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The Big Bang – An Hypothesis (Rev. 1.2)

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0. Introduction

The purpose of this paper is to present a scenario that describes the Big Bang based upon the author's discoveries in Spin Theory, Core Pressure and The Atom, and represents the universe as we see it today.

*(Refer to **Appendix 1** for an explanation of the papers, mathematical formulas, constants, symbols and units used in this document)*

1. Conclusions

The hypothesis presented in this paper is viable as it is supported by known mathematical theory and reproduces a universe similar to that which we see today and provides the following information concerning the Big Bang and our universe:

The Big Bang occurred when the gravitational energy within a proton-star generated sufficient pressure to compress two adjacent protons at the centre of its core.

1.1 Further Work

None

2. The Body System

A proton star

3. Methodology

Calculate the pressure required to compromise a proton.

Calculate the size of a proton star that would generate such a pressure.

Calculate the energy released in the resultant explosion

4. Calculations

It is assumed that the Big Bang occurred when a proton's integrity was compromised by gravitational force, which would occur when gravitational force ($G.m_p^2/R^2$) exceeds Coulomb's repulsion force ($k.e^2/R^2$)
Where:
G is Newton's gravitational constant
k is Coulomb's constant
e is the elementary charge
m_p is the mass of a proton
R is the diameter of a proton

Together, these formulas define the mass necessary to balance the attractive (gravitational) and repulsive (electrical) forces:
$m_u = k.e^2 / G.m_p.\varphi + m_p$
Where:
m_u = the ultimate mass (i.e. 'Big Bang' mass)

m_u = 4.68943E+48 kg
$N_p = m_u/m_p$ = 2.80364E+75
i.e. there are approximately 2.80364E+75 sub-atomic particles in the universe

If each proton possesses the equivalent of 1.6021765E-19 J, the energy released when the proton star exploded (i.e. when the innermost proton was compromised) would have been:
$E_u = e.N_p$ = 4.49193E+56 J

If the mass of the proton star prior to the explosion is the same as the mass in the universe today (equivalent to 8.784256E+10 Milky Way galactic masses) the average velocity of all galaxies must be equal to $\sqrt{[2.E/m]}$ relative to the centre of the explosion, i.e.:
$v \leq \sqrt{[2.E_u/m_u]}$ = 13,841 m/s

The relative velocity of the Milky Way and most other galaxies is due to the 3-D effect of universal travel post 'Big Bang'.

A proton star is proposed for the ultimate mass because of the energy required to explode if compromised, whilst a solid lump of neutrons would not.

5. Propositions

Proposal 1: The Big Bang was caused by a star with the density of a proton at its centre that was large enough to generate sufficient pressure from gravitational energy to compromise a proton

Proposal 2: The proton star had a mass of 4.68943E+48 kg

Proposal 3: There are approximately 2.80364E+75 sub-atomic particles in the universe

Proposal 4: The Big Bang explosion occurred at the centre of the proton star

Proposal 5: The energy released by the exploding proton star is 4.49193E+56 J

Proposal 6: The universe has a mass identical to the proton star

Proposal 7: There are approximately 8.784256E+10 Milky Way galactic masses in the universe

Proposal 8: The linear velocity of the Milky Way galaxy is 13,841 m/s relative to the source of the Big Bang

Appendices

Appendix 1: Papers, Mathematical Constants, Formulas, Symbols & Units

Appendix 1: Papers, Mathematical Symbols & Units

Isaac Newton's gravitational constant: G = 6.67359232004332E-11 $m^3/kg/s^2$

Coulomb's constant: k = 8.98755184732667E+09 $N.m^2/C^2$

Elementary charge: $Q_e = -Q_p$ = -1.60217648753000E-19 C

Universal density: ρ = 7.12660796350450E+16 kg/m^3

This paper should be read in conjunction with the following:

http://calqlata.com/Maths/Formulas_Laws_of_Motion.html

http://calqlata.com/Maths/Formulas_The_Atom.html

http://calqlata.com/Papers/Spin.pdf

http://calqlata.com/Maths/Formulas_Core_Pressure.html

Refer to CalQlata's **Definitions** (http://calqlata.com/help_definitions.html) for an explanation of the terms used in this paper