

TABLES OF THERMODYNAMIC PROPERTIES
OF ARGON FROM 100 TO 3000°K

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April 1964

ARO Project No. VT8002

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FOREWORD

The author wishes to acknowledge the assistance of C. A. Neel, D. Gray, Jr., R. G. Field, and C. K. Acker of the Scientific Computing Services, ARO, Inc., for providing the necessary computing machine calculations.

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ABSTRACT

Tables of the thermodynamic properties of argon are presented for the temperature range of 100 to 3000°K. In the first table, temperature and pressure are the independent variables with the pressure range extending from one to 5000 atm. In the second table, temperature and density are the independent variables with a density range extending from 10^{-7} to 630 amagats. The additional tabulated properties are the compressibility factor Z and the dimensionless functions E/RT, H/RT, and S/R. The sources of data and the tables are discussed.

PUBLICATION REVIEW

This report has been reviewed and publication is approved.

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NOMENCLATURE

E	Internal energy in dimensionless function E/RT
H	Enthalpy in dimensionless function H/RT
log	Common logarithm
p	Pressure, atm
R	Gas constant (see Appendix)
S	Entropy in dimensionless function S/R
T	Temperature, °K
Z	Compressibility factor
ρ/ρ_0	Density in amagat units

1.0 INTRODUCTION

Tables were prepared in the von Kármán Gas Dynamics Facility (VKF), Arnold Engineering Development Center (AEDC), Air Force Systems Command (AFSC), USAF, to provide a uniform source of data on the thermodynamic properties of argon for use in data reduction in the operation of wind tunnels. The format uses the dimensionless quantities Z, E/RT, H/RT, and S/R.

The sources are the tables of Hilsenrath, Beckett, et. al. (Ref. 1) and of Din (Ref. 2), both of which use temperature and pressure as the independent variables. The range of pressure in Ref. 1 extends from 10^{-2} to 10^2 atm with rather large pressure-tabulation intervals. In Ref. 2 the tabulations are from one to as high as 5000 atm. The interpolations were done on the IBM 7074 computer.

Two sets of tables are presented. In the first table, the independent variables are temperature and pressure through a range of temperature from 100 to 3000°K and a range of pressure from one to 5000 atm. In the other table, the independent variables are temperature and density. The range of temperatures remains the same, and the density varies from 10^{-7} to about 630 amagats. The extension of the density range down to 10^{-7} amagat is based on perfect gas assumptions.

The appendix contains numerical values of the reference density and the gas constant.

2.0 DATA CONVERSION

The tables of Ref. 1 are based on the assumption that the internal energy of the perfect gas is zero at 0°K. The tables of Ref. 2 assume that the internal energy of the perfect crystal is zero at 0°K, so its tabulated values of energy involve provisions for the latent heats and specific heats of the liquid and solid states.

All the entries of Ref. 1 have the desired form with the exception of the enthalpy function $(H - E_0)/RT_0$ which must be multiplied by T_0/T to yield the function H/RT. T_0 is equal to 273.16°K.

Manuscript received March 1964.

Controls

The gas volume is given in cm^3/mole in Ref. 2 and is converted to density in amagats by the relation

$$\frac{\rho}{\rho_0} = \frac{2.23904 \times 10^4}{\text{tabulated value}} \quad (1)$$

The compressibility factor Z is found by the relation

$$Z = \frac{P}{(\rho/\rho_0) RT} \quad (2)$$

in which the gas constant R is numerically equal to $3.661 \times 10^{-3} \text{ atm}/\text{amagat} \cdot {}^\circ\text{K}$.

The entropies in Ref. 2 are given in joules/mole - ${}^\circ\text{K}$ and are converted to dimensionless form by the relation

$$S/R = 1.20271 \times 10^{-1} \text{ (tabulated value)} \quad (3)$$

The enthalpies of Ref. 2 are expressed in joules/mole and are converted to dimensionless form by the relation

$$H/RT = \frac{1.2034 \times 10^{-1} \text{ (tabulated value)}}{T} \sim 931 \quad (4)$$

in which the two constants are averages of numerical comparisons of corresponding pairs of entries in Ref. 1 and Ref. 2. The average deviation of entries computed from Eq. (4) is 0.4 percent. The dimensionless internal energy function follows from the relation

$$E/RT = H/RT - Z \quad (5)$$

The appearance of negative enthalpies and internal energies is discussed in the air tables of Humphrey and Neel (Ref. 3).

The entries of Table 2 below a pressure of 10^{-2} were calculated by perfect gas assumptions.

The interpolations in the real gas domain of Table 2 are discussed in Ref. 4.

3.0 CHECKING

Tables 1 and 2 were checked for consistency in various ways. The entries of Table 1 were compared with Ref. 1. Average agreement was found to be within 0.3 percent. Both tables were plotted isothermally as functions of pressure and density to verify smoothness.

The general gas law

$$P = ZRT (\rho/\rho_0)$$

was tested throughout both tables. The average deviation disclosed was 0.03 percent. Checking the validity of Eq. (4) for the calculation of the function H/RT at high pressures by the method of characteristic functions is discussed in Ref. 4. These differential relationships gave an average inconsistency of 0.52 percent.

REFERENCES

1. Hilsenrath, J., Beckett, C. W., et. al. "Tables of Thermal Properties of Gases." National Bureau of Standards, Circular 564, November 1955.
2. Din, F. Thermodynamic Functions of Gases, Vol. 2. Butterworths Scientific Publications, London, 1961.
3. Humphrey, R. L. and Neel, C. A. "Thermodynamic Properties of Air from 90 to 1500°K." AEDC-TN-61-103, August 1961.
4. Little, Wanda J. and Neel, C. A. "Thermodynamic Properties of Nitrogen from 100 to 1500°K." AEDC-TDR-62-170, September 1962.

*Controls***APPENDIX**

Density at 0°C and p = 1 atm

$$\begin{aligned}\rho_0 &= 4.46568 \times 10^{-5} \text{ mole/cm}^3 \\ &1.78377 \times 10^{-3} \text{ g/cm}^3 \\ &1.11358 \times 10^{-1} \text{ lb/ft}^3\end{aligned}$$

Gas Constant

$$\begin{aligned}R &= 1.98719 \text{ cal/mole-}^\circ\text{K} \\ &4.97494 \times 10^{-2} \text{ cal/g-}^\circ\text{K} \\ &1.98588 \text{ Btu/lb-mole-}^\circ\text{R} \\ &4.97166 \times 10^{-3} \text{ Btu/lb-}^\circ\text{R} \\ &3.661 \times 10^{-3} \text{ atm/amagat-}^\circ\text{K}\end{aligned}$$

TABLE 1

**TABLES OF THE THERMODYNAMIC PROPERTIES OF ARGON FROM 100 TO 3000°K
WITH INDEPENDENT VARIABLES OF TEMPERATURE AND PRESSURE**

Contrails

T = 100°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.8278-01	1.4577+00	2.4405+00	1.5813+01	2.7793+00
2.0+00	9.6351-01	1.4248+00	2.3883+00	1.5088+01	5.6699+00
3.0+00	9.4387-01	1.3830+00	2.3269+00	1.4648+01	8.6818+00

T = 110°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.8582-01	1.4677+00	2.4535+00	1.6056+01	2.5189+00
2.0+00	9.6996-01	1.4374+00	2.4074+00	1.5336+01	5.1201+00
3.0+00	9.5388-01	1.4032+00	2.3571+00	1.4900+01	7.8097+00
5.0+00	9.1717-01	1.3491+00	2.2663+00	1.4334+01	1.3537+01

Controls

T = 120°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.8835-01	1.4752+00	2.4635+00	1.6277+01	2.3031+00
2.0+00	9.7514-01	1.4483+00	2.4234+00	1.5562+01	4.6686+00
3.0+00	9.6192-01	1.4194+00	2.3813+00	1.5130+01	7.0990+00
5.0+00	9.3325-01	1.3739+00	2.3071+00	1.4573+01	1.2195+01
7.0+00	9.0164-01	1.3233+00	2.2249+00	1.4182+01	1.7672+01
1.0+01	8.5091-01	1.2286+00	2.0795+00	1.3736+01	2.6751+01

Contrails

AE DC-TDR-64-68

T = 130°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9050-01	1.4783+00	2.4688+00	1.6481+01	2.1213+00
2.0+00	9.7971-01	1.4563+00	2.4360+00	1.5769+01	4.2893+00
3.0+00	9.6873-01	1.4322+00	2.4009+00	1.5341+01	6.5069+00
5.0+00	9.4639-01	1.3934+00	2.3398+00	1.4792+01	1.1101+01
7.0+00	9.2227-01	1.3499+00	2.2722+00	1.4410+01	1.5948+01
1.0+01	8.8399-01	1.2725+00	2.1565+00	1.3983+01	2.3769+01
1.5+01	8.1220-01	1.1434+00	1.9556+00	1.3437+01	3.8805+01

Controls

T = 140°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9251-01	1.4817+00	2.4742+00	1.6668+01	1.9658+00
2.0+00	9.8379-01	1.4622+00	2.4460+00	1.5960+01	3.9664+00
3.0+00	9.7482-01	1.4420+00	2.4168+00	1.5534+01	6.0044+00
5.0+00	9.5678-01	1.4101+00	2.3669+00	1.4993+01	1.0196+01
7.0+00	9.3752-01	1.3727+00	2.3102+00	1.4618+01	1.4568+01
1.0+01	9.0886-01	1.3093+00	2.2182+00	1.4204+01	2.1467+01
1.5+01	8.4568-01	1.2126+00	2.0583+00	1.3686+01	3.4606+01
2.0+01	7.9993-01	1.0753+00	1.8752+00	1.3262+01	4.8781+01
2.5+01	7.2761-01	9.3879-01	1.6664+00	1.2880+01	6.7037+01
3.0+01	6.2740-01	7.7850-01	1.4059+00	1.2489+01	9.3293+01

Contrails

AEDC-TDR-64-68

T = 150⁰K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ ₀)
1.0+00	9.9401-01	1.4848+00	2.4788+00	1.6844+01	1.8320+00
2.0+00	9.8685-01	1.4670+00	2.4538+00	1.6138+01	3.6905+00
3.0+00	9.7961-01	1.4501+00	2.4297+00	1.5715+01	5.5767+00
5.0+00	9.6497-01	1.4238+00	2.3888+00	1.5178+01	9.4355+00
7.0+00	9.5017-01	1.3913+00	2.3415+00	1.4809+01	1.3415+01
1.0+01	9.2715-01	1.3406+00	2.2677+00	1.4407+01	1.9641+01
1.5+01	8.8934-01	1.2500+00	2.1393+00	1.3911+01	3.0714+01
2.0+01	8.4583-01	1.1523+00	1.9981+00	1.3518+01	4.3058+01
2.5+01	7.9703-01	1.0487+00	1.8457+00	1.3179+01	5.7118+01
3.0+01	7.3684-01	9.4036-01	1.6772+00	1.2867+01	7.4140+01
4.0+01	5.9208-01	6.9042-01	1.2825+00	1.2282+01	1.2302+02

Contrails

T = 160°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9524-01	1.4864+00	2.4816+00	1.7008+01	1.7153+00
2.0+00	9.8937-01	1.4705+00	2.4599+00	1.6304+01	3.4510+00
3.0+00	9.8335-01	1.4570+00	2.4403+00	1.5883+01	5.2083+00
5.0+00	9.7138-01	1.4351+00	2.4065+00	1.5350+01	8.7874+00
7.0+00	9.5964-01	1.4070+00	2.3666+00	1.4986+01	1.2453+01
1.0+01	9.4164-01	1.3656+00	2.3072+00	1.4592+01	1.8130+01
1.5+01	9.1038-01	1.2930+00	2.2034+00	1.4115+01	2.8129+01
2.0+01	8.7836-01	1.2145+00	2.0929+00	1.3746+01	3.8872+01
2.5+01	8.4252-01	1.1353+00	1.9778+00	1.3435+01	5.0657+01
3.0+01	8.0287-01	1.0523+00	1.8552+00	1.3156+01	6.3790+01
4.0+01	7.1061-01	8.7229-01	1.5829+00	1.2675+01	9.6096+01
5.0+01	5.9853-01	6.6627-01	1.2648+00	1.2199+01	1.4261+02
6.0+01	4.4375-01	2.5090-01	6.9465-01	1.1534+01	2.3083+02
7.0+01	3.5226-01	-3.1948-01	3.2783-02	1.0806+01	3.3925+02
8.0+01	3.4158-01	-6.1341-01	-2.7183-01	1.0456+01	3.9983+02
1.0+02	3.7056-01	-8.8608-01	-5.1552-01	1.0127+01	4.6071+02
1.2+02	4.1539-01	-1.0407+00	-6.2533-01	9.9440+00	4.9318+02
1.4+02	4.6327-01	-1.1495+00	-6.8625-01	9.8117+00	5.1591+02
1.6+02	5.1237-01	-1.2400+00	-7.2762-01	9.7059+00	5.3310+02
1.8+02	5.6132-01	-1.3205+00	-7.5921-01	9.6145+00	5.4744+02
2.0+02	6.0997-01	-1.3948+00	-7.8478-01	9.5327+00	5.5976+02
2.5+02	7.2390-01	-1.5624+00	-8.3850-01	9.3324+00	5.8953+02
3.0+02	8.3261-01	-1.7076+00	-8.7503-01	9.1719+00	6.1512+02
3.5+02	9.4133-01	-1.8200+00	-8.7870-01	9.0262+00	6.3476+02
4.0+02	1.0469+00	-1.9349+00	-8.8800-01	8.9019+00	6.5228+02
5.0+02	1.2504+00	-2.1194+00	-8.6902-01	8.6980+00	6.8263+02
6.0+02	1.4618+00	-2.2980+00	-8.3620-01	8.5145+00	7.0070+02
8.0+02	1.8704+00	-2.5660+00	-6.9560-01	8.2329+00	7.3017+02
1.0+03	2.2645+00	-2.7221+00	-4.5760-01	8.0209+00	7.5339+02
1.5+03	3.1986+00	-2.8900+00	3.0860-01	7.6663+00	8.0058+02
2.0+03	4.0868+00	-2.9815+00	1.1053+00	7.4243+00	8.3546+02
2.5+03	4.9383+00	-3.0450+00	1.8933+00	7.2303+00	8.6425+02
3.0+03	5.7642+00	-2.9914+00	2.7728+00	7.0755+00	8.8851+02

Contrails

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T = 170°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9626-01	1.4882+00	2.4845+00	1.7160+01	1.6128+00
2.0+00	9.9145-01	1.4746+00	2.4660+00	1.6459+01	3.2412+00
3.0+00	9.8664-01	1.4617+00	2.4483+00	1.6041+01	4.8855+00
5.0+00	9.7667-01	1.4440+00	2.4207+00	1.5511+01	8.2257+00
7.0+00	9.6698-01	1.4204+00	2.3874+00	1.5152+01	1.1631+01
1.0+01	9.5227-01	1.3870+00	2.3393+00	1.4764+01	1.6873+01
1.5+01	9.2680-01	1.3282+00	2.2550+00	1.4301+01	2.6005+01
2.0+01	9.0132-01	1.2659+00	2.1672+00	1.3949+01	3.5654+01
2.5+01	8.7549-01	1.1997+00	2.0752+00	1.3656+01	4.5882+01
3.0+01	8.4606-01	1.1328+00	1.9789+00	1.3402+01	5.6973+01
4.0+01	7.8363-01	9.8787-01	1.7715+00	1.2965+01	8.2016+01
5.0+01	7.0685-01	8.4175-01	1.5486+00	1.2568+01	1.1366+02
6.0+01	6.2002-01	6.7508-01	1.2951+00	1.2194+01	1.5549+02
7.0+01	5.2744-01	4.5339-01	9.8083-01	1.1781+01	2.1324+02
8.0+01	4.7362-01	1.2000-01	5.9362-01	1.1327+01	2.7140+02
1.0+02	4.4205-01	-2.9298-01	1.4907-01	1.0776+01	3.6348+02
1.2+02	4.5726-01	-5.3471-01	-7.7452-02	1.0468+01	4.2166+02
1.4+02	4.9429-01	-6.9845-01	-2.0416-01	1.0266+01	4.5509+02
1.6+02	5.3505-01	-8.1425-01	-2.7920-01	1.0124+01	4.8048+02
1.8+02	5.7739-01	-9.0756-01	-3.3017-01	1.0010+01	5.0090+02
2.0+02	6.2145-01	-9.9480-01	-3.7335-01	9.9091+00	5.1710+02
2.5+02	7.2817-01	-1.1842+00	-4.5600-01	9.6799+00	5.5164+02
3.0+02	8.2884-01	-1.3374+00	-5.0855-01	9.4966+00	5.8157+02
3.5+02	9.2973-01	-1.4632+00	-5.3350-01	9.3379+00	6.0487+02
4.0+02	1.0270+00	-1.5720+00	-5.4500-01	9.2025+00	6.2581+02
5.0+02	1.2128+00	-1.7560+00	-5.4324-01	8.9806+00	6.6244+02
6.0+02	1.4141+00	-1.9316+00	-5.1750-01	8.7903+00	6.8176+02
8.0+02	1.8018+00	-2.1798+00	-3.7800-01	8.4982+00	7.1340+02
1.0+03	2.1744+00	-2.3552+00	-1.8080-01	8.2783+00	7.3896+02
1.5+03	3.0620+00	-2.5490+00	5.1300-01	7.9123+00	7.8712+02
2.0+03	3.9038+00	-2.6320+00	1.2718+00	7.6625+00	8.2318+02
2.5+03	4.7095+00	-2.6560+00	2.0535+00	7.4651+00	8.5294+02
3.0+03	5.4897+00	-2.6563+00	2.8334+00	7.3077+00	8.7805+02
4.0+03	7.0613+00	-2.6267+00	4.4346+00	7.0575+00	9.1018+02

Contrails

AEDC-TDR-64-68

$T = 180^{\circ}\text{K}$

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ_0)
1.0+00	9.9703-01	1.4900+00	2.4870+00	1.7305+01	1.5220+00
2.0+00	9.9303-01	1.4777+00	2.4707+00	1.6605+01	3.0563+00
3.0+00	9.8896-01	1.4663+00	2.4553+00	1.6188+01	4.6033+00
5.0+00	9.8070-01	1.4519+00	2.4326+00	1.5662+01	7.7368+00
7.0+00	9.7256-01	1.4319+00	2.4045+00	1.5306+01	1.0922+01
1.0+01	9.6036-01	1.4047+00	2.3651+00	1.4924+01	1.5801+01
1.5+01	9.3935-01	1.3569+00	2.2962+00	1.4472+01	2.4232+01
2.0+01	9.1902-01	1.3063+00	2.2253+00	1.4133+01	3.3024+01
2.5+01	8.9632-01	1.2548+00	2.1511+00	1.3852+01	4.2326+01
3.0+01	8.7429-01	1.2000+00	2.0743+00	1.3616+01	5.2071+01
4.0+01	8.2956-01	1.0829+00	1.9125+00	1.3212+01	7.3171+01
5.0+01	7.7602-01	9.6798-01	1.7440+00	1.2858+01	9.7775+01
6.0+01	7.1570-01	8.4580-01	1.5615+00	1.2542+01	1.2722+02
7.0+01	6.5470-01	7.0890-01	1.3636+00	1.2229+01	1.6225+02
8.0+01	5.9642-01	5.5388-01	1.1503+00	1.1932+01	2.0355+02
1.0+02	5.3406-01	1.8503-01	7.1909-01	1.1368+01	2.8414+02
1.2+02	5.2295-01	-9.8690-02	4.2426-01	1.0978+01	3.4822+02
1.4+02	5.4084-01	-2.9709-01	2.4375-01	1.0715+01	3.9281+02
1.6+02	5.6931-01	-4.3788-01	1.3143-01	1.0532+01	4.2648+02
1.8+02	6.0509-01	-5.4921-01	5.5882-02	1.0390+01	4.5142+02
2.0+02	6.4250-01	-6.4478-01	-2.2821-03	1.0270+01	4.7237+02
2.5+02	7.3952-01	-8.6702-01	-1.2750-01	1.0013+01	5.1300+02
3.0+02	8.2956-01	-1.0063+00	-1.7678-01	9.8081+00	5.4878+02
3.5+02	9.2406-01	-1.1326+00	-2.0850-01	9.6366+00	5.7477+02
4.0+02	1.0146+00	-1.2436+00	-2.2900-01	9.4905+00	5.9828+02
5.0+02	1.1861+00	-1.4364+00	-2.5032-01	9.2512+00	6.3973+02
6.0+02	1.3762+00	-1.6272+00	-2.5100-01	9.0544+00	6.6160+02
8.0+02	1.7401+00	-1.8520+00	-1.1190-01	8.7522+00	6.9765+02
1.0+03	2.0875+00	-2.0182+00	6.9253-02	8.5248+00	7.2696+02
1.5+03	2.9428+00	-2.2490+00	6.9380-01	8.1488+00	7.7350+02
2.0+03	3.7547+00	-2.3303+00	1.4244+00	7.8922+00	8.0832+02
2.5+03	4.5230+00	-2.3680+00	2.1550+00	7.6902+00	8.3877+02
3.0+03	5.2661+00	-2.3755+00	2.8906+00	7.5290+00	8.6449+02
4.0+03	6.7232+00	-2.3250+00	4.3982+00	7.2728+00	9.0284+02

T = 190°K

p, atm	Z	E/RT	H/RT	S/R	(p/p _o)
1.0+00	9.9765-01	1.4903+00	2.4879+00	1.7442+01	1.4410+00
2.0+00	9.9432-01	1.4800+00	2.4743+00	1.6743+01	2.8917+00
3.0+00	9.9085-01	1.4708+00	2.4616+00	1.6328+01	4.3527+00
5.0+00	9.8398-01	1.4580+00	2.4420+00	1.5804+01	7.3052+00
7.0+00	9.7711-01	1.4415+00	2.4186+00	1.5450+01	1.0299+01
1.0+01	9.6632-01	1.4193+00	2.3856+00	1.5074+01	1.4877+01
1.5+01	9.4866-01	1.3799+00	2.3286+00	1.4630+01	2.2731+01
2.0+01	9.3101-01	1.3400+00	2.2710+00	1.4300+01	3.0883+01
2.5+01	9.1335-01	1.2975+00	2.2108+00	1.4030+01	3.9350+01
3.0+01	8.9569-01	1.2531+00	2.1488+00	1.3805+01	4.8151+01
4.0+01	8.6038-01	1.1598+00	2.0202+00	1.3425+01	6.6837+01
5.0+01	8.2185-01	1.0647+00	1.8865+00	1.3099+01	8.7463+01
6.0+01	7.7819-01	9.6901-01	1.7472+00	1.2817+01	1.1084+02
7.0+01	7.3710-01	8.6440-01	1.6015+00	1.2547+01	1.3653+02
8.0+01	6.9344-01	7.5486-01	1.4483+00	1.2299+01	1.6585+02
1.0+02	6.2474-01	5.0366-01	1.1284+00	1.1825+01	2.3012+02
1.2+02	5.9713-01	2.4182-01	8.3895-01	1.1426+01	2.8891+02
1.4+02	5.9777-01	4.0400-02	6.3817-C1	1.1133+01	3.3670+02
1.6+02	6.1331-01	-1.1321-01	5.0010-C1	1.0918+01	3.7505+02
1.8+02	6.4028-01	-2.3582-01	4.0446-C1	1.0750+01	4.0416+02
2.0+02	6.6904-01	-3.4058-01	3.2846-C1	1.0609+01	4.2976+02
2.5+02	7.5630-01	-5.6380-01	1.9250-01	1.0329+01	4.7522+02
3.0+02	8.3598-01	-7.1400-01	1.2198-C1	1.0105+01	5.1591+02
3.5+02	9.2489-01	-8.3599-01	8.8900-C2	9.9221+00	5.4403+02
4.0+02	1.0095+00	-9.5050-01	5.9000-C2	9.7661+00	5.6963+02
5.0+02	1.1686+00	-1.1530+00	1.5572-C2	9.5110+00	6.1512+02
6.0+02	1.3488+00	-1.3363+00	1.2500-02	9.3079+00	6.3950+02
8.0+02	1.6915+00	-1.5830+00	1.0850-C1	8.9963+00	6.7994+02
1.0+03	2.0161+00	-1.7193+00	2.9679-C1	8.7617+00	7.1307+02
1.5+03	2.8340+00	-1.9240+00	9.1000-C1	8.3765+00	7.6092+02
2.0+03	3.6085+00	-2.0437+00	1.5648+00	8.1135+00	7.9681+02
2.5+03	4.3401+00	-2.0920+00	2.2481+00	7.9068+00	8.2811+02
3.0+03	5.0467+00	-2.1005+00	2.9462+00	7.7418+00	8.5460+02
4.0+03	6.4207+00	-2.0514+00	4.3693+00	7.4809+00	8.9562+02
5.0+03	7.8012+00	-1.9751+00	5.8261+00	7.3101+00	9.2142+02

Contrails

T = 200°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9815-01	1.4909+00	2.4890+00	1.7572+01	1.3683+00
2.0+00	9.9523-01	1.4824+00	2.4776+00	1.6874+01	2.7446+00
3.0+00	9.9236-01	1.4743+00	2.4667+00	1.6460+01	4.1288+00
5.0+00	9.8663-01	1.4633+00	2.4499+00	1.5937+01	6.9213+00
7.0+00	9.8077-01	1.4492+00	2.4300+00	1.5586+01	9.7477+00
1.0+01	9.7168-01	1.4306+00	2.4023+00	1.5213+01	1.4055+01
1.5+01	9.5704-01	1.3978+00	2.3548+00	1.4776+01	2.1406+01
2.0+01	9.4179-01	1.3649+00	2.3067+00	1.4453+01	2.9003+01
2.5+01	9.2715-01	1.3302+00	2.2573+00	1.4191+01	3.6826+01
3.0+01	9.1312-01	1.2937+00	2.2068+00	1.3974+01	4.4871+01
4.0+01	8.8324-01	1.2189+00	2.1021+00	1.3612+01	6.1852+01
5.0+01	8.5396-01	1.1398+00	1.9938+00	1.3306+01	7.9966+01
6.0+01	8.2346-01	1.0590+00	1.8825+00	1.3046+01	9.9513+01
7.0+01	7.9418-01	9.7452-01	1.7687+00	1.2800+01	1.2038+02
8.0+01	7.6124-01	8.8956-01	1.6508+00	1.2579+01	1.4353+02
1.0+02	7.0147-01	7.0383-01	1.4053+00	1.2168+01	1.9470+02
1.2+02	6.6682-01	4.9958-01	1.1664+00	1.1805+01	2.4578+02
1.4+02	6.5755-01	3.1274-01	9.7029-01	1.1506+01	2.9078+02
1.6+02	6.6462-01	1.5585-01	8.2047-01	1.1272+01	3.2879+02
1.8+02	6.8073-01	2.8430-02	7.0916-01	1.1083+01	3.6114+02
2.0+02	7.0147-01	-7.9560-02	6.2191-01	1.0927+01	3.8940+02
2.5+02	7.7736-01	-2.9636-01	4.8100-01	1.0626+01	4.3923+02
3.0+02	8.4542-01	-4.5517-01	3.9025-01	1.0387+01	4.8464+02
3.5+02	9.2985-01	-6.0435-01	3.2550-01	1.0193+01	5.1408+02
4.0+02	1.0098+00	-7.1980-01	2.9000-01	1.0029+01	5.4102+02
5.0+02	1.1589+00	-9.0102-01	2.5788-01	9.7600+00	5.8922+02
6.0+02	1.3293+00	-1.0773+00	2.5200-01	9.5514+00	6.1647+02
8.0+02	1.6503+00	-1.3028+00	3.4750-01	9.2312+00	6.6204+02
1.0+03	1.9519+00	-1.4467+00	5.0518-01	8.9903+00	6.9970+02
1.5+03	2.7360+00	-1.6770+00	1.0590+00	8.5965+00	7.4875+02
2.0+03	3.4768+00	-1.7815+00	1.6953+00	8.3276+00	7.8563+02
2.5+03	4.1755+00	-1.8400+00	2.3355+00	8.1162+00	8.1772+02
3.0+03	4.8493+00	-1.8495+00	2.9998+00	7.9475+00	8.4492+02
4.0+03	6.1729+00	-1.8259+00	4.3470+00	7.6817+00	8.8500+02
5.0+03	7.4721+00	-1.7448+00	5.7273+00	7.5073+00	9.1389+02

Contrails

AEDC-TDR-64-68

T = 210°K

p, atm	Z	E/RT	H/RT	S/R	(p/p ₀)
1.0+00	9.9855-01	1.4920+00	2.4905+00	1.7694+01	1.3026+00
2.0+00	9.9605-01	1.4839+00	2.4799+00	1.6998+01	2.6117+00
3.0+00	9.9355-01	1.4772+00	2.4707+00	1.6585+01	3.9275+00
5.0+00	9.8873-01	1.4677+00	2.4564+00	1.6063+01	6.5777+00
7.0+00	9.8368-01	1.4555+00	2.4392+00	1.5715+01	9.2561+00
1.0+01	9.7595-01	1.4398+00	2.4157+00	1.5344+01	1.3328+01
1.5+01	9.6375-01	1.4119+00	2.3756+00	1.4912+01	2.0244+01
2.0+01	9.5155-01	1.3834+00	2.3349+00	1.4594+01	2.7339+01
2.5+01	9.3819-01	1.3555+00	2.2937+00	1.4338+01	3.4660+01
3.0+01	9.2715-01	1.3242+00	2.2513+00	1.4127+01	4.2087+01
4.0+01	9.0159-01	1.2631+00	2.1647+00	1.3779+01	5.7707+01
5.0+01	8.7719-01	1.1987+00	2.0759+00	1.3486+01	7.4140+01
6.0+01	8.5396-01	1.1314+00	1.9854+00	1.3242+01	9.1389+01
7.0+01	8.2956-01	1.0635+00	1.8931+00	1.3015+01	1.0975+02
8.0+01	8.0865-01	9.9045-01	1.7991+00	1.2811+01	1.2668+02
1.0+02	7.6682-01	8.3808-01	1.6049+00	1.2441+01	1.6962+02
1.2+02	7.3196-01	6.8264-01	1.4146+00	1.2116+01	2.1324+02
1.4+02	7.11163-01	5.2877-01	1.2404+00	1.1830+01	2.5589+02
1.6+02	7.11198-01	3.8232-01	1.0943+00	1.1592+01	2.9230+02
1.8+02	7.2046-01	2.5463-01	9.7509-01	1.1390+01	3.2497+02
2.0+02	7.3661-01	1.4278-01	8.7939-01	1.1220+01	3.5316+02
2.5+02	8.0173-01	-6.9230-02	7.3250-C1	1.0903+01	4.0560+02
3.0+02	8.5919-01	-2.2850-01	6.3069-C1	1.0651+01	4.5417+02
3.5+02	9.3897-01	-3.8147-01	5.5750-C1	1.0450+01	4.8484+02
4.0+02	1.0140+00	-4.9250-01	5.2150-C1	1.0278+01	5.1308+02
5.0+02	1.1531+00	-6.7427-01	4.7883-C1	9.9981+00	5.6399+02
6.0+02	1.3149+00	-8.2290-01	4.9200-C1	9.7849+00	5.9351+02
8.0+02	1.6176+00	-1.0526+00	5.6500-01	9.4578+00	6.4327+02
1.0+03	1.8996+00	-1.2024+00	6.9716-01	9.2116+00	6.8472+02
1.5+03	2.6562+00	-1.4420+00	1.2142+00	8.8092+00	7.3455+02
2.0+03	3.3694+00	-1.5525+00	1.8169+00	8.5344+00	7.7203+02
2.5+03	4.0410+00	-1.6190+00	2.4220+00	8.3191+00	8.0469+02
3.0+03	4.6881+00	-1.6363+00	3.0518+00	8.1472+00	8.3236+02
4.0+03	5.9254+00	-1.5951+00	4.3303+00	7.8765+00	8.7805+02
5.0+03	7.1744+00	-1.5336+00	5.6408+00	7.6985+00	9.0649+02

Contrails

T = 220°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9891-01	1.4929+00	2.4918+00	1.7811+01	1.2429+00
2.0+00	9.9669-01	1.4854+00	2.4821+00	1.7116+01	2.4914+00
3.0+00	9.9447-01	1.4794+00	2.4739+00	1.6703+01	3.7455+00
5.0+00	9.9037-01	1.4703+00	2.4607+00	1.6182+01	6.2683+00
7.0+00	9.8593-01	1.4606+00	2.4465+00	1.5836+01	8.8151+00
1.0+01	9.7983-01	1.4470+00	2.4268+00	1.5467+01	1.2671+01
1.5+01	9.6902-01	1.4234+00	2.3924+00	1.5039+01	1.9219+01
2.0+01	9.5821-01	1.3991+00	2.3573+00	1.4725+01	2.5915+01
2.5+01	9.4823-01	1.3736+00	2.3218+00	1.4472+01	3.2735+01
3.0+01	9.3824-01	1.3475+00	2.2857+00	1.4267+01	3.9699+01
4.0+01	9.1828-01	1.2946+00	2.2129+00	1.3930+01	5.4083+01
5.0+01	8.9832-01	1.2408+00	2.1391+00	1.3647+01	6.9106+01
6.0+01	8.7836-01	1.1852+00	2.0636+00	1.3414+01	8.4812+01
7.0+01	8.5784-01	1.1292+00	1.9870+00	1.3199+01	1.0131+02
8.0+01	8.3843-01	1.0715+00	1.9099+00	1.3009+01	1.1847+02
1.0+02	8.0960-01	9.4390-01	1.7535+00	1.2668+01	1.5336+02
1.2+02	7.7854-01	8.2066-01	1.5992+00	1.2371+01	1.9137+02
1.4+02	7.5847-01	6.9303-01	1.4515+00	1.2104+01	2.2918+02
1.6+02	7.5414-01	5.6496-01	1.3191+00	1.1873+01	2.6342+02
1.8+02	7.5858-01	4.4352-01	1.2021+00	1.1667+01	2.9461+02
2.0+02	7.6967-01	3.3233-01	1.1020+00	1.1488+01	3.2263+02
2.5+02	8.2511-01	1.3508-01	9.6019-01	1.1160+01	3.7619+02
3.0+02	8.7337-01	-2.9030-02	8.4434-01	1.0899+01	4.2648+02
3.5+02	9.4914-01	-1.8714-01	7.6200-01	1.0692+01	4.5784+02
4.0+02	1.0201+00	-3.0120-01	7.1890-01	1.0515+01	4.8686+02
5.0+02	1.1506+00	-4.6981-01	6.8079-01	1.0227+01	5.3953+02
6.0+02	1.3041+00	-6.3260-01	6.7150-01	1.0010+01	5.7124+02
8.0+02	1.5890+00	-8.5900-01	7.3000-01	9.6764+00	6.2511+02
1.0+03	1.8521+00	-9.7767-01	8.7443-01	9.4256+00	6.7037+02
1.5+03	2.5784+00	-1.2090+00	1.3694+00	9.0154+00	7.2231+02
2.0+03	3.2606+00	-1.3299+00	1.9307+00	8.7353+00	7.6158+02
2.5+03	3.9049+00	-1.4010+00	2.5039+00	8.5159+00	7.9488+02
3.0+03	4.5249+00	-1.4231+00	3.1018+00	8.3408+00	8.2318+02
4.0+03	5.7004+00	-1.3826+00	4.3178+00	8.0654+00	8.7122+02
5.0+03	6.9038+00	-1.3388+00	5.5650+00	7.8838+00	8.9921+02

T = 230°K

P, atm	Z	E/RT	H/RT	S/R	(P/P ₀)
1.0+00	9.9918-01	1.4938+00	2.4930+C0	1.7923+01	1.1886+00
2.0+00	9.9727-01	1.4867+00	2.4840+C0	1.7228+01	2.3817+00
3.0+00	9.9547-01	1.4812+00	2.4767+C0	1.6816+01	3.5790+00
5.0+00	9.9186-01	1.4733+00	2.4652+C0	1.6297+01	5.9867+00
7.0+00	9.8799-01	1.4646+00	2.4526+C0	1.5952+01	8.4143+00
1.0+01	9.8285-01	1.4526+00	2.4354+C0	1.5584+01	1.2083+01
1.5+01	9.7383-01	1.4317+00	2.4055+C0	1.5158+01	1.8293+01
2.0+01	9.6428-01	1.4109+00	2.3752+C0	1.4847+01	2.4632+01
2.5+01	9.5606-01	1.3882+00	2.3443+C0	1.4598+01	3.1055+01
3.0+01	9.4837-01	1.3645+00	2.3129+C0	1.4395+01	3.7568+01
4.0+01	9.3140-01	1.3193+00	2.2507+C0	1.4066+01	5.1003+01
5.0+01	9.1495-01	1.2725+00	2.1874+C0	1.3793+01	6.4900+01
6.0+01	8.9745-01	1.2256+00	2.1230+C0	1.3565+01	7.9399+01
7.0+01	8.7995-01	1.1787+00	2.0586+C0	1.3361+01	9.4474+01
8.0+01	8.6563-01	1.1282+00	1.9938+C0	1.3179+01	1.0976+02
1.0+02	8.3805-01	1.0260+00	1.8640+C0	1.2859+01	1.4171+02
1.2+02	8.1471-01	9.2159-01	1.7363+C0	1.2583+01	1.7493+02
1.4+02	8.0198-01	8.1092-01	1.6129+C0	1.2334+01	2.0732+02
1.6+02	7.9264-01	7.0456-01	1.4972+C0	1.2112+01	2.3973+02
1.8+02	7.9339-01	5.9601-01	1.3894+C0	1.1912+01	2.6944+02
2.0+02	8.0198-01	4.9072-01	1.2927+C0	1.1732+01	2.9617+02
2.5+02	8.4902-01	3.0078-01	1.1498+C0	1.1397+01	3.4970+02
3.0+02	8.8950-01	1.4360-01	1.0331+C0	1.1130+01	4.0054+02
3.5+02	9.6076-01	-2.3260-02	9.3750-C1	1.0919+01	4.3264+02
4.0+02	1.0271+00	-1.3720-01	8.8990-C1	1.0739+01	4.6251+02
5.0+02	1.1483+00	-2.8311-01	8.6519-C1	1.0446+01	5.1710+02
6.0+02	1.2951+00	-4.4410-01	8.5100-C1	1.0225+01	5.5021+02
8.0+02	1.5657+00	-6.5000-01	9.1570-C1	9.8871+00	6.0681+02
1.0+03	1.8140+00	-7.7510-01	1.0389+C0	9.6325+00	6.5469+02
1.5+03	2.5104+00	-9.9500-01	1.5154+C0	9.2152+00	7.0961+02
2.0+03	3.1612+00	-1.1235+00	2.0377+C0	8.9301+00	7.5136+02
2.5+03	3.7807+00	-1.2010+00	2.5797+C0	8.7068+00	7.8531+02
3.0+03	4.3759+00	-1.2258+00	3.1501+C0	8.5284+00	8.1420+02
4.0+03	5.5162+00	-1.2077+00	4.3085+C0	8.2482+00	8.6117+02
5.0+03	6.6566+00	-1.1594+00	5.4972+C0	8.0618+00	8.9205+02

Contrails

T = 240°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9944-01	1.4944+00	2.4938+00	1.8030+01	1.1388+00
2.0+00	9.9781-01	1.4880+00	2.4858+00	1.7335+01	2.2812+00
3.0+00	9.9623-01	1.4831+00	2.4793+00	1.6925+01	3.4273+00
5.0+00	9.9298-01	1.4758+00	2.4688+00	1.6405+01	5.7308+00
7.0+00	9.8988-01	1.4678+00	2.4577+00	1.6061+01	8.0483+00
1.0+01	9.8510-01	1.4571+00	2.4422+00	1.5694+01	1.1553+01
1.5+01	9.7748-01	1.4386+00	2.4161+00	1.5271+01	1.7465+01
2.0+01	9.6985-01	1.4197+00	2.3895+00	1.4963+01	2.3470+01
2.5+01	9.6324-01	1.3993+00	2.3625+00	1.4716+01	2.9539+01
3.0+01	9.5613-01	1.3788+00	2.3349+00	1.4516+01	3.5710+01
4.0+01	9.4139-01	1.3388+00	2.2802+00	1.4191+01	4.8359+01
5.0+01	9.2741-01	1.2977+00	2.2251+00	1.3925+01	6.1360+01
6.0+01	9.1404-01	1.2554+00	2.1694+00	1.3702+01	7.4709+01
7.0+01	9.0093-01	1.2124+00	2.1133+00	1.3505+01	8.8430+01
8.0+01	8.8893-01	1.1687+00	2.0576+00	1.3330+01	1.0243+02
1.0+02	8.6616-01	1.0811+00	1.9473+00	1.3024+01	1.3140+02
1.2+02	8.4725-01	9.9175-01	1.8390+00	1.2761+01	1.6120+02
1.4+02	8.3261-01	9.0159-01	1.7342+00	1.2525+01	1.9137+02
1.6+02	8.2549-01	8.0791-01	1.6334+00	1.2315+01	2.2060+02
1.8+02	8.2620-01	7.1190-01	1.5381+00	1.2122+01	2.4796+02
2.0+02	8.3159-01	6.1831-01	1.4499+00	1.1948+01	2.7372+02
2.5+02	8.7165-01	4.4025-01	1.3119+00	1.1612+01	3.2643+02
3.0+02	9.0581-01	2.9339-01	1.1992+00	1.1344+01	3.7694+02
3.5+02	9.7314-01	1.5286-01	1.1260+00	1.1131+01	4.0934+02
4.0+02	1.0355+00	4.1000-02	1.0765+00	1.0950+01	4.3964+02
5.0+02	1.1488+00	-1.1610-01	1.0327+00	1.0654+01	4.9536+02
6.0+02	1.2888+00	-2.6130-01	1.0275+00	1.0431+01	5.2983+02
8.0+02	1.5454+00	-4.4900-01	1.0964+00	1.0089+01	5.8917+02
1.0+03	1.7791+00	-5.8740-01	1.1917+00	9.8322+00	6.3973+02
1.5+03	2.4480+00	-8.0500-01	1.6430+00	9.4092+00	6.9738+02
2.0+03	3.0702+00	-9.3140-01	2.1388+00	9.1201+00	7.4140+02
2.5+03	3.6740+00	-1.0350+00	2.6390+00	8.8921+00	7.7444+02
3.0+03	4.2545+00	-1.0577+00	3.1968+00	8.7100+00	8.0252+02
4.0+03	5.3474+00	-1.0470+00	4.3004+00	8.4238+00	8.5135+02
5.0+03	6.4301+00	-9.9440-01	5.4357+00	8.2325+00	8.8500+02

Contrails

AEDC-TDR-64-68

T = 250°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9962-01	1.4949+00	2.4945+00	1.8132+01	1.0930+00
2.0+00	9.9820-01	1.4888+00	2.4870+00	1.7437+01	2.1891+00
3.0+00	9.9679-01	1.4844+00	2.4812+00	1.7028+01	3.2884+00
5.0+00	9.9401-01	1.4776+00	2.4716+00	1.6508+01	5.4959+00
7.0+00	9.9127-01	1.4707+00	2.4620+00	1.6166+01	7.7155+00
1.0+01	9.8766-01	1.4603+00	2.4480+00	1.5800+01	1.1062+01
1.5+01	9.8083-01	1.4441+00	2.4249+00	1.5378+01	1.6709+01
2.0+01	9.7498-01	1.4263+00	2.4013+00	1.5072+01	2.2413+01
2.5+01	9.6863-01	1.4086+00	2.3772+00	1.4828+01	2.8199+01
3.0+01	9.6180-01	1.3909+00	2.3527+00	1.4629+01	3.4080+01
4.0+01	9.5058-01	1.3535+00	2.3041+00	1.4307+01	4.5976+01
5.0+01	9.3862-01	1.3169+00	2.2555+00	1.4048+01	5.8202+01
6.0+01	9.2754-01	1.2793+00	2.2068+00	1.3829+01	7.0677+01
7.0+01	9.1681-01	1.2405+00	2.1573+00	1.3638+01	8.3422+01
8.0+01	9.0685-01	1.2009+00	2.1077+00	1.3466+01	9.6386+01
1.0+02	8.8860-01	1.1228+00	2.0114+00	1.3170+01	1.2296+02
1.2+02	8.7367-01	1.0434+00	1.9171+00	1.2915+01	1.5007+02
1.4+02	8.6216-01	9.6244-01	1.8246+00	1.2689+01	1.7742+02
1.6+02	8.5493-01	8.8257-01	1.7375+00	1.2488+01	2.0448+02
1.8+02	8.5464-01	7.9916-01	1.6538+00	1.2303+01	2.3012+02
2.0+02	8.5884-01	7.1646-01	1.5753+00	1.2134+01	2.5444+02
2.5+02	8.8202-01	5.5658-01	1.4386+00	1.1803+01	3.0969+02
3.0+02	9.2227-01	4.2193-01	1.3442+00	1.1541+01	3.5540+02
3.5+02	9.7521-01	2.9969-01	1.2749+00	1.1326+01	3.9213+02
4.0+02	1.0365+00	1.8790-01	1.2244+00	1.1146+01	4.2166+02
5.0+02	1.1492+00	3.4700-02	1.1839+00	1.0850+01	4.7538+02
6.0+02	1.2707+00	-9.9800-02	1.1709+00	1.0633+01	5.1591+02
8.0+02	1.5069+00	-2.9550-01	1.2114+00	1.0275+01	5.8006+02
1.0+03	1.7518+00	-4.1860-01	1.3332+00	1.0025+01	6.2369+02
1.5+03	2.3935+00	-6.2810-01	1.7654+00	9.6072+00	6.8472+02
2.0+03	2.9962+00	-7.6240-01	2.2338+00	9.3042+00	7.2933+02
2.5+03	3.5622+00	-8.3310-01	2.7291+00	9.0732+00	7.6679+02
3.0+03	4.1283+00	-8.8750-01	3.2408+00	8.8856+00	7.9399+02
4.0+03	5.1725+00	-8.7850-01	4.2940+00	8.5934+00	8.4492+02
5.0+03	6.2461+00	-8.6570-01	5.3804+00	8.3985+00	8.7463+02

Contrails

T = 260°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9979-01	1.4952+00	2.4950+00	1.8229+01	1.0508+00
2.0+00	9.9855-01	1.4896+00	2.4881+00	1.7534+01	2.1042+00
3.0+00	9.9744-01	1.4856+00	2.4830+00	1.7127+01	3.1598+00
5.0+00	9.9519-01	1.4790+00	2.4742+00	1.6608+01	5.2783+00
7.0+00	9.9289-01	1.4725+00	2.4654+00	1.6265+01	7.4067+00
1.0+01	9.8956-01	1.4633+00	2.4529+00	1.5901+01	1.0617+01
1.5+01	9.8393-01	1.4482+00	2.4321+00	1.5480+01	1.6016+01
2.0+01	9.7877-01	1.4320+00	2.4108+00	1.5203+01	2.1467+01
2.5+01	9.7361-01	1.4154+00	2.3890+00	1.4934+01	2.6976+01
3.0+01	9.6844-01	1.3989+00	2.3673+00	1.4736+01	3.2544+01
4.0+01	9.5906-01	1.3651+00	2.3242+00	1.4418+01	4.3817+01
5.0+01	9.4850-01	1.3322+00	2.2807+00	1.4162+01	5.5381+01
6.0+01	9.3917-01	1.2985+00	2.2377+00	1.3947+01	6.7118+01
7.0+01	9.3049-01	1.2632+00	2.1937+00	1.3759+01	7.9034+01
8.0+01	9.2227-01	1.2270+00	2.1493+00	1.3591+01	9.1129+01
1.0+02	9.0745-01	1.1558+00	2.0632+00	1.3302+01	1.1577+02
1.2+02	8.9581-01	1.0841+00	1.9799+00	1.3054+01	1.4073+02
1.4+02	8.8680-01	1.0125+00	1.8993+00	1.2837+01	1.6585+02
1.6+02	8.8136-01	9.4024-01	1.8216+00	1.2640+01	1.9072+02
1.8+02	8.8005-01	8.6795-01	1.7480+00	1.2464+01	2.1488+02
2.0+02	8.8305-01	7.9735-01	1.6804+00	1.2303+01	2.3794+02
2.5+02	9.0322-01	6.5408-01	1.5573+00	1.1980+01	2.9078+02
3.0+02	9.4029-01	5.3001-01	1.4703+00	1.1722+01	3.3519+02
3.5+02	9.8534-01	4.1966-01	1.4050+00	1.1509+01	3.7317+02
4.0+02	1.0379+00	3.1990-01	1.3578+00	1.1330+01	4.0489+02
5.0+02	1.1519+00	1.6790-01	1.3198+00	1.1035+01	4.5602+02
6.0+02	1.2725+00	3.5800-02	1.3083+00	1.0818+01	4.9536+02
8.0+02	1.5052+00	-1.5760-01	1.3476+00	1.0461+01	5.5836+02
1.0+03	1.7314+00	-2.6760-01	1.4638+00	1.0210+01	6.0679+02
1.5+03	2.3367+00	-4.6140-01	1.8753+00	9.7877+00	6.7441+02
2.0+03	2.9185+00	-5.9660-01	2.3219+00	9.4810+00	7.1995+02
2.5+03	3.4721+00	-6.7950-01	2.7926+00	9.2452+00	7.5643+02
3.0+03	4.0117+00	-7.3030-01	3.2814+00	9.0540+00	7.8563+02
4.0+03	5.0299+00	-7.4140-01	4.2885+00	8.7557+00	8.3546+02
5.0+03	6.0528+00	-7.2240-01	5.3304+00	8.5585+00	8.6784+02

Contrails

AEDC-TDR-64-68

T = 270°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	9.9994-01	1.4956+00	2.4955+00	1.8324+01	1.0117+00
2.0+00	9.9890-01	1.4897+00	2.4886+00	1.7629+01	2.0255+00
3.0+00	9.9791-01	1.4863+00	2.4842+00	1.7222+01	3.0413+00
5.0+00	9.9606-01	1.4805+00	2.4766+00	1.6704+01	5.0783+00
7.0+00	9.9407-01	1.4745+00	2.4686+00	1.6362+01	7.1239+00
1.0+01	9.9131-01	1.4657+00	2.4570+00	1.5997+01	1.0205+01
1.5+01	9.8680-01	1.4515+00	2.4383+00	1.5577+01	1.5378+01
2.0+01	9.8228-01	1.4368+00	2.4191+00	1.5276+01	2.0598+01
2.5+01	9.7708-01	1.4224+00	2.3995+00	1.5035+01	2.5885+01
3.0+01	9.7324-01	1.4067+00	2.3799+00	1.4838+01	3.1184+01
4.0+01	9.6511-01	1.3760+00	2.3411+00	1.4523+01	4.1930+01
5.0+01	9.5675-01	1.3456+00	2.3023+00	1.4269+01	5.2870+01
6.0+01	9.4911-01	1.3144+00	2.2635+00	1.4057+01	6.3954+01
7.0+01	9.4188-01	1.2824+00	2.2243+00	1.3873+01	7.5186+01
8.0+01	9.3511-01	1.2496+00	2.1847+00	1.3707+01	8.6550+01
1.0+02	9.2309-01	1.1844+00	2.1075+00	1.3425+01	1.0960+02
1.2+02	9.1360-01	1.1195+00	2.0331+00	1.3184+01	1.3288+02
1.4+02	9.0709-01	1.0543+00	1.9614+00	1.2971+01	1.5614+02
1.6+02	9.0366-01	9.8904-01	1.8927+00	1.2781+01	1.7912+02
1.8+02	9.0276-01	9.2574-01	1.8285+00	1.2610+01	2.0172+02
2.0+02	9.0547-01	8.6423-01	1.7697+00	1.2456+01	2.2346+02
2.5+02	9.2399-01	7.3611-01	1.6601+00	1.2144+01	2.7372+02
3.0+02	9.5698-01	6.2332-01	1.5803+00	1.1889+01	3.1714+02
3.5+02	9.9945-01	5.2065-01	1.5201+00	1.1680+01	3.5428+02
4.0+02	1.0501+00	4.2630-01	1.4764+00	1.1502+01	3.8538+02
5.0+02	1.1567+00	2.8540-01	1.4421+00	1.1209+01	4.3731+02
6.0+02	1.2742+00	1.5810-01	1.4323+00	1.0994+01	4.7639+02
8.0+02	1.5001+00	-2.7700-02	1.4724+00	1.0639+01	5.3953+02
1.0+03	1.7170+00	-1.3320-01	1.5838+00	1.0388+01	5.8922+02
1.5+03	2.2840+00	-3.0700-01	1.9770+00	9.9608+00	6.6440+02
2.0+03	2.8465+00	-4.4340-01	2.4031+00	9.6505+00	7.1081+02
2.5+03	3.3774+00	-5.2640-01	2.8510+00	9.4100+00	7.4884+02
3.0+03	3.9174+00	-5.9930-01	3.3181+00	9.2152+00	7.7475+02
4.0+03	4.8978+00	-6.1480-01	4.2830+00	8.9121+00	8.2621+02
5.0+03	5.8738+00	-5.8970-01	5.2841+00	8.7124+00	8.6117+02

Contrails

AEDC-TDR-64-68

T = 280°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0000+00	1.4960+00	2.4960+00	1.8416+01	9.7545+01
2.0+00	9.9922-01	1.4904+00	2.4896+00	1.7721+01	1.9526+00
3.0+00	9.9835-01	1.4870+00	2.4853+00	1.7313+01	2.9314+00
5.0+00	9.9665-01	1.4818+00	2.4784+00	1.6796+01	4.8941+00
7.0+00	9.9517-01	1.4759+00	2.4711+00	1.6453+01	6.8619+00
1.0+01	9.9294-01	1.4679+00	2.4608+00	1.6090+01	9.8247+00
1.5+01	9.8880-01	1.4548+00	2.4436+00	1.5671+01	1.4799+01
2.0+01	9.8467-01	1.4413+00	2.4260+00	1.5371+01	1.9815+01
2.5+01	9.8140-01	1.4269+00	2.4083+00	1.5132+01	2.4851+01
3.0+01	9.7769-01	1.4130+00	2.3907+00	1.4936+01	2.9934+01
4.0+01	9.7072-01	1.3848+00	2.3555+00	1.4623+01	4.0198+01
5.0+01	9.6375-01	1.3570+00	2.3207+00	1.4371+01	5.0611+01
6.0+01	9.5757-01	1.3278+00	2.2854+00	1.4162+01	6.1126+01
7.0+01	9.5155-01	1.2991+00	2.2506+00	1.3980+01	7.1764+01
8.0+01	9.4598-01	1.2694+00	2.2154+00	1.3818+01	8.2500+01
1.0+02	9.3630-01	1.2103+00	2.1466+00	1.3540+01	1.0419+02
1.2+02	9.2907-01	1.1509+00	2.0800+00	1.3306+01	1.2600+02
1.4+02	9.2410-01	1.0918+00	2.0159+00	1.3098+01	1.4779+02
1.6+02	9.2227-01	1.0326+00	1.9549+00	1.2912+01	1.6924+02
1.8+02	9.2227-01	9.7593-01	1.8982+00	1.2749+01	1.9039+02
2.0+02	9.2541-01	9.2119-01	1.8466+00	1.2600+01	2.1083+02
2.5+02	9.4219-01	8.0691-01	1.7491+00	1.2295+01	2.5885+02
3.0+02	9.7377-01	7.0263-01	1.6764+00	1.2044+01	3.0054+02
3.5+02	1.0141+00	6.0770-01	1.6218+00	1.1838+01	3.3670+02
4.0+02	1.0596+00	5.2230-01	1.5819+00	1.1663+01	3.6826+02
5.0+02	1.1633+00	3.8850-01	1.5518+00	1.1373+01	4.1930+02
6.0+02	1.2731+00	2.7140-01	1.5445+00	1.1160+01	4.5976+02
8.0+02	1.4953+00	9.0900-02	1.5862+00	1.0809+01	5.2192+02
1.0+03	1.7079+00	-1.3900-02	1.6940+00	1.0557+01	5.7118+02
1.5+03	2.2416+00	-1.7190-01	2.0697+00	1.0127+01	6.5278+02
2.0+03	2.7797+00	-3.0300-01	2.4767+00	9.8129+00	7.0189+02
2.5+03	3.3004+00	-3.9650-01	2.9039+00	9.5676+00	7.3896+02
3.0+03	3.8167+00	-4.6580-01	3.3509+00	9.3691+00	7.6679+02
4.0+03	4.7752+00	-4.9770-01	4.2775+00	9.0624+00	8.1717+02
5.0+03	5.7294+00	-4.8880-01	5.2406+00	8.8604+00	8.5135+02

Contrails

AEDC-TDR-64-68

T = 290°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0000+00	1.4962+00	2.4962+00	1.8504+01	9.4168+01
2.0+00	9.9943-01	1.4906+00	2.4900+00	1.7809+01	1.8849+00
3.0+00	9.9875-01	1.4876+00	2.4863+00	1.7401+01	2.8292+00
5.0+00	9.9741-01	1.4827+00	2.4801+00	1.6885+01	4.7217+00
7.0+00	9.9589-01	1.4775+00	2.4734+00	1.6542+01	6.6205+00
1.0+01	9.9404-01	1.4699+00	2.4639+00	1.6179+01	9.4754+00
1.5+01	9.9068-01	1.4574+00	2.4481+00	1.5762+01	1.4261+01
2.0+01	9.8773-01	1.4442+00	2.4319+00	1.5462+01	1.9072+01
2.5+01	9.8437-01	1.4318+00	2.4162+00	1.5225+01	2.3921+01
3.0+01	9.8058-01	1.4194+00	2.4000+00	1.5030+01	2.8816+01
4.0+01	9.7595-01	1.3926+00	2.3685+00	1.4719+01	3.8604+01
5.0+01	9.6985-01	1.3671+00	2.3369+00	1.4470+01	4.8559+01
6.0+01	9.6468-01	1.3407+00	2.3054+00	1.4263+01	5.8583+01
7.0+01	9.5997-01	1.3138+00	2.2738+00	1.4084+01	6.8682+01
8.0+01	9.5542-01	1.2869+00	2.2423+00	1.3924+01	7.8867+01
1.0+02	9.4777-01	1.2327+00	2.1805+00	1.3651+01	9.9380+01
1.2+02	9.4196-01	1.1791+00	2.1211+00	1.3420+01	1.1999+02
1.4+02	9.3876-01	1.1251+00	2.0639+00	1.3217+01	1.4047+02
1.6+02	9.3759-01	1.0719+00	2.0095+00	1.3036+01	1.6074+02
1.8+02	9.3818-01	1.0211+00	1.9593+00	1.2877+01	1.8071+02
2.0+02	9.4146-01	9.7264-01	1.9141+00	1.2733+01	2.0009+02
2.5+02	9.5807-01	8.6843-01	1.8265+00	1.2436+01	2.4578+02
3.0+02	9.8815-01	7.7235-01	1.7605+00	1.2188+01	2.8596+02
3.5+02	1.0262+00	6.8540-01	1.7116+00	1.1986+01	3.2124+02
4.0+02	1.0702+00	6.0530-01	1.6755+00	1.1813+01	3.5205+02
5.0+02	1.1695+00	4.8020-01	1.6497+00	1.1527+01	4.0271+02
6.0+02	1.2746+00	3.7100-01	1.6456+00	1.1316+01	4.4337+02
8.0+02	1.4875+00	2.0170-01	1.6892+00	1.0969+01	5.0657+02
1.0+03	1.6953+00	9.9300-02	1.7946+00	1.0719+01	5.5559+02
1.5+03	2.2022+00	-4.8300-02	2.1539+00	1.0286+01	6.4156+02
2.0+03	2.7175+00	-1.7520-01	2.5423+00	9.9669+00	6.9320+02
2.5+03	3.2181+00	-2.6700-01	2.9511+00	9.7179+00	7.3171+02
3.0+03	3.7229+00	-3.4400-01	3.3789+00	9.5146+00	7.5900+02
4.0+03	4.6610+00	-3.9030-01	4.2707+00	9.2055+00	8.0832+02
5.0+03	5.5739+00	-3.7540-01	5.1985+00	9.0011+00	8.4492+02

Contrails

T = 300°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0000+00	1.4965+00	2.4965+00	1.8589+01	9.1022+01
2.0+00	9.9970-01	1.4908+00	2.4905+00	1.7894+01	1.8215+00
3.0+00	9.9901-01	1.4883+00	2.4873+00	1.7486+01	2.7342+00
5.0+00	9.9791-01	1.4837+00	2.4816+00	1.6970+01	4.5620+00
7.0+00	9.9685-01	1.4788+00	2.4756+00	1.6629+01	6.3936+00
1.0+01	9.9506-01	1.4717+00	2.4668+00	1.6265+01	9.1501+00
1.5+01	9.9242-01	1.4600+00	2.4524+00	1.5848+01	1.3762+01
2.0+01	9.8978-01	1.4477+00	2.4375+00	1.5550+01	1.8398+01
2.5+01	9.8713-01	1.4360+00	2.4231+00	1.5314+01	2.3059+01
3.0+01	9.8449-01	1.4241+00	2.4086+00	1.5120+01	2.7745+01
4.0+01	9.7921-01	1.4006+00	2.3798+00	1.4810+01	3.7193+01
5.0+01	9.7514-01	1.3762+00	2.3513+00	1.4564+01	4.6686+01
6.0+01	9.7107-01	1.3517+00	2.3228+00	1.4358+01	5.6257+01
7.0+01	9.6725-01	1.3275+00	2.2947+00	1.4181+01	6.5893+01
8.0+01	9.6359-01	1.3026+00	2.2662+00	1.4024+01	7.5592+01
1.0+02	9.5725-01	1.2533+00	2.2105+00	1.3755+01	9.5116+01
1.2+02	9.5302-01	1.2045+00	2.1575+00	1.3528+01	1.1465+02
1.4+02	9.5074-01	1.1563+00	2.1070+00	1.3330+01	1.3407+02
1.6+02	9.4993-01	1.1081+00	2.0580+00	1.3154+01	1.5336+02
1.8+02	9.5155-01	1.0620+00	2.0135+00	1.2999+01	1.7223+02
2.0+02	9.5481-01	1.0186+00	1.9734+00	1.2858+01	1.9072+02
2.5+02	9.7189-01	9.2251-01	1.8944+00	1.2567+01	2.3421+02
3.0+02	1.0016+00	8.3300-01	1.8346+00	1.2323+01	2.7272+02
3.5+02	1.0376+00	7.5290-01	1.7905+00	1.2125+01	3.0714+02
4.0+02	1.0784+00	6.8000-01	1.7584+00	1.1954+01	3.3771+02
5.0+02	1.1732+00	5.6430-01	1.7375+00	1.1672+01	3.8805+02
6.0+02	1.2736+00	4.6270-01	1.7363+00	1.1464+01	4.2893+02
8.0+02	1.4769+00	3.0560-01	1.7825+00	1.1120+01	4.9318+02
1.0+03	1.6795+00	2.0610-01	1.8856+00	1.0871+01	5.4214+02
1.5+03	2.1654+00	6.4300-02	2.2297+00	1.0436+01	6.3072+02
2.0+03	2.6595+00	-5.9100-02	2.6004+00	1.0112+01	6.8472+02
2.5+03	3.1413+00	-1.4940-01	2.9919+00	9.8598+00	7.2461+02
3.0+03	3.6354+00	-2.3360-01	3.4018+00	9.6530+00	7.5136+02
4.0+03	4.5544+00	-2.9330-01	4.2611+00	9.3402+00	7.9966+02
5.0+03	5.4491+00	-2.9270-01	5.1564+00	9.1346+00	8.3546+02

Contrails

AEDC-TDR-64-68

T = 320°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0000+00	1.4970+00	2.4970+00	1.8750+01	8.5316+01
2.0+00	1.0000+00	1.4920+00	2.4920+00	1.8055+01	1.7071+00
3.0+00	9.9959-01	1.4898+00	2.4894+00	1.7649+01	2.5618+00
5.0+00	9.9883-01	1.4857+00	2.4845+00	1.7133+01	4.2730+00
7.0+00	9.9806-01	1.4811+00	2.4792+00	1.6792+01	5.9867+00
1.0+01	9.9654-01	1.4752+00	2.4717+00	1.6430+01	8.5656+00
1.5+01	9.9444-01	1.4653+00	2.4597+00	1.6014+01	1.2875+01
2.0+01	9.9273-01	1.4546+00	2.4473+00	1.5717+01	1.7197+01
2.5+01	9.9120-01	1.4440+00	2.4352+00	1.5482+01	2.1529+01
3.0+01	9.8930-01	1.4339+00	2.4232+00	1.5290+01	2.5885+01
4.0+01	9.8663-01	1.4129+00	2.3995+00	1.4983+01	3.4606+01
5.0+01	9.8377-01	1.3924+00	2.3762+00	1.4740+01	4.3384+01
6.0+01	9.8106-01	1.3718+00	2.3529+00	1.4538+01	5.2204+01
7.0+01	9.7858-01	1.3513+00	2.3299+00	1.4365+01	6.1059+01
8.0+01	9.7656-01	1.3300+00	2.3066+00	1.4211+01	6.9926+01
1.0+02	9.7290-01	1.2886+00	2.2615+00	1.3950+01	8.7737+01
1.2+02	9.7077-01	1.2478+00	2.2186+00	1.3730+01	1.0552+02
1.4+02	9.7031-01	1.2073+00	2.1776+00	1.3539+01	1.2316+02
1.6+02	9.7107-01	1.1678+00	2.1389+00	1.3371+01	1.4064+02
1.8+02	9.7374-01	1.1298+00	2.1035+00	1.3221+01	1.5779+02
2.0+02	9.7824-01	1.0930+00	2.0712+00	1.3087+01	1.7452+02
2.5+02	9.9501-01	1.0119+00	2.0069+00	1.2805+01	2.1447+02
3.0+02	1.0213+00	9.3630-01	1.9576+00	1.2568+01	2.5073+02
3.5+02	1.0541+00	8.6860-01	1.9227+00	1.2376+01	2.8342+02
4.0+02	1.0918+00	8.0640-01	1.8982+00	1.2211+01	3.1272+02
5.0+02	1.1780+00	7.0780-01	1.8858+00	1.1938+01	3.6230+02
6.0+02	1.2695+00	6.2010-01	1.8896+00	1.1735+01	4.0343+02
8.0+02	1.4578+00	4.8330-01	1.9411+00	1.1399+01	4.6842+02
1.0+03	1.6469+00	3.9230-01	2.0392+00	1.1152+01	5.1830+02
1.5+03	2.1044+00	2.5070-01	2.3551+00	1.0709+01	6.0843+02
2.0+03	2.5542+00	1.4050-01	2.6947+00	1.0378+01	6.6837+02
2.5+03	3.0117+00	4.1800-02	3.0535+00	1.0116+01	7.0856+02
3.0+03	3.4883+00	-5.8000-02	3.4303+00	9.9019+00	7.3411+02
4.0+03	4.3613+00	-1.3040-01	4.2309+00	9.5844+00	7.8288+02
5.0+03	5.2038+00	-1.3760-01	5.0662+00	9.3739+00	8.2016+02

Contrails

T = 340°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0000+00	1.4971+00	2.4971+00	1.8902+01	8.0284+01
2.0+00	1.0000+00	1.4930+00	2.4930+00	1.8207+01	1.6063+00
3.0+00	9.9999-01	1.4909+00	2.4909+00	1.7800+01	2.4102+00
5.0+00	9.9945-01	1.4872+00	2.4866+00	1.7285+01	4.0191+00
7.0+00	9.9888-01	1.4835+00	2.4824+00	1.6946+01	5.6300+00
1.0+01	9.9784-01	1.4782+00	2.4760+00	1.6584+01	8.0512+00
1.5+01	9.9676-01	1.4690+00	2.4658+00	1.6169+01	1.2090+01
2.0+01	9.9533-01	1.4602+00	2.4555+00	1.5873+01	1.6143+01
2.5+01	9.9479-01	1.4504+00	2.4452+00	1.5640+01	2.0190+01
3.0+01	9.9353-01	1.4418+00	2.4353+00	1.5449+01	2.4258+01
4.0+01	9.9174-01	1.4242+00	2.4159+00	1.5145+01	3.2403+01
5.0+01	9.8995-01	1.4068+00	2.3967+00	1.4905+01	4.0577+01
6.0+01	9.8858-01	1.3890+00	2.3776+00	1.4706+01	4.8760+01
7.0+01	9.8733-01	1.3712+00	2.3585+00	1.4536+01	5.6959+01
8.0+01	9.8629-01	1.3531+00	2.3394+00	1.4384+01	6.5164+01
1.0+02	9.8492-01	1.3173+00	2.3022+00	1.4129+01	8.1568+01
1.2+02	9.8471-01	1.2825+00	2.2672+00	1.3914+01	9.7903+01
1.4+02	9.8557-01	1.2487+00	2.2343+00	1.3729+01	1.1412+02
1.6+02	9.8801-01	1.2155+00	2.2035+00	1.3567+01	1.3010+02
1.8+02	9.9138-01	1.1838+00	2.1752+00	1.3422+01	1.4587+02
2.0+02	9.9605-01	1.1530+00	2.1490+00	1.3292+01	1.6131+02
2.5+02	1.0136+00	1.0826+00	2.0962+00	1.3019+01	1.9815+02
3.0+02	1.0377+00	1.0186+00	2.0563+00	1.2788+01	2.3227+02
3.5+02	1.0674+00	9.6090-01	2.0283+00	1.2602+01	2.6342+02
4.0+02	1.1008+00	9.0870-01	2.0095+00	1.2441+01	2.9192+02
5.0+02	1.1787+00	8.2550-01	2.0042+00	1.2174+01	3.4080+02
6.0+02	1.2637+00	7.4760-01	2.0113+00	1.1974+01	3.8144+02
8.0+02	1.4381+00	6.2660-01	2.0647+00	1.1643+01	4.4691+02
1.0+03	1.6146+00	5.4390-01	2.1585+00	1.1398+01	4.9756+02
1.5+03	2.0452+00	4.0390-01	2.4491+00	1.0948+01	5.8922+02
2.0+03	2.4471+00	3.1560-01	2.7627+00	1.0612+01	6.5661+02

Contrails

AEDC-TDR-64-68

T = 360°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0000+00	1.4972+00	2.4972+00	1.9045+01	7.5815-01
2.0+00	1.0000+00	1.4939+00	2.4939+00	1.8350+01	1.5168+00
3.0+00	1.0000+00	1.4922+00	2.4922+00	1.7943+01	2.2754+00
5.0+00	1.0000+00	1.4886+00	2.4886+00	1.7430+01	3.7937+00
7.0+00	9.9961-01	1.4853+00	2.4849+00	1.7092+01	5.3133+00
1.0+01	9.9900-01	1.4805+00	2.4795+00	1.6730+01	7.5951+00
1.5+01	9.9832-01	1.4725+00	2.4708+00	1.6315+01	1.1400+01
2.0+01	9.9764-01	1.4646+00	2.4622+00	1.6020+01	1.5211+01
2.5+01	9.9713-01	1.4564+00	2.4535+00	1.5788+01	1.9023+01
3.0+01	9.9628-01	1.4488+00	2.4451+00	1.5598+01	2.2847+01
4.0+01	9.9628-01	1.4328+00	2.4291+00	1.5296+01	3.0463+01
5.0+01	9.9493-01	1.4184+00	2.4133+00	1.5060+01	3.8131+01
6.0+01	9.9425-01	1.4034+00	2.3976+00	1.4862+01	4.5788+01
7.0+01	9.9391-01	1.3880+00	2.3819+00	1.4695+01	5.3438+01
8.0+01	9.9384-01	1.3724+00	2.3662+00	1.4546+01	6.1076+01
1.0+02	9.9425-01	1.3409+00	2.3351+00	1.4295+01	7.6314+01
1.2+02	9.9547-01	1.3109+00	2.3064+00	1.4084+01	9.1464+01
1.4+02	9.9771-01	1.2819+00	2.2796+00	1.3903+01	1.0647+02
1.6+02	1.0009+00	1.2543+00	2.2552+00	1.3746+01	1.2129+02
1.8+02	1.0046+00	1.2282+00	2.2328+00	1.3606+01	1.3595+02
2.0+02	1.0098+00	1.2023+00	2.2121+00	1.3480+01	1.5027+02
2.5+02	1.0276+00	1.1414+00	2.1690+00	1.3214+01	1.8459+02
3.0+02	1.0502+00	1.0860+00	2.1362+00	1.2988+01	2.1675+02
3.5+02	1.0781+00	1.0354+00	2.1135+00	1.2806+01	2.4632+02
4.0+02	1.1088+00	9.9030-01	2.0991+00	1.2648+01	2.7372+02
5.0+02	1.1793+00	9.1950-01	2.0988+00	1.2386+01	3.2170+02
6.0+02	1.2565+00	8.5170-01	2.1082+00	1.2188+01	3.6230+02
8.0+02	1.4206+00	7.3940-01	2.1600+00	1.1860+01	4.2730+02
1.0+03	1.5859+00	6.6330-01	2.2492+00	1.1615+01	4.7843+02
1.5+03	1.9977+00	5.2130-01	2.5190+00	1.1160+01	5.6973+02
2.0+03	2.3518+00	4.5770-01	2.8095+00	1.0817+01	6.4526+02

Contrails

T = 380°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0000+00	1.4980+00	2.4980+00	1.9181+01	7.1819+01
2.0+00	1.0000+00	1.4947+00	2.4947+00	1.8486+01	1.4367+00
3.0+00	1.0000+00	1.4931+00	2.4931+00	1.8079+01	2.1552+00
5.0+00	1.0000+00	1.4900+00	2.4900+00	1.7566+01	3.5928+00
7.0+00	1.0000+00	1.4868+00	2.4868+00	1.7223+01	5.0304+00
1.0+01	1.0000+00	1.4824+00	2.4824+00	1.6867+01	7.1879+00
1.5+01	9.9971-01	1.4754+00	2.4751+00	1.6452+01	1.0785+01
2.0+01	9.9907-01	1.4687+00	2.4678+00	1.6158+01	1.4390+01
2.5+01	9.9923-01	1.4613+00	2.4605+00	1.5927+01	1.7984+01
3.0+01	9.9875-01	1.4548+00	2.4535+00	1.5739+01	2.1592+01
4.0+01	9.9875-01	1.4415+00	2.4402+00	1.5439+01	2.8779+01
5.0+01	9.9875-01	1.4286+00	2.4273+00	1.5206+01	3.5986+01
6.0+01	9.9875-01	1.4156+00	2.4143+00	1.5009+01	4.3183+01
7.0+01	9.9913-01	1.4022+00	2.4013+00	1.4844+01	5.0361+01
8.0+01	9.9984-01	1.3885+00	2.3883+00	1.4697+01	5.7515+01
1.0+02	1.0013+00	1.3610+00	2.3623+00	1.4449+01	7.1787+01
1.2+02	1.0039+00	1.3350+00	2.3389+00	1.4241+01	8.5919+01
1.4+02	1.0068+00	1.3106+00	2.3174+00	1.4066+01	9.9957+01
1.6+02	1.0109+00	1.2868+00	2.2977+00	1.3912+01	1.1377+02
1.8+02	1.0153+00	1.2647+00	2.2800+00	1.3776+01	1.2744+02
2.0+02	1.0209+00	1.2429+00	2.2638+00	1.3652+01	1.4082+02
2.5+02	1.0394+00	1.1893+00	2.2287+00	1.3392+01	1.7290+02
3.0+02	1.0604+00	1.1414+00	2.2018+00	1.3171+01	2.0336+02
3.5+02	1.0854+00	1.0980+00	2.1834+00	1.2993+01	2.3178+02
4.0+02	1.1134+00	1.0586+00	2.1720+00	1.2837+01	2.5825+02
5.0+02	1.1782+00	9.9700-01	2.1752+00	1.2578+01	3.0505+02
6.0+02	1.2501+00	9.3580-01	2.1859+00	1.2382+01	3.4500+02
8.0+02	1.4023+00	8.3270-01	2.2350+00	1.2054+01	4.1008+02
1.0+03	1.5570+00	7.6230-01	2.3193+00	1.1808+01	4.6166+02
1.5+03	1.9455+00	6.2490-01	2.5704+00	1.1349+01	5.5422+02
2.0+03	2.2665+00	5.7310-01	2.8396+00	1.1000+01	6.3429+02

T = 400°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0002+00	1.4981+00	2.4983+00	1.9310+01	6.8224-01
2.0+00	1.0003+00	1.4955+00	2.4958+00	1.8614+01	1.3646+00
3.0+00	1.0004+00	1.4935+00	2.4939+00	1.8208+01	2.0470+00
5.0+00	1.0005+00	1.4907+00	2.4912+00	1.7694+01	3.4121+00
7.0+00	1.0006+00	1.4879+00	2.4885+00	1.7356+01	4.7771+00
1.0+01	1.0007+00	1.4842+00	2.4849+00	1.6995+01	6.8243+00
1.5+01	1.0009+00	1.4777+00	2.4786+00	1.6581+01	1.0238+01
2.0+01	1.0010+00	1.4716+00	2.4726+00	1.6288+01	1.3644+01
2.5+01	1.0011+00	1.4654+00	2.4665+00	1.6059+01	1.7053+01
3.0+01	1.0012+00	1.4596+00	2.4608+00	1.5871+01	2.0467+01
4.0+01	1.0014+00	1.4483+00	2.4497+00	1.5573+01	2.7272+01
5.0+01	1.0018+00	1.4371+00	2.4389+00	1.5342+01	3.4085+01
6.0+01	1.0024+00	1.4259+00	2.4283+00	1.5146+01	4.0873+01
7.0+01	1.0032+00	1.4143+00	2.4175+00	1.4983+01	4.7649+01
8.0+01	1.0043+00	1.4027+00	2.4070+00	1.4839+01	5.4398+01
1.0+02	1.0068+00	1.3788+00	2.3856+00	1.4594+01	6.7891+01
1.2+02	1.0101+00	1.3563+00	2.3664+00	1.4389+01	8.1125+01
1.4+02	1.0136+00	1.3353+00	2.3489+00	1.4217+01	9.4315+01
1.6+02	1.0184+00	1.3149+00	2.3333+00	1.4067+01	1.0729+02
1.8+02	1.0238+00	1.2956+00	2.3194+00	1.3935+01	1.2006+02
2.0+02	1.0296+00	1.2772+00	2.3068+00	1.3813+01	1.3264+02
2.5+02	1.0484+00	1.2295+00	2.2779+00	1.3557+01	1.6284+02
3.0+02	1.0687+00	1.1876+00	2.2563+00	1.3339+01	1.9170+02
3.5+02	1.0920+00	1.1492+00	2.2412+00	1.3164+01	2.1887+02
4.0+02	1.1175+00	1.1150+00	2.2325+00	1.3010+01	2.4444+02
5.0+02	1.1772+00	1.0601+00	2.2373+00	1.2754+01	2.9003+02
6.0+02	1.2443+00	1.0041+00	2.2484+00	1.2557+01	3.2927+02
8.0+02	1.3859+00	9.0890-01	2.2948+00	1.2229+01	3.9420+02
1.0+03	1.5341+00	8.4040-01	2.3745+00	1.1984+01	4.4514+02
1.5+03	1.9031+00	7.0540-01	2.6085+00	1.1520+01	5.3823+02
2.0+03	2.1837+00	6.7390-01	2.8576+00	1.1164+01	6.2543+02

Contrails

T = 450°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0006+00	1.4979+00	2.4985+00	1.9604+01	6.0638-01
2.0+00	1.0007+00	1.4963+00	2.4970+00	1.8909+01	1.2127+00
3.0+00	1.0010+00	1.4947+00	2.4957+00	1.8504+01	1.8189+00
5.0+00	1.0013+00	1.4928+00	2.4941+00	1.7991+01	3.0311+00
7.0+00	1.0016+00	1.4909+00	2.4925+00	1.7655+01	4.2422+00
1.0+01	1.0020+00	1.4881+00	2.4901+00	1.7295+01	6.0580+00
1.5+01	1.0025+00	1.4836+00	2.4861+00	1.6881+01	9.0833+00
2.0+01	1.0031+00	1.4793+00	2.4824+00	1.6590+01	1.2103+01
2.5+01	1.0037+00	1.4749+00	2.4786+00	1.6362+01	1.5118+01
3.0+01	1.0044+00	1.4707+00	2.4751+00	1.6176+01	1.8130+01
4.0+01	1.0056+00	1.4629+00	2.4685+00	1.5881+01	2.4154+01
5.0+01	1.0071+00	1.4547+00	2.4618+00	1.5653+01	3.0135+01
6.0+01	1.0088+00	1.4468+00	2.4556+00	1.5461+01	3.6102+01
7.0+01	1.0105+00	1.4387+00	2.4492+00	1.5302+01	4.2048+01
8.0+01	1.0124+00	1.4307+00	2.4431+00	1.5161+01	4.7966+01
1.0+02	1.0166+00	1.4142+00	2.4308+00	1.4922+01	5.9708+01
1.2+02	1.0208+00	1.3987+00	2.4195+00	1.4725+01	7.1352+01
1.4+02	1.0259+00	1.3840+00	2.4099+00	1.4560+01	8.2835+01
1.6+02	1.0315+00	1.3701+00	2.4016+00	1.4416+01	9.4156+01
1.8+02	1.0369+00	1.3575+00	2.3944+00	1.4288+01	1.0537+02
2.0+02	1.0426+00	1.3451+00	2.3877+00	1.4172+01	1.1643+02
2.5+02	1.0593+00	1.3113+00	2.3706+00	1.3923+01	1.4325+02
3.0+02	1.0768+00	1.2812+00	2.3580+00	1.3713+01	1.6911+02
3.5+02	1.0959+00	1.2525+00	2.3484+00	1.3540+01	1.9386+02
4.0+02	1.1169+00	1.2267+00	2.3436+00	1.3390+01	2.1738+02
5.0+02	1.1671+00	1.1824+00	2.3495+00	1.3136+01	2.6007+02
6.0+02	1.2248+00	1.1348+00	2.3596+00	1.2939+01	2.9735+02
8.0+02	1.3512+00	1.0493+00	2.4005+00	1.2610+01	3.5940+02
1.0+03	1.4829+00	9.8800-01	2.4709+00	1.2365+01	4.0933+02
1.5+03	1.8096+00	8.5780-01	2.6674+00	1.1889+01	5.0316+02
2.0+03	2.0170+00	8.5500-01	2.8720+00	1.1515+01	6.0189+02

Contrails

AEDC-TDR-64-68

T = 500°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0008+00	1.4982+00	2.4990+00	1.9868+01	5.4569+01
2.0+00	1.0012+00	1.4965+00	2.4977+00	1.9172+01	1.0913+00
3.0+00	1.0014+00	1.4958+00	2.4972+00	1.8767+01	1.6366+00
5.0+00	1.0019+00	1.4943+00	2.4962+00	1.8256+01	2.7269+00
7.0+00	1.0022+00	1.4931+00	2.4953+00	1.7919+01	3.8157+00
1.0+01	1.0027+00	1.4914+00	2.4941+00	1.7561+01	5.4478+00
1.5+01	1.0035+00	1.4884+00	2.4919+00	1.7148+01	8.1657+00
2.0+01	1.0043+00	1.4854+00	2.4897+00	1.6858+01	1.0880+01
2.5+01	1.0052+00	1.4826+00	2.4878+00	1.6631+01	1.3586+01
3.0+01	1.0065+00	1.4796+00	2.4861+00	1.6448+01	1.6284+01
4.0+01	1.0084+00	1.4741+00	2.4825+00	1.6155+01	2.1675+01
5.0+01	1.0106+00	1.4685+00	2.4791+00	1.5931+01	2.7028+01
6.0+01	1.0127+00	1.4633+00	2.4760+00	1.5741+01	3.2365+01
7.0+01	1.0150+00	1.4579+00	2.4729+00	1.5585+01	3.7675+01
8.0+01	1.0175+00	1.4523+00	2.4698+00	1.5446+01	4.2951+01
1.0+02	1.0226+00	1.4416+00	2.4642+00	1.5213+01	5.3425+01
1.2+02	1.0277+00	1.4315+00	2.4592+00	1.5021+01	6.3790+01
1.4+02	1.0326+00	1.4222+00	2.4548+00	1.4859+01	7.4067+01
1.6+02	1.0380+00	1.4130+00	2.4510+00	1.4720+01	8.4206+01
1.8+02	1.0435+00	1.4039+00	2.4474+00	1.4597+01	9.4236+01
2.0+02	1.0487+00	1.3951+00	2.4438+00	1.4484+01	1.0419+02
2.5+02	1.0632+00	1.3719+00	2.4351+00	1.4240+01	1.2846+02
3.0+02	1.0782+00	1.3494+00	2.4276+00	1.4036+01	1.5201+02
3.5+02	1.0939+00	1.3270+00	2.4209+00	1.3864+01	1.7479+02
4.0+02	1.1116+00	1.3059+00	2.4175+00	1.3715+01	1.9658+02
5.0+02	1.1565+00	1.2675+00	2.4240+00	1.3462+01	2.3619+02
6.0+02	1.2077+00	1.2260+00	2.4337+00	1.3265+01	2.7140+02
8.0+02	1.3214+00	1.1491+00	2.4705+00	1.2936+01	3.3073+02
1.0+03	1.4371+00	1.0952+00	2.5323+00	1.2690+01	3.8014+02
1.5+03	1.7311+00	9.6680-01	2.6979+00	1.2201+01	4.7337+02
2.0+03	1.8738+00	9.9000-01	2.8638+00	1.1808+01	5.8308+02

Contrails

T = 550°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ_0)
1.0+00	1.0010+00	1.4983+00	2.4993+00	2.0107+01	4.9607-01
2.0+00	1.0013+00	1.4973+00	2.4986+00	1.9412+01	9.9195-01
3.0+00	1.0015+00	1.4969+00	2.4984+00	1.9006+01	1.4876+00
5.0+00	1.0020+00	1.4959+00	2.4979+00	1.8496+01	2.4782+00
7.0+00	1.0025+00	1.4950+00	2.4975+00	1.8160+01	3.4676+00
1.0+01	1.0032+00	1.4939+00	2.4971+00	1.7803+01	4.9503+00
1.5+01	1.0041+00	1.4921+00	2.4962+00	1.7390+01	7.4190+00
2.0+01	1.0052+00	1.4901+00	2.4953+00	1.7101+01	9.8810+00
2.5+01	1.0064+00	1.4883+00	2.4947+00	1.6875+01	1.2336+01
3.0+01	1.0074+00	1.4868+00	2.4942+00	1.6694+01	1.4789+01
4.0+01	1.0097+00	1.4837+00	2.4934+00	1.6403+01	1.9675+01
5.0+01	1.0127+00	1.4798+00	2.4925+00	1.6181+01	2.4521+01
6.0+01	1.0152+00	1.4765+00	2.4917+00	1.5992+01	2.9353+01
7.0+01	1.0178+00	1.4734+00	2.4912+00	1.5838+01	3.4158+01
8.0+01	1.0205+00	1.4702+00	2.4907+00	1.5703+01	3.8933+01
1.0+02	1.0259+00	1.4639+00	2.4898+00	1.5474+01	4.8412+01

T = 600°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4984+00	2.4995+00	2.0325+01	4.5472+01
2.0+00	1.0014+00	1.4977+00	2.4991+00	1.9629+01	9.0925+01
3.0+00	1.0016+00	1.4974+00	2.4990+00	1.9224+01	1.3635+00
5.0+00	1.0021+00	1.4964+00	2.4985+00	1.8714+01	2.2715+00
7.0+00	1.0027+00	1.4956+00	2.4983+00	1.8377+01	3.1782+00
1.0+01	1.0034+00	1.4944+00	2.4978+00	1.8020+01	4.5371+00
1.5+01	1.0046+00	1.4922+00	2.4968+00	1.7609+01	6.7973+00
2.0+01	1.0056+00	1.4903+00	2.4959+00	1.7321+01	9.0539+00
2.5+01	1.0070+00	1.4883+00	2.4953+00	1.7097+01	1.1303+01
3.0+01	1.0083+00	1.4865+00	2.4948+00	1.6917+01	1.3545+01
4.0+01	1.0109+00	1.4831+00	2.4940+00	1.6629+01	1.8013+01
5.0+01	1.0137+00	1.4794+00	2.4931+00	1.6410+01	2.2456+01
6.0+01	1.0163+00	1.4760+00	2.4923+00	1.6222+01	2.6876+01
7.0+01	1.0191+00	1.4728+00	2.4919+00	1.6071+01	3.1272+01
8.0+01	1.0218+00	1.4695+00	2.4913+00	1.5937+01	3.5642+01
1.0+02	1.0274+00	1.4630+00	2.4904+00	1.5712+01	4.4311+01

Contrails

T = 650°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4985+00	2.4998+00	2.0560+01	4.1973-01
2.0+00	1.0016+00	1.4980+00	2.4996+00	1.9854+01	8.3913-01
3.0+00	1.0018+00	1.4977+00	2.4995+00	1.9452+01	1.2584+00
5.0+00	1.0023+00	1.4969+00	2.4992+00	1.8946+01	2.0963+00
7.0+00	1.0028+00	1.4962+00	2.4990+00	1.8611+01	2.9333+00
1.0+01	1.0036+00	1.4950+00	2.4986+00	1.8253+01	4.1871+00
1.5+01	1.0050+00	1.4924+00	2.4974+00	1.7833+01	6.2654+00
2.0+01	1.0064+00	1.4902+00	2.4966+00	1.7540+01	8.3395+00
2.5+01	1.0079+00	1.4880+00	2.4959+00	1.7316+01	1.0410+01
3.0+01	1.0092+00	1.4862+00	2.4954+00	1.7136+01	1.2479+01
4.0+01	1.0120+00	1.4826+00	2.4946+00	1.6855+01	1.6610+01
5.0+01	1.0154+00	1.4783+00	2.4937+00	1.6625+01	2.0692+01
6.0+01	1.0183+00	1.4746+00	2.4929+00	1.6439+01	2.4761+01
7.0+01	1.0207+00	1.4720+00	2.4927+00	1.6283+01	2.8820+01
8.0+01	1.0242+00	1.4678+00	2.4920+00	1.6145+01	3.2826+01
1.0+02	1.0300+00	1.4610+00	2.4910+00	1.5915+01	4.0800+01

$T = 700^{\circ}\text{K}$

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ_0)
1.0+00	1.0013+00	1.4986+00	2.4999+00	2.0745+01	3.8975-01
2.0+00	1.0016+00	1.4982+00	2.4998+00	2.0039+01	7.7917-01
3.0+00	1.0018+00	1.4979+00	2.4997+00	1.9638+01	1.1685+00
5.0+00	1.0024+00	1.4972+00	2.4996+00	1.9132+01	1.9465+00
7.0+00	1.0029+00	1.4966+00	2.4995+00	1.8797+01	2.7237+00
1.0+01	1.0037+00	1.4956+00	2.4993+00	1.8439+01	3.8877+00
1.5+01	1.0052+00	1.4936+00	2.4988+00	1.8019+01	5.8172+00
2.0+01	1.0066+00	1.4918+00	2.4984+00	1.7727+01	7.7426+00
2.5+01	1.0081+00	1.4900+00	2.4981+00	1.7504+01	9.6651+00
3.0+01	1.0095+00	1.4883+00	2.4978+00	1.7323+01	1.1585+01
4.0+01	1.0122+00	1.4853+00	2.4975+00	1.7043+01	1.5420+01
5.0+01	1.0158+00	1.4812+00	2.4970+00	1.6813+01	1.9208+01
6.0+01	1.0187+00	1.4779+00	2.4966+00	1.6628+01	2.2984+01
7.0+01	1.0211+00	1.4752+00	2.4963+00	1.6473+01	2.6750+01
8.0+01	1.0245+00	1.4715+00	2.4960+00	1.6335+01	3.0471+01
1.0+02	1.0301+00	1.4654+00	2.4955+00	1.6107+01	3.7880+01

Contrails

T = 750°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4987+00	2.5000+00	2.0918+01	3.6376-01
2.0+00	1.0016+00	1.4984+00	2.5000+00	2.0212+01	7.2721-01
3.0+00	1.0018+00	1.4981+00	2.4999+00	1.9810+01	1.0905+00
5.0+00	1.0024+00	1.4975+00	2.4999+00	1.9305+01	1.8167+00
7.0+00	1.0029+00	1.4970+00	2.4999+00	1.8970+01	2.5421+00
1.0+01	1.0037+00	1.4962+00	2.4999+00	1.8612+01	3.6285+00
1.5+01	1.0052+00	1.4946+00	2.4998+00	1.8193+01	5.4291+00
2.0+01	1.0066+00	1.4931+00	2.4997+00	1.7901+01	7.2259+00
2.5+01	1.0081+00	1.4916+00	2.4997+00	1.7678+01	9.0199+00
3.0+01	1.0095+00	1.4901+00	2.4996+00	1.7498+01	1.0812+01
4.0+01	1.0122+00	1.4874+00	2.4996+00	1.7217+01	1.4390+01
5.0+01	1.0158+00	1.4839+00	2.4997+00	1.6989+01	1.7927+01
6.0+01	1.0186+00	1.4813+00	2.4999+00	1.6804+01	2.1453+01
7.0+01	1.0210+00	1.4790+00	2.5000+00	1.6649+01	2.4970+01
8.0+01	1.0244+00	1.4758+00	2.5002+00	1.6512+01	2.8441+01
1.0+02	1.0300+00	1.4707+00	2.5007+00	1.6285+01	3.5350+01

T = 800°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4987+00	2.5000+00	2.1079+01	3.4103-01
2.0+00	1.0016+00	1.4985+00	2.5001+00	2.0373+01	6.8178-01
3.0+00	1.0018+00	1.4983+00	2.5001+00	1.9972+01	1.0224+00
5.0+00	1.0024+00	1.4977+00	2.5001+00	1.9466+01	1.7032+00
7.0+00	1.0029+00	1.4973+00	2.5002+00	1.9131+01	2.3832+00
1.0+01	1.0037+00	1.4966+00	2.5003+00	1.8774+01	3.4017+00
1.5+01	1.0052+00	1.4954+00	2.5006+00	1.8355+01	5.0897+00
2.0+01	1.0066+00	1.4943+00	2.5009+00	1.8064+01	6.7741+00
2.5+01	1.0081+00	1.4930+00	2.5011+00	1.7841+01	8.4559+00
3.0+01	1.0095+00	1.4917+00	2.5012+00	1.7661+01	1.0136+01
4.0+01	1.0122+00	1.4893+00	2.5015+00	1.7380+01	1.3490+01
5.0+01	1.0158+00	1.4862+00	2.5020+00	1.7152+01	1.6806+01
6.0+01	1.0186+00	1.4839+00	2.5025+00	1.6968+01	2.0112+01
7.0+01	1.0210+00	1.4818+00	2.5028+00	1.6813+01	2.3410+01
8.0+01	1.0242+00	1.4793+00	2.5035+00	1.6676+01	2.6669+01
1.0+02	1.0297+00	1.4748+00	2.5045+00	1.6450+01	3.3160+01

Contrails

T = 850°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4987+00	2.5000+00	2.1230+01	3.2097+01
2.0+00	1.0016+00	1.4985+00	2.5001+00	2.0525+01	6.4167+01
3.0+00	1.0019+00	1.4983+00	2.5002+00	2.0124+01	9.6227+01
5.0+00	1.0024+00	1.4979+00	2.5003+00	1.9618+01	1.6030+00
7.0+00	1.0029+00	1.4975+00	2.5004+00	1.9283+01	2.2430+00
1.0+01	1.0037+00	1.4969+00	2.5006+00	1.8925+01	3.2017+00
1.5+01	1.0051+00	1.4961+00	2.5012+00	1.8507+01	4.7908+00
2.0+01	1.0065+00	1.4951+00	2.5016+00	1.8216+01	6.3766+00
2.5+01	1.0079+00	1.4940+00	2.5019+00	1.7993+01	7.9601+00
3.0+01	1.0093+00	1.4929+00	2.5022+00	1.7814+01	9.5416+00
4.0+01	1.0121+00	1.4905+00	2.5026+00	1.7533+01	1.2700+01
5.0+01	1.0155+00	1.4880+00	2.5035+00	1.7305+01	1.5822+01
6.0+01	1.0183+00	1.4858+00	2.5041+00	1.7121+01	1.8935+01
7.0+01	1.0206+00	1.4841+00	2.5047+00	1.6967+01	2.2040+01
8.0+01	1.0239+00	1.4817+00	2.5056+00	1.6831+01	2.5109+01
1.0+02	1.0293+00	1.4778+00	2.5071+00	1.6605+01	3.1220+01

Contrails

AEDC-TDR-64-68

T = 900°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4988+00	2.5001+00	2.1373+01	3.0314-01
2.0+00	1.0016+00	1.4986+00	2.5002+00	2.0668+01	6.0604-01
3.0+00	1.0018+00	1.4985+00	2.5003+00	2.0267+01	9.0885-01
5.0+00	1.0023+00	1.4981+00	2.5004+00	1.9761+01	1.5140+00
7.0+00	1.0028+00	1.4978+00	2.5006+00	1.9426+01	2.1185+00
1.0+01	1.0036+00	1.4972+00	2.5008+00	1.9069+01	3.0239+00
1.5+01	1.0049+00	1.4967+00	2.5016+00	1.8651+01	4.5253+00
2.0+01	1.0062+00	1.4960+00	2.5022+00	1.8360+01	6.0239+00
2.5+01	1.0076+00	1.4951+00	2.5027+00	1.8137+01	7.5202+00
3.0+01	1.0090+00	1.4941+00	2.5031+00	1.7957+01	9.0148+00
4.0+01	1.0117+00	1.4920+00	2.5037+00	1.7677+01	1.2000+01
5.0+01	1.0151+00	1.4897+00	2.5048+00	1.7450+01	1.4949+01
6.0+01	1.0180+00	1.4876+00	2.5056+00	1.7266+01	1.7888+01
7.0+01	1.0204+00	1.4860+00	2.5064+00	1.7112+01	2.0820+01
8.0+01	1.0235+00	1.4840+00	2.5075+00	1.6976+01	2.3721+01
1.0+02	1.0288+00	1.4806+00	2.5094+00	1.6750+01	2.9500+01

Contrails

AEDC-TDR-64-68

T = 950°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4988+00	2.5001+00	2.1509+01	2.8718-01
2.0+00	1.0016+00	1.4986+00	2.5002+00	2.0804+01	5.7413-01
3.0+00	1.0018+00	1.4985+00	2.5003+00	2.0402+01	8.6099-01
5.0+00	1.0023+00	1.4982+00	2.5005+00	1.9896+01	1.4343+00
7.0+00	1.0028+00	1.4979+00	2.5007+00	1.9562+01	2.0071+00
1.0+01	1.0036+00	1.4973+00	2.5009+00	1.9204+01	2.8649+00
1.5+01	1.0048+00	1.4970+00	2.5018+00	1.8787+01	4.2875+00
2.0+01	1.0061+00	1.4964+00	2.5025+00	1.8496+01	5.7074+00
2.5+01	1.0074+00	1.4957+00	2.5031+00	1.8273+01	7.1252+00
3.0+01	1.0088+00	1.4948+00	2.5036+00	1.8093+01	8.5414+00
4.0+01	1.0115+00	1.4928+00	2.5043+00	1.7813+01	1.1370+01
5.0+01	1.0147+00	1.4909+00	2.5056+00	1.7586+01	1.4168+01
6.0+01	1.0174+00	1.4893+00	2.5067+00	1.7403+01	1.6957+01
7.0+01	1.0196+00	1.4880+00	2.5076+00	1.7249+01	1.9740+01
8.0+01	1.0227+00	1.4862+00	2.5089+00	1.7113+01	2.2491+01
1.0+02	1.0280+00	1.4831+00	2.5111+00	1.6888+01	2.7970+01

T = 1000°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4988+00	2.5001+00	2.1637+01	2.7283-01
2.0+00	1.0016+00	1.4987+00	2.5003+00	2.0932+01	5.4545-01
3.0+00	1.0018+00	1.4986+00	2.5004+00	2.0530+01	8.1800-01
5.0+00	1.0023+00	1.4983+00	2.5006+00	2.0025+01	1.3627+00
7.0+00	1.0028+00	1.4980+00	2.5008+00	1.9690+01	1.9068+00
1.0+01	1.0035+00	1.4977+00	2.5012+00	1.9333+01	2.7219+00
1.5+01	1.0047+00	1.4975+00	2.5022+00	1.8915+01	4.0732+00
2.0+01	1.0060+00	1.4970+00	2.5030+00	1.8625+01	5.4219+00
2.5+01	1.0073+00	1.4963+00	2.5036+00	1.8402+01	6.7685+00
3.0+01	1.0086+00	1.4955+00	2.5041+00	1.8222+01	8.1136+00
4.0+01	1.0112+00	1.4937+00	2.5049+00	1.7942+01	1.0800+01
5.0+01	1.0143+00	1.4921+00	2.5064+00	1.7715+01	1.3460+01
6.0+01	1.0171+00	1.4905+00	2.5076+00	1.7532+01	1.6113+01
7.0+01	1.0192+00	1.4895+00	2.5087+00	1.7379+01	1.8760+01
8.0+01	1.0222+00	1.4879+00	2.5101+00	1.7243+01	2.1377+01
1.0+02	1.0273+00	1.4852+00	2.5125+00	1.7018+01	2.6590+01

Contrails

AEDC-TDR-64-68

T = 1100°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0013+00	1.4988+00	2.5001+00	2.1875+01	2.4803-01
2.0+00	1.0016+00	1.4987+00	2.5003+00	2.1170+01	4.9587-01
3.0+00	1.0018+00	1.4987+00	2.5005+00	2.0769+01	7.4364-01
5.0+00	1.0022+00	1.4985+00	2.5007+00	2.0263+01	1.2388+00
7.0+00	1.0027+00	1.4983+00	2.5010+00	1.9929+01	1.7336+00
1.0+01	1.0034+00	1.4980+00	2.5014+00	1.9572+01	2.4747+00
1.5+01	1.0046+00	1.4980+00	2.5026+00	1.9154+01	3.7039+00
2.0+01	1.0059+00	1.4976+00	2.5035+00	1.8864+01	4.9309+00
2.5+01	1.0072+00	1.4970+00	2.5042+00	1.8642+01	6.1562+00
3.0+01	1.0084+00	1.4963+00	2.5047+00	1.8462+01	7.3802+00
4.0+01	1.0110+00	1.4946+00	2.5056+00	1.8182+01	9.8250+00
5.0+01	1.0139+00	1.4934+00	2.5073+00	1.7955+01	1.2246+01
6.0+01	1.0163+00	1.4924+00	2.5087+00	1.7772+01	1.4661+01
7.0+01	1.0183+00	1.4915+00	2.5098+00	1.7619+01	1.7070+01
8.0+01	1.0212+00	1.4903+00	2.5115+00	1.7483+01	1.9453+01
1.0+02	1.0261+00	1.4882+00	2.5143+00	1.7259+01	2.4200+01

Contrails

AEDC-TDR-64-68

T = 1200°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.2093+01	2.2736-01
2.0+00	1.0015+00	1.4989+00	2.5004+00	2.1388+01	4.5456-01
3.0+00	1.0017+00	1.4988+00	2.5005+00	2.0986+01	6.8169-01
5.0+00	1.0022+00	1.4986+00	2.5008+00	2.0481+01	1.1357+00
7.0+00	1.0026+00	1.4984+00	2.5010+00	2.0146+01	1.5893+00
1.0+01	1.0033+00	1.4982+00	2.5015+00	1.9789+01	2.2688+00
1.5+01	1.0045+00	1.4982+00	2.5027+00	1.9372+01	3.3961+00
2.0+01	1.0057+00	1.4981+00	2.5038+00	1.9082+01	4.5215+00
2.5+01	1.0070+00	1.4975+00	2.5045+00	1.8860+01	5.6454+00
3.0+01	1.0082+00	1.4969+00	2.5051+00	1.8680+01	6.7682+00
4.0+01	1.0104+00	1.4956+00	2.5060+00	1.8400+01	9.0110+00
5.0+01	1.0132+00	1.4946+00	2.5078+00	1.8174+01	1.1233+01
6.0+01	1.0155+00	1.4938+00	2.5093+00	1.7991+01	1.3449+01
7.0+01	1.0175+00	1.4931+00	2.5106+00	1.7838+01	1.5660+01
8.0+01	1.0202+00	1.4921+00	2.5123+00	1.7703+01	1.7849+01
1.0+02	1.0249+00	1.4902+00	2.5151+00	1.7479+01	2.2210+01

Contrails

T = 1300°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.2293+01	2.0987-01
2.0+00	1.0015+00	1.4989+00	2.5004+00	2.1588+01	4.1960-01
3.0+00	1.0017+00	1.4988+00	2.5005+00	2.1187+01	6.2928-01
5.0+00	1.0021+00	1.4987+00	2.5008+00	2.0681+01	1.0484+00
7.0+00	1.0025+00	1.4986+00	2.5011+00	2.0346+01	1.4671+00
1.0+01	1.0032+00	1.4984+00	2.5016+00	1.9990+01	2.0945+00
1.5+01	1.0044+00	1.4984+00	2.5028+00	1.9573+01	3.1356+00
2.0+01	1.0055+00	1.4984+00	2.5039+00	1.9283+01	4.1750+00
2.5+01	1.0066+00	1.4980+00	2.5046+00	1.9061+01	5.2131+00
3.0+01	1.0078+00	1.4974+00	2.5052+00	1.8881+01	6.2502+00
4.0+01	1.0099+00	1.4962+00	2.5061+00	1.8601+01	8.3220+00
5.0+01	1.0125+00	1.4956+00	2.5081+00	1.8375+01	1.0376+01
6.0+01	1.0146+00	1.4950+00	2.5096+00	1.8192+01	1.2425+01
7.0+01	1.0165+00	1.4945+00	2.5110+00	1.8039+01	1.4470+01
8.0+01	1.0191+00	1.4936+00	2.5127+00	1.7904+01	1.6495+01
1.0+02	1.0235+00	1.4921+00	2.5156+00	1.7681+01	2.0530+01

Contrails

AEDC-TDR-64-68

T = 1400°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.2478+01	1.9489-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.1774+01	3.8965-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.1372+01	5.8436-01
5.0+00	1.0020+00	1.4988+00	2.5008+00	2.0867+01	9.7357-01
7.0+00	1.0024+00	1.4987+00	2.5011+00	2.0532+01	1.3625+00
1.0+01	1.0030+00	1.4986+00	2.5016+00	2.0175+01	1.9451+00
1.5+01	1.0042+00	1.4986+00	2.5028+00	1.9759+01	2.9122+00
2.0+01	1.0053+00	1.4986+00	2.5039+00	1.9469+01	3.8778+00
2.5+01	1.0064+00	1.4983+00	2.5047+00	1.9246+01	4.8423+00
3.0+01	1.0076+00	1.4977+00	2.5053+00	1.9067+01	5.8059+00
4.0+01	1.0095+00	1.4967+00	2.5062+00	1.8787+01	7.7310+00
5.0+01	1.0121+00	1.4961+00	2.5082+00	1.8561+01	9.6383+00
6.0+01	1.0143+00	1.4954+00	2.5097+00	1.8379+01	1.1541+01
7.0+01	1.0162+00	1.4949+00	2.5111+00	1.8226+01	1.3440+01
8.0+01	1.0184+00	1.4944+00	2.5128+00	1.8091+01	1.5327+01
1.0+02	1.0220+00	1.4938+00	2.5158+00	1.7867+01	1.9090+01

Contrails

AEDC-TDR-64-68

T = 1500°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.2651+01	1.8189-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.1946+01	3.6368-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.1545+01	5.4542-01
5.0+00	1.0020+00	1.4988+00	2.5008+00	2.1039+01	9.0870-01
7.0+00	1.0023+00	1.4988+00	2.5011+00	2.0704+01	1.2717+00
1.0+01	1.0029+00	1.4987+00	2.5016+00	2.0347+01	1.8156+00
1.5+01	1.0041+00	1.4987+00	2.5028+00	1.9931+01	2.7186+00
2.0+01	1.0052+00	1.4987+00	2.5039+00	1.9641+01	3.6203+00
2.5+01	1.0060+00	1.4987+00	2.5047+00	1.9419+01	4.5211+00
3.0+01	1.0071+00	1.4982+00	2.5053+00	1.9240+01	5.4210+00
4.0+01	1.0090+00	1.4972+00	2.5062+00	1.8960+01	7.2190+00
5.0+01	1.0113+00	1.4968+00	2.5081+00	1.8734+01	9.0028+00
6.0+01	1.0133+00	1.4963+00	2.5096+00	1.8552+01	1.0783+01
7.0+01	1.0149+00	1.4960+00	2.5109+00	1.8399+01	1.2560+01
8.0+01	1.0173+00	1.4954+00	2.5127+00	1.8264+01	1.4320+01
1.0+02	1.0213+00	1.4944+00	2.5157+00	1.8041+01	1.7830+01

Contrails

AEDC-TDR-64-68

T = 1600°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.2812+01	1.7053-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.2108+01	3.4096-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.1706+01	5.1135-01
5.0+00	1.0020+00	1.4988+00	2.5008+00	2.1200+01	8.5195-01
7.0+00	1.0023+00	1.4988+00	2.5011+00	2.0866+01	1.1923+00
1.0+01	1.0028+00	1.4988+00	2.5016+00	2.0509+01	1.7023+00
1.5+01	1.0040+00	1.4988+00	2.5028+00	2.0093+01	2.5491+00
2.0+01	1.0051+00	1.4988+00	2.5039+00	1.9803+01	3.3948+00
2.5+01	1.0059+00	1.4988+00	2.5047+00	1.9581+01	4.2395+00
3.0+01	1.0069+00	1.4984+00	2.5053+00	1.9401+01	5.0836+00
4.0+01	1.0087+00	1.4975+00	2.5062+00	1.9121+01	6.7700+00
5.0+01	1.0110+00	1.4971+00	2.5081+00	1.8896+01	8.4432+00
6.0+01	1.0129+00	1.4967+00	2.5096+00	1.8713+01	1.0113+01
7.0+01	1.0145+00	1.4964+00	2.5109+00	1.8561+01	1.1780+01
8.0+01	1.0167+00	1.4959+00	2.5126+00	1.8426+01	1.3433+01
1.0+02	1.0204+00	1.4952+00	2.5156+00	1.8203+01	1.6730+01

Controls

T = 1700°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ_0)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.2964+01	1.6050-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.2260+01	3.2091-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.1858+01	4.8129-01
5.0+00	1.0019+00	1.4989+00	2.5008+00	2.1352+01	8.0189-01
7.0+00	1.0022+00	1.4989+00	2.5011+00	2.1017+01	1.1223+00
1.0+01	1.0027+00	1.4989+00	2.5016+00	2.0661+01	1.6023+00
1.5+01	1.0039+00	1.4989+00	2.5028+00	2.0245+01	2.3997+00
2.0+01	1.0049+00	1.4989+00	2.5038+00	1.9955+01	3.1960+00
2.5+01	1.0057+00	1.4989+00	2.5046+00	1.9733+01	3.9916+00
3.0+01	1.0065+00	1.4987+00	2.5052+00	1.9553+01	4.7866+00
4.0+01	1.0082+00	1.4979+00	2.5061+00	1.9273+01	6.3750+00
5.0+01	1.0106+00	1.4974+00	2.5080+00	1.9048+01	7.9498+00
6.0+01	1.0125+00	1.4969+00	2.5094+00	1.8866+01	9.5213+00
7.0+01	1.0142+00	1.4965+00	2.5107+00	1.8713+01	1.1090+01
8.0+01	1.0162+00	1.4962+00	2.5124+00	1.8578+01	1.2649+01
1.0+02	1.0195+00	1.4958+00	2.5153+00	1.8355+01	1.5760+01

Contrails

AEDC-TDR-64-68

T = 1800°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.3106+01	1.5158-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.2402+01	3.0308-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.2001+01	4.5456-01
5.0+00	1.0019+00	1.4989+00	2.5008+00	2.1495+01	7.5736-01
7.0+00	1.0022+00	1.4989+00	2.5011+00	2.1160+01	1.0600+00
1.0+01	1.0027+00	1.4989+00	2.5016+00	2.0804+01	1.5134+00
1.5+01	1.0039+00	1.4989+00	2.5028+00	2.0388+01	2.2666+00
2.0+01	1.0048+00	1.4989+00	2.5037+00	2.0098+01	3.0189+00
2.5+01	1.0055+00	1.4989+00	2.5044+00	1.9876+01	3.7704+00
3.0+01	1.0063+00	1.4987+00	2.5050+00	1.9697+01	4.5214+00
4.0+01	1.0080+00	1.4979+00	2.5059+00	1.9417+01	6.0220+00
5.0+01	1.0102+00	1.4976+00	2.5078+00	1.9191+01	7.5108+00
6.0+01	1.0120+00	1.4972+00	2.5092+00	1.9009+01	8.9966+00
7.0+01	1.0136+00	1.4969+00	2.5105+00	1.8856+01	1.0480+01
8.0+01	1.0154+00	1.4967+00	2.5121+00	1.8721+01	1.1956+01
1.0+02	1.0185+00	1.4964+00	2.5149+00	1.8499+01	1.4900+01

Contrails

T = 1900°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.3242+01	1.4361-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.2538+01	2.8714-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.2136+01	4.3065-01
5.0+00	1.0019+00	1.4989+00	2.5008+00	2.1630+01	7.1752-01
7.0+00	1.0022+00	1.4989+00	2.5011+00	2.1296+01	1.0042+00
1.0+01	1.0027+00	1.4989+00	2.5016+00	2.0939+01	1.4339+00
1.5+01	1.0039+00	1.4989+00	2.5028+00	2.0523+01	2.1477+00
2.0+01	1.0048+00	1.4989+00	2.5037+00	2.0233+01	2.8605+00
2.5+01	1.0055+00	1.4989+00	2.5044+00	2.0011+01	3.5729+00
3.0+01	1.0061+00	1.4989+00	2.5050+00	1.9832+01	4.2847+00
4.0+01	1.0076+00	1.4983+00	2.5059+00	1.9552+01	5.7070+00
5.0+01	1.0096+00	1.4980+00	2.5076+00	1.9326+01	7.1197+00
6.0+01	1.0112+00	1.4978+00	2.5090+00	1.9144+01	8.5299+00
7.0+01	1.0126+00	1.4976+00	2.5102+00	1.8992+01	9.9380+00
8.0+01	1.0144+00	1.4975+00	2.5119+00	1.8857+01	1.1338+01
1.0+02	1.0174+00	1.4973+00	2.5147+00	1.8634+01	1.4130+01

Contrails

AEDC-TDR-64-68

T = 2000°K

P, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.3370+01	1.3643-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.2666+01	2.7279-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.2264+01	4.0912-01
5.0+00	1.0018+00	1.4989+00	2.5007+00	2.1759+01	6.8167-01
7.0+00	1.0021+00	1.4989+00	2.5010+00	2.1424+01	9.5408-01
1.0+01	1.0025+00	1.4989+00	2.5014+00	2.1067+01	1.3623+00
1.5+01	1.0037+00	1.4989+00	2.5026+00	2.0652+01	2.0406+00
2.0+01	1.0046+00	1.4989+00	2.5035+00	2.0362+01	2.7180+00
2.5+01	1.0053+00	1.4989+00	2.5042+00	2.0140+01	3.3949+00
3.0+01	1.0059+00	1.4989+00	2.5048+00	1.9960+01	4.0713+00
4.0+01	1.0074+00	1.4983+00	2.5057+00	1.9680+01	5.4230+00
5.0+01	1.0092+00	1.4982+00	2.5074+00	1.9455+01	6.7664+00
6.0+01	1.0107+00	1.4981+00	2.5088+00	1.9273+01	8.1076+00
7.0+01	1.0120+00	1.4979+00	2.5099+00	1.9120+01	9.4470+00
8.0+01	1.0138+00	1.4978+00	2.5116+00	1.8986+01	1.0777+01
1.0+02	1.0169+00	1.4974+00	2.5143+00	1.8763+01	1.3430+01

Contrails

T = 2100°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.3492+01	1.2993-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.2788+01	2.5980-01
3.0+00	1.0016+00	1.4989+00	2.5005+00	2.2386+01	3.8965-01
5.0+00	1.0018+00	1.4989+00	2.5007+00	2.1880+01	6.4924-01
7.0+00	1.0021+00	1.4989+00	2.5010+00	2.1546+01	9.0868-01
1.0+01	1.0025+00	1.4989+00	2.5014+00	2.1189+01	1.2975+00
1.5+01	1.0037+00	1.4989+00	2.5026+00	2.0774+01	1.9437+00
2.0+01	1.0045+00	1.4989+00	2.5034+00	2.0484+01	2.5892+00
2.5+01	1.0052+00	1.4989+00	2.5041+00	2.0262+01	3.2342+00
3.0+01	1.0058+00	1.4989+00	2.5047+00	2.0082+01	3.8788+00
4.0+01	1.0072+00	1.4983+00	2.5055+00	1.9802+01	5.1670+00
5.0+01	1.0090+00	1.4982+00	2.5072+00	1.9577+01	6.4467+00
6.0+01	1.0104+00	1.4981+00	2.5085+00	1.9395+01	7.7242+00
7.0+01	1.0117+00	1.4980+00	2.5097+00	1.9242+01	9.0000+00
8.0+01	1.0132+00	1.4980+00	2.5112+00	1.9108+01	1.0269+01
1.0+02	1.0162+00	1.4977+00	2.5139+00	1.8885+01	1.2800+01

Contrails

AEDC-TDR-64-68

T = 2200°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.3608+01	1.2403-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.2904+01	2.4800-01
3.0+00	1.0015+00	1.4990+00	2.5005+00	2.2503+01	3.7195-01
5.0+00	1.0017+00	1.4990+00	2.5007+00	2.1997+01	6.1975-01
7.0+00	1.0020+00	1.4990+00	2.5010+00	2.1662+01	8.6742-01
1.0+01	1.0024+00	1.4990+00	2.5014+00	2.1305+01	1.2386+00
1.5+01	1.0035+00	1.4990+00	2.5025+00	2.0890+01	1.8555+00
2.0+01	1.0043+00	1.4990+00	2.5033+00	2.0600+01	2.4718+00
2.5+01	1.0050+00	1.4990+00	2.5040+00	2.0378+01	3.0877+00
3.0+01	1.0055+00	1.4990+00	2.5045+00	2.0199+01	3.7031+00
4.0+01	1.0068+00	1.4986+00	2.5054+00	1.9919+01	4.9330+00
5.0+01	1.0085+00	1.4985+00	2.5070+00	1.9693+01	6.1555+00
6.0+01	1.0100+00	1.4983+00	2.5083+00	1.9511+01	7.3760+00
7.0+01	1.0112+00	1.4983+00	2.5095+00	1.9359+01	8.5950+00
8.0+01	1.0127+00	1.4983+00	2.5110+00	1.9224+01	9.8083+00
1.0+02	1.0153+00	1.4981+00	2.5134+00	1.9002+01	1.2230+01

Contrails

T = 2300°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ_0)
1.0+00	1.0011+00	1.4990+00	2.5001+00	2.3719+01	1.1863-01
2.0+00	1.0014+00	1.4990+00	2.5004+00	2.3016+01	2.3722-01
3.0+00	1.0015+00	1.4990+00	2.5005+00	2.2614+01	3.5578-01
5.0+00	1.0017+00	1.4990+00	2.5007+00	2.2108+01	5.9282-01
7.0+00	1.0019+00	1.4990+00	2.5009+00	2.1773+01	8.2974-01
1.0+01	1.0023+00	1.4990+00	2.5013+00	2.1417+01	1.8480+00
1.5+01	1.0034+00	1.4990+00	2.5024+00	2.1001+01	2.4312+00
2.0+01	1.0042+00	1.4990+00	2.5032+00	2.0712+01	2.9534+00
2.5+01	1.0049+00	1.4990+00	2.5039+00	2.0490+01	3.4346+00
3.0+01	1.0054+00	1.4990+00	2.5044+00	2.0310+01	3.8854+00
4.0+01	1.0064+00	1.4988+00	2.5052+00	2.0030+01	4.7200+00
5.0+01	1.0082+00	1.4986+00	2.5068+00	1.9805+01	5.8900+00
6.0+01	1.0095+00	1.4986+00	2.5081+00	1.9623+01	7.0582+00
7.0+01	1.0107+00	1.4985+00	2.5092+00	1.9470+01	8.2250+00
8.0+01	1.0122+00	1.4984+00	2.5106+00	1.9336+01	9.3850+00
1.0+02	1.0149+00	1.4982+00	2.5131+00	1.9113+01	1.1700+01

Contrails

AEDC-TDR-64-68

T = 2400°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0010+00	1.4991+00	2.5001+00	2.3826+01	1.1369-01
2.0+00	1.0013+00	1.4991+00	2.5004+00	2.3122+01	2.2733-01
3.0+00	1.0014+00	1.4991+00	2.5005+00	2.2720+01	3.4096-01
5.0+00	1.0016+00	1.4991+00	2.5007+00	2.2214+01	5.6813-01
7.0+00	1.0018+00	1.4991+00	2.5009+00	2.1880+01	7.9520-01
1.0+01	1.0022+00	1.4991+00	2.5013+00	2.1523+01	1.1355+00
1.5+01	1.0033+00	1.4991+00	2.5024+00	2.1108+01	1.7013+00
2.0+01	1.0041+00	1.4991+00	2.5032+00	2.0818+01	2.2665+00
2.5+01	1.0047+00	1.4991+00	2.5038+00	2.0596+01	2.8313+00
3.0+01	1.0052+00	1.4991+00	2.5043+00	2.0417+01	3.3958+00
4.0+01	1.0062+00	1.4989+00	2.5051+00	2.0136+01	4.5240+00
5.0+01	1.0079+00	1.4987+00	2.5066+00	1.9911+01	5.6459+00
6.0+01	1.0092+00	1.4987+00	2.5079+00	1.9729+01	6.7661+00
7.0+01	1.0104+00	1.4986+00	2.5090+00	1.9577+01	7.8850+00
8.0+01	1.0119+00	1.4985+00	2.5104+00	1.9442+01	8.9981+00
1.0+02	1.0144+00	1.4983+00	2.5127+00	1.9220+01	1.1220+01

Contrails

AEDC-TDR-64-68

T = 2500°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0010+00	1.4991+00	2.5001+00	2.3928+01	1.0914-01
2.0+00	1.0012+00	1.4991+00	2.5003+00	2.3224+01	2.1824-01
3.0+00	1.0013+00	1.4991+00	2.5004+00	2.2822+01	3.2733-01
5.0+00	1.0015+00	1.4991+00	2.5006+00	2.2316+01	5.4543-01
7.0+00	1.0017+00	1.4991+00	2.5008+00	2.1982+01	7.6342-01
1.0+01	1.0021+00	1.4991+00	2.5012+00	2.1625+01	1.0902+00
1.5+01	1.0032+00	1.4991+00	2.5023+00	2.1210+01	1.6335+00
2.0+01	1.0040+00	1.4991+00	2.5031+00	2.0920+01	2.1762+00
2.5+01	1.0046+00	1.4991+00	2.5037+00	2.0698+01	2.7186+00
3.0+01	1.0051+00	1.4991+00	2.5042+00	2.0519+01	3.2606+00
4.0+01	1.0059+00	1.4991+00	2.5050+00	2.0239+01	4.3440+00
5.0+01	1.0076+00	1.4989+00	2.5065+00	2.0013+01	5.4214+00
6.0+01	1.0088+00	1.4989+00	2.5077+00	1.9831+01	6.4974+00
7.0+01	1.0098+00	1.4989+00	2.5087+00	1.9679+01	7.5720+00
8.0+01	1.0112+00	1.4989+00	2.5101+00	1.9544+01	8.6426+00
1.0+02	1.0135+00	1.4989+00	2.5124+00	1.9322+01	1.0780+01

Contrails

AEDC-TDR-64-68

T = 2600°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0010+00	1.4991+00	2.5001+00	2.4026+01	1.0495-01
2.0+00	1.0012+00	1.4991+00	2.5003+00	2.3322+01	2.0986-01
3.0+00	1.0013+00	1.4991+00	2.5004+00	2.2920+01	3.1475-01
5.0+00	1.0015+00	1.4991+00	2.5006+00	2.2415+01	5.2446-01
7.0+00	1.0017+00	1.4991+00	2.5008+00	2.2080+01	7.3408-01
1.0+01	1.0021+00	1.4991+00	2.5012+00	2.1723+01	1.0483+00
1.5+01	1.0032+00	1.4991+00	2.5023+00	2.1308+01	1.5708+00
2.0+01	1.0039+00	1.4991+00	2.5030+00	2.1018+01	2.0928+00
2.5+01	1.0045+00	1.4991+00	2.5036+00	2.0796+01	2.6145+00
3.0+01	1.0050+00	1.4991+00	2.5041+00	2.0617+01	3.1359+00
4.0+01	1.0058+00	1.4991+00	2.5049+00	2.0337+01	4.1780+00
5.0+01	1.0074+00	1.4989+00	2.5063+00	2.0112+01	5.2144+00
6.0+01	1.0086+00	1.4989+00	2.5075+00	1.9930+01	6.2493+00
7.0+01	1.0095+00	1.4989+00	2.5084+00	1.9777+01	7.2830+00
8.0+01	1.0109+00	1.4989+00	2.5098+00	1.9643+01	8.3131+00
1.0+02	1.0132+00	1.4989+00	2.5121+00	1.9420+01	1.0370+01

Contrails

AEDC-TDR-64-68

T = 2700°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0010+00	1.4991+00	2.5001+00	2.4120+01	1.0106-01
2.0+00	1.0012+00	1.4991+00	2.5003+00	2.3417+01	2.0209-01
3.0+00	1.0013+00	1.4991+00	2.5004+00	2.3015+01	3.0310-01
5.0+00	1.0015+00	1.4991+00	2.5006+00	2.2509+01	5.0505-01
7.0+00	1.0017+00	1.4991+00	2.5008+00	2.2174+01	7.0692-01
1.0+01	1.0021+00	1.4991+00	2.5012+00	2.1817+01	1.0095+00
1.5+01	1.0031+00	1.4991+00	2.5022+00	2.1402+01	1.5127+00
2.0+01	1.0038+00	1.4991+00	2.5029+00	2.1113+01	2.0155+00
2.5+01	1.0044+00	1.4991+00	2.5035+00	2.0891+01	2.5180+00
3.0+01	1.0049+00	1.4991+00	2.5040+00	2.0711+01	3.0202+00
4.0+01	1.0056+00	1.4991+00	2.5047+00	2.0431+01	4.0240+00
5.0+01	1.0071+00	1.4990+00	2.5061+00	2.0206+01	5.0226+00
6.0+01	1.0083+00	1.4990+00	2.5073+00	2.0024+01	6.0198+00
7.0+01	1.0092+00	1.4990+00	2.5082+00	1.9871+01	7.0160+00
8.0+01	1.0105+00	1.4990+00	2.5095+00	1.9737+01	8.0075+00
1.0+02	1.0128+00	1.4990+00	2.5118+00	1.9515+01	9.9870+00

Contrails

AEDC-TDR-64-68

T = 2800°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0010+00	1.4991+00	2.5001+00	2.4211+01	9.7450-02
2.0+00	1.0012+00	1.4991+00	2.5003+00	2.3508+01	1.9487-01
3.0+00	1.0013+00	1.4991+00	2.5004+00	2.3106+01	2.9227-01
5.0+00	1.0015+00	1.4991+00	2.5006+00	2.2600+01	4.8702-01
7.0+00	1.0017+00	1.4991+00	2.5008+00	2.2265+01	6.8169-01
1.0+01	1.0020+00	1.4991+00	2.5011+00	2.1908+01	9.7350-01
1.5+01	1.0030+00	1.4991+00	2.5021+00	2.1493+01	1.4588+00
2.0+01	1.0037+00	1.4991+00	2.5028+00	2.1204+01	1.9437+00
2.5+01	1.0043+00	1.4991+00	2.5034+00	2.0982+01	2.4284+00
3.0+01	1.0048+00	1.4991+00	2.5039+00	2.0802+01	2.9128+00
4.0+01	1.0055+00	1.4991+00	2.5046+00	2.0522+01	3.8810+00
5.0+01	1.0069+00	1.4990+00	2.5059+00	2.0297+01	4.8445+00
6.0+01	1.0081+00	1.4990+00	2.5071+00	2.0115+01	5.8067+00
7.0+01	1.0090+00	1.4990+00	2.5080+00	1.9962+01	6.7680+00
8.0+01	1.0103+00	1.4990+00	2.5093+00	1.9828+01	7.7248+00
1.0+02	1.0124+00	1.4990+00	2.5114+00	1.9606+01	9.6350+00

Contrails

T = 2900°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0010+00	1.4991+00	2.5001+00	2.4299+01	9.4090-02
2.0+00	1.0012+00	1.4991+00	2.5003+00	2.3595+01	1.8815-01
3.0+00	1.0013+00	1.4991+00	2.5004+00	2.3193+01	2.8220-01
5.0+00	1.0015+00	1.4991+00	2.5006+00	2.2688+01	4.7024-01
7.0+00	1.0017+00	1.4991+00	2.5008+00	2.2353+01	6.5820-01
1.0+01	1.0020+00	1.4991+00	2.5011+00	2.1996+01	9.3997-01
1.5+01	1.0030+00	1.4991+00	2.5021+00	2.1581+01	1.4085+00
2.0+01	1.0037+00	1.4991+00	2.5028+00	2.1292+01	1.8767+00
2.5+01	1.0043+00	1.4991+00	2.5034+00	2.1070+01	2.3446+00
3.0+01	1.0047+00	1.4991+00	2.5038+00	2.0890+01	2.8123+00
4.0+01	1.0054+00	1.4991+00	2.5045+00	2.0610+01	3.7470+00
5.0+01	1.0068+00	1.4990+00	2.5058+00	2.0385+01	4.6777+00
6.0+01	1.0079+00	1.4990+00	2.5069+00	2.0203+01	5.6073+00
7.0+01	1.0088+00	1.4990+00	2.5078+00	2.0050+01	6.5360+00
8.0+01	1.0100+00	1.4990+00	2.5090+00	1.9916+01	7.4604+00
1.0+02	1.0121+00	1.4990+00	2.5111+00	1.9693+01	9.3060+00

T = 3000°K

p, atm	Z	E/RT	H/RT	S/R	(ρ/ρ₀)
1.0+00	1.0010+00	1.4991+00	2.5001+00	2.4383+01	9.0960-02
2.0+00	1.0012+00	1.4991+00	2.5003+00	2.3680+01	1.8189-01
3.0+00	1.0013+00	1.4991+00	2.5004+00	2.3278+01	2.7280-01
5.0+00	1.0015+00	1.4991+00	2.5006+00	2.2772+01	4.5458-01
7.0+00	1.0017+00	1.4991+00	2.5008+00	2.2438+01	6.3628-01
1.0+01	1.0020+00	1.4991+00	2.5011+00	2.2081+01	9.0868-01
1.5+01	1.0029+00	1.4991+00	2.5020+00	2.1666+01	1.3617+00
2.0+01	1.0036+00	1.4991+00	2.5027+00	2.1376+01	1.8144+00
2.5+01	1.0042+00	1.4991+00	2.5033+00	2.1154+01	2.2669+00
3.0+01	1.0046+00	1.4991+00	2.5037+00	2.0975+01	2.7191+00
4.0+01	1.0052+00	1.4991+00	2.5043+00	2.0695+01	3.6230+00
5.0+01	1.0065+00	1.4991+00	2.5056+00	2.0470+01	4.5230+00
6.0+01	1.0076+00	1.4991+00	2.5067+00	2.0288+01	5.4219+00
7.0+01	1.0085+00	1.4991+00	2.5076+00	2.0135+01	6.3200+00
8.0+01	1.0097+00	1.4991+00	2.5088+00	2.0001+01	7.2140+00
1.0+02	1.0117+00	1.4991+00	2.5108+00	1.9778+01	8.9990+00

TABLE 2

TABLES OF THE THERMODYNAMIC PROPERTIES OF ARGON FROM 100 TO 3000°K
WITH INDEPENDENT VARIABLES OF TEMPERATURE AND DENSITY

Contrails

AEDC-TDR-64-68

T = 100°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4994+00	2.4994+00	3.3003+01	3.6610-08
-6.8	1.0000+00	1.4994+00	2.4994+00	3.2542+01	5.8023-08
-6.6	1.0000+00	1.4994+00	2.4994+00	3.2082+01	9.1960-08
-6.4	1.0000+00	1.4994+00	2.4994+00	3.1621+01	1.4575-07
-6.2	1.0000+00	1.4994+00	2.4994+00	3.1161+01	2.3099-07
-6.0	1.0000+00	1.4994+00	2.4994+00	3.0700+01	3.6610-07
-5.8	1.0000+00	1.4994+00	2.4994+00	3.0240+01	5.8023-07
-5.6	1.0000+00	1.4994+00	2.4994+00	2.9779+01	9.1960-07
-5.4	1.0000+00	1.4994+00	2.4994+00	2.9319+01	1.4575-06
-5.2	1.0000+00	1.4994+00	2.4994+00	2.8858+01	2.3099-06
-5.0	1.0000+00	1.4994+00	2.4994+00	2.8398+01	3.6610-06
-4.8	1.0000+00	1.4994+00	2.4994+00	2.7937+01	5.8023-06
-4.6	1.0000+00	1.4994+00	2.4994+00	2.7477+01	9.1960-06
-4.4	1.0000+00	1.4994+00	2.4994+00	2.7016+01	1.4575-05
-4.2	1.0000+00	1.4994+00	2.4994+00	2.6556+01	2.3099-05
-4.0	1.0000+00	1.4994+00	2.4994+00	2.6095+01	3.6610-05
-3.8	1.0000+00	1.4994+00	2.4994+00	2.5635+01	5.8023-05
-3.6	1.0000+00	1.4994+00	2.4994+00	2.5174+01	9.1960-05
-3.4	1.0000+00	1.4994+00	2.4994+00	2.4714+01	1.4575-04
-3.2	1.0000+00	1.4994+00	2.4994+00	2.4253+01	2.3099-04
-3.0	1.0000+00	1.4994+00	2.4994+00	2.3793+01	3.6610-04
-2.8	1.0000+00	1.4994+00	2.4994+00	2.3332+01	5.8023-04
-2.6	1.0000+00	1.4994+00	2.4994+00	2.2872+01	9.1960-04
-2.4	1.0000+00	1.4994+00	2.4994+00	2.2411+01	1.4575-03
-2.2	1.0000+00	1.4994+00	2.4994+00	2.1951+01	2.3099-03
-2.0	1.0000+00	1.4994+00	2.4994+00	2.1490+01	3.6610-03
-1.8	1.0000+00	1.4994+00	2.4994+00	2.1030+01	5.8023-03
-1.6	1.0000+00	1.4994+00	2.4994+00	2.0569+01	9.1960-03
-1.4	9.9980-01	1.4987+00	2.4985+00	2.0108+01	1.4581-02
-1.2	9.9955-01	1.4980+00	2.4975+00	1.9647+01	2.3100-02
-1.0	9.9930-01	1.4972+00	2.4965+00	1.9186+01	3.6596-02
-.8	9.9905-01	1.4964+00	2.4954+00	1.8725+01	5.7978-02
-.6	9.9880-01	1.4956+00	2.4944+00	1.8264+01	9.1852-02
-.4	9.9713-01	1.4923+00	2.4894+00	1.7803+01	1.4531-01
-.2	9.9515-01	1.4885+00	2.4836+00	1.7340+01	2.2982-01
.0	9.9316-01	1.4845+00	2.4777+00	1.6878+01	3.6347-01
.2	9.8963-01	1.4753+00	2.4649+00	1.6414+01	5.7334-01
.4	9.8422-01	1.4613+00	2.4455+00	1.5925+01	9.0455-01
.6	9.7307-01	1.4411+00	2.4142+00	1.5448+01	1.4182+00
.8	9.5858-01	1.4143+00	2.3729+00	1.4978+01	2.2142+00

Controls

T = 110°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4995+00	2.4995+00	3.3146+01	4.0271-08
-6.8	1.0000+00	1.4995+00	2.4995+00	3.2686+01	6.3825-08
-6.6	1.0000+00	1.4995+00	2.4995+00	3.2225+01	1.0116-07
-6.4	1.0000+00	1.4995+00	2.4995+00	3.1765+01	1.6032-07
-6.2	1.0000+00	1.4995+00	2.4995+00	3.1304+01	2.5409-07
-6.0	1.0000+00	1.4995+00	2.4995+00	3.0843+01	4.0271-07
-5.8	1.0000+00	1.4995+00	2.4995+00	3.0383+01	6.3825-07
-5.6	1.0000+00	1.4995+00	2.4995+00	2.9922+01	1.0116-06
-5.4	1.0000+00	1.4995+00	2.4995+00	2.9462+01	1.6032-06
-5.2	1.0000+00	1.4995+00	2.4995+00	2.9001+01	2.5409-06
-5.0	1.0000+00	1.4995+00	2.4995+00	2.8541+01	4.0271-06
-4.8	1.0000+00	1.4995+00	2.4995+00	2.8080+01	6.3825-06
-4.6	1.0000+00	1.4995+00	2.4995+00	2.7620+01	1.0116-05
-4.4	1.0000+00	1.4995+00	2.4995+00	2.7159+01	1.6032-05
-4.2	1.0000+00	1.4995+00	2.4995+00	2.6699+01	2.5409-05
-4.0	1.0000+00	1.4995+00	2.4995+00	2.6238+01	4.0271-05
-3.8	1.0000+00	1.4995+00	2.4995+00	2.5778+01	6.3825-05
-3.6	1.0000+00	1.4995+00	2.4995+00	2.5317+01	1.0116-04
-3.4	1.0000+00	1.4995+00	2.4995+00	2.4857+01	1.6032-04
-3.2	1.0000+00	1.4995+00	2.4995+00	2.4396+01	2.5409-04
-3.0	1.0000+00	1.4995+00	2.4995+00	2.3936+01	4.0271-04
-2.8	1.0000+00	1.4995+00	2.4995+00	2.3475+01	6.3825-04
-2.6	1.0000+00	1.4995+00	2.4995+00	2.3015+01	1.0116-03
-2.4	1.0000+00	1.4995+00	2.4995+00	2.2554+01	1.6032-03
-2.2	1.0000+00	1.4995+00	2.4995+00	2.2094+01	2.5409-03
-2.0	1.0000+00	1.4995+00	2.4995+00	2.1633+01	4.0271-03
-1.8	1.0000+00	1.4995+00	2.4995+00	2.1173+01	6.3825-03
-1.6	1.0000+00	1.4995+00	2.4995+00	2.0711+01	1.0123-02
-1.4	9.9985-01	1.4989+00	2.4987+00	2.0251+01	1.6039-02
-1.2	9.9970-01	1.4981+00	2.4978+00	1.9790+01	2.5413-02
-1.0	9.9956-01	1.4974+00	2.4970+00	1.9329+01	4.0265-02
-.8	9.9941-01	1.4968+00	2.4962+00	1.8868+01	6.3797-02
-.6	9.9923-01	1.4961+00	2.4953+00	1.8408+01	1.0108-01
-.4	9.9757-01	1.4932+00	2.4908+00	1.7946+01	1.5993-01
-.2	9.9591-01	1.4904+00	2.4863+00	1.7484+01	2.5306-01
.0	9.9424-01	1.4876+00	2.4818+00	1.7022+01	4.0042-01
.2	9.9078-01	1.4798+00	2.4706+00	1.6559+01	6.3201-01
.4	9.8585-01	1.4678+00	2.4536+00	1.6059+01	9.9725-01
.6	9.7559-01	1.4482+00	2.4238+00	1.5591+01	1.5640+00
.8	9.6200-01	1.4205+00	2.3825+00	1.5120+01	2.4443+00
1.0	9.3738-01	1.3789+00	2.3163+00	1.4646+01	3.7742+00

Contrails

AEDC-TDR-64-68

T = 120°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4996+00	2.4996+00	3.3277+01	4.3932-08
-6.8	1.0000+00	1.4996+00	2.4996+00	3.2816+01	6.9628-08
-6.6	1.0000+00	1.4996+00	2.4996+00	3.2356+01	1.1035-07
-6.4	1.0000+00	1.4996+00	2.4996+00	3.1895+01	1.7490-07
-6.2	1.0000+00	1.4996+00	2.4996+00	3.1435+01	2.7719-07
-6.0	1.0000+00	1.4996+00	2.4996+00	3.0974+01	4.3932-07
-5.8	1.0000+00	1.4996+00	2.4996+00	3.0514+01	6.9628-07
-5.6	1.0000+00	1.4996+00	2.4996+00	3.0053+01	1.1035-06
-5.4	1.0000+00	1.4996+00	2.4996+00	2.9593+01	1.7490-06
-5.2	1.0000+00	1.4996+00	2.4996+00	2.9132+01	2.7719-06
-5.0	1.0000+00	1.4996+00	2.4996+00	2.8671+01	4.3932-06
-4.8	1.0000+00	1.4996+00	2.4996+00	2.8211+01	6.9628-06
-4.6	1.0000+00	1.4996+00	2.4996+00	2.7750+01	1.1035-05
-4.4	1.0000+00	1.4996+00	2.4996+00	2.7290+01	1.7490-05
-4.2	1.0000+00	1.4996+00	2.4996+00	2.6829+01	2.7719-05
-4.0	1.0000+00	1.4996+00	2.4996+00	2.6369+01	4.3932-05
-3.8	1.0000+00	1.4996+00	2.4996+00	2.5908+01	6.9628-05
-3.6	1.0000+00	1.4996+00	2.4996+00	2.5448+01	1.1035-04
-3.4	1.0000+00	1.4996+00	2.4996+00	2.4987+01	1.7490-04
-3.2	1.0000+00	1.4996+00	2.4996+00	2.4527+01	2.7719-04
-3.0	1.0000+00	1.4996+00	2.4996+00	2.4066+01	4.3932-04
-2.8	1.0000+00	1.4996+00	2.4996+00	2.3606+01	6.9628-04
-2.6	1.0000+00	1.4996+00	2.4996+00	2.3145+01	1.1035-03
-2.4	1.0000+00	1.4996+00	2.4996+00	2.2685+01	1.7490-03
-2.2	1.0000+00	1.4996+00	2.4996+00	2.2224+01	2.7719-03
-2.0	1.0000+00	1.4996+00	2.4996+00	2.1764+01	4.3932-03
-1.8	1.0000+00	1.4996+00	2.4996+00	2.1303+01	6.9628-03
-1.6	1.0000+00	1.4995+00	2.4995+00	2.0842+01	1.1044-02
-1.4	9.9991-01	1.4989+00	2.4988+00	2.0381+01	1.7499-02
-1.2	9.9983-01	1.4984+00	2.4982+00	1.9920+01	2.7727-02
-1.0	9.9976-01	1.4978+00	2.4976+00	1.9460+01	4.3934-02
-.8	9.9968-01	1.4973+00	2.4970+00	1.8999+01	6.9614-02
-.6	9.9935-01	1.4965+00	2.4958+00	1.8538+01	1.1028-01
-.4	9.9806-01	1.4942+00	2.4923+00	1.8077+01	1.7456-01
-.2	9.9677-01	1.4920+00	2.4888+00	1.7615+01	2.7630-01
.0	9.9510-01	1.4892+00	2.4843+00	1.7153+01	4.3717-01
.2	9.9187-01	1.4835+00	2.4754+00	1.6691+01	6.9061-01
.4	9.8673-01	1.4719+00	2.4586+00	1.6190+01	1.0889+00
.6	9.7812-01	1.4543+00	2.4324+00	1.5723+01	1.7107+00
.8	9.6564-01	1.4275+00	2.3931+00	1.5252+01	2.6766+00
1.0	9.4377-01	1.3905+00	2.3343+00	1.4777+01	4.1457+00
1.2	9.1092-01	1.3381+00	2.2490+00	1.4297+01	6.3417+00
1.4	8.5861-01	1.2430+00	2.1016+00	1.3804+01	9.4729+00

Controls

T = 130°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4998+00	2.4998+00	3.3397+01	4.7593-08
-6.8	1.0000+00	1.4998+00	2.4998+00	3.2936+01	7.5430-08
-6.6	1.0000+00	1.4998+00	2.4998+00	3.2476+01	1.1955-07
-6.4	1.0000+00	1.4998+00	2.4998+00	3.2015+01	1.8947-07
-6.2	1.0000+00	1.4998+00	2.4998+00	3.1555+01	3.0029-07
-6.0	1.0000+00	1.4998+00	2.4998+00	3.1094+01	4.7593-07
-5.8	1.0000+00	1.4998+00	2.4998+00	3.0634+01	7.5430-07
-5.6	1.0000+00	1.4998+00	2.4998+00	3.0173+01	1.1955-06
-5.4	1.0000+00	1.4998+00	2.4998+00	2.9713+01	1.8947-06
-5.2	1.0000+00	1.4998+00	2.4998+00	2.9252+01	3.0029-06
-5.0	1.0000+00	1.4998+00	2.4998+00	2.8792+01	4.7593-06
-4.8	1.0000+00	1.4998+00	2.4998+00	2.8331+01	7.5430-06
-4.6	1.0000+00	1.4998+00	2.4998+00	2.7871+01	1.1955-05
-4.4	1.0000+00	1.4998+00	2.4998+00	2.7410+01	1.8947-05
-4.2	1.0000+00	1.4998+00	2.4998+00	2.6949+01	3.0029-05
-4.0	1.0000+00	1.4998+00	2.4998+00	2.6489+01	4.7593-05
-3.8	1.0000+00	1.4998+00	2.4998+00	2.6028+01	7.5430-05
-3.6	1.0000+00	1.4998+00	2.4998+00	2.5568+01	1.1955-04
-3.4	1.0000+00	1.4998+00	2.4998+00	2.5107+01	1.8947-04
-3.2	1.0000+00	1.4998+00	2.4998+00	2.4647+01	3.0029-04
-3.0	1.0000+00	1.4998+00	2.4998+00	2.4186+01	4.7593-04
-2.8	1.0000+00	1.4998+00	2.4998+00	2.3726+01	7.5430-04
-2.6	1.0000+00	1.4998+00	2.4998+00	2.3265+01	1.1955-03
-2.4	1.0000+00	1.4998+00	2.4998+00	2.2805+01	1.8947-03
-2.2	1.0000+00	1.4998+00	2.4998+00	2.2344+01	3.0029-03
-2.0	1.0000+00	1.4998+00	2.4998+00	2.1884+01	4.7593-03
-1.8	1.0000+00	1.4998+00	2.4998+00	2.1423+01	7.5430-03
-1.6	1.0000+00	1.4996+00	2.4996+00	2.0962+01	1.1964-02
-1.4	9.9997-01	1.4990+00	2.4990+00	2.0501+01	1.8958-02
-1.2	9.9994-01	1.4986+00	2.4985+00	2.0041+01	3.0041-02
-1.0	9.9992-01	1.4981+00	2.4980+00	1.9580+01	4.7602-02
-.8	9.9989-01	1.4975+00	2.4974+00	1.9119+01	7.5430-02
-.6	9.9948-01	1.4967+00	2.4962+00	1.8658+01	1.1949-01
-.4	9.9845-01	1.4947+00	2.4931+00	1.8197+01	1.8918-01
-.2	9.9741-01	1.4929+00	2.4903+00	1.7736+01	2.9951-01
.0	9.9580-01	1.4900+00	2.4858+00	1.7274+01	4.7393-01
.2	9.9300-01	1.4846+00	2.4776+00	1.6804+01	7.4902-01
.4	9.8791-01	1.4730+00	2.4609+00	1.6310+01	1.1810+00
.6	9.8085-01	1.4587+00	2.4395+00	1.5844+01	1.8584+00
.8	9.6954-01	1.4340+00	2.4035+00	1.5372+01	2.9114+00
1.0	9.5076-01	1.4009+00	2.3517+00	1.4899+01	4.5248+00
1.2	9.2268-01	1.3507+00	2.2734+00	1.4416+01	6.9598+00
1.4	8.7590-01	1.2580+00	2.1339+00	1.3921+01	1.0468+01

Contrails

AEDC-TDR-64-68

$T = 140^{\circ}\text{K}$

$\log(\rho/\rho_0)$	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4998+00	2.4998+00	3.3508+01	5.1254-08
-6.8	1.0000+00	1.4998+00	2.4998+00	3.3047+01	8.1232-08
-6.6	1.0000+00	1.4998+00	2.4998+00	3.2587+01	1.2874-07
-6.4	1.0000+00	1.4998+00	2.4998+00	3.2126+01	2.0405-07
-6.2	1.0000+00	1.4998+00	2.4998+00	3.1666+01	3.2339-07
-6.0	1.0000+00	1.4998+00	2.4998+00	3.1205+01	5.1254-07
-5.8	1.0000+00	1.4998+00	2.4998+00	3.0745+01	8.1232-07
-5.6	1.0000+00	1.4998+00	2.4998+00	3.0284+01	1.2874-06
-5.4	1.0000+00	1.4998+00	2.4998+00	2.9824+01	2.0405-06
-5.2	1.0000+00	1.4998+00	2.4998+00	2.9363+01	3.2339-06
-5.0	1.0000+00	1.4998+00	2.4998+00	2.8903+01	5.1254-06
-4.8	1.0000+00	1.4998+00	2.4998+00	2.8442+01	8.1232-06
-4.6	1.0000+00	1.4998+00	2.4998+00	2.7982+01	1.2874-05
-4.4	1.0000+00	1.4998+00	2.4998+00	2.7521+01	2.0405-05
-4.2	1.0000+00	1.4998+00	2.4998+00	2.7061+01	3.2339-05
-4.0	1.0000+00	1.4998+00	2.4998+00	2.6600+01	5.1254-05
-3.8	1.0000+00	1.4998+00	2.4998+00	2.6140+01	8.1232-05
-3.6	1.0000+00	1.4998+00	2.4998+00	2.5679+01	1.2874-04
-3.4	1.0000+00	1.4998+00	2.4998+00	2.5219+01	2.0405-04
-3.2	1.0000+00	1.4998+00	2.4998+00	2.4758+01	3.2339-04
-3.0	1.0000+00	1.4998+00	2.4998+00	2.4298+01	5.1254-04
-2.8	1.0000+00	1.4998+00	2.4998+00	2.3837+01	8.1232-04
-2.6	1.0000+00	1.4998+00	2.4998+00	2.3377+01	1.2874-03
-2.4	1.0000+00	1.4998+00	2.4998+00	2.2916+01	2.0405-03
-2.2	1.0000+00	1.4998+00	2.4998+00	2.2455+01	3.2339-03
-2.0	1.0000+00	1.4998+00	2.4998+00	2.1995+01	5.1254-03
-1.8	1.0000+00	1.4998+00	2.4998+00	2.1534+01	8.1232-03
-1.6	1.0000+00	1.4996+00	2.4996+00	2.1073+01	1.2884-02
-1.4	9.9998-01	1.4991+00	2.4991+00	2.0612+01	2.0417-02
-1.2	9.9997-01	1.4987+00	2.4987+00	2.0152+01	3.2354-02
-1.0	9.9996-01	1.4983+00	2.4983+00	1.9691+01	5.1270-02
-.8	9.9995-01	1.4980+00	2.4979+00	1.9231+01	8.1245-02
-.6	9.9950-01	1.4969+00	2.4964+00	1.8770+01	1.2870-01
-.4	9.9869-01	1.4954+00	2.4941+00	1.8308+01	2.0380-01
-.2	9.9788-01	1.4938+00	2.4917+00	1.7847+01	3.2272-01
.0	9.9641-01	1.4911+00	2.4875+00	1.7385+01	5.1071-01
.2	9.9401-01	1.4857+00	2.4797+00	1.6908+01	8.0745-01
.4	9.8946-01	1.4749+00	2.4644+00	1.6421+01	1.2739+00
.6	9.8371-01	1.4620+00	2.4457+00	1.5956+01	2.0072+00
.8	9.7313-01	1.4390+00	2.4121+00	1.5484+01	3.1470+00
1.0	9.5744-01	1.4113+00	2.3687+00	1.5013+01	4.9072+00
1.2	9.3129-01	1.3589+00	2.2902+00	1.4528+01	7.5645+00
1.4	8.8808-01	1.2775+00	2.1656+00	1.4033+01	1.1427+01
1.6	8.2701-01	1.1566+00	1.9836+00	1.3513+01	1.6869+01
1.8	7.4139-01	9.6481-01	1.7062+00	1.2953+01	2.3959+01

Controls

T = 150°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4998+00	2.4998+00	3.3612+01	5.4915-08
-6.8	1.0000+00	1.4998+00	2.4998+00	3.3151+01	8.7034-08
-6.6	1.0000+00	1.4998+00	2.4998+00	3.2690+01	1.3794-07
-6.4	1.0000+00	1.4998+00	2.4998+00	3.2230+01	2.1862-07
-6.2	1.0000+00	1.4998+00	2.4998+00	3.1769+01	3.4649-07
-6.0	1.0000+00	1.4998+00	2.4998+00	3.1309+01	5.4915-07
-5.8	1.0000+00	1.4998+00	2.4998+00	3.0848+01	8.7034-07
-5.6	1.0000+00	1.4998+00	2.4998+00	3.0388+01	1.3794-06
-5.4	1.0000+00	1.4998+00	2.4998+00	2.9927+01	2.1862-06
-5.2	1.0000+00	1.4998+00	2.4998+00	2.9467+01	3.4649-06
-5.0	1.0000+00	1.4998+00	2.4998+00	2.9006+01	5.4915-06
-4.8	1.0000+00	1.4998+00	2.4998+00	2.8546+01	8.7034-06
-4.6	1.0000+00	1.4998+00	2.4998+00	2.8085+01	1.3794-05
-4.4	1.0000+00	1.4998+00	2.4998+00	2.7625+01	2.1862-05
-4.2	1.0000+00	1.4998+00	2.4998+00	2.7164+01	3.4649-05
-4.0	1.0000+00	1.4998+00	2.4998+00	2.6704+01	5.4915-05
-3.8	1.0000+00	1.4998+00	2.4998+00	2.6243+01	8.7034-05
-3.6	1.0000+00	1.4998+00	2.4998+00	2.5783+01	1.3794-04
-3.4	1.0000+00	1.4998+00	2.4998+00	2.5322+01	2.1862-04
-3.2	1.0000+00	1.4998+00	2.4998+00	2.4862+01	3.4649-04
-3.0	1.0000+00	1.4998+00	2.4998+00	2.4401+01	5.4915-04
-2.8	1.0000+00	1.4998+00	2.4998+00	2.3941+01	8.7034-04
-2.6	1.0000+00	1.4998+00	2.4998+00	2.3480+01	1.3794-03
-2.4	1.0000+00	1.4998+00	2.4998+00	2.3020+01	2.1862-03
-2.2	1.0000+00	1.4998+00	2.4998+00	2.2559+01	3.4649-03
-2.0	1.0000+00	1.4998+00	2.4998+00	2.2099+01	5.4915-03
-1.8	1.0000+00	1.4998+00	2.4998+00	2.1638+01	8.7034-03
-1.6	1.0000+00	1.4997+00	2.4997+00	2.1177+01	1.3805-02
-1.4	1.0000+00	1.4992+00	2.4992+00	2.0716+01	2.1876-02
-1.2	9.9999-01	1.4988+00	2.4988+00	2.0255+01	3.4667-02
-1.0	9.9999-01	1.4985+00	2.4985+00	1.9795+01	5.4936-02
-.8	9.9999-01	1.4981+00	2.4981+00	1.9334+01	8.7057-02
-.6	9.9956-01	1.4970+00	2.4966+00	1.8873+01	1.3790-01
-.4	9.9895-01	1.4958+00	2.4947+00	1.8412+01	2.1841-01
-.2	9.9834-01	1.4944+00	2.4927+00	1.7951+01	3.4592-01
.0	9.9695-01	1.4918+00	2.4887+00	1.7489+01	5.4748-01
.2	9.9482-01	1.4869+00	2.4817+00	1.7005+01	8.6583-01
.4	9.9078-01	1.4767+00	2.4675+00	1.6526+01	1.3667+00
.6	9.8552-01	1.4639+00	2.4494+00	1.6060+01	2.1545+00
.8	9.7617-01	1.4439+00	2.4201+00	1.5589+01	3.3823+00
1.0	9.6253-01	1.4185+00	2.3810+00	1.5117+01	5.2856+00
1.2	9.4010-01	1.3691+00	2.3092+00	1.4633+01	8.1816+00
1.4	9.0635-01	1.2907+00	2.1970+00	1.4134+01	1.2499+01
1.6	8.5593-01	1.1750+00	2.0309+00	1.3609+01	1.8708+01
1.8	7.7406-01	1.0073+00	1.7814+00	1.3060+01	2.6801+01
2.0	6.5131-01	7.9269-01	1.4440+00	1.2521+01	3.5558+01

Contrails

AEDC-TDR-64-68

T = 160°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4998+00	2.4998+00	3.3708+01	5.8576-08
-6.8	1.0000+00	1.4998+00	2.4998+00	3.3248+01	9.2837-08
-6.6	1.0000+00	1.4998+00	2.4998+00	3.2787+01	1.4714-07
-6.4	1.0000+00	1.4998+00	2.4998+00	3.2327+01	2.3320-07
-6.2	1.0000+00	1.4998+00	2.4998+00	3.1866+01	3.6959-07
-6.0	1.0000+00	1.4998+00	2.4998+00	3.1406+01	5.8576-07
-5.8	1.0000+00	1.4998+00	2.4998+00	3.0945+01	9.2837-07
-5.6	1.0000+00	1.4998+00	2.4998+00	3.0485+01	1.4714-06
-5.4	1.0000+00	1.4998+00	2.4998+00	3.0024+01	2.3320-06
-5.2	1.0000+00	1.4998+00	2.4998+00	2.9564+01	3.6959-06
-5.0	1.0000+00	1.4998+00	2.4998+00	2.9103+01	5.8576-06
-4.8	1.0000+00	1.4998+00	2.4998+00	2.8643+01	9.2837-06
-4.6	1.0000+00	1.4998+00	2.4998+00	2.8182+01	1.4714-05
-4.4	1.0000+00	1.4998+00	2.4998+00	2.7722+01	2.3320-05
-4.2	1.0000+00	1.4998+00	2.4998+00	2.7261+01	3.6959-05
-4.0	1.0000+00	1.4998+00	2.4998+00	2.6801+01	5.8576-05
-3.8	1.0000+00	1.4998+00	2.4998+00	2.6340+01	9.2837-05
-3.6	1.0000+00	1.4998+00	2.4998+00	2.5879+01	1.4714-04
-3.4	1.0000+00	1.4998+00	2.4998+00	2.5419+01	2.3320-04
-3.2	1.0000+00	1.4998+00	2.4998+00	2.4958+01	3.6959-04
-3.0	1.0000+00	1.4998+00	2.4998+00	2.4498+01	5.8576-04
-2.8	1.0000+00	1.4998+00	2.4998+00	2.4037+01	9.2837-04
-2.6	1.0000+00	1.4998+00	2.4998+00	2.3577+01	1.4714-03
-2.4	1.0000+00	1.4998+00	2.4998+00	2.3116+01	2.3320-03
-2.2	1.0000+00	1.4998+00	2.4998+00	2.2656+01	3.6959-03
-2.0	1.0000+00	1.4998+00	2.4998+00	2.2195+01	5.8576-03
-1.8	1.0000+00	1.4998+00	2.4998+00	2.1735+01	9.2837-03
-1.6	1.0000+00	1.4997+00	2.4997+00	2.1273+01	1.4725-02
-1.4	1.0000+00	1.4992+00	2.4992+00	2.0813+01	2.3335-02
-1.2	9.9999-01	1.4989+00	2.4989+00	2.0352+01	3.6980-02
-1.0	9.9999-01	1.4986+00	2.4986+00	1.9892+01	5.8603-02
-.8	9.9999-01	1.4983+00	2.4983+00	1.9431+01	9.2870-02
-.6	9.9961-01	1.4972+00	2.4968+00	1.8970+01	1.4712-01
-.4	9.9915-01	1.4961+00	2.4952+00	1.8509+01	2.3303-01
-.2	9.9870-01	1.4949+00	2.4936+00	1.8048+01	3.6911-01
.0	9.9742-01	1.4925+00	2.4899+00	1.7586+01	5.8425-01
.2	9.9560-01	1.4875+00	2.4831+00	1.7095+01	9.2428-01
.4	9.9204-01	1.4778+00	2.4698+00	1.6624+01	1.4596+00
.6	9.8728-01	1.4658+00	2.4531+00	1.6158+01	2.3023+00
.8	9.7896-01	1.4489+00	2.4279+00	1.5688+01	3.6181+00
1.0	9.6703-01	1.4247+00	2.3917+00	1.5215+01	5.6643+00
1.2	9.4808-01	1.3804+00	2.3285+00	1.4733+01	8.8013+00
1.4	9.1843-01	1.3117+00	2.2301+00	1.4238+01	1.3512+01
1.6	8.7513-01	1.2074+00	2.0825+00	1.3718+01	2.0406+01
1.8	8.0475-01	1.0563+00	1.8610+00	1.3170+01	2.9741+01
2.0	6.9930-01	8.5150-01	1.5508+00	1.2627+01	4.0911+01
2.2	5.6460-01	5.7520-01	1.1398+00	1.2053+01	5.2039+01
2.4	4.2367-01	1.2569-01	5.4936-01	1.1374+01	6.2065+01
2.6	3.4186-01	-6.0569-01	-2.6383-01	1.0466+01	7.9720+01
2.8	9.2055-01	-1.7986+00	-8.7800-01	9.0541+00	3.3984+02

Controls

T = 170°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.3799+01	6.2237-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3339+01	9.8639-08
-6.6	1.0000+00	1.4999+00	2.4999+00	3.2878+01	1.5633-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2418+01	2.4777-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.1957+01	3.9269-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.1497+01	6.2237-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1036+01	9.8639-07
-5.6	1.0000+00	1.4999+00	2.4999+00	3.0576+01	1.5633-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0115+01	2.4777-06
-5.2	1.0000+00	1.4999+00	2.4999+00	2.9655+01	3.9269-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9194+01	6.2237-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.8734+01	9.8639-06
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8273+01	1.5633-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.7813+01	2.4777-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7352+01	3.9269-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.6891+01	6.2237-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6431+01	9.8639-05
-3.6	1.0000+00	1.4999+00	2.4999+00	2.5970+01	1.5633-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.5510+01	2.4777-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5049+01	3.9269-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.4589+01	6.2237-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4128+01	9.8639-04
-2.6	1.0000+00	1.4999+00	2.4999+00	2.3668+01	1.5633-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3207+01	2.4777-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.2747+01	3.9269-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2286+01	6.2237-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.1826+01	9.8639-03
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1364+01	1.5645-02
-1.4	1.0000+00	1.4994+00	2.4994+00	2.0904+01	2.4794-02
-1.2	9.9999-01	1.4991+00	2.4991+00	2.0443+01	3.9293-02
-1.0	9.9999-01	1.4989+00	2.4989+00	1.9983+01	6.2271-02
-.8	9.9999-01	1.4986+00	2.4986+00	1.9522+01	9.8686-02
-.6	9.9967-01	1.4975+00	2.4972+00	1.9061+01	1.5633-01
-.4	9.9934-01	1.4966+00	2.4959+00	1.8600+01	2.4765-01
-.2	9.9901-01	1.4955+00	2.4945+00	1.8139+01	3.9230-01
.0	9.9786-01	1.4931+00	2.4910+00	1.7677+01	6.2104-01
.2	9.9632-01	1.4885+00	2.4848+00	1.7180+01	9.8276-01
.4	9.9321-01	1.4796+00	2.4728+00	1.6715+01	1.5527+00
.6	9.8904-01	1.4681+00	2.4571+00	1.6249+01	2.4505+00
.8	9.8175-01	1.4530+00	2.4347+00	1.5781+01	3.8552+00
1.0	9.7121-01	1.4307+00	2.4019+00	1.5309+01	6.0444+00
1.2	9.5475-01	1.3927+00	2.3474+00	1.4830+01	9.4174+00
1.4	9.2884-01	1.3330+00	2.2618+00	1.4339+01	1.4520+01
1.6	8.9003-01	1.2370+00	2.1270+00	1.3821+01	2.2050+01
1.8	8.2857-01	1.0922+00	1.9208+00	1.3279+01	3.2518+01
2.0	7.3698-01	8.9912-01	1.6361+00	1.2724+01	4.5809+01
2.2	6.1442-01	6.6168-01	1.2761+00	1.2169+01	6.0562+01
2.4	4.9089-01	2.2698-01	7.1787-01	1.1473+01	7.6645+01
2.6	4.5137-01	-4.4112-01	1.0251-02	1.0588+01	1.1182+02
2.8	1.0537+00	-1.5985+00	-5.4475-01	9.1706+00	4.1305+02

Contrails

AEDC-TDR-64-68

T = 180°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.3885+01	6.5898-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3424+01	1.0444-07
-6.6	1.0000+00	1.4999+00	2.4999+00	3.2964+01	1.6553-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2503+01	2.6234-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.2043+01	4.1579-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.1582+01	6.5898-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1122+01	1.0444-06
-5.6	1.0000+00	1.4999+00	2.4999+00	3.0661+01	1.6553-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0201+01	2.6234-06
-5.2	1.0000+00	1.4999+00	2.4999+00	2.9740+01	4.1579-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9280+01	6.5898-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.8819+01	1.0444-05
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8359+01	1.6553-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.7898+01	2.6234-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7438+01	4.1579-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.6977+01	6.5898-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6517+01	1.0444-04
-3.6	1.0000+00	1.4999+00	2.4999+00	2.6056+01	1.6553-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.5596+01	2.6234-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5135+01	4.1579-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.4675+01	6.5898-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4214+01	1.0444-03
-2.6	1.0000+00	1.4999+00	2.4999+00	2.3754+01	1.6553-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3293+01	2.6234-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.2833+01	4.1579-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2372+01	6.5898-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.1911+01	1.0453-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1450+01	1.6566-02
-1.4	1.0000+00	1.4994+00	2.4994+00	2.0989+01	2.6253-02
-1.2	9.9999-01	1.4992+00	2.4992+00	2.0529+01	4.1606-02
-1.0	9.9999-01	1.4990+00	2.4990+00	2.0068+01	6.5937-02
-.8	9.9999-01	1.4987+00	2.4987+00	1.9608+01	1.0449-01
-.6	9.9974-01	1.4978+00	2.4975+00	1.9147+01	1.6554-01
-.4	9.9950-01	1.4968+00	2.4963+00	1.8686+01	2.6226-01
-.2	9.9921-01	1.4957+00	2.4949+00	1.8225+01	4.1546-01
.0	9.9821-01	1.4936+00	2.4918+00	1.7763+01	6.5780-01
.2	9.9680-01	1.4887+00	2.4855+00	1.7264+01	1.0411+00
.4	9.9416-01	1.4811+00	2.4753+00	1.6802+01	1.6456+00
.6	9.9040-01	1.4704+00	2.4608+00	1.6336+01	2.5983+00
.8	9.8394-01	1.4576+00	2.4415+00	1.5869+01	4.0911+00
1.0	9.7464-01	1.4371+00	2.4117+00	1.5397+01	6.4227+00
1.2	9.6021-01	1.4044+00	2.3646+00	1.4921+01	1.0029+01
1.4	9.3699-01	1.3510+00	2.2880+00	1.4433+01	1.5510+01
1.6	9.0192-01	1.2675+00	2.1694+00	1.3921+01	2.3660+01
1.8	8.4904-01	1.1340+00	1.9830+00	1.3388+01	3.5290+01
2.0	7.7086-01	9.5754-01	1.7284+00	1.2831+01	5.0785+01
2.2	6.6058-01	7.2212-01	1.3827+00	1.2259+01	6.8968+01
2.4	5.5711-01	3.2133-01	8.7844-01	1.1576+01	9.2085+01
2.6	5.4547-01	-3.2000-01	2.2547-01	1.0685+01	1.4308+02
2.8	1.1508+00	-1.3967+00	-2.4593-01	9.3005+00	4.7753+02

Contrails
T = 190°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.3966+01	6.9559-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3506+01	1.1024-07
-6.6	1.0000+00	1.4999+00	2.4999+00	3.3045+01	1.7472-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2585+01	2.7692-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.2124+01	4.3889-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.1664+01	6.9559-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1203+01	1.1024-06
-5.6	1.0000+00	1.4999+00	2.4999+00	3.0743+01	1.7472-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0282+01	2.7692-06
-5.2	1.0000+00	1.4999+00	2.4999+00	2.9821+01	4.3889-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9361+01	6.9559-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.8900+01	1.1024-05
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8440+01	1.7472-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.7979+01	2.7692-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7519+01	4.3889-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.7058+01	6.9559-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6598+01	1.1024-04
-3.6	1.0000+00	1.4999+00	2.4999+00	2.6137+01	1.7472-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.5677+01	2.7692-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5216+01	4.3889-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.4756+01	6.9559-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4295+01	1.1024-03
-2.6	1.0000+00	1.4999+00	2.4999+00	2.3835+01	1.7472-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3374+01	2.7692-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.2914+01	4.3889-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2453+01	6.9559-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.1992+01	1.1034-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1531+01	1.7487-02
-1.4	1.0000+00	1.4995+00	2.4995+00	2.1071+01	2.7713-02
-1.2	9.9999-01	1.4993+00	2.4993+00	2.0610+01	4.3920-02
-1.0	9.9999-01	1.4991+00	2.4991+00	2.0149+01	6.9603-02
-.8	9.9999-01	1.4988+00	2.4988+00	1.9689+01	1.1030-01
-.6	9.9981-01	1.4979+00	2.4977+00	1.9228+01	1.7475-01
-.4	9.9967-01	1.4969+00	2.4966+00	1.8767+01	2.7687-01
-.2	9.9939-01	1.4958+00	2.4952+00	1.8306+01	4.3862-01
.0	9.9856-01	1.4939+00	2.4925+00	1.7845+01	6.9459-01
.2	9.9719-01	1.4889+00	2.4861+00	1.7346+01	1.0993+00
.4	9.9499-01	1.4820+00	2.4770+00	1.6884+01	1.7385+00
.6	9.9161-01	1.4728+00	2.4644+00	1.6419+01	2.7459+00
.8	9.8592-01	1.4616+00	2.4475+00	1.5952+01	4.3271+00
1.0	9.7770-01	1.4429+00	2.4206+00	1.5480+01	6.8008+00
1.2	9.6368-01	1.4134+00	2.3771+00	1.5007+01	1.0624+01
1.4	9.4291-01	1.3669+00	2.3098+00	1.4522+01	1.6474+01
1.6	9.1233-01	1.2949+00	2.2072+00	1.4017+01	2.5264+01
1.8	8.6658-01	1.1762+00	2.0428+00	1.3491+01	3.8029+01
2.0	7.9716-01	1.0105+00	1.8077+00	1.2940+01	5.5430+01
2.2	7.0363-01	7.8047-01	1.4841+00	1.2357+01	7.7545+01
2.4	6.1411-01	4.0279-01	1.0169+00	1.1671+01	1.0727+02
2.6	6.3484-01	-2.1108-01	4.2376-01	1.0784+01	1.7577+02
2.8	1.2865+00	-1.2729+00	1.3563-02	9.3782+00	5.6332+02

Controls

AEDC-TDR-64-68

T = 200°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.4043+01	7.3220-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3583+01	1.1605-07
-6.6	1.0000+00	1.4999+00	2.4999+00	3.3122+01	1.8392-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2661+01	2.9149-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.2201+01	4.6199-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.1740+01	7.3220-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1280+01	1.1605-06
-5.6	1.0000+00	1.4999+00	2.4999+00	3.0819+01	1.8392-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0359+01	2.9149-06
-5.2	1.0000+00	1.4999+00	2.4999+00	2.9898+01	4.6199-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9438+01	7.3220-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.8977+01	1.1605-05
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8517+01	1.8392-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.8056+01	2.9149-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7596+01	4.6199-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.7135+01	7.3220-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6675+01	1.1605-04
-3.6	1.0000+00	1.4999+00	2.4999+00	2.6214+01	1.8392-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.5754+01	2.9149-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5293+01	4.6199-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.4833+01	7.3220-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4372+01	1.1605-03
-2.6	1.0000+00	1.4999+00	2.4999+00	2.3912+01	1.8392-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3451+01	2.9149-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.2991+01	4.6199-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2530+01	7.3220-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2069+01	1.1615-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1608+01	1.8407-02
-1.4	1.0000+00	1.4995+00	2.4995+00	2.1148+01	2.9172-02
-1.2	9.9999-01	1.4994+00	2.4994+00	2.0687+01	4.6232-02
-1.0	9.9999-01	1.4992+00	2.4992+00	2.0226+01	7.3268-02
-.8	9.9999-01	1.4989+00	2.4989+00	1.9766+01	1.1611-01
-.6	9.9988-01	1.4980+00	2.4979+00	1.9305+01	1.8396-01
-.4	9.9980-01	1.4971+00	2.4969+00	1.8844+01	2.9148-01
-.2	9.9951-01	1.4961+00	2.4956+00	1.8383+01	4.6176-01
.0	9.9877-01	1.4941+00	2.4929+00	1.7917+01	7.3130-01
.2	9.9753-01	1.4891+00	2.4866+00	1.7424+01	1.1576+00
.4	9.9560-01	1.4835+00	2.4791+00	1.6963+01	1.8311+00
.6	9.9262-01	1.4751+00	2.4677+00	1.6497+01	2.8934+00
.8	9.8766-01	1.4652+00	2.4529+00	1.6031+01	4.5628+00
1.0	9.8014-01	1.4480+00	2.4281+00	1.5560+01	7.1765+00
1.2	9.6750-01	1.4212+00	2.3887+00	1.5088+01	1.1227+01
1.4	9.4901-01	1.3805+00	2.3295+00	1.4606+01	1.7454+01
1.6	9.2162-01	1.3158+00	2.2374+00	1.4105+01	2.6864+01
1.8	8.8097-01	1.2127+00	2.0937+00	1.3588+01	4.0698+01
2.0	8.2271-01	1.0569+00	1.8796+00	1.3040+01	6.0238+01
2.2	7.4180-01	8.2920-01	1.5710+00	1.2445+01	8.6021+01
2.4	6.6562-01	4.7538-01	1.1410+00	1.1766+01	1.2242+02
2.6	7.1541-01	-1.1938-01	5.9603-01	1.0871+01	2.0837+02
2.8	1.4339+00	-1.1508+00	2.8311-01	9.4471+00	6.5895+02

Controls

T = 210°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.4116+01	7.6881-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3656+01	1.2185-07
-6.6	1.0000+00	1.4999+00	2.4999+00	3.3195+01	1.9312-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2735+01	3.0607-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.2274+01	4.8509-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.1814+01	7.6881-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1353+01	1.2185-06
-5.6	1.0000+00	1.4999+00	2.4999+00	3.0893+01	1.9312-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0432+01	3.0607-06
-5.2	1.0000+00	1.4999+00	2.4999+00	2.9972+01	4.8509-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9511+01	7.6881-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.9051+01	1.2185-05
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8590+01	1.9312-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.8130+01	3.0607-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7669+01	4.8509-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.7208+01	7.6881-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6748+01	1.2185-04
-3.6	1.0000+00	1.4999+00	2.4999+00	2.6287+01	1.9312-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.5827+01	3.0607-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5366+01	4.8509-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.4906+01	7.6881-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4445+01	1.2185-03
-2.6	1.0000+00	1.4999+00	2.4999+00	2.3985+01	1.9312-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3524+01	3.0607-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.3064+01	4.8509-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2603+01	7.6881-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2142+01	1.2196-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1681+01	1.9328-02
-1.4	1.0000+00	1.4996+00	2.4996+00	2.1221+01	3.0632-02
-1.2	9.9999-01	1.4995+00	2.4995+00	2.0760+01	4.8546-02
-1.0	9.9999-01	1.4994+00	2.4994+00	2.0300+01	7.6937-02
-.8	9.9999-01	1.4990+00	2.4990+00	1.9839+01	1.2192-01
-.6	9.9995-01	1.4982+00	2.4981+00	1.9378+01	1.9318-01
-.4	9.9993-01	1.4974+00	2.4973+00	1.8917+01	3.0609-01
-.2	9.9965-01	1.4963+00	2.4959+00	1.8456+01	4.8492-01
.0	9.9900-01	1.4943+00	2.4933+00	1.7986+01	7.6804-01
.2	9.9785-01	1.4897+00	2.4875+00	1.7498+01	1.2159+00
.4	9.9619-01	1.4843+00	2.4805+00	1.7037+01	1.9238+00
.6	9.9342-01	1.4769+00	2.4703+00	1.6572+01	3.0406+00
.8	9.8912-01	1.4685+00	2.4576+00	1.6106+01	4.7981+00
1.0	9.8204-01	1.4522+00	2.4342+00	1.5636+01	7.5500+00
1.2	9.7089-01	1.4282+00	2.3991+00	1.5165+01	1.1830+01
1.4	9.5499-01	1.3914+00	2.3464+00	1.4684+01	1.8442+01
1.6	9.3031-01	1.3331+00	2.2634+00	1.4187+01	2.8474+01
1.8	8.9290-01	1.2402+00	2.1331+00	1.3675+01	4.3310+01
2.0	8.4196-01	1.0980+00	1.9400+00	1.3130+01	6.4724+01
2.2	7.7710-01	8.7550-01	1.6526+00	1.2532+01	9.4663+01
2.4	7.1370-01	5.4440-01	1.2581+00	1.1859+01	1.3782+02
2.6	7.9296-01	-4.0690-02	7.5227-01	1.0946+01	2.4260+02
2.8	1.5449+00	-9.9743-01	5.4747-01	9.5363+00	7.4661+02

Contrails

AEDC-TDR-64-68

T = 220°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.4186+01	8.0542-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3725+01	1.2765-07
-6.6	1.0000+00	1.4999+00	2.4999+00	3.3265+01	2.0231-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2804+01	3.2064-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.2344+01	5.0819-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.1883+01	8.0542-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1423+01	1.2765-06
-5.6	1.0000+00	1.4999+00	2.4999+00	3.0962+01	2.0231-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0502+01	3.2064-06
-5.2	1.0000+00	1.4999+00	2.4999+00	3.0041+01	5.0819-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9581+01	8.0542-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.9120+01	1.2765-05
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8660+01	2.0231-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.8199+01	3.2064-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7739+01	5.0819-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.7278+01	8.0542-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6818+01	1.2765-04
-3.6	1.0000+00	1.4999+00	2.4999+00	2.6357+01	2.0231-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.5897+01	3.2064-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5436+01	5.0819-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.4976+01	8.0542-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4515+01	1.2765-03
-2.6	1.0000+00	1.4999+00	2.4999+00	2.4055+01	2.0231-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3594+01	3.2064-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.3134+01	5.0819-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2673+01	8.0542-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2212+01	1.2776-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1751+01	2.0248-02
-1.4	1.0000+00	1.4996+00	2.4996+00	2.1291+01	3.2090-02
-1.2	1.0000+00	1.4995+00	2.4995+00	2.0830+01	5.0857-02
-1.0	1.0000+00	1.4994+00	2.4994+00	2.0369+01	8.0601-02
-.8	1.0000+00	1.4990+00	2.4990+00	1.9909+01	1.2773-01
-.6	9.9999-01	1.4982+00	2.4982+00	1.9448+01	2.0239-01
-.4	9.9999-01	1.4975+00	2.4975+00	1.8987+01	3.2070-01
-.2	9.9975-01	1.4965+00	2.4962+00	1.8526+01	5.0808-01
.0	9.9922-01	1.4945+00	2.4937+00	1.8051+01	8.0479-01
.2	9.9813-01	1.4903+00	2.4884+00	1.7568+01	1.2741+00
.4	9.9665-01	1.4853+00	2.4819+00	1.7107+01	2.0163+00
.6	9.9398-01	1.4783+00	2.4723+00	1.6642+01	3.1871+00
.8	9.9028-01	1.4701+00	2.4604+00	1.6176+01	5.0325+00
1.0	9.8381-01	1.4559+00	2.4397+00	1.5708+01	7.9238+00
1.2	9.7402-01	1.4343+00	2.4083+00	1.5237+01	1.2433+01
1.4	9.5934-01	1.4017+00	2.3610+00	1.4758+01	1.9408+01
1.6	9.3806-01	1.3469+00	2.2850+00	1.4263+01	3.0078+01
1.8	9.0573-01	1.2608+00	2.1665+00	1.3752+01	4.6025+01
2.0	8.5935-01	1.1333+00	1.9926+00	1.3214+01	6.9212+01
2.2	8.0498-01	9.2562-01	1.7306+00	1.2624+01	1.0275+02
2.4	7.5562-01	6.0868-01	1.3643+00	1.1952+01	1.5287+02
2.6	8.4689-01	6.1010-02	9.0790-01	1.1042+01	2.7144+02
2.8	1.6240+00	-8.7477-01	7.4923-01	9.6430+00	8.2413+02

Controls

T = 230°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.4253+01	8.4203-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3792+01	1.3345-07
-6.6	1.0000+00	1.4999+00	2.4999+00	3.3332+01	2.1151-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2871+01	3.3522-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.2411+01	5.3128-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.1950+01	8.4203-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1490+01	1.3345-06
-5.6	1.0000+00	1.4999+00	2.4999+00	3.1029+01	2.1151-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0569+01	3.3522-06
-5.2	1.0000+00	1.4999+00	2.4999+00	3.0108+01	5.3128-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9648+01	8.4203-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.9187+01	1.3345-05
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8727+01	2.1151-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.8266+01	3.3522-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7806+01	5.3128-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.7345+01	8.4203-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6884+01	1.3345-04
-3.6	1.0000+00	1.4999+00	2.4999+00	2.6424+01	2.1151-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.5963+01	3.3522-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5503+01	5.3128-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.5042+01	8.4203-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4582+01	1.3345-03
-2.6	1.0000+00	1.4999+00	2.4999+00	2.4121+01	2.1151-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3661+01	3.3522-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.3200+01	5.3128-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2740+01	8.4203-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2278+01	1.3357-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1818+01	2.1169-02
-1.4	1.0000+00	1.4996+00	2.4996+00	2.1357+01	3.3550-02
-1.2	1.0000+00	1.4995+00	2.4995+00	2.0897+01	5.3172-02
-1.0	1.0000+00	1.4994+00	2.4994+00	2.0436+01	8.4268-02
-.8	1.0000+00	1.4990+00	2.4990+00	1.9975+01	1.3354-01
-.6	9.9999-01	1.4983+00	2.4983+00	1.9515+01	2.1160-01
-.4	9.9999-01	1.4977+00	2.4977+00	1.9054+01	3.3531-01
-.2	9.9980-01	1.4966+00	2.4964+00	1.8593+01	5.3123-01
.0	9.9939-01	1.4948+00	2.4942+00	1.8113+01	8.4152-01
.2	9.9839-01	1.4909+00	2.4893+00	1.7635+01	1.3324+00
.4	9.9703-01	1.4860+00	2.4830+00	1.7174+01	2.1088+00
.6	9.9472-01	1.4796+00	2.4743+00	1.6709+01	3.3345+00
.8	9.9126-01	1.4720+00	2.4633+00	1.6243+01	5.2664+00
1.0	9.8554-01	1.4589+00	2.4444+00	1.5776+01	8.2985+00
1.2	9.7695-01	1.4389+00	2.4158+00	1.5305+01	1.3038+01
1.4	9.6359-01	1.4090+00	2.3726+00	1.4826+01	2.0381+01
1.6	9.4515-01	1.3560+00	2.3011+00	1.4333+01	3.1682+01
1.8	9.1687-01	1.2779+00	2.1948+00	1.3825+01	4.8712+01
2.0	8.7452-01	1.1595+00	2.0340+00	1.3292+01	7.3635+01
2.2	8.2565-01	9.7045-01	1.7961+00	1.2712+01	1.1017+02
2.4	7.9294-01	6.6116-01	1.4541+00	1.2032+01	1.6771+02
2.6	8.8768-01	1.5062-01	1.0383+00	1.1142+01	2.9755+02
2.8	1.6933+00	-7.1429-01	9.7901-01	9.7563+00	8.9720+02

Controls

AEDC-TDR-64-68

T = 240°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.4999+00	2.4999+00	3.4317+01	8.7864-08
-6.8	1.0000+00	1.4999+00	2.4999+00	3.3856+01	1.3926-07
-6.6	1.0000+00	1.4999+00	2.4999+00	3.3396+01	2.2070-07
-6.4	1.0000+00	1.4999+00	2.4999+00	3.2935+01	3.4979-07
-6.2	1.0000+00	1.4999+00	2.4999+00	3.2475+01	5.5438-07
-6.0	1.0000+00	1.4999+00	2.4999+00	3.2014+01	8.7864-07
-5.8	1.0000+00	1.4999+00	2.4999+00	3.1554+01	1.3926-06
-5.6	1.0000+00	1.4999+00	2.4999+00	3.1093+01	2.2070-06
-5.4	1.0000+00	1.4999+00	2.4999+00	3.0632+01	3.4979-06
-5.2	1.0000+00	1.4999+00	2.4999+00	3.0172+01	5.5438-06
-5.0	1.0000+00	1.4999+00	2.4999+00	2.9711+01	8.7864-06
-4.8	1.0000+00	1.4999+00	2.4999+00	2.9251+01	1.3926-05
-4.6	1.0000+00	1.4999+00	2.4999+00	2.8790+01	2.2070-05
-4.4	1.0000+00	1.4999+00	2.4999+00	2.8330+01	3.4979-05
-4.2	1.0000+00	1.4999+00	2.4999+00	2.7869+01	5.5438-05
-4.0	1.0000+00	1.4999+00	2.4999+00	2.7409+01	8.7864-05
-3.8	1.0000+00	1.4999+00	2.4999+00	2.6948+01	1.3926-04
-3.6	1.0000+00	1.4999+00	2.4999+00	2.6488+01	2.2070-04
-3.4	1.0000+00	1.4999+00	2.4999+00	2.6027+01	3.4979-04
-3.2	1.0000+00	1.4999+00	2.4999+00	2.5567+01	5.5438-04
-3.0	1.0000+00	1.4999+00	2.4999+00	2.5106+01	8.7864-04
-2.8	1.0000+00	1.4999+00	2.4999+00	2.4646+01	1.3926-03
-2.6	1.0000+00	1.4999+00	2.4999+00	2.4185+01	2.2070-03
-2.4	1.0000+00	1.4999+00	2.4999+00	2.3725+01	3.4979-03
-2.2	1.0000+00	1.4999+00	2.4999+00	2.3264+01	5.5438-03
-2.0	1.0000+00	1.4999+00	2.4999+00	2.2804+01	8.7864-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2342+01	1.3938-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1882+01	2.2089-02
-1.4	1.0000+00	1.4996+00	2.4996+00	2.1421+01	3.5007-02
-1.2	1.0000+00	1.4995+00	2.4995+00	2.0961+01	5.5481-02
-1.0	1.0000+00	1.4994+00	2.4994+00	2.0500+01	8.7928-02
-.8	1.0000+00	1.4990+00	2.4990+00	2.0039+01	1.3934-01
-.6	1.0000+00	1.4984+00	2.4984+00	1.9578+01	2.2081-01
-.4	1.0000+00	1.4979+00	2.4979+00	1.9118+01	3.4991-01
-.2	9.9990-01	1.4968+00	2.4967+00	1.8657+01	5.5439-01
.0	9.9958-01	1.4950+00	2.4946+00	1.8173+01	8.7827-01
.2	9.9866-01	1.4913+00	2.4900+00	1.7699+01	1.3907+00
.4	9.9744-01	1.4869+00	2.4843+00	1.7238+01	2.2014+00
.6	9.9528-01	1.4809+00	2.4762+00	1.6773+01	3.4814+00
.8	9.9210-01	1.4736+00	2.4657+00	1.6308+01	5.5001+00
1.0	9.8701-01	1.4614+00	2.4484+00	1.5841+01	8.6722+00
1.2	9.7927-01	1.4429+00	2.4222+00	1.5370+01	1.3637+01
1.4	9.6790-01	1.4136+00	2.3815+00	1.4890+01	2.1362+01
1.6	9.5085-01	1.3645+00	2.3153+00	1.4399+01	3.3259+01
1.8	9.2552-01	1.2917+00	2.2172+00	1.3893+01	5.1308+01
2.0	8.9089-01	1.1758+00	2.0667+00	1.3358+01	7.8276+01
2.2	8.4882-01	9.9918-01	1.8480+00	1.2783+01	1.1820+02
2.4	8.2691-01	6.9959-01	1.5265+00	1.2099+01	1.8250+02
2.6	9.5042-01	2.0028-01	1.1507+00	1.1203+01	3.3226+02
2.8	1.7399+00	-5.6420-01	1.1757+00	9.8753+00	9.6329+02

Controls

T = 250°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4378+01	9.1525-08
-6.8	1.0000+00	1.5000+00	2.5000+00	3.3917+01	1.4506-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3457+01	2.2990-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.2996+01	3.6437-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2536+01	5.7748-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2075+01	9.1525-07
-5.8	1.0000+00	1.5000+00	2.5000+00	3.1615+01	1.4506-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1154+01	2.2990-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.0694+01	3.6437-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0233+01	5.7748-06
-5.0	1.0000+00	1.5000+00	2.5000+00	2.9773+01	9.1525-06
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9312+01	1.4506-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.8852+01	2.2990-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8391+01	3.6437-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.7931+01	5.7748-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7470+01	9.1525-05
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7010+01	1.4506-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.6549+01	2.2990-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6088+01	3.6437-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.5628+01	5.7748-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5167+01	9.1525-04
-2.8	1.0000+00	1.5000+00	2.5000+00	2.4707+01	1.4506-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4246+01	2.2990-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.3786+01	3.6437-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3325+01	5.7748-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.2865+01	9.1525-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2403+01	1.4519-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.1943+01	2.3010-02
-1.4	1.0000+00	1.4996+00	2.4996+00	2.1482+01	3.6468-02
-1.2	1.0000+00	1.4995+00	2.4995+00	2.1022+01	5.7797-02
-1.0	1.0000+00	1.4994+00	2.4994+00	2.0561+01	9.1601-02
-.8	1.0000+00	1.4990+00	2.4990+00	2.0100+01	1.4516-01
-.6	1.0000+00	1.4985+00	2.4985+00	1.9640+01	2.3003-01
-.4	1.0000+00	1.4980+00	2.4980+00	1.9179+01	3.6451-01
-.2	9.9998-01	1.4969+00	2.4969+00	1.8718+01	5.7755-01
.0	9.9971-01	1.4953+00	2.4950+00	1.8230+01	9.1498-01
.2	9.9886-01	1.4916+00	2.4905+00	1.7760+01	1.4489+00
.4	9.9772-01	1.4873+00	2.4850+00	1.7299+01	2.2938+00
.6	9.9576-01	1.4818+00	2.4776+00	1.6835+01	3.6282+00
.8	9.9289-01	1.4748+00	2.4677+00	1.6369+01	5.7338+00
1.0	9.8867-01	1.4632+00	2.4519+00	1.5902+01	9.0488+00
1.2	9.8171-01	1.4462+00	2.4279+00	1.5432+01	1.4240+01
1.4	9.7183-01	1.4175+00	2.3893+00	1.4951+01	2.2342+01
1.6	9.5598-01	1.3715+00	2.3275+00	1.4462+01	3.4832+01
1.8	9.3401-01	1.3013+00	2.2353+00	1.3957+01	5.3937+01
2.0	9.0409-01	1.1890+00	2.0931+00	1.3421+01	8.2745+01
2.2	8.6992-01	1.0170+00	1.8869+00	1.2841+01	1.2619+02
2.4	8.5830-01	7.2700-01	1.5853+00	1.2156+01	1.9732+02
2.6	9.8798-01	2.7642-01	1.2644+00	1.1288+01	3.5987+02
2.8	1.8314+00	-4.4460-01	1.3868+00	9.9728+00	1.0516+03

Contrails

AEDC-TDR-64-68

T = 260°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4437+01	9.5186-08
-6.8	1.0000+00	1.5000+00	2.5000+00	3.3976+01	1.5086-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3516+01	2.3910-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3055+01	3.7894-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2595+01	6.0058-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2134+01	9.5186-07
-5.8	1.0000+00	1.5000+00	2.5000+00	3.1674+01	1.5086-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1213+01	2.3910-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.0753+01	3.7894-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0292+01	6.0058-06
-5.0	1.0000+00	1.5000+00	2.5000+00	2.9831+01	9.5186-06
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9371+01	1.5086-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.8910+01	2.3910-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8450+01	3.7894-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.7989+01	6.0058-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7529+01	9.5186-05
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7068+01	1.5086-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.6608+01	2.3910-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6147+01	3.7894-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.5687+01	6.0058-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5226+01	9.5186-04
-2.8	1.0000+00	1.5000+00	2.5000+00	2.4766+01	1.5086-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4305+01	2.3910-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.3845+01	3.7894-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3384+01	6.0058-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.2924+01	9.5186-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2462+01	1.5100-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.2002+01	2.3931-02
-1.4	1.0000+00	1.4998+00	2.4998+00	2.1541+01	3.7927-02
-1.2	1.0000+00	1.4997+00	2.4997+00	2.1081+01	6.0110-02
-1.0	1.0000+00	1.4996+00	2.4996+00	2.0620+01	9.5266-02
-.8	1.0000+00	1.4992+00	2.4992+00	2.0159+01	1.5097-01
-.6	1.0000+00	1.4987+00	2.4987+00	1.9699+01	2.3924-01
-.4	1.0000+00	1.4983+00	2.4983+00	1.9238+01	3.7912-01
-.2	1.0000+00	1.4972+00	2.4972+00	1.8777+01	6.0070-01
.0	9.9982-01	1.4954+00	2.4952+00	1.8284+01	9.5170-01
.2	9.9906-01	1.4918+00	2.4909+00	1.7818+01	1.5072+00
.4	9.9807-01	1.4878+00	2.4859+00	1.7357+01	2.3864+00
.6	9.9643-01	1.4826+00	2.4790+00	1.6893+01	3.7759+00
.8	9.9398-01	1.4756+00	2.4696+00	1.6428+01	5.9697+00
1.0	9.9011-01	1.4649+00	2.4550+00	1.5962+01	9.4245+00
1.2	9.8407-01	1.4485+00	2.4326+00	1.5491+01	1.4846+01
1.4	9.7522-01	1.4206+00	2.3958+00	1.5018+01	2.3317+01
1.6	9.6208-01	1.3760+00	2.3381+00	1.4520+01	3.6457+01
1.8	9.4217-01	1.3093+00	2.2515+00	1.4016+01	5.6584+01
2.0	9.1652-01	1.1994+00	2.1159+00	1.3479+01	8.7237+01
2.2	8.8929-01	1.0323+00	1.9216+00	1.2897+01	1.3416+02
2.4	8.8850-01	7.5860-01	1.6471+00	1.2215+01	2.1243+02
2.6	1.0270+00	3.4060-01	1.3676+00	1.1367+01	3.8909+02
2.8	1.9552+00	-3.3930-01	1.6159+00	1.0054+01	1.1617+03

Controls

T = 270°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4493+01	9.8847-08
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4033+01	1.5666-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3572+01	2.4829-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3112+01	3.9352-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2651+01	6.2368-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2191+01	9.8847-07
-5.8	1.0000+00	1.5000+00	2.5000+00	3.1730+01	1.5666-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1270+01	2.4829-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.0809+01	3.9352-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0349+01	6.2368-06
-5.0	1.0000+00	1.5000+00	2.5000+00	2.9888+01	9.8847-06
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9428+01	1.5666-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.8967+01	2.4829-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8507+01	3.9352-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8046+01	6.2368-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7586+01	9.8847-05
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7125+01	1.5666-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.6665+01	2.4829-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6204+01	3.9352-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.5743+01	6.2368-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5283+01	9.8847-04
-2.8	1.0000+00	1.5000+00	2.5000+00	2.4822+01	1.5666-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4362+01	2.4829-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.3901+01	3.9352-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3441+01	6.2368-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.2980+01	9.8847-03
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2519+01	1.5681-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.2058+01	2.4852-02
-1.4	1.0000+00	1.4998+00	2.4998+00	2.1598+01	3.9387-02
-1.2	1.0000+00	1.4997+00	2.4997+00	2.1137+01	6.2423-02
-1.0	1.0000+00	1.4996+00	2.4996+00	2.0677+01	9.8932-02
-.8	1.0000+00	1.4992+00	2.4992+00	2.0216+01	1.5678-01
-.6	1.0000+00	1.4987+00	2.4987+00	1.9755+01	2.4845-01
-.4	1.0000+00	1.4983+00	2.4983+00	1.9294+01	3.9373-01
-.2	1.0000+00	1.4973+00	2.4973+00	1.8833+01	6.2386-01
.0	9.9994-01	1.4957+00	2.4956+00	1.8337+01	9.8842-01
.2	9.9927-01	1.4919+00	2.4912+00	1.7875+01	1.5655+00
.4	9.9838-01	1.4879+00	2.4863+00	1.7413+01	2.4789+00
.6	9.9694-01	1.4833+00	2.4802+00	1.6950+01	3.9231+00
.8	9.9478-01	1.4767+00	2.4715+00	1.6485+01	6.2043+00
1.0	9.9147-01	1.4662+00	2.4577+00	1.6018+01	9.8004+00
1.2	9.8633-01	1.4500+00	2.4363+00	1.5546+01	1.5452+01
1.4	9.7776-01	1.4243+00	2.4021+00	1.5067+01	2.4277+01
1.6	9.6653-01	1.3814+00	2.3479+00	1.4578+01	3.8034+01
1.8	9.4965-01	1.3167+00	2.2663+00	1.4072+01	5.9228+01
2.0	9.2776-01	1.2097+00	2.1375+00	1.3534+01	9.1704+01
2.2	9.0672-01	1.0472+00	1.9539+00	1.2951+01	1.4205+02
2.4	9.1615-01	7.9035-01	1.7065+00	1.2276+01	2.2746+02
2.6	1.0775+00	3.9010-01	1.4676+00	1.1426+01	4.2362+02
2.8	2.0401+00	-2.3220-01	1.8079+00	1.0144+01	1.2599+03

Contrails

AEDC-TDR-64-68

T = 280°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4548+01	1.0251-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4087+01	1.6246-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3627+01	2.5749-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3166+01	4.0809-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2706+01	6.4678-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2245+01	1.0251-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.1785+01	1.6246-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1324+01	2.5749-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.0864+01	4.0809-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0403+01	6.4678-06
-5.0	1.0000+00	1.5000+00	2.5000+00	2.9943+01	1.0251-05
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9482+01	1.6246-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9022+01	2.5749-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8561+01	4.0809-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8101+01	6.4678-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7640+01	1.0251-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7180+01	1.6246-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.6719+01	2.5749-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6259+01	4.0809-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.5798+01	6.4678-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5338+01	1.0251-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.4877+01	1.6246-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4416+01	2.5749-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.3956+01	4.0809-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3495+01	6.4678-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3034+01	1.0260-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2573+01	1.6261-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.2113+01	2.5772-02
-1.4	1.0000+00	1.4998+00	2.4998+00	2.1652+01	4.0845-02
-1.2	1.0000+00	1.4997+00	2.4997+00	2.1192+01	6.4733-02
-1.0	1.0000+00	1.4996+00	2.4996+00	2.0731+01	1.0259-01
-.8	1.0000+00	1.4992+00	2.4992+00	2.0270+01	1.6258-01
-.6	1.0000+00	1.4988+00	2.4988+00	1.9810+01	2.5766-01
-.4	1.0000+00	1.4985+00	2.4985+00	1.9349+01	4.0832-01
-.2	1.0000+00	1.4976+00	2.4976+00	1.8888+01	6.4701-01
.0	9.9997-01	1.4958+00	2.4958+00	1.8391+01	1.0251+00
.2	9.9945-01	1.4921+00	2.4915+00	1.7930+01	1.6238+00
.4	9.9868-01	1.4882+00	2.4869+00	1.7468+01	2.5715+00
.6	9.9733-01	1.4839+00	2.4812+00	1.7004+01	4.0700+00
.8	9.9554-01	1.4774+00	2.4729+00	1.6538+01	6.4389+00
1.0	9.9276-01	1.4673+00	2.4601+00	1.6072+01	1.0177+01
1.2	9.8783-01	1.4517+00	2.4395+00	1.5601+01	1.6049+01
1.4	9.8119-01	1.4261+00	2.4073+00	1.5121+01	2.5264+01
1.6	9.7095-01	1.3858+00	2.3567+00	1.4633+01	3.9624+01
1.8	9.5638-01	1.3221+00	2.2785+00	1.4126+01	6.1857+01
2.0	9.3800-01	1.2207+00	2.1587+00	1.3589+01	9.6152+01
2.2	9.2316-01	1.0612+00	1.9844+00	1.3002+01	1.4998+02
2.4	9.3973-01	8.2367-01	1.7634+00	1.2340+01	2.4196+02
2.6	1.1219+00	4.4190-01	1.5638+00	1.1489+01	4.5735+02
2.8	2.1057+00	-1.3170-01	1.9740+00	1.0236+01	1.3528+03

Controls

T = 290°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4600+01	1.0617-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4140+01	1.6827-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3679+01	2.6668-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3219+01	4.2267-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2758+01	6.6988-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2298+01	1.0617-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.1837+01	1.6827-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1377+01	2.6668-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.0916+01	4.2267-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0456+01	6.6988-06
-5.0	1.0000+00	1.5000+00	2.5000+00	2.9995+01	1.0617-05
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9535+01	1.6827-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9074+01	2.6668-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8614+01	4.2267-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8153+01	6.6988-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7693+01	1.0617-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7232+01	1.6827-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.6772+01	2.6668-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6311+01	4.2267-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.5851+01	6.6988-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5390+01	1.0617-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.4930+01	1.6827-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4469+01	2.6668-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4009+01	4.2267-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3548+01	6.6988-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3087+01	1.0627-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2626+01	1.6842-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.2165+01	2.6692-02
-1.4	1.0000+00	1.4998+00	2.4998+00	2.1705+01	4.2304-02
-1.2	1.0000+00	1.4997+00	2.4997+00	2.1244+01	6.7046-02
-1.0	1.0000+00	1.4996+00	2.4996+00	2.0784+01	1.0626-01
-.8	1.0000+00	1.4992+00	2.4992+00	2.0323+01	1.6840-01
-.6	1.0000+00	1.4988+00	2.4988+00	1.9862+01	2.6687-01
-.4	1.0000+00	1.4985+00	2.4985+00	1.9402+01	4.2292-01
-.2	1.0000+00	1.4976+00	2.4976+00	1.8941+01	6.7016-01
.0	9.9998-01	1.4958+00	2.4958+00	1.8444+01	1.0619+00
.2	9.9957-01	1.4921+00	2.4917+00	1.7982+01	1.6820+00
.4	9.9895-01	1.4885+00	2.4874+00	1.7520+01	2.6640+00
.6	9.9786-01	1.4843+00	2.4822+00	1.7057+01	4.2176+00
.8	9.9611-01	1.4783+00	2.4744+00	1.6591+01	6.6727+00
1.0	9.9360-01	1.4682+00	2.4618+00	1.6124+01	1.0549+01
1.2	9.8961-01	1.4526+00	2.4422+00	1.5653+01	1.6652+01
1.4	9.8338-01	1.4285+00	2.4119+00	1.5174+01	2.6225+01
1.6	9.7513-01	1.3892+00	2.3643+00	1.4685+01	4.1216+01
1.8	9.6248-01	1.3282+00	2.2907+00	1.4179+01	6.4474+01
2.0	9.4758-01	1.2309+00	2.1785+00	1.3643+01	1.0060+02
2.2	9.3771-01	1.0775+00	2.0152+00	1.3055+01	1.5779+02
2.4	9.6240-01	8.5460-01	1.8170+00	1.2400+01	2.5664+02
2.6	1.1610+00	4.9090-01	1.6519+00	1.1551+01	4.9056+02
2.8	2.1435+00	-3.1200-02	2.1123+00	1.0336+01	1.4312+03

Contrails

AEDC-TDR-64-68

T = 300°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4651+01	1.0983-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4191+01	1.7407-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3730+01	2.7588-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3270+01	4.3724-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2809+01	6.9298-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2349+01	1.0983-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.1888+01	1.7407-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1428+01	2.7588-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.0967+01	4.3724-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0507+01	6.9298-06
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0046+01	1.0983-05
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9586+01	1.7407-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9125+01	2.7588-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8665+01	4.3724-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8204+01	6.9298-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7744+01	1.0983-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7283+01	1.7407-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.6823+01	2.7588-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6362+01	4.3724-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.5902+01	6.9298-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5441+01	1.0983-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.4981+01	1.7407-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4520+01	2.7588-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4059+01	4.3724-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3599+01	6.9298-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3138+01	1.0993-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2677+01	1.7423-02
-1.6	1.0000+00	1.4998+00	2.4998+00	2.2216+01	2.7613-02
-1.4	1.0000+00	1.4998+00	2.4998+00	2.1756+01	4.3763-02
-1.2	1.0000+00	1.4997+00	2.4997+00	2.1295+01	6.9359-02
-1.0	1.0000+00	1.4996+00	2.4996+00	2.0835+01	1.0992-01
-.8	1.0000+00	1.4993+00	2.4993+00	2.0374+01	1.7421-01
-.6	1.0000+00	1.4990+00	2.4990+00	1.9913+01	2.7608-01
-.4	1.0000+00	1.4986+00	2.4986+00	1.9453+01	4.3753-01
-.2	1.0000+00	1.4978+00	2.4978+00	1.8992+01	6.9332-01
.0	9.9999-01	1.4959+00	2.4959+00	1.8495+01	1.0985+00
.2	9.9976-01	1.4923+00	2.4921+00	1.8033+01	1.7404+00
.4	9.9915-01	1.4889+00	2.4880+00	1.7571+01	2.7565+00
.6	9.9820-01	1.4849+00	2.4831+00	1.7108+01	4.3646+00
.8	9.9689-01	1.4789+00	2.4758+00	1.6642+01	6.9083+00
1.0	9.9449-01	1.4692+00	2.4637+00	1.6175+01	1.0922+01
1.2	9.9114-01	1.4541+00	2.4452+00	1.5703+01	1.7253+01
1.4	9.8591-01	1.4305+00	2.4164+00	1.5225+01	2.7199+01
1.6	9.7799-01	1.3933+00	2.3713+00	1.4736+01	4.2762+01
1.8	9.6830-01	1.3341+00	2.3024+00	1.4230+01	6.7101+01
2.0	9.5612-01	1.2402+00	2.1963+00	1.3694+01	1.0501+02
2.2	9.5039-01	1.0950+00	2.0454+00	1.3110+01	1.6543+02
2.4	9.8555-01	8.8135-01	1.8669+00	1.2455+01	2.7186+02
2.6	1.1988+00	5.3840-01	1.7372+00	1.1619+01	5.2384+02
2.8	2.1677+00	6.3700-02	2.2314+00	1.0434+01	1.5020+03

Controls

T = 320°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4748+01	1.1715-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4288+01	1.8567-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3827+01	2.9427-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3367+01	4.6639-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2906+01	7.3918-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2446+01	1.1715-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.1985+01	1.8567-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1525+01	2.9427-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1064+01	4.6639-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0603+01	7.3918-06
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0143+01	1.1715-05
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9682+01	1.8567-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9222+01	2.9427-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8761+01	4.6639-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8301+01	7.3918-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7840+01	1.1715-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7380+01	1.8567-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.6919+01	2.9427-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6459+01	4.6639-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.5998+01	7.3918-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5538+01	1.1715-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5077+01	1.8567-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4617+01	2.9427-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4156+01	4.6639-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3696+01	7.3918-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3234+01	1.1726-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2774+01	1.8584-02
-1.6	1.0000+00	1.4999+00	2.4999+00	2.2313+01	2.9454-02
-1.4	1.0000+00	1.4999+00	2.4999+00	2.1853+01	4.6681-02
-1.2	1.0000+00	1.4998+00	2.4998+00	2.1392+01	7.3984-02
-1.0	1.0000+00	1.4997+00	2.4997+00	2.0931+01	1.1725-01
-.8	1.0000+00	1.4994+00	2.4994+00	2.0471+01	1.8583-01
-.6	1.0000+00	1.4992+00	2.4992+00	2.0010+01	2.9450-01
-.4	1.0000+00	1.4988+00	2.4988+00	1.9549+01	4.6672-01
-.2	1.0000+00	1.4980+00	2.4980+00	1.9083+01	7.3962-01
.0	1.0000+00	1.4960+00	2.4960+00	1.8591+01	1.1720+00
.2	1.0000+00	1.4925+00	2.4925+00	1.8130+01	1.8569+00
.4	9.9961-01	1.4899+00	2.4895+00	1.7668+01	2.9416+00
.6	9.9894-01	1.4863+00	2.4852+00	1.7204+01	4.6589+00
.8	9.9784-01	1.4803+00	2.4781+00	1.6739+01	7.3758+00
1.0	9.9574-01	1.4714+00	2.4671+00	1.6272+01	1.1565+01
1.2	9.9321-01	1.4576+00	2.4508+00	1.5801+01	1.8441+01
1.4	9.8961-01	1.4356+00	2.4252+00	1.5321+01	2.9121+01
1.6	9.8486-01	1.4002+00	2.3851+00	1.4833+01	4.5933+01
1.8	9.7809-01	1.3462+00	2.3243+00	1.4328+01	7.2299+01
2.0	9.7139-01	1.2597+00	2.2311+00	1.3794+01	1.1380+02
2.2	9.7394-01	1.1282+00	2.1021+00	1.3215+01	1.8083+02
2.4	1.0218+00	9.3530-01	1.9571+00	1.2565+01	3.0069+02
2.6	1.2582+00	6.3090-01	1.8891+00	1.1760+01	5.8664+02
2.8	2.2784+00	2.0810-01	2.4865+00	1.0581+01	1.6766+03

Controls

AEDC-TDR-64-68

T = 340°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4839+01	1.2447-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4379+01	1.9728-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.3918+01	3.1266-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3458+01	4.9554-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.2997+01	7.8538-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2537+01	1.2447-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2076+01	1.9728-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1615+01	3.1266-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1155+01	4.9554-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0694+01	7.8538-06
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0234+01	1.2447-05
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9773+01	1.9728-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9313+01	3.1266-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8852+01	4.9554-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8392+01	7.8538-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.7931+01	1.2447-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7471+01	1.9728-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7010+01	3.1266-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6550+01	4.9554-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6089+01	7.8538-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5629+01	1.2447-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5168+01	1.9728-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4708+01	3.1266-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4247+01	4.9554-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3787+01	7.8538-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3325+01	1.2459-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2865+01	1.9746-02
-1.6	1.0000+00	1.4999+00	2.4999+00	2.2404+01	3.1295-02
-1.4	1.0000+00	1.4999+00	2.4999+00	2.1944+01	4.9599-02
-1.2	1.0000+00	1.4998+00	2.4998+00	2.1483+01	7.8609-02
-1.0	1.0000+00	1.4997+00	2.4997+00	2.1022+01	1.2458-01
-.8	1.0000+00	1.4994+00	2.4994+00	2.0562+01	1.9745-01
-.6	1.0000+00	1.4992+00	2.4992+00	2.0101+01	3.1292-01
-.4	1.0000+00	1.4988+00	2.4988+00	1.9640+01	4.9593-01
-.2	1.0000+00	1.4980+00	2.4980+00	1.9168+01	7.8593-01
.0	1.0000+00	1.4960+00	2.4960+00	1.8682+01	1.2454+00
.2	1.0000+00	1.4931+00	2.4931+00	1.8220+01	1.9733+00
.4	9.9995-01	1.4907+00	2.4906+00	1.7758+01	3.1265+00
.6	9.9946-01	1.4872+00	2.4867+00	1.7295+01	4.9527+00
.8	9.9855-01	1.4819+00	2.4804+00	1.6831+01	7.8424+00
1.0	9.9726-01	1.4733+00	2.4706+00	1.6363+01	1.2413+01
1.2	9.9542-01	1.4608+00	2.4562+00	1.5892+01	1.9637+01
1.4	9.9331-01	1.4397+00	2.4330+00	1.5412+01	3.1058+01
1.6	9.9010-01	1.4082+00	2.3983+00	1.4925+01	4.9063+01
1.8	9.8654-01	1.3575+00	2.3440+00	1.4421+01	7.7480+01
2.0	9.8483-01	1.2779+00	2.2627+00	1.3889+01	1.2259+02
2.2	9.9523-01	1.1584+00	2.1536+00	1.3315+01	1.9634+02
2.4	1.0562+00	9.8270-01	2.0389+00	1.2672+01	3.3021+02
2.6	1.3108+00	7.1490-01	2.0257+00	1.1885+01	6.4846+02
2.8	2.2992+00	3.4810-01	2.6473+00	1.0735+01	1.7991+03

Controls

T = 360°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.4925+01	1.3180-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4464+01	2.0888-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4004+01	3.3106-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3543+01	5.2469-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3083+01	8.3158-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2622+01	1.3180-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2162+01	2.0888-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1701+01	3.3106-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1241+01	5.2469-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0780+01	8.3158-06
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0320+01	1.3180-05
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9859+01	2.0888-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9399+01	3.3106-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.8938+01	5.2469-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8478+01	8.3158-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8017+01	1.3180-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7557+01	2.0888-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7096+01	3.3106-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6636+01	5.2469-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6175+01	8.3158-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5714+01	1.3180-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5254+01	2.0888-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4793+01	3.3106-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4333+01	5.2469-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3872+01	8.3158-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3411+01	1.3192-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.2950+01	2.0907-02
-1.6	1.0000+00	1.4999+00	2.4999+00	2.2490+01	3.3136-02
-1.4	1.0000+00	1.4999+00	2.4999+00	2.2029+01	5.2517-02
-1.2	1.0000+00	1.4999+00	2.4999+00	2.1569+01	8.3233-02
-1.0	1.0000+00	1.4998+00	2.4998+00	2.1108+01	1.3191-01
-.8	1.0000+00	1.4996+00	2.4996+00	2.0647+01	2.0907-01
-.6	1.0000+00	1.4994+00	2.4994+00	2.0187+01	3.3134-01
-.4	1.0000+00	1.4990+00	2.4990+00	1.9726+01	5.2512-01
-.2	1.0000+00	1.4981+00	2.4981+00	1.9248+01	8.3224-01
.0	1.0000+00	1.4962+00	2.4962+00	1.8767+01	1.3188+00
.2	1.0000+00	1.4937+00	2.4937+00	1.8306+01	2.0898+00
.4	1.0000+00	1.4915+00	2.4915+00	1.7844+01	3.3115+00
.6	9.9994-01	1.4882+00	2.4881+00	1.7381+01	5.2466+00
.8	9.9932-01	1.4830+00	2.4823+00	1.6918+01	8.3100+00
1.0	9.9854-01	1.4751+00	2.4736+00	1.6449+01	1.3160+01
1.2	9.9755-01	1.4631+00	2.4606+00	1.5977+01	2.0837+01
1.4	9.9628-01	1.4435+00	2.4398+00	1.5498+01	3.2983+01
1.6	9.9477-01	1.4148+00	2.4096+00	1.5014+01	5.2194+01
1.8	9.9390-01	1.3678+00	2.3617+00	1.4509+01	8.2651+01
2.0	9.9679-01	1.2939+00	2.2907+00	1.3978+01	1.3137+02
2.2	1.0144+00	1.1865+00	2.2009+00	1.3411+01	2.1189+02
2.4	1.0838+00	1.0270+00	2.1108+00	1.2777+01	3.5878+02
2.6	1.3502+00	7.8760-01	2.1378+00	1.2001+01	7.0715+02
2.8	2.2881+00	4.6910-01	2.7572+00	1.0879+01	1.8991+03

Contrails

AEDC-TDR-64-68

T = 380°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5006+01	1.3912-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4545+01	2.2049-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4085+01	3.4945-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3624+01	5.5384-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3164+01	8.7778-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2703+01	1.3912-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2243+01	2.2049-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1782+01	3.4945-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1322+01	5.5384-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0861+01	8.7778-06
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0401+01	1.3912-05
-4.8	1.0000+00	1.5000+00	2.5000+00	2.9940+01	2.2049-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9480+01	3.4945-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9019+01	5.5384-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8559+01	8.7778-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8098+01	1.3912-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7638+01	2.2049-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7177+01	3.4945-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6717+01	5.5384-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6256+01	8.7778-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5796+01	1.3912-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5335+01	2.2049-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4874+01	3.4945-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4414+01	5.5384-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.3953+01	8.7778-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3492+01	1.3925-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.3031+01	2.2069-02
-1.6	1.0000+00	1.4999+00	2.4999+00	2.2571+01	3.4977-02
-1.4	1.0000+00	1.4999+00	2.4999+00	2.2110+01	5.5435-02
-1.2	1.0000+00	1.4999+00	2.4999+00	2.1650+01	8.7858-02
-1.0	1.0000+00	1.4998+00	2.4998+00	2.1189+01	1.3924-01
-.8	1.0000+00	1.4996+00	2.4996+00	2.0729+01	2.2069-01
-.6	1.0000+00	1.4994+00	2.4994+00	2.0268+01	3.4976-01
-.4	1.0000+00	1.4991+00	2.4991+00	1.9807+01	5.5432-01
-.2	1.0000+00	1.4983+00	2.4983+00	1.9323+01	8.7853-01
.0	1.0000+00	1.4964+00	2.4964+00	1.8849+01	1.3923+00
.2	1.0000+00	1.4943+00	2.4943+00	1.8387+01	2.2063+00
.4	1.0000+00	1.4922+00	2.4922+00	1.7925+01	3.4963+00
.6	1.0000+00	1.4890+00	2.4890+00	1.7463+01	5.5402+00
.8	1.0000+00	1.4840+00	2.4840+00	1.6999+01	8.7787+00
1.0	9.9976-01	1.4767+00	2.4765+00	1.6529+01	1.3909+01
1.2	9.9914-01	1.4655+00	2.4646+00	1.6058+01	2.2030+01
1.4	9.9875-01	1.4478+00	2.4465+00	1.5581+01	3.4907+01
1.6	9.9875-01	1.4214+00	2.4201+00	1.5097+01	5.5314+01
1.8	1.0005+00	1.3769+00	2.3774+00	1.4594+01	8.7817+01
2.0	1.0068+00	1.3105+00	2.3173+00	1.4065+01	1.4006+02
2.2	1.0316+00	1.2120+00	2.2436+00	1.3502+01	2.2743+02
2.4	1.1062+00	1.0687+00	2.1749+00	1.2877+01	3.8653+02
2.6	1.3762+00	8.5040-01	2.2266+00	1.2110+01	7.6149+02
2.8	2.2540+00	5.7510-01	2.8291+00	1.1014+01	1.9777+03

Controls

T = 400°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5083+01	1.4644-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4622+01	2.3209-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4162+01	3.6784-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3701+01	5.8299-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3241+01	9.2397-07
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2780+01	1.4644-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2320+01	2.3209-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.1859+01	3.6784-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1399+01	5.8299-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.0938+01	9.2397-06
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0478+01	1.4644-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0017+01	2.3209-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9557+01	3.6784-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9096+01	5.8299-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8636+01	9.2397-05
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8175+01	1.4644-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7715+01	2.3209-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7254+01	3.6784-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6794+01	5.8299-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6333+01	9.2397-04
-3.0	1.0000+00	1.5000+00	2.5000+00	2.5873+01	1.4644-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5412+01	2.3209-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.4952+01	3.6784-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4491+01	5.8299-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4030+01	9.2397-03
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3569+01	1.4658-02
-1.8	1.0000+00	1.4999+00	2.4999+00	2.3108+01	2.3231-02
-1.6	1.0000+00	1.4999+00	2.4999+00	2.2648+01	3.6818-02
-1.4	1.0000+00	1.4999+00	2.4999+00	2.2187+01	5.8353-02
-1.2	1.0000+00	1.4999+00	2.4999+00	2.1727+01	9.2483-02
-1.0	1.0000+00	1.4998+00	2.4998+00	2.1266+01	1.4658-01
-.8	1.0000+00	1.4996+00	2.4996+00	2.0806+01	2.3231-01
-.6	1.0000+00	1.4994+00	2.4994+00	2.0345+01	3.6818-01
-.4	1.0001+00	1.4991+00	2.4992+00	1.9884+01	5.8352-01
-.2	1.0002+00	1.4983+00	2.4985+00	1.9396+01	9.2483-01
.0	1.0003+00	1.4966+00	2.4969+00	1.8926+01	1.4657+00
.2	1.0003+00	1.4948+00	2.4951+00	1.8464+01	2.3228+00
.4	1.0004+00	1.4924+00	2.4928+00	1.8002+01	3.6811+00
.6	1.0005+00	1.4895+00	2.4900+00	1.7539+01	5.8336+00
.8	1.0007+00	1.4850+00	2.4857+00	1.7075+01	9.2457+00
1.0	1.0009+00	1.4781+00	2.4790+00	1.6605+01	1.4651+01
1.2	1.0011+00	1.4674+00	2.4685+00	1.6134+01	2.3234+01
1.4	1.0013+00	1.4516+00	2.4529+00	1.5658+01	3.6835+01
1.6	1.0023+00	1.4275+00	2.4298+00	1.5174+01	5.8434+01
1.8	1.0060+00	1.3867+00	2.3927+00	1.4675+01	9.2889+01
2.0	1.0158+00	1.3260+00	2.3418+00	1.4149+01	1.4875+02
2.2	1.0459+00	1.2358+00	2.2817+00	1.3591+01	2.4274+02
2.4	1.1270+00	1.1063+00	2.2333+00	1.2969+01	4.1448+02
2.6	1.3979+00	9.0340-01	2.3013+00	1.2209+01	8.1463+02

Contrails

AEDC-TDR-64-68

T = 450°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5259+01	1.6475-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4799+01	2.6110-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4338+01	4.1382-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.3878+01	6.5586-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3417+01	1.0395-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.2957+01	1.6475-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2496+01	2.6110-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2036+01	4.1382-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1575+01	6.5586-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1115+01	1.0395-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0654+01	1.6475-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0194+01	2.6110-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9733+01	4.1382-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9273+01	6.5586-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8812+01	1.0395-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8352+01	1.6475-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.7891+01	2.6110-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7431+01	4.1382-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.6970+01	6.5586-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6510+01	1.0395-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6049+01	1.6475-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5589+01	2.6110-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5128+01	4.1382-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4668+01	6.5586-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4206+01	1.0404-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3746+01	1.6490-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.3285+01	2.6135-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.2825+01	4.1421-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.2364+01	6.5647-02
-1.2	1.0001+00	1.4999+00	2.5000+00	2.1903+01	1.0404-01
-1.0	1.0001+00	1.4998+00	2.4999+00	2.1443+01	1.6490-01
-.8	1.0002+00	1.4996+00	2.4998+00	2.0982+01	2.6135-01
-.6	1.0003+00	1.4994+00	2.4997+00	2.0522+01	4.1421-01
-.4	1.0003+00	1.4991+00	2.4994+00	2.0061+01	6.5651-01
-.2	1.0004+00	1.4983+00	2.4987+00	1.9564+01	1.0405+00
.0	1.0007+00	1.4967+00	2.4974+00	1.9102+01	1.6492+00
.2	1.0009+00	1.4952+00	2.4961+00	1.8641+01	2.6140+00
.4	1.0012+00	1.4935+00	2.4947+00	1.8180+01	4.1434+00
.6	1.0015+00	1.4913+00	2.4928+00	1.7718+01	6.5687+00
.8	1.0021+00	1.4876+00	2.4897+00	1.7253+01	1.0416+01
1.0	1.0027+00	1.4822+00	2.4849+00	1.6784+01	1.6518+01
1.2	1.0039+00	1.4738+00	2.4777+00	1.6314+01	2.6213+01
1.4	1.0059+00	1.4614+00	2.4673+00	1.5840+01	4.1612+01
1.6	1.0099+00	1.4416+00	2.4515+00	1.5359+01	6.6236+01
1.8	1.0179+00	1.4094+00	2.4273+00	1.4861+01	1.0581+02
2.0	1.0344+00	1.3633+00	2.3977+00	1.4347+01	1.7041+02
2.2	1.0700+00	1.2929+00	2.3629+00	1.3795+01	2.7936+02
2.4	1.1574+00	1.1910+00	2.3484+00	1.3185+01	4.7887+02
2.6	1.4548+00	1.0011+00	2.4559+00	1.2417+01	9.5343+02

Contracts

AEDC-TDR-64-68

T = 500°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5418+01	1.8305-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.4957+01	2.9011-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4497+01	4.5980-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4036+01	7.2874-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3575+01	1.1550-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3115+01	1.8305-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2654+01	2.9011-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2194+01	4.5980-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1733+01	7.2874-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1273+01	1.1550-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0812+01	1.8305-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0352+01	2.9011-05
-4.6	1.0000+00	1.5000+00	2.5000+00	2.9891+01	4.5980-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9431+01	7.2874-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.8970+01	1.1550-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8510+01	1.8305-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8049+01	2.9011-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7589+01	4.5980-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7128+01	7.2874-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6668+01	1.1550-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6207+01	1.8305-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5747+01	2.9011-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5286+01	4.5980-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4826+01	7.2874-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4364+01	1.1560-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.3904+01	1.8322-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.3443+01	2.9039-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.2983+01	4.6024-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.2522+01	7.2943-02
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2061+01	1.1561-01
-1.0	1.0001+00	1.4998+00	2.4999+00	2.1601+01	1.8323-01
-.8	1.0002+00	1.4996+00	2.4998+00	2.1140+01	2.9040-01
-.6	1.0003+00	1.4994+00	2.4997+00	2.0680+01	4.6027-01
-.4	1.0004+00	1.4991+00	2.4995+00	2.0215+01	7.2950-01
-.2	1.0005+00	1.4984+00	2.4989+00	1.9722+01	1.1563+00
.0	1.0011+00	1.4968+00	2.4979+00	1.9260+01	1.8327+00
.2	1.0014+00	1.4958+00	2.4972+00	1.8799+01	2.9052+00
.4	1.0018+00	1.4946+00	2.4964+00	1.8338+01	4.6056+00
.6	1.0023+00	1.4929+00	2.4952+00	1.7876+01	7.3039+00
.8	1.0030+00	1.4903+00	2.4933+00	1.7411+01	1.1585+01
1.0	1.0041+00	1.4848+00	2.4889+00	1.6944+01	1.8379+01
1.2	1.0063+00	1.4801+00	2.4864+00	1.6476+01	2.9193+01
1.4	1.0099+00	1.4703+00	2.4802+00	1.6005+01	4.6430+01
1.6	1.0161+00	1.4555+00	2.4716+00	1.5527+01	7.4045+01
1.8	1.0274+00	1.4321+00	2.4595+00	1.5033+01	1.1866+02
2.0	1.0466+00	1.3987+00	2.4453+00	1.4530+01	1.9157+02
2.2	1.0829+00	1.3427+00	2.4256+00	1.3984+01	3.1416+02
2.4	1.1792+00	1.2491+00	2.4283+00	1.3375+01	5.4208+02
2.6	1.4990+00	1.0682+00	2.5672+00	1.2587+01	1.0891+03

Contrails

AEDC-TDR-64-68

T = 550°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5561+01	2.0136-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5100+01	3.1913-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4639+01	5.0578-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4179+01	8.0161-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3718+01	1.2705-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3258+01	2.0136-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2797+01	3.1913-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2337+01	5.0578-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.1876+01	8.0161-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1416+01	1.2705-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.0955+01	2.0136-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0495+01	3.1913-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0034+01	5.0578-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9574+01	8.0161-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9113+01	1.2705-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8653+01	2.0136-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8192+01	3.1913-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7732+01	5.0578-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7271+01	8.0161-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6811+01	1.2705-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6350+01	2.0136-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.5890+01	3.1913-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5429+01	5.0578-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.4969+01	8.0161-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4507+01	1.2716-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4047+01	2.0154-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.3586+01	3.1942-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3126+01	5.0625-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.2665+01	8.0236-02
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2204+01	1.2717-01
-1.0	1.0001+00	1.4998+00	2.4999+00	2.1744+01	2.0155-01
-.8	1.0002+00	1.4996+00	2.4998+00	2.1283+01	3.1945-01
-.6	1.0003+00	1.4994+00	2.4997+00	2.0823+01	5.0631-01
-.4	1.0004+00	1.4991+00	2.4995+00	2.0349+01	8.0250-01
-.2	1.0007+00	1.4984+00	2.4991+00	1.9866+01	1.2720+00
.0	1.0013+00	1.4973+00	2.4986+00	1.9404+01	2.0162+00
.2	1.0016+00	1.4967+00	2.4983+00	1.8943+01	3.1963+00
.4	1.0020+00	1.4959+00	2.4979+00	1.8483+01	5.0681+00
.6	1.0028+00	1.4945+00	2.4973+00	1.8021+01	8.0386+00
.8	1.0037+00	1.4910+00	2.4947+00	1.7555+01	1.2752+01
1.0	1.0053+00	1.4860+00	2.4913+00	1.7089+01	2.0242+01
1.2	1.0080+00	1.4810+00	2.4890+00	1.6623+01	3.2167+01
1.4	1.0130+00	1.4713+00	2.4843+00	1.6156+01	5.1235+01
1.6	1.0211+00	1.4566+00	2.4777+00	1.5679+01	8.1847+01

Controls

T = 600°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5691+01	2.1966-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5230+01	3.4814-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4770+01	5.5176-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4309+01	8.7448-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3849+01	1.3860-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3388+01	2.1966-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.2928+01	3.4814-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2467+01	5.5176-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2007+01	8.7448-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1546+01	1.3860-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1086+01	2.1966-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0625+01	3.4814-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0165+01	5.5176-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9704+01	8.7448-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9244+01	1.3860-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8783+01	2.1966-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8323+01	3.4814-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7862+01	5.5176-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7402+01	8.7448-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.6941+01	1.3860-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6481+01	2.1966-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6020+01	3.4814-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5560+01	5.5176-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5099+01	8.7448-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4638+01	1.3872-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4177+01	2.1987-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.3717+01	3.4847-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3256+01	5.5229-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.2795+01	8.7532-02
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2335+01	1.3873-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.1874+01	2.1988-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.1414+01	3.4850-01
-.6	1.0004+00	1.4995+00	2.4999+00	2.0953+01	5.5236-01
-.4	1.0005+00	1.4992+00	2.4997+00	2.0471+01	8.7548-01
-.2	1.0008+00	1.4985+00	2.4993+00	1.9996+01	1.3877+00
.0	1.0014+00	1.4977+00	2.4991+00	1.9534+01	2.1997+00
.2	1.0017+00	1.4972+00	2.4989+00	1.9074+01	3.4875+00
.4	1.0023+00	1.4961+00	2.4984+00	1.8613+01	5.5301+00
.6	1.0031+00	1.4949+00	2.4980+00	1.8151+01	8.7723+00
.8	1.0044+00	1.4917+00	2.4961+00	1.7685+01	1.3921+01
1.0	1.0062+00	1.4872+00	2.4934+00	1.7221+01	2.2103+01
1.2	1.0097+00	1.4822+00	2.4919+00	1.6758+01	3.5153+01
1.4	1.0153+00	1.4724+00	2.4877+00	1.6293+01	5.6022+01
1.6	1.0246+00	1.4574+00	2.4820+00	1.5823+01	8.9604+01

Contrails

AEDC-TDR-64-68

T = 650°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5811+01	2.3797-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5351+01	3.7715-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.4890+01	5.9774-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4430+01	9.4736-07
-6.2	1.0000+00	1.5000+00	2.5000+00	3.3969+01	1.5015-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3508+01	2.3797-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3048+01	3.7715-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2587+01	5.9774-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2127+01	9.4736-06
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1666+01	1.5015-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1206+01	2.3797-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0745+01	3.7715-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0285+01	5.9774-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9824+01	9.4736-05
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9364+01	1.5015-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.8903+01	2.3797-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8443+01	3.7715-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.7982+01	5.9774-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7522+01	9.4736-04
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7061+01	1.5015-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6601+01	2.3797-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6140+01	3.7715-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5680+01	5.9774-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5219+01	9.4736-03
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4758+01	1.5029-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4297+01	2.3819-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.3837+01	3.7750-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3376+01	5.9831-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.2916+01	9.4826-02
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2455+01	1.5029-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.1994+01	2.3820-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.1534+01	3.7753-01
-.6	1.0004+00	1.4995+00	2.4999+00	2.1073+01	5.9840-01
-.4	1.0005+00	1.4992+00	2.4997+00	2.0612+01	9.4848-01
-.2	1.0008+00	1.4989+00	2.4997+00	2.0144+01	1.5036+00
.0	1.0017+00	1.4979+00	2.4996+00	1.9680+01	2.3837+00
.2	1.0020+00	1.4974+00	2.4994+00	1.9223+01	3.7792+00
.4	1.0026+00	1.4965+00	2.4991+00	1.8766+01	5.9929+00
.6	1.0035+00	1.4952+00	2.4987+00	1.8304+01	9.5069+00
.8	1.0050+00	1.4924+00	2.4974+00	1.7825+01	1.5106+01
1.0	1.0076+00	1.4884+00	2.4960+00	1.7357+01	2.4008+01
1.2	1.0115+00	1.4832+00	2.4947+00	1.6901+01	3.8156+01
1.4	1.0185+00	1.4744+00	2.4929+00	1.6424+01	6.0880+01
1.6	1.0293+00	1.4618+00	2.4911+00	1.5941+01	9.7513+01

Controls

T = 700°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.5922+01	2.5627-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5462+01	4.0616-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5001+01	6.4372-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4541+01	1.0202-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4080+01	1.6170-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3620+01	2.5627-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3159+01	4.0616-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2699+01	6.4372-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2238+01	1.0202-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1778+01	1.6170-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1317+01	2.5627-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0857+01	4.0616-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0396+01	6.4372-05
-4.4	1.0000+00	1.5000+00	2.5000+00	2.9936+01	1.0202-04
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9475+01	1.6170-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9015+01	2.5627-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8554+01	4.0616-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8093+01	6.4372-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7633+01	1.0202-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7172+01	1.6170-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6712+01	2.5627-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6251+01	4.0616-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5791+01	6.4372-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5329+01	1.0212-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4869+01	1.6185-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4408+01	2.5651-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.3948+01	4.0655-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3487+01	6.4433-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3027+01	1.0212-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2566+01	1.6186-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2106+01	2.5653-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.1645+01	4.0659-01
-.6	1.0004+00	1.4995+00	2.4999+00	2.1184+01	6.4442-01
-.4	1.0005+00	1.4994+00	2.4999+00	2.0723+01	1.0215+00
-.2	1.0008+00	1.4990+00	2.4998+00	2.0254+01	1.6193+00
.0	1.0017+00	1.4980+00	2.4997+00	1.9792+01	2.5672+00
.2	1.0021+00	1.4975+00	2.4996+00	1.9336+01	4.0704+00
.4	1.0028+00	1.4967+00	2.4995+00	1.8878+01	6.4549+00
.6	1.0038+00	1.4955+00	2.4993+00	1.8414+01	1.0242+01
.8	1.0056+00	1.4931+00	2.4987+00	1.7936+01	1.6278+01
1.0	1.0084+00	1.4896+00	2.4980+00	1.7470+01	2.5872+01
1.2	1.0126+00	1.4848+00	2.4974+00	1.7014+01	4.1131+01
1.4	1.0201+00	1.4763+00	2.4964+00	1.6537+01	6.5666+01

Contrails

AEDC-TDR-64-68

T = 750°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6026+01	2.7458-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5565+01	4.3517-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5105+01	6.8970-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4644+01	1.0931-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4184+01	1.7325-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3723+01	2.7458-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3263+01	4.3517-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2802+01	6.8970-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2342+01	1.0931-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1881+01	1.7325-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1421+01	2.7458-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.0960+01	4.3517-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0500+01	6.8970-05
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0039+01	1.0931-04
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9579+01	1.7325-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9118+01	2.7458-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8657+01	4.3517-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8197+01	6.8970-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7736+01	1.0931-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7276+01	1.7325-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6815+01	2.7458-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6355+01	4.3517-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5894+01	6.8970-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5433+01	1.0941-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.4972+01	1.7341-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4512+01	2.7483-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4051+01	4.3559-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3591+01	6.9036-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3130+01	1.0942-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2670+01	1.7342-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2209+01	2.7485-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.1749+01	4.3563-01
-.6	1.0004+00	1.4996+00	2.5000+00	2.1288+01	6.9048-01
-.4	1.0005+00	1.4995+00	2.5000+00	2.0826+01	1.0945+00
-.2	1.0009+00	1.4991+00	2.5000+00	2.0357+01	1.7351+00
.0	1.0018+00	1.4981+00	2.4999+00	1.9896+01	2.7508+00
.2	1.0022+00	1.4977+00	2.4999+00	1.9440+01	4.3615+00
.4	1.0029+00	1.4970+00	2.4999+00	1.8982+01	6.9167+00
.6	1.0040+00	1.4959+00	2.4999+00	1.8516+01	1.0978+01
.8	1.0059+00	1.4938+00	2.4997+00	1.8039+01	1.7449+01
1.0	1.0089+00	1.4907+00	2.4996+00	1.7575+01	2.7734+01
1.2	1.0138+00	1.4858+00	2.4996+00	1.7117+01	4.4121+01
1.4	1.0212+00	1.4788+00	2.5000+00	1.6643+01	7.0428+01

Controls

T = 800°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6123+01	2.9288-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5662+01	4.6418-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5201+01	7.3568-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4741+01	1.1660-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4280+01	1.8479-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3820+01	2.9288-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3359+01	4.6418-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2899+01	7.3568-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2438+01	1.1660-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.1978+01	1.8479-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1517+01	2.9288-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1057+01	4.6418-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0596+01	7.3568-05
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0136+01	1.1660-04
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9675+01	1.8479-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9215+01	2.9288-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8754+01	4.6418-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8294+01	7.3568-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7833+01	1.1660-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7373+01	1.8479-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.6912+01	2.9288-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6452+01	4.6418-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.5991+01	7.3568-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5530+01	1.1671-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5069+01	1.8497-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4609+01	2.9316-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4148+01	4.6462-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3688+01	7.3638-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3227+01	1.1671-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2766+01	1.8498-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2306+01	2.9318-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.1845+01	4.6468-01
-.6	1.0004+00	1.4996+00	2.5000+00	2.1385+01	7.3651-01
-.4	1.0005+00	1.4995+00	2.5000+00	2.0921+01	1.1675+00
-.2	1.0009+00	1.4992+00	2.5001+00	2.0452+01	1.8508+00
.0	1.0018+00	1.4983+00	2.5001+00	1.9994+01	2.9342+00
.2	1.0023+00	1.4978+00	2.5001+00	1.9538+01	4.6525+00
.4	1.0030+00	1.4972+00	2.5002+00	1.9078+01	7.3789+00
.6	1.0043+00	1.4961+00	2.5004+00	1.8610+01	1.1715+01
.8	1.0063+00	1.4945+00	2.5008+00	1.8136+01	1.8620+01
1.0	1.0094+00	1.4918+00	2.5012+00	1.7674+01	2.9596+01
1.2	1.0148+00	1.4871+00	2.5019+00	1.7213+01	4.7110+01
1.4	1.0227+00	1.4805+00	2.5032+00	1.6739+01	7.5239+01

Contrails

AEDC-TDR-64-68

T = 850°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6214+01	3.1119-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5753+01	4.9319-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5292+01	7.8166-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4832+01	1.2388-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4371+01	1.9634-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3911+01	3.1119-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3450+01	4.9319-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.2990+01	7.8166-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2529+01	1.2388-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2069+01	1.9634-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1608+01	3.1119-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1148+01	4.9319-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0687+01	7.8166-05
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0227+01	1.2388-04
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9766+01	1.9634-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9306+01	3.1119-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8845+01	4.9319-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8385+01	7.8166-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.7924+01	1.2388-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7464+01	1.9634-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7003+01	3.1119-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6543+01	4.9319-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6082+01	7.8166-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5621+01	1.2400-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5160+01	1.9653-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4700+01	3.1147-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4239+01	4.9365-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3779+01	7.8239-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3318+01	1.2400-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2857+01	1.9654-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2397+01	3.1150-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.1936+01	4.9371-01
-.6	1.0004+00	1.4996+00	2.5000+00	2.1476+01	7.8254-01
-.4	1.0005+00	1.4995+00	2.5000+00	2.1011+01	1.2405+00
-.2	1.0009+00	1.4992+00	2.5001+00	2.0542+01	1.9666+00
.0	1.0019+00	1.4983+00	2.5002+00	2.0085+01	3.1178+00
.2	1.0024+00	1.4979+00	2.5003+00	1.9629+01	4.9436+00
.4	1.0032+00	1.4973+00	2.5005+00	1.9169+01	7.8412+00
.6	1.0045+00	1.4964+00	2.5009+00	1.8700+01	1.2451+01
.8	1.0064+00	1.4952+00	2.5016+00	1.8227+01	1.9788+01
1.0	1.0098+00	1.4925+00	2.5023+00	1.7768+01	3.1450+01
1.2	1.0155+00	1.4880+00	2.5035+00	1.7304+01	5.0086+01
1.4	1.0239+00	1.4817+00	2.5056+00	1.6830+01	8.0033+01

Controls

T = 900°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6299+01	3.2949-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5839+01	5.2221-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5378+01	8.2764-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4918+01	1.3117-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4457+01	2.0789-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.3997+01	3.2949-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3536+01	5.2221-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3076+01	8.2764-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2615+01	1.3117-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2155+01	2.0789-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1694+01	3.2949-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1234+01	5.2221-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0773+01	8.2764-05
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0313+01	1.3117-04
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9852+01	2.0789-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9391+01	3.2949-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.8931+01	5.2221-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8470+01	8.2764-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8010+01	1.3117-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7549+01	2.0789-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7089+01	3.2949-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6628+01	5.2221-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6168+01	8.2764-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5706+01	1.3129-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5246+01	2.0809-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4785+01	3.2980-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4325+01	5.2270-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3864+01	8.2843-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3404+01	1.3130-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.2943+01	2.0811-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2483+01	3.2984-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.2022+01	5.2278-01
-.6	1.0004+00	1.4996+00	2.5000+00	2.1561+01	8.2860-01
-.4	1.0005+00	1.4996+00	2.5001+00	2.1096+01	1.3135+00
-.2	1.0009+00	1.4993+00	2.5002+00	2.0628+01	2.0823+00
.0	1.0019+00	1.4984+00	2.5003+00	2.0172+01	3.3012+00
.2	1.0024+00	1.4980+00	2.5004+00	1.9716+01	5.2345+00
.4	1.0032+00	1.4975+00	2.5007+00	1.9255+01	8.3032+00
.6	1.0045+00	1.4968+00	2.5013+00	1.8784+01	1.3186+01
.8	1.0065+00	1.4958+00	2.5023+00	1.8313+01	2.0954+01
1.0	1.0100+00	1.4933+00	2.5033+00	1.7856+01	3.3298+01
1.2	1.0160+00	1.4891+00	2.5051+00	1.7390+01	5.3060+01
1.4	1.0249+00	1.4831+00	2.5080+00	1.6917+01	8.4827+01

Contrails

AEDC-TDR-64-68

T = 950°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6380+01	3.4780-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5920+01	5.5122-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5459+01	8.7362-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.4999+01	1.3846-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4538+01	2.1944-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4078+01	3.4780-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3617+01	5.5122-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3157+01	8.7362-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2696+01	1.3846-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2236+01	2.1944-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1775+01	3.4780-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1315+01	5.5122-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0854+01	8.7362-05
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0394+01	1.3846-04
-4.2	1.0000+00	1.5000+00	2.5000+00	2.9933+01	2.1944-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9473+01	3.4780-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9012+01	5.5122-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8552+01	8.7362-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8091+01	1.3846-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7631+01	2.1944-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7170+01	3.4780-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6710+01	5.5122-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6249+01	8.7362-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5788+01	1.3859-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5327+01	2.1965-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4867+01	3.4812-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4406+01	5.5174-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.3945+01	8.7446-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3485+01	1.3860-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.3024+01	2.1967-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2564+01	3.4816-01
-.8	1.0003+00	1.4997+00	2.5000+00	2.2103+01	5.5182-01
-.6	1.0004+00	1.4996+00	2.5000+00	2.1642+01	8.7465-01
-.4	1.0005+00	1.4996+00	2.5001+00	2.1176+01	1.3865+00
-.2	1.0009+00	1.4993+00	2.5002+00	2.0710+01	2.1981+00
.0	1.0019+00	1.4985+00	2.5004+00	2.0254+01	3.4848+00
.2	1.0024+00	1.4982+00	2.5006+00	1.9797+01	5.5257+00
.4	1.0032+00	1.4976+00	2.5008+00	1.9336+01	8.7651+00
.6	1.0046+00	1.4970+00	2.5016+00	1.8863+01	1.3922+01
.8	1.0067+00	1.4961+00	2.5028+00	1.8395+01	2.2123+01
1.0	1.0103+00	1.4937+00	2.5040+00	1.7939+01	3.5155+01
1.2	1.0164+00	1.4899+00	2.5063+00	1.7472+01	5.6024+01
1.4	1.0254+00	1.4846+00	2.5100+00	1.6999+01	8.9580+01

Controls

T = 1000°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6457+01	3.6610-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.5997+01	5.8023-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5536+01	9.1960-07
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5076+01	1.4575-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4615+01	2.3099-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4155+01	3.6610-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3694+01	5.8023-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3234+01	9.1960-06
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2773+01	1.4575-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2313+01	2.3099-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1852+01	3.6610-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1392+01	5.8023-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.0931+01	9.1960-05
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0471+01	1.4575-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0010+01	2.3099-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9550+01	3.6610-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9089+01	5.8023-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8628+01	9.1960-04
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8168+01	1.4575-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7707+01	2.3099-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7247+01	3.6610-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6786+01	5.8023-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6326+01	9.1960-03
-2.4	1.0000+00	1.5000+00	2.5000+00	2.5864+01	1.4588-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5404+01	2.3121-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.4943+01	3.6644-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4483+01	5.8078-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4022+01	9.2048-02
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3562+01	1.4589-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.3101+01	2.3122-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2641+01	3.6647-01
-.8	1.0003+00	1.4998+00	2.5001+00	2.2180+01	5.8086-01
-.6	1.0004+00	1.4997+00	2.5001+00	2.1719+01	9.2067-01
-.4	1.0005+00	1.4997+00	2.5002+00	2.1252+01	1.4595+00
-.2	1.0009+00	1.4994+00	2.5003+00	2.0788+01	2.3137+00
.0	1.0019+00	1.4986+00	2.5005+00	2.0331+01	3.6682+00
.2	1.0024+00	1.4983+00	2.5007+00	1.9874+01	5.8167+00
.4	1.0033+00	1.4978+00	2.5011+00	1.9413+01	9.2268+00
.6	1.0047+00	1.4974+00	2.5021+00	1.8939+01	1.4659+01
.8	1.0069+00	1.4965+00	2.5034+00	1.8473+01	2.3295+01
1.0	1.0105+00	1.4942+00	2.5047+00	1.8018+01	3.7020+01
1.2	1.0168+00	1.4907+00	2.5075+00	1.7549+01	5.9004+01
1.4	1.0260+00	1.4859+00	2.5119+00	1.7077+01	9.4346+01

Contrails

AEDC-TDR-64-68

T = 1100°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6600+01	4.0271-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6140+01	6.3825-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5679+01	1.0116-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5219+01	1.6032-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4758+01	2.5409-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4298+01	4.0271-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3837+01	6.3825-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3377+01	1.0116-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.2916+01	1.6032-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2456+01	2.5409-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.1995+01	4.0271-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1535+01	6.3825-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1074+01	1.0116-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0614+01	1.6032-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0153+01	2.5409-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9693+01	4.0271-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9232+01	6.3825-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8771+01	1.0116-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8311+01	1.6032-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7850+01	2.5409-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7390+01	4.0271-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.6929+01	6.3825-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6468+01	1.0125-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6007+01	1.6047-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5547+01	2.5433-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5086+01	4.0309-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4626+01	6.3886-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4165+01	1.0125-01
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3705+01	1.6048-01
-1.2	1.0001+00	1.4999+00	2.5000+00	2.3244+01	2.5435-01
-1.0	1.0002+00	1.4998+00	2.5000+00	2.2784+01	4.0312-01
-.8	1.0003+00	1.4998+00	2.5001+00	2.2323+01	6.3895-01
-.6	1.0004+00	1.4997+00	2.5001+00	2.1862+01	1.0127+00
-.4	1.0005+00	1.4997+00	2.5002+00	2.1394+01	1.6055+00
-.2	1.0010+00	1.4994+00	2.5004+00	2.0932+01	2.5452+00
.0	1.0020+00	1.4986+00	2.5006+00	2.0475+01	4.0353+00
.2	1.0026+00	1.4983+00	2.5009+00	2.0018+01	6.3988+00
.4	1.0034+00	1.4980+00	2.5014+00	1.9556+01	1.0151+01
.6	1.0049+00	1.4979+00	2.5028+00	1.9081+01	1.6129+01
.8	1.0074+00	1.4969+00	2.5043+00	1.8617+01	2.5626+01
1.0	1.0112+00	1.4945+00	2.5057+00	1.8164+01	4.0722+01
1.2	1.0173+00	1.4920+00	2.5093+00	1.7694+01	6.4930+01

Controls

T = 1200°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6731+01	4.3932-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6270+01	6.9628-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5810+01	1.1035-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5349+01	1.7490-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.4889+01	2.7719-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4428+01	4.3932-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.3968+01	6.9628-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3507+01	1.1035-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3047+01	1.7490-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2586+01	2.7719-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2126+01	4.3932-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1665+01	6.9628-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1205+01	1.1035-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0744+01	1.7490-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0284+01	2.7719-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9823+01	4.3932-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9362+01	6.9628-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.8902+01	1.1035-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8441+01	1.7490-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.7981+01	2.7719-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7520+01	4.3932-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7060+01	6.9628-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6598+01	1.1046-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6138+01	1.7506-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5677+01	2.7745-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5217+01	4.3973-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4756+01	6.9693-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4296+01	1.1046-01
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3835+01	1.7507-01
-1.2	1.0002+00	1.4999+00	2.5001+00	2.3375+01	2.7747-01
-1.0	1.0003+00	1.4998+00	2.5001+00	2.2914+01	4.3978-01
-.8	1.0004+00	1.4998+00	2.5002+00	2.2454+01	6.9705-01
-.6	1.0005+00	1.4997+00	2.5002+00	2.1991+01	1.1049+00
-.4	1.0006+00	1.4997+00	2.5003+00	2.1523+01	1.7515+00
-.2	1.0011+00	1.4994+00	2.5005+00	2.1063+01	2.7766+00
.0	1.0021+00	1.4986+00	2.5007+00	2.0607+01	4.4022+00
.2	1.0027+00	1.4983+00	2.5010+00	2.0149+01	6.9806+00
.4	1.0036+00	1.4982+00	2.5018+00	1.9684+01	1.1077+01
.6	1.0052+00	1.4981+00	2.5033+00	1.9211+01	1.7598+01
.8	1.0077+00	1.4972+00	2.5049+00	1.8750+01	2.7957+01
1.0	1.0117+00	1.4952+00	2.5069+00	1.8293+01	4.4448+01
1.2	1.0177+00	1.4931+00	2.5108+00	1.7826+01	7.0862+01

T = 1300°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6851+01	4.7593-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6390+01	7.5430-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.5930+01	1.1955-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5469+01	1.8947-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5009+01	3.0029-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4548+01	4.7593-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4088+01	7.5430-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3627+01	1.1955-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3167+01	1.8947-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2706+01	3.0029-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2246+01	4.7593-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1785+01	7.5430-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1325+01	1.1955-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0864+01	1.8947-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0404+01	3.0029-04
-4.0	1.0000+00	1.5000+00	2.5000+00	2.9943+01	4.7593-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9483+01	7.5430-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9022+01	1.1955-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8562+01	1.8947-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8101+01	3.0029-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7640+01	4.7593-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7180+01	7.5430-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6719+01	1.1966-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6258+01	1.8965-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5797+01	3.0057-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5337+01	4.7637-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4876+01	7.5500-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4416+01	1.1966-01
-1.4	1.0001+00	1.4999+00	2.5000+00	2.3955+01	1.8965-01
-1.2	1.0002+00	1.4999+00	2.5001+00	2.3495+01	3.0059-01
-1.0	1.0003+00	1.4998+00	2.5001+00	2.3034+01	4.7642-01
-.8	1.0004+00	1.4998+00	2.5002+00	2.2574+01	7.5513-01
-.6	1.0005+00	1.4997+00	2.5002+00	2.2110+01	1.1970+00
-.4	1.0007+00	1.4997+00	2.5004+00	2.1642+01	1.8975+00
-.2	1.0012+00	1.4994+00	2.5006+00	2.1184+01	3.0080+00
.0	1.0022+00	1.4986+00	2.5008+00	2.0728+01	4.7691+00
.2	1.0028+00	1.4984+00	2.5012+00	2.0269+01	7.5631+00
.4	1.0037+00	1.4984+00	2.5021+00	1.9802+01	1.2003+01
.6	1.0053+00	1.4984+00	2.5037+00	1.9331+01	1.9067+01
.8	1.0079+00	1.4973+00	2.5052+00	1.8872+01	3.0286+01
1.0	1.0121+00	1.4957+00	2.5078+00	1.8413+01	4.8168+01
1.2	1.0183+00	1.4939+00	2.5122+00	1.7945+01	7.6808+01

Controls

T = 1400°K

Log(p/p ₀)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.6962+01	5.1254-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6502+01	8.1232-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6041+01	1.2874-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5580+01	2.0405-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5120+01	3.2339-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4659+01	5.1254-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4199+01	8.1232-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3738+01	1.2874-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3278+01	2.0405-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2817+01	3.2339-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2357+01	5.1254-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.1896+01	8.1232-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1436+01	1.2874-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.0975+01	2.0405-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0515+01	3.2339-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0054+01	5.1254-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9594+01	8.1232-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9133+01	1.2874-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8673+01	2.0405-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8212+01	3.2339-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7752+01	5.1254-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7291+01	8.1232-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6830+01	1.2886-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6369+01	2.0423-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.5909+01	3.2369-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5448+01	5.1302-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.4988+01	8.1310-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4527+01	1.2887-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4067+01	2.0425-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.3606+01	3.2371-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3145+01	5.1307-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.2685+01	8.1320-01
-.6	1.0006+00	1.4997+00	2.5003+00	2.2220+01	1.2890+00
-.4	1.0008+00	1.4997+00	2.5005+00	2.1752+01	2.0434+00
-.2	1.0013+00	1.4994+00	2.5007+00	2.1296+01	3.2394+00
.0	1.0023+00	1.4986+00	2.5009+00	2.0840+01	5.1359+00
.2	1.0029+00	1.4986+00	2.5015+00	2.0380+01	8.1449+00
.4	1.0038+00	1.4986+00	2.5024+00	1.9911+01	1.2929+01
.6	1.0054+00	1.4986+00	2.5040+00	1.9442+01	2.0535+01
.8	1.0082+00	1.4974+00	2.5056+00	1.8986+01	3.2615+01
1.0	1.0125+00	1.4960+00	2.5085+00	1.8524+01	5.1899+01
1.2	1.0189+00	1.4944+00	2.5133+00	1.8057+01	8.2770+01

T = 1500°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7065+01	5.4915-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6605+01	8.7034-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6144+01	1.3794-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5684+01	2.1862-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5223+01	3.4649-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4763+01	5.4915-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4302+01	8.7034-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3842+01	1.3794-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3381+01	2.1862-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.2921+01	3.4649-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2460+01	5.4915-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2000+01	8.7034-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1539+01	1.3794-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1079+01	2.1862-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0618+01	3.4649-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0158+01	5.4915-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9697+01	8.7034-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9237+01	1.3794-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8776+01	2.1862-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8316+01	3.4649-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7855+01	5.4915-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7395+01	8.7034-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.6933+01	1.3807-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6473+01	2.1882-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6012+01	3.4681-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5552+01	5.4966-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.5091+01	8.7116-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4631+01	1.3807-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4170+01	2.1883-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.3709+01	3.4683-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3249+01	5.4973-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.2788+01	8.7133-01
-.6	1.0006+00	1.4997+00	2.5004+00	2.2322+01	1.3812+00
-.4	1.0009+00	1.4997+00	2.5006+00	2.1857+01	2.1894+00
-.2	1.0014+00	1.4994+00	2.5008+00	2.1400+01	3.4708+00
.0	1.0024+00	1.4987+00	2.5011+00	2.0944+01	5.5030+00
.2	1.0030+00	1.4987+00	2.5017+00	2.0484+01	8.7273+00
.4	1.0039+00	1.4987+00	2.5026+00	2.0013+01	1.3855+01
.6	1.0055+00	1.4987+00	2.5042+00	1.9546+01	2.2002+01
.8	1.0083+00	1.4977+00	2.5058+00	1.9091+01	3.4940+01
1.0	1.0126+00	1.4964+00	2.5090+00	1.8628+01	5.5599+01
1.2	1.0192+00	1.4949+00	2.5141+00	1.8161+01	8.8701+01

Contrails

T = 1600°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7162+01	5.8576-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6702+01	9.2837-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6241+01	1.4714-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5781+01	2.3320-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5320+01	3.6959-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4860+01	5.8576-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4399+01	9.2837-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.3939+01	1.4714-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3478+01	2.3320-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3018+01	3.6959-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2557+01	5.8576-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2097+01	9.2837-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1636+01	1.4714-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1176+01	2.3320-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0715+01	3.6959-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0255+01	5.8576-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9794+01	9.2837-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9333+01	1.4714-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8873+01	2.3320-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8412+01	3.6959-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.7952+01	5.8576-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7491+01	9.2837-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7030+01	1.4727-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6569+01	2.3341-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6109+01	3.6993-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5648+01	5.8630-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.5188+01	9.2923-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4727+01	1.4728-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4267+01	2.3342-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.3806+01	3.6996-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3346+01	5.8636-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.2885+01	9.2938-01
-.6	1.0006+00	1.4998+00	2.5004+00	2.2418+01	1.4732+00
-.4	1.0009+00	1.4998+00	2.5007+00	2.1954+01	2.3354+00
-.2	1.0014+00	1.4995+00	2.5009+00	2.1498+01	3.7022+00
.0	1.0024+00	1.4988+00	2.5012+00	2.1041+01	5.8699+00
.2	1.0030+00	1.4988+00	2.5018+00	2.0581+01	9.3092+00
.4	1.0040+00	1.4988+00	2.5028+00	2.0108+01	1.4780+01
.6	1.0057+00	1.4988+00	2.5045+00	1.9644+01	2.3470+01
.8	1.0084+00	1.4978+00	2.5062+00	1.9190+01	3.7269+01
1.0	1.0128+00	1.4967+00	2.5095+00	1.8725+01	5.9322+01
1.2	1.0195+00	1.4954+00	2.5149+00	1.8258+01	9.4648+01

Contrails

AEDC-TDR-64-68

T = 1700°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7253+01	6.2237-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6793+01	9.8639-07
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6332+01	1.5633-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5872+01	2.4777-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5411+01	3.9269-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.4951+01	6.2237-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4490+01	9.8639-06
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4030+01	1.5633-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3569+01	2.4777-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3109+01	3.9269-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2648+01	6.2237-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2188+01	9.8639-05
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1727+01	1.5633-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1267+01	2.4777-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0806+01	3.9269-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0346+01	6.2237-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9885+01	9.8639-04
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9424+01	1.5633-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.8964+01	2.4777-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8503+01	3.9269-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8043+01	6.2237-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7582+01	9.8639-03
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7121+01	1.5648-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6660+01	2.4800-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6200+01	3.9306-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5739+01	6.2297-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.5279+01	9.8735-02
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4818+01	1.5649-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4358+01	2.4801-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.3897+01	3.9308-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3437+01	6.2304-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.2976+01	9.8747-01
-.6	1.0006+00	1.4998+00	2.5004+00	2.2508+01	1.5653+00
-.4	1.0009+00	1.4998+00	2.5007+00	2.2046+01	2.4813+00
-.2	1.0014+00	1.4995+00	2.5009+00	2.1590+01	3.9336+00
.0	1.0024+00	1.4989+00	2.5013+00	2.1132+01	6.2365+00
.2	1.0030+00	1.4989+00	2.5019+00	2.0672+01	9.8912+00
.4	1.0040+00	1.4989+00	2.5029+00	2.0199+01	1.5704+01
.6	1.0057+00	1.4989+00	2.5046+00	1.9736+01	2.4934+01
.8	1.0084+00	1.4979+00	2.5063+00	1.9283+01	3.9588+01
1.0	1.0130+00	1.4968+00	2.5098+00	1.8816+01	6.3050+01

Controls

T = 1800°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7339+01	6.5898-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6878+01	1.0444-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6418+01	1.6553-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.5957+01	2.6234-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5497+01	4.1579-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5036+01	6.5898-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4576+01	1.0444-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4115+01	1.6553-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3655+01	2.6234-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3194+01	4.1579-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2734+01	6.5898-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2273+01	1.0444-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1813+01	1.6553-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1352+01	2.6234-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0892+01	4.1579-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0431+01	6.5898-04
-3.8	1.0000+00	1.5000+00	2.5000+00	2.9971+01	1.0444-03
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9510+01	1.6553-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9050+01	2.6234-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8589+01	4.1579-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8129+01	6.5898-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7667+01	1.0454-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7207+01	1.6568-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6746+01	2.6259-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6286+01	4.1617-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5825+01	6.5959-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.5365+01	1.0454-01
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4904+01	1.6568-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4444+01	2.6260-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.3983+01	4.1620-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3522+01	6.5969-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.3061+01	1.0456+00
-.6	1.0006+00	1.4998+00	2.5004+00	2.2593+01	1.6574+00
-.4	1.0009+00	1.4998+00	2.5007+00	2.2132+01	2.6273+00
-.2	1.0014+00	1.4995+00	2.5009+00	2.1676+01	4.1650+00
.0	1.0024+00	1.4989+00	2.5013+00	2.1218+01	6.6034+00
.2	1.0030+00	1.4989+00	2.5019+00	2.0756+01	1.0474+01
.4	1.0042+00	1.4989+00	2.5031+00	2.0284+01	1.6630+01
.6	1.0058+00	1.4989+00	2.5047+00	1.9822+01	2.6402+01
.8	1.0085+00	1.4979+00	2.5064+00	1.9369+01	4.1930+01
1.0	1.0131+00	1.4970+00	2.5101+00	1.8903+01	6.6762+01

Contrails

AEDC-TDR-64-68

T = 1900°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7420+01	6.9559-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.6960+01	1.1024-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6499+01	1.7472-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6038+01	2.7692-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5578+01	4.3889-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5117+01	6.9559-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4657+01	1.1024-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4196+01	1.7472-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3736+01	2.7692-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3275+01	4.3889-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2815+01	6.9559-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2354+01	1.1024-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1894+01	1.7472-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1433+01	2.7692-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.0973+01	4.3889-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0512+01	6.9559-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0052+01	1.1024-03
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9591+01	1.7472-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9131+01	2.7692-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8670+01	4.3889-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8210+01	6.9559-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7748+01	1.1035-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7288+01	1.7489-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6827+01	2.7718-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6367+01	4.3929-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5906+01	6.9623-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.5446+01	1.1035-01
-1.6	1.0001+00	1.4999+00	2.5000+00	2.4985+01	1.7489-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4525+01	2.7719-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.4064+01	4.3933-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3603+01	6.9631-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.3141+01	1.1037+00
-.6	1.0006+00	1.4998+00	2.5004+00	2.2674+01	1.7495+00
-.4	1.0009+00	1.4998+00	2.5007+00	2.2214+01	2.7732+00
-.2	1.0014+00	1.4995+00	2.5009+00	2.1758+01	4.3964+00
.0	1.0024+00	1.4989+00	2.5013+00	2.1300+01	6.9707+00
.2	1.0030+00	1.4989+00	2.5019+00	2.0836+01	1.1057+01
.4	1.0044+00	1.4989+00	2.5033+00	2.0365+01	1.7553+01
.6	1.0059+00	1.4989+00	2.5048+00	1.9904+01	2.7867+01
.8	1.0086+00	1.4981+00	2.5067+00	1.9450+01	4.4263+01
1.0	1.0132+00	1.4976+00	2.5103+00	1.8985+01	7.0443+01

Controls

T = 2000°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7497+01	7.3220-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7037+01	1.1605-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6576+01	1.8392-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6115+01	2.9149-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5655+01	4.6199-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5194+01	7.3220-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4734+01	1.1605-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4273+01	1.8392-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3813+01	2.9149-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3352+01	4.6199-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2892+01	7.3220-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2431+01	1.1605-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.1971+01	1.8392-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1510+01	2.9149-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1050+01	4.6199-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0589+01	7.3220-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0129+01	1.1605-03
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9668+01	1.8392-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9208+01	2.9149-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8747+01	4.6199-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8287+01	7.3220-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7825+01	1.1615-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7365+01	1.8409-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6904+01	2.9176-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6444+01	4.6241-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.5983+01	7.3287-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.5523+01	1.1615-01
-1.6	1.0001+00	1.4999+00	2.5000+00	2.5062+01	1.8409-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4602+01	2.9178-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.4141+01	4.6245-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3680+01	7.3296-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.3218+01	1.1618+00
-.6	1.0006+00	1.4998+00	2.5004+00	2.2750+01	1.8416+00
-.4	1.0009+00	1.4998+00	2.5007+00	2.2291+01	2.9192+00
-.2	1.0014+00	1.4995+00	2.5009+00	2.1835+01	4.6278+00
.0	1.0024+00	1.4989+00	2.5013+00	2.1377+01	7.3374+00
.2	1.0030+00	1.4989+00	2.5019+00	2.0911+01	1.1640+01
.4	1.0044+00	1.4989+00	2.5033+00	2.0442+01	1.8478+01
.6	1.0059+00	1.4989+00	2.5048+00	1.9982+01	2.9333+01
.8	1.0086+00	1.4983+00	2.5069+00	1.9526+01	4.6597+01
1.0	1.0132+00	1.4978+00	2.5106+00	1.9062+01	7.4156+01

Contrails

AEDC-TDR-64-68

T = 2100°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7570+01	7.6881-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7110+01	1.2185-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6649+01	1.9312-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6189+01	3.0607-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5728+01	4.8509-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5268+01	7.6881-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4807+01	1.2185-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4347+01	1.9312-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3886+01	3.0607-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3425+01	4.8509-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.2965+01	7.6881-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2504+01	1.2185-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2044+01	1.9312-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1583+01	3.0607-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1123+01	4.8509-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0662+01	7.6881-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0202+01	1.2185-03
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9741+01	1.9312-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9281+01	3.0607-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8820+01	4.8509-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8360+01	7.6881-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7898+01	1.2196-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7438+01	1.9330-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.6977+01	3.0635-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6517+01	4.8554-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6056+01	7.6953-02
-1.8	1.0001+00	1.4999+00	2.5000+00	2.5596+01	1.2196-01
-1.6	1.0001+00	1.4999+00	2.5000+00	2.5135+01	1.9330-01
-1.4	1.0002+00	1.4999+00	2.5001+00	2.4675+01	3.0637-01
-1.2	1.0003+00	1.4999+00	2.5002+00	2.4214+01	4.8557-01
-1.0	1.0004+00	1.4998+00	2.5002+00	2.3754+01	7.6961-01
-.8	1.0005+00	1.4998+00	2.5003+00	2.3290+01	1.2199+00
-.6	1.0006+00	1.4998+00	2.5004+00	2.2822+01	1.9337+00
-.4	1.0009+00	1.4998+00	2.5007+00	2.2365+01	3.0651+00
-.2	1.0014+00	1.4995+00	2.5009+00	2.1909+01	4.8591+00
.0	1.0024+00	1.4989+00	2.5013+00	2.1450+01	7.7045+00
.2	1.0030+00	1.4989+00	2.5019+00	2.0983+01	1.2223+01
.4	1.0044+00	1.4989+00	2.5033+00	2.0515+01	1.9401+01
.6	1.0059+00	1.4989+00	2.5048+00	2.0057+01	3.0793+01
.8	1.0087+00	1.4983+00	2.5070+00	1.9599+01	4.8928+01
1.0	1.0133+00	1.4980+00	2.5109+00	1.9135+01	7.7881+01

Controls

T = 2200°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7640+01	8.0542-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7179+01	1.2765-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6719+01	2.0231-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6258+01	3.2064-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5798+01	5.0819-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5337+01	8.0542-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4877+01	1.2765-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4416+01	2.0231-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.3956+01	3.2064-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3495+01	5.0819-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3035+01	8.0542-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2574+01	1.2765-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2114+01	2.0231-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1653+01	3.2064-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1193+01	5.0819-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0732+01	8.0542-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0272+01	1.2765-03
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9811+01	2.0231-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9351+01	3.2064-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8890+01	5.0819-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8430+01	8.0542-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.7968+01	1.2777-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7508+01	2.0251-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7047+01	3.2095-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6587+01	5.0867-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6126+01	8.0619-02
-1.8	1.0001+00	1.5000+00	2.5001+00	2.5666+01	1.2777-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5205+01	2.0251-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.4744+01	3.2096-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4284+01	5.0869-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.3823+01	8.0625-01
-.8	1.0005+00	1.4999+00	2.5004+00	2.3359+01	1.2779+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.2892+01	2.0257+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2435+01	3.2111+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.1979+01	5.0905+00
.0	1.0024+00	1.4990+00	2.5014+00	2.1520+01	8.0714+00
.2	1.0030+00	1.4990+00	2.5020+00	2.1052+01	1.2806+01
.4	1.0044+00	1.4990+00	2.5034+00	2.0584+01	2.0325+01
.6	1.0059+00	1.4990+00	2.5049+00	2.0128+01	3.2259+01
.8	1.0087+00	1.4985+00	2.5072+00	1.9669+01	5.1262+01
1.0	1.0133+00	1.4981+00	2.5114+00	1.9205+01	8.1581+01

T = 2300°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7707+01	8.4203-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7246+01	1.3345-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6786+01	2.1151-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6325+01	3.3522-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5865+01	5.3128-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5404+01	8.4203-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.4944+01	1.3345-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4483+01	2.1151-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4023+01	3.3522-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3562+01	5.3128-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3102+01	8.4203-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2641+01	1.3345-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2180+01	2.1151-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1720+01	3.3522-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1259+01	5.3128-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0799+01	8.4203-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0338+01	1.3345-03
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9878+01	2.1151-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9417+01	3.3522-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.8957+01	5.3128-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8496+01	8.4203-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8035+01	1.3358-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7574+01	2.1171-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7114+01	3.3553-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6653+01	5.3178-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6193+01	8.4282-02
-1.8	1.0001+00	1.5000+00	2.5001+00	2.5732+01	1.3358-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5272+01	2.1171-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.4811+01	3.3555-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4351+01	5.3182-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.3890+01	8.4293-01
-.8	1.0005+00	1.4999+00	2.5004+00	2.3425+01	1.3361+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.2959+01	2.1178+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2502+01	3.3571+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2046+01	5.3219+00
.0	1.0024+00	1.4990+00	2.5014+00	2.1570+01	7.6068+00
.2	1.0030+00	1.4990+00	2.5020+00	2.1115+01	9.3388+00
.4	1.0044+00	1.4990+00	2.5034+00	2.0640+01	1.5742+01
.6	1.0059+00	1.4990+00	2.5049+00	2.0190+01	3.1099+01
.8	1.0087+00	1.4986+00	2.5073+00	1.9736+01	5.3590+01
1.0	1.0132+00	1.4983+00	2.5115+00	1.9272+01	8.5308+01

Controls

T = 2400°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7771+01	8.7864-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7310+01	1.3926-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6849+01	2.2070-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6389+01	3.4979-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5928+01	5.5438-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5468+01	8.7864-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.5007+01	1.3926-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4547+01	2.2070-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4086+01	3.4979-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3626+01	5.5438-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3165+01	8.7864-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2705+01	1.3926-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2244+01	2.2070-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1784+01	3.4979-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1323+01	5.5438-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0863+01	8.7864-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0402+01	1.3926-03
-3.6	1.0000+00	1.5000+00	2.5000+00	2.9942+01	2.2070-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9481+01	3.4979-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.9021+01	5.5438-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8560+01	8.7864-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8099+01	1.3938-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7638+01	2.2090-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7178+01	3.5011-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6717+01	5.5488-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6257+01	8.7943-02
-1.8	1.0001+00	1.5000+00	2.5001+00	2.5796+01	1.3938-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5336+01	2.2091-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.4875+01	3.5013-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4415+01	5.5494-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.3954+01	8.7957-01
-.8	1.0005+00	1.4999+00	2.5004+00	2.3488+01	1.3942+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.3023+01	2.2099+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2567+01	3.5030+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2110+01	5.5533+00
.0	1.0024+00	1.4991+00	2.5015+00	2.1650+01	8.8053+00
.2	1.0030+00	1.4991+00	2.5021+00	2.1181+01	1.3971+01
.4	1.0044+00	1.4991+00	2.5035+00	2.0716+01	2.2172+01
.6	1.0058+00	1.4991+00	2.5049+00	2.0261+01	3.5187+01
.8	1.0086+00	1.4988+00	2.5074+00	1.9799+01	5.5923+01
1.0	1.0131+00	1.4984+00	2.5116+00	1.9336+01	8.9012+01

Contrails

AEDC-TDR-64-68

T = 2500°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7832+01	9.1525-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7371+01	1.4506-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6911+01	2.2990-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6450+01	3.6437-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.5990+01	5.7748-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5529+01	9.1525-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.5069+01	1.4506-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4608+01	2.2990-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4148+01	3.6437-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3687+01	5.7748-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3227+01	9.1525-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2766+01	1.4506-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2305+01	2.2990-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1845+01	3.6437-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1384+01	5.7748-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0924+01	9.1525-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0463+01	1.4506-03
-3.6	1.0000+00	1.5000+00	2.5000+00	3.0003+01	2.2990-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9542+01	3.6437-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.9082+01	5.7748-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8621+01	9.1525-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8160+01	1.4519-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7699+01	2.3011-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7239+01	3.6470-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6778+01	5.7801-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6318+01	9.1609-02
-1.8	1.0001+00	1.5000+00	2.5001+00	2.5857+01	1.4519-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5397+01	2.3012-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.4936+01	3.6472-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4476+01	5.7807-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.4015+01	9.1624-01
-.8	1.0005+00	1.4999+00	2.5004+00	2.3549+01	1.4523+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.3085+01	2.3020+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2628+01	3.6490+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2171+01	5.7846+00
.0	1.0024+00	1.4991+00	2.5015+00	2.1711+01	9.1718+00
.2	1.0030+00	1.4991+00	2.5021+00	2.1241+01	1.4553+01
.4	1.0044+00	1.4991+00	2.5035+00	2.0777+01	2.3094+01
.6	1.0058+00	1.4991+00	2.5049+00	2.0324+01	3.6649+01
.8	1.0086+00	1.4989+00	2.5075+00	1.9861+01	5.8254+01
1.0	1.0128+00	1.4989+00	2.5117+00	1.9397+01	9.2697+01

Controls

T = 2600°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7891+01	9.5186-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7430+01	1.5086-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.6970+01	2.3910-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6509+01	3.7894-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.6049+01	6.0058-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5588+01	9.5186-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.5127+01	1.5086-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4667+01	2.3910-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4206+01	3.7894-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3746+01	6.0058-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3285+01	9.5186-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2825+01	1.5086-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2364+01	2.3910-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1904+01	3.7894-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1443+01	6.0058-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.0983+01	9.5186-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0522+01	1.5086-03
-3.6	1.0000+00	1.5000+00	2.5000+00	3.0062+01	2.3910-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9601+01	3.7894-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.9141+01	6.0058-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8680+01	9.5186-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8219+01	1.5100-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7758+01	2.3932-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7298+01	3.7929-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6837+01	6.0114-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6377+01	9.5274-02
-1.8	1.0001+00	1.5000+00	2.5001+00	2.5916+01	1.5100-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5456+01	2.3933-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.4995+01	3.7931-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4535+01	6.0118-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.4074+01	9.5283-01
-.8	1.0005+00	1.4999+00	2.5004+00	2.3607+01	1.5103+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.3144+01	2.3940+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2688+01	3.7949+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2231+01	6.0160+00
.0	1.0024+00	1.4991+00	2.5015+00	2.1770+01	9.5388+00
.2	1.0030+00	1.4991+00	2.5021+00	2.1299+01	1.5135+01
.4	1.0044+00	1.4991+00	2.5035+00	2.0836+01	2.4017+01
.6	1.0058+00	1.4991+00	2.5049+00	2.0384+01	3.8110+01
.8	1.0086+00	1.4990+00	2.5076+00	1.9920+01	6.0583+01
1.0	1.0128+00	1.4990+00	2.5118+00	1.9457+01	9.6399+01

Contrails

AEDC-TDR-64-68

T = 2700°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.7947+01	9.8847-07
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7487+01	1.5666-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.7026+01	2.4829-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6566+01	3.9352-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.6105+01	6.2368-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5645+01	9.8847-06
-5.8	1.0000+00	1.5000+00	2.5000+00	3.5184+01	1.5666-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4724+01	2.4829-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4263+01	3.9352-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3802+01	6.2368-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3342+01	9.8847-05
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2881+01	1.5666-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2421+01	2.4829-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.1960+01	3.9352-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1500+01	6.2368-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.1039+01	9.8847-04
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0579+01	1.5666-03
-3.6	1.0000+00	1.5000+00	2.5000+00	3.0118+01	2.4829-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9658+01	3.9352-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.9197+01	6.2368-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8737+01	9.8847-03
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8275+01	1.5681-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7815+01	2.4853-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7354+01	3.9389-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6894+01	6.2428-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6433+01	9.8941-02
-1.8	1.0001+00	1.5000+00	2.5001+00	2.5973+01	1.5681-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5512+01	2.4853-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.5052+01	3.9390-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4591+01	6.2431-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.4131+01	9.8951-01
-.8	1.0005+00	1.4999+00	2.5004+00	2.3663+01	1.5684+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.3201+01	2.4861+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2745+01	3.9409+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2287+01	6.2474+00
.0	1.0024+00	1.4991+00	2.5015+00	2.1827+01	9.9058+00
.2	1.0030+00	1.4991+00	2.5021+00	2.1355+01	1.5718+01
.4	1.0044+00	1.4991+00	2.5035+00	2.0893+01	2.4940+01
.6	1.0058+00	1.4991+00	2.5049+00	2.0441+01	3.9572+01
.8	1.0086+00	1.4990+00	2.5076+00	1.9977+01	6.2907+01

Contrails

T = 2800°K

Log(ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.8002+01	1.0251-06
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7541+01	1.6246-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.7081+01	2.5749-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6620+01	4.0809-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.6160+01	6.4678-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5699+01	1.0251-05
-5.8	1.0000+00	1.5000+00	2.5000+00	3.5239+01	1.6246-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4778+01	2.5749-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4318+01	4.0809-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3857+01	6.4678-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3396+01	1.0251-04
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2936+01	1.6246-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2475+01	2.5749-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.2015+01	4.0809-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1554+01	6.4678-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.1094+01	1.0251-03
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0633+01	1.6246-03
-3.6	1.0000+00	1.5000+00	2.5000+00	3.0173+01	2.5749-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9712+01	4.0809-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.9252+01	6.4678-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8790+01	1.0260-02
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8330+01	1.6262-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7869+01	2.5773-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7409+01	4.0847-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.6948+01	6.4739-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6488+01	1.0260-01
-1.8	1.0001+00	1.5000+00	2.5001+00	2.6027+01	1.6262-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5567+01	2.5774-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.5106+01	4.0849-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4646+01	6.4743-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.4185+01	1.0262+00
-.8	1.0005+00	1.4999+00	2.5004+00	2.3717+01	1.6266+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.3256+01	2.5782+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2799+01	4.0868+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2342+01	6.4787+00
.0	1.0024+00	1.4991+00	2.5015+00	2.1881+01	1.0273+01
.2	1.0030+00	1.4991+00	2.5021+00	2.1410+01	1.6300+01
.4	1.0044+00	1.4991+00	2.5035+00	2.0948+01	2.5862+01
.6	1.0058+00	1.4991+00	2.5049+00	2.0496+01	4.1038+01
.8	1.0086+00	1.4990+00	2.5076+00	2.0032+01	6.5230+01

Contrails

AEDC-TDR-64-68

T = 2900°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.8054+01	1.0617-06
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7594+01	1.6827-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.7133+01	2.6668-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6673+01	4.2267-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.6212+01	6.6988-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5752+01	1.0617-05
-5.8	1.0000+00	1.5000+00	2.5000+00	3.5291+01	1.6827-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4831+01	2.6668-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4370+01	4.2267-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3910+01	6.6988-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3449+01	1.0617-04
-4.8	1.0000+00	1.5000+00	2.5000+00	3.2989+01	1.6827-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2528+01	2.6668-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.2068+01	4.2267-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1607+01	6.6988-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.1147+01	1.0617-03
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0686+01	1.6827-03
-3.6	1.0000+00	1.5000+00	2.5000+00	3.0226+01	2.6668-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9765+01	4.2267-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.9305+01	6.6988-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8843+01	1.0627-02
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8383+01	1.6842-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7922+01	2.6693-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7462+01	4.2306-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.7001+01	6.7051-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6540+01	1.0627-01
-1.8	1.0001+00	1.5000+00	2.5001+00	2.6080+01	1.6843-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5619+01	2.6694-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.5159+01	4.2308-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4698+01	6.7056-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.4237+01	1.0628+00
-.8	1.0005+00	1.4999+00	2.5004+00	2.3769+01	1.6846+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.3309+01	2.6703+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2853+01	4.2328+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2395+01	6.7101+00
.0	1.0024+00	1.4991+00	2.5015+00	2.1933+01	1.0640+01
.2	1.0030+00	1.4991+00	2.5021+00	2.1462+01	1.6883+01
.4	1.0044+00	1.4991+00	2.5035+00	2.1002+01	2.6788+01
.6	1.0058+00	1.4991+00	2.5049+00	2.0548+01	4.2514+01
.8	1.0086+00	1.4990+00	2.5076+00	2.0085+01	6.7561+01

Controls

T = 3000°K

Log (ρ/ρ_0)	Z	E/RT	H/RT	S/R	p, atm
-7.0	1.0000+00	1.5000+00	2.5000+00	3.8105+01	1.0983-06
-6.8	1.0000+00	1.5000+00	2.5000+00	3.7645+01	1.7407-06
-6.6	1.0000+00	1.5000+00	2.5000+00	3.7184+01	2.7588-06
-6.4	1.0000+00	1.5000+00	2.5000+00	3.6724+01	4.3724-06
-6.2	1.0000+00	1.5000+00	2.5000+00	3.6263+01	6.9298-06
-6.0	1.0000+00	1.5000+00	2.5000+00	3.5803+01	1.0983-05
-5.8	1.0000+00	1.5000+00	2.5000+00	3.5342+01	1.7407-05
-5.6	1.0000+00	1.5000+00	2.5000+00	3.4882+01	2.7588-05
-5.4	1.0000+00	1.5000+00	2.5000+00	3.4421+01	4.3724-05
-5.2	1.0000+00	1.5000+00	2.5000+00	3.3961+01	6.9298-05
-5.0	1.0000+00	1.5000+00	2.5000+00	3.3500+01	1.0983-04
-4.8	1.0000+00	1.5000+00	2.5000+00	3.3039+01	1.7407-04
-4.6	1.0000+00	1.5000+00	2.5000+00	3.2579+01	2.7588-04
-4.4	1.0000+00	1.5000+00	2.5000+00	3.2118+01	4.3724-04
-4.2	1.0000+00	1.5000+00	2.5000+00	3.1658+01	6.9298-04
-4.0	1.0000+00	1.5000+00	2.5000+00	3.1197+01	1.0983-03
-3.8	1.0000+00	1.5000+00	2.5000+00	3.0737+01	1.7407-03
-3.6	1.0000+00	1.5000+00	2.5000+00	3.0276+01	2.7588-03
-3.4	1.0000+00	1.5000+00	2.5000+00	2.9816+01	4.3724-03
-3.2	1.0000+00	1.5000+00	2.5000+00	2.9355+01	6.9298-03
-3.0	1.0000+00	1.5000+00	2.5000+00	2.8894+01	1.0993-02
-2.8	1.0000+00	1.5000+00	2.5000+00	2.8433+01	1.7423-02
-2.6	1.0000+00	1.5000+00	2.5000+00	2.7973+01	2.7614-02
-2.4	1.0000+00	1.5000+00	2.5000+00	2.7512+01	4.3765-02
-2.2	1.0000+00	1.5000+00	2.5000+00	2.7052+01	6.9363-02
-2.0	1.0000+00	1.5000+00	2.5000+00	2.6591+01	1.0993-01
-1.8	1.0001+00	1.5000+00	2.5001+00	2.6131+01	1.7423-01
-1.6	1.0001+00	1.5000+00	2.5001+00	2.5670+01	2.7614-01
-1.4	1.0002+00	1.5000+00	2.5002+00	2.5210+01	4.3766-01
-1.2	1.0003+00	1.5000+00	2.5003+00	2.4749+01	6.9367-01
-1.0	1.0004+00	1.4999+00	2.5003+00	2.4287+01	1.0994+00
-.8	1.0005+00	1.4999+00	2.5004+00	2.3820+01	1.7427+00
-.6	1.0006+00	1.4999+00	2.5005+00	2.3360+01	2.7623+00
-.4	1.0009+00	1.4999+00	2.5008+00	2.2904+01	4.3786+00
-.2	1.0014+00	1.4996+00	2.5010+00	2.2446+01	6.9414+00
.0	1.0024+00	1.4991+00	2.5015+00	2.1983+01	1.1007+01
.2	1.0030+00	1.4991+00	2.5021+00	2.1513+01	1.7464+01
.4	1.0044+00	1.4991+00	2.5035+00	2.1053+01	2.7709+01
.6	1.0058+00	1.4991+00	2.5049+00	2.0599+01	4.3977+01
.8	1.0085+00	1.4991+00	2.5076+00	2.0137+01	6.9884+01