

# **EARTH'S AND VENUS' AVERAGE TEMPERATURE AT 1 BAR USING THE CHARGED ATMOSPHERE AND FARADAY'S CONSTANT**

*by John Politis*

*First published June 28, 2022*

The average temperature of Earth and Venus at 1 BAR can be calculated straight from the energy required to raise the potential of 1 electron through 1 volt. We simply sum up all the electrons in a MOLE of AIR on Earth and multiply it by the energy required to charge up each electron in a mole of air to 1 electron volt.

This will prove that the energy in a Mole of charged electrons to 1 volt is also the same as the Earth's average temperature. Which proves that it is the charge energy discharged from an atom via radiation (channeling) that is the reason for Earth's average temperature. Miles: Or, to say it another way, they are both a measurement of the same thing. This is proof that both heat and temperature are a direct measurement of charge density and thereby of the unified field.

[From Wikipedia - Faraday's Constant.](#)

*The absolute electric charge of one mole of electrons is known as "Faraday's Constant". The Faraday constant can be thought of as the conversion factor between the mole (used in chemistry) and the coulomb (used in physics and in practical electrical measurements), Expressed in faradays, the Faraday constant  $F$  equals "1 faraday of charge per mole".*

The base unit to lift one MOLE of electrons through a potential of 1 VOLT is the "FARADAY CONSTANT" which is expressed in Ampere hours.

To charge 1 mole of electrons to 1 Volt requires 1 faraday or 96,485.3399 joules of energy. This equates to 96,485.3399 Joules /  $6.022 \times 10^{23}$  (Avogadro's number) =  $1.602 \times 10^{-19}$  Joules per electron.

Knowing that Milliken and Fletcher determined the charge rate of an Electron that required a particle to counter gravity tells us that the  $1.602 \times 10^{-19}$  Joules has Earth's gravity built into it. See below for more on that.

Other common units of the Faraday Constant

**96.485 kJ per volt**–gram-equivalent

23.061 kcal per volt–gram-equivalent

**26.801 A·h/mol**

To charge up 1 MOLE of Electrons through to 1 Volt requires 26.801 Amp Hours of current or 96485.3399 Amp Seconds of current.

$96485.3399 \text{ (Amp Seconds)} / 26.801 \text{ (Amp Hours)} = 3600$

There are  $8.70727 \times 10^{24}$  Electrons in a MOLE of air on Earth

## For the Earth

Example on how the sum of electrons per element are calculated.

To calculate the number of electrons in a mole of Nitrogen relevant to the mass of a mole of air we need to know the percentage of Nitrogen in that mole of air.

Nitrogen  $N_2$  makes up 78.084% of the atoms / molecules in a mole of air.

There are 14 electrons in  $N_2$

$$6.022 \times 10^{23} * 14 \text{ electrons} * 78.084\% = 6.36709 \times 10^{24} \text{ electrons}$$

Oxygen  $O_2$  makes up 20.946% of the atoms / molecules in a mole of air.

$$\text{There are 16 electrons in } O_2. \quad 6.022 \times 10^{23} * 16 \text{ electrons} * 20.946\% = 2.0182 \times 10^{24} \text{ electrons}$$

And so on for Argon,  $CO_2$  etc.

After calculating the number of electrons relevant to the mass of a MOLE of AIR in Earth's atmosphere, we have in total  $8.70727 \times 10^{24}$  Electrons

$$8.70727 \times 10^{24} \times 1.602 \times 10^{-19} \text{ Joules} = 1,395,057.73 \text{ Joules}$$

1,395,057.73 Joules divided by 3600 to get 387.51 Watts. Then apply the Stefan Boltzmann Law regarding energy radiated from a black body.

$$\text{Temperature} = (387.51 / 5.6704 \times 10^{-8})^{.25} = 287.52 \text{ Kelvin. Earths average temperature is approx. 288 kelvin}$$

## VENUS

Using the same method as above we are able to calculate the temperature on Venus at 1 Bar after we make the necessary adjustment for the following:

1. **The gravitational field.**
2. **The amount of energy that Venus receives from the Sun compared to Earth.**
3. **The application of the Inverse square law on black bodies radiating energy.**

### **The gravitational field.**

On Earth gravity is embedded in the Energy required to raise the potential of the electron through 1 volt.

The Oil drop experiment.

Robert A. Millikan *devised a straightforward method of measuring the minute electric charge that is present on many of the droplets in the descending fine mist of oil particles.*

Millikan was able to calculate the amount of electric force required to suspend particle against the force of Gravity. With further calculations they assessed that the force required to pass one electron through a 1 Volt potential was  $1.602 \times 10^{-19}$  Joules per electron

<https://www.britannica.com/science/Millikan-oil-drop-experiment>

Miles: it is important to know that the potential was vertical. So the numbers here are for vertical energies only. Which is why these calculations directly yield temperatures: they are measuring the charge field of the Earth, which is moving straight up against gravity. But since they had no way to separate the unified field, finding one number for gravity and one for charge, they instead used a combined force, calling that the gravity field. In this way the charge field remained hidden within this unified field until I separated it out.

We need to adjust for the differences in gravity for Venus and Earth to ascertain the amount of energy to lift an electron through 1 volt of potential on Venus from the methods employed on Earth using established physics relevant to Earth's atmosphere. We apply two steps. **A** and **B** as shown below.

Divide the  $1.602 \times 10^{-19}$  Joules by Venus's gravity and multiply by Earth's gravity.

Venus – Gravity  $8.87 \text{ms}^{-2}$

Earth – Gravity  $9.80665 \text{ms}^{-2}$

$$(A) 1.602 \times 10^{-19} \text{ Joules} / 8.87 \text{m.s}^{-2} * 9.80665 \text{ m.s}^{-2} = 1.77136 * 10^{-19} \text{ Joules}$$

## 2. The amount of energy that Venus receives compared to Earth.

Venus receives 1.911 times the energy than Earth does.  $2601.30 \text{ W.M}^2$  compared to  $1361 \text{ W.M}^2 = 1.911$

<https://nssdc.gsfc.nasa.gov/planetary/factsheet/venusfact.html>

## 3. The application of the Inverse square law on black bodies radiating energy.

Stefan Boltzmann Law describes the power radiated from a body is directly proportional to the fourth power of the black body.

To compare Venus to Earth we need to ensure that energy received in the Venusian atmosphere is the same as that on Earth. I.E comparing apples with apples.

We apply the inverse square law proposed by Stefan Boltzmann. **(B)**  $1.91^{.25} = 1.175$

By multiplying points 2 and 3 **(A)** and **(B)** together we get the required energy on Venus to lift an electron by a potential of 1 Volt.

$$1.771356 \times 10^{-19} \text{ Joules} * 1.175 = (C) 2.08135 \times 10^{-19} \text{ Joules}$$

Venus total electrons count per mole of Venusian atmosphere is  $1.314 \times 10^{25}$ .

Multiply by  $2.08135 \times 10^{-19}$  Joules / 3600 = 759.7 Watts or 340K on Venus at 1 Bar.

But isn't Venus' temperature more like 750K? No, because that is the temperature at the surface, which is 92 Bar. See the extract below from Robert Holmes' paper “**On the Apparent Relationship**

## Between Total Solar Irradiance and the Atmospheric Temperature at 1 Bar on Three Terrestrial-type Bodies”.

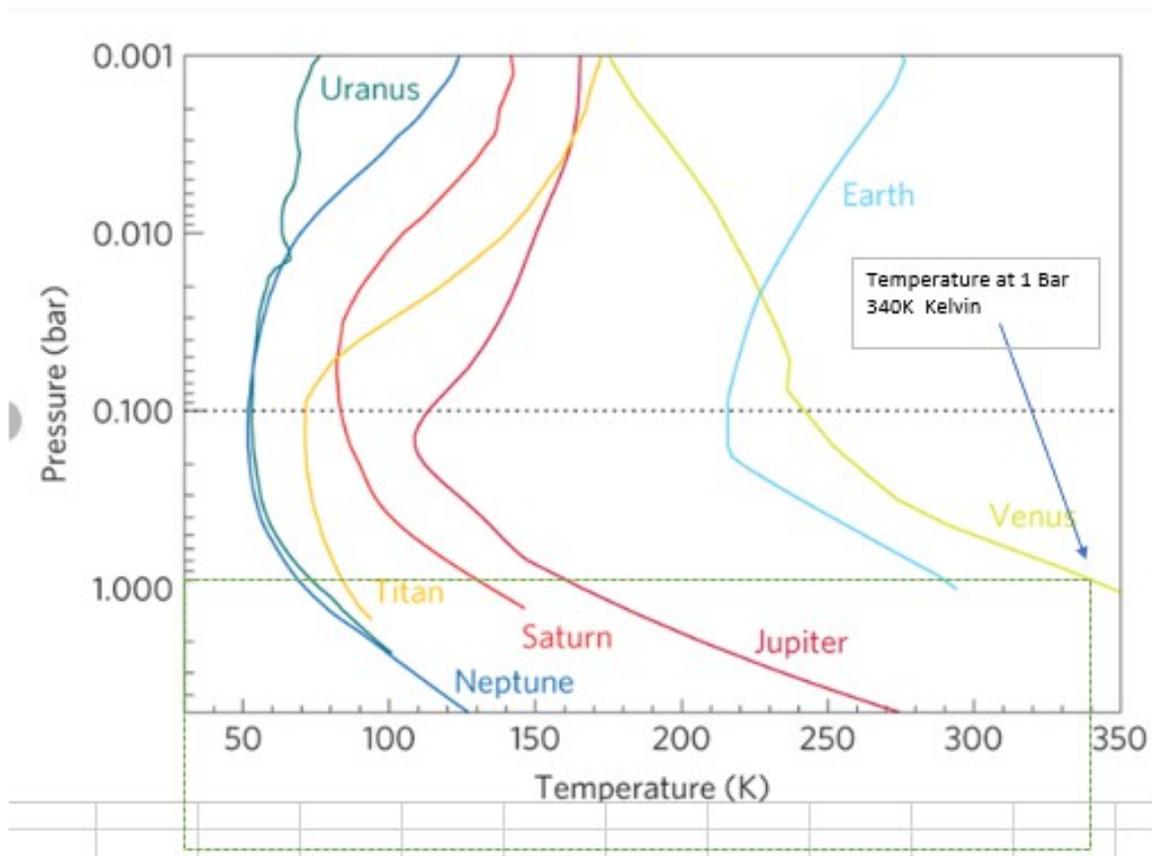
*The measured temperature in the Venusian atmosphere cited here comes from Venera’s 8, 9, 10, 11 and 12 and from the Pioneer Sounder at 1atm, averages 340K [12, 13, 20].*

[12] Moroz, V., Ekonomov, A., Moshkin, B., Revercomb, H., Sromovsky, L., Schofield, J. Tomasko, M. G. (1985). Solar and thermal radiation in the Venus atmosphere. *Advances in Space Research*, 5 (11), 197-232.

[13] Zasova, L., Ignatiev, N., Khatuntsev, I., & Linkin, V. (2007). Structure of the Venus atmosphere. *Planetary and Space Science*, 55 (12), 1712-1728.

[20] Robinson, T. D., & Catling, D. C. (2014). Common 0.1 [thinsp] bar tropopause in thick atmospheres set by pressure-dependent infrared transparency. *Nature Geoscience*, 7 (1), 12-15.

I have added in the dashed box and comments to the chart from the Robert Holmes paper.



DATA below

						Avogadro's no.	
						6.02E+23	
Atomic Number	Derived from	No of Electrons	Name		composition of Atmosphere	Number of electrons per atom / molecule	
7	7 x 2N	14	Nitrogen	N <sub>2</sub>	0.78084	6.58326E+24	
8	8 x 2 O	16	Oxygen	O <sub>2</sub>	0.20946	2.01824E+24	
18	18	18	Argon	Ar	0.00934	1.01244E+23	
6&8	6 + 8 x 2	22	Carbon dioxide	CO <sub>2</sub>	0.00033	4.37207E+21	
						0.00000E+00	
10	10	10	Neon	Ne	0.00001818	1.09483E+20	
2	2	2	Helium	He	0.00000524	6.31120E+18	
6&1	6 + 1 x 4	10	Methane	CH <sub>4</sub>	0.00000179	1.07796E+19	
36	36	36	Krypton	Kr	0.000001	2.16797E+19	
1	1 x 2	2	Hydrogen	H <sub>2</sub>	0.00000005	6.02214E+17	
54	54	54	Xenon	Xe	0.00000009	2.92676E+18	
				<b>Sum</b>	<b>0.9999968</b>		

			(a)	Total NO. of Electrons per mole of air	8.7073E+24	Electrons
			(b)	Coulombs, Electron-Volt, Ampere Second per ELECTRON	1.6022E-19	Ampere Second
			(c)	Electrons multiplied by Joules per charged electron through 1 Volt (a) * (b) = Joules or Ampere Second	1,395,057.49	Ampere Second
			(d)	Total Watts required in Earths Molar mass. To lift an electron potential to 1 volt. = (c) / 3600	387.52	Watts
			(e)	Stefan Boltzman equation. Temperature = (power/5.670373e-08)^.25	287.52	Kelvin

Venus table below

						Avogadro's no. N <sub>A</sub>	
						6.02E+23	
Atomic Number	Derived from	No of Electrons	Name		Composition of Atmosphere	Number of electrons per atom / molecule	
7	7 x 2N	14	Nitrogen	N <sub>2</sub>	0.035	2.95085E+23	
6&8	6 + 8 x 2	22	Carbon dioxide	CO <sub>2</sub>	0.965	1.27850E+25	
				<b>Sum</b>	<b>1</b>	1.30801E+25	

		(a)	Total NO. of Electrons per mole of Air on Venus	1.30801E+25	
		(b)	Coulombs, Electron-Volt, Ampere Second, Joules per ELECTRON	1.60218E-19	Ampere Second
		(c)	Convert. Relevant to earths Gravity. (b) Divide by 8.87 * 9.80665	1.77136E-19	
		(d)	Apply the inverse square Law. $1.911^{A-25} * (c)$	2.08268E-19	
		(e)	Total Electrons multiplied by (VENUS eV) to lift one electron through 1 volt potential	2.72417E+06	Ampere Second
		(f)	Total Watts. (e)/3600	756.71	Watts
		(g)	Stefan Boltzman equation. Temperature = $(power/5.670373e-08)^{.25}$	339.88	Kelvin

Miles: I have published this simple math from a reader because it confirms many of my contentions, the main one being that the electron is simply a boat on the charge sea, and that all energy of the electric field comes from the ambient charge field or unified field. Or, for electrical engineers: the EM field [is a straight function of the D field](#). If everything weren't a function of the charge field (displacement field according to Maxwell), these calculations wouldn't resolve as they do. You wouldn't expect to be able to calculate these things so easily, given the old fields and assumptions. But in [my paper on the Earth's core](#), I have run similar calculations, and that is where my reader got the idea to run the equations above. There, I was able to calculate the total energy of the Earth straight from the fundamental charge, using electron volts, Coulombs, and Joules. The same thing my reader is doing here, but he has pulled temperature at 1bar into the calculations.