

# See Monday's solar eclipse if you can

**“It was truly a life-changing experience! Just mind bogglingly beautiful and awe inspiring!”**

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**That's how science journalist David Barron describes it. He's talking, of course, the solar eclipse he watched in Aruba in 1998.**

That's a lot of info to take in, so feel free to watch it again as many times as you need to.

The last total solar eclipse seen from contiguous United States was on Feb. 26, 1979, and it was visible across the northwestern U.S. states of Washington, Oregon, Idaho, Montana, and North Dakota. The one coming up tomorrow will cross the United States from northwest to southeast, coast to coast.

reaches totality between 10:30 am and 3:30 pm, depending on where you are. If you want to see what the eclipse will look like from where you are (enter your ZIP code), go to [this site](#).

**[Tme \(Solar Eclipse Map\)](#)**

A solar Eclipse always comes at the time of a new moon.

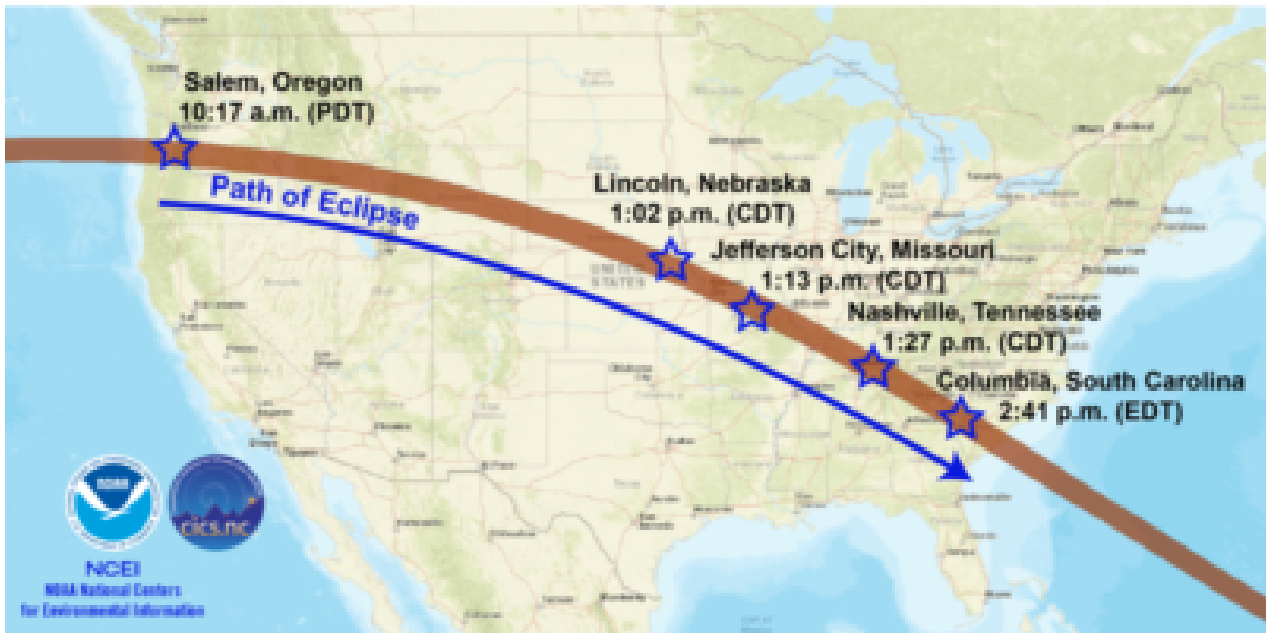
total solar eclipses in any given spot on the Earth are rare. They happen roughly once or twice a year *somewhere* on Earth, but it's a big planet, and a lot of it is hard to reach. 70% is ocean, and a lot of what's left of the real estate is taken up by places like the Arctic and Antarctic. So getting a total solar eclipse over, say, the U.S. doesn't happen often. [The last one was in 1979](#), and that one cut a shallow chord across the northwest.

For another, total solar eclipses are one of the most beautiful, wondrous, awe-inspiring sights nature provides for us. The Moon slowly covers the Sun, taking nearly 90 minutes. In the last seconds before the Sun is totally covered, the sky grows dark, the air cools, birds fooled into thinking night has fallen stop singing ... and then the moment arrives.

A solar eclipse occurs when the moon gets between the sun and Earth, casting a shadow on the Earth's surface. This can happen only during a new moon when the sun and the moon are in conjunction as seen from Earth in an alignment referred to as syzygy. In a **total eclipse**, the disk of the sun is fully obscured by the moon, as seen from Earth. In partial and annular eclipses, only part of the sun is obscured. Anytime there is a total solar eclipse, there is a partial solar eclipse nearby, outside a rather narrow **path of totality**. [This Is True](#)

Emphasis is in the original.

## State Capitals in Path of Totality



State capitals in the path of the total solar eclipse: Salem, OR; Lincoln, NE; Jefferson City, MO; Nashville, TN; and Columbia, SC. The optimal local viewing time is given for each. The rust-colored path marks the area where a total eclipse will appear, also called the path of totality. Map developed by CICS-NC in cooperation with NOAA NCEI, Deborah Riddle

the total eclipse lasts just seconds to minutes,

When depicting an eclipse path, data visualizers have usually chosen to represent the moon's shadow as an oval. By bringing in a variety of NASA data sets, visualizer Ernie Wright has created a new and more accurate representation of the eclipse.

For the first time, we are able to see that the moon's shadow is better represented as a polygon. This more complicated shape is based NASA's Lunar Reconnaissance Orbiter's view of the mountains and valleys that form the moon's jagged edge. By combining moon's terrain, heights of land forms on Earth, and the angle of the sun, Wright is able to show the eclipse path with the greatest accuracy to date.

the **partial eclipse** – when the moon is covering just part of

the sun – takes much, much longer (hours)

you'll even be able to see a partial eclipse from Hawaii,

right in the middle of that strip, the path of totality (which is about 70 miles wide for this eclipse)



Moments before totality in the 2012 Australian eclipse, just a small part of the Sun is still visible, creating a "diamond ring" effect.

the shadow of the moon during an eclipse starts in the west, and moves east at the speed of the moon's orbital velocity minus the Earth's rotational velocity. This eclipse starts in the morning on the west coast, and ends in the afternoon on the east coast.

totality is the big show

the path of totality runs through Idaho, Wyoming, Nebraska, Kansas, Missouri, Illinois, Kentucky, Tennessee, Georgia, and North Carolina. You have to be right in the middle of the path of totality to get the full length of totality. Along the

edge, just 35 miles from the middle, you might only see a few seconds of totality. NASA has [national and state maps](#) where you can learn what you can see from where you are, and when.

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Until totality begins, **you are going to need eye protection to directly view the eclipse.**

about 15 minutes before totality, changes in your local environment will become noticeable. Ambient light levels are obviously lower, like at sunset, but the landscape takes on a blue-gray tone, very much unlike sunset. The reds of sunset aren't there because the light isn't traveling through any more atmosphere, especially with the 2017 total solar eclipse occurring so close to solar noon

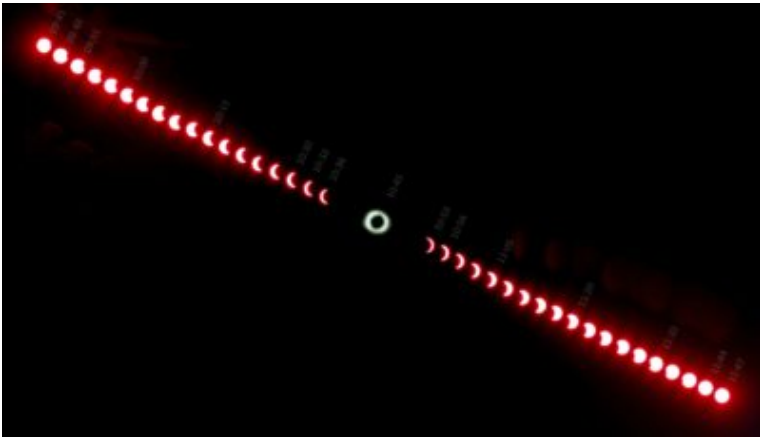
Ripples of light and shadows have been reported to move across the ground just before and after totality; this may be due to optical effects called constructive and destructive interference as the light from the Sun goes past the Moon. I don't think it's terribly well understood what causes it.

As the moon continues to nibble away at the sun's disk (aka the photosphere), this is a good time to look around you. Birds and other animals may become quiet, bedding down for the night, others may become anxious. Some plants and flowers may even close up because they sense it's turning to night!

Five minutes before totality, look to the western horizon: it will look as if a large thunderstorm is approaching, darkening significantly. If you are viewing from a hilltop, you may be able to see the edge of the darkness approaching. You are seeing the shadow of totality coming toward you! The temperature may drop noticeably.

About 15 seconds before totality, with only the thinnest crescent of the sun remaining uncovered, the first evidence of the sun's corona, or outer atmosphere, becomes visible. Latin

for crown, the corona is irregularly shaped and only visible during totality, which is very exciting for astronomers to see firsthand.



2008 Solar eclipse progression with timestamps.

About 5-10 seconds before totality, the last rays of sunlight from the photosphere merge into a brilliant point of light – known as the **Diamond Ring** effect.

If you can take a second to look down to the western horizon, you'll see that shadow now *really* rushing toward you.

The Diamond Ring will then fade into what is known as **Baily's Beads**, about 3 seconds before totality. Along the left side of the moon, sunlight breaks through the valleys and craters of the moon's surface, forming points of light resembling dazzling jewels on a necklace. They're named for Francis Baily, who first described the source of the phenomenon in 1836.

**Second contact** is when totality begins, and you can safely remove your solar glasses from your eyes (and your camera or telescope).

Ah, [the Sun's outer atmosphere](#), the ethereally thin gas that is normally invisible due to the Sun's overwhelming glare. But when the Sun is behind the Moon, the corona is visible, sometimes reaching out for several times the Sun's diameter.

Shaped by magnetic forces, it can appear wispy, or shot through with tendrils, or as just a smooth glow. It all depends on the Sun's magnetic mood at that moment.

You'll have just a few seconds look for the vivid red of the chromosphere, the gaseous layer below the corona and just above the photosphere. You may catch vibrant red prominences stretching into the corona. These prominences can be many times larger than Earth. If you miss it, you'll have another chance on the right side of the moon, seconds before totality ends.

Over the next seconds to about 2 minutes and 30 seconds, depending on where you are in the path of totality, observe the corona extending out many solar diameters. Each eclipse is different; sometimes the corona appears very round, sometimes it's wider at the equator. This is also a good time to observe the sun's magnetic influences in the form of loops and arcs – solar flares – tracing out those magnetic fields.

Also look for planets and stars to appear. Venus and the bright star Regulus may appear right above the sun/moon. Also look for Mars about 8 degrees to the right. It's been hidden for several weeks in the sun's glare.

I know many people who have seen total solar eclipses, and they all say –every last one of them– that it's one of the most beautiful things they have ever seen in their entire lives. For a few moments, under the shadow of the Moon, people gasp, choke up, even weep openly.

during totally. A 10-15 degree drop is pretty typical.



The 1999 total solar eclipse seen from France (Photo: Luc Viatour / <https://Lucnix.be> via Wikipedia. Solar prominences can be seen along the limb (in red) as well as extensive coronal filaments.

As the right edge of the moon begins to brighten, it's time to get those eclipse glasses back on: the end of totality (**third contact**) is seconds away, and the whole process reverses

<http://www.americaneclipse2017.org/maps/the-sky-during-totality/>

Use eclipse glasses or a pinhole camera to see the “bite” out of the sun, and watch how it changes over time.

## **And If You Miss It in 2017?**

There's another total solar eclipse coming to North America,



running from Mexico through Texas, Arkansas, Missouri, Illinois, Kentucky, Indiana, Ohio, Pennsylvania, New York, northern Vermont and New Hampshire, and then the southern parts of Ontario, Quebec, New Brunswick, western Prince Edward Island, and Newfoundland, Canada. But that doesn't happen until April 8, 2024. If you miss *that* one, the next one in the Continental United States won't come until August 12, 2045. In between, though, there are other total solar eclipses that are visible in other parts of the globe. And that super-long one in Guyana in 2186, just 169 years away!

**NEVER** look directly at the unshielded sun, **even during partial eclipse**, without *proper* eye protection! Doing so can *easily* cause **permanent damage** to your eyes, up to and including blindness. Sunglasses definitely aren't enough. **Only** when you are in the path of totality, and **during** totality, when the sun's disk is *completely* covered right **after** the Diamond Ring fades, can you safely take off eye protection and look directly at the corona, Baily's Beads, and other phenomena during the eclipse.

As magnificent as a solar eclipse is, it is a natural phenomenon that occurs at predictable times and places dictated by the orbits of the moon around the earth and the earth around the sun. It is not a "magnificent harold of end time events," as one wannabe prophet proclaims. It is indeed a glorious wonder in the sky, but it is not a sign of things to come. A solar eclipse is just something that happens when the earth, the moon, and the sun all come into the proper positions with respect to each other. It's something to enjoy, if you're lucky enough to be in the right place. There is absolutely nothing about it to fear. And that's the truth.

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## Sources:

- [American](#)
- [Bad Astronomy: Solar Eclipse](#)
- [Crash Course Eclipses](#)
- [Bad Astronomy 1](#)
- [Bad Astronomy 2](#)
- [NASA](#)
- [National Centers for Environmental Information](#)
- [Tme \(Solar Eclipse Map\)](#)

[What to Look for During the 2017 Solar Eclipse](#)

<https://www.ncei.noaa.gov/news/ready-set-eclipse>

'<https://thisistrue.com/2017-eclipse/>

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## [A love of drumming](#)

*It's hard to stay positive sometimes, so here's a bird realizing a love of drumming <pic.twitter.com/DplQ4uZAPf>*

– Kyle Hill (@Sci\_Phile) [August 15, 2017](#)

I love nature, and I love animals that appear to be having fun. I understand it's difficult to know what's in the mind of

an animal. We can barely communicate with each other. But this little bird seems to be having lots of fun. See how he looks up at his owner in anticipation two or three times? I'm convinced. And that's the truth.

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## Truth is beauty . . .

*Vole sleeping in an iris flower* [pic.twitter.com/CWZ7E61LMq](https://pic.twitter.com/CWZ7E61LMq)

– *Life on Earth* (@planetepics) [July 31, 2017](#)

Beauty is truth, truth beauty – that is all  
Ye know on earth, and all ye need to know.

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Ode to a Grecian Urn

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## Rick Perry and Al Franken on Climate Change

*Watch Al Franken absolutely shut down Rick Perry over climate change* [pic.twitter.com/Lr80co69w9](https://pic.twitter.com/Lr80co69w9)

– *NowThis* (@nowthisnews) [June 27, 2017](#)

I think this short video demonstrates the current situation in climate science better than anything else I've seen: "Get the politicians out of the room and let the scientists (do their

jobs).” At least, I think that’s what Rick Perry was trying to say. Good idea, Rick. But it’s already been done. As Al Franken says, “That’s what scientists do all the time.”

Anthropocentric climate change is real. Climate scientists agree on it almost hundred percent. The only question now is, what are we going to do about it? And that’s the truth.

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## No Ordinary Octopus

This extraordinary creature is one of the few octopuses adapted to move about on land. The clip does not identify the species, but it is probably *Abdopus aculeatus*.

According to Wikipedia, *A. aculeatus* is about the size of a small orange and is referred to as “algae octopus,” due to its typical resting camouflage, which looks as if it is overgrown with algae. It is also adept at mimicking its surroundings.

(This octopus) is found throughout intertidal zones along the Indonesian, Philippine, and Northern Australian coastlines. They primarily live in areas with abundant sea grass coverage and occupy dens built into the sandy seafloor, which they line with small pebbles. In its resting camouflage, *A. aculeatus* displays mottled ochre, gray, and brown colors that resemble a shell overgrown with algae, and dark arm bars reminiscent of hermit crab legs.

[Wikipedia](#)



Mating Octopuses (Abdopus-aculeatus)

They forage during the day, feeding mostly on small crustaceans, and return to their dens at night. They chase their prey by jetting to propel their body forward, head first. When they catch their prey they use their sharp beak to “drill” into its exoskeleton and reach the muscle within, most often eating their prey on site.

To the right are a pair of them mating, from [The Octopus News Magazine Online](#).

**Nature is often extraordinary, and that’s the truth.**

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**Source:**

- [The Octopus News Magazine Online](#)
  - [Wikipedia/Abdopus aculeatus](#)
  - [Why Evolution Is Real](#)
- 

## **In America, We Worship . . .**

*IN AMERICA WE DON'T WORSHIP GOVERNMENT – WE WORSHIP GOD!* <https://t.co/jIejSgVnnA>

*– Donald J. Trump (@realDonaldTrump) [July 26, 2017](#)*

Pres. Donald Trump will undoubtedly go down in history as The Tweeting President. His tweets are by far the best indicator of what's on his tiny mind at any one particular time.

A few days ago he tweeted that, “In America we don't worship government. We worship God.” He got it half right.

The truth is that in America, we worship any god we please – or no god at all – and our President doesn't make the decision for us. The Constitution of the United States guarantees us freedom of and from religion.

And that's the truth.

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**Sources:**

- [Why Evolution Is True](#)

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# Truth about everything of importance



As of today, July 30, 2017, this blog has a renewed focus to searching for and telling truth about everything of importance. Truth about 'science stuff' (a term I use to include science, the stuff it studies [nature], and the stuff it produces

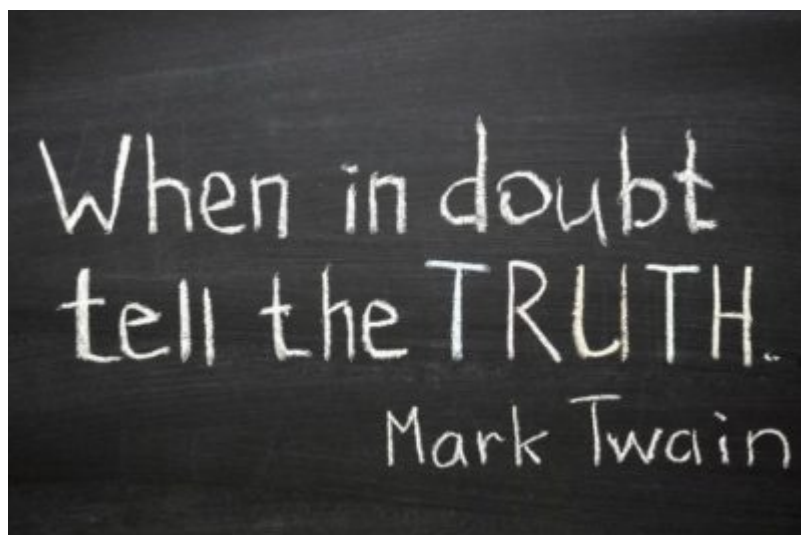
[technology]), which I love, but also truth about politics (which I often abhor), about everyday life, and (as just mentioned) about everything of importance. And never any intentional untruth about anything, of course, regardless of importance or unimportance. I'll often, conclude a post with the statement, "This is the truth about ...", or something very similar.

Actually, you'll notice little difference, because I always try to say the truth anyway.

An important thing for us to remember as we search for important truths will be that It is very difficult to determine that any truth is unimportant, and a truth that seems unimportant today may be important tomorrow.

While I'll continue to post mostly about science stuff, I also want to post the truth as I see it about many things that seem

important, including current national and world events, politics, and anything else I consider important. Whenever possible, I'll include quotes, graphics, or videos from other sources to illustrate my point. Sometimes, in fact, the quoted material may be the whole post.



In some cases, we may disagree about what the truth is. I have seldom hesitated to express my opinions about controversial subjects, assuming I have what I consider an informed or educated opinion. I don't always, of course. I have never pretended to know everything.

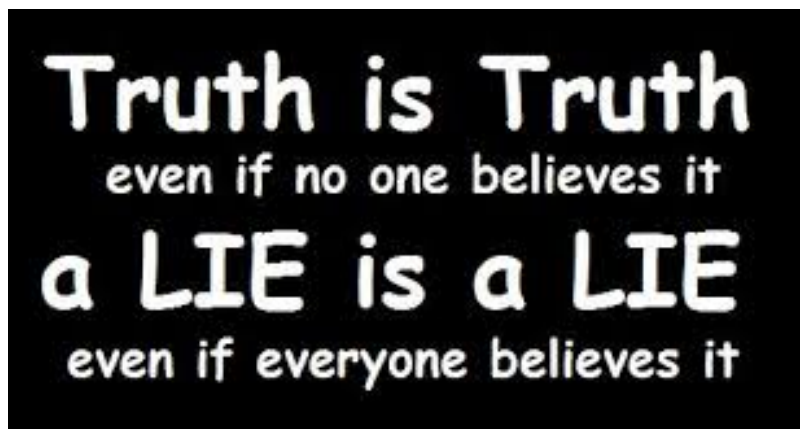
Whether you agree or disagree with me, be sure to leave your comments below each post. I expect to make so many controversial statements that I'll probably provoke quite a bit of disagreement. That's OK. Just be honest, brief, and courteous, and I'll publish your comments. No foul language, please. Abusive comments may or may not be published, solely at my discretion.

While I expect to provoke disagreement, this is not my purpose. Stating truth as I see it is. Truth about virtually anything and everything. I have very strong opinions about many things, and I expect to write about many of them.

This refocusing of the search for truth on this blog is a result of major changes in my life. I have very recently



become further disabled and have entered a nursing home, where I'll probably spend the rest of my life. While it's not like being at home, there are actually certain advantages.



For one, I get to sit here in bed all day with my notebook computer in my lap, searching the Internet for information, reading some great blogs, writing an ebook or

two, and occasionally making a post on my own blog. (And struggling with bedsores on my bottom, of course. But that's another subject.)

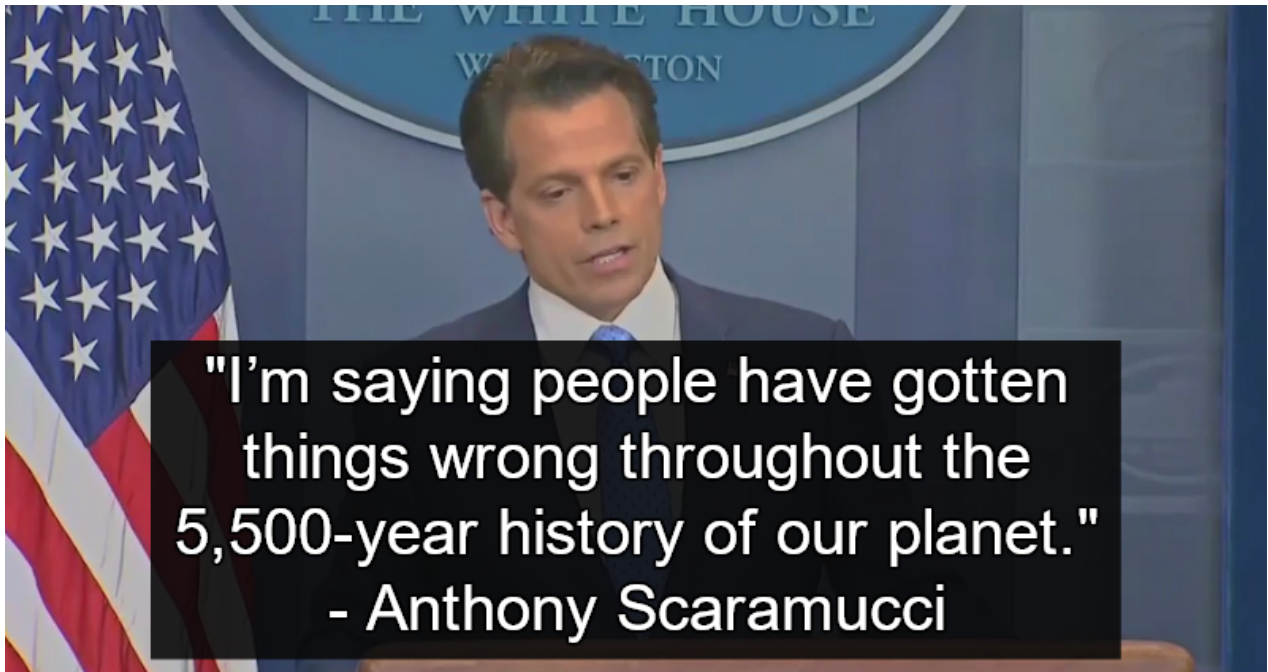
**As long as I am able, I intend to make good use of what time I have left, learning and telling truth as best I can determine it.**

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# Wrong for 5,500 years? And wrong about that!



Anthony Scaramucci – Trump’s New Communications Chief Anti-Science Climate Change Denier

Anthony Scaramucci, Pres. Trump’s new appointee for White House communications director, is the very epitome of ignorance. He claims civilization on earth is only 5500 years old. It is far older. I don’t know for sure where this number came from, but I assume it came from the approximate 6000 year figure calculated by students of the Bible, based on adding up all the “begats” in the Old Testament. This implies a religious reason for his willful ignorance.

He thinks science cannot be trusted because, “People have gotten things wrong throughout the 5500 year history of our planet.” And because of “overwhelming scientific consensus that the earth was flat and that we were at the center of the world.” Even assuming he meant to say universe, instead of world, this is still amazing Ignorance. It was never scientists who claimed the earth was flat and that it was the

center of the universe. It was religion. It was the Church. More specifically, it was the Papacy. Remember Galileo?

Scaramucci repeatedly questioned anthropogenic – man made – climate change with the excuse, “I honestly don’t know. I’m not a scientist.” He claims to have no idea whether or not climate change is real. This is possibly the most important question we face about the long-term future of our planet. (Assuming we don’t blow ourselves up or succumb to chemicals or biological weapons.) For the President’s spokesman not to have even an opinion – much less genuine knowledge of the truth – about climate change is inexcusable!

More than 97% of scientists polled recently said anthropogenic climate change is real. If we limit our poll to scientists actually involved in studying climate, the number climbs to way over 99%. There is no longer any serious question among scientists that anthropogenic climate change is both real and deadly serious. The argument is among laymen who do not understand the science. For the President spokesman to say, “I don’t know. I’m not a scientist,” is embarrassing. Scientists are still studying the details, but they agree that climate change is real. Everybody on earth should know that.

Pres. Trump recently named Scaramucci to be the White House communications director. It is absurd that the greatest country in the world – the most powerful scientific force on earth – should have such an ignorant man in such a high office for communication. From this position, he’ll undoubtedly spread his ignorance to the world.

In the short video below alone, he makes several incorrect statements and indicates his disdain for science.

There were several other mistakes in the video. For example, interviewer Chris Cuomo said “science” one time when he evidently meant to say “climate.” Scaramucci referred to somebody – presumably Pres. Trump – as the President-

elect. These were obviously slips of the tongue, not indications of ignorance. But when did we start governing our country from from the Trump Tower?

This grossly ignorant man wants the names of those who worked on global warming at the Department of Energy, and refuses to say why, claiming "it's about intellectual curiosity." Well, I agree he seems pretty curious, But I wouldn't want him knowing anything about me. I wouldn't feel safe.

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**Sources:**

- [Progressive Secular Humanist](#)

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## [Testing Carbon Dioxide's Ill Effects on Health](#)

**Actually, it ought to be convincing.**

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## [Aiden: Future Zoologist](#)

This young man's name is Aiden. I don't know anything else about him except the very little I was able to glean from Yotube and Go Fund Me. I just found the video on Youtube a few hours ago.

According to his [Go Fund Me page](#), his older sister is accepting contributions for his college fund. I cannot vouch for this. I have no idea whether or not it is legitimate. For what it's worth, here's the text from there.

Aiden has a passion for animals and nature and dreams of being a zoologist in the future. I noticed all the support and love he's getting from the video, so I decided to start a college fund for him early so that he can be set in the future and choose from whatever college he dreams of attending! This is a college fund for Aiden being raised by his older sister, donors are those he has inspired with his nature videos on YouTube and Twitter.

It mentions Miramar, Florida, so I assume that's where he lives.

Aiden's knowledge of backyard wildlife is phenomenal, as well as his language skills and vocabulary and the ease with which he shows us the things most of us always missed in our own backyards.

He wants to be a zoologist. He might be the Richard Dawkins of his generation. In fact, now that I think of it. Dawkins says he wasn't even unusually interested in nature until he was in college, so this young man has a big head start on him.

With George Bush's awesome sounding No Child Left Behind Program, we've spent so many resources trying to educate kids that will wear diapers all their lives and never learn to read—kids who perhaps should indeed have been left behind—that we have little left for kids like Aiden. Our public school system can't even begin to meet their educational needs. (And now our President and his Education Secretary want to gut the system instead of improving it. But that's another story for another day.)

I hope, for the future of humanity, that Aiden is able to get the education he needs. It is young people like him who will

build our tomorrows.

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**Source:**

- [Go Fund Me](#)