

NEW QUANTUM THEORY AND BIG BANG

9.0

SINGULARITY OF THE BIG BANG

THE BIG BANG THEORY STATES THAT AT SOME TIME IN THE DISTANT PAST THERE WAS NOTHING. A PROCESS KNOWN AS VACUUM FLUCTUATION CREATED WHAT ASTROPHYSICISTS CALL A SINGULARITY. THE MATTER WITHIN THAT SINGULARITY, WHICH WAS ABOUT THE SIZE OF A DIME, AND FROM THIS OUR UNIVERSE WAS BORN.

BECAUSE OF THE SINGULARITIES IN THE BIG BANG CONCEPT PHYSICISTS AND COSMOLOGISTS HAVE COME TO A STALE MATE. A FEW QUOTES ARE GIVEN BELOW TO SHOW HOW PEOPLE THINK OF THE SHORTCOMINGS OF THE OLD QUANTUM MECHANICS WHEN ONE WANTS TO UNIFY MACRO AND MICRO THEORIES.

EXPANSION OF THE UNIVERSE OR BIG BANG

IN ORDER TO EXPLAIN THE EXPANSION OF THE BIG BANG THE FOLLOWING AXIOMS NEED BE DEFINED.

AXIOMS:

- (1) **SPATIAL DENSITY D_N** , VARIES INVERSELY AS $P_N(x)$..
(1E)
- (2) **ENERGY DENSITY E_N** , VARIES INVERSELY AS $P_N(x)$.
(2E)
- (3) **GRAVITY G_N** , VARIES INVERSELY AS $P_N(x)$..
(3E)
- (4) **$P_N(x)$** IS UNIFORM AND DIVERGENT WITH RESPECT TO N .
(4E)
- (5) FOR ANY TWO GIVEN INTEGERS K, J WHERE $K > J$ THE
SCHRODINGER
WAVE FUNCTION GIVES $P_K(x) > P_J(x)$, AND $E_K < E_J$ THAT IS E_K IS
CONVERGENT WHILE $P_K(x)$ IS DIVERGENT.
(5E)

PLANCK ERA

THE EARLIEST MOMENTS OF CREATION ARE WHERE OUR MODERN PHYSICS BREAKDOWN, WHERE 'BREAKDOWN' MEANS THAT OUR THEORIES AND LAWS HAVE NO ABILITY TO DESCRIBE OR PREDICT THE BEHAVIOR OF THE EARLY UNIVERSE. OUR EVERYDAY NOTIONS OF SPACE AND TIME CEASE TO BE VALID. (SEE APPENDIX).

ALTHOUGH WE HAVE LITTLE KNOWLEDGE OF THE UNIVERSE BEFORE THE PLANCK TIME, ONLY SPECULATION, WE CAN CALCULATE WHEN THIS ERA ENDS AND WHEN OUR PHYSICS BEGINS. THE HOT BIG BANG MODEL, TOGETHER WITH THE IDEAS OF MODERN PARTICLE PHYSICS, PROVIDES A SOUND FRAMEWORK FOR SENSIBLE SPECULATION BACK TO THE PLANCK ERA. THIS OCCURS WHEN THE UNIVERSE IS AT THE PLANCK SCALE IN ITS EXPANSION.

THE TWO PASSAGES TAKEN FROM PAPERS RANDOMLY EXEMPLIFY HOW PEOPLE THINK OF THE NEED FOR SOMEBODY TO ATTEMPT TO EXPLAIN THESE PHENOMENA. QUANTUM MECHANICAL EXPLANATIONS SOME OBSERVATIONS ARE GIVEN BELOW. FIRST LET US COMPARE THE BIG BANG TO A BLACK HOLE.

A BLACK HOLE IS A SPACE-TIME, OR AN OBJECT SO COMPACT THAT NOTHING CAN ESCAPE FROM THE GRAVITY WITHIN IT, NOT EVEN LIGHT. MATHEMATICALLY, A BLACK HOLE IS AN OBJECT OF ZERO SIZE AND INFINITE DENSITY (BUT *FINITE MASS*) – WHAT IS CALLED A SINGULARITY.

THE STATEMENTS ABOVE SHOW THAT BEFORE A BIG BANG WHAT EXISTED WAS SIMILAR TO A BLACK HOLE, PERHAPS WHAT EXISTED BEFORE WAS A BLACK HOLE, FOR THEY BOTH HAVE

*INFINITE ENERGY

*INFINITE DENSITY

* FINITE MASS.

THE NEW QUANTUM MECHANICS GIVES SOME INDICATIONS OF WHAT HAPPENED AT THE TIME OF THE BANG.

CONCLUSION

THE NEW INTERPRETATION OF SCHRODINGER'S EQUATION OF QUANTUM MECHANICS, GIVES SOME GROUNDS TO EXPLAIN THE EARLIER MOMENTS OF CREATION, OR THE BIG BANG BEFORE PLANCK TIME.

THE APPLICATION OF THIS NEW QUANTUM THEORY TO THE THREE ASPECTS OF THE THEORY OF BIG BANG SHOWS HOW TO UNIFY CLASSICAL MECHANICS AND QUANTUM THEORY.

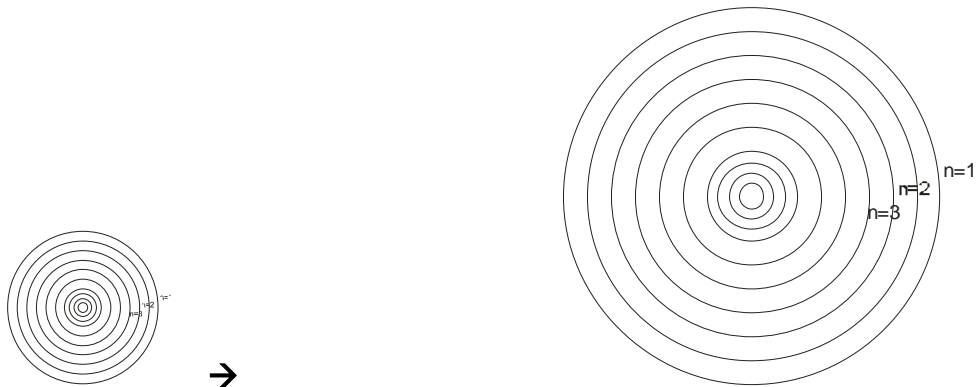
THE EXPLANATIONS GIVEN TO THE SAMPLED PHENOMENA IN PHYSICS, AND COSMOLOGY, USING THIS THEORY, MAY BE TAKEN AS AN ENCOURAGEMENT AND A GOOD STARTING POINT FOR OTHER INVESTIGATIONS IN OTHER AREAS LIKE CHEMISTRY AND DNA.

HOPEFULLY THOSE WHO WANT TO TEST THIS IDEA MAY FIND IT HELPFUL IN SOME WAY.

LET ME KNOW HOW YOU GET ON AND ANY SUGGESTIONS FOR CORRECTION OR IMPROVEMENT WILL BE VERY WELCOME. TWO HEADS ARE BETTER THAN ONE.

EXPANSION OF UNIVERSE

9.2



$$F \rightarrow \infty$$

$$G \rightarrow \infty$$

$$E \rightarrow \infty$$

$$D \rightarrow \infty$$

$$T \rightarrow 0$$

$$f < \infty$$

$$g < \infty$$

$$e < \infty$$

$$d \rightarrow 0$$

$$t \rightarrow \infty$$

WHERE F IS FREQUENCY, G IS GRAVITY, E IS ENERGY, D IS DENSITY,
AND T IS TIME

THE DIAGRAM ABOVE IS SUMMARY OF ALL THE DISCUSSION ON THE STUDY OF THE BEHAVIOR OF THE WAVE FUNCTIONS OF SCHRODINGER'S EQUATION AND THEREFORE OF PHYSICAL REALITY DURING EXPANSION.

FROM THE AXIOMS IT IS SEEN THAT DURING EXPANSION F GOES TO ZERO, G GOES TO ZERO, E GOES TO ZERO, D GOES TO ZERO, AND T GOES TO INFINITY.

RIPPLE OR INFLATION

10:0

EXPANSION OF THE UNIVERSE

TO INVESTIGATE WHAT HAPPENED IN THE EARLY BIG BANG IT IS NECESSARY TO REVIEW THE LAWS WHICH GOVERN EXPANSION IN THE UNIVERSE.

AXIOMS:

- (1) SPATIAL DENSITY D_N , VARIES INVERSELY AS $P_N(x)$..
(1E)
- (2) ENERGY DENSITY E_N , VARIES INVERSELY AS $P_N(x)$.
(2E)
- (3) GRAVITY G_N , VARIES INVERSELY AS $P_N(x)$..
(3E)
- (4) $P_N(x)$ IS UNIFORM AND DIVERGENT WITH RESPECT TO N .
(4E)
- (5) $Y_N(x)$ IS UNIFORM AND DIVERGENT WITH RESPECT TO N .
(4EY)
- (7) FOR ANY TWO GIVEN INTEGERS K, J WHERE $K > J$ THE SCHRODINGER WAVE FUNCTION GIVES $P_K(x) > P_J(x)$, AND $E_K < E_J$ THAT IS E_K IS CONVERGENT WHILE $P_K(x)$ IS DIVERGENT.
(5E)
- (8) FOR ANY TWO GIVEN INTEGERS K, J WHERE $K > J$ THE SCHRODINGER WAVE FUNCTION GIVES $Y_K(x) > Y_J(x)$, AND $E_K < E_J$ THAT IS E_K IS CONVERGENT WHILE $Y_K(x)$ IS DIVERGENT.
(5EY)

WE SHALL ENDEAVOR TO APPLY THE ABOVE AXIOMS TO THE BIG BANG THEORY TO SEE HOW THE NEW QUANTUM MECHANICS MEETS CLASSICAL PHYSICS.