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An Unsolved Enigma: DARK MATTER

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1 Shedding Light on Dark Matter (DM):

Dark Matter consists of particles which do not emit, reflect OR absorb light and hence can not be detected by using electro-magnetic radiations. The ordinary atoms that make up the known universe, from our bodies and the air we breathe to planets and stars, constitute ***only 5% of all matters and energy in cosmos. The rest 95% is known as Dark Matter (30%) and Dark Energy (65%), because their precise identities are unknown. Our target is to solve one of the most compelling mystery of modern Science; Dark Matter.***

Today we have data from underground laboratories, satellite in space and the Large Hadron Collider which provides the foundation needed to fully fathom this epochal moment in humankind's quest to understand the universe.

Candidates for Dark Matter: WIPMS (Weakly Interacting Massive Particle), MACHO (Massive Astrophysical Compact Halo Object), Axion, Super Symmetric particle etc. Detectors around the world: LUX (Large Underground Xenon) detector, Fermi LAT, ZENON100, CoGeNT, Alpha Magnetic Spectrometer CDMS etc. **In this Cosmic Cocktail, Dark Matter matters.**

2 Dark Matter Analogy:

2.1 Analogy 1

Dark Matter is like air. As we cannot see the air but its effect can be felt. Same as for Dark Matter; we cannot see it directly but its effect can be seen to Galaxy's exterior part.

2.2 Analogy 2

Dark Matter is like a man in black suite and a woman in a white dress dancing in a dim lighted room. We can not see dark matter (black suited man) but we can see the Bright matter (the woman). We know there is Dark Matter because we see the lighted matter and know that there in balance with each other.

2.3 Analogy 3

The Dark Matter is like the water in the chunky noddle soup, we can not see it directly, but it must be there because the soup would not look the same without it.

3 Why do we need Dark Matter in search of the Hidden Universe?

We do not know what it is, we do not know its origin, and we are not sure where to look for it but finding dark matter is important because it can tell us about origin of Universe, how it functions, and dark mysteries of Universe. The study of dark matter can also reveal if the universe is closed OR open (Expanding) OR flat.

We can come up with to explain certain common rare phenomena that existing theories of physics cannot. For that we have to make more sensitive detectors like **XENON1T and LUX-ZEPLIN** than upper written detectors.

4 Some Recent NEWS about the Dark Matter:

1. Yale scientists are part of a new international experiment, COSINE 100, that challenges previous claims about the detection of non-luminous dark matter.

2. There is a new theory of dark matter which is based on the detection of unusual X-ray radiation of galaxies. These radiations are produced by dark matter annihilation.

3. The LUX experiment finds no clue of dark matter but not finding dark matter is still useful, because it tells scientists what the elusive stuff

cannot do.

4. Recently Oxford Scientist Dr Jamie Farnes' modified cosmology model suggests that the Universe could be largely made of fluid-like existence called Negative Mass (Dark Fluid).