A few resources

http://earthquake.usgs.gov/earthquakes/world/historical.php/

http://nctr.pmel.noaa.gov/

www.nasa.gov

http://neo.jpl.nasa.gov/orbits/

http://www.nasa.gov/topics/earth/features/2012.html

http://www.maya-portal.net/

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The Simple Truth

A guide to addressing the

2012

Doomsday Prophecy

By: Laura Venner

Introduction

As a science educator, I have the opportunity to answer a variety of questions from students. One question that I hear with urgency concerns whether the world will end on December 21, 2012.

This guide addresses the most common concerns I have encountered regarding the belief that the world will end on December 21, 2012. The concerns included in this booklet are those that have been brought to my attention by students at least one hundred times.

It is my intent that the simple truth provided herein will empower children and adults so they can understand why the 2012 doomsday scenario is just another hoax.

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Laura is an Earth and Space Explainer and a Hayden Planetarium lecturer at the American Museum of Natural History.

Laura also serves as a NASA/Jet Propulsion Laboratory Solar System Ambassador and a NASA/Jet Propulsion Laboratory Solar System Educator.

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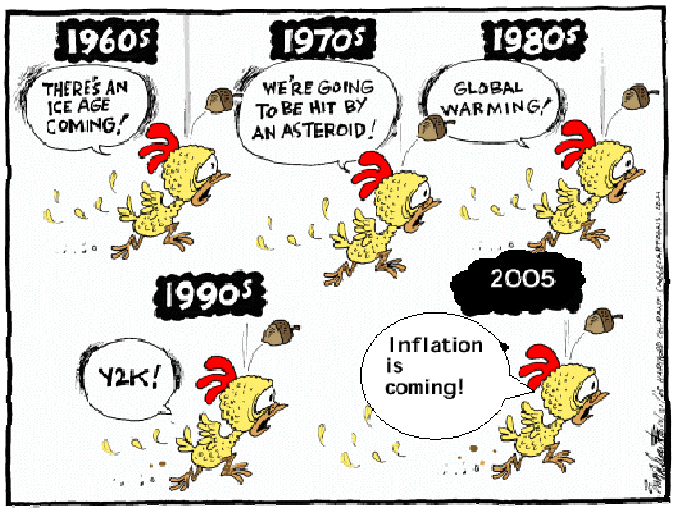
Do not be like Chicken Little!



Do not be like Chicken Little running around in a state of anxiety every time a doomsday scenario presents itself. Research the issue at hand and get the facts behind these predictions so you can become empowered with knowledge and understanding. Remember to gather as many resources as you can so that you can make an informed decision about your opinion based on many different perspectives. Good luck, and I will see you in 2013!

Will the world end on December 21, 2012?

There is no scientific evidence to support the claim that the world will end in 2012.

End of the world predictions persist even though the annihilation of humankind has been predicted many times in the past.

I was eight years old when my grandmother told me that the world was going to end on December 13, 1974. It seemed to me that all the necessary ingredients for an apocalypse were there, a partial solar eclipse was to occur on that day, and it was also a Friday the 13th. I sat on the back stoop and waited for the end of the world with my dog, Lady. The eclipse began; I held my breath and hugged Lady tightly and then the eclipse ended. I was amazed when I realized that everything around me still appeared to be in place.

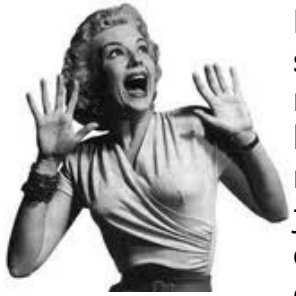
I fearfully waited for that particular apocalypse to occur on that cold concrete stoop for a long time before realizing the world was not going to end.

I can guarantee that I am not going to sit on a concrete stoop with my dog fearfully waiting for the end of the world on December 21, 2012, but instead will sleep soundly knowing that science has no evidence for such an event.

The Mayan calendar is expiring

The Mayan calendar is not expiring, but recycling. The calendar is entering a new cycle or Baktun. The Mayans never foretold the end of humanity in 2012, but did foretell the end of an age. Humans have survived the ending of many ages and we will survive the ending of this one as well.

Why is everyone making a big deal about 2012 if it is only a hoax?

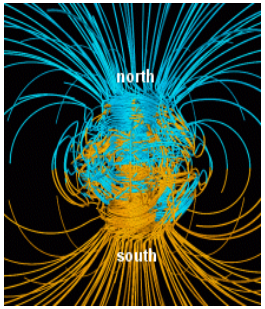


Humans like to be scared. We pay good money to watch horror movies and ride roller coasters just for the scary experience and ensuing adrenaline rush.

There is nothing wrong with experiencing this hoax as you would a scary movie. But I ask that you do not internalize this fear and make it real. Do not let this hoax distract you from living your life and accomplishing your goals. The world is not going to end in 2012, and if you let the hoax take hold of your life, you will lose precious time that would be better spent living, learning, and experiencing life.

"Don't worry about the world coming to an end today…… It's already tomorrow in Australia." Charles Shulz

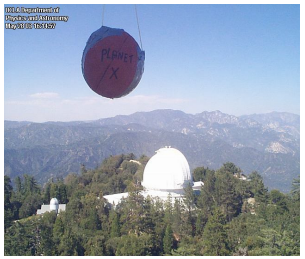
Earth's magnetic poles are going to reverse



Earth's magnetic polarity does reverse on an irregular basis. Some people claim that the next pole reversal will cause Earth's magnetic field to collapse resulting in Earth's bombardment by harmful cosmic radiation. Scientists do not know when the next magnetic pole reversal will occur, but do know that Earth's atmosphere will remain intact serving as a shield against most of the harmful cosmic radiation hurled at Earth.

The next reversal, like those in the past, will not cause catastrophic weather or planet wide extinctions. Scientists have been able to determine the effects of past magnetic pole reversals on life by studying deep sea sediments, and report that not much seems to happen. Humans will survive the next pole reversal along with Earth's other occupants.

Nibiru is going to collide with earth



A whole planet is headed our way and no one can see it! I know what you are going to say — the planet has a cloaking device right? Wrong. We have detected hundreds of exoplanets and other celestial bodies in our own solar system, but none are headed our way. If a planet were going to collide with us on December 21, 2012, we would be able to see the planet without the aid of technology — in other words — with the naked eye.

The Sun is going to explode

The Sun is NEVER going to explode. In about 5 billion years the Sun will begin to run out of fuel and it will swell up to the approximate size of a red giant star.

The Sun's outer layers will expand beyond the orbits of Mercury and Venus, and may even reach out and engulf our tiny planet incinerating Earth entirely. The Sun's outer layers will slough off into space leaving only its hot core behind. The Sun will then be a white dwarf. After a few billion more years, the Sun's leftover core will cool, reaching the background temperature of the universe — consequently becoming a black dwarf.

I like to use the analogy of a charcoal fire. When a charcoal fire is burning, it emits a lot of energy that we experience as heat and fire; this stage is similar to our Sun today.

If Apophis' orbit causes it to pass through what is called a gravitational keyhole within the orbit of earth, the earth's gravity could potentially tug the asteroid into a new orbit. This tug may cause the asteroid to collide with earth on April 13th, 2036, which happens to be Easter Sunday.

The current estimate places Apophis at 30.5 million miles from earth, a more comfortable distance than originally reported, on April 13, 2036. Two former astronauts: Edward Lu and Stanley Love came up with an idea to defend earth against Apophis. The astronauts presented what they call a gravity tractor that can be launched near the asteroid and tug on the asteroid, subsequently changing its orbit to ensure that it will miss the earth in 2036. NASA scientists at NEO and scientists from around the world are monitoring Apophis and other cosmic marauders and coming up with solutions to combat these potential threats.

An asteroid is going to destroy the earth

There is always the threat of an asteroid or comet striking the earth. But to say that 12/21/2012 will be the day of destruction by one of these cosmic marauders without offering a shred of scientific evidence to justify that claim is ridiculous. The following link will bring you to NASA's Near Earth Object Program and provide you with everything you need to know about potentially hazardous asteroids:
http://neo.jpl.nasa.gov/orbits/

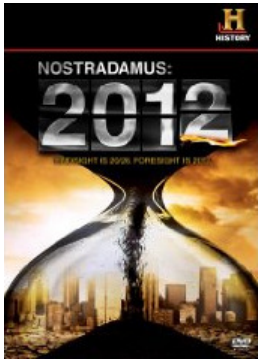
One asteroid that is making big news is Apophis. Apophis is approximately 885 ft in diameter and will come within 18,300 miles of earth on April 13, 2029. Of course, April 13, 2029 is a Friday the 13th which adds to the perceived threat of the object. When Apophis comes near earth on April 13th, we will be able to see the asteroid with our naked eye.

Once the fire is extinguished, the charcoal appears white, and while it is still very hot, it is no longer generating the intense energy that it did during its prime; this represents the white dwarf stage.

Eventually, the charcoal cools to the point where you cannot feel or see any of the energy being released; this represents the black dwarf stage.

When the Sun dies, it will be disastrous for Earth and its inhabitants. So be sure to mark your calendars for this cataclysmic event. After all, we only have 5 billion years to prepare.

Nostradamus' predictions



Nostradamus predicted that a giant comet will come close to the earth in 2012 and destroy everything. Unfortunately, no one can predict the future.

Nostradamus uses symbolism in his writings which can be interpreted differently by various individuals based on their own experiences. I like to call the "predictors" "post-dictors" because it is only after an event occurs that they look back at the text and fit the "prophecy" into the event at hand. This is not the same as a prediction, which allows us to know about an event before it occurs.

"If you learn one thing from having lived through decades of changing views, it is that all predictions are necessarily false." M. H. Abrams

In 79 AD Mount Vesuvius erupted and buried Pompeii and its sister city, Herculaneum. This volcano has erupted 50 more times since the 79 AD eruption and will likely erupt again in the future. However, today more than 2 million people live in the immediate vicinity of Mount Vesuvius. If Mount Vesuvius erupts today, the cost in lives and property will be devastating and we will see the devastation on every news channel.

Natural disasters are part of the earth's dynamic nature and they will continue to occur. However, humans have survived these disasters in the past, and we will endure and survive natural disasters in the future as well.

Natural disasters are increasing in frequency and devastation

Natural disasters just seem to be occurring more frequently than in the past, but they are more devastating. The increased devastation is a direct result of the large human population on Earth compared to that of the past. When a natural disaster takes place today, more lives and property are lost and destroyed.

We are hearing about more natural disasters for two reasons:

1) We now have advanced scientific instruments that can detect and record natural disasters in various locations across the earth.

2) Widespread news coverage makes it seem as though catastrophic events are occurring at an unprecedented rate, when in fact these events are occurring at expected rates.

The earth is going to explode

Many people think that the core of the Earth is heating up and this is going to cause the Earth to explode. Actually, the Earth's core is slowly cooling down, not heating up. Another frightening scenario imagines a massive asteroid strike that causes the Earth to explode. We have mapped the sky for massive objects, such as the one that allegedly destroyed the dinosaurs, and have not detected any such objects heading our way.

Aliens are going to invade earth

Scientists have not found any proof that aliens exist or ever have existed so it is unlikely that they will pop up out of nowhere and invade the earth on 12/21/2012. We should leave the alien invasion scenarios where they belong, to the imaginative minds of the Hollywood movie makers.

A planetary alignment will knock earth out of its orbit

Like a cosmic game of telephone this concern changes slightly when communicated to a new group. The end result however, stays the same with earth, being flung out of its orbit and hurled into the vastness of space resulting in all of humanity succumbing to a cold harsh death.

Three popular scenarios postulate that on December 21, 2012:

1) The Earth and the Sun will align. The Earth and the Sun are always in alignment, but this particular alignment will mark the winter solstice, as it does every year on or around December 21st.

2) All the planets in our solar system will arrange themselves into a straight line configuration.

A major planetary alignment is not in the cosmic forecast, and even if this were to happen, the resulting gravitational disruption would be negligible.

3) The Sun will align with the dark center of the Milky Way galaxy and eclipse the galaxy's true center causing large amounts of radiation to be directed toward earth. This is an annual event as well, and passes without notice each year. Also, the sun will not eclipse the actual center of the Milky Way galaxy, which is the radio source point that scientists identify as the true center, for at least another 200 years. Even then, the alignment will not be dead center and will not result in any negative consequences for life on earth or to the earth itself.

"Rumors are hearsay; they are told, believed, and passed on not because of the weight of evidence but because of the expectations by tellers that they are true in the first place." Erich Goode & Nachman Ben-Yehuda, *Moral Panics*