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Review Article

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Solution To Global Warming: Sunspots, Carbon 14, And Average Temperature -- Exploding Star Events

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Abstract

The formation of C14 from nitrogen by collision with a gamma ray or high energy particle in our high atmosphere is a widely accepted theory. The new yet to be recognized supernova, SN, and nova impact theory, SNIT, proposes debris streams of high energy particles from exploding stars impact our planet and cause global warming, sunspot, and other extraordinary events. Some of the recorded C14 data must match the calculated impact times of exploding star debris streams and a similar result occurs for sunspots. The new calculated supernova impact times in conjunction with two temperature plots from Dr Loehle and NOAA prove our current episode of global warming is caused by the Crab nebula or SN 1054 and is waning. The accuracy of the SNIT impact times are shown for the first time due to exact C14 data. Supernova explosions within 700 light years are very dangerous to mankind.

Keywords: Supernova; Nova; Carbon 14; Events; Black plague; 1460 event, Minimum sunspots; Global warming; Hyper giant.

Method

The method used will be to predict the year of exploding star impact time using SNIT derived equation and look for the C14 event near the same time. The C14 curve responds to a supernova impact by showing an increase that continues for at least 100 years, the approximate duration of a supernova impact [2]. The solution for one exploding star debris stream has been found when the beginning times are within the tolerance allowed for impact time. The C14 event time data is accepted as exact.

Introduction and SNIT Model Definition

The equation for the year of impact, ETA, is obtained by eliminating distance algebraically from the velocity, time, and distance equations for debris and light travelling between the remnant and Earth.

$$ETA = Constant\ \Delta T_L + T_L \quad (1)$$

Where ΔT_L = light years to remnant
T_L = years ago -- age of remnant or year of observed explosion

$$Constant = (0.13337 - 0.119)(\Delta T_L - 147) / (7543 - 147) + 0.119 \quad (2)$$

To simplify calculations equations (1) and (2) may be combined to give

$$T_L - (1.94294(\Delta T_L/103)2 + 0.118414\ \Delta T_L) = ETA \quad (3)$$

When the units of TL are years ago and the result of equation (3) is positive the answer is years ago and when the result of equation (3) is negative the answer is years in the future. In the beginning of the work, the constant was fixed, but when the distance and travel time became known for SN1006 and WZ Sagittae 2017 debris streams, the linear variation in the constant was found to be represented by equation (2). An order of magnitude analysis for equation (3) allows for the case when the exploding star's distance, ΔT_L, is below 1000 light years the squared term may be neglected and the new constant becomes 0.118414.

The right ascension, RA, of SN 1054 is 5h 34.5 min and equation (4) defines the DOY or CAM date for the eastern terminus, ET, of the incoming debris stream. Using equation (4),

$$RA = 24(DOY-79)/365 \quad (4)$$

Calculate the eastern terminus CAM day of the year The CAM DOY equals 164 or June 13 for the ET. By definition, the CAM date for the WT is 182.5 days away from the ET CAM date or DOY 346 or December 12. The equation for the WT longitude, L, is

$$L = 13W + 360(15 - RA) / 24 \quad (5)$$

The part of the equation to the right of the plus sign equals +141 degrees. The plus sign means the remnant RA 5.45 is smaller than 15 indicating the 13W longitude point must be moved 141 degrees to the west or 154W is the theoretical longitude for SN 1054's WT. By definition, the ET is 180 degrees away on the other side of the planet or 26E is the theoretical longitude for SN 1054's ET.

When calculating the real longitudes for the hotspot location, the theoretical value is shifted 30 degrees west in the northern hemisphere and 50 degrees east in the southern hemisphere. These shifts occur due to the effects on the trajectory of an incoming positive particle moving through the Earth's magnetic field.

Table 1: Beginning Dates C14 Events, Sunspot Events & Impact ETAs

Supernova	Beginning C14 Event (cal BP)	ETA (cal BP)	ETA(AD) Impact Times	Temperature Event (AD)	Sunspot Event (AD)	Δ (yrs)
Vela Jr	550	617	1333	1350	1390	+67
Puppis A [4]	1375	1403	547	500		+28
RCW103	400?	522	1428	1450	1620	+22
SN 1054	80	73	1877	1910	1800	- 7
SN 185	693	663	1287	1200	1290	- 30
SN 393	1000	1150	800	800	1040	+150
Nova - H. G.						
P Cygni900	130	210	1740	1780	1800	+80
PCygni2100	1450	1410	540	In Puppis A		- 40
VY Canis Majoris	310	309	1641	1680	1620	- 1

Discussion

Table 1 shows the calculated impact times, ETA (AD)s, for the six supernovas and two novas being considered for the time period shown in Figure 1 using the SNIT model equations. The times in the column for beginning C14 events were read directly from Figures 2 and 4. The X axis, cal BP date, in Figures 2 and 3 is calculated by subtracting the AD date of the event from 1950, cal BP equal zero, generating the ETA (cal BP) column. The times in the column for sunspot events were read directly from Figure 5. The Δ column in Table 1 represents the error in the SNIT method and the applied astrophysical data in units of years.

Supernovas and Earth Average Temperature

The influence of supernova impacts on Earth's average temperature uses the plot by Dr Lothe shown as Figure 1.

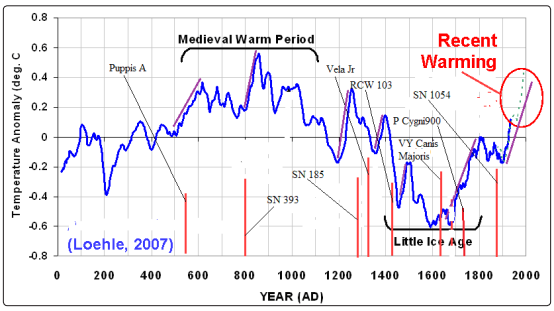

Figure 1: Supernova Impact Times and Earth Average Temperatures [10]

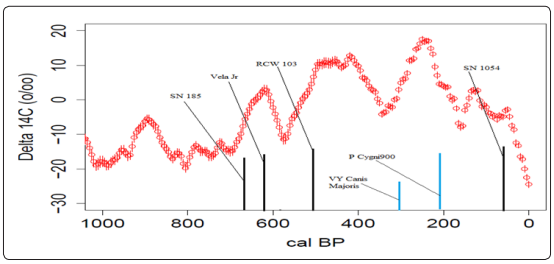

Figure 2: Accurate Dates for C14 Events versus Supernova and Nova Calculated Impact Times [7]

Major temperature rises in Figure 1 due to supernova impacts are highlighted in purple. Puppis A shows a modest temperature rise that begins the Medieval Warm Period and SN 393 follows by producing the maximum temperature of the noted warm period. Both impacts cause higher temperatures for over 100 years. SN 185's impact time shifted to the left to 1200 AD produces a large temperature rise that again lasted for over 100 years. SN Vela Jr produces a modest temperature rise. SN RCW 103 produces a moderate temperature rise at the beginning of the Little Ice Age. The outburst of hyper giant VY Canis begins the recovery from the Little Ice Age [19]. Nova P Cygni900 helps the temperature rise of the hyper giant. Finally, the Crab Nebula, SN 1054, brings us out of the Little Ice Age and warms the planet back to the temperatures of the Medieval Warm Period. The Crab's warming period is 109 years to date because it is still effective today. The sharp rise in Figure 2 near 400 cal BP is the work of SN RCW 103.

The real question Figure 1 asks is: When did the current global warming really begin? The answer is supplied in Figures 1 and 3. Both Figures show the Earth average temperatures increasing since 1910. Both curves indicate Earth is currently responding to the energy input of SN 1054 and as occurred with the other five supernovas in Figure 1 when the 100+ year debris stream ends for SN 1054 the average Earth temperature will decrease. It is sad to realize the Paris Accords are wasting an immense effort on something they cannot control or change.

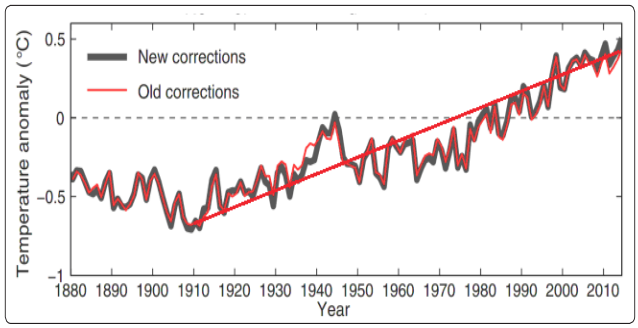

Figure 3: Recorded Earth Average Temperatures [12]

As the distances in light years to the remnant and times of explosion data for supernovas are improved by astronomers, the error in the table 1 data will diminish. The supernova that needs improved distance and time of visible explosion is SN 393. This is a supernova whose existence and location is still being debated [20].

There are other temperature constructions similar to Dr Lothe's curve, Figure 1. If the reader plots the purple highlighted regions and supernova ETAs shown, general agreement occurs. These purple highlighted regions and supernova ETAs are the proof that global warming will continue until the debris stream of SN 1054 passes our planet or begins to seed our oceans with food for algae that devours CO_2 and cools our planet.

C14 Dates and Exploding Star Impacts

Dr Paula Reimer contributed both of the C14 plots, Figures 2 and 4 [7]. It is of interest to comment on the C14 data forming a downward line slightly above and below the gray bar in Figure 4. This marked decrease of Delta 14C data has been attributed to mankind's increased use of fossil fuels during the industrial revolution causing 12C to increase in our atmosphere [17]. Dr Graven needed a 12C source and did not have an incoming exploding star debris stream as a possibility so mankind became his fall guy. The Crab nebula or SN 1054 is certainly different from other supernovas in the fact that its debris stream contains an abundant amount of incoming 12C that is still producing CO_2 in our atmosphere as indicated by the extended gray bar in Figure 4.

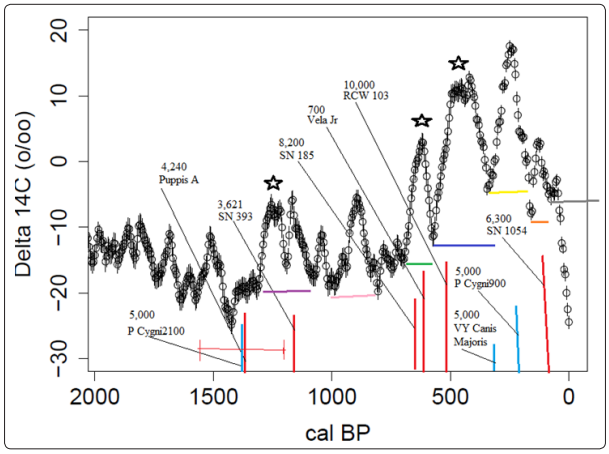

Figure 4: Comparison of C14 Events and Supernova & Nova Impact Times [7]

The vertical red lines in Figure 4 are the supernova impact times, ETA, when C14 increase should begin. The black stars represent C14 peaks for well correlated events. The horizontal lines of purple, pink, green, blue, yellow, orange, and gray denote the length of the C14 event caused by supernovas Puppis A, 393, 185, Vela Jr, Hyper Giant VP Canis Majoris, Nova P Cygni, and 1054, respectively. SN RCW 103 is contained in the horizontal dark blue line also used for SN Vela Jr. The end of the horizontal blue line does not mean the C14 event produced by supernova Vela Jr is over. It means another C14 event has started as shown in Figure 4. The two vertical light blue lines in Figure 4 at 1410 and 210 cal BP show the impact times of Nova P Cygni, a recurrent nova, producing outburst at 900 and 2100 years ago [9]. These nova outburst show changes on the C14 curve in Figure 4. The 900 year ago outburst was strong enough to produce the Dalton minimum, a sunspot minimum shown in Figure 5. The numbers near the name of the supernova or nova in Figure 4 are the distance from the remnant to our planet in light years. The horizontal red line with bars denotes the tolerance on the calculated time of impact, ETA, for supernova Puppis A of ± 150 years.

The time period for C14 production by supernovas Vela Jr and RCW 103 are represented by the blue horizontal line and it has the longest period of C14 production and the maximum value for C14 percentage. Comparing the numbers representing distance, Vela Jr is the closest recorded supernova to our planet and it contains the major portion of the time period of the Black Death, 1340 – 1771 [5]. A supernova explosion destroyed 50 percent of humanity from a distance of 700 light years.

Minimum Sunspots

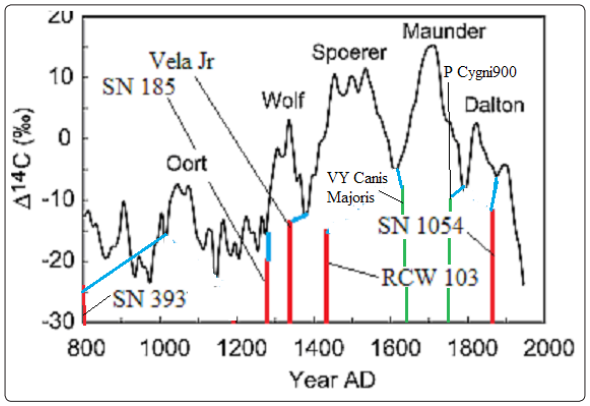

Figure 5: Minimum Sunspots and Supernova [8]

The increase in the number of small particles caused by supernova debris streams between our planet and the sun causes the incoming sunlight to scatter and hide sunspots from view. This well known effect produces the periods of minimum sunspots as noted in in Figure 5. Figure 5 is is complimenting Figure 1 and the blue lines connect the red supernova lines to the beginning times of the sunspot minimums. The green lines are hyper giant VY Canis Majoris producing the Maunder minimum and nova P Cygni900 whose impact produced the Dalton minimum. P Cygni is a very unusual star [13]. The difference in times for SN 393 in Figure 4 may be because some experts cannot decide if SN 393 exists. The distance of 5,000 light years or 1533 parsecs to the remnant for SN 393 would cause the impact time to match the beginning time for the Oort sunspot minimum.

SN 1054 Sea Ice Melt

Since a major effect of a supernova debris stream is to melt ice on a specified date and at a specified location calculated by the SNIT theory and SN 1054 has been melting a significant amount of sea ice at both poles in June by the 26E ET and in December by the 154W WT for 109 years, evidence should be available. When looking for melted sea ice by a supernova, the sea ice plot for the month after the CAM date is the 1st day of the following month and will show the melt of a particular terminus of the preceding month. The calculated theoretical longitude of the terminus will be shifted 30 degrees west in the Arctic and 50 degrees east in the Antarctic to

place the real l

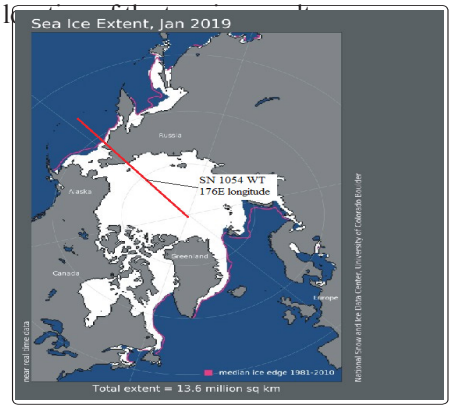

Figure 6: Sea Ice Melt WT December 2018 [16]

The blue water between the thin red line of the mean ice edge and ice close to the 176E longitude line is the December melt. The melt is east of the WT and the red longitude line was to the east 12 degrees on December 1.

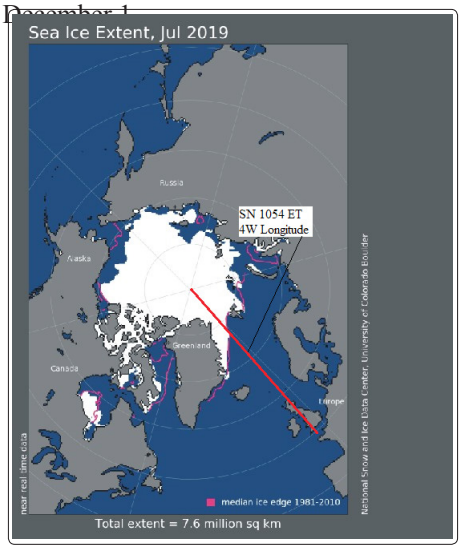

Figure 7: Sea Ice Melt ET June 2019 [16]

The melt is to the west of the ET and the red line was west 12 degrees on June 1.

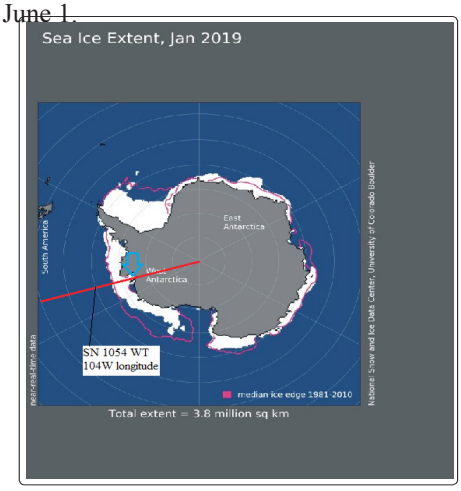

Figure 8: Sea Ice Melt WT December 2018 [16]

The melt of sea ice in Figure 8 is shown east of the WT and the red line was 12 degrees east on December 1. Directly at the tip of the blue arrow is the Thwaites Glacier holding a cavity at its mouth. The void underneath the ice is about 1,000 feet tall and contained 14 billion tons of ice [14]. The void is a true testament of the WT of SN1054 melting ice for two months at the fixed longitude location for 109 years. A terminus is the longitude location where the maximum heating of incoming debris of a supernova occurs and is the reason the cavity is local. It is very improbable that NASA will find similar cavities located at other glaciers. The melted ice from the cavity does not refreeze rapidly after the hotspot has moved because the cavity is below the ocean surface. A similar melting situation occurred for the Jakobshavn Isbrae glacier in Greenland and SN 1006 [15]. When SN 1006 was no longer an effective heat source the Jakobshavn Isbrae glacier began to refreeze. When the cavity in the Thwaites Glacier starts to fill with ice, you will know our current global warming episode is over.

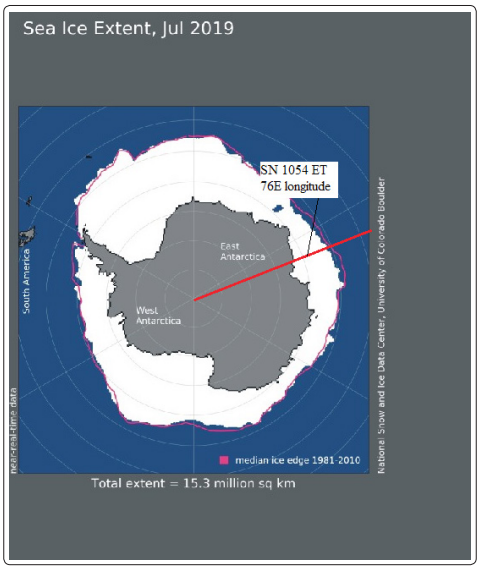

Figure 9: Sea Ice Melt ET June 2019 [16]

The melt is to the west of the ET and the red line was west 12 degrees on June 1.

Conclusions

It is certain a number of debris stream impacts are missing from table 1 such as novas and surely C14 events exist with shorter time periods as seen in Figures 2 and 4. Data can be added to increase the impact of this paper as they become available.

Trees that lived through the wildfire of Alberta, Canada in 1981 should also have enriched C14 tree rings for that year [3].

The correlation of the nine matched explosive star events shown offers acceptable evidence of the SNIT theory via the fact debris streams have impacted our planet at the times predicted and produced C14, temperature rise, and minimum sunspot events [2]. The concepts of this paper are excellent, but when it comes to the astrophysicist's chance to make a contribution affecting mankind they are arguing about intersecting galaxies while better input data is needed to produce improved values for table 1.

It is necessary to consider the inaccuracy of methods of predicting times in the past. When the data screams at you, it is necessary to give that case some special attention. The 1460 AD C14 event is depicted in Figure 10. The data does not fit the steep rise and fall of a supernova impact that is far away from our planet because the supernova explosion is near and the expanding hollow sphere debris stream has not had time to become thinner as it expands. The peak occurs from 1450 to 1550 and the Black Death occurs in the old world from 1340 to 1771 [1, 5]. The authors of the cited paper did very well to mention a supernova as a possible cause of the 1460 AD C14 event. The incoming debris stream of Vela Jr destroyed 50 percent of the world population at the time. The Black Death seems to be tied to SN Vela Jr because it is the closest known supernova The distance when a supernova is dangerous for Earth is equal to or less than 700 light years and the maximum proton density is quoted as 7 x 10^{10} protons/ cm^2 [1].

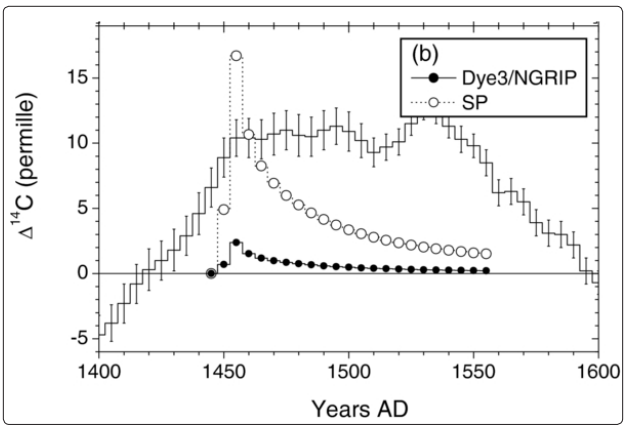

Figure 10: C14 1460 Event [1]

The beginning of the Justin Plague was 541 AD and the arrival time of Puppis A as shown in table 1 was 547 AD well within the tolerance range for the supernova impact calculation. The Manchurian bubonic plague killed 40,000 in China at the initial impact of SN 1054 in 1910 -12 [18]. Three serious plagues in the Common Era have been identified at the beginning of strong C14 events due to supernova debris streams. Will we be ready to defend mankind when the next mass dying comes from the sky?

It will not be soon because time is required for the planet to cool, but the future loss of the Crab's power source or algae blooms brings on the possibility of a future mini ice age which is the second danger to mankind. The end of Vela Jr and SN RCW 103 in Figure 1 initiated the Little Ice Age causing difficulties for mankind due to loss of crops. The last value for the Earth's average temperature in August 2019 was 0.38 C [11] and the temperature curve in Figure 1 has been extended to include this data. The bottom line is still the same. All major thermal changes for the planet are natural cycles caused by energy streams from exploding stars. The incoming energy from exploding stars has been neglected in the general energy equation, but the CO_2 greenhouse gas theory effect was over estimated to produce higher average Earth temperatures to account for the oversight [11].

Addendum

The various papers on the SNIT theory are located at https://independent.academia.edu/WilliamSokeland. Please send financial support for this research in USA dollars to the Good Shepherd United Methodist Church, 210 W. Harrison Street, PO Box 336, Oakland City, IN 47660. If you have any questions, the author can be reached by email at wpsokeland@gmail.com. Good Luck!

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