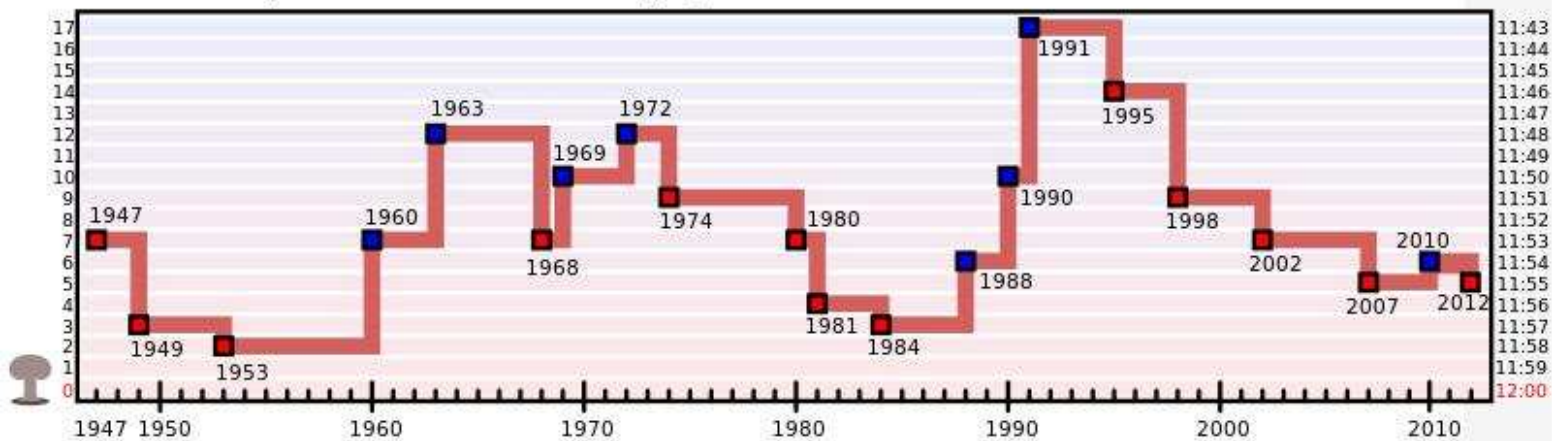
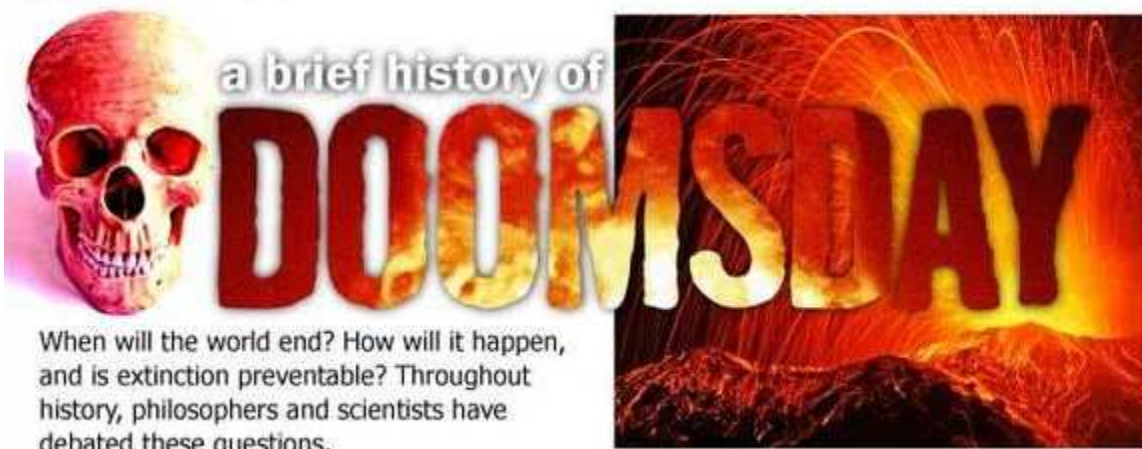


Doomsday Clock: Minutes to Midnight, 1947-2012



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When will the world end? How will it happen, and is extinction preventable? Throughout history, philosophers and scientists have debated these questions.

HAVING FAITH IN THE END: ESCHATOLOGY

Eschatology is the philosophical or theological study of how the world is prophesied to end. Religions often propose that time has cycles, which bring endings and beginnings.

The **Abrahamic** traditions, Judaism, Christianity and Islam, predict an apocalypse when the world will be destroyed, the people judged, and a new world begun.

Early **Christians** expected the end to come within a generation after Christ's crucifixion.



ABOVE: CHRIST PRESIDES OVER "THE LAST JUDGEMENT" OF MANKIND (PAINTING BY JEAN COUSIN THE YOUNGER (C. LATE 16TH CENTURY). BELOW LEFT: THE WORLD CONSUMED BY FIRE IN THE NORSE LEGEND OF RAGNARÖK. BELOW: CARVING OF A MAYAN GOD.



In Norse Pagan mythology, **Ragnarök** is a series of events including a great battle, the deaths of gods, disasters, and the cleansing of the Earth with fire and water. From the destruction a new world arises. The tales of Ragnarök were compiled in the 13th century.

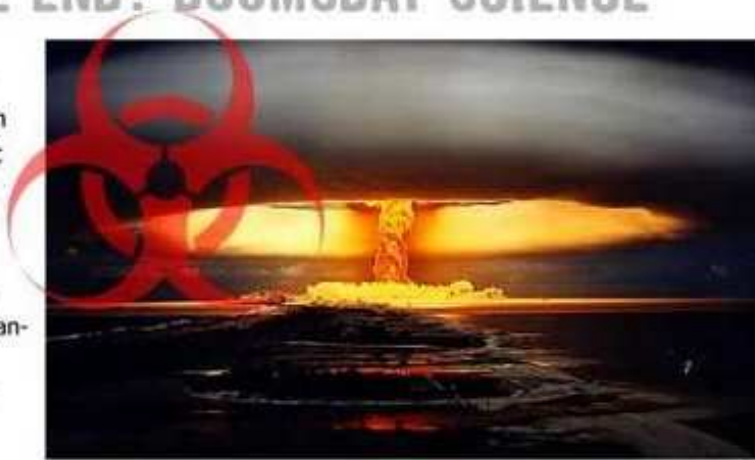


The **2012 phenomenon** is a belief that on Dec. 21, 2012, the 5,125-year Fourth World of the Mayan Long Count calendar will end in some sort of apocalyptic or transformative event, and the next world will begin. Modern scholars say that while the Mayans would have celebrated this date, predictions of a global catastrophe are unwarranted.

A RATIONAL END? DOOMSDAY SCIENCE

The accelerating pace of scientific discovery and technological power leads some, including science fiction author Vernor Vinge, to project that the world could be transformed by some inevitable, human-caused event around the year 2030.

Believers in this **Singularity** say that it will completely reshape humanity and the world, rendering both unrecognizable to those of us who lived before it.



The Earth itself poses threats to our survival. Many fear that the Earth's **changing climate** is approaching a tipping point from which it cannot recover. The melting of polar ice could result in rising seas and global flooding, which could disrupt civilization.

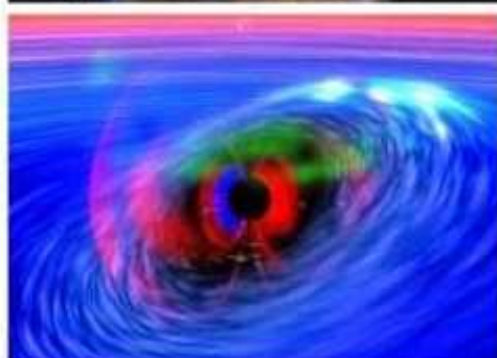
A **supervolcano** such as the one in the Yellowstone area of the United States (see map below) could erupt, spreading ash over a wide area. A volcanic winter would follow, with widespread crop failures and starvation.

Astronomy and physics show us that the universe is a risky place to live. Space is full of threats which could wipe out life on Earth, or even destroy the Earth itself. The ocean impact of a **large asteroid** could cause a **mega-tsunami** that could wipe out the entire coastline of a continent.

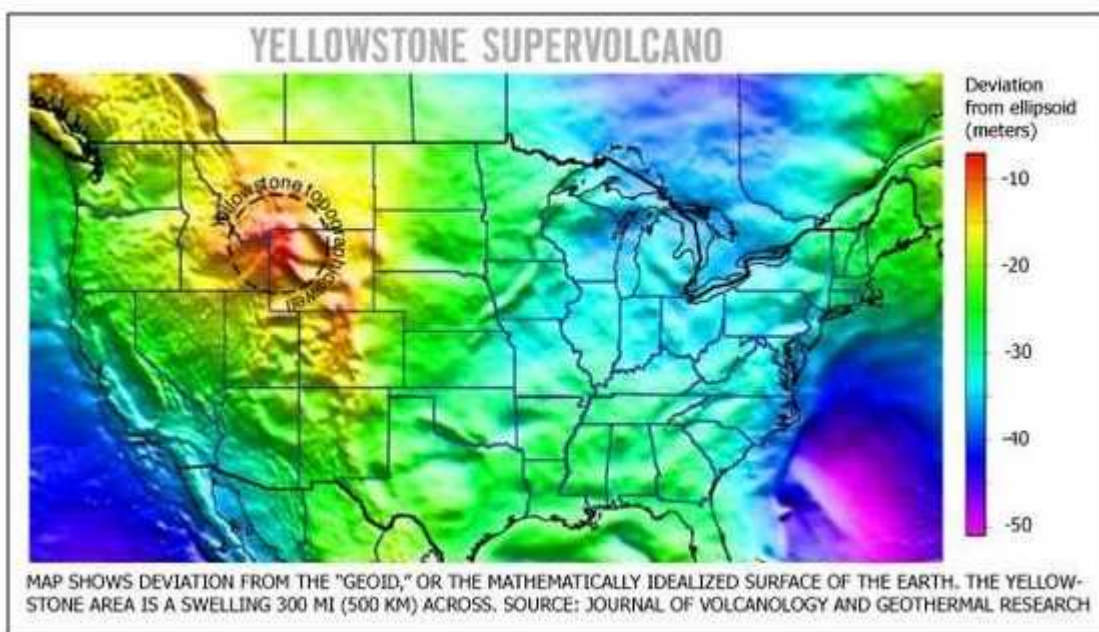
A **star explosion**, or supernova, occurring within 100 light-years of Earth could affect our atmosphere. The explosion would rain radiation down on our globe, causing a chemical reaction in the Earth's upper atmosphere, wrecking our protective ozone layer and allowing solar and cosmic radiation in that would harm life worldwide.

Our Milky Way galaxy is on a **collision course** with our neighbor the Andromeda galaxy, which we are due to hit in 2 to 5 billion years. The supermassive black holes within both galaxies will tear them apart, and our solar system may be flung out into intergalactic space.

Long before that, however, in **only 1.4 billion years**, life on Earth will become impossible due to the slowly increasing intensity of our sun.



FROM TOP: HYDROGEN BOMB EXPLOSION; ARTIST'S CONCEPTION OF PLANETS COLLIDING; SUPERNOVA V838 MONOCEROTIS, 20,000 LIGHT-YEARS FROM EARTH, FLARES UP IN 2002; WAVES OF SPACE-TIME SWIRL AROUND A BLACK HOLE IN THIS COMPUTER SIMULATION.



CINEMA OF DOOM

Films have explored many themes of apocalypse and catastrophe. Some of the more prominent examples:

WHEN WORLDS COLLIDE (1951):

We're all doomed when an alien planetary system is on a collision course with Earth.

See also **MELANCHOLIA** (2011), **GORATH** (1962), **WARNING FROM SPACE** (1956)

THE TERMINATOR (1984) and sequels :

A computer network called Skynet becomes self-aware, and the war between humans and machines is on.

See also **THE MATRIX** and sequels (1999)

THE QUIET EARTH (1985):

Three survivors wander an Earth empty of all other people after a scientific experiment goes wrong.

See also **THE WORLD, THE FLESH AND THE DEVIL** (1959)

ARMAGEDDON (1998):

We're all doomed when an asteroid "the size of Texas" bears down upon Earth. In reality the only known asteroid that big is Ceres, and it cannot sneak up on us like that.

See also **DEEP IMPACT** (1998), **METEOR** (1979)

28 DAYS LATER (2002):

Society collapses when a contagious virus spreads, transforming victims into vicious, zombie-like creatures.

See also **NIGHT OF THE LIVING DEAD** (1968) and sequels, **RESIDENT EVIL** (2002) and sequels, **THE WALKING DEAD** TV series (2010) and many others

THE CORE (2003):

The Earth's core stops spinning, which causes our magnetic field to collapse. We're doomed unless nuclear bombs can be used to re-spin the core.

THE DAY AFTER TOMORROW (2004):

Climate change creates a monster storm that brings a global ice age.

CHILDREN OF MEN (2006):

When the human race becomes infertile, extinction is inevitable unless the world's only pregnant woman can be rescued.

SUNSHINE (2007):

As the sun loses intensity, the Earth plunges into a deep freeze. Our only hope is a spaceship sent with a huge nuclear bomb for reigniting the sun.

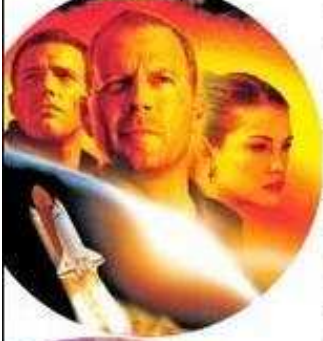
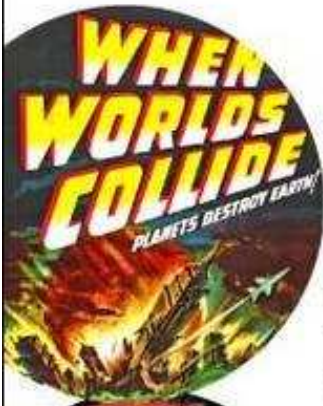
See also **SOLAR CRISIS** (1990)

2012 (2009):

Solar flares are causing Earth's core temperature to increase, which triggers a cataclysmic shift in the Earth's crust.

KNOWING (2009):

Eerie numerical sequences predict disastrous events, including a giant solar flare that will end the world.



SOURCES: U.S. NATIONAL INSTITUTES OF HEALTH, NATIONAL SCIENCE FOUNDATION, NASA, BERKELEY CENTER FOR COSMOLOGICAL PHYSICS, OAK RIDGE NATIONAL LABORATORY, USA TODAY

"THE CLOSING OF THE WESTERN MIND: THE RISE OF FAITH AND FALL OF REASON" BY CHARLES FREEMAN

KARL TATE / LiveScience.com