

Apophis: Will It Hit the Earth? : Part 1

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Published On : January 12, 2023

Last Updated : January 12, 2023

Defining Near-Earth Objects, Quantity Of NEOs, Near-Earth Asteroids, Potentially Hazardous Objects, Potentially Hazardous Asteroids, Spaceguard Foundation, NEAT, Sentry System, Palermo Technical Scale, Torino Scale, No Serious Threats Foreseen For Next 100 Years, Sentry Impact Risk Data Table, Calculating NEO Paths Isn't A Perfect Science, 101955 Bennu (1999 RQ36), 99942 Apophis (2004 MN4), Apophis Is Not A Threat To Earth, Apophis' Very Close 2029 Approach, Future Approaches Of Apophis, Apophis On Close Approach Data Table, Apep/Apophis: Egyptian God of Chaos, "Serpent From The Nile" And "Evil Dragon", Strategies To Deflect Asteroids, No Nukes

Some time ago, I had an opportunity to watch an interesting National Geographic documentary entitled "Asteroid That Hit Earth". As some of you will already know, and as National Geographic's documentary points out, at this current time, there are literally thousands of objects within our Solar System which are referred to as Near-Earth Objects. Those people who study these spacefaring bodies usually refer to them as NEOs. Near-Earth Objects include comets, asteroids and meteoroids that come into close proximity with Planet Earth, and certain man-made, solar-orbiting spacecraft as well.

Exactly how close must these Space objects come in order to qualify as a Near-Earth Object? The NASA website states that an NEO must have a perihelion -- or closest orbital distance from the Sun -- of less than 1.3 AU. An AU, or Astronomical Unit, is a unit of length that is used by astronomers that's equal to about 92,955,807 miles, or 149,597,871 kilometers. One AU also happens to be the mean distance of the Earth to the Sun. The NASA/JPL's CNEOS website states that as of the month of December, 2022, more than 31,000 Near-Earth Objects have been discovered. By the way, CNEOS stands for Center For Near Earth Object Studies.

As noted a moment ago, naturally-occurring Near-Earth Objects are divided between Near-Earth Comets, Near-Earth Asteroids and Near-Earth Meteoroids. According to the CNEOS website, as of December 24, 2022, a total of 118 Near-Earth Comets have been discovered. NASA states that in addition to having a perihelion of less than 1.3 AU, in order for a comet to be classified as an NEO/NEC, it must also be what is known as a short-period comet. That is to say, its orbital period must be less than two hundred years.

Concerning NEM's, or Near-Earth Meteoroids, while I was not able to find any information on the NASA website, Wikipedia states that they have a diameter of fifty meters or less.

According to the CNEOS website, just under 31,000 NEOs are Near-Earth Asteroids. As such, they are referred to as NEAs. When a new NEA has been detected, it is submitted to the Minor Planet Center where it is added to an extensive catalog. Located at the Smithsonian Institute's Smithsonian Astrophysical Observatory in Cambridge, the Minor Planet Center operates under the auspices of Division III of the International Astronomical Union. It is funded by a grant from NASA. The Minor Planet Center is globally recognized as the official organization which is in charge of collecting observational data for minor planets -- that is, asteroids -- and comets, calculating their orbits, and then disseminating this data via Minor Planet Circulars, in conjunction with the Central Bureau For Astronomical Telegrams. You can visit the Minor Planet Center website at:

<https://minorplanetcenter.org/iau/mpc.html>

To continue, of the currently known NEAs, 10,346 of them are known to have diameters of roughly 140 meters and larger. In addition, 858 NEAs are classified as being large asteroids, meaning that they are approximately one kilometer or larger in size. But size is not the only thing to consider when it comes to NEOs, NEAs and the like, as you will now see.

When a particular Near-Earth Object is determined to possibly be dangerous to the Earth, it is classified as a Potentially Hazardous Object, or PHO. In order to acquire PHO status, the NASA website states that an NEO must have a MOID -- or Earth Minimum Orbit Intersection Distance -- of 0.05 AU or less, as well as an absolute magnitude (H) of 22.0 or less. In simple terms, this means that said object must come within at least

4,650,000 miles -- or 7,480,000 kilometers -- of the Earth, and it must be larger than five hundred feet -- or about one hundred and fifty meters -- in diameter, in order to qualify as a PHO.

Being as most Near-Earth Objects are asteroids, a potentially dangerous asteroid is called a PHA, which is an acronym for Potentially Hazardous Asteroid. As of December 24, 2022, the CNEOS website lists 2,319 NEOs as being Potentially Hazardous Asteroids. But that is not all. There are also 152 PHAs which have an estimated diameter of one kilometer or larger. If you would like to see a breakdown of these statistics, please go to the following CNEOS webpage:

<https://cneos.jpl.nasa.gov/stats/totals.html>

NEAs are further divided into four sub-groups. These are Atens, Apollos, Amors and Atiras. An asteroid belongs to a particular group based upon certain parameters that are associated with the trajectory of its orbit in relationship to the Earth. If you wish to learn more about this, please visit the following page on the CNEOS website:

https://cneos.jpl.nasa.gov/about/neo_groups.html

Naturally, the potential for one of these NEOs to strike the Earth is of concern to both governments and scientists alike. As a result, in 1996 a global network of earth-based observatories was set up in order to monitor these objects. This global endeavor to discover, identify and monitor NEOs is referred to as the Spaceguard Foundation. Apparently, the name of the foundation finds its origin in Arthur C. Clarke's classic 1972 science fiction novel "Rendezvous With Rama", which I read -- and greatly enjoyed -- many years ago. The Spaceguard Foundation is a non-political, non-profit entity. It is based in Frascati, Italy at the ESA Centre for Earth Observation. ESA is the European Space Agency.

Just prior to the formation of the Spaceguard Foundation, NASA and the Jet Propulsion Laboratory set up a similar NEO program called Near Earth Asteroid Tracking, or NEAT. This program was in operation from 1995 until 2007. In addition to NEAT, NASA and the Jet Propulsion Laboratory also operate an automated monitoring system called the JPL Sentry System. Concerning this NEA monitoring system, on its website, NASA states in part:

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"Sentry is a highly automated collision monitoring system that continually scans the most current asteroid catalog for possibilities of future impact with Earth over the next 100 years. Whenever a potential impact is detected, it will be analyzed and the results immediately published . . ."

"Every day, observations and orbit solutions for Near-Earth Asteroids (NEAs) are received from the Minor Planet Center (MPC) in Cambridge, Massachusetts. Once classified as an NEA, the asteroid is thereafter given automatic orbit updates within our Sentry system. A new orbit solution for an NEA is computed whenever new optical or radar observations for that object become available."

----- End Quotes -----

Of course, not all Near-Earth Asteroids pose the same degree of threat to the Earth. With that in mind, different scales have been designed to classify each NEO, or NEA. The first scale is called the Palermo Technical Scale. This scale is used internally by the International Astronomical Union to grade the potential impact threat of an NEA. Scientists who use the Palermo Technical Scale rely upon various factors to measure the importance of a potential impact. These are the impact date, the impact energy -- meaning what degree of damage may occur should an impact actually occur -- and the impact probability -- meaning the likelihood that the impact will actually occur. The Palermo Technical Scale is a very complex tool which employs advanced mathematics and science in order for space scientists to arrive at their conclusions, and is therefore not meant for the public.

In the event that NASA, the IAU, etc., determine that an NEA poses a significant threat to the Earth, they'll use a much more simplified scale -- referred to as the Torino Scale, or the Torino Impact Hazard Scale -- in order to communicate their findings to the general public. However, unlike the Palermo Technical Scale, the Torino Scale is only used to convey information regarding NEAs which have the potential for impacting the Earth within the next one hundred years; the reason being that NEAs which possess impact potential outside of the 100-year time frame -- such as 1999 RQ36 -- would be of little interest to the current public. Thus, the Torino Scale is purposely designed to be a more simplified scale compared to its technical cousin, the Palermo Technical

Scale.

If you are reading this article in HTML format on the Bill's Bible Basics website, you can see a representation of the Torino Scale below, taken from the NASA website:

[Torino Scale image goes here]

If you are interested in viewing a much larger -- or more easily readable -- table of the Torino Impact Hazard Scale, please visit the URL below on the CNEOS website:

https://cneos.jpl.nasa.gov/sentry/torino_scale.html

At this point, you may possibly be wondering exactly how many Near-Earth Asteroids pose a potential impact threat to the planet Earth. In contrast to what some headline-grabbing news reports, sensationalistic Hollywood movies, misguided social media addicts, and self-styled, wannabe prophets would like you to believe, according to the information that can be found on the CNEOS website, at this current time, and in fact during the next 100 years, NO SERIOUS THREATS are foreseen. You can verify this information for yourself by carefully examining the Sentry Impact Risk Data table which is found on the CNEOS website at the following URL:

<https://cneos.jpl.nasa.gov/sentry/>

When you arrive at the above page, click on the number that you see under the "Impact Probability (cumulative)" column. Doing so will bring up a small window which will explain to you in more layman's terms what the probability is of that particular object hitting the Earth. Please also notice that under the two "Palermo Scale" columns, all of the numbers are negative. Likewise, the "Torino Scale" column shows all zeroes. To learn more about a particular object, click or tap on its name in the "Object Designation" column. In order to better understand the Sentry Impact Risk Data table, and to view it in its proper context, you may wish to read the introductory page of the Impact Risk section of the CNEOS website at the following URL:

<https://cneos.jpl.nasa.gov/risk/intro.html>

As you'll learn there, even the scientists and mathematicians who run the Sentry collision monitoring system, clearly state that calculating the paths of NEOs, and their proximity to

the Earth at their closest approach, isn't a perfect science. As more observations are conducted, the numbers can change, and new NEOs will be added to the table, while others will be transferred to the "Removed Objects" table, as their impact risk lowers. It is just the nature of the process.

Please note that the information on the aforementioned table only covers the next one hundred years. While astronomers are currently not predicting any impacts with the Earth, it should be noted that there are a number of variables which affect their conclusions. First of all, as we have already seen, information that is made available to the public is based on the Torino Scale. This means that even if there were a potential impact threat one hundred years from now, or thereafter, we the public would not know about it. In fact, according to the information I have researched, there are a number of Near-Earth Asteroids which are of interest to astronomers, precisely because they possess varying degrees of impact potential after that date, even if that potential is rather small.

For example, discovered in 1999, the asteroid designated as 101955 Bennu (1999 RQ36), is about 490 meters in diameter, and is listed as a PHA. It has a 1 in 1,800 chance of striking the Earth at some point in the future. In other words, there is a 99.943% chance the asteroid will TOTALLY MISS the Earth.

Another asteroid which was previously of considerable concern was 99942 Apophis (2004 MN4). Discovered in 2004, this NEA is estimated to be about 350-390 meters in diameter. It's listed as a PHA, or Potentially Hazardous Asteroid. Shortly after its discovery in June 2004, 99942 Apophis was classified as a 4 on the Torino Scale, which is the highest rating an NEA had ever reached. Early observations suggested a 2.7% probability that it might strike the Earth on April 13, 2029. However, as additional observations were made, the possibility of a direct impact on the Earth in 2029 was eventually eliminated. But if it were to directly strike the Earth, the Sentry Risk Table estimates that Apophis would impact Earth with kinetic energy equivalent to 1,200 megatons of TNT! That is no small explosion!

Nevertheless, despite the threat level being downgraded, that still was not the end of the story for asteroid Apophis. That is because there yet remained some indications that whatever happened with the 2029 passage, might possibly result in a direct strike on April 13, 2036. However, once again, further

observations removed that possibility, and by August of 2006, Apophis had been dropped to a rating of zero on the Torino Scale.

In fact, when I tried to find Apophis on the aforementioned Sentry Impact Risk Data table, it was nowhere to be found, regardless of what object designation I used for it. This gave me the impression that NASA/JPL and the CNEOS website apparently no longer consider Apophis to be of any great significance, or at least believe that it has zero chance of directly impacting the Earth during the next century. Just a few minutes ago, as I continued to study this issue, I found the following information on the Wikipedia website:

----- Begin Quote -----

". . . on March 25, 2021, the Jet Propulsion Laboratory announced that Apophis has no chance of impacting Earth in the next 100 years. The uncertainty in the 2029 approach distance has been reduced from hundreds of kilometers to now just a couple of kilometers, greatly enhancing predictions of future approaches. Apophis was removed altogether from the Sentry Risk Table the next day."

----- End Quote -----

Based on the above quote from Wikipedia, I went back to the CNEOS website to the "Removed Objects" page. As I mentioned earlier, once an object -- meaning a Near-Earth Object -- has been determined to have a very low or zero impact risk, it is dropped from the Sentry Impact Risk Data table, and placed on the Sentry Removed Objects table instead. You will find the latter table at the following URL:

<https://cneos.jpl.nasa.gov/sentry/removed.html>

Well, I searched backwards from the current year to the year 2004, and I was unable to find the Apophis (2004 MN4) removal listing anywhere, so I am not sure what to think of that. As I said, the Wikipedia website states that Apophis was removed from the Sentry Impact Risk Data table. I was able to confirm this point in an online EuroNews article dated March 28, 2021, and called "Good news: Asteroid Apophis won't hit Earth for at least 100 years, says NASA". In the article, Davide Farnocchia of the Center for Near-Earth Object Studies -- CNEOS -- states the following:

----- Begin Quote -----

"A 2068 impact is not in the realm of possibility anymore, and our calculations don't show any impact risk for at least the next 100 years . . . With the support of recent optical observations and additional radar observations, the uncertainty in Apophis' orbit has collapsed from hundreds of kilometers to just a handful of kilometers when projected to 2029. This greatly improved knowledge of its position in 2029 provides more certainty of its future motion, so we can now remove Apophis from the risk list."

----- End Quote -----

Upon reading the EuroNews article, I was not aware of the fact that the asteroid was also expected to make a close approach -- or possibly even a direct impact -- in 2068. However, upon more closely examining the information that I found on the Wikipedia website, I discovered the following:

----- Begin Quote -----

2029 close approach

The closest known approach of Apophis occurs at April 13, 2029 21:46 UT, when Apophis will pass Earth closer than geosynchronous communication satellites, but will come no closer than 31,600 kilometres (19,600 mi) above Earth's surface. Using the June 2021 orbit solution which includes the Yarkovsky effect, the 3-sigma uncertainty region in the 2029 approach distance is about ± 3.4 km. The distance, a hair's breadth in astronomical terms, is five times the radius of the Earth, ten times closer than the Moon, and closer than more than 500 geostationary satellites currently orbiting the earth. It will be the closest asteroid of its size in recorded history. On that date, it will become as bright as magnitude 3.1 (visible to the naked eye from rural as well as darker suburban areas, visible with binoculars from most locations). The close approach will be visible from Europe, Africa, and western Asia. During the approach, Earth will perturb Apophis from an Aten-class orbit with a semi-major axis of 0.92 AU to an Apollo-class orbit with a semi-major axis of 1.1 AU. Perihelion will lift from 0.746 AU to 0.894 AU and aphelion will lift from 1.099 AU to 1.31 AU.

2036 approaches

In 2036 Apophis will approach the Earth at a third the distance of the Sun in both March and December. Using the 2021 orbit solution, the Earth approach on March 27, 2036, will be no closer than 0.3089 AU (46.21 million km; 28.71 million mi; 120.2 LD), but more likely about 0.3097 AU (46.33 million km; 28.79 million mi). The planet Venus will be closer to Earth at 0.2883 AU (43.13 million km; 26.80 million mi; 112.2 LD) on May 30, 2036.

2051 approach

Around April 19–20, 2051, Apophis will pass about 0.04 AU (6.0 million km; 3.7 million mi) from Earth and it will be the first time since 2029 that Apophis has passed within 10 million km of Earth.

2066/2068

In the 2060s Apophis will approach Earth in September 2066, and then from February 2067 to December 2071 Apophis will remain further from Earth than the Sun is. On April 12, 2068, JPL Horizons calculates that Apophis will be about 1.864 ± 0.003 AU (278.85 ± 0.45 million km) from Earth, making the asteroid much further than the Sun.

----- End Quote -----

Concerning the aforementioned 2029 passage of Apophis, one rather amazing thing about it is the fact that it will be so close in proximity to the Earth, that in some areas of the world, people will actually be able to see it with the naked eye. Sadly, that doesn't appear to be the case for the island of Guam in the Mariana Islands, where I happen to live. The EuroNews article I shared previously also states the following:

----- Begin Quote -----

Some Earth dwellers will have the chance to see Apophis with their own eyes in April 2029, when it will pass the planet at the somewhat uncomfortably close distance of 20,000 miles - closer than the distance of geosynchronous satellites.

It will be visible to observers on the ground in the Eastern Hemisphere without the aid of a telescope or binoculars, NASA said.

----- End Quote -----

While in astronomical terms, asteroid Apophis passing within some 20,000 miles of the Earth is certainly a rather close passage, in recent decades, there have been a few others, but they have not come nearly as close as Apophis will do in 2029. For example, on May 19, 1996 Asteroid 1996 JA1 passed the Earth at a distance of about 281,000 miles -- or 450,000 kilometers -- which is about the distance to the Moon. With a diameter of about 500 meters, 1996 JA1 is probably the largest asteroid to pass so close to the Earth. In September of the year 2000, Asteroid QW7 came within some four million kilometers of the Earth, or about 2,485,485 miles. Lastly, on July 3rd of 2006, Asteroid 2004 XP14 passed by the Earth at a distance of about 268,624 miles -- or roughly 430,000 kilometers -- which is about 1.1 times the average distance of the Moon from the Earth. It is estimated to be a quarter mile to half a mile wide, and is classified as a PHA.

Returning to our discussion concerning Apophis, while I was unable to find 99942 Apophis on CNEOS's "Removed Objects" list, on the Close Approach Data table, I was able to find a total of fourteen passages of the asteroid, both from the past, as well as into the future. I am not sure why the 2036 and 2068 passages are not mentioned in this table:

Object Distance Designation Minimum (au)	Close Approach (CA) Date	CA Distance Nominal (au)	CA
99942 Apophis (2004 MN4) 0.02860	1907-Apr-13 01:12 ± 00:02	0.02861	
99942 Apophis (2004 MN4) 0.05985	1939-Dec-18 16:26 ± < 00:01	0.05985	
99942 Apophis (2004 MN4) 0.02796	1949-Apr-14 11:30 ± < 00:01	0.02796	
99942 Apophis (2004 MN4) 0.07539	1957-Apr-01 03:20 ± < 00:01	0.07540	
99942 Apophis (2004 MN4) 0.07924	1972-Dec-24 11:52 ± < 00:01	0.07924	
99942 Apophis (2004 MN4) 0.07213	1980-Dec-18 01:52 ± < 00:01	0.07213	
99942 Apophis (2004 MN4) 0.03293	1990-Apr-14 20:44 ± < 00:01	0.03293	
99942 Apophis (2004 MN4)	1998-Apr-14 19:46 ± < 00:01	0.02439	

0.02439			
99942 Apophis (2004 MN4)	2004-Dec-21 09:25 ± < 00:01		0.09638
0.09638			
99942 Apophis (2004 MN4)	2013-Jan-09 11:43 ± < 00:01		0.09666
0.09666			
99942 Apophis (2004 MN4)	2029-Apr-13 21:46 ± < 00:01		0.00025
0.00025			
99942 Apophis (2004 MN4)	2051-Apr-20 01:55 ± 08:24		0.04146
0.03981			
99942 Apophis (2004 MN4)	2102-Sep-11 20:32 ± 15:55		0.02343
0.02249			
99942 Apophis (2004 MN4)	2116-Apr-12 17:50 ± 7_14:41		0.01946
0.00101			

If you are interested in such things, you can examine and use the CNEOS's Close Approach Data table for yourself at the following URL. Make sure to adjust the Table Settings according to your personal preferences using the pull-down menus:

<https://cneos.jpl.nasa.gov/ca/>

It was in fact when I first became aware of Apophis in 2019, that I began writing this current article. After all, based on the limited information I possessed at the time, it seemed that Apophis might possibly be of some Biblical significance. I was also drawn to Apophis due to the fact that its name is derived from the ancient Egyptian god of chaos, Apep, which in the ancient Greek language is Apophis. Apophis has been depicted in art as a great serpent, and conferred with titles such as "Serpent from the Nile" and "Evil Dragon". He's also been depicted as a crocodile as well. More on these points a bit later in this article.

To continue, as I further studied the matter concerning this particular asteroid, and came to the realization that Apophis is no longer the threat which had first been suggested, I put off finishing this article until this current time. Yet while according to astronomers, Apophis no longer poses a serious threat to the Earth for the foreseeable future, nevertheless, being as there may be -- and probably will be -- significant threats from other Near-Earth Objects at some point in the future, it should come as no surprise that governments and men of science have devised a number of plans to eliminate any potential NEA threats in the future, by deflecting asteroids and other NEOs away from the Earth.

One such project which was proposed by the European Space Agency was called the Don Quijote Mission. This experiment to deflect asteroids away from the Earth was to consist of two spacecrafts: the Hidalgo and the Sancho. The strategy was for Hidalgo to crash into Apophis, while Sancho was to observe the collision and record any changes in the trajectory of the asteroid. However, this mission never got beyond the initial study stage. According to the Wikipedia website, other plans to deflect threatening asteroids include the following:

----- Begin Quote -----

Studies by NASA, ESA, and various research groups in addition to the Planetary Society contest teams, have described a number of proposals for deflecting Apophis or similar objects, including gravitational tractor, kinetic impact, and nuclear bomb methods.

On December 30, 2009, Anatoly Perminov, the director of the Russian Federal Space Agency, said in an interview that Roscosmos will also study designs for a possible deflection mission to Apophis.

On August 16, 2011, researchers at China's Tsinghua University proposed launching a mission to knock Apophis onto a safer course using an impactor spacecraft in a retrograde orbit, steered and powered by a solar sail. Instead of moving the asteroid on its potential resonant return to Earth, Shengping Gong and his team believe the secret is shifting the asteroid away from entering the gravitational keyhole in the first place.

On February 15, 2016, Sabit Saitgarayev, of the Makeyev Rocket Design Bureau, announced intentions to use Russian ICBMs to target relatively small near-Earth objects. Although the report stated that likely targets would be between the 20 to 50 metres in size, it was also stated that 99942 Apophis would be an object subject to tests by the program.

In October 2022, a method of mapping the insides of a potentially problematic asteroid, such as 99942 Apophis, in order to determine the best area for impact was proposed.

----- End Quote -----

In addition to directly impacting a threatening asteroid with rockets such as ICBMs, a few other methods of deflection have

been suggested as well. For example, one approach would be to use a solar mirror to reflect light from the Sun on to the asteroid, so as to boil away parts of the object. The hope is that the stream of gases would sufficiently move the asteroid so that it would no longer be in the Earth's path.

Yet another suggested proposal has been to cover the surface of an asteroid with paint or some other material which would either absorb or reflect light. The idea is that heating or cooling parts of the asteroid would result in changing its orbit just enough so that it would miss the Earth.

Instead of smashing one or more missiles into an asteroid such as Apophis, another proposal suggests actually landing a rocket on the asteroid, and then using chemicals which are found on the asteroid to propel it in a different direction, thus avoiding a collision with the Earth.

Some of you may be wondering why no one has suggested using nuclear warheads to simply destroy a threatening asteroid before it reaches the Earth. Well, if you have watched enough Outer Space disaster movies such as "Armageddon" and "Deep Impact", you may already know the answer to this question. The simple fact is that doing so could inadvertently result in generating thousands of smaller objects which would be on a similar course as the original asteroid. In short, simply blowing up an asteroid could potential compound the problem.

Please go to part two for the conclusion of this article.

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Apophis: Will It Hit the Earth? : Part 2

Copyright 1994 - 2023 Bill's Bible Basics

Published On : January 12, 2023

Last Updated : January 12, 2023

Bible Is A Very Profound Book With Many Mysteries, Angels And Demons Watch Over The Nations, Spiritual Battles In The Book Of Daniel, Role Of Archangel Michael, Prophecy Against King Of Tyrus, Judgment And Fall Of Satan, Prophecy Against Pharaoh Of Egypt, Nile River, Pharaoh Hophra/Apries, Apries Is Described As A Serpent And Dragon Just Like Apophis, God Of Chaos, Tom Horn Et Al Claim Apophis Is Wormwood And Will Strike The Earth On April 13, 2029, Tom Horn Is Misguided And A False Prophet, Gullible Christians, Money-Making Bible Hucksters, Deceivers And Their Tactics, Filthy Lucre, I Do Not Believe Apophis Is Wormwood, God Uses Natural Forces To Punish Inhabitants Of The Earth, All Of God's Prophetic Word Will Be Fulfilled, Leaving Open The Door Of Possibility, God Alone Knows The Future, God's Coming Judgments, Accept Jesus Today, Closing Remarks, BBB Suggested Articles Reading List

Continuing our discussion from part one, at this point in our talk concerning Apophis and other Near-Earth Objects, we are going to change gears and direct our attention more towards the Scriptures. As I have commented on a number of previous occasions, the Bible is a very profound Book. In fact, it is so deep, that we could easily spend our entire lives studying it, and we would still not discover or comprehend all of the wonderful mysteries which God has hidden within its pages. Some of the original authors of the ancient scrolls which have become a part of our modern Bible evidently felt the very same way regarding the truths and mysteries of God's Word. Consider the following verses:

"Open thou mine eyes, that I may behold wondrous things out of thy law."

Psalms 119:18, KJV

"Such knowledge is too wonderful for me; it is high, I cannot attain unto it."

Psalms 139:6, KJV

"For my thoughts are not your thoughts, neither are your ways my ways, saith the LORD. For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts."

Isaiah 55:8-9, KJV

"Which doeth great things past finding out; yea, and wonders

without number."

Job 9:10, KJV

"O the depth of the riches both of the wisdom and knowledge of God! how unsearchable are his judgments, and his ways past finding out!"

Romans 11:33, KJV

It should come as no surprise to you then, that after over five decades of seriously studying God's Word, I continue to be amazed by the Biblical mysteries that are revealed to me. One thing I can tell you is that God never disappoints, and there are always new treasures to be found within His Word, as is hinted at in the following verse:

"Then said he unto them, Therefore every scribe which is instructed unto the kingdom of heaven is like unto a man that is an householder, which bringeth forth out of his treasure things new and old."

Matthew 13:52, KJV

If you have read my 1998 series "Satan: King of Tyrus, King of Empires", then you will know that the Bible makes it very clear that -- while they may remain invisible to us -- in the Spirit Realm, certain spiritual beings -- both Angels and demons -- are assigned to watch over certain nations. In some cases, said beings may even manipulate and control the leaders of those particular nations. Furthermore, in certain cases, this manipulation may possibly include actual demonic possession.

For example, as I point out in the aforementioned article, in the Book of Daniel, we discover that God's Angelic Messenger is being prevented for three weeks from coming to the Prophet Daniel -- who is fasting -- until Michael the Archangel -- who is also referred to as a prince -- assists him in his battle against the evil prince of Persia. Please consider the following verses:

"Then said he unto me, Fear not, Daniel: for from the first day that thou didst set thine heart to understand, and to chasten thyself before thy God, thy words were heard, and I am come for thy words. But the prince of the kingdom of Persia withstood me one and twenty days: but, lo, Michael, one of the chief princes, came to help me; and I remained there with the kings of Persia."

Daniel 10:12-13, KJV

As the previous verses reveal, in addition to the prince of Persia, the Angelic Messenger also refers to the "kings of Persia". Thus, we see the mention of spiritual princes and kings all in the same verses. A few verses later, this very same Angelic Messenger informs Daniel that after he shares his message with Daniel, he must return to fight against the prince of Persia; and after that, he must fight against the spiritual prince of Greece as well. Please keep in mind that these are Demon Princes. They are not human beings. Again, consider these two verses:

"Then said he, Knowest thou wherefore I come unto thee? and now will I return to fight with the prince of Persia: and when I am gone forth, lo, the prince of Grecia shall come. But I will shew thee that which is noted in the scripture of truth: and there is none that holdeth with me in these things, but Michael your prince."

Daniel 10:20-21, KJV

As the opening verse of Daniel chapter twelve reveals, the Archangel Michael is in fact the spiritual Prince who God has assigned to watch over the descendants of the children of Israel, as we see here:

"And at that time shall Michael stand up, the great prince which standeth for the children of thy people: and there shall be a time of trouble, such as never was since there was a nation even to that same time: and at that time thy people shall be delivered, every one that shall be found written in the book."

Daniel 12:1, KJV

Returning to the Book of Ezekiel, in prophesying against the king of Tyrus, it becomes very clear that the Lord isn't just speaking to the human king of Tyrus; He is also speaking to the spiritual entity which controls the king, which appears to be none other than Satan himself. Consider these verses:

"Son of man, take up a lamentation upon the king of Tyrus, and say unto him, Thus saith the Lord GOD; Thou sealest up the sum, full of wisdom, and perfect in beauty. Thou hast been in Eden the garden of God; every precious stone was thy covering, the sardius, topaz, and the diamond, the beryl, the onyx, and the jasper, the sapphire, the emerald, and the carbuncle, and gold: the workmanship of thy tabrets and of thy pipes was prepared in thee in the day that thou wast

created."

Ezekiel 28:12-13, KJV

Now, obviously, the physical human king of Tyrus was never in the Garden of Eden, but we certainly know somebody who was. Consider the following verse:

"Now the serpent was more subtil than any beast of the field which the LORD God had made. And he said unto the woman, Yea, hath God said, Ye shall not eat of every tree of the garden?"

Genesis 3:1, KJV

That God -- through the Prophet Ezekiel -- was pronouncing a judgment against Satan, and not just against the human king of Tyrus, becomes even more apparent when we read the next verses in Ezekiel's prophecy:

"Thou art the anointed cherub that covereth; and I have set thee so: thou wast upon the holy mountain of God; thou hast walked up and down in the midst of the stones of fire. Thou wast perfect in thy ways from the day that thou wast created, till iniquity was found in thee."

Ezekiel 28:14-15, KJV

For a more in-depth Scriptural analysis of the king of Tyrus and Satan connection, please consider reading "Satan: King of Tyrus, King of Empires" in its entirety. As I explain in that series, the Prophet Isaiah uses the very same approach when writing about God's judgment against the king of Babylon. It appears that God is speaking to the human king; and then, right in the middle of the prophecy, He addresses Satan, as if Satan and the king are one and the same, as we see here:

"How art thou fallen from heaven, O Lucifer, son of the morning! how art thou cut down to the ground, which didst weaken the nations! For thou hast said in thine heart, I will ascend into heaven, I will exalt my throne above the stars of God: I will sit also upon the mount of the congregation, in the sides of the north: I will ascend above the heights of the clouds; I will be like the most High. Yet thou shalt be brought down to hell, to the sides of the pit."

Isaiah 14:12-15, KJV

At this point, you may be wondering where the connection is between our discussion of Near-Earth Asteroids, Apophis, and

these spiritual entities. This is where it gets interesting; at least in my view.

In the twenty-ninth chapter of the Book of Ezekiel, in fact, right after the prophecy against Tyrus, we find a prophecy of the Lord against the nation of Egypt. In this prophecy, the Lord -- via the Prophet Ezekiel -- states that just as He used the military forces of King Nebuchadnezzar -- a.k.a. Nebuchadrezzar -- to punish the island nation of Tyrus, He is also going to use the Babylonian army to punish Egypt. In particular, in verses two through six, and nineteen, we read the following:

"Son of man, set thy face against Pharaoh king of Egypt, and prophesy against him, and against all Egypt: Speak, and say, Thus saith the Lord GOD; Behold, I am against thee, Pharaoh king of Egypt, the great dragon that lieth in the midst of his rivers, which hath said, My river is mine own, and I have made it for myself. But I will put hooks in thy jaws, and I will cause the fish of thy rivers to stick unto thy scales, and I will bring thee up out of the midst of thy rivers, and all the fish of thy rivers shall stick unto thy scales. And I will leave thee thrown into the wilderness, thee and all the fish of thy rivers: thou shalt fall upon the open fields; thou shalt not be brought together, nor gathered: I have given thee for meat to the beasts of the field and to the fowls of the heaven. And all the inhabitants of Egypt shall know that I am the LORD, because they have been a staff of reed to the house of Israel . . . Therefore thus saith the Lord GOD; Behold, I will give the land of Egypt unto Nebuchadnezzar king of Babylon; and he shall take her multitude, and take her spoil, and take her prey; and it shall be the wages for his army."

Ezekiel 29:2-6, 19, KJV

In particular, I would like to call your attention to verse three which states "Speak, and say, Thus saith the Lord GOD; Behold, I am against thee, Pharaoh king of Egypt, the great dragon that lieth in the midst of his rivers, which hath said, My river is mine own, and I have made it for myself." We find a similar verse in chapter thirty-two which reads:

"Son of man, take up a lamentation for Pharaoh king of Egypt, and say unto him, Thou art like a young lion of the nations, and thou art as a whale in the seas: and thou camest forth with thy rivers, and troubledst the waters with thy feet, and fouledst their rivers."

Ezekiel 32:2, KJV

Please note that in Ezekiel 32:2, the translators' notes in two different Bibles state that the word "whale" has an alternate translation of "dragon" or "sea serpent". I reveal this same point in my article entitled "Leviathan: An Ancient Dragon of the Sea?". According to the Brown, Driver, Briggs, Gesenius Hebrew Aramaic English Lexicon, the word "rivers" is derived from the Hebrew word yeh-ore', which it defines as follows:

----- Begin Quote -----

yeh-ore'

of Egyptian origin; TWOT - 832; n m

KJV - river 53, brooks 5, flood 5, streams 1; 64

1) river, stream, canal, Nile, Nile-canal

1a) stream, river (Nile)

1b) Nile-arms, Nile-canals

1c) watercourses

1d) shafts (mining)

1e) river (in general)

----- End Quote -----

Based on the previous definition, it would seem that these verses in Ezekiel may actually be referring to the Nile River. It also appears that one of the main reasons why the Lord has chosen to judge this particular pharaoh, is because in his pride he boastfully claims "My river is mine own, and I have made it for myself." In reality, God made the Nile River, just as He created the entire Earth, yet this proud pharaoh basically appears to be declaring himself a god. Of course, this should come as no surprise to us, because the pharaohs of Egypt did in fact view themselves as gods.

Concerning the actual identity of this particular pharaoh, online sources suggest that he may have been Hophra, who was also known as Apries in ancient Greek, and also as Waphres or Wahibre Haaibre. According to the Wikipedia website, he was the fourth king -- counting from Psamtik I -- of the twenty-sixth dynasty of Egypt, and ruled for nineteen years from 589 BC to 570 BC. This same pharaoh is also mentioned by name by the Prophet Jeremiah, who was a contemporary of

Ezekiel. Here again we see God pronouncing judgment against Hophra:

"Thus saith the LORD; Behold, I will give Pharaohhophra king of Egypt into the hand of his enemies, and into the hand of them that seek his life; as I gave Zedekiah king of Judah into the hand of Nebuchadrezzar king of Babylon, his enemy, and that sought his life."

Jeremiah 44:30

Now, the reason why I find all of this talk of Apries/Hophra so interesting is because, as you may recall, in part one of this article, I mentioned the fact that the asteroid Apophis gets its name from the ancient Egyptian god of chaos, Apep, who in the ancient Greek language is Apophis. As we learned in part one, Apophis is depicted in art as a great serpent, and conferred with titles such as "Serpent from the Nile" and "Evil Dragon". Is it merely a coincidence that we likewise see pharaoh Apries/Hophra being described as a dragon or sea serpent who has made the Nile River his own? Who knows. Maybe it is nothing. Or maybe Apries was viewed as the physical incarnation of this ancient Egyptian god. It would be interesting to find out.

It is also interesting to note that just as Apep/Apophis was the god of chaos, in Ezekiel 32:2 above, we are likewise told that pharaoh Apries/Hophra also stirred up quite a bit of chaos, both in Egypt itself, as well as in the countries which surrounded it, referred to in that verse as "rivers". Ezekiel wrote that he "troubledst the waters with thy feet, and fouledst their rivers."

To continue, while astronomers inform us that, based on the latest observations, Apophis poses no serious threat to the Earth for the next century, sadly, there are some people out there -- including some wannabe Christian "prophets" -- who continue to vehemently insist that the asteroid Apophis will strike the Earth on April 13, 2029 and wreak great havoc and destruction. In fact, some of these characters -- such as Tom Horn in his 2019 book "The Wormwood Prophecy" -- are erroneously claiming that Apophis is the Biblical Wormwood, which we find mentioned in the Book of Revelation. Consider these two verses:

"And the third angel sounded, and there fell a great star from heaven, burning as it were a lamp, and it fell upon the third part of the rivers, and upon the fountains of waters;

And the name of the star is called Wormwood: and the third part of the waters became wormwood; and many men died of the waters, because they were made bitter."

Revelation 8:10-11, KJV

Quite frankly, as I first mentioned in my 2010 series called "2012: New Age Deception and Psychobabble", personally, it is my view that Tom Horn is a very misguided teacher, as well as a false prophet. Similar to so many other money-making Bible hucksters, the man has a propensity for latching on to very popular topics, and then distorting the Scriptures -- as well as other sources of information -- so that they appear to support his wayward doctrines. Over the years, this man has said so many things in so many of his books, which have never come to pass, as I first pointed out thirteen years ago. So please beware of him, and others like him!

Sadly, even though Horn's interpretations rarely -- if ever -- come to pass, there are so many gullible Christians who continue to purchase his nonsensical books, while Horn rakes in the money. I can only conclude that such people either don't have an ounce of Spiritual Discernment, or else they have a very short memory, or else they simply love being deceived by Mr. Horn. I am reminded of the following verse:

"But evil men and seducers shall wax worse and worse, deceiving, and being deceived."

2 Timothy 3:13, KJV

In the case of Mr. Horn, he is so deceived, that he has in fact convinced himself -- and apparently his readers also -- that the U.S. government, astronomers, etc., are outright lying to the American public. According to Horn, they are engaged in a full-scale coverup operation, so that people don't realize what is happening until it is too late. We all know how many people just love to suck up conspiracy theories; and these money-making Bible hucksters will use it to their advantage! So again, watch out! Don't you be their next victim, and don't spend your hard-earned cash on their junk!

One of their tactics which I have observed over the years, is that these deceivers seem to coalesce together. They will appear on each others' TV shows, radio shows, podcasts, etc. Not only do they do it to support each other, but they also do it to add legitimacy to themselves and to what they teach. In other words, if five of these guys agree about something,

then certainly they can't be wrong, right? Wrong! That is precisely how they seduce and deceive people into accepting their doctrines, and into purchasing their books, videos or whatever else they are selling.

As I point out in articles such as "Money-Making Bible Hucksters and Mammon", and also in "Abundant Life Doctrine: Scripturally Exposed!", these things ought not to be! God, Jesus and the First Century Apostles were and are opposed to selling God's Word for profit. Yet sadly, that is precisely what so many of these deceivers do. In the New Testament, this vile practice of greedily profiting from God's Word is referred to as "filthy lucre", and the Apostle Peter even talks about making merchandise out of God's hungry sheep. Consider the following verses which verify this point:

"Woe unto you, scribes and Pharisees, hypocrites! for YE DEVOUR WIDOWS' HOUSES, and for a pretence make long prayer: therefore ye shall receive the greater damnation."
Matthew 23:14, KJV

"And he said unto them in his doctrine, Beware of the scribes, which love to go in long clothing, and love salutations in the marketplaces, And the chief seats in the synagogues, and the uppermost rooms at feasts: WHICH DEVOUR WIDOWS' HOUSES, and for a pretence make long prayers: these shall receive greater damnation."
Mark 12:38-40, KJV

"Beware of the scribes, which desire to walk in long robes, and love greetings in the markets, and the highest seats in the synagogues, and the chief rooms at feasts; WHICH DEVOUR WIDOWS' HOUSES, and for a shew make long prayers: the same shall receive greater damnation."
Luke 20:46-47, KJV

"And Jesus went into the temple of God, and cast out all them that sold and bought in the temple, and overthrew the tables of the moneychangers, and the seats of them that sold doves, And said unto them, It is written, My house shall be called the house of prayer; but ye have made it a den of thieves."
Matthew 21:12-13, KJV

"And the Jews' passover was at hand, and Jesus went up to Jerusalem, And found in the temple those that sold oxen and sheep and doves, and the changers of money sitting: And when

he had made a scourge of small cords, he drove them all out of the temple, and the sheep, and the oxen; and poured out the changers' money, and overthrew the tables; And said unto them that sold doves, Take these things hence; make not my Father's house an house of merchandise."

John 2:13-16, KJV

"And they come to Jerusalem: and Jesus went into the temple, and began to cast out them that sold and bought in the temple, and overthrew the tables of the moneychangers, and the seats of them that sold doves; And would not suffer that any man should carry any vessel through the temple. And he taught, saying unto them, Is it not written, My house shall be called of all nations the house of prayer? but ye have made it a den of thieves."

Mark 11:15-17, KJV

"Not given to wine, no striker, NOT GREEDY OF FILTHY LUCRE; but patient, not a brawler, NOT COVETOUS . . . Likewise must the deacons be grave, not doubletongued, not given to much wine, not greedy of filthy lucre;"

1 Timothy 3:3, 8, KJV

"For a bishop must be blameless, as the steward of God; not selfwilled, not soon angry, not given to wine, no striker, NOT GIVEN TO FILTHY LUCRE . . . Whose mouths must be stopped, who subvert whole houses, teaching things which they ought not, FOR FILTHY LUCRE'S SAKE."

Titus 1:7, 11, KJV

"Feed the flock of God which is among you, taking the oversight thereof, not by constraint, but willingly; NOT FOR FILTHY LUCRE, but of a ready mind;"

1 Peter 5:2, KJV

"And through COVETOUSNESS shall they WITH FEIGNED WORDS MAKE MERCHANDISE OF YOU: whose judgment now of a long time lingereth not, and their damnation slumbereth not."

2 Peter 2:3, KJV

While I discuss Wormwood in my 1998 article entitled "Comet Hale-Bopp, Chernobyl and the Death Star Wormwood", unlike Tom Horn and his misguided ilk, at this current time, I have no overwhelming reason to believe that Apophis is Wormwood. In fact, to be quite honest, at this point in time, I am not even certain if Wormwood is a past event, or an as-of-yet unfulfilled prophecy. I am sure that time will certainly

tell. It always does. Regardless of how things turn out, we still have to continue to trust the Lord.

Now please don't get me wrong. If God can use the natural forces of the Earth -- such as earthquakes, floods, fires, hurricanes, typhoons, pestilences/diseases, droughts, etc. -- as His instruments of judgment and chastisement against a wicked and unrepentant world -- as He does throughout the Bible -- then I am sure that He can use comets, asteroids, meteoroids, etc., for the very same purpose. That is, if He so chooses. The question is whether or not that is the case with Apophis. As we have now seen, the astronomers say "no" while Horn and his crowd say "yes". You need to decide for yourself what you want to believe.

Let me also add that I am absolutely convinced that every jot and tittle of God's prophetic Word will be fulfilled to the letter, sooner or later. If for the sake of argument we adopt the position that Wormwood is a future event, then whether or not the NEA referred to as 99942 Apophis, a.k.a. 2004 MN4, will turn out to be the prophetic death star we know as Wormwood -- assuming that it' is even meant to be understood in a literal, physical sense -- remains to be seen.

While I currently believe that Apophis will not strike the Earth in 2029, or any time during the next 100 years, there is a reason why I am not completely shutting the door on such a possibility. I already mentioned this reason to you in part one of this article when I explained that even the scientists and mathematicians who run the Sentry collision monitoring system, clearly state that calculating the paths of NEOs, and their proximity to the Earth at their closest approach, isn't a perfect science. As more observations are conducted, the impact risk of a particular asteroid can in fact be lowered or raised. It is simply the nature of the process.

As I have already made clear, based on current observations, astronomers believe that Apophis will come very close to the Earth -- within 20,000 miles -- but it will not strike the Earth directly. But it's not a perfect prediction, and there is still room for human error. The year 2029 is still six years away. Perhaps something could happen between now and then which might slightly alter the current trajectory of this asteroid, and bring it closer to the Earth. Then again, maybe not. I am not a professional astronomer, so it is not

for me to say. Only God knows His intentions for the Earth.

However, given the current wicked state of the world, it is difficult for me to believe that God's judgments will not be forthcoming at some point. We have certainly filled up our cup of iniquity in so many ways. If God's Wrath in some form should be poured out in the near future, are you prepared in your mind, heart and spirit for such things? If not, then I urge you to get ready soon. That begins with repenting of any unconfessed sins in your life, accepting Jesus Christ as your Lord and Savior, and then endeavoring to live your life in as wholesome a manner as you possibly can, in accordance with God's Word.

With these sobering thoughts, I will bring this article to a close. I pray that it has been both instructive, as well as a blessing, in your life. If you have enjoyed it, and if you have an account with Facebook, Twitter, Tumblr or with any other social network, I would also appreciate if you would take the time to click or tap on the corresponding link that is found on this page. Thanks so much, and may God bless you abundantly!

For additional information, I encourage you to study the list of reading resources below which were also mentioned in this article, or which contain topics that are related to this article, and which are likewise located on the Bill's Bible Basics web server:

2012: New Age Deception And Psychobabble
Abundant Life Doctrine: Scripturally Exposed!
Comet Hale-Bopp, Chernobyl and the Death Star Wormwood
Divine Protection: Do You Have Fear or Faith?
Is Science Better Than the Bible?
Leviathan: An Ancient Dragon of the Sea?
Money-Making Bible Hucksters and Mammon
Satan: His Origin, Purpose and Future
Satan: King of Tyrus, King of Empires
Science and Technology: The Forbidden Knowledge?
The Nibiru Planet X Wormwood Controversy
When Was Satan Cast Out of Heaven?
Who Hindered the Antichrist?

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