

A New Look at the Books of Revelation & Daniel End-Time Prophecies

Part 9 Seals 6-7 Trumpets 1-4 The Fall of Rome & Global Catastrophe

Introduction 3

Overview of the Seal and Trumpet Prophecies 4

Fulfillment of the Seal Prophecies 4

Fulfillment of the Trumpet Prophecies 5

Overview of the Sixth Seal of Revelation 6

Sixth Seal – Earthquakes, Celestial Signs and Events 6

In-Depth Study of the Sixth Seal of Revelation 7

“There Was a Great Earthquake” – 365 Crete Earthquake 7

Constantinople Earthquakes 10

526 Antioch Earthquake 12

Earthquake “Storm” in the Mediterranean World 14

“Every Mountain and Island Were Moved out of Their Places” 16

Sixth Seal – Celestial Signs in the Sun, Moon, and Stars 18

The Sun and Moon “Serve as Signs” 18

“The Sun Became Black” – Total Solar Eclipse 19

The Roman Solar Eclipse of 418 22

The Assyrian Solar Eclipse of 763 BC 29

“The Whole Moon Became Like Blood” – Blood-Red Total Lunar Eclipse 32

The Roman Lunar Eclipse of 455 34

“Stars of the Sky Fell to the Earth” – Intense Meteoric and Cometary Impact Activity 37

“The Sky Was Split Apart” – Intense Meteor Showers 40

Catastrophic Impacts by Large Meteors 42

The Seventh Seal of Revelation – Preparation for the Seven Trumpets 43

Overview of Trumpets 1-4 44

First Trumpet – Cometary Debris Impacting Earth 44

Second Trumpet – Catastrophic Volcanic Eruption of Krakatoa in 535 45

Third Trumpet – The “Great Star” Describes a Comet 45

Fourth Trumpet – Light of Sun, Moon, and Stars Dimmed by Volcanic & Cometary Debris 46

In-Depth Study of Trumpets 1-4 46

First Trumpet – “Hail and Fire, Mixed with Blood” – Cometary Impacts and Blood Rain Events 400-600 46

 “The Lord Threw Large Stones from Heaven” Killing Israel’s Enemies 48

 Blood Rain Associated with Cosmic Events 48

 “A Third of the Earth Was Burned Up” 52

Second Trumpet – Eruption of Krakatoa in 535 53

 “A Great Mountain Burning with Fire Was Thrown into the Sea” 60

 A Third of the Sea Life and Ships Destroyed 62

 Evidence of a Second Volcanic Eruption in Central America 63

Third Trumpet – Comet: “A Great Star Fell From Heaven, Burning Like a Torch” 64

 The Star (Comet) Named Wormwood Poisons the Waters 67

 The “Great Star from Heaven” – 541 Comet over Western Europe 68

Fourth Trumpet – Dimming of Sun, Moon, and Stars 70

The Catastrophe That Changed the World 74

Global Catastrophe of the Sixth Century 76

Catastrophe – Origins of the Modern World 77

 Evidence for Showers of Cometary Fragments and Debris 78

 Catastrophe! The Day the Sun Went Out 80

 Catastrophe! How the World Changed 82

References 85

A NEW LOOK AT THE BOOKS OF REVELATION & DANIEL END-TIME PROPHECIES

Peter and Christie Michas

Messengers of Messiah

7231 Boulder Avenue #164, Highland CA 92346 USA

Tel. 909-425-8751 - www.messengers-of-messiah.org

Copyright 2013 Peter and Christie Michas

December 2013; September 2014.

This publication may be freely copied and distributed provided it is copied in total with no alterations or deletions. The authors' names, ministry name and website address, mailing address and telephone number, and copyright notice must be included. No charge may be levied on recipients of distributed copies. Brief quotations may be embodied in critical articles and reviews without breaching copyright. This publication is available for free at Messengers of Messiah's website (<http://www.messengers-of-messiah.org>).

PART 9

SEALS 6-7 TRUMPETS 1-4

THE FALL OF ROME & GLOBAL CATASTROPHE

In Part 8, we showed that the First Seal is a prophetic picture of the 6th Head of the Beast – the Roman Empire – reaching the height of its territorial expansion under Emperor Trajan in the Second Century. But after reaching its height, it wasn't long before the empire began to decline, a decline that eventually led to its fall. The Second, Third, and Fourth Seals reveal a prophetic picture of this decline, caused by war, economic breakdown, food shortages and disease, leading to a greatly depopulated empire in the West. As we showed from history, what has been called the Crisis of the Third Century of the Roman Empire perfectly fits the prophetic visions of Seals 2-4.

We continue our study with the Sixth and Seventh Seals and Trumpets 1-4, which show a prophetic picture of the collapse of the Roman Empire in the West and a catastrophic global event that caused the collapse of civilizations around the world, with devastating effects on the Roman Empire in the East (Byzantine Empire).

OVERVIEW OF THE SEAL AND TRUMPET PROPHECIES

Before examining Seals 6-7 and Trumpets 1-4 in detail, an overview of the Seals and Trumpets 1-6 is helpful in seeing the larger prophetic picture. These prophecies unfold in chronological order and show the history of the Roman Empire and the rise and spread of Islamic Empires throughout the Mediterranean and Middle Eastern world.

FULFILLMENT OF THE SEAL PROPHECIES

1st Seal – Second Century: The Roman Empire (6th Head of the Beast) reaches its greatest territorial expansion under Emperor Trajan.

2nd, 3rd, and 4th Seals – Third Century: The Roman Empire begins its decline during the Crisis of the Third Century, a period when the empire came close to collapse due to civil war, invasion, economic depression, and plague.

5th Seal – Martyrs of the Roman Empire: persecution and martyrdom of believers by Rome; periods of persecution under emperors Nero, Domitian, Trajan, Hadrian, Marcus Aurelius, Maximinus the Thracian, Decius, Valerian, Diocletian and Galerius. The last and most severe persecution under Diocletian and Galerius in the Third Century is called the “Great Persecution”.

6th Seal – Fourth to Fifth Centuries: Signs of God’s judgment on the Roman Empire in the Earth, Sun, Moon, and Stars: the “great earthquake” of 365 in Crete, with greatly increased earthquake activity throughout the Mediterranean world beginning in the Fourth Century; the total solar eclipse of 418, visible throughout the Roman Empire; the total lunar eclipse of 455,

visible in Rome, associated with the Sack of Rome in 455 preceding Rome's fall in 476; meteor storms of great intensity and cometary debris impacts beginning about the Fifth Century.

7th Seal – Preparation for the Trumpet Judgments.

FULFILLMENT OF THE TRUMPET PROPHECIES

1st Trumpet – Fifth to Sixth Centuries: Period of increased and intense meteor showers/storms, and material from comets falling on Earth. “Hail and fire, mixed with blood” refers to cometary material of ice and rock falling to Earth, burning in the atmosphere to produce fireballs, with “blood rain”, red rain associated with meteoritic and cometary material falling to Earth.

2nd Trumpet – Sixth Century: Catastrophic volcanic eruption of Krakatoa in 535.

3rd Trumpet – Sixth Century: The “great star” that fell from Heaven “burning like a torch” refers to a comet that is called Wormwood because it poisoned the waters causing death.

4th Trumpet – Sixth Century: Major reduction in the light of the Sun, Moon, and Stars caused by immense amounts of volcanic and cometary material in the atmosphere. This resulted in catastrophic global climate change and the fall of civilizations around the world. The Mediterranean and Middle Eastern world was devastated and the conditions led to the rise and spread of Islam.

5th Trumpet – Seventh to Eighth Centuries: Rise and spread of Islamic Empires (8th Head of the Beast) out of Arabia and throughout the Mediterranean and Middle Eastern world.

6th Trumpet – Fifteenth Century: Rise of the Ottoman Empire, last and greatest Islamic Empire, which conquered the Eastern Roman (Byzantine) Empire (7th Head of the Beast).

7th Trumpet – Near future: Resurrection of the Two Witnesses coinciding with the Rapture (Revelation 11:11-15).

OVERVIEW OF THE SIXTH SEAL OF REVELATION

SIXTH SEAL – EARTHQUAKES, CELESTIAL SIGNS AND EVENTS

We will start our study of the Sixth Seal with an overview, followed by an in-depth study. Let's begin by reading Revelation 6:12-17:

Rev. 6:12 And I looked when He [Messiah Yeshua] broke the sixth seal, and there was a great earthquake; and the sun became black as sackcloth made of hair [total solar eclipse], and the whole moon became like blood [total lunar eclipse];

Rev. 6:13 and the stars of the sky fell to the earth [meteor storms], as a fig tree casts its unripe figs when shaken by a great wind.

Rev. 6:14 And the sky was split apart like a scroll when it is rolled up; and every mountain and island were moved out of their places.

Rev. 6:15 And the kings of the earth and the great men and the commanders and the rich and the strong and every slave and free man, hid themselves in the caves and among the rocks of the mountains;

Rev. 6:16 and they said to the mountains and to the rocks, "Fall on us and hide us from the presence of Him who sits on the throne, and from the wrath of the Lamb;

Rev. 6:17 for the great day of their wrath has come; and who is able to stand?"

The Sixth Seal Prophecy describes a great earthquake and celestial signs and events associated with God's judgment. The physical upheaval in the earth and celestial realm that began in the Fourth Century and continued through the Sixth Century was a sign of God's judgment, and mirrored and intensified the political and social upheaval throughout the Roman Empire.

During this time, catastrophic earthquakes, cosmic impacts, and a gigantic volcanic eruption caused dramatic changes in global climate, resulting in the fall of major civilizations throughout the world. In the Mediterranean and Middle East, the classical world of antiquity was fundamentally and forever changed, and the foundations of the modern world as we know it

were laid. The Seals (6-7) and Trumpets (1-6) are a prophetic vision of these major events in the history of the 6th Head (Roman Empire), 7th Head (Byzantine Empire), and 8th Head (Islamic Empires) of the Beast from the Sea (Revelation 13 and 17).

IN-DEPTH STUDY OF THE SIXTH SEAL OF REVELATION

“THERE WAS A GREAT EARTHQUAKE” – 365 CRETE EARTHQUAKE

The Sixth Seal Prophecy describes a great earthquake:

And I looked when He [Messiah Yeshua] broke the **sixth seal**, and there was a **great earthquake**; and the sun became black as sackcloth made of hair, and the whole moon became like blood; and the stars of the sky fell to the earth, as a fig tree casts its unripe figs when shaken by a great wind. And the sky was split apart like a scroll when it is rolled up; and **every mountain and island were moved out of their places** (Revelation 6:12-14, emphasis added).

The area of the Mediterranean is very seismically active. To correctly identify the “great earthquake” referred to in Revelation 6:12, we need to look in the right place at the right time. The previous Seals are about the Roman Empire, so we are looking at what earthquakes took place in the Roman Empire. The time period we are looking at is after the Third Century.

As shown in the BBC documentary *Earthquake Storms* (2003), a catastrophic earthquake struck the island of Crete on July 21, 365.¹ This event occurred in connection with a period of intensified earthquake activity throughout the Mediterranean world that lasted between the Fourth and Sixth Century.² During this time, the Roman Empire was shaken by a series of catastrophic natural events that affected both the western and eastern divisions of the empire.

¹ *Earthquake Storms*, BBC, 2003; aired on the Discovery Channel in 2005 (DVD currently unavailable).

² Fourth Century: 301-400; Sixth Century: 501-600.

According to Wikipedia:

The **AD 365 Crete earthquake** was an undersea earthquake that occurred at about sunrise on 21 July 365 in the Eastern Mediterranean,[3][4] with an assumed epicentre near Crete.[5] Geologists today estimate the quake to have been a **magnitude eight or higher,[4] causing widespread destruction in central and southern Greece, northern Libya, Egypt, Cyprus, and Sicily.[6] In Crete, nearly all towns were destroyed.[4]**

The Crete earthquake was followed by a tsunami which devastated the southern and eastern coasts of the Mediterranean, particularly Libya, Alexandria and the Nile Delta, killing thousands and hurling ships 3 km (1.9 mi) inland.[7] The quake left a deep impression on the late antique mind, and numerous writers of the time referred in their works to the event[8] (emphasis added).³

Map of the Mediterranean world⁴



Note: Crete is the largest island southeast of Greece, located between Greece and Turkey.

³ http://en.wikipedia.org/wiki/365_Crete_earthquake (introductory information).

⁴ http://en.wikipedia.org/wiki/365_Crete_earthquake#mediaviewer/File:Relief_Map_of_Mediterranean_Sea.png

Recent geological studies view the AD 365 Crete earthquake in connection with a clustering of major seismic activity in the Eastern Mediterranean between the fourth and sixth century AD which may have reflected a reactivation of all major plate boundaries in the region.[4] The earthquake is thought to be responsible for an uplift of nine metres [30 feet] of the island of Crete, which is estimated to correspond to a seismic moment of $\sim 10^{29}$ dyne cm. **An earthquake of such a size exceeds all modern ones known to have affected the region.**[4]

Researchers at the University of Cambridge recently carbon dated corals on the coast of Crete which were lifted ten metres [33 feet] and clear of the water in one massive push. This indicates that the tsunami of AD 365 was generated by an earthquake in a steep fault in the Hellenic Trench near Crete. **The scientists estimate that such a large uplift is only likely to occur once in 5,000 years;** however, the other segments of the fault could slip on a similar scale—and could happen every 800 years or so. It is unsure whether "one of the contiguous patches might slip in the future"[9][10] (emphasis added).⁵

The 365 Crete Earthquake certainly qualifies as the “great earthquake” prophesied by the Sixth Seal Prophecy: the greatest known earthquake to hit the Mediterranean from ancient times to today; magnitude 8 or higher; producing a massive uplift estimated to occur only once in 5000 years; resulting in catastrophic and widespread destruction throughout Mediterranean world.

Let’s examine other major earthquakes that occurred in the Mediterranean world during this period of intense seismic activity.

⁵ http://en.wikipedia.org/wiki/365_Crete_earthquake (section “Geological evidence”).

CONSTANTINOPLE EARTHQUAKES

During the period of intense earthquake activity between the Fourth to Sixth Century, Constantinople, the capital of the Eastern Roman (Byzantine) Empire, was hit with several earthquakes. It is interesting to note that frequent earthquakes occurred in the Sixth Century during the reign of Justinian, when the Eastern Roman Empire was at its peak territorial expansion.

Constantinople is part of an active seismic zone. Earthquakes were relatively frequent during the reign of Justinian I (r. 527–565). An earthquake in November 533 had led a crowd to seek refuge at the Forum of Constantine, but there were no real casualties. Minor earthquakes were also reported in 540–541, 545, 547, 551 and 554–555 [3] (emphasis added).⁶

In 526, the same year there was a great earthquake at Antioch (see following section), a severe earthquake struck Constantinople. Many buildings and churches collapsed, as well as the statues of Arcadius and Theodosius I.⁷

Then in 557, a catastrophic earthquake hit Constantinople:

The 557 Constantinople earthquake took place on the night of 14 December. This great earthquake, described in the works of Agathias, John Malalas and Theophanes the Confessor, caused great damage to Constantinople, then capital of the Byzantine Empire, and a region frequently afflicted with earthquakes.[2] More minor quakes had preceded the large event, including two in April and October respectively.[3] **The main quake in December was of unparalleled ferocity, and "almost completely razed" the city.** It caused damage to the Hagia Sophia ["Holy Wisdom" Church built by Constantine] which contributed to the collapse of its dome the next year, as well as damaging the Walls of Constantinople to the

⁶ http://en.wikipedia.org/wiki/557_Constantinople_earthquake (section "Prior events").

⁷ Glanville Downey, "Earthquakes at Constantinople and Vicinity, A.D. 342-1454", p. 598.

extent that Hun invaders were able to penetrate it with ease the following season[3].⁸

[Agathias] describes ... [the earthquake] as **unparalleled in magnitude and duration**. ... He also describes the city as affected by a severe winter prior to the earthquake.[4]

Tremors started towards the midnight, when most residents of Constantinople were sleeping. The tremors awoke the citizens and as the buildings trembled, "shrieks and lamentations could be heard". The successive tremors were accompanied by thunder-like sounds from the ground. The air reportedly "grew dim with the vaporous exhalations of a smoky haze rising from an unknown source, and gleamed with a dull radiance".[4]

The panicked residents started evacuating their houses, gathering in streets and alleyways. Agathias observed that the city had precious few "wide open spaces entirely free of obstructions", which meant that residents were not safe from falling debris even outdoors. A shower of sleet soaked those outside and everyone "suffered greatly from the cold". Many sought refuge within the churches of the city.[4] ...

The district of Rhegium, close to the port of Constantinople, suffered the greatest loss of houses. Many other buildings were demolished or suffered structural damage. Agathias notes that "large numbers of ordinary people" perished, while Anatolius was the only casualty among the high-ranking in society[4](emphasis added).⁹

⁸ http://en.wikipedia.org/wiki/557_Constantinople_earthquake (introductory information).

⁹ http://en.wikipedia.org/wiki/557_Constantinople_earthquake (section "Events").

526 ANTIOCH EARTHQUAKE

In May 526, a great earthquake hit Antioch (now Antakya in southeast Turkey), killing an estimated 250,000.¹⁰ Antioch was the main city of Syria and fourth largest city of the Roman Empire, after Rome, Ephesus, and Alexandria.

The **526 Antioch earthquake** was a major earthquake that hit Syria and Antioch in the Byzantine Empire in 526. It struck during late May, probably between May 20–29, at mid-morning, killing approximately 250,000 people.[3] The earthquake was followed by a fire that destroyed most of the buildings left standing by the earthquake. The maximum intensity in Antioch is estimated to be between VIII (destructive) and IX (violent) on the Mercalli intensity scale.¹¹ ...

The estimated magnitude for the earthquake is 7.0 on the surface wave magnitude scale.[1] It was followed by 18 months of aftershocks.[3]¹²

The high death toll seems to be the result of large numbers coming to the city for Ascension Day:

Estimates of the death toll for this earthquake vary between 250,000 and 300,000, with 250,000 being the most commonly reported.[3] It has been suggested that the very high number of casualties was a result of there being a large number of visitors in the city from the surrounding countryside, there to celebrate Ascension Day.[7]¹³

¹⁰ http://en.wikipedia.org/wiki/Historical_earthquakes (Chart “Pre-11th century”).

¹¹ http://en.wikipedia.org/wiki/526_Antioch_earthquake (introductory information).

The Mercalli intensity scale measures the intensity of earthquakes based upon their effects. In terms of measurement on the Richter Scale, an estimate of this earthquake’s magnitude ranges from 7.0 to 8.0 or higher. http://en.wikipedia.org/wiki/Mercalli_intensity_scale

¹² http://en.wikipedia.org/wiki/526_Antioch_earthquake (section “Earthquake”).

¹³ http://en.wikipedia.org/wiki/526_Antioch_earthquake (section “Damage”).

Map of Paul's missionary journeys showing Syrian Antioch (upper right hand corner).¹⁴



Constantine's Great Church (Domus Aurea) was destroyed by fire after the earthquake:

The earthquake caused severe damage to many of the buildings in Antioch, including Constantine's great octagonal church Domus Aurea ["Golden House"] built on an island in the Orontes River. Only houses built close to the mountain are said to have survived. Most of the damage however, was a result of the fires that went on for many days in the immediate aftermath of the earthquake, made worse by the wind.[3] The Great Church was destroyed by the fire seven days after the earthquake.[3] Amongst the many victims was Euphrasius the Patriarch

¹⁴ http://www.google.com/imgres?imgurl=http://www.ccel.org/bible/phillips/CNM17-AntiochChurch.gif&imgrefurl=http://www.ccel.org/bible/phillips/CN092MAPS1.htm&h=336&w=520&sz=13&tbid=373RR_EkewyN0M:&tbnh=96&tbnw=149&zoom=1&usq=_Q12zWAXIMYZFkXODTfoOYEKgmw8=&docid=5DUpM-U6n7a2iM&sa=X&ei=BjOaUq20O8zmoATosYGgBA&ved=0CC8Q9QEwAQ

of Antioch, who died by falling into a cauldron of pitch being used by wineskin makers, with only his head remaining unburnt.[5]¹⁵

That Constantine's Great Church was destroyed by fire is prophetically significant. Constantine is the Man of Lawlessness who established the Apostate Church prophesied by the apostle Paul (2 Thessalonians 2:3). (See Part 6 The Man of Lawlessness & the Apostasy – Emperor Constantine & the Roman Church). That the Patriarch of Antioch suffered such a terrible death also seems prophetically significant.¹⁶

The Great Church in Antioch was rebuilt but finally destroyed by another earthquake in 588.

Domus Aurea (in English Golden House) or the **Great Church** in Antioch was the cathedral where the Patriarch of Antioch preached. It was one of the churches whose construction was started during the reign of Constantine the Great. ... From 526 to 587 it suffered from a series of earthquakes, fires and Persian attacks, before being finally destroyed in another earthquake in 588, after which it was not rebuilt.¹⁷

EARTHQUAKE “STORM” IN THE MEDITERRANEAN WORLD

A period of intense earthquake activity occurred throughout the ancient Mediterranean world beginning in the latter part of the Fourth Century and continuing through the Sixth Century. The Mediterranean and Middle East is an area of great seismic activity where three tectonic plates come together: the Eurasian, African, and Arabian plates (see the following map).

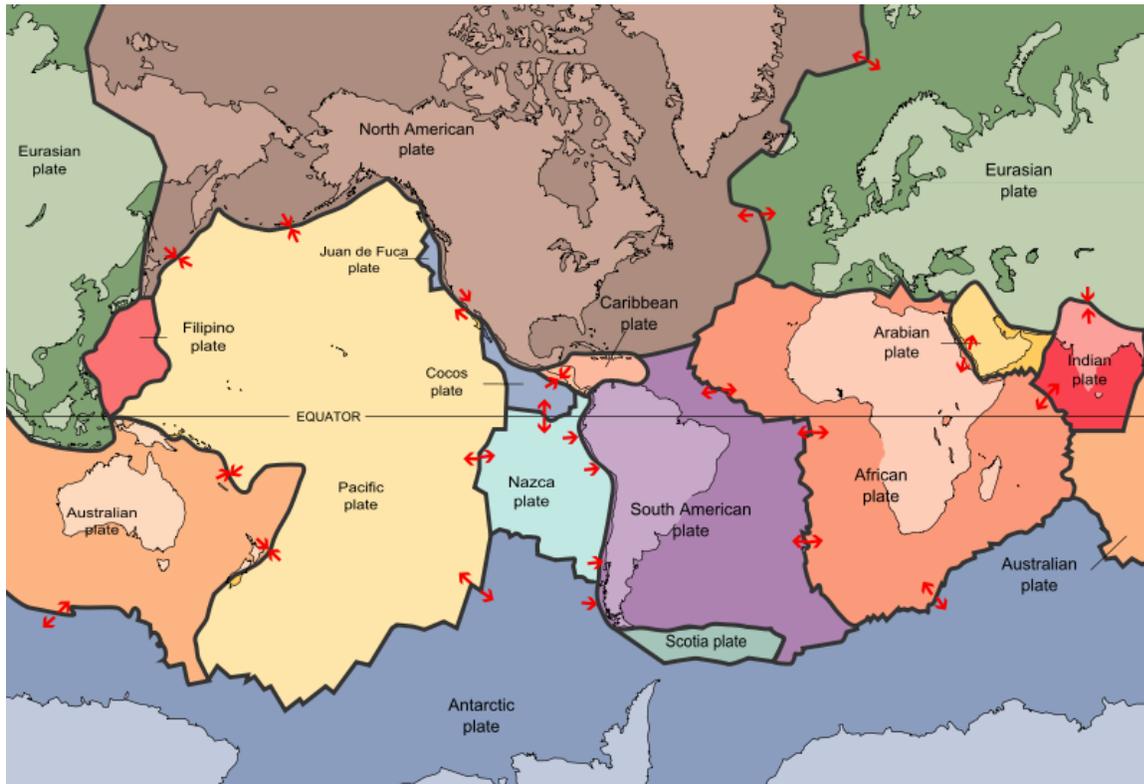
¹⁵ http://en.wikipedia.org/wiki/526_Antioch_earthquake (section “Damage”).

¹⁶ http://en.wikipedia.org/wiki/Patriarch_of_Antioch - The Bishop of Antioch held the title of Patriarch and was the overseer of the first Gentile Christian community.

¹⁷ [http://en.wikipedia.org/wiki/Domus_Aurea_\(Antioch\)](http://en.wikipedia.org/wiki/Domus_Aurea_(Antioch)) (introductory information). If link does not work, click on the following: *Domus Aurea (Antioch)*.

Map of the World's Major Tectonic Plates¹⁸

(Map enlargement http://upload.wikimedia.org/wikipedia/commons/8/8a/Plates_tect2_en.svg)



In addition to the catastrophic 365 Crete Earthquake, widespread destruction throughout the Mediterranean world occurred as a result of a series of powerful earthquakes over a period of years, called an “earthquake storm”.¹⁹

An **earthquake storm** is a recently proposed theory about earthquakes, where **one triggers a series of other large earthquakes—along the same plate boundary—as the stress transfers along the fault system.** This is similar to the idea of aftershocks, with the exception that they take place **years apart.** These series of earthquakes can **devastate entire countries or geographical regions.** Possible events may have occurred during **the end of the Bronze Age, and the latter part of the Roman Empire.** It has been suggested that this is what may be

¹⁸ http://en.wikipedia.org/wiki/Plate_tectonics

¹⁹ *Earthquake Storms*, 2003, BBC documentary; aired on the Discovery Channel in 2005 (DVD currently unavailable). There were 11 earthquakes in a period of 12 years: 7 earthquakes before 365; 1 in 365; and 3 afterwards.

occurring in modern day Turkey.[1] The term was coined by Stanford Professor of Geophysics Amos Nur in 2000 [2] (emphasis added).²⁰

Understanding that the Seals have to do with God’s judgment on the 6th Head of the Beast, the Roman Empire, we can see the prophetic significance of an earthquake storm beginning in the Fourth Century, as described by the Sixth Seal Prophecy, following the Crisis of the Third Century, as described by the Second, Third, and Fourth Seal Prophecies.

It is interesting to note that an earthquake storm is thought to have occurred during the end of the Bronze Age, resulting in the collapse of Mediterranean civilizations. It is prophetically significant that the Israelite Exodus from Egypt (about 1450 BC) took place during this time period, leading to the establishment of the ancient nation of Israel.²¹ It is also prophetically significant that an earthquake storm is currently taking place along the North Anatolian Fault in Turkey, one of the nations prophesied to attack Israel in the future War of Gog-Magog (Ezekiel 38). Earthquakes are prophesied as part of God’s judgment on those who come against Israel in the final battle of Armageddon (Revelation 16:16).

“EVERY MOUNTAIN AND ISLAND WERE MOVED OUT OF THEIR PLACES”

We have seen how a period of intense earthquake activity shook the Roman Empire between the Fourth and Sixth Centuries. The Sixth Seal Prophecy refers to “every mountain and island” being “moved out of their places”, showing the cataclysmic upheaval that took place:

And I looked when He broke the **sixth seal**, and there was **a great earthquake** ... and **every mountain and island were moved out of their places** (Revelation 6:12, 14, emphasis added).

²⁰ http://en.wikipedia.org/wiki/Earthquake_storm

²¹ The documentary *Earthquake Storms* (BBC, 2003) refers to a period about 1500 BC. The correct date for the Exodus is about 1450 BC (not 1250 BC).

This prophecy was certainly fulfilled, as evidenced by scientific findings:

Recent geological studies view the AD 365 Crete earthquake in connection with a clustering of major seismic activity in the Eastern Mediterranean between the fourth and sixth century AD which may have reflected a **reactivation of all major plate boundaries in the region**.^[4] The earthquake is thought to be responsible for an **uplift of nine metres [30 feet] of the island of Crete**. ... An earthquake of such a size exceeds all modern ones known to have affected the region.^[4] (emphasis added).²²

Recently, the awesome power of a massive earthquake to move mountains and islands was demonstrated. In March 2011, an 8.9 magnitude earthquake moved the main island of Japan 8 feet and shifted Earth's axis by 4 inches:

The powerful earthquake that unleashed a devastating tsunami Friday appears to have **moved the main island of Japan by 8 feet** (2.4 meters) and **shifted the Earth on its axis**.

"At this point, we know that one GPS station moved (8 feet), and we have seen a map from GSI (Geospatial Information Authority) in Japan showing the pattern of shift over a large area is consistent with about that much shift of the land mass," said Kenneth Hudnut, a geophysicist with the U.S. Geological Survey (USGS).

Reports from the National Institute of Geophysics and Volcanology in Italy estimated the 8.9-magnitude quake **shifted the planet on its axis by nearly 4 inches** (10 centimeters) (emphasis added).²³

²² http://en.wikipedia.org/wiki/365_Crete_earthquake (section "Geological evidence").

²³ <http://www.cnn.com/2011/WORLD/asiapcf/03/12/japan.earthquake.tsunami.earth/index.html>

"Quake moved Japan coast 8 feet, shifted Earth's axis", Kevin Voigt, CNN, April 20, 2011.

This event shows the powerful forces at work that can so dramatically and suddenly change the Earth's surface and even the axis on which the Earth rotates, giving real meaning to the Sixth Seal Prophecy that "every mountain and island were moved out of their places".

SIXTH SEAL – CELESTIAL SIGNS IN THE SUN, MOON, AND STARS

The Sixth Seal Prophecy describes celestial signs of the Sun, Moon, and Stars:

And I looked when He [Messiah Yeshua] broke the **sixth seal**, and there was a great earthquake; and the **sun became black** as sackcloth made of hair [**total solar eclipse**], and **the whole moon became like blood** [**total lunar eclipse**]; and **the stars of the sky fell to the earth** [**meteor storms/cosmic impacts**], as a fig tree casts its unripe figs when shaken by a great wind. And the sky was split apart like a scroll when it is rolled up; and every mountain and island were moved out of their places (Revelation 6:12-14, emphasis added).

The Sun becoming "black" describes a total solar eclipse; the Moon becoming "like blood" describes a total lunar eclipse; and "the stars of the sky" falling to the Earth describes meteor showers/storms and cometary debris falling from the sky to the Earth.

Searching NASA's solar and lunar eclipse data, we have identified two prophetically significant total eclipses of the Sun and Moon. In addition, scientific evidence indicates meteor showers of increased intensity between the Fourth and Sixth Centuries. As we will show, the scientific evidence precisely fits the prophecies and prophetic timeline of the Sixth Seal Prophecy.

THE SUN AND MOON "SERVE AS SIGNS"

The Word of God tells us that the Sun and Moon "serve as signs":

God said, 'Let there be luminaries in the firmament of the heaven to separate between the day and the night; and **they shall serve as signs, and for [Biblical]**

festivals [Appointed Times of the Lord], and for days and years; and they shall serve as luminaries in the firmament of the heaven to shine upon the earth.’ And it was so (Genesis 1:14-15, emphasis added).²⁴

Signs include solar and lunar eclipses associated with key prophetic events. The Sun and Moon also reveal God’s prophetic pattern and timeline because their movements are the basis of the Biblical calendar by which the Appointed Times of the Lord are determined (Leviticus 23).

In Genesis 1:14, the Hebrew word *moadim* (Strong’s #4150 – *moed*, singular) can be translated “seasons” or “festivals”, meaning the Biblical festivals, the true Biblical Holy Days called the Appointed Times of the Lord. The word is often used in the context of the Biblical festivals and that is how it should be understood in this context as well.²⁵ The Appointed Times of the Lord are the key to understanding God’s prophetic pattern and timeline.

“THE SUN BECAME BLACK” – TOTAL SOLAR ECLIPSE

In Revelation 6:12, the imagery of the Sun becoming “black” describes a total solar eclipse:

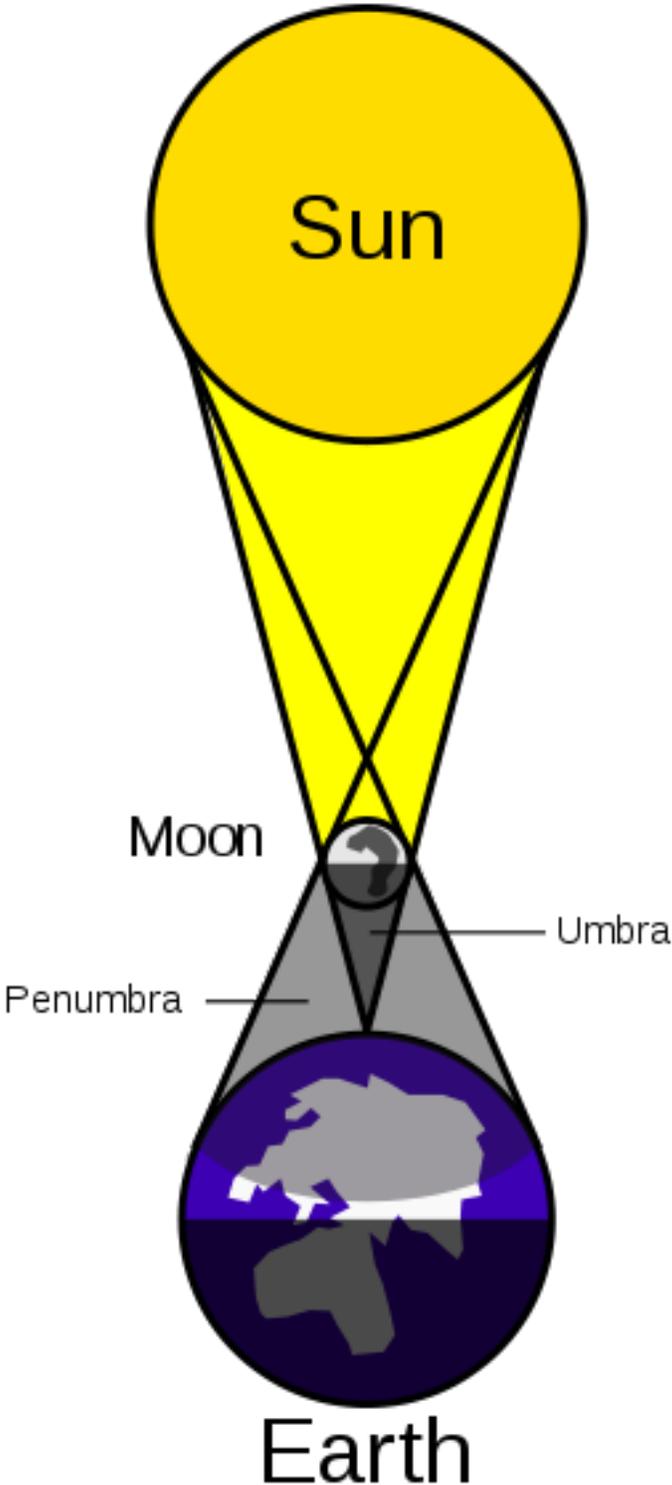
And I looked when He [Messiah Yeshua] broke the **sixth seal**, and there was a great earthquake; and **the sun became black as sackcloth** made of hair, and the whole moon became like blood (Revelation 6:12, emphasis added).

During a solar eclipse, the Moon passes between the Sun and Earth, blocking the Sun’s light as seen from Earth. This can only happen during the New Moon phase of the lunar cycle. (Note: From this we know that the sky darkening during the Crucifixion could not have been caused by a solar eclipse because Passover falls during the Full Moon.)

²⁴ *Genesis*, ArtScroll Tanach Series, Vol. 1a, pp. 55, 57. Note: The Hebrew word *moadim* is correctly translated “festivals” rather than “seasons”.

²⁵ William D. Mounce, *Mounce’s Complete Expository Dictionary of Old & New Testament Words*, p. 621.

Illustration of Solar Eclipse (http://en.wikipedia.org/wiki/File:Solar_eclipse.svg)



According to Wikipedia:

A **total [solar] eclipse** occurs when the dark silhouette of the Moon completely obscures the intensely bright light of the Sun, allowing the much fainter solar **corona** to be visible. During any one eclipse, totality occurs at best only in a narrow track on the surface of Earth.[5]²⁶

Total solar eclipses are rare events. Although they occur somewhere on Earth every 18 months on average,[26] it is estimated that **they recur at any given place only once every 360 to 410 years**, on average.[27]²⁷

The following YouTube video, “Solar Eclipse: What you should know”, describes the various types of solar eclipses:

http://www.youtube.com/watch?v=HrloqdXrzN4&list=TL-2EL_ezqvj57NZzhjCJT-zrkm_5elw

Published on May 8, 2013

Summary:

Solar eclipses are spectacular natural phenomena that have captivated mankind since ancient times. A solar eclipse occurs when the Moon passes between the Sun and Earth, fully or partially blocking the Sun's rays and casting a shadow. This can happen only at new moon, when the Sun and the Moon are in conjunction as seen from Earth.

There are four types of solar eclipses - total, annular, hybrid, and partial. In an annular eclipse, the apparent size of moon is not large enough to totally block the sun; the sun appears as a bright ring (annulus). During a partial eclipse, the sun and moon are not exactly aligned. During a hybrid eclipse, the eclipse shifts from annular to total eclipse at some point along the path of the eclipse.

Total eclipses occur every 18 months on average somewhere on the earth. In any one place, total solar eclipses occur once every 360-410 years, never lasting more than a few minutes.

The Sun and Moon must be the same apparent size for a total solar eclipse to occur. Even though the Sun's diameter is 400 times greater than the Moon's, it is 400 times farther away

²⁶ http://en.wikipedia.org/wiki/Solar_eclipse#cite_note-5 (section “Types”).

²⁷ http://en.wikipedia.org/wiki/Solar_eclipse#cite_note-5 (section “Occurrence and cycles”).

from Earth.²⁸ This makes the perfect lineup of the Sun and Moon possible, and is evidence of the masterful design of Creation.²⁹

THE ROMAN SOLAR ECLIPSE OF 418

There is only one total solar eclipse that fits the Sixth Seal Prophecy because of the time and place of its occurrence in connection with the prophetic history of the Roman Empire, the 6th Head of the Beast – the total solar eclipse of July 19, 418.

The path of the 418 total solar eclipse tracked across the entire length of the Mediterranean world, including Portugal, Spain, Italy, Greece, Turkey, and Syria.³⁰ Significantly, the center of the path of the eclipse fell between the two power centers of the Roman Empire – Rome and Constantinople – and the eclipse was visible directly over the city of Rome when the sun was located high in the sky. The NASA illustration below shows total and annular solar eclipse paths for the period 401-420, including the July 19, 418 Total Solar Eclipse.³¹

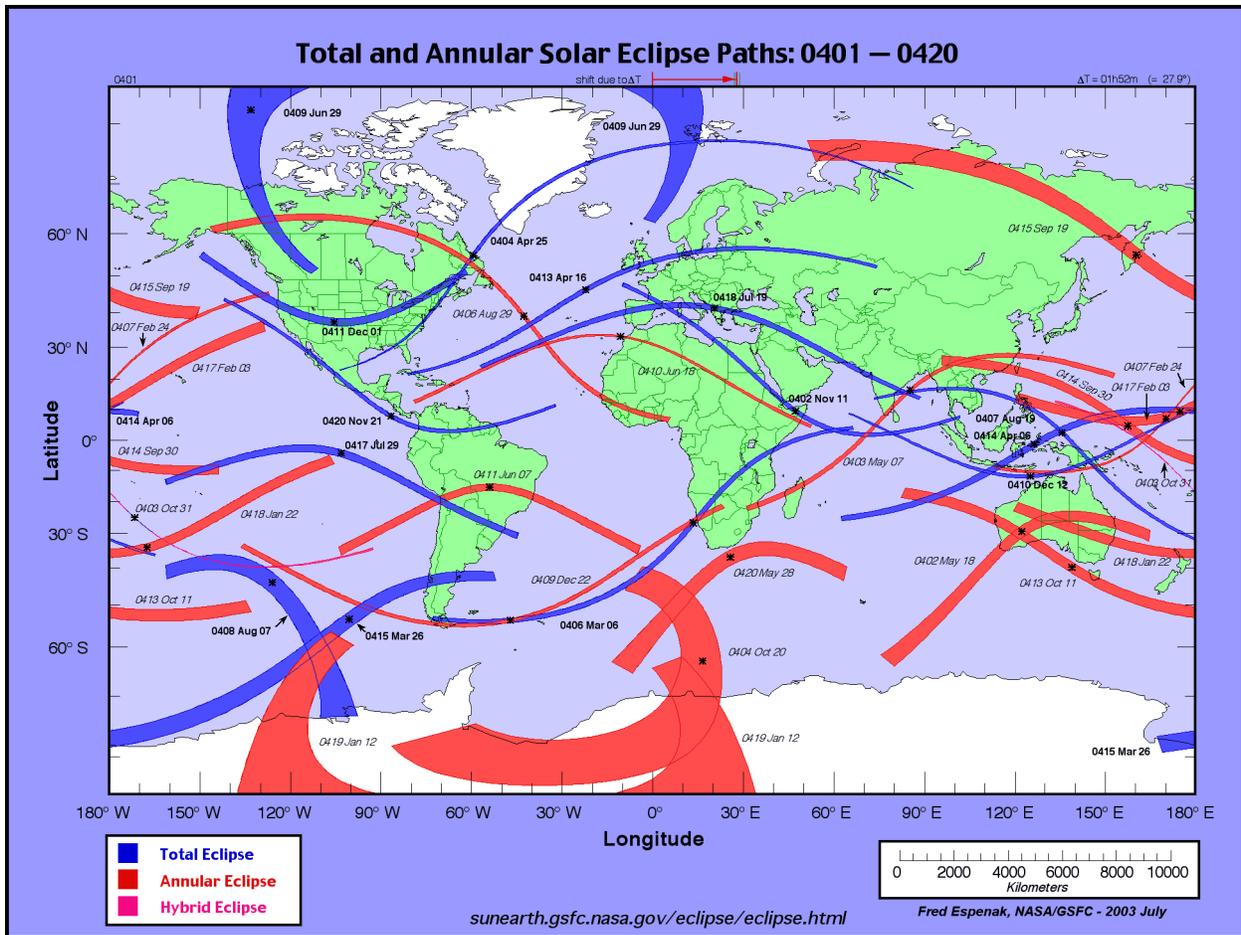
²⁸ <http://earthsky.org/space/coincidence-that-sun-and-moon-seem-same-size>

²⁹ The number 400 is very interesting in light of the fact that the Sun and Moon became visible on the Fourth Day of Creation (Genesis 1:14-19). In the Word of God, the number 4 is associated with God's creative works. The number 400 is the product of 4 x 10 x 10 – the number 10 signifying the perfection of the Creator's order in the universe (E. W. Bullinger, *Number in Scripture: Its Supernatural Design and Spiritual Significance*, pp. 123, 243).

³⁰ <http://eclipse.gsfc.nasa.gov/SEsearch/SEsearchmap.php?Ecl=04180719>

³¹ <http://eclipse.gsfc.nasa.gov/SEcat5/SE0401-0500.html>

NASA Eclipse Web Site, "Five Millennium Catalog of Solar Eclipses", "0401 to 0500 (401 CE to 500 CE)". Click on Catalog Number 05749 to see the path of the total solar eclipse (in blue). See also NASA's "World Atlas of Solar Eclipse Paths" at: <http://eclipse.gsfc.nasa.gov/SEatlas/SEatlas.html> - Go to catalog listing for the 5th Century and click on time period 0401 to 0420, which shows "Total and Annular Solar Eclipse Paths: 0401 – 0420". See 0418 Jul 19 Total Solar Eclipse Path across the Mediterranean and Middle East (in blue).



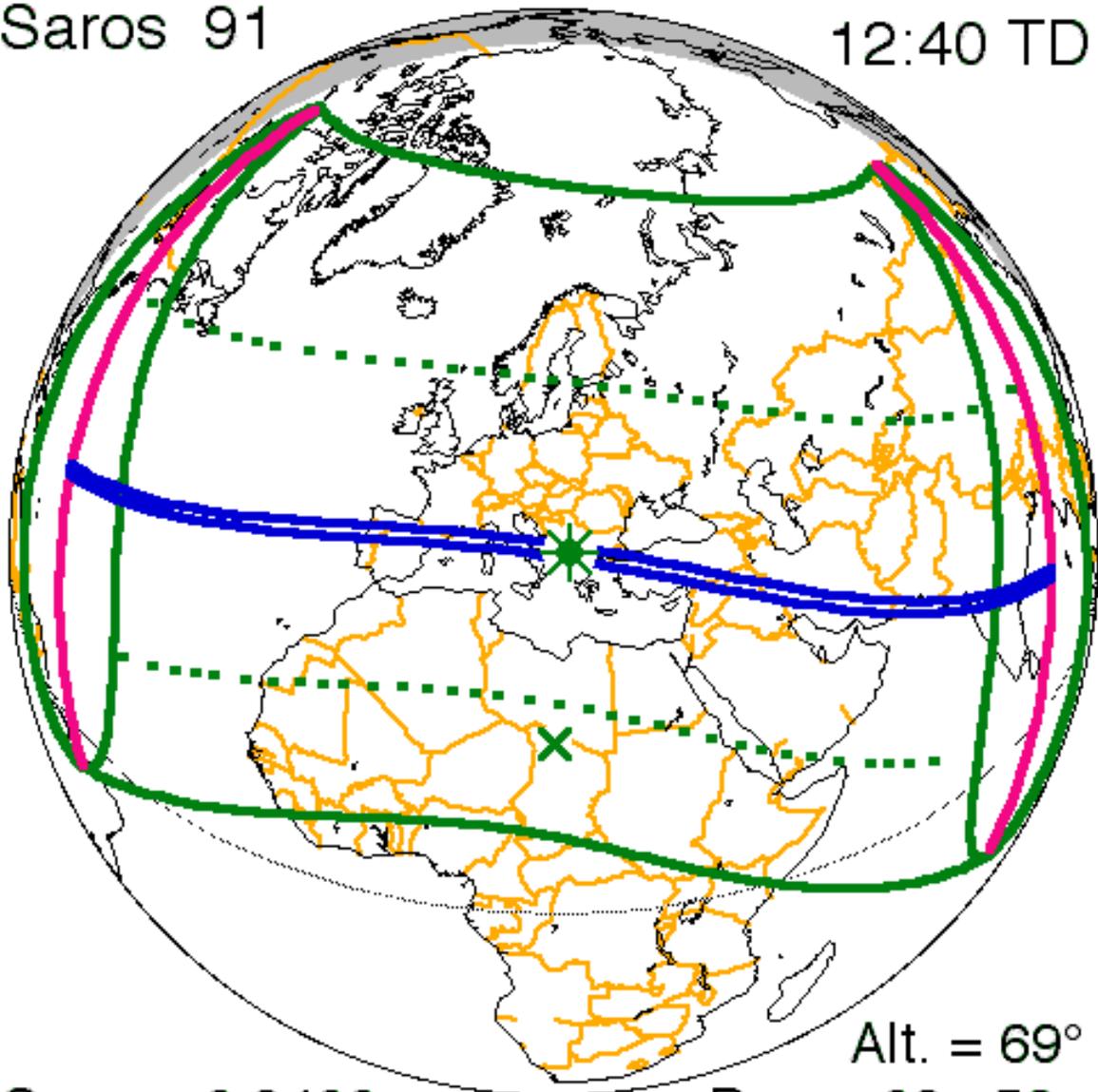
Note east to west path of the July 19, 418 total solar eclipse over the Mediterranean (in blue).

Total

Saros 91

0418 Jul 19

12:40 TD



Gam. = 0.3480

Alt. = 69°
Dur. = 03m52s

Five Millennium Canon of Solar Eclipses (Espanak & Meeus)

Note that the path of the total solar eclipse (in blue) runs across the entire length of the Mediterranean world and directly over the city of Rome. The center point of the solar eclipse path is marked by the green starburst symbol, where the sun was at its highest position in the sky at the time of the eclipse.

What makes this solar eclipse even more remarkable is the simultaneous discovery of a comet:

First report of a comet discovered during a solar eclipse, seen by the historian Philostorgius in Asia Minor.³²

In the ancient world, comets were thought to be a sign of impending destruction. A comet and a total solar eclipse visible throughout the Mediterranean world of the Roman Empire would have certainly struck fear into the inhabitants, especially given the historical events taking place at the time: barbarian invasions and disintegration of the Roman Empire in the West.

The July 19, 418 total solar eclipse fits the Sixth Seal Prophecy for the following reasons:

1. **RIGHT TIME:** Follows the 365 Crete earthquake. As we have shown, the Seal Prophecies unfolded in a chronological order.
2. **RIGHT PLACE:** Path of total eclipse over Rome and across the Mediterranean world. As we have shown, the Seal Prophecies are about the Roman Empire.
3. **LINK TO PROPHETIC EVENTS:** During the Fifth Century, the Western Roman Empire was invaded by various Germanic tribes, which led to its fall in 476.

The fall of the western Roman Empire owed its immediate cause to invasions by Germanic peoples from the north. The Visigoths had already crossed into the Balkans in 375, and began an attack on Italy in 402. Eight years later they sacked Rome. The year 410 henceforth became a key date in Roman history, but, for the western provinces as a whole, the incursion of Vandals, Alans and Sueves in 406 was no less significant. They, like the Goths, came in search of land as well as plunder, and **by the end of the fifth century almost all of the western empire was under Germanic control** (emphasis added).³³

³² *Totality – Eclipses of the Sun* (3rd edition) by Littman, Espenak, and Willcox – see explanatory notes on “Solar Eclipses of Historical Interest” by Fred Espenak, NASA Eclipse Web Site - <http://eclipse.gsfc.nasa.gov/SEhistory/SEhistory.html#0418>

³³ Chris Scarre, *Chronicle of the Roman Emperors: The Reign-by-Reign Record of the Rulers of Imperial Rome*, p. 230.

When Emperor Theodosius died in 395, he left the Roman Empire to his two sons: Arcadius to rule the eastern empire and Honorius, only 10 years old, to rule the western empire.

Honorius's reign was dominated by Germanic incursions. ...

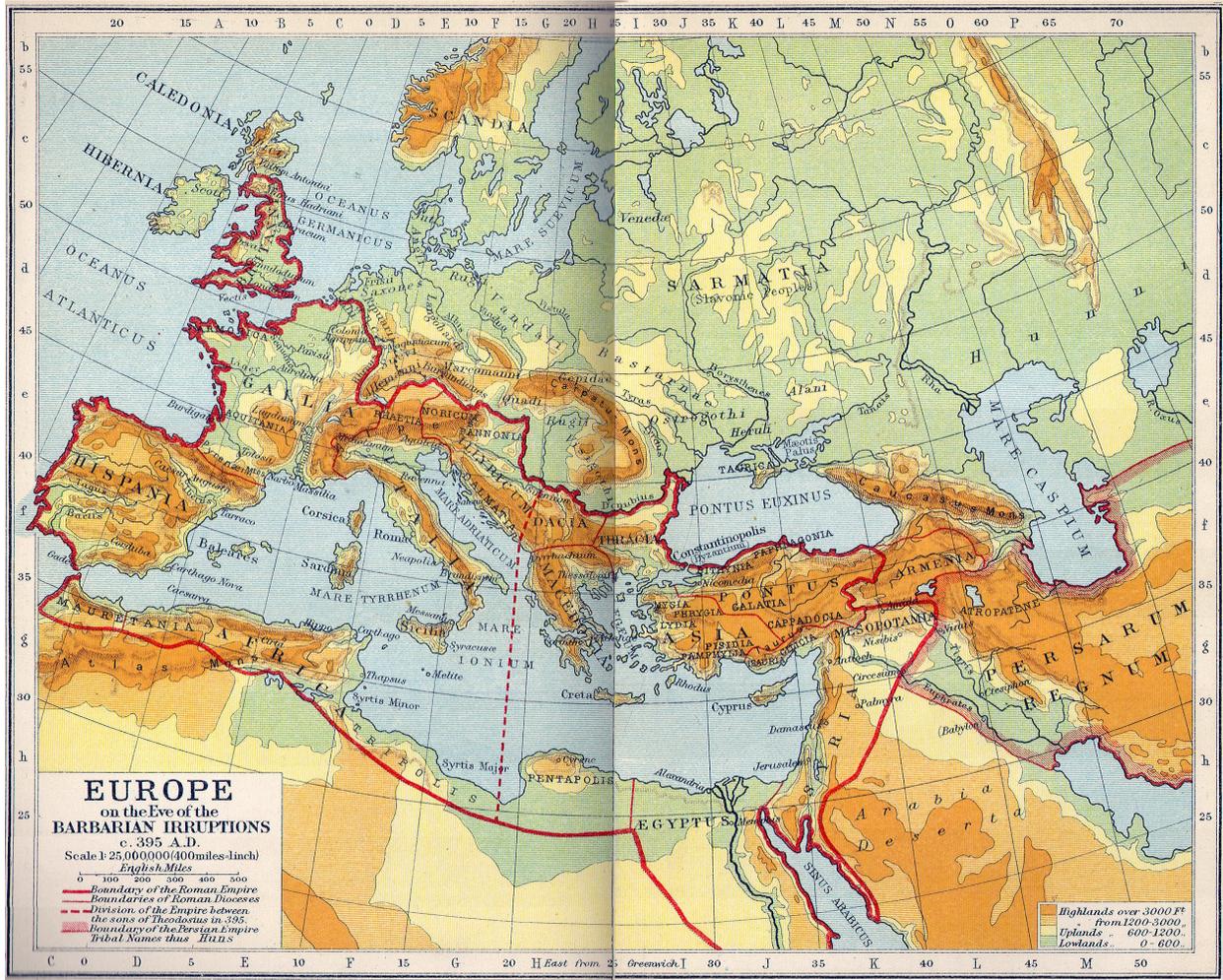
From 410 until his death in 423 Honorius did what he could to salvage the situation, but **imperial control over the western provinces was irreparably weakened** (emphasis added).³⁴

The Fifth Century marked a major turning point in the history of the Roman Empire, as Germanic peoples conquered the lands of the empire in the West. In less than sixty years from the 418 solar eclipse, Rome fell and the Western Roman Empire (6th Head of the Beast) ceased to exist.

The maps below, the first showing the Roman Empire before the Germanic invasions (395) and the second showing the Roman Empire one year after the Fall of Rome (476), dramatically illustrate this major turning point in the history of the Roman Empire.

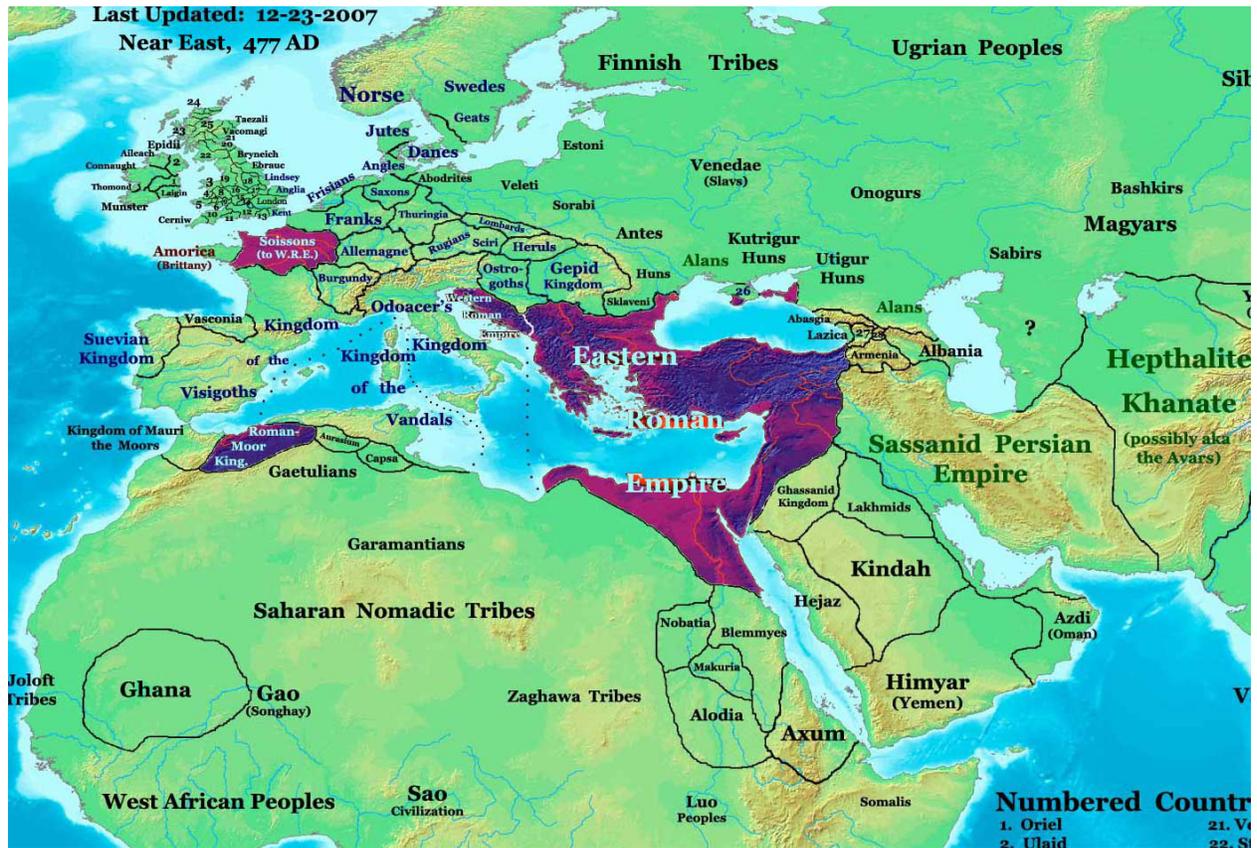
³⁴ Scarre, pp. 229-230.

Map: Roman Empire Before Invasions about 395³⁵



³⁵ <http://www.heritage-history.com/maps/philips/phil001.jpg>

Map: One year after the Fall of Rome in 476³⁶



³⁶ http://en.wikipedia.org/wiki/File:Roman-Empire_477ad.jpg

THE ASSYRIAN SOLAR ECLIPSE OF 763 BC

As the Sixth Seal Prophecy shows, the total solar eclipse of 418 was a sign of the coming fall of Rome and collapse of the Western Roman Empire, the 6th Head of the Beast from the Sea. The total solar eclipse was a sign of God's coming judgment.

Likewise, a total solar eclipse was prophesied to occur as a sign of God's impending judgment during the time of the Assyrian Empire, the 2nd Head of the Beast from the Sea. Amos prophesied that God's judgment would fall on the Northern Kingdom of Israel (Ten Northern Tribes) because of their idolatry, injustice, and greed.

“And it will come about in that day,” declares the Lord GOD, “That **I shall make the sun go down at noon And make the earth dark in broad daylight**”
(Amos 8:9, emphasis added).

The “sun go[ing] down at noon” and the earth becoming dark “in broad daylight” is a description of a total solar eclipse. Amos prophesied during the period 767 to 753 BC.³⁷ This prophecy was fulfilled on June 15, 763 BC, when a total solar eclipse darkened the skies over the Eastern Mediterranean and Assyrian Empire.

The NASA illustration (below) shows the path of the total solar eclipse (in blue) over Africa, the Eastern Mediterranean, and directly through the area of what was the Assyrian Empire at the time (today Turkey, Syria, Iraq, and Iran).

Note: The NASA illustration shows the date June 15, 763 BC as -0762 Jun 15. The one-year difference compensates for the fact there is no year 0 when going from BC to AD dates on the calendar. Accordingly, NASA's Catalog of Solar Eclipses dates the period 800 BCE to 701 BCE as -799 to -700.³⁸

³⁷ *The Open Bible* (NKJV), p. 1255.

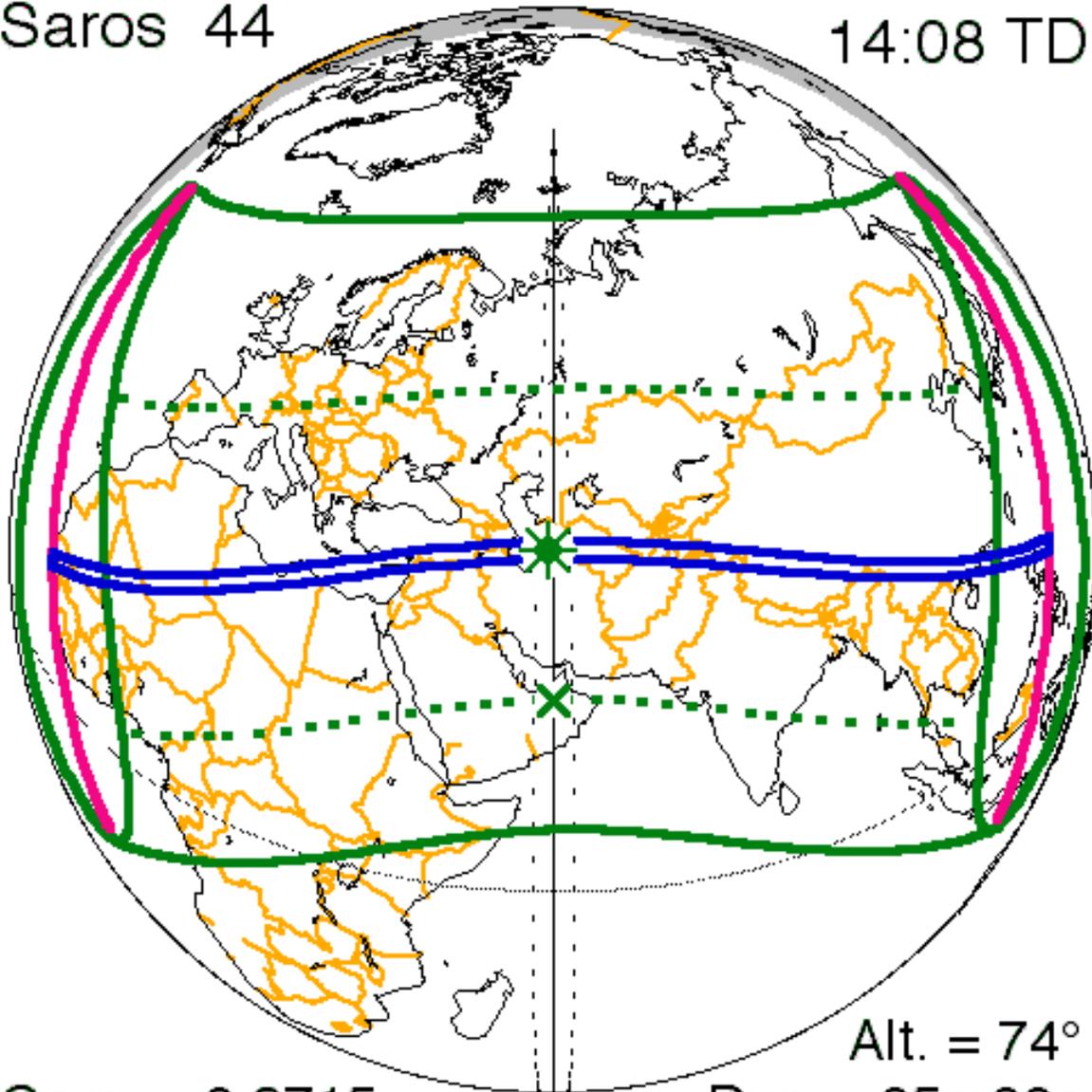
³⁸ <http://eclipse.gsfc.nasa.gov/SEcat5/SE-0799--0700.html>

Total

Saros 44

-0762 Jun 15

14:08 TD



Gam. = 0.2715

Alt. = 74°
Dur. = 05m00s

Five Millennium Canon of Solar Eclipses (Espanak & Meeus)

After the 763 BC total solar eclipse, the warning sign prophesied by Amos, the Israelites of the Northern Kingdom failed to repent. In 722 BC, the Assyrian Empire conquered the Northern Kingdom of Israel.³⁹ At the time of the Assyrian Solar Eclipse, the Assyrian Empire (2nd Head of the Beast) had been in decline. Similarly, the Roman Empire (6th Head of the Beast) was in decline at the time of the Roman Solar Eclipse in 418. In each case, the total solar eclipse was prophesied and fulfilled as a sign of God's impending judgment.

The 763 BC Assyrian Eclipse is also prophetically significant because of its link to God's warning through the prophet Jonah to the inhabitants of Nineveh, the capital of the Assyrian Empire at that time.⁴⁰ Jonah lived at the time of the solar eclipse and was a contemporary of King Jeroboam II of Israel (782-753 BC).⁴¹

The repentance of Ninevah probably occurred in the reign of Ashurbanipal III (773-755 B.C.). Two plagues (765 and 759 B.C.) and a solar eclipse (763 B.C.) may have prepared the people for Jonah's message of judgment.⁴²

Not only had the inhabitants of Ninevah witnessed the total solar eclipse, but they had also suffered two plagues. Ancient peoples viewed eclipses as bad omens,⁴³ signs of impending divine judgment. To the ancients, plagues were also viewed as divine judgment. The combination of these events would certainly have prepared the people to receive Jonah's message that unless they turned from their evil ways, Ninevah would be utterly destroyed. From the king to the common people, the inhabitants of Ninevah repented and judgment was suspended for a time.

³⁹ <http://en.wikipedia.org/wiki/Jerusalem> (section "History", subsection "Ancient period").

⁴⁰ http://en.wikipedia.org/wiki/Neo-Assyrian_Empire (Capital Nineveh 705 BC).

⁴¹ *The Open Bible* (NKJV), p. 1272.

⁴² *The Open Bible* (NKJV), p. 1272.

⁴³ http://en.wikipedia.org/wiki/Solar_eclipse (section "Historical eclipses").

“THE WHOLE MOON BECAME LIKE BLOOD” – BLOOD-RED TOTAL LUNAR ECLIPSE

The imagery of the Sixth Seal Prophecy describes a total lunar eclipse, called a blood moon because of its red color, following the total solar eclipse of 418.

And I looked when He [Messiah Yeshua] broke the sixth seal, and there was a great earthquake; and the sun became black as sackcloth made of hair, and **the whole moon became like blood** (Revelation 6:12, emphasis added).

The following YouTube video, “What happens during a lunar eclipse”, shows what happens during a lunar eclipse and why a total lunar eclipse takes on a red color.

<http://www.youtube.com/watch?v=fXPJIDrzo0w&list=TL-5y8aJVhj9J2ls8TADgo0q5JZUrgBb64>

According to Wikipedia:

A lunar eclipse occurs when the Moon passes directly behind the Earth into its umbra (shadow). This can occur only when the Sun, Earth, and Moon are aligned (in "syzygy") exactly, or very closely so, with the Earth in the middle. Hence, **a lunar eclipse can only occur the night of a full moon. ...**

Unlike a solar eclipse, which can only be viewed from a certain relatively small area of the world, **a lunar eclipse may be viewed from anywhere on the night side of the Earth.** A lunar eclipse lasts for a few hours, whereas a total solar eclipse lasts for only a few minutes at any given place, due to the smaller size of the moon's shadow.⁴⁴

More about lunar eclipses and what produces the red color:

⁴⁴ http://en.wikipedia.org/wiki/Lunar_eclipse

Because the moon's orbit around Earth lies in a slightly different plane than Earth's orbit around the sun, perfect alignment for an eclipse doesn't occur at every full moon.

There are three types — total, partial and penumbral — with the most dramatic being a **total lunar eclipse, in which Earth's shadow completely covers the moon.**

[During a total lunar eclipse] Earth's full (umbral) shadow falls on the moon. The moon won't completely disappear, but it will be cast in an eerie darkness. ...

Some sunlight passing through Earth's atmosphere is scattered and refracted, or bent, and refocused on the moon, giving it a dim glow even during totality. If you were standing on the moon, looking back at the sun, you'd see the black disk of Earth blocking the entire sun, but you'd also see a ring of reflected light glowing around the edges of Earth — that's the light that falls on the moon during a total lunar eclipse.

The moon may turn red or coppery colored during the total portion of an eclipse. The red moon is possible because while the moon is in total shadow, some light from the sun passes through Earth's atmosphere and is bent toward the moon. While other colors in the spectrum are blocked and scattered by Earth's atmosphere, red light tends to make it through easier. **The effect is to cast all the planet's sunrises and sunsets on the moon.**

The exact color that the moon appears depends on the amount of dust and clouds in the atmosphere," according to NASA scientists. "If there are **extra particles in the atmosphere**, from say a recent volcanic eruption, the moon will appear a **darker shade of red**" (emphasis added).⁴⁵

⁴⁵ <http://www.space.com/15689-lunar-eclipses.html> - "Lunar Eclipses: What Are They; When is the Next One?", Robert Roy Britt, Space.com, November 29, 2012.

When a total lunar eclipse takes on a red color, it is referred to as a blood moon. This is why the Sixth Seal Prophecy describes the total lunar eclipse as “the whole moon became like blood”.

Photo of a blood moon over Namibia, Africa on June 15, 2011.⁴⁶

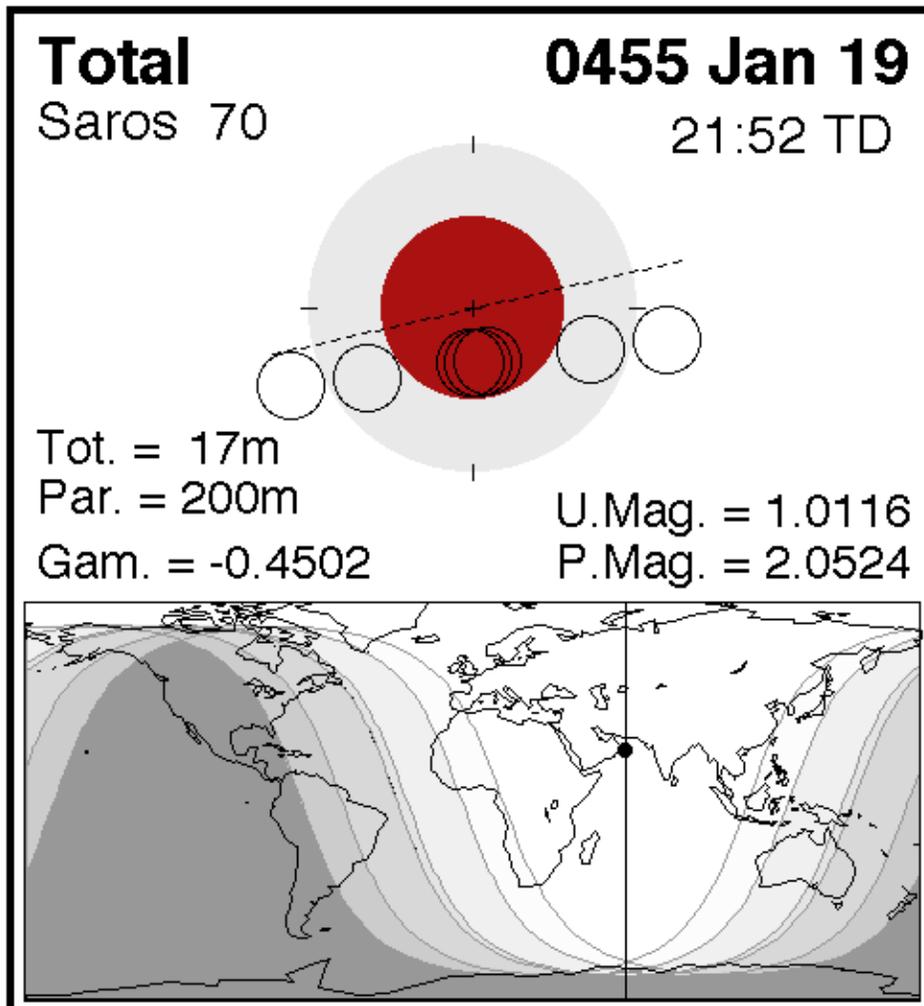


THE ROMAN LUNAR ECLIPSE OF 455

On January 19, 455, a total lunar eclipse appeared over the Roman Empire. This lunar eclipse links to one of the most important events in the history of Rome: the sacking of the city in 455 by the Vandals about four months after the blood moon.

Next Page: NASA Illustration of 455 Lunar Eclipse. Total lunar eclipse visible in white zone.

⁴⁶ <http://www.space.com/15689-lunar-eclipses.html> - Photo of blood red moon over the Sossusviei Desert Lodge on NamibRand Nature Reserve in Namibia by George Tucker on June 15, 2011.



Five Millennium Canon of Lunar Eclipses (Espenak & Meeus)
NASA TP-2009-214172

The sack of Rome by the Vandals began on June 3, 455 and lasted 14 days.⁴⁷

The sack of 455 is generally seen as being more thorough than the Visigothic sack of 410,[4] because the Vandals plundered Rome for fourteen days whereas the Visigoths spent only three days in the city.

⁴⁷ <http://burnpit.legion.org/2013/06/vandals-sack-rome-decline-western-empire-accelerates> - "Vandals Sack Rome: Decline of Western Empire Accelerates", Siggurdsson, June 3, 2013.

This Sack of Rome is held by some historians to mark the "end of the Roman Empire", if a single event can legitimately be held to mark the end of [a] long, complex entity such as an 'empire' or 'culture' (emphasis added).⁴⁸

The sacking of Rome in 455 is a major event in the history of the Roman Empire's decline and fall. Linking the 455 total lunar eclipse to the 455 Sack of Rome fits the prophetic picture of the Sixth Seal, as the Seals are about the Roman Empire, the 6th Head of the Beast.

The 455 total lunar eclipse fits the prophetic timeline of the Sixth Seal Prophecy: first an earthquake (365 Crete Earthquake), then a total solar eclipse (418 total solar eclipse), followed by a total lunar eclipse (455 total lunar eclipse). The 455 total lunar eclipse fits the Sixth Seal Prophecy for all of the following reasons:

1. **RIGHT TIME:** Follows the total solar eclipse of 418 over the Roman Empire. As we have shown, the Seal Prophecies unfold in chronological order.
2. **RIGHT PLACE:** Visible to the inhabitants of the Roman Empire. As we have shown, the Seal Prophecies are about the Roman Empire.
3. **LINK TO MAJOR EVENT IN ROME'S HISTORY:** The Sack of Rome by the Vandals in 455 was a key event ultimately leading to the fall of Rome in 476.

Even though lunar and solar eclipses occur with regular frequency, when they line up with specific Biblical prophecies regarding historical events of prophetic significance, we need to pay attention. In this case, the Sixth Seal Total Lunar Eclipse (Blood Moon) was a sign of God's judgment on the Roman Empire, the 6th Head of the Beast from the Sea. The Roman Empire began a period of decline in the Third Century that eventually led to the fall of the Roman Empire in the West in the Fifth Century.

⁴⁸ http://en.wikipedia.org/wiki/Sack_of_Rome - click on "Sack of Rome (455)".

“STARS OF THE SKY FELL TO THE EARTH” – INTENSE METEORIC AND COMETARY IMPACT ACTIVITY

And I looked when He [Messiah Yeshua] broke the **sixth seal**, and there was a great earthquake; and the sun became black as sackcloth made of hair, and the whole moon became like blood; and **the stars of the sky fell to the earth**, as a fig tree casts its unripe figs when shaken by a great wind (Revelation 6:12-13, emphasis added).

The prophetic picture of “the stars of the sky” falling to Earth fits the description of meteor showers and meteor storms (intense meteor showers), as well as cometary impact events.

The ancients described meteors as stars falling from Heaven because that is how they appear. Today we continue to call meteors “shooting stars”:

Shooting star is a common name for the visible path of a meteoroid as it enters the atmosphere, becoming a meteor. As it enters the atmosphere the meteor burns and vaporizes. If the meteor survives the entry and lands on the surface of the Earth, it is classified as a meteorite. The sizes range from a piece of dust to the size of the average thumbnail (emphasis added).⁴⁹

When Earth passes through the debris of a comet, meteor showers/storms are produced:

A meteor shower is a celestial event in which a number of meteors are observed to radiate, or originate, from one point in the night sky. These meteors are caused by streams of cosmic debris called meteoroids entering Earth's atmosphere at extremely high speeds on parallel trajectories. Most meteors are smaller than a grain of sand, so almost all of them disintegrate and never hit the Earth's surface. **Intense or unusual meteor showers are known as meteor**

⁴⁹ http://en.wikipedia.org/wiki/Shooting_Star

outbursts and meteor storms, which may produce greater than 1,000 meteors an hour [1] (emphasis added).⁵⁰

Meteors falling from the sky are actually debris from comets (rarely asteroids):

A meteor shower is the result of an interaction between a planet, such as Earth, and streams of debris from a comet. Comets can produce debris by water vapor drag, as demonstrated by Fred Whipple in 1951,[2] and by breakup. Whipple envisioned comets as "dirty snowballs," made up of rock embedded in ice, orbiting the Sun. The "ice" may be water, methane, ammonia, or other volatiles, alone or in combination. The "rock" may vary in size from that of a dust mote to that of a small boulder. Dust mote sized solids are orders of magnitude more common than those the size of sand grains, which, in turn, are similarly more common than those the size of pebbles, and so on. When the ice warms and sublimates [changes directly from solid to gas state], the vapor can drag along dust, sand, and pebbles.

Each time a comet swings by the Sun in its orbit, some of its ice vaporizes and a certain amount of meteoroids will be shed. The meteoroids spread out along the entire orbit of the comet to form a meteoroid stream, also known as a "dust trail" (as opposed to a comet's "dust tail" caused by the very small particles that are quickly blown away by solar radiation pressure) (emphasis added).⁵¹

There is scientific evidence of intense bombardment of Earth by cometary debris, as evidenced by increased fireball activity of meteor streams during the period 400-600. This is highly significant because it fits the prophetic description and timeline of the Sixth Seal Prophecy.

... British cometary astrophysicists ... find that **earth was at increased risk of bombardment by cometary debris in the AD 400-600 timeframe, based on**

⁵⁰ http://en.wikipedia.org/wiki/Meteor_shower (introductory information).

⁵¹ http://en.wikipedia.org/wiki/Meteor_shower (section "Origin of meteorid streams").

the frequency of fireball activity in the Taurid meteor streams recorded in Chinese archives [2] (emphasis added).⁵²

As we have shown, there was a period of intense earthquake activity throughout the Roman Mediterranean world, beginning in the Fourth Century (301-400) and continuing through the Sixth Century (501-600). The Earth was being shaken. Then the Heavens were being shaken from the Fifth Century (401-500) through the Sixth Century (501-600).

Massive earthquakes and cosmic impacts further destabilized the Roman Empire, which had previously experienced political, economic, and social upheaval during the Crisis of the Third Century, as previously detailed in our study of the Second, Third, and Fourth Seals (see Part 8 “Seals 1-5 The Rise and Decline of the 6th Head of the Beast, the Roman Empire”).

As previously stated, astrophysicists have found an increased frequency of fireball activity in the Taurid meteor streams during the period 400-600. (Note: A fireball is an exceptionally bright meteor.)

The Taurids are an annual meteor shower associated with the comet Encke.

They are named after their radiant point in the constellation Taurus, where they are seen to come from in the sky. Because of their occurrence in **late October and early November**, they are also called Halloween fireballs.

Encke and the Taurids are believed to be remnants of a much larger comet, which has disintegrated over the past 20,000 to 30,000 years, breaking into several pieces and releasing material by normal cometary activity or perhaps occasionally by close encounters with the tidal force of Earth or other planets (Whipple, 1940; Klačka, 1999). In total, **this stream of matter is the largest in the inner solar system. Since the meteor stream is rather spread out in space, Earth takes several weeks to pass through it, causing an extended period of meteor activity, compared with the much smaller periods of activity in other**

⁵² http://en.wikipedia.org/wiki/Mike_Baillie (section “Comet theories”).

showers. The Taurids are also made up of weightier material, pebbles instead of dust grains [1] (emphasis added).⁵³

The Southern Taurids occur September 10-November 20, with a peak date of October 10; the Northern Taurids occur October 20-December 10, with peak date of November 12. There are also the Daytime Beta Taurids that occur June 5–July 17.⁵⁴

The September-October timeframe for the Taurids is prophetically significant because this is when the Feast of Trumpets (Rosh HaShanah) and the Feast of Tabernacles (Sukkot) take place. Because the Taurids have more and larger, weightier material, and it takes Earth several weeks to pass through this largest of cometary debris fields in our inner solar system, the effect on Earth can be greater. This certainly fits the prophetic picture of the Sixth Seal Prophecy.

“THE SKY WAS SPLIT APART” – INTENSE METEOR SHOWERS

According to the Sixth Seal Prophecy, “the sky was split apart” when “the stars of the sky fell to earth”:

and **the stars of the sky fell to earth**, as a fig tree casts its unripe figs when shaken by a great wind. And **the sky was split apart like** a scroll when it is rolled up ... (Revelation 6:13-14, emphasis added).

During an intense meteor shower, called a meteor storm, it does appear that stars split the sky as they fall to the Earth. This is dramatically illustrated by the following depiction of the 1833 Leonid meteor storm, when 100,000 to over 200,000 meteors/hour shot across the sky.

⁵³ <http://en.wikipedia.org/wiki/Taurids> (introductory information).

⁵⁴ http://en.wikipedia.org/wiki/List_of_meteor_showers



A famous depiction of the 1833 meteor storm, produced in 1889 for the Seventh-day Adventists book *Bible Readings for the Home Circle*.⁵⁵

⁵⁵ <http://en.wikipedia.org/wiki/Leonids> - <http://en.wikipedia.org/wiki/Leonids#mediaviewer/File:Leonids-1833.jpg>

With regard to the Leonid meteor shower:

The Leonids (/ˈliːɒnɪdz/ lee-ə-nidz) is a prolific meteor shower associated with the comet Tempel-Tuttle. The Leonids get their name from the location of their radiant in the constellation Leo: the meteors appear to radiate from that point in the sky.

The Leonids are a fast moving stream which encounter the path of Earth and impact at 72 km/s [over 160,000 miles/hour].[4] Larger Leonids which are about 10 mm [0.39 inches] across have a mass of half a gram and are **known for generating bright** (apparent magnitude -1.5) **meteors**.[5] An annual Leonid shower may deposit 12 or 13 tons of particles across the entire planet.

... Leonids ... peak around November 18 ... Meteor storms (large outbursts) exceed 1000 meteors per hour, to be compared to the sporadic background (5 to 8 meteors per hour) and the shower background (several per hour).

The Leonids are famous because their meteor showers, or storms, can be among the most spectacular. ... The **meteor storm of 1833** was of truly superlative strength. One estimate is over one hundred thousand meteors an hour,[8] but another, done as the storm abated, estimated **in excess of two hundred thousand meteors an hour[1] over the entire region of North America east of the Rocky Mountains** (emphasis added).

CATASTROPHIC IMPACTS BY LARGE METEORS

If large enough, meteors can cause tremendous damage, a good example being Meteor Crater in Arizona. The impact crater is about 3,900 feet in diameter and 570 feet deep. The meteorite that caused the crater is estimated to have been about 160 feet across, travelling about 28,600 miles

per hour and impacting with the energy of 10 megatons. Most of the meteorite was vaporized upon impact.⁵⁶

Panoramic view of Meteor Crater in Arizona⁵⁷



THE SEVENTH SEAL OF REVELATION – PREPARATION FOR THE SEVEN TRUMPETS

The Seventh Seal reveals preparations for the Seven Trumpets:

And when He [Messiah Yeshua] broke the **seventh seal**, there was silence in heaven for about half an hour. And **I saw the seven angels who stand before God; and seven trumpets were given to them**. And another angel came and stood at the altar, holding a golden censer; and much incense was given to him, that he might add it to the prayers of all the saints [believers] upon the golden altar which was before the throne. And the smoke of the incense, with the prayers of the saints, went up before God out of the angel's hand. And the angel took the censer; and he filled it with the fire of the altar and threw it to the earth; and there followed peals of thunder and sounds and flashes of lightning and an earthquake. And **the seven angels who had the seven trumpets prepared themselves to sound them** (Revelation 8:1-6, emphasis added).

⁵⁶ http://en.wikipedia.org/wiki/Meteor_Crater (introductory information; section "Formation").

⁵⁷ http://en.wikipedia.org/wiki/Meteor_Crater#mediaviewer/File:Meteor_Crater_Panorama_near_Winslow,_Arizona,_2012_07_11.jpg

OVERVIEW OF TRUMPETS 1-4

We will start our study of Trumpets 1-4 with an overview, followed by an in-depth study. Let's begin by reading Revelation 8:7-12.

Rev. 8:7 And the first sounded, and there came hail and fire, mixed with blood, and they were thrown to the earth; and a third of the earth was burned up, and a third of the trees were burned up, and all the green grass was burned up.

Rev. 8:8 And the second angel sounded, and something like a great mountain burning with fire was thrown into the sea; and a third of the sea became blood;

Rev. 8:9 and a third of the creatures, which were in the sea and had life, died; and a third of the ships were destroyed.

Rev. 8:10 And the third angel sounded, and a great star fell from heaven, burning like a torch, and it fell on a third of the rivers and on the springs of waters;

Rev. 8:11 and the name of the star is called Wormwood; and a third of the waters became wormwood; and many men died from the waters, because they were made bitter.

Rev. 8:12 And the fourth angel sounded, and a third of the sun and a third of the moon and a third of the stars were smitten, so that a third of them might be darkened and the day might not shine for a third of it, and the night in the same way.

FIRST TRUMPET – COMETARY DEBRIS IMPACTING EARTH

And **the first sounded**, and there came **hail and fire [cometary debris], mixed with blood [blood rain]**, and they were thrown to the earth; and a third of the earth was burned up, and a third of the trees were burned up, and all the green grass was burned up (Revelation 8:7, emphasis added).

The First Trumpet Prophecy of “hail and fire” fits the description of the icy rocks of a comet falling to earth in fireballs as the rock burns; “mixed with blood” describes red rain, called

blood rain, that falls after such celestial events; “a third of the earth burned up” describes the fires caused by the cosmic impacts as the fireballs ignited vegetation.

SECOND TRUMPET – CATASTROPHIC VOCANIC ERUPTION OF KRAKATOA IN 535

And the **second angel sounded**, and something like **a great mountain burning with fire was thrown into the sea [Krakatoa eruption of 535]**; and a third of the sea became blood; and a third of the creatures, which were in the sea and had life, died; and a third of the ships were destroyed (Revelation 8:8-9, emphasis added).

The Second Trumpet Prophecy of “a great mountain burning with fire ... thrown into the sea” fits the massive and catastrophic 535 eruption of the supervolcano Krakatoa, a volcanic island in Indonesia.

THIRD TRUMPET – THE “GREAT STAR” DESCRIBES A COMET

And the **third angel sounded**, and **a great star fell from heaven, burning like a torch [comet]**, and it fell on a third of the rivers and on the springs of waters; and the name of the star is called Wormwood; and a third of the waters became wormwood; and many men died from the waters, because they were made bitter (Revelation 8:10-11, emphasis added).

The Third Trumpet Prophecy of “a great star [that] fell from heaven, burning like a torch” describes a comet. As a result of cometary debris falling on Earth and contaminating the water, many people died.

FOURTH TRUMPET – LIGHT OF SUN, MOON, AND STARS DIMMED BY VOLCANIC & COMETARY DEBRIS

And the **fourth angel sounded**, and a **third of the sun and a third of the moon and a third of the stars were smitten**, so that a third of them might be **darkened and the day might not shine** for a third of it, and the night in the same way (Revelation 8:12, emphasis added).

The Fourth Trumpet Prophecy describes the dimming of the light of the sun, moon, and stars caused by showers of cometary debris and a catastrophic volcanic eruption. These events filled Earth's atmosphere with dust and debris that drastically affected global climate and led to the collapse of civilizations around the world.

IN-DEPTH STUDY OF TRUMPETS 1-4

FIRST TRUMPET – “HAIL AND FIRE, MIXED WITH BLOOD” – COMETARY IMPACTS AND BLOOD RAIN EVENTS 400-600

The First Trumpet Prophecy describes a celestial event in which “hail and fire, mixed with blood” is thrown to the earth:

And **the first sounded**, and there came **hail and fire, mixed with blood, and they were thrown to the earth**; and a third of the earth was burned up, and a third of the trees were burned up, and all the green grass was burned up (Revelation 8:7, emphasis added).

The description of “hail and fire” is an unusual combination of ice and fire that fits the composition and appearance of cometary fragments travelling through Earth's atmosphere. A comet consists of ice, rock, and dust; it can fragment and shower cometary debris on Earth, which burns up with a fiery appearance as it travels through the atmosphere.

The reference in Revelation 8:7 to a third of the earth and trees, as well all green grass, being burned, refers to the area affected by the cosmic impacts. Biblical references to “all the earth” or the “whole earth” are correctly interpreted by understanding the context, and generally refer to a particular region, rather than to the entire planet. For example, in Daniel 7:23, “the whole earth” refers to the Roman Empire; in Daniel 8:5, “the whole earth” refers to the Persian Empire that Alexander the Great conquered; in Jeremiah 51:7, 49 and Daniel 4:1, 20, “all the earth” refers to the Babylonian Empire; in Daniel 2:39, “all the earth” refers to Alexander the Great’s Empire; and in 1 Kings 10:24, “all the earth” refers to the Mediterranean and Middle Eastern world that heard about King Solomon.

The description of the First Trumpet Prophecy fits what scientists have found regarding the increased bombardment of Earth with cometary debris during the period 400-600. During such a period of increased cometary bombardment, it is certainly possible that large impact events could have taken place that caused fires and destruction in various parts of the world, including the Mediterranean and Middle Eastern world.

The late Eugene Shoemaker of the U.S. Geological Survey came up with an **estimate of the rate of Earth impacts**, and suggested that **an event about the size of the nuclear weapon that destroyed Hiroshima occurs about once a year**. Such events would seem to be spectacularly obvious, but they generally go unnoticed for a number of reasons: the majority of the Earth's surface is covered by water; a good portion of the land surface is uninhabited; and the explosions generally occur at relatively high altitude, resulting in a huge flash and thunderclap ... (emphasis added).⁵⁸

Although reports of injuries from cosmic impacts are rare, that such events can cause great loss of human life have been reported:

⁵⁸ http://en.wikipedia.org/wiki/Impact_event (section “Holocene events”).

A Chinese record states that **10,000 people were killed** in Shanxi Province in 1490 **by a hail of "falling stones"**; some astronomers hypothesize that this may describe the breakup of a large asteroid [34] (emphasis added).⁵⁹

“THE LORD THREW LARGE STONES FROM HEAVEN” KILLING ISRAEL’S ENEMIES

There is another interesting and relevant example in the Old Testament of cometary or asteroid debris being cast from Heaven to Earth. In the Book of Joshua, we are told that God threw large hailstones from Heaven, killing Israel’s enemies:

And it came about as they fled from before Israel, while they were at the descent of Beth-horon, that **the LORD threw large stones from heaven** on them as far as Azekah, and they died; there were **more who died from the hailstones** than those whom the sons of Israel killed with the sword (Joshua 10:11, emphasis added).

BLOOD RAIN ASSOCIATED WITH COSMIC IMPACTS

According to the First Trumpet Prophecy, blood mixed with hail and fire is thrown to the Earth:

And the first sounded, and there came **hail and fire, mixed with blood, and they were thrown to the earth** ... (Revelation 8:7, emphasis added).

Over the centuries, there have been and continue to be reports of “blood rain” in association with meteoritic or cometary activity.

A study has been published showing a **correlation between historic reports of coloured rains and of meteors**:[33] the author of the paper, Patrick McCafferty,

⁵⁹ http://en.wikipedia.org/wiki/Impact_event (section “Presumed impact events” accessed 2013 - note: revision of article as of September 24, 2014 has this information under section “Holocene”).

stated that sixty of these events (coloured rain), or 36%, were **linked to meteoritic or cometary activity**. But not always strongly. Sometimes the fall of red rain seems to have occurred after an air-burst, as from a meteor exploding in air; other times the odd rainfall is merely recorded in the same year as the appearance of a comet (emphasis added).⁶⁰

This strange phenomenon of blood rain is one of the subjects examined in the episode “Alien Blood Rain, Carolina Beach Boom, and Voynich Manuscript” from the Science Channel’s *The Unexplained Files* (2013). The following link provides a three-minute video segment from the program, detailing examination of red “blood” rain in Sri Lanka.

<http://science.discovery.com/tv-shows/the-unexplained-files/the-unexplained-files-videos/blood-red-rain.htm>

The following comes from our notes taken while watching the entire segment of this program on television. It explains one of the strangest findings upon examination of “blood” rain – the possible existence of a strange life form, in appearance similar to yet not red blood cells:

In the case of the red rain samples from Sri Lanka, physicist Professor Godfrey Lewis ruled out red blood cells, algae, and desert dust as the cause of the red color. He found cell-like structures having a cell wall that appeared to be living and replicate without DNA, unlike any life form on Earth.

Relevant to our study, one week before the red rain began to fall in Sri Lanka, there were reports of lights in the sky, which may have been due to falling meteorites. Astrobiologist Chandra Wickramasinghe obtained meteorites from the affected area. Deep inside these samples, he discovered structures similar to the cell-like bodies in the Sri Lanka red rain.

Dr. Anil Samaranayake of the Medical Research Institute in Sri Lanka also examined samples of the meteorites and found “unicellular donut-shaped

⁶⁰ http://en.wikipedia.org/wiki/Red_rain_in_Kerala (section “Alternative hypotheses”).

structures”. In the outer crust of these structures, he found high concentrations of uranium, which is radioactive and toxic. This shows that this type of red “blood” rain could very well cause harmful effects to people, animals, and plants.

Another case of red rain in Colombia, South America (2008) was examined and found to contain three markers for blood but of an undetermined type.

Not all cases of red rain are caused by these strange cell-like structures. In Kerala, India (2001), red rain thought to be caused by Arabian Desert dust was later determined to be caused by algal spores, although questions remain about unusual spore proliferation and dispersal.⁶¹

Such strange occurrences of “blood rain” have been reported from ancient times to the present day. According to Wikipedia:

Occurrences of blood rain throughout history are distributed from the ancient, to the modern day. The earliest literary instance is in Homer's *Iliad*, in which Zeus twice caused a rain of blood, on one occasion to warn of slaughter in a battle. The same portent occurs in the work of the poet Hesiod,[1] writing around 700 BC;[2] ... The first-century Greek biographer Plutarch also recounts a tradition of a **rain of blood during the reign of Romulus, founder of Rome.**[3] Roman authors Livy and Pliny record some later cases of blood rain, with Livy describing it as a bad portent.[1]

Unusual events such as a rain of blood were considered bad omens in Antiquity, and this belief persisted through the Middle Ages and well into the Early modern period.[4] **Throughout northern and western Europe there are many cases of rains of blood** which were used by contemporary writers to augur bad events: the Anglo-Saxon Chronicle records that in 685, "there was a bloody rain in Britain. And milk and butter were turned to blood. And Lothere, king of Kent, died". ... Gregory of Tours records that **in 582 "In the territory of Paris**

⁶¹ http://en.wikipedia.org/wiki/Red_rain_in_Kerala (introductory information; section “Official report”).

there rained real blood from the clouds, falling upon the garments of many men, who were so stained and spotted that they stripped themselves of their own clothing in horror"[6] (emphasis added).⁶²

It is very interesting to note that the blood rain that fell in the territory of Paris in 582 fits the general prophetic timeframe of the First Trumpet Prophecy. This occurrence of blood rain in Western Europe, in what had been the Western Roman Empire before the fall of Rome in 476, fits the unfolding of the Seal and Trumpet Prophecies in a chronological order.

The number of reported cases of blood rain has fluctuated over time, with periods of increased occurrence being noted:

In Europe, there were fewer than 30 recorded cases all together of blood rain in the 13th, 14th, and 15th centuries. There were 190 instances across the 16th and 17th centuries; there was a decline in the 17th century when only 43 were recorded, but this picked up again with 146 in the 19th century.[15] There is little literature on the subject of blood rain,[6] although it has gained the attention of some naturalists.[16] The phenomenon received international coverage in 2001, after red rain fell in Kerala, India,[17] and again in 2012.[18]⁶³

As we saw in the case of the red rain that fell in Sri Lanka, the cause remains a mystery. The discovery of red bodies resembling red blood cells in the rain certainly fits the Biblical description of blood raining down on Earth. However, in some cases there may be other explanations for the red color, such as the mixing of dust containing iron oxide with rain or the presence of algal and fungal spores. In the case of dust contamination, it is possible that in certain cases, the dust comes from a meteorite.⁶⁴ The association of blood rain with meteorite dust is highly significant because this is consistent with the First Trumpet Prophecy describing cometary/meteoritic material bombarding Earth, mixed with “blood”, referring to red rain.

⁶² http://en.wikipedia.org/wiki/Blood_rain (section “History and use in literature”).

⁶³ http://en.wikipedia.org/wiki/Blood_rain (section “History and use in literature”).

⁶⁴ http://en.wikipedia.org/wiki/Blood_rain (section “Explanation”).

“A THIRD OF THE EARTH WAS BURNED UP”

According to the First Trumpet Prophecy, a third of the earth is burned up:

And **the first sounded**, and there came **hail and fire**, mixed with blood, and they were **thrown to the earth**; and **a third of the earth was burned up, and a third of the trees were burned up, and all the green grass was burned up** (Revelation 8:7, emphasis added).

The period 400-600 was a time of intense cosmic bombardment of the Earth. As cometary and other cosmic debris enters Earth's atmosphere, it burns creating fireballs. Fiery fragments hitting Earth can cause fires, which under certain conditions (such as abundant combustible material, winds, and dry conditions) spread rapidly.

In modern times, the Great Chicago Fire of 1871 is an example of a great fire linked to “balls of fire falling from the sky”, possibly from the break up of Comet Biela:

The Great Chicago Fire was a conflagration that burned from Sunday, October 8, to early Tuesday, October 10, 1871, killing hundreds and destroying about 3.3 square miles (9 km²) in Chicago, Illinois.[1] ... the fire was one of the largest U.S. disasters of the 19th century ...⁶⁵

The fire began the same day as several other fires destroyed towns and forests in Wisconsin and Michigan (emphasis added).⁶⁶

The story that the fire was caused by O'Leary's cow kicking over a lantern was made up by *Chicago Republican* reporter, Michael Ahern, as he later admitted.⁶⁷ The cause of the fire was never determined. However, there is scientific evidence linking it to a meteor shower:

⁶⁵ http://en.wikipedia.org/wiki/Great_Chicago_Fire (introductory information).

⁶⁶ http://en.wikipedia.org/wiki/Great_Chicago_Fire (see “Related events” in revised article September 24, 2014).

⁶⁷ http://en.wikipedia.org/wiki/Great_Chicago_Fire (sections “Origin” and “Questions about the fire”).

An alternative theory [of the cause of the fire], first suggested in 1882 by Ignatius L. Donnelly in *Ragnarok: The Age of Fire and Gravel*, is that **the Great Chicago Fire was caused by a meteor shower**. At a 2004 conference of the Aerospace Corporation and the American Institute of Aeronautics and Astronautics, engineer and physicist Robert Wood suggested that the fire began when Biela's Comet broke up over the Midwest. **That four large fires took place, all on the same day, all on the shores of Lake Michigan ... suggests a common root cause. Eyewitnesses reported sighting spontaneous ignitions, lack of smoke, "balls of fire" falling from the sky, and blue flames.** According to Wood, these accounts suggest that the fires were caused by the methane that is commonly found in comets [21] (emphasis added).⁶⁸

Four large fires starting on the same day on the shores of Lake Michigan point to a common cause. The witness reports of fireballs falling from the sky along with spontaneous ignitions supports the theory that the cause of the Great Chicago Fire and separate fires at the same time was the result of fiery cosmic impacts.

As there is scientific evidence of intense meteor storms during the period 400-600, the prophecy of fire from the sky causing widespread fires on Earth certainly fits the First Trumpet Prophecy. The fires destroyed large areas (“a third of the earth”, “a third of the trees”, and “all the green grass”), no doubt referring to the areas of impact. As we have previously shown, Biblical references to “all the earth” generally do not refer to the entire planet but to a particular region or empire. In this case there is insufficient information to know what areas were affected.

SECOND TRUMPET – ERUPTION OF KRAKATOA IN 535

The Second Trumpet Prophecy describes “something like a great mountain burning with fire” being “thrown into the sea”:

⁶⁸ http://en.wikipedia.org/wiki/Great_Chicago_Fire (section “Questions about the fire”).

And the **second angel sounded**, and **something like a great mountain burning with fire was thrown into the sea**; and a third of the sea became blood; and a third of the creatures, which were in the sea and had life, died; and a third of the ships were destroyed (Revelation 8:8-9, emphasis added).

The catastrophic eruption of Krakatoa in 535 fits both the prophetic timeline of the Seal and Trumpets Prophecies, as well as the description of “something like a great mountain burning with fire” being “thrown into the sea”.

David Keys presents historical and scientific evidence for the 535 Krakatoa Eruption in his book, *Catastrophe: An Investigation into the Origins of the Modern World*. This event, in addition to the cosmic impact events described by the First and Third Trumpet Prophecies, created the conditions for the rise and spread of Islamic Empires (8th Head of the Beast), described by the Fifth and Sixth Trumpet Prophecies. Dramatic dimming of the sun caused by atmospheric debris, as described by the Fourth Trumpet Prophecy, led to catastrophic global climate change, resulting in the collapse of civilizations around the world. The ancient Roman world was fundamentally transformed, laying the foundations for the modern world of today.

It was a catastrophe without precedent in recorded history: for months on end, starting in A.D. 535, a strange, dusky haze robbed much of the earth of normal sunlight. Crops failed in Asia and the Middle East as global weather patterns radically altered. Bubonic plague, exploding out of Africa, wiped out entire populations in Europe. Flood and drought brought ancient cultures to the brink of collapse. **In a matter of decades, the old order died and a new world – essentially the modern world as we know it today – began to emerge.**

In this fascinating, groundbreaking, totally accessible book, archaeological journalist David Keys dramatically reconstructs the global chain of revolutions that began in the catastrophe of A.D. 535, then offers a definitive explanation of how and why this cataclysm occurred on that momentous day centuries ago.

The Roman Empire, the greatest power in Europe and the Middle East for centuries, lost half its territory in the century following the catastrophe. Meanwhile, as restless tribes swept down from central Asian steppes, **a new religion known as Islam spread through the Middle East.** As Keys demonstrates with compelling originality and authoritative research, these were not isolated upheavals but linked events arising from the same cause and rippling around the world like an enormous tidal wave.

Keys's narrative circles the globe as he identifies the eerie fallout from the months of darkness: unprecedented drought in Central America, a strange yellow dust drifting like snow over eastern Asia, prolonged famine, and the hideous pandemic of the bubonic plague. With a superb command of ancient literatures and historical records, Keys makes hitherto unrecognized connections between the "wasteland" that overspread the British countryside and the fall of the great pyramid-building Teotihuacan civilization in Mexico, between the little-known "Jewish empire" in Eastern Europe and the rise of the Japanese nation-state, between storms in France and pestilence in Ireland (emphasis added).⁶⁹

Krakatoa is one of the world's powerful supervolcanoes, whose eruptions are capable of causing widespread catastrophic destruction and severe global cooling:

A supervolcano is a large volcano that usually has a large caldera [large crater formed by a major eruption leading to the collapse of the mouth of the volcano] and can potentially produce devastation on an enormous, sometimes continental, scale. Such eruptions would be able to cause severe cooling of global temperatures for many years afterwards because of the huge volumes of sulfur and ash erupted. They are the most dangerous type of volcano. Examples include Yellowstone Caldera in Yellowstone National Park and Valles Caldera in New Mexico (both western United States), Lake Taupo in New Zealand, Lake Toba in Sumatra, Indonesia and Ngorogoro Crater in Tanzania,

⁶⁹ David Keys, *Catastrophe: An Investigation into the Origins of the Modern World*, inside book jacket.

Krakatoa near Java and Sumatra, Indonesia. Supervolcanoes are hard to identify centuries later, given the enormous areas they cover (emphasis added).⁷⁰

Evidence of Krakatoa's massive volcanic eruption in 535 is found in Greenland and Antarctic ice cores:

Buried up to sixteen hundred feet below the surface of the Greenland and Antarctic ice caps is **a telltale layer of ice contaminated by sulfuric acid of volcanic origin that was almost certainly associated with the twelve- to eighteen-month-long sun-dimming event of 535-536** and the subsequent climatic chaos (emphasis added).⁷¹

The final evidence ... comes from ice cores drilled ... from deep inside the Antarctic ice cap. There, 660 feet below the windswept surface, scientists discovered **evidence of a truly massive volcanic eruption.**⁵ The ice-core material revealed that acid snow had cascaded down on the Antarctic for at least four years running. ...

... by examining the acid traces left by other first-millennium A.D. eruptions **it is possible, through a process of elimination, to conclude that the four-year acid episode must have been associated with the climatic catastrophe and probably with the 535 eruption. ... the four-year event that occurred in the 490-540 bracket is by far the biggest event recorded in Antarctica for the whole of the first millennium A.D.**

It is very likely, therefore, that the Greenland and Antarctic ice cores signal the same atmosphere-polluting climate-changing event recorded historically and in the tree-ring terms for 535-536 (emphasis added).⁷²

⁷⁰ <http://en.wikipedia.org/wiki/Volcano> (section "Supervolcanoes").

⁷¹ Keys, p. 245.

⁷² Keys, p. 247.

By examining scientific and historical evidence, Keys pinpoints the source of the 535 volcanic eruption event to the island mountain of Krakatoa.⁷³ The eruption was enormous and its thunderous sound was heard 2800 miles away in China in February 535, as recorded in the *Chinese History of the Southern Dynasties*.⁷⁴

... volcanic explosions can indeed be heard for thousands of miles. In 1883 Krakatoa was heard four thousand miles away. In the 1815 Tambora volcanic eruption, the sound traveled at least two thousand miles. ...

For the sound to travel the twenty-eight hundred miles from a volcano in the Sumatra/western Java area to Nanjing [China] would have taken around four hours, and not all the audible sound would have been lost. In fact, there are several factors that could substantially strengthen it.⁷⁵

Greenland and Antarctic ice cores point to a tropical eruption in the Southern Hemisphere.⁷⁶

Bearing in mind that the eruption had to have occurred in the southern tropics, the area pinpointed by the Chinese account narrows the field down to the southern Sumatra/western Java part of the Samoa-Sumatra volcanic chain.

Significantly, there is only one known caldera of appropriate size and vintage in that relatively small (six-hundred-mile-long) area. It surrounds the site of no less notorious a volcano than Krakatoa, the island mountain that brought death and destruction to Java and Sumatra in the 1880s. Could an earlier, bigger eruption of Krakatoa have been responsible for the catastrophe that tormented the world in the mid-sixth century A.D. and changed its history forever?

⁷³ Keys, Chapter 31 “The Big Bang”, pages 249-261.

⁷⁴ Keys, p. 251.

⁷⁵ Keys, p. 251-252.

⁷⁶ Keys, p. 249.

Here the evidence takes a fascinating turn. For buried deep in a little-known and normally ignored Indonesian chronicle is an extraordinary passage that may well describe the 535 supereruption itself.

Describing a huge volcanic event in the Sunda Straits area (between Sumatra and Java), where Krakatoa is located, the chronicle says that a “mighty roar of thunder” came out of a local mountain (Mount Batuwara, now called Pulosari).

“There was a furious shaking of the earth, total darkness, thunder and lightning.

“Then came forth a furious gale together with torrential rain and a deadly storm darkened the entire world.”

The chronicle—known as the *Pustaka Raja Purwa*, or *The Book of Ancient Kings*, goes on to state that “a great flood then came from Mount Batuwara and flowed eastwards to Mount Kamula [now called Mount Gede].” It then claims that the eruption was so massive that large areas of land sank below sea level, creating the straits that currently separate Sumatra and Java.

Claiming to describe the dramatic course of events, the chronicle says that “when the waters subsided it could be seen that the island of Java had been split in two, thus creating the island of Sumatra.”⁷⁷

Evidence of just such a catastrophic eruption has been found in an immense volcanic-ash deposit, showing a much larger eruption prior to the 1883 Krakatoa eruption. Unfortunately, no charcoal (carbonized wood) has yet been found in this particular layer to precisely date the eruption. However, the volcanic deposit layers above and below this deposit have been dated and indicate the eruption occurred during the First Millennium (1-1000). A 535 eruption falls in the middle of this time period.⁷⁸

⁷⁷ Keys, p. 253.

⁷⁸ *Catastrophe! The Day the Sun Went Out* (Part 1) and *How the World Changed* (Part 2).

Maps – Krakatoa, Java, and Sumatra (below)

http://en.wikipedia.org/wiki/Krakatoa#mediaviewer/File:Sunda_strait_map_v3.png



“A GREAT MOUNTAIN BURNING WITH FIRE WAS THROWN INTO THE SEA”

The Second Trumpet Prophecy describes “something like a great mountain burning with fire ... thrown into the sea”. This description exactly fits a catastrophic eruption of Krakatoa, a volcanic mountain surrounded by the sea. Krakatoa has even been called “The Fire Mountain”:

Thornton mentions that Krakatoa was known as "The Fire Mountain" during Java's [Sailendra](#) dynasty, with records of seven eruptive events between the 9th and 16th centuries.[16]⁷⁹

The description “burning with fire” describes the fiery magma (molten rock) expelled from the volcano during an eruption, as dramatically shown by the photograph below.⁸⁰ Cataclysmic eruptions result in collapse of the volcanic mountain into the sea, exactly as described by the Second Trumpet Prophecy.

Krakatoa: An eruption in 2008



⁷⁹ http://en.wikipedia.org/w/index.php?title=Krakatoa&redirect=no#Anak_Krakatau (section “535 AD event”).

⁸⁰ http://en.wikipedia.org/w/index.php?title=Krakatoa&redirect=no#mediaviewer/File:Krakatoa_eruption_2008.jpg

Over time, the Krakatoa supervolcano regrows into a mountain as rock and ash build up with successive eruptions.

In 1927 a new island, Anak Krakatau, or "Child of Krakatoa", emerged from the caldera formed in 1883 and is the current location of eruptive activity (emphasis added).⁸¹

Photo (left): Thick plume of ash, steam and volcanic gas rising from Anak Krakatoa visible on satellite image.⁸² Photo (right): Volcanic activity at Anak Krakatoa, 2008.⁸³



⁸¹ <http://en.wikipedia.org/wiki/Krakatoa> (introductory information).

⁸² http://en.wikipedia.org/w/index.php?title=Krakatoa&redirect=no#mediaviewer/File:Krakatau,_Indonesia.jpg

⁸³ http://en.wikipedia.org/w/index.php?title=Krakatoa&redirect=no#mediaviewer/File:Indonesia,_Sunda_Straits.jpg

A THIRD OF THE SEA LIFE AND SHIPS DESTROYED

According to the Second Trumpet Prophecy, a third of the sea life perishes and a third of the ships are destroyed.

And the **second angel sounded**, and something like a great mountain burning with fire was thrown into the sea; and a third of the sea became blood; and **a third of the creatures, which were in the sea and had life, died; and a third of the ships were destroyed** (Revelation 8:8-9, emphasis added).

This refers to the area of massive destruction caused by the catastrophic volcanic eruption and resulting tidal wave (tsunami). The death and destruction caused by the 1883 Krakatoa eruption provides a context for understanding the effects of a far greater eruption in 535:

The most notable eruptions of Krakatoa culminated in **a series of massive explosions over August 26–27, 1883, which were among the most violent volcanic events in recorded history.**

With an estimated [Volcanic Explosivity Index](#) (VEI) of 6,[2] the eruption was equivalent to 200 megatons of TNT (840 PJ) —about 13,000 times the [nuclear yield](#) of the [Little Boy](#) bomb (13 to 16 kt) that devastated [Hiroshima](#), Japan, during World War II, and four times the yield of [Tsar Bomba](#) (50 Mt), the most powerful [nuclear device](#) ever detonated.⁸⁴

The explosions were so violent that they were heard 3,110 km (1,930 mi) away in [Perth, Western Australia](#) and the island of [Rodrigues](#) near [Mauritius](#), 4,800 km (3,000 mi) away.[4] The pressure wave from the final explosion was recorded on barographs around the world, which continued to register it up to 5 days after the explosion. The recordings show that the shock wave from the final explosion reverberated around the globe seven times.[21] Ash was propelled to a height of

⁸⁴ http://en.wikipedia.org/w/index.php?title=Krakatoa&redirect=no#Anak_Krakatau (section “Historical significance”).

80 km (50 mi). The sound of the eruption was so loud it was reported that if anyone was within ten miles (16 km), they would have gone deaf.

The combined effects of pyroclastic flows, volcanic ashes, and tsunamis had disastrous results in the region and world-wide. The death toll recorded by the Dutch authorities was 36,417, although some sources put the estimate at more than 120,000. There are numerous documented reports of groups of human skeletons floating across the Indian Ocean on rafts of volcanic pumice and washing up on the east coast of Africa up to a year after the eruption (emphasis added).⁸⁵

EVIDENCE OF A SECOND VOLCANIC ERUPTION IN CENTRAL AMERICA

In his book, *Catastrophe: An Investigation into the Origins of the Modern World*, David Keys proposes that there may have been a second major volcanic eruption involved in the global climate change event.

The immediate effects of the 535 eruption and **a possible second eruption from a different (and as yet unlocated) volcano in c. 540** lasted five to seven years in the Northern Hemisphere and even longer in the Southern Hemisphere (emphasis added).⁸⁶

Ten years after Keys published his book, evidence of just such another massive volcanic eruption precisely dated to 535 has been found in El Salvador:

In 2010, **Robert Dull, John Southon** and colleagues presented evidence suggesting a link between the **Tierra Blanca Joven (TBJ)** eruption of **the Ilopango caldera in central El Salvador and the AD 536 event.**[20] Although earlier published radiocarbon evidence suggested a two-sigma age range of AD 408–536,[21]

⁸⁵ http://en.wikipedia.org/w/index.php?title=Krakatoa&redirect=no#Anak_Krakatau (section “1883 eruption”).

⁸⁶ Keys, p. 269.

which is consistent with the global climate downturn, the connection between AD 536 and Ilopango was not explicitly made until research on Central American Pacific margin marine sediment cores by Steffen Kutterolf and colleagues showed that the **phreatoplinian** TBJ eruption was much larger than previously thought.[22] The **radioactive carbon-14** in successive growth increments of a single tree that had been killed by a TBJ **pyroclastic** flow was measured in detail using **Accelerator mass spectrometry**; **the results supported the date of AD 535 as the year in which the tree died.** A conservative bulk **tephra** volume for the TBJ event of $\sim 84 \text{ km}^3$ was calculated, indicating a large **Volcanic Explosivity Index 6+** event and a magnitude of 6.9. The results suggest that the Ilopango TBJ eruption size, latitude and age are consistent with the ice core sulphate records of Larsen et al. 2008 (bold emphasis added).⁸⁷

The eruption of the volcano under Lake Ilopango in El Salvador fits the second volcanic eruption proposed by David Keys. Nevertheless, it is the Krakatoa volcanic eruption that fits the Second Trumpet Prophecy of a fiery mountain collapsing into the sea (“something like a great mountain burning with fire was thrown into the sea”, Revelation 8:8).

THIRD TRUMPET – COMET: “A GREAT STAR FELL FROM HEAVEN, BURNING LIKE A TORCH”

According to the Third Trumpet Prophecy, a great “star” falls from heaven:

And the third angel sounded, and **a great star fell from heaven, burning like a torch**, and it fell on a third of the rivers and on the springs of waters; and the name of the star is called Wormwood; and a third of the waters became wormwood; and many men died from the waters, because they were made bitter (Revelation 8:10-11, emphasis added).

⁸⁷ http://en.wikipedia.org/wiki/Extreme_weather_events_of_535–536 (section “Possible explanations”).

The imagery of “a great star fell from heaven, burning like a torch” fits the description of a comet.

As previously explained, 400-600 was a period of intense cosmic bombardment of Earth. Mike Baillie has found evidence of a severe environmental downturn in 540 as evidenced by tree ring analysis, which he believes was caused by cometary debris showering the planet:

Michael G. L. "Mike" Baillie is Professor Emeritus of Palaeoecology at Queen's University of Belfast, in Northern Ireland. Baillie is a leading expert in dendrochronology, or dating by means of tree-rings. In the 1980s, he was instrumental in building a year-by-year chronology of tree-ring growth reaching 7,400 years into the past.⁸⁸

Upon examining the tree-ring record, Baillie noticed indications of **severe environmental downturns** around 2354 BC, 1628 BC, 1159 BC, 208 BC, and **AD 540**. The evidence suggests that these environmental downturns were **wide-ranging catastrophic events; the AD 540 event in particular is attested in tree-ring chronologies from Siberia through Europe and North and South America**. This event coincides with the second largest ammonium signal in the Greenland ice in the last two millennia, the largest being in AD 1014, and both these epochs were **accompanied by cometary apparitions. Baillie explains the general absence of mainstream historical references to this event by the fact it was described in terms of biblical metaphors ...**

Since then, he has devoted much of his attention to uncovering the causes of these global environmental downturns. **He believes that impacts from cometary debris may account for most of the downturns, especially the AD 540 event.** This hypothesis is supported in work by British cometary astrophysicists, who find that **earth was at increased risk of bombardment by cometary debris in the AD 400-600 timeframe**, based on the frequency of fireball activity in the

⁸⁸ http://en.wikipedia.org/wiki/Mike_Baillie (introductory information).

Taurid meteor streams recorded in Chinese archives.[2]

To provide further support to his cometary debris theory, Dr Baillie has searched the written record and traditions embodied in myths. There he has found evidence that the dates of the environmental downturns listed above are often associated with **collapses of civilizations or turning points in history. The AD 540 event, for example, may have been associated with a catastrophe that ushered in the Dark Ages of Europe** (emphasis added).⁸⁹

Baillie finds evidence to support his theory of cometary impacts at this time in the historical records and myths of Ireland:

His book, *Exodus to Arthur: Catastrophic Encounters with Comets* (Batsford, 1999), relates the findings of his tree-ring studies to a series of global environmental traumas over the past 4400 years that may mark events such as the biblical Exodus, the disasters which befell Egypt, collapses of Chinese dynasties, and the onset of the European Dark Ages. *The Celtic Gods: Comets in Irish Mythology* (Tempus, 2005), co-authored with Patrick McCafferty, focuses on **the AD 540 event as recorded in the historical records and myths of Ireland and shows that the imagery in the myths and the times between events are consistent with a comet with an earth-crossing orbit similar to P/Encke** [Comet Encke thought to be source of the Taurid meteor showers⁹⁰], as described by the British astronomers Victor Clube and Bill Napier. His latest book, *New Light on the Black Death: The Cosmic Connection* (Tempus, 2006), shows how the tree-ring and Greenland ice core evidence and descriptions in annals, myths and metaphors adduced in support of the global environmental downturn at AD 540, which included the Justinian plague, also applies to conditions extant at the time of the Black Death in AD 1348 (emphasis added).⁹¹

⁸⁹ http://en.wikipedia.org/wiki/Mike_Baillie (section “Comet theories”).

⁹⁰ http://en.wikipedia.org/wiki/Comet_Encke

⁹¹ http://en.wikipedia.org/wiki/Mike_Baillie (section “Comet theories”).

The reference to plague in association with cometary impacts also links to the Third Trumpet Prophecy, showing human mortality caused by a “star” (comet) called Wormwood that poisoned the waters.

THE STAR (COMET) NAMED WORMWOOD POISONS THE WATERS

According to the Third Trumpet Prophecy, a comet falls from the sky and cometary debris impacts Earth, releasing toxic substances into the rivers and waters:

And the **third angel sounded**, and a great star [comet] fell from heaven, burning like a torch, and it fell on a third of the rivers and on the springs of waters; and the name of **the star [comet] is called Wormwood**; and a third of the waters became wormwood; and **many men died from the waters, because they were made bitter** (Revelation 8:10-11, emphasis added).

The comet is called Wormwood because people die from consuming the poisoned water. In the Word of God, the plant called “wormwood” is associated with bitterness:

Artemisia herba-alba is thought to be the plant translated as "wormwood" in English language versions of the Bible ("apsinthos" in the Greek text). **Wormwood is mentioned seven times in the Jewish Bible [Hebrew Bible – Old Testament], always with the implication of bitterness.** Wormwood is mentioned once in the New Testament, as **the name of a star, also with implications of bitterness** [20] (emphasis added).⁹²

The star, which describes a comet, is called Wormwood because it causes the waters to become bitter and toxic. As we have previously explained, comets and meteorites can release toxic substances when the cometary or meteoritic material falls to Earth. Such impacts can also cause toxic substances to be released from the ground.

⁹² http://en.wikipedia.org/wiki/Artemisia_herba-alba (section “Culture”).

Also as previously explained, plagues have been linked to meteoritic and cometary debris impacts and the associated “blood rain” phenomenon – exactly as described by the First and Third Trumpet Prophecies. For example, the terrible plague called the Black Death in the Fourteenth Century was associated with “a shower of blood”:

In Germany, **a shower of blood was one of several portents** for the arrival of the Black Death in 1348–1349 [14] (emphasis added).⁹³

THE “GREAT STAR FROM HEAVEN” – 541 COMET OVER WESTERN EUROPE

In 541, a comet lit up the sky over Gaul in Western Europe.⁹⁴ In *Flowers of History (Flores Historiarum)*, Roger of Wendover records the appearance of this comet and its association with blood rain and human mortality:

In the year of grace 541, there appeared a comet in Gaul, so vast that the whole sky seemed on fire. In the same year there dropped real blood from the clouds, and about the same time the house of a certain man appeared sprinkled with blood, and a dreadful mortality ensued.⁹⁵

Roger of Wendover’s description of the 541 comet and its lethal effects is noted in a research paper, titled “One of the First Recorded Sightings of a Comet in 541 AD in English Medieval History”, and presented by R.R. Chau and A.A. Mardon (E-mail: aamardon@yahoo.ca) at the 76th Annual Meteoritical Society Meeting (2013):

⁹³ http://en.wikipedia.org/wiki/Blood_rain (section “History and use in literature”).

⁹⁴ <http://en.wikipedia.org/wiki/Gaul> - (introductory information; “**Gaul** (Latin: *Gallia*) was a region of Western Europe during the Iron Age and Roman era, encompassing present day France, Luxembourg and Belgium, most of Switzerland, Northern Italy, as well as the parts of the Netherlands and Germany on the west bank of the Rhine.”

⁹⁵ *Roger of Wendover’s Flowers of History*, p. 42 (accessed September 2014; link to p. 42 below)
http://books.google.com/books?id=TiYRa8nIJYwC&pg=PA42&lpg=PA42&dq=In+the+year+of+grace+541,+there+appeared+a+comet+in+Gaul,+so+vast+that+the+whole+sky+seemed+on+fire&source=bl&ots=y7Hec7lzzo&sig=PKEIYs4JUCQ_j4F8OkwNhg1cEY&hl=en&sa=X&ei=5FMjVOa6Cqa5iwK_-oHwAw&ved=0CC8Q6AEwBA#v=onepage&q=In%20the%20year%20of%20grace%20541%2C%20there%20appeared%20a%20comet%20in%20Gaul%2C%20so%20vast%20that%20the%20whole%20sky%20seemed%20on%20fire&f=false

There are no records up until the Medieval age of recorded sightings of comets. It was only ... 497 AD that the first comet was actually recorded in English history in the form of the manuscript *Flores Historiarum* with Matthew Paris as the credited writer [1] and only in **541 AD** were there any events related to that of a comet sighting. **"In the year of grace 541, there appeared a comet in Gaul, so vast that the whole sky seemed on fire. In the same year there dropped real blood from the clouds, and about the same time the house of a certain man appeared sprinkled with blood, and a dreadful mortality ensued."** [2]. It is unclear whether these two events, the comet sighting and the "blood" raining from the clouds, were related to each other at all. However, there is the possibility that the comet may have dropped debris from its orbit that later passed through the atmosphere and caused deaths among the people residing in the area. References: [1] Mardon E.G. and Mardon A.A. 2008. *English Medieval Cometary References Over a Thousand Years* [2] Paris M. 1849. *Roger of Wendover's Flowers of History* pp. 42. Translated from original text *Flores Historiarum* by H.G. Bohn (emphasis added).⁹⁶

The comet of 541 is prophetically significant because it occurred over Western Europe, the area that had once been part of the Western Roman Empire (6th Head of the Beast). The description of "a comet ... so vast that the whole sky seemed on fire" fits the Third Trumpet Prophecy of "a great star ... burning like a torch". And the association of blood rain and "a dreadful mortality", referring to human deaths, also fits the Third Trumpet Prophecy. As we have previously explained, blood rain has been reported in connection with meteor impacts. Here we see blood rain reported in connection with a comet.

The 541 Comet over Western Europe fits the Third Trumpet Prophecy for the following reasons:

⁹⁶ <http://www.hou.usra.edu/meetings/metsoc2013/pdf/5208.pdf> (Note: To access this article, do a search for "One of the First Recorded Sightings of a Comet in 541 AD in English Medieval History" and click on the pdf link; clicking directly on link in this footnote does not bring up article.)

1. **RIGHT PLACE:** Over the center of Western Europe, which had been part of the Western Roman Empire, the 6th Head of the Beast.
2. **RIGHT TIME:** Sixth Century, following the chronological unfolding of the Sixth Seal, First and Second Trumpet Prophecies.
3. **RARE AND UNUSAL EVENT:** Appearance of a particularly awesome comet in association with the rare phenomenon of blood rain, including human fatalities.
4. **FITS DETAILS OF THIRD TRUMPET PROPHECY:** The fiery comet was spectacular in appearance, lighting up a vast expanse of the sky, fitting the description of “a great star [that] fell from heaven, burning like a torch”; caused significant human mortality, fitting the description of death from poisoned waters. (Note: A third of the waters being contaminated refers to the region affected, not the entire planet.)

Although the 541 Comet fits the prophetic picture of the Third Trumpet Prophecy, there were other significant comets of this period that show it was a time of increased cometary activity. In *The Decline and Fall of the Roman Empire*, Edward Gibbon notes that a comet was seen for twenty days in September 531, and another comet was visible for forty days in 539. About these comets, Gibbons notes:

The nations, who gazed with astonishment, expected wars and calamities from their baleful influence; and these expectations were abundantly fulfilled.⁹⁷

Surely, this was a turbulent and traumatic time in history for the inhabitants of the Roman world, the focus of the Beast described in the Book of Revelation.

FOURTH TRUMPET – DIMMING OF SUN, MOON, AND STARS

The Fourth Trumpet Prophecy describes a dramatic reduction in the light of the Sun, Moon, and Stars:

⁹⁷ Edward Gibbon, *The Decline and Fall of the Roman Empire*, Vol. 4, Chapter 43, “531-539 Comets”, pp. 411-412. Free online access at <http://www.ccel.org/g/gibbon/decline/volume2/chap43.htm> (accessed September 2014).

And the **fourth angel sounded**, and a **third of the sun and a third of the moon and a third of the stars were smitten**, so that a third of them might be **darkened** and the day might not shine for a third of it, and the night in the same way (Revelation 8:12, emphasis added).

The Fourth Trumpet Prophecy is a prophetic picture of the effects of events described by the First, Second, and Third Trumpet Prophecies. The First Trumpet shows a period of intense meteor showers (and possibly cosmic impact events); the Second Trumpet shows a catastrophic volcanic eruption (535 Krakatoa eruption); and the Third Trumpet shows a cometary impact event. These events filled the Earth's atmosphere with dust and debris, causing a dramatic and catastrophic global climate change resulting from the reduction in sunlight.

As previously explained, there is scientific evidence of increased cosmic bombardment of Earth during the period 400-600, fitting the prophetic timeframe of the Sixth and Seventh Seals and first four Trumpets. This includes evidence for showers of cometary debris in the 530s:

Presumed impact events during 533–534 ± 2 CE have been proposed by the dendrochronologist Mike Baillie as a possible cause of several brief (typically 5-10 year) climatic downturns recorded in ancient tree ring patterns. Baillie highlights four such events and suggests that these might have been caused by the **dust veils thrown up by the impact of cometary debris** [33] (emphasis added).⁹⁸

Also as previously explained, there is scientific and historical evidence of a massive volcanic eruption of Krakatoa in 535. The combined effects of cosmic impacts and volcanic eruption caused Earth's atmosphere to become darkened, greatly reducing sunlight.

In his book, *Catastrophe: An Investigation into the Origins of the Modern World*, David Keys found evidence of dramatic dimming of sunlight in eyewitness historical accounts:

⁹⁸ http://en.wikipedia.org/wiki/Impact_event (section "Presumed impact events" accessed about November 2013; article has since been revised; accessed September 25, 2014, the quote is in section "Holocene").

From the Mediterranean region there are five historical sources for the A.D. 535/536 event. A sixth-century historian and prominent church leader, **John of Ephesus**, wrote that **“there was a sign from the sun, the like of which had never been seen and reported before. The sun became dark and its darkness lasted for eighteen months. Each day, it shown for about four hours, and still this light was only a feeble shadow. Everyone declared that the sun would never recover its full light again.”**¹ This apocalyptic description was set down in the second volume of his greatest historical work, the *Historiae Ecclesiasticae* (*Church Histories*). Sadly, only the third volume has survived fully intact, but luckily, the description of the apparent near-demise of the sun and other fragments of the preceding tome were plagiarized by a much later historian, a patriarch of Antioch called Michael the Syrian, who wrote six centuries later.

... the Roman historian **Procopius** also described the apparently bizarre behavior of the sun at this exact time. He regarded it as a very bad omen indeed – a sentiment that was to prove only too correct. **“And it came about during this year that a most dread portent took place,”** he wrote. **“For the sun gave forth its light without brightness like the moon during this whole year, and it seemed exceedingly like the sun in eclipse, for the beams it shed were not clear, nor such as it is accustomed to shed,”** said the historian ...

Another sixth-century writer, **Zacharias of Mytilene**, was the author of a chronicle containing a third account of the 535 and 536 “Dark Sun” event. **“The sun began to be darkened by day and the moon by night,”** he recorded.³

A fourth account was written by a Roman official and academic of Anatolian origin known as **John the Lydian**, who reported that **“the sun became dim for nearly a whole year.”**⁴

All these reports were compiled by eyewitnesses in the Roman imperial capital, Constantinople. But in Italy, a very senior local civil servant also recorded the solar phenomenon. **“The sun seems to have lost its wonted light, and appears of a bluish color. We marvel to see no shadows of our bodies at noon, to feel the mighty vigor of the sun’s heat wasted into feebleness, and the phenomena which accompany a transitory eclipse prolonged through almost a whole year,”** wrote Cassiodorus Senator in late summer 536. **“The moon too, even when its orb is full, is empty of its natural splendor,”** he added.⁵

It wasn’t just the sun’s light that appeared to be reduced. Its heat seemed weakened as well. Unseasonable frosts disrupted agriculture. **“We have had a spring without mildness and a summer without heat,”** wrote Cassiodorus. **“The months which should have been maturing the crops have been chilled by north winds. Rain is denied and the reaper fears new frosts.”**

In normally warm Mesopotamia, the winter was “a severe one, so much so that from the large and unwonted quantity of snow, the birds perished,” and there was “distress among men,” says the chronicle written by Zacharias of Mytilene.

John of Ephesus (reported through Michael the Syrian) said that “the fruits did not ripen and the wine tasted like sour grapes,” while John the Lydian noted that “the fruits were killed at an unseasonable time” (emphasis added).⁹⁹

⁹⁹ Keys, pp. 281-282.

THE CATASTROPHE THAT CHANGED THE WORLD

In his book, *Catastrophe: An Investigation into the Origins of the Modern World*, David Keys shows how catastrophic global climate change fundamentally transformed the ancient world:

In A.D. 535-536 mankind was hit by one of the greatest natural disasters ever to occur. It blotted out much of the light and heat of the sun for eighteen months, and the climate of the entire planet began to spin out of control. The result, direct or indirect, was climatic chaos, famine, migration, war, and massive political change on virtually every continent.

As the engine for extraordinary intraregional change in four great areas of the world – Afro-Eurasia (from Mongolia to Britain, from Scandinavia to southern Africa), the Far East (China, Korea, Japan), Mesoamerica (Mexico/Central America), and South America – **the disaster altered world history dramatically and permanently.**

The hundred-year period after it occurred is the heart of history's so-called **Dark Ages, which formed the painful and often violent interface between the ancient and protomodern worlds. That period witnessed the final end of the supercities of the ancient world; the end of ancient Persia; the transmutation of the Roman Empire into the Byzantine Empire;** the end of ancient South Arabian civilization; the end of Catholicism's greatest rival, Arian Christianity; the collapse of the greatest ancient civilization in the New World, the metropolis state of Teotihuacan; the fall from power of the great Maya city of Tikal; and the fall of the enigmatic Nasca civilization of South America.

But it was also the hundred-year period that witnessed **the birth, or in some cases the conception, of Islam, France, Spain, England, Ireland, Japan, Korea, Indonesia, Cambodia, and the power of the Turks.** It is also produced a

united China and the first great South American empires, the forerunners of the Incas.

Until now, these geographically widely dispersed tragedies and new beginnings – occurring well before the Old and New Worlds knew of each other – have been viewed by historians as largely separate events. Now, for the first time – as a result of the research done for this book – **the origins of our modern world can be seen as an integrated whole, linked by a common causal factor.**

This climatic disaster half destroyed the Roman Empire, unleashing hordes of central Asian barbarians against the empire’s northern borders, triggering geopolitical processes that created Arab pressures on its southern flank, and causing a series of killer epidemics that drastically reduced its population.

In Arabia and the Mediterranean world as a whole, an apocalyptic zeitgeist, which at base was the result of the shift in climate, led to the emergence of Islam.

In western Europe, the climatic catastrophe and its epidemiological aftereffects destabilized the demographic and political status quo and led to the birth of at least four major nations.

In western Asia, the disaster triggered the rise of the Turks – a process that eventually led to an expansion of Turkic influence everywhere from India to eastern Europe and ultimately to the emergence of the Ottoman Empire (emphasis added).¹⁰⁰

Although David Keys identifies the 535 Krakatoa eruption as the cause of this global climatic catastrophe, Mike Baille shows evidence that showers of cometary fragments and debris also

¹⁰⁰ Keys, pp. 3-4.

added significant amounts of dust to the atmosphere blocking sunlight. Both Keys and Baillie are correct, as shown by the Trumpet Prophecies 1-4. It is not a matter of one or the other, but the combined effect of both volcanic eruption and cosmic impacts that created the global climatic catastrophe that changed the course of human history.

As a result of these cataclysmic events, the Mediterranean and Middle Eastern world – the focus of the empires of the Beast from the Sea – was changed forever. Conditions led to a sequence of events leading to the rise of Islam (8th Head of the Beast), from Muhammad to the Turkish Ottoman Empire, the last and greatest of the Islamic Empires, which conquered the Eastern Roman (Byzantine) Empire (7th Head of the Beast).

GLOBAL CATASTROPHE OF THE SIXTH CENTURY

As previously explained, cometary material impacting Earth and a massive volcanic eruption occurred in the Sixth Century. These events darkened the skies, causing drastic global climate change that resulted in the collapse of civilizations around the world.

The Eastern Roman (Byzantine) Empire (7th Head of the Beast) was severely affected and weakened, allowing for the rise of Islamic Empires (8th Head of the Beast) throughout the Middle East and Mediterranean world, as described by the Fifth and Sixth Trumpets. As a result of these events, the modern world of today emerged. For these reasons, these events are of great prophetic significance.

In the PBS *Secrets of the Dead* Series documentary *Catastrophe!* (Part 1: “The Day the Sun Went Out” - 5/15/2000; Part 2: “How the World Changed” - 5/16/2000), David Keys presents evidence that the 535 Krakatoa eruption was the main event causing global and catastrophic climate change. In addition, Mike Baillie presents evidence that the cause was Earth being bombarded by cometary debris. Since the original broadcast of the documentary in 2000, Mike Baillie has continued his research and written books presenting more evidence in support of

cometary debris impacts, including an ammonium spike in Greenland ice.¹⁰¹ Both David Keys and Mike Baillie are correct, each having a key piece of the prophetic picture described by Trumpets 1-4.

At this time, the documentary *Catastrophe!* is not available for purchase. However, both Parts 1 and 2 can be viewed on YouTube at the following links.

PBS *Secrets of the Dead* Series:

Catastrophe! Part 1: “The Day the Sun Went Out” (5/15/2000).

<https://www.youtube.com/watch?v=fl2ieI7m4-g&list=PLr5qwpzhfepTdysA8qK-vErdugejDa8s&index=1>

or

<http://www.youtube.com/watch?v=fl2ieI7m4-g>

Catastrophe! Part 2: “How the World Changed” (5/16/2000).

<http://www.youtube.com/watch?v=9OYvtDo83Ws>

Note: If these links become inactive, do an Internet search to find other active links.

Below is a summary of key information from Parts 1 and 2 of the documentary *Catastrophe!* All quotes are from the documentary unless otherwise indicated.

CATASTROPHE! THE ORIGINS OF THE MODERN WORLD

In the PBS documentary *Catastrophe!*, David Keys calls the Krakatoa eruption in 535 the “most important date in history in the world we live in today”.¹⁰² This catastrophic volcanic eruption changed the course of human history. Its global climatic effects lasted 10-20 years but the global effects on civilizations lasted for over 100 years. Whole cities died out and civilizations

¹⁰¹ *Exodus to Arthur: Catastrophic Encounters with Comets* (Batsford, 1999); *The Celtic Gods: Comets in Irish Mythology* (Tempus, 2005); *New Light on the Black Death: The Cosmic Connection* (Tempus, 2006). Previously referenced above: http://en.wikipedia.org/wiki/Mike_Baillie (section “Comet theories”).

¹⁰² All quotes from *Catastrophe!* Part 1: “The Day the Sun Went Out” and Part 2 “How the World Changed” unless otherwise indicated.

around the world collapsed. There was massive upheaval and destabilization of the ancient Mediterranean and Middle Eastern world.

The ancient Roman world was devastated by cold, drought, famine, and plague. Resulting migrations of peoples set the foundations for the establishment of the modern world as we know it, with European nations such as England, Spain, and France being established in what was once the Western Roman Empire (6th Head of the Beast).

In the East, the Eastern Roman (Byzantine) Empire (7th Head of the Beast) eventually fell to the Islamic Empire (8th Head of the Beast) of the Ottoman Turks. At that time, Constantinople, the Christian capital of the Eastern Roman Empire, became the capital of the Islamic Empire.

EVIDENCE FOR SHOWERS OF COMETARY FRAGMENTS AND DEBRIS

At the time the documentary was produced (2000), the lack of iridium in ice cores was assumed to show there was no evidence of Earth being showered with cometary debris. However, since that time, an ammonium spike, another marker for cometary material, has been discovered in Greenland ice:

Upon examining the tree-ring record, Baillie noticed indications of severe environmental downturns around 2354 BC, 1628 BC, 1159 BC, 208 BC, and **AD 540**. The evidence suggests that these environmental downturns were **wide-ranging catastrophic events; the AD 540 event in particular is attested in tree-ring chronologies from Siberia through Europe and North and South America. This event coincides with the second largest ammonium signal in the Greenland ice in the last two millennia**, the largest being in AD 1014, and both **these epochs were accompanied by cometary apparitions** (emphasis added).¹⁰³

¹⁰³ http://en.wikipedia.org/wiki/Mike_Baillie (section “Comet theories”).

Baille's evidence for cometary impact events has been confirmed by other scientists:

In 2009, Dallas Abbott of Columbia University's Lamont–Doherty Earth Observatory in New York published **evidence from Greenland ice cores that multiple comet impacts caused the haze**. The spherules found in the ice may originate from terrestrial debris ejected into the atmosphere by an impact event[1][19] (emphasis added).¹⁰⁴

The scientific evidence is consistent with Mike Baillie's description of a "large number of pieces of comet arriving in a short period of time and exploding in the atmosphere, the model for that is the 1908 Tunguska impact over Siberia ... [an] airburst explosion of lightweight comet." "A whole shower of cometary debris could affect the climate".¹⁰⁵

As Baille states:

Pieces of comets (or perhaps of asteroids) crashed into Earth, spewing a veil of dust that encircled the world and dimmed the sun.

A much larger and rarer bolide (an exploding meteoric fireball) is assumed to have ended the reign of the dinosaurs some 65 million years ago. A smaller and more common one exploded over the Tunguska River in the Siberian wilderness 91 years ago with 2,000 times the power of the bomb that devastated Hiroshima in 1945. And just five years ago [July 1994], astronomers watched the fragmented comet of Shoemaker-Levy 9 plow spectacularly into Jupiter.

I believe the association between the tree-ring data and historical documents and folktales is real: Earth faced catastrophic environmental dislocation at or around 1628 B.C., 1159 B.C., and A.D. 540 (and probably in 2354 B.C. and 208 B.C., as well) because of near-miss comets, either through dust-loading

¹⁰⁴ http://en.wikipedia.org/wiki/Extreme_weather_events_of_535-536 (section "Possible explanations").

¹⁰⁵ All quotes from *Catastrophe!* Part 1 "The Day the Sun Went Out" unless otherwise indicated.

of the atmosphere as Earth passed through the comet's dusty tail or through direct bombardment by cometary fragments. (They must have been near misses, because if we had been hit by a full-blown comet in the past 10,000 years or so, we wouldn't be here today.) (emphasis added).¹⁰⁶

Cometary fragments and debris raining down on Earth fit the description from Arthurian legend about “terrible blows that rained down from the heavens on Arthur’s people”, and King Arthur’s kingdom in western Britain becoming a wasteland. King Arthur’s death is recorded as having taken place in 539 or 542, the relevant time period. The Celtic myths speak of “sun gods with long arms rising in the western sky”, which Baillie logically connects to a comet and its characteristic tail.¹⁰⁷

CATASTROPHE! THE DAY THE SUN WENT OUT

Unless otherwise indicated, the following information comes from the PBS *Secrets of the Dead* Series documentary (2000) *Catastrophe!* (Part 1: “The Day the Sun Went Out”).

Analysis of Irish Oak tree rings by Mike Baillie, archaeologist and paleoecologist from Queen’s University in Belfast, Ireland, shows that in the mid-Sixth Century something happened that caused temperatures to dramatically plummet all over the world. There were long stretches of cold and missed summers.

A colleague of Mike Baillie’s in Finland confirmed an “abrupt drop” in temperature in 536; “a bit of a recovery” in 537-538; and another dramatic drop in 542. It was also noted that in 536, tree ring growth in German Oaks was “drastically” reduced, with a pattern that indicated frost damage.

¹⁰⁶ Mike Baille, “Did Asteroids and Comets Turn the Tides of Civilization?”, *Discovering Archaeology*, July/August 1999 (<http://www.freerepublic.com/focus/chat/714636/posts>).

¹⁰⁷ *Catastrophe!* Part 1 “The Day the Sun Went Out”.

Analysis of Foxtail Pine tree rings from the California Sierra Nevada shows that the years 535, 536, and 541 were three of the worst four years in the past 2,000 years for tree growth.

These findings are consistent with the 535 Krakatoa Eruption, which we have identified as fitting the Second Trumpet Prophecy describing “a great mountain burning with fire was thrown into the sea”; and the dramatic 541 Comet observed over Gaul, which we have identified as fitting the Third Trumpet Prophecy describing “a great star fell from Heaven, burning like a torch”.

The First Trumpet Prophecy and Third Trumpet Prophecy describe a time of intense meteor showers and cometary impact events. Cometary impacts may have been caused by fragments of Halley’s Comet.^{108, 109} (The perihelion date for Halley’ Comet was September 27, 530.¹¹⁰ Interestingly, the date according to the Biblical/Jewish Calendar was Tishri 19, the 5th day of the Feast of Tabernacles.)

Cometary debris and volcanic dust and ash shrouded the planet, blocking sunlight and creating red rain and yellow snow. Severe cold for two years was followed by drought, floods, famine, and plague. “Whole cities died out” and “civilizations died out” around the world.

For a decade sunlight was significantly reduced, causing an abrupt drop in global temperatures and droughts, followed by floods. Vast numbers of people were wiped out by famine and plague. The entire course of human history was changed as civilizations collapsed around the world. It must have been a truly terrifying experience for people all over the world, struggling to survive and surrounded by the dead and dying.

As David Keys states in his book, *Catastrophe: An Investigation into the Origins of the Modern World*: “The mid-sixth century catastrophe was the most important date in the history of the past

¹⁰⁸ <http://www.livescience.com/42048-halleys-comet-linked-to-ancient-famine.html> - “Why Halley’s Comet May Be Linked to Famine 1,500 Years Ago”, Mike Wall, LiveScience, December 18, 2013.

¹⁰⁹ <http://www.dailymail.co.uk/sciencetech/article-2527090/Did-Halleys-comet-cause-FAMINE-1-500-years-ago-Dust-cosmic-body-cooled-Earths-atmosphere-caused-devastating-crop-failures.html> - “Did Halley’s comet cause a famine 1,500 years? Dust from cosmic body cooled Earth’s atmosphere and caused devastating crop failures”, Ellie Zolfagharifard, Daily Mail (UK), December 20, 2013.

¹¹⁰ http://en.wikipedia.org/wiki/Halley's_Comet (section “Apparitions”, accessed September 25, 2014).

2,000 years. It really did lay the foundations for the world we live in today.” It “totally altered the course of world history.”

CATASTROPHE! HOW THE WORLD CHANGED

Unless otherwise indicated, the following information comes from the PBS *Secrets of the Dead* Series documentary (2000) *Catastrophe!* (Part 2: “How the World Changed”).

The energy of the 535 Krakatoa eruption is estimated to have been equivalent to 2000 million Hiroshima nuclear bombs, 10s to 100s times greater than volcanic eruptions today. Huge amounts of dust, ash, and water vapor were thrown up into the atmosphere; “ash and sulfur dioxide from Krakatoa clouded the sky in endless gray”. Sunlight was blocked and the global climate effect lasted 10-20 years. The effects were global and devastating.

Then came the bubonic plague, the “spread of a terrible disease that brought the mighty Roman Empire to its knees.” At the time, the Eastern Roman (Byzantine) Empire had recovered from assaults of the Huns and Goths, and recaptured much of its former territory.

The first recorded outbreak of bubonic plague occurred in 542:

In the middle of the sixth century, the world’s smallest organism collided with the world’s mightiest power. **Twenty-five million corpses later, the Roman Empire, under her last great emperor, Justinian, was decimated.** Before *Yersinia pestis*, the bacterium that carries bubonic plague, was through, both **Rome and Persia were easy targets for the armies of Muhammad** on their conquering march out of Arabia. In its wake, the plague – history’s first pandemic – marked the end of the multi-national Mediterranean imperium and the birth of European nation-states ... **the transition from late antiquity to the medieval world** (emphasis added).¹¹¹

¹¹¹ William Rosen, *Justinian’s Flea: Plague, Empire, and the Birth of Europe*, inside front flap.

This marks a major turning point in prophetic history – The decline of the Roman Empire and the rise of Islamic Empire – The end of the old world order and the beginning of a new world order – The end of the ancient world and the foundations set for the rise of the modern world.

The plague moved from Africa via trade routes to Alexandria, Egypt, then to Constantinople. In Constantinople more than 10,000 died daily, “week after week, month after month”. When the number of dead reached a quarter of a million, the counting stopped. Plague spread to towns and cities throughout the empire; “untold millions perished”.

With all these catastrophes: “People thought the world was coming to an end”. And in a sense this was true because their world was coming to an end.

Even as the “plague struck a mortal blow to the Eastern Roman (Byzantine) Empire and its military, another blow was yet to come. Three thousand miles away, the Mongols (north of China) were on the move westward. The Mongolian region was crippled by cold and drought. The Avars, a brutal barbarian people and the most advanced horsemen in the world at the time, were forced to move westward as their horses – their source of food and sustenance – starved.

The Avars ... were a group of equestrian warrior nomads[2] who established an empire spanning considerable areas of Central and Eastern Europe from the late 6th to the early 9th century.[3]¹¹²

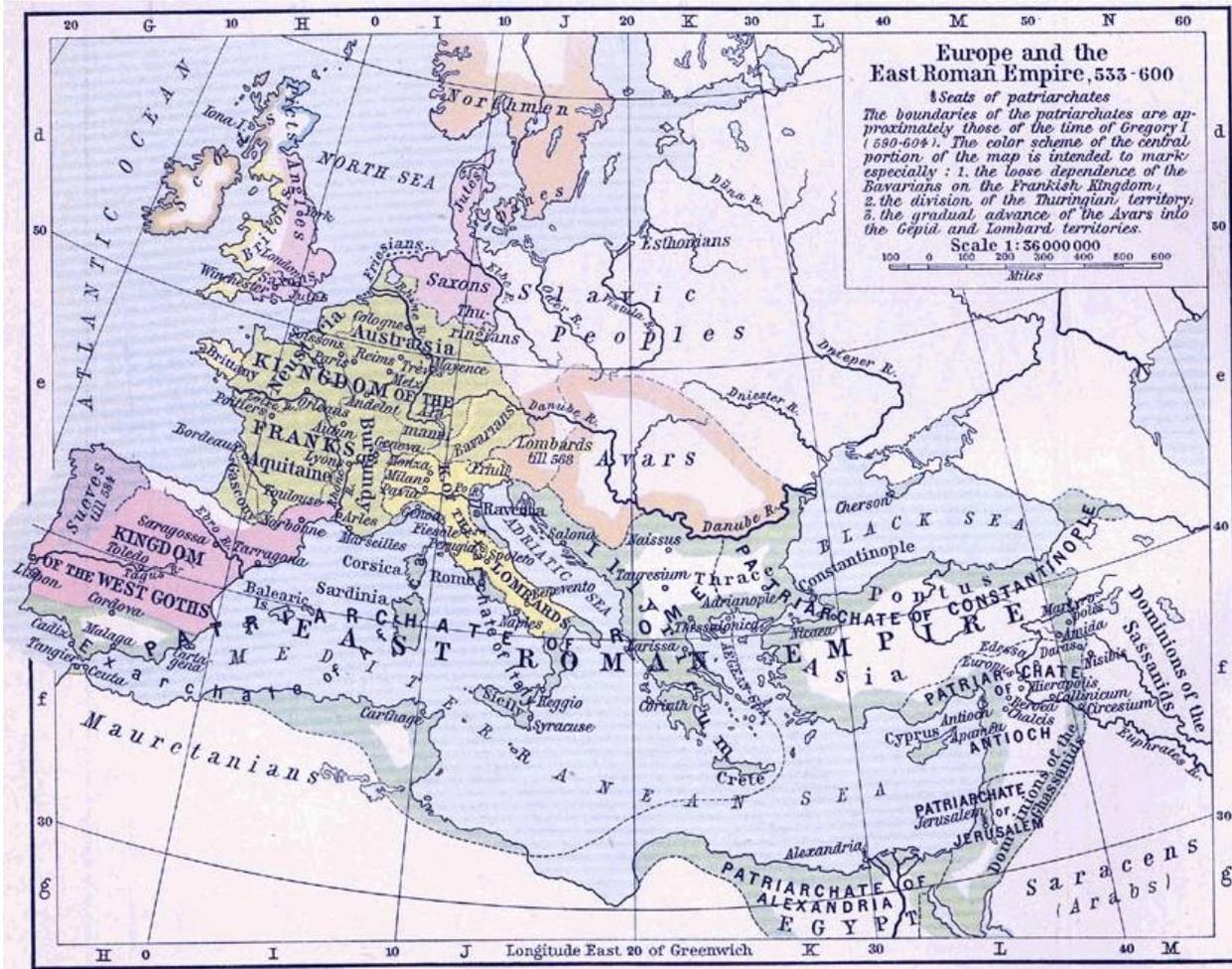
After being defeated by the Turks, the Avars began a 4000-mile trek westward, conquering along the way. (Note: This marks the beginning of the rise of the Turks, who would end the Byzantine Empire in 1453 with the conquest of Constantinople.)

When the Avars reached the Byzantine Empire, they besieged its capital, Constantinople. The assault was stopped with a payoff in gold, and over a 50-year period, the Avars received gold estimated at a value of 11 billion dollars. All of these events further weakened the Byzantine

¹¹² http://en.wikipedia.org/wiki/European_Avars (introductory information).

Empire, making it even more vulnerable to the Islamic armies to come. By the 550s, the Avars had gained control over the Huns and Germanic tribes north of the Danube river.

Map: Avar territory in the 6th century¹¹³



These events set the stage for the fulfillment of the prophecies of Trumpets 5 and 6, showing the rise and spread of Islamic empires throughout the Middle East and Mediterranean world. (See Part 10 “Trumpets 5-6 The Rise of the 8th Head of the Beast, Islamic Empire, & Fall of the 7th Head, the Eastern Roman Empire.”)

¹¹³ http://en.wikipedia.org/wiki/File:East_Roman.jpg

REFERENCES

New American Standard Bible version unless otherwise noted.

Wikipedia articles and other Internet sources are subject to revision after date originally cited for this study. Unless otherwise noted, Internet references were accessed in December 2013.

ARTICLES

Downey, Glanville. "Earthquakes at Constantinople and Vicinity, A.D. 342-1454." *Speculum*, Vol. 30, No. 4 (October 1955). Published by Medieval Academy of America; available from JSTOR, <http://www.jstor.org>

BOOKS

Bullinger, E. W., *Number in Scripture: Its Supernatural Design and Spiritual Significance*. Grand Rapids, MI: Kregel Publications, 1967.

Genesis, ArtScroll Tanach Series (Two Volumes). Brooklyn, NY: Mesorah Publications, Ltd., 1986, 1988.

Gibbon, Edward. *The Decline and Fall of the Roman Empire* (Six Volumes). New York, NY: Everyman's Library, 1994.

Keys, David. *Catastrophe: An Investigation into the Origins of the Modern World*. New York, NY: Ballantine Books, 1999.

Mounce, William D. (Editor). *Mounce's Complete Expository Dictionary of Old & New Testament Words*. Grand Rapids, MI: Zondervan, 2006.

Rosen, William. *Justinian's Flea: Plague, Empire, and the Birth of Europe*. New York, NY: Viking Penguin, 2007.

Scarre, Chris. *Chronicle of the Roman Emperors: The Reign-by-Reign Record of the Rulers of Imperial Rome*. London, England: Thames & Hudson Ltd., 1995.

The Open Bible (NKJV). Nashville, TN: Thomas Nelson Publishers, 1997.

DOCUMENTARIES

PBS *Secrets of the Dead* Series:

Catastrophe! Part 1: “The Day the Sun Went Out” (5/15/2000).

Catastrophe! Part 2: “How the World Changed” (5/16/2000).

Earthquake Storms, BBC, 2003; Discovery Channel, 2005.