

Cosmology in the Dreamtime at the University of Sydney

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ABSTRACT

On the evening of the 29th of November 2016, Professor Manfred Lindner from the Max Planck Institute for Nuclear Physics, gave a public lecture at the University of Sydney, on dark matter and cosmology, and the Xenon1T project searching for dark matter particles by means of neutrino collisions and recoils in a 1 tonne vat of liquid xenon. At the conclusion of his lecture I questioned him on his presentation of an all-sky 'CMB' anisotropy map. He confirmed that the map was from the *Planck* satellite. The *Planck* satellite's 4 K 'blackbody' reference loads failed. This failing, ironically, proved that there is no monopole signal at L2, and hence no 'CMB'. Without its 'CMB', big bang cosmology is dead.

Prof. Manfred Lindner,
Max Planck Institute for Nuclear Physics,
Particle and Astroparticle Physics Division,
(Department of Physics and Astronomy, Heidelberg University),
Germany,

Dear Sir,

You will recall that I spoke to you briefly after your talk at the University of Sydney tonight. By your response to my comments it was very clear to me that you did not understand what I said to you. I must therefore put the arguments in writing.

- (1) You confirmed that the all-sky 'CMB' anisotropy map that appeared in one of your slides is from the *Planck* satellite.
- (2) The two 4 K loads of the Low Frequency Instrument (LFI) of *Planck* were attached to the shield of the High Frequency Instrument (HFI) by means of metal washers and screws. The shield was cooled to 4 K. Although this attachment ensured that the 4 K loads were at 4 K, the metal connexions produced conduction paths from the loads to the shield. Consequently the 4 K loads did not operate as blackbody emission sources at 4 K. There is no blackbody when conduction is present. Since heat was shunted from the loads into the shield by conduction, the 4 K loads emitted negligible or no photons.
- (3) The signal from each of the two sky horns of the LFI were subtracted from the two reference horns for the 4 K loads respectively. Since the loads did not operate as blackbody sources, owing to conduction, they effectively presented at 0 K to the reference horns.
- (4) The *Planck* Team reported better than expected response from the LFI. The only means by which this could have been achieved is that the sky is also at 0 K. This means that there is no monopole signal at L2, and hence, no anisotropies. This also proves that the so-called 'CMB' is not of cosmic origin and therefore that Big Bang cosmology is false.
- (5) The COBE satellite reported a very strong monopole signal from an altitude of ~900km. The COBE shield was incapable of protecting the satellite's detectors from microwave

diffraction over the shield, owing to its inadequate design. Water is a good absorber of microwaves, as microwave ovens in the home and submarines at sea prove. A good absorber is also a good emitter, and at the same frequencies. Approximately 70% of the surface of Earth is covered by water. This water is not microwave silent. Microwaves are emitted by water via the hydrogen bond. This emission from the oceans is scattered by the atmosphere to produce isotropy. The scattered microwave emissions diffracted over the COBE shield right into its detectors, no matter which direction COBE pointed its sky horn. COBE reported a monopole signal at 2.725 K. COBE detected the microwave emission from the oceans.

- (6) The temperature of the oceans is not 3 K. There are two bonds in water: (a) the hydroxyl bond, (b) the hydrogen bond. Energy bound within the hydroxyl bond is not available to microwave emission. Only the much lower energy in the hydrogen bonds is available to microwave emission. The temperature extracted from the scattered hydrogen bond emission spectrum in the atmosphere reports 3 K. This is an example of the fact that Kirchhoff's Law of Thermal Emission is false and that Planck's equation for thermal spectra is not universal. Any temperature extracted from a thermal spectrum that is not from a true blackbody, such as soot, is only an apparent temperature, not the true temperature of the emitter. The walls of an isolated arbitrary cavity at thermal equilibrium always contain energy that is not available to thermal emission, unless the cavity is made from a black material such as carbon. Kirchhoff and Planck however, in their theorising, and contrary to experimental facts known even in their time, incorrectly permitted all the energy of the walls of an arbitrary cavity at thermal equilibrium to be available to thermal emission. In doing so they made all cavities black. Cavities are not always black. The nature of the walls cannot be ignored, contrary to Kirchhoff and Planck. Physical proof of this fact is at hand. NMR and MRI are thermal processes, facilitated by spin-lattice relaxation. This means that there is energy in the walls of an arbitrary cavity that is not available to thermal emission. If Kirchhoff and Planck were right, then NMR and MRI could not exist. The clinical existence of MRI proves that Kirchhoff and Planck are wrong.

The foregoing facts dramatically affect your search for 'dark matter' with the Xenon1T, as a component of Big Bang cosmology. Similarly the 'dark energy' of Big Bang cosmology is without scientific basis.

I refer you to the following papers:

Robitaille P.-M., WMAP: A Radiological Analysis, *Progress in Physics*, v.1, pp.3-18, (2007), <http://vixra.org/pdf/1310.0121v1.pdf>

Robitaille P.-M., COBE: A Radiological Analysis, *Progress in Physics*, v.4, pp.17-42, (2009), <http://vixra.org/pdf/1310.0125v1.pdf>

Robitaille P.-M., Crothers S. J. "The Theory of Heat Radiation" Revisited: A Commentary on the Validity of Kirchhoff's Law of Thermal Emission and Max Planck's Claim of Universality, *Progress in Physics*, v. 11, p.120-132, (2015), <http://vixra.org/pdf/1502.0007v2.pdf>

I look forward to receiving your considerations on these issues.

Yours faithfully,
Stephen J. Crothers.
29th November 2016