

# WHY IS **VENUS** SO HOT?



1  
00:00:00,316 --> 00:00:02,773  
Why is Venus so hot?

2  
00:00:03,673 --> 00:00:05,748  
We Asked a NASA Scientist.

3  
00:00:06,000 --> 00:00:08,000  
Well, let's start with what we know. The Earth.

4  
00:00:08,512 --> 00:00:10,922  
So the Earth's average surface temperature is about

5  
00:00:10,922 --> 00:00:14,084  
60 degrees Fahrenheit, 15 degrees Celsius.

6  
00:00:14,084 --> 00:00:17,688  
Our atmospheric composition is about 78% nitrogen,

7  
00:00:18,022 --> 00:00:22,726  
20-ish% oxygen, and then about less  
than 1% of a whole bunch of other gases.

8  
00:00:23,160 --> 00:00:25,496  
But Venus's atmosphere isn't like Earth's.

9  
00:00:25,529 --> 00:00:29,400  
We know that on Earth, carbon dioxide acts as a greenhouse gas.

10  
00:00:29,466 --> 00:00:32,102  
So light from the Sun passes through the Earth's atmosphere.

11  
00:00:32,336 --> 00:00:36,106  
But CO<sub>2</sub> absorbs some of the heat that would otherwise

12  
00:00:36,106 --> 00:00:37,775  
have escaped back into space.

13

00:00:37,775 --> 00:00:41,879

And it traps that heat against the Earth,  
causing the Earth's surface to be warmer

14

00:00:42,179 --> 00:00:45,315

than it would otherwise have been in the absence of CO<sub>2</sub>.

15

00:00:45,649 --> 00:00:49,553

Now, imagine that same process happening on Venus, a place with over

16

00:00:49,553 --> 00:00:54,525

2,000 times as much CO<sub>2</sub> in the atmosphere and a lot closer to the Sun.

17

00:00:54,558 --> 00:00:58,162

And it's no wonder that Venus's actual average surface temperature

18

00:00:58,362 --> 00:01:01,398

is a blistering 870 degrees Fahrenheit,

19

00:01:01,632 --> 00:01:04,034

about 465 degrees Celsius.

20

00:01:04,501 --> 00:01:08,038

So Venus, really, really hot.

21

00:01:08,238 --> 00:01:09,256

And why is it so hot?

22

00:01:10,040 --> 00:01:12,042

Much closer to the Sun.

23

00:01:12,042 --> 00:01:13,856

Massive greenhouse effect.