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SUNSPOT ELECTORAL THEORY ON USA PRESIDENCY (SETUP)

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ABSTRACT

*Historically, the study of the world's economy was classified into Micro-economic and Macro-economic. Perhaps, contemporary economists should learn from the 'astronomists' about the universe which we are part of it. This article shall name it as '**Cosmo-Economic**'. Many scientists have found that sunspots affect human behaviour. With all these evidence in mind, the aim of this exploratory research paper is to investigate how sunspot activities can affect the human decision on selecting their preferred national leader. This paper showed Harris has an edge over Trump updated to 2024-10-18. However from the finding of the "SETUP", the latter should win the election. Of course, by the time this paper is published, the election will be over. Nevertheless, the author will NOT change the above conclusion based on the SETUP principle. Once proven, the model will be applicable for similar presidency / prime-minister elections for other countries round the World, as the Sunspot is global !*

Keywords: Cosmo-Economic; Sunspots Numbers; Human Behavior; USA President Election, Opinion Polls

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1. INTRODUCTION

1.1. What are 'Cosmo-Economic' and Sunspot?

The classical study of the world's economy can be broadly classified into Micro-economics and Macro-economics. According to Wikipedia, Micro-economics is "a branch of economics that studies how individuals, households and firms and some states make decisions to allocate limited resources." Macro-economics is "a branch of economics that deals with the performance, structure, and behaviorof a national or regional economy as a whole". Perhaps contemporary economists should learn from the 'astronomists' about the universe which we are part of it. The authors shall name this '**Cosmo-Economics**', and shall define it as *"a branch of economics that explore the impact of the universeat large on the economy of mankind, including financial market, industrial, national and global development matters".*

The purpose of this paper is therefore to develop a Cosmo-Economics Sunspot Presidency Forecasting (**CSPF**) Model to enable the global financial investors to get hold of the dynamics of the main global financial indices and plan their investment more effectively.

In the first section of the first chapter of the Bible, God started his creation and the first thing He did was “Let there be light”. This creation has put the Sun symbolically into the centre of the Universe affecting mankind. This also gives us the hint that we should study the sun first before human economic activities. Sunspots are dark spots, some as large as 5 times the Earth’s diameter, moving across the surface of the sun, contracting and expanding as they go (see **Figure-1**). These strange and powerful phenomena are known as sunspots. According to George Fischer (1998), a solar astronomer at the University of California, *"A sunspot is a dark part of the sun's surface that is cooler than the surrounding area. It turns out it is cooler because of a strong magnetic field there that inhibits the transport of heat via convective motion in the sun. The magnetic field is formed belowthe sun's surface, and extends out into the sun's corona."*

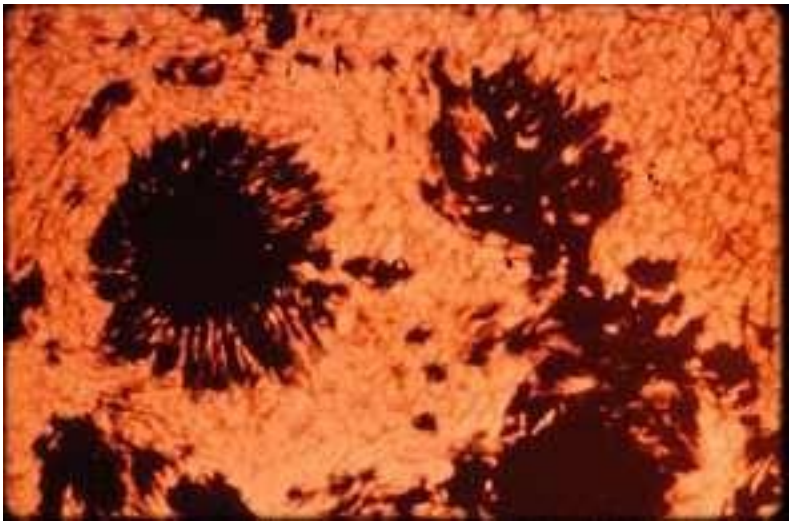


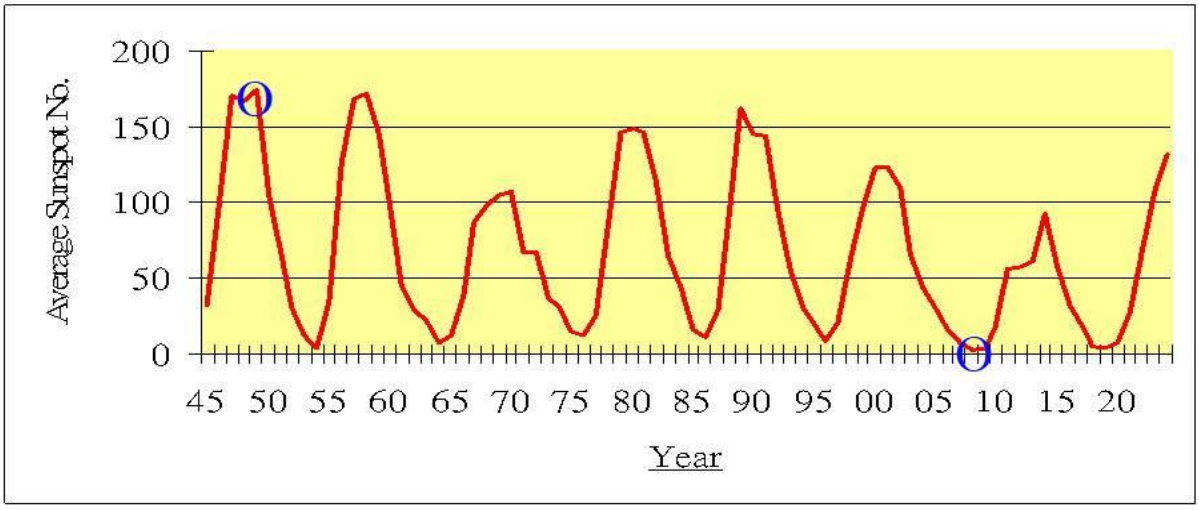
Figure-1: An image of the region around a sunspot

As well as being a darker area on the sun, a sunspot is an area that temporarily has a concentrated magnetic field. This magnetic force inhibits the convective motion, which ordinarily brings hot matter up from the interior of the sun, so the area of the sunspot is cooler than the surrounding plasma and gas. But as Fischer points out, sunspots are actually quite hot. "Instead of being about 5,400^{o}C like the rest of the photosphere, the temperature of a sunspot is more like 3,700^{o}C. But that is still very hot, compared to anything here on the Earth."

1.2. The Sunspot Cycle

In the last few decades, the forces behind sunspots are becoming better understood, but we have known for over 160 years that sunspots appear in cycles (**Figure-2**). The average number of visible sunspots varies over time, increasing and decreasing on a regular cycle of an average about 11 years. An amateur astronomer, Heinrich Schwabe, was the first to note this cycle, in 1843. The part of the cycle with low sunspot activity is referred to as "solar minimum" while the portion of the cycle with high activity is known as "solar maximum."

Figure-2: The Sunspot Cycle from 1945-2024 (Highest in **1949** at **174**; Lowest in **2008** at **2**)



Source: www.spaceweather.com

1.3. Sunspot Light Image and X-ray Image

Fischer (2009) discusses what can be seen in white light and x-ray images of the sun.

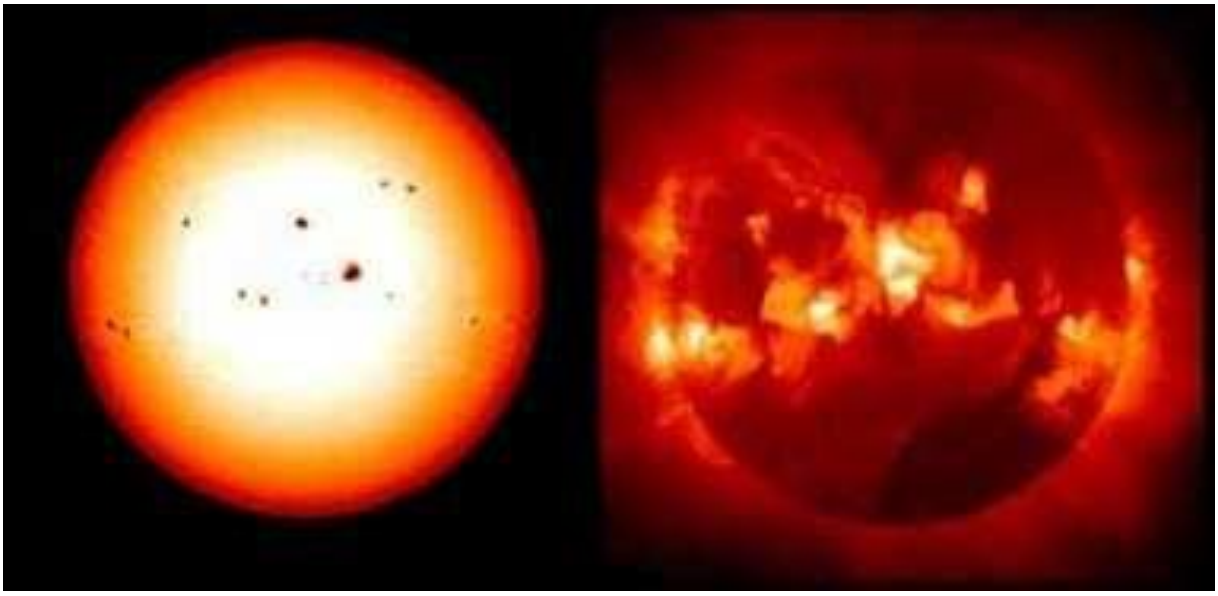


Figure-3: A visible light image (left) and an X-ray image (right) of the sun

Will the dark areas of high sunspot activity visible in white light images correspond to the bright areas of active regions visible in the x-ray images (**Figure-3**)? According to Fischer, "It is known that the area of sunspots group is roughly proportional to the amount of x-rays coming out of an active region."

2. THE SUN-EARTH CONNECTION

The sun's energy has a great effect on Earth. Its light provides energy for photosynthesis in plants and algae, the basis for the food chain, which ultimately feeds almost all life on Earth. Scientists today have discovered a lot about the way the sunspots affect the Earth. According to Dearborn (1998), "The sunspot itself, the dark region on the sun, doesn't by itself affect the Earth.

However, it is produced by a magnetic field, and that magnetic field doesn't just stop, it comes to the surface and expands out above the surface " Hot material called plasma near a sunspot interacts with magnetic fields, and the plasma can burst up and out from the sun, in what is called a solar flare. Energetic particles, x-rays and magnetic fields from these solar flares bombard the Earth in what are called geomagnetic storms. When these storms reach Earth, they affect us in many ways.

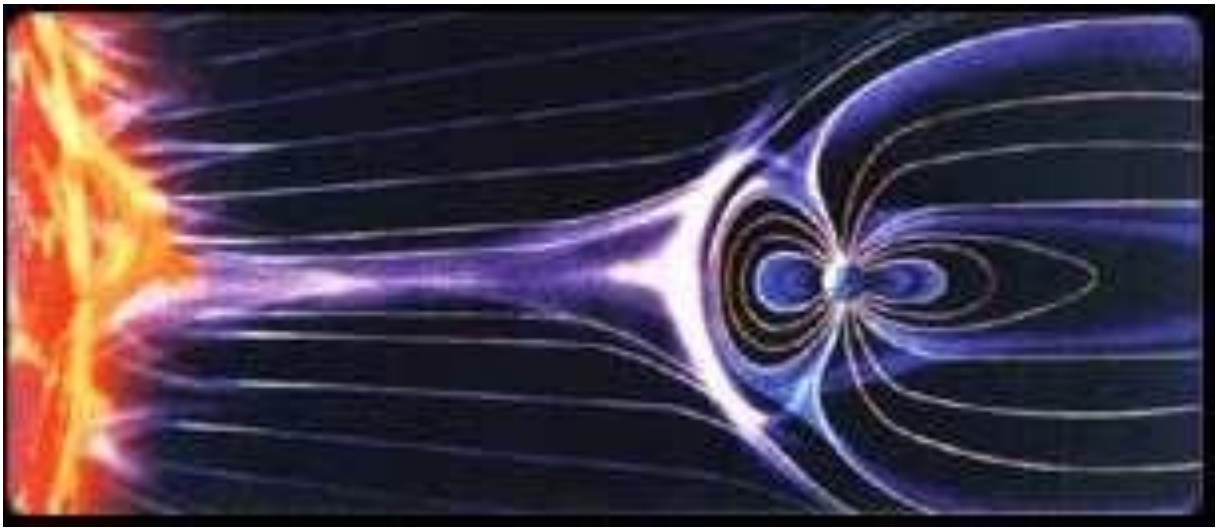


Figure-4: NSAS illustration showing the earth's magnetosphere and its interaction with the sun

Ordinarily, the Earth's own magnetic field protects the Earth from most of the sun's emissions.However during periods of intense sunspot activity, which coincide with solar flares and coronal mass ejections, the geomagnetic flow from the sun is much stronger. These magnetic storms produce heightened, spectacular displays of the Northern and Southern Polar Lights (**Figure-4**).

As Fisher describes it, "The Earth has a protective cocoon of magnetic field called the magnetosphere, and it normally protects us from the magnetic particles of the solar wind, and the other energetic particles in the solar wind. But during a coronal mass ejection we actually have a chunk of the sun that breaks away and hits the Earth's magnetosphere, and disturbs it, and this disturbance shows up as Polar Lights."

2.1. The Effect of Sunspots on the Earth's Climate

Even though sunspots are darker, cooler regions on the face of the sun, periods of high sunspot activityare associated with a very slight increase in the total energy output of the sun. Dark sunspot areas aresurrounded by areas of increased brightness. Some parts of the solar spectrum, especially ultraviolet, increase a great deal during sunspot activity. Even though ultraviolet radiation makes very little contribution to the total energy that comes from the sun, changes in this type of radiation can have a large effect on the Earth's atmosphere, especially the energy balance and chemistry of the outer atmosphere. Though the connection between sunspot activity and the Earth's climate is still being debated, it is known that a period of unusually low sunspot activity from 1645-1715, called the Maunder Minimum, coincided with a period of long cold winters and severe cold temperatures in Western Europe, often called the "Little Ice Age." However,variations in the sunspot cycle seem to have less impact on the Earth's climate than human actions, such as burning fossil fuels or clear-cutting forests, do.

2.2. Sunspots and Human Behavior

Many scientists have been investigating the relationship of the Sun and human behaviour for many years, and we are quite confident that we can predict behaviours based on sunspot fluctuations over very short and long durations within the Solar Cycle of 11 years (Borges, 2009). Historically, research has been conducted to link the 11 year cycle of the sun to changes in human behavior and society. The most famous research had been done by Tchijevsky (1978), a Russian scientist, who presented a paper to the American Meteorological Society at Philadelphia in the late 19th century. He prepared a study of the history of mass human movement compared to the solar cycle, beginning with the division of the Solar cycle into four parts: 1) Minimum sunspot activity; 2) increasing sunspot activity; 3) maximum sunspot activity; 4) Decreasing sunspot activity.

By these comparisons he constructed an "Index of Mass Human Excitability" covering each year from 500 B.C. to 1922 A.D. He investigated the histories of 72 countries in that period, noting signs of human unrest such as wars, revolutions, riots, expeditions and migrations, plus the number of humans involved. Tchijevsky found that fully 80% of the most significant events occurred during the years ofmaximum sunspot activity. He maintained that the "exciting" period may be explained by an acute change in the nervous and psychic character of humanity, which takes place at sunspot maxima.

Tchijevsky discovered that the solar minimum is the lag period when repression is tolerated by the masses, as if they lacked the vital energy to make the needed changes. He found that during the sunspot maximum, the movement of humans is also at its peak. Tchijevsky's study is the foundation of sunspot theory on human behavior, and as Stetson (1947), in his book Sunspots and their effects (available from BSRF -- Lakhovsky, 1985), stated, “Until, however, someone can arrive at a more convincing excitability quotient for mass movements than professor Tchijevsky appears yet to have done, scientists will be reluctant to subscribe to all the conclusions which he sets forth.” Stetson didacknowledge that the mechanism by which ultraviolet radiation is absorbed was still a puzzle biologists had to solve.

The mechanism behind the stimulation of human behavior is still a mystery, but the theories of Lakhovsky (1985) may shed some light. He considered his book, “The Secret of Life”, the extension of a scientific hypothesis of a new theory of life. The Sun is one of Earth’s primarysources of cosmic radiation. While the Sun does produce its own radiations, solar winds actually capture passing cosmic dust and radiation and blow it into the Earth’s atmosphere. While it may seem frightening to some, this can actually be considered the Primal Vibration that sets the cells vibrating with Vital Force. This is the Prana, that Cosmic Breath, which is meant to vitalize man, and is the source for our evolution.

2.3. Sun’s Radiation and Human Biological Reaction

Crile (1942), a distinguished American surgeon, studied the sun in light of its radiant energy. In the ‘Preliminary Remarks’ to Lakhovsky’s The Secret of Life, Crile quoted: “It isclear that radiation produces the electrical current which operates adaptively the organism as a whole, producing memory, reason, imagination, emotion, the special senses, secretions, muscular action, the response to infection, normal growth, and the growth of benign tumours and cancers, all of which are governed adaptively by the electric charges that are generated by the short wave or ionizing radiationin protoplasm.”

The cosmic radiation from the Sun is a blessing of Vital Force. As Lakhovsky has postulated, it isthe cosmic radiations that give the cells their vibrant oscillations. While the sunspot maxima is occurring, the solar flares and the subsequent geo-magnetic reactions effect the many subtle reactions that take place within our bodies at the atomic level. It has been theorized that this has a direct relationship to the metabolism of the body.

The increase of penetrating waves during a solar storm causes an excitation in these electro-chemical reactions within the body. Tchijevsky also identified correlations between changes in solar magnetic activity with biological processes. In light of Lakhovsky's theory in his own words, **"Kwith the aid of elementary analogies, that the cell, essential organic unit in all living beings, is nothing but an electromagnetic resonator, capable of emitting and absorbing radiations of very high frequency."** A plausible mechanism is provided to understanding the stimulating effects the radiation from the Sun has on human behavior.

2.4. Historical Evidence of the Link between Sunspot Cycle with Human Creativity andCultural Development

In another historical study Ertel (2011) writes in his article "Synchronous Bursts of Activity in Independent Cultures; Evidence for Extraterrestrial Connections" that evidence has been reported **suggesting a link between historical oscillations of scientific creativity and solar cyclic variation**. Ertel's discovery of abnormal secular periods of solar inactivity (Maunders minimum type) offered theopportunity to put the present hypothesis to a crucial test. Using time series of flourish years of creators in science, literature and painting (A.D. 600-1800), it was found as expected:

1. Cultural flourish curves show marked discontinuities (bursts) after the onset of secular solar excursions synchronously in Europe and China;
2. During periods of extended solar excursions, bursts of creativity in painting, literature, and science succeeded one another with lags of about 10-15 years;
3. The reported regularities of cultural output are prominent throughout with eminent creators. They decrease with ordinary professionals. The hypothesized extraterrestrial connection of human culture has thus been strengthened.

The above evidence shows that during the maxima of sunspot activity human behavior isstimulated.

3. SUNSPOT AND USA PRESIDENCY

3.1. Past Literature

There have been several claims and counterclaims for the existence of a correlation between sunspot activity (as measured by the number of sunspots) and the economy or stock-market movements (Modis, 2007). Interestingly, opponents of this notion, like astronomers Wall and Jenkins (2003), claim that this correlation is well-known but mainly as folklore because trying to substantiate it is verydifficult — and trying to find an underlying physical cause even more so. But they admit that this correlation may after all exist because global temperature is now known to correlate with sunspot number and long-term weather trends may have physical, social and economic effects.

At the same time, proponents of this notion, like "guru" Mandeville (2003), claim, "it is easy to see thatboth political and economic affairs are profoundly caught up and influenced by the 'waves' of sunspot energy." But he also admits that there is zero correlation between daily price movements and average daily sunspot numbers and there is only a weak connection between long-term historical trends in the prices and average monthly or annual trends in the numbers of the sunspots.

3.2. Analytical Techniques Deployed

3.2.1. *<U. of Virgina> – 2024-9-25 – The following is a ballot-map of the USA as on Sep 25, 40 days before the Voting Date of 2024-11-5 as presented by the University of Virgina.*

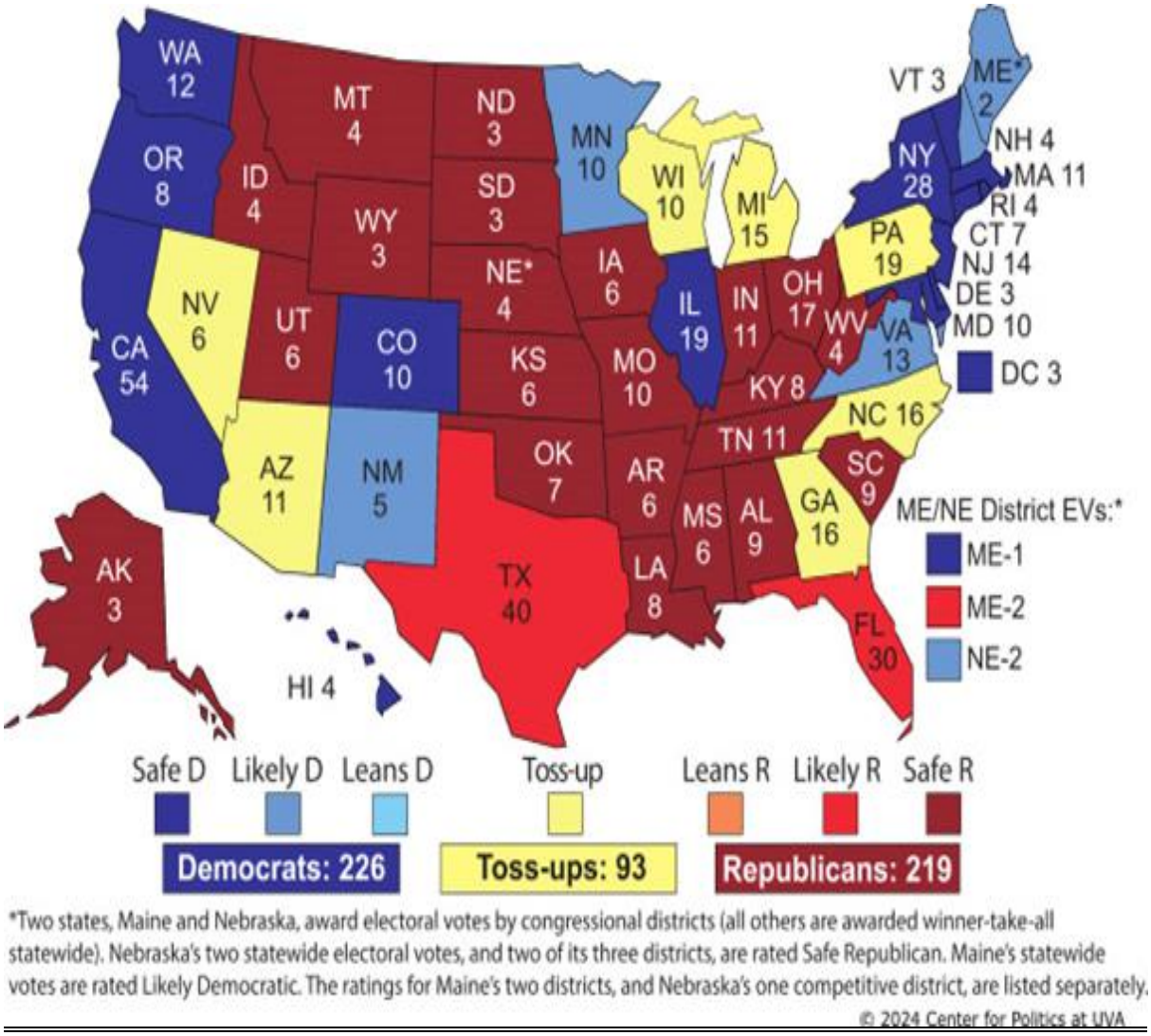


Figure-5: ballot-map of the USA as on Sep 25 -- 40 days before the Voting Date

https://centerforpolitics.org/crystalball/2024-president/

3.2.2. <abc NEWS> – 2024-10-18 *-- Then around 18 days countdown before the Voting Date, Kamala still have an advantage over Trump in the National Poll:-*

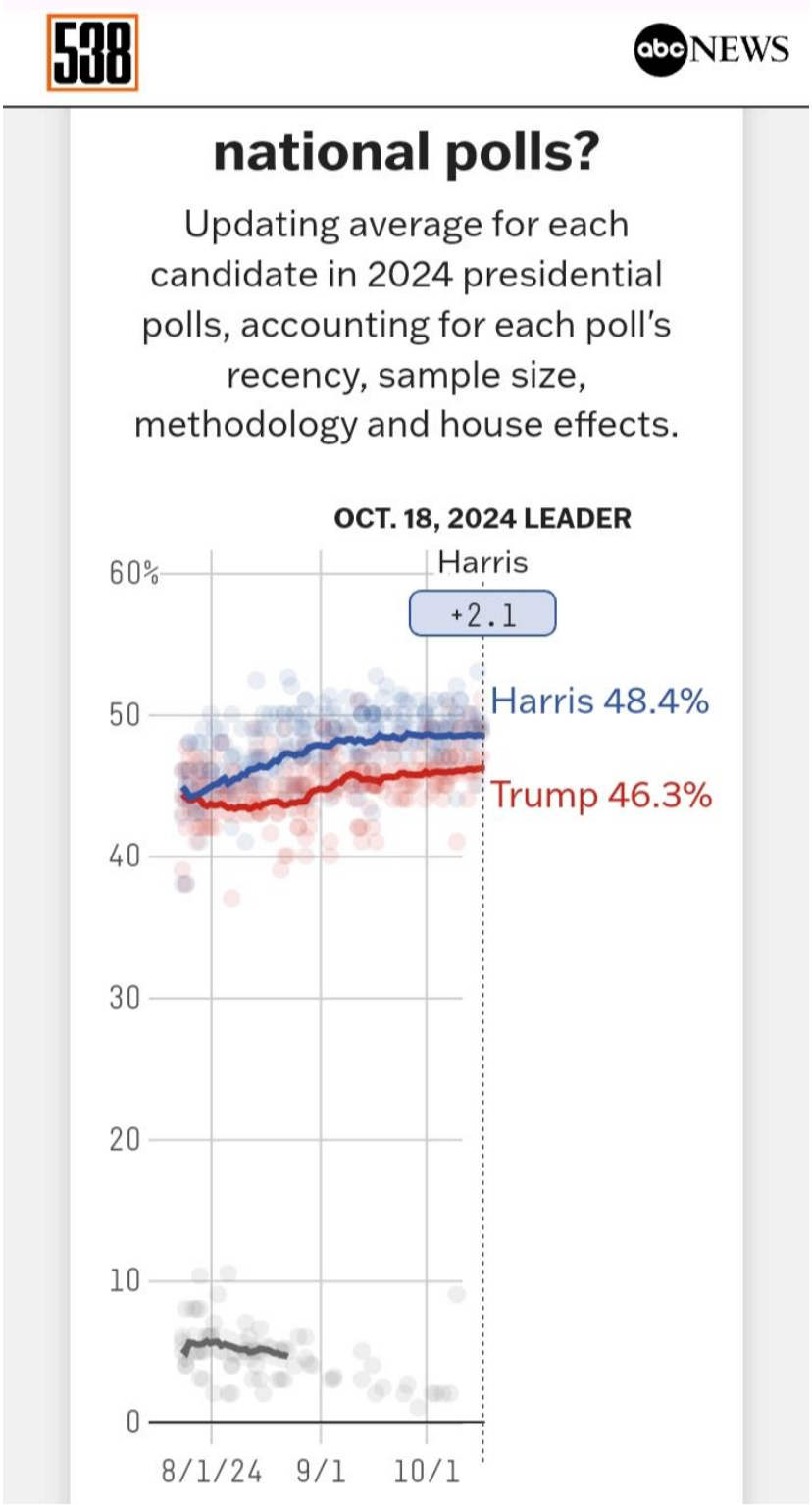


Figure-6: abc-NEWS National Poll as on Oct 8 -- 18 days before the Voting Date

https://projects.fivethirtyeight.com/polls/president-general/2024/national/

3.2.3. Sunspot Analysis since the USA was established by President Washington in 1794 (see App-1) *– As can be seen, all the yellow highlighted data are the years where the Sunspots are at their Maxima. During those years, we witness a lot of Great Things happening in the USA, including President # 1-3-16-28-32:-*

#	Sunspot Maxima *11-year cycle*	US Presidency (4/8-year term, except #32)	USA President	Party Tally: Demo. = 20 Repu. = 23	Critical Milestones
1	1794	1789-97	George Washington	Federalist	Established USA
3	1805	1801-09	Thomas Jefferson	Demo.-Repu.	Independence
16	1860	1861-65	Abraham Lincoln	Republican	Liberated Slaves
28	1915	1913-21	Woodrow Wilson	Democratic	WWI: 1914-18
32	1937	1933-45	Franklin Roosevelt	Democratic	WWII: 1938-45
45		2017-21	Donald Trump	Republican	N/A
46		2021-25	Joe Biden	Democratic	N/A
47	2025	2025-29	???	???	Make US Great?

One might argue why Donald Trump was not particularly GREAT during his #45 tour of presidency. The answer was that the Sunspot was not yet at its Maxima. Now for the #47 US President, the Sunspot will be at its maxima in early 2025. Comparing Donald Trump & Kamala Harris, it is no doubt that Donald is the one who advocate to "Make American Great". So, the Sunspot Maxima will provide him the necessary energy and power to make that happen. Having said that, by Nov 2024, the Sunspot is approaching its peak at the current 11-year Cycle. Therefore, according to the foregone Sunspot theory, he will be charging fully to win the election on 2024-11-5.

4. CONCLUSION

Sunspots (could be as large as 5 times the Earth's diameter) are areas of extremely high electro-magnetic radiations (including X-ray). Thus the Earth experiences variation of solar radiation as the Sunspot sizes and numbers change. Sunspots are cyclical from 0 (Solar Minimum) to as high as 300 (Solar Maximum). The historical annual average varies from 2.4 (2008) to 174 (1949). The periodic time is around 11 years. When the Earth experiences Solar Minimum, mankind tended to be more conservative and less aggressive.

The classical study of the world's economy can be broadly classified into Micro-economics and Macro-economics. Perhaps contemporary economists should learn from the 'astronomists' about the universe which we are part of it. The authors have named this '**Cosmo-Economics**', and defined it as *"a branch of economics that explore the impact of the universe at large on the economy of mankind, including financial market, industrial, **political**, national and global development matters".* Despite the Opinion Poll on 40-days (Figure-5) and 18-days (Figure-6) before the Election Date of 2024-11-5 showed Harris has an edge over Trump. However from the finding of the "**SETUP**", the latter should win the election. Of course, by the time this paper is published, the election will be over. Nevertheless, the author will NOT change the above conclusion based on the SETUP principle. Once proven, the model will be applicable for similar presidency / prime-minister elections for other countries round the World, as the Sunspot is global !

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App-1: USA President Chronicles & Sunspot Maxima

#	Sunspot Maxima *11-year cycle*	US Presidency (4/8-year term, except #32)	USA President	Party Tally: Demo. = 20 Repu. = 23	Critical Milestones
1	1794	1789-97	George Washington	Federalist	Established USA
2		1791-01	John Adams	Federalist	
3	1805	1801-09	Thomas Jefferson	Demo.-Repu.	Independence
4		1809-27	James Madison	Demo.-Repu.	
5	1816	1817-25	James Monroe	Demo.-Repu.	
6	1827	1825-29	John Adams	Republican	
7		1829-37	Andrew Jackson	Democratic	
8	1838	1837-41	Martin Buren	Democratic	
9		1984 (3-4)	William Harrison	Whig	
10		1841-45	John Tyler	Whig	
11	1849	1845-49	James Polk	Democratic	
12		1849-50	Zachary Taylor	Whig	
13		1850-53	Millard Fillmore	Whig	
14		1853-57	Franklin Pierce	Democratic	
15		1857-61	James Buchanan	Democratic	
16	1860	1861-65	Abraham Lincoln	Republican	Liberated Slaves
17		1965-69	Andrew Johnson	Democratic	
18	1871	1869-77	Ulyssess Grant	Republican	
19		1877-81	Rutherford Hayes	Republican	
20		1881 (3-9)	James Garfield	Republican	
21	1882	1981-85	Chester Arthur	Republican	
22		1985-89	Grover Cleveland	Democratic	
23	1893	1889-93	Benjamin Harrison	Republican	
24		1893-97	Grover Cleveland	Democratic	
25	1904	1901-09	Theodore Roosevelt	Republican	
26		1987-01	William McKinley	Republican	
27		1909-13	William Taft	Republican	
28	1915	1913-21	Woodrow Wilson	Democratic	WWI: 1914-18
29		1921-23	Warren Harding	Republican	
30	1926	1923-29	Calvin Coolidge	Republican	
31		1929-33	Herbert Hoover	Republican	
32	1937	1933-45	Franklin Roosevelt	Democratic	WWII: 1938-45
33	1948	1945-53	Harry Truman	Democratic	
34	1959	1953-61	Dwight Eisenhower	Republican	
35		1961-63	John Kennedy	Democratic	
36		1963-69	Lyndon Johnson	Democratic	
37	1970	1969-74	Richard Nixon	Republican	
38		1974-77	Gerald Ford	Republican	
39		1977-81	Jimmy Carter	Democratic	
40	1981	1981-89	Ronald Reagan	Republican	
41	1992	1989-93	George Bush	Republican	
42		1993-01	Bill Clinton	Democratic	
43	2003	2001-09	George W. Bush	Republican	
44	2014	2009-17	Barrack Obama	Democratic	
45		2017-21	Donald Trump	Republican	
46		2021-25	Joe Biden	Democratic	
47	2025	2025-29	???	???	Make US Great?

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Useful Sunspot Data Websites:

The Solar Data Analysis Center at: http://umbra.nascom.nasa.gov/ & www.spaceweather.com

The Solar Data Analysis Center at NASA's Goddard Space Flight Center has information on many solar research projects, and a fantastic archive of solar images, both past and current, including the SOHO eruptive prominence of the week.

Today's Space Weather at: http://www.sel.bldrdoc.gov/today.html

Presented by the Space Environment Center, one of NOAA's research laboratories, this site provides a daily update on levels of solar activity, and the intensities of solar emissions reaching Earth.

European Space Agency Sunspot Data at:

http://space-env.esa.int/Data_Plots/noaa/ssn_plot.html

The YOHKOH Data Archive at: http://ydac.mssl.ucl.ac.uk/ydac/

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The author declares NO conflict of interest. There are no other third parties in the design of the study, in the collection, analyses, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.

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