بسم الله الرحمن الرحيم

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THE ABSTRACT : IN THIS MANUSCRIPT :TIME LINE OF THE EINSTEIN'S LIFE, FAMILY PICTIRES OF ALBERT EINSTEIN, EINSTEIN'S FAMILY TREE, CHRONOLOGY 1879-1896, SCHOOLBOY :MUNICH , MILAN AND AT SWISS POLYTECHNIC INSTITUTE, ZURICH, 1896-1900 ,GRADUATE STUDENT : 1900-1905, USEFUL DEFINITIONS,SPECIAL THEORY OF RELATIVITYOF LIGHT , E=M c^2 , GENERAL THEORY OF RELATIVITY , ALBERT'S EINSTEIN WORKS, ALBERT'S EINSTEIN DOCTORAL CERTIFICATE, ALBERT'S EINSTEIN FIRST PAPER ,THE SCIENTIFIC METHOD OF ALBERT EINSTEIN, ALBERT'S EINSTEIN WORDS, ALBERT EINSTEIN WITH OTHERS , THE 1905 PAPERS, ALBERT'S EINSTEIN ACHIEVEMENTS , MANHATTAN PROJECT, ALBERT'S EINSTEIN SIGNATURE AND SONS, ALBERT EINSTEIN AGAINST THE QUANTUM MECHANICS, THEN MY ACHIEVED RESEARCH : THERE ARE NO QUANTUM MECHANICS, THE FOURTH DIMENSION, THE FIFTH DIMENSION, THE SIXTH DIMENSION, THE SEVENTH DIMENSION, THE EIGHTH DIMENSION,THE 9TH DIMENSION, THE TENTH DIMENSION, THE 11TH DIMENSION, THE TWELFTH DIMENSION, THEN SOME OF MY ACHIEVED RESEARCHES: FINDING THE SPEED OF THE ANGELS AND THE SPIRIT, THE WALK YEAR , THE MEANING OF THE SKIES AND THE EARTH , FINDING THE SPEED OF THINGS NEAR ALLAH ((ALLAH SEE FROM THE POINT OF VIEW OF THE SPECIAL RELATIVITY OF ALBERT EINSTEIN - RELATIVITY OF LIGHT-)), THE ACHIEVED RESEARCH: THE PROOF OF THE EXISTING OF THE ROADS OF THE SKY , THEN THE MEANING OF "EINSTEIN" WORD , THEN THE ORIGION OF ALBERT EINSTEIN AS ASHKENAZI PERSOBN, THE ALBERT'S EINSTEIN CERTIFICATE AT THE AGE OF 17 FROM THE AARGAU KANTONSSCHULE. THE GENERAL THEORY OF RELATIVITY OF LIGHT MANUSCRIPT OF ALBERT ENSTEIN, ETHER ,AND THE EXPANSION OF THE UNIVERSE.

KEYWORDS: ALBERT EINSTEIN, SPECIAL RELATIVITY, GENERAL RELATIVITY, ALLAH, AND THE KOR'AN.

PART 1:
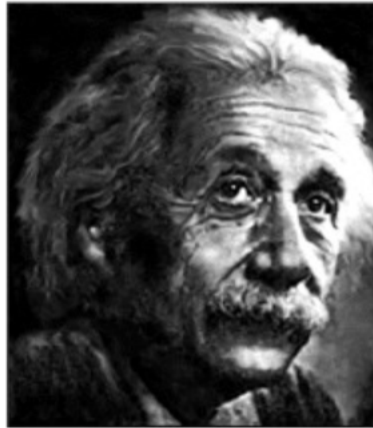
Time Line of ALBERT'S EINSTEIN Life

1879: Albert Einstein is born to Hermann Einstein (a featherbed salesman) and his wife Pauline in Ulm, Germany.

1884: Around this time, Albert receives his first compass, beginning his quest to investigate the natural world.

1889: At age 10, Albert sets into a program of self education and reads as much about science as he can.

1894: The Einsteins move from Munich to Pavia, Italy and Albert, 15, stays on in Munich to finish the school year. Albert lasts only a term on his own and follows his family to Pavia.

1895: Albert attempts to skip high school by taking an entrance exam to the Swiss Polytechnic, a top technical university, but he fails the arts portion. His family sends him to the Swiss town of Aarau to finish high school.

1896: Albert graduates from high school at the age of 17 and enrolls at the ETH (the Federal Polytechnic) in Zurich.

1898: Albert falls in love with Mileva Maric, a Hungarian classmate at the ETH.

1900: Albert graduates from the ETH.

1901: Albert becomes a Swiss citizen. Unemployed, he searches for work. He and Mileva meet in northern Italy for a tryst.

Mileva becomes pregnant. In the fall, Albert finds work in

Schaffhausen, Switzerland as a tutor. Mileva, visibly pregnant,

moves to Stein Am Rhein, three miles upriver. Mileva then moves

to Hungary to give birth to their baby at her parent's home.

Albert moves to Bern.

1902: In January, Mileva gives birth to their daughter, Lieserl,

whom they eventually put up for adoption. She reportedly

becomes ill and then all record of her disappears. Albert takes a

job at the Swiss Patent Office. Hermann Einstein becomes ill and

dies.

1903: Albert and Mileva marry in January

1904: Mileva gives birth to their first son, Hans Albert.

1905: "Annus Mirabilis" – Einstein's "Miracle Year": his Special

Theory of Relativity is born. June 30th, Einstein, submits his

paper, "On the Electrodynamics of Moving Bodies" to the leading

German physics journal. At age 26, he applies his theory to mass and energy and formulates the equation E=mc^2.

1906: Still living in Bern, Einstein continues as an Examiner at the Swiss Patent Office.

1907: Einstein begins applying the laws of gravity to his Special Theory of Relativity.

1910: Son Eduard is born.

1911: The Einsteins move to Prague where Albert is given a full professorship at the German University there. Albert is the youngest to attend the invitation-only Solvay Conference in Brussels, the first world physics conference.

1912: The Einsteins move to Zurich where Albert is given a position as a professor of Theoretical Physics at the ETH.

1913: Einstein works on his new Theory of Gravity.

1914: Einstein becomes director of the Kaiser Wilhelm Institute in Berlin and professor of theoretical physics at the University of Berlin. The family moves there in April, but Mileva and the sons return to Zurich after 3 months. The divorce prodeedings begin. In August, World War I begins.

1915: Einstein completes the General Theory of Relativity.

1917: Einstein collapses and, near death, falls seriously ill. He is nursed back to health by his cousin, Elsa. He publishes his first paper on cosmology.

1919: Albert marries Elsa. May 29, a solar eclipse proves Einstein's General Theory of Relativity works.

1922: Is awarded the Nobel Prize in physics for 1921.

1927: Attends fifth Solvay Conference and begins developing the foundation of quantum mechanics with Bohr.

1928: Einstein begins pursing his idea of a unified field theory.

1932: Einstein is 53 and at the height of his fame. Identified as a Jew, he begins to feel the heat of Nazi Germany.

1933: Albert and Elsa set sail for the United States. They settle in Princeton, New Jersey where he assumes a post at the Institute for Advanced Study.

1936: Elsa dies after a brief illness.

1939: World War II begins. Einstein writes a famous letter to President Franklin D. Roosevelt warning of the possibility of Germany's building an atomic bomb and urging nuclear research.

1940: Einstein becomes an American citizen; retains Swiss citizenship.

1949: Mileva dies.

1955: Einstein dies of heart failure on April 16.

REFGERENCE : http://202.201.109.15/gzxia/jxzyg/yy/2/19/01/kzzl1.htm

PART 2:

PICTURES:

EINSTEIN AT 3 YEARS OLD

1882

ALBERT EINSTEIN LATE IN TALK AT 9 YEARS OLD.

THE HOUSE IN ULM WHERE ALBERT EINSTEIN WAS BORN

PAULINE NEE KOCH EINSTEIN THE MOTHER OF ALBERT EINSTEIN

HERMANN EINSTEIN THE FATHER OF ALBERT EINSTEIN

ALBERT EINSTEIN IN 1893 (AGE 14)

ALBERT'S EINSTEIN FIRST WIFE AND SONS :

EDUARD TO THE LEFT, MILEVA, AND HANS AT 1914.

EINSTEIN'S SECOND WIFE

ELSA

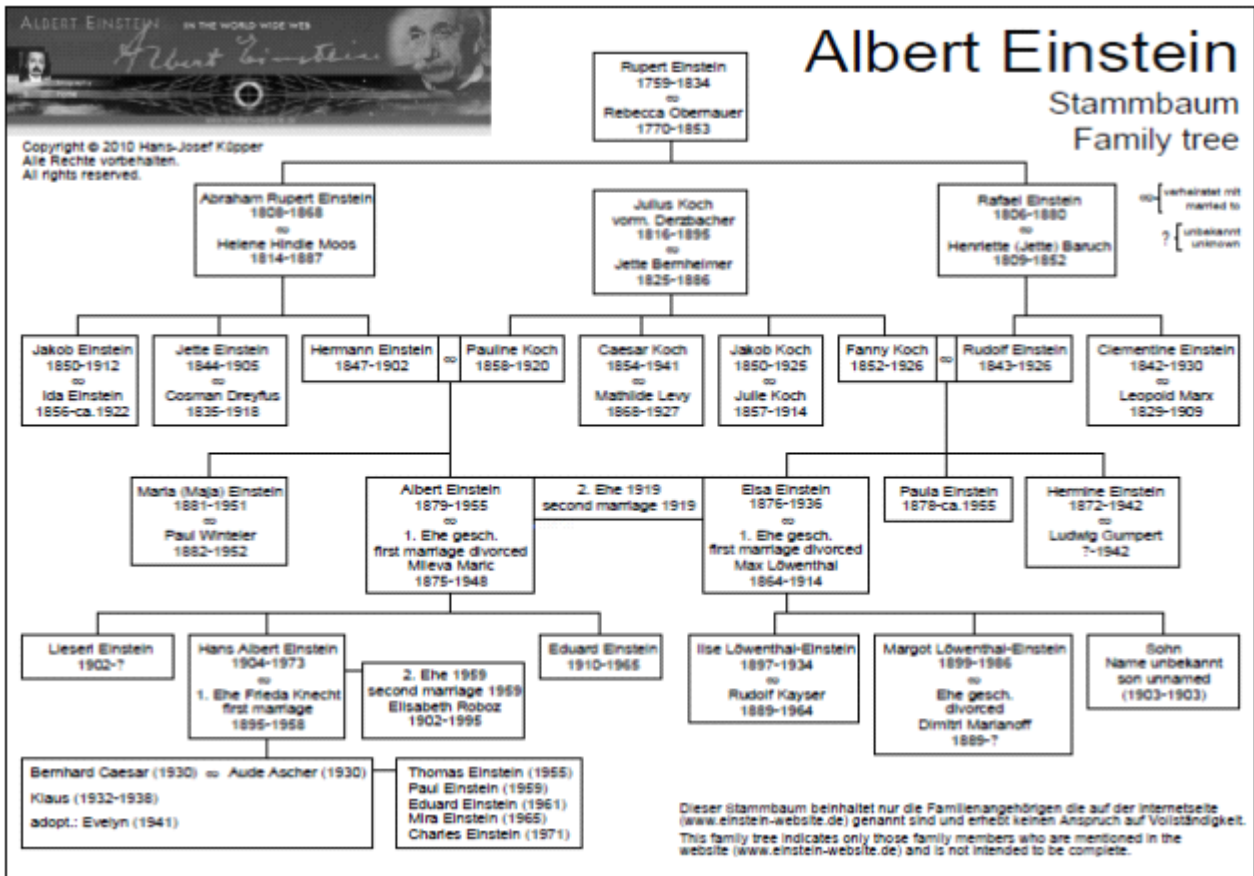**ELSA EINSTEIN WITH HER HUSBAND**

HER PARENTS : RUDOLF RAFAEL RUPERT EINSTEIN   AND   FANNY (NEE KOCH)

REFERENCE:

http://en.wikipedia.org/wiki/Albert_Einstein

PART 3:

EINSTEIN'S FAMILY TREE

REFERENCE:

www.einstein-website.de

PART 4:

CHRONOLOGY 1879-1896

[ ] REPRESENTS THE AGE:

[0]   **1879 14 March, AE born in Ulm, Germany;**
ancestors for two centuries are Swabian Jews, but parents irreligious

[1]   **1880 Family moves to Munich; father and uncle Jakob partners in**
manufacturing firm for plumbing and electrical apparatus

[5]   **1884 E enchanted by a compass. Has private lessons at home**
(too young for admission to public primary school)

[6]   **1885 E starts violin lessons, continues to age 13.**
Oct, enters Catholic primary school; also begins
private Jewish religious instruction (required by law)

[9]   **1888 Oct, E enters 1st year of 9-year *Gymnasium* program**

[10]   **1889 Uncle tells E of Pythagorean Theorem; E devises a proof.**
Max Talmud (later Talmey) begins regular visits; continues six
years, brings E popular science books

[11]   **1890 E's intense "religious paradise", lasting about a year.**
Reading science, including Darwin, disenchants E
with religion; he becomes a "fanatic freethinker"

[12] 1891 E enthralled with "holy little geometry book" (from Talmud), finds Euclid's axiomatic-deductive method a trustworthy "road to paradise." Over next four years learns analytic geometry and calculus outside school

[13] 1892 E distains bar mitzvah. Captivated by Mozart sonatas ("love is a better teacher than duty"); reads Kant

[15] 1894 Family moves to Milan. Intends E to stay in Munich to complete *Gymnasium*; in Dec E quits school, goes to Italy

[16] 1895 Summer, sends uncle essay on state of ether in magnetic field. Oct, fails entrance exam for ETH; enrolls in cantonal school in Aarau, boards with Winteler family. Ponders *Gedanken* ride on light wave.

[17] 1896 Jan, renounces German citizenship. Sept, passes exam for Aarau diploma. Essays on Goethe and on future plans.

REFERENCE :
https://www.chem.purdue.edu/.../Herschba...

OR
http://www.google.bs/url?sa=t&rct=j&q=%22CHRONOLOGY%22%22ALBERT+EINSTEIN%22+%221879-1896%22&source=web&cd=1&cad=rja&ved=0CBoQFjAA&url=https%3A%2F%2Fwww.chem.purdue.edu%2Fcourses%2Fchm374%2FArticles%2520etc%2FHerschbach_Einstein_2005.pdf&ei=iO9mULeNCeWm0QWy6oD4Dg&usg=AFQjCNGUZDGAhsKUTel_dBwwuUYPIgyqSA

Schoolboy: Munich, Milan, and

At Swiss Polytechnic Institute, Zurich, 1896-1900

[17]   1896 Oct, E to Zurich, enrolls in ETH program for diploma
to teach high school math and physics; among 10 other students in that
program are Marcel Grossmann, math, and Mileva Maric, physics

[18]   1897 Through music, meets Michele Besso, engineer; he urges E to study
Mach

[19]   1898 Jan, E dismayed by father's bankruptcy;
Oct, E passes midway oral exams, using Grossmann notes to cram,
gets highest score among math & physics candidates (5.7/6).

[20]   1899 Aug, E in letter to Mileva [M], first proposes to discard ether.
Oct, E applies for Swiss citizenship.

[21]   1900 Spring, E and M write diploma essays, both on heat
conduction, for Prof. Weber (scores 4.5 /6 and 4/6)
July, E graduates from ETH; on final diploma exams, of 5 candidates in
math & physics, E scores 4th (4.9/6); M scores last (4/6) and fails.
Aug, E only one of the 4 passing diploma candidates not appointed as an
assistant at ETH

REFERENCE :

https://www.chem.purdue.edu/.../Herschba...

OR

http://www.google.bs/url?sa=t&rct=j&q=%22CHRONOLOGY%22%22ALBERT+EINSTEIN%22+%221879-1896%22&source=web&cd=1&cad=rja&ved=0CBoQFjAA&url=https%3A%2F%2Fwww.chem.purdue.edu%2Fcourses%2Fchm374%2FArticles%2520etc%2FHerschbach_Einstein_2005.pdf&ei=iO9mULeNCeWm0QWy6oD4Dg&usg=AFQjCNGUZDGAhsKUTel_dBwwuUYPIgyqSA

PART 6:

Graduate student: 1900-1905

[21]   1900 Oct, E starts on thermoelectricity as thesis project, in Weber's lab.
Dec, submits first paper (on capillarity) to *Annalen der Physik*

[22]   1901 Feb, E becomes Swiss Citizen, completing process begun Oct 99;

Mar, E exempted from military service: "varicose veins, flat and sweaty feet"

Mar & Apr, E seeks assistant jobs in several countries, in vain.

Apr, E criticizes Planck's radiation theory in letter to M.

13 Apr gets letter from Grossmann about possible job at patent office.

May, E and M enjoy Lake Como; learn M is pregnant;

15 May-15 July, E a substitute teacher of math at Winterthur;

E excited about Lenard's observation of photoelectric effect.

July, M again fails diploma exam.

Sept, E becomes private tutor at Schaffhausen.

23 Nov, E submits proposed thesis on gas kinetics theory to Prof. Kleiner.

11 Dec, patent office job advertised; 18 Dec, E applies

[23]   1902 Jan, daughter Lieserl born; in response, E wishes to give birth himself.

1 Feb, E withdraws thesis, moves to Bern, advertises private lessons.

Apr, forms "Olympia Academy" with Maurice Solovine & Conrad Habicht.

30 Apr submits paper 2 (on electrochemistry) to *Annalen.*

May, interviewed for patent office job.

23 June, E starts provisional job at patent office: "Expert III Class."

26 June, E submits paper 3 (on statistical thermodynamics).

Oct, E's father dies in Milan; E shocked and desolate

[24]   1903 Jan, E and M married; Habicht & Solovine only witnesses.

E writes Besso he'll not pursue PhD: "comedy."

E submits paper 4 (on foundations of thermodynamics).

Sept, Lieserl survives scarlet fever; likely given up for adoption.

Dec, E talks on electromagnetic waves at *Naturforschende Gesellschaft*

[25]   1904 29 Mar, E submits paper 5 (on fluctuations).

May, son Hans Albert born.

Summer, Besso takes job at patent office: "Expert II Class."

Sept, E made "definitive" in patent office; still "Expert III Class."

Late Oct, Habicht leaves Bern for teaching post in Schaffhausen

[26]   1905 Mar-Nov, E publishes 21 reviews in *Beiblätter zu den Annalen*

Mar-June, E completes papers 6, 7, 8, & 9.

20 July, E submits paper 7 as his Ph.D. thesis; accepted 27 July.

Aug-Dec, E submits slightly revised paper 7 and papers 10 & 11.

Nov, Solovine leaves Bern for Univ. of Lyon

1906 15 Jan, all formalities completed, E becomes a Ph.D.

REFERENCE :

https://www.chem.purdue.edu/.../Herschba...

OR

http://www.google.bs/url?sa=t&rct=j&q=%22CHRONOLOGY%22%22ALBERT+EINSTEIN%22+%221879-1896%22&source=web&cd=1&cad=rja&ved=0CBoQFjAA&url=https%3A%2F%2Fwww.chem.purdue.edu%2Fcourses%2Fchm374%2FArticles%2520etc%2FHerschbach_Einstein_2005.pdf&ei=iO9mULeNCeWm0QWy6oD4Dg&usg=AFQjCNGUZDGAhsKUTel_dBwwuUYPIgyqSA

PART 7:

USEFUL DEFINITIONS:

(1)

THERE IS NO INFINITY , BUT ALLAH, ALLAH HAS NO START AND NO END, ALLAH CAN NOT CONTAINED.

(2) GEOMETRY IS PHYSICS:

GEOMETRY: IS A BRANCH OF MATHEMATICS WITH QUESTIONS OF SHAPE, SIZE, RELATIVE POSITION OF FIGURES, AND THE PROPERTIES OF SPACE.

(3) KINDS OF GEOMETRY :

(1) THE EUCLIDEAN GEOMETRY : CONSISTES OF TWO DIMENSIONS X,Y: A PLANE , SO THE RADIUS OF IT'S CARVETURE IS (∞) SO IT'S CARVETURE : R $=1/r^2=1/\infty^2=0$
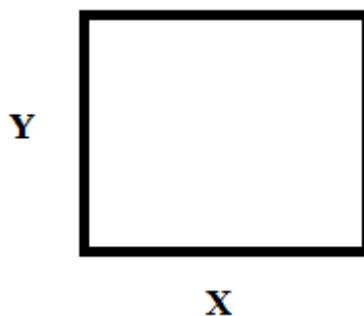
EUCLIDEAN GEOMETRY

R=0

(2) SPHEREICAL GEOMETRY:

IT'S CARVETURE=+ VALUE, 3D

IT'S COORDINATES: ϴ,ø,r , WHICH r IS THE RADIUS OF THE SPHERE
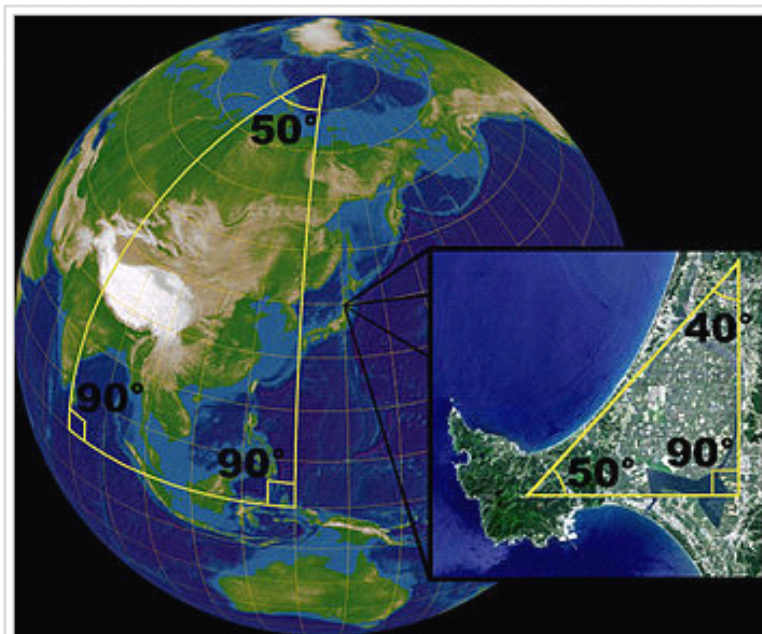
On a sphere, the sum of the angles of a triangle is not equal to 180°
A sphere is not a Euclidean space, but locally the laws of the Euclidean
geometry are good approximations. In a small triangle on the face of the
earth, the sum of the angles is very nearly 180. The surface of a
sphere can be represented by a collection of two dimensional maps.
Therefore it is a two dimensional manifold.

R=+

(3) HYPERBOLIC GEOMETRY:

IT'S CARVETURE (R)= - VALUE,

A triangle immersed in a saddle-shape plane (a hyperbolic paraboloid), as well as two diverging ultraparallel lines.

$$R=-$$
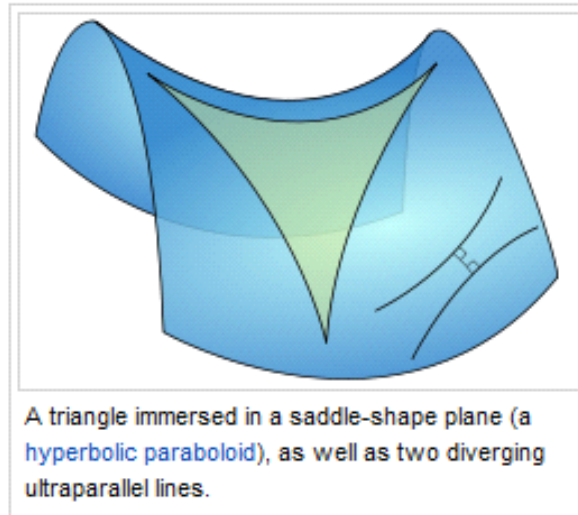
(4) MATTER IS CONSEDRED AS ENERGY SINCE M=E/C^2, WHERE (M) THE MASS AND (E) IS THE EQUEVALENT ENERGY OF IT , AND (C) IS THE SPEED OF LIGHT IN VACUUM.

(5) THE SINGULARITY : IS A LOCATION WHERE THE QUANTITIES ARE USED TO MEASURE THE GRAVITATIONAL FIELD BECOME INFINITE IN A WAY THAT DOES NOT DEPEND ON THE COORDINATE SYSTEM.

SO, WHEN SOLVING OR ANALYSING EQUATIONS; PHYSICIST MAKE A WAY TO AVOIDS THE SINGULARITY POINTS.

(6) THE WORLD LINE: THE WORLD LINE OF AN OBJECT IS THE UNIQUE PATH OF THAT OBJECT AS IT TRAVELS THROUGH 4-

DIMENSIONAL SPACE-TIME.

NOTE: THE WORLD LINE DIFFERE FROM "ORBIT" OR "TRAJECTORY" BY TIME DIMENSION, AND TYPICALLY ENCOMPASSES A LARGE AREA OF ((SPACE-TIME)) WHEREIN PERCEPTUALLY STRAIGHT PATHS ARE RECALCULATED TO SHOW THEIR (RELATIVELY) MORE ABSOLUTE POSITION STATES TO REVEAL THE NATURE OF THE SPECIAL THEORY OF RELATIVITY OR GRAVITATIONAL INTERACTIONS. THE IDEA OF WORLD LINE ORIGINATES IN PHYSICS AND WAS PIONEERED BY MINKOWSKI.

(7) THE GEODESIC :

A GEODESIC GENERALIZES THE NOTION OF A "STRAIGHT LINE" TO CURVED ((SPACE-TIME)).

IMPORTANTLY, THE WORLD LINE OF A PARTICLE FREE FROM ALL EXTERNAL, NON-GRAVITATIONAL FORCE, IS A PARTICULAR TYPE OF GEODESIC.

IN OTHER WORDS, A FREELY MOVING OR FALLING PARTICLE ALWAYS MOVES ALONG A GEODESIC.

IN GENERAL RELATIVITY , GRAVITY CAN BE REGARDED AS NOT A FORCE BUT A CONSEQUENCE OF A CURVED ((SPACE-TIME)) GEOMETRY WHERE THE SOURCE OF CURVATURE IS THE STRESS-ENERGY TENSOR (REPRESENTING MATTER, FOR INSTANCE).THUS, FOR EXAMPLE, THE PATH OF A PLANET ORBITING AROUND A STAR IS THE PROJECTION OF A GEODESIC OF THE CURVED 4-

DIMENSIONAL ((SPACE-TIME)) GEOMETRY AROUND THE STAR ONTO 3-DIMENSIONAL SPACE.

(9) THE SET : A SET IS A COLLECTION OF WELL DEFINED AND DISTINCT OBJECTS, CONSIDERED AS AN OBJECT IN ITS OWN RIGHT.SETS ARE ONE OF THE MOST FUNDAMENTAL CONCEPTS IN MATHEMATICS.
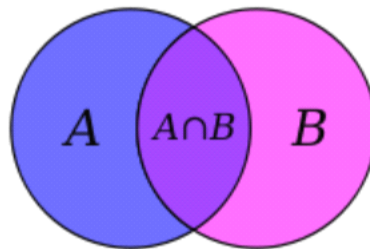
The *intersection* of two sets is made up of the objects contained in both sets, shown in a Venn diagram.
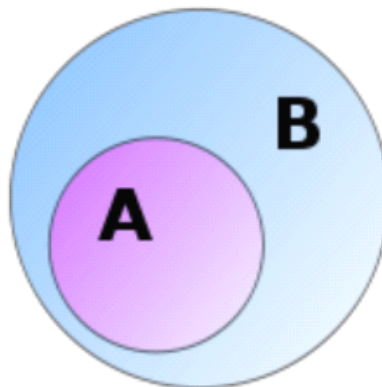
A is a subset of *B*
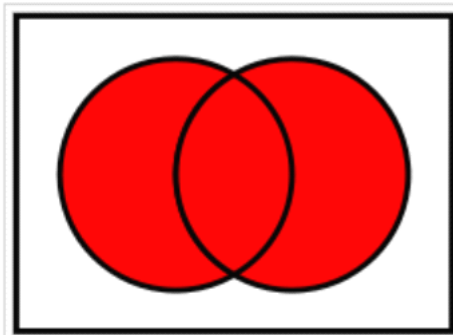
The **union** of *A* and *B*, denoted $A \cup B$
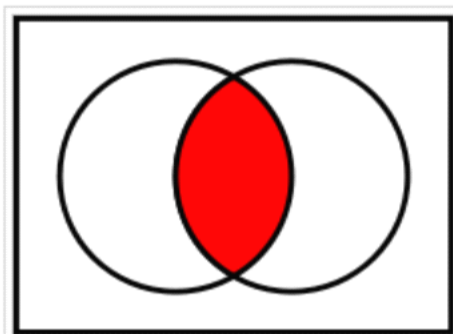
The **intersection** of *A* and *B*, denoted $A \cap B$.
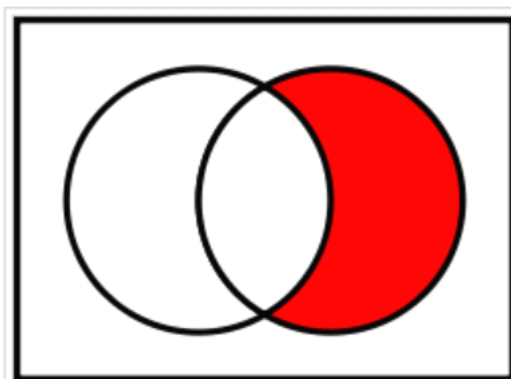
The **relative complement** of *A* (left circle) in *B* (right circle):

$$A^c \cap B \quad = \quad B \smallsetminus A$$

The **complement** of A in U:
$$A^c = U \smallsetminus A$$
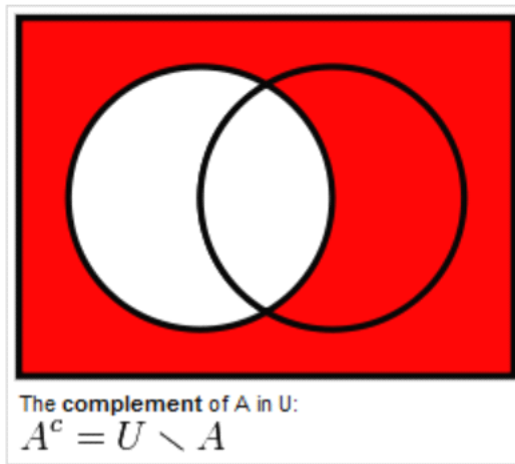
(THE ABSOLUTE COMPLEMENT OF A IN U) WHERE U IS A UNIVERSE

The **relative complement**
of *B* in *A*

The **complement** of *A* in *U*

The **symmetric difference** of *A* and *B*
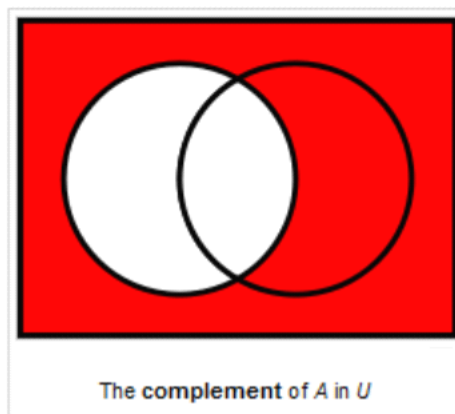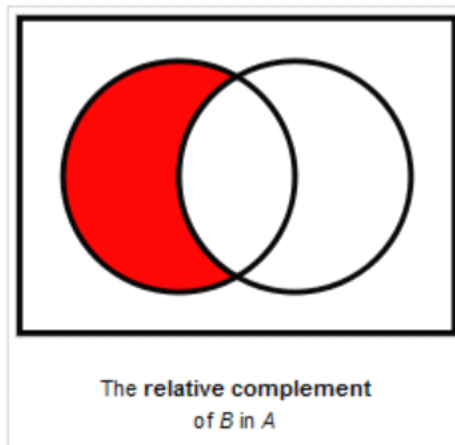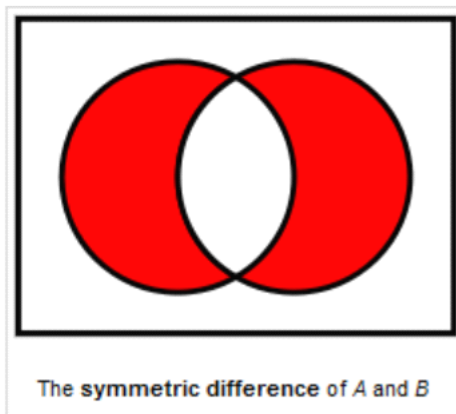
(10) VENN DIAGRAMS : VENN DIAGRAMS OR SET DIAGRAMS THAT SHOW ALL POSSIBLE LOGICAL RELATIONS BETWEEN A FINITE COLLECTION OF SETS (AGGREGATION OF THING). VENN DIAGRAMS WERE CONCEIVED AROUND 1880 BY JOHN VENN.

Venn diagram that shows the intersections of the Greek, Latin and Russian alphabets (upper case letters)
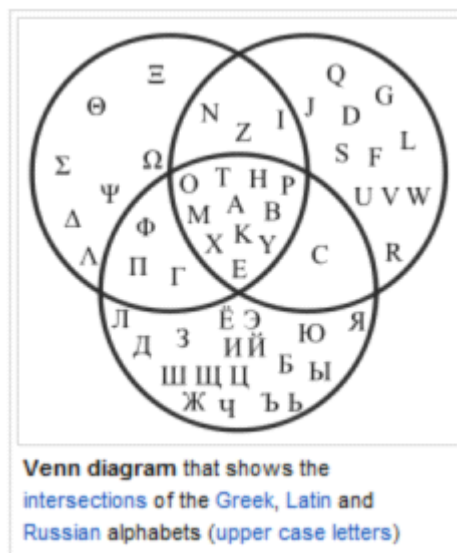
(11) THE METRIC SPACE: IN MATHEMATICS, A METRIC SPACE IS A SET WHERE A NOTION OF DISTANCE ((CALLED A METRIC)) BETWEEN ELEMENTS OF THE SET DEFINED.

(12) THE HYPERBOLOID MODEL:

IN GEOMETRY , IT IS A MODEL OF N-DIMENSIONAL HYPERBOLIC GEOMETRY IN WICH POINTS ARE REPRESENTED BY THE POINTS ON THE FORWARD SHEET S+ OF A TWO-SHEETED HYPERBOLOID IN (N+1) DIMENSIONAL PLANES IN MINKOWSKI SPACE WITH S+.

IT'S ALSO NAMED ((THEMINKOESKI MODEL)) OR ((LORENTZ MODEL)).
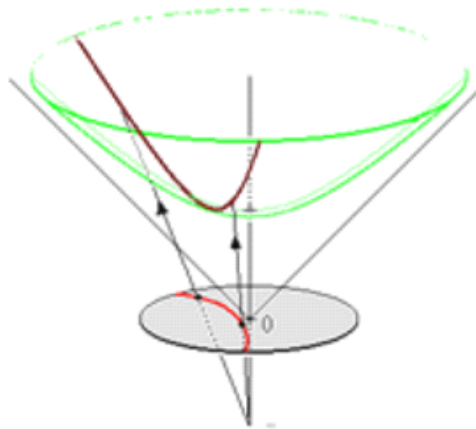
Red circular arc is geodesic in Poincaré
disk model; it projects to the brown geodesic
on the green hyperboloid.

(13) THE POINCARE DISK MODEL :

IN GEOMETRY , IT IS A MODEL OF N-DIMENSIONAL HYPERBOLIC

GEOMETRY IN WHICH THE POINTS OF THE GEOMETRY ARE IN AN N-DIMENSIONAL DISK, OR UNIT BALL, AND THE STRAIGHT LINES OF THE HYPERBOLIC GEOMETRY ARE SEGMENTS OF CIRCLES CONTAINED IN THE DISKORTHOGONAL TO THE BOUNDARY OF THE DISK, OR ELSE DIAMETERS OF THE DISK.

Poincaré disc model of great rhombitruncated {3,7} tiling.
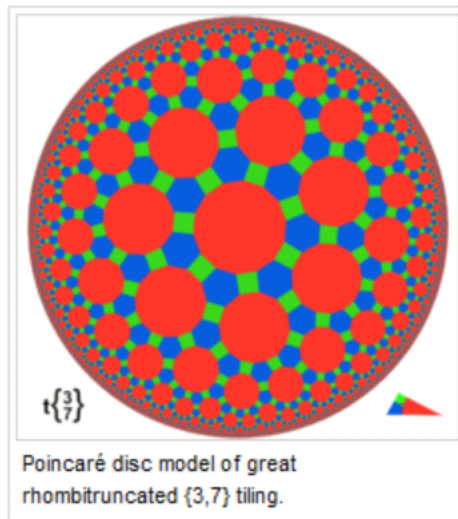
(14) SET THEORY : IT IS A BRANCH OF MATHEMATICS THAT STUDIES SETS, WICH ARE COLLECTIONS OF OBJECTS. ALTHOUGH ANY TYPE OF OBJECT CAN BE COLLECTED INTO A SET, SET THEORY IS APPLIED MOST OFTEN TO OBJECTS THAT ARE RELEVANT TO MATHEMATICS. THE LANGUAGE OF SET THEORY CAN BE USED IN THE DEFINITIONS OF NEARLY ALL MATHEMATICAL OBJECTS.

THE MODERN STUDY OF SET THEORY WAS INITIATED BY GEORG CANTOR AND RICHARD DEDEKIND IN THE 1870S.

GEORG CANTOR

(15) KINDS OF NUMBERS:

(1) REAL NUMBERS: 0,1,2,-1,-2, ETC.

(2) COMPLEX NUMBERS : WHICH CONTAINS $(-1)^{(1/2)}$.

   $(-1)^{(1/2)}$ REPRESENTED BY (i).

(16) RIEMANN SPHERE: IN MATHEMATICS, THE RIEMANN SPHERE (OR EXTENDED COMPLEX PLANE) , NAMED AFTER THE 19TH CENTURY MATHEMATICIAN BERNHARD RIEMAN, IS THE SPHERE OBTAINED FROM THE <u>COMPLEX PLANE</u> BY ADDING A <u>POINT AT INFINITY</u>. <u>THE SPHERE IS THE GEOMETRIC REPRESENTATION OF THE EXTENDED COMPLEX NUMBERS</u> : C U {∞}, WHICH CONSIST OF THE COMPLEX NUMBERS (C) TOGETHER WITH A SYMBOL (∞) TO REPRESENT INFINITY.

THE EXTENDED COMPLEX NUMBERS ARE USEFUL IN COMPLEX ANALYSIS BECAUSE THEY ALLOW FOR DIVISION BY ZERO IN SOME CIRCUMSTANCES, IN A WAY THAT MAKES EXPRESSIONS SUCH AS $(1/0)= ∞$, AND $(1/∞)=0$, WELL-BEHAVED.
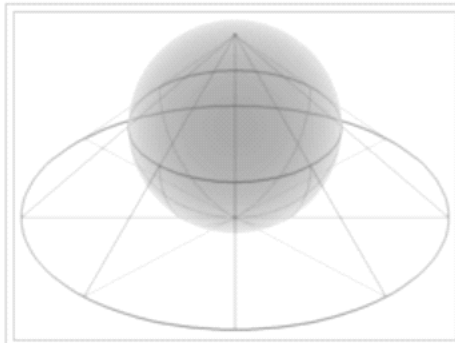
The Riemann sphere can be visualized as the complex number plane wrapped around a sphere (by some form of stereographic projection).
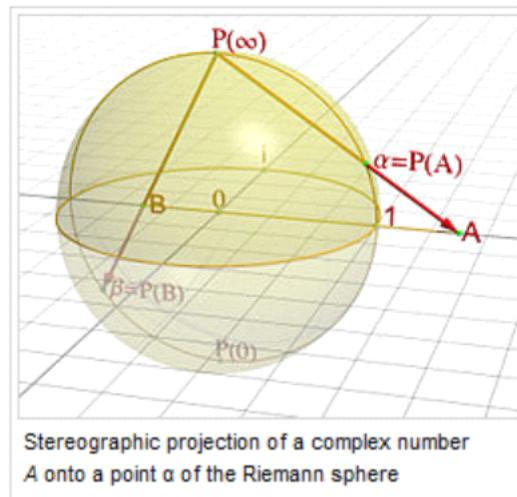
Stereographic projection of a complex number A onto a point α of the Riemann sphere

(17) THE "EVENT" :

BY COMBINING THE TIME-ORDERING AND SPACE-ORDERING OF THE EVENTS OF NATURE INTO A SINGLE ORDER OF FOUR DIMENSIONS, WE SHALL NOT ONLY OBTAIN GREATER SIMPLICITY FOR THE PHENOMENA IN WHICH THE SEPARATION OF TIME AND SPACE IS IRRELEVANT, BUT WE SHALL UNDERSTAND BETTER THE NATURE OF THE DIFFERENTIATION WHEN IT IS RELEVANT.

A POINT IN THIS SPACE-TIME, THAT IS TO SAY A GIVEN INSTANT AT A GIVEN PLACE, IS CALLED AN "EVENT".

AN EVENT IN ITS CUSTOMARY MEANING WOULD BE THE PHYSICAL HAPPENING WHICH OCCURS <u>AT</u> AND IDENTIFIES A PARTICULAR PLACE AND TIME. HOWEVER, WE SHALL USE THE WORD IN BOTH SENSES, BECAUSE IT IS SCARCELY POSSIBLE TO THINK OF A POINT IN SPACE-TIME WITHOUT IMAGINING SOME IDENTIFYING OCCURRENCE.

THE COORDINATES OF EVENT 1 : (X1,Y1,Z1,t1)
THE COORDINATES OF EVENT 2 : (X2,Y2,Z2,t2)

(18) THE "INTERVAL" : THE EXTENSION IN SPACE AND TIME COMINED IS CALLED THE "INTERVAL" BETWEEN 2THE TWO EVENTS; IT IS THE SAME FOR ALL OBSERVERS, HOWEVER THEY RESOLVE IT INTO SPACE AND TIME SEPARATLY.

(19) THE DISTANCE: IT IS GIVEN BY FROM GEOMETRY :

S^2=(X2-X1)^2 + (Y2-Y1)^2 + (Z2-Z1)^2

WHERE (S) IS THE DISTANCE IN 3D SPACE.

(20) THE GEOMETRY OF SPACETIME:

IT'S SEMI-EUCLIDEAN OR "HYPERBOLIC".

THE TIME GEOMETRY – THE EINSTEIN'S TIME : LIGHT TIME- IS HYPERBOLIC.

(21) ADDING THE TIME AS A DIMENSION :

THE SPACE-TIME IS NOT EUCLIDEAN ; IT DOES , HOWEVER, CONFORM (AT LEAST APPROXIMATELY) TO A VERY SIMPLE MODIFICATION OF EUCLIDEAN GEOMETRY INDICATED BY THE CORRECTED FORMULA :

IN REAL TIME (t) :

$$S^2 = (X_2-X_1)^2 + (Y_2-Y_1)^2 + (Z_2-Z_1)^2 - (t_2-t_1)^2$$

THE (S) QUANTITY: THE INTERVAL BETWEEN THE TWO EVENTS.

THE MINUS SIGN IS THE SECRET OF THE DIFFERENCES OF THE MANIFESTATIONS OF TIME AND SPACE IN NATURE.

(22) REPRESENTATION OF TIME:

INSTEAD OF REAL TIME t ; CONSIDER IMAGINARY TIME τ;

$t = \tau \sqrt{-1}$, $\tau = ct/\sqrt{-1}$ **(c=SPEED OF LIGHT)**

$(t_2-t_1)^2 = -(\tau_2-\tau_1)^2$

SO;

$$S^2 = (X_2-X_1)^2 + (Y_2-Y_1)^2 + (Z_2-Z_1)^2 + (\tau_2-\tau_1)^2$$

EVERYTHING IS NOW SYMMETRICAL AND THERE IS NO DISTINCTION BETWEEN τ AND THE OTHER VARIABLES. THE CONTINUUM FORMED OF SPACE AND IMAGINARY TIME IS COMPLETELY ISOTROPIC FOR ALL MEASUREMENT; NO DIRECTION CAN BE PICKED OUT IN IT AS FUNDAMENTALLY DISTINCT FROM ANY OTHER.

THE OBSERVER'S SEPARATION OF THIS CONTINUUM INTO SPACE AND TIME CONSISTS IN SLICTING IT IN SOME DIRECTION, VIZ. THAT PERPENDICULAR TO THE PATH ALONG WHICH HE IS HIMSELF TRAVELLING. THE SECTION GIVES THREE-DIMENSIONAL SPACE AT SOME MOMENT, AND THE PERPENDICULAR DIMENSION IS ((IMAGINARY)) TIME.
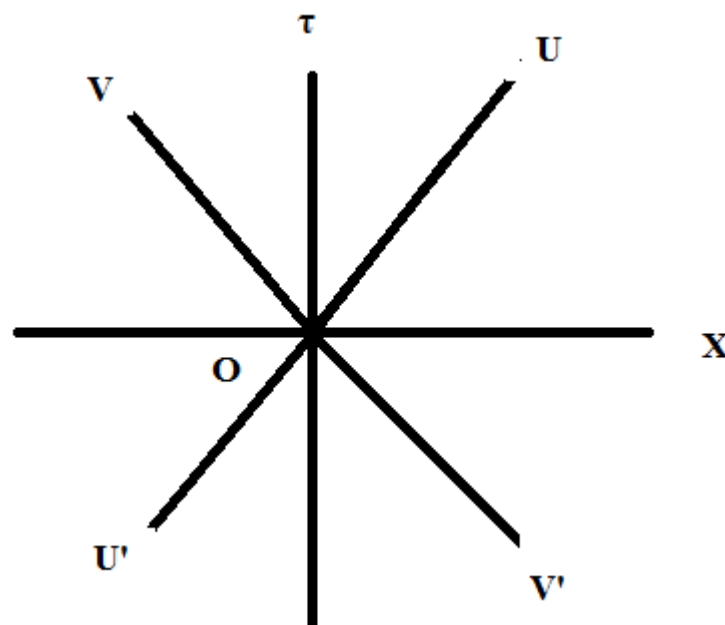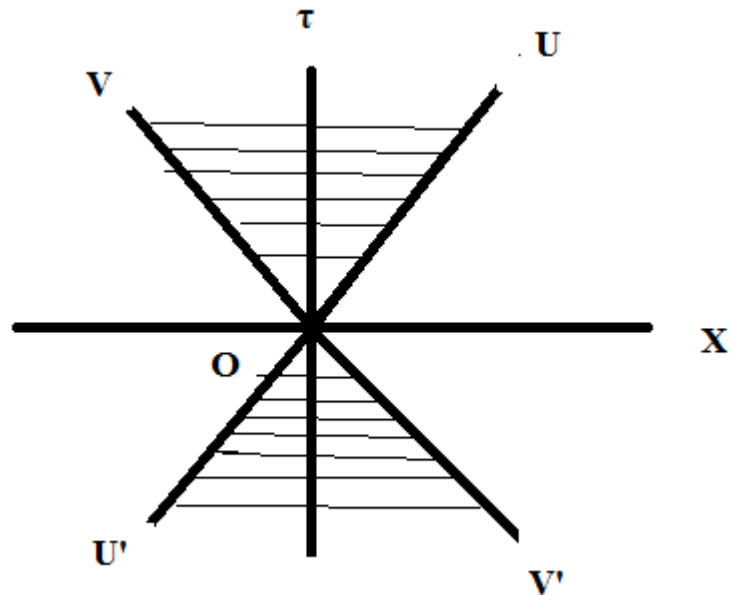
 SPACETIME IS THUS DIVIDED INTO THREE ZONES WITH RESPECT TO THE EVENT (O). U'OV' BELONGS TO THE INDUBITABLE PAST. U O V IS THE INDUBITABLE FUTURE.

UOV' AND VOU' ARE ((ABSOLUTELY)) NEITHER PAST NOR FUTURE, BUT SIMPLY "ELSEWHERE".

(O) –THE ORIGION- REPRESENT'S THE EVENT , OBSERVER, AND PRESENT.

Light cone in 2D space plus a time dimension.
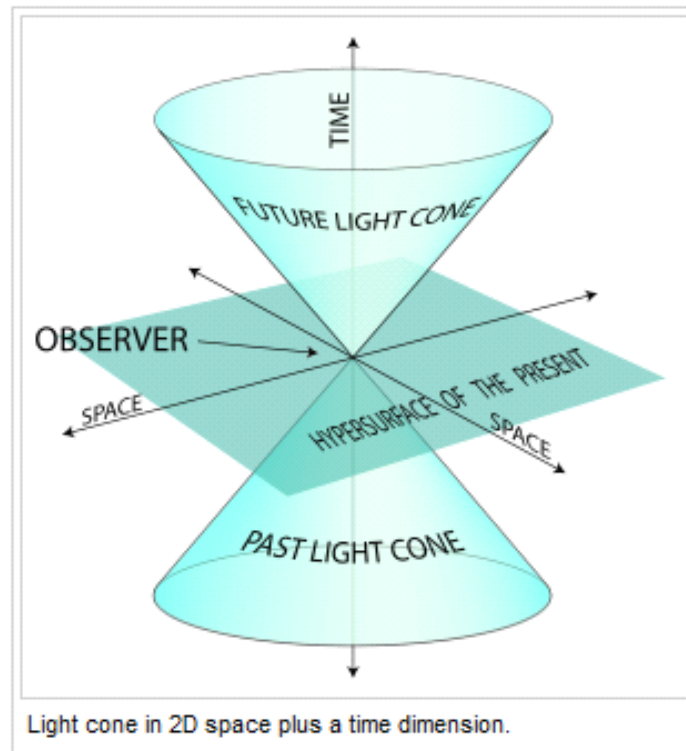
THE LIGHT CONE :

light cone is the path that a flash of light, emanating from a single event (localized to a single point in space and a single moment in time) and traveling in all directions, would take through spacetime. If we imagine the light confined to a two-dimensional plane, the light from the flash spreads out in a circle after the event E occurs, and if we graph the growing circle with the vertical axis of the graph representing time, the result is a cone, known as the future light cone. The past light cone behaves like the future light cone in reverse, a circle which contracts in radius at the speed of light until it converges to a point at the exact position and time of the event (O). In reality, there are three space dimensions, so the light would actually form an expanding or contracting sphere in 3D space rather than a circle in 2D, and the light cone would actually be a four-dimensional version of a cone whose CROSS-SECTIONS form 3D spheres (analogous to a normal three-dimensional cone whose cross-sections form 2D

circles), but the concept is easier to visualize with the number of spatial dimensions reduced from three to two.

Because signals and other causal influences cannot travel faster than light,

The light cone plays an essential role in defining the concept of **causality** for a given event (O), the set of events that lie on or inside the past light cone of (O) would also be the set of all events that could send a signal that would have time to reach (O) and influence it in some way. For example, at a time ten years before (O) , if we consider the set of all events in the past light cone of (O) which occur at that time, the result would be a sphere (2D: disk) with a radius of ten light-years centered on the future position (O) will occur. So, any point on or inside the sphere could send a signal moving at the speed of light or slower that would have time to influence the event (O), while points outside the sphere at that moment would not be able to have any causal influence on (O).

 Likewise, the set of events that lie on or inside the *future* light cone of (O) would also be the set of events that could receive a signal sent out from the position and time of (O), so the future light cone contains all the events that could potentially be causally influenced by (O). Events which lie neither in the past or future light cone of (O) cannot influence or be influenced by (O) in relativity.

THE CAUSALITY:

2Causality –causation**- is the relationship between an event (the *cause*) and a second event (the *effect*), where the second event is understood as a consequence of the first.**
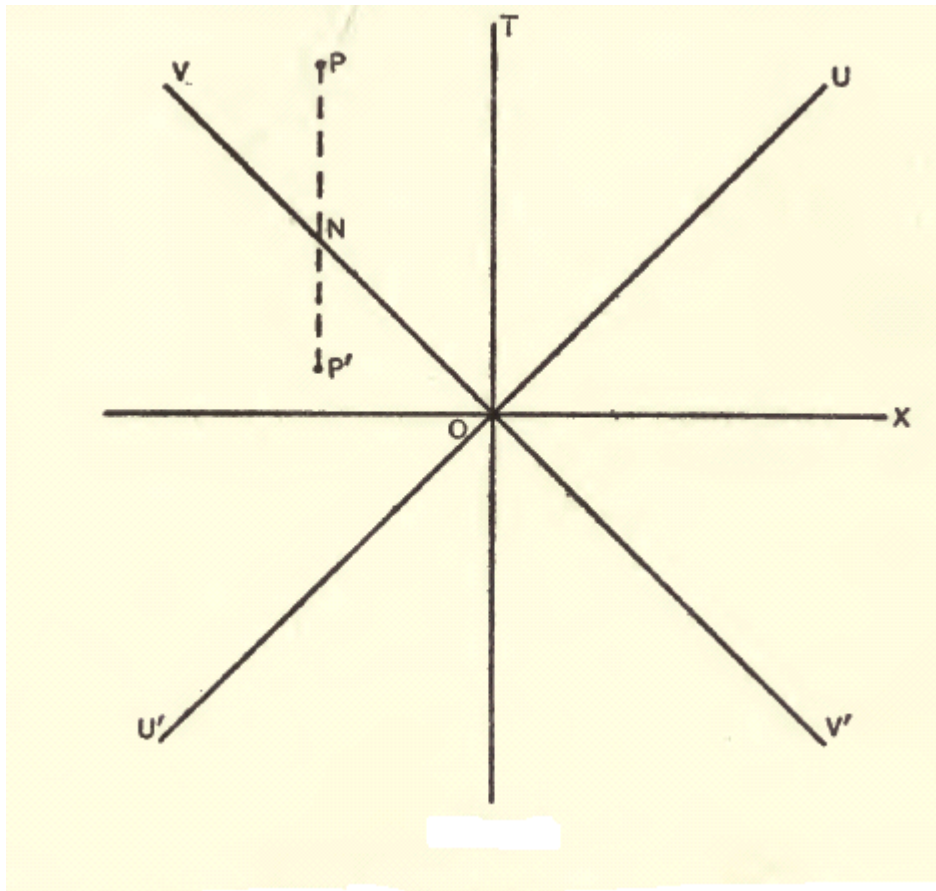
THE EVENTS (O) AND (P') CAN NOT HAPPEN TO THE SAME PARTICLE; AND NO OBSERVER COULD REGARD THEM AS HAPPENING AT THE SAME PLACE. NOTE THAT THE TIME AXIS IT'S FOR TIME NOT TIME SQUARED.

IN THE EINSTIEN'S TIME (: LIGHT TIME: IN IT THE TIME MEASURED BY LIGHT AS IN THE ABOVE DIAGRAMS) :

SIMULTANEITY OF EVENTS AT DIFFERENT PLACES HAS NO ABSOLUTE MEANING.

THE DENIAL OF ABSOLUTE SIMULTANEITY IS A NATURAL COMPLEMENT TO THE DENAIL OF ABSOLUTE MOTION. THE LATTER ASSETS THAT WE CAN NOT FIND OUT WHAT IS THE SAME PLACE AT TWO DIFFERENT TIMES-ACCORDING TO THE LIGHT(BECAUSE WE STUDY NOW THE TIME AS IT THE TIME OF EINSTEIN:THE TIME OF LIGHT)-; THE FORMER THAT WE CANNOT FIND OUT WHAT IS THE SAME TIME AT TWO DIFFERENT PLACES-ACCORDING TO THE LIGHT-.

$\tau^2 = -C^2 (t)^2$ **, AND**

$\tau = C (t) \sqrt{(-1)}$ **.**
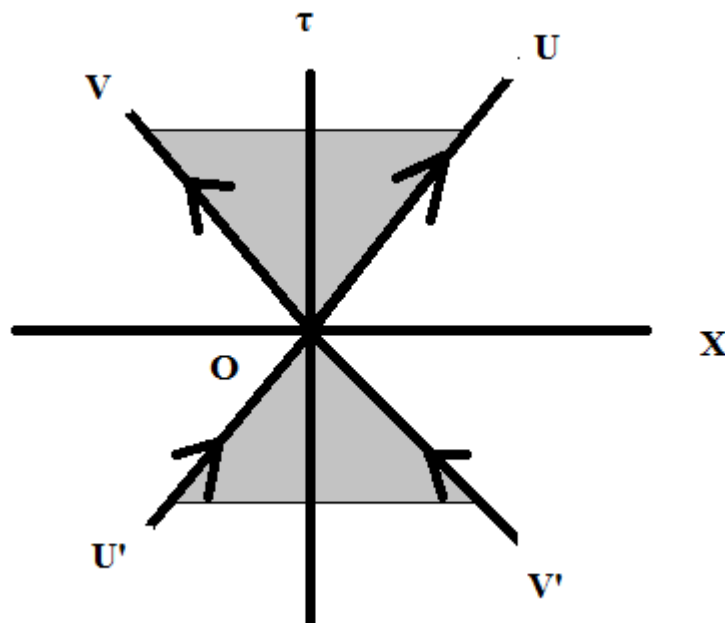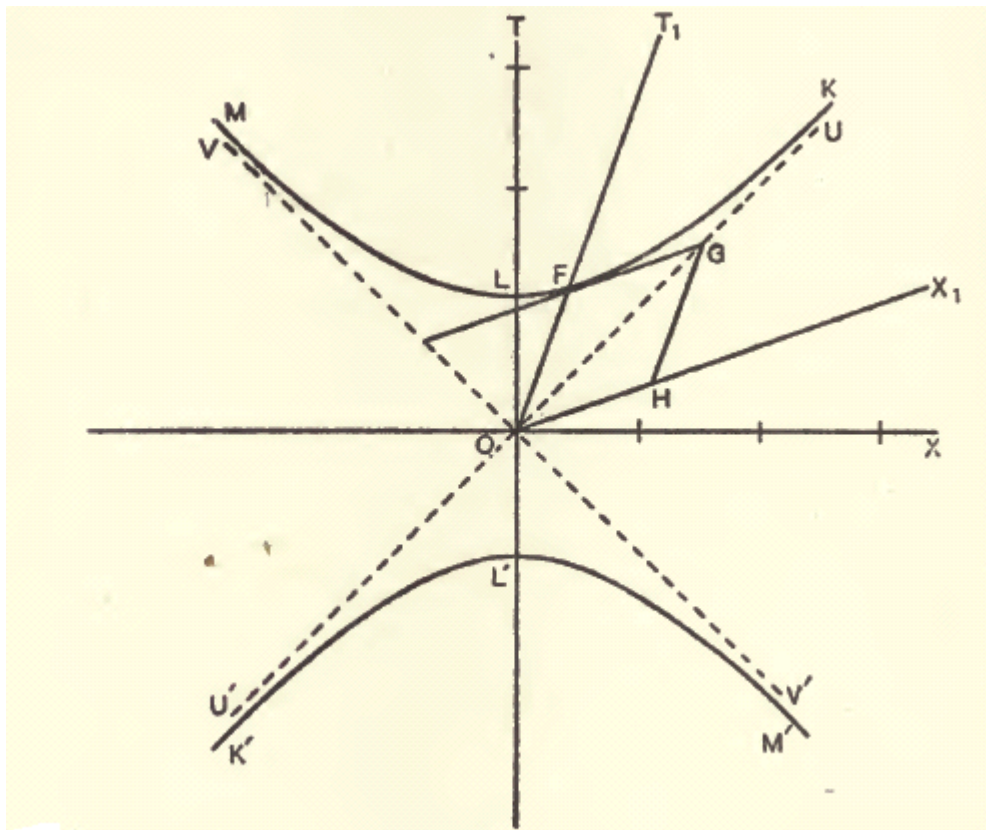
FOR THE ABOVE FIGURE :

CONSIDER NOW ALL THE EVENTS WHICH ARE AT AN INTERVAL OF ONE UNIT FROM (O), ACCORDING TO THE DEFINITION OF THE INTERVAL (S)

$$S^2 = -(X_2-X_1)^2-(Y_2-Y_1)^2-(Z_2-Z_1)^2+(t_2-t_1)^2$$

WE HAVE CHANGED THE SIGN OF S^2, BECAUSE USUALLY (THOUGH NOT ALWAYS) THE ORIGINAL (S^2) WOULD HAVE COME TO NEGATIVE. IN EUCLIDEAN SPACE POINT DISTANT A UNIT INTERVAL LIE ON A CIRCLE; BUT, OWING TO THE CHANGE IN GEOMETRY DUE TO THE ALTERED SIGN OF $(t_2-t_1)^2$, THEY NOW LIE ON A RECTANGULAR HYPERBOLA WITH TWO BRANCHES *KLM, K'L'M'*. SINCE THE INTERVAL IS AN ABSOLUTE QUANTITY, ALL OBSERVERS

WILL AGREE THAT THESE POINTS ARE AT UNIT INTERVAL FROM (O).

NOW MAKE THE FOLLOWING CONSTRUCTION:- DRAW A STRAIGHT LINE *OFT1* , TO MEET THE HYPERBOLA IN *F* ; DRAW THE TANGENT *FG* AT *F*, MEETING THE LIGHT-LINE *U'OU* IN *G*; COPLETE THE PARALLELOGRAM *OFGH*; PRODUCE *OH* TO *X1*. WE NOW ASSERT THAT AN OBSERVER *S1* WHO CHOOSES *OT1* FOR THIS TIME-DIRECTION WILL REGARD *OX1* AS HIS SPACE DIRECTION AND WILL CONSIDER *OF* AND *OH* TO BE THE UNITS OF TIME AND SPACE.

(23) IS THERE NO TIME:

THE FACT THAT EVENTS TAKE PLACE "IN NO TIME" IS USUALLY EXPLAINED BY SAYING THAT THE INERTIA OF ANY PARTICLE MOVING WITH THE VELOCITY OF LIGHT BECOMES INFINITE ACCORDING TO

$M = MO/(1-V^2/C^2)^{1/2}$ SPECIAL THEORY OF RELATIVITY OF EINSTEIN OF MASS

SO THAT ALL MOLECULAR PROCESSES IN THE OBSERVER MUST STOP.

(24) THE SPEED OF LIGHT:

THE CHIEF IMPORTANCE OF THE SPEED OF LIGHT IN VACUUM IS THAT NO MATERIAL BODY CAN EXCEED THIS SPEED.

C=299792458 METERS/SECOND.

(25) THE FACTOR $\gamma = (1-(V^2/C^2))^{(1/2)}$:

WHERE V= THE SPEED OF A MATERIAL BODY

C=THE SPEED OF LIGHT IN VACUUM,

M=MO/γ,

T=TO γ ,

L=LO γ.

THE ABOVE THREE EQUATIONS ARE THE SPECIAL RELATIVITY OF EINSTEIN EQUATIONS,

MO=REST MASS , M=M(V),

TO= REST TIME , TIME ACCORDENCE WITH V=0,

T=T(V),

LO=THE REST LENGTH , L=L(V),

AS (V) INCREASES , GAMMA DECREASES, M INCREASES, T DECREASES, AND LENGTH L DECREASES

WE SEE ABOVE THAT THE FACTOR GIVING THE INCREASE OF MASS WITH IT'S SPEED IS THE SAME AS THAT THAT AFFECTS LENGTH AND TIME.

THUS IF A ROD MOVES AT SUCH A SPEED THAT IT'S LENGTH IS HALVED, IT'S MASS WILL BE DOUBLED. IT'S DENSITY WILL BE INCREASED FOUR-FOLD, SINCE IT IS BOTH HEAVIER AND LESS IN VOLUME.

(26) IS RELATIVITY BELONG TO LIGHT ONLY:

NO, RELATIVITY CAN BE CONSIDERED BELONGING TO ANY THING THAT USED TO TRANFORMED INFORMATION,

LIKE:

    (1) LIGHT SO THE $\gamma = (1-(V^2/C^2))^{.5}$

    (2) SOUND ,   SO

       $\gamma = (V^2/(\text{SPEED OF SOUND})^2)^{1/2}$

    (3) A SWIMMER ,

       $\gamma = (\text{CURRENT SPEED})^2/(\text{SWIMMER SPEED})^2)^{1/2}$

(27) THE FITZGERALD CONTRACTION

WILL IT TAKE LONGER TO SWIM TO A POINT 100 YARDS UP-STREAM AND BACK, OR TO A POINT 100 YARDS ACROSS-STREAM AND BACK.

IN THE FIRST CASE THERE IS A LONG TOIL UP AGAINST THE CURRENT, AND THEN A QUECK RETURN HELPED BY THE CURRENT, WHICH IS ALL TOO SHORT TO COMPENSATE.

IN THE SECOND CASE THE CURRENT ALSO HINDERS, BECAUSE PART OF THE EFFORT IS DEVOTED TO OVERCOMING THE DRIFT

DOWN-STREAM. BUT NO SWIMMER WILL HESITATE TO SAY THAT THE HINDRANCE IS THE GREATER IN THE FIRST CASE.

LET US TAKE A NUMERICAL EXAMPLE. SUPPOSE THE SWIMMER'S SPEED IS 50 YARDS A MINUTE IN STILL WATER, AND THE CURRENT IS 30 YARDS A MINUTE. THUS THE SPEED AGAINST THE CURRENT IS 20, AND WITH THE CURRENT 80 YARDS A MINUTE. THE UP JOURNY THEN TAKES 5 MINUTES AND THE DOWN JOURNY 1(1/4) MINUTES. TOTAL TIME, 6(1/4) MINUTES.

GOING CROSS-STREAM THE SWIMMER MUST AIM AT A POINT (E) ABOVE THE POINT (B) WHERE HE WISHES TO ARRIVE,SO THE (OE) REPRESENTS HIS DISTANCE TRAVELLED IN STILL WATER, AND (EB) THE AMOUNT HE HAS DRIFTED DOWN. THESE MUST BE IN THE RATIO 50 TO 30, AND WE THEN KNOW FROM THE RIGHT-ANGLED TRIANGLE (OBE) THAT (OB) WILL CORRESPOND TO 40. SINCE (OB) IS 100 YARDS, (OE) IS 125 YARDS, AND THE TIME TAKEN IS 2(1/2) MINUTES. ANOTHER 2(1/2) MINUTES WILL BE NEEDED FOR THE RETURN JOURNY. TOTAL TIME, 5 MINUTES.
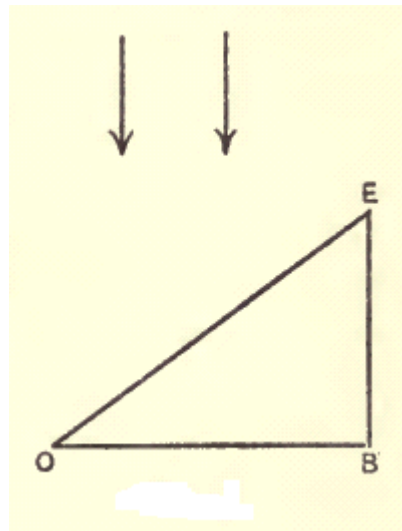
IN STILL WATER THE TIME WOULD HAVE BEEN 4 MINUTES. THE UP-AND- DOWN SWIM IS THUS LONGER THAN THE TRANSVERSE SWIM IN THE RATIO

6(1/4) MINUTES: 5 MINUTES =1.25

OR WE MAY WRITE THE RATIO

$$1/[1-(30/50)^2]^{(1/2)} =1.25$$

WHICH SHOWS HOW THE RESULT DEPENDS ON THE RATIO OF THE SPEED OF THE CURRENT TO THE SPEED OF THE SWIMMER , VIZ. 30/50.

(28) THE THEORETICAL INCREASE OF THE MASS OF AN ELECTRON WITH SPEED HAS BEEN CONFIRMED EXPERIMENTALLY , THE AGREEMENT WITH CALCULATION BEING PERFECT IF THE ELECTRON UNDERGOES THE FITZGERALD CONTRACTION BY IT'S MOTION.

(29) FLATLAND : IT'S A BOOK IN THE FOURTH DIMENSION.

(30) THE FOUR-DIMENSIONAL WORLD OF SPACETIME:

(1) AS A FOUR-DIMENSIONAL BODY MOVES, IT'S SECTION BY THE THREE-DIMENSIONAL WORLD MAY VARY; THUS A RIGID BODY CAN ALTER SIZE AND SHAPE.

(2) IT SHOULD BE POSSIBLE FOR A BODY TO ENTER A COMPLETELY CLOSED ROOM, BY TRAVELLING INTO IT IN THE DIRECTION OF THE FOURTH DIMENSION, JUST AS WE CAN BRING OUR PENCIL DOWN ON TO ANY POIN8T WITHIN A SQUARE WITHOUT CROSSING IT'S SIDES.

(3) IT SHOULD BE POSSIBLE TO SEE THE INSIDE OF A SOLID, JUST AS WE CAN SEE THE INSIDE OF A SQUARE BY VIEWING IT FROM A POINT OUTSIDE IT'S PLANE.

(31) KINDS OF DISCOVERED FORCES:

  (1) ELECTRIC FORCE,
  (2) MAGNETIC FORCE,
  (3) WEAK NUCLEAR FORCE (REPONSIBLE FOR DISINTEGRATION)
  (4) STRONG NUCLEAR FORCE (BINDING FORCE BETWEE , AMONG PROTONS AND NUETRONS IN THE NUCLEOUS OF THE ATOM,

AND,

(5) GRAVITY.

(32) TENSOR : TENSORS ARE GEOMETRIC OBJECTS THAT DESCRIBE THE LINEAR RELATIONS BETWEEN VECOTORS, SCALARS, AND OTHER TENSORS.
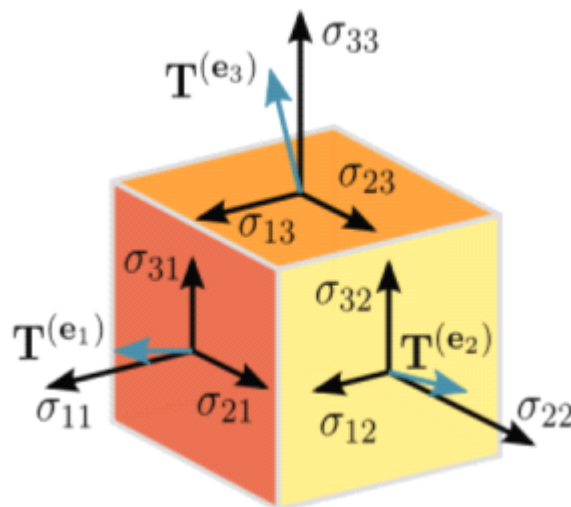
(33)

Stress, a second-order tensor. The tensor's components, in a three-dimensional Cartesian coordinate system, form the

$$\sigma = \left[\mathbf{T}^{(\mathbf{e_1})} \mathbf{T}^{(\mathbf{e_2})} \mathbf{T}^{(\mathbf{e_3})} \right]$$

matrix :
$$= \begin{bmatrix} \sigma_{11} & \sigma_{12} & \sigma_{13} \\ \sigma_{21} & \sigma_{22} & \sigma_{23} \\ \sigma_{31} & \sigma_{32} & \sigma_{33} \end{bmatrix}$$

whose columns are the forces acting on the e_1, e_2, and e_3 faces of the cube.

(33) STRESS-ENERGY TENSOR :

The stress–energy tensor (sometimes stress–energy–momentum tensor) is a and energy of flux and density that describes the physics quantity in tensor

of Newtonian physics. It [stress tensor](), generalizing the [spacetime]() in [momentum]() . The [force fields](), and non-gravitational [radiation](), [matter]()is an attribute of [Einstein field]() in the [gravitational field]()stress–energy tensor is the source of the , just as mass density is the source of such a field [general relativity]() of [equations]() [Newtonian gravity]()in
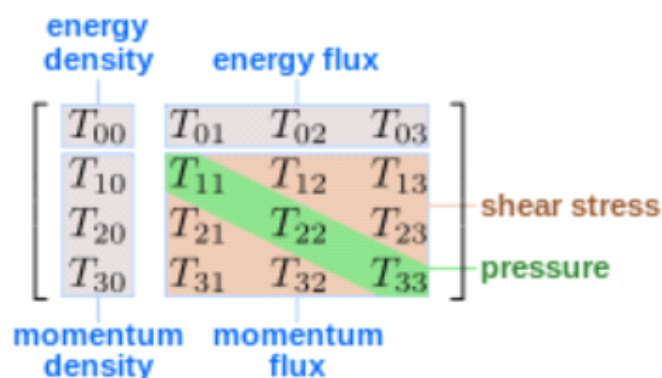
STRESS-ENERGY TENSOR COMPONENTS

$T00$= ENERGY DENSITY=ρ,

T10,T20,T30 : ARE THE MOMENTUM DENSITY,

T01,T02,T03 : ENERGY FLUX,

T11,T22,T33 : PRESSURE,

T12,T13,T23,T21,T32,T31: SHEAR STRESS COMPONENTS

(34) THE TIME OF EVENT : THE TIME OF EVENT TAKING PLACE AT A POINT P(X,Y,Z) - MEASURED BY A CLOCK WHICH IS CONSIDERED AT REST AT ONE POINT OF THE COORDINATE SYSTEM, E.G., AT THE COORDINATE ORIGION (X=Y=Z=0) - DEFINED AS THE TIME SHOWN ON THE CLOCK SIMULTANEOUSLY WITH THE EVENT.

(35) THE THREE CONCEPTS:
THEY ARE : MOTION, SPACE , TIME.

PHYSICS DEALS WITH "EVENTS" IN SPACE AND TIME.

THE THEORY OF RELATIVITY IS THE PHYSICAL THEORY WHICH IS BASED ON A CONSISTENT PHYSICAL ITERPRETATION OF THESE THREE CONCEPTS.

(36) MOTION :

MOTION IS NEVER OBSERVABLE AS "MOTION WITH RERSPECT TO SPACE" OR, AS IT HAS BEEN EXPRESSED, AS "ABSOLUTE MTION.", THE PRINCIPLE " IN IT'S WIDEST SENSE IS CONTAINED IN THE STATEMENT : THE TOTALITY OF THE PHYSICAL PHENOMENA IS OF SUCH A CHARACTER THAT IT GIVES NO BASIS FOR THE INTRODUCTION OF THE CONCEPT OF " ABDSOLUTE MOTION"; OR SHORTER BUT LESS PRECISE: THERE IS NO ABSOLUTE MOTION.

(37) USING THE LIGHT TO DEFINE THE SIMULTANEITY :

THE SPCIAL THEORY OF RELATIVITY DEFINE SIMULTANNEITY PHYSICALLY <u>WITH THE USE OF LIGHT SIGNALS.</u>

(38) INERTIAL SYSTEMS :

CLASSICAL MECHANICS IS BASED ON <u>GALILEO'S PRINCIPLE : A BODY IS IN RECTILINEAR AND UNIFORM MOTION AS LONG AS OTHER BODIES DO NOT ACT ON IT.</u>

THIS STATEMENT CAN NOT BE VALID FOR ARBITRARY MOVING SYSTEMS OF COORDINATES. IT CAN CLAIM VALIDITY ONLY FOR SO - CALLED "INERTIAL SYSTEMS".

<u>INERTIAL SYSTEMS ARE IN RECTILINEAR AND UNIFORM MOTION WITH RESPECT TO EACH OTHER.</u>

IN CLASSICAL PHYSICS LAWS CLAIM VALIDITY ONLY WITH RESPECT TO ALL INERTIAL SYSTEMS (SPECIAL PRINCIPLE OF RELATIVITY).

(39) FROM WHERE THE NAME " LORENTZ TRANSFORMATIONS" HAD COME TO THE DERIVATION OF THE SPECIAL THEORY OF RELATIVITY.

THE ANSWER:

IT IS NOW EASY TO UNDERSTAND THE DILEMMA WHICH HAS LED TO THE SPECIAL THEORY OF RELATIVITY.

EXPERIENCE AND THEORY HAVE GRADUALLY LED TO THE CONVICTION <u>THAT LIGHT IN EMPTY SPACE ALWAYS TRAVELS WITH THE SAME SPEED (c) INDEPENDENT OF IT'S COLOR AND THE STATE OF MOTION OF THE SOURCE OF LIGHT (PRINCIPLE OF THE CONSTANCY OF THE SPEED OF LIGHT - IN THE FOLLOWING REFERRED TO AS "L-PRINCIPLE"-).</u>

THE L-PRINCIPLE HOLDS FOR ALL INERTIAL SYSTEMS (APPLICATION OF THE SPECIAL PRINCIPLE OF RELATIVITY TO THE L-PRINCIPLE) TO SOLVE THE PROBLEM OF COORDINATE TRANSFORMATION.

REFERENCES :

(1)

http://en.wikipedia.org/wiki/

(2) "SPACE TIME AND GRAVITATION", BY A.S. EDDINGTON, CAMBRIDGE UNIVERSITY PREES, 1920.

(3) "OUT OF MY LATER YEARS", ALBERT EINSTEIN, COPYRIGHT 1950 BY THE PHILOSOPHICAL LIBRARY, INC.

SPECIAL THEORY OF RELATIVITY OF LIGHT

LORENTZ TRANSFORMATIONS:

SIMPLE DERIVATION OF THE LORENTZ TRANSFORMATION

FOR THE RELATIVE ORIENTATION OF THE CO-ORDINATE SYSTEM INDICATED IN THE NEXT FIGURE,
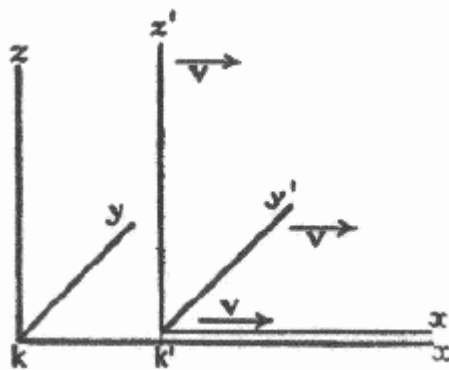
THE X-AXES OF BOTH SYSTEMS PERMANENTLY COINCIDE. IN THE PRESENT CASE WE CAN DIVIDE THE PROBLEM INTO PARTS BY CONSIDERING FIRST ONLY EVENTS WHICH ARE LOCALISED ON THE X-AXIS. ANY SUCH EVENT IS REPRESENTED WITH RESPECT TO THE COORDINATE SYSTEM _K_ BY THE ABSCISSA X AND THE TIME t, AND WITH RESPECT TO THE SYSTEM K' BY THE ABSCISSA X' AND THE TIME t'. WE REQUIRE TO FIND X' AND t' WHEN X AND t ARE GIVEN.

A LIGHT-SIGNAL, WHICH IS PROCEEDING ALONG THE POSITIVE AXIS OF X, IS TRANSMITTED ACCORDING TO THE EQUATION :

X=ct

OR

X-ct=0   ....(1).

SINCE THE SAME LIGHT-SIGNAL HAS TO BE TRANSMITTED RELATIVE TO K' WITH THE VELOCITY (= SPEED) c , THE PROPAGATIONRELATIVE TO THE SYSTEM K' WILL BE REPRESENTED BY THE ANALOGOUS FORMULA :

X'-ct'=0   ....(2).

THOSE SPACETIME POINTS (EVENTS) WHICH SATISFY EQ.(1) MUST SATISFY EQ.(2). OBVIOUSLY THIS WILL BE THE CASE WHEN THE RELATION :

(X'-ct')= λ (X-ct)   ....(3)

IS FULFILLED IN GENERAL, WHERE λ INDICATES A CONSTANT; FOR, ACCORDING TO EQ.(3), <u>THE DISAPPEARANCE OF (X-ct) INVOLVES THE DISAPPEARANCE OF (X'-ct').</u>

IF WE APPLY QUITE SIMILAR CONSIDERATIONS TO <u>LIGHT RAYS</u> WHICH ARE BEING TRANSMITTED ALONG THE NEGATIVE X-AXIS, WE OBTAIN THE CONDITION :

(X'+ct')= μ (X+ct) ....EQ.(4)

BY ADDING (OR SUBSTRACTING) EQUATIONS (3) AND (4), AND INTRODUCING FOR CONVENIENCE THE CONSTANTS (A) AND (B) IN PLACE OF THE CONSTANTS λ AND μ WHERE

A= $(\lambda + \mu)/2$, AND B= $(\lambda - \mu)/2$

WE OBTAIN THE EQUATIONS :

X'=AX-Bct, ct'=Act-BX   ....(5).

WE SHOULD THUS HAVE THE SOLUTION OF OUR PROBLEM, IF THE
CONSTANTS (A) AND (B) WERE KNOWN. THESE RESLTU FROM THE
FOLLOWING DISCUSSION.

FOR THE ORIGION OF K' WE HAVE PERMANENTLY X'=0, I.E. BY
CONSIDERING THE OBJECT WHICH IS IN THE K' IS IN IT'S ORIGION,
AND HENCE ACCORDING TO THE FIRST OF EQ.(5) -[X'=AX-Bct]- , =>
AX=Bct =>

X=(Bc/A) * t.

AND SINCE SPEED=DISTANCE/TIME; SO : (X/t) =V ,

IF WE CALL (v) THE SPEED WITH WHICH THE ORIGION OF
K' IS MOVING RELATIVE TO K,

X/t=Bc/A ,

WE THEN HAVE

V=Bc/A   ....EQ.(6)

<u>WE CAN SAY THAT THE (V) IS THE RELATIVE SPEED OF THE TWO
SYSTEMS.</u>

IN ORDER TO SEE HOW THE POINTS OF THE X'-AXIS APPEAR AS VIEWED FROM K , WE ONLY REQUIRE TO TAKE A "SNAPSHOT" OF K' FROM K ; THIS MEANS THAT WE HAVE TO INSERT A PARTICULAR VALUE OF t (TIME OF K) , E.G. t =0. FOR THIS VALUE OF t WE THEN OBTAIN FROM THE FIRST OF THE EQUATIUONS (5) -

[X'=AX-Bct]-:

t =0,

X'=AX.

BY TAKE THE DIFFERENCE FOR THE ABOVE EQUATION YIELDS:

$\triangle X'=A \triangle X$

TWO POINTS OF THE X'-AXIS WHICH ARE SEPARATED BY THE DISTANCE

$\triangle X'=1$

THEN MEASURED IN THE K' SYSTEM ARE THUS SEPARATED IN OUR INSTANTANEOUS PHOTOGRAPH BY THE DISTANCE:

1=A $\triangle X$ YEILDS :

$\triangle X=1/A$ ....EQ.(7)

BUT IF THE SNAPSHOT BE TAKEN FROM K' (t'=0
), AND IF WE ELIMINATE t FROM THE EQUATIONS (5),
TAKING INTO ACCOUNT THE EXPRESSION EQ.(6), WE OBTAIN:

X'= A (1- (V^2/c^2)) X.

FROM THIS WE CONCLUDE THAT TWO POINT ON THE X-AXIS AND SEPARATED BY THE DISTANCE (1) (RELATIVE TO K) WILL BE REPRESENTED ON OUR SNAPSHOT BY THE DISTANCE :

△X'=A (1-(V^2/c^2))   ....EQ.(8)

BUT FROM WHAT HAS BEEN SAID, THE TWO SNAPSHOTS MUST BE IDENTICAL; HENCE
△X IN EQUATION IN EQ.(7) MUST BE EQUAL TO △X' IN EQ.(8) , SO THAT WE OBTAIN :

A^2=1/(1-(V^2/c^2))   ....EQ.(9)

THE EQUATIONS (6) AND EQ.(9) DETERMINE THE CONSTANTS (A) AND (B). BY INSERTING THE VALUES OF THESE CONSTANTS IN EQ.(5), WE OBTAIN :

X'=(X-Vt)/[1-(V^2/c^2)]^(1/2) ....EQ.(10)
t' =(t- (VX/c^2))/[1-(V^2/c^2)]^(1/2)   ....EQ.(11)

SINCE V IS THE SPEED OF THE SYSTEM K' RELATIVE TO SYSTEM K':
SO:

X'=XO =REST LENGTH ,
T' =to = REST TIME , AND
M'=MO = REST MASS.

PUTTING $\gamma = [1-(V^2/c^2)]^{(1/2)}$

IN EQ.(10) , t =0 LEADS TO:

X=XO* γ ; L=LO γ

AND IN EQ.(11) , X=0 , THEN EQ.(11) BECOME:

t = t' γ, MEANS : t = to γ

AND FOR MASS :

THE FRAME -SYSTEM- K SEE THE MASS IN THE FRAME -SYSTEM- K' AS (M) NOT (MO), M=M(V).

P= THE MOMENTUM OF MASS (M),
PO= THE MOMENTUM OF MASS (MO),
PV= THE MOMENTUM OF THE MASS DUT TO THE VELOCITY (V) OF THE FRAME K' REPECT TO THE FRAME K,
SO : THE DIFFERENCE IN MOMENTUME DUE TO THE MOTION (V) :
THE MOMENTUM DUT TO ACUIREING TO (V)

$\triangle$**P^2 =PO^2+(PV)^2   ....(1)**

P=MC , PO=MO C , PV=MV   ....(2)

PUTTING EQ.(2) IN EQ.(1) YIELDS:

M^2 C^2= MO^2 C^2 +(M*V)^2 ;
M/MO= $\pm$ **[1-(V^2/C^2)]^ (1/2) =** $\pm$ γ

SO : M= $\pm MO^{\gamma}$ WHICH REPRESENTS THE RELATIVISTIC MASS EQUATION.

NOTE: IN ABOVE EQUATION AN INDICATION -PROOF- OF EXISTENCE OF THE NEGATIVE MASS.

WITH THE HELP OF THE LORENTZ TRANSFORMATION THESPECIAL THEORY OF RELATIVITY CAN BE EXPRESSED THUS : THE LAWS OF NATURE ARE INVARIANT WITH THE RESPECT TO LORENTZ-TRANSFORMATIONS (I.E., A LAW OF NATURE DOES NOT CHANGE IT'S FORM IF ONE INTRODUEES INTO IF A NEW INERTIAL SYSTEM WITH THE HELP OF A LORENTZ-TRANSFORMATION ON X,Y ,Z, t).

THE SPECIAL THEORY OF RELATIVITY HAS LED TO A CLEAR UNDERSTANDING OF THE PHYSICAL CONCEPTS OF SPACE AND TIME AND IN CONNECTION WITH THIS TO A RECOGNITION OF THE BEHAVIOR OF MOVING MEASURING RODS AND CLOCKS.

IT HAS IN PRINCIPLE REMOVED THE CONCEPT OF ABSOLUTE SIMULTANEITY -ACCORDING TO LIGHT- AND THEREBY ALSO THAT ON INSTANTANEOUS ACTION AT A DISTANCE IN THE SENSE OF NEWTON.

IT HAS UNIFIED THE LAWS OF CONSERVATION OF MOMENTUM AND OF ENERGY INTO A ONE SINGLE LAW HAS DEMONSTRATED THE EQUIVALENCE OF MASS AND ENEREGY.

IT HAS SHOWN GENERALLY THE ROLE WHICH THE UNIVERSAL

CONSTANT (C=2.99792458 *10^8 M/S) PLAYS IN THE LAWS OF NATURE AND HAS DEMONSTRATED : THAT THERE EXISTS A CLOSE CONNECTION BETWEEN THE FORM IN WHICH TIME ON THE ONE HAND AND THE THE SPATIAL COORDINATES ON THE OTHER HAND ENTER INTO THE LAWS OF NATURE.

REFERENCE: "RELATIVITY : THE SPECIAL AND GENERAL THEORY", BY : DR. ALBERT EINSTEIN PHD, NEW YORK, HENRY HOLT AND COMPANY 1920.

PART 9:

E=MC^2

SIMPLE DREIVATION OF RELATION E=Mc^2

THE KINETIC ENERGY $E = (1/2) M V^2$ ....EQ.(1)

SUPPOSE TWO PHOTONS OF EQUAL MASS COMING IN OPOSITE DIRECTION TO A BODY (B) AND ABSORBED BY IT.

$E = (1/2) m_1 V_1^2 + (1/2) m_2 V_2^2$ .... (2)

(1/2)m c^2   B   (1/2) m c^2
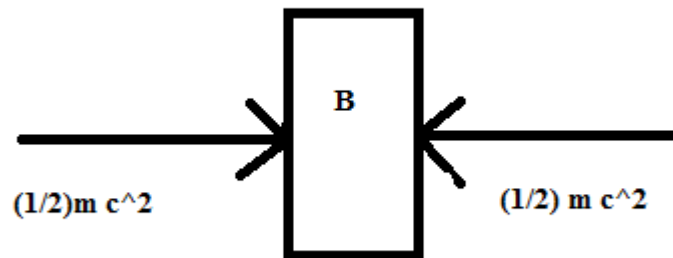
AND SINCE $m_1 = m_2 = M$, $V_1 = V_2 = C$ ....EQ.(3)

THE TWO PHOTONS COME INTO THE BODY (B) IN OPPOSITIE DIRECTION TO SURE THAT ALL THE PHOTONS MASSES (ENERGIES) WILL TRANSFORM TO ENERGY IN THE BODY NOT AS KINETIC ENERGY TO MOVE IT.

THE TWO PHOTONS ARE EQUAL IN MASS (ENERGY).

PUTTING EQ.(3) IN EQ.(2) YEILDS THAT THE ABSORBED ENERGY BY BODY (B) IS :

$$E=(1/2)MC^2+(1/2) MC^2$$

$$=Mc^2$$ **WHICH IS THE ABSORBED ENERGY WHICH MADE THE BODY (B) HEAVER BY (M).**

PART 10:

GENERAL THEORY OF RELATIVITY :

PRINCIPLE OF EQUIVALENCE: ABODY HAS AN INERTIAL MASS (RESISTANCE TO ACCELERATION) AND A HEAVY MASS (WHICH DETERMINES THE WEIGHT OF THE BODY IN A GIVEN GRAVITATIONAL FIELD, EG. , THAT AT THE SURFACE OF THE EARTH). THESE TWO QUANTITIES, SO DIFFERENT ACCORDING TO THEIR DEFINITION, ARE ACCORDING TO EXPERIENCE MEASURED BY ONE AND THE SAME NUMBER.

IN A GRAVITATIONAL FIELD ; DIFFERENT MASSES RECEIVE THE SAME ACCELERATION.

BODIES IN A GRAVITATIONAL FIELD BEHAVE AS IN THE ABSENCE OF A GRAVITATIONAL FIELD IF, IN THE LATTER CASE, THE SYSTEM OF REFERENCE USED IS A UNIFORMLY ACCELERATED COORDINATE SYSTEM (INSTEAD OF AN INERTIAL SYSTEM).

THE GENERAL THEORY OF RELATIVITY : ALL CONTINUOUS COORDINATE TRANSFORMATIONS (WHICH FORM A GROUP) .

THE GENERAL RELATIVITY EQUATIONS :

IT'S NAMED ((GENERAL)) BECAUSE IT DEALS WITH A PRESENCE OF A GRAVITATIONAL FIELD – A PRESENCE OF MASS-.

R=(1/r^2)

R= THE CARVETURE OF ((SPACE-TIME))
r = THE RADIUS OF THE CARVETURE

THE EINSTEIN RELATION OF THE GENERAL RELATIVITY IS :

$$R_{\mu\nu} - (1/2)\, g_{\mu\nu}\, R = (-8\,\pi\, G/C^2) * T_{\mu\nu}$$

WHERE μ AND ν TAKES THE VALUES FROM 1 TO 4

$$g_{\mu\nu} = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 \end{bmatrix}$$

g is METRIC RERESENTS 16 VALUES

$$T_{\mu\nu} = \begin{bmatrix} \rho & 0 & 0 & 0 \\ 0 & p & 0 & 0 \\ 0 & 0 & p & 0 \\ 0 & 0 & 0 & P \end{bmatrix}$$

RICCI TENSOR = Rμν

RICCI SCALAR = R

Tμν IS THE STRESS-ENERGY TENSOR AND IT CONTAINS:

ρ = ENERGY DENSITY

P=PRESSURE

$$R\mu\nu -(1/2) g\mu\nu R = (-8 \pi G/C\char94 2) * T\mu\nu = G\mu\nu$$

WHERE Gμν IS THE EINSTEIN TENSOR

AND SINCE μ,ν =1,2,3,4 , SO THE GENERAL RELATIVITY EQUATION CONSISTE OF 16 EQUATIONS.

AFTER 3 MONTHS OF APPEARING THE GENERAL RELATIVITY EQUATION , SCHWARZSCHILD PUTTED A SOLUTION FOR IT IN THE SPHEREICAL COORDINATES :

dS^2=- [1/[1-(2m/r)]]dr^2 – r^2 [dϴ^2+sin^2 (ϴ) dø^2]+ [1- (2m/r)]dt^2

r>2m, ϴ=0 TO π , ø= 0 TO 2π

THE VALUES OF THE METRIC TENSOR : FROM, THE TENSOR (g) MENSTIONED ABOVE , IT'S CLEARLLY THAT :

g11=1, g22 = g33 = g44 =-1,

g12=g13=g14=g21=g23=g24=g31=g32=g41=g42=g43=0.

THE VALUES OF THE RICCI TENSOR :

$$R11-(1/2) R=-(8 \pi G /C^2) \rho,$$

$$R12=0, R13=0, R14=0, R21=0,$$

$$R22+(1/2)R=-(8 \pi G / C^2) P,$$

$$R23=0, R24=0, R31=0, R32=0,$$

$$R33+(1/2) R = -(8 \pi G / C^2) P,$$

$$R41=0, R42=0, R43=0,$$

$$R44+(1/2) R = -(8 \pi G / C^2) P,$$

SO,

$$R11=(-8 \pi G /C^2) (\rho) + (1/2) R$$

R11=(-8 π G /C^2) (ρ) + (1/2r^2) ….

R22= [(8 π G P)/C^2 + (1/2r^2)] …..

=R33 = R44

SO : R11 RELATED WITH R22 (R33, R44) AS :

R11= (-8 π G (ρ) /C^2) – (R22+(8 π G (P)/C^2)

R11= (-8 π G (ρ) /C^2) – (R33+(8 π G (P)/C^2)

R11= (-8 π G (ρ) /C^2) – (R44+(8 π G (P)/C^2)

THE EXPANSION OF THE UNIVERSE:

MAY BE SOMEBODY ASK: HOW SOME –FAR- CELESTIAL OBJECTS IT'S SPEED OF RESEEDING EXCEED THE SPEED OF LIGHT ; HOW THAT :

THE ANSWER: IS THAT THE PART OF THIS SPEED THAT MAKE IT'S SPEED EXCEED'S THE SPEED OF LIGHT IN VACUUM IS NOT A LOCALLY SPEED OF THE OBJECT, BUT IT IS DUE TO THE EXPANSION OF THE UNIVERSE.

No mass, no stress energy, T=0.
No curvature, R=0.
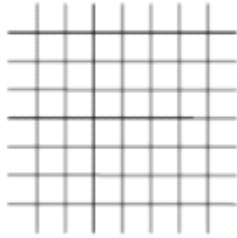
Medium mass per volume, T = moderate
Moderate curvature, R = medium.
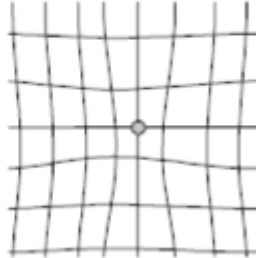
R=(1/r^2), WHERE

((r)) IS THE RADIUS OF THE CARVETURE OF THE ((SPACE-TIME))

Flat space with no energy present. Two dimensions are suppressed.

X

t
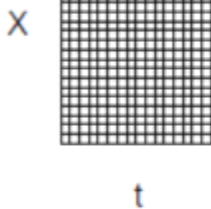
A dense mass in in the center of the same space. The geodesics, shortest lines between points, are curved.

X

t
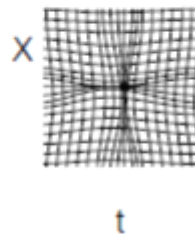
THE CARVETURE ((R=1/r^2)) OF THE ((SPACE-TIME)) IS MESURED AS FOLLOWS:

In four dimensions the curvature requires quite a bit of calculation.

We measure curvature based on the radius.

Gaussian curvature.

r

r
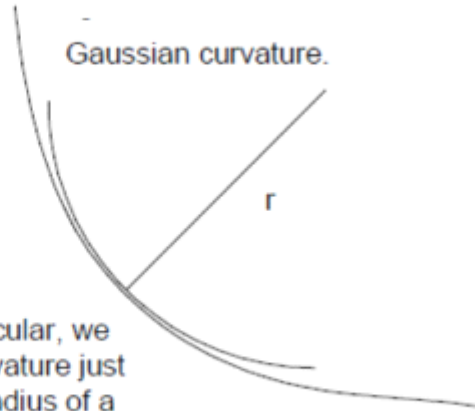
For curvature that is not circular, we take a point and find the curvature just at that point. r is then the radius of a circle with that curvature.
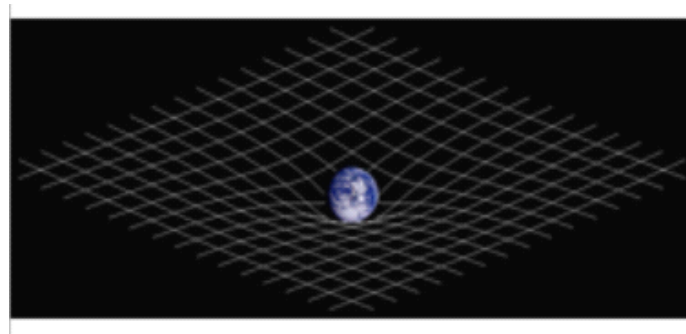
THE PRESENCE OF A MASS DESTORTE THE ((SPACE-TIME)) GRID

Light cone in 2D space plus a time dimension.
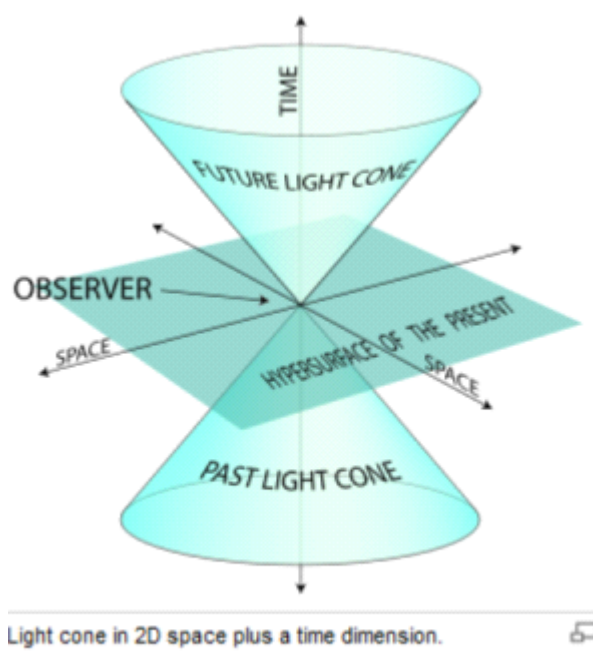
THE TIME AXIS IS AN IMAGINARY AXIS
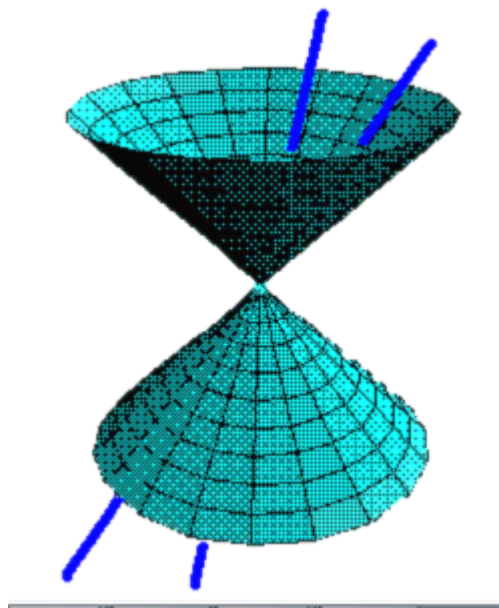
THE EINSTEIN-MINKOWSKY SPACE-TIME:

THE UPPER CONE: THE FUTURE,

THE LOWER CONE:THE PAST,

AT THE CENTER : THE PRESENT

NOTE: IF YOU WANT TO UNDERSTAND ((TIME)) WELL READ

CHAPTER 3 OF BOOK :SPACE TIME AND GRAVITATION , BY A.S.

EDDINGTON, COPYRIGHT 1920. IT'S A GREAT BOOK. ((THIS BOOK IS A FREE OF CHARGE AVAILABLE AT THE INTERNET)).
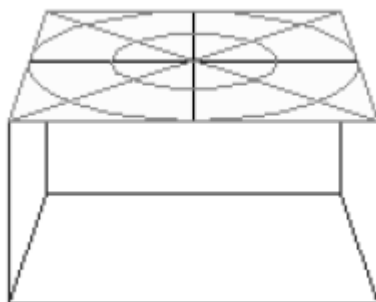
CROSS-SECTION

THROUGH

AN EMPTY BOX:

FLAT SPACE TIME:THERE IS NO MASS
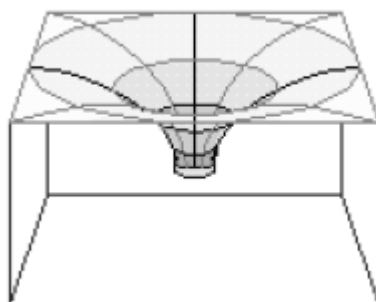
GRAVITY-WELL

THERE IS A MASS

REFERENCES:

(1) http://en.wikipedia.org/wiki/

(2) "OUT OF MY LATER YEARS", ALBERT EINSTEIN, COPY RIGHT 1950 BY THE PHILOSOPHICAL LIBRARY, INC.

(3) THE EVANS EQUATIONS OF UNIFIED FIELD THEORY, LAURENCE G. FELKER, OCTOBER 2005.

PART 11:

ALBERT'S EINSTEIN WORKS :

1- PAPERS = 300 PAPER

2- BOOK : (1) THE MEANING OF RELATIVITY ,

(2) THE WORLD AS I SEE IT,

(3) OUT OF MY LATER YEARS,

AND ,

(4) IDEAS AND OPINIONS.

PART 12:

EINSTEIN'S DOCTORAL CERTIFICATE :

UNTER DER OBERHOHEIT DER BEHÖRDEN UND DES VOLKES DES KANTONS

UND IM NAMEN DER

UNIVERSITÄT ZÜRICH

HAT DIE

MATHEMATISCH-NATURWISSENSCHAFTLICHE SEKTION

DER

PHILOSOPHISCHEN FAKULTÄT

IN IHRER SITZUNG VOM 27. JULI 1905

DEM HERRN

ALBERT EINSTEIN

VON ZÜRICH

AUF GRUND SEINER DISSERTATION, BETITELT:

„EINE NEUE BESTIMMUNG DER MOLEKÜLDIMENSIONEN"

UND DER VORSCHRIFTSMÄSSIGEN PRÜFUNGSAUSWEISE

DIE RECHTE UND WÜRDEN

EINES

DOCTOR DER PHILOSOPHIE

VERLIEHEN

UND STELLT ZUM ZEUGNIS DESSEN DIESE MIT DEM UNIVERSITÄTSSTEMPEL VERSEHENE URKUNDE AUS

GEGEBEN IN ZÜRICH

15. JANUAR 1906.

FÜR DEN AKADEMISCHEN SENAT

DER REKTOR:

_____

FÜR DIE II. SEKTION DER
PHILOSOPHISCHEN FAKULTÄT

DER DEKAN:

_____

PART 13:

ALBERT'S EINSTEIN FIRST PAPER

In 1894 or 1895, the young Albert Einstein wrote an essay on `The Investigation of the State of Aether in Magnetic Fields.' He sent the essay, most probably his First scienic work, with a letter to his uncle C¨asar Koch.
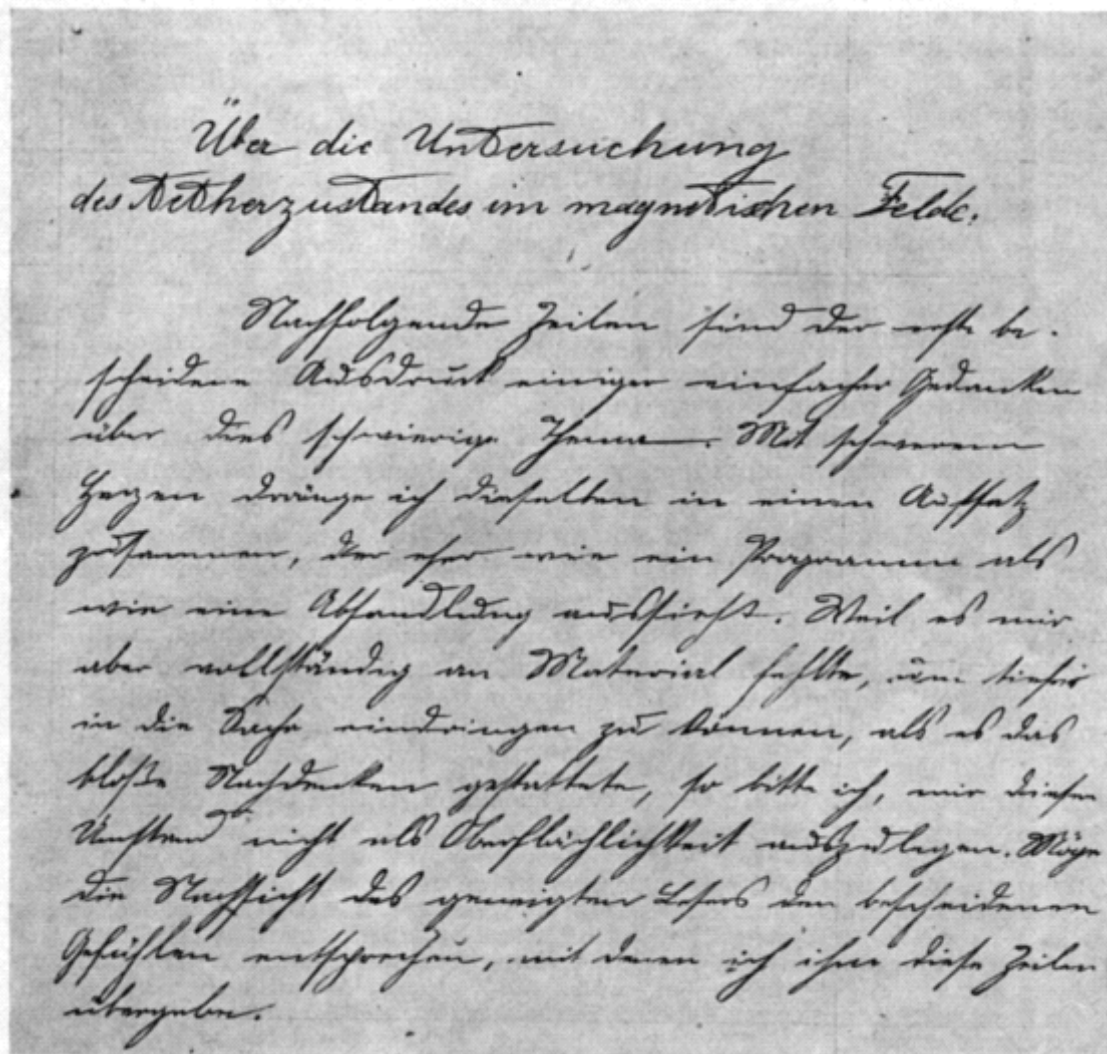
The introduction to Einstein's essay on `The Investigation of the State of Aether in Magnetic Fields,' which he wrote at the age of 15 or 16 and sent to his uncle C¨asar Koch with a covering letter.

Letter to C̈asar Koch

1894 or 1895. A. Einstein. (Date recalled in 1950.)

My dear Uncle:

I am really very happy that you are still interested in the little things I am doing

and working on, even though we could not see each other for a long time and I am such a terribly lazy correspondent. I always hesitated to send you this [attached] note; because it deals with a very special topic, and besides it is still rather naive and imperfect, as is to be expected from a young fellow like myself. I shall not be o ended at all if you don't read the stuff; but you must recognize it at least as a modest attempt to overcome the laziness in writing which I have inherited from both of my dear parents: : : :

As you probably already know, I am now expected to go to the Polytechnic in

Zurich. However, it presents serious difficulties because I ought to be at least two years older for that. We shall write to you in the next letter what happens in this matter. Warm greetings to dear aunt and your lovely children,

from your

Albert

Concerning the Investigation of the State of Aether in Magnetic Fields

The following lines are the first modest expression of some simple thoughts on this difficult subject. With much hesitation I am compressing them into an essay which looks more like a program than a paper. Since I completely lacked the materials to penetrate the subject more deeply than was permitted by reflection alone, I ask that this circumstance should not be ascribed to me as superficiality. I hope the indulgence of the interested reader will correspond to the humble feelings with which I offer him these lines.

When the electric current comes into being, it immediately sets the surrounding

aether in some kind of instantaneous motion, the nature of which has still not been exactly determined. In spite of the continuation of the cause of this motion, namely the electric current, the motion ceases, but the aether remains in a potential state and produces a magnetic field. That the magnetic field is a potential state [of the aether] is shown by the [existence of a] permanent magnet, since the principle of conservation of energy excludes the possibility of a state of motion in this case.

The motion of the aether, which is caused by an electric current, will continue until the acting [electro-] motive forces are compensated by the equivalent passive forces which arise from the deformation caused by the motion of the aether itself. The marvellous experiments of Hertz have most ingeniously illuminated the dynamic nature of these phenomena - the propagation in space, as well as the qualitative identity of these motions with light and heat. I believe that for the understanding of electromagnetic phenomena it is important also to undertake a comprehensive experimental investigation of the potential states of the aether in magnetic fields of all kinds - or, in other words, to measure the elastic deformations and the acting deforming forces.

Every elastic change of the aether at any (free) point in a given direction should

be determinable from the change which the velocity of an aether wave undergoes at this point in that direction. The velocity of a wave is proportional to the square root of the elastic forces which cause [its] propagation, and inversely proportional to the mass of the aether moved by these forces. However, since the changes of density caused by the elastic deformations are generally insignificant, they may probably be neglected in this case also. It could therefore be said with good approximation:

The square root of the ratio of the change of velocity of propagation (wavelength) is equal to the ratio of the change of the elastic force.

I dare not decide as to which type of aether waves, whether light or electrodynamic, and which method of measuring the wavelength is most appropriate for studying the magnetic eld; in principle, after all, this makes no difference. If a change of wavelength in the magnetic field can be detected at all in any given direction, then the question can be experimentally decided whether only the component of the elastic state in the direction of the propagation of the wave influences the velocity of propagation, or the components perpendicular to it also do; since it is known a priori that in a uniform magnetic field, whether it is cylindrical or pyramidal in form, the elastic states at a point perpendicular to the direction of the lines of force are completely homogeneous, but different in the direction of the lines of force. Therefore if one lets waves propagate that are polarized perpendicularly to the direction of the lines of force, then the direction of the plane of oscillation would be important for the velocity of propagation - that is if the component of the elastic force perpendicular to the propagation of a wave at all influences the velocity of propagation. However, this probably might not be the case, although the phenomenon of double diffraction seems to indicate this.

Thus after the question has been answered as to how the three components of elasticity affect the velocity of an aether wave, one can proceed to the study of

the magnetic field. In order to understand properly the state of the aether in it [the magnetic field], three cases ought to be distinguished:

1. The lines of force come together at the North pole in the shape of a pyramid.

2. The lines of force come together at the South pole in the shape of a pyramid.

3. The lines of force are parallel.

In these cases the velocity of propagation of a wave in the direction of the lines of force and perpendicular to them has to be examined. There is no doubt that the elastic deformations as well as the cause of their origin will be determined [by these experiments], provided sufficiently accurate instruments to measure the wavelength can be constructed.

The most interesting, but also the most difficult, task would be the direct experimental study of the magnetic field which arises around an electric current, because the investigation of the elastic state of the aether in this case would allow us to obtain a glimpse of the mysterious nature of the electric current. This analogy also permits us to draw definite conclusions concerning the state of the aether in the magnetic field which surrounds the electric current, provided of course the experiments mentioned above yield any result.

I believe that the quantitative researches on the absolute magnitudes of the density and the elastic force of the aether can only begin if qualitative results exist that are connected with established ideas. Let me add one more thing. If the wavelength does not turn out to be proportional to $(A + k)^{1/2}$ [sic], then the reason (for that) has to be looked for in the change of density of the moving aether caused by the elastic deformations; here A is the elastic aether force, a priori a constant which we have to determine empirically, and k the (variable) strength of the magnetic field which, of course, is proportional to the elastic forces in question that are produced.

Above all it must be demonstrated that there exists a passive resistance to the electric current for the production of the magnetic field, that is proportional to the length of the path of the current and independent of the cross section and the material of the conductor.

THE ORIGINAL MESSAGE IN DEUTCH :

1894 oder 95. A. Einstein. (Datum 1950 nachgeholt.)

Mein lieber Onkel!

Es freut mich wirklich sehr, dass Du Dich f¨ur mein bischen Thun und Treiben noch interessierst, trotzdem wir uns so lange nicht sehen durften und ich so gr¨asslich fauler Briefschreiber bin. Und doch z¨ogerte ich immer, Dir dieses Schreiben hier zu schicken. Denn es behandelt ein ein [sic] sehr speziales Thema, und ist ausserdem, wie es sich f¨ur so einen jungen Kerl wie mich von selbst versteht, noch ziemlich naiv und unvollkommen. Wenn Du das Zeug gar nicht liest, nehme ich Dirs durchaus nicht ¨ubel; Du musst es aber doch zum mindesten als einen sch¨uchternen Versuch anerkennen, die von meinen beiden lieben Eltern geerbte Schreibfaulheit zu bek¨amfen - - -

Wie Du schon wissen wirst soll ich jetzt auf das Polytechnikum nach Z¨urich kommen. Die Sache st¨osst aber auf bedeutende Schwierigkeiten, da ich dazu eigentlich zwei Jahre mindestens ¨alter sein sollte. Im n¨achsten Brief schreiben wir Dir, was aus der Sache wird.

Innige Gr¨usse der lieben Tante und Deinen herzigen Kinderchen

von Deinem

Albert

Uber die Untersuchung des Aetherzustandes im magnetischen Felde

Nachfolgende Zeilen sind der erste bescheidene Ausdruck einiger einfacher Gedanken ¨uber dies schwierige Thema. Mit schwerem Herzen dr¨ange ich dieselben in einen Aufsatz zusammen, der eher wie ein Programm als wie eine Abhandlung aussieht. Weil es mir aber vollst¨andig an Material fehlte, um tiefer in die Sache eindringen zu k¨onnen, als es das blosse Nachdenken gestattete, so bitte ich, mir diesen Umstand nicht als Oberfl¨achlichkeit auszulegen. M¨oge die Nachsicht des geneigten Lesers den bescheidnen Gef¨uhlen entsprechen, mit denen ich ihm diese Zeilen ¨ubergebe. Der elektrische Strom setzt bei seinem Entstehen den umliegenden ¨Ather in irgend eine, bisher ihrem Wesen nach noch nicht sicher bestimmte, momentane Bewegung. Trotz Fortdauer der Ursache dieser Bewegung, n¨amlich des elektrischen Stroms, h¨ort die Bewegung auf, der ¨Ather verbleibt in einem potentiellen Zustande und bildet ein magnetisches Feld. Dass das magnetische Feld ein potentieller Zustand

sei, beweisst der permanente Magnet, da das Gesetz von der Erhaltung der

Energie hier die M¨oglichkeit eines Bewegungszustandes ausschliesst. Die Bewegung des ¨Athers, welche durch einen elektrischen Strom bewirkt wird, wird so lange dauern, bis die wirkenden motorischen Kr¨afte durch ¨aquivalente passive Kr¨afte kompensiert werden, welche von der durch die Bewegung des ¨ Athers selbst erzeugten Deformationen herr¨uhren.

Die wunderbaren Versuche von Hertz haben die dynamische Natur dieser Erscheinungen, die Fortpflanzung im Raume, sowie die qualitative Identit¨at dieser Bewegungen mit Licht und W¨arme aufs genialste beleuchtet. Ich glaube nun, dass es f¨ur die Erkenntnis der elektromagnetischen Erscheinungen von Wichtigkeit w¨are, auch die potentiellen Zust¨ande des ¨ Athers in magnetischen Feldern aller Art einer umfassenden experimentellen Betrachtung zu unterziehen, oder mit anderen Worten, die elastischen Deformationen und die wirkenden deformierenden Kr¨afte zu messen.

Jede elastische Ver¨anderung des ¨Athers an irgend einem (freien) Punkte in einer Richtung muss sich konstatieren lassen aus der Ver¨anderung, welche die Geschwindigkeit einer ¨Atherwelle an diesem Punkte in dieser Richtung erleidet. Die Geschwindigkeit einer Welle ist proportional der Quadratwurzel der elastischen Kr¨afte, welche zur Fortpflanzung dienen, und umgekehrt proportional der von diesen Kr¨aften zu bewegenden ¨Athermassen. Da jedoch die durch die elastischen Deformationen hervorgerufenen Ver¨anderungen der Dichte meist nur unbedeutend sind, so wird man sie auch in diesem Falle wahrscheinlich vernachl¨assigen d¨urfen. Man wird also mit grosser Ann¨aherung sagen k¨onnen: Die Quadratwurzel aus dem Verh¨altnis

der Ver¨anderung der Fortpflanzungsgeschwindigkeit (Wellenl¨ange) ist gleich dem Verh¨altnis der Ver¨anderung der elastischen Kraft.

Was f¨ur eine Art von ¨Atherwellen, ob Licht oder elektrodynamische, und was f¨ur eine Methode der Messung der Wellenl¨aange f¨ur die Untersuchung des magnetischen Feldes am geeignetsten sei, wage ich nicht zu entscheiden; im Prinzip ist es ja schliesslich gleich.

Zun¨achst kann, wenn ¨uberhaupt eine Ver¨anderung der Wellenl¨ange im magnetischen Feld in irgendeiner Richtung sich konstatieren l¨asst, experimentell die Frage gel¨ost werden, ob nur die Komponente des elastischen Zustandes in der Richtung der Fortpflanzung der Welle oder auch die dazu senkrechten Komponenten eine Wirkung auf die Fortpflanzungsgeschwindigkeit aus¨uben, da a priori klar ist, dass in einem regelm¨assigen magnetischen Feld, sei es zylinder- oder pyramidenf¨ormig, die elastischen Zust¨ande an einem Punkt senkrecht zur Richtung der Kraftlinien vollst¨andig homogen sind und anders in der Richtung der Kraftlinien. L¨asst man daher senkrecht zur Richtung der Kraftlinien polarisierte Wellen durchdringen, so w¨are f¨ur die Fortpflanzungsgeschwindigkeit die Richtung der Schwingungsebene von

Bedeutung | wenn die zur Fortpflanzung einer Welle senkrechte Komponente

der elastischen Kraft wirklich auf die Geschwindigkeit der Fortpflanzung einen Einfluss aus¨ubt. Dies d¨urfte jedoch wahrscheinlich nicht der Fall sein, trotzdem das Ph¨anomen der Doppelbrechung darauf hinzuweisen scheint.

Nachdem so die Frage entschieden w¨are, wie die drei Komponenten der Elastizit¨at auf die Geschwindigkeit einer ¨Atherwelle einwirken, kann zur Untersuchung des magnetischen Feldes geschritten werden. Um den Zustand des ¨Athers in demselben recht begreifen zu k¨onnen d¨urften drei F¨alle unterschieden werden:

1. Kraftlinien, die sich pyramidenartig am Nordpol vereinigen.

2. Kraftlinien, die sich pyramidenartig am S¨udpol vereinigen.

3. Parallele Kraftlinien.

In diesen F¨allen ist die Fortpflanzungsgeschwindigkeit einer Welle in der Richtung der Kraftlinien und senkrecht dazu zu untersuchen. Unzweifelhaft m¨ussen sich so die elastischen Deformationen samt ihrer Entstehungsursache ergeben, wenn es nur gelingt, gen¨ugend ganaue Instrumente zur Messung der Wellenl¨ange zu bauen.

Der interessanteste, aber auch subtilste Fall w¨are die direkte experimentelle Untersuchung des magnetischen Feldes, welches um einen elektrischen Strom herum entsteht, denn die Erforschung des elastischen Zustandes des ¨Athers in diesem Falle erlaubten [sic] uns, einen Blick zu werfen in das geheimnisvolle Wesen des elektrischen Stromes. Die Analogie erlaubt uns aber auch sichere Schl¨usse ¨uber den ¨Atherzustand im magnetischen Felde, das den elektrischen Strom umgibt, wenn nur die vorher angef¨uhrten Untersuchungen zu einem Ziele f¨uhren.

Die quantitativen Forschungen ¨uber die absoluten Gr¨ossen der Dichte und

elastischen Kraft des ¨Athers k¨onnen, wie ich glaube, erst beginnen, wenn qualitative Resultate existieren, die mit sicheren Vorstellungen verbunden sind;

nur eins glaube ich noch sagen zu müssen. Sollte sich die Wellenl¨ p ange nicht proportional erweisen $(A + k)^{(1/2)}$, wobei A die elastischen ¨ Atherkr¨afte a priori, also f¨ur uns eine empirisch zu ndende Konstante, k die (variable) St¨arke des magnetischen Feldes bedeutet, die nat¨urlich den erzeugten in Betracht kommenden elastischen Kr¨aften proportional ist, so w¨are der Grund hierf¨ur in der durch die elastische Deformationen erzeugten Ver¨anderung der Dichte des bewegten ¨ Athers zu suchen.

Vor allem aber muss sich zeigen lassen, dass es f¨ur den elektrischen Strom

zur Bildung des magnetischen Feldes einen passiven Widerstand gibt, der proportional ist der L¨ange der Strombahn und unabh¨angig vom Querschnitt und Material des Leiters.

REFERENCE:

Efiko.org

OR:

http://www.google.bs/url?sa=t&rct=j&q=first+paper+albert+einstein%22pdf%22&source=web&cd=7&cad=rja&ved=0CFMQFjAG&url=http%3A%2F%2Fwww.efiko.org%2Fmaterial%2FAlbert%2520Einstein%255C's%2520First%2520Paper%2520by%2520Anonymous.pdf&ei=yPZmUMqHF8as0QW8sIDwAw&usg=AFQjCNFXwC57N96aZXbdXoaV5FBLsMC1qw

PART 14:

STAY WITH PROBLEMS LONGER

SCIENTIC METHOD WORD

OF

ALBERT EINSTEIN :

((IT'S NOT THAT IAM SO SMART; IT IS JUST THAT I STAY WITH PROBLEMS LONGER)).

EXAMPLE:

SPECIAL THEORY OF RELATIVITY : 10 YEARS

PART 15:

EINSTEIN'S WORDS:

1- ABOUT MARRIAGE:

((WOMEN MARRY MEN HOPING THEY WILL CHANGE. MEN MARRY WOMEN HOPING THEY WILL NOT. SO EACH IS INEVITABLY DISAPPOINTED)).

2- ABOUT SUCCESS:

((ONCE WE ACCEPT OUR LIMITS, WE GO BEYOND THEM))

((LIVE AS IF YOU WERE TO DIE TOMORROW, LEARN AS IF YOU WERE TO LIVE FOREVER))

PART 16:

ALBERT EINSTEIN WITH OTHERS

ALBERT EINSTEIN DURING HIS VISIT TO THE UNITED STATES

ALBERT EINSTEIN AND NIELS BOHR , 1925.
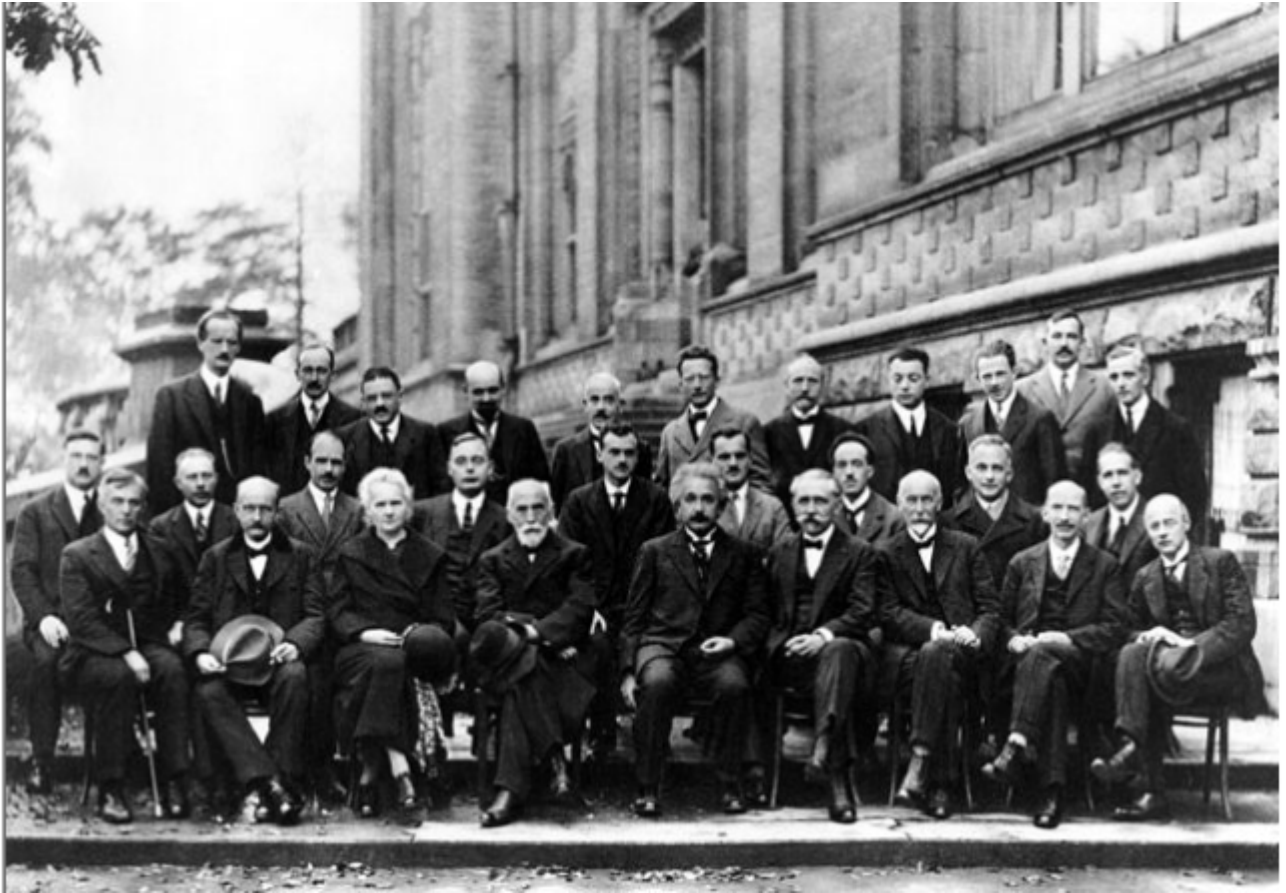
THE 1927 SOLVAY CONFERENCE IN BRUSSELS, A GATHERING OF THE WORLD'S TOP PHYSICISTS.

ALBERT EINSTEIN IN THE CENTER.

ALBERT EINSTEIN IN HIS OFFICE AT THE UNIVERSITY OF BERLIN.

ALBERT EINSTEIN ACCEPTING THE US CITIZENSHIP, 1940.
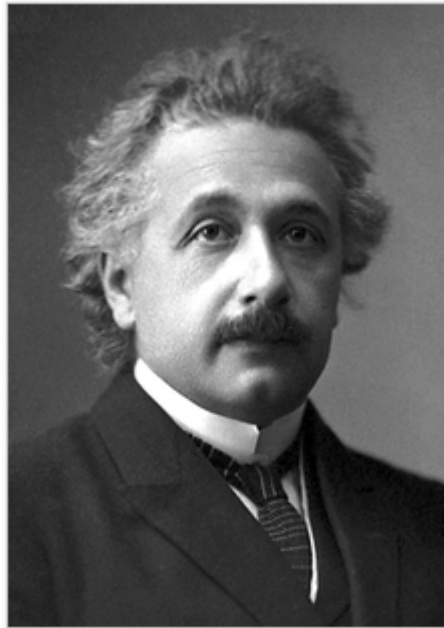
ALBERT 'S EINSTEIN OFFICIAL 1921 PORTRAIT AFTER RECEIVING NOBEL PRIZE IN PHYSICS.

REFERENCE: http://en.wikipedia.org/wiki/Albert_Einstein

PART 17:

THE 1905 PAPERS:

1905 - Annus Mirabilis papers

1- TITLE : *On a Heuristic Viewpoint Concerning the Production and Transformation of Light*

AREA: PHOTOELECTRIC EFFETC

RESOLVED AN UNSOLVED PUZZLE BY SUGGESTING THAT ENERGY IS EXCHANGED ONLY IN DISCRETE AMOUNT QUANTA.

THIS IDEA WAS PIVOTAL TO THE EARLY DEVELOPMENT OF QUANTUM THEORY.

2- TITLE : On the Motion of Small Particles Suspended in a Stationary Liquid, as Required by the Molecular Kinetic Theory of Heat

AREA: BROWNIAN MOTION.

EXPLAIN EMPIRICAL EVIDENCE FOR THE ATOMIC THEORY, SUPPORTING THE APPLICATION FOR THE STATISTICAL PHYSICS.

3- TITLE: On the Electrodynamics of Moving Bodies

AREA : SPECIAL RELATIVITY (OF LIGHT)

∵ Reconciled Maxwell's equations for electricity and magnetism with the laws of mechanics by introducing major changes to mechanics close to the speed of light, resulting from analysis based on empirical evidence <u>that the speed of light is independent of the motion of the observer.</u> Discredited the concept of a "LUMINIFEROUS ETHER".

BY: ALBERT EINSTEIN , JUNE 30, 1905.

IN THE LATE 19TH CENTURY, LUMINIFEROUS AETHER, æther or ETHER, MEANING LIGHT-BEARING AETHER, WAS THE POSTULATED MEDIUM FOR THE PROPAGATION OF LIGHT.

FOLLOWING THE NEGATIVE OUTCOME OF AETHER-DRIFT EXPERIMENT , LIKE THE MICHELSON-MORLY EXPERIMENT , THE CONCEPT OF AETHER AS A MECHANICAL MEDIUM HAVING A STATE OF MOTION ADHERENTS. IT HAS REPLACED IN MODERN PHYSICS BY THE THEORY OF RELATIVITY AND QUANTUM THEORY.

4- TITLE :

Does the Inertia of a Body Depend Upon Its Energy Content?

BY: ALBERT EINSTEIN, SEPTEMBER 27, 1905.

THE ANSWER IS YES.

AREA: MATTER-ENERGY EQUIVALENCE

E=Mc^2

Equivalence of matter and energy, $E = mc^2$

(and by implication, the ability of gravity to "bend" light),

AND THE EXISTENCE OF "REST ENERGY"

and the basis of nuclear energy.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

AND TWO PAPERS OF ALBERT EINSTEIN,

NOTE: THERE IS A PAPER IT'S TITLE :INVESTIGATIONS ON THE THEORY OF, THE BROWNIAN MOVEMENT BY DR. ALBERT EINSTEIN,BERNE, MAY , 1905.

PART 18:

ALBERT'S EINSTEIN ACHIEVEMENTS

1-Thermodynamic fluctuations and statistical physics

TWO PAPERS PUBLISHED IN 1902-1903 (THERMODYNAMICS) ATTEMPTED TO INTERPRET ATOMIC PHENOMENA FROM A STATISTICAL POINT OF VIEW. THESE TWO PAPERS WERE THE FOUNDATION FOR THE 1905 PAPER ON BROWNIAN MOTION, WHICH SHOWED THAT BROWNIAN MOVEMENT CAN BE CONSTRUED AS FIRM EVIDENCE THAT MOLECULES EXIST. HIS RESEARCH IN 1903 AND 1904 WAS MAINLY CONCERNED WITH THE EFFECT OF FINITE ATOMIC SIZE ON DIFFUSION PHENOMENA.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

2-General principles : LIKE THE PRINCIPLE OF EQUIVALENCE MENSIONED IN THE PART 7.

3-Theory of relativity and $E = mc^2$

4-Photons and energy quanta

EINSTEIN POSTULATED THAT LIGHT ITSELF CONSISTS OF LOCALIZED PARTICLES (QUANTA). ALBERT'S EINSTEIN LIGHT QUANTA NEARLY UNIVERSALLY REJECTED BY ALL PHYSICISTS, INCLUDING MAX PLANCK AND NIELS BOHR. THIS IDEA ONLY

BECAME UNIVERSALLY ACCEPTED IN 1919, WITH THE ROBERT MILLIKAN'S DETAILED EXPERIMENTS ON THE PHOTOELECTRIC EFFECT, AND WITH THE MEASUREMENT OF COMPTON SCATTERING.

EINSTEIN CONCLUDED THAT EACH WAVE OF FREQUENCY (f) IS ASSOCIATED WITH A COLLECTION OF PHOTONS WITH EANERGY (hf) EACH, WHERE (h) IS PLANCK'S CONSTANT. HE DOES NOT SAY MUCH MORE, BECASUSE HE IS NOT SURE HOW THE PARTICLES ARE RELATED TO THE <u>WAVE</u>. BUT HE DOES NOT SUGGEST THAT THIS IDEA WOULD EXPLAIN CERTAIN EXPERIMENTAL RESULTS, NOTABLY THE PHOTOELECTRIC EFFECT.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

5-Quantized atomic vibrations

In 1907 Einstein proposed a model of matter where each atom in a lattice structure is an independent harmonic oscillator. In the Einstein model, each atom oscillates independently – a series of equally spaced quantized states for each oscillator.

EINSTEIN WAS AWARE THAT GETTING THE FREQUENCY OF THE ACTUAL OSCILLATIONS WOULD BE DIFFERENT, BUT HE NEVERTHLESS PROPOSED THIS THEORY BECASUSE IT WAS A PARTICULARLY CLEAR DEMONSTRATION THAT QUANTUM MECHANICS COULD SOLVE THE SPECIFIC HEAT PROBLEM IN CLASSICAL MECHANICS. PETER DEBYE REFINED THIS MODEL.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

6-Adiabatic principle and action-angle variables

Throughout the 1910s, quantum mechanics expanded in scope to cover many different systems. After **Ernest Rutherford** discovered the nucleus and proposed that electrons orbit like planets, Niels Bohr was able to show that the same quantum mechanical postulates introduced by Planck and developed by Einstein would explain the discrete motion of electrons in atoms, and the **periodic table of the elements**.

Einstein contributed to these developments by linking them with the 1898 arguments **Wilhelm Wien** had made. Wien had shown that the hypothesis of **adiabatic invariance** of a thermal equilibrium state allows all the **blackbody curves** at different temperature to be derived from one another by a **simple shifting process**. Einstein noted in 1911 that the same adiabatic principle shows that the quantity which is quantized in any mechanical motion must be an adiabatic invariant. **Arnold Sommerfeld** identified this adiabatic invariant as the **action variable** of classical mechanics. The law that the action variable is

quantized was a basic principle of the QUANTUM THEORY AS IT WAS KNOW BETWEEN 1900 AND 1925.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

7-Wave–particle duality

Although the patent office promoted Einstein to Technical Examiner Second Class in 1906, he had not given up on academia. In 1908, he became a *privatdozent* at the **University of Bern**. In "über die Entwicklung unserer Anschauungen über das Wesen und die Konstitution der Strahlung" ("**The Development of Our Views on the Composition and Essence of Radiation**"), on the **quantization** of light, and in an earlier 1909 paper, Einstein showed that Max Planck's energy quanta must have well-defined **momenta** and act in some respects as independent, **point-like particles**. This paper introduced the *photon* concept (although the name *photon* was introduced later by **Gilbert N. Lewis** in

1926) and inspired the notion of **wave–particle duality** in QUANTUM MECHANICS.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

8-Theory of critical opalescence

Einstein returned to the problem of thermodynamic fluctuations, giving a treatment of the density variations in a fluid at its critical point. Ordinarily the density fluctuations are controlled by the second derivative of the free energy with respect to the density. At the critical point, this derivative is zero, leading to large fluctuations. <u>The effect of density fluctuations is that light of all wavelengths is scattered, making the fluid look milky white.</u> Einstein relates this to **Rayleigh scattering**, which is what happens when the fluctuation size is much smaller than the wavelength, and which explains why the sky is blue.

Einstein quantitatively derived critical opalescence from a treatment of density

fluctuations, and demonstrated how both the effect and Rayleigh scattering originate from the atomistic constitution of matter.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

9-Zero-point energy

Einstein's physical intuition led him to note that Planck's oscillator energies had an incorrect zero point. He modified Planck's hypothesis by stating that the lowest energy state of an oscillator is equal to $\frac{1}{2}hf$, to half the energy spacing between levels. This argument, which was made in 1913 in collaboration with , was based on the thermodynamics of a diatomic molecule which can split apart into two free atoms.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

10-General relativity and the Equivalence Principle

THEORY OF GRAVITATION GENERAL RELATIVITY (G.R.) IS DEVELOPED BY ALBERT EINSTEIN BETWEEN 1907 AND 1915.

According to general relativity, the observed gravitational attraction between masses results from the warping of space and time by those masses. General relativity has developed into an essential tool in modern astrophysics. It provides the foundation for the current understanding of black holes, regions of space where gravitational attraction is so strong that not even light can escape.

As Albert Einstein later said, the reason for the development of general relativity was that the preference of inertial motions within special relativity was unsatisfactory, while a theory which from the outset prefers no state of motion (even accelerated ones) should appear more satisfactory. So in 1908 he published an article on acceleration under special relativity. In that article, he argued that free fall is really inertial motion, and that for a freefalling observer the rules of special relativity must apply. This argument is called the Equivalence principle. In the same article, Einstein also predicted the phenomenon of gravitational time dilation. In 1911, Einstein published another article expanding on the 1907 article, in which additional effects such as the deflection of light by massive bodies were predicted.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

11- Hole argument and Entwurf theory

While developing general relativity, Einstein became confused about the gauge invariance in the theory. He formulated an argument that led him to conclude that a general relativistic field theory is impossible. He gave up looking for fully generally covariant tensor equations, and searched for equations that would be invariant under general linear transformations only.

In June, 1913 the Entwurf ("draft") theory was the result of these investigations.

As its name suggests, it was a sketch of a theory, with the equations of motion supplemented by additional gauge fixing conditions. Simultaneously less elegant and more difficult than general relativity, after more than two years of intensive work Einstein abandoned the theory in November, 1915 after realizing that the hole argument was mistaken.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

12-Cosmology

In 1917, Einstein applied the General theory of relativity to model the structure of the universe as a whole. He wanted the universe to be eternal and unchanging, but this type of universe is not consistent with relativity. To fix this, Einstein modified the general theory by introducing a new notion, the COSMOLOGICAL CONSTANT. With a positive cosmological constant, the universe could be an ETERNAL STATIC SPHERE.

Einstein believed a spherical static universe is philosophically preferred, because it would obey Mach's principle. He had shown that general relativity incorporates Mach's principle to a certain extent in frame dragging by gravitomagnetic fields, but he knew that Mach's idea would not work if space goes on forever. In a closed universe, he believed that Mach's principle would hold. Mach's principle has generated much controversy over the years.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

13-Modern quantum theory

Einstein was displeased with quantum theory and mechanics, despite its acceptance by other physicists, stating "God doesn't play with dice." As Einstein passed away at the age of 76 he still would not accept quantum theory. In 1917, at the height of his work on relativity, Einstein published an article in *Physikalische Zeitschrift* that proposed the possibility of stimulated emission, the physical process that makes possible the maser and the laser. This article

showed that the statistics of absorption and emission of light would only be consistent with Planck's distribution law if the emission of light into a

mode with n photons would be enhanced statistically compared to the emission of light into an empty mode. This paper was enormously influential in the later development of quantum mechanics, because it was the first paper to show that the statistics of atomic transitions had simple laws. Einstein discovered Louis de Broglie 's work, and supported his ideas, which were received skeptically at first. In another major paper from this era, Einstein gave a wave equation for de Broglie waves, which Einstein suggested was the Hamilton–Jacobi equation of mechanics. This paper would inspire Schrödinger's work of 1926.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

14-Bose–Einstein statistics

In 1924, Einstein received a description of a statistical model from Indian physicist Satyendra Nath Bose, based on a counting method that assumed that light could be understood as a gas of indistinguishable particles. Einstein noted that Bose's statistics applied to some atoms as well as to the proposed light particles, and submitted his translation of Bose's paper to the *Zeitschrift für Physik* . Einstein also published his own articles describing the model and its implications, among them the Bose–Einstein condensate phenomenon that some particulates should appear at very low temperatures. It was not until 1995 that the first such condensate was produced experimentally by Eric Allin Cornell and Carl Wieman using ultra-cooling equipment built at the NIST–JILA laboratory at the University of Colorado at Boulder.

Bose–Einstein statistics are now used to describe the behaviors of any assembly of bosons. Einstein's sketches for this project may be seen in the Einstein Archive in the library of the Leiden University.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

15-Energy momentum pseudotensor

General relativity includes a dynamical spacetime, so it is difficult to see how to identify the conserved energy and momentum. **Noether's theorem** allows these quantities to be determined from a **Lagrangian** with **translation invariance**, but **general covariance** makes translation invariance into something of a **gauge symmetry**. The energy and momentum derived within general relativity by Noether's presecriptions do not make a real tensor for this reason.

Einstein argued that this is true for fundamental reasons, because the gravitational field could be made to vanish by a choice of coordinates. He maintained that the non-covariant energy momentum pseudotensor was in fact the best description of the energy momentum distribution in a gravitational field. This approach has been echoed by **Lev Landau** and **Evgeny Lifshitz**, and others, and has become standard. he use of non-covariant objects like pseudotensors was heavily criticized in 1917 by **Erwin Schrödinger** and others.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

16-Unified field theory

Following his research on general relativity, Einstein entered into a series of attempts to generalize his geometric theory of gravitation to include electromagnetism as another aspect of a single entity. In 1950, he described his "**unified field theory**" in a *Scientific American* article entitled "On the Generalized Theory of Gravitation". Although he continued to be lauded for his work, Einstein became increasingly isolated in his research, and his efforts were ultimately unsuccessful. In his pursuit of a unification of the fundamental forces, Einstein ignored some mainstream developments in physics, most notably the **strong** and **weak nuclear forces**, which were not well understood until many

years after his death. Mainstream physics, in turn, largely ignored Einstein's approaches to unification. Einstein's dream of unifying other laws of physics with gravity motivates modern quests for a **theory of everything** and in

particular **string theory**, where geometrical fields emerge in a unified quantum-mechanical setting.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

17-Wormholes

Einstein collaborated with others to produce a model of a **wormhole**. His motivation was to model elementary particles with charge as a solution of gravitational field equations, in line with the program outlined in the paper "Do Gravitational Fields play an Important Role in the Constitution of the Elementary Particles?". These solutions cut and pasted **Schwarzschild black holes** to make a bridge between two patches.

If one end of a wormhole was positively charged, the other end would be negatively charged. These properties led Einstein to believe that pairs of particles and antiparticles could be described in this way.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

18-Einstein–Cartan theory

19- Equations of motion

The theory of general relativity has a fundamental law – the **Einstein equations** which describe how space curves, the **geodesic equation** which describes how particles move may be derived from the Einstein equations.

Since the equations of general relativity are non-linear, a lump of energy made out of pure gravitational fields, like a black hole, would move on a trajectory which is determined by the Einstein equations themselves, not by a new law. So Einstein proposed that the path of a singular solution, like a black hole, would be determined to be a geodesic from general relativity itself.

This was established by Einstein, Infeld, and Hoffmann for pointlike objects without angular momentum.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

20- Other investigations

 Einstein conducted other investigations that were unsuccessful and abandoned. These pertain to force, superconductivity, gravitational waves, and other research.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

21-Einstein–de Haas experiment

Einstein and De Haas demonstrated that magnetization is due to the motion of electrons, nowadays known to be the spin. In order to show this, they reversed the magnetization in an iron bar suspended on a torsion pendulum. They confirmed that this leads the bar to rotate, because the electron's angular momentum changes as the magnetization changes.

This experiment needed to be sensitive, because the angular momentum associated with electrons is small, but it definitively established that electron motion of some kind is responsible for magnetization.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

22-Schrödinger gas model

Einstein suggested to Erwin Schrödinger that he might be able to reproduce the statistics of a Bose–Einstein gas by considering a box. Then to each possible quantum motion of a particle in a box associate an independent harmonic oscillator. Quantizing these oscillators, each level will have an integer occupation number, which will be the number of particles in it.

This formulation is a form of second quantization, but it predates modern

quantum mechanics. Erwin Schrödinger applied this to derive the thermodynamic properties of a semiclassical ideal gas. Schrödinger urged Einstein to add his name as co-author, although Einstein declined the invitation.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

23-Einstein refrigerator

In 1926, Einstein and his former student Leó Szilárd co-invented (and in 1930, patented) the Einstein refrigerator. This absorption refrigerator was then revolutionary for having no moving parts and using only heat as an input. On 11 November 1930, U.S. Patent 1,781,541 was awarded to Albert Einstein and Leó Szilárd for the refrigerator. Their invention was not immediately put into commercial production, as the most promising of their patents were quickly bought up by the Swedish company Electrolux to protect its refrigeration technology from competition.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

24-Bohr versus Einstein

The Bohr–Einstein debates were a series of public disputes about quantum mechanics between Albert Einstein and Niels Bohr who were two of its founders. Their debates are remembered because of their importance to the philosophy of science.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

25-Einstein–Podolsky–Rosen paradox

In 1935, Einstein returned to the question of quantum mechanics. He considered how a measurement on one of two entangled particles would affect the other. He noted, along with his collaborators, that by performing different measurements on the distant particle, either of position or momentum, different properties of

the entangled partner could be discovered without disturbing it in any way.

He then used a hypothesis of local realism to conclude that the other particle had these properties already determined. The principle he proposed is that if it is possible to determine what the answer to a position or momentum measurement would be, without in any way disturbing the particle, then the particle actually has values of position or momentum.

This principle distilled the essence of Einstein's objection to quantum mechanics. As a physical principle, it was shown to be incorrect when the Aspect experiment of 1982 confirmed Bell's theorem, which had been promulgated in 1964.

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

REFERENCE: http://en.wikipedia.org/wiki/Albert_Einstein

PART 19:

THE Manhattan Project

A RESULT OF E=M c^2

The Manhattan Project was a research and development program by the United States with the United Kingdom and Canada that produced the first ATOMIC

BOMB DURING WORLD WAR 2. FROM 1942 TO 1946, THE PROJECT WAS UNDER THE DIRECTION OF MAJOR GENERAL LESLIE GROVES OF THE USA ARMY CORPS OF ENGINEERS.

Two types of atomic bomb were developed during the war.

A RELATIVELY SIMPLE GUN-TYPE FISSION WEAPON WAS MADE USING URANIUM 235, AN ISOTOPE THAT MAKES UP ONLY 0.7 PERCENT OF NATURAL URANIUM.

THE GUN-TYPE DESIGN PROVED IMPRACTICAL TO USE WITH PLUTONIUM SO A MORE COMPLEX IMPLOSION -TYPE WEAPON WAS DEVELOPED IN A CONCERTED DESIGN AND CONSTRUCTION EFFORT AT THE PROJECT'S WEAPONS RESEARCH AND DESIGN LABORATORY IN LOS ALAMOS, NEW MEXICO.

HIROSHIMA BOMB = GUN TYPE A BOMB

NAGASAKI BOMB= IMPLOSION TYPE A BOMB

Conventional explosive

Gun barrel

Hollow Uranium "bullet"

Cylinder target

GUN TYPE

Fast explosive

Slow explosive

Tamper/Pusher

Spherical shockwave compresses core

Neutron initiator
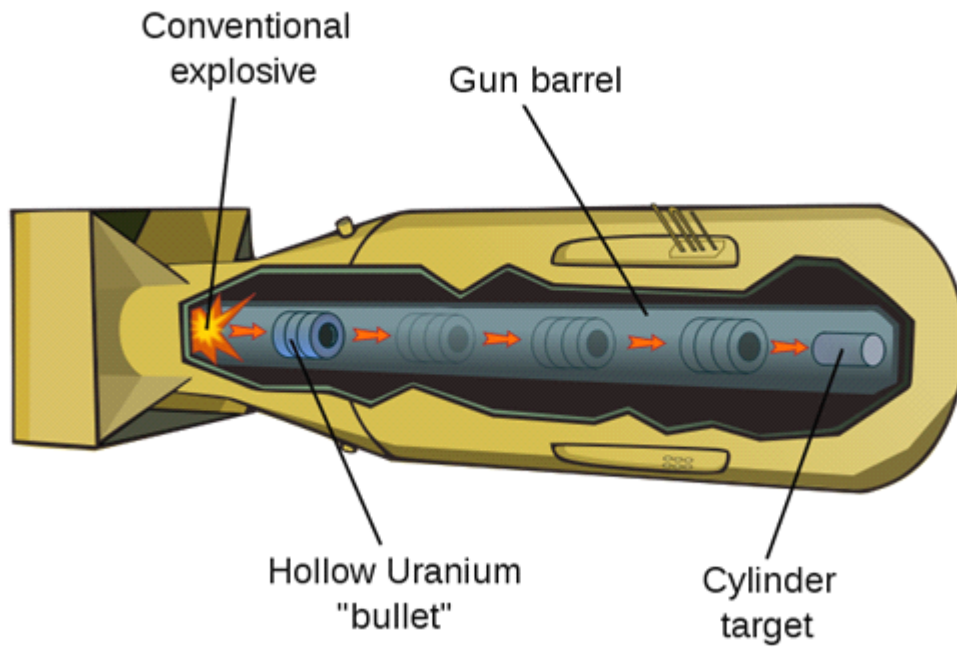
Plutonium core
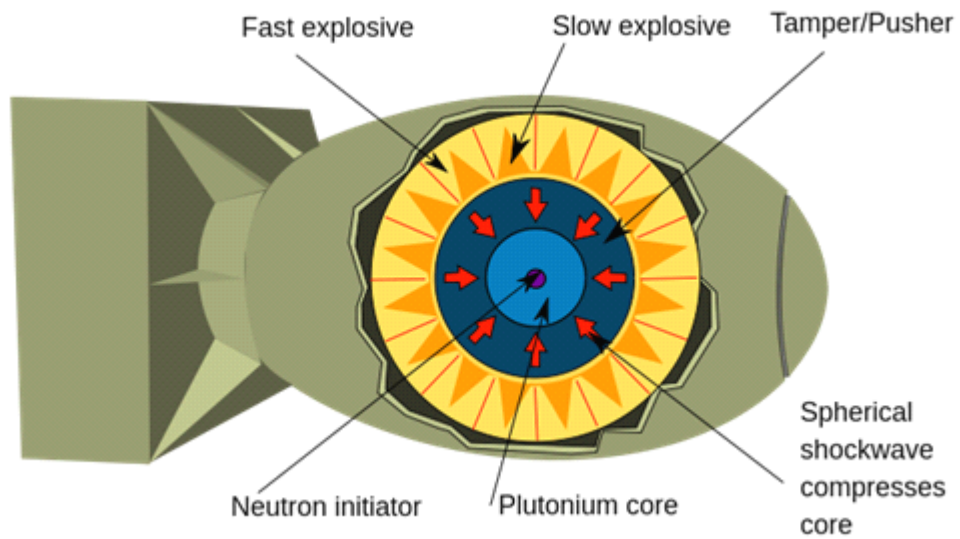
IMPLOSION TYPE

H BOMB:

BY USA
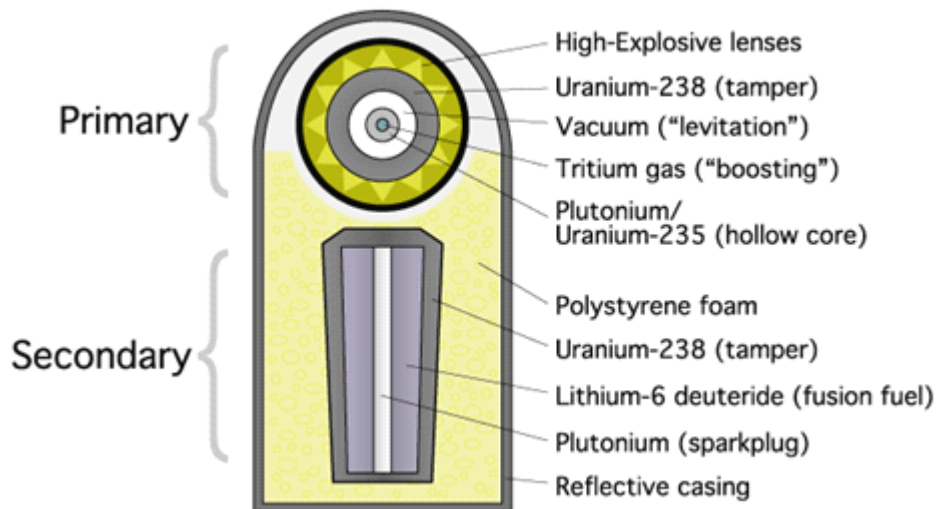
THE H BOMB CONTAINS OF A NUCLEAR BOMB WITH A FUSION FUEL.

THE ENERGY RELEASED BY THE H BOMB RESULTS OF FUSION OF ELEMENTS TO HEAVER ELEMENTS AND RELEASING A HIGH ENERGY.

LIKE:

HYDROGEN ——–> HE + ENERGY

THE REACTION IN THE CORE OF STARS (LIKE SUN) IS A FUSION TYPE.

REFERENCE: http://en.wikipedia.org/wiki/Albert_Einstein

PART 20:

EINSTEIN'S SIGNATURE

Signature

Albert Einstein

FROM THE FAMILY TREE WE CAN SEE THAT THE FULL NAME OF ALBERT IS :

ALBERT (HERMANN) (ABRAHAM) (RUPERT EINSTEIN)

SO THE (EINSTEIN) IS THE TOTAL FAMILY NAME.

••

ALBERT'S SONS

THEY ARE :

1- HANS ALBERT HERMANN ABRAHAM RUPERT EINSTEIN,

2- EDUARD ALBERT HERMANN ABRAHAM RUPERT EINSTEIN ,

AND

3- LIESERL ALBERT HERMANN ABRAHAM RUPERT EINSTEIN.

SONS OF (HANS) (ALBERT HERMANN EINSTEIN):

1-EVELYN (HANS) (ALBERT EINSTEIN),

2- KLAUS MARTIN (HANS) (ALBERT EINSTEIN),

AND

3- BERNHARD CAESAR (HANS) (ALBERT EINSTEIN).

••

SONS OF BERNHARD CAESAR (HANS) (ALBERT).... (EINSTEIN) :

1- THOMAS (BERNHARD CAESAR) (HANS) (ALBERT) (EINSTEIN),

2- MYRA (BERNHARD CAESAR) (HANS) (ALBERT) (EINSTEIN),

3- CHARLES (BERNHARD CAESAR) (HANS) (ALBERT) (EINSTEIN),

4- TEDDY (BERNHARD CAESAR) (HANS) (ALBERT) (EINSTEIN),

AND

5- PAUL (BERNHARD CAESAR) (HANS) (ALBERT) (EINSTEIN).

HANS ALBERT HERMANN EINSTEIN

EVELYN HANS ALBERT EINSTEIN

BERNHARD CAESAR (HANS) (ALBERT)…. (EINSTEIN)

THOMAS (BERNHARD CAESAR) HANS ALBERT EINSTEIN

REFERENCE: http://en.wikipedia.org/wiki/Albert_Einstein

PART 21:

ALBERT EINSTEIN AGAINST THE QUANTUM MECHANICS

(1)

EINSTEIN MEASURED THE MOMENTUM AND POSITION OF A PARTICLE BUT NOT AT THE SAME TIME.

REFERENCE: "KNOWLEDGE OF PAST AND FUTURE IN QUANTUM MECHANICS", ALBERT EINSTEIN, RICHARD C. TOLMAN, AND BORIS PODOLSKY, CALIFORNIA INSTITUTE OF TECHNOLOGY, FEBRUARY 26, 1931.

(2)

Einstein–Podolsky–Rosen paradox : EPR PARADOX :

IN PHYSICS, THE PRINCIPLE OF LOCALITY STATES THAT AN OBJECT IS INFLUENCED DIRECTLY ONLY BY IT'S IMMEDIATE SURROUNDINGS. EXPERIMENTS HAVE SHOWN THAT QUANTUM MECHANICALLY <u>ENTANGLED</u> PARTICLES MUST VIOLATE EITHER THE PRINCIPLE OF LOCALITY OR THE FORM OF <u>PHILOSOPHICAL REALISM</u> KNOWN AS <u>COUNTERFACTUAL DEFINITENESS</u>.

LOCAL REALISM :

LOCAL REALISM IS THE COMBINATION OF THE PRINCIPLE OF LOCALITY WITH THE "REALISTIC" ASSUMPTION THAT ALL OBJECTS MUST OBJECTIVELY HAVE A PRE-EXISTING VALUE FOR ANY POSSIBLE MEASUREMENT BEFORE THE MEASUREMENT IS

MADE. ALBERT EINSTEIN SAID :"I LIKE TO THINK THAT THE MOON IS THERE EVEN IF I AM NOT LOOKING AT IT".

ALBERT EINSTEIN ARGUED THAT QUANTUM MECHANICS WAS AN INCOMPLETE PHYSICAL THEORY. USING PRINCIPLE OF LOCALITY, IN A FAMOUS PAPER HE AND HIS CO-AUTHORS ARTICULATED THE EINSTEIN-PODOLSKY-ROSEN PARADOX WHICH SHOWED THAT POSITION AND MOMENTUM WERE SIMULTANEOUS "REAL" PHYSICAL PROPERTIES OF A PARTICLE. HOWEVER QUANTUM MECHANICS HAS NOTHING TO SAY ABOUT THESE "ELEMENTS OF REALITY".

REFERENCE: "CAN QUANTUM-MECHANICAL DESCRIPTION OF PHYSICAL REALITY BE CONSIDERED COMPLETE?", ALBERT EINSTEIN, BORIS PODOLSKY AND NATHAN ROSEN, INSTITUTE FOR ADVANCED STUDY, PRINCETON, NEW JERSEY, (RECEIVED MARCH 25, 1935), *PHYSICAL REVIEW, VOLUME 47, MAY 15, pages 777-780, 1935.*

PART 22:

THERE ARE NO QUANTUM MECHANICS

I EXPLAINED IN THIS PAPER THAT WE CAN MEASURE THE POSITION AND THE MOMENTUM OF THE PARTICLE ACCURATLLY AND IN SAME TIME. SO THERE IS NO UNCERTAINTY PRINCIPLE AND THERE ARE NO QUANTUM MECHANICS.

THE RESEARCH:

SUPPOSE A BOX CONTAINING IDENTICAL PARTICLES AND HAVING THE <u>SAME THERMAL AGITATION</u>, AND SO SAME VELOCITY.

THE BOX HAVING TWO SHUTTERS , THE SHUTTERS ARE COVERED BY TWO COVERS S2 AND S1. AS SHOWED IN FIGURE (1).

WE WILL USE TWO PARTICLES TO APPROVE THAT THERE IS NO UNCERTAINTY PRINCIPLE.

PARTICLE 1 : GET OUT FROM THE SHUTTER S1

PARTICLE 2 : GET OUT FROM THE SHUTTER S2

V1= THE VELOCITY OF THE FIRST PARICLE

V2= THE VELOCITY OF THE SECOND PARTICLE

T1= THE TIME REQUIRED BY THE PARTICLE 1 TO REACH THE ORIGION (O)

T2= THE TIME REQUIRED BY THE PARTICLE 2 TO REACH THE ORIGION (O).

D1= THE DISTANCE TRAVELED BY THE PARTICLE 1 FROM THE BOX (B) TO THE ORIGION (O)= THE LINE [BO].

D2= THE DISTANCE TRAVELED BY THE PARTICLE 2 FROM THE BOX (B) TO THE ORIGION (O)= THE PATH [BR]+[RO]

WHERE: (R) IS
AN ELASTIC REFLECTOR.
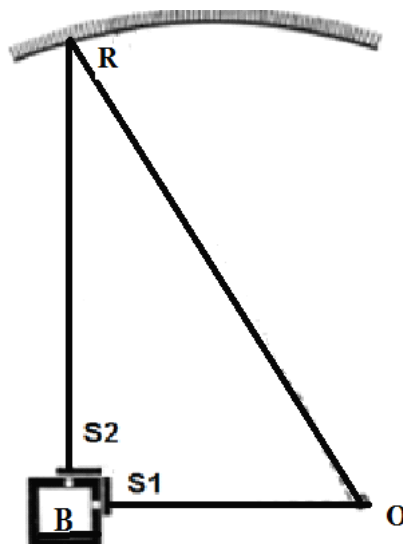
FIGURE (1)

PART ONE: GETTING ((MEASURING)) THE VELOCITY OF THE PARTICLE

WE CAN DO AN EXPERIMENT AND IN IT WE CAN OBTAIN THE POSITION AND THE MOMENTUM OF THE PARTICLE WITHOUT MISTAKE ((EXACT)).

THE VELOCITIES OF THE TWO PARTICLES ARE EQUALS

V1=V2=V …….EQ.(1) BECAUSE THE TWO PARTICLES ARE IDENTICAL AND HAVING THE SAME THERMAL AGITATION.

IF WE ROMOVED THE TWO COVERS ((OPEN SHUTTERS)) S1 AND S2 FOR A SHORT TIME IN THE SAME TIME.

THE TWO PARTICLES WILL GET OUT FROM THE BOX IN THE SAME TIME.

THE FIRST PARTICLE WILL GO ALONG LINE : B-O : [BOX – ORIGION] AS EXPLAINED IN THE FIGURE (1) .WE MEASURE IT'S LOCATION EXACTLY BY A PHOTON. SO REMAINS IT'S MOMENTUM ((VELOCITY ,SPEED))

MOMENTUM=MASS * VELOCITY.

AND SICE THE PARTICLES ARE IDENTICAL :

➔ **MOMENTUM α VELOCITY**

SO WE OBTAINED THE 1- ((EXACT POSITION)) OF THE PARTICLE 1 IN THIS EXPERIMENT.

THE SECOND PARTICLE WENT ALONG THE LINE (S-R-O) : (BOX- ELASTIC REFLECTION SURFACE- THE ORIGION) , WE <u>NOW</u> MESURE IT'S VELOCITY AND HENCE IT'S MOMENTUM SINCE : MOMENTUM=MASS* VELOCITY,AS WE SAID ABOVE.

AND SINCE THE TWO PARTICLES HAVING THE SAME SPEED ((THE SAME VELOCITY)) BECAUSE THEY ARE HAVING THE SAME THERMAL AGITATION , AND BECAUSE THEY ARE IDENTICAL ((HAVING THE SAME MASS)) SO WE OBTAINED 2-THE EXACT MOMENTUM((THE EXACT SPEED, VELOCITY)) OF THE PARTICLE IN THIS EXPERIMENT.

WHAT WE CAN NOT MESURE FOR THE PARTICLE 1 WE KNEW IT FROM THE PARTICLE 2 : THIS IS THE IDEA OF THE PART ONE OF THE EXPERIMENT.

PART TWO: IN THIS PART WE WILL REPEAT THE ABOVE EXPERIMENT –PART ONE- BUT IN THE EVIDENCE OF ((SAME TIME)) :

IN THE PART 2 SIMPLY WE WILL REMOVE THE TWO COVERS IN TIME RELATION SO AS THE TWO PARTICLES : (THE PARTICLE 2 AND THE PARTICLE 1) WILL REACH THE ORIGION (O) IN THE <u>SAME TIME</u>. SO WE WILL <u>NOT REMOVE THE TWO COVERS</u> ((WILL NOT

OPEN THE SHUTTERS S1 AND S2)) <u>IN THE SAME TIME.</u> BUT IN TIME DIFFERENCE EQUAL TO ΔT SO AS ENABLE THE TWO PARTICLES ((PARTICLE 1 AND PARTICLE 2) TO REACH THE ORIGION EXACTLY AT THE SAME TIME.

$T1 = D1/V$ →

$T1 = [BO]/V$ ……….…..EQ.(2)

$T2 = D2/V$, SO

$T2 = [(BR)+(RO)]/V$ …………..EQ.(3)

$\Delta T = T2 - T1$ ……….…EQ.(4)

PUTTING EQUATION (2) AND EQUATION (3) IN EQ.(3) YIELDS:

$\Delta T = [(BR)+(RO)]/V - (BO)/V$ ……….…EQ.(4)

WE CAN ALSO SINCE $(RO) = [(BR)^2 + (BO)^2]^{1/2}$ FROM THE FIGURE (1) SO

$\Delta T = (BR)/V + [(BR)^2 + (BO)^2]^{1/2}/V - (BO)/V$ ……….…EQ.(5)

(BR)= KNOWN, (BO)=KNOWN, (RO)=KNOWN.

BY CALCULATING ΔT BY EQUATION (4) OR EQ.(5) SO WE CAN KNOW <u>THE DIFFERENCE</u> OF TIME REQUIRED OF THE TWO PARTICLES TO

TRAVEL FROM THE BOX B TO THE ORIGION (O) ; PARTICLE 1 AND PARTICLE 2

SO BY THE FIRST PART OF THE EXPERIMENT WE KNEW THE VELOCITY OF THE PARTICLES (V) , SO WE KNOW THE ΔT SO WE WE NOW KNOW WHEN THE PARTICLE 2 WILL REACH THE ORIGION (O) AFTER THE REACHING OF THE PARTICLE 1 TO THE ORIGION (O); BECAUSE THE TWO PATHS OF THE TWO PARTICLES ARE NOT IDENTICAL ((NOT HAVING THE SAME LENGTH)) WHILE THEY HAVING THE SAME (VELOCITY).

SO TO MAKE THE ((SAME TIME EVIDENCE)) IF WE SIPPOSE THAT THE MEASURING PROCESS OF POSITION AND THE VELOCITY (THE MOMENTUM) AT THE ORIGION (O) , SO NOW IN THIS PART : PART TWO WHICH IS ANOTHER EXPERIMENT CAME AFTER THE EXPERIMENT : PART ONE, WE WILL MAKE THE EVIDENCE OF ((SAME TIME)) IN THE MESURING OF THE POSITION AND MOMENTUM (VELOCITY) OF THE PARTICLE IN THIS EXPERIMENT.

TO DO IT : WE WILL DO IS FIRST MAKING THE PARTICLE 2 GET OUT FROM THE BOX [BY REMOVING SHUTTER S2] IN ADVANCED TIME ((BEFORE)) OF REMOVING THE [COVER S1] TO LET THE PARTICLE 2 GET OUT FROM THE BOX ((BEFORE)) THE PARTICLE 1 ((BY ΔT)), AND BECAUSE THEY HAVE THE SAME VELOCITY ((EQUATION (1))) THEY WILL REACH THE ORIGION (O) AT SAME TIME TO BE MESURED. SO WE WILL MMESURE THE POSITION ((OF THE PARTICLE 1)) AND THE MOMENTUM ((VELOCITY)) OF TWO PARTICLES ((BECAUSE THEY ARE IDENTICAL AS SUPPOSED AND HASVING THE SAME THERMAL AGITATION AND HENCE THE SAME VELOCITY)) BY THE PARTICLE 2, AND AS WE TOLD WHAT COINCIDE ON PARTICLE 2 COINCIDES ON

PARTICLE 1 ((WE MEANS THE SPEED, VELOCITY AND HENCE THE MOMENTUM)) AND BECAUSE THEY REACHED THE ORIGION (O) AT THE SAME TIME AND HENCE THE POSITION AND MOMENTUM OF THE PARTICLE IN THIS EXPERIMENT MEASURED IN <u>THE SAME TIME</u> BY THE ∆T METHOD AS IN THIS PART 2.

SO IN THIS EXPERIMENT :

 WE OBTAINED :

1- THE EXACT POSITION OF THE PARTICLE IN THIS EXPERIMENT

2- THE EXACT MOMENTUM ((THE EXACT SPEED, VELOCITY)) OF THE PERITCLE IN THIS EXPERIMENT

3- AT SAME TIME AND EXACT.

SO THERE IS NO UNCERTAINTY PRINCIPLE SO THERE ARE NO QUANTUM MECHANICS.

<u>RESULTS:</u>

WE MESURED THE EXACT POSITION AND THE EXACT MOMENTUM OF THE PARTICLE IN THIS EXPERIMENT AT SAME TIME. SO THERE IS NO UNCERTAINTY PRINCIPLE.SO THERE ARE NO QUANTUM MECHANICS.

PART 23:

THE FOURTH DIMENSION

IT IS TIME

PART 24:

THE FIFTH DIMENSION

IN PHYSICS, KLAUZA-KLEIN THEORY (KK THEORY) IS A MODEL THAT SEEKS TO UNIFY THE TWO FUNDAMENTAL FORCES OF GRAVITATION AND ELECTROMAGNETISM.
THE THEORY WAS FIRST PUBLISHED IN 1921. IT WAS PROPPSED BY THE MATHEMATICIAN THEODOR KALUZA WHO EXTENDED GENERAL RELATIVITY TO A FIVE-DIMENSIONAL SPACE-TIME. THE RESULTING EQUATIONS CAN BE SEPARATED INTO FURTHER SETS OF EQUATIONS, ONE OF WHICH IS EQUIVALENT TO EINSTEIN'S FIELD EQUATIONS, ANOTHER SET EQUIVALENT TO MAXWELL'S EQUATIONS FOR THE ELECTROMAGNETIC FIELD AND THE FINAL PART AN EXTRA SCALAR FIELD NOW TERMED THE "RADION".

IT IS THE DIMENSION OF $E = M c^2$: THE NUCLEAR BOMB

REFERENCE: http://en.wikipedia.org/

PART 25:

THE SIXTH DIMENSION

SOME NAMED IT AS : THE UNIVERSAL MEMORY

The Sixth Dimension or Sixth Dimension may refer to one of several fictitious worlds.

It can refer to the setting of the underworld in the film:

FORBIDDEN ZONE

THIS DIMENSION REQWUIRES LIFE AND AFTER LIFE, IT PREDICTS BOTH.

VERY IMPORTANT NOTE: THE OBJECT MUST HAVE ONE DIMENSION LESS THAN THE WORLD TO ENTER TO THAT OBJECT WITHOUT INTERSECT IT'S BODERS.

TO ENTER INTO A SQUARE WE CAN BECAUSE OUR WORLD IS 3-D OR 4-D ,

SO; TO GET INTO THE 5TH DIMENSION OBJECT WE MUST BE FROM THE WORLD OF THE 6TH DIMENSION , AND SO ON.

REFERENCE:

http://www.thetreacheries.com/thenightmaretreacheries_008.htm

PART 26:

THE SEVENTH DIMENSION

LIFE

THE LIVING DIMENSION

We are living beings, with alive minds. The living dimension predicated all alive dimensions. From the first conglomeration of atoms that set an independent life in motion, propelling itself to sense the universe; the living dimension was realized. From the first feeling thing to the first seeing being, the living dimension is of hunger and survival. The living dimension is of evolutions. As our very bodies never remain the same and are constantly evolving, as our thoughts constantly change and evolve, the living dimension is never constant. All living things and their categories are changing, adapting and evolving. Every day and every minute we evolve in every way.

Life is simply this: Temporary in seven dimensions to the power of as many as five senses . Feel your living universe.

THE REFERENCE :

http://www.thetreacheries.com/thenightmaretreacheries_009.htm

PART 27:

THE EIGHTH DIMENSION

If the "seven" defines the natural reality, "eight" represents that which is higher than nature, the "circumference" that encompasses the circle of creation.

THE DIMENSION OF VISIONS -LIKE SEE THE FUTURE DURING SLEEPING OR AFTERR THE SLEEPING-

Out of the living dimension we shall travel, my dear and only friend. Onto the moment the last atom is set in place... in the mind of the first alive being! The moment in which the universe, in the ultimate form of compliment, was recreated in a living body producing the alive mind! The alive dreaming being. And so it was as it is, the universe is recreated in the mind of the alive. Space, matter and the Enerlogue combine in the living tissue of the alive mind to create the dreaming alive dimension.

 With every dream your mind interconnects with the fourth dimension, and the memory of the universe.

"Seven" includes both matter and spirit, both mundanity and holiness, both involvement and transcendence, but as separate, distinct components of the cycle of creation; the "seventh dimension" will exert its influence on the other six, but only in a "transcendent" way—as a "spiritual," "other-worldly" reality that will never be truly internalized and integrated within the system. In contrast, "eight" represents the introduction of a reality that is beyond all nature and definition, including the definition "transcendence." This "eighth dimension" (if we can call it a "dimension") has no limitations at all: it

transcends and pervades, being beyond nature yet also fully present within it, being equally beyond matter and spirit and equally within them.

Your dreams are your interactions with everything alive. They are your abstractions of the interactions, not the interactions themselves mind you. Sleeping is the time we dream, it is the time we are interconnected with the Enerlogue and this is the time it gets to use us. But we can look inside the creature and whisper to it, and to others as well so alive in the twelfth dimension. Dreams are our futures and our fears, our communications with each other and the universal... and they can be nightmares too, leave no doubt.

THE DREAM WHICH IS FROM ALLAH IS THE GOOD THING , NOT ALL DREAMS ARE GOOD.

THE GOOD DREAM NAMED :"VISION"

REFERENCE :

http://www.thetreacheries.com/thenightmaretreacheries_010.htm

PART 28:

THE NINTH DIMENSOIN

ABSTRACT THOUGHT

OR WERE YOU ALREADT THINKING THAT

We can abstract the world, we can invent and abstract our senses into thoughts.

This is the dimension of abstract thought! We sense the universe and remember it later. We marry senses together and abstract it, and see it later between our ears.

We do these things because our mind was born in an alive abstracting dimension.

Rule your mind with an iron fist and do not heed the whispers of our parasite, and heed your ninth sense of commonality for we all think in common ways.

THE REFERNCE :
http://www.thetreacheries.com/thenightmaretreacheries_011.htm

PART 29:

THE TENTH DIMENSION

MEMORY

THE TENTH DIMENSION IS THE MEMORY.

REFERENCE:

http://www.thetreacheries.com/thenightmaretreacheries_012.htm

PART 30:

THE ELEVENTH DIMENSION

THE SPIRIT.

THE REFERENCE:

http://www.thetreacheries.com/thenightmaretreacheries_013.htm

PART 31:

THE TWELFTH DIMENSION

IT IS THE INTERACTION WITH THE FOURTH DIMENSION.

We can sense each other, visit each others memories and communicate with each other awake and asleep.

We can act on each other. This is the twelfth dimension and it is the source of miracles and maladies. This is the source of spells and hypnotisim... of visions unexplained, explained. Of God and Angels.

REFERENCE :

http://www.thetreacheries.com/thenightmaretreacheries_014.htm

PART 32:

FINDING THE SPEED OF THE ANGELS AND THE SPIRIT

ALLAH SAID IN KOR'AN : ((WINDING THE ANGELS AND THE SPIRIT TO ALLAH IN A DAY IT'S MAGNITUDE IS 50000 YEARS, PATIENTLY PATIENCE THEY SEE IT AWAY AND WE SEE IT SOON)).

MAY BE ALLAH REFERS TO THE APPEARING OF IL IMAM IL MAHDI ,THEY –THE UNBELIVERS- SEE THE APPEARING AWAY , BUT THE ALLAH AND ANGELS AND THE BELIVERS SEE IT SOON.

WE CAN GET THE SPEED OF ANGELS FROM THE KOR'AN, ALLAH SAID : ((THE ANGELS AND THE SPIRIT WINDING TO HIM IN A DAY IT'S MAGNITUDE 50000 YEARS)),
BY PUTTING: T=1 DAY,
T0=50000*354.36666666666666666666666666667
IN THE EQUATION (2) WE WILL FIND THE SPEED OF THE SPIRIT AND THE ANGELS):

FOR 1 DAY=50 000 YEARS

$V(T) = \pm C[1 - 3.185328772072304379470481739655 \times 10^{-15}]^{1/2}$

$V(T) = \pm C[0.9999999999999681467122792769562]^{1/2}$

$V(T) = \pm 0.9999999999999840733561396384654\, C$

$V(T) = \pm 2.997924579999952253122894116068 \times 10^{8}$

METERS/SECOND

T= TIME OF ALLAH, ANGELS, THINGS NEAR TO ALLAH

TO= TIME AS COMPUTED BY EARTH'S PEOPLE AND THE UNBELIVERS.

V= THE SPEED OF TIME (T),

SO THAT THE SPEED OF ANGELS AND THE SPIRIT IS MORE THAN THE SPEED OF THINGS NEAR TO ALLAH.

SO THE DIFFERENCE BETWEEN [THE SPEED OF ANGELS AND THE SPIRIT] AND [THE SPEED OF THINGS NEAR ALLAH] WICH IS ΔV EQUALES:

ABS(V [1DAY=50000 YEARS]) -ABS(V[1DAY=1000 YEARS]) =

ΔV= ([2.99792457999999952253122894116068]-

[2.99792457998806328072350526246988]) *10^8

METERS/SECOND

= 0.0000000001193194458878414913 7 * 10^8

METERS/SECOND

= 0.00119319445888784149137 METERS/SECOND,

=1.193194458878414913 7 MILLIMETERS/SECOND.

RESULTS:

140

THIS IS NAMED IN EINSTEIN'S SPECIAL RELATIVITY OF TIME BY [[TIME DELATION]], AND WE –MOSLEMS- NAMED IT ELONGATION OF TIME-LONGER-. PROPHET MOHAMMAD [[PEACE ON HIM AND ON HIS FAMILY]] SAID ABOUT THE APPEARING OF IL IMAM IL MAHDI : ((IF JUST A ONE DAY REMAINS OF THE WORLD –ALDONIA- SO ALLAH WILL ELONGATE THAT DAY –MAKE IT LONGER- UNTIL ONE OF MY FAMILY GOVERNS THE EARTH.)) REFRES TO AL IMAM IL MAHDI [[PEACE ON HIM AND ON HIS FAMILY]].

PART 33:

THE WALK YEAR

THE WALK YEAR IS A DISTANCE TRAVELED BY A HUMEN AT ORDINARLLY SPEED, AS THE LIGHT YEAR IS THE DISTANCE TRAVELED BY A LIGHT BEAM DURING A YEAR.

SO TO FIND THE MAGNITUDE OF THE WALK YEAR WE MUST FIND THE SPEED OF WALKING OF THE HUMEN BEING:

IT'S (V) EXPERIMENTALLY BY ME =1.2 METERS/SECOND …….EQ.(1)

=103.680 KM/DAY

BUT I CAN FIND THE SPEED OF WALKING FROM KOR'AN :

ALLAH SAID IN KOR"AN : ((SAY WALK IN EARTH DURING 4 MONTHS…)).

THE SPEED OF WALKIN FROM KOR'AN = DIAMETER OF THE EARTH PLANET/ 4 MONTHS =12756000METERS/(4*30*24*3600) SECONDS

=1.23 METERS/SECOND   …….EQ.(2)

=106.272 KM/DAY

SO THE WALK YEAR FROM EQ."(1) = 103.680 *365 =37843.2 KM …..EQ.(3)

BUT FROM THE EQ.(2) THE WALK YEAR = 106.272* 365

$$=38789.28 \text{ KM} \quad …EQ.(4)$$

FINDING THE DISTANCE BETWEEN EARTH PLANET AND THE MOON :

PROPHET MOHAMMAD (PEACE ON HIM AND HIS FAMILY) SAID ABOUT THE MOON : ((IT IS FROM US BY WALK OF ((10)) YEARS))

SO THE DISTANCE OF THE MOON FROM EARTH BY USING THE EXPERIMENTALLY HUMEN SPEED EQ.(1) :

= 10 YEARS * THE WALK YEAR

$$=10* 37843.2$$

$$=378432 \text{ KM}$$

THE DISTANCE OF THE MOON FROM EARTH BY USING THE KOR"ANIC HUMEN SPEED EQ.(2) :

$$= 10 \text{ YEARS} * \text{THE WALK YEAR}$$

$$=10* 38789.28$$

$$=387892.8 \text{ KM}$$

AND TO FINDING THE DISTANCE OF THE SUN FROM US:

FROM PROPHET MOHAMMAD (PEACE ON HIM AND HIS FAMILY):

((THE SUN IS IN THE FOURTH SKY)), ((THE THICKNESS OF EVERY SKY IS A WALK OF 500 YEARS, AND THE DISTANCE BETWEEN SKIES IS A WALK OF 500 YEARS)): SO

THE DISTANCE BEWTEEN THE SUN AND THE EARTH BY USING THE EXPERIMENTALLY HUMEN SPEED BY ME EQ.(1) :

= DISTANCES AMONG THE SKIES+ SKIES THICHKNESSES

(500*4+500*4)= 1000 *4 = 4000 WALK YEARS

=4000* 37843.2

=151 372 800 KELOMETERS

THE DISTANCE BEWTEEN THE SUN AND THE EARTH BY USING THE KORA"NIC HUMEN SPEED BY ME EQ.(2) :

= DISTANCES AMONG THE SKIES+ SKIES THICHKNESSES

(500*4+500*4)= 1000 *4 = 4000 WALK YEARS

=4000* 38789.28

=155 127 120 KELOMETERS

NOTE: THE PARSEC=3.860888889 KM

SO THE DISTANCE BETWEEN THE EARTH AND THE MOON= 100 000 PARSECS.

AND THE DISTANCE BETWEEN THE EARTH AND THE SUN= 40 000 000 PARSECS.

RESULTS: I FOUNDEED THE MAGNITUDE OF THE WALK YEAR AND THE DISTANCE BETWEEN THE EARTH AND THE MOON AND THE DISTANCE BETWEEN THE EARTH AND THE SUN FROM THE KOR'AN AND THE PROPHET MOHAMMAD ((PEACE ON HIM AND HIS FAMILY)) AND FROM EPERIMENTALLY HUMEN SPEED ((THE SPEED OF THE AUTHOR –THE RESEARCHER- IN THE ROOM)).

PART 34:

THE MEANING OF THE SKIES AND THE EARTH

I EXPLAIN HERE THE MEANING OF THE SKIES AND EARTH IN KOR'AN AND IN OUR SPEECH. THE SKIES ARE LAYERED REGIONS ABOVE THIS PLANET ((THE EARTH)).

EVERY EARTH PLANET HAVE SKIES, FOR EXAMPLE FOR EARTH-LIKE PLANET IN OTHER SOLAR SYSTEM THERE ARE SKIES. AND THE EARTH MEANS THE PLANET EARTH. AS SUPPOSE THAT THERE IS ONE PLANET EARTH IN EVERY SOLAR SYSTEM.

BUT THE MEANING OF THESE WORDS : ((AND FROM THE EARTH LIKE THEM)) , SEVEN EARTHS, HERE MEANS THE SEVEN LAYERS OF EARTH PLANET.

((ALLAH CREATED SEVEN SKIES AND FROM THE EARTH LIKE THEM)).

THE UNIVERSE IS LARGER THAN THE SEVEN SKIES AND THE EARTH,

THE SEVEN SKIES ARE ASSOCIATED WITH THE PLANERT EARTH IN EVERY SOLAR SYSTEM, SO THE UNIVERSE IS LARGER THAN THE SKIES AND EARTH BY BILLIONS BILLIONS BILLIONS TIMES.

THE SHAPE OF THE SKIES: THE SHAPE SEEMS LIKE SPHERE, IT'S CENTER IS THE CEDNTER OF THE EARTH PLANET

THE THICKNESS OF EVERY SKY= 500 WALK YEARS

THE DISTANCE BETWEEN TWO SEDUCTIVE SKIES=500 WALK YEARS

THE EXPERIMENTALLY WOLK YEAR ((BY THE AUTHOR))= (1.2M/S) * 3600* 24* 365 METERS

=37843.200 KM

THE THEORETICAL WALK YEAR ((FROM KOR'AN : SEE THE RESEARCH : WALK YEAR))=   (1.23 M/S) * 3600* 24*365 METERS= THE WALK YEAR = 38789.280 KM

<u>NOTE</u>: THE DISTANCES IN THE NEXT TWO TABLES ARE IN ((WALK YEARS))

THE SKY	THICKNESS	HEIGHT (LOWER, UPPER)
1	500	500, 1000
2	500	1500, 2000
3	500	2500, 3000
4	500	3500, 4000
5	500	4500, 5000
6	500	5500, 6000
7	500	6500, 7000

SKY NO.	CELESTIAL BODY	HEIGHT
1		
2		
3		
4	THE SUN	3750
5		
6		
7		

IN THE ABOVE TABLE THE SUN COSIDERED TO BE IN THE MIDDLLE OF THE 4TH. SKY = 3500+ (500/2)=3750 WALK YEARS

AND ABOVE THE SEVEN SKY THE THRONE OF ALLAH.

THE WALK YEAR IN LIGHT SECONDS= WALK YEAR/ C

=38789.280/(2.99792458*10^5)

=0.12938711   LIGHT SECONDS

THE THICKNESS OF EVERY SKY= 500 WALK YEAR =
500 *0.12938711

$$=$$

64.69355543 LIGHT SECONDS

THE DISTANCE BETWEEN THE EARTH PLANET AND
THE SUN = WALK YEAR * 3750

=38789.280 * 3750   = 145 459 800 KM

WHILE NASA NUMBER IS = 149 600 000 KM

THE RADIUS OF THE SKIES AND EARTH= (EARTH
PLANET DIAMETER/2) + 7000 WALK YEARS
=(12756.2/2) + 7000* 38789.280 KM

$$=$$

(6378.1   ) + 271 524 960   KM

= 271 531 338.1 KM

 THE RADIUS IN LIGHT SECONDS =

= 905.7310511 LIGHT SECONDS

<div align="center">**=15.09551752 LIGHT MINUTES**</div>

THE DIAMETER OF THE SEVEN SKIES AND THE EARTH

= 2* THE RADIUS

= 30.19103504 LIGHT MINUTES

THIS MEANS THAT SOME PLANETS LIKE JUPITER, URANUS , SATURN IN A POSITION ABOVE THE SEVEN SKY, THE DISTANCE BETWEEN EARTH AND JUPITER IS 8 LIGHT HOURS.

THE DEPTH OF "THARA" = EARTH PLANET RADIUS THE " THARA" IS THE SEVEN LAYER UNDER THE EARTH SURFACE AND MAY BE UNDER THE "HELL" IS UNDER THE "THARA".

THE THRONE OF ALLAH:

THE THRONE OF ALLAH IS ABOVE THE SEVENTH SKY, IF SOMEONE ASKED IF EVERY STAR IN THE SKY IS A SOLAR SYSTEM3 , AND IN EVERY SOLAR SYSTEMN THERE IS A PLANET IT'S NAME EARTH AND SEVEN SKIES ASSOCIATED WITH IT , AND THERE IS A THRONE OF ALLAH ABOVE THE SEVENTH SKY ASSOCIATED WITH THAT PLANET EARTH , AND THERE ARE MORE THAN 100 *10^9 GALAXIES IN THE UNIVERSE , AND IN EVERY GALAXY THERE ARE ABOUT 100 *10^9

SOLAR SYSTEMS , AND IN EVERY SOLAR SYSTEM A PLANET IT'S NAME "EARTH" SUITABLE FOR LIFE AND SEVEN SKIES ASSOCIATED WITH IT , SO HOW ALLAH IS ONE, THE ANSWER IS THAT MAY BE ALL THESE THRONES REPRESENTS A ONE THRONE , OR THERE ARE MANY THRONES, BUT THE FACT THAT IS : IF THE THRONE IS ONE ((ALL THRONES IN THE UNIVERSE REPRESENTS ONE THRONE)) OR INSPITE OF MANY THRONES ; THE GOD "ALLAH" IS ONE .

RESULTS: THE THRONE OF ALLAH MAY BE REPRESENTS ALL THRONES IN THE UNIVERSE , OR THERE ARE MANY THRONES BUT ALLAH IS ONE IN SPITE OF THAT THERE ARE MANY THRONES, MEANS IN SPITE OF THE MULTIPLICITY OF THE THRONES.

AND THE UNIVERSE IS BIGGER THAN THE SEVEN SKIES AND THE EARTH BY BILLIONS BILLIONS BILLIONS TIMES.

PART 35:

ALLAH ALSO SEE FROM THE POINT OF VIEW OF THE SPECIAL RELATIVITY OF EINSTEIN -RELATIVITY OF THE LIGHT-

FINDING THE SPEED OF THINGS NEAR ALLAH

IN THIS RESEARCH I FOUND THE SPEED OF THINGS AT ALLAH FROM THE SPECIAL THEORY OF EINSTEIN AND THE KOR'AN.

ALLAH SAID IN HOLY KOR'AN : ((THE ONE DAY IN THE NEAR OF ALLAH AS A 1000 YEARS OF WHAT YOU COMPUTE)). (WE COMPUTE DEPENDING ON EARTH AND SUN).

IN THE ALLAH'S TIME T=1 DAY =1000 YEARS (RELATIVITY: WE CAN FIND THE SPEED (V) OF THIS , FROM THE SPECIAL RELATIVITY OF LIGHT ((SPECIAL RELATIVITY OF THE DOCTOR ALBERT EINSTEIN)) EQUATION :

$$T(V)=T(V=0)* [1-V^2/C^2]^{(0.5)} ....EQ.(1)$$

WHERE :
T(V): TIME OF SPEED (V),
T(V=0)= T0 = TIME OF WHAT MOST PEOPLE COMPUTE ((TIME OF 0 SPEED)),
V: SPEED (METERS/SECOND) ,

AND

C: THE SPEED OF LIGHT IN VACUUM =$2.99792458*10^8$ METERS/SECOND

BY SOLVING THE EQUATION (1) FOR (V) WE GET:

V(T)=$\pm$C $[1-(T^2/T0^2)]^{(1/2)}$ ....EQ.(2)

YOU ACCORDING TO THE RELATIVITY ASSUNPTION CAN FIND THE SPEED OF THINGS NEAR THE LAHOOT,

D=(354*30+11)/30= 10631/30
 = 354.36666666666666666666666666667 DAYS
WHERE (D) REPRESENTS THE NUMBER OF DAYS IN THE MOONIC YEAR ((BECAUSE THE KOR'AN IS IN THE MOONIC YEARS)):

BY PUTTING: T=1 DAY, T0=1000*354.36666666666666666666666666667
 IN THE EQUATION (2) WE WILL FIND THE SPEED OF THINGS NEAR THE LAHOOT:

FOR 1 DAY= 1000 YEARS
V(T)=$\pm$C $[1-7.96332193018076094867620434913 98*10^{-12}]^{(1/2)}$
V(T)= $\pm$ C $[0.999999999920366780698192390 5132]^{(1/2)}$
V(T)= $\pm$ 0.99999999996018339034901692 71364 C
V(T)= $\pm$ 2.99792457998063280723505262 4698 *10^8
 METERS/SECOND

PART 36:

THE PROOF OF THE EXISTING OF THE ROADS OF THE SKY

ALLAH SAID : ((THE ANGELS AND THE SPIRIT ARE WINDING TO ALLAH IN A DAY ; IT'S MAGNITUDE IS 50000 YEARS)). THIS IS A SPECIAL RELATIVITY((1 DAY= 50000 YEARS)).

RADIUS OF THE SKIES AND EARTH= 7 * (500+500)WALK YEARS + EARTH'S RADIUS …………EQ.(1)

WHERE: 7 = NO.OF THE SKIES,

500= THICKNESS OF EACHSKY ,

AND

500 = THE INTERVAL BETWEEN SKIES.

AND SINCE THE WALKYEAR =1.23* 3600*24*365 METERS

=38789280METERS ……EQ.(2)

RADIUS OFEARTH = 12756000/2 = 6378000METERS …….EQ.(3)

PUTTINGEQ.(2)AND EQ.(3) IN EQUATION (1)RESULTS IN:

RADIUS OFTHE SKIES AND EARTH= 7000*38789280 + 6378000

= 2.7152496 * 10^11 + 6378000

=2.71531338 *10^11METERS

THE RADIUS OFTHE SKIES AND

THE EARTHIN LIGHT SECONDS: =905.7310508 SECONDS

.……EQ.(4)

SO;

THE RADIUS OFTHE SKIES AND THE EARTHIN LIGHT UNITS

= 15 LIGHT MINUTES + 5.7310508 LIGHT SECONDS

………..EQ.(5)

SOTHE LIGHT NEEDS TOTHE TIMEMENSIONED IN EQ.(5) TO TRAVEL FROM THE CENTER OFTHE EARTH TO THE SEVENTH SKY.

BUT : IN SPITE OFTHAT THE ANGELS AND THE SPIRIT SPEED IS HIGH ((SEE THE PART 5))

(V=0.9999999999999840733561396384654 C) WEHRE C IS THE

SPEED OF LIGHT IN VACUUM

BUT THE ANGELS AND THE SPIRIT TAKE ((ONE DAY)) TO TRAVEL FROM THE EARTHTOTHE SEVENTHSKY , 1 DAY IS ABOUT 96 TIMES THE (1/4)HOURS , THIS MEANS THAT THEWAYS OF ANGELS AND

THE SPIRIT ISMUCHLONGER((ABOUT 96TIMES))THAN THE DIRECT WAY FROMEARTHTOTHE SEVENTHSKY,

T= RADIUS OF THE SKIES AND EARTH ((IN METERS)) / V

………..EQ.(6)

WHERE((V)) IS THE SPEED OFANGELS AND THE SPIRIT.

T=905.7310508 SECONDS * C/(0.99999999999999840733561396384654 C)

TD = 905.73105080001442525587 93626442 SECONDS. ……EQ.(7)

THE ((TD))TIME IN EQ.(7) IS THE TIMEREQUIREDBY ANGELS AND THE SPIRIT TOTRAVEL FROM EARTH TO THE SEVENTH SKY IF THEY((THE ANGELS AND THE SPIRIT)) GODIRECTLY FROM EARTH

TO THE SEVENTHSKY , BUT ALLAH SAID : ((IN A DAY)), SO THEY GO FROM EARTH TO THE SEVENTH SKY IN A ROAD AND THE TIMEIS (:1DAY).

TND=1 *24*3600 = 86400 SECONDS ……EQ.(8)

SOALLAH GAVE US : THE SPEEDOF THE ANGELS AND THE SPIRIT ((T=1 DAY, TO=50000 YEARS)), AND THE PROFF THAT THE SKY IS ROADS ((T=1DAY)) IN SPIT THAT ((V=0.99999999999999840733561396384654 C)).

T=TND/TD = TIMENOT DIRECT/ TIMEDIRECT

T=1*24*3600 SECONDS/905.73105080001442525587 93626442

SECONDS.

=95.39255601724796514373518977996 TIMES

THE ANGELS AND THE SPIRIT TAKE A ROAD LONGER (95.39255601724796514373518977996 TIMES)THAN THE DIRECT WAY FROMTHE EARTH TO THE

SEVENTHSKY. [[[SO THE NUMBER IS 95.39255601724796514373518977996 NOT 96]]].

THIS APPROVE THAT THE SKY HAVE ROADS.

IMAM ALI SAID : ((ASKME ABOUT THE ROADS OF THE SKY, I KNOW THEM MORE THAN THE ROADS OF EARTH)).

RESULTS:THE ANGELS AND THE SPIRIT TAKE A ROAD LONGER (95.3925560172479651437351897996 TIMES) THAN THE DIRECT WAY FROM THE EARTH TO THE SEVENTH SKY.THIS APROVE THAT THERE ARE ROADS FOR THE SKY.

PART 37:

THE MEANING OF "EINSTEIN"

EINSTEIN IS A DEUTSCH WORD CONTAINING OF TWO WORDS

EINSTEIN = EIN + STEIN ....EQ.(1)

IF WE TRANSLATED THE ABOVE EQUATION TO ENGLISH THEN WE GET:

THE STONE = THE + STONE   ....EQ.(2)

(EIN) MEANS (THE) , AND THE (STEIN) MEANS (STONE) OR THER MAN WHO LIVES NEAR THE STONE.

DEUTCH   ENGLISH

....

EIN   THE

STEIN   STONE , OR A MAN WHO LIVES NEAR THE STONE

NOTE: STONE MAY BE REFERS TO THE (ROCK DOME) IN PALESTINE,

SO THE EINSTEIN IS A FAMILY IN GERMANY.

PART 38:

THE ORIGION OF ALBERT EINSTEIN

ASHKENAZI JEWS (ASHKENAZIC JEWS OR ASHKENAZIM) : ARE THE JEWS DESCENDED FROM THE MEDIEVAL JEWISH COMMUNITIES ALONG THE RINE IN GERMANY FROM ALSACE IN THE SOUTH TO THE RHINELAND IN THE NORTH.

LORELEY ROCK IN RHINELAND- PALATINATE

THE RHINE (RHEIN) RIVER

The Rhine is one of the most important rivers in Europe.

THE RHINE RIVER

THE NAME ASHKENAZI DERIVES FROM THE BIBLICAL FIGURE OF ASHKENAZ, THE FIRST SON OF GOMER, AND A JAPHETIC PATRIARCH IN THE TABLE OF NATIONS (GENESIS 10).

IN THE HEBREW BIBLE , ASHKENAZ WAS THE FIRST SON OF GOMER, GOMER WAS THE GRANDSON OF NOAH THROUGH JAPHETH.

ASHKENAZ SON OF GOMER SON OF JAPHETH SON OF THE PROPHET NOAH.

JAPHETH IS YAPHETH

THE TABLE OF NATIONS MEANS THE SONS OF NOAH.

IN THE RABBINIC LITERATURE, THE KINGDOM OF ASHKENAZ WAS FIRST ASSOCIATED WITH THE SCYTHIAN REGION, THEN LATER WITH THE SLAVIC TERRITORIES, AND , FROM THE 11TH CENTURY ONWARDS WITH NORTHEN EUROPE AND GERMANY. LATER, JEWS LIVING IN THESE REGIONS ASSOCIATED WITH ASHKENAZ'S KINGDOM THUS CAME TO CALL THEMSELVES THE ASHKENAZI.

LATER, JEWS FROM WESTERN AND CENTRAL EUROPE ALSO CAME TO BE CALLED ASHKENAZI BECAUSE THE MAIN CENTERS OF JEWISH LEARNING WERE LOCATED IN GERMANY.
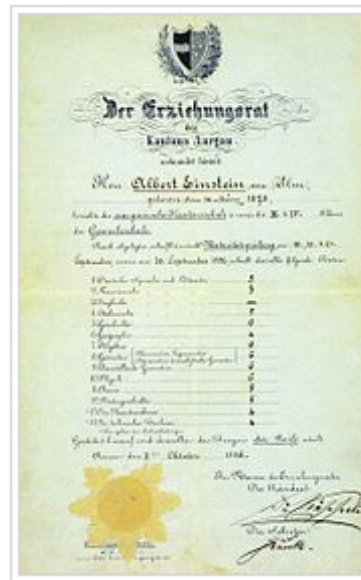
ASHKENAZI JEWS = 80% OF THE JEWS OF THE WORLD.

REFERENCE:

http://en.wikipedia.org/wiki/Ashkenazi_Jews

PART 39:

ALBERT'S EINSTEIN CERTIFICATE AT THE AGE OF 17

AARGAU KANTONSSCHULE

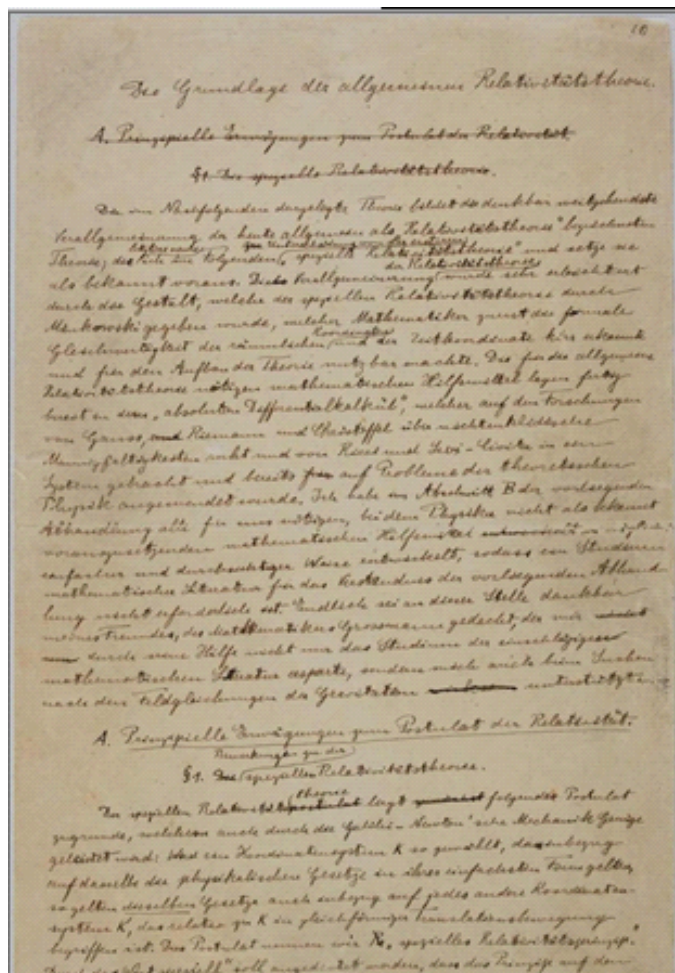**ALBERT'S EINSTEIN CERTIFICATE AT THE AGE OF 17,**

SHOWING HIS FINAL GRADES FROM THE AARGAU KANTONSSCHULE

(ON A SCALE OF 1-6)

REFERENCE : http://en.wikipedia.org/wiki/Albert_Einstein

PART 40

THE GENERAL THEORY OF RELATIVITY OF LIGHT MANUSCRIPT

OF ALBERT'S EINSTEIN

GENERAL THEORY OF RELATIVITY MANUSCRIPT

REFERENCE:

http://upload.wikimedia.org/wikipedia/en/c/c3/GeneralRelativityTheoryManuscript.jpg

PART 41

THE ETHER

I PREPARED THIS PART JUST TO UNDERSTAND

THE ALBERT'S EINSTEIN FIRST PAPER

BECAUSE THE PHYSICS EXPERIMENTS APROVED THAT THE ETHER

HAS NO EXISTENCE

(1) LIGHT MUST BE INTERPRETED AS A VIBRATORY PROCESS IN AN ELASTIC, INERT MEDIUM FILLING UP UNIVERSAL SPACE. IT ALSO SEEMED TO BE A NECESSARY CONSEQUENCE OF THE FACT THAT LIGHT IS CAPABLE OF POLARISATION THAT THIS MEDIUM , THE ETHER MUST BE OF THE NATURE OF S SOLID BODY, BECAUSE TRANSVERSE WAVES ARE NOT POSSIBLE IN A FLUID, BUT ONLY IN A SOLID. THUS THE PHYSICISTS WERE BOUND TO ARRIVE AT THE THEORY OF THE "QUASI-RIGID" LUMINIFEROUS ETHER, THE PARTS OF WHICH CAN CARRY OUT NO MOVEMENTS RELATIVELY TO ONE ANOTHER EXCEPT SMALL MOVEMENTS OF DEFORMATION WHICH CORRESPOND TO LIGHT -WAVES.

IN THE FIZEAU EXPERIMENT ONE WAS OBLIGED TO INFER THAT THE LUMINIFEROUS ETHER DOES NOT TAKE PART IN THE

MOVEMENTS OF BODIES, THIS IS A FUNDAMENTAL IMPORTANCE IN THE SPECIAL THEORY OF RELATIVITY. THE PHENOMENON OF ABERRATION ALSO FAVOURED THE THEORY OF THE QUASI-RIGID ETHER.

(2) THE ETHER APPEARS AS BEARER OF ELECTROMANETIC FIELDS.

(3) LORENTZ SUCCEEDED IN REDUCING ALL ELECTROMAGNETIC HAPPENINGS TO MAXWELL'S EQUATION FOR FREE SPACE.

(4) THE SPACE-TIME THEORY AND THE KINEMATICS OF THE SPECIAL THEORY OF RELATIVITY ERE MODELLED ON THE MAXWELL-LORENTZ THEORY OF THE ELECTROMAGNETIC FIELD.

(5) THE SPECIAL THEORY OF RELATIVITY DOES NOT COMPEL US TO DENY ETHER.

(6) THE RECOGNITION OF THE FACT THAT EMPTY SPACE IN ITS PHYSICAL RELATION IS NEITHER HOMOGENEOUS NOR ISOTROPIC COMPELLING US TO DESCRIBE ITS STATE BY TEN FUNCTIONS (THE GRAVITATION POTENTIALS $g_{\mu\nu}$), has finally disposed of the view that space is physically empty.

(7) THE ETHER OF THE GENERAL THEORY OF RELATIVITY IS A MEDIUM WHICH IS ITSELF DEVOID OF ALL MECHANICAL AND KINEMATICAL QUALITIES, BUT HELPS TO DETERMINE MECHANICAL (AND ELECTROMAGNETIC) EVENTS.

(8) WHAT IS FUNDAMENTALLY NEW IN THE ETHER OF THE GENERAL THEORY OF RELATIVITY AS OPPOSED TO THE ETHER OF LORENTZ CONSISTS IN THIS, THAT THE STATE OF THE FORMER IS AT EVERY PLACE DETERMINED BY CONNECTIONS WITH THE

MATTER AND THE STATE OF THE ETHER IN NEIGHBOURING PLACES, WHICH ARE AMENABLE TO LAW IN THE FORM OF

DIFFERENTIAL EQUATIONS; WHEREAS THE STATE OF THE LORENTZIAN ETHER IN THE ABSENCE OF ELECTROMAGNETIC FIELDS IS CONDITIONED BY NOTHING OUTSIDE ITSELF, AND IS EVERYWHERE THE SAME.

(9) THE UNIVERSE SPATIALLY UNBOUNDED AND OF FINITE MAGNITUDE, IT'S MAGNITUDE BEING DETERMINED BY THE VALUE OF IT'S MEAN DENSITY.

(10) THEN FOR THE FIRST TIME THE EPOCH OF THE THEORETICAL PHYSICS FOUNDED BY FARADAY AND MAXWELL WOULD REACH A SATISFACTORY CONCLUSION. THE CONTRAST BETWEEN ETHER AND MATTER WOULD FADE AWAY , AND, THROUGH THE GENERAL THEORY OF RELATIVITY, THE WHOLE OF PHYSICS WOULD BECOME

COMPLETE SYSTEM OF THOUGHT, LIKE GEOMETRY, KINEMATICS, AND THE THEORY OF GRAVITATION.

(11) ACCORDING TO THE GENERAL THEORY OF RELATIVITY SPACE

WITHOUT ETHER IS UNTHINKABLE; FOR IN SUCH SPACE THERE NOT ONLY WOULD BE NO PROPAGATION OF LIGHT, BUT ALSO NO POSSIBILITY OF EXISTENCE FOR STANDARDS OF SPACE AND TIME (MEASURING- RODS AND CLOCKS), NOR THEREFORE ANY SPACE-TIME INTERVALS IN THE PHYSICAL SENSE. THE IDEA OF MOTION MAY NOT BE APPLIED TO IT.

REFERENCE:

www.orgonelab.org/EtherDrift/Einstein1920.pdf

THE UNIVERSE EXPANSION

THE UNIVERSE EXPANDS AND SLOWS TO INFINITY , NEVER STOPPING OR REVERSING IT'S EXPANSION.

POINTS IS SPACE-TIME HAVE TIMELIKE SEPARATION R=vt FROM THE BIG BANG .

SCALE R=vt EXPANDS AS t INCREASES, ITS EXPANSION SLOWED BY GRAVITATION. GRAVITATION FURTHER REQUIRES THAT v AND t BE RELATED BY:

$GM = t\, v^3$

G=NEWTO'S CONSTAN ,

M= MASS OF THE UNIVERSE,

t= AGE OF THE UNIVERSE.

$R = GM/(v^2)$

$R(t) = (GM)^{1/3}\, t^{2/3}$

NOTE: THE UNIVERSE EXPANSION OBEYS THE GENERAL THEORY OF RELATIVITY OF LIGHT NOT THE SPECIAL THEORY OF

RELATIVITY OF LIGHT.

I.E. OBJECTS (LIKE STARS, GLAXIES) CAN BE OBSERVED GO AWAY FROM US BY c OR FASTER THAN c FROM US.

REFERENCE :

www-conf.slac.stanford.edu/.../aspauthor2004_3.pdf