Part XXI

A Laboratory-Scale and Field Observational Approach to The Dark Matter Problem

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CONTENTS

1: INTRODUCTION

While the Dark Matter is known to constitute some 23% of the cosmos, little else is known about it except that it exerts a gravitational force.

In this document we describe the strange problem of the vanishing of water vapor molecules in a laboratory scale experiment with a de Laval Nozzle which could throw some light on the Dark Matter or possibly be explained by a visible matter -to- Dark Matter transformation.

We also touch on some remarkable and almost inexplicable effects in which quasi-fragile objects are found totally embedded in matter, such as fragile straws embedded or completely penetrating solid objects such as tree trunks, after the passage some large tornadoes. We propose a potential Dark Matter involvement in these field observations.

2: The de Laval Nozzle

This device consists typically of two cones, one converging and one diverging. They are joined at the minimum cross section, or "throat", to form a converging /diverging nozzle. See Fig. 1. An airflow through the nozzle will first accelerate in the converging section , reaching sonic speed, or Mach 1, at the throat, then it will continue to accelerate downstream in the diverging cone, reaching high supersonic speed, until it exits into the suction device that activates the flow, such as a vacuum blower. This article shall be referencing the acceleration of humid air **ONLY** by suction, applied at the diverging end of the nozzle by a central axial vacuum motor.

Immense flow acceleration forces in the short distance from the start of the throat to the tip of the shockwave area could be breaking the weak hydrogen bonds that make up the water molecules [1], and so might be a sign of a fundamental change of state, that may be a sign of a visible to Dark Matter transformation, (Hyperbolic to Elliptical equation of states), having taken place. See Fig 1 below. (from Ref 3).

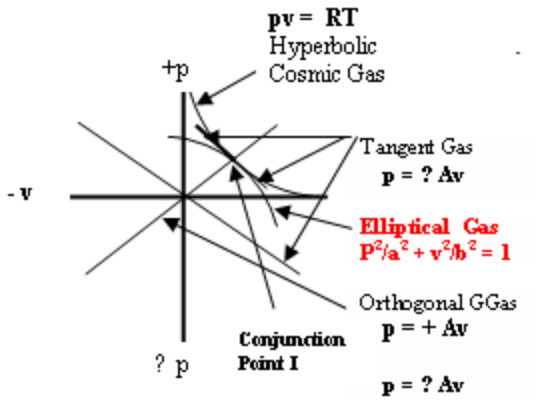

Figure 1

The complete disappearance of water, and water vapor in the de Laval suction supersonic nozzle, despite flow temperatures being measured well below the dew point, with no condensation in the diverging section of the nozzle upstream or downstream of the shockwave, raises questions. If this is true, as is observed visually during testing, even with the addition of ultrasonically added humidified water droplets, then there is molecular bond energy which is being broken which would therefore release measurable microwave energy. A test is therefore proposed to measure the released microwave bond breaking energy, MW, in a commercial EMI/EMC laboratory equipped to measure very low levels of B and E Mode microwaves in the 150 GHz range.

3: Dark Matter and extraordinary projectile penetration observations in the wake of large tornadoes

High energy EF4/5 tornadoes are known to produce very low pressure zones, perhaps substantially much lower, (with MUCH faster velocities), in the areas around multiple vortex type tornadoes than have been quoted by those studying their characteristics. There are many very strange pieces of physical evidence which raise some fundamental questions about what these believed velocities and accelerations really are, in some rare cases. These involve penetration of stationary objects such as wooden, cement, and steel light poles, trees, and cement pillars, by flimsy or fragile projectiles, some of wood, others plastic, which, had they been sucked up against, or otherwise shot at the target objects, would have been pulverized.

The really weird tornado phenomena referred to earlier are the those in which pieces of fragile matter, such as straw, (hay), drinking straws, lengths of garden hose, playing cards, vinyl long playing records, and pieces of wooden beams, have been found partially embedded into, or having passed part or all the way through trees, cement and steel light poles, sheet metal roofing, etc., and these projectiles were found to be physically intact after passage of these intense tornados. In other cases the penetration leaves the objects protruding both at the entry and exit point of impact, which is seen typically seen in long hollow projectiles, such as drinking straws, and in one case, a garden hose. Noteworthy is the absence of any entry or exit damage, especially where hollow objects, (projectiles), with long length to diameter ratios, present themselves. The stationary objects we shall call “targets”, while the “thrown” or suctioned objects shall be referred to as “projectiles”. Some projectiles are only partially embedded in the target, while others, such as the garden hose, (refer to photos in Annex A), and the drinking straw, pass clear through tree trunks and telephone poles, leaving a trailing end and leading end undamaged. The projectiles which pass through but remain embedded in the target show no leading-edge impact evidence, (ie. blunting or flattening of the projectile tip or edge). It is extremely difficult to explain this lack of damage to the projectile through normal laws of physics or aerodynamics, and strength of materials science. It is equally perplexing that no impact entry or exit cones, such as those produced by a bullet through a steel plate are found. One attached picture of a roughly 2 x 10 inch wooden beam embedded in a steel light pole, shows no denting of the poles outer metal surface. It is quite possible that there exist completely embedded objects, in trees for example, that are never detected as no entry or exit evidence exists. Only Xray inspection would detect these type of objects.

4: Dark Matter and Tornado Oddities

There may be a potential Dark Matter explanation to the previously mentioned field observations: It requires a VERY fast acceleration and VERY low local ambient atmospheric pressure, transporting the projectile at high supersonic speeds, (ie. Mach 2 or 3, or higher). Velocities very close to these were achieved in our laboratory central vacuum/de Laval nozzle test rig with only a 300mb absolute pressure drop passing through a narrow throat. It is possible to produce supersonic flow with pressure drops as low as 240mb, as was also found in lab testing, provided the throat size is appropriate. The "throat" in nature could be something as simple as two trees side by side, or a hole in a wall, for example. In the lab, the acceleration takes place from an entry flow velocity of 10 m/s, and within 1 to 2cm reaches approximately 700m/s. This constitutes an acceleration of air molecules of somewhere between 3,000,000 to 5,000,000G's, (million G's)! We propose that the G forces might be sufficient to break the molecular bonds between diatomic molecules, such as nitrogen and oxygen, thereby rarefying the carrier medium, and rarefying any projectile light enough to entrained in the flow. The garden hose, for example, would be sucked up into a small "streamer" of supersonic air, accelerated to the same velocity as the streamer, and, in this case, enters the sizeable tree trunk, passing effortlessly and transparently through it, and for reasons yet to be explained, reverts to visible matter as it decelerates unconventionally.

It is very interesting that objects such as the record album, and the playing card show no deceleration damage. Fired from a conventional air cannon, the playing card would either fold over and flatten against the tree, shear off, or be shredded. The vinyl record would have shattered as the unsupported trailing mass could not be supported at the surface of the tree upon impact. It seems as though these projectiles, (and targets), were not subject to the normal laws of physics that we are accustomed to.

NOTE: The de Laval Nozzle referenced in this article was specially designed to produce relatively high super sonic flow, (close to MACH 3), using a 2.6Kw commercial central axial type vacuum motor, (CVAC), yielding about -300mb of deadheaded vacuum, and about 180 CFM of free air flow. The nozzle was 3D printed with a layer height of .004" using PLA resin on a Bambu PS1 3D printer. Both radial and axial pressure, (vacuum), readings, at the entrance to the throat, at ¼ "intervals back to the CVAC entrance were measured through pitot holes printed in the nozzle body using a digital manometer. Temperature readings were taken at theses same positions and measured using a K type thermocouple. A MACH 1 shockwave/shock cone can be felt using a pitot tube inserted axially into the throat at about 1.5cm from the face of the nozzle where the throat begins. The highest pressure drops occurred at four points close to the boundary layer at say the 7, 10, 2, and 5 o'clock

positions, (looking down the throat), near where the shock cone intersects the inside of the nozzle. These pressure drops were very small and localized, and were at least 100mb lower in pressure at points just a millimeter or so adjacent to them. These zones of lower pressure and higher velocity, (close to MACH 3), we call “streamers”, and where we believe the Dark Matter transformation might be occurring. Aperture plates of different throat size, some with chamfered inlets of various angles, some radiused with various radius sizes, were affixed to the nozzle face using four threaded studs and appropriate hardware and tested. Flat aperture plates, with no throat hole, were also tested, designed to force the incoming air to enter the throat at 90 degrees to the suction vector, as it does in an actual tornado. It is important to note that the nozzle in question was designed to replicate how air enters the nonrotating core of an actual tornado. Although swirling of the incoming air was also tested, we believe there is little or no rotation of the core in an actual tornado. The majority of the tests did not use swirled air.

5: A summary of field and laboratory observations in point form:

1: Supersonic flow in a de Laval nozzle at the throat, despite being much colder that the dew point, does not produce water vapor condensation. This has been demonstrated repeatedly in the lab.

2. Photographically documented evidence of extreme target damage in the wake of EF4/EF5 tornados defy the classical physical material properties of the projectiles.

3. Projectiles tend to adopt an axial flight orientation and strike the target normal to the upwind face.

4: Projectiles that are low in mass, with a high length to diameter and/or thickness ratios, display the greatest penetration power upon striking the stationary targets. Hollow projectiles of very low mass and high aspect ratios of length to diameter, display the most extreme penetrating power. (see ANNEX A, Photo Page 4).

5. There appears to be a frequently observed phenomena of the projectiles striking the center of cylindrical targets, such as telephone poles, trees, and light poles. This is probably and aerodynamic effect where the projectile is centered across a symmetrically divided airflow of rarefied air flow.

6: Within a given suction driven mass of supersonic air flow, small zones of air exist that are MUCH higher in velocity and subsequently of MUCH lower pressure within the test nozzle. We refer to these as “Streamers”. There is little reason to doubt that larger scale zones exist in nature, such as around EF4 and EF5 tornadoes, or their satellite vortices, capable of producing what has clearly been captured photographically. It is noteworthy

that pressures which are **too low** on the PV Visible and Dark Matter curves, (Ref Fig 1), will trigger the return to a **visible** state of matter, which might explain the reappearance of projectiles mid-way through quasi-isentropic material such as trees or telephone poles, (ie. cellulose). Non-isentropic materials, such as cement, which is an aggregate, displays evidence of fragmentation or cracking, which is not found in wooden targets, (except where splitting is seen along the grain of a tree for example). See photo 11.

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ANNEX A

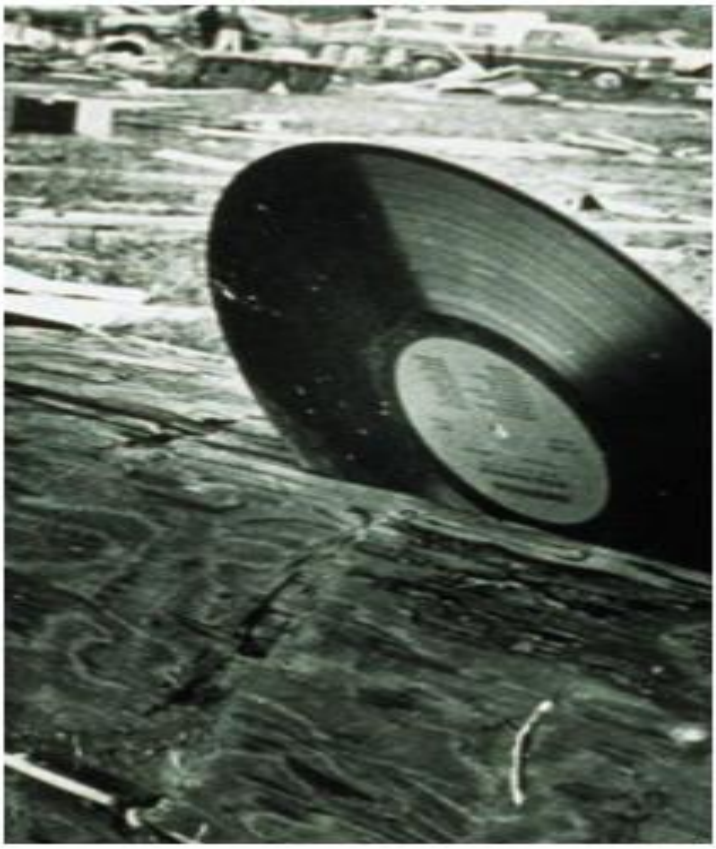

PHOTO 1: 33 RPM VINYL RECORD ALBUM EMBEDDED IN A TREE

PHOTO 2: GARDEN HOSE PULLED CLEAR THROUGH A LARGE TREE

PHOTO 2A: GARDEN HOSE PULLED CLEAR THROUGH A LARGE TREE

PHOTO 3: PLAYING CARD DEEPLY EMBEDDED IN A PARTIALLY DEBARKED TREE

PAGE 4: DRINKING STRAW PULLED CLEAR THROUGH A WOODEN POWER POLE

PHOTO 5: 2” X 8” WOODEN BEAM PASSES THROUGH PALM TREE

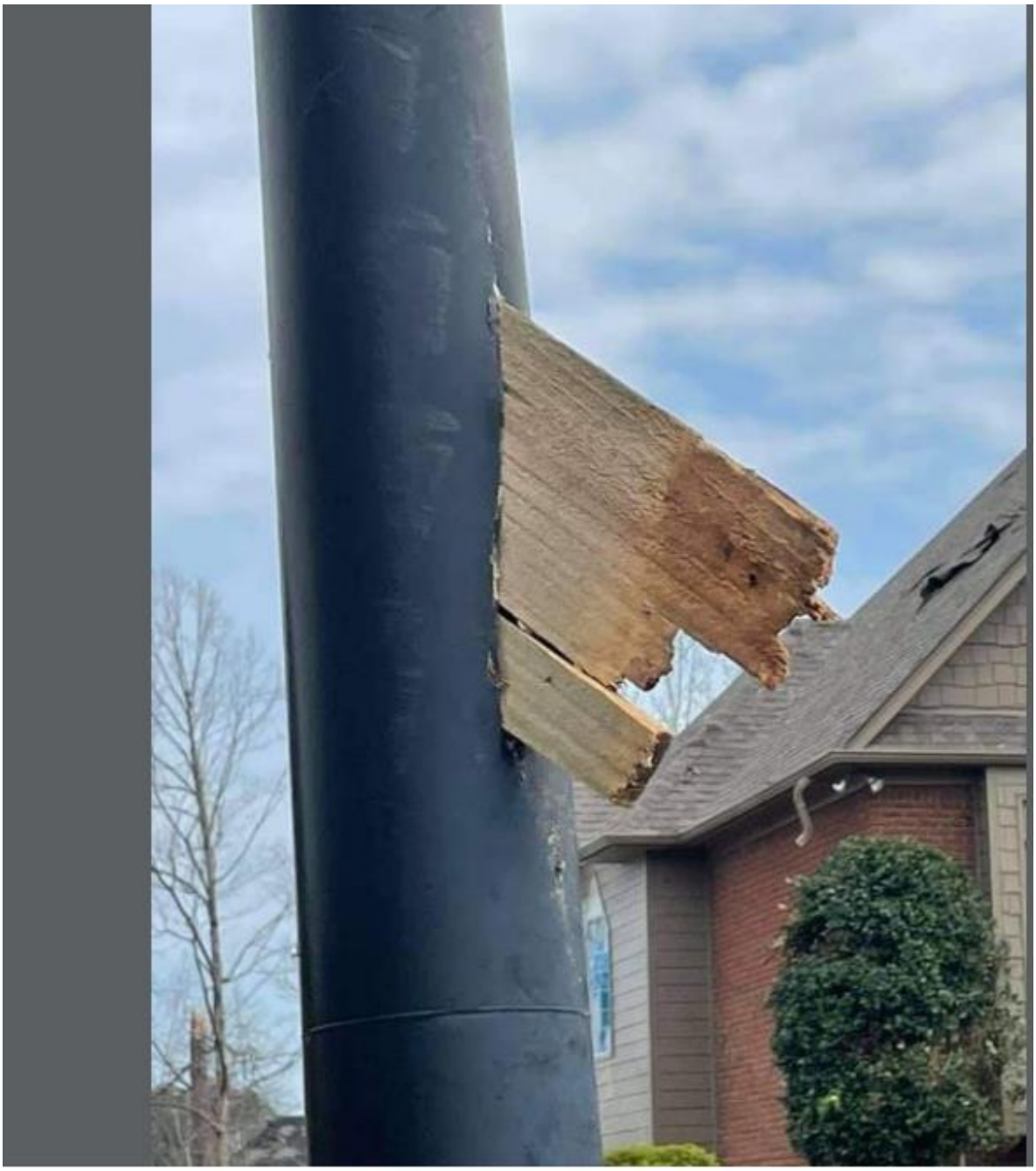

PHOTO 7: WOODEN BEAM PASSES THROUGH ONE SIDE OF A WELDED STEEL LIGHT POLE

PHOTO 8: 2” X 8” WOODEN BEAM PASSES THROUGH PALM TREE

PHOTO 9: PLASTIC PLATE PASSED THROUGH CEMENT LIGHT POLE

PHOTO 10: BANK CHEQUE ROLLED AND EMBEDDED INTO A WOODEN TELEPHONE POLE

PHOTO 11: CEMENT CURB IMPAILED BY WOODEN BEAM

PHOTO 12: SUPERSONIC SUCTION FLOW BENCH SET-UP WITH MEASURING INSTRUMENTS

PHOTO 13: SUPERSONIC SUCTION FLOW BENCH SET-UP WITH RADIUSED APERTURE PLATE INSTALLED

7: References:

1: energycompressibility.info Part VIII, Equations of State for Cosmic Fields

2: energycompressibility.info Part X, Big Bang, Dark Matter Mysteries and Eq. of State Solutions

3: energycompressibility.info Part VIII, Equations of State for Cosmic Fields

4: Photographic evidence and references…See ANNEX A

Please Note: Due to a severe malware and virus issue risks, (which the junior author experienced writing this document, unfortunately), the authors will not post specific web addresses for each photograph. They can be found, for example, on Google.com, by searching under “garden hose pulled through tree EF5 tornado”, on Bing.com, “Joplin Tornado shot a 2 x 4 thru a curb”, or on Reddit.com, etc., or under similarly titled web searches describing the photograph.

5: A summary of field and laboratory observations