

Fusion; God's Choice for Energy

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Gerald Schroeder, Ph.D., MIT in nuclear physics and earth science writes: "The Jerusalem Translation of the opening line in Bereshit Genesis, ca 100 CE is "With wisdom God created the heavens and the earth." NOT In the beginning God created ... Nahmanides quotes this and calls it a great and deep secret."

The ancient biblical commentator Rabbi Moses ben Nahman Girondi Girondi ca Porta, or Nahmanides, accounted for the creation of the universe as follows: "At the briefest instant following creation all the matter of the universe was concentrated in a very small place, no larger than a grain of mustard. The matter at this time was so thin, so intangible, that it did not have real substance. It did have, however, a potential to gain substance and form and to become tangible matter. From the initial concentration of this intangible substance in its minute location, the substance expanded, expanding the universe as it did so. As the expansion progressed, a change in the substance occurred. This initially thin noncorporeal substance took on the tangible aspects of matter as we know it. From this initial act of creation, from this ethereally thin pseudosubstance, everything that has existed, or will ever exist, was, is, and will be formed."

Dr. Schroeder notes, "Nahmanides's reference to a grain of mustard is the traditional way of saying, "In the language of man," the tiniest imaginable speck of space. Nahmanides taught that at the beginning, all that is on and within the Earth and all the heavens, in fact the entire universe, was somehow packed, compressed, squeezed into this speck of space, the size of a mustard grain."... Nearly 800 years later modern scientists take credit for proposing what Nahmanides clearly articulated... "The Big Bang Theory."

Another ancient Jewish commentator, Rabbi Shlomo Yitzchaki known today as Rashi, ca 1090, tells us that to understand Genesis 1:1 we need to go to Proverbs 8. There vs 12 states "I am wisdom." The Proverb is written in first person. Wisdom is speaking here. Then vs 23 and after "God made me [wisdom] as the first of His works etc., etc. Wisdom is the substance of the entire creation of the universe.

Fast forward to our need to solve energy. The Earth is part of a finely tuned universe and is a uniquely fine-tuned planet. This "fine tuning" has created conditions for the formation and development of life on Earth evolving over billions of years. Mankind, through the attribute of intelligence and his ability to reason, is set apart from all other forms of life. Man controls his life apart from his surroundings whereas all other forms of life adapt to their surroundings and are controlled by them. Fundamental to man's ability to control his life is access to energy.

The ancient commentator Rashi noted that God gave man dominion over the earth but in order for man to responsibly exercise his dominion he must understand how things work. We do that by understanding science and its universal language, mathematics.

As the worldwide human population is increased so is the fundamental demand for energy. Energy is required in agriculture. Energy is required to produce and transport potable water. Energy is required to transport humans and for the production of virtually all goods produced by humans. And energy is required to provide for man's comfort given the variations in the Earth's temperature and weather conditions daily, and seasonally.

Through the act of creation during the "big bang" the Earth now has three sources of energy resulting from two fundamental scientific processes. These processes are atomic in nature.

Firstly, the Earth is unique in having life as we know it powered through photosynthesis from energy produced by the Sun. This energy within the Sun is provided by the fusion of hydrogen into helium and the associated release of energy. The Earth is like an organic battery having been charged by the Sun for over 500 million years and converted to fossil fuels like petroleum, natural, gas and coal.

Secondly, the Earth is unique given the large amounts of fissionable heavy elements occurring in nature such as Uranium and Thorium. These heavy elements are very rare in our universe which consists of 99% hydrogen and helium.

Thirdly, the Earth is unique given the large amount of deuterons on the Earth in the form of heavy hydrogen. Whereas in the universe, approximately 2 in one hundred thousand hydrogen atoms are deuterons; the ratio on the Earth is one hydrogen atom in 5,500. The Pacific Ocean alone contains over 10^{46} power hydrogen atoms. Over 10^{42} power are deuterons.

I. Third Source and 3rd Choice

Energy produced by chemical reactions which generate heat by "burning" hydrocarbon fossil fuels. Fossil fuels were created through photosynthesis in combination with the processes of plant and animal life from the energy provided by the Sun over the last 300 million years of the Earth's existence. Over a 300 year period, man will have depleted usable fossil fuel reserves. During this time, man must use his intelligence and reasoning abilities to master the second and first choice of energies as these fossil fuels are finite and cannot be replaced or reproduced.

II. Second Source and 2nd Choice.

Energy produced by the atomic reaction of splitting heavy elements such as uranium, element 92, isotope 235, or thorium element number 90, isotope 232. Thorium 232 is relatively abundant on Earth. Uranium 235 is far less abundant. It is estimated that there is enough useable thorium 232 on the Earth to provide the energy consumed by the United States for the next 1,000 years based on current energy use.

However, the splitting apart of elements in a man induced atomic reaction through the assembly of a critical mass of heavy fissionable atoms is contrary to nature, and the formation of the universe and all matter in it, from the Creation or big bang event.

The splitting of atoms results in many problems such as nuclear radiation, long term dangerous radioactive waste, possible explosive chain reactions, melt downs of fuel cores, and basic fissile fuel sources having military uses in weapons and the related threats.

III. First Source and G-d's Choice.

Energy produced by the process of nuclear fusion wherein two light element atoms are fused into a slightly heavier atom along with a corresponding large release of energy. An example is the well-known and well understood fusion reaction of D (Hydrogen 2) + T (Hydrogen 3) > He (Helium) + 17.6 mev (energy units) + n (neutron.) This is the fundamental process resulting from the big bang or creation event. This is also the fundamental process of the Sun. The Earth has enough heavy Hydrogen or deuterium to power the entire world's energy needs literally for eternity. Controlled nuclear fusion is God's first choice for energy because:

- It is the epitome of God's wisdom as he created the Creation.
- It follows the laws of the creation of the universe.
- It has none of the negative aspects associated with fission or the splitting of atoms.
- It is virtually an unlimited source of inexpensive power capable of supplying 100% of the Earth's annual energy requirements.

Fusion is more difficult to accomplish than fission. Fusion is a creation process whereas fission is a destruction process. In fission once a critical mass of heavy element fissionable material is assembled, it destroys itself and decays into highly radioactive elements of lower atomic mass. Fusion, on the other hand requires energy to be pumped into the system to a point where the net energy gain resulting from the bringing together of light atoms is considerably greater than the energy pumped in.

And so it is with human relationships and the relationships of countries. It is much more difficult to build than to destroy. It is noteworthy that fission and fusion are both atomic process but polar opposites in how they work and what they produce. Fission was developed in a time of war as a necessary means to end a war responsible for the deaths of close to 40 million people worldwide.

Fusion will be developed when people and countries come together to cooperate and build. Reverting back to God given wisdom and Dr. Schroeder, I note his article on the Nefesh and Neshamah. Animals and humans were given different natures; in Hebrew "Nefesh" and "Neshamah." Nefesh is the animal instinct toward survival, comfort and reproduction. Neshamah is the higher nature, a reflection of God Himself that sees the bigger picture and realizes how interconnected – and interdependent – we all are. Actually, we humans have both natures, often in conflict with each other. The article is posted at: <http://fusion4freedom.us/the-deeper-problem/>

The current conflict in Israel is a prime example. Prime Minister Binyamin Netanyahu noted many times the difference between the Israelis and those trying to destroy them. Israel protects its citizens with patriot missiles while those in Gaza protect their rockets using their citizens as shields.

I have proposed to Prime Minister Netanyahu in a letter dated July 13, 2014 that a project be initiated in Israel, funded by the private sector, and participated in by Israelis and Americans to quickly develop fusion power as Israel's gift to the world. This needs to be 100% open and public. The entire world must know. My letter to the Prime Minister is posted on our web site for public view in English and Hebrew; click here and scroll down to "Correspondence with World Leaders:" <http://fusion4freedom.us/tom-tamarkin-series/>

As explained in the recent Inquisitr Q&A interview this is a lengthy process because much experimental science needs to be conducted followed by application and materials engineering leading to commercialization. Clearly we can demonstrate a positive net energy gain within a decade. It may take another decade to build a commercial fusion power plant. A further decade will be required to deploy and replace aged infrastructure around the world. <http://www.inquisitr.com/1243235/2060-and-lights-out-how-will-america-survive-without-oil-inquisitr-special-report/#5pPZ0zSCVxdmXT4R.99>

While this is being done, large populations of neshamah deficient human beings can be educated through this project. Wisdom will be acquired and a new culture will result.

I have laid this out in a web site dedicated to this goal. It starts with a "Proclamation to the World by the American and Israeli People." That proclamation is posted in English, Hebrew, Arabic, Russian, and Spanish at: <http://fusion4freedom.us/a-proclamation-to-the-world/>

Time is of the essence. If we do not pull together and do this now, billions of lives will be lost over the next hundred years because we simply do not have sufficient reserves of energy to support a worldwide population of close to 9 billion people much beyond the middle of this century. This is where the emphasis needs to be placed. The issue of anthropogenic global warming may be a trick God is playing on man's mind. Israel can stand strong and allow the emphasis to be placed on the real issue. We have posted an article titled "The Battle of the Century" describing who this trick or joke is played on at: <http://fusion4freedom.us/789/>