

The boron-nuclear fusion crop circle

Jerry Kroth

This crop circle arrived on August 8, 2022 in Etchilhampton Hill near Devizes in Wiltshire, U.K.

The farmer would not allow visitors, but based on video footage, there do not appear to be human footprints or any other signs of human activity. Based on the intricacy of the construction, it seems unlikely this was made by humans under cover of darkness. The distance, for example, from the center of the outer circles to the

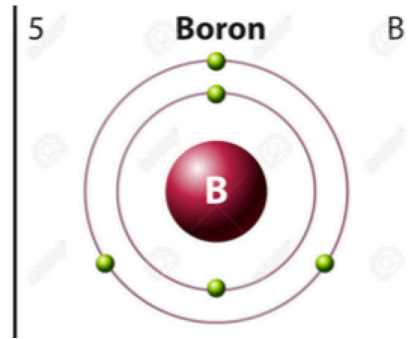


center of the central circle appears from photo analysis to be close to exact for each one of the outer circles—to the millimeter. ¹

The crop circle connector was quick to list sundry interpretations: a planetary clock, the sun and five planets, a comet, an alchemical design about the age of Aquarius, a Venus pentagram, and ‘something to awaken the divinity within you.’²

I didn’t find any of these compelling. If these are planets, why are they all the same size?

Instead, I was reminded of a crop circle interpretation in 2010 crop circle which was discussed as a pictogram of boron with 5 electrons.



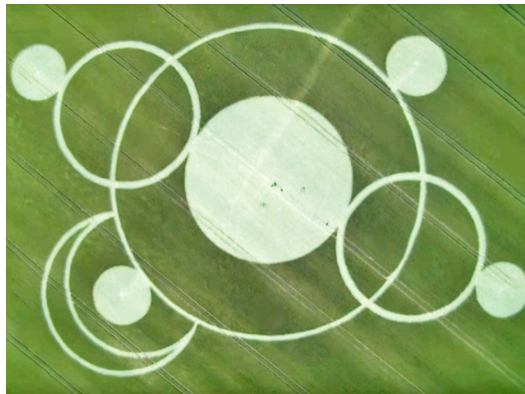
2010 crop circle (left) and model of boron (rt)

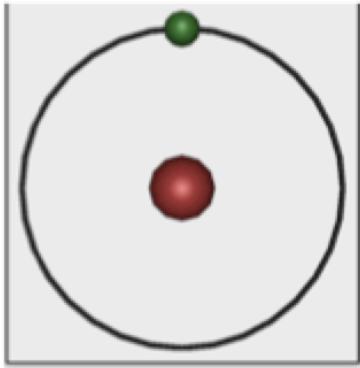
That was a very short insert in a book I wrote entitled *Messages from the Gods: a scientific exposition on the extraterrestrial origin of crop circles*.

At that time I asked “why” would an extraterrestrial intelligence alert us to boron? A number of gold nuggets appeared: While boron is rare and interesting; it is not formed here on Earth, but only by “cosmic ray spallation and supernovae.”³ But its most compelling aspect is in its relationship to nuclear fusion research. I interpreted the crop circle, therefore, as an “advisory” to study boron as it relates to nuclear fusion, and certainly, that has been born out of the scientific literature since 2010.

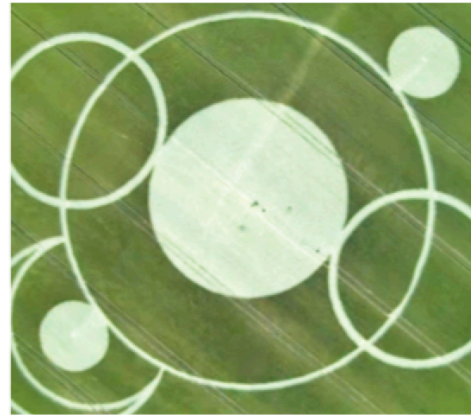
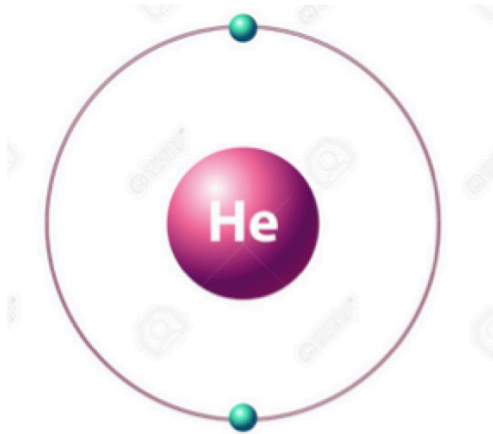
Before hazarding a guess about what this new August 2022 crop circle is saying—and if it is saying anything about boron—I want to draw your attention to another crop circle that appeared in 2017 to your right.

It rather quickly can be seen as a reference to both hydrogen and helium.





Model of hydrogen with one electron and crop circle detail (rt).



Model of helium with two electrons and crop circle rt.

The crop circle combines hydrogen with helium and one must ask, where do hydrogen and helium come into play but in research on nuclear fusion. How curious that only a few hundred miles south of this crop circle there is the ITER French nuclear fusion research facility.

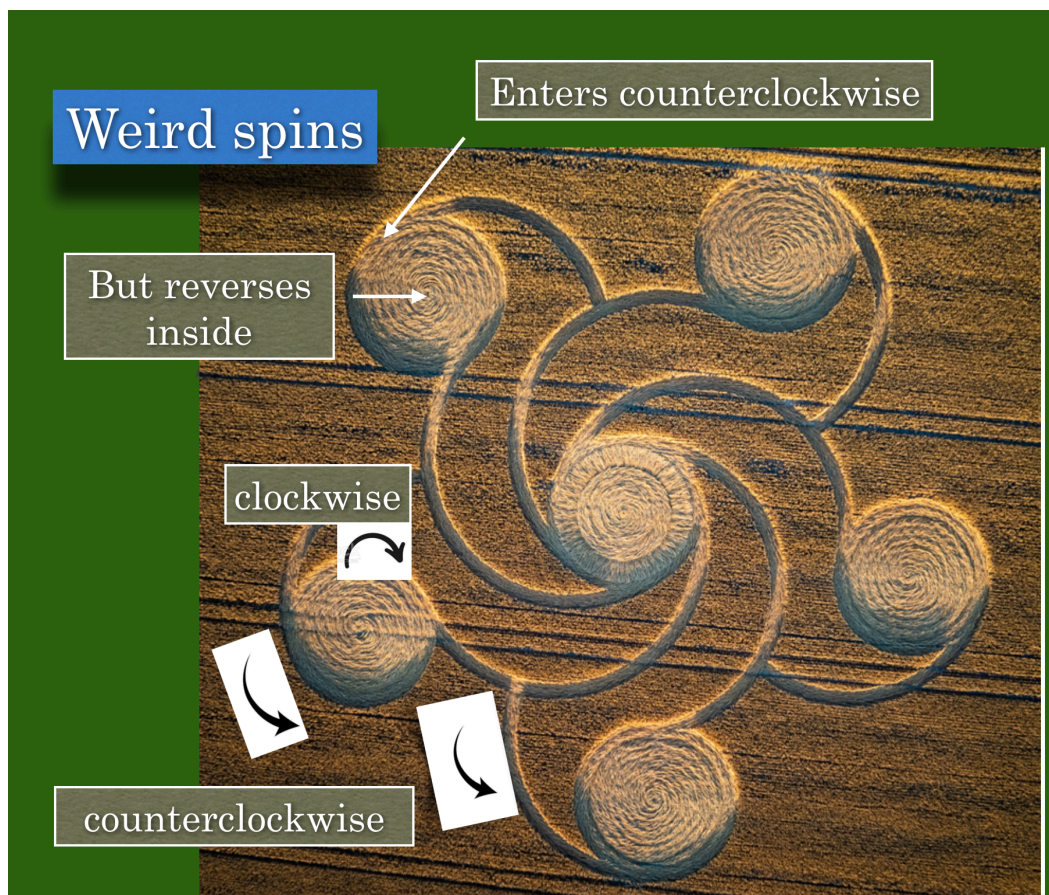
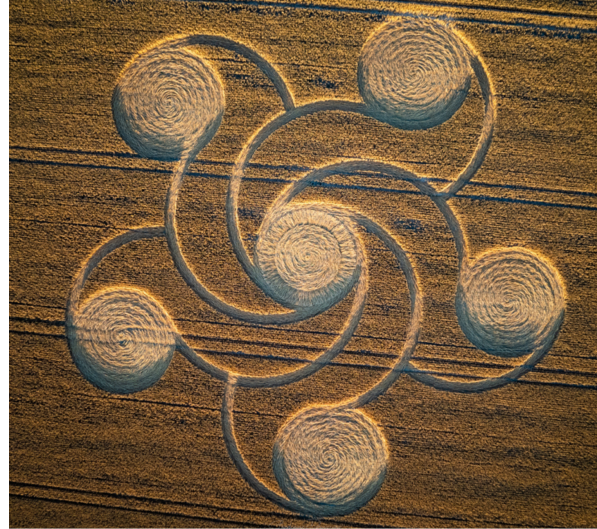
The interpretation given for that crop circle—again without going into depth on that scholarly narrative—was that this was a “recommendation” to pursue fusion research *differently* than the way it was being pursued at the ITER facility.

Back to the boron crop circle

With that short background, let us turn to this August, 2022 mystery. If this crop circle is depicting boron, it is certainly far more *detailed* than the crop circle of 2010 which just showed the nucleus and 5 electrons.

Here we have a nucleus surrounded by 5 electrons but they are moving in strange orbits, and they are also “spinning” in a funny ways.

Start at the top left of this picture. You can see the direction of travel as you enter the electron is counterclockwise, but somewhere in the middle, it changes direction and “leaves clockwise” only to enter the nucleus of the atom in counterclockwise direction.



That was simply an observation. Whatever it is, an electron, a planet, or the Age of Aquarius, it is doing something weird by reversing course inside the sphere, which we are calling an electron for the time being.

If you look at the Earth from above the North Pole it rotates counterclockwise, but if you look at it from below the South Pole it is rotating clockwise. Is this crop circle giving us some kind of three-dimensional view from two different perspectives at once? ⁴ Or are the electrons spinning one way then spinning another?

I have a Ph.D. in psychology, not physics, so my grasp of this subject matter is minimal at best. As such, I consulted 8 nuclear physicists before writing this interpretation. My email went something like this:

Dear Professor . . .

I know that boron is being studied for its potential in fusion research. And I know boron has 5 electrons. I'd like to ask if the "spin" of the electrons in boron research has received attention. Is it important? Is boron spin relevant to fusion research and, if so, how?

Finally, is it possible that the spin can be reversed as in clockwise and counterclockwise?

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Of the 8 nuclear physicists, I got a few substantive replies. One University of Michigan professor did confirm something important about electron spin:

"The spin of electrons on boron and other atoms has received attention. The electrons pack onto the atom in groups of two with opposing spin, and if you somehow flip the spin of one of them you will put the atom into a higher energy state."

From that, at least we know the electrons are spinning and flipping, and that seems to correspond to what we have discovered in this crop circle with its clockwise and counterclockwise twisting and turning.

Another physicist described the spin of electrons and their counter spins as “magnetic moments” and “spin-orbit coupling.”⁵ A magnetic moment is when an object orients itself to a magnetic field. In fusion research, there is a plethora of magnetism created, and it seems the spin of the boron electrons is influenced by these magnetic fields.⁶ He also described it as “spin-orbit coupling.” A spin-orbit interaction changes the electron’s energy levels as it interacts with a magnetic field and the nucleus.⁷

Again, quite over my head, but certainly related to the nuclear fusion research work being done with strong magnetic fields. So let us see what we can pick up from the literature on boron and fusion:

A review of the literature

In an article entitled “Hydrogen-boron fusion might be the answer to nuclear fusion dilemmas,” the author writes,

“A nuclear fusion reaction is the holy grail of limitless energy as produced by our own Sun. The only problem with such a reaction is that it is almost impossible to replicate. And even if we are able to produce the same reaction artificially, it is even more difficult to control. . .

Multibillion-dollar projects like Wendelstein 7-X stellarator to the HL-2m Tokamak project are trying to generate nuclear fusion energy by heating deuterium-tritium (two types of hydrogen) to insanely hot temperatures like 100 million degrees. . . However, it seems we are always a few years away from actually being able to generate energy from highly volatile reactions.

This is where HB11 steps in — a spin-off from the University of New South Wales (Australia). . . . It intends to create an unlimited source of clean, safe & reliable energy. . . . The novel approach . . . Also known as the Hydrogen-

boron 11 fusion, the technique involves employing naturally abundant hydrogen and boron B-11 coupled with special lasers to start the fusion reaction. The process does not require incredibly high temperatures as in the case of deuterium-tritium fusion reaction.

. . .Professor Hora (lasers & fusion energy expert) had been propagating this alternative method to achieve a fusion reaction for decades. However, the absence of advanced lasers at the time kept this as a theoretical concept. The situation changed dramatically after the invention of the “Chirped Pulse Amplification” (CPA) laser technology in 1985. ⁸

[I also contacted Professor Hora in preparation for this article.]

Another article also recommended a different approach to fusion by bringing boron front and center:

“Sixty years of worldwide research for the ignition of the heavy hydrogen isotopes deuterium (D) and tritium (T) have provided near breakthroughs for ignition. However, DT fusion produces radioactive waste.

. . . One clean fusion process – without neutron production – is the fusion of hydrogen (H) with the boron isotope ^{11}B (^{11}B). Boron 11 plays a vital role in creating the conditions necessary to release energy in fusion experiments.” ⁹

“Using just 3.4kg of boron, the fusion process with hydrogen, when commercialised, has the potential to meet the power needs of an individual for their entire lifetime. The boron reserves of the world’s largest producer, Eti Maden, estimated to be over 1 billion tonnes, could power the planet for about 3,000 years. . . Dr Daniele Margarone, . . . described the results as a “big step forward. . .” ¹⁰

This article appeared five months before the crop circle.

Another academic piece mentions just how new boron research is and how exciting it’s potential:

“A string of boron compounds in exotic bonding states have turned the element’s behaviour on its head. . . .

The renaissance in boron chemistry is all the more remarkable. . . . ‘Boron definitely has more surprises awaiting discovery.’¹¹

In “Nuclear Power’s ray of hope: hydrogen-boron fusion,” the author says that hydrogen-boron fusion could be a dream come true.

“Closer analysis revealed that the boron nucleus, having absorbed a proton, splits into three alpha particles, which fly off with enormous velocities. The total energy contained in their motion – their kinetic energy – turns out to be millions of times larger than the energy liberated per atom by any known chemical reaction. . . . A second big advantage is that the hydrogen-boron nuclear reaction produces essentially no radioactivity.”¹²

A final article suggests that boron is unusual and forms rather “unusual bonding behavior.”¹³

So where does that leave us?

That review alerts us to the fact that boron has potential, can be exciting, can be a different way to approach fusion—albeit more difficult and expensive—and that boron as an element with unusual properties.

But there is an added problem if are going to continue thinking this crop circle refers to boron and its potential in fusion research. I’m referring to the weird structure in the center of the crop circle that looks like a shell. If this crop circle is referring to boron, then it is depicting a *shell* around the nucleus of boron, which is otherwise made up of neutrons and protons.

If you look at the central circle, it seems to have a border around the swirling nucleus in the center (see the blue arrow). None of the other outer circles have this property, and it looks like a delicate “shell” surrounding the central rotating nucleus carved out in wheat.



So, if we assume this is still boron, then the question is “does boron have a shell around its nucleus?”

Actually, some diagrams of boron show a shell around the nucleus (right)

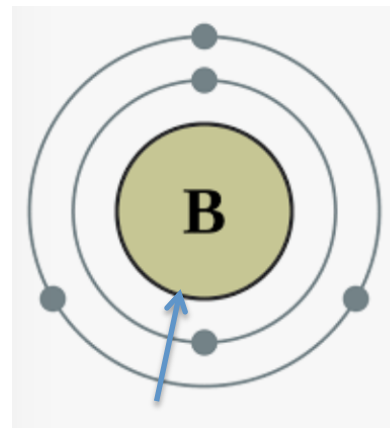
I wrote to one of the most active researchers on boron and nuclear fusion with that question, and I got an answer which unfortunately further confused me.

The question was, “Is there such a thing as a neutron shell with boron, and, if so, does it have any importance in fusion research. His reply:

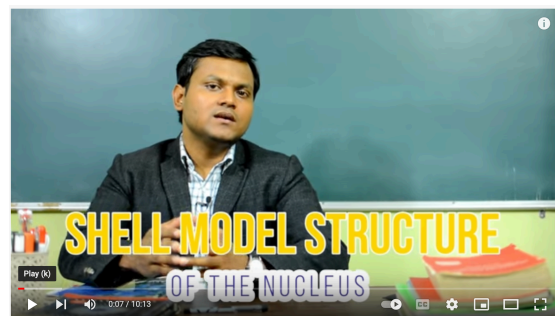
“You are touching a point of the state of the helium structure in the boron hydride about which a number of options must be considered. . . I should let you know in due course.”

I have no idea what that means, but I gather the question of a neutron shell is indeed relevant, or rather it is not irrelevant.

Now in the crop circle nucleus you can see a swirling motion, and the physicist in this adjacent video called “the shell model structure



Diagrams of Boron also show a “shell” around the nucleus.



Physicist describes electron spin, counter spin, and the shell which surrounds the nucleus of an atom.
<https://www.youtube.com/watch?v=Rd0CJje59bE>

argues that the nucleus of the atom indeed is a shell, and that it also spins—what he calls “nuclear spin.”

This spin is different from the spin of the electrons rotating around the nucleus, and involves some kind of splitting. This “splitting of energy levels *completely changes the structure of the nuclear energy diagram.*” He speaks of a factor of twenty times, and it is at this time that I said to myself, ‘you need to stop here, you don’t have the education to proceed further.’

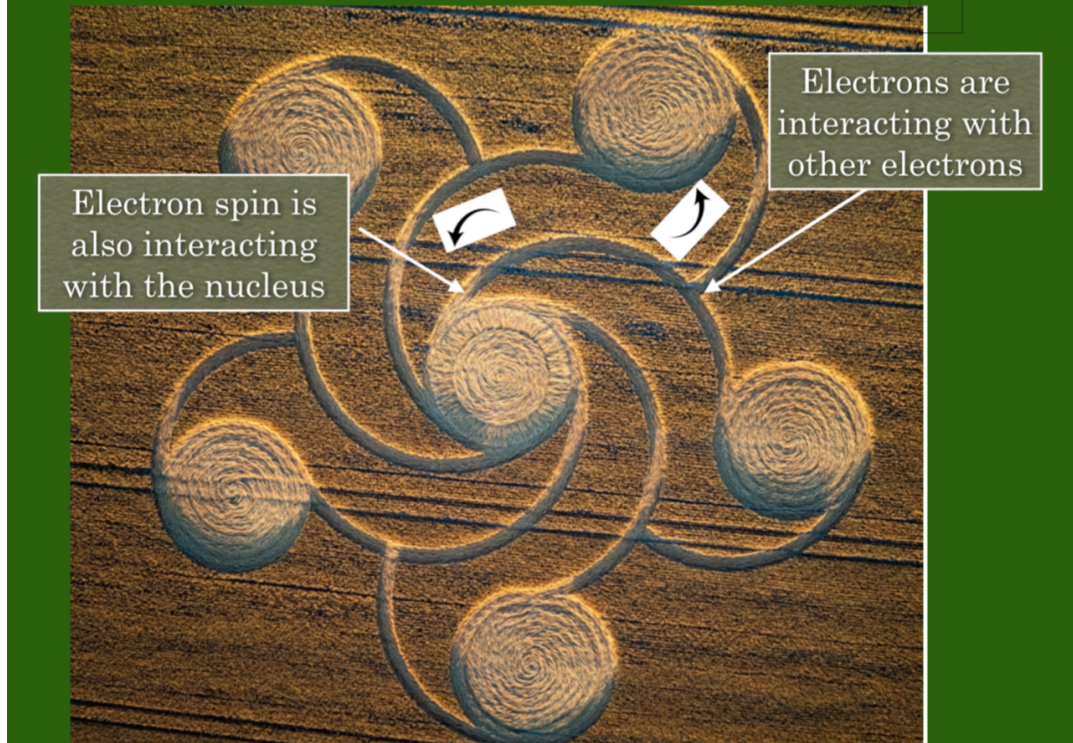
Electron-electron interaction

But one element I did seem to somewhat understand is that in the video above, the lecturer says that the electrons may interact with each other, and, if I am understanding him correctly, he is referring to “spin-orbit interaction,” where one electron interacts either with itself or with an adjacent electron.

Elsewhere in quantum mechanics, there is a discussion of how electrons interact with each other. ¹⁴ In the diagram which follows you can see that these outer electrons interact not only with the nucleus but with adjacent electrons.

In the crop circle, you can see that an electron (circle) has a line that goes toward the nucleus, but that line also diverges and connects to the adjacent electron. Does that not indicate the electrons are interacting with each other *as well as interacting with the nucleus?*

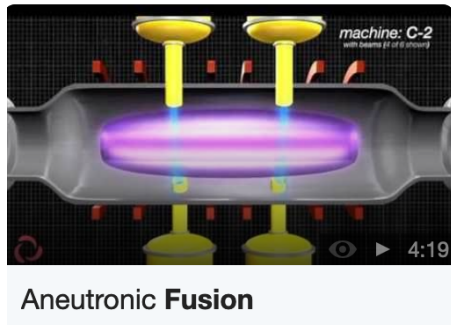
Electron spin with other electrons and the nucleus



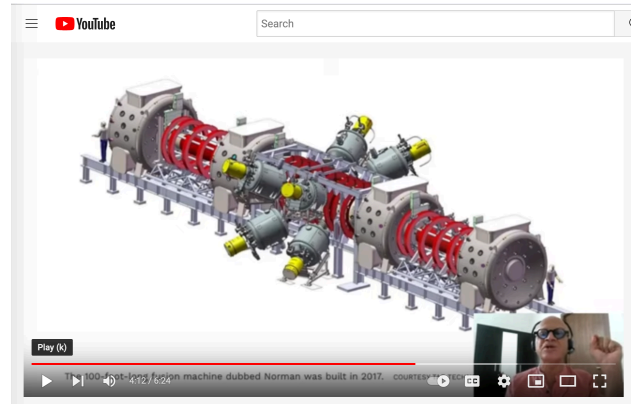
Hydrogen-Boron fusion

A final element to address is that boron is used in fusion research, but more specifically in hydrogen-boron fusion. Let us look more directly at hydrogen-boron fusion then which is considered a cleaner alternative to fusion. Apparently, the spin and the plasma are critical ingredients in this soup.

A company named Tri-alpha energies successfully held a boron-hydrogen mix in place for a few milliseconds and this was considered a major breakthrough in hydrogen-boron fusion. The two videos below explain these contemporary developments further:



See “Aneutronic fusion” on Youtube



https://www.youtube.com/watch?v=9a9_qkNlnJI

What it all means?

We seem to have connected quite a number of dots between boron and this crop circle:

- The crop circle looks like it is describing boron.
- It shows boron’s 5 electrons.
- It depicts the *spin* of the electrons, and the ability of the electrons to spin in two different directions.
- The counterclockwise and clockwise spin may be describing or referencing “magnetic moments” and “spin-orbit coupling.”
- The crop circle depicts a “shell around the nucleus, and there appears to be a shell around the nucleus of boron which has importance in ‘splitting of energy levels.’
- The shell nucleus may also have something to do with boron hydride and/or helium—and thus fusion research.
- Additionally, this crop circle may be making a statement about cutting-edge research now going on about the hydrogen-boron fusion reaction.

Translating the message

In my book, *Messages from the Gods*,¹⁵ I attempted to translate the meaning of crop circles into English—as if we received a message from an alien intelligence. So in an attempt to summarize this crop circle interpretation and to translate it into English, here is what it may be saying:

“Pay closer attention to boron. Study its spin-orbit coupling, magnetic moment, and electron interactions with the nucleus. This will aid your species in its search for nuclear fusion and sustainable energy for your planet.”

Unfortunately, that is where my intelligence and probably yours leave off. Perhaps if we had 20 unbiased nuclear physicists sitting around a table and musing about what kind of “advisory” was contained in this crop circle, we might come up with something far more specific. But for this lowly psychologist, I surrender with the lament that it is probably saying something very important about nuclear fusion, about humanity’s energy future, about boron, and about how to get there, but greater minds than mine need to step up to the plate.

Unfortunately, there is so much bias about crop circles, we cannot convene any such consortium of nuclear scientists who might come to a consensus and render a more expert opinion.

When I wrote to these eight nuclear physicists I never mentioned crop circles at all but confined all my questions to boron. Had I, I’m sure none would have written back at all.

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- ¹ Crop circle photos by Lucy Pringle
 - ² <http://cropcircleconnector.com/2022/Etchilhampton/comments.html>
 - ³ <https://en.wikipedia.org/wiki/Boron>
 - ⁴ <http://curious.astro.cornell.edu/about-us/126-observational-astronomy/timekeeping/clocks/768-why-do-clocks-turn-in-the-opposite-direction-from-the-earth-and-moon-intermediate#:~:text=First%20of%20all%2C%20the%20Earth%20and%20Moon%20only,do%20with%20sundials%2C%20which%20were%20the%20first%20clocks.>
 - ⁵ <https://www.youtube.com/watch?v=Rd0CJje59bE>
 - ⁶ https://en.wikipedia.org/wiki/Magnetic_moment
 - ⁷ https://en.wikipedia.org/wiki/Spin%E2%80%93orbit_interaction
 - ⁸ <https://medium.com/technicity/hydrogen-boron-fusion-might-be-the-answer-to-nuclear-fusion-dilemmas-fb134195ed99>
 - ⁹ <https://borates.today/boron-and-nuclear-fusion/#>
 - ¹⁰ Ibid.
 - ¹¹ <https://www.chemistryworld.com/features/theres-something-about-boron/3010313.article>
 - ¹² <https://asiatimes.com/2020/04/nuclear-powers-ray-of-hope-hydrogen-boron-fusion/>
 - ¹³ <https://phys.org/news/2011-10-unprecedented-formation-boron-boron-covalent-bond.html>
 - ¹⁴ <https://plus.maths.org/content/quantum-physics-strange>
 - ¹⁵ <https://www.amazon.com/Messages-gods-scientific-exposition-extraterrestrial-ebook/dp/B07RF9TQLL>