Report September 1, 2023

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- **Cracks Appear in Big Bang Support**
- **Saybrook Fusion Has No Connection to LPPFusion**
- **LPPFusion Lab Radiation at Less Than Background**

Cracks Appear in Big Bang's Support

Would you believe the universe started 13.8 billion years ago? No? Well, would you believe 26.7 billion? 39.7 billion?...

Headline (July 14) in the mass-circulation newspaper *USA Today*: "**How old is our universe? New study says Big Bang might have happened 27 billion years ago**".

As followers of these updates know, LPPFusion's understanding of our dense plasma focus fusion device rests on knowledge gained by studying plasma in nature, especially in space on all scales. This knowledge makes sense only in the context of an evolving universe without a Big Bang, without an origin in time. LPPFusion's Chief Scientist Eric Lerner has been prominent in research that shows that the Big Bang never happened, research greatly strengthened by recent observations by the James Webb Space Telescope(JWST).

This *USA Today* article, one of dozens of high-profile articles such as in MSN and the *Daily Mail*, refers to an important new paper in the prominent journal *Monthly Notices of the Royal Astronomical Society (MNRAS)*. The author, Dr. Rajendra Gupta of the University of Ottawa, **admits that JWST observations show that galaxies at high redshift are seemingly older than the Big Bang and are far smaller in radius than predicted by the Big Bang hypothesis**. This contradicts the current version of the Big Bang, called "LCDM", the inflation/dark energy/dark matter version that people have heard about in the media. Dr. Gupta also stated that the predictions of a non-expanding universe hypothesis, with the redshift due to some process that affects light over long distances ("tired light hypothesis") does fit the new data.

But instead of abandoning the Big Bang/expanding universe hypothesis for the non-expanding hypothesis, Dr. Gupta attempts in this paper to merge the two theories, hypothesizing a universe that expands, but also has a redshift due to a tired-light process. By adding in the tired light redshift, the redshift due to expansion can be theoretically reduced, and thus the expansion can be (hypothetically) slowed. This means Dr. Gupta can push back the age of the Big Bang to fit the new data. In a flash, the universe becomes twice as old: 26.7 billion years instead of 13.7 billion years old. Thus the "impossibly old" JWST galaxies are now not too old for the suddenly much older Big Bang.

It's great that Dr. Gupta can change the age of the entire universe by just writing a few equations. If he could change individual humans' ages in the opposite direction in the same way, he would certainly have quite a discovery!

Seriously, Dr. Gupta is to be congratulated for recognizing, as several other researchers have, that the expansion predictions are severely contradicted by the JWST data. The widespread publicity for this paper introduced a broader public to the idea that there is a different explanation than expansion for the redshift phenomena. This media notice also shows that the "consensus" cosmology is starting to crack apart. The possibility that the age of the universe, claimed to be "precisely 13.81 billion years old" could be uncertain by a factor of two contributes to discrediting the theoretical claims of the Big Bang cosmologists, which are contradicted by observation, the key test in science.

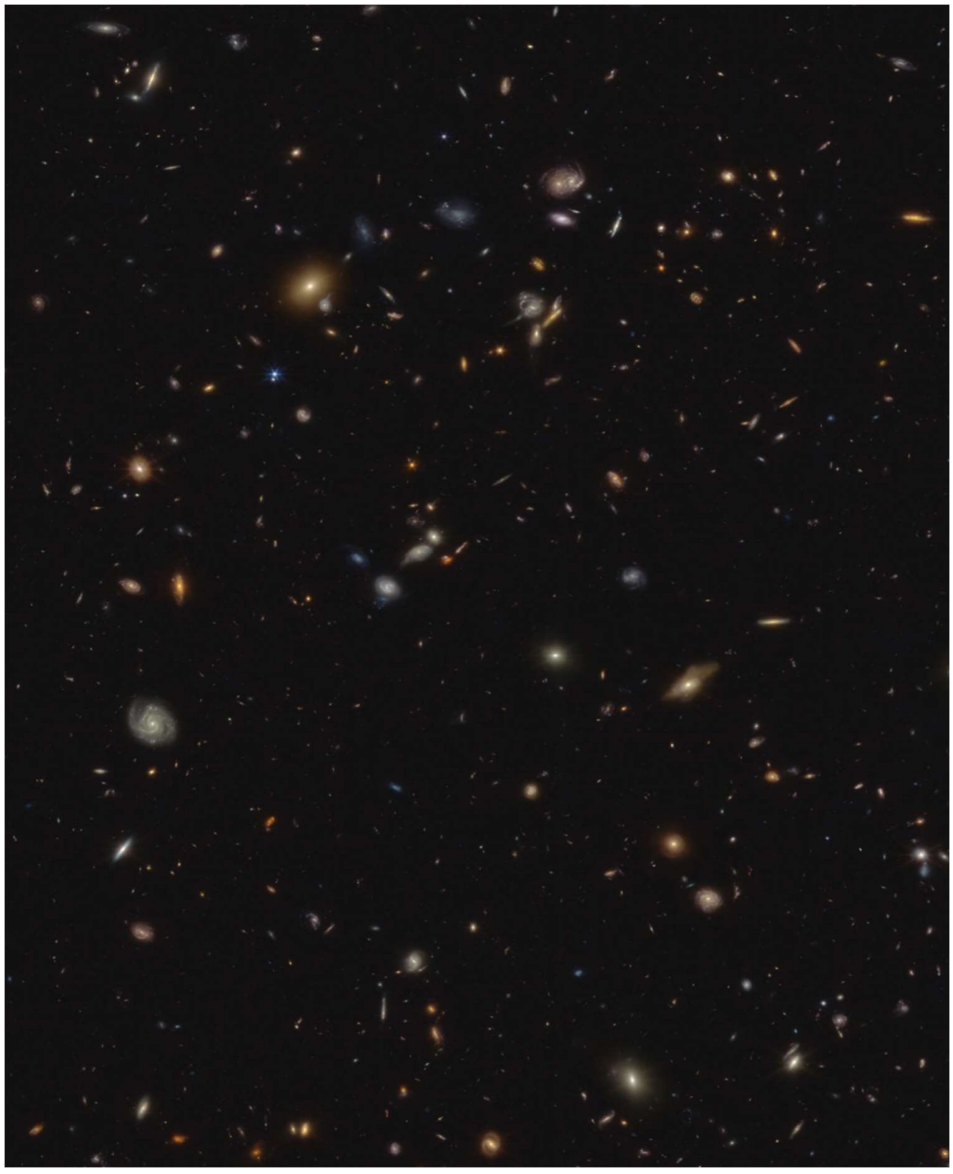

Fig. 1 Ever further, every smaller. This small section of the JWST's Advanced Deep Extragalactic Survey image shows galaxy images that are smaller and smaller as they are more distant, in contradiction with the predictions of the expanding universe hypothesis.

However, this paper errs in trying to compromise between an expanding universe and a non-expanding one. It's either one or the other. Historically, scientists sometimes try to "sit on two chairs" to avoid abandoning popular misconceptions. Back in the 1570's famed astronomer Tycho Brahe tried to bridge the gap between the Ptolemaic earth-centered cosmos and the Copernican sun-center one by hypothesizing a compromise in which all the planets except the earth revolved around the sun, which in turn revolved around the earth. Such compromises are almost without exception only brief transitions to the new paradigms.

In this case, to there is no reason to compromise and a compromise won't work. Dr Gupta writes that a non-expanding universe can't account for the very smooth cosmic microwave background (CMB). However, as Lerner has published in leading journals, including the *Astrophysical Journal*, plasma processes in the existing universe can scatter radiation produced by stars into the smooth "radio fog" that we see today. No Big Bang is needed.

A compromise won't work because much observational data is incompatible with the predictions of *any* expanding hypothesis or any hypothetical hot, dense Big Bang epoch. Papers published by Lerner and colleagues Renato Falomo and Riccardo Scarpa have shown that the surface brightness of galaxies do not change with redshift, a clear test that only predictions based on a non-expanding universe have passed. In addition, the Big Bang hypothesis gets totally wrong the abundance of lithium and helium, and these wrong predictions won't be changed by any tweaks to the Big Bang/expansion hypothesis.

With a flood of results still coming from JWST and other telescopes like the ground-based ALMA radio telescope, this and other such compromises will likely be swept away in the coming months. But Gupta's paper and others that we expect in the near future are helping to break apart the frozen consensus behind the Big Bang, paving the way for a shift to a scientifically sounder view of the universe: evolving, but not expanding, and consisting mostly of plasma, not dark energy and dark matter.

“Saybrook Fusion” Has No Connection To LPPFusion

We’ve been contacted by colleagues who have received information from a company calling itself “Saybrook Fusion”. Our colleagues were confused by the presentations from this company because “Saybrook Fusion” described themselves as developing the exact same fusion generators as those that we are developing. Saybrook’s presentation used an image that was easily identifiable as our electrodes (Fig. 2), with their name superimposed on it, and they asserted they were using “proprietary designs”, which seemed to imply they had acquired our patents.

We want to make clear that in reality “Saybrook Fusion” has NO connection to LPPFusion and has no license to use any of our proprietary designs or patents. These images have been altered from any that we have publicly released but are clearly based on either them or other versions that have been obtained illicitly. Some of our images were published under a Creative Commons license. But that license prohibits modifying the images, or publishing them without credit to the originators and Saybrook Fusion violated these terms.

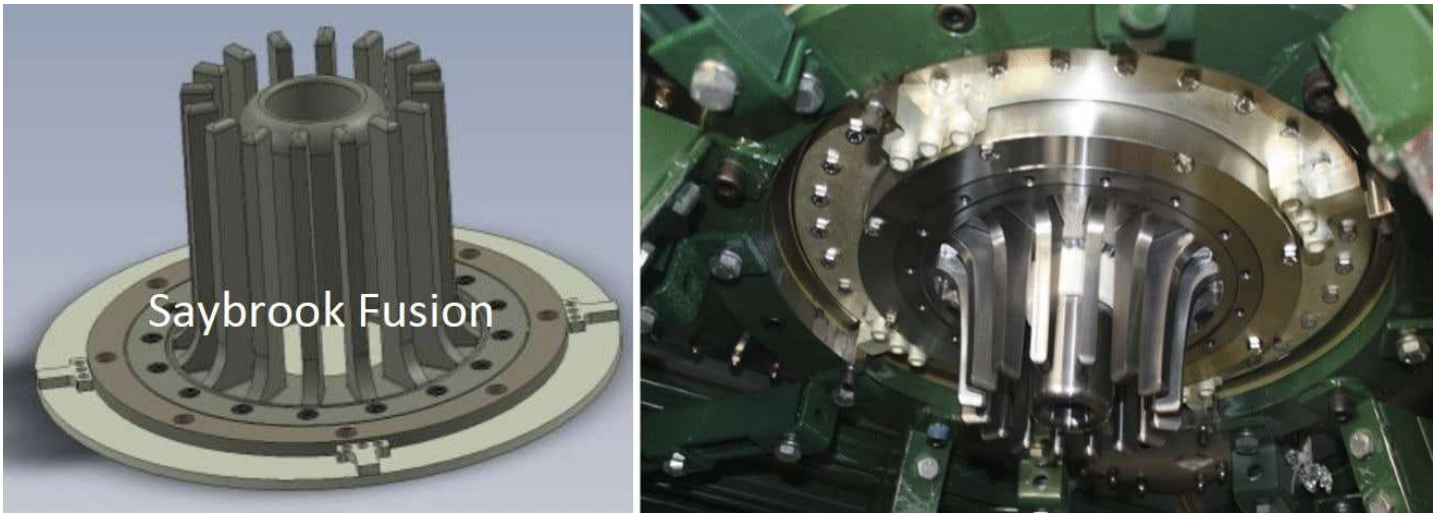

Figure 2. Image from Saybrook Fusion literature (left), closely resembling LPPFusion’s distinctive electrodes (right, in copyrighted photo) falsely implies that Saybrook now has LPPFusion’s intellectual property. It does not.

Our IP law firm, Chalker-Flores, has sent Saybrook Fusion Principal, Joshua Brimdyr, a cease and desist letter, instructing him to delete all our proprietary and copyrighted files and to stop using them in Saybrook literature or implying in any way that Saybrook is using our proprietary designs or patents.

The Saybrook literature lists Timothy Klein as CTO, but when asked, Mr. Klein said he had never seen or approved the literature that used his name.

Mr. Brimdyr, who made small investments in LPPFusion some years ago, for two years attempted to get us to sign an agreement to give him a free option on a license to our technology. With the unanimous advice of our Board of Advisors, we refused to sign such an agreement, insisting that any licensing agreement, or option to purchase a license in the future, must involve a substantial up-front payment to or investment in LPPFusion. Mr. Brimdyr was informed of this final rejection of his proposal and the close of any discussion of it at the end of January of this year.

The implication in Saybrook Fusion’s literature that they have instead successfully gained a license to use our technology is thus unequivocally false and we are insisting they make the lack of connection to LPPFusion clear in all their presentations.

LPPFusion Lab Radiation at Less Than Background

In August, LPPFusion was contacted by the Middlesex County Hazardous Materials Unit. An anonymous complaint had asserted that we were not making adequate safety precautions for our upcoming tests with pB11 fuel and in particular would be releasing dangerous amounts of radioactive materials to the environment. We don't know for certain who made this anonymous complaint, but the (false) assertions were also made by Josh Brimdyr of Saybrook Fusion in emails to LPPFusion investors. So maybe we can guess who the anonymous complainant might be.

Mr. Carlos Morales of the Haz Mat unit immediately checked with colleagues and learned that municipal and county safety authorities have known of LPPFusion's work since we set up our lab in Middlesex back in 2009 and were fine with our safety procedures. He also contacted us. To prepare for our work with pB11, which will produce a very short-lived radioactive isotope, carbon-11, Mr. Morales took several background radiation readings around the outside of our laboratory.

Oddly enough, he found radiation levels from 4 to 7 microrems per hour, which is **three to five times less than the average background** of 20 microrems per hour in Middlesex Borough. When he later took readings inside our experimental room, the value was even lower, 3 microrems per hour. So it seems that in the 14 years our lab has been operating, it has contributed *negative* radioactivity to the environment!

Since negative radioactivity does not actually exist (kind of like dark energy), we assume the low levels of background are just due to natural variations in the soil beneath the lab. Most background radiation at sea level comes from radon gas released by the decay of small amounts of uranium scattered in the soil.

Mr. Morales explained to the LPPFusion team that strong variations in the background readings in Middlesex Borough are connected to radioactive waste still remaining from the Manhattan Project during WWII. As we learned when we first set up the lab, Middlesex was the site of a uranium refinery during the war years and was heavily contaminated. An unsuccessful effort by the Federal government to clean up the waste in the 1960's was followed by a more successful one in the 1990's. However, Mr. Morales told us during his inspection that even that later clean up left radioactive waste at levels deeper than about six feet, some of it within a few hundred yards of our lab. But, fortunately, our location was not one of those initially contaminated.

In any case the LPPFusion research team will be working closely with Mr. Morales and other state and local safety authorities to ensure that our operations with pB11 are totally safe. This should be easy to do, as the main reaction produces no radioactive material at all, and the side reaction that produces carbon -11 occur at about 1/500th the rate of the main reaction. Since carbon -11 has a half-life of only 20 minutes, we have prepared careful procedures to keep the material isolated until it decays to background overnight.