheric temperature and the 3-hour geomagnetic index a_p shows a strong departure from linearity for small values of a_p (Jacchia and Slowey, 1964). The formula given in the last reference can be used without alterations. The increase of temperature with a_p is then

$$\Delta T = 1^\circ.0\, a_p + 125^\circ\,[1 - \exp(-0.08\, a_p)] . \qquad (14)$$

ΔT represents the atmospheric heating above the level corresponding to $a_p = 0$.

6. Limitations of the present models

As we stated in Section 1, atmospheric models must suffer from the oversimplified assumptions one is obliged to make to construct them. Our models share with those of Nicolet the limitations imposed by the invariance of the temperature profiles and of the boundary conditions; this latter limitation is common also to the Harris-Priester models.

A consequence of the fixed boundary conditions is a nearly isopycnic layer at 200 km at times of moderate to high solar activity. At such times, according to the models (ours, Nicolet's and the Harris-Priester models), the density at 200 km should not show appreciable variations when the exospheric

temperature varies. This condition is nearly fulfilled by the diurnal variation which practically disappears at heights lower than 200 km. On the other hand, density variations at the 200-km level have been observed at times of high solar activity in correspondence with geomagnetic storms, and also of the erratic ("27-day") component of the 10.7-cm flux (Jacchia, 1959).

The different response of the density at 200 km to different types of heating could be explained by assuming that the temperature at 120 km is not subject to a diurnal variation, but increases in correspondence with geomagnetic storms and transient enhancements of solar EUV radiation. If we increase the temperature at 120 km by 50° without changing the composition, the density at 200 km will increase, according to our models, by a little over 30 percent when the exospheric temperature is about 1400°K. This is just about the order of magnitude of the erratic density changes observed in Sputnik 2 and 3. At greater heights the density change is more or less the same, decreasing only slightly with height, but its relative importance becomes smaller because of the increased response of the density to changes in the exospheric temperature (or, to be more accurate, to changes in the corresponding temperature gradient above 120 km).

Satellites at heights as low as 160 km have recently shown that the density changes during magnetic storms are in phase with those at greater heights (Zirm, 1964). This indicates that most of the heating during these storms must occur at heights considerably lower than 160 km. It therefore looks highly probable that the temperature at 120 km must undergo changes during a magnetic storm.

If we assume that also the erratic changes in solar EUV affect the temperature at 120 km, it is difficult to see how the much larger variations of EUV in the course of the 11-year solar cycle could leave the temperature at 120 km undisturbed. Perhaps there is such a change and the construction of better models will be possible when this change becomes known.

7. The tables

Detailed data on composition and density are given in Table 1 for 30 temperature profiles ending in exospheric temperatures 50° apart and ranging from 650°K to 2100°K. Table 2 gives a summary of the density data only.

The boundary conditions and the temperature profiles are specified in Section 3. For the acceleration of gravity we used the formula

$$g = 980.665\ (1 + Z/R)^{-2}\ \text{cm sec}^{-2},$$

with $R = 6.35677 \times 10^{8}$ cm.

Hydrogen concentrations are given only above 500 km, as in the CIRA 1964 tables, since hydrogen cannot be considered to be in diffusion equilibrium at lower heights (Kockarts and Nicolet, 1962).

Although the tables extend to a height of 1000 km, the data above 800 km must be considered as theoretical extrapolations since accurate satellite drag data are not available at those heights. For high exospheric temperatures (above, say, 1300°K) at which atomic oxygen is still the major constituent between 800 and 1000 km, the densities should still be reliable; the same cannot be said, however, for lower exospheric temperatures.

The generation of individual densities for given values of z and T_∞ from equations (4) and (5) is so simple that prospective users of these models may deem it preferable to use the formulae rather than the tables to obtain atmospheric densities in electronic-computer programs. In such a case, the extrapolation of the tables to heights above 1000 km, which may be necessary for the sake of continuity in numerical integrations along satellite orbits, is automatic, and the density approaches zero when z increases beyond any limit. If the tables are used and it is desired to have the density ρ approach a limiting value ρ_∞ rather than zero, we can recommend the procedure we have been using for some time in our numerical-integration programs. Compute $b = d\ell n\ \rho/dz = (\ell n\ 10)\ d\ \log_{10} \rho/dz$ at 1000 km from the tabular values of log ρ and use

$$\rho = \rho_\infty + (\rho_{1000} - \rho_\infty) \exp [b(z - 1000)] \quad . \qquad (15)$$

$(z > 1000 \text{ km})$

Acknowledgment

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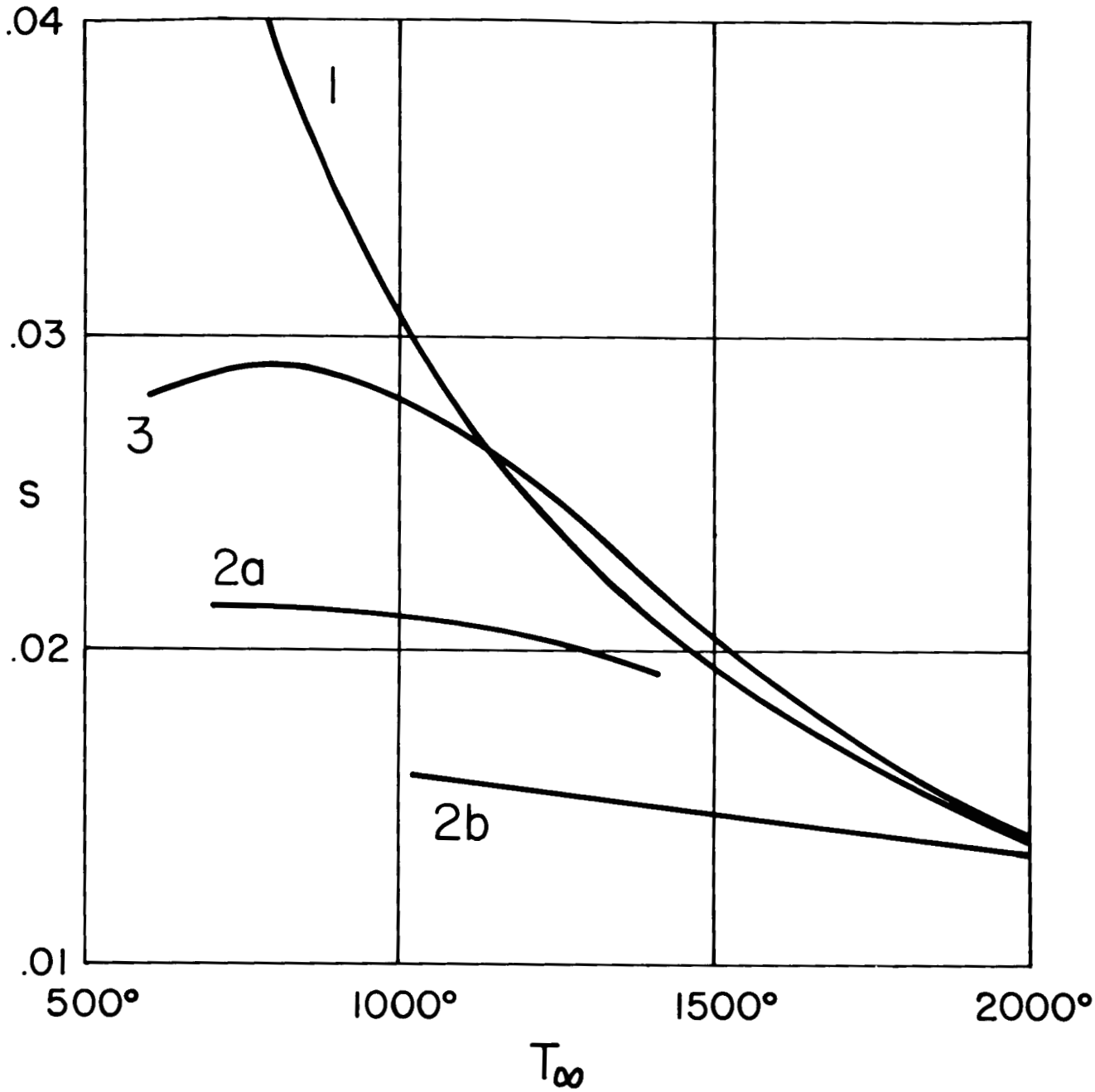

Figure 1.--The coefficient s of equation (4), which determines the vertical temperature distribution, as a function of the exospheric temperature T_∞. Curve 1 gives the temperature profiles of Nicolet's (1961) models. Curves 2a and 2b are those pertaining to the Harris-Priester models in the COSPAR International Reference Atmosphere 1964 (2a for 4 AM, 2b for 2 PM). Curve 3 gives the temperature profiles of the present tables.

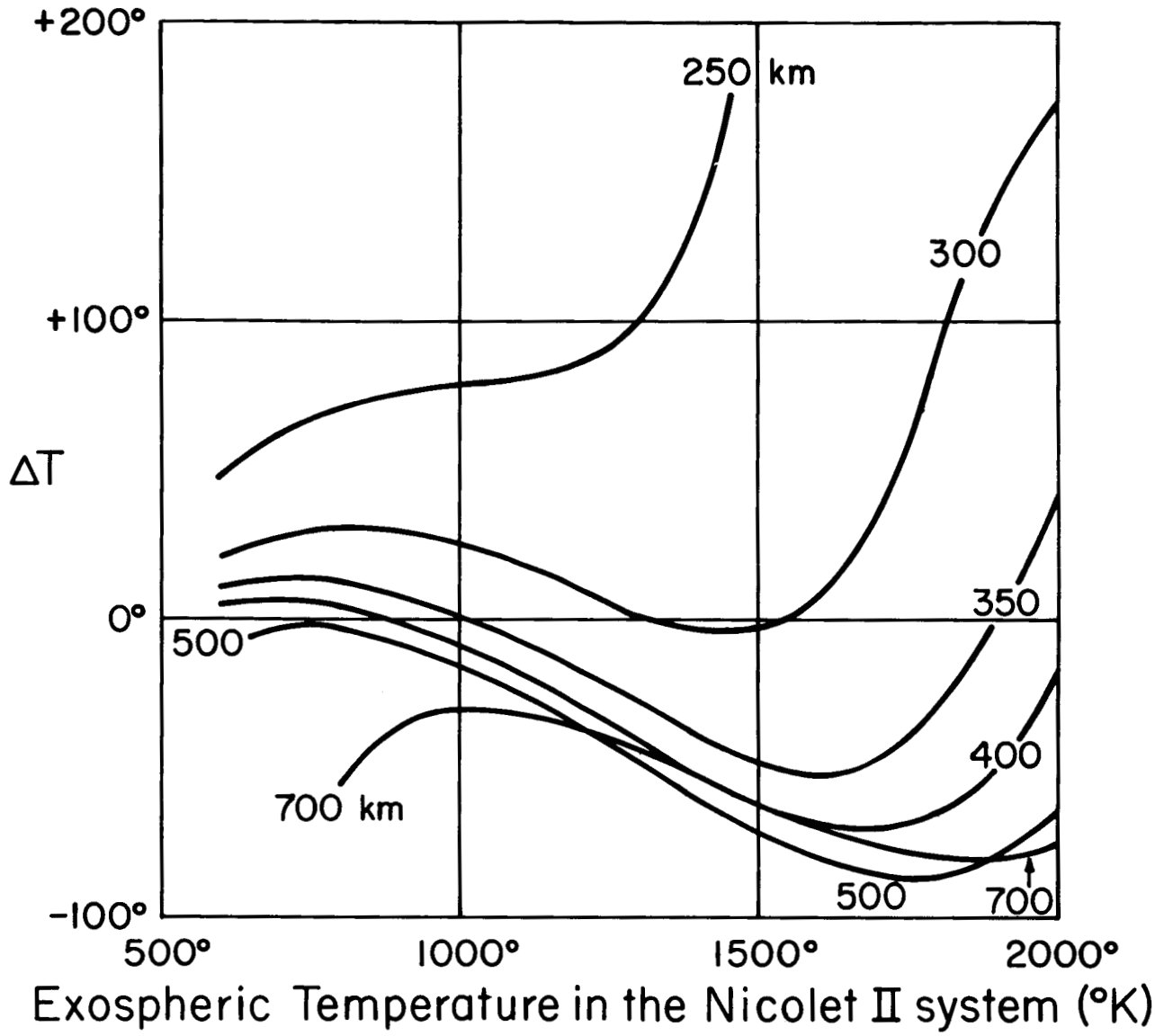

Figure 2.--Correction to the exospheric temperatures obtained from densities by use of the Nicolet II models to reduce them to temperatures obtained using the present models.

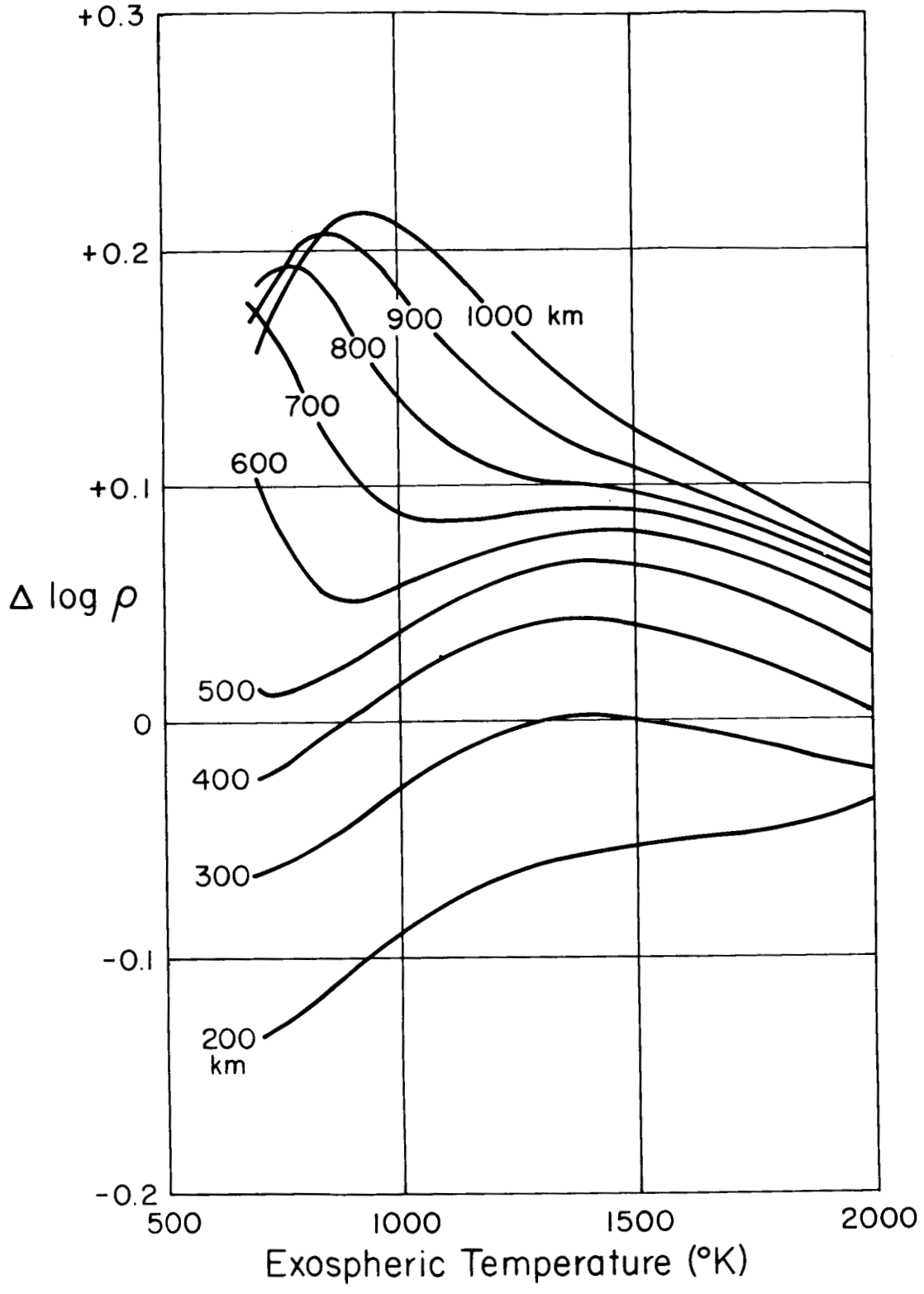

Figure 3.--Difference in log ρ for a given exospheric temperature and a given height between Nicolet II and the present models. The difference is taken in the sense: Present tables minus Nicolet II.

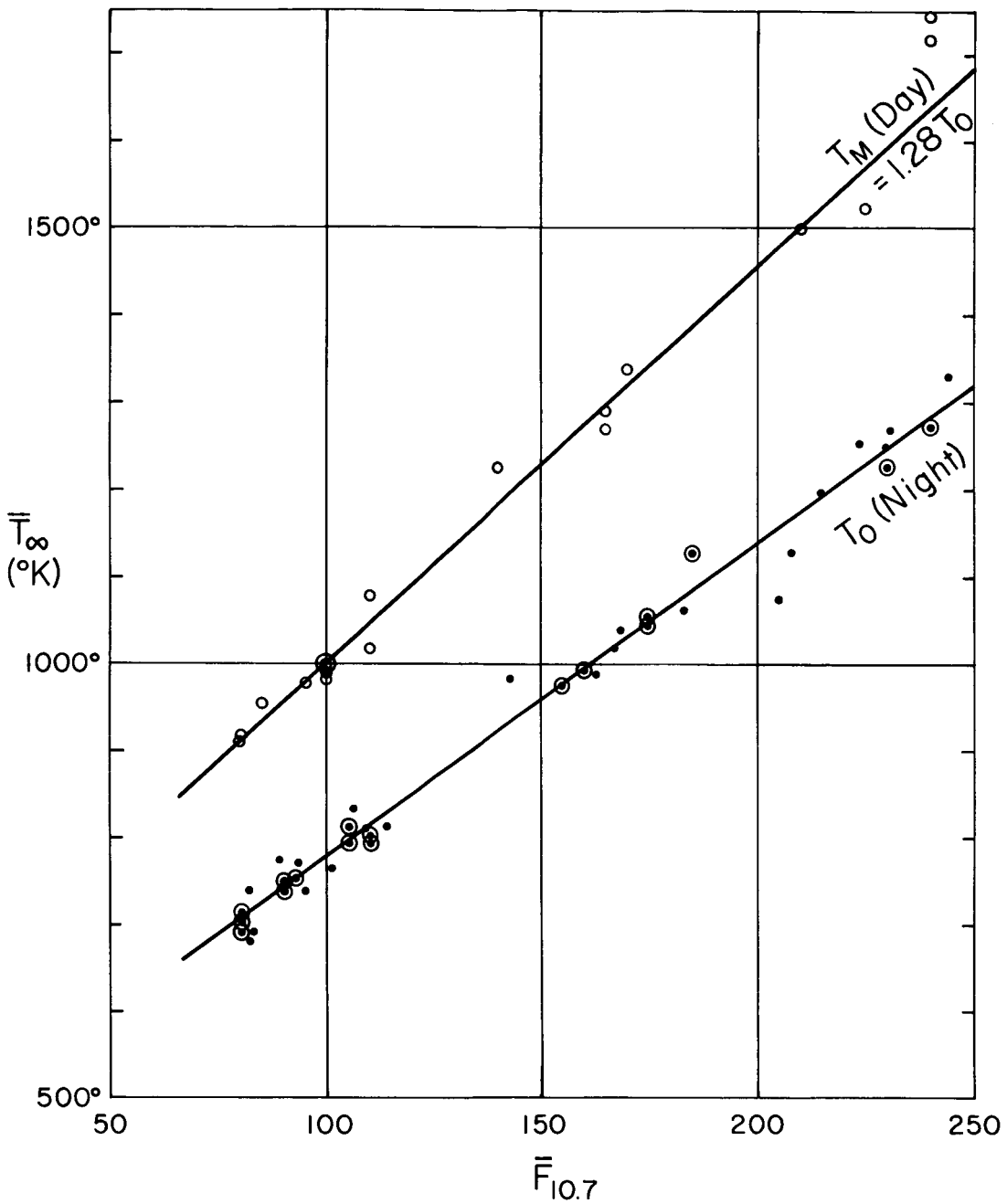

Figure. 4.--Daytime maximum and nighttime minimum temperatures above the thermopause as a function of the 10.7-cm solar flux, in units of 10^{-22} watts/m^2/cycle/sec bandwidth. Data are averaged over two or three solar rotations. Open circles: individual maxima deduced from satellite drag curves. Circled dots: individual minima deduced from satellite drag curves. Dots: temperatures reduced to the nighttime minimum at times when the curve of the semiannual temperature variation was close to the annual average. The temperatures in this diagram must be considered as referred to average quiet geomagnetic conditions ($K_p = 2$ or $a_p = 7$).

Table 1.--Detailed atmospheric data as a function of height and exospheric temperature.

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	573.0	10.3158	10.4972	11.0866	7.3586		26.32	19.22	0.7612E-11	-11.118
140.0	763.7	9.9522	10.2530	10.7527	7.2514		25.86	26.15	0.3583E-11	-11.446
150.0	930.6	9.6796	10.0738	10.5034	7.1748		25.47	32.46	0.2051E-11	-11.688
160.0	1076.7	9.4597	9.9322	10.3029	7.1159		25.11	38.21	0.1315E-11	-11.881
170.0	1204.5	9.2738	9.8149	10.1341	7.0685		24.78	43.44	0.9068E-12	-12.042
180.0	1316.4	9.1116	9.7145	9.9874	7.0292		24.47	48.22	0.6582E-12	-12.182
190.0	1414.3	8.9668	9.6265	9.8567	6.9956		24.18	52.60	0.4961E-12	-12.304
200.0	1499.9	8.8351	9.5479	9.7382	6.9665		23.90	56.61	0.3848E-12	-12.415
210.0	1574.9	8.7137	9.4766	9.6293	6.9409		23.63	60.31	0.3052E-12	-12.515
220.0	1640.5	8.6005	9.4111	9.5279	6.9179		23.36	63.73	0.2466E-12	-12.608
230.0	1697.9	8.4938	9.3503	9.4327	6.8972		23.11	66.89	0.2021E-12	-12.694
240.0	1748.1	8.3926	9.2934	9.3425	6.8782		22.85	69.84	0.1677E-12	-12.775
250.0	1792.1	8.2958	9.2396	9.2565	6.8608		22.61	72.59	0.1406E-12	-12.852
260.0	1830.5	8.2029	9.1886	9.1740	6.8446		22.37	75.17	0.1190E-12	-12.925
270.0	1864.2	8.1132	9.1397	9.0944	6.8295		22.14	77.60	0.1014E-12	-12.994
280.0	1893.6	8.0261	9.0928	9.0174	6.8152		21.91	79.89	0.8699E-13	-13.061
290.0	1919.4	7.9415	9.0475	8.9425	6.8017		21.68	82.06	0.7507E-13	-13.125
300.0	1942.0	7.8588	9.0037	8.8695	6.7889		21.46	84.13	0.6512E-13	-13.186
320.0	1979.0	7.6986	8.9195	8.7282	6.7647		21.03	88.00	0.4964E-13	-13.304
340.0	2007.3	7.5437	8.8389	8.5919	6.7423		20.63	91.57	0.3840E-13	-13.416
360.0	2029.0	7.3931	8.7613	8.4594	6.7212		20.24	94.91	0.3008E-13	-13.522
380.0	2045.7	7.2458	8.6859	8.3301	6.7010		19.87	98.05	0.2380E-13	-13.623
400.0	2058.4	7.1013	8.6123	8.2032	6.6816		19.52	101.03	0.1901E-13	-13.721
420.0	2068.1	6.9590	8.5401	8.0784	6.6627		19.18	103.87	0.1530E-13	-13.815
440.0	2075.6	6.8186	8.4691	7.9553	6.6444		18.87	106.60	0.1240E-13	-13.907
460.0	2081.3	6.6798	8.3992	7.8336	6.6264		18.58	109.23	0.1011E-13	-13.995
480.0	2085.7	6.5425	8.3300	7.7133	6.6088		18.30	111.77	0.8296E-14	-14.081
500.0	2089.0	6.4064	8.2616	7.5940	6.5914	2.9454	18.04	114.23	0.6840E-14	-14.165
520.0	2091.6	6.2714	8.1939	7.4758	6.5743	2.9406	17.79	116.63	0.5667E-14	-14.247
540.0	2093.6	6.1375	8.1267	7.3585	6.5573	2.9360	17.56	118.95	0.4716E-14	-14.326
560.0	2095.1	6.0046	8.0601	7.2421	6.5405	2.9315	17.35	121.23	0.3940E-14	-14.405
580.0	2096.2	5.8726	7.9940	7.1265	6.5239	2.9271	17.14	123.46	0.3304E-14	-14.481
600.0	2097.1	5.7415	7.9283	7.0117	6.5074	2.9228	16.95	125.65	0.2781E-14	-14.556
620.0	2097.8	5.6112	7.8631	6.8976	6.4910	2.9185	16.76	127.81	0.2348E-14	-14.629
640.0	2098.3	5.4817	7.7983	6.7843	6.4748	2.9144	16.58	129.96	0.1989E-14	-14.701
660.0	2098.7	5.3530	7.7339	6.6716	6.4586	2.9102	16.41	132.10	0.1689E-14	-14.772
680.0	2099.0	5.2251	7.6700	6.5596	6.4426	2.9061	16.24	134.25	0.1439E-14	-14.842
700.0	2099.2	5.0980	7.6064	6.4483	6.4267	2.9021	16.08	136.40	0.1228E-14	-14.911
750.0	2099.6	4.7833	7.4490	6.1728	6.3873	2.8921	15.68	141.94	0.8357E-15	-15.078
800.0	2099.8	4.4731	7.2939	5.9012	6.3484	2.8823	15.26	147.83	0.5761E-15	-15.240
850.0	2099.9	4.1673	7.1409	5.6335	6.3102	2.8726	14.83	154.31	0.4019E-15	-15.396
900.0	2099.9	3.8657	6.9901	5.3694	6.2724	2.8631	14.36	161.62	0.2834E-15	-15.548
950.0	2100.0	3.5682	6.8414	5.1090	6.2352	2.8537	13.84	170.01	0.2020E-15	-15.695
1000.0	2100.0	3.2748	6.6947	4.8521	6.1985	2.8445	13.26	179.79	0.1454E-15	-15.837

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	572.2	10.3162	10.4977	11.0870	7.3589		26.32	19.20	0.7619E-11	-11.118
140.0	761.6	9.9527	10.2539	10.7533	7.2520		25.86	26.08	0.3589E-11	-11.445
150.0	926.7	9.6802	10.0750	10.5041	7.1757		25.46	32.33	0.2055E-11	-11.687
160.0	1070.7	9.4601	9.9336	10.3036	7.1172		25.11	38.00	0.1317E-11	-11.880
170.0	1196.2	9.2739	9.8165	10.1346	7.0701		24.77	43.15	0.9082E-12	-12.042
180.0	1305.6	9.1114	9.7162	9.9876	7.0309		24.46	47.85	0.6589E-12	-12.181
190.0	1401.0	8.9661	9.6282	9.8565	6.9976		24.17	52.13	0.4964E-12	-12.304
200.0	1484.2	8.8338	9.5496	9.7376	6.9686		23.88	56.06	0.3847E-12	-12.415
210.0	1556.7	8.7117	9.4782	9.6282	6.9431		23.61	59.66	0.3049E-12	-12.516
220.0	1619.9	8.5978	9.4125	9.5262	6.9203		23.34	62.99	0.2460E-12	-12.609
230.0	1675.0	8.4903	9.3515	9.4304	6.8996		23.08	66.07	0.2015E-12	-12.696
240.0	1723.1	8.3882	9.2943	9.3394	6.8808		22.82	68.93	0.1670E-12	-12.777
250.0	1765.0	8.2905	9.2403	9.2527	6.8634		22.58	71.60	0.1398E-12	-12.854
260.0	1801.5	8.1966	9.1889	9.1693	6.8473		22.33	74.10	0.1181E-12	-12.928
270.0	1833.3	8.1058	9.1397	9.0889	6.8321		22.09	76.45	0.1005E-12	-12.998
280.0	1861.1	8.0177	9.0924	9.0109	6.8179		21.86	78.68	0.8614E-13	-13.065
290.0	1885.3	7.9319	9.0467	8.9351	6.8044		21.63	80.79	0.7422E-13	-13.129
300.0	1906.4	7.8481	9.0023	8.8611	6.7915		21.41	82.79	0.6428E-13	-13.192
320.0	1940.9	7.6853	8.9171	8.7177	6.7673		20.97	86.55	0.4884E-13	-13.311
340.0	1967.0	7.5279	8.8354	8.5791	6.7447		20.56	90.02	0.3766E-13	-13.424
360.0	1986.9	7.3745	8.7566	8.4443	6.7233		20.17	93.27	0.2940E-13	-13.532
380.0	2002.1	7.2244	8.6799	8.3125	6.7029		19.79	96.33	0.2319E-13	-13.635
400.0	2013.6	7.0770	8.6049	8.1831	6.6832		19.44	99.24	0.1845E-13	-13.734
420.0	2022.3	6.9317	8.5313	8.0557	6.6641		19.10	102.02	0.1480E-13	-13.830
440.0	2029.0	6.7883	8.4589	7.9299	6.6455		18.79	104.69	0.1196E-13	-13.922
460.0	2034.0	6.6464	8.3874	7.8056	6.6272		18.49	107.26	0.9719E-14	-14.012
480.0	2037.8	6.5060	8.3168	7.6825	6.6092		18.21	109.74	0.7946E-14	-14.100
500.0	2040.8	6.3668	8.2469	7.5606	6.5915	2.9752	17.95	112.15	0.6531E-14	-14.185
520.0	2043.0	6.2287	8.1776	7.4396	6.5740	2.9704	17.70	114.49	0.5394E-14	-14.268
540.0	2044.7	6.0916	8.1089	7.3196	6.5567	2.9657	17.47	116.78	0.4474E-14	-14.349
560.0	2045.9	5.9556	8.0407	7.2005	6.5395	2.9612	17.26	119.00	0.3727E-14	-14.429
580.0	2046.9	5.8204	7.9731	7.0821	6.5225	2.9567	17.05	121.19	0.3116E-14	-14.506
600.0	2047.7	5.6862	7.9059	6.9646	6.5056	2.9523	16.86	123.35	0.2615E-14	-14.583
620.0	2048.2	5.5528	7.8391	6.8478	6.4889	2.9480	16.67	125.48	0.2201E-14	-14.657
640.0	2048.6	5.4202	7.7728	6.7317	6.4722	2.9437	16.49	127.59	0.1859E-14	-14.731
660.0	2049.0	5.2884	7.7068	6.6163	6.4557	2.9395	16.32	129.71	0.1574E-14	-14.803
680.0	2049.2	5.1574	7.6413	6.5016	6.4393	2.9353	16.15	131.83	0.1337E-14	-14.874
700.0	2049.4	5.0272	7.5762	6.3876	6.4230	2.9312	15.98	133.98	0.1138E-14	-14.944
750.0	2049.7	4.7049	7.4150	6.1054	6.3826	2.9210	15.57	139.52	0.7687E-15	-15.114
800.0	2049.8	4.3871	7.2561	5.8272	6.3428	2.9109	15.14	145.48	0.5263E-15	-15.279
850.0	2049.9	4.0738	7.0994	5.5529	6.3036	2.9011	14.68	152.12	0.3646E-15	-15.438
900.0	2050.0	3.7649	6.9450	5.2825	6.2650	2.8913	14.18	159.68	0.2555E-15	-15.593
950.0	2050.0	3.4601	6.7926	5.0157	6.2269	2.8817	13.63	168.47	0.1810E-15	-15.742
1000.0	2050.0	3.1596	6.6423	4.7525	6.1892	2.8722	13.02	178.78	0.1296E-15	-15.888

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	571.7	10.3165	10.4981	11.0873	7.3592		26.32	19.18	0.7625E-11	-11.118
140.0	759.8	9.9533	10.2547	10.7539	7.2526		25.86	26.02	0.3594E-11	-11.444
150.0	923.1	9.6808	10.0762	10.5048	7.1767		25.46	32.21	0.2059E-11	-11.686
160.0	1065.0	9.4606	9.9350	10.3043	7.1184		25.10	37.80	0.1320E-11	-11.880
170.0	1188.1	9.2742	9.8181	10.1353	7.0716		24.77	42.87	0.9098E-12	-12.041
180.0	1295.1	9.1114	9.7179	9.9880	7.0326		24.45	47.48	0.6600E-12	-12.180
190.0	1387.9	8.9656	9.6300	9.8566	6.9995		24.16	51.67	0.4969E-12	-12.304
200.0	1468.5	8.8328	9.5514	9.7373	6.9708		23.87	55.50	0.3848E-12	-12.415
210.0	1538.5	8.7101	9.4799	9.6274	6.9454		23.59	59.01	0.3048E-12	-12.516
220.0	1599.3	8.5954	9.4141	9.5249	6.9227		23.32	62.25	0.2457E-12	-12.610
230.0	1652.1	8.4871	9.3529	9.4283	6.9022		23.05	65.23	0.2010E-12	-12.697
240.0	1697.9	8.3841	9.2955	9.3367	6.8834		22.80	68.01	0.1664E-12	-12.779
250.0	1737.7	8.2855	9.2412	9.2491	6.8661		22.54	70.60	0.1391E-12	-12.857
260.0	1772.2	8.1906	9.1894	9.1649	6.8500		22.30	73.02	0.1174E-12	-12.930
270.0	1802.2	8.0987	9.1398	9.0836	6.8349		22.05	75.30	0.9976E-13	-13.001
280.0	1828.3	8.0095	9.0921	9.0047	6.8207		21.82	77.45	0.8533E-13	-13.069
290.0	1850.9	7.9225	9.0459	8.9278	6.8071		21.58	79.49	0.7341E-13	-13.134
300.0	1870.5	7.8374	9.0011	8.8528	6.7942		21.36	81.44	0.6347E-13	-13.197
320.0	1902.4	7.6720	8.9148	8.7071	6.7699		20.91	85.08	0.4807E-13	-13.318
340.0	1926.4	7.5118	8.8319	8.5662	6.7472		20.49	88.45	0.3693E-13	-13.433
360.0	1944.5	7.3556	8.7518	8.4289	6.7256		20.09	91.61	0.2873E-13	-13.542
380.0	1958.2	7.2025	8.6737	8.2945	6.7049		19.71	94.59	0.2258E-13	-13.646
400.0	1968.5	7.0520	8.5973	8.1624	6.6850		19.35	97.42	0.1790E-13	-13.747
420.0	1976.2	6.9035	8.5222	8.0323	6.6656		19.02	100.14	0.1431E-13	-13.844
440.0	1982.1	6.7569	8.4483	7.9037	6.6466		18.70	102.75	0.1152E-13	-13.939
460.0	1986.5	6.6118	8.3753	7.7766	6.6280		18.40	105.26	0.9330E-14	-14.030
480.0	1989.8	6.4681	8.3031	7.6507	6.6096		18.12	107.69	0.7602E-14	-14.119
500.0	1992.3	6.3256	8.2315	7.5259	6.5915	3.0070	17.86	110.05	0.6227E-14	-14.206
520.0	1994.2	6.1843	8.1606	7.4021	6.5736	3.0021	17.61	112.34	0.5126E-14	-14.290
540.0	1995.6	6.0439	8.0903	7.2792	6.5559	2.9974	17.38	114.57	0.4238E-14	-14.373
560.0	1996.7	5.9045	8.0205	7.1571	6.5384	2.9928	17.17	116.76	0.3519E-14	-14.454
580.0	1997.5	5.7661	7.9512	7.0359	6.5209	2.9883	16.96	118.91	0.2933E-14	-14.533
600.0	1998.1	5.6286	7.8824	6.9154	6.5037	2.9838	16.77	121.02	0.2453E-14	-14.610
620.0	1998.6	5.4919	7.8140	6.7958	6.4865	2.9794	16.58	123.12	0.2058E-14	-14.686
640.0	1998.9	5.3560	7.7460	6.6768	6.4695	2.9750	16.40	125.21	0.1733E-14	-14.761
660.0	1999.2	5.2209	7.6784	6.5586	6.4526	2.9707	16.22	127.30	0.1463E-14	-14.835
680.0	1999.4	5.0867	7.6113	6.4410	6.4357	2.9665	16.05	129.41	0.1238E-14	-14.907
700.0	1999.5	4.9532	7.5445	6.3242	6.4190	2.9622	15.88	131.55	0.1051E-14	-14.978
750.0	1999.8	4.6229	7.3793	6.0350	6.3777	2.9518	15.46	137.11	0.7048E-15	-15.152
800.0	1999.9	4.2972	7.2165	5.7499	6.3369	2.9415	15.01	143.17	0.4790E-15	-15.320
850.0	1999.9	3.9761	7.0559	5.4687	6.2967	2.9314	14.53	149.99	0.3295E-15	-15.482
900.0	2000.0	3.6594	6.8976	5.1915	6.2571	2.9214	14.00	157.86	0.2293E-15	-15.640
950.0	2000.0	3.3471	6.7414	4.9180	6.2180	2.9115	13.41	167.10	0.1614E-15	-15.792
1000.0	2000.0	3.0390	6.5874	4.6483	6.1795	2.9018	12.76	178.03	0.1149E-15	-15.940

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	571.3	10.3168	10.4984	11.0876	7.3594		26.32	19.16	0.7629E-11	-11.118
140.0	758.2	9.9538	10.2554	10.7545	7.2531		25.86	25.97	0.3599E-11	-11.444
150.0	919.8	9.6815	10.0773	10.5056	7.1775		25.46	32.09	0.2063E-11	-11.686
160.0	1059.5	9.4613	9.9365	10.3052	7.1196		25.10	37.62	0.1323E-11	-11.879
170.0	1180.2	9.2748	9.8198	10.1361	7.0730		24.76	42.60	0.9118E-12	-12.040
180.0	1284.6	9.1116	9.7198	9.9886	7.0344		24.45	47.11	0.6612E-12	-12.180
190.0	1374.8	8.9654	9.6320	9.8570	7.0015		24.14	51.21	0.4976E-12	-12.303
200.0	1452.8	8.8321	9.5533	9.7373	6.9730		23.85	54.94	0.3852E-12	-12.414
210.0	1520.2	8.7087	9.4818	9.6268	6.9478		23.57	58.35	0.3048E-12	-12.516
220.0	1578.5	8.5933	9.4159	9.5237	6.9253		23.30	61.49	0.2455E-12	-12.610
230.0	1628.9	8.4842	9.3545	9.4265	6.9049		23.03	64.39	0.2005E-12	-12.698
240.0	1672.4	8.3803	9.2969	9.3341	6.8862		22.77	67.07	0.1658E-12	-12.780
250.0	1710.1	8.2807	9.2422	9.2457	6.8690		22.51	69.58	0.1385E-12	-12.859
260.0	1742.6	8.1847	9.1901	9.1606	6.8529		22.26	71.92	0.1167E-12	-12.933
270.0	1770.7	8.0917	9.1401	9.0784	6.8378		22.01	74.12	0.9900E-13	-13.004
280.0	1795.0	8.0012	9.0920	8.9984	6.8236		21.77	76.20	0.8455E-13	-13.073
290.0	1816.0	7.9130	9.0453	8.9205	6.8100		21.53	78.18	0.7262E-13	-13.139
300.0	1834.2	7.8266	9.0000	8.8444	6.7971		21.30	80.06	0.6268E-13	-13.203
320.0	1863.5	7.6585	8.9125	8.6964	6.7727		20.85	83.58	0.4729E-13	-13.325
340.0	1885.3	7.4953	8.8284	8.5529	6.7497		20.43	86.85	0.3621E-13	-13.441
360.0	1901.7	7.3360	8.7468	8.4130	6.7279		20.02	89.92	0.2806E-13	-13.552
380.0	1913.9	7.1798	8.6673	8.2758	6.7070		19.63	92.82	0.2197E-13	-13.658
400.0	1923.0	7.0260	8.5894	8.1409	6.6868		19.27	95.59	0.1735E-13	-13.761
420.0	1929.8	6.8742	8.5128	8.0079	6.6670		18.93	98.24	0.1382E-13	-13.860
440.0	1934.9	6.7243	8.4372	7.8764	6.6477		18.61	100.78	0.1108E-13	-13.955
460.0	1938.7	6.5758	8.3625	7.7463	6.6287		18.31	103.24	0.8943E-14	-14.049
480.0	1941.6	6.4286	8.2886	7.6174	6.6099		18.03	105.62	0.7261E-14	-14.139
500.0	1943.7	6.2826	8.2154	7.4896	6.5914	3.0409	17.77	107.92	0.5926E-14	-14.227
520.0	1945.3	6.1378	8.1428	7.3627	6.5731	3.0360	17.52	110.17	0.4861E-14	-14.313
540.0	1946.5	5.9940	8.0708	7.2368	6.5550	3.0313	17.29	112.35	0.4005E-14	-14.397
560.0	1947.4	5.8511	7.9992	7.1117	6.5370	3.0266	17.07	114.50	0.3314E-14	-14.480
580.0	1948.0	5.7092	7.9282	6.9874	6.5192	3.0219	16.87	116.60	0.2753E-14	-14.560
600.0	1948.5	5.5682	7.8576	6.8639	6.5015	3.0174	16.67	118.68	0.2295E-14	-14.639
620.0	1948.9	5.4280	7.7875	6.7412	6.4839	3.0129	16.48	120.75	0.1919E-14	-14.717
640.0	1949.2	5.2887	7.7178	6.6192	6.4665	3.0085	16.30	122.81	0.1611E-14	-14.793
660.0	1949.4	5.1502	7.6485	6.4980	6.4491	3.0040	16.12	124.88	0.1355E-14	-14.868
680.0	1949.5	5.0125	7.5797	6.3775	6.4319	2.9997	15.95	126.98	0.1144E-14	-14.942
700.0	1949.7	4.8756	7.5112	6.2576	6.4147	2.9953	15.78	129.12	0.9675E-15	-15.014
750.0	1949.8	4.5369	7.3418	5.9610	6.3723	2.9846	15.34	134.72	0.6437E-15	-15.191
800.0	1949.9	4.2029	7.1748	5.6686	6.3305	2.9741	14.87	140.90	0.4341E-15	-15.362
850.0	1950.0	3.8735	7.0101	5.3803	6.2893	2.9637	14.36	147.95	0.2964E-15	-15.528
900.0	1950.0	3.5487	6.8477	5.0959	6.2487	2.9535	13.79	156.19	0.2049E-15	-15.689
950.0	1950.0	3.2284	6.6876	4.8155	6.2086	2.9434	13.16	165.94	0.1433E-15	-15.844
1000.0	1950.0	2.9124	6.5296	4.5388	6.1691	2.9334	12.47	177.58	0.1014E-15	-15.994

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	571.0	10.3170	10.4986	11.0878	7.3595		26.32	19.16	0.7633E-11	-11.117
140.0	756.8	9.9543	10.2561	10.7551	7.2536		25.86	25.92	0.3604E-11	-11.443
150.0	916.6	9.6822	10.0784	10.5065	7.1784		25.46	31.99	0.2067E-11	-11.685
160.0	1054.1	9.4621	9.9380	10.3062	7.1208		25.09	37.43	0.1326E-11	-11.878
170.0	1172.4	9.2754	9.8216	10.1370	7.0746		24.76	42.32	0.9141E-12	-12.039
180.0	1274.1	9.1120	9.7218	9.9894	7.0362		24.44	46.74	0.6628E-12	-12.179
190.0	1361.6	8.9654	9.6341	9.8575	7.0036		24.13	50.74	0.4986E-12	-12.302
200.0	1436.9	8.8315	9.5555	9.7374	6.9753		23.84	54.37	0.3856E-12	-12.414
210.0	1501.6	8.7075	9.4839	9.6264	6.9503		23.55	57.68	0.3049E-12	-12.516
220.0	1557.3	8.5913	9.4179	9.5227	6.9279		23.27	60.72	0.2453E-12	-12.610
230.0	1605.2	8.4813	9.3563	9.4248	6.9077		23.00	63.53	0.2002E-12	-12.699
240.0	1646.4	8.3765	9.2984	9.3316	6.8891		22.74	66.12	0.1653E-12	-12.782
250.0	1681.9	8.2758	9.2434	9.2424	6.8719		22.47	68.53	0.1379E-12	-12.860
260.0	1712.4	8.1787	9.1909	9.1564	6.8559		22.22	70.79	0.1160E-12	-12.936
270.0	1738.6	8.0845	9.1405	9.0731	6.8409		21.97	72.92	0.9826E-13	-13.008
280.0	1761.2	7.9928	9.0919	8.9921	6.8266		21.72	74.93	0.8377E-13	-13.077
290.0	1780.6	7.9032	9.0447	8.9131	6.8131		21.48	76.83	0.7182E-13	-13.144
300.0	1797.3	7.8154	8.9988	8.8357	6.8001		21.25	78.65	0.6187E-13	-13.209
320.0	1824.0	7.6444	8.9101	8.6852	6.7755		20.79	82.06	0.4651E-13	-13.332
340.0	1843.8	7.4781	8.8246	8.5391	6.7524		20.35	85.23	0.3547E-13	-13.450
360.0	1858.4	7.3156	8.7416	8.3963	6.7303		19.94	88.21	0.2737E-13	-13.563
380.0	1869.2	7.1560	8.6605	8.2563	6.7091		19.55	91.04	0.2134E-13	-13.671
400.0	1877.2	6.9987	8.5810	8.1184	6.6885		19.18	93.73	0.1679E-13	-13.775
420.0	1883.1	6.8435	8.5027	7.9823	6.6684		18.84	96.32	0.1332E-13	-13.875
440.0	1887.5	6.6899	8.4254	7.8477	6.6487		18.52	98.80	0.1064E-13	-13.973
460.0	1890.8	6.5378	8.3490	7.7144	6.6293		18.22	101.20	0.8555E-14	-14.068
480.0	1893.2	6.3870	8.2733	7.5823	6.6102		17.93	103.53	0.6919E-14	-14.160
500.0	1894.9	6.2373	8.1983	7.4513	6.5912	3.0772	17.67	105.78	0.5626E-14	-14.250
520.0	1896.3	6.0888	8.1239	7.3212	6.5725	3.0722	17.43	107.97	0.4598E-14	-14.337
540.0	1897.2	5.9413	8.0500	7.1921	6.5539	3.0674	17.19	110.11	0.3775E-14	-14.423
560.0	1898.0	5.7948	7.9766	7.0638	6.5355	3.0626	16.98	112.21	0.3112E-14	-14.507
580.0	1898.5	5.6492	7.9038	6.9363	6.5172	3.0579	16.77	114.28	0.2576E-14	-14.589
600.0	1898.9	5.5045	7.8314	6.8096	6.4991	3.0533	16.58	116.33	0.2140E-14	-14.670
620.0	1899.2	5.3607	7.7595	6.6837	6.4811	3.0487	16.39	118.36	0.1784E-14	-14.749
640.0	1899.4	5.2177	7.6880	6.5585	6.4632	3.0441	16.20	120.41	0.1491E-14	-14.826
660.0	1899.5	5.0756	7.6169	6.4341	6.4454	3.0396	16.02	122.47	0.1251E-14	-14.903
680.0	1899.7	4.9343	7.5462	6.3104	6.4277	3.0351	15.84	124.56	0.1052E-14	-14.978
700.0	1899.8	4.7939	7.4760	6.1874	6.4101	3.0307	15.67	126.70	0.8869E-15	-15.052
750.0	1899.9	4.4462	7.3021	5.8831	6.3666	3.0197	15.21	132.36	0.5852E-15	-15.233
800.0	1899.9	4.1034	7.1307	5.5830	6.3237	3.0089	14.72	138.70	0.3915E-15	-15.407
850.0	1900.0	3.7654	6.9617	5.2871	6.2814	2.9982	14.18	146.03	0.2653E-15	-15.576
900.0	1900.0	3.4321	6.7951	4.9952	6.2397	2.9877	13.57	154.68	0.1820E-15	-15.740
950.0	1900.0	3.1033	6.6307	4.7074	6.1985	2.9774	12.90	165.04	0.1264E-15	-15.898
1000.0	1900.0	2.7790	6.4685	4.4235	6.1580	2.9671	12.16	177.49	0.8897E-16	-16.051

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	570.8	10.3171	10.4987	11.0879	7.3596		26.32	19.15	0.7635E-11	-11.117
140.0	755.5	9.9549	10.2567	10.7556	7.2540		25.86	25.88	0.3609E-11	-11.443
150.0	913.5	9.6830	10.0796	10.5074	7.1792		25.46	31.88	0.2071E-11	-11.684
160.0	1048.7	9.4630	9.9396	10.3072	7.1220		25.09	37.24	0.1329E-11	-11.876
170.0	1164.4	9.2762	9.8235	10.1381	7.0761		24.75	42.04	0.9166E-12	-12.038
180.0	1263.3	9.1125	9.7239	9.9903	7.0381		24.43	46.36	0.6645E-12	-12.178
190.0	1348.0	8.9655	9.6363	9.8581	7.0058		24.12	50.25	0.4997E-12	-12.301
200.0	1420.5	8.8311	9.5577	9.7376	6.9777		23.82	53.78	0.3862E-12	-12.413
210.0	1482.5	8.7064	9.4861	9.6261	6.9529		23.53	56.99	0.3051E-12	-12.516
220.0	1535.6	8.5894	9.4199	9.5218	6.9307		23.25	59.93	0.2452E-12	-12.610
230.0	1580.9	8.4785	9.3582	9.4231	6.9106		22.98	62.64	0.1999E-12	-12.699
240.0	1619.8	8.3726	9.3000	9.3291	6.8921		22.70	65.14	0.1648E-12	-12.783
250.0	1653.0	8.2708	9.2447	9.2390	6.8750		22.44	67.47	0.1373E-12	-12.862
260.0	1681.5	8.1725	9.1918	9.1519	6.8591		22.18	69.64	0.1153E-12	-12.938
270.0	1705.8	8.0770	9.1409	9.0676	6.8440		21.92	71.69	0.9748E-13	-13.011
280.0	1726.6	7.9839	9.0918	8.9854	6.8298		21.67	73.62	0.8296E-13	-13.081
290.0	1744.4	7.8929	9.0440	8.9052	6.8162		21.43	75.46	0.7099E-13	-13.149
300.0	1759.7	7.8037	8.9975	8.8266	6.8031		21.19	77.22	0.6104E-13	-13.214
320.0	1783.9	7.6295	8.9075	8.6734	6.7784		20.72	80.51	0.4570E-13	-13.340
340.0	1801.6	7.4599	8.8205	8.5244	6.7551		20.28	83.58	0.3470E-13	-13.460
360.0	1814.5	7.2939	8.7360	8.3786	6.7328		19.86	86.48	0.2667E-13	-13.574
380.0	1824.0	7.1307	8.6532	8.2355	6.7112		19.47	89.22	0.2071E-13	-13.684
400.0	1831.0	6.9698	8.5719	8.0944	6.6903		19.09	91.85	0.1622E-13	-13.790
420.0	1836.1	6.8108	8.4918	7.9550	6.6698		18.75	94.37	0.1281E-13	-13.892
440.0	1839.8	6.6534	8.4127	7.8171	6.6496		18.42	96.80	0.1019E-13	-13.992
460.0	1842.5	6.4974	8.3344	7.6805	6.6298		18.12	99.15	0.8162E-14	-14.088
480.0	1844.5	6.3428	8.2568	7.5451	6.6102		17.84	101.42	0.6575E-14	-14.182
500.0	1846.0	6.1893	8.1799	7.4106	6.5908	3.1160	17.57	103.62	0.5325E-14	-14.274
520.0	1847.1	6.0368	8.1036	7.2771	6.5717	3.1109	17.33	105.76	0.4335E-14	-14.363
540.0	1847.9	5.8855	8.0278	7.1446	6.5526	3.1060	17.10	107.86	0.3546E-14	-14.450
560.0	1848.4	5.7350	7.9525	7.0129	6.5337	3.1011	16.88	109.92	0.2912E-14	-14.536
580.0	1848.9	5.5856	7.8777	6.8820	6.5150	3.0963	16.67	111.95	0.2401E-14	-14.620
600.0	1849.2	5.4370	7.8034	6.7520	6.4964	3.0915	16.48	113.96	0.1988E-14	-14.702
620.0	1849.4	5.2894	7.7296	6.6227	6.4779	3.0868	16.29	115.97	0.1651E-14	-14.782
640.0	1849.5	5.1426	7.6561	6.4942	6.4595	3.0822	16.10	118.00	0.1375E-14	-14.862
660.0	1849.7	4.9966	7.5832	6.3664	6.4412	3.0775	15.92	120.05	0.1149E-14	-14.940
680.0	1849.8	4.8515	7.5106	6.2394	6.4230	3.0730	15.73	122.14	0.9630E-15	-15.016
700.0	1849.8	4.7073	7.4385	6.1131	6.4050	3.0684	15.55	124.29	0.8091E-15	-15.092
750.0	1849.9	4.3502	7.2599	5.8005	6.3603	3.0571	15.07	130.04	0.5292E-15	-15.276
800.0	1850.0	3.9982	7.0839	5.4923	6.3162	3.0460	14.56	136.58	0.3510E-15	-15.455
850.0	1850.0	3.6511	6.9103	5.1884	6.2728	3.0351	13.98	144.24	0.2360E-15	-15.627
900.0	1850.0	3.3087	6.7392	4.8887	6.2300	3.0243	13.33	153.39	0.1607E-15	-15.794
950.0	1850.0	2.9711	6.5703	4.5931	6.1877	3.0137	12.60	164.45	0.1109E-15	-15.955
1000.0	1850.0	2.6380	6.4038	4.3015	6.1460	3.0032	11.81	177.83	0.7758E-16	-16.110

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	570.7	10.3173	10.4988	11.0880	7.3597		26.32	19.14	0.7638E-11	-11.117
140.0	754.2	9.9555	10.2574	10.7562	7.2545		25.86	25.83	0.3614E-11	-11.442
150.0	910.3	9.6839	10.0808	10.5083	7.1801		25.45	31.77	0.2076E-11	-11.683
160.0	1043.1	9.4640	9.9412	10.3084	7.1233		25.09	37.05	0.1333E-11	-11.875
170.0	1156.0	9.2771	9.8255	10.1392	7.0778		24.75	41.75	0.9194E-12	-12.037
180.0	1252.2	9.1131	9.7261	9.9914	7.0401		24.42	45.97	0.6664E-12	-12.176
190.0	1333.9	8.9657	9.6387	9.8589	7.0081		24.11	49.75	0.5008E-12	-12.300
200.0	1403.5	8.8307	9.5601	9.7379	6.9802		23.81	53.17	0.3869E-12	-12.412
210.0	1462.7	8.7052	9.4884	9.6258	6.9557		23.52	56.28	0.3053E-12	-12.515
220.0	1513.0	8.5873	9.4221	9.5208	6.9336		23.23	59.11	0.2451E-12	-12.611
230.0	1555.9	8.4754	9.3601	9.4214	6.9137		22.95	61.72	0.1995E-12	-12.700
240.0	1592.3	8.3685	9.3016	9.3264	6.8953		22.67	64.13	0.1643E-12	-12.784
250.0	1623.3	8.2655	9.2459	9.2353	6.8783		22.40	66.36	0.1366E-12	-12.865
260.0	1649.7	8.1659	9.1926	9.1471	6.8623		22.14	68.46	0.1145E-12	-12.941
270.0	1672.1	8.0690	9.1413	9.0616	6.8473		21.88	70.42	0.9666E-13	-13.015
280.0	1691.2	7.9745	9.0915	8.9782	6.8330		21.62	72.29	0.8210E-13	-13.086
290.0	1707.4	7.8819	9.0432	8.8967	6.8194		21.37	74.06	0.7010E-13	-13.154
300.0	1721.3	7.7911	8.9960	8.8167	6.8063		21.13	75.75	0.6015E-13	-13.221
320.0	1743.0	7.6135	8.9045	8.6606	6.7814		20.65	78.94	0.4484E-13	-13.348
340.0	1758.7	7.4404	8.8160	8.5086	6.7578		20.20	81.91	0.3389E-13	-13.470
360.0	1770.1	7.2706	8.7297	8.3596	6.7352		19.78	84.72	0.2593E-13	-13.586
380.0	1778.4	7.1036	8.6452	8.2131	6.7133		19.38	87.39	0.2004E-13	-13.698
400.0	1784.4	6.9388	8.5620	8.0686	6.6919		19.00	89.95	0.1563E-13	-13.806
420.0	1788.7	6.7758	8.4800	7.9258	6.6710		18.65	92.41	0.1229E-13	-13.910
440.0	1791.8	6.6143	8.3989	7.7844	6.6504		18.32	94.78	0.9736E-14	-14.012
460.0	1794.1	6.4543	8.3186	7.6442	6.6301		18.02	97.07	0.7762E-14	-14.110
480.0	1795.7	6.2955	8.2390	7.5051	6.6101		17.74	99.29	0.6227E-14	-14.206
500.0	1796.9	6.1379	8.1601	7.3671	6.5902	3.1574	17.47	101.44	0.5023E-14	-14.299
520.0	1797.8	5.9813	8.0817	7.2300	6.5705	3.1522	17.23	103.54	0.4072E-14	-14.390
540.0	1798.4	5.8258	8.0039	7.0939	6.5510	3.1472	17.00	105.59	0.3317E-14	-14.479
560.0	1798.8	5.6713	7.9266	6.9586	6.5316	3.1422	16.78	107.61	0.2714E-14	-14.566
580.0	1799.1	5.5177	7.8497	6.8241	6.5124	3.1373	16.57	109.61	0.2229E-14	-14.652
600.0	1799.4	5.3651	7.7734	6.6905	6.4932	3.1324	16.37	111.59	0.1838E-14	-14.736
620.0	1799.6	5.2133	7.6975	6.5576	6.4742	3.1276	16.18	113.58	0.1520E-14	-14.818
640.0	1799.7	5.0625	7.6220	6.4255	6.4553	3.1228	15.99	115.59	0.1262E-14	-14.899
660.0	1799.8	4.9125	7.5471	6.2942	6.4366	3.1181	15.80	117.64	0.1050E-14	-14.979
680.0	1799.8	4.7634	7.4725	6.1637	6.4179	3.1134	15.62	119.74	0.8768E-15	-15.057
700.0	1799.9	4.6152	7.3984	6.0339	6.3993	3.1087	15.43	121.91	0.7339E-15	-15.134
750.0	1799.9	4.2482	7.2149	5.7127	6.3534	3.0971	14.93	127.78	0.4757E-15	-15.323
800.0	1800.0	3.8864	7.0340	5.3959	6.3081	3.0857	14.38	134.56	0.3128E-15	-15.505
850.0	1800.0	3.5296	6.8556	5.0836	6.2635	3.0745	13.75	142.62	0.2085E-15	-15.681
900.0	1800.0	3.1778	6.6797	4.7755	6.2195	3.0634	13.05	152.36	0.1409E-15	-15.851
950.0	1800.0	2.8307	6.5061	4.4717	6.1760	3.0524	12.28	164.24	0.9659E-16	-16.015
1000.0	1800.0	2.4884	6.3350	4.1720	6.1332	3.0417	11.44	178.69	0.6719E-16	-16.173

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	570.5	10.3174	10.4990	11.0882	7.3597		26.32	19.14	0.7641E-11	-11.117
140.0	752.7	9.9561	10.2581	10.7569	7.2550		25.86	25.78	0.3619E-11	-11.441
150.0	906.8	9.6849	10.0821	10.5094	7.1810		25.45	31.55	0.2081E-11	-11.682
160.0	1037.1	9.4650	9.9430	10.3096	7.1246		25.08	36.84	0.1337E-11	-11.874
170.0	1147.2	9.2780	9.8276	10.1405	7.0796		24.74	41.44	0.9222E-12	-12.035
180.0	1240.3	9.1137	9.7285	9.9924	7.0422		24.41	45.55	0.6684E-12	-12.175
190.0	1319.1	8.9658	9.6412	9.8596	7.0105		24.10	49.22	0.5021E-12	-12.299
200.0	1385.6	8.8301	9.5626	9.7381	6.9829		23.79	52.53	0.3875E-12	-12.412
210.0	1441.9	8.7038	9.4908	9.6254	6.9586		23.49	55.53	0.3055E-12	-12.515
220.0	1489.5	8.5850	9.4244	9.5196	6.9367		23.20	58.26	0.2450E-12	-12.611
230.0	1529.8	8.4720	9.3621	9.4193	6.9169		22.92	60.76	0.1991E-12	-12.701
240.0	1563.8	8.3639	9.3032	9.3234	6.8986		22.64	63.08	0.1637E-12	-12.786
250.0	1592.6	8.2596	9.2471	9.2311	6.8816		22.36	65.22	0.1358E-12	-12.867
260.0	1616.9	8.1585	9.1933	9.1418	6.8657		22.09	67.23	0.1136E-12	-12.944
270.0	1637.4	8.0601	9.1414	9.0550	6.8507		21.83	69.13	0.9573E-13	-13.019
280.0	1654.8	7.9640	9.0910	8.9703	6.8364		21.57	70.92	0.8114E-13	-13.091
290.0	1669.5	7.8698	9.0420	8.8873	6.8227		21.31	72.62	0.6913E-13	-13.160
300.0	1682.0	7.7772	8.9941	8.8059	6.8095		21.06	74.25	0.5918E-13	-13.228
320.0	1701.4	7.5961	8.9010	8.6466	6.7844		20.58	77.33	0.4391E-13	-13.357
340.0	1715.2	7.4191	8.8108	8.4913	6.7605		20.12	80.21	0.3303E-13	-13.481
360.0	1725.1	7.2454	8.7227	8.3389	6.7375		19.69	82.94	0.2515E-13	-13.599
380.0	1732.2	7.0742	8.6362	8.1888	6.7152		19.28	85.54	0.1934E-13	-13.713
400.0	1737.3	6.9051	8.5510	8.0406	6.6935		18.90	88.04	0.1502E-13	-13.823
420.0	1740.9	6.7379	8.4669	7.8941	6.6721		18.55	90.44	0.1175E-13	-13.930
440.0	1743.5	6.5721	8.3837	7.7489	6.6510		18.22	92.75	0.9265E-14	-14.033
460.0	1745.4	6.4077	8.3013	7.6049	6.6302		17.92	94.99	0.7354E-14	-14.133
480.0	1746.7	6.2446	8.2196	7.4620	6.6097		17.63	97.15	0.5873E-14	-14.231
500.0	1747.6	6.0826	8.1385	7.3202	6.5893	3.2016	17.37	99.25	0.4717E-14	-14.326
520.0	1748.3	5.9217	8.0579	7.1793	6.5691	3.1964	17.12	101.31	0.3808E-14	-14.419
540.0	1748.8	5.7618	7.9779	7.0393	6.5490	3.1912	16.89	103.32	0.3088E-14	-14.510
560.0	1749.1	5.6029	7.8984	6.9002	6.5291	3.1862	16.67	105.29	0.2516E-14	-14.599
580.0	1749.4	5.4450	7.8194	6.7619	6.5093	3.1811	16.47	107.26	0.2058E-14	-14.687
600.0	1749.6	5.2880	7.7409	6.6245	6.4896	3.1761	16.27	109.22	0.1690E-14	-14.772
620.0	1749.7	5.1320	7.6629	6.4879	6.4701	3.1712	16.07	111.19	0.1392E-14	-14.856
640.0	1749.8	4.9768	7.5853	6.3521	6.4507	3.1663	15.88	113.19	0.1151E-14	-14.939
660.0	1749.8	4.8226	7.5082	6.2170	6.4313	3.1614	15.68	115.25	0.9542E-15	-15.020
680.0	1749.9	4.6692	7.4315	6.0828	6.4122	3.1566	15.49	117.36	0.7934E-15	-15.100
700.0	1749.9	4.5167	7.3553	5.9493	6.3931	3.1517	15.29	119.57	0.6616E-15	-15.179
750.0	1750.0	4.1393	7.1665	5.6188	6.3458	3.1398	14.76	125.60	0.4246E-15	-15.372
800.0	1750.0	3.7672	6.9805	5.2930	6.2993	3.1281	14.17	132.68	0.2767E-15	-15.558
850.0	1750.0	3.4002	6.7970	4.9718	6.2534	3.1166	13.50	141.21	0.1829E-15	-15.738
900.0	1750.0	3.0383	6.6160	4.6549	6.2081	3.1051	12.75	151.65	0.1226E-15	-15.911
950.0	1750.0	2.6814	6.4376	4.3424	6.1634	3.0939	11.92	164.48	0.8349E-16	-16.078
1000.0	1750.0	2.3293	6.2615	4.0342	6.1194	3.0828	11.03	180.15	0.5778E-16	-16.238

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	570.3	10.3176	10.4992	11.0884	7.3599		26.32	19.13	0.7644E-11	-11.117
140.0	751.1	9.9568	10.2590	10.7576	7.2555		25.85	25.73	0.3625E-11	-11.441
150.0	903.0	9.6859	10.0835	10.5105	7.1820		25.45	31.52	0.2087E-11	-11.681
160.0	1030.5	9.4660	9.9449	10.3109	7.1261		25.08	36.61	0.1341E-11	-11.873
170.0	1137.7	9.2789	9.8298	10.1417	7.0815		24.73	41.11	0.9252E-12	-12.034
180.0	1227.7	9.1142	9.7310	9.9934	7.0445		24.40	45.10	0.6703E-12	-12.174
190.0	1303.3	8.9657	9.6437	9.8602	7.0131		24.08	48.66	0.5032E-12	-12.298
200.0	1366.8	8.8293	9.5652	9.7381	6.9858		23.77	51.86	0.3881E-12	-12.411
210.0	1420.1	8.7021	9.4933	9.6247	6.9616		23.47	54.74	0.3056E-12	-12.515
220.0	1464.9	8.5822	9.4266	9.5181	6.9400		23.18	57.36	0.2446E-12	-12.611
230.0	1502.5	8.4680	9.3640	9.4168	6.9202		22.88	59.77	0.1985E-12	-12.702
240.0	1534.1	8.3585	9.3047	9.3198	6.9020		22.60	61.98	0.1629E-12	-12.788
250.0	1560.7	8.2528	9.2481	9.2263	6.8851		22.32	64.05	0.1349E-12	-12.870
260.0	1583.0	8.1502	9.1938	9.1357	6.8692		22.04	65.97	0.1126E-12	-12.948
270.0	1601.7	8.0502	9.1412	9.0475	6.8542		21.77	67.79	0.9467E-13	-13.024
280.0	1617.4	7.9523	9.0901	8.9613	6.8399		21.50	69.51	0.8005E-13	-13.097
290.0	1630.7	7.8563	9.0404	8.8768	6.8261		21.24	71.15	0.6804E-13	-13.167
300.0	1641.8	7.7618	8.9917	8.7937	6.8128		20.99	72.72	0.5810E-13	-13.236
320.0	1658.9	7.5767	8.8968	8.6311	6.7874		20.50	75.70	0.4289E-13	-13.368
340.0	1671.0	7.3956	8.8047	8.4721	6.7632		20.03	78.49	0.3210E-13	-13.494
360.0	1679.5	7.2176	8.7146	8.3160	6.7398		19.59	81.14	0.2431E-13	-13.614
380.0	1685.6	7.0420	8.6260	8.1621	6.7171		19.18	83.67	0.1860E-13	-13.730
400.0	1689.8	6.8684	8.5387	8.0100	6.6948		18.80	86.11	0.1437E-13	-13.843
420.0	1692.8	6.6966	8.4524	7.8595	6.6729		18.44	88.45	0.1119E-13	-13.951
440.0	1694.9	6.5262	8.3669	7.7102	6.6514		18.11	90.70	0.8779E-14	-14.057
460.0	1696.4	6.3572	8.2822	7.5622	6.6300		17.81	92.89	0.6935E-14	-14.159
480.0	1697.5	6.1894	8.1982	7.4153	6.6089		17.52	95.00	0.5512E-14	-14.259
500.0	1698.2	6.0228	8.1148	7.2694	6.5880	3.2490	17.26	97.06	0.4407E-14	-14.356
520.0	1698.7	5.8572	8.0319	7.1244	6.5672	3.2436	17.01	99.06	0.3541E-14	-14.451
540.0	1699.1	5.6927	7.9496	6.9804	6.5465	3.2384	16.78	101.03	0.2860E-14	-14.544
560.0	1699.4	5.5292	7.8678	6.8372	6.5260	3.2331	16.57	102.97	0.2320E-14	-14.635
580.0	1699.6	5.3666	7.7865	6.6949	6.5057	3.2280	16.36	104.91	0.1889E-14	-14.724
600.0	1699.7	5.2051	7.7057	6.5535	6.4855	3.2228	16.15	106.85	0.1544E-14	-14.811
620.0	1699.8	5.0444	7.6254	6.4128	6.4653	3.2178	15.95	108.81	0.1267E-14	-14.897
640.0	1699.8	4.8848	7.5456	6.2730	6.4454	3.2127	15.76	110.81	0.1043E-14	-14.982
660.0	1699.9	4.7260	7.4662	6.1340	6.4255	3.2077	15.56	112.88	0.8610E-15	-15.065
680.0	1699.9	4.5681	7.3872	5.9958	6.4057	3.2027	15.35	115.02	0.7129E-15	-15.147
700.0	1699.9	4.4112	7.3088	5.8584	6.3861	3.1978	15.15	117.27	0.5920E-15	-15.228
750.0	1700.0	4.0227	7.1145	5.5183	6.3375	3.1855	14.58	123.52	0.3762E-15	-15.425
800.0	1700.0	3.6396	6.9230	5.1829	6.2895	3.1735	13.95	130.96	0.2427E-15	-15.615
850.0	1700.0	3.2618	6.7341	4.8522	6.2423	3.1616	13.23	140.07	0.1590E-15	-15.799
900.0	1700.0	2.8893	6.5478	4.5260	6.1957	3.1498	12.41	151.34	0.1058E-15	-15.975
950.0	1700.0	2.5218	6.3641	4.2043	6.1497	3.1382	11.52	165.27	0.7158E-16	-16.145
1000.0	1700.0	2.1594	6.1829	3.8870	6.1043	3.1268	10.59	182.34	0.4930E-16	-16.307

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	569.9	10.3179	10.4995	11.0887	7.3600		26.32	19.12	0.7649E-11	-11.116
140.0	749.1	9.9576	10.2599	10.7584	7.2562		25.85	25.66	0.3632E-11	-11.440
150.0	898.6	9.6869	10.0851	10.5116	7.1832		25.45	31.37	0.2092E-11	-11.679
160.0	1023.2	9.4671	9.9469	10.3122	7.1278		25.08	36.36	0.1345E-11	-11.871
170.0	1127.2	9.2797	9.8322	10.1429	7.0835		24.73	40.75	0.9282E-12	-12.032
180.0	1214.0	9.1145	9.7336	9.9943	7.0469		24.39	44.62	0.6722E-12	-12.173
190.0	1286.3	8.9654	9.6464	9.8605	7.0158		24.07	48.06	0.5042E-12	-12.297
200.0	1346.7	8.8281	9.5678	9.7379	6.9888		23.75	51.14	0.3884E-12	-12.411
210.0	1397.0	8.6999	9.4957	9.6236	6.9649		23.45	53.91	0.3054E-12	-12.515
220.0	1439.0	8.5787	9.4287	9.5160	6.9434		23.14	56.43	0.2441E-12	-12.612
230.0	1474.0	8.4632	9.3658	9.4136	6.9237		22.85	58.73	0.1977E-12	-12.704
240.0	1503.2	8.3522	9.3060	9.3153	6.9056		22.56	60.85	0.1619E-12	-12.791
250.0	1527.5	8.2449	9.2488	9.2205	6.8888		22.27	62.82	0.1338E-12	-12.874
260.0	1547.9	8.1406	9.1938	9.1285	6.8729		21.99	64.67	0.1114E-12	-12.953
270.0	1564.8	8.0387	9.1405	9.0387	6.8578		21.71	66.41	0.9342E-13	-13.030
280.0	1578.9	7.9390	9.0887	8.9509	6.8434		21.44	68.07	0.7879E-13	-13.104
290.0	1590.7	7.8410	9.0381	8.8647	6.8295		21.17	69.65	0.6679E-13	-13.175
300.0	1600.6	7.7445	8.9885	8.7799	6.8161		20.91	71.16	0.5688E-13	-13.245
320.0	1615.6	7.5550	8.8917	8.6135	6.7904		20.41	74.04	0.4176E-13	-13.379
340.0	1626.1	7.3694	8.7975	8.4507	6.7658		19.94	76.75	0.3108E-13	-13.508
360.0	1633.4	7.1868	8.7052	8.2905	6.7420		19.49	79.32	0.2341E-13	-13.631
380.0	1638.4	7.0064	8.6144	8.1325	6.7187		19.07	81.79	0.1782E-13	-13.749
400.0	1641.9	6.8280	8.5247	7.9762	6.6960		18.69	84.16	0.1369E-13	-13.864
420.0	1644.4	6.6513	8.4360	7.8214	6.6735		18.33	86.45	0.1060E-13	-13.975
440.0	1646.1	6.4760	8.3482	7.6679	6.6514		18.00	88.65	0.8276E-14	-14.082
460.0	1647.3	6.3021	8.2610	7.5155	6.6294		17.69	90.78	0.6505E-14	-14.187
480.0	1648.1	6.1293	8.1746	7.3643	6.6077		17.41	92.84	0.5145E-14	-14.289
500.0	1648.7	5.9577	8.0887	7.2140	6.5862	3.2996	17.15	94.85	0.4094E-14	-14.388
520.0	1649.1	5.7872	8.0034	7.0647	6.5648	3.2942	16.90	96.81	0.3274E-14	-14.485
540.0	1649.4	5.6177	7.9186	6.9164	6.5435	3.2888	16.67	98.74	0.2631E-14	-14.580
560.0	1649.6	5.4493	7.8344	6.7689	6.5224	3.2834	16.45	100.65	0.2124E-14	-14.673
580.0	1649.7	5.2819	7.7506	6.6223	6.5015	3.2781	16.24	102.56	0.1722E-14	-14.764
600.0	1649.8	5.1154	7.6674	6.4766	6.4806	3.2728	16.03	104.48	0.1402E-14	-14.853
620.0	1649.9	4.9500	7.5847	6.3317	6.4599	3.2676	15.83	106.44	0.1145E-14	-14.941
640.0	1649.9	4.7854	7.5024	6.1877	6.4393	3.2624	15.63	108.45	0.9379E-15	-15.028
660.0	1649.9	4.6219	7.4206	6.0445	6.4189	3.2572	15.42	110.54	0.7709E-15	-15.113
680.0	1649.9	4.4592	7.3393	5.9021	6.3985	3.2521	15.21	112.73	0.6355E-15	-15.197
700.0	1650.0	4.2975	7.2584	5.7605	6.3783	3.2470	14.98	115.05	0.5254E-15	-15.280
750.0	1650.0	3.8972	7.0583	5.4101	6.3282	3.2344	14.38	121.56	0.3303E-15	-15.481
800.0	1650.0	3.5026	6.8609	5.0646	6.2788	3.2220	13.70	129.46	0.2111E-15	-15.676
850.0	1650.0	3.1133	6.6663	4.7238	6.2301	3.2097	12.91	139.26	0.1370E-15	-15.863
900.0	1650.0	2.7295	6.4744	4.3878	6.1821	3.1976	12.03	151.51	0.9048E-16	-16.043
950.0	1650.0	2.3509	6.2851	4.0563	6.1347	3.1857	11.09	166.73	0.6083E-16	-16.216
1000.0	1650.0	1.9775	6.0984	3.7294	6.0880	3.1739	10.11	185.37	0.4172E-16	-16.380

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	569.2	10.3183	10.4999	11.0891	7.3603		26.32	19.10	0.7656E-11	-11.116
140.0	746.6	9.9584	10.2611	10.7594	7.2570		25.85	25.58	0.3640E-11	-11.439
150.0	893.5	9.6879	10.0868	10.5128	7.1846		25.44	31.19	0.2099E-11	-11.678
160.0	1015.0	9.4680	9.9492	10.3134	7.1296		25.07	36.08	0.1350E-11	-11.870
170.0	1115.7	9.2803	9.8348	10.1440	7.0858		24.72	40.34	0.9310E-12	-12.031
180.0	1199.0	9.1146	9.7363	9.9950	7.0496		24.38	44.10	0.6738E-12	-12.171
190.0	1268.0	8.9646	9.6491	9.8606	7.0188		24.05	47.41	0.5049E-12	-12.297
200.0	1325.2	8.8262	9.5704	9.7371	6.9920		23.73	50.37	0.3884E-12	-12.411
210.0	1372.4	8.6968	9.4981	9.6219	6.9683		23.42	53.03	0.3049E-12	-12.516
220.0	1411.6	8.5743	9.4307	9.5132	6.9469		23.11	55.44	0.2432E-12	-12.614
230.0	1444.0	8.4573	9.3673	9.4095	6.9274		22.81	57.64	0.1966E-12	-12.706
240.0	1470.9	8.3446	9.3069	9.3099	6.9094		22.51	59.67	0.1606E-12	-12.794
250.0	1493.1	8.2355	9.2491	9.2135	6.8925		22.21	61.56	0.1324E-12	-12.878
260.0	1511.5	8.1293	9.1933	9.1199	6.8766		21.93	63.33	0.1100E-12	-12.959
270.0	1526.7	8.0255	9.1392	9.0284	6.8614		21.64	65.00	0.9195E-13	-13.036
280.0	1539.3	7.9236	9.0865	8.9388	6.8469		21.36	66.59	0.7733E-13	-13.112
290.0	1549.8	7.8234	9.0350	8.8507	6.8329		21.09	68.11	0.6536E-13	-13.185
300.0	1558.4	7.7247	8.9844	8.7640	6.8194		20.83	69.57	0.5550E-13	-13.256
320.0	1571.5	7.5306	8.8855	8.5936	6.7933		20.32	72.35	0.4050E-13	-13.393
340.0	1580.5	7.3401	8.7890	8.4265	6.7682		19.83	74.98	0.2997E-13	-13.523
360.0	1586.6	7.1524	8.6944	8.2620	6.7439		19.38	77.49	0.2244E-13	-13.649
380.0	1590.8	6.9669	8.6011	8.0995	6.7201		18.96	79.90	0.1698E-13	-13.770
400.0	1593.7	6.7834	8.5089	7.9387	6.6968		18.57	82.21	0.1297E-13	-13.887
420.0	1595.7	6.6014	8.4176	7.7793	6.6737		18.21	84.44	0.9991E-14	-14.000
440.0	1597.0	6.4208	8.3272	7.6212	6.6510		17.88	86.59	0.7757E-14	-14.110
460.0	1598.0	6.2416	8.2374	7.4642	6.6284		17.57	88.66	0.6065E-14	-14.217
480.0	1598.6	6.0635	8.1483	7.3083	6.6060		17.29	90.67	0.4772E-14	-14.321
500.0	1599.0	5.8866	8.0598	7.1535	6.5839	3.3539	17.03	92.63	0.3777E-14	-14.423
520.0	1599.3	5.7109	7.9719	6.9995	6.5618	3.3482	16.78	94.55	0.3006E-14	-14.522
540.0	1599.6	5.5362	7.8845	6.8466	6.5399	3.3427	16.55	96.44	0.2404E-14	-14.619
560.0	1599.7	5.3625	7.7976	6.6945	6.5182	3.3372	16.33	98.33	0.1931E-14	-14.714
580.0	1599.8	5.1898	7.7113	6.5434	6.4966	3.3317	16.12	100.22	0.1558E-14	-14.807
600.0	1599.9	5.0182	7.6255	6.3931	6.4751	3.3263	15.91	102.13	0.1262E-14	-14.899
620.0	1599.9	4.8476	7.5401	6.2438	6.4537	3.3209	15.70	104.10	0.1026E-14	-14.989
640.0	1599.9	4.6779	7.4553	6.0952	6.4325	3.3156	15.48	106.13	0.8364E-15	-15.078
660.0	1600.0	4.5093	7.3710	5.9476	6.4114	3.3102	15.27	108.26	0.6842E-15	-15.165
680.0	1600.0	4.3415	7.2871	5.8007	6.3904	3.3049	15.04	110.51	0.5615E-15	-15.251
700.0	1600.0	4.1748	7.2037	5.6547	6.3695	3.2997	14.81	112.91	0.4620E-15	-15.335
750.0	1600.0	3.7620	6.9973	5.2934	6.3179	3.2867	14.16	119.76	0.2873E-15	-15.542
800.0	1600.0	3.3550	6.7938	4.9370	6.2670	3.2739	13.41	128.22	0.1817E-15	-15.741
850.0	1600.0	2.9536	6.5931	4.5856	6.2167	3.2612	12.56	138.86	0.1169E-15	-15.932
900.0	1600.0	2.5578	6.3952	4.2391	6.1672	3.2487	11.61	152.25	0.7660E-16	-16.116
950.0	1600.0	2.1674	6.2000	3.8973	6.1184	3.2364	10.61	168.97	0.5121E-16	-16.291
1000.0	1600.0	1.7822	6.0075	3.5601	6.0702	3.2243	9.59	189.37	0.3501E-16	-16.456

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	568.3	10.3188	10.5005	11.0896	7.3608		26.32	19.06	0.7666E-11	-11.115
140.0	743.5	9.9594	10.2624	10.7604	7.2580		25.85	25.47	0.3649E-11	-11.438
150.0	887.4	9.6890	10.0888	10.5141	7.1862		25.44	30.99	0.2105E-11	-11.677
160.0	1005.7	9.4689	9.9516	10.3147	7.1317		25.06	35.76	0.1354E-11	-11.868
170.0	1102.8	9.2806	9.8375	10.1449	7.0884		24.71	39.90	0.9335E-12	-12.030
180.0	1182.7	9.1141	9.7390	9.9953	7.0525		24.36	43.52	0.6750E-12	-12.171
190.0	1248.2	8.9631	9.6518	9.8602	7.0220		24.03	46.72	0.5052E-12	-12.297
200.0	1302.1	8.8236	9.5729	9.7358	6.9955		23.70	49.55	0.3880E-12	-12.411
210.0	1346.3	8.6928	9.5002	9.6195	6.9719		23.38	52.10	0.3040E-12	-12.517
220.0	1382.7	8.5687	9.4324	9.5094	6.9507		23.07	54.40	0.2419E-12	-12.616
230.0	1412.5	8.4500	9.3684	9.4043	6.9312		22.76	56.50	0.1951E-12	-12.710
240.0	1437.1	8.3354	9.3074	9.3031	6.9132		22.45	58.44	0.1589E-12	-12.799
250.0	1457.2	8.2243	9.2488	9.2050	6.8963		22.15	60.25	0.1306E-12	-12.884
260.0	1473.8	8.1160	9.1922	9.1096	6.8803		21.86	61.94	0.1082E-12	-12.966
270.0	1487.4	8.0099	9.1371	9.0162	6.8651		21.57	63.55	0.9020E-13	-13.045
280.0	1498.6	7.9058	9.0834	8.9246	6.8504		21.28	65.07	0.7562E-13	-13.121
290.0	1507.7	7.8032	9.0308	8.8345	6.8363		21.00	66.54	0.6372E-13	-13.196
300.0	1515.3	7.7020	8.9791	8.7456	6.8225		20.73	67.95	0.5393E-13	-13.268
320.0	1526.6	7.5028	8.8779	8.5708	6.7960		20.21	70.65	0.3910E-13	-13.408
340.0	1534.2	7.3070	8.7789	8.3992	6.7705		19.72	73.21	0.2875E-13	-13.541
360.0	1539.3	7.1139	8.6817	8.2299	6.7456		19.26	75.65	0.2139E-13	-13.670
380.0	1542.8	6.9229	8.5857	8.0626	6.7212		18.84	77.99	0.1609E-13	-13.794
400.0	1545.1	6.7337	8.4908	7.8969	6.6972		18.44	80.25	0.1221E-13	-13.913
420.0	1546.7	6.5461	8.3967	7.7326	6.6735		18.08	82.42	0.9354E-14	-14.029
440.0	1547.8	6.3599	8.3035	7.5695	6.6501		17.75	84.52	0.7221E-14	-14.141
460.0	1548.5	6.1750	8.2109	7.4076	6.6268		17.45	86.54	0.5615E-14	-14.251
480.0	1549.0	5.9913	8.1190	7.2468	6.6038		17.16	88.50	0.4394E-14	-14.357
500.0	1549.3	5.8088	8.0277	7.0870	6.5809	3.4119	16.90	90.41	0.3459E-14	-14.461
520.0	1549.5	5.6274	7.9370	6.9282	6.5582	3.4062	16.66	92.29	0.2739E-14	-14.562
540.0	1549.7	5.4471	7.8468	6.7703	6.5356	3.4004	16.43	94.15	0.2179E-14	-14.662
560.0	1549.8	5.2678	7.7572	6.6134	6.5131	3.3948	16.20	96.01	0.1741E-14	-14.759
580.0	1549.9	5.0896	7.6681	6.4574	6.4908	3.3891	15.99	97.89	0.1397E-14	-14.855
600.0	1549.9	4.9125	7.5795	6.3023	6.4687	3.3835	15.77	99.80	0.1126E-14	-14.948
620.0	1549.9	4.7363	7.4914	6.1481	6.4466	3.3780	15.55	101.78	0.9105E-15	-15.041
640.0	1550.0	4.5612	7.4038	5.9948	6.4247	3.3725	15.33	103.86	0.7388E-15	-15.131
660.0	1550.0	4.3871	7.3168	5.8423	6.4029	3.3670	15.10	106.05	0.6014E-15	-15.221
680.0	1550.0	4.2140	7.2302	5.6908	6.3813	3.3615	14.86	108.38	0.4911E-15	-15.309
700.0	1550.0	4.0418	7.1442	5.5401	6.3597	3.3561	14.60	110.89	0.4022E-15	-15.396
750.0	1550.0	3.6157	6.9311	5.1670	6.3064	3.3427	13.90	118.17	0.2472E-15	-15.607
800.0	1550.0	3.1956	6.7210	4.7992	6.2538	3.3294	13.08	127.32	0.1547E-15	-15.811
850.0	1550.0	2.7813	6.5139	4.4365	6.2020	3.3164	12.15	138.97	0.9863E-16	-16.006
900.0	1550.0	2.3727	6.3096	4.0788	6.1509	3.3035	11.14	153.73	0.6417E-16	-16.193
950.0	1550.0	1.9697	6.1081	3.7259	6.1004	3.2908	10.09	172.15	0.4270E-16	-16.370
1000.0	1550.0	1.5721	5.9093	3.3779	6.0507	3.2783	9.05	194.49	0.2915E-16	-16.535

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	566.9	10.3195	10.5014	11.0904	7.3614		26.32	19.02	0.7679E-11	-11.115
140.0	739.6	9.9604	10.2641	10.7616	7.2593		25.85	25.34	0.3660E-11	-11.437
150.0	880.4	9.6900	10.0911	10.5154	7.1880		25.44	30.75	0.2112E-11	-11.675
160.0	995.0	9.4695	9.9542	10.3158	7.1341		25.05	35.39	0.1358E-11	-11.867
170.0	1088.5	9.2806	9.8403	10.1455	7.0912		24.69	39.40	0.9357E-12	-12.029
180.0	1164.7	9.1131	9.7418	9.9953	7.0557		24.34	42.89	0.6757E-12	-12.170
190.0	1226.7	8.9609	9.6545	9.8592	7.0255		24.00	45.96	0.5049E-12	-12.297
200.0	1277.3	8.8199	9.5752	9.7336	6.9992		23.67	48.68	0.3869E-12	-12.412
210.0	1318.5	8.6875	9.5021	9.6159	6.9758		23.34	51.11	0.3025E-12	-12.519
220.0	1352.1	8.5616	9.4337	9.5044	6.9546		23.02	53.30	0.2401E-12	-12.620
230.0	1379.5	8.4409	9.3690	9.3976	6.9352		22.70	55.31	0.1931E-12	-12.714
240.0	1401.8	8.3243	9.3072	9.2946	6.9171		22.39	57.17	0.1568E-12	-12.805
250.0	1420.0	8.2109	9.2477	9.1947	6.9002		22.08	58.89	0.1285E-12	-12.891
260.0	1434.8	8.1002	9.1901	9.0972	6.8841		21.78	60.52	0.1061E-12	-12.974
270.0	1446.9	7.9917	9.1340	9.0018	6.8687		21.48	62.06	0.8813E-13	-13.055
280.0	1456.7	7.8850	9.0792	8.9080	6.8539		21.19	63.53	0.7364E-13	-13.133
290.0	1464.7	7.7798	9.0254	8.8156	6.8396		20.91	64.95	0.6183E-13	-13.209
300.0	1471.2	7.6758	8.9725	8.7243	6.8256		20.63	66.31	0.5215E-13	-13.283
320.0	1480.9	7.4710	8.8687	8.5447	6.7986		20.10	68.93	0.3755E-13	-13.425
340.0	1487.3	7.2695	8.7670	8.3680	6.7724		19.60	71.42	0.2742E-13	-13.562
360.0	1491.6	7.0705	8.6668	8.1937	6.7469		19.13	73.80	0.2026E-13	-13.693
380.0	1494.4	6.8736	8.5680	8.0212	6.7219		18.70	76.08	0.1514E-13	-13.820
400.0	1496.3	6.6784	8.4701	7.8502	6.6972		18.31	78.28	0.1142E-13	-13.942
420.0	1497.5	6.4847	8.3731	7.6806	6.6728		17.95	80.40	0.8695E-14	-14.061
440.0	1498.4	6.2925	8.2768	7.5123	6.6486		17.62	82.44	0.6672E-14	-14.176
460.0	1498.9	6.1015	8.1813	7.3451	6.6246		17.31	84.41	0.5157E-14	-14.288
480.0	1499.3	5.9118	8.0863	7.1789	6.6008		17.03	86.32	0.4013E-14	-14.397
500.0	1499.5	5.7232	7.9920	7.0138	6.5772	3.4742	16.77	88.19	0.3142E-14	-14.503
520.0	1499.7	5.5358	7.8983	6.8498	6.5537	3.4682	16.53	90.03	0.2473E-14	-14.607
540.0	1499.8	5.3495	7.8051	6.6866	6.5304	3.4623	16.29	91.86	0.1957E-14	-14.709
560.0	1499.9	5.1643	7.7125	6.5245	6.5072	3.4565	16.07	93.70	0.1555E-14	-14.808
580.0	1499.9	4.9802	7.6204	6.3633	6.4842	3.4507	15.84	95.58	0.1241E-14	-14.906
600.0	1499.9	4.7971	7.5289	6.2031	6.4613	3.4449	15.62	97.51	0.9947E-15	-15.002
620.0	1500.0	4.6151	7.4379	6.0437	6.4385	3.4392	15.39	99.52	0.8001E-15	-15.097
640.0	1500.0	4.4342	7.3474	5.8853	6.4159	3.4334	15.16	101.65	0.6457E-15	-15.190
660.0	1500.0	4.2543	7.2575	5.7278	6.3933	3.4278	14.91	103.92	0.5229E-15	-15.282
680.0	1500.0	4.0754	7.1680	5.5712	6.3710	3.4221	14.65	106.37	0.4247E-15	-15.372
700.0	1500.0	3.8975	7.0791	5.4155	6.3487	3.4165	14.38	109.02	0.3461E-15	-15.461
750.0	1500.0	3.4572	6.8589	5.0300	6.2936	3.4027	13.60	116.84	0.2102E-15	-15.677
800.0	1500.0	3.0230	6.6419	4.6499	6.2393	3.3890	12.71	126.84	0.1301E-15	-15.886
850.0	1500.0	2.5949	6.4278	4.2751	6.1857	3.3755	11.70	139.70	0.8224E-16	-16.085
900.0	1500.0	2.1727	6.2167	3.9054	6.1329	3.3622	10.62	156.07	0.5317E-16	-16.274
950.0	1500.0	1.7562	6.0085	3.5409	6.0808	3.3491	9.52	176.41	0.3526E-16	-16.453
1000.0	1500.0	1.3455	5.8031	3.1812	6.0294	3.3361	8.48	200.82	0.2407E-16	-16.619

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	565.1	10.3205	10.5026	11.0914	7.3622		26.32	18.96	0.7697E-11	-11.114
140.0	734.8	9.9616	10.2661	10.7630	7.2608		25.85	25.18	0.3672E-11	-11.435
150.0	872.0	9.6909	10.0936	10.5168	7.1902		25.43	30.46	0.2119E-11	-11.674
160.0	982.9	9.4698	9.9571	10.3168	7.1368		25.04	34.97	0.1362E-11	-11.866
170.0	1072.5	9.2800	9.8432	10.1458	7.0943		24.67	38.85	0.9372E-12	-12.028
180.0	1144.9	9.1113	9.7447	9.9946	7.0591		24.32	42.21	0.6757E-12	-12.170
190.0	1203.4	8.9576	9.6570	9.8574	7.0292		23.97	45.15	0.5038E-12	-12.298
200.0	1250.7	8.8150	9.5773	9.7304	7.0030		23.63	47.74	0.3852E-12	-12.414
210.0	1289.0	8.6807	9.5036	9.6112	6.9798		23.30	50.06	0.3002E-12	-12.523
220.0	1319.9	8.5527	9.4345	9.4979	6.9587		22.97	52.16	0.2377E-12	-12.624
230.0	1344.8	8.4297	9.3689	9.3892	6.9393		22.64	54.07	0.1904E-12	-12.720
240.0	1365.0	8.3107	9.3062	9.2842	6.9212		22.32	55.84	0.1542E-12	-12.812
250.0	1381.3	8.1948	9.2457	9.1821	6.9041		22.00	57.50	0.1259E-12	-12.900
260.0	1394.5	8.0815	9.1869	9.0824	6.8879		21.69	59.06	0.1035E-12	-12.985
270.0	1405.1	7.9702	9.1297	8.9846	6.8723		21.39	60.54	0.8571E-13	-13.067
280.0	1413.7	7.8607	9.0736	8.8883	6.8573		21.09	61.96	0.7134E-13	-13.147
290.0	1420.7	7.7526	9.0184	8.7934	6.8427		20.80	63.33	0.5968E-13	-13.224
300.0	1426.3	7.6457	8.9641	8.6996	6.8285		20.51	64.65	0.5015E-13	-13.300
320.0	1434.5	7.4348	8.8575	8.5147	6.8009		19.97	67.19	0.3584E-13	-13.446
340.0	1439.9	7.2270	8.7527	8.3326	6.7741		19.46	69.62	0.2597E-13	-13.585
360.0	1443.4	7.0217	8.6495	8.1527	6.7479		18.99	71.94	0.1906E-13	-13.720
380.0	1445.7	6.8183	8.5475	7.9745	6.7221		18.56	74.17	0.1414E-13	-13.849
400.0	1447.2	6.6166	8.4464	7.7979	6.6966		18.17	76.31	0.1060E-13	-13.975
420.0	1448.2	6.4165	8.3462	7.6226	6.6714		17.80	78.37	0.8016E-14	-14.096
440.0	1448.8	6.2177	8.2467	7.4486	6.6465		17.48	80.36	0.6113E-14	-14.214
460.0	1449.2	6.0202	8.1479	7.2757	6.6217		17.17	82.28	0.4696E-14	-14.328
480.0	1449.5	5.8240	8.0498	7.1039	6.5971		16.89	84.14	0.3632E-14	-14.440
500.0	1449.7	5.6290	7.9522	6.9332	6.5727	3.5409	16.63	85.97	0.2826E-14	-14.549
520.0	1449.8	5.4351	7.8553	6.7634	6.5484	3.5348	16.39	87.77	0.2212E-14	-14.655
540.0	1449.9	5.2424	7.7589	6.5947	6.5243	3.5287	16.15	89.58	0.1739E-14	-14.760
560.0	1449.9	5.0508	7.6631	6.4270	6.5003	3.5226	15.92	91.41	0.1374E-14	-14.862
580.0	1449.9	4.8604	7.5679	6.2603	6.4765	3.5166	15.69	93.29	0.1091E-14	-14.962
600.0	1450.0	4.6710	7.4732	6.0945	6.4528	3.5107	15.46	95.25	0.8690E-15	-15.061
620.0	1450.0	4.4828	7.3791	5.9297	6.4292	3.5047	15.22	97.32	0.6950E-15	-15.158
640.0	1450.0	4.2956	7.2855	5.7658	6.4058	3.4988	14.96	99.53	0.5578E-15	-15.254
660.0	1450.0	4.1095	7.1924	5.6029	6.3825	3.4930	14.70	101.91	0.4491E-15	-15.348
680.0	1450.0	3.9244	7.0999	5.4409	6.3594	3.4871	14.41	104.51	0.3629E-15	-15.440
700.0	1450.0	3.7404	7.0079	5.2798	6.3363	3.4813	14.11	107.35	0.2941E-15	-15.531
750.0	1450.0	3.2849	6.7802	4.8810	6.2793	3.4670	13.26	115.85	0.1764E-15	-15.753
800.0	1450.0	2.8358	6.5556	4.4878	6.2232	3.4528	12.28	126.89	0.1081E-15	-15.966
850.0	1450.0	2.3929	6.3342	4.1001	6.1677	3.4389	11.19	141.21	0.6773E-16	-16.169
900.0	1450.0	1.9561	6.1158	3.7177	6.1131	3.4251	10.05	159.44	0.4356E-16	-16.361
950.0	1450.0	1.5253	5.9004	3.3405	6.0592	3.4115	8.93	181.91	0.2885E-16	-16.540
1000.0	1450.0	1.1004	5.6879	2.9685	6.0060	3.3982	7.90	208.44	0.1974E-16	-16.705

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	562.6	10.3217	10.5041	11.0927	7.3633		26.31	18.88	0.7721E-11	-11.112
140.0	729.0	9.9629	10.2685	10.7646	7.2627		25.84	24.98	0.3686E-11	-11.433
150.0	862.3	9.6918	10.0965	10.5182	7.1927		25.42	30.13	0.2127E-11	-11.672
160.0	969.1	9.4698	9.9601	10.3175	7.1398		25.03	34.50	0.1365E-11	-11.865
170.0	1054.7	9.2788	9.8462	10.1456	7.0977		24.65	38.24	0.9380E-12	-12.028
180.0	1123.3	9.1085	9.7474	9.9932	7.0629		24.29	41.46	0.6748E-12	-12.171
190.0	1178.3	8.9531	9.6593	9.8546	7.0332		23.94	44.27	0.5018E-12	-12.299
200.0	1222.3	8.8085	9.5790	9.7260	7.0072		23.59	46.75	0.3825E-12	-12.417
210.0	1257.6	8.6719	9.5046	9.6049	6.9840		23.24	48.96	0.2972E-12	-12.527
220.0	1285.9	8.5416	9.4346	9.4896	6.9629		22.90	50.95	0.2344E-12	-12.630
230.0	1308.6	8.4161	9.3680	9.3787	6.9434		22.57	52.78	0.1872E-12	-12.728
240.0	1326.7	8.2944	9.3042	9.2714	6.9252		22.24	54.48	0.1509E-12	-12.821
250.0	1341.3	8.1756	9.2425	9.1669	6.9080		21.91	56.06	0.1228E-12	-12.911
260.0	1353.0	8.0594	9.1824	9.0646	6.8916		21.59	57.56	0.1006E-12	-12.998
270.0	1362.3	7.9451	9.1238	8.9642	6.8758		21.28	58.99	0.8290E-13	-13.081
280.0	1369.8	7.8324	9.0663	8.8653	6.8606		20.97	60.36	0.6872E-13	-13.163
290.0	1375.8	7.7211	9.0097	8.7676	6.8457		20 67	61.69	0.5725E-13	-13.242
300.0	1380.6	7.6110	8.9538	8.6710	6.8312		20.38	62.97	0.4791E-13	-13.320
320.0	1387.5	7.3934	8.8440	8.4803	6.8029		19.83	65.45	0.3396E-13	-13.469
340.0	1392.0	7.1788	8.7360	8.2922	6.7753		19.32	67.81	0.2442E-13	-13.612
360.0	1394.9	6.9666	8.6294	8.1063	6.7483		18.84	70.08	0.1779E-13	-13.750
380.0	1396.7	6.7562	8.5240	7.9221	6.7217		18.41	72.25	0.1310E-13	-13.883
400.0	1397.9	6.5475	8.4194	7.7393	6.6954		18.01	74.34	0.9751E-14	-14.011
420.0	1398.6	6.3404	8.3157	7.5579	6.6694		17.65	76.34	0.7324E-14	-14.135
440.0	1399.1	6.1346	8.2128	7.3778	6.6436		17.33	78.27	0.5548E-14	-14.256
460.0	1399.4	5.9301	8.1105	7.1987	6.6180		17.03	80.14	0.4234E-14	-14.373
480.0	1399.6	5.7270	8.0089	7.0209	6.5925		16.75	81.95	0.3254E-14	-14.488
500.0	1399.8	5.5250	7.9079	6.8440	6.5672	3.6126	16.49	83.74	0.2516E-14	-14.599
520.0	1399.9	5.3242	7.8075	6.6683	6.5421	3.6062	16.24	85.52	0.1956E-14	-14.709
540.0	1399.9	5.1247	7.7077	6.4936	6.5171	3.5999	16.00	87.31	0.1529E-14	-14.816
560.0	1399.9	4.9263	7.6085	6.3199	6.4923	3.5937	15.76	89.15	0.1201E-14	-14.921
580.0	1400.0	4.7290	7.5098	6.1472	6.4676	3.5874	15.52	91.05	0.9470E-15	-15.024
600.0	1400.0	4.5329	7.4118	5.9755	6.4430	3.5813	15.28	93.06	0.7499E-15	-15.125
620.0	1400.0	4.3379	7.3143	5.8048	6.4186	3.5751	15.02	95.21	0.5961E-15	-15.225
640.0	1400.0	4.1440	7.2174	5.6351	6.3944	3.5690	14.74	97.53	0.4755E-15	-15.323
660.0	1400.0	3.9513	7.1210	5.4663	6.3703	3.5629	14.45	100.06	0.3807E-15	-15.419
680.0	1400.0	3.7596	7.0251	5.2985	6.3463	3.5569	14.14	102.85	0.3058E-15	-15.515
700.0	1400.0	3.5690	6.9299	5.1316	6.3224	3.5509	13.81	105.94	0.2465E-15	-15.608
750.0	1400.0	3.0973	6.6940	4.7186	6.2634	3.5360	12.87	115.29	0.1460E-15	-15.836
800.0	1400.0	2.6321	6.4614	4.3114	6.2052	3.5214	11.79	127.62	0.8851E-16	-16.053
850.0	1400.0	2.1734	6.2320	3.9098	6.1478	3.5069	10.62	143.68	0.5506E-16	-16.259
900.0	1400.0	1.7210	6.0059	3.5138	6.0912	3.4927	9.43	164.03	0.3529E-16	-16.452
950.0	1400.0	1.2749	5.7828	3.1231	6.0354	3.4786	8.31	188.77	0.2339E-16	-16.631
1000.0	1400.0	0.8347	5.5627	2.7378	5.9803	3.4647	7.32	217.29	0.1609E-16	-16.793

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	559.5	10.3232	10.5061	11.0943	7.3647		25.31	18.77	0.7750E-11	-11.111
140.0	721.9	9.9644	10.2714	10.7664	7.2650		25.84	24.75	0.3702E-11	-11.432
150.0	851.0	9.6925	10.0997	10.5195	7.1956		25.41	29.75	0.2135E-11	-11.671
160.0	953.5	9.4693	9.9634	10.3180	7.1432		25.01	33.97	0.1368E-11	-11.864
170.0	1035.0	9.2767	9.8493	10.1449	7.1015		24.63	37.56	0.9377E-12	-12.028
180.0	1099.7	9.1046	9.7501	9.9910	7.0669		24.26	40.65	0.6727E-12	-12.172
190.0	1151.2	8.9471	9.6614	9.8506	7.0374		23.89	43.33	0.4986E-12	-12.302
200.0	1192.0	8.8001	9.5803	9.7200	7.0115		23.53	45.69	0.3788E-12	-12.422
210.0	1224.5	8.6610	9.5049	9.5968	6.9883		23.18	47.80	0.2932E-12	-12.533
220.0	1250.3	8.5279	9.4339	9.4791	6.9672		22.83	49.70	0.2303E-12	-12.638
230.0	1270.8	8.3995	9.3661	9.3658	6.9477		22.48	51.45	0.1831E-12	-12.737
240.0	1287.1	8.2747	9.3010	9.2559	6.9293		22.14	53.07	0.1470E-12	-12.833
250.0	1300.0	8.1529	9.2379	9.1486	6.9119		21.81	54.59	0.1190E-12	-12.924
260.0	1310.3	8.0333	9.1764	9.0436	6.8953		21.48	56.04	0.9709E-13	-13.013
270.0	1318.4	7.9156	9.1162	8.9402	6.8792		21.16	57.42	0.7967E-13	-13.099
280.0	1324.9	7.7995	9.0571	8.8383	6.8636		20.84	58.75	0.6575E-13	-13.182
290.0	1330.1	7.6847	8.9988	8.7376	6.8484		20.54	60.03	0.5453E-13	-13.263
300.0	1334.2	7.5710	8.9413	8.6378	6.8335		20.24	61.29	0.4543E-13	-13.343
320.0	1340.0	7.3462	8.8279	8.4408	6.8045		19.68	63.70	0.3193E-13	-13.496
340.0	1343.7	7.1241	8.7163	8.2463	6.7761		19.16	66.00	0.2277E-13	-13.643
360.0	1346.0	6.9044	8.6061	8.0538	6.7482		18.68	68.21	0.1645E-13	-13.784
380.0	1347.5	6.6865	8.4969	7.8630	6.7207		18.24	70.33	0.1203E-13	-13.920
400.0	1348.4	6.4703	8.3886	7.6736	6.6935		17.85	72.36	0.8884E-14	-14.051
420.0	1349.0	6.2555	8.2812	7.4856	6.6666		17.49	74.30	0.6625E-14	-14.179
440.0	1349.4	6.0422	8.1744	7.2988	6.6398		17.17	76.18	0.4983E-14	-14.303
460.0	1349.6	5.8303	8.0684	7.1133	6.6132		16.87	77.99	0.3777E-14	-14.423
480.0	1349.7	5.6196	7.9631	6.9288	6.5869		16.59	79.77	0.2883E-14	-14.540
500.0	1349.8	5.4102	7.8583	6.7455	6.5606	3.6895	16.33	81.52	0.2214E-14	-14.655
520.0	1349.9	5.2020	7.7542	6.5632	6.5346	3.6830	16.08	83.28	0.1710E-14	-14.767
540.0	1349.9	4.9950	7.6508	6.3820	6.5087	3.6764	15.84	85.07	0.1328E-14	-14.877
560.0	1350.0	4.7893	7.5479	6.2019	6.4829	3.6699	15.59	86.92	0.1036E-14	-14.985
580.0	1350.0	4.5847	7.4456	6.0228	6.4573	3.6635	15.34	88.87	0.8113E-15	-15.091
600.0	1350.0	4.3814	7.3439	5.8448	6.4319	3.6571	15.07	90.96	0.6382E-15	-15.195
620.0	1350.0	4.1792	7.2428	5.6678	6.4066	3.6507	14.79	93.22	0.5041E-15	-15.298
640.0	1350.0	3.9781	7.1423	5.4917	6.3814	3.6444	14.49	95.69	0.3996E-15	-15.398
660.0	1350.0	3.7782	7.0423	5.3167	6.3564	3.6381	14.17	98.42	0.3179E-15	-15.498
680.0	1350.0	3.5794	6.9430	5.1427	6.3316	3.6318	13.82	101.46	0.2539E-15	-15.595
700.0	1350.0	3.3818	6.8441	4.9697	6.3068	3.6256	13.45	104.86	0.2035E-15	-15.691
750.0	1350.0	2.8926	6.5995	4.5414	6.2456	3.6102	12.41	115.29	0.1190E-15	-15.924
800.0	1350.0	2.4102	6.3583	4.1191	6.1853	3.5950	11.23	129.19	0.7144E-16	-16.146
850.0	1350.0	1.9345	6.1205	3.7026	6.1257	3.5800	9.99	147.29	0.4418E-16	-16.355
900.0	1350.0	1.4654	5.8859	3.2919	6.0670	3.5652	8.77	170.00	0.2828E-16	-16.548
950.0	1350.0	1.0026	5.6546	2.8868	6.0091	3.5506	7.68	197.02	0.1882E-16	-16.725
1000.0	1350.0	0.5462	5.4263	2.4872	5.9520	3.5363	6.75	227.21	0.1306E-16	-16.884

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	555.6	10.3251	10.5086	11.0963	7.3664		26.31	18.64	0.7787E-11	-11.109
140.0	713.5	9.9660	10.2747	10.7685	7.2677		25.83	24.47	0.3721E-11	-11.429
150.0	838.0	9.6931	10.1033	10.5208	7.1990		25.39	29.31	0.2142E-11	-11.669
160.0	936.1	9.4683	9.9669	10.3180	7.1471		24.99	33.38	0.1370E-11	-11.863
170.0	1013.3	9.2737	9.8524	10.1434	7.1057		24.60	36.82	0.9361E-12	-12.029
180.0	1074.1	9.0994	9.7525	9.9876	7.0713		24.22	39.77	0.6692E-12	-12.174
190.0	1122.1	8.9393	9.6630	9.8451	7.0419		23.84	42.32	0.4942E-12	-12.306
200.0	1159.8	8.7895	9.5810	9.7122	7.0161		23.47	44.57	0.3738E-12	-12.427
210.0	1189.6	8.6475	9.5044	9.5865	6.9929		23.11	46.58	0.2880E-12	-12.541
220.0	1213.0	8.5113	9.4321	9.4662	6.9716		22.75	48.40	0.2252E-12	-12.647
230.0	1231.5	8.3796	9.3630	9.3500	6.9519		22.39	50.07	0.1782E-12	-12.749
240.0	1246.0	8.2513	9.2963	9.2372	6.9333		22.04	51.63	0.1424E-12	-12.846
250.0	1257.5	8.1259	9.2316	9.1269	6.9157		21.69	53.09	0.1147E-12	-12.940
260.0	1266.5	8.0027	9.1685	9.0186	6.8987		21.35	54.49	0.9310E-13	-13.031
270.0	1273.6	7.8813	9.1065	8.9120	6.8823		21.02	55.82	0.7603E-13	-13.119
280.0	1279.2	7.7614	9.0456	8.8068	6.8664		20.70	57.12	0.6244E-13	-13.205
290.0	1283.6	7.6427	8.9855	8.7027	6.8508		20.39	58.37	0.5153E-13	-13.288
300.0	1287.1	7.5250	8.9261	8.5995	6.8355		20.08	59.59	0.4273E-13	-13.369
320.0	1292.0	7.2922	8.8089	8.3955	6.8055		19.51	61.94	0.2976E-13	-13.526
340.0	1295.0	7.0621	8.6933	8.1940	6.7763		18.98	64.19	0.2103E-13	-13.677
360.0	1296.9	6.8342	8.5791	7.9944	6.7474		18.50	66.34	0.1507E-13	-13.822
380.0	1298.1	6.6082	8.4658	7.7964	6.7189		18.07	68.40	0.1093E-13	-13.962
400.0	1298.8	6.3838	8.3535	7.5999	6.6907		17.68	70.37	0.8008E-14	-14.096
420.0	1299.3	6.1609	8.2420	7.4048	6.6628		17.33	72.26	0.5927E-14	-14.227
440.0	1299.5	5.9394	8.1312	7.2109	6.6350		17.00	74.08	0.4425E-14	-14.354
460.0	1299.7	5.7193	8.0211	7.0182	6.6075		16.71	75.84	0.3329E-14	-14.478
480.0	1299.8	5.5006	7.9118	6.8267	6.5801		16.43	77.57	0.2522E-14	-14.598
500.0	1299.9	5.2831	7.8030	6.6363	6.5529	3.7724	16.17	79.30	0.1923E-14	-14.716
520.0	1299.9	5.0670	7.6949	6.4471	6.5258	3.7655	15.91	81.05	0.1475E-14	-14.831
540.0	1300.0	4.8521	7.5875	6.2589	6.4989	3.7588	15.66	82.86	0.1137E-14	-14.944
560.0	1300.0	4.6384	7.4806	6.0719	6.4722	3.7520	15.40	84.75	0.8804E-15	-15.055
580.0	1300.0	4.4260	7.3744	5.8859	6.4456	3.7453	15.12	86.78	0.6849E-15	-15.164
600.0	1300.0	4.2148	7.2688	5.7010	6.4192	3.7387	14.84	88.97	0.5350E-15	-15.272
620.0	1300.0	4.0048	7.1638	5.5172	6.3929	3.7321	14.53	91.39	0.4197E-15	-15.377
640.0	1300.0	3.7960	7.0594	5.3344	6.3668	3.7255	14.20	94.06	0.3305E-15	-15.481
660.0	1300.0	3.5885	6.9557	5.1527	6.3408	3.7189	13.84	97.06	0.2613E-15	-15.583
680.0	1300.0	3.3820	6.8524	4.9719	6.3150	3.7124	13.45	100.42	0.2074E-15	-15.683
700.0	1300.0	3.1768	6.7498	4.7923	6.2893	3.7060	13.03	104.22	0.1652E-15	-15.782
750.0	1300.0	2.6688	6.4958	4.3475	6.2257	3.6900	11.87	116.01	0.9545E-16	-16.020
800.0	1300.0	2.1678	6.2453	3.9089	6.1630	3.6742	10.60	131.81	0.5681E-16	-16.246
850.0	1300.0	1.6738	5.9983	3.4765	6.1012	3.6586	9.30	152.27	0.3501E-16	-16.456
900.0	1300.0	1.1867	5.7548	3.0499	6.0403	3.6433	8.09	177.48	0.2246E-16	-16.649
950.0	1300.0	0.7061	5.5145	2.6293	5.9802	3.6281	7.05	206.57	0.1506E-16	-16.822
1000.0	1300.0	0.2322	5.2775	2.2143	5.9209	3.6132	6.21	237.77	0.1059E-16	-16.975

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	550.8	10.3273	10.5116	11.0988	7.3685		26.31	18.48	0.7831E-11	-11.106
140.0	703.8	9.9678	10.2786	10.7707	7.2709		25.82	24.14	0.3742E-11	-11.427
150.0	823.3	9.6933	10.1073	10.5220	7.2028		25.38	28.82	0.2150E-11	-11.668
160.0	916.6	9.4665	9.9706	10.3176	7.1514		24.96	32.72	0.1370E-11	-11.863
170.0	989.6	9.2695	9.8554	10.1410	7.1103		24.56	36.01	0.9329E-12	-12.030
180.0	1046.5	9.0925	9.7547	9.9830	7.0761		24.17	38.82	0.6641E-12	-12.178
190.0	1091.1	8.9294	9.6642	9.8380	7.0467		23.78	41.26	0.4881E-12	-12.311
200.0	1125.8	8.7764	9.5809	9.7023	7.0208		23.40	43.40	0.3674E-12	-12.435
210.0	1153.0	8.6310	9.5030	9.5737	6.9975		23.02	45.31	0.2817E-12	-12.550
220.0	1174.2	8.4912	9.4291	9.4503	6.9761		22.65	47.05	0.2191E-12	-12.659
230.0	1190.8	8.3557	9.3583	9.3310	6.9561		22.28	48.65	0.1724E-12	-12.763
240.0	1203.7	8.2236	9.2900	9.2148	6.9373		21.92	50.15	0.1370E-12	-12.863
250.0	1213.9	8.0943	9.2234	9.1010	6.9193		21.56	51.57	0.1098E-12	-12.959
260.0	1221.8	7.9670	9.1584	8.9893	6.9020		21.21	52.92	0.8861E-13	-13.052
270.0	1227.9	7.8414	9.0945	8.8791	6.8852		20.87	54.22	0.7198E-13	-13.143
280.0	1232.8	7.7173	9.0316	8.7702	6.8688		20.54	55.47	0.5879E-13	-13.231
290.0	1236.5	7.5943	8.9695	8.6624	6.8528		20.22	56.69	0.4828E-13	-13.316
300.0	1239.5	7.4724	8.9080	8.5555	6.8370		19.91	57.88	0.3983E-13	-13.400
320.0	1243.6	7.2308	8.7865	8.3438	6.8061		19.33	60.18	0.2746E-13	-13.561
340.0	1246.1	6.9919	8.6666	8.1346	6.7757		18.80	62.38	0.1923E-13	-13.716
360.0	1247.6	6.7552	8.5479	7.9272	6.7459		18.32	64.47	0.1365E-13	-13.865
380.0	1248.5	6.5203	8.4303	7.7215	6.7163		17.89	66.47	0.9816E-14	-14.008
400.0	1249.1	6.2870	8.3136	7.5173	6.6870		17.50	68.38	0.7135E-14	-14.147
420.0	1249.5	6.0553	8.1977	7.3144	6.6580		17.15	70.21	0.5238E-14	-14.281
440.0	1249.7	5.8250	8.0825	7.1128	6.6291		16.83	71.97	0.3879E-14	-14.411
460.0	1249.8	5.5961	7.9680	6.9124	6.6005		16.54	73.69	0.2896E-14	-14.538
480.0	1249.9	5.3686	7.8543	6.7133	6.5720		16.26	75.39	0.2177E-14	-14.662
500.0	1249.9	5.1425	7.7412	6.5153	6.5437	3.8616	15.99	77.10	0.1647E-14	-14.783
520.0	1250.0	4.9177	7.6288	6.3185	6.5156	3.8545	15.73	78.86	0.1253E-14	-14.902
540.0	1250.0	4.6942	7.5171	6.1228	6.4876	3.8474	15.46	80.70	0.9585E-15	-15.018
560.0	1250.0	4.4720	7.4060	5.9283	6.4598	3.8404	15.18	82.67	0.7367E-15	-15.133
580.0	1250.0	4.2511	7.2955	5.7349	6.4321	3.8335	14.88	84.80	0.5688E-15	-15.245
600.0	1250.0	4.0315	7.1857	5.5426	6.4047	3.8265	14.56	87.15	0.4411E-15	-15.356
620.0	1250.0	3.8131	7.0765	5.3514	6.3773	3.8197	14.22	89.78	0.3435E-15	-15.464
640.0	1250.0	3.5959	6.9679	5.1613	6.3502	3.8128	13.85	92.72	0.2686E-15	-15.571
660.0	1250.0	3.3801	6.8600	4.9723	6.3232	3.8060	13.44	96.06	0.2109E-15	-15.676
680.0	1250.0	3.1654	6.7526	4.7844	6.2963	3.7993	13.01	99.85	0.1664E-15	-15.779
700.0	1250.0	2.9519	6.6459	4.5975	6.2696	3.7925	12.54	104.16	0.1318E-15	-15.880
750.0	1250.0	2.4236	6.3817	4.1350	6.2035	3.7759	11.26	117.65	0.7526E-16	-16.123
800.0	1250.0	1.9026	6.1212	3.6789	6.1383	3.7595	9.90	135.72	0.4450E-16	-16.352
850.0	1250.0	1.3889	5.8644	3.2291	6.0740	3.7433	8.58	158.81	0.2741E-16	-16.562
900.0	1250.0	0.8822	5.6110	2.7855	6.0106	3.7273	7.41	186.46	0.1770E-16	-16.752
950.0	1250.0	0.3824	5.3612	2.3480	5.9481	3.7116	6.45	217.09	0.1202E-16	-16.920
1000.0	1250.0	-0.1105	5.1147	1.9165	5.8864	3.6961	5.72	248.35	0.8590E-17	-17.066

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	545.2	10.3300	10.5151	11.1017	7.3711		26.30	18.30	0.7885E-11	-11.103
140.0	692.5	9.9696	10.2830	10.7733	7.2746		25.81	23.76	0.3765E-11	-11.424
150.0	806.7	9.6932	10.1117	10.5230	7.2072		25.36	28.26	0.2157E-11	-11.666
160.0	895.2	9.4639	9.9744	10.3166	7.1561		24.93	31.99	0.1369E-11	-11.863
170.0	963.8	9.2639	9.8584	10.1376	7.1152		24.52	35.13	0.9279E-12	-12.033
180.0	1017.0	9.0836	9.7566	9.9768	7.0811		24.11	37.81	0.6571E-12	-12.182
190.0	1058.1	8.9171	9.6647	9.8288	7.0518		23.71	40.13	0.4803E-12	-12.318
200.0	1090.1	8.7604	9.5799	9.6900	7.0258		23.32	42.17	0.3595E-12	-12.444
210.0	1114.8	8.6110	9.5003	9.5581	7.0023		22.92	44.00	0.2740E-12	-12.562
220.0	1134.0	8.4671	9.4247	9.4312	6.9806		22.54	45.66	0.2118E-12	-12.674
230.0	1148.8	8.3275	9.3520	9.3082	6.9603		22.15	47.20	0.1657E-12	-12.781
240.0	1160.3	8.1911	9.2816	9.1882	6.9411		21.78	48.65	0.1309E-12	-12.883
250.0	1169.3	8.0572	9.2130	9.0707	6.9227		21.41	50.02	0.1042E-12	-12.982
260.0	1176.2	7.9254	9.1459	8.9550	6.9050		21.05	51.33	0.8363E-13	-13.078
270.0	1181.5	7.7953	9.0798	8.8408	6.8877		20.70	52.59	0.6753E-13	-13.171
280.0	1185.7	7.6665	9.0147	8.7278	6.8708		20.36	53.82	0.5485E-13	-13.261
290.0	1188.9	7.5388	8.9502	8.6159	6.8543		20.03	55.01	0.4478E-13	-13.349
300.0	1191.4	7.4121	8.8864	8.5049	6.8380		19.72	56.18	0.3675E-13	-13.435
320.0	1194.8	7.1610	8.7603	8.2849	6.8059		19.13	58.42	0.2507E-13	-13.601
340.0	1196.9	6.9125	8.6356	8.0672	6.7745		18.60	60.56	0.1738E-13	-13.760
360.0	1198.1	6.6661	8.5122	7.8515	6.7434		18.12	62.60	0.1223E-13	-13.913
380.0	1198.9	6.4215	8.3898	7.6373	6.7127		17.69	64.53	0.8710E-14	-14.060
400.0	1199.3	6.1786	8.2682	7.4246	6.6822		17.31	66.37	0.6276E-14	-14.202
420.0	1199.6	5.9373	8.1475	7.2134	6.6520		16.96	68.14	0.4567E-14	-14.340
440.0	1199.8	5.6975	8.0276	7.0034	6.6219		16.65	69.85	0.3354E-14	-14.474
460.0	1199.9	5.4591	7.9084	6.7947	6.5921		16.36	71.53	0.2483E-14	-14.605
480.0	1199.9	5.2222	7.7899	6.5873	6.5624		16.07	73.21	0.1851E-14	-14.733
500.0	1199.9	4.9866	7.6721	6.3810	6.5329	3.9578	15.80	74.92	0.1388E-14	-14.857
520.0	1200.0	4.7525	7.5550	6.1760	6.5036	3.9504	15.52	76.71	0.1048E-14	-14.980
540.0	1200.0	4.5196	7.4386	5.9722	6.4745	3.9431	15.23	78.62	0.7946E-15	-15.100
560.0	1200.0	4.2882	7.3229	5.7696	6.4456	3.9358	14.93	80.69	0.6057E-15	-15.218
580.0	1200.0	4.0581	7.2078	5.5681	6.4168	3.9286	14.60	82.99	0.4639E-15	-15.334
600.0	1200.0	3.8293	7.0935	5.3678	6.3881	3.9214	14.24	85.56	0.3569E-15	-15.447
620.0	1200.0	3.6018	6.9797	5.1687	6.3597	3.9142	13.85	88.47	0.2758E-15	-15.559
640.0	1200.0	3.3756	6.8666	4.9707	6.3314	3.9071	13.43	91.78	0.2142E-15	-15.669
660.0	1200.0	3.1507	6.7542	4.7738	6.3032	3.9000	12.97	95.57	0.1670E-15	-15.777
680.0	1200.0	2.9271	6.6424	4.5780	6.2753	3.8929	12.48	99.91	0.1309E-15	-15.883
700.0	1200.0	2.7048	6.5312	4.3834	6.2474	3.8859	11.96	104.87	0.1032E-15	-15.986
750.0	1200.0	2.1544	6.2560	3.9015	6.1786	3.8686	10.56	120.45	0.5832E-16	-16.234
800.0	1200.0	1.6117	5.9847	3.4264	6.1107	3.8515	9.14	141.17	0.3436E-16	-16.464
850.0	1200.0	1.0766	5.7171	2.9579	6.0437	3.8346	7.83	167.01	0.2125E-16	-16.673
900.0	1200.0	0.5488	5.4532	2.4958	5.9777	3.8180	6.74	196.74	0.1388E-16	-16.858
950.0	1200.0	0.0282	5.1929	2.0401	5.9125	3.8016	5.90	227.99	0.9593E-17	-17.018
1000.0	1200.0	-0.4852	4.9362	1.5906	5.8483	3.7854	5.28	258.05	0.6993E-17	-17.155

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	538.6	10.3331	10.5194	11.1051	7.3741		26.30	18.08	0.7947E-11	-11.100
140.0	679.7	9.9716	10.2880	10.7760	7.2788		25.80	23.33	0.3791E-11	-11.421
150.0	788.3	9.6928	10.1164	10.5238	7.2121		25.33	27.64	0.2163E-11	-11.665
160.0	871.8	9.4603	9.9783	10.3149	7.1614		24.90	31.20	0.1367E-11	-11.864
170.0	936.0	9.2568	9.8611	10.1329	7.1206		24.47	34.19	0.9207E-12	-12.036
180.0	985.4	9.0727	9.7579	9.9689	7.0865		24.05	36.74	0.6480E-12	-12.188
190.0	1023.4	8.9020	9.6644	9.8174	7.0570		23.63	38.94	0.4706E-12	-12.327
200.0	1052.7	8.7410	9.5777	9.6750	7.0308		23.22	40.89	0.3499E-12	-12.456
210.0	1075.1	8.5871	9.4962	9.5391	7.0071		22.81	42.64	0.2648E-12	-12.577
220.0	1092.4	8.4386	9.4185	9.4082	6.9850		22.41	44.24	0.2034E-12	-12.692
230.0	1105.7	8.2942	9.3437	9.2811	6.9644		22.01	45.72	0.1580E-12	-12.801
240.0	1115.9	8.1529	9.2710	9.1570	6.9447		21.62	47.12	0.1240E-12	-12.907
250.0	1123.8	8.0141	9.2001	9.0351	6.9258		21.24	48.45	0.9809E-13	-13.008
260.0	1129.9	7.8773	9.1305	8.9150	6.9076		20.87	49.73	0.7819E-13	-13.107
270.0	1134.5	7.7421	9.0620	8.7964	6.8898		20.51	50.97	0.6273E-13	-13.202
280.0	1138.1	7.6081	8.9944	8.6790	6.8723		20.16	52.16	0.5064E-13	-13.296
290.0	1140.8	7.4753	8.9274	8.5625	6.8552		19.83	53.33	0.4110E-13	-13.386
300.0	1142.9	7.3434	8.8611	8.4469	6.8383		19.51	54.47	0.3353E-13	-13.475
320.0	1145.8	7.0818	8.7297	8.2178	6.8050		18.92	56.66	0.2262E-13	-13.645
340.0	1147.5	6.8227	8.5999	7.9909	6.7723		18.38	58.74	0.1552E-13	-13.809
360.0	1148.5	6.5658	8.4712	7.7659	6.7400		17.91	60.71	0.1081E-13	-13.966
380.0	1149.1	6.3107	8.3436	7.5426	6.7079		17.49	62.58	0.7625E-14	-14.118
400.0	1149.5	6.0573	8.2168	7.3207	6.6762		17.11	64.35	0.5442E-14	-14.264
420.0	1149.7	5.8056	8.0909	7.1003	6.6446		16.77	66.06	0.3924E-14	-14.406
440.0	1149.8	5.5553	7.9657	6.8812	6.6133		16.46	67.72	0.2855E-14	-14.544
460.0	1149.9	5.3066	7.8414	6.6635	6.5821		16.16	69.37	0.2094E-14	-14.679
480.0	1149.9	5.0594	7.7177	6.4470	6.5512		15.87	71.04	0.1547E-14	-14.811
500.0	1150.0	4.8136	7.5949	6.2319	6.5204	4.0619	15.59	72.78	0.1150E-14	-14.939
520.0	1150.0	4.5693	7.4727	6.0179	6.4899	4.0542	15.29	74.63	0.8599E-15	-15.066
540.0	1150.0	4.3263	7.3512	5.8053	6.4595	4.0465	14.97	76.65	0.6464E-15	-15.189
560.0	1150.0	4.0848	7.2305	5.5938	6.4293	4.0389	14.63	78.89	0.4884E-15	-15.311
580.0	1150.0	3.8447	7.1104	5.3836	6.3992	4.0313	14.26	81.41	0.3709E-15	-15.431
600.0	1150.0	3.6060	6.9910	5.1746	6.3693	4.0238	13.86	84.28	0.2830E-15	-15.548
620.0	1150.0	3.3686	6.8723	4.9668	6.3396	4.0163	13.41	87.57	0.2170E-15	-15.664
640.0	1150.0	3.1326	6.7543	4.7602	6.3101	4.0089	12.93	91.37	0.1672E-15	-15.777
660.0	1150.0	2.8979	6.6370	4.5547	6.2807	4.0015	12.41	95.75	0.1296E-15	-15.887
680.0	1150.0	2.6646	6.5203	4.3505	6.2516	3.9942	11.85	100.80	0.1010E-15	-15.996
700.0	1150.0	2.4326	6.4043	4.1473	6.2225	3.9869	11.27	106.59	0.7918E-16	-16.101
750.0	1150.0	1.8583	6.1172	3.6446	6.1507	3.9688	9.77	124.72	0.4442E-16	-16.352
800.0	1150.0	1.2920	5.8340	3.1488	6.0798	3.9509	8.33	148.38	0.2620E-16	-16.582
850.0	1150.0	0.7336	5.5548	2.6599	6.0099	3.9333	7.09	176.81	0.1637E-16	-16.786
900.0	1150.0	0.1828	5.2795	2.1778	5.9410	3.9160	6.11	207.81	0.1088E-16	-16.963
950.0	1150.0	-0.3604	5.0079	1.7022	5.8731	3.8989	5.40	238.38	0.7684E-17	-17.114
1000.0	1150.0	-0.8962	4.7400	1.2331	5.8060	3.8820	4.91	265.94	0.5726E-17	-17.242

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	531.0	10.3367	10.5242	11.1090	7.3776		26.30	17.83	0.8020E-11	-11.096
140.0	665.4	9.9737	10.2937	10.7790	7.2837		25.78	22.86	0.3819E-11	-11.418
150.0	768.1	9.6918	10.1216	10.5244	7.2176		25.31	26.96	0.2169E-11	-11.664
160.0	846.5	9.4555	9.9824	10.3123	7.1671		24.85	30.35	0.1362E-11	-11.866
170.0	906.4	9.2478	9.8637	10.1268	7.1264		24.41	33.19	0.9110E-12	-12.040
180.0	952.1	9.0592	9.7586	9.9589	7.0922		23.97	35.61	0.6365E-12	-12.196
190.0	987.0	8.8837	9.6631	9.8034	7.0625		23.54	37.71	0.4588E-12	-12.338
200.0	1013.7	8.7178	9.5743	9.6567	7.0360		23.11	39.57	0.3385E-12	-12.470
210.0	1034.1	8.5588	9.4905	9.5164	7.0119		22.69	41.24	0.2543E-12	-12.595
220.0	1049.7	8.4051	9.4104	9.3810	6.9894		22.27	42.78	0.1938E-12	-12.713
230.0	1061.6	8.2553	9.3331	9.2493	6.9683		21.85	44.22	0.1494E-12	-12.826
240.0	1070.6	8.1085	9.2578	9.1204	6.9481		21.45	45.58	0.1164E-12	-12.934
250.0	1077.6	7.9642	9.1843	8.9937	6.9286		21.05	46.88	0.9140E-13	-13.039
260.0	1082.9	7.8218	9.1120	8.8687	6.9098		20.67	48.12	0.7234E-13	-13.141
270.0	1086.9	7.6809	9.0408	8.7452	6.8913		20.30	49.33	0.5765E-13	-13.239
280.0	1090.0	7.5413	8.9703	8.6228	6.8732		19.95	50.50	0.4622E-13	-13.335
290.0	1092.4	7.4027	8.9006	8.5013	6.8554		19.61	51.65	0.3727E-13	-13.429
300.0	1094.2	7.2650	8.8314	8.3807	6.8379		19.28	52.76	0.3022E-13	-13.520
320.0	1096.6	6.9920	8.6944	8.1415	6.8032		18.69	54.89	0.2015E-13	-13.696
340.0	1098.0	6.7214	8.5588	7.9046	6.7691		18.16	56.90	0.1367E-13	-13.864
360.0	1098.8	6.4529	8.4244	7.6695	6.7353		17.69	58.81	0.9418E-14	-14.026
380.0	1099.3	6.1863	8.2910	7.4361	6.7019		17.27	60.60	0.6576E-14	-14.182
400.0	1099.6	5.9215	8.1585	7.2042	6.6687		16.90	62.32	0.4646E-14	-14.333
420.0	1099.8	5.6583	8.0269	6.9738	6.6357		16.57	63.97	0.3317E-14	-14.479
440.0	1099.9	5.3967	7.8961	6.7448	6.6030		16.25	65.59	0.2390E-14	-14.622
460.0	1099.9	5.1367	7.7661	6.5171	6.5704		15.95	67.23	0.1735E-14	-14.761
480.0	1100.0	4.8782	7.6368	6.2908	6.5381		15.65	68.92	0.1269E-14	-14.897
500.0	1100.0	4.6213	7.5083	6.0659	6.5059	4.1746	15.34	70.71	0.9341E-15	-15.030
520.0	1100.0	4.3658	7.3806	5.8423	6.4740	4.1665	15.02	72.67	0.6916E-15	-15.160
540.0	1100.0	4.1119	7.2536	5.6199	6.4422	4.1585	14.67	74.85	0.5149E-15	-15.288
560.0	1100.0	3.8594	7.1274	5.3989	6.4106	4.1506	14.28	77.32	0.3854E-15	-15.414
580.0	1100.0	3.6083	7.0019	5.1791	6.3792	4.1427	13.85	80.16	0.2900E-15	-15.538
600.0	1100.0	3.3588	6.8771	4.9606	6.3480	4.1348	13.39	83.44	0.2194E-15	-15.659
620.0	1100.0	3.1106	6.7530	4.7433	6.3169	4.1270	12.87	87.26	0.1669E-15	-15.778
640.0	1100.0	2.8639	6.6296	4.5273	6.2860	4.1192	12.32	91.70	0.1277E-15	-15.894
660.0	1100.0	2.6185	6.5070	4.3125	6.2553	4.1115	11.73	96.85	0.9833E-16	-16.007
680.0	1100.0	2.3746	6.3850	4.0990	6.2248	4.1038	11.12	102.80	0.7624E-16	-16.118
700.0	1100.0	2.1320	6.2637	3.8866	6.1945	4.0961	10.48	109.62	0.5955E-16	-16.225
750.0	1100.0	1.5316	5.9635	3.3610	6.1193	4.0772	8.91	130.75	0.3330E-16	-16.478
800.0	1100.0	0.9396	5.6675	2.8427	6.0453	4.0586	7.51	157.44	0.1978E-16	-16.704
850.0	1100.0	0.3558	5.3756	2.3316	5.9722	4.0402	6.38	187.85	0.1257E-16	-16.901
900.0	1100.0	-0.2200	5.0877	1.8275	5.9002	4.0220	5.55	218.82	0.8555E-17	-17.068
950.0	1100.0	-0.7878	4.8038	1.3304	5.8291	4.0042	4.98	247.22	0.6194E-17	-17.208
1000.0	1100.0	-1.3480	4.5237	0.8400	5.7590	3.9865	4.61	271.18	0.4721E-17	-17.326

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	522.5	10.3408	10.5298	11.1134	7.3816		26.29	17.54	0.8104E-11	-11.091
140.0	649.6	9.9758	10.3000	10.7821	7.2891		25.76	22.33	0.3849E-11	-11.415
150.0	746.1	9.6902	10.1271	10.5246	7.2236		25.28	26.22	0.2173E-11	-11.663
160.0	819.3	9.4494	9.9864	10.3087	7.1734		24.80	29.43	0.1354E-11	-11.868
170.0	874.9	9.2368	9.8658	10.1190	7.1326		24.34	32.12	0.8986E-12	-12.046
180.0	917.1	9.0428	9.7586	9.9467	7.0982		23.89	34.42	0.6225E-12	-12.206
190.0	949.1	8.8619	9.6607	9.7864	7.0682		23.43	36.42	0.4448E-12	-12.352
200.0	973.4	8.6903	9.5694	9.6348	7.0413		22.98	38.20	0.3253E-12	-12.488
210.0	991.9	8.5255	9.4829	9.4895	7.0167		22.54	39.82	0.2422E-12	-12.616
220.0	1005.9	8.3658	9.4000	9.3490	6.9937		22.10	41.30	0.1830E-12	-12.738
230.0	1016.5	8.2100	9.3198	9.2120	6.9719		21.67	42.70	0.1399E-12	-12.854
240.0	1024.6	8.0571	9.2417	9.0777	6.9511		21.25	44.02	0.1081E-12	-12.966
250.0	1030.7	7.9066	9.1651	8.9456	6.9310		20.84	45.29	0.8424E-13	-13.074
260.0	1035.4	7.7580	9.0898	8.8152	6.9114		20.45	46.51	0.6617E-13	-13.179
270.0	1038.9	7.6108	9.0155	8.6862	6.8923		20.07	47.69	0.5234E-13	-13.281
280.0	1041.6	7.4649	8.9420	8.5583	6.8735		19.71	48.84	0.4167E-13	-13.380
290.0	1043.6	7.3200	8.8691	8.4314	6.8549		19.36	49.95	0.3337E-13	-13.477
300.0	1045.1	7.1760	8.7968	8.3052	6.8366		19.04	51.04	0.2687E-13	-13.571
320.0	1047.2	6.8902	8.6535	8.0549	6.8004		18.44	53.11	0.1770E-13	-13.752
340.0	1048.4	6.6069	8.5116	7.8069	6.7647		17.92	55.06	0.1186E-13	-13.926
360.0	1049.1	6.3258	8.3709	7.5607	6.7294		17.46	56.88	0.8080E-14	-14.093
380.0	1049.5	6.0466	8.2312	7.3162	6.6944		17.05	58.61	0.5579E-14	-14.253
400.0	1049.7	5.7692	8.0924	7.0734	6.6596		16.69	60.25	0.3899E-14	-14.409
420.0	1049.8	5.4935	7.9546	6.8320	6.6251		16.35	61.86	0.2753E-14	-14.560
440.0	1049.9	5.2195	7.8176	6.5921	6.5908		16.03	63.46	0.1962E-14	-14.707
460.0	1049.9	4.9471	7.6814	6.3536	6.5567		15.72	65.11	0.1409E-14	-14.851
480.0	1050.0	4.6763	7.5460	6.1166	6.5228		15.40	66.85	0.1019E-14	-14.992
500.0	1050.0	4.4071	7.4114	5.8809	6.4891	4.2969	15.06	68.75	0.7423E-15	-15.129
520.0	1050.0	4.1395	7.2776	5.6466	6.4557	4.2885	14.70	70.88	0.5437E-15	-15.265
540.0	1050.0	3.8735	7.1445	5.4137	6.4224	4.2801	14.30	73.30	0.4006E-15	-15.397
560.0	1050.0	3.6090	7.0123	5.1821	6.3893	4.2718	13.85	76.11	0.2969E-15	-15.527
580.0	1050.0	3.3460	6.8808	4.9519	6.3564	4.2635	13.35	79.39	0.2213E-15	-15.655
600.0	1050.0	3.0845	6.7500	4.7230	6.3236	4.2552	12.81	83.23	0.1660E-15	-15.780
620.0	1050.0	2.8245	6.6201	4.4954	6.2911	4.2470	12.22	87.74	0.1253E-15	-15.902
640.0	1050.0	2.5660	6.4908	4.2691	6.2588	4.2389	11.59	93.03	0.9523E-16	-16.021
660.0	1050.0	2.3090	6.3623	4.0441	6.2266	4.2308	10.94	99.17	0.7294E-16	-16.137
680.0	1050.0	2.0535	6.2345	3.8204	6.1946	4.2228	10.27	106.25	0.5634E-16	-16.249
700.0	1050.0	1.7994	6.1075	3.5979	6.1628	4.2147	9.60	114.33	0.4391E-16	-16.357
750.0	1050.0	1.1704	5.7930	3.0472	6.0841	4.1949	8.02	138.81	0.2464E-16	-16.608
800.0	1050.0	0.5501	5.4829	2.5042	6.0065	4.1754	6.71	168.19	0.1486E-16	-16.828
850.0	1050.0	-0.0615	5.1771	1.9688	5.9300	4.1561	5.74	199.37	0.9681E-17	-17.014
900.0	1050.0	-0.6646	4.8755	1.4407	5.8545	4.1371	5.07	228.67	0.6774E-17	-17.169
950.0	1050.0	-1.2596	4.5780	0.9199	5.7801	4.1184	4.54	253.57	0.5034E-17	-17.298
1000.0	1050.0	-1.8464	4.2846	0.4061	5.7067	4.0999	4.36	273.38	0.3916E-17	-17.407

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	513.0	10.3453	10.5360	11.1184	7.3861		26.28	17.23	0.8199E-11	-11.086
140.0	632.3	9.9780	10.3069	10.7855	7.2952		25.74	21.75	0.3882E-11	-11.411
150.0	722.4	9.6879	10.1330	10.5243	7.2302		25.24	25.43	0.2176E-11	-11.662
160.0	790.4	9.4418	9.9904	10.3040	7.1801		24.75	28.46	0.1344E-11	-11.872
170.0	841.8	9.2233	9.8675	10.1093	7.1393		24.26	31.01	0.8831E-12	-12.054
180.0	880.5	9.0233	9.7577	9.9318	7.1045		23.79	33.19	0.6057E-12	-12.218
190.0	909.8	8.8360	9.6570	9.7661	7.0741		23.31	35.10	0.4285E-12	-12.368
200.0	931.9	8.6580	9.5627	9.6089	7.0466		22.84	36.80	0.3103E-12	-12.508
210.0	948.6	8.4866	9.4731	9.4578	7.0214		22.37	38.36	0.2288E-12	-12.641
220.0	961.2	8.3201	9.3871	9.3114	6.9977		21.92	39.80	0.1712E-12	-12.766
230.0	970.7	8.1575	9.3036	9.1685	6.9753		21.47	41.16	0.1297E-12	-12.887
240.0	977.9	7.9978	9.2222	9.0283	6.9537		21.03	42.45	0.9930E-13	-13.003
250.0	983.3	7.8404	9.1423	8.8902	6.9328		20.61	43.69	0.7672E-13	-13.115
260.0	987.4	7.6848	9.0635	8.7537	6.9125		20.21	44.89	0.5976E-13	-13.224
270.0	990.5	7.5306	8.9858	8.6186	6.8925		19.82	46.05	0.4690E-13	-13.329
280.0	992.8	7.3777	8.9088	8.4846	6.8729		19.45	47.17	0.3705E-13	-13.431
290.0	994.6	7.2258	8.8325	8.3515	6.8535		19.10	48.26	0.2946E-13	-13.531
300.0	995.9	7.0748	8.7567	8.2193	6.8343		18.78	49.31	0.2355E-13	-13.628
320.0	997.7	6.7750	8.6064	7.9567	6.7964		18.18	51.31	0.1530E-13	-13.815
340.0	998.7	6.4777	8.4575	7.6964	6.7590		17.67	53.19	0.1013E-13	-13.994
360.0	999.2	6.1826	8.3099	7.4380	6.7219		17.22	54.94	0.6813E-14	-14.167
380.0	999.6	5.8895	8.1632	7.1813	6.6852		16.82	56.59	0.4648E-14	-14.333
400.0	999.8	5.5982	8.0176	6.9264	6.6487		16.46	58.18	0.3210E-14	-14.494
420.0	999.9	5.3088	7.8728	6.6729	6.6125		16.12	59.76	0.2239E-14	-14.650
440.0	999.9	5.0211	7.7290	6.4211	6.5765		15.80	61.36	0.1577E-14	-14.802
460.0	1000.0	4.7351	7.5860	6.1707	6.5407		15.46	63.05	0.1119E-14	-14.951
480.0	1000.0	4.4508	7.4438	5.9218	6.5051		15.11	64.89	0.7998E-15	-15.097
500.0	1000.0	4.1682	7.3025	5.6744	6.4697	4.4300	14.73	66.97	0.5755E-15	-15.240
520.0	1000.0	3.8872	7.1620	5.4284	6.4346	4.4212	14.31	69.34	0.4168E-15	-15.380
540.0	1000.0	3.6078	7.0223	5.1838	6.3996	4.4124	13.84	72.12	0.3037E-15	-15.518
560.0	1000.0	3.3301	6.8834	4.9406	6.3649	4.4036	13.31	75.40	0.2227E-15	-15.652
580.0	1000.0	3.0539	6.7454	4.6989	6.3303	4.3949	12.73	79.29	0.1645E-15	-15.784
600.0	1000.0	2.7794	6.6081	4.4585	6.2960	4.3863	12.10	83.90	0.1223E-15	-15.913
620.0	1000.0	2.5064	6.4716	4.2195	6.2618	4.3777	11.43	89.35	0.9167E-16	-16.038
640.0	1000.0	2.2350	6.3359	3.9819	6.2278	4.3691	10.73	95.73	0.6930E-16	-16.159
660.0	1000.0	1.9651	6.2010	3.7457	6.1941	4.3606	10.02	103.13	0.5289E-16	-16.277
680.0	1000.0	1.6968	6.0668	3.5108	6.1605	4.3522	9.31	111.60	0.4079E-16	-16.389
700.0	1000.0	1.4300	5.9334	3.2772	6.1271	4.3438	8.63	121.12	0.3182E-16	-16.497
750.0	1000.0	0.7695	5.6032	2.6990	6.0445	4.3230	7.11	148.96	0.1808E-16	-16.743
800.0	1000.0	0.1183	5.2776	2.1288	5.9630	4.3024	5.97	180.05	0.1118E-16	-16.952
850.0	1000.0	-0.5239	4.9565	1.5666	5.8826	4.2822	5.18	210.27	0.7511E-17	-17.124
900.0	1000.0	-1.1572	4.6398	1.0122	5.8034	4.2623	4.68	236.30	0.5418E-17	-17.266
950.0	1000.0	-1.7819	4.3275	0.4653	5.7252	4.2426	4.36	256.95	0.4125E-17	-17.385
1000.0	1000.0	-2.3980	4.0194	-0.0742	5.6481	4.2232	4.16	272.73	0.3263E-17	-17.486

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	502.7	10.3503	10.5429	11.1239	7.3911		26.28	16.89	0.8305E-11	-11.081
140.0	613.7	9.9801	10.3145	10.7890	7.3019		25.72	21.13	0.3917E-11	-11.407
150.0	697.2	9.6848	10.1391	10.5235	7.2375		25.20	24.58	0.2176E-11	-11.662
160.0	759.9	9.4325	9.9942	10.2980	7.1874		24.68	27.43	0.1330E-11	-11.876
170.0	807.1	9.2073	9.8686	10.0975	7.1463		24.17	29.84	0.8643E-12	-12.063
180.0	842.6	9.0002	9.7557	9.9139	7.1111		23.67	31.91	0.5861E-12	-12.232
190.0	869.2	8.8057	9.6517	9.7419	7.0801		23.17	33.74	0.4099E-12	-12.387
200.0	889.3	8.6202	9.5540	9.5783	7.0520		22.67	35.38	0.2935E-12	-12.532
210.0	904.4	8.4413	9.4609	9.4208	7.0260		22.19	36.88	0.2141E-12	-12.669
220.0	915.7	8.2673	9.3712	9.2678	7.0015		21.71	38.28	0.1585E-12	-12.800
230.0	924.2	8.0970	9.2840	9.1182	6.9782		21.24	39.61	0.1189E-12	-12.925
240.0	930.6	7.9296	9.1988	8.9712	6.9558		20.79	40.88	0.9010E-13	-13.045
250.0	935.4	7.7644	9.1151	8.8264	6.9340		20.35	42.09	0.6896E-13	-13.161
260.0	939.0	7.6010	9.0326	8.6831	6.9128		19.94	43.27	0.5323E-13	-13.274
270.0	941.8	7.4391	8.9510	8.5412	6.8919		19.54	44.40	0.4142E-13	-13.383
280.0	943.8	7.2784	8.8701	8.4004	6.8713		19.17	45.49	0.3245E-13	-13.489
290.0	945.3	7.1187	8.7899	8.2605	6.8510		18.82	46.55	0.2560E-13	-13.592
300.0	946.5	6.9599	8.7103	8.1214	6.8308		18.50	47.57	0.2031E-13	-13.692
320.0	948.0	6.6445	8.5522	7.8452	6.7910		17.91	49.50	0.1301E-13	-13.886
340.0	948.9	6.3317	8.3956	7.5713	6.7517		17.41	51.29	0.8491E-14	-14.071
360.0	949.4	6.0211	8.2402	7.2994	6.7127		16.97	52.96	0.5636E-14	-14.249
380.0	949.6	5.7126	8.0859	7.0293	6.6741		16.58	54.55	0.3794E-14	-14.421
400.0	949.8	5.4061	7.9326	6.7609	6.6357		16.22	56.10	0.2585E-14	-14.587
420.0	949.9	5.1014	7.7803	6.4942	6.5975		15.87	57.66	0.1780E-14	-14.750
440.0	949.9	4.7986	7.6288	6.2291	6.5596		15.53	59.30	0.1237E-14	-14.908
460.0	950.0	4.4976	7.4783	5.9655	6.5220		15.16	61.09	0.8660E-15	-15.062
480.0	950.0	4.1983	7.3287	5.7035	6.4845		14.76	63.11	0.6109E-15	-15.214
500.0	950.0	3.9008	7.1799	5.4431	6.4473	4.5753	14.32	65.45	0.4340E-15	-15.362
520.0	950.0	3.6050	7.0320	5.1841	6.4103	4.5660	13.82	68.21	0.3105E-15	-15.508
540.0	950.0	3.3110	6.8850	4.9267	6.3735	4.5567	13.26	71.50	0.2237E-15	-15.650
560.0	950.0	3.0186	6.7388	4.6707	6.3369	4.5475	12.64	75.45	0.1623E-15	-15.790
580.0	950.0	2.7279	6.5935	4.4162	6.3005	4.5384	11.96	80.19	0.1188E-15	-15.925
600.0	950.0	2.4389	6.4490	4.1632	6.2644	4.5293	11.24	85.84	0.8767E-16	-16.057
620.0	950.0	2.1516	6.3053	3.9117	6.2284	4.5202	10.49	92.52	0.6535E-16	-16.185
640.0	950.0	1.8659	6.1625	3.6616	6.1927	4.5112	9.73	100.31	0.4925E-16	-16.308
660.0	950.0	1.5818	6.0204	3.4129	6.1571	4.5023	8.98	109.24	0.3757E-16	-16.425
680.0	950.0	1.2994	5.8792	3.1656	6.1218	4.4934	8.27	119.28	0.2904E-16	-16.537
700.0	950.0	1.0185	5.7388	2.9197	6.0867	4.4845	7.62	130.33	0.2276E-16	-16.643
750.0	950.0	0.3233	5.3912	2.3111	5.9997	4.4626	6.26	160.91	0.1324E-16	-16.878
800.0	950.0	-0.3622	5.0484	1.7109	5.9139	4.4410	5.32	192.02	0.8471E-17	-17.072
850.0	950.0	-1.0382	4.7104	1.1191	5.8293	4.4197	4.72	219.43	0.5896E-17	-17.229
900.0	950.0	-1.7048	4.3771	0.5355	5.7459	4.3987	4.35	241.19	0.4378E-17	-17.359
950.0	950.0	-2.3624	4.0483	-0.0402	5.6636	4.3780	4.13	257.66	0.3401E-17	-17.468
1000.0	950.0	-3.0110	3.7240	-0.6080	5.5825	4.3576	3.99	270.20	0.2721E-17	-17.565

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	491.6	10.3558	10.5505	11.1299	7.3966		26.27	16.52	0.8422E-11	-11.075
140.0	593.9	9.9822	10.3226	10.7926	7.3092		25.70	20.47	0.3954E-11	-11.403
150.0	670.6	9.6808	10.1455	10.5221	7.2453		25.15	23.69	0.2174E-11	-11.663
160.0	728.1	9.4212	9.9979	10.2904	7.1952		24.61	26.36	0.1312E-11	-11.882
170.0	771.2	9.1882	9.8689	10.0833	7.1537		24.07	28.63	0.8420E-12	-12.075
180.0	803.4	8.9730	9.7524	9.8927	7.1179		23.54	30.60	0.5636E-12	-12.249
190.0	827.6	8.7702	9.6446	9.7135	7.0862		23.01	32.34	0.3891E-12	-12.410
200.0	845.8	8.5763	9.5429	9.5426	7.0573		22.49	33.92	0.2751E-12	-12.561
210.0	859.4	8.3888	9.4457	9.3776	7.0304		21.97	35.38	0.1982E-12	-12.703
220.0	869.5	8.2062	9.3519	9.2171	7.0050		21.47	36.75	0.1450E-12	-12.839
230.0	877.2	8.0273	9.2605	9.0600	6.9807		20.98	38.05	0.1075E-12	-12.968
240.0	882.9	7.8512	9.1711	8.9055	6.9573		20.52	39.29	0.8064E-13	-13.093
250.0	887.2	7.6774	9.0831	8.7530	6.9345		20.07	40.48	0.6109E-13	-13.214
260.0	890.4	7.5053	8.9962	8.6022	6.9122		19.65	41.63	0.4670E-13	-13.331
270.0	892.8	7.3346	8.9103	8.4527	6.8903		19.25	42.74	0.3600E-13	-13.444
280.0	894.6	7.1652	8.8252	8.3042	6.8687		18.87	43.80	0.2796E-13	-13.553
290.0	896.0	6.9968	8.7407	8.1567	6.8473		18.53	44.82	0.2187E-13	-13.660
300.0	897.0	6.8293	8.6567	8.0100	6.8261		18.21	45.81	0.1721E-13	-13.764
320.0	898.3	6.4966	8.4900	7.7186	6.7841		17.63	47.65	0.1085E-13	-13.965
340.0	899.0	6.1665	8.3248	7.4296	6.7426		17.14	49.36	0.6977E-14	-14.156
360.0	899.5	5.8388	8.1608	7.1427	6.7015		16.71	50.96	0.4563E-14	-14.341
380.0	899.7	5.5132	7.9979	6.8576	6.6607		16.32	52.49	0.3027E-14	-14.519
400.0	899.8	5.1896	7.8361	6.5743	6.6202		15.96	54.02	0.2032E-14	-14.692
420.0	899.9	4.8680	7.6753	6.2928	6.5800		15.59	55.61	0.1378E-14	-14.861
440.0	899.9	4.5484	7.5155	6.0129	6.5400		15.21	57.35	0.9435E-15	-15.025
460.0	900.0	4.2306	7.3566	5.7347	6.5002		14.79	59.32	0.6511E-15	-15.186
480.0	900.0	3.9147	7.1987	5.4582	6.4607		14.32	61.62	0.4528E-15	-15.344
500.0	900.0	3.6007	7.0416	5.1833	6.4214	4.7344	13.79	64.36	0.3173E-15	-15.499
520.0	900.0	3.2885	6.8855	4.9099	6.3823	4.7246	13.19	67.69	0.2241E-15	-15.650
540.0	900.0	2.9781	6.7303	4.6382	6.3435	4.7148	12.52	71.73	0.1596E-15	-15.797
560.0	900.0	2.6695	6.5760	4.3680	6.3049	4.7051	11.79	76.63	0.1147E-15	-15.940
580.0	900.0	2.3627	6.4226	4.0994	6.2665	4.6954	11.01	82.55	0.8326E-16	-16.080
600.0	900.0	2.0576	6.2701	3.8324	6.2283	4.6858	10.20	89.60	0.6113E-16	-16.214
620.0	900.0	1.7543	6.1184	3.5668	6.1903	4.6762	9.39	97.85	0.4545E-16	-16.342
640.0	900.0	1.4528	5.9677	3.3028	6.1526	4.6667	8.61	107.36	0.3428E-16	-16.465
660.0	900.0	1.1529	5.8177	3.0403	6.1151	4.6573	7.88	118.02	0.2625E-16	-16.581
680.0	900.0	0.8548	5.6687	2.7793	6.0778	4.6479	7.21	129.68	0.2044E-16	-16.689
700.0	900.0	0.5583	5.5204	2.5197	6.0407	4.6385	6.62	142.06	0.1619E-16	-16.791
750.0	900.0	-0.1755	5.1535	1.8773	5.9489	4.6154	5.48	173.94	0.9765E-17	-17.010
800.0	900.0	-0.8991	4.7917	1.2438	5.8583	4.5926	4.76	203.00	0.6508E-17	-17.187
850.0	900.0	-1.6126	4.4350	0.6191	5.7691	4.5701	4.33	226.28	0.4692E-17	-17.329
900.0	900.0	-2.3163	4.0831	0.0031	5.6810	4.5480	4.08	243.80	0.3570E-17	-17.447
950.0	900.0	-3.0104	3.7361	-0.6046	5.5942	4.5261	3.92	257.04	0.2812E-17	-17.551
1000.0	900.0	-3.6951	3.3937	-1.2040	5.5085	4.5045	3.82	267.62	0.2263E-17	-17.645

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	479.7	10.3617	10.5587	11.1363	7.4025		26.26	16.13	0.8550E-11	-11.068
140.0	573.0	9.9842	10.3314	10.7962	7.3171		25.67	19.77	0.3992E-11	-11.399
150.0	642.8	9.6757	10.1522	10.5199	7.2538		25.09	22.76	0.2169E-11	-11.664
160.0	695.0	9.4078	10.0013	10.2812	7.2035		24.52	25.25	0.1291E-11	-11.889
170.0	734.1	9.1658	9.8684	10.0664	7.1615		23.96	27.39	0.8161E-12	-12.088
180.0	763.3	8.9413	9.7477	9.8677	7.1250		23.39	29.25	0.5381E-12	-12.269
190.0	785.2	8.7290	9.6354	9.6803	7.0924		22.83	30.93	0.3661E-12	-12.436
200.0	801.5	8.5255	9.5292	9.5010	7.0625		22.28	32.45	0.2552E-12	-12.593
210.0	813.7	8.3283	9.4273	9.3276	7.0346		21.74	33.87	0.1814E-12	-12.741
220.0	822.9	8.1360	9.3287	9.1586	7.0081		21.21	35.21	0.1310E-12	-12.883
230.0	829.7	7.9473	9.2326	8.9930	6.9827		20.70	36.48	0.9592E-13	-13.018
240.0	834.8	7.7614	9.1383	8.8299	6.9581		20.22	37.70	0.7110E-13	-13.148
250.0	838.6	7.5778	9.0455	8.6689	6.9342		19.76	38.87	0.5327E-13	-13.274
260.0	841.5	7.3959	8.9538	8.5095	6.9107		19.33	39.99	0.4030E-13	-13.395
270.0	843.6	7.2155	8.8631	8.3514	6.8875		18.93	41.06	0.3075E-13	-13.512
280.0	845.2	7.0363	8.7730	8.1944	6.8647		18.56	42.09	0.2366E-13	-13.626
290.0	846.4	6.8581	8.6837	8.0383	6.8421		18.22	43.07	0.1833E-13	-13.737
300.0	847.3	6.6809	8.5948	7.8831	6.8197		17.90	44.01	0.1430E-13	-13.845
320.0	848.5	6.3287	8.4184	7.5747	6.7754		17.34	45.77	0.8862E-14	-14.052
340.0	849.2	5.9793	8.2436	7.2688	6.7315		16.86	47.39	0.5605E-14	-14.251
360.0	849.5	5.6323	8.0700	6.9650	6.6880		16.44	48.92	0.3605E-14	-14.443
380.0	849.7	5.2876	7.8976	6.6632	6.6448		16.05	50.43	0.2352E-14	-14.629
400.0	849.9	4.9450	7.7262	6.3633	6.6019		15.66	51.98	0.1553E-14	-14.809
420.0	849.9	4.6045	7.5560	6.0652	6.5593		15.26	53.66	0.1036E-14	-14.985
440.0	850.0	4.2661	7.3867	5.7689	6.5169		14.82	55.58	0.6975E-15	-15.156
460.0	850.0	3.9297	7.2185	5.4743	6.4748		14.33	57.85	0.4737E-15	-15.325
480.0	850.0	3.5952	7.0513	5.1815	6.4330		13.76	60.60	0.3244E-15	-15.489
500.0	850.0	3.2627	6.8850	4.8904	6.3914	4.9091	13.11	63.97	0.2241E-15	-15.650
520.0	850.0	2.9321	6.7197	4.6010	6.3500	4.8987	12.38	68.14	0.1563E-15	-15.806
540.0	850.0	2.6035	6.5554	4.3133	6.3089	4.8884	11.58	73.28	0.1101E-15	-15.958
560.0	850.0	2.2767	6.3920	4.0272	6.2680	4.8781	10.73	79.54	0.7847E-16	-16.105
580.0	850.0	1.9518	6.2296	3.7428	6.2273	4.8678	9.86	87.08	0.5668E-16	-16.247
600.0	850.0	1.6288	6.0681	3.4600	6.1869	4.8577	8.99	95.96	0.4156E-16	-16.381
620.0	850.0	1.3077	5.9075	3.1789	6.1467	4.8476	8.18	106.17	0.3098E-16	-16.509
640.0	850.0	0.9884	5.7479	2.8993	6.1068	4.8375	7.42	117.59	0.2352E-16	-16.629
660.0	850.0	0.6709	5.5891	2.6214	6.0671	4.8275	6.76	129.97	0.1820E-16	-16.740
680.0	850.0	0.3552	5.4313	2.3450	6.0276	4.8175	6.18	142.94	0.1438E-16	-16.842
700.0	850.0	0.0413	5.2744	2.0702	5.9883	4.8077	5.69	156.08	0.1158E-16	-16.936
750.0	850.0	-0.7357	4.8858	1.3900	5.8911	4.7832	4.81	187.14	0.7318E-17	-17.136
800.0	850.0	-1.5018	4.5028	0.7192	5.7952	4.7590	4.30	212.52	0.5090E-17	-17.293
850.0	850.0	-2.2573	4.1250	0.0578	5.7007	4.7352	4.00	231.63	0.3782E-17	-17.422
900.0	850.0	-3.0024	3.7525	-0.5945	5.6075	4.7118	3.82	246.05	0.2929E-17	-17.533
950.0	850.0	-3.7373	3.3850	-1.2379	5.5155	4.6886	3.69	257.70	0.2325E-17	-17.634
1000.0	850.0	-4.4623	3.0226	-1.8725	5.4248	4.6658	3.60	268.02	0.1874E-17	-17.727

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	467.4	10.3679	10.5675	11.1432	7.4089		26.25	15.72	0.8690E-11	-11.061
140.0	551.3	9.9860	10.3407	10.7999	7.3256		25.64	19.05	0.4031E-11	-11.395
150.0	614.1	9.6694	10.1590	10.5169	7.2628		25.03	21.79	0.2161E-11	-11.665
160.0	661.1	9.3920	10.0043	10.2701	7.2123		24.43	24.11	0.1266E-11	-11.898
170.0	696.1	9.1398	9.8669	10.0465	7.1696		23.83	26.11	0.7866E-12	-12.104
180.0	722.4	8.9046	9.7413	9.8386	7.1323		23.22	27.89	0.5099E-12	-12.292
190.0	742.0	8.6815	9.6239	9.6418	7.0986		22.63	29.49	0.3412E-12	-12.467
200.0	756.6	8.4669	9.5124	9.4529	7.0675		22.04	30.97	0.2341E-12	-12.631
210.0	767.6	8.2587	9.4052	9.2699	7.0384		21.47	32.35	0.1638E-12	-12.786
220.0	775.8	8.0553	9.3012	9.0912	7.0107		20.92	33.66	0.1166E-12	-12.933
230.0	781.9	7.8555	9.1996	8.9159	6.9840		20.39	34.90	0.8426E-13	-13.074
240.0	786.5	7.6586	9.0998	8.7431	6.9581		19.89	36.10	0.6166E-13	-13.210
250.0	789.9	7.4638	9.0015	8.5724	6.9328		19.43	37.24	0.4564E-13	-13.341
260.0	792.4	7.2709	8.9043	8.4033	6.9079		18.99	38.33	0.3413E-13	-13.467
270.0	794.3	7.0794	8.8081	8.2355	6.8835		18.59	39.36	0.2577E-13	-13.589
280.0	795.8	6.8891	8.7126	8.0688	6.8593		18.23	40.35	0.1962E-13	-13.707
290.0	796.8	6.7000	8.6177	7.9032	6.8353		17.89	41.29	0.1505E-13	-13.822
300.0	797.6	6.5117	8.5234	7.7383	6.8115		17.58	42.18	0.1163E-13	-13.935
320.0	798.7	6.1377	8.3361	7.4108	6.7645		17.04	43.85	0.7069E-14	-14.151
340.0	799.3	5.7665	8.1503	7.0858	6.7179		16.57	45.39	0.4388E-14	-14.358
360.0	799.6	5.3979	7.9659	6.7630	6.6717		16.15	46.88	0.2770E-14	-14.557
380.0	799.8	5.0317	7.7827	6.4424	6.6258		15.74	48.39	0.1774E-14	-14.751
400.0	799.9	4.6677	7.6007	6.1237	6.5802		15.31	50.04	0.1149E-14	-14.940
420.0	799.9	4.3059	7.4198	5.8070	6.5349		14.85	51.91	0.7524E-15	-15.124
440.0	800.0	3.9463	7.2400	5.4922	6.4899		14.32	54.16	0.4974E-15	-15.303
460.0	800.0	3.5889	7.0613	5.1793	6.4452		13.70	56.93	0.3319E-15	-15.479
480.0	800.0	3.2335	6.8836	4.8681	6.4007		12.99	60.40	0.2237E-15	-15.650
500.0	800.0	2.8802	6.7070	4.5588	6.3565	5.1019	12.19	64.76	0.1523E-15	-15.817
520.0	800.0	2.5290	6.5313	4.2514	6.3126	5.0908	11.30	70.22	0.1050E-15	-15.979
540.0	800.0	2.1798	6.3567	3.9456	6.2689	5.0798	10.37	76.97	0.7337E-16	-16.134
560.0	800.0	1.8326	6.1832	3.6417	6.2254	5.0689	9.43	85.17	0.5208E-16	-16.283
580.0	800.0	1.4874	6.0106	3.3395	6.1823	5.0580	8.51	94.89	0.3763E-16	-16.424
600.0	800.0	1.1442	5.8390	3.0391	6.1393	5.0472	7.66	106.06	0.2774E-16	-16.557
620.0	800.0	0.8030	5.6684	2.7404	6.0966	5.0365	6.90	118.47	0.2089E-16	-16.680
640.0	800.0	0.4638	5.4987	2.4433	6.0542	5.0258	6.24	131.75	0.1610E-16	-16.793
660.0	800.0	0.1264	5.3301	2.1480	6.0120	5.0151	5.68	145.44	0.1269E-16	-16.896
680.0	800.0	-0.2090	5.1624	1.8544	5.9700	5.0046	5.23	159.02	0.1024E-16	-16.990
700.0	800.0	-0.5425	4.9956	1.5624	5.9283	4.9941	4.86	172.06	0.8432E-17	-17.074
750.0	800.0	-1.3681	4.5828	0.8396	5.8250	4.9681	4.23	200.41	0.5615E-17	-17.251
800.0	800.0	-2.1821	4.1758	0.1270	5.7231	4.9424	3.87	221.97	0.4059E-17	-17.392
850.0	800.0	-2.9848	3.7744	-0.5758	5.6227	4.9171	3.66	238.38	0.3085E-17	-17.511
900.0	800.0	-3.7765	3.3786	-1.2689	5.5236	4.8922	3.51	251.90	0.2414E-17	-17.617
950.0	800.0	-4.5573	2.9882	-1.9525	5.4259	4.8676	3.39	264.26	0.1922E-17	-17.716
1000.0	800.0	-5.3275	2.6031	-2.6268	5.3296	4.8433	3.28	276.57	0.1547E-17	-17.810

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	454.5	10.3745	10.5769	11.1505	7.4157		26.24	15.29	0.8839E-11	-11.054
140.0	529.0	9.9875	10.3504	10.8035	7.3347		25.60	18.30	0.4070E-11	-11.390
150.0	584.7	9.6619	10.1659	10.5130	7.2724		24.96	20.81	0.2149E-11	-11.668
160.0	626.3	9.3736	10.0068	10.2569	7.2216		24.32	22.95	0.1236E-11	-11.908
170.0	657.5	9.1096	9.8643	10.0232	7.1781		23.68	24.82	0.7535E-12	-12.123
180.0	680.8	8.8623	9.7330	9.8047	7.1397		23.03	26.50	0.4792E-12	-12.320
190.0	698.3	8.6267	9.6098	9.5971	7.1048		22.40	28.04	0.3147E-12	-12.502
200.0	711.3	8.3996	9.4922	9.3973	7.0724		21.77	29.47	0.2120E-12	-12.674
210.0	721.0	8.1788	9.3788	9.2033	7.0418		21.17	30.82	0.1459E-12	-12.836
220.0	728.3	7.9628	9.2686	9.0136	7.0126		20.59	32.10	0.1022E-12	-12.990
230.0	733.8	7.7503	9.1608	8.8272	6.9844		20.05	33.32	0.7277E-13	-13.138
240.0	737.9	7.5407	9.0548	8.6434	6.9570		19.54	34.48	0.5250E-13	-13.280
250.0	740.9	7.3333	8.9502	8.4616	6.9302		19.07	35.59	0.3835E-13	-13.416
260.0	743.2	7.1278	8.8467	8.2815	6.9038		18.63	36.64	0.2833E-13	-13.548
270.0	744.9	6.9237	8.7442	8.1027	6.8778		18.24	37.63	0.2113E-13	-13.675
280.0	746.2	6.7210	8.6424	7.9251	6.8520		17.88	38.58	0.1590E-13	-13.799
290.0	747.2	6.5193	8.5413	7.7484	6.8265		17.55	39.47	0.1207E-13	-13.918
300.0	747.9	6.3186	8.4408	7.5727	6.8012		17.25	40.31	0.9222E-14	-14.035
320.0	748.8	5.9197	8.2411	7.2234	6.7510		16.72	41.89	0.5488E-14	-14.261
340.0	749.3	5.5238	8.0430	6.8768	6.7014		16.26	43.37	0.3335E-14	-14.477
360.0	749.6	5.1307	7.8463	6.5326	6.6521		15.82	44.87	0.2061E-14	-14.686
380.0	749.8	4.7400	7.6509	6.1906	6.6032		15.36	46.47	0.1291E-14	-14.889
400.0	749.9	4.3518	7.4568	5.8507	6.5546		14.86	48.32	0.8189E-15	-15.087
420.0	749.9	3.9659	7.2638	5.5129	6.5063		14.29	50.57	0.5251E-15	-15.280
440.0	750.0	3.5823	7.0720	5.1771	6.4583		13.61	53.40	0.3403E-15	-15.468
460.0	750.0	3.2010	6.8814	4.8432	6.4105		12.82	57.03	0.2230E-15	-15.652
480.0	750.0	2.8220	6.6919	4.5114	6.3631		11.92	61.69	0.1479E-15	-15.830
500.0	750.0	2.4451	6.5034	4.1815	6.3160	5.3155	10.94	67.65	0.9950E-16	-16.002
520.0	750.0	2.0705	6.3161	3.8535	6.2691	5.3037	9.90	75.13	0.6804E-16	-16.167
540.0	750.0	1.6980	6.1299	3.5274	6.2225	5.2920	8.88	84.33	0.4741E-16	-16.324
560.0	750.0	1.3277	5.9447	3.2032	6.1761	5.2803	7.90	95.27	0.3376E-16	-16.472
580.0	750.0	0.9595	5.7606	2.8809	6.1301	5.2687	7.02	107.82	0.2463E-16	-16.609
600.0	750.0	0.5935	5.5776	2.5604	6.0843	5.2572	6.26	121.64	0.1844E-16	-16.734
620.0	750.0	0.2295	5.3956	2.2417	6.0387	5.2457	5.62	136.19	0.1418E-16	-16.848
640.0	750.0	-0.1324	5.2147	1.9249	5.9935	5.2343	5.11	150.89	0.1119E-16	-16.951
660.0	750.0	-0.4922	5.0348	1.6099	5.9484	5.2229	4.69	165.14	0.9063E-17	-17.043
680.0	750.0	-0.8500	4.8559	1.2967	5.9037	5.2117	4.36	178.52	0.7505E-17	-17.125
700.0	750.0	-1.2057	4.6780	0.9852	5.8592	5.2005	4.11	190.77	0.6338E-17	-17.198
750.0	750.0	-2.0863	4.2377	0.2143	5.7490	5.1727	3.68	216.21	0.4438E-17	-17.353
800.0	750.0	-2.9546	3.8036	-0.5459	5.6403	5.1454	3.42	235.90	0.3307E-17	-17.481
850.0	750.0	-3.8109	3.3754	-1.2955	5.5332	5.1184	3.24	252.59	0.2552E-17	-17.593
900.0	750.0	-4.6553	2.9532	-2.0348	5.4275	5.0918	3.09	268.40	0.2010E-17	-17.697
950.0	750.0	-5.4882	2.5368	-2.7640	5.3233	5.0656	2.95	284.63	0.1603E-17	-17.795
1000.0	750.0	-6.3098	2.1260	-3.4832	5.2205	5.0397	2.82	302.02	0.1292E-17	-17.889

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	441.4	10.3814	10.5867	11.1581	7.4229		26.23	14.86	0.8998E-11	-11.046
140.0	506.2	9.9889	10.3607	10.8070	7.3443		25.56	17.54	0.4110E-11	-11.386
150.0	554.8	9.6530	10.1728	10.5080	7.2826		24.89	19.80	0.2133E-11	-11.671
160.0	591.2	9.3524	10.0087	10.2414	7.2313		24.20	21.77	0.1202E-11	-11.920
170.0	618.4	9.0750	9.8603	9.9961	7.1870		23.51	23.51	0.7169E-12	-12.145
180.0	638.9	8.8137	9.7226	9.7657	7.1473		22.82	25.10	0.4461E-12	-12.351
190.0	654.2	8.5639	9.5925	9.5457	7.1109		22.14	26.57	0.2869E-12	-12.542
200.0	665.7	8.3224	9.4680	9.3333	7.0770		21.47	27.96	0.1895E-12	-12.722
210.0	674.3	8.0871	9.3476	9.1266	7.0448		20.84	29.28	0.1280E-12	-12.893
220.0	680.7	7.8566	9.2302	8.9243	7.0139		20.24	30.53	0.8809E-13	-13.055
230.0	685.5	7.6296	9.1152	8.7252	6.9840		19.68	31.72	0.6167E-13	-13.210
240.0	689.2	7.4055	9.0020	8.5287	6.9548		19.16	32.85	0.4381E-13	-13.358
250.0	691.9	7.1837	8.8902	8.3343	6.9262		18.68	33.91	0.3154E-13	-13.501
260.0	693.9	6.9637	8.7796	8.1415	6.8980		18.25	34.92	0.2298E-13	-13.639
270.0	695.4	6.7452	8.6699	7.9502	6.8702		17.87	35.87	0.1692E-13	-13.772
280.0	696.6	6.5281	8.5610	7.7600	6.8427		17.51	36.76	0.1257E-13	-13.901
290.0	697.4	6.3121	8.4527	7.5708	6.8154		17.20	37.60	0.9419E-14	-14.026
300.0	698.1	6.0971	8.3450	7.3826	6.7883		16.90	38.40	0.7110E-14	-14.148
320.0	698.9	5.6699	8.1311	7.0084	6.7346		16.38	39.91	0.4129E-14	-14.384
340.0	699.4	5.2458	7.9189	6.6371	6.6814		15.90	41.40	0.2448E-14	-14.611
360.0	699.7	4.8245	7.7082	6.2683	6.6286		15.41	42.99	0.1476E-14	-14.831
380.0	699.8	4.4060	7.4989	5.9019	6.5762		14.86	44.84	0.9022E-15	-15.045
400.0	699.9	3.9901	7.2909	5.5377	6.5241		14.22	47.13	0.5586E-15	-15.253
420.0	699.9	3.5766	7.0842	5.1758	6.4724		13.46	50.10	0.3501E-15	-15.456
440.0	700.0	3.1657	6.8787	4.8160	6.4210		12.56	54.02	0.2222E-15	-15.653
460.0	700.0	2.7571	6.6744	4.4583	6.3698		11.53	59.20	0.1431E-15	-15.844
480.0	700.0	2.3510	6.4713	4.1028	6.3190		10.40	65.99	0.9372E-16	-16.028
500.0	700.0	1.9472	6.2695	3.7493	6.2685	5.5534	9.24	74.69	0.6261E-16	-16.203
520.0	700.0	1.5458	6.0688	3.3979	6.2183	5.5407	8.12	85.51	0.4281E-16	-16.368
540.0	700.0	1.1467	5.8692	3.0485	6.1683	5.5282	7.10	98.44	0.3007E-16	-16.522
560.0	700.0	0.7500	5.6708	2.7011	6.1187	5.5157	6.21	113.20	0.2176E-16	-16.662
580.0	700.0	0.3555	5.4736	2.3558	6.0693	5.5032	5.47	129.23	0.1625E-16	-16.789
600.0	700.0	-0.0367	5.2775	2.0124	6.0203	5.4909	4.87	145.81	0.1252E-16	-16.902
620.0	700.0	-0.4267	5.0825	1.6710	5.9715	5.4786	4.41	162.15	0.9944E-17	-17.002
640.0	700.0	-0.8144	4.8886	1.3316	5.9230	5.4664	4.05	177.66	0.8114E-17	-17.091
660.0	700.0	-1.1999	4.6959	0.9940	5.8747	5.4542	3.77	191.95	0.6778E-17	-17.169
680.0	700.0	-1.5833	4.5042	0.6585	5.8268	5.4421	3.55	204.93	0.5773E-17	-17.239
700.0	700.0	-1.9644	4.3136	0.3248	5.7791	5.4301	3.38	216.64	0.4995E-17	-17.301
750.0	700.0	-2.9079	3.8419	-0.5012	5.6610	5.4004	3.07	241.70	0.3651E-17	-17.438
800.0	700.0	-3.8382	3.3767	-1.3157	5.5446	5.3711	2.85	263.51	0.2786E-17	-17.555
850.0	700.0	-4.7556	2.9180	-2.1189	5.4298	5.3422	2.68	284.72	0.2179E-17	-17.662
900.0	700.0	-5.6604	2.4656	-2.9110	5.3166	5.3137	2.52	306.85	0.1731E-17	-17.762
950.0	700.0	-6.5528	2.0195	-3.6922	5.2050	5.2856	2.37	330.66	0.1392E-17	-17.856
1000.0	700.0	-7.4330	1.5793	-4.4629	5.0948	5.2579	2.23	356.48	0.1131E-17	-17.947

Table 1 (continued).

HEIGHT KM	TEMP DEG K	LOG N(O2) /CM3	LOG N(O) /CM3	LOG N(N2) /CM3	LOG N(HE) /CM3	LOG N(H) /CM3	MEAN MOL WT	SCALE HT KM	DENSITY GM/CM3	LOG DEN GM/CM3
120.0	355.0	10.8751	10.8808	11.6021	7.5315		26.90	11.62	0.2461E-10	-10.609
130.0	428.2	10.3885	10.5968	11.1659	7.4303		26.22	14.42	0.9165E-11	-11.038
140.0	483.3	9.9899	10.3712	10.8104	7.3544		25.52	16.77	0.4150E-11	-11.382
150.0	524.7	9.6426	10.1798	10.5020	7.2933		24.80	18.79	0.2113E-11	-11.675
160.0	555.8	9.3280	10.0100	10.2234	7.2416		24.07	20.58	0.1163E-11	-11.934
170.0	579.2	9.0354	9.8547	9.9650	7.1961		23.32	22.20	0.6770E-12	-12.169
180.0	596.7	8.7582	9.7096	9.7207	7.1550		22.58	23.70	0.4112E-12	-12.386
190.0	610.0	8.4920	9.5717	9.4865	7.1170		21.85	25.11	0.2583E-12	-12.588
200.0	619.9	8.2339	9.4392	9.2597	7.0812		21.14	26.45	0.1668E-12	-12.778
210.0	627.4	7.9819	9.3106	9.0384	7.0471		20.47	27.73	0.1103E-12	-12.957
220.0	633.0	7.7346	9.1850	8.8214	7.0142		19.85	28.94	0.7446E-13	-13.128
230.0	637.2	7.4909	9.0617	8.6077	6.9823		19.27	30.10	0.5118E-13	-13.291
240.0	640.4	7.2501	8.9402	8.3966	6.9511		18.75	31.19	0.3575E-13	-13.447
250.0	642.8	7.0115	8.8201	8.1875	6.9205		18.28	32.21	0.2532E-13	-13.596
260.0	644.6	6.7749	8.7012	7.9802	6.8903		17.85	33.17	0.1817E-13	-13.741
270.0	645.9	6.5398	8.5832	7.7743	6.8604		17.47	34.06	0.1318E-13	-13.880
280.0	646.9	6.3061	8.4660	7.5696	6.8308		17.13	34.90	0.9649E-14	-14.015
290.0	647.7	6.0736	8.3495	7.3660	6.8015		16.82	35.70	0.7128E-14	-14.147
300.0	648.3	5.8422	8.2336	7.1633	6.7723		16.52	36.47	0.5304E-14	-14.275
320.0	649.0	5.3821	8.0033	6.7605	6.7145		15.98	37.99	0.2994E-14	-14.524
340.0	649.4	4.9254	7.7748	6.3607	6.6572		15.43	39.61	0.1725E-14	-14.763
360.0	649.7	4.4718	7.5479	5.9635	6.6004		14.81	41.51	0.1010E-14	-14.996
380.0	649.8	4.0211	7.3225	5.5689	6.5440		14.08	43.95	0.6007E-15	-15.221
400.0	649.9	3.5731	7.0985	5.1767	6.4879		13.18	47.23	0.3622E-15	-15.441
420.0	649.9	3.1279	6.8759	4.7869	6.4322		12.11	51.72	0.2218E-15	-15.654
440.0	650.0	2.6853	6.6546	4.3995	6.3768		10.88	57.90	0.1382E-15	-15.860
460.0	650.0	2.2454	6.4346	4.0143	6.3217		9.57	66.24	0.8788E-16	-16.056
480.0	650.0	1.8080	6.2159	3.6314	6.2670		8.26	77.18	0.5731E-16	-16.242
500.0	650.0	1.3732	5.9985	3.2507	6.2126	5.8199	7.05	90.96	0.3851E-16	-16.414
520.0	650.0	0.9409	5.7824	2.8723	6.1585	5.8063	6.00	107.46	0.2678E-16	-16.572
540.0	650.0	0.5111	5.5675	2.4960	6.1047	5.7927	5.14	126.10	0.1933E-16	-16.714
560.0	650.0	0.0838	5.3539	2.1219	6.0513	5.7793	4.47	145.96	0.1449E-16	-16.839
580.0	650.0	-0.3410	5.1414	1.7500	5.9981	5.7659	3.95	165.94	0.1128E-16	-16.948
600.0	650.0	-0.7634	4.9303	1.3802	5.9453	5.7526	3.57	185.14	0.9071E-17	-17.042
620.0	650.0	-1.1833	4.7203	1.0126	5.8927	5.7394	3.27	202.97	0.7507E-17	-17.125
640.0	650.0	-1.6009	4.5115	0.6470	5.8405	5.7262	3.05	219.23	0.6358E-17	-17.197
660.0	650.0	-2.0161	4.3039	0.2835	5.7885	5.7131	2.87	234.00	0.5485E-17	-17.261
680.0	650.0	-2.4289	4.0975	-0.0779	5.7369	5.7001	2.73	247.54	0.4799E-17	-17.319
700.0	650.0	-2.8394	3.8923	-0.4372	5.6855	5.6872	2.61	260.14	0.4244E-17	-17.372
750.0	650.0	-3.8554	3.3842	-1.3268	5.5584	5.6552	2.38	289.37	0.3226E-17	-17.491
800.0	650.0	-4.8573	2.8833	-2.2039	5.4330	5.6236	2.20	317.83	0.2526E-17	-17.598
850.0	650.0	-5.8453	2.3893	-3.0688	5.3094	5.5925	2.04	347.19	0.2017E-17	-17.695
900.0	650.0	-6.8197	1.9021	-3.9219	5.1875	5.5618	1.90	378.01	0.1636E-17	-17.786
950.0	650.0	-7.7807	1.4216	-4.7632	5.0672	5.5315	1.77	410.29	0.1346E-17	-17.871
1000.0	650.0	-8.7287	0.9476	-5.5931	4.9486	5.5016	1.66	443.69	0.1122E-17	-17.950

Table 2.--Densities as a function of height and exospheric temperature. Decimal logarithms, g/cm^3.

Z \ T_∞	2100	2050	2000	1950	1900	1850	1800	1750	1700	1650	1600	1550	1500	1450	1400
120	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609
130	-11.118	-11.118	-11.118	-11.118	-11.117	-11.117	-11.117	-11.117	-11.117	-11.116	-11.116	-11.115	-11.115	-11.114	-11.112
140	-11.446	-11.445	-11.444	-11.444	-11.443	-11.443	-11.442	-11.441	-11.441	-11.440	-11.439	-11.438	-11.437	-11.435	-11.433
150	-11.688	-11.687	-11.686	-11.686	-11.685	-11.684	-11.683	-11.682	-11.681	-11.679	-11.678	-11.677	-11.675	-11.674	-11.672
160	-11.881	-11.880	-11.880	-11.879	-11.878	-11.876	-11.875	-11.874	-11.873	-11.871	-11.870	-11.868	-11.867	-11.866	-11.865
170	-12.042	-12.042	-12.041	-12.040	-12.039	-12.038	-12.037	-12.035	-12.034	-12.032	-12.031	-12.030	-12.029	-12.028	-12.028
180	-12.182	-12.181	-12.180	-12.180	-12.179	-12.178	-12.176	-12.175	-12.174	-12.173	-12.171	-12.171	-12.170	-12.170	-12.171
190	-12.304	-12.304	-12.304	-12.303	-12.302	-12.301	-12.300	-12.299	-12.298	-12.297	-12.297	-12.297	-12.297	-12.298	-12.299
200	-12.415	-12.415	-12.415	-12.414	-12.414	-12.413	-12.412	-12.412	-12.411	-12.411	-12.411	-12.411	-12.412	-12.414	-12.417
210	-12.515	-12.516	-12.516	-12.516	-12.516	-12.516	-12.515	-12.515	-12.515	-12.515	-12.516	-12.517	-12.519	-12.523	-12.527
220	-12.608	-12.609	-12.610	-12.610	-12.610	-12.610	-12.611	-12.611	-12.611	-12.612	-12.614	-12.616	-12.620	-12.624	-12.630
230	-12.694	-12.696	-12.697	-12.698	-12.699	-12.699	-12.700	-12.701	-12.702	-12.704	-12.706	-12.710	-12.714	-12.720	-12.728
240	-12.775	-12.777	-12.779	-12.780	-12.782	-12.783	-12.784	-12.786	-12.788	-12.791	-12.794	-12.799	-12.805	-12.812	-12.821
250	-12.852	-12.854	-12.857	-12.859	-12.860	-12.862	-12.865	-12.867	-12.870	-12.874	-12.878	-12.884	-12.891	-12.900	-12.911
260	-12.925	-12.928	-12.930	-12.933	-12.936	-12.938	-12.941	-12.944	-12.948	-12.953	-12.959	-12.966	-12.974	-12.985	-12.998
270	-12.994	-12.998	-13.001	-13.004	-13.008	-13.011	-13.015	-13.019	-13.024	-13.030	-13.036	-13.045	-13.055	-13.067	-13.081
280	-13.061	-13.065	-13.069	-13.073	-13.077	-13.081	-13.086	-13.091	-13.097	-13.104	-13.112	-13.121	-13.133	-13.147	-13.163
290	-13.125	-13.129	-13.134	-13.139	-13.144	-13.149	-13.154	-13.160	-13.167	-13.175	-13.185	-13.196	-13.209	-13.224	-13.242
300	-13.186	-13.192	-13.197	-13.203	-13.209	-13.214	-13.221	-13.228	-13.236	-13.245	-13.256	-13.268	-13.283	-13.300	-13.320
310	-13.246	-13.252	-13.259	-13.265	-13.271	-13.278	-13.285	-13.293	-13.303	-13.313	-13.325	-13.339	-13.355	-13.374	-13.395
320	-13.304	-13.311	-13.318	-13.325	-13.332	-13.340	-13.348	-13.357	-13.368	-13.379	-13.393	-13.408	-13.425	-13.446	-13.469
330	-13.361	-13.368	-13.376	-13.384	-13.392	-13.401	-13.410	-13.420	-13.431	-13.444	-13.459	-13.475	-13.494	-13.516	-13.541
340	-13.416	-13.424	-13.433	-13.441	-13.450	-13.460	-13.470	-13.481	-13.494	-13.508	-13.523	-13.541	-13.562	-13.585	-13.612
350	-13.469	-13.478	-13.488	-13.497	-13.507	-13.517	-13.529	-13.541	-13.554	-13.570	-13.587	-13.606	-13.628	-13.653	-13.682
360	-13.522	-13.532	-13.542	-13.552	-13.563	-13.574	-13.586	-13.599	-13.614	-13.631	-13.649	-13.670	-13.693	-13.720	-13.750
370	-13.573	-13.584	-13.595	-13.606	-13.617	-13.629	-13.643	-13.657	-13.673	-13.690	-13.710	-13.732	-13.757	-13.785	-13.817
380	-13.623	-13.635	-13.646	-13.658	-13.671	-13.684	-13.698	-13.713	-13.730	-13.749	-13.770	-13.794	-13.820	-13.849	-13.883
390	-13.673	-13.685	-13.697	-13.710	-13.723	-13.737	-13.752	-13.769	-13.787	-13.807	-13.829	-13.854	-13.882	-13.913	-13.947
400	-13.721	-13.734	-13.747	-13.761	-13.775	-13.790	-13.806	-13.823	-13.843	-13.864	-13.887	-13.913	-13.942	-13.975	-14.011
410	-13.769	-13.782	-13.796	-13.811	-13.826	-13.842	-13.859	-13.877	-13.897	-13.920	-13.944	-13.972	-14.002	-14.036	-14.074
420	-13.815	-13.830	-13.844	-13.860	-13.875	-13.892	-13.910	-13.930	-13.951	-13.975	-14.000	-14.029	-14.061	-14.096	-14.135
430	-13.861	-13.876	-13.892	-13.908	-13.925	-13.942	-13.961	-13.982	-14.004	-14.029	-14.056	-14.086	-14.119	-14.155	-14.196
440	-13.907	-13.922	-13.939	-13.955	-13.973	-13.992	-14.012	-14.033	-14.057	-14.082	-14.110	-14.141	-14.176	-14.214	-14.256
450	-13.951	-13.968	-13.985	-14.002	-14.021	-14.040	-14.061	-14.084	-14.108	-14.135	-14.164	-14.196	-14.232	-14.271	-14.315
460	-13.995	-14.012	-14.030	-14.049	-14.068	-14.088	-14.110	-14.133	-14.159	-14.187	-14.217	-14.251	-14.288	-14.328	-14.373
470	-14.038	-14.056	-14.075	-14.094	-14.114	-14.135	-14.158	-14.183	-14.209	-14.238	-14.270	-14.304	-14.342	-14.384	-14.431
480	-14.081	-14.100	-14.119	-14.139	-14.160	-14.182	-14.206	-14.231	-14.259	-14.289	-14.321	-14.357	-14.397	-14.440	-14.488
490	-14.123	-14.143	-14.163	-14.183	-14.205	-14.228	-14.253	-14.279	-14.308	-14.339	-14.372	-14.409	-14.450	-14.495	-14.544
500	-14.165	-14.185	-14.206	-14.227	-14.250	-14.274	-14.299	-14.326	-14.356	-14.388	-14.423	-14.461	-14.503	-14.549	-14.599
510	-14.206	-14.227	-14.248	-14.271	-14.294	-14.319	-14.345	-14.373	-14.404	-14.437	-14.473	-14.512	-14.555	-14.602	-14.654
520	-14.247	-14.268	-14.290	-14.313	-14.337	-14.363	-14.390	-14.419	-14.451	-14.485	-14.522	-14.562	-14.607	-14.655	-14.709
530	-14.287	-14.309	-14.332	-14.356	-14.381	-14.407	-14.435	-14.465	-14.497	-14.533	-14.571	-14.612	-14.658	-14.708	-14.762
540	-14.326	-14.349	-14.373	-14.397	-14.423	-14.450	-14.479	-14.510	-14.544	-14.580	-14.619	-14.662	-14.709	-14.760	-14.816
550	-14.366	-14.389	-14.413	-14.439	-14.465	-14.493	-14.523	-14.555	-14.589	-14.627	-14.667	-14.711	-14.759	-14.811	-14.868

Table 2 (continued).

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560	-14.405	-14.429	-14.454	-14.480	-14.507	-14.536	-14.566	-14.599	-14.635	-14.673	-14.714	-14.759	-14.808	-14.862	-14.921
570	-14.443	-14.468	-14.493	-14.520	-14.548	-14.578	-14.609	-14.643	-14.679	-14.719	-14.761	-14.807	-14.857	-14.912	-14.972
580	-14.481	-14.506	-14.533	-14.560	-14.589	-14.620	-14.652	-14.687	-14.724	-14.764	-14.807	-14.855	-14.906	-14.962	-15.024
590	-14.519	-14.545	-14.572	-14.600	-14.630	-14.661	-14.694	-14.730	-14.768	-14.809	-14.853	-14.902	-14.954	-15.012	-15.075
600	-14.556	-14.583	-14.610	-14.639	-14.670	-14.702	-14.736	-14.772	-14.811	-14.853	-14.899	-14.948	-15.002	-15.061	-15.125
610	-14.593	-14.620	-14.649	-14.678	-14.709	-14.742	-14.777	-14.814	-14.854	-14.898	-14.944	-14.995	-15.050	-15.110	-15.175
620	-14.629	-14.657	-14.686	-14.717	-14.749	-14.782	-14.818	-14.856	-14.897	-14.941	-14.989	-15.041	-15.097	-15.158	-15.225
630	-14.666	-14.694	-14.724	-14.755	-14.788	-14.822	-14.859	-14.898	-14.940	-14.985	-15.033	-15.086	-15.144	-15.206	-15.274
640	-14.701	-14.731	-14.761	-14.793	-14.826	-14.862	-14.899	-14.939	-14.982	-15.028	-15.078	-15.131	-15.190	-15.254	-15.323
650	-14.737	-14.767	-14.798	-14.831	-14.865	-14.901	-14.939	-14.980	-15.024	-15.071	-15.121	-15.176	-15.236	-15.301	-15.371
660	-14.772	-14.803	-14.835	-14.868	-14.903	-14.940	-14.979	-15.020	-15.065	-15.113	-15.165	-15.221	-15.282	-15.348	-15.419
670	-14.807	-14.839	-14.871	-14.905	-14.941	-14.978	-15.018	-15.061	-15.106	-15.155	-15.208	-15.265	-15.327	-15.394	-15.467
680	-14.842	-14.874	-14.907	-14.942	-14.978	-15.016	-15.057	-15.100	-15.147	-15.197	-15.251	-15.309	-15.372	-15.440	-15.515
690	-14.877	-14.909	-14.943	-14.978	-15.015	-15.054	-15.096	-15.140	-15.187	-15.238	-15.293	-15.352	-15.417	-15.486	-15.562
700	-14.911	-14.944	-14.978	-15.014	-15.052	-15.092	-15.134	-15.179	-15.228	-15.280	-15.335	-15.396	-15.461	-15.531	-15.608
710	-14.945	-14.978	-15.014	-15.050	-15.089	-15.129	-15.173	-15.218	-15.268	-15.320	-15.377	-15.438	-15.505	-15.577	-15.654
720	-14.978	-15.013	-15.049	-15.086	-15.125	-15.167	-15.210	-15.257	-15.307	-15.361	-15.419	-15.481	-15.548	-15.621	-15.700
730	-15.012	-15.047	-15.083	-15.121	-15.161	-15.203	-15.248	-15.296	-15.347	-15.401	-15.460	-15.523	-15.592	-15.666	-15.746
740	-15.045	-15.081	-15.118	-15.156	-15.197	-15.240	-15.286	-15.334	-15.386	-15.441	-15.501	-15.565	-15.635	-15.710	-15.791
750	-15.078	-15.114	-15.152	-15.191	-15.233	-15.276	-15.323	-15.372	-15.425	-15.481	-15.542	-15.607	-15.677	-15.753	-15.836
760	-15.111	-15.148	-15.186	-15.226	-15.268	-15.313	-15.360	-15.410	-15.463	-15.520	-15.582	-15.648	-15.720	-15.797	-15.880
770	-15.143	-15.181	-15.220	-15.260	-15.303	-15.348	-15.396	-15.447	-15.502	-15.560	-15.622	-15.689	-15.762	-15.840	-15.924
780	-15.176	-15.214	-15.253	-15.295	-15.338	-15.384	-15.433	-15.484	-15.540	-15.599	-15.662	-15.730	-15.803	-15.882	-15.967
790	-15.208	-15.246	-15.287	-15.329	-15.373	-15.419	-15.469	-15.521	-15.577	-15.637	-15.701	-15.770	-15.845	-15.924	-16.010
800	-15.240	-15.279	-15.320	-15.362	-15.407	-15.455	-15.505	-15.558	-15.615	-15.676	-15.741	-15.811	-15.886	-15.966	-16.053
810	-15.271	-15.311	-15.353	-15.396	-15.442	-15.490	-15.540	-15.595	-15.652	-15.714	-15.780	-15.850	-15.926	-16.008	-16.095
820	-15.303	-15.343	-15.385	-15.429	-15.476	-15.524	-15.576	-15.631	-15.689	-15.751	-15.818	-15.890	-15.966	-16.049	-16.137
830	-15.334	-15.375	-15.418	-15.462	-15.509	-15.559	-15.611	-15.667	-15.726	-15.789	-15.857	-15.929	-16.006	-16.089	-16.178
840	-15.365	-15.407	-15.450	-15.495	-15.543	-15.593	-15.646	-15.702	-15.762	-15.826	-15.895	-15.968	-16.046	-16.129	-16.219
850	-15.396	-15.438	-15.482	-15.528	-15.576	-15.627	-15.681	-15.738	-15.799	-15.863	-15.932	-16.006	-16.085	-16.169	-16.259
860	-15.427	-15.469	-15.514	-15.561	-15.609	-15.661	-15.715	-15.773	-15.834	-15.900	-15.970	-16.044	-16.124	-16.209	-16.299
870	-15.457	-15.501	-15.546	-15.593	-15.642	-15.695	-15.750	-15.808	-15.870	-15.936	-16.007	-16.082	-16.162	-16.247	-16.338
880	-15.487	-15.531	-15.577	-15.625	-15.675	-15.728	-15.784	-15.843	-15.905	-15.972	-16.043	-16.119	-16.200	-16.286	-16.377
890	-15.518	-15.562	-15.608	-15.657	-15.708	-15.761	-15.817	-15.877	-15.941	-16.008	-16.080	-16.156	-16.237	-16.324	-16.415
900	-15.548	-15.593	-15.640	-15.689	-15.740	-15.794	-15.851	-15.911	-15.975	-16.043	-16.116	-16.193	-16.274	-16.361	-16.452
910	-15.577	-15.623	-15.670	-15.720	-15.772	-15.827	-15.884	-15.945	-16.010	-16.079	-16.151	-16.229	-16.311	-16.398	-16.489
920	-15.607	-15.653	-15.701	-15.751	-15.804	-15.859	-15.917	-15.979	-16.044	-16.113	-16.187	-16.265	-16.347	-16.434	-16.526
930	-15.636	-15.683	-15.732	-15.782	-15.835	-15.891	-15.950	-16.012	-16.078	-16.148	-16.222	-16.300	-16.383	-16.470	-16.561
940	-15.666	-15.713	-15.762	-15.813	-15.867	-15.923	-15.983	-16.046	-16.112	-16.182	-16.256	-16.335	-16.418	-16.505	-16.597
950	-15.695	-15.742	-15.792	-15.844	-15.898	-15.955	-16.015	-16.078	-16.145	-16.216	-16.291	-16.370	-16.453	-16.540	-16.631
960	-15.724	-15.772	-15.822	-15.874	-15.929	-15.987	-16.047	-16.111	-16.178	-16.249	-16.324	-16.404	-16.487	-16.574	-16.665
970	-15.752	-15.801	-15.852	-15.905	-15.960	-16.018	-16.079	-16.143	-16.211	-16.282	-16.358	-16.437	-16.521	-16.608	-16.698
980	-15.781	-15.830	-15.881	-15.935	-15.990	-16.049	-16.110	-16.175	-16.243	-16.315	-16.391	-16.470	-16.554	-16.641	-16.730
990	-15.809	-15.859	-15.911	-15.964	-16.021	-16.080	-16.142	-16.207	-16.275	-16.348	-16.424	-16.503	-16.586	-16.673	-16.762
1000	-15.837	-15.888	-15.940	-15.994	-16.051	-16.110	-16.173	-16.238	-16.307	-16.380	-16.456	-16.535	-16.619	-16.705	-16.793

Table 2 (continued).

Z \ T_∞	1350	1300	1250	1200	1150	1100	1050	1000	950	900	850	800	750	700	650
120	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609	-10.609
130	-11.111	-11.109	-11.106	-11.103	-11.100	-11.096	-11.091	-11.086	-11.081	-11.075	-11.068	-11.061	-11.054	-11.046	-11.038
140	-11.432	-11.429	-11.427	-11.424	-11.421	-11.418	-11.415	-11.411	-11.407	-11.403	-11.399	-11.395	-11.390	-11.386	-11.382
150	-11.671	-11.669	-11.668	-11.666	-11.665	-11.664	-11.663	-11.662	-11.662	-11.663	-11.664	-11.665	-11.668	-11.671	-11.675
160	-11.864	-11.863	-11.863	-11.863	-11.864	-11.866	-11.868	-11.872	-11.876	-11.882	-11.889	-11.898	-11.908	-11.920	-11.934
170	-12.028	-12.029	-12.030	-12.033	-12.036	-12.040	-12.046	-12.054	-12.063	-12.075	-12.088	-12.104	-12.123	-12.145	-12.169
180	-12.172	-12.174	-12.178	-12.182	-12.188	-12.196	-12.206	-12.218	-12.232	-12.249	-12.269	-12.292	-12.320	-12.351	-12.386
190	-12.302	-12.306	-12.311	-12.318	-12.327	-12.338	-12.352	-12.368	-12.387	-12.410	-12.436	-12.467	-12.502	-12.542	-12.588
200	-12.422	-12.427	-12.435	-12.444	-12.456	-12.470	-12.488	-12.508	-12.532	-12.561	-12.593	-12.631	-12.674	-12.722	-12.778
210	-12.533	-12.541	-12.550	-12.562	-12.577	-12.595	-12.616	-12.641	-12.669	-12.703	-12.741	-12.786	-12.836	-12.893	-12.957
220	-12.638	-12.647	-12.659	-12.674	-12.692	-12.713	-12.738	-12.766	-12.800	-12.839	-12.883	-12.933	-12.990	-13.055	-13.128
230	-12.737	-12.749	-12.763	-12.781	-12.801	-12.826	-12.854	-12.887	-12.925	-12.968	-13.018	-13.074	-13.138	-13.210	-13.291
240	-12.833	-12.846	-12.863	-12.883	-12.907	-12.934	-12.966	-13.003	-13.045	-13.093	-13.148	-13.210	-13.280	-13.358	-13.447
250	-12.924	-12.940	-12.959	-12.982	-13.008	-13.039	-13.074	-13.115	-13.161	-13.214	-13.274	-13.341	-13.416	-13.501	-13.596
260	-13.013	-13.031	-13.052	-13.078	-13.107	-13.141	-13.179	-13.224	-13.274	-13.331	-13.395	-13.467	-13.548	-13.639	-13.741
270	-13.099	-13.119	-13.143	-13.171	-13.202	-13.239	-13.281	-13.329	-13.383	-13.444	-13.512	-13.589	-13.675	-13.772	-13.880
280	-13.182	-13.205	-13.231	-13.261	-13.296	-13.335	-13.380	-13.431	-13.489	-13.553	-13.626	-13.707	-13.799	-13.901	-14.015
290	-13.263	-13.288	-13.316	-13.349	-13.386	-13.429	-13.477	-13.531	-13.592	-13.660	-13.737	-13.822	-13.918	-14.026	-14.147
300	-13.343	-13.369	-13.400	-13.435	-13.475	-13.520	-13.571	-13.628	-13.692	-13.764	-13.845	-13.935	-14.035	-14.148	-14.275
310	-13.420	-13.449	-13.481	-13.519	-13.561	-13.609	-13.662	-13.723	-13.790	-13.866	-13.950	-14.044	-14.149	-14.267	-14.401
320	-13.496	-13.526	-13.561	-13.601	-13.645	-13.696	-13.752	-13.815	-13.886	-13.965	-14.052	-14.151	-14.261	-14.384	-14.524
330	-13.570	-13.603	-13.639	-13.681	-13.728	-13.781	-13.840	-13.906	-13.979	-14.061	-14.153	-14.255	-14.370	-14.499	-14.645
340	-13.643	-13.677	-13.716	-13.760	-13.809	-13.864	-13.926	-13.994	-14.071	-14.156	-14.251	-14.358	-14.477	-14.611	-14.763
350	-13.714	-13.750	-13.791	-13.837	-13.888	-13.946	-14.010	-14.081	-14.161	-14.249	-14.348	-14.458	-14.582	-14.722	-14.880
360	-13.784	-13.822	-13.865	-13.913	-13.966	-14.026	-14.093	-14.167	-14.249	-14.341	-14.443	-14.557	-14.686	-14.831	-14.996
370	-13.852	-13.892	-13.937	-13.987	-14.043	-14.105	-14.174	-14.250	-14.336	-14.431	-14.536	-14.655	-14.788	-14.939	-15.109
380	-13.920	-13.962	-14.008	-14.060	-14.118	-14.182	-14.253	-14.333	-14.421	-14.519	-14.629	-14.751	-14.889	-15.045	-15.221
390	-13.986	-14.030	-14.078	-14.132	-14.192	-14.258	-14.332	-14.414	-14.505	-14.606	-14.719	-14.846	-14.988	-15.149	-15.332
400	-14.051	-14.096	-14.147	-14.202	-14.264	-14.333	-14.409	-14.494	-14.587	-14.692	-14.809	-14.940	-15.087	-15.253	-15.441
410	-14.116	-14.162	-14.214	-14.272	-14.336	-14.407	-14.485	-14.572	-14.669	-14.777	-14.897	-15.032	-15.184	-15.355	-15.548
420	-14.179	-14.227	-14.281	-14.340	-14.406	-14.479	-14.560	-14.650	-14.750	-14.861	-14.985	-15.124	-15.280	-15.456	-15.654
430	-14.241	-14.291	-14.347	-14.408	-14.476	-14.551	-14.634	-14.727	-14.829	-14.943	-15.071	-15.214	-15.375	-15.555	-15.758
440	-14.303	-14.354	-14.411	-14.474	-14.544	-14.622	-14.707	-14.802	-14.908	-15.025	-15.156	-15.303	-15.468	-15.653	-15.860
450	-14.363	-14.416	-14.475	-14.540	-14.612	-14.692	-14.780	-14.877	-14.986	-15.106	-15.241	-15.392	-15.561	-15.750	-15.959
460	-14.423	-14.478	-14.538	-14.605	-14.679	-14.761	-14.851	-14.951	-15.062	-15.186	-15.325	-15.479	-15.652	-15.844	-16.056
470	-14.482	-14.538	-14.601	-14.669	-14.745	-14.829	-14.922	-15.025	-15.139	-15.266	-15.407	-15.565	-15.742	-15.937	-16.150
480	-14.540	-14.598	-14.662	-14.733	-14.811	-14.897	-14.992	-15.097	-15.214	-15.344	-15.489	-15.650	-15.830	-16.028	-16.242
490	-14.598	-14.657	-14.723	-14.795	-14.875	-14.963	-15.061	-15.169	-15.289	-15.422	-15.570	-15.734	-15.917	-16.117	-16.330
500	-14.655	-14.716	-14.783	-14.857	-14.939	-15.030	-15.129	-15.240	-15.362	-15.499	-15.650	-15.817	-16.002	-16.203	-16.414
510	-14.711	-14.774	-14.843	-14.919	-15.003	-15.095	-15.197	-15.310	-15.436	-15.574	-15.728	-15.899	-16.086	-16.287	-16.495
520	-14.767	-14.831	-14.902	-14.980	-15.066	-15.160	-15.265	-15.380	-15.508	-15.650	-15.806	-15.979	-16.167	-16.368	-16.572
530	-14.822	-14.888	-14.960	-15.040	-15.128	-15.225	-15.331	-15.449	-15.580	-15.724	-15.883	-16.057	-16.247	-16.447	-16.645
540	-14.877	-14.944	-15.018	-15.100	-15.189	-15.288	-15.397	-15.518	-15.650	-15.797	-15.958	-16.134	-16.324	-16.522	-16.714
550	-14.931	-15.000	-15.076	-15.159	-15.251	-15.351	-15.463	-15.585	-15.720	-15.869	-16.032	-16.210	-16.399	-16.594	-16.778

Table 2 (continued).

z / T_∞	1350	1300	1250	1200	1150	1100	1050	1000	950	900	850	800	750	700	650
560	-14.985	-15.055	-15.133	-15.218	-15.311	-15.414	-15.527	-15.652	-15.790	-15.940	-16.105	-16.283	-16.472	-16.662	-16.839
570	-15.038	-15.110	-15.189	-15.276	-15.371	-15.476	-15.592	-15.718	-15.858	-16.011	-16.177	-16.355	-16.541	-16.728	-16.895
580	-15.091	-15.164	-15.245	-15.334	-15.431	-15.538	-15.655	-15.784	-15.925	-16.080	-16.247	-16.424	-16.609	-16.789	-16.948
590	-15.143	-15.218	-15.301	-15.391	-15.490	-15.599	-15.718	-15.849	-15.992	-16.147	-16.315	-16.492	-16.673	-16.847	-16.997
600	-15.195	-15.272	-15.356	-15.447	-15.548	-15.659	-15.780	-15.913	-16.057	-16.214	-16.381	-16.557	-16.734	-16.902	-17.042
610	-15.246	-15.325	-15.410	-15.504	-15.606	-15.719	-15.841	-15.976	-16.122	-16.279	-16.446	-16.620	-16.793	-16.954	-17.085
620	-15.298	-15.377	-15.464	-15.559	-15.664	-15.778	-15.902	-16.038	-16.185	-16.342	-16.509	-16.680	-16.848	-17.002	-17.125
630	-15.348	-15.429	-15.518	-15.615	-15.720	-15.836	-15.962	-16.099	-16.247	-16.405	-16.570	-16.738	-16.901	-17.048	-17.162
640	-15.398	-15.481	-15.571	-15.669	-15.777	-15.894	-16.021	-16.159	-16.308	-16.465	-16.629	-16.793	-16.951	-17.091	-17.197
650	-15.448	-15.532	-15.624	-15.723	-15.832	-15.951	-16.080	-16.218	-16.367	-16.524	-16.685	-16.846	-16.998	-17.131	-17.230
660	-15.498	-15.583	-15.676	-15.777	-15.887	-16.007	-16.137	-16.277	-16.425	-16.581	-16.740	-16.896	-17.043	-17.169	-17.261
670	-15.547	-15.633	-15.728	-15.830	-15.942	-16.063	-16.194	-16.334	-16.482	-16.636	-16.792	-16.944	-17.085	-17.205	-17.291
680	-15.595	-15.683	-15.779	-15.883	-15.996	-16.118	-16.249	-16.389	-16.537	-16.689	-16.842	-16.990	-17.125	-17.239	-17.319
690	-15.644	-15.733	-15.830	-15.935	-16.049	-16.172	-16.304	-16.444	-16.591	-16.741	-16.890	-17.033	-17.162	-17.271	-17.346
700	-15.691	-15.782	-15.880	-15.986	-16.101	-16.225	-16.357	-16.497	-16.643	-16.791	-16.936	-17.074	-17.198	-17.301	-17.372
710	-15.739	-15.831	-15.930	-16.037	-16.153	-16.278	-16.410	-16.549	-16.693	-16.838	-16.980	-17.113	-17.232	-17.331	-17.397
720	-15.786	-15.879	-15.979	-16.087	-16.204	-16.329	-16.461	-16.600	-16.742	-16.884	-17.022	-17.150	-17.264	-17.359	-17.422
730	-15.833	-15.926	-16.028	-16.137	-16.254	-16.379	-16.512	-16.649	-16.789	-16.928	-17.062	-17.185	-17.295	-17.386	-17.446
740	-15.879	-15.974	-16.076	-16.186	-16.304	-16.429	-16.561	-16.697	-16.834	-16.970	-17.099	-17.219	-17.325	-17.412	-17.469
750	-15.924	-16.020	-16.123	-16.234	-16.352	-16.478	-16.608	-16.743	-16.878	-17.010	-17.136	-17.251	-17.353	-17.438	-17.491
760	-15.970	-16.066	-16.170	-16.282	-16.400	-16.525	-16.655	-16.788	-16.920	-17.049	-17.170	-17.281	-17.380	-17.462	-17.513
770	-16.015	-16.112	-16.217	-16.328	-16.447	-16.571	-16.700	-16.831	-16.961	-17.086	-17.203	-17.310	-17.406	-17.486	-17.535
780	-16.059	-16.157	-16.262	-16.374	-16.493	-16.617	-16.744	-16.873	-16.999	-17.121	-17.234	-17.338	-17.432	-17.510	-17.556
790	-16.103	-16.202	-16.307	-16.420	-16.538	-16.661	-16.787	-16.913	-17.036	-17.154	-17.264	-17.366	-17.457	-17.533	-17.577
800	-16.146	-16.246	-16.352	-16.464	-16.582	-16.704	-16.828	-16.952	-17.072	-17.187	-17.293	-17.392	-17.481	-17.555	-17.598
810	-16.189	-16.289	-16.395	-16.507	-16.625	-16.745	-16.868	-16.989	-17.106	-17.217	-17.321	-17.417	-17.504	-17.577	-17.618
820	-16.231	-16.332	-16.438	-16.550	-16.667	-16.786	-16.906	-17.025	-17.139	-17.247	-17.348	-17.441	-17.527	-17.599	-17.638
830	-16.273	-16.374	-16.480	-16.592	-16.707	-16.825	-16.944	-17.059	-17.170	-17.275	-17.373	-17.465	-17.549	-17.620	-17.657
840	-16.314	-16.415	-16.522	-16.633	-16.747	-16.864	-16.979	-17.092	-17.201	-17.302	-17.398	-17.488	-17.571	-17.641	-17.676
850	-16.355	-16.456	-16.562	-16.673	-16.786	-16.901	-17.014	-17.124	-17.229	-17.329	-17.422	-17.511	-17.593	-17.662	-17.695
860	-16.395	-16.496	-16.602	-16.711	-16.824	-16.936	-17.047	-17.155	-17.257	-17.354	-17.446	-17.533	-17.614	-17.682	-17.714
870	-16.434	-16.535	-16.641	-16.749	-16.860	-16.971	-17.080	-17.184	-17.284	-17.378	-17.468	-17.555	-17.635	-17.703	-17.732
880	-16.473	-16.574	-16.679	-16.786	-16.896	-17.004	-17.111	-17.213	-17.310	-17.402	-17.490	-17.576	-17.656	-17.723	-17.751
890	-16.511	-16.612	-16.716	-16.822	-16.930	-17.037	-17.140	-17.240	-17.335	-17.425	-17.512	-17.597	-17.677	-17.742	-17.769
900	-16.548	-16.649	-16.752	-16.858	-16.963	-17.068	-17.169	-17.266	-17.359	-17.447	-17.533	-17.617	-17.697	-17.762	-17.786
910	-16.585	-16.685	-16.787	-16.892	-16.996	-17.098	-17.197	-17.291	-17.382	-17.469	-17.554	-17.638	-17.717	-17.781	-17.804
920	-16.621	-16.720	-16.822	-16.925	-17.027	-17.127	-17.223	-17.316	-17.404	-17.490	-17.574	-17.658	-17.737	-17.800	-17.821
930	-16.657	-16.755	-16.856	-16.957	-17.057	-17.155	-17.249	-17.340	-17.426	-17.511	-17.594	-17.677	-17.756	-17.819	-17.838
940	-16.691	-16.789	-16.888	-16.988	-17.086	-17.182	-17.274	-17.362	-17.448	-17.531	-17.614	-17.697	-17.776	-17.838	-17.854
950	-16.725	-16.822	-16.920	-17.018	-17.114	-17.208	-17.298	-17.385	-17.468	-17.551	-17.634	-17.716	-17.795	-17.856	-17.871
960	-16.759	-16.854	-16.951	-17.047	-17.142	-17.233	-17.321	-17.406	-17.489	-17.570	-17.653	-17.735	-17.814	-17.875	-17.887
970	-16.791	-16.886	-16.981	-17.076	-17.168	-17.258	-17.344	-17.427	-17.508	-17.590	-17.672	-17.754	-17.833	-17.893	-17.903
980	-16.823	-16.916	-17.010	-17.103	-17.194	-17.281	-17.365	-17.447	-17.528	-17.608	-17.690	-17.773	-17.852	-17.911	-17.919
990	-16.854	-16.946	-17.039	-17.130	-17.218	-17.304	-17.387	-17.467	-17.547	-17.627	-17.709	-17.792	-17.870	-17.929	-17.935
1000	-16.884	-16.975	-17.066	-17.155	-17.242	-17.326	-17.407	-17.486	-17.565	-17.645	-17.727	-17.810	-17.889	-17.947	-17.950

Table 3.--Corrections to the temperatures derived from the Nicolet II models to obtain those of the present models.

Z \ T_∞	2000	1900	1800	1700	1600	1500	1400	1300	1200	1100	1000	900	800	700
210	0	0	0	0	0	0	0	0	0	345	225	181	150	126
220	0	0	0	0	0	0	0	0	297	198	165	141	122	101
230	0	0	0	0	0	0	804	278	172	139	126	111	102	86
240	0	0	0	691	696	617	255	147	116	101	98	92	84	73
250	396	496	533	562	460	260	133	104	82	81	78	76	71	62
260	358	423	404	402	232	134	78	65	60	61	63	63	59	52
270	311	330	333	244	128	71	48	42	43	47	51	53	50	44
280	254	259	217	140	70	36	24	24	29	36	41	43	42	38
290	212	196	143	74	32	12	7	11	18	26	32	35	36	32
300	172	139	90	36	7	-3	-3	1	9	18	25	29	30	28
320	104	64	21	-12	-25	-27	-23	-13	-3	5	15	20	22	20
340	59	16	-16	-39	-43	-41	-33	-22	-12	-1	5	12	15	15
360	20	-11	-40	-55	-58	-51	-44	-30	-21	-9	-0	6	10	11
380	-5	-34	-52	-62	-64	-56	-50	-36	-25	-14	-4	2	6	9
400	-17	-51	-66	-69	-69	-61	-52	-41	-29	-18	-8	-0	4	7
420	-31	-60	-72	-74	-74	-66	-55	-44	-32	-20	-10	-3	2	5
440	-47	-70	-77	-80	-77	-68	-57	-45	-33	-22	-12	-4	0	3
460	-53	-73	-82	-83	-78	-69	-59	-46	-35	-24	-14	-5	-0	1
480	-61	-77	-84	-83	-78	-70	-59	-47	-35	-24	-14	-7	-2	-0
500	-65	-80	-86	-84	-79	-71	-60	-48	-36	-25	-15	-8	-3	-3
520	-68	-82	-86	-85	-79	-71	-59	-47	-36	-25	-16	-9	-5	-6
540	-72	-83	-86	-84	-78	-70	-59	-47	-36	-26	-16	-9	-7	-10
560	-72	-85	-86	-84	-76	-70	-57	-47	-36	-26	-17	-11	-9	-15
580	-75	-84	-87	-83	-77	-66	-57	-46	-36	-26	-18	-13	-13	-21
600	-76	-85	-87	-82	-74	-67	-57	-46	-35	-26	-19	-15	-17	-32
620	-74	-84	-86	-80	-74	-65	-56	-45	-35	-26	-20	-17	-22	-50
640	-74	-82	-82	-79	-73	-64	-55	-45	-36	-28	-22	-21	-28	-86
660	-75	-84	-81	-78	-71	-63	-54	-45	-36	-28	-24	-24	-36	0
680	-73	-80	-80	-76	-70	-62	-53	-44	-36	-30	-26	-29	-46	0
700	-75	-79	-79	-75	-69	-61	-53	-44	-37	-31	-30	-35	-56	0
750	-72	-76	-75	-72	-66	-59	-53	-45	-40	-37	-41	-55	-88	0
800	-70	-72	-72	-69	-64	-59	-53	-48	-45	-47	-57	-80	-212	0
850	-67	-70	-69	-68	-64	-59	-55	-53	-53	-61	-79	-104	0	0
900	-66	-68	-68	-67	-64	-61	-59	-60	-66	-80	-101	-119	0	0
950	-64	-66	-67	-67	-66	-65	-67	-71	-82	-101	-120	-126	0	0
1000	-63	-66	-68	-69	-69	-72	-75	-85	-102	-121	-130	-128	0	0

Table 4.--Differences in log ρ (Present models minus Nicolet II).

Z \ T_∞	2000	1900	1800	1700	1600	1500	1400	1300	1200	1100	1000	900	800	700
120	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158	-0.158
130	-0.135	-0.130	-0.130	-0.126	-0.125	-0.119	-0.116	-0.113	-0.107	-0.105	-0.099	-0.092	-0.086	-0.087
140	-0.099	-0.097	-0.096	-0.096	-0.097	-0.098	-0.097	-0.097	-0.096	-0.096	-0.093	-0.091	-0.090	-0.087
150	-0.070	-0.072	-0.076	-0.079	-0.081	-0.083	-0.087	-0.089	-0.091	-0.094	-0.095	-0.098	-0.100	-0.101
160	-0.050	-0.057	-0.063	-0.069	-0.071	-0.077	-0.080	-0.083	-0.086	-0.091	-0.097	-0.102	-0.110	-0.113
170	-0.041	-0.048	-0.054	-0.059	-0.064	-0.070	-0.073	-0.078	-0.082	-0.089	-0.095	-0.108	-0.117	-0.125
180	-0.036	-0.045	-0.051	-0.057	-0.060	-0.063	-0.068	-0.072	-0.077	-0.086	-0.096	-0.108	-0.120	-0.132
190	-0.034	-0.042	-0.047	-0.052	-0.055	-0.058	-0.061	-0.066	-0.072	-0.082	-0.093	-0.107	-0.121	-0.133
200	-0.033	-0.040	-0.045	-0.049	-0.050	-0.053	-0.056	-0.060	-0.067	-0.077	-0.089	-0.105	-0.121	-0.134
210	-0.032	-0.038	-0.042	-0.044	-0.045	-0.047	-0.049	-0.054	-0.061	-0.072	-0.085	-0.101	-0.116	-0.131
220	-0.031	-0.037	-0.039	-0.040	-0.040	-0.041	-0.043	-0.047	-0.054	-0.065	-0.080	-0.096	-0.112	-0.123
230	-0.031	-0.035	-0.036	-0.037	-0.035	-0.037	-0.037	-0.041	-0.048	-0.059	-0.075	-0.089	-0.108	-0.118
240	-0.029	-0.032	-0.032	-0.031	-0.030	-0.030	-0.031	-0.034	-0.042	-0.052	-0.068	-0.084	-0.100	-0.111
250	-0.027	-0.031	-0.029	-0.028	-0.024	-0.025	-0.025	-0.030	-0.035	-0.048	-0.061	-0.077	-0.093	-0.103
260	-0.027	-0.029	-0.024	-0.024	-0.019	-0.020	-0.019	-0.023	-0.030	-0.040	-0.055	-0.070	-0.085	-0.095
270	-0.026	-0.025	-0.023	-0.019	-0.016	-0.014	-0.014	-0.017	-0.024	-0.034	-0.048	-0.064	-0.078	-0.086
280	-0.024	-0.022	-0.018	-0.015	-0.011	-0.009	-0.008	-0.011	-0.018	-0.029	-0.042	-0.056	-0.069	-0.080
290	-0.022	-0.019	-0.015	-0.010	-0.006	-0.003	-0.003	-0.006	-0.013	-0.023	-0.036	-0.049	-0.063	-0.071
300	-0.020	-0.015	-0.011	-0.006	-0.002	0.001	0.002	-0.001	-0.006	-0.017	-0.029	-0.043	-0.055	-0.065
320	-0.015	-0.009	-0.003	0.003	0.008	0.011	0.012	0.010	0.003	-0.005	-0.019	-0.033	-0.044	-0.053
340	-0.010	-0.003	0.004	0.011	0.016	0.020	0.020	0.018	0.012	0.002	-0.007	-0.021	-0.034	-0.043
360	-0.004	0.003	0.011	0.018	0.025	0.028	0.030	0.026	0.023	0.013	0.001	-0.012	-0.024	-0.035
380	0.001	0.009	0.016	0.024	0.031	0.034	0.038	0.034	0.029	0.021	0.009	-0.003	-0.016	-0.029
400	0.005	0.016	0.024	0.030	0.037	0.041	0.043	0.041	0.036	0.028	0.016	0.003	-0.011	-0.024
420	0.010	0.021	0.029	0.036	0.044	0.048	0.049	0.048	0.043	0.034	0.022	0.009	-0.006	-0.018
440	0.016	0.027	0.035	0.043	0.050	0.053	0.055	0.053	0.047	0.038	0.027	0.013	-0.001	-0.011
460	0.020	0.031	0.040	0.048	0.054	0.058	0.060	0.057	0.053	0.043	0.032	0.017	0.004	-0.006
480	0.025	0.035	0.045	0.052	0.059	0.063	0.064	0.061	0.055	0.047	0.035	0.021	0.009	0.005
500	0.029	0.039	0.049	0.056	0.063	0.067	0.068	0.067	0.060	0.050	0.038	0.026	0.016	0.016
520	0.032	0.043	0.052	0.061	0.066	0.071	0.071	0.068	0.063	0.053	0.042	0.030	0.022	0.031
540	0.036	0.047	0.055	0.064	0.069	0.074	0.074	0.072	0.066	0.057	0.045	0.033	0.030	0.047
560	0.038	0.051	0.059	0.067	0.071	0.078	0.075	0.074	0.068	0.060	0.049	0.038	0.039	0.066
580	0.042	0.053	0.062	0.069	0.075	0.077	0.079	0.076	0.071	0.063	0.052	0.045	0.051	0.084
600	0.045	0.056	0.066	0.071	0.076	0.081	0.081	0.078	0.073	0.065	0.058	0.052	0.065	0.104
620	0.046	0.058	0.068	0.073	0.079	0.082	0.083	0.080	0.075	0.067	0.062	0.061	0.079	0.123
640	0.048	0.060	0.068	0.076	0.081	0.084	0.085	0.083	0.078	0.073	0.067	0.071	0.093	0.140
660	0.051	0.064	0.070	0.077	0.082	0.086	0.086	0.085	0.080	0.075	0.074	0.081	0.111	0.153
680	0.051	0.063	0.072	0.079	0.085	0.088	0.088	0.086	0.084	0.080	0.080	0.093	0.127	0.166
700	0.055	0.065	0.073	0.080	0.086	0.089	0.091	0.088	0.087	0.085	0.089	0.106	0.142	0.174
750	0.058	0.068	0.076	0.084	0.089	0.092	0.096	0.096	0.097	0.099	0.114	0.139	0.173	0.186
800	0.061	0.070	0.079	0.086	0.092	0.097	0.101	0.103	0.108	0.120	0.139	0.168	0.192	0.185
850	0.063	0.074	0.081	0.091	0.096	0.102	0.107	0.114	0.123	0.139	0.166	0.191	0.201	0.183
900	0.066	0.075	0.084	0.093	0.101	0.109	0.116	0.126	0.142	0.161	0.185	0.204	0.204	0.174
950	0.068	0.077	0.087	0.097	0.106	0.116	0.129	0.141	0.159	0.180	0.200	0.211	0.201	0.166
1000	0.070	0.081	0.092	0.103	0.113	0.126	0.138	0.156	0.176	0.195	0.210	0.215	0.198	0.157

NOTICE

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