

A Matter of Acoustics: The Genesis of the Big Bang

Samuel J. Hunt

Western Kentucky University, GRH 3007, Bowling Green, KY 42101

e-mail: samuel.hunt1@topper.wku.edu

Since Darwin and Einstein challenged the Judeo-Christian belief of origins beginning in 1850 through 1950, there has been a lasting debate and continual inquiry into the process underlying the origin of the Universe and the species. The purpose of this paper is to look objectively at three observable facts; that everything science has scrutinized is composed of three articles: 1) acoustics, 2) light (energy), and 3) matter. Science for 150 years has studied the transduction of light to matter and vice-versa. However, less time has been spent on the transduction of acoustics into light (i.e. Sonoluminescence). The central tenet of the Theory of Acoustic Genesis is that sound begets light and light begets matter, and that this is the core framework of all processes underlying any serious inquiry into the origins of the Universe. This paper will describe the evidence that exists as artifacts left over from this process, namely: 1) that all matter emits an acoustic signature, 2) that all matter can be manipulated by sound, & 3) that the structure of all matter can be reduced to simple vibration (harmony).

1. Introduction

In the beginning, an acoustic wave gave power to produce light and from light, in the form of particles, all matter was created. As each new epoch actualized it was initiated by a new perturbation that transduced potential energy packets from out of the vacuum into usable kinetic energy lumps that eventually gave rise to combinations of matter we now know as chemical elements in various states of existence, combination, and magnitude [1]. The initial state of all matter was the hot, liquid, high-energy plasma. The super-luminal primordial acoustic wave [2] caused piston-like pinching and dilating of this plasma state of matter. Due to the compression-rarefaction cycles of the acoustic wave came all elements [3, 4], a universe of structures was born, and an intense cooling effect occurred creating a bubble of thermal energy [5]: the cosmic microwave background radiation (CMBR), i.e. a background sea of light [6]. Inside this bubble the temperature dropped dramatically trapping light and ‘freezing’ it at an average temperature of 2.7 K¹.

This description of origins is a summary of the combined texts of Genesis and Big Bang cosmology. There are a few key elements of this description that will be described in this paper. Essentially, the key process for all cosmological inquiry is this: Sound → Light → Matter → Sound. That is the circle of all inquiry into life: that all matter came from particles of light, and that all light is the resultant of an initial acoustic wave pulling particles from out of the void.

2. The Acoustics of the Vacuum

At first thought this seems counterintuitive since we all have been taught that sound cannot travel in a vacuum. However, this is simply untrue. First, we know that there is no such thing as an empty vacuum at any level due to the Casimir effect. Demonstrated in a recent experiment, scientists were actually able to

pull pairs of electrons out of the vacuum using a superconducting quantum interference device (SQUID) and measured them as microwave background radiation [8]. In addition Sen and Mohar (2009), describe that the bonds between chained particles can be quasi-statically stretched giving rise to stretch-pinch oscillations. These oscillations effectively give rise to longitudinal waves, i.e. acoustic perturbations that could be measurable. The reason sound is not heard across a vacuum is not because it cannot travel, but because the particles are easily scattered and diffused in and out of the vacuum [9]. However, this has been solved experimentally by Wilson (2011) as they were able to trap the particles and ‘hold them’ in reality from out of the void. Therefore, under the correct and now reproducible conditions, sound can travel through a vacuum and a vacuum itself should have its own acoustic signature if the particles become real particles. This condition has also been observed as the CMB itself emits a distinct tone [10]; which, in essence, tells us that particles appeared out of the void, became real particles, and carried an acoustic wave that left its signature in the CMB. Lastly, as artifacts of the primordial process of acoustics, all observable matter and phenomena emit a characteristic acoustic tone; including everything from black holes [11], molecules [12], stars [13], the CMB [14, 15], genes [16], biological cells and substrates [17, 18], and even the overall taxonomy of all species shows an acoustic artifact potentially left over from creation [19]. Incredibly, all of these move in harmony to the tone emitted by the Sun [20]. Since the CMB is described as the “leftovers” and a “picture” of what took place at the moment of creation, then the undulations caused by acoustic waves is observational evidence of their necessity in the formation and continuing implementation and structure of all phenomena in the universe.

3. Sonoluminescence, the Waters, and the Early Universe

Sonoluminescence (SL) literally means light from sound. There are three elements for an experiment replicating SL to work: a fluid medium, a bubble, and an external sonic influence that drives the compression wave. What is the result from the interaction of these three elements? Light is produced (Fig. 1).

¹ Ginsberg, Garner, & Hau (2007) have demonstrated that light can be stopped in sodium atoms cooled to approximately 2.7 K (-455° F). Since this is true, then any attempt to date the universe or measure its expanse using a constant speed of light at any other temperature is ludicrous [7].

Not only this, but the experiment is capable of producing temperatures as hot as the sun [21], a plasma state inside the bubble [22, 23, 24], and even fusion [25, 26]. Interestingly, the final collapse of the bubble which emits light also emits sound; exactly what is needed by cosmologists to describe the variance of the CMB. This has led some physicists to describe SL experiments as "A Star in a Jar" [27]. Interestingly, in the first three verses of Genesis the same three elements are described as existing prior to the creation of Light. This event could be equated to the instance of the big bang as the exact same elements were present in all epochs prior to when the universe became transparent. The previous four epochs held all the primordial particles (the "waters") which were popping into existence from the vacuum (the "void") [28]. To bolster this claim, the RHIC scientists at Brookhaven claim to have created the perfect primordial fluid: a quark-gluon plasma equivalent to the plasma thought to exist only seconds after the big bang was initiated (Figs. 2 & 3). Since the universe is primarily made up of hydrogen and helium gases the SL-style expansion-contraction cavitations of the early big bang, could lead to a Linde's process² effect of these primordial gases created from the quark-gluon plasma that would lead to a phase change of these two gases creating a universe-filling superfluidity [29]. The Theory of Acoustic Genesis predicts that the superfluid state of matter still exists in the universe today comprising all the "missing matter" hypothesized to be dark matter. The lambda point of ⁴He is 2.17 K, below which temperature it can behave as either a normal fluid or superfluid [30]. This is also capable of carrying an acoustic wave where the pressure is replaced by heat and is called "second sound" [31]. According to Steven Weinberg, sound traveled through the early universe before light did [32]. Thus we can clearly see that Genesis and the Big Bang model account for the same artifacts necessary for creation: a "void", "waters", Sound → Light → Matter. The experiment of SL is a loose reproduction of the events that took place.

4. Conclusion

A cursory reading of the first four verses in Genesis allows us to find the first act of creation is the begetting of Light. But, this act, and all other acts in Genesis and Big Bang cosmology are preceded by a very important initiation of energy: acoustic energy in the form of a compression wave, i.e. sound. This is the key to all origins research whether it is cosmology or creationism. Without this initial sound (acoustic/sonic/compression wave), nothing in science makes sense and nothing in the universe would exist. The central tenet of the theory of Acoustic Genesis (www.scienceprovescreation.com) is: sound came first, then light, then matter. This leads to only three predictions of the theory:

1. That all matter emits a distinct tone
2. That all matter can be manipulated by sound
3. That the structure of all matter can be reduced to simple vibration

² Linde's process involves the phase change of gas into a liquid state based on the expansion and compression of a compressed gas. As the temperature cools rapidly during each expansion the phase state of the gas turns to liquid.

Since we can observe these artifacts, from the smallest organization of matter to the largest, across time and space (Fig. 4), then there is only one logical conclusion we can make: The heavens and the earth were instituted by an initial acoustic wave and all matter in the universe was created, and continues to be reproduced, by the perturbations of that wave.

5. References

- [1] M. Whittle, "A brief history of matter", University of Virginia, (2003), retr. http://www.astro.virginia.edu/class/whittle/astr124/matter/matter_three.html.
- [2] W. M. Robertson, J. Pappafotis, P. Flannigan, "Sound beyond the speed of light: measurement of negative group velocity in an acoustic loop filter", *Appl Phys Lett* **90** (1): 014102 (2007).
- [3] J. Magueijo, "Speedy sound and cosmic structure", arxiv:0803.0859 v1 J. (2008).
- [4] M. Whittle, "Big bang acoustics - sound in the early universe", *Echoes* **14** (4): 1, 4 (Fall 2004), retr. <http://www.astro.virginia.edu/~dmw8f/sounds/aas/echoes.pdf>.
- [5] I. Teper, "The universe as kitchen: cosmic ovens, nebular refrigerators, and the predictive power of physical law", *The American Scholar* 18-19 (2012, Spring).
- [6] B. Haisch, "Brilliant disguise: light, matter, and the zero-point field", *Science and Spirit* 30-31 (1999).
- [7] N. S. Ginsberg, et al, "Coherent control of optical information with matter wave dynamics", *Nature* **445**: 623-6 (2007).
- [8] C. M. Wilson, et al, "Observation of the dynamical Casimir effect in a superconducting circuit", *Nature* **479**: 376-9 (2011).
- [9] S. Sen, T. R. Mohar, "Dynamics of metastable breathers in nonlinear chains in acoustic vacuum", *Phys Rev E: Stat Nonlin Soft Matter Phys* **79** (3, pt 2): 036603 (2009), retr. <http://www.ncbi.nlm.nih.gov/pubmed/19392069>.
- [10] C. J. Miller, R. C. Nichol, D. J. Batuski, "Acoustic oscillations in the early universe and today", *Science* **292**: 2302-3 (2001), doi: 10.1126/science.1060440, retr. <http://www.sciencemag.org>.
- [11] NASA Goddard Space Flight Center, "Interpreting the song of a distant black hole", (2003), retr. <http://www.nasa.gov/centers/goddard/universe/black-hole-sound.htm>.
- [12] T. Niederhausen, U. Thumm, "Controlled vibrational quenching of nuclear wave packets in D2+", *Phys Rev A* **77**: 013407 (2008).
- [13] European Space Agency, "Moving to the rhythm of the sun" (2007), retr. http://esa.int/esasc/semjyul05f_index_0.html.
- [14] J. Foust, "Big bang evidence found", *Spaceflight Now* (2001), retr. <http://spaceflighnow.com/news/n0105/02bigbang/>.
- [15] R. Cowen, "Age of the universe: a new determination", *Science News* **160** (17): 261 (2001), doi: 10.2307/4012955.
- [16] L. Cai, C. Dalal, M. Elowitz, "Frequency-modulated nuclear localization bursts coordinate gene regulation", *Nature* **455** (7212): 485-90 (2008), doi: 10.1038/nature07292.
- [17] A. J. Campanella, "Investigations of sound waves generated by the Hall effect in electrolytes", *J Acoustic Soc Am* **113** (3): 1207-8 (2003).
- [18] N. Ma, et al, "Measurement of elastic properties of prostate cancer cells using AFM", *Analyst* **133** (11): 1498-1500 (2008).
- [19] G. Caldarelli, et al, "On the widespread occurrence of the inverse square distribution in the social sciences and taxonomy", *Phys Rev E* **69**: 035101 (2004), ArXiv:cond-mat/0311486v1.
- [20] D. J. Thomson, "Solar model structure of the engineering environment", *Proc IEEE* **95** (5): 1085-1132 (2007).

- [21] D. Lohse, "Cavitation hots up", *Nature* **434**: 33-34 (2005).
- [22] D. J. Flannigan, K. Suslick, "Plasma formation and temperature measurement during single-bubble cavitation", *Nature* **434**: 52-5 (2005).
- [23] B. G. Levi, "Evidence for a plasma inside a sonoluminescing bubble", *Physics Today* **58** (5): 21-23 (2005).
- [24] K. Suslick, D. J. Flannigan, "Inside a collapsing bubble: sonoluminescence and the conditions during cavitation", *An Rev Phys Chem* **59** (1): 659-83 (2008).
- [25] R. P. Taleyarkhan, et al, "Evidence of nuclear emissions during acoustic cavitation", *Science* **295** (5561): 1868 (2002).
- [26] R. I. Nigmatulin, et al, "Theory of supercompression of vapor bubbles and nanoscale thermonuclear fusion", *Physics of Fluids* **17**: 107106-1-31 (2005), doi: 10.1063/1.2104556.
- [27] S. Putterman, "Sonoluminescence: the star in a jar", *Physics World* 38-42 (May 1998).
- [28] Brookhaven National Laboratory, "RHIC scientists serve up 'perfect' liquid" (2005), retr. http://www.bnl.gov/bnlweb/pubaf/pr/pr_display.asp?prid=05-38.
- [29] H. Li, R. J. Le Roy, P. Roy, R. W. McKellar, "Molecular superfluid: nonclassical rotations in doped para-hydrogen clusters", *Phys Rev Lett* **105** (13): (2010), doi: 10.1103/PhysRevLett.105.133401.
- [30] Superfluid helium-4, *Wikipedia*, retr. http://en.wikipedia.org/w/index.php?title=Superfluid_helium-4&oldid=490794336.
- [31] Second sound, *Wikipedia*, retr. http://en.wikipedia.org/w/index.php?title=Second_sound&oldid=486121516.
- [32] T. Rossing, "Sound before light?" *Echoes*, **14** (1): 4 (Winter 2004).

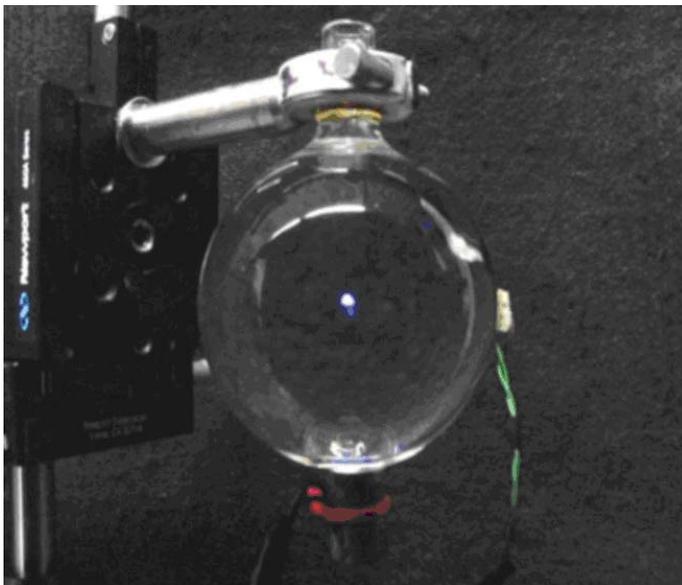


Fig. 1. A Star in a Jar. An image of sonoluminescence and the resulting plasma produced. This image resembles a miniature star or sun. Credit: Ken Suslick, University of Illinois.

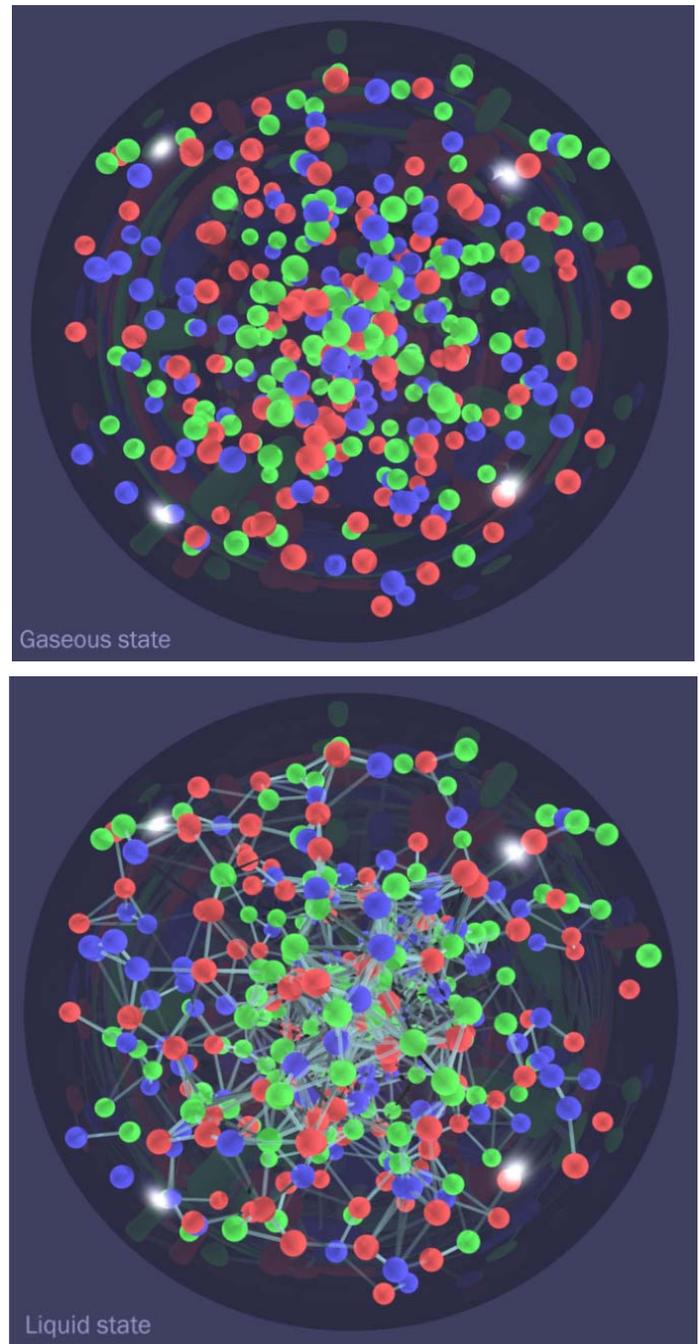


Fig. 2. An image of the "perfect liquid" (bottom) and a normal gaseous state (top). In a normal gaseous state the quarks and gluons spread out and collide randomly. The bottom image shows how that the quarks and gluons behave more like a fluid or liquid and acting in cohesion. This was an unexpected glimpse at the behavior of elementary particles at the beginning of creation. Credit: Brookhaven National Laboratories.

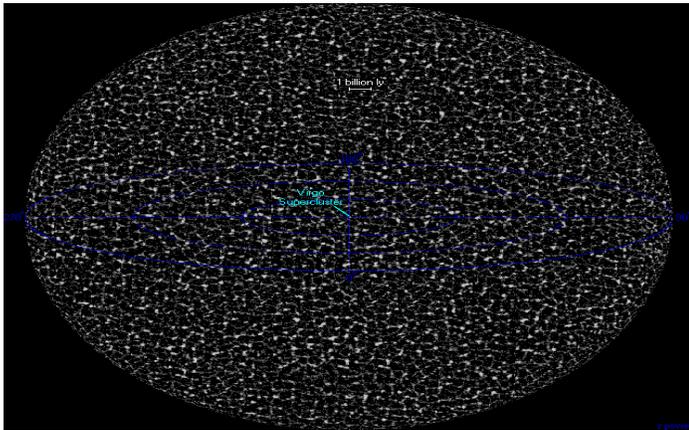


Fig. 3. Atlas of the Visible Universe. This map shows the entire visible universe. The galaxies in the universe tend to collect into vast sheets and superclusters of galaxies connected by filaments of matter surrounded by large ‘voids’ giving the universe a clumpy appearance. Credit: Powell, Richard, “The universe within 14-billion light years: the visible universe.” <http://atlasoftheuniverse.com/copyright.html>

mation of the spiral galaxy M51 (below). Genesis and the Big Bang theory collude to say that all matter was created from the primordial waters into the galaxies we see today. Above we can reproduce the similar effects by sending acoustic waves through water to form similar structures found in ‘outer space’. Credit: (left) Photograph from Water Sound Images by Alexander Lauterwasser. © 2005 MACROmedia Publishing. <http://www.cymaticsource.com>; (right) X-ray: heritage Team (STScI/AURA); IR: NASA/JPL-Caltech/Univ. of AZ/R. Kennicutt.

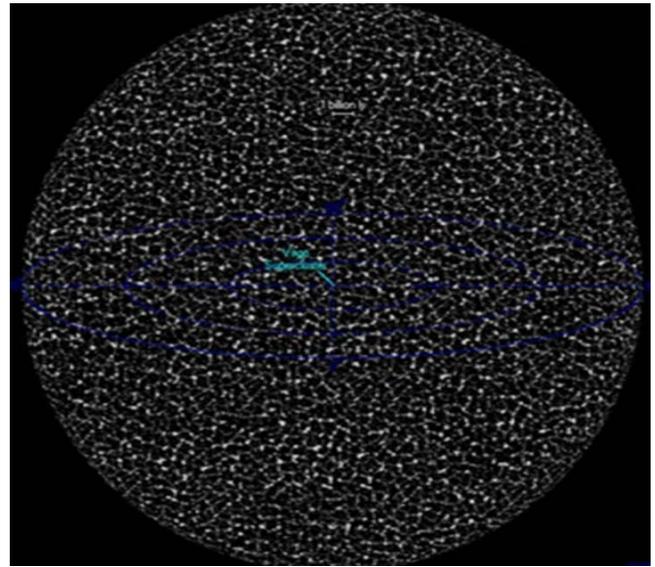


Fig. 4. Sound across Water. This is a comparison of images as sound passed through water (above), and a picture of the for-

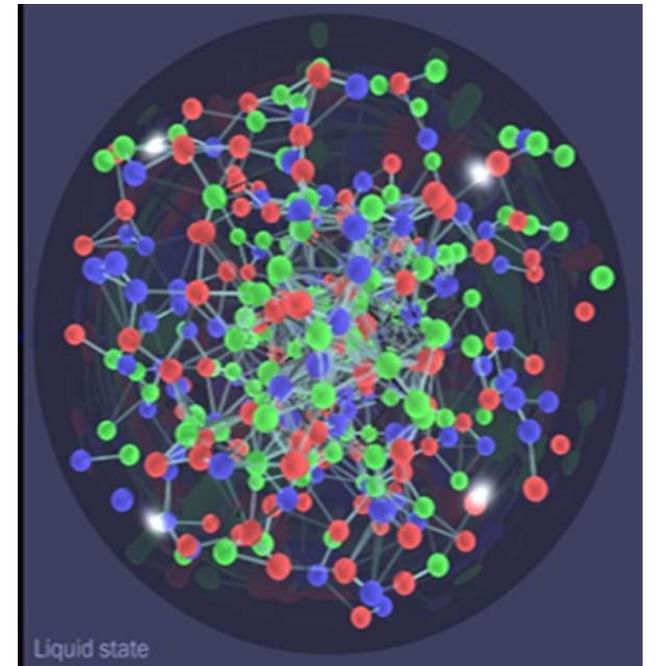


Fig. 5. Macro-matter structure vs. Micro-matter structure. This is a comparison of the largest organization of matter of the whole universe to the smallest elementary organization of all matter in the universe. Below is an illustration of the ‘waters’ just after the initial perturbation of acoustic influence, and above we see the resultant of that and other perturbations as the collection of all matter stands today. The similarity of the two is predicted by the Theory of Acoustic Genesis.