PAO LO EMILIO FRIEND-ROX AS

THE SUPREME HARMONY

of the UNIVERSE

The Endospheric Theory

of the Field

the

Kemi, the name given to the

mythical Land of Egypt, source

of all knowledge and knowledge.

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PAOLO EMILIO FRIEND-ROXAS

THE SUPREME HARMONY

of the UNIVERSE

The Endospheric Theory

of the Field

EDITR1CE KEMI-MILAN

' * *

INFORMATION SHEET

Amico-Roxas (surname), Paolo Emilio (name) born in Rome on

1907

Academic Titles:

Degree in Mathematics and Physics at the University of Rome.

Honours:

Lauro Accademico Tiberino in Campidoglio (1961).

Acknowledgments:)

Culture Award of the Presidency of the Council of Ministers

(1961).

Teachings:

Mathematical Analysis at the University of Rome

Matemática and Física in secondary schools.

Special studies:

Philosophy of Science and Cosmology.

Main publications:

Compendium of Rational Mechanics (2 ed.)

The Space Problem and the Conception of the World.

Conferences:

Universities and Cultural Centers of Buenos Aires

Popular University of Rome

IX International Conference of Communications in Genoa

(1961)

IV and V International Congress of the Association for Sciences

ze Astronautics

41st Milan International Fair.

International Center for Comparison and Synthesis (1980), etc.

At the CIDA of Genoa, October 1988 «Appearance and real-

tá in the scenery of Heaven».

PREFACE

The reader may wonder why a publishing house like the

Kemi, who pursues strictly initiatory ends, has decided to

publish a strictly scientific book.

The continuation of this same preface will justify ample

mind why.

The hollow earth theory is nothing new.

As the author will explain more fully, it has been supported

by various writers, and has appeared in the last century and in this,

peeping through the folds of science, “without infamy and
without praise". She was considered more of a curiosity and therefore not
worthy of being taken into consideration, also because it presents itself
tava as too shocking and fantastic a theory.
The Earth extreme limit of the Universe that contains everything in itself
the creation!
This conception, in addition to contradicting current scientific theories
fíche, which postulate an immense, albeit finite, Universe in
continuous expansion, towards undefined borders that our
stra reason fails to grasp, ill agrees even with
our psychology, which, based and elaborated on by the senses, takes us
feel a completely different reality.
But is what the senses transmit to us the true external reality?
The author will answer the question about the vision in detail. There
it is now important to point out, instead, how the hypothesis of a land ca¬
va, with all its implications can respond to a rigorous
scientific concept, based on the transformation for ver¬ rays
The
reciprocal tori already applied from mathematical analysis to theory
of the Potentials, which allow the passage from the convex sphere
concave sphere.
This demonstration, summarily outlined by the author, yes
can easily be found in any Higher Analysis book.
Already the great Sommerfeld in his “Partial differential equations
in Physic” published in Princeton, presage of the great possibilities that
offered the Teoría regretted that the transformation had been
applied only to the Theory of Potentials “Unfortunately, these
mapping methods for the two and three dimensional case are en-
terly restricted to potential theory.”

Merit of Roxas is to have masterfully reworked the elements
existing, helped in this by the studies of Morrow, building a
theory which, unexceptionable from a mathematical and physical point of view,
presents us with a new vision of the Universe.
But are we sure that it is a new theory?
Why this regurgitation at the end of an era?
If we look into the distant past we can see
see how the cosmological theory corresponds, in all respects,
to the hollow world theory. It is the basis of all Cosmogony.
For Orphism, as for the Chinese conceptions, as for the
Egyptian tions, in the beginning there is the Egg, and when creation begins,
the Fire, the Light, appears in it, not outside it. Panes yes
manifest within, not without. With this act they create Heaven
and the Earth and the worlds begin to rotate.
In continuation the theory passes and stops in the initiatory centers, in the
Templarism and in the later schools. It reappears in the light in
1700 and then back again in the dark.
Purely theosophical conception but at the same time mate¬
matic.
The fact that now imposes itself is not whether to believe or not to believe it
endospheric theory. No leap of faith is to be taken; Yes
they only have to make a series of reflections and then make a
act of courage.

Mathematical proofs fully confirm its possible existence.
test, geometric and physical tests too.
Only now remains one's persónate conviction, or rather, the
own orientation: whether to accept a universe where the void is there
rule, against the alchemical "nequam vacuum", and where the Earth

is a lost rock that sails into infinity, and where the conception
ne cosmogónica is lost in a truly existential void, op-
also accept the earth as the real boundary of the universe, where
everything pulsates with energies and the Cosmos appears as a Living,
in the real sense of the term and in the Neoplatonic sense, where the
ze are the real rulers of the system.
There a pessimistic conception of the world and in a certain sense
nihilist, who dilutes everything into nothingness, born at the end of the Kaly
Yugas; here a lively and palpitating conception, supported by the ma¬
theme, heritage of the old mysteries, handed down in the
medieval alchemical circles, and full of internal dishes.
Herein lies the problem.
Kemi
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LETTER TO THE EDITOR
Dear Doctor Angelo Angelini
Of the Teoría Endosferica, with different titles, they treated several
authors (See Introduction to the book «Suprema armonía delPUniver-
so - The Endospheric Field Theory»).
For fairness and greater precision, should a possibility arise
sible matter of priority, and for better information for
the reader, among other valid arguments I distinguish the discoveries
due to my research work and what I call novelty.
I mention here authors, especially American and German,
who in the last century, and even more in this one, dealt with the ¬
the endosphere of the Universe: the Americans Ulisse G. Morrow
(deceased 1950) and Cyrus Reed Teed (Koresh) and the German Pe-
ter Bender (Worms, died in Mauthausen concentration camp), Freder
Van Holk (Bielmanner-Verlag, München), PA Müller-Murnau

(1940), Bruno H. Bürgel (1946), Ernst Barthel (1940), Karl
Schópffer (1869), Karl Neupert (Augusburg 1940), Johannes Lang
(Schirmer Mahlau, 1941).
The latter on p. 25 of his volume «Die Hohlwelttheo-
rie» writes: «In the Tamarack mine in Calumet (USA)
do not let plumb lines go down to 1300 meters. of depth.
According to the measurements made by the operators, such lead wires
bo in depth, instead of converging and approaching One to-
the other, as was to be expected in a convex earth, diverged
they insult the earth's surface in this way concave". This sin-
very funny experiment, not confirmed at the time (no known

know the exact date) from arguments of a physical nature, came
come on more strangely forgotten.
Of the geometric transformation for reciprocal vector rays
dealt with the aforementioned authors and other rha, except Morrow, not
in their diagrams they respected the punctual rigor observed in ¬
instead of my writings (Tav. XIV and Tav. XV, and the text of Guido
Castelnuovo). However, an essential point was overlooked therein e
that is, the diagrammatic aspect obtained from the application of
ta geometric transformation to the classical Universe (Tav. XIV e
Tab. XV), an aspect that is identified with the physical one (Tab. III)
of the electromagnetic spectrum (Marxwell) obtained by means of
iron filings sprinkled on a sheet of paper placed on top of the two
poles of a horseshoe magnet.
This is the crucial point and it is a novelty: this identity
tification leads to consider the diagram no longer as the
structure (Table III) of the physical spectrum of the lines of force of na¬
electromagnetic ture of light (Maxwell) as opposed to pure

and unfounded hypothesis of universal «refraction».

Another novelty is the demonstration of the physical impossibility of the light-year, as I pointed out in the article I published on p. 27 of no. 38 (February 1989) of the Kemi-Hathor magazine (Chap. III).

The transformation by reciprocal vector rays, known for more than a century, applied to the image of the classical Universe, as it is known, it preserves the angles, i.e. the angles formed by two classic lines rectilinear Euclidean physics are equal to those formed by the corre-punctual shores non-Euclidean curves. This means that the observer earthly observer cannot distinguish, through pure observation ocular tion, between the classical Theory and the Endospheric one: in the Classical theory the lines of vision are supposed to be rectilinear eucli¬dee, while in the Endospheric Theory the corresponding lines are no curves, not Euclidean. In the classical theory the lines of vision, for a psychic phenomenon of the human optical center (Chap. III) are think rectilinear, while the endospheric lines of vision are con-

form the fact of the isogonality of the transformation «Hypo-theses non fingo» said Newton. Therefore, since the light for-runs (See the proof of Chap. III) only curved lines, must rule out the classical hypothesis.

Newton's Universe, brilliantly conceived, is imagined ne specular of the real Universe, to which one arrives through the application of well-known analytical and geometric formulas. Therefore, having excluded the classical hypothesis, one must necessarily put the endospheric one, which constitutes the scientific proof of it typification based on the facts of physical reality. This is the third novelty.

Quite a novelty is the law of conservation of energy from

treated me on p. 17 of number 39 (April 1989) of the magazine
Kemi-Hathor (Cap. Fil). The novelty consists in offering an explanation
scientific gation of the conservation of energy, which circulates
from the Sun to the Stellar Centre, joined by a magnet, and then from
Star Center at the Solé, as happens in the magnetic pro-
ducted by a magnet where the lines of force of the induction field
magnetic ions are directed outward to the magnet from the pole
North to the South pole, and internally to the magnet from the South pole to the
North Pole.
The universal energies circulate in the Universe without any
dispersion and therefore without any independent recovery phenomenon
dently from possible nuclear processes within the Solé.
There is the problem of the colossal quantities of energy that in the
classical system depart from the Sun and the Galaxies and disperse
not to infinity or, as Einstein writes, on the basis of Heve
relativistic curvature of space (close to zero), it occurs
would fy the return to the starting point of the energies after a
path without a physical explanation as well as improbable,
lasting billions of years. Such a problem with the new Teo¬
ría is resolved.
The four innovations do not appear in the aforementioned vast letter-
ture. Therefore any possible discussion around the priority of
new ideas can have no foundation.
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To you, dear Dr. Angelini, go the expressions of mine
esteem and my grateful thought for welcoming you to your publishing house
my writings; receive my cordial and sincere greetings.
PE Friend-Roxas
)■

EN DOSPHERIC FIELD THEORY

A new conception of the world?

/ great successes of Meccanica Celeste, the known confirmations-
very popular, in the experimental field, of Newton's law appear-
no to the mind of the modern physicist and, even more, to the man of
road, as proof of the truth of the classical conception
of the world (the modifications made by Einstein are quanti-
tatively very mild).

However, in this book a new conception of the
world; the same facts, the same experiments can be
interpreted in another way. It is, as Einstein said, in or-
end to his own theories, of «new and original ways of thinking
on experiments and phenomena that have been known for some time".

The concept of field, established in the last century, both in
experimental seat, both in the theoretical one, with the famous equations
by Maxwell, is the fundamental concept of this new Theory.

The world is conceived as a field: the latest developments and more
impressive physics make the field appear as the form
basic and most natural activity of energy.

The Universe, this immense reserve of incessant energy
activity, therefore appears to the modern physicist as a field.

All those facts that the classical theory explains find an explanation
equally comprehensive gation in the new conception of mon¬
do, which, moreover, not only allows you to make calculations and pre-
visions of celestial phenomena with the same exactness with which they are
not carried out on the basis of the Copernican conception, but fills al-

three important gaps in the traditional concept of the Universe.

Moho we talk about the positive sides of the classical conception, po¬

with its flaws.

Many are those who know what a principle looks like
that of conservation of energy is violated in a manner
disconcerting from the classical theory, a violation that not even ¡a
Einsteinian theory, admitting the elliptical space, as proof
stra ArmelHni, managed to fill.

Of the immense quantity of energy emitted by the Solé solíanlo
About 20 billionths are used by the planets: everything else
it is not recovered, but it is completely lost! edding-
ton underlines the «strange combination» of the symmetrical fall-
ta of cosmic rays on the earth's surface. Cosmic space
is uniform (such can be considered practically also with the cor-
relativistic directions), the motions in it are rigid: it is still Ed-
dington along with others, who rejects a characterless space
characteristics (curvatures), also noting: «The indifferent identity
aunty hey! nothing cannot be distinguished in a philosophical way. The
realities of physics are inhomogeneities, events, changes».

The fabulous duration of light rays of billions of light-years
cannot fail to leave the physicist perplexed, who sees himself forced to
accept it not because it emerges from experimental facts, but because
which follows from the premises from which the classical conception starts
of the world. Armellini underlines two «singular» facts; The earth
it is the densest of the bodies in the solar system and is, moreover, the favorite
as to its habitability. Now, how come the Earth, which, in the
classic concept, is an "any planet", presents such
privileged situation?

Planck notes the "single difference" between the behavior
to of electrons, which can only circulate in ben orbits
determined that they differ from each other in a discrete way,

and that of planets for which no orbit seems preferred
with respect to another: this is in contrast with the analogy, which is desired
assert, between Tatomo and the planetary system.
20
Still others are the weak points of the classic theory; and I'm
scientists such as Eddington, Armellini, Planck and others of the same sta-
scientific ture that have repeatedly detected them. A theory
that to accidental facts, or unsatisfactorily explained, for-
nishes a comprehensive and rational explanation seems to deserve the
consideration of scrutiny and criticism.
The identity between heavy mass and inert mass, which occurs
is accidental in the classical theory (Newton himself had re-
raised), in relativistic physics it appears instead as a fact
fundamental, what made Einstein say: «A mystery novel
10 is judged to be of inferior quality if it explains strange facts such as ac-
accidents; we find it much more satisfying if it does not deviate from
a rational line
Facts like the symmetrical fall of cosmic rays on the su¬
land surface, the particular position of the Earth, as far as
to concern the density, with respect to other celestial bodies, the non-uni-
shape of the cosmic space and the non-rigidity of the motions, the lumin-
darkness of the cloudless and moonless night sky, they descend
from the new theory, without the need to introduce new hypotheses
yes more or less artificial, more or less plausible, while in Theo¬
classic ria appear «strange as accidentó>. The new Teo¬
ría, where the same facts «do not deviate from a rational line
le», appears more satisfactory.
Classical theory involves surprising facts such as, for example,
11 rapid flight (3 km/sec.) of Antares, which has a diameter of more

of half a billion kilometers and a density 2,000 times less
re than that of the air, and as the speeds of tens of thousands of
km/sec. of millions of «Suns», which have diameters thousands of times
higher than the Earth-Sun distance and density of the order of 10 -21
(20 corpuscles, atoms or free electrons, for each cubic centimetre
bo), density, that is, billions of billions of times less than that
of the air. These vo/s of gigantic bodies, having densities close-
sime to zero and speeds not far from that of light, constitute
unknown phenomena, in which one feels to believe. In the new Theory
21
on the other hand, there are very high densities, reduced volumes and speeds
referred to local units of length '. these phenomena significantly
you more likely.

* * *

In my volume «I! Space Problem and Conception
of the World» published in 1960, I developed the theory extensively
ría Endosferica and subsequently I published some minor writings
and held numerous conferences. Now I publish «La Suprema Armo¬
nía delTUniverso» with some modifications (the earth is im-
bile) and with some very important additions:

1) The geometric inversion for reciprocal vector rays is illustrated
stra tae brings it back to the physical representation of a field
electromagnetic. The inverted universe takes on the appearance of
Plate XV, identical aspect to the representation of the cam¬
electromagnetic po (magnétic spectrum) of Table III. That-
This observation leads us to consider that the physical universe is
an electromagnetic field.

2) Said geometric transformation is a biu-
nivoca isogonal and conforming between two superimposed planes notis-

sima to mathematicians; it enjoys the remarkable property of con¬
keep the corners and change their direction. The two figures. Puna tra¬
deformed in the other, are made up of the former by straight lines e
the second from arcs of circle, and that is the rectilinear geodedics
Euclidean change into non-Euclidean curvilinear geodesics and vi¬
otherwise.
The observer cannot distinguish between Euclidean space and spa¬
non-Euclidean data because the observation data remain inva-
riati, as in a mirror.
3) In Chap. III the physical impossibility of the year is demonstrated-
light. The electromagnetic nature of light (Maxwell) re-
leads to the curvilinear geodelics of the field.
22
4) All experiences and/fetluate to try the rotation of the
Terra tested negative (Ch. X).
5) The swelling at the equator of the Earth is due to rotation
internal tion of the cosmosphere from east to west, rice Ivendo an¬
that the problem of the so-called continental drift.
6) The (minimum) depths reached in the so-called ter¬ crust
rests may not end with a gradual attenuation
of the field until it approaches zero.
7) Einsteinian curvatures are added to those of the new
Universe: the relativistic radius of curvature measures approximately 30
trillion light-years equal to about 3 x 10 23 kilometers eu-
clideis (the space is almost flat) while the radius of curvature
endospheric does not exceed 6,370 Euclidean kilometers.
8) The demonstration of the principle of conservation of energy
(Ch. Vil).
9) The endosphericity of the Universe is based on a scientific proof

pussy?

In Chap. III the physical possibility of the year-

light. I have not received the slightest objection to this from anyone

showing.

Notwithstanding the observational data regarding the

behavior of light, only two hypotheses can be enunciated

(the classic one and the endospheric one); the first being unacceptable

but it is necessary to agree with the second. Since the transformation

geometry well known to mathematicians is scientifically pro-

vata with its isogonality, there is no doubt that the light, of natu¬

electromagnetic ra, follows the lines of force of an electro-

magnetic field with unaltered observation data and thus the Theory

endospheric remains physically tested.

Already in the past appeared in 1719 a book written in Latin and

in German entitled "OpusMago" owned by AMORC,

San José, California (Antica Mística Ordo Rosae Crucis) which treats

tava of an Endospheric Universe, but unfortunately, in spite of one

my polite request, I was not allowed to obtain even

minus a photocopy, albeit partial. With news I had about

a similar Chinese theory, but I could not find any trace of it.

* # *

The Endospheric Theory or Cosmocentric System had,

several other proponents, who called it « Teoría del mon¬

I give cable». They are, among others, the Germans Kart Neupert, Jo-

hannes Lang and PA Müller and American Cyrus Reed Teed. Not

I dwell, however, on the arguments with which said Authors

they justify the Theory, because I consider them weak, and that is principally

mind by the fact that they rest on the hypothesis of the Eucli- space

god; moreover, it does not seem to me that scientific rigor is sufficed there
ciently respected.
Many years ago, I myself disclosed the Neupert Theory, but me
I soon separated definitively from it. Of all the proponents of the new
vo concept of the world of great mushroom the most considerable esteem
both the American Ulysses G. Morrow, died on September 1950,
at the age of 86 (he was born on October 26, 1864, in the village of
Freedom, in Barren County, Kentucky); I had an inten¬ with him
I knew correspondence from 1934 until his death. This correspondence
Thu is divided into two periods: the first goes from 1934 to 1939 while
I was in Argentina; the second since 1940, the year I returned
in Italy, until 1950.
Morrow is the author of the drawings, which appear, with some mo-
modification brings by me, in the Tablets, less the last one, the qua-
it is due to the ability of Mr. Br. Zimmerli of Zungo, taking over
I do, however, through my work, a substantial modification. He died
row found a method to practically carry out the procedures
inversion ti; he did some experiments on the Flo¬ beach
laugh, in the United States, to prove the concavity of the Earth, but
then he realized his mistake (as he wrote me with dated leñera
Nov 28th 1946), in the sense that the new concept of the world is one

new Theory of space (a space in which the motions are not re-
gidi): it is precisely, as he himself called it, «the Theory of
Field". Morrow's work was essentially limited to the part
geometry and the description, in broad terms, of the physics of
The Universe, in the configuration of a field. There were, all-
however, in Morrow's work there are many ideas for an organic development
co and for a systematic reworking of the whole matter, that is

which I have completed with this work of mine, with ap-

foundations that deserve the most serious attention.

Paolo Emilio Amico-Roxas

Rome - October 1990

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Chapter I

GEOMETRIC TRANSFORMATION FOR

MUTUAL VECTOR RAYS

The transformation by reciprocal vector rays refers in

general to three-dimensional space. I expose this transformation

referring it to the plane, or rather to two superimposed planes.

Each point of one of the two planes corresponds to another

on the other floor, and vice versa. Points that overlap each other

united, that is, they correspond to themselves. The dots of the are joined

circumference with respect to which the transformation is performed.

An important exception is the following: all points at infinity

nite (ie the directions of the infinite straight lines) correspond to a

single point, the center of the circle with respect to which the transformation takes place

mation, and vice versa.

The inversion for reciprocal vector rays is a transformation

ne quadratic or Cremonian and enjoys the following properties: ri¬

with respect to a circle it changes arcs into arcs, straight lines into passing circles

through the center of inversion O. The line passing through O changes

in itself.

The inversion is an isogonal or conformal correspondence, ie

it keeps the angles and changes its direction.

The inversion extends up to 3 a coordinate fsphere) with the same

if properties: the spheres change into spheres, the planes into passing spheres

for the center of reversal and vice versa. On the floor to infinity, that is

the O'delia center corresponds to all directions in space

sphere with respect to which the inversion is performed. We will deal with the transformation

mation referred to the plan for reasons of simplicity and clarity.

Each point inside the inversion circle corresponds to one

one external to it and vice versa.

In Table I we have considered two circles (though considered

superimposed): by superimposing the two circles we will have, in the same

figure the internal curvilinear tangent and the external rectilinear one,

that match; the two overlapping contact points cost-

they form a single united point.

On the left of Table II we have the geometric procedure

inversion, to obtain the point inside the circle corresponding

tooth to an external point and vice versa.

Given a circle of radius eg. 1 meter, we consider the point

2 (2 m. away from the center of the circle) and we lead the two from 2

tangents to the circle passing through the two contact points a and b, with¬

let us now consider the point where the line joining a and b intersects la

connecting 2 with the center of the circle: the point of intersection

é 1/2 (half a metre) i.e. the inverse of 2 (hence the name inver¬

sion or reciprocity for reciprocal vector rays).

The internal point will correspond to the generic external point m

- and viceversa. If the point is at infinity, they lead from it

the parallel tangents touching the circle at the endpoints of a

diameter of the given circle, at this generic point at infinity cor¬

the center of the circle will answer, that is, as already said, to each

point to infinity (direction) corresponds to a single point, i.e. the

center of the turning circle.

To search for the center N of an arc OP, arc

corresponding to an external segment of the line C considereda¬

we see on the right of Table II the small figure where the external segment

undotted by C corresponds to the arc OP passing through O

and for the joint point P.

The sought center N is located on the intersection of the extension

ment of the diameter of the circle with the perpendiculars at the point

middle of the chord OP, Plate II.

To the Euclidean segment of a dotted line inside the circle

of inversion corresponds the completion of non-Eucleus arc

deo outside the circle (see also Table XI).

28

Let us consider Table IV; to each curved line in the figure

the upper one corresponds to a rectilinear one of the lower figure. The

two figures, as already said, must be thought of as superimposed. There

upper figure represents non-Euclidean space; the figure in¬

inferior represents the Euclidean space (where the 5th postulate holds)

by Euclid. Alie straight tangents ab, be, cd of the Eucli¬ space

deo (fig. inf.) correspond to the curvilinear tangents ab, be, cd of the

space with variable curvature (fig. above); straight parallel wings

the non-Euclidean curvilinear parallels correspond to Euclidean; The

angles under which the Euclidean lines intersect and the corresponding

t non-Euclidean lines are equal. The invertible formulas of tra-

deformation of the classical exospheric cosmos into the endospheric one

I am:

y =

r 1 y'

. 1z

where x 1 and y 1 are the inverse coordinates of x and y

* * *

Projectivity is a bijective algebraic correspondence between

S 1 and S'i o, also a one-to-one and continuous correspondence between

S, and S,', which preserves the bi-ratios. The case is called involution

considerable amount of projectivity between two forms of the first kind in which the two

whatever elements you want always match in duplicate

way.

The two elements are said to be conjugated in the involution, which

29

has two joined or double points in each of which two elements

conjugate minds coincide.

A conic determines a correspondence, subordinate to the

cónica, between the points and the straight lines of a plane: this correspondence

cesi polarity; an involutory correlation between two superimposed planes

places is a flat polarity.

If a point P and a plane p correspond doubly

in polarity, they are said respectively pole of p and polar of P.

If of the two points the second belongs to the polar of the first, ¡1

the first will belong to the polar of the second: the colons are called

conjugate or reciprocal in polarity. A point is said to be self-conjugated

gato if it belongs to its own polar.

A polar correlation is represented by equations of the type:

pu = a Mx + a, 2y + a 13x

(1) pv = a 2t x + a 22 y + a 23 z A =LO

pw = a 31x + a 32y + a 33z

The condition for two points P (x, y, zyé Q (x', y', z')

are conjugated in the polarity «(1)» is found by expressing that Q

belongs to Polar P, that is, it is

vx' + vy' + wz' = O

where u, v, w are homogeneous Plückerian coordinates ex\ y', z'

Cartesian homogeneous coordinates.

Substituting au, v, w the expressions «(1)» we have

a,, xx' + a 22 yy' + as 33 zz' + a, 2 (xy' + x'y) + a l3 (xz' + x'z)

+ a^yz' + y'z) = O

Setting x = x', y = y', z = z' we have the condition why

P (x, y, z) is self-conjugate, i.e. belongs to the proper polar.

The locus of self-conjugate points in a polarity is a curve

of the 2nd order given by the equation.

30

a,,x 2 + aay 2 + a 33 z 2 + a 12 xy + 2a, 3 xz + 2a 23 yz = O

which is the fundamental equation of polarity.

With extension to space, a quadric (of discriminant

not null) determines in space a correspondence, which

changes each point in its own polar plane and each plane in! pro-

first pole; in particular every point of the quadric corresponds

to its tangent plane, and vice versa.

Inversion or transformation with respect to a circle by vector radii

mutual bulls

If the fundamental equation of polarity is a circle, yes

it has the quadratic transformation called for reciprocal vellorí rays

There. Given a circle with center O and radius r, at every point P is external

let that point P' of the straight line OP correspond to the circle

which makes OP.OP' = r 2 (also in sign). P' is the intersection

of the line joining the two points of contact of the conducted tangents

te from P to the circle and the straight line OP. The correspondence between PeP'

is exchangeable and bijective except for P coinciding with

Or, to which point no point corresponds to the finite, or the point

to conventional (oo, oo), i.e. the points of the infinite plane (see

«Reversal Process»).

Between P (x, y) and P' (x\ y')y and r = 1 the formulas hold

(2)

x'

x

x 2 + y 2

y

x 2 + y 2

The inversion does not alter the angles, ie it is isogonal or con¬

forms.

If the point P describes a curve, the inverse point P' describes

an inverse curve of the first.

The inverse of a straight line is a circle.

If the line passes through O, then its inverse is itself.

Each circle changes by inversion into a circle or into a

31

straight line if the pitch circle passes through O.

With a procedure analogous to that already applied for the pia¬

no one has an obvious extension for the sphere (particular quadric).

of the «(2)» at the third z coordinate. Inversion changes spheres into spheres

etc.

Therefore inversion is a projectivity (or product of projects

activity) which, through «(2)», allows to go back from space

outside to inside a circle (or sphere). We will say cosmic

this projectivity which, similarly to the projectivity in the mirror,

allows to interpret the external space as an apparent space

Euclidean and internal space as real space.

If we apply «(2)» to the transformation of the Universe,

which appears flat to us, in straight lines of the Universe, we go back to the Uni-

real verse, projected precisely on the flat space, made

abstraction from metric properties.

By assimilating the ellipses (orbits) to circles, the figure Universe Co-
mostcentric (v.) 2 is only the result of the transformation of
The Heliocentric Universe (v.) apparent, Euclidean, in the real universe
without prejudice to observational data.

Chapter II

THE ELECTROMAGNETIC FIELD

In the previous chapter we developed the transformation
geometry for reciprocal vector rays. The geometry does not go with¬
fused with physics; it is all abstract. We'll see what the point is
starting point that allows us to apply geometry to a fact
well-known physicist.

We owe Maxwell the discovery of the nature of light and the laws
who already govern it. We now turn to examine the experiment
of the magnetic spectrum, of which Table III is an illustration.

A sheet of paper is placed on the North and South poles of a magnet
paper, stretched over a stretcher frame, and some filing is spread over it
of iron; its orientation is facilitated by giving light strokes with the finger
more on paper. You will see the filings arranged in curved lines
(lines of force) as shown in the figure.

The figures obtained in this way are called ghosts
magnetic ; their appearance varies with distance and quality
of the magnetic poles considered and with the shape of the magnet.

Maxwell (1813-1897), with his famous equations, demonstrated
that the lines of force of a magnetic spectrum have an electrical nature
tromagnetic, in the sense that the apparent variety of fields ma¬
genetics is traced back to a single genesis of atomic physics, yes
according to which magnetism is always electromagnetism, that is

it is due to electric currents (moving electrons).

Given the electromagnetic nature of light, the lines of force
electromagnetic waves of the aforementioned magnet also highlight the
electromagnetic behavior of light in the presence of two

poles: so light travels along curved lines.

The electromagnetic field theory was born with Maxwell;
in 1886 Heinrich Hertz demonstrated, using his oscillator,
The existence of electromagnetic waves confirming the Theory of
Maxwell. The behavior of light, described by the great físi¬
co Scottish, through mathematical formulas, becomes a phenomenon
experimental, real, physical. The «visible» lines of force in the cur¬
ve of the filings, in the presence of two magnetic poles of opposite sign
place, constitute the magnetic spectrum (Tab. III).

By means of the procedure described in chap. I got-
I have the inverted image of the classical universe: let us remember that
the inversion involves the constancy of the angles so if you apply
I call in Table XIV the inversion for reciprocal vector rays, obtaining
we keep Table XV, a result that is identified with the phenome¬
no physicist of the magnetic spectrum. «Hypotheses I don't pretend» he says-
Go Newton, I don't construct hypotheses.

The physical identification of Table III with Table XV is obvious
tooth with the important result that the classical universe is inverted
reminds us of the physical image of Max¬'s electromagnetic field
well.

The new cosmology is based on this observation which con-
he feels he sees objects, people, the sun, the stars along lines
curves receiving our retina F identical image of who observes
serves the sky supposedly exospheric in the belief that the light

is transmitted in a straight line.

Table I illustrates the shape of the earth according to the

classical theory, i.e. the Esospheric Theory, on the basis of the hypothesis that

the ray of light that departs e.g. from the sun and rays anoint ours

eye spreads in a straight line, with the alleged "observation"

that the earth is convex, and therefore the universe would be exospheric.

Except that if we start from the hypothesis that the ray of light that par¬

te from the sun and reaches our eye is propagated in line cur¬

goes, the concavity of the Earth is ascertained with equal right.

The two interpretations, from an optical point of view only, are

equally valid due to the fact that the two light propagations

they are i) the result of an isogonal geometric transformation e

according to which the image of the celestial body appears to us in the

same way: the telescopic sight.

It is a matter of establishing which of the two identical images for

ccite corresponds to physical reality. That's what we'll try to do

see on the following pages.

the

Chapter III

THE LIGHT-YEAR AND ITS IMPOSSIBILITY

PHYSICS

Before getting to the heart of the subject, I repeat a few points

cctti on vision already developed in my volume: The Problem of

Space and the Conception of the World.

The phenomenon of vision must be examined in its two foundations

mental moments: the reception, by the retina, of radiation

luminous ctions and the process of vision proper

operated by the optical centers of the brain.

The first moment is known: light radiations penetrate
through the pupil, until it reaches the retina, which constitutes
the most noble part of the eye comes out. The retina arises from tissue
nerve and represents the sensory portion of sight, that is
which, in a camera, is the sensitive film; has the
form of a segment of a hollow sphere and extends from the ucyte of the bulb
of the optic nerve up to the pupillary orifice; it is not uniform but
undergoes profound modifications that allow it to be divided into
two fundamental portions: a rear one, which has the
characteristics of sensory organ, having the ability to transform
sea the light energy in nerve impulse, and an anterior devoid
of these characteristics.

The retina has a layer of sensory cells made up of cones
and from the rods and a layer of ganglion cells adapted to transport
transfer the nerve impulse produced by the rods and cones to the centres
higher nerves, where the sensation of vision is processed
neither. This last layer, the cerebral portion of the retina, is a
sort of outpost of the brain, which selects and leads everyone

impulses derived from sensory cells. This is the second
aforementioned moment: the elaboration of the optical centres.

The psychic mechanism with which the images received by the re¬
tina are transmitted to the outside, it is not known, by the way
gua of many other brain functions, such as hearing, smell,
the taste, the touch which constitute subjective cerebral responses to the
stimuli from outside. This circumstance leads
however to a consideration of the highest importance: the images
gini that we see, are a mental product: we prolong in

linea retía radiation processed by the brain.

Projectivity in the mirror: apparent space and real space

An example of this process is constituted by the images vi¬
you are in the mirror. An object that is projected onto a surface
specular, it appears to us in a different place from the real one: the ra¬
diations of light depart from the real object and arrive on the su¬
surface of the mirror, deviate due to Descartes' law from li¬
nea line and penetrate into our eye, which, due to det¬
mental, psychic process, extends the radiation in a straight line
tion of light that reaches it.

And we see the object "in" the mirror! Such a phenomenon
no it also happens when we look at a photograph; the machi-
na fotográfica fixes on the plate not a movement but Pimma-
instantaneous generation of single frames starting from an initial stroke
infinitely small and is therefore always the brain of the ob-
servant who interprets the phenomenon.

We have perianth an apparent space with line of vision
rectilinear, and a real space, seen along the real path divided
tion of radiation, and that is what the sense of touch and mo¬
movement allow us to observe. Between the apparent space and
the real space there is a relationship defined by rigorous formulas
mathematics.

Kunt said «The head is in space and yet space is
lydia head».

Cosmic roictlivity: apparent space and real space

An analogous process we can attribute to the observation of
cycle, from which we receive information through radiation
coming from us, we perceive them and mentally, we prolong them

mo in a straight line. We propose an interpretation of the sky of¬
different from the traditional one, driven towards the search for explanations
more reliable than those which the classical science of
the universe such as that of having to admit a phenomenon
implausible, i.e. light path times in the billions
of years at a speed of 300,000 km per second, with wavelengths
from equal to 0.4-0.7 micron and a frequency calculated from 400 to 700
trillions of oscillations per second. We formulate the hypothesis of one
real space that is projected onto an apparent space (designed by
mind) similarly to the phenomenon of the mirror, where the space
it is projected onto the apparent plane space, reflected from the su¬
specular surface. This projection of real space in one
apparent (mental) space has the characteristics of projection
of a real object on the mirrored surface: preserve angles
and change its direction. The apparent sky, like a projected object
tato on the mirror, keep the angles and change the direction of the sky
real, that is, an inversion or geometric correspondence with¬
forms, called transformation by reciprocal ray vectors, such as
I have shown in other writings. Applying to the physical universe such
geometric transformation the light radiations perceived by the
The eye follows curvilinear paths, for which the celestial bodies observe
vati are apparent rather than real as situad tungo le
reí te tangential to the curves traversed by the striking rays of light
our eyes all the time. We see celestial objects
along these tangent lines, i.e. in a (mental) space where the lines

nee of universe are rectilinear (Euclidean space). The spa-
The real cosmic space is analogous to the space determined by the poles
of a magnet on iron filings sprinkled on a sheet of

paper with its characteristic electromagnetic curves (Maxwell).

Geometric distances and duration of light

The light-year corresponds to a length of km 9.463 x
10 to the twelfth = km 9 billion and 463 billion, or the distance
za that light is animated by a constant speed of 300 x 10 alia
third km/sec, it would travel if it could have the duration of an
no. This route, considered "straight" is the unit of measurement with
which astronomers calculate (not measure) the distance from
we of a star.

Attention must be paid to the meaning of the word di¬
room and the word light. Distance is the geometric space between
one point and another point. Light is the set of discrete elements
called physical quanta of light (photons) or animated particles of energy
from speed.

A physical train of propagates along a geometric distance
innumerable photons, distributed non-uniformly (elec-
Maxwell's magnetic field).

A distance is measured by means of a geometric unit called
metre, whose standard (international metre) consists of a
platinum ruler, kept in the Museum of Arts and Crafts of Paris
gi, equivalent, with great approximation, as is known, to alia
40 millionth part of an earth meridian.

Astronomers, to calculate a stellar distance, combine
divide the geometric unit of measure with the physical unit of measure
of light (k photons) as if they were compactly distributed.

The light-year arises from the fact that in the triangulations of the cal¬
cólo of the stellar distances the rectilinearity of the sides is assumed
calculate, and the photon distribution uniformity, related to

physical impossibility of the endless durations of the light itself, so
I'll see right away.
But first let us specify with an example our ordinary mi-
surc or distance calculations with the caveat that a beam of radiation
tions of light, starting from the source, are fading
for the divergence between the rays of each pair, and for the always
less compactness of photons of the same radius.
If, for example, a light source is 10 meters away
of geometric distance from me, I assume geo¬ as the unit of measure
constant metric the metre; but if I take as a unit of measure
physical constant, e.g. 100 million photons (quanta of light), in
first stretch (let's say 1 cm) of the light beam are contained
ti 100 million photons, but this second stretch is geo¬ long
metrically half of the first and so on from half to half the photos
towards the source they are becoming more and more thickening (that is, they
distribute non-compactly and non-uniformly - Law of
Lambert). Therefore assuming constant fí¬ as unit of measure
physically 100 million photons, my physical distance from the source,
with innumerable halves it is almost infinite, while úmanc fini¬
ta (10 metres) is my geometric distance. It is concluded that the di¬
Terra Solé physical-geometric room in the classic measure system
150,000,000 kilometers in physics-geometry-, in the Teoría Endo-
spherical, since at each straight exospheric kilometer cor-
small arches respond, which gradually become shorter and shorter
towards the source, there are still 150 million Km. but with
physical meaning being constituted by trains of photons, not supe¬
rando the geometric paths of sunlight and stars 10,000 chi¬
geometry meters with a probable duration of the journey
light of hours, not of years. Alia half line «rectilinear solar rays»

corresponds in the transformation for reciprocal vector rays, the
semicircle «curvilinear rays».
To the geometric kilometre, transformed «increasing» from partiré
from the source, on the semicircle corresponds the kilometer (with si¬
physical meaning) decreasing in accordance with the physical law of

lighting intensity inversely proportional to the square
to the distance from the source. It could be said (to understand) that
the lengthening of the geometric kilometer is compensated by the
decrease in intensity of illumination. Match the mon-
geometric length of a ray with its decreasing intensity
of illumination stands at the root of the light-year.
If you want to measure the length of a stretch of river, use
we will lose the meter; our result has nothing to do with it
with the flow rate of the river water as well as the distance of a
star has no relationship with the train of photons that travels through it.
Distances are geometric entities; the flow of water and the
train of photons are physical entities.
\
Distance law
The intensity of illumination of a screen is inversely
proportional to! square of the distance from the source.
In fact, the amount of light that comes from a point lumi¬
noso O falls on a square ABCD, at a distance double ca-
d would be on a square A' B' C' D' of double side and therefore of
area four times greater than the first. Perianth the amount of
light that would fall on A' B' C' D' would be the same as that which
falls on ABCD but with an illumination intensity equal to 1/4
than that which falls on ABCD.

The splendor, that is the luminous intensity of the unit of surfaces

ie, a double distance is 1/4, a triple distance would be 1/9 etc.

The intensity of illumination E is directly proportional

alF emission intensity and cosine a formed by the normal

to the ray incident with the struck surface and vice versa

proportional to the square of the distance from the source:

_ -eos a

(Lambert's first cosine law).

At given distances of m 3, 4, 5, etc. the intensity of illumination

produced by a source decreases by 9, 16, 25 times. In fig.

two rays of light leaving the source at a given instant are

separated by an arc AB, at a later instant by an arc A'B',

etc. The light spreads throughout the spherical space; every surface

spherical each receives the same amount of light, but the intensity

of lighting on each square meter. decreases inversely by

square of the distance. When the latter reaches values

of millions of kilometers the intensity of illumination decreases rá¬

gradually tending to zero, until extinction. The same quantity

tá of light emitted by the source illuminates an extended sphere 4n r

where r is the increasing radius of each sphere and figure squared

to. If the radius of the sphere is 1000 km, the radiated surface

is 12 times 1,000,000 square km; if r is equal to 1,000,000

km the spherical surface is about 12 million square km.

If r is equal to 150,000,000 km, the illuminated surface has a

thousands of trillions of square kilometers.

In the figure, observe for example the arc AB, the arc A'B'

and the arc A”B”. These three arcs are sectors of the circumference;

the corresponding spherical surfaces each receive the same il¬

lighting, the intensity of which, as the extension increases, goes rá¬

gradually attenuating in the inverse ratio of the square of the di¬
room until it vanishes.
43
THE
For the classical theory the nebulae whose light would employ
200 million years to reach the Earth, it would be rp ad
a distance of 2,000 trillion kilometers: the figure is: 2,000,000.-
000.000.000.000.000 (21 zeros). The fabulous duration of propagation-
tion of light rays (light-years) is not the result of experience,
but it necessarily follows from the premises from which Gastro starts
classical nomía and that is: Euclidean cosmic space, convex Earth
and the attribution, extrapolating, to the cosmic space of characters
of the earth's space. The light of the Andrómeda nebula im¬
would take 2 million years to reach us, that of the
galaxies more than two billion years away. The light with a fre-
frequency which is calculated between 400 and 750 billion vibrations per second
do, each ray constituting a very tenuous «thread of energy»
in motion with a speed of 300,000 kilometers per second is so
the ¡Ilusorio that could last for billions of years!
The speed of light
The speed of propagation of light (electromagnetic waves)
which in vacuum) is taken as the fundamental universal constant
and is usually indicated with C, even if the escape velocity of a qua-
sar is hyper-c.
44
The first determination was made in 1675 by the astro-
dáñese name Olaf Roemer who calculated the periods of the satellites of
Jupiter in different eras, obtaining different results. Know-
I give this difference in distance and the time taken to travel it

(about 1000 seconds) Roemer calculated for the speed of light the
value of 307,200 km/sec.
The determination of the speed of light, performed by Ja¬
mes Bradley in 1728 based on the aberration of the stars, con-
led to equal results (except for negligible differences); the same
the same applies to other researchers such as Anderson, Essen, Bergrastrand,
Alakson. These calculations are based on the hypothesis of correctness
of the propagation path of the light.
It is necessary to clarify the concept of speed of light in the system
heliocentric and the same concept in the cosmocentric system. There
distance in the endospheric system is the length of a trajectory-
rectified curvilinear air, whose geometric unit of measurement (me¬
tro) does not coincide with the physical unit of measurement (k photons). This
the physical unit of k photons is not known, therefore it is not calculable
the travel time of the physical body k photons is not known. Perian¬
to the speed of light is not calculable.
The average diameter of the molecules has been calculated, with various
systems, reaching a value of the order of a few Angstroms
(1 Angstrom = 10 -8 cm), or one ten-thousandth of a microm; there
classical Earth-Sirius distance is 9 light-years; these va-
lutions, however, cannot be accepted because the photons of a
ray of light, unlike classic assessments, does not spread
distribute uniformly, the photons or quanta of energy do not travel
jano compact but they are distancing until annulled
of their action (see figure) moho time before reaching
the observer.
The concept of heliocentric speed refers to paths of light
physical-geometric with a constant unit of measurement, in the system
cosmocentric instead the same concept is referred to units of mi¬

variable geometric suras containing each unit of geo-

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metric is the constant physical quantity of k photons. The light travels
I make an enormous number of variable geometric units in parti¬
ré from the source it fades until it tends to zero. That-
this path implies a non-calculable variable time, but ve¬
similarly ultra-short in the geometric vicinity of the source,
but gradually increasing as it travels towards the observer
land carrier.
The Teoría Cosmocentrica formulates the hypothesis of variable times
li of path of the light from the source to the observer, holding
note that illumination, as already said, is inversely pro-
proportional to the square of the distance.
The calculation of C was carried out in the hypothesis of unit of time
po constant per unit of travel constant. From these assumptions
the classical value of C is enjoyed even in the depths of space
cosmic, except that Lambert's law leads to a progressive
vo dimming of lighting intensity up to its an-
nothing long before reaching the ter¬ observer
rest. As for the famous experiment of Fizeau la
speed of light was, yes, constant, but obviously for a duration
fractions of a second subsequent to the instant of emission of the
light, whose route from Suresne to Montmartre, round trip,
it was only 8.633 km x 2 = 17.266 km. Therefore, taking into account
than previously said, it is absurd to assume for the speed
tá of light the constant C value for durations of «billions of years-
ni". The light-year is therefore absolutely impossible.

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Chapter IV

FLAT SPACE AND CURVED SPACE -

HYPERSPACE - SPECIAL RELATIVITY E

FINAL RELATIVITY

With the advent of Einsteinian theories, they developed

developing new cosmologies.

The classic universe of Newton was followed by that of Minkow-

skiing; the non-static (pulsating and hyperbolic) universes of

Friedman; Einstein's system of General Relativity, Fan-

Piattié introduced his Final Relativity using the model

by De Sitter; stationary cosmologies proposed by Hoyle and Bondi-

Gold, Gamow and Lemaítre evolutionary cosmologies.

Fundamental problems are associated with this rich mass of theories.

mental as the meaning of hyperspace and curvature of space

and of time, the problem of the reality or appearance of phenomena

predicted by relativist theories, the meaning of stationarity and of

expansion, model of the Universe, the concept of relativity and the

Einsteinian theory of gravitation, then focusing on the di-

distinction between the relativist conceptions of theoretical universes a cur¬

constant nature based on group theory and conception

of the real Universe with variable curvature, not related to this theory.

Hyperspace

To explain what a four-dimensional space is, yes

resorting to various expedients, the most significant and close to intuition

tion being that of the bianimal which, linked to a space a

two dimensions, he cannot imagine a three-dimensional space.

Analogously, it has been said, a three-dimensional, bound being

to a three-dimensional space, it cannot conceive of a space

at four. This juxtaposition between the behavior of the white

animal and that of the three-dimensional being appeared to satisfy
the need for intuition.
But was intuition really satisfied? A short
reflection suggests a negative answer. We can petó do-
send us if such a problem really exists or is hiding in it-
de The mistake of confusing between geometric abstraction and physical reality
approx. The space n dimensions in geometry to be well known
it does not need to be illustrated. What needs to be investigated is
why we speak of physical space with more than three dimensions. Among the
first responsible for this is Minkowski, who, with Einstein, introduced
came up with the term "four-dimensional" to mean space-
real time.
It is true that these authors take care to specify that the three
spatial variables x, y, z and the time variable t could be
merged but not confused, but this did not prevent the most famous texts
brad still linger to illustrate the events of the bianimal.
The idea of geometric representation that Minkowski has
datum of Special Relativity arises from observing that the transformation
Lorentz's mation works similarly on spa¬ coordinates
tials x, y, xe over time f, hence the opportunity to interpret
mechanical phenomena, rather than in ordinary space, in a spa¬
four-dimensional space in which time functions as a fourth coor-
dinate. However, since in space-time it doesn't happen at all
that a three-dimensional being faced the problem of con¬
perceive the fourth spatial dimension, is completely out of place,
in the question in question, consider the bianimal not having
the possibility of conceiving the third dimension, and this because in the
space-time real space dimensions are three and do not go
confused with the temporal dimension that a character takes on

analogous to the spatial ones only in the geometrical representation
ca : in reality space and time cannot and should not be

confused.
It is known, in rational mechanics, that the ellipsoid of inertia is one
geometric representation of the moments of inertia, but it is
only one interpretation: to insist on the vicissitudes of the bianimal
aforesaid is equivalent to believing that the ellipsoid of inertia, instead of
be a mere geometric interpretation of the moments of iner¬
aunt, "identify" with them.
A convenient proposal could be to not do it
more use of the term "four-dimensional" when referring to it
to the real world: it will be granted that such suppression spares
would obscure conceptual and useless efforts and how many forward
in the shifting sands of relativity.
Strange, just about the Minkowski diagram,
notes that «he soon forgot this original diagram-
matic and an absurd reality is almost generally attributed to this
this representation... the hypothetical continuum became a semi-
four-dimensional space." But to the enigma of the «four-
spatial dimensionality» is associated with that of the curvature of the
space and time.
Curvature of space and time
Also to explain this "mystery" well-known authors are
resorts to approaches similar to the previous ones. Like a plan
it curves in a three-dimensional space, it is explained, so a spa¬
three-dimensional space "curves" in the fourth dimension. But not
only space "curves", but also time!
What a "curved time" could mean no one knows, neither

will ever know, except perhaps the authors, the critics and the merchants

than 99 percent of abstract paintings.

Here too the rigorous and recommended distinction is imposed

by Veronese, between geometric representation and reality. Until

we remain in the interpretative field offered to us by geometry

analytical, space-time can take on the suggestive aspect of

a cone (Minkowski), a cylinder (Einstein) or a hyperbo-

loids (De Sitter).

To allow the tracking of Einstein's chronotope (fig.

1) the spatial coordinates are reduced to two (circumference)

the third coordinate being time. For the representation of

De Sitter's Universe (fig. 2) is the third coordinate, being lo

expanding space, looks curved. As you can see it is not

of the "curvature" or "flatness" of time, but simply

of its geometric representation, what is sensitively

more understandable.

As for the «curved space» we must distinguish: 1) the spa¬

uncle geométrico, which is: flat if the Pythagorean theorem is valid in it

ra (Euclidean geometry); curved if, on the other hand, the re-

Pythagorean action (non-Euclidean geometries); 2) the physical space,

which is defined: plane, if admitting the hypothesis of propagation

rectilinear tion of electromagnetic waves, for description

Euclidean geometry is applied to the phenomena of nature; cur¬

vo se, admitting a curvilinear propagation of light, for

the description of the phenomena of nature applies a geome¬

non-Euclidean tria.

Newtonian space is flat because the trajectory of lu¬

ce, supposedly rectilinear (in the Euclidean sense), requires the application

ne of Euclidean geometry; the Einsteinian space of Relati-

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General life is curved because gravitational electromagnetic waves

/.ional, undergo the action of the gravitational field and therefore

gcodetics traveled by light, not being Euclidean, requires

the application of a non-Euclidean geometry.

Depending, therefore, on the physical theories adopted to explain

the phenomena of nature we apply a type of geometry or

re another: it is the type of geometry that we apply that makes us

I will define flat or curved (in the Euclidean sense) the physical space, that is

the set of material bodies and energy fields that constitute it

they understand.

Therefore, it makes no sense to consider the curvature as a ca-

intrinsic nature of physical space. To say that «space or time

or space-time is curved", and worse, "curves" is an expression

which should be abandoned in favor of rigor, of pre¬

cision and clarity.

Reality or appearance of the phenomena predicted by reiativist theories

Perhaps the most discussed problem, linked to the transformation of

Lorentz, is that of the variation of length, of duration

and the mass of the body as a function of its motion.

Are these real or apparent phenomena? We have to be precise

first of all what we want to understand by real and what we want

mean by apparent.

If an observer K sees a ruler pass before him, he travels

with uniform rectilinear motion at a speed, with respect to

him, comparable with that of light and proceeds to measure it

length, the result of its measurement carried out (with only half

zi optics) differs from a similar measurement carried out (with prin¬ means

typically tatíili) from another observer K', united with the re¬
goal and precisely the length l obtained from the first observed¬
re is less than the length /' detected by the second.
We will have, according to the Lorentz transformation.
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where v is the speed of the rod and c is the speed of light. os-
servant K the ruler appears shortened. What does this mean?
It means that the length detected by K\ traveling jointly
te with the ruler, is true: K detects a shortening of this lun¬
true length, i.e. detects an apparent length.
This is the crux of the matter and so it was considered by
Enrico Fermi, from Straneo, from Castelnuovo and from many other
all scientists: this has not prevented and still does not prevent that
still discussing a problem that the same invertibility of the equations
tions of Lorentz puts us away from any doubt. Indeed,
if it were K' to judge the length of a ruler identical to that
the previous one but now in solidarity with K, would be K' to detect for
this ruler has a smaller length than that detected by K.
From this it follows that the rule traveling with rectilinear motion uni¬
shapes in a supposed pseudo-Euclidean space (with only the inter¬
physical wind of light) empty like Euclidean space, the ruler
really does not shorten at all, does not suffer any contraction
tion inherent in its molecular structure, such as erróneamen¬
Lorentz himself thought of you at first, then changed his mind
definitively.
We therefore conclude that the true length is the measured one
mainly with the intervention of touch (tactile space), while
the apparent length is that measured with the intervention only
of vision (optical space). I omit a similar reasoning

to be done for the «dilation» of time, a purely ap¬ phenomenon
relative.
These fundamental notions and findings must always be
pre kept in mind when considering events from a point of
relativistic view, that is, with the use of founded transformations
on group theory, such as the Lorentz transformation of
Special Relativity and other relativistic transformations, including,
in particular, that of the Final Relativity of Fantappié, developed
hopped by Giuseppe Arcidiacono.
The journey imagined by a distinguished Physicist is famous, such as
was P. Langevin: he assumed that one of two young twins
it spun with fantastic speed from the Earth, pushing itself up to one
distant star and returned with the same inverted speed to Ter¬
ra and stopped there.
Assuming the translation speed v sufFjciently large
de (next to that of light) the twin who had traveled
he could have been still a child, while the other remained
constantly on Earth, it should have been very old!
That this is only an absurd paradox is proved by the fact
which, due to the invertibility of the Lorentz transformations, is the ge-
aged traveling mello that would have found child, to his
return, the twin who remained on Earth.
Add to this the serious circumstance that illicit use has been made of the
Lorentzian formulas which predict only uniform rectilinear motions
(otherwise the transformation would not leave unchanged even
not the form of the law of motion), while the traveling twin,
reversing the course for the return, it is animated by an accelera-
rat.
The problem of the reality or appearance of phenomena in

the Special Theory of Relativity should be considered in an ana-
loga in other relativistic theories, based on group theory
especially in Final Relativity.
The unification of the electric and hydrodynamic fields
it has an apparent and not real character, because it depends on the distance
za from the observer. «It will have to happen, writes Arcidiacono, that a
purely hydrodynamic phenomenon, which occurs on a Ga-
lassia distant, it will have to appear to us, due to the effect of the distance, of
magneto-hydrodynamic nature. Alie small distances from the bone
vator... the electromagnetic and hydrodynamic fields result
are independent of each other. Alie great distances instead... the two
fields come to merge intimately, through the constant uni-
versal r, in a single magneto-dynamic field».
53
Whether a conducting fluid (e.g. mercury) or a gas
ionized (plasma) is immersed in a magnetic field, a
coupling between electromagnetic field and hydrodynamic field
mic, in the sense that a hydrodynamic motion gives rise to cor-
electric currents. which, in turn, generate actions that alter
the state of motion of the fluid.
If, however, the hydrodynamic field is the electromagnetic one
are independent of each other (that is, the first is not immersed in the
the other) and yet to a distant observer the phenomenon is
has a magneto-hydrodynamic nature, it is clear that it is
not of a real phenomenon, but only of an apparent phenomenon.
This clarification around the problem of reality or
The appearance of the phenomena predicted by relativist theories develops
pate in the group theory scheme of rigid movements
highlights the fundamental character of these theories, namely

the fact that their genesis is linked to purely material needs -
matic, as Arcidiacono warns regarding the Re-
the activity of Fantappié and as Straneo warns (1, pag. 81) for quan¬
to regards Special Relativity.
It is known in fact that, to write a transformation that gave
reason of the experimental results obtained by Michelson-Morley,
Poincaré, wanting to achieve a transformation that was not alone
approximate as the one Lorentz had found, but it was
if exact, he resorted to the mathematical theory of groups, based on the
which it could be rigorously demonstrated that the only transformations
tions, which left the shape of the optical laws unchanged, were
given by certain equations where a magnitude and de¬ figured
terminate according to some particular condition of the problem
that it was placed. In the search for a law of transformation
uniform, which leaves the form of the fundamental laws unchanged
electromagnetic fields, the mentioned equations are applied to a ca¬
so experimental, that of Michelson-Morley, and equaling it
the results it will be possible to determine the numerical value of the constant.
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case we find for c the value of the speed of light.
So the cusíante c was born from a mathematical need for
account for certain phenomena. Whether it be theories that associate-
no to the simplicity of mathematical formulas a structure of
moho world simpler and more schematic than the real one proves it
also the fact that, for example, while the value c is insurmountable in
In the sphere of Special Relativity, in Final Relativity it is seen
the speed of light is no longer a limiting speed, whereas there is
its entry a time limit r/c.
All this takes away only the transformations of Relativity Ri¬

strict, within the limits of the field of their validity, represent one
very valuable tool in science: the modern gigantic machines
china, which are used in nuclear physics laboratories for this purpose
to produce high energy particles (synchrotons, betatrons,
etc.) must be designed in order for them to function,
based precisely on the laws of Special Relativity; and can-
we are likely to expect very useful applications of the
relationships of other theories based on group theory.
But when from the effects foreseen by the aforementioned relations
lativists let us move on to an objective structural vision of the Uni-
towards real (cosmology), then we must abandon the abstraction
of a space-time with constant curvature of relativist theories
based on the group theory of rigid movements (roto-
translations), to introduce into our equations the characteristic data
characteristics of real space, which has variable curvature: it is what
did Einstein in his theory of General Relativity, where
the space considered is the real one, at least in the first approximation
mation, a space, that is, gravitational.
"The gravitational field, Einstein points out, deforms my
stiff throats". In the Endospheric Theory we consider a space,
which is even more approximate to the real one: it, as well as gra¬
vitational, it is electric. The variable curvature (with the consequent

non-rigid motions) of the Universe in General Relativity is linked
due to the presence of matter as well as the curvature of the Universe
Endospheric is linked not only to the presence of matter (actions
graviiational), but also in the presence of the springs of a cam¬
universal electric po.
It is necessary to specify the entity of the difference between the curvatures of

Einstein and those of the EndosJerica Teoría: the former are neglected
bilities being linked only to the gravitational field, while the se-
conda are related to both the gravitational field and the electric field
tromagnetic; the former have a radius of curvature of billions
of Euclidean kilometers (the limit of the Universe is approximately one
plane) while the second ones have a radius of curvature not greater
day of 6370 Euclidean kilometers (Earth radius).

Chapter V

«RELATIVISM» AND THE ROLE
«PRIVILEGED» OF THE EARTH

"Relativism"

An objection, which has been raised against the Teoría Endo-
spherical, is this: the hypothesis of the curvilinear propagation of light
(field theory) can be done, as well as by the observer ter¬
restre, even by an observer from any other planet, for
e.g., of Mars. He too could imagine an endo-universe
spherical, of which the concave surface of Mars would constitute the
side.

It is therefore absurd to think that the universe is cosmocentric
is real, because otherwise they would have equal right to be with
real siderad the different universes observed and, like that, inter¬
pretad by the observers of the various planets. So it's puree
abstractions, of pure mathematical structures, which cannot cor-
respond to physical reality!

So far the objection.

We shall immediately observe that the hypothesis of the existence of a habit
many on the external convex surface of Mars is done by analogy
already with the inhabitant on the supposedly convex terrestrial surface; in

In other words, the hypothesis that Mars is inhabited immediately implies one
second, which is twofold, namely the hypothesis that the surface of Mars
whether inhabited externally or internally. The first hypothesis is po¬
stands for analogy with the Earth, whether concave or convex; the i¬
second possibility, which it implies, is doubly analogical: if
the surface of Mars is supposed to be externally inhabited.
57
this is done by analogy with the convex surface of the Earth
classical system; if it is assumed instead that the surface of Mars
is inhabited internally, this is done by analogy with the surface
concave of the Earth of the cosmocentric system.
The aforementioned objection, therefore, implies the following circumstance
te: the objector starts from the implied affirmation of dwelling on the ¬
the convex surface of the Earth, from the statement, that is, that
the system of the Universe is the traditional one and therefore concludes
that the hypothesis of the curvilinear propagation of light is a pure one
hypothesis to which a real physical law cannot correspond, even though it satisfies
undoing to a coherent mathematical structure of the Universe.
From this it follows that such a propagation hypothesis curvilated
idea of light can be formulated, and only as a mere exercise
intellectual quotation, even from an observer located on the su¬
external, convex, surface of Mars.
The objection in question is therefore vitiated by a prejudice
tial, that is, that the Universe certainly has the structure
traditional: one objects, in short, prejudicially, to the assertion-
re of the cosmocentric system that the Universe is not cosmocentric
co, but Copernican.
It is therefore not a real objection, because
derives prejudicially from the affirmation that the true system is

but of the world it is the classic one: to be a real objection
the argument raised should be independent of any
any concept of the universe, be it Copernican or cosmocen¬
trico, so as to let us see that the argument itself carries
to affirm the validity of one or the other of the two systems
me. Instead we pretend to proceed in the exact opposite direction:
in fact with the objection it leads to validate one of the two systems
mi, but one of the two systems, prejudicially stated as
The only true one leads to the objection!
Then follows the obvious admission that the observer assumes
I'm located on a "certainly" convex earth surface can
you represent an endospheric but certainly abstract universe

to, certainly not corresponding to the real world; it's the same
what can the hypothetical inhabitant of Mars do, located by analogy
with the Earth's surface, on the outer surface of that planet.
Both observers, the terrestrial and the Martian,
could make the same speech and say: I am situated with cer-
height on the convex surface of my world, but I can build
some abstract structures, mathematically valid, certainly not
corresponding to reality, but such as to allow me to configure
re in my imagination a hypothetical universe enclosed by hypotheses
concave walls of the surface on which I stand.
The hypothesis of the habitability of Mars by analogy with the su¬
terrestrial surface can be associated with the other hypothesis, that is that Pos-
Martian servant is found, again by analogy with the surface
cie terrestrial, not already on the external, convex surface of his
globe, but rather on the inner surface, concave, and this does not apply
worth considering the Endospheric Theory of the Universe.

The objection raised at the outset is vitiated by the circumstance that
two opposing hypotheses are mixed in it: the Copernican hypothesis and that
cosmocentric.
We do not perceive in this objection that it is tautological to say
sea that the Copemican system leads to... the Copernicus system
dog. The preliminary ruling from which we start excludes that the hypothesis of the
The cosmocentric universe can correspond to reality and therefore
of the objection which it is believed to oppose to the cosmocentric system
it is pleonastic, superfluous, because the precondition that the universe
it is certainly not cosmocentric precedes the objection itself.
In this objection only the Coperni hypothesis is actually made
cana: the two hypotheses are not compared impartially.
The hypothesis of rectilinear propagation of light leads to
to assert that living beings inhabit the external surface either
of the Earth and of Mars (allowing however the habitability of these
this planet).
The hypothesis of the curvilinear propagation of light (teoría del
field) made by the terrestrial observer, leads to assert that

living beings inhabit the inner surface of both the Earth
that of Mars (allowing anyway the habitability of this planet-
ta). The analogy with the Earth (and not observation), which has
once the scientist has been educated to make the hypothesis of the habitability of Mars, he must
be conducted to the end, without mixing the two opposites
hypothesis.
The terrestrial and Martian observatories are either alPe-
sternum or both within the surface of their world e
this is because the only reason that led to the hypothesis of the ahi-
stability of the planets is the analogy with the earth's surface. No-

no one has ever observed any inhabitant on the surface of the plains

ti: these are just analog conjectures. The objection then posed

at the beginning it has no foundation, because, as he said

Poincaré, «there is no paradox that cannot be demonstrated when

mix two affirmations in the premises of the proof

ni (or hypothesis) contrary".

Whether the Universe is cosmocentric or not, it must be

decided by the consequences that this admission entails.

If the hypothesis of the Endospheric Universe involves the explanation

of all the observed facts already explained by the old theory, and furthermore

three the solution of even a single weak point of the old con¬

I concede, this hypothesis is more valid than the old one, this structure of the

The universe is more valid (more true) than the structure of the universe

traditional.

Admitted the greater validity of the super Endospheric Universe

placing an «external» Martian observer would mean formu¬

make a hypothesis not even supported by analogy, a hypothesis

yes completely arbitrary, devoid of any foundation an¬

than purely theoretical.

However, we must add a further consideration.

When the Theory of Relativity appeared, there was opposition

slow rose up against it.

Men of science, even well-known, cursed them

Einstein. Vincenzo Cerull, then President of the Astro-

nomica spoke of a "degenerative crisis" that had occurred in the camp

scientific.

Michele La Rosa wrote: «We feel a breathless sense

of bewilderment, a deep and acute unease, which comes from

I will feel the very foundations of our ra-

region". Then things changed. Objections to Einstein's ideas

niane turned out to be more psychological than rational: to understand

to understand relativist ideas it was necessary to change a certain way of translating

dictionary to think. A certain tradi-

tional mental attitude, Relativity asserted itself triumphantly

mind.

Then, as often happens, he went even further, he became di¬

re alia Relativity what Relativity did not say and they were born

absurd "interpretations", like the pleasant story of the twins of

a physicist, albeit an eminent one like Langevin was.

"Relativism" was born, a deteriorating mental attitude

re in the shadow of a Theory that nevertheless has a great scope

but, both in the scientific and in the speculative field.

The síoria offers us many examples of these "schools" that arose on the

trail of great masters: "schools" that often distort Palto con¬

keeping to the original doctrine. "Relativism" is rampant!

You do not strictly abide by the terms and conditions below

which it is permissible to speak of relativity and pleasant paradoxes arise, but

worthless, interpretations and arguments apparently

suggestive, but without rigor in their premises.

Relativity teaches that for an observer located in a three¬

no in motion the images of the places, which it crosses, are identi-

than to those that he would contemplate if the places were moving

verses and he stood still. Omitting, now considerations a lot

important, around the meaning of motion and rest, it does not seem

that it can be doubted that it is the train and not who moves

the landscape! The Lorentzian reports are of the highest interest

and of greater fecundity, as we all know, but we don't admire ourselves

we are sick of "relativism" falling from the frying pan into the fire!

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The "privileged" role of the Earth

A second objection to the Endospheric Theory has been formulated
mulated by a famous French scientist in a letter, to me
sent from Paris on 20 January 1961, which reads: «The geoperipher-
ism of Theory restores a privileged role to the Earth and this
this is the point for which I don't agree with the theory».

The critical arguments to this second objection are
similar to those already opposed to the objection already discussed above.
Here too the objection does not lead to validating either of the two
systems, but one of the two systems, prejudicially stated thus
me valid Púnico, leads to the objection. It is coming from the system
but Copernican that one can possibly speak of a private role
envoy of the Earth, is admitting that the Earth is a "planet"
that its privileged role cannot be considered justified
compared to the "other" planets.

If the Earth were a planet, if, what is the same, the system
of the world were Copernican, precisely it would not be at all
justified to attribute a privileged role to the Earth.

But what does it mean, for our objector, to attribute to Ter¬
ra a privileged role?

It means referring to the Earth's "role" of being the boundary
of the Universe, means, that is, to refer to the Cosmocentric system-
co, in which precisely the Earth is not a planet and therefore not
it makes sense to speak of a privileged role.

Two opposite hypotheses are mixed again, which are resolved
in a contradiction. Also in this objection we start from
Copernican system to reach the... Copernican system: pu¬

ra tautology.

If we can speak of privileges, it is, on the other hand, precisely by analyzing
the classic system.

In it, among all the paths attributable to light waves, yes
must admit the most singular path, the rectilinear one. Between
all the infinite lines, the straight line is the most particular case, it is Pec-

perception, it is the behavior that clearly distinguishes it from all
te the other lines; the straight line is privileged over all straight lines
constructible or conceivable due to its very particular character, which is not
it has nothing in common with all other lynxes: it is the only lynx
which has an infinite radius of curvature at every point.

That the real universe is dominated by a law of propagation
tion of electromagnetic waves so singular, "privileged",
is less probable than the opposite hypothesis, that is, the hypothesis that always
obeying a certain law, the light rays take on
no different curvatures at each point and for each direction, curva-
tures ranging from values that tend to zero to infinite values.

There is no reason to bind the propagation of light
to a geometric law as singular as that of the straight line
Euclidean: Euclidean geometry, in the new concept of the world,
it no longer has that privileged role it had in the classical concept.

Another singularity or «privilege» we find, in the classi-
co, in the rigid motions to which bodies are subject. Of all the
sible laws, to which bodies in motion may be subject, from those
involving very slight deformations to those involving de-
sensible formations, the law of rigid motion is a limiting case,
a privileged case. Nature is probably not subject
to laws of this singularity, but albeit to more general laws. If by

privileged roles can be talked about, therefore, it is precisely by analysing
the classical system, where one must admit, as a consequence
necessary za of the same structure of this system, rigid motions (dei
bodies) and straight paths (of light).

Chapter VI

SPACE TRAVEL - INERTIA

An observation usually comes from someone who comes across
the new theory: «Based on calculations according to the classical theory
space probes go just how and where they have to go, re-
returning how and where they have to return».

Let us now consider that from the experiments of American satellites
ni and Russians some important data emerged:

a) The space between the planets cannot be considered empty, so
Newton supposed me. The concentrations of the electrons emitted
yes from the sun lead to consider a greater extension
of the solar corona; said electrons must possess a
energy corresponding to very high temperatures. The gas in¬
terplanetary is a part of the solar atmosphere, which is much more
extensive than previously assumed.

b) At a distance of more than 5 terrestrial radii the magnetometers of the different
satellites recorded systematic field differences
magnético from the data calculated on the basis of the teó¬ magnetic field
rich.

Particularly impressive achievements in this field were
no recorded by the Pioneer V launched on March 6, 1960, which achieved
a distance of 5 million kilometers.

These observations seem to confirm the existence of nu-
magnetized plasma bi emitted by the Solé and traveling through

I know space producing storms upon its arrival on Earth but-
gnetic and other geophysical effects.
In a statement released by Tass, the Soviet expert on
astronáutica Sternfeld on April 21, 1959 announced that the Lu¬
nik III had revealed in its movement some particulars in con¬
contrast with the Newtonian laws of Celestial Mechanics. The variety
condensations of spatial energies caused speed drops
tá to Vanguard I, Sputnik III and other satellites.
All this offers justified reasons for criticism of the current Theo-
theory of the Universe: Newton's law presupposes empty space
to, while the latest experiments lead to exclude it. A pro
repository of the «emptiness» Louis de Broglie (Journal de Phisique, dec.
1959) stated: «The void appears quite paradoxical to us
mind endowed with important physical properties. M. Bohm calculated
a formidable amount of energy, 10 27 joules per centimetre
cube".
As for the temporal coincidence of the rockets going and returning
I return the concordance with the calculations made was not, how
you think, exactly.
In 1959 the Russians launched the Lunik II which landed near
the Sea of Serenity on September 12, 1979. For a trip of
381.203 kilometers the aircraft took 83 seconds longer than expected
i'm. By means of easy calculations an average speed of approx
3 kilometers per second. Multiplying 3 by 83 gives 249
kilometers behind the calculations made at the table.
As regards the affirmed precise concordance therefore between the forecasts
obtained through classical calculations and actual experimental results
mentalities we have to surrender to the fact that this precise concordance

it has not been verified. On the other hand, consider that in the
train journeys often the calculated times and the actual times do not coincide
they give. But the discussion does not end here.
The classical space is considered uniform while the space
endospheric (electromagnetic field) uniform is not.
About the durations of the journeys in the spaceship it is necessary to bear in mind
that bodies moving towards the sky in the endospheric space are subjected
jets with an increasing intensification of the universal magnetic field
versale, which, by opposing a growing resistance, slows down, delays

the motion as well as the occurrence of expansion and contraction phenomena
tion.
Einstein said: «The field deforms my rigid rules». There
speed therefore varies without this being able to be warned or from
earth, neither by travellers, nor tampoco is easy (if not impossible-
bile) calculate the entity of such delays; however such slowdowns
partly compensate for it and balance the duration calculations, carried out
assuming that the space is uniform, and this by the equivalence (equal
mass gliance) between the endospheric and exospheric spaces.
The further one goes towards the sky in cosmic space,
the more the concentration of energy increases.
They correspond to constantly increasing endospheric densities
almost zero density in the classical space. From space to media
almost empty (Lámmel, Eddington) and featureless (cur-
vature) one passes to the natural space of variable curvatures; in
any field of nature the geometric straight line (a di-
mensione) is never observed.
1 two physical systems, connectable by geometric transformations-
that flawless have the same mass, but each has infinite extension

sion and enormously rarefied matter, the other immense power
za and spatial concentration tending to infinity.
One more consideration about inertia. It is stated that the
spaceships follow many inertials, i.e. without acceleration. In the
new system there can be no inertia in the classical sense. Already the
famous Faraday in 1837 gave a new address to the studies of
electrical phenomena that occur in the medium (whether it is empty or a
dielectric) attributing to lines of force ("tubes of force") which
they ply the middle, a real existence and not a simple value
geometric representation of the field.
An endosphere "inertia" corresponds to the Newtonian inertia.
pattern that the ship follows due to the nature of electromagnetic space
gnetic along the curved lines of the same spectrum ma¬
gnético (lines of force that are formed, for example, in a filing of
iron sprinkled on a sheet of paper arranged over the two poles
of a magnet). As for the joined starting points (see chap. I).
and upon arrival on the land of Sonde, they are the same with the me-
same directions in the two concepts of the world, given resogonality

of the geometric transformation, i.e. the angle with respect to the ground
lo under which the object both departs and arrives on earth e
the same in the two systems; the probe is going just as it should go
returning how and where it must return (Table XI).

Chapter VII

THE LAW OF CONSERVATION OF ENERGY - TERRESTRIAL DEPTHS - SPACE CURVATURES

The law of conservation of energy states that in no

in the process, energy is created or destroyed, remaining unchanged
ta the total energy (Mayer, Helmholtz, 1847).
The lines of force of the magnetic induction field produced
by a magnet they are directed from the North (N) to the South (S) pole,
outside the magnet and from the South (S) to the North (N) pole
internally.
In the Endospheric Theory, in the magnetic spectrum, at the pole
N is the Sun and at the S pole is the Stellar Centre.
The universal energies go from the Sun to the Stellar Center con-
arrived by a magnet (externally) and continue to the Centro Stel¬
lare and al Solé (internally). Energy circulates and this explains
the "eternity" of solar energy independent of any pro-
nuclear fusion cessation inside the Solé. There is a circular
tion of energy without any dispersion and without any phenó¬
less recovery.
In violation of the aforementioned energy conservation law
yes, in the classical system the energies start from the Sun and the Stars
and they disperse to infinity.
In Einstein's system, then, the Universe presents a curve¬
ture, albeit small; the infinite and unlimited space of the cosmos
logia Newtoniana is replaced by a still unlimited space
but finite in the sense that, starting in one direction, it
back to starting point.
Eddington defines the classical space as "empty" by noting that

there is an average of one star every 20 parsecs, one parsec being one
length of 30 trillion kilometers.
So the radius of curvature of the Einstein universe has a
length of trillions of kilometers, while the radius

of curvature of each of the lines of force of the electro-
magnetic (Endospheric Teoría), which permeates the universal space
le, has a maximum length in Euclidean terms of 6370 km (rag¬
terrestrial) and that is a curvature K = 1/r enormously greater
bigger than that of Einstein's universe.
If we consider the time that the energy of a force line
takes to return to the starting point, this duration is billions
of of years that is almost infinite; the law of conservation of e-
energy appears improbable, but this law is fully respected
in the Endospheric Universe where the eternally cir-
breakfast takes place in stark contrast to the dispersion of colos-
salt quantities of energy emitted by the Sun, the Stars and the Ga-
lassie in the classical system.
As can be seen in the drawing of the magnetic field pro-
drawn by a magnet, a field which, enormously enlarged, al-
tro is nothing but the universal space, the energies go from the Solé N
to the Stellare S center (externally) and continue from the Stellar Center
lare S al Solé N (internally).
Now in Einstein's system the return to the is not explained
starting point with a physical reason as it happens instead
in the Endospheric System, nor much less is the disper¬ explained
infinite fusion of universal energy. With this consideration-
tion can be affirmed that in the new system the circulation of the ¬
the universal energy, in harmony with the dictation of the law of con¬
conservation of energy, has an incontrovertible physical basis.
As to greatness in the new universe, we need to pause
on the word greatness.
For example, if we show a farmer an orange and he
we ask if its peel or its seed is bigger, he

he will say that it is the largest peel. But if we consider the seed in-

its potency, in its genetic content of innumerable plants

of oranges, then it will be better to accept that the seed is enormous

bigger than the peel.

It is a question of distinguishing in the word "greatness" the meaning

to of extension and that of power.

In the Endospheric Theory the Stellar Center has a magnitude

infinite za. Aristotle's act and potency return: Pinfini-

extremely large potential coincides with infinitely small

extend them.

If we refer to the center of the universe, we see it in his

geometric representation of Table XV, where the arrows ver¬

if the outside they indicate the Earth which is "smaller" than the center Sun-

Stellar Center, where all the energy of the Universe is concentrated

i know. We are used to a geometric conception, i.e. abstract,

of space, so it is unusual to see an extended center

sionally small, but, potentially, enormously large.

We cannot therefore use the compass to find the cen¬

tro of the Earth, which surrounds the universal space. We have to detach-

carci from the geometry that is used in the « uniform » space

me » which belongs to it, and therefore cannot be used for lo

concentrated, non-uniform space of the Endospheric Universe.

The Center of the Universe is the bipolar field Sun-Centre Stel¬

where Sun and Star Center are, with respect to the usual con-

classic concept, relatively close, but loses meaning in the new

concept of space The habitual idea of geometric distance.

The geometric figure needs to be interpreted. He returned

born to the idea of the size of the seed compared to the peel. observe-

do the terrestrial layers, those reached so far, one might think
that one proceeds in depth towards ever greater densities, se-
as well as in the Endospheric Theory the opposite is stated, because
energy densities and vitai are considered.
The greatest density, in this sense, is met with hand a
as we advance towards the Stellar Center and the Sun, in which
enormous amounts of physical energy and vitai are concentrated, such as

happens eg. in the seed of an orange, where we detect in the main
physical and vital signs, harbingers of innumerable plants, enormous sizes
memente greater than the size of the peel: inside the
seed germinate, like the human embryo, those energies
physical and vital that give rise to the prodigious phenomenon of life.
The Universe is a living organism where we find the power
Aristotle's tense and act: the infinitely small in extension
coincides with infinitely large in power.
Magnetic field produced by a magnet (Magnetic field of
to magnety. the lines of force of the magnetic induction field
produced by a magnet are directed from the North Pole (N) to the South
(S) extremely to the magnet and from the S. pole to the N. internally.
At the pole pieces the field is very in¬
tense.

Chapter VIII
THE SUN GIVER OF LIFE
Solar energy and its conservation
The Endospheric Theory allows us to solve the problem of
the constancy of universal energy, in perpetual circulation: the pro¬
problem of the energy emanating from the universal center and spreading

loses in the old system almost everything indefinitely remains instead
Resolved.
The amount of energy was calculated using the pyroheliometer
gía (solar constant) which reaches one cm 2 in one minute
of surface placed at right angles to the sun's rays and ap-
penalty outside the earth's atmosphere: a quan has been obtained
amount of heat equivalent to 1.937 calorie-grams.
The sun emits more than 100 billion energy every second
of billions of kilowatt hours, according to the classical system.
The flow of energy that the sun radiates in a year amounts
to 2.88 x 10 33 calorie-grams. «Near the center of the Solé, he writes
Deutsch, at a temperature of 20 million degrees Celsius,
atomic nuclei collide with such violence as to transform into
in each other.
The most important of these processes produce helium nuclei2
starting from those of hydrogen 1. They are the so-called cycle
of carbon and the proton-proton reaction.
By means of these thermonuclear reactions, 564 million
tons of hydrogen are transformed, every second, into 560
million tons of helium. Most of the 4 million

tons of helium which is thus dispersed every second, is con-
converted into radiant energy, and this flows, outside the su¬
incandescent surface of the Solé, at the rate of half a million minutes
billions of billions of horsepower. Of this colossal quantity
tá of energy the Copernican Earth receives a tiny fraction, even
less than two billionths; planets receive a few dozen of
billionths. «Where does the radiated energy migrate, writes Lámmel
from the sun? Only a very small fraction reaches the Earth

and on other planets. Energy really sinks into nothingness
infinite and unreachable?…».
The problem of the solar energy source and its refuelling
classically remains unsolved. And so it remains for Armellini too,
while resorting to the Theory of Relativity, which for reasons
we are not here to develop complexity. This dispersion-
ne of energy, which we have already dealt with, is in contrast with the
great "law of the parsimony of nature" as he called it
Maxwell.
According to the endospheric theory the energy of the magnetic field
co universal, like the lines of force of the induction field
magnética produced by a magnet, circulates externally and in¬
ternately to a magnet connecting the Sun and the Stellar Centre:
an indisputable solution.
The chlorophyll synthesis
What makes all manifestations of life possible on the
earth, says Mezzetti, is the continuous replenishment of solar energy
re, which is utilized through the chlorophyll synthesis.
We now proceed to a brief scientific description of these
this process.
When a body has the ability to do work, yes
he says he has energy.
The master builder has energy in his muscles, the drawn bow has the e-

energy in the elasticity of its fibers, the car engine has
energy in the petrol in your tank.
Energy is the ability to do work; then the energy
turns into work and work turns into energy, lnte-
we give the height from the ground by position, i.e. the relative height

to a pre-selected quota considered as «zero quota» of reference
chin.
The energy of position possessed by a body depends on: the
quantity of matter of which it is made, i.e. by its mass, by
so-called «attraction of gravity» to which it is subjected, by
the height at which the body is with respect to the reference system
chin. An example of a cycle of transformations of a certain quantity
type of energy in work is that of a «roller coaster», a yes
stem which, like the pendulum, transforms the energy of position into
kinetic energy and vice versa.
However, we see that perpetual motion is impossible. If an-
let's touch the wheels of the roller coaster we discover that they are
if, during running, they have heated up due to the effect of friction. That-
This in turn produces heat, which is an energy called ener¬
already thermal.
For the same amount of positional energy lost from
weight, a certain amount of water heat is always produced
stopped by the water in which this weight is immersed. Joule got
this result by measuring a certain quantity of water falling
ta, the rise in its temperature and the distance covered
from the falling weight.
Even in the case of the pendulum or the Penergy roller coaster
position of the trolley or of the rails is transformed into energy ci¬
netic and this, due to the effect of the friction of the air (pendulum) or of the ¬
the rails (cart), is transformed into heat, i.e. into thermal energy
approx. Energy, like matter, is conserved: it is not created, neither
it is destroyed but it is transformed. The principle of conservation of
Energy can also be expressed like this: in a closed system, that is
without relations with the outside, the sum of all forms of energy

already remains constant.

A direct source of heat is wood combustion, but
it must exist within the wood before burning. The-
Thermal energy is released from wood when it transforms
into ashes (salts) and smoke, that is when its large organic molecules
niches are reduced to simpler molecules such as C0 2 (anhydri-
de carbonica) and H 2 0 (water). Big molecules have
another form of energy: chemical energy. To possess energy
Chemistry is the combination of wood and oxygen. The combination of ash and soul
dride carbonica, which results from combustion, is free of oxygen-
geno and can no longer burn or produce heat.

One of the characteristics that distinguish living beings is theirs
possibility of "making an effort". A being is alive if he can
release energy by performing certain actions. Even the stones on the tor¬
kings have energy, but they don't go up there spontaneously
and when they fall to the ground they remain inert.

Heat production is a hallmark of life.

From his accurate measurements Lavoisier, observing that a topoli¬
no or a lighted candle (inside a closed bell) consumes
the same amount of oxygen while also producing the same amount
tity of heat, he came to the conclusion that « breathing is in
actually a form of combustion, constituting a process for
exactly similar to the burning of a candle, and therefore it seems that
we breathe feeds the inner flame of life that sustains us
neither hot».

What is burned in the animal organism? Lavoi replied
whey: Foods. All foods are compound substances that
contain carbon and, when burned in the laboratory, they produce

dride carbonica and water, i.e. the same gases produced by respi¬
animal ration.
Foods possess chemical energy: with the contribution of os¬
sigen introduced with respiration, the transformed organisms
turn this chemical energy into heat and into work. Where did it come from
nor the chemical energy of foods? The wood, the sugar, the

organic rooms on which the food feeds are produced by the
plants. With their roots, plants absorb water from the ground;
with the leaves they absorb carbon dioxide from the air.
Starting with small molecules like PH 2 0 and C0 2 I plan them
Green teas build the more complex molecules of the or¬ substances
ganiche. From this manufacture or sirtthesis remains the oxygen which
is poured into the air. Small molecules H z O and C0 2 do not
they have energy; the large organic molecules on the other hand possess
I donate chemical energy. The production of oxygen only takes place
when the plant is illuminated (it does not emit oxygen in the dark).
Light is also a source of energy; the sun is an im- phone
table of energy that only reaches the Earth in the form of light
through space. Leaf cells contain green granules
of a substance called chlorophyll (in Greek chloros = green). In
presence of light, chlorophyll favors the «disassembly» of
small molecules of H 2 0 and CO z by recombining the atoms of
C, O, H in larger molecules of organic matter.
This process of fundamental importance takes the name
me of chlorophyll synthesis or photosynthesis: this is the mechanism
by which green plants produce organic substances
that are necessary for all living beings.
But it is also the mechanism by which green plants

store the energy of the sun in food, transforming
la in chemical energy. The various forms of energy are transformed
one in the other but they are neither created nor destroyed; they in certain
transformations produce mechanical work or muscular work.
In the chlorophyll synthesis the energy of the sun plus carbon dioxide
bónica organic substances produce more oxygen than possible
sit chemical energy.
In respiration organic substances have more oxygen
gift chemical energy that produces muscle energy, tér¬ energy
mica (heat) plus carbon dioxide, plus water.
This is the biological cycle.
What makes all manifestations of life possible on the
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Earth is the continuous supply of solar energy. This energy
already is transformed by chlorophyll synthesis into chemical energy
ca, which is available to plants and the animal kingdom.
Therefore the continuous supply of energy necessary for the
life comes from the sun, which is experimentally and scientifically
you are the giver of life.
The universal balance
Not only does the rebalancing and constancy of the united energies
versali, but this also happens in terrestrial nature. Yes pro
however, there is a tendency towards an imbalance on the horizon: im-
many resources are destroyed or left unused.
The riches annihilated by the debauchery of vast sectors of the
society, which aim only at their material well-being, with the re-
a result that more than half of mankind literally lacks
the bread. Science has provided formidable tools to make
life to large human masses is more acceptable, but the politics man¬

he holds in the hands of the exploiters immense goods, leaving them as prey
to fame huge crowds of men and children abandoned to alia
more ñera misery.
Is all this really inevitable?
Is all this really a fatal disharmony?
The ancients looked to heaven as the kingdom of happiness
and harmony, just think of Pythagoras. It overlooks that the sky,
with its superior harmony not only in its functioning,
but also in the supreme supply of energies, it is a harbinger of life.
It is necessary to look to the sky to recompose the peace and harmony of the
world. An example, one of many, which is offered to our attention
tension, is the destruction of boundless goods due to egolatria
individuality and the ruins of wars.
A relevant example is the existence of inexhaustible sources of
tá consisting of animal and human waste which, instead of being

used wisely for the fertility of the earth, are ac-
accumulated and rendered not only useless but harmful and polluting. Come
huge quantities of waste are introduced into the seas, rendered useless in¬
instead of being used for fertility that the earth is always ready
ta to provide with an unmatched generosity. Humanity is limited
tata to look at the sky in its significant symbols, in particular
the Sun which comes to express itself in the symbolic manifestations
that of the cleric and in the tonsure of priests, in the headdresses of
the other prelates, in the Postia, in the monstrance and on the head of the goddess
Hathor of Dendera Temple. The Sun is there, always generous,
to enrich the crops, to make beautiful in the eyes of humans
the spectacles of nature, to give us the true wealth that is there
life lived according to nature. We must abandon the imbalances

perverse and contemplate the supreme example of harmony, offered to us
from the sun.

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Chapter IX

THE DAY AND THE NIGHT AND THE WAVES SEISMIC

Table XI illustrates day and night in the two systems. Like the
Rectilinear rays of the exospheric sun illuminate only one hemisphere of the
Convex earth, so the curvilinear rays of the endospheric sun illu¬
they undermine only one hemisphere of the concave Earth.
The other hemisphere of the convex Earth is not illuminated
because it is not reached by the sun's rays; the same happens
in the other hemisphere of the concave Earth, which remains in shadow however
because the sun's rays fall vertically at noon and gradually
pre more oblique until tangentially touching the ground in the points
corresponding to the hours of 6 am and 6 pm; beyond these points not
they no longer touch the ground but spin in space until they reach
the other source of the universal field, which is the Star Center.
From the night side, due to the curvature of radiation
bright, a large funnel-shaped area with walls is observed
curves (similar to a double point pseudo spherical surface
conical) which remains devoid of solar rays: these radiations, which surround
flow into the high spaces of the night side, explain the luminosity
tá of the night sky with no clouds and no moon.
Table X illustrates the horizon system or the method
to coordinate the celestial degrees with the degrees of the vault's arc
sky. The construction of an astronomical system of the European space
clideo requires only one circle or concave arc on the vault of the sky.
In the endospheric space we must instead employ two yeses

stems of degrees, one connected with the observation point and the other
connected to the Cosmic Centre, from which the radial lines extend
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gift on the surface of the concave Earth. So there are degrees
celestial and degrees on the arc facing the celestial surface.
The stars, located in the depths of cosmic space appear
not projected, in different points, on the great vault of the sky, which
it seems to cover the world.
Thus, for example, the small semicircle ABCD appears
re enlarged and extended in the semicircle A'B'C'D', whose
degrees are the same as the concentric minor semicircle
king; thus, for example, if the Solé is placed in A it appears to arise in A'; alie
9 am will be in B but appears projected in B';CeC' is found-
compartment at zenith.
Any object seen in space appears to be in the dis-
direction with which rays enter the eye or darkroom
of a camera.
In this way a star in B appears to be in B' at an altitude
45 degrees above the horizon. This happens because the star, finding
doses at 45 degrees in the starry sky, sends its rays downwards and ver¬
know the exterior by penetrating these into the eye of the observer below
10 same angle. Having as a fundamental line of observation
tion the curvilínea tangent, together with a complete and precise
system, which coordinates the celestial degrees with the terrestrial degrees, can be
I am now applying this geometry to the Matemática astronomy with
the certainty of obtaining results that are not only exact, but correct.
The phenomenon of seismic waves whose effects are known is known
felt at the antipodes (or anticephalous) and almost at all in the areas in¬
term. Suppose the underground explosion occurs

in point 12 (Tab. XI) with a significant extent of its effects
not before / and not later than 11\ within this space pass the
lines of force of the electromagnetic field and are reached by
lines of action of the explosion by which they are warned
at the antipodes (or anticephalia) around 12 (see in Table XI
11 circle passing through 11). Before and beyond the interval 1-11 passes
no lines of force with greater distances and therefore are not rag¬
arrived from the signals of the explosion felt between 1 and 11.

Chapter X

«REVOLUTION» AND «ROTATION»
OF THE EARTH
- FOUCAULT'S PENDULUM -
IMMOBILITY OF THE EARTH

The motion of "revolution" of the Earth - For the purpose of rendering
the "revolution" motion of the Earth was evident, were devised
different experiences. Famous that of Michelson and Morley, pro ¬
position of which Francesco Severi (6) observes: «That the thought
of Einstein received the last decisive impetus to build
tion of the Theory of Relativity is due to the desire to explain
re the negative result of the famous experience of Michelson and Mor¬
ley and has very little importance all the more so that a more detailed
Examination shows that experience itself cannot discriminate
The basic hypothesis of Special Relativity from the contrary hypothesis,
called ballistics, of the composition of the speed of light with
that of the source".

Trouton and Noble proved with great accuracy the non
existence of a rotary pulse on a suitable capacitor
suspended, which the classical theory of electrons predicts al

moment of charge as a consequence of the translational motion of the
Earth. Orienting in an oblique direction, with respect to that of the motion
of the Earth, a plane capacitor, charged, according to the theory of
tronics, one should observe a force couple tending to
move the surface of the capacitor parallel to the motion of the
Earth, which instead is not observed at all.
Trouton and Rankine set out to highlight the
presumed change in electrical resistance of a conductive wire
tor oriented now parallel, now normally, alias dire¬
tion of the motion of the Earth. Also this experiment, like all

the previous ones, had a null result.
In the Endospheric Theory it makes no sense to propose the hypothesis
thesis of the motion of «revolution» of the Earth. The negative result
of all the experiments devised to prove this supposed «ri¬
volution" is entirely predictable.
The stable Earth is the frontier of the Universe.
The Solé, together with the endospheric sky, revolves around the center
stellar, but does not complete closed circles, but a spiral of
about 180 rounds. At the two extremes of this spiral we have the two sol-
stices; halfway the two equinoxes (see Plate VII).
The movement of "rotation" of the Earth on itself - In my
volume II Problem of Space and the Conception of the World,
published 25 years ago, on p. 274 I mentioned the relativity of
ti which could lead one to think that it was the inner sky rotating
re remaining stable the Earth. This hypothesis I wanted to neglect for
avoid a further «shock» to the reader, especially since the rotation
At first it didn't seem to me that classical music involved tea
but fundamental of the Endosphericity of the Universe.

The book came out with the admission of the classic rotation. But more
later I had second thoughts: the stability of the Earth and rotation
of Heaven I not only deemed them admissible, but capable of explaining,
moreover, the phenomenon of falling bodies towards the east and the oscillations
actions of Foucault's pendulum.
The Earth, in the Endospheric Theory, does not move: it rotates in¬
instead the inner Heaven from east to west.
As for the flattening of the Earth at the poles, Ein-
stein wrote: «As in uniform motions there is no way to know
who is at rest and who is in motion, we can say that also
in accelerated motions there is no possibility of establishing who accesses
ra and who stands still.
Thus we come to generalize the principle of relativity.
We can then say that the bulge of the equator is not
caused by the rotation of the Earth on itself, but that instead
the celestial cap, rotating in accelerated motion with respect to one

Firm land, it causes the equatorial bulge».
Free fall of bodies towards the east (Galilei) and the oscillations
of Foucault's pendulum
If on any given day we observe the Sun and the Moon, we will see,
eg, at a given point in the sky come the Sun followed by the
Moon and if we observe the phenomenon the following day we will see
still the Long come after the Solé, but, than the day
previous, its distance from the Solé has increased; the moon there
seems to have lagged behind; its westward path is slower
of the same westward journey made by the Solé. This re-
lagging behind the Solé determines the phases of the moon.
In the new conception the entire internal Universe (remaining

stable the Earth) rotates from East to West, Moon and Sun com-
taken; but the predicted phenomenon makes us see the Moon stay in
behind the Sole; the Moon appears to move eastward.
Análogo fenómeno takes place in the free fall of heavy ver¬
so oriente , where the vertical thread of Galileo's experiment has
the role of the Sun and the grave the role of the Moon. All space
endospheric rotates from east to west, vertical thread and grave com-
taken, but the grave with respect to the wire remains behind towards the east,
and that is, it appears to move away from the vertical animated by a motion
East-West a little slower than the motion of said vertical, which is solí
dale with the universal space equal to the plane of oscillation of the
Foucault pendulum.
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Chapter XI
BIG-BANG - PULSAR - QUASAR - HOLES
WHITES AND BLACKS - HUBBLE E'S LAW
EXPANSION OF THE UNIVERSE -
CHRONOTOPE
Neir/po/esf of the uniform cosmic space and, therefore, in the
hypothesis of the rectilinearity of light radiations astronomers
classics have come to the so-called discoveries of new and extraordinary
dinars stellar objects, such as «pulsars» (neutron stars forming
ti of hyperdense matter and rotating on themselves at high speed) i
«quasars» (which are found at the extreme limits of the cosmos and emit
tone of the enormous quantities of energy) and the Black Holes of Gra-
vitation (in which matter becomes invisible); the professor. Below-
seppe Arcidiacono writes on the subject: «everything calls into question
sion the current laws of physics and requires new and more advanced
theories capable of explaining everything that is 'observed' in the sky».

On the assumption that a star runs out of fuel
nuclear power, three possibilities can arise depending on the
its mass; if the star has a mass of less than 1.2 solar masses i
we have a "white dwarf" with a density in the center of the order of one
ton per cm 3 .
If the mass is between one tenth and double the mass
sa solar the star turns into «pulsar» or neutron star
with density equal to at least 1 billion tons per cm 3 (pa¬
rí to the density of the atomic nucleus).
If the star has a mass much greater than that of the sun
gravitational collapse will occur with consequent formation
tion of a Buco Ñero.
Giuseppe Arcidiacono relates what Zichi has shown
who: «if Black Holes exist...» and since a physical law must

valid forever and for everything, and therefore also for the Universe, if
this undergoes the collapse and disappears into thin air where they end up
physical laws? Archdeacon wonders.
The phenomenon of gravitational collapse can occur at three le-
levels: 1) on a cosmic scale, 2) for individual stars or galaxies; 3) a
microphysical level, i.e. at the Planck wavelength (10 —33
cm).
In case 1) the collapse of the entire Universe is the process of
Buco Ñero, that is the inverse of the White Hole of the great explosion
sion or Big Bang. In the hypothesis of a cosmic evolution we have
two processes, mutually inverse, i.e. the process of "expansion"
resulting in the dispersion of both matter and energy ed
a contraction process that produces a concentration of
matter and energy.

These processes would take place at high speed and would give rise to
go to the Buchi Bianchi formation with sudden and continuous
«appearance of matter and energy from nothing». In nature there would be
drink three types of particles, the brads with speeds sub-c (protons,
electrons...), luxons with speed c (photons, neutrons...) and ta-
kions with hyper-c speeds like quasars.
Let us now dwell on the expansion of the Universe and on the law
by Hubble.
The immense swarm of galaxies is not static, but continuous
expansion : this phenomenon is the most "bewildering" discovery
of the 20th century and constitutes the debated point of the various theories
cosmological.
Using the Doppler effect, between 1912 and 1917, Slipher re-
scl to calculate the radial velocity of 15 galaxies and found that it al-
they were far away from us at the speed of several hundreds of Km.
per second. In 1928 the comparison of Hubble's calculations of
galactic distances and those of Humason on the displacements' spec-
among them led to the discovery of the Hubble-Humason law based on the ¬
ia which is the velocity V of a galaxy, i.e. the entity of the displacement
ment towards the red, it was not random but it was proportional

le at its distance from us:
V = ox
and the factor o of direct proportionality is called Hub constant-
ble or recession constant.
In 1957, the maximum recorded escape velocity was 120,000
km. per second, which is 2/5 of the speed of light. The law
of Hubble, writes Professor Giuseppe Arcidiacono, «results
thus established on solid experimental bases».

We cannot share that conclusion: all the talk
which antecedes is not based at all on «experimental» bases, however
because everything is based on the hypothesis and the conviction of the reality of
straightness of light and spectral radiation, what has-
proved to be unacceptable.
No «solid» experimental basis, therefore, no «expand-
sion of the Universe» but rather a phenomenon of concentration
energy towards the Stellar Center. The interpretation of the
The red shift of the spectral lines is only a hypothesis based on
sata on a flat Euclidean space of the classical world.
The same can be said of the "observed" masses and of all
consequences that such "observations" entail.
In Chapter XII we will speak of Newton and his theory with con¬
sequences acceptable by a reconstruction of the space not
Euclidean of the Universe. The appearance of matter and energy «since
nothing" is absolutely inadmissible. The new space, as you see
we'll say again, it's not inertial.
The idea of the Big Bang tends to describe the beginning and the end
of the Universe reaching the singularity of maximum expansion
and then reversing its motion towards the other singularity, the massi¬
but compression (black hole). But the Universe truly has a
beginning and an end? The law of conservation of energy (Chap.
VII) would exclude it.
The idea of the Big Bang tends to describe the beginning and the end
of the Universe reaching the singularity of maximum expansion

and, then reversing its motion towards the other singularity, the maximum
but compression (black hole). But the universe really has a
beginning and an end? The law of conservation of energy

excludes it.

In the prestigious volume by Jacques Merleau — Ponty «Co¬
smology of the 20th century". (II Saggiatore, Milan, 1974) reads:
«a certain disappointment is experienced in realizing that it is right in the
cosmology that we find the most disparate and contradictory theories
stories and that there is complete disagreement on fundamental points
such, such as e.g. about the question of finite age or in¬
finite nature of the Universe and of the law of conservation of energy».

Space-Time or Chronotope

A contradiction is detected in ascribing reality or ir-
reality in space-time or chronotope. We need to refer to the pa¬
role of the well-known physicist Percy Williams Bridgman on p. 16 of his
«The logic of modern physics» Ed. Einaudi: «Ragionamenti
purely mathematical can never give physical results, what if
something physical comes out of mathematics, it must be there
previously introduced in another form. A mathematical formula
ca by itself says nothing.

Mathematics is only logic.

Mathematical passages are subject to the laws of logic.

E.g.: ax + by + c = 0 does not say anything if it does not first assign-
mo ad x and y the variable size character and aa,b,c the ca-
character of constant values; The aforementioned expression can mean
a straight line or a plane depending on the meanings we give to the
lative variables and constant ones, and moreover if we refer to a
geometric entity in one or two dimensions.

The Pythagorean relation, characteristic of Euclidean space

$l 2 = x 2 + x 2 + x 2$

it can be extended to abstract hyperspaces in 4 or more dimensions
arriving for example at the space-time invariant with the addition

of a new independent coordinate from the other 3 and proportional-

nal at time ct = x 4 where c is the constant speed of light. 11

new 4-dimensional invariant also Euclidean é

(1) P = x 2 + xj + X* + x{

to express the constancy of the speed of light Einstein and Min-

kowski the following condition

(2)

xj + x2 + x2 = ^

c 2

expressions and that, multiplying both sides by c 2 , can write

verses

x2 + x2 + x2 — x2 = 0

Einstein admitted the expression,

(3) s 2 = x 2 + x 2 + x 2 — x 2

where s is the distance, squared, of the space-time of two points;

except that this new invariant differs from the classic (1) by

the sign of the time interval, squared, x 2 . The two invaded

rianti (1) and (3) have a very different meaning. The annulment

della (1) says that: two events coincide (occur in the same

place and at the same instant), while the vanishing of (3) says that

the two non-coinciding points can be joined by a radius

day of light.

Let us dwell on the relation ct = X 4 and examine one

contradiction inherent in (3). The x< assumes only apparent-

mind analogous character to the other 3 coordinates, characterizing

spatial distances while x< is given the character of an in¬

time interval, even if it is interpreted as a distance for

the fact that it is the product of a constant number «understood» as

the constant speed (of light) for a time.

Equation (3) tends to make spatial quantities considered homogeneous

tials and the temporal one in spite of the the clarification that space is time there are fused but not confused. Space and time are great dexterities of a different nature even if the mathematical formulas alone they do not specify this difference.

These formulas have led to erroneous interpretations per¬ because space is obviously something other than time. It is said: «lá do- where there is space there is also time» and concludes with Vente qua- Minkowski dimensionality. In the word «four-dimensional» there is a serious error: by size we mean the extent of homogeneous entities, while in fact (3) is not constituted from homogeneous entities having the first 3 terms spatial significance and the 4th term temporal meaning while imposing the meaning of a space to the product of a constant number c by t «just stificato" from the circumstance that this constant number is the ratio to numerical between the measure of a space and the measure of a time, that is, the "held constant" value of the speed of light.

This velocity, the basis of Special Relativity, is contradicted ta by the same supporters of this Relativity who introduce the so-called «multi-temporal universes» in which one considers given increasing values of c: c, c', c”...; moreover it is attributed to the tachyon particles a hyper-c speed, higher than «insu- perable" of c. The fact that «where there is space there is also time po» does not modify this contradiction; there is not only time, where there is space, but also a temperature.

If a «four-dimensional entity» could make sense, it wouldn't sees why the time dimension has, as such, a position

of privilege compared to other quantities of a different nature:
of the term four-dimensional I would propose not to make more use of it. There
Minkowski diagram cannot be accepted in the context of
a physical truth. There is a geometric need to identify in the
10 space-time a certain privileged temporal direction.
The fact of assuming a fundamental physical orientation of the
time variable establishes a limit to the recognition of time
as a geometric entity since there is an insa-
ninety two
a notable contrast between the irreversible orientation and the substantial one
typical reversibility of all spatial relationships.
It will be said that if space-time is not real, one cannot
understand why it is a useful mathematical representation.
In fact, modern and large machines (betatrons, synchrotrons, ci-
clotrons, linear accelerations of resonance, etc.) which are im-
bent in the laboratories until they are given corresponding speeds
teeth at high accelerating voltages, would seem to constitute a
confirmation of (3) of special relativity.
It is a "modus operandi": in other words, the big ones
accelerator machines only work if designed according to
laws of relativity. In these laws, however, keep in mind that
it is about the reality of an irreversible time and that the experiments
are necessarily carried out on short journeys.
There are relations of Special Relativity that cannot
be tested for laboratory experimentation. Consider-
mo e.g. the relativistic relationship
where x and x' are the times computed by two operators located on two
set Fuño in motion with respect to each other, there is the speed of light,
v is the speed of which one of the two mobiles is animated with respect to the Fal-

tro. When v assumes the value of c the expression of the radical becomes equal to zero, therefore the first member is also cancelled. This is the reading of the (abstract) mathematical formula. How much expressing a reality is another matter. Time did not arrive never stay!

Relativistic space-time or chronotope constitutes an element useful, but not true.

THE

Chapter XII

COPERNICUS - KEPLER - NEWTON

The image of the Universe has been developing and changing singing over the centuries. Neglecting the primitive images, in IL se¬ cólo after Christ the geocentric system of Claudius To- lomeo. In the 15th century Nicolaus Copernicus, Polish from Thorn (1473- 1543) reproposes the heliocentric system, already proposed in IV century BC by Aristarchus of Samos. In the sixteenth century almost temporary arise Galileo Galilei of Pisa (1564 - 1642) and Gio- vanni Kepler of Würtemberg (1571 - 1630). Galileo, father of physics and modern natural sciences, founder of the spe- remental, it promotes Copemican ideas. It was he who discovered the law of inertia and that of the free fall of bodies in the gra- vitation.

1) Kepler

Kepler discovers his three famous laws of motion of the planets. The el- planetary life had required an enormous effort from Kepler to emerge from the chaotic mass of data on the motion of Mars, which he he had inherited from Tycho Brahe. Kepler's task was the following following: on the basis of Thyco data, which is the simplest curve

What is it that inludes them all? In all theories of Mars, up to this one of Kepler included, there was only one focus for the orbit. We have to distinguish between Kepler's physical hypothesis, i.e. that Mars describes there is an oviform figure around the Solé, and its maternal hypothesis-

tics, which involved calculations with a perfect ellipse.

Kepler's decision to treat observed physical phenomena as approximations to mathematically exact conceptions yes transformed after him into a typical property of scientific investigation typify. Kepler had initially identified the orbit of Mars in an oval with one fire, and only after keeping unsuccessfully to directly find the quadrature of the oviform curve he conjectured that assuming the sensitive ovoid mind equal to an ellipse of the same eccentricity, the lúnu¬ the cropped from it would have been little different from the one cropped-from a perfect ellipse: the defects of the upper part are com-thought almost exactly from the excesses of the lower part of the Povoide Plate VIII. Since ancient times men have imagined born the curves as responding to laws as far as possible plici: between them, near the retia and the circle, Pellisse and the hyperbo-the. With Kepler we see these shapes made in the trajectories described by celestial bodies, at least, as Einstein writes, with great ¬ of approximation.

2) Newton Isaac of Woolsthorpe

In 1642 Galileo died and Isaac Newton was born. Before New¬ ton there was no well-defined system of physical causality, capable of grasping the deepest features of the world of experience za. Kepler's laws explain the motion of the planets around the Solé (elliptical shape of the orbit, equality of the areas described

in equal times, relationship between the major semiaxes and the duration of the
route), but these rules did not satisfy the condition
necessary of causality. They are three logically independent rules
teeth one from the other, with no internal correlation; refers-
they respond to the motion taken as a whole and not already in the sequential way
according to which the state of motion of a system in a given time
ment derives from the state of the motion which immediately pre-

succumbed.
They are integral laws but not differential laws.
The differential law is the only form which fully satisfies
to the necessary condition of causality of the modern physicist. There-
had the clear conception of the differential law, as written
ve Einstein, is one of the greatest merits of Newton's genius.
An admirable effect also had the observation that the cause
of the movements of celestial bodies is identical to gravitation. Three
moreover, they were the weak points of the Newtonian theory: space
absolute, the introduction of direct forces acting instantaneously-
mind at a distance, the absence of an explanation as to why I weigh
and inertia of a body are determined by the same magnitude,
the mass.
3) Maxwell James Clerk of Edinburgh
Newton's theory of motion, taken as the foundation of
all of theoretical physics, received its first blow from theory
of Maxwell's electricity. It was found that the reciprocal actions
exerted between bodies by electric and magnetic bodies are not de¬
terminated by forces acting instantaneously at a distance, but
by phenomena that are transferred in space at a speed of
finished.

An ele¬ has been added to the material point and its movement
physical ment, the «field», a fundamental concept in a pri¬
We spend some time on mechanical conceptions but then the «cam¬ is conceived
electromagnetic type» as the last irreducible keystone
of physical reality.
4) Einstein Albert of Ulm
f
The three weaknesses of Newton's theory disappeared with
97
the advent of Al¬'s ingenious Generalized Relatívitá theory
berto Einstein which implies a complex matemá¬ development
tico, which can be read in numerous treatises.
5) Validity of Kepler's and Newton's laws
In the endospheric concept we have the same quantity of mass con-
siderata in the exospheric concept with the relevant circumstance that
the mass of the Exospheric Universe has an enormous density on average
less than that of the mass of the Universe Endospheres¬
co. Kepler and Newton saw the sky the same way that
we all see it, including of course the theorists of the En¬ Universe
dospheric.
We have given the example of the flat mirror: the image
that we see in the plane mirror is apparent. Among the objects redi
(neighbors) and virtual ones intercede the well-known Cartesian laws
of reflection.
The reflected image of an object has the same size and
the same shape of the object itself, but it is reversed. The tra-
geometric shape technically leads to the same results
tati: we see in the sky the images of celestial bodies which, however, are
not only virtues; to have redi images apply the procedures

geometrical elements developed by us and the analytical technique that is
read on p. 238 of the book «The problem of space and the concept
tion of the world" no. 12. The sky is not a mirror but his
images can be assimilated to those reflected by the spec¬
chio, with some important considerations: the space you see
mo is not Euclidean; it undergoes phenomena of expansion and con-
traction, which is not felt directly, because what
we feel it is only the Euclidean image of celestial objects.
But from the Euclidean virtude image one can pass via geo¬
metrics and analytics to the corresponding redi images.
When Newton contemplated the sky, he clearly configured

he keeps in his mind not the real images but the virtual ones of the gods
celestial bodies whose distances, masses and volumes had to be re-
conducted to their representation of crimes.
The transformation by reciprocal vector rays and the corresponding
teeth real phenomena could only be considered in partiré
since the last century with the advent of Maxwell and other famous mathe-
math and physics. The real masses as well as the real distances are obtained
they are applied by applying the geotransformation to the virtual images
metric. Therefore Newtonian laws are still valid in the new
vo concept, but this validity occurs after submitting the
Newton's formulas to the aforementioned transformations, both geometric and
physical. The Big-Bang phenomena of the expansion of the Universe,
and of the expansion-concentration of virtual zones.
The second law of dynamics
F = me
it is the sum work of Newton who with this mathematical formula
expresses the concept of strength. The constant ratio m between F and

acceleration a comes from Newton's ingenious intuition as well as from
experimentation.
When the acceleration of a body is zero, as assumed
neva were in the classical cosmic space, there is inertia; in the new
vo concept instead the path of objects thrown into space
they never have inertia due to nature itself in space
cosmic, chap. YOU.
Binet's dinámica formula (known to Newton) says that the
force acting on a Planet is given by
f = _ mc2 [1 + d21 i
v 2 lr d0 2 J
which expresses the radial acceleration multiplied by the mass m
in the case of central motions by means of geometric elements of the trajectory
history. With mathematical developments that we don't report, we move on to alia
99
formula
,, me 2
from which Newton drew the famous formula of Gravitation
Universal
_ r mM
F = — f-=7
Y 2
I omit the complete technical development leading up to this form
mula limiting myself to giving only these few passages.
The validity of Kepler's and Newton's laws in the en-
dospheric arises from the fact that those laws are based on a con-
perception of virtual phenomena which, translated into non-Eucli-
gods, provide us with the corresponding real phenomena. The mass of
exospheric cosmos is quantitatively equal to the mass of the co-

endospheric smo. The mass of the exospheric bodies reaches the density of distant bodies with values billions of billions of times smaller ri than that of the air. Flights of bodies are classically considered giants with densities close to zero and velocities greater than that of light (quasars). These incredible values of density and speed cities are calculated, not measured. The masses of the bodies endospheres reach very high densities with expansions and con-concentrations of matter due to the nature of the universal field (Plate X). In the classic concept we get to conceive «the creation tion of matter of nothing»! In the new concept, celestial phenomena instead they are linked to the nature of universal space. This is one of the aspects that radically differentiate the two concepts tions.

I cannot close this chapter on Copemico, Kepler and New¬ ton before mentioning more closely the exceptional personality of Isaac Newton who emerged in the group of eminent scientists co¬ me Boyle, Halley and Hooke known for their works on the wire¬ natural sofia.

After spending a few years at Cambridge, Newton had held the first degree and a scholarship returning then in the his small Woolsthorpe property where for the first time he tried to know the forces that regulate and govern the movements of celestial bodies. From his first works on the problem of gravity tion around 1665-66 Newton will keep a moving remembrance do: “I was then at the apex of my creative force and I never tried plus such a passion for philosophy”. The fall of the apple, done banal in itself, brought that mind, sharpened by the study god, from meditation and from the numerous discoveries, to elaborate

tion of one of the most extensive syntheses in the history of science. An¬
that that apple was subject to the same force of gravity as yes
opposes the flight of the boldest birds. So why is his effect
fect shouldn't have been heard even much further away-
no, even in the orbit of the Moon? The Moon could be considered
rate as a land projectile launched horizontally with a
enough speed not to make it fall back to Earth and push it
further and further away. What was true of the Earth and the Moon
Couldn't that also be true of the Sun and the other planets?
This question had not been considered by Galileo. Newtons
he then set about calculating the attraction that held the Moon ed
the planets in their respective orbits. Taken as a starting point
proof of Kepler's discovery that plants revolve around the Sun
according to elliptical orbits. But for this reason their movement
generates centrifugal forces directed towards the outside of the ellipse. huy-
gens in 1659 had already provided the mathematical expression of such
forces relative to the simplest expression of movement
circulated, but only published the result in 1673 in the work Hor-
logium oscillatorium. Newton calculated these forces and realized
tó that to hold the planets in their elliptical orbits around
the Sun needed other forces, such as directed centripetal forces
towards the interior of the ellipse, more precisely towards the Sun, we managed
I try to give them a perfect balance. But since he was not able
do to calculate the centrifugal force of the movement according to a

ellipse, studied the simplified system of the circular orbit, then cal-
the centrifugal force that was supposed to hold a plane
ta in its orbit, based on Kepler's third law. I find
that this force is inversely proportional to the square of the

distance from the planet to the Sun. New calculations would allow him
I know I find that gravity wasn't enough to determine
exactly the central force needed to compensate for the force
centrifuge exerted on our satellite by the rotation around
On Earth, Newton temporarily set aside the calculations he had begun
to devote himself again to the studies of light. Around 1671 Fa-
French astronomer Jean Picard measured the length of one degree
meridian, work undertaken on the initiative of Louis XIV in se-
following the founding of the Paris observatory in 1667.
I was aware of the results observed by Picard, discussed alia
Royal Society in 1672, Newton returned to Cambridge to redo
his calculations. Realizing that he was about to reach a conclusion
sion his emotion reached such a paroxysm that he asked a
friend to finish them for him. This time the value of the force it
held the Moon in its orbit was exactly determined:
indeed if a stone could be carried sixty
terrestrial radii away from the Earth, would fall in the same
so point and with the same speed of the Moon, if it were
suddenly arrested in its course. Newton was convinced
thought that only the force of gravity held the moon in his
orbit, even though already then presenting the law of universal attraction
pour them. He did not possess any evidence at that time.
general situation and well appreciated the importance of what he did
resembling Earth and Moon to point-like massesL It was, however
to decide whether to calculate the distance between the Earth and the departing Moon
do from the respective centers or from their surfaces or if necessary in¬
instead use another derived quantity.
In 1673 Newton's attention was drawn to the studies of Huy-
gens, who had formulated the laws of circular motion. The-

expression of the centrifugal force proposed by the great scientist

Dutch was essential to solve the problem of gravity
universal tion. Already the knowledge of this expression is the third
Kepler's law, which describes the proportionality between the squares of
times of revolution and the cubes of the great axes or the radii, in the case
of circular orbits, allow to draw the formula of the law
of force inversely proportional to the square of the distance.

We wanted to ascertain the link between the force that causes us to fall
objects towards the center of the Earth and the movements of the Moon
and the planets.

Hooke as early as 1666 had submitted a mo¬ to the Royal Society
nography on the movement of the celestial bodies in which the
goddess of a force that attracted the planets towards the Sun and the satellites
of the planets to their planet. Hooke specified that this force
it was not constant, but depended on the distance of the planet from
Sun and, in the case of a satellite, by the distance of the planet; all-
however he acknowledged that he was unable to give the exact form of
this law. Three years later, in 1670, Hooke made a breakthrough
of capital importance in the elaboration of his Teoría: for the
first time it expressed the idea of a universal attraction; write-
It was evident that the force of attraction initially attributed to the Sole e
to its planets it is not only them, but that it was one
universal force that does not limit itself to uniting the bodies of the so¬ system
but is also identified with gravity, i.e. with heaviness
itself. He heralded a new world system, built
on between presuppositions, according to the laws of mechanics: I o) it is am-
puts first that all celestial bodies have a force
of attraction or gravitation towards its center. Sun and moon

they are not the only ones to have an influence on the body and movement
of the Earth, and the Earth upon them, but also Mercury, Mars,
Saturn and Jupiter have a considerable influence on movement
ment of the Earth, thanks to their strength and equally the strength
attraction of the Earth has a considerable influence on everyone
the movements; 2 o) the second assumption expresses the law of
inertia force; 3 o) the third assumption is that these forces of

attraction are all the more powerful the more the body on which
they act near their centers.
Hooke then acknowledged that he had not verified experimentally
the value of the third assumption. Further on Hooke puts it this way-
goes: “He who will devote himself to this task - I dare to promise-
tell him - he will find that this principle influences all the great mo-
vicissitudes of the world and that one will have the perfection of astronomy
when this principle is fully understood.”
Hooke had not yet discovered the inverse square law
I know, but he had certainly taken a big step forward. You understand-
then Hooke's assertion on his right of priority is known
and the accusations of plagiarism made against Newton a few years later. New-
ton defended himself by claiming that he was unaware of the research
made by Hooke and not having read his studies on attraction;
in fact, since then he had identified the subject with the same number
Hooke's precision and had used mathematical systems that
they dig in Hooke.
The fact that Hooke had become secretary of the Royal Society
ty did not encourage Newton, while it was Hooke who pushed
Newto to deal again with the problem of gravita-
ne: research that this time Newton brought to a conclusion providing

I give the exceptional synthesis set forth in the Principia.
Newton returned to gravitation a short time later by demonstrating
the following propositions about the orbital motion of a point ma-
material: Kepler's second law or law of areas, stated
in the case of planetary ellipses, it is true for any motion, even though
that the force exerted on a material point is one / force
central, that is, you pass from a fixed point; if this force is inverse
proportional to the square of the distance from the center of at¬
traction to the material point, the movement of this will have se-
according to a conical section, i.e. according to a circle, an ellipse,
a parabola or a hyperbola, considering the center of attraction
ne in the center of the circle or in one of the foci of the cone; inver
ly a material point that describes an ellipse around

one of its fires, as in the case of the planets, is subjected to
a central force directed towards the fire and is inversely pro-
proportional to the square of the distance.
A short time later the astronomer Edmond Halley, taking into account
of Kepler's third law he had come to the conclusion that the
centripetal force that holds the planets had to be inversely
proportional to the square of the distance from the Solé.
A series of lectures written by Newton between 1686 and 168
form the body of the treatise Philosophiae naturalis Principia
mathematica. In the same 1686 Dr. Vincent presented alia
Royal Society the manuscript of the Principia and on 9 May the
tá decided the publication of the manuscript and the then president
appointed gave the imprimatur. Following Hoo-
ke Newton nearly suppressed the third book on the system
but of the world, by far the most important because it completes

goes Toopera. She didn't do it mostly so as not to harm Halley
responsible for the publication and financing of the work to which
the profits from the sale were reserved. From the correspondence between
Newton and Halley it transpires that there were other difficulties and others
dissensions, but finally in the summer of 1687 the Principia came out (500
pages). The work entirely written in Latin and preceded by a
honors in Latin hexameters written by Halley and dedicated “A1P¿Ilustre
Isaac Newton and his work in the fields of mathematics and ¬
physics” and “to this man dear to the Muses who approached the
Gods more than any other moríale.”
The Principia consists of three books dealing respectively with
the problems of the movement in resistant means, in non-resistent means
sistent and finally the system of the world. The law of attraction
universal properly so called rightly associated with the name of
Newton and the deductions drawn from this law relating to masses
of the sun and the planets occupy only the tenth part of the work.
The first book begins by proposing definitions and axioms or laws of
movement, first codified presentation of mechanics. You
the concept of mass according to Newton, the momentum, is revealed

(mass times velocity), the vis insita (inertia of the mass), the vis im-
press by which the state of motion of a body can change,
produced by impact, pressure or centripetal force ver¬
I know a center and who acts at a distance. Then Newton pronounces three o'clock
famous laws of motion, recognizing Galileo the honor of discovering
loss of the first two. The second law modernly states
that the derivative with respect to time (mass times acceleration)
is equal to the applied force. The equality of action and reaction
ne (third law) was extended from actions of contact to actions of

distance. In the first book Newton demonstrates that the motion of
a material point, under the effect of a central force more ge¬
néral, takes place following Kepler's second law or ¬ law
areas and that this force is inversely proportional to the qua-
square of the distance if the curve described by the point is an ellipse
such that the center of the force occupies one of its foci. In the
second book opens the way to the development of hydrodynamics
approx. In the third book Newton expounds the system of the desen¬ world
selling and explaining the movements of the planets and their satellites, ex-
explaining for the first time the reason for Ke¬'s three famous laws
pler, which some scientists still doubted. It was also collapsing
Descartes' theory of vortices; the attraction replaced the impulse
i know. The work for the breadth of the discoveries described demonstrated
one of the most prestigious events in the history of science.
Newton will express his attitude on the concluding hypotheses
I thus give the Principia with a true leap of positivistic faith: Hypothe-
ses non fingo (I don't imagine, I don't pretend).
All celestial mechanics can be derived from the law of at-
universal traction and the laws of mechanics. This work for-
places today to have the complete description of the movements of the
solar system and the prediction of astronomical phenomena, due
to gravitation.
Newton's theory is valid only in a Euclidean universe
and the movements, discovered and denounced by the Theory of Relativity
General are plausible, solar system-wide, explaining

the residual fraction of the secular advance of the perihelion of the pla¬
neta Mercury.
Newton's greatness is universally recognized; in this-

my work completes the research on the nature of space
of the solar system: the validity of the Newtonian world system
it is linked to the supposed Euclidean nature of universal space. Such
validity is confirmed by the Endospheric Theory as soon as we co-
that transformation by reciprocal vector rays which allows us
feels confirmed everything asserted by Newton with the warning
tendency to refer his great work not to the supposed reality of the
the Euclidean universe but to the reality of the non-Euclidean universe which,
as we have amply demonstrated, it is reached through the
predicted transformation that does not alter the non-observation data
that is, it alters the data considered by Newton to arrive at its greatness
godly construction, but which is only the similarly mirrored image
part of the real universe.
The transformation formulas are as follows:
x = v 2 * 1 ;
X' : +. y ' 2 + z ' 2
y = v2 *'
x' 2 + y' 2 + z' 1
x' 2 + y 2 + z' 2
The transition from the Newtonian school to the Endospheric Theory is
the fundamental point of the new concept. Shakespeare did
tell Hamlet: “I could be encased in a nutshell and
while believing myself king of infinite space.” With these words one puts

tone compared The concept of extension and that of gathering
chin; from the infinite open world we go towards the one collected in the
Endosphere; the Euclidean sky image is projected onto the
non-Euclidean real space.
James Clerk Maxwell, a century after Newton enters

among the immortals: the new is born with the electromagnetic field
non-Euclidean space. Newton's imperishability remains unchanged.
ra glory of the structure of a Euclidean world that opens, with
the Endospheric Theory firmly based on experience, al sa¬
of many classic weaknesses starting from the year-
light and by the law of conservation of energy, and to describe
tion of universal reality.

Chapter XIII

QUESTIONS AND ANSWERS

ABOUT - Suppose we are, as astronauts, in space
at an average distance between the earth and the moon, so as to see one and Pal-
between as spherical bodies. How can this conformity of
uta and that is how it can be seen as a body in space so much there
Moon (so far it is fine) than the Earth which - according to Theo¬
ría Cosmocentrica — would contain within its surface
spherical cie the entire Universe?

R1 - The impact of new ideas creates something certain in the mind
mess. The classic concept is only partially overcome
illicitly peeping out where the new con¬ is concerned instead
piece of the world. He will refer to the Tablets of the new book.
The transformation by reciprocal vector rays allows one
reverse worldview to the classical one with the condition of
assume the vision in function of a behavior of the light
related to Maxwell's discovery of the electromagnetic nature of
light. This circumstance is fundamental. Comparing the Tab.
XIV (Classical Universe) with Table XV (Endosphere Universe-
co), that is passing from the first to the second by applying said tra¬
geometric deformation, one immediately notices that Table XV has everything

The aspect of Table III, image of the magnetic spectrum of
terminated by the action of a magnet.
The basic nucleus is therefore the vision: carrying out this tra¬
deformation the angles remain unchanged, i.e. the observation data
service will remain the same.
Table V illustrates the phenomenon whereby the surface

the concave cié of the Earth is seen as convex (see also Tab.
THE); in the figure on the left of Table V, placed the observer in the
point H, the Copernican Earth is seen at points i, k, j (la
mind interprets the path of light as rectilinear, as it is exposed
in Chap. III, as roughly in short courses. Instead of points
i, k, j we actually see the points F, B, G, due to alia
curvature of the ray of light and that is we see the real shape cón¬
earth quarry.
This is a consequence of the electromagnetic nature of lu¬
which runs through the vast universal spaces. An identical effect ab-
We are observing the figure to the right of Table V, where the
illustrated how the concave Earth appeared to the seated astronaut
in H on the Moon. Even in photography the Earth appears conve¬
knows how it is explained in Chapter III.
Q2 - How would the Earth be «born»? The Solar System? the U-
niverse?
R2 - These questions have more of a philosophical character than
scientific.
The new theory, observing that the magnetic spectrum (Pl.
III), has the same aspect as the inversion of the Covered Universe
Nican (Tav. XV), concludes that the geometric orientation of the
the inversion mirrors the physical orientation of the lines of force

electromagnetic waves of the universe.

Bearing in mind that geometry is abstract and physics is con¬

clay The abstract geometric design can be interpreted like this

me the physical behavior of electromagnetic waves (Tab.

III). Since light has an electromagnetic nature (Maxwell) follows

that its path has the same behavior as the Universe in-

vert.

As for the "birth" of the Earth, the Solar System and the ¬

the Universe are problems of a not precisely physical nature.

My thought is that of Lavoisier: «Nothing is created, nothing

it is destroyed, everything is transformed».

I don't see how the electron can be created out of nothing and neither

as well as how it can annihilate itself.

As regards the theory of the Big-Bang or that of the

the ever-expanding Universe or that of the Universe in

expansion-concentration, we talked about it in Chap. XI.

D3 - Data in km. 6.370 the Earth's radius:

I or km. 6.370 and no more should be the radius of the universe;

2 or therefore all the other known quantities should be reviewed

know;

3 or km. 6.370 should be the thickness of the earth's crust

stre in decreasing density until tending to 0.

R3 - In Chap. III the problem of the measurement of is studied

a length. We measure a street with a yardstick, that is

the 40 millionth part of an earth meridian. How it works

ra? Bringing a meter back to the road and noting how many times

it is contained along the road itself.

So the meter is a unit of length with which we can measure

measure homogeneous sizes per metre, i.e. lengths.
Measuring the length of a ray of light is another matter, though
because I don't know the length of the unit of measurement, that is of each
each photon that makes up light.
This is a physical entity whose length of each is unknown
s single constituent, namely the photon.
The meter is the submultiple of a terrestrial meridian; the photo¬
it is a submultiple of a ray of light, but its value is not
it is known nor perhaps it is possible to get to know it.
Of the luminous radiation we would need to know the lun¬
length of a submultiple of its extension. Then measure¬
re the length of a road and measure the length of a rag¬
days of light are two different operations; I need it first
know the submultiple length unit of a meridian that
I can establish; for the second operation I need a unit

of length submultiple of a light radiation that does not
I can establish.
In Table XI I can consider the line segment that from
sun reaches the point 6 pm (rectilinear solar ray) whose lun¬
length is calculated at about 150 million km. (then use-
z or the meter as a unit of measurement); this segment corresponds
de in the geometric transformation the semicircle that goes from the so¬
lé at point 6 pm To measure the length of this semicircle
I divide this by 150 million to get unequal segments
decreasing towards the Sun being in relationship with the va-
riable of light.
Then 1km. non-Euclidean is worth 150 millionth part of
such a semicircle, but these parts are not equal to each other but

rapidly decreasing in the direction of the Solé.
Make the geometric length of a spoke coincide with the
its decreasing intensity of illumination lies at the root of the co-
so-called light-year.
It is therefore concluded that the objection has no foundation: al rag¬
classic terrestrial thu in the transformation matches the value
of the length of the Endospheric Universe in terms of km not
Euclidean, i.e. in terms of non-uniform variable lengths of¬
differently from what happens in the Euclidean measures of space
exospheric. The objector points out: «they should therefore all meet again
other known quantities. We reply that in the absence of the ¬
the knowledge of a unit of length all the quantities co-
characteristics need to be revised to adapt to the nature of the new spa
and the electromagnetic nature of light according to which
the measures are taken.
How much of the thickness of the so-called earth's crust remained
I give in the final part of Chapter VII.
D4 - In the Endospheric theory, of a ship in the distance
you see, as in the classic concept, first the trees, then
the hull; this reason cannot apply to the camera-

gráfica that «does not suffer» from the mental process that determines the
vision.
R4 - When observing an object (far away) the mind interprets
the luminous radiation joining the object in a straight line
with Pocchio (Chap. III).
Plate I illustrates the classical proof of the shape of the earth (ra¬
rectilinear diation that goes from the sole to the eye) and the endosphere test
of the concavity where the curvilinear radiation, transformed

of the previous one, it shows the same image, the same view as you
lescópica, the mental interpretation of the classical image.
The camera fixes on the plate not a movement
to but the snapshot of single frames starting from
an enormously small initial stroke, so it is always the cer-
fleece of the observer who interprets the phenomenon.
The development of the movement is but the rapid succession of
images (frames) projected onto a screen; such projection
is linked to another mental phenomenon on the part of the observer, which
it is the persistence of the retina, an outpost of the brain.
D5 - There is evidence of greater curvature of light waves
lesser according to the Endospheric Theory with respect to the curvatures
do I accept the Theory of Relativity?
R5 - The Einsteinian spatial curvatures are due to the pre-
without the gravitational field. The infinite and unlimited space
of Newtonian cosmology is replaced by Einstein by one
still unlimited space (that is, without a limit), but finished in the
meaning that by going in a certain direction one returns to the point of
departure.
Eddington defines the spa as "empty" (on average almost empty).
classic uncle by noting that there is a star every 20 cubic parsecs
a parsec being a length of 30 trillion kilometers.
The radius of curvature of Einstein's Universe is lun¬
length of trillions of kilometres, while in the
the Endospheric Universe at the gravitational radius of curvature yes

adds the much less relevant one of the electromagnetic field
co, i.e. the magnetic field (spectrum) that permeates the universal space
versal having a maximum length in Euclidean terms of 6.370

kilometers (terrestrial radius) or rather a curvature of k = 1/renor¬
mind major.
D6 - Why, given the hollow Earth, the seas and oceans do not pre-
do they cite inside?
R6 - In the old concept the reason consisted in the action
of gravitation, (gravitational attraction), in the new system
but phenomena of cosmic repulsion are considered (also Ein-
stein admits it) by the Solé. The effects are evidently
yourself the same.
Furthermore, the swelling of the equator, caused by the rotation
tion of the universal system around the axis//S50 of the Universe-
Earth (the Earth is motionless) also explains the greater distance from
metrical of the opposite points of the equator with respect to that of the po¬
there, as it is also classically known.
Q7 - Why space probes launched based on calculations
according to the current theory they go right where and how they have to go
dare, returning how and where should they return? The time factor
should be influenced in the conception-description of the U-
cosmo-centric universe in which at greater curvatures it should run
answer a time — a duration — different.
R7 - Chap. VI on spa trips responds to this objection
aunts.
Q8 - How would the planets of the solar system be arranged if ¬
Do I agree with the Endospheric Theory? As well as the exospheric one that is
around the sun? It wouldn't appear from a photo of his drawings.
R8 - Read chapter XV on planetary orbits
D9 - If the earth is the least dense "body", at the limits of the Uni-

towards Cavo it is possible to calculate the density of at least the Solé and the

the other planets and the Moon — according to your Theory?

R9 - According to the Endospheric Teoría it is necessary to reflect on
sa and density of the Solé because the Solé is not considered as
a massive sphere, but like a sphere that has a
cell-like structure; however outside or inside the
masses are the same, even if the densities vary, and therefore they are valid
Newton's laws based on the entity of the masses (see Ch. XII).
The classical astronomer determines the mass of the Solé by applying the
Kepler's third law, which refers to the "orbit" of the
Terra, that is, to a reference that does not make sense in the new con-
perception that the Earth does not travel in any orbit
I am stable (Chap. X). The annual orbit shown in the table
XV is the perpendicular to the curvilinear trajectories of light without
a physical meaning since the Earth is stable (isogonality).
As to the density of the Sun the classical astronomer refers
to the mass and radius of the Sun considering this density 1.4
gm/cm 3 (gm = gram mass); the radius of the Sun is calculated
classically considering the Solé not as a solid body
do, but gaseous to its core.
The question of its diameter, always considered
by the Copernicans, is complicated by the fact that we cannot tell
exactly where the atmosphere ends and the Solé field begins
CIA. There is the brilliant surface that impresses the photographic plate
fica and appears to us as a disc that is observed when the Sun comes
glimpsed among evanescent clouds. This is the surface (ref-
rita to the photosphere) that the traditional observer has in mind quan¬
do talk about the diameter of the Solé. Seen from Earth this surface
it averages 32 minutes of arc. From this and from the knowledge
za of the value of the classical astronomical unit (semimajor axis

of the «earth orbit 149,600,000 km) the «real» radius is obtained
of the Solé through an equation that I am not going to develop and which
provides precisely the radius and therefore the real diámetro of the Solé class¬
physical. I omit the explanation of the minute of arc that measures the

small angle a subtended to the eye by the ray of the observed Sun
from the earth.
I mention a consideration, the most important: the astronomical
The classical model considers space with its straight lines Euclidean,
for example. joining the Earth to the Sun.
Another consideration is the hypothesis of the gaseous Sun, which is not
is admitted by the Endospheric Theory.
We can identify for the new concept the unit astronó¬
not by applying to it the transformation for reciprocal vector rays-
proci, bearing in mind that in the new theory space is not
neither uniform, nor flat, but non-uniform and curved.
The universal lines are curved like the shape of the lines
strength of the electromagnetic spectrum. In the new concept yes
admit the same classically calculated masses.
The Sun, the planets, the celestial bodies actually have an extension
sion much lower than that calculated by astronomers, but han-
no, but a much higher density: the masses do not change. The
Newtonian laws hold equally. The new concept sees
in the seed of an orange an enormous size compared to the buc-
cia, because it is in the seed that the physical and vital principles are concentrated
which, substituting itself for the mere illusory extension of the classical Universe
physicist, embrace the existence of innumerable living subjects such as
occurs in the human and animal embryo.
GOD - The greater curvature (compared to that of Relati-

vitá General) of light is an experimental fact or rather not
itself a hypothesis? And not experienceable?
RIO - In General Relativity, among the experiences on which it is
sa rests, there is that of the deflection of light rays. Such
experimental deflection is predicted by Einstein's Theory, la
which is also based on the famous experiment of the elevator me¬
by which the equality between heavy mass and is proved
inert mass.
One can consider what has been observed by astronomers

mi: given the position of a star seen in a certain point in the sky
lo, when its luminous radiation (light) passes close to a
body such as the Sun, this radiation deviates from the straight line by a
angle a calculable. This observation is expressed through
Einstein gave her a curvature, albeit slight, as shown
in Chapter VII «The law of conservation of energy...». The pre-
said deflection of General Relativity is an experimental fact
such ; the Endospheric Teoría, as well as admitting the said defles¬
sion, rests on the physical basis of the electromagnetic field.
Dll - Given Hollow Earth description as explained
the formation of the universe?
Rll - Read Chapter XI on the Big-Bang.
Q12 - How to explain the tides?
R12 - First of all, an idea about it needs to be corrected
moho and that is that this phenomenon is explained by the law
Newton's gravity.
The phenomenon of tides has been studied by many physicists and
astronomers but it has not yet been fully explained. New¬
ton had to admit that the distance affects according to the cu¬

bo to account for the greater influence of the Moon in comparison
with that of the Solé, but did not explain why in this case
the force of attraction is proportional to the cube rather than to the qua-
drato, as in the other cases.
Other aspects of the problem are uncertain in the explanation between-
ditional. Even applying the new rules in the new concept
the problem is not fully explained.
DI3 - How do you explain the formation of the Universe, the for¬
tion of the cosmic electromagnetic field on which essentially
mind the whole theory of the Cosmo-Universe is held up and explained
centric?
R13 - Read Chapter II and Chapter XII.
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D14 - How do you explain Foucault's experience with his pen-
malice?
R14 - Read Chapter X.
D15 - It is acquired that the verification of General Relativity
it concerns the slowing down of clocks in the gravitational field.
Time, that is what clocks measure, runs much slower
the stronger the gravitational force is. But then
It is correct to say that in the gravitational field, in fact (slow down
rhythms), do you age more slowly than in the absence of gravity?
In the order of the Cosmocentric Theory there is an intensification
density as you enter towards the Centro Stel-
with a metric shortening and a slowing down of the ve-
locality. So it is correct to say that as we get deeper into
would it age less?
R15 - Let us first mention the phenomenon of ageing-
lie after a journey through the cosmos in relation to Relativity

Restricted. Let us pass over the analytical developments of the formulas but
themes. We limit ourselves to the principle of Relativity: «If KeK' are
no two coordinate systems with respect to each other with straight motion
uniform tilinear, the development of natural facts (mechanical ed
electrical) is regulated by the same general laws as much if referred to
K as referred to K'».
This means that if it takes 3 minutes to cook an egg
ti in an inertial system K, an identical time interval oc-
it will run for an egg to cook on any other inertia system
le K', even if to the observer of K the cooking of the egg in K' ap-
seems to be of different duration.
This reciprocity is essential.
The formulas leading to this result are invertible
so that if an observer, located in K, observes in his watch-
Thurs that the cooking of the egg takes place in three minutes, another remarked
vator located in K\ in uniform relative motion with respect to K, va¬
lutes a longer duration (dilatation of durations), but he knows

that physical phenomena obey intrinsic laws and are indi-
hanging from the inertial system in which they take place; knowing then-
of experience the real duration of such cooking, recognizes that
his evaluation of the cooking time in K is only apparent -,
in fact by inverting the relative formula he finds the real duration of ta¬
le cooking time (3 minutes) of the egg in K. Therefore the question arises
of the reality and the appearance of the dilatations of the durations and of the
shortening of the lengths (Chap. IV).
The famous physicist Langevin, a great friend of Einstein, imagined
ginó a journey of one of two twins, who pariendo from
térra and pushing towards a distant star then returned with

the same speed reversed on the Earth and stopped there. Suppo-
making the translation speed v sufficiently large (next
sima to that of light) the twin who had traveled would be
could still turn out to be a child, while the other, remained constant
terly on Earth, it should have been very old.
This paradoxical effect of the apparent flow of time
between systems in relative rapid translational motion is envisaged
as real by Langevin, violating a fundamental element on
which the structural validity of the formulas is based, i.e. the assumption
tion of a uniform relative motion; now to a motion that is not
uniform (the traveler goes back) may not apply
formulas based instead on the hypothesis of uniform motion given that
the motion of our uniform traveler is not.
Therefore the story of the twins is baseless because
incorrectly set. Now let's move on to:
Generóle Relativity - Between Special and Ge¬ Relativity
nally there is, as is known, a fundamental difference: in the first
but we consider a Euclidean or pseudo-Euclidean space, where the e-
The physical element is limited to the constant C of the speed of light,
while the second Relativity is essentially based on the ¬
Gravitation.
By means of a machine, which we are not going to describe, the físi¬
co Waltenhofen, with regard to induced currents, he demonstrated that

the excitation of an electromagnet abruptly brakes the oscillations
actions (Waltenhofen pendulum). The more intense the cor-
induced forces, the more intense is the braking.
Gravitational actions have an effect on the rhythm of the atoms
vibrating, identifying the gravitational actions with the acceleration

tion. These brakes are therefore real.

As for time and temporal durations, there is a question to be done.

distinction analogous to that made between space and distances

spatial.

It is not accurate to say that time is measured by clocks;

the rhythm of time is not time, but reflects physical conditions

che (rhythm) of the clock that measures it. If in a room A I have

a pendulum swinging with a certain rhythm and in room B I have

a pendulum swinging at a slower rate is incorrect to assert

that time flows in B more slowly than in A!

There is no «time itself», a Kantian idealistic concept, aná¬

logically to the «space in itself»; as there is no empty space,

but things, bodies, fields of force, so there is no «time

in itself», an empty time, but the events, the processes and therefore

of a method to measure them.

Not space "in itself", but spatial distances are traversed

from bodies in motion; not time "in itself," but temporal durations

they mark the flow of events. There is no time itself, but the tools

minds (clocks) that measure the fluiré of said processes-events, which

we call durations', only differences in durations are observed, differ-

temporal rences, not time "in itself", an idealistic abstraction

connected to that of space «in itself».

That said, especially on the basis of the Waltenhofen experiment,

it can be concluded that in the gravitational field, since the rhythms yes

slow down, it would age more slowly than without gra¬

life. All this is admitted by the Endospheric Theory in addition to the fe-

names of contraction and dilatation due to the non-rigidity of the bodies.

Even Einstein noted: «The field deforms my rules

rigid bodies, and Pérsico: «Solid bodies are never perfectly

gidi, as it is often convenient to consider them in mechanics».

D16 - We talk about Black Holes and actually talk about them in ter-
mini theorists; now the Buco Ñero figure is compatible with the
Endospheric theory?

R16 - There is theorization on the apparent phenomenon of implosion (col-
lasso) of Black Holes, a phenomenon linked to the classical interpretation
physics of the nature of space.
The Universe would first appear expanding to games from one
point (White Hole), then reached a maximum initial extension
would collapse by reducing to a point (Buco Ñero). This
would imply a creation and disappearance of matter, con-
concept that is rejected by the Endospheric Theory, in which yes
configures an electromagnetic cosmic state in which the class mass
physically interpreted is in reality enormously less extensive and
enormously denser than it appears.
Regarding the inertial motions in the new Teoría it should be observed
vato that, instead of straight lines, the bodies travel naturally
te the curved lines of the field; perianto the astronaut who descended on the
moon walked, without being able to visually notice it, the curves
electromagnetic fields and not Newtonian straight lines.

Q17 - What lies beyond the concave Earth?

R17 - Read the end of Chapter VII. The progressive decrease
tion of the field density has no end. It's a weakening
towards the indefinite. The question is related to the classic concept in
contrast with the new concept.

DI8 - How to conceive time?

R18 - Read question 15 above.

D19 - The Endospheric Teoría should be considered as one of

scription or even as an explanation?

R19 - It is customary to use the words description and explanation

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an indifferent use. Accurately the description is a representation

minute sensation, a geometric layout while an explanation

tion is rather an interpretation.

The drawing of a house is a description, its explanation

tion is a clarification about the arrangement of the rooms, of the

stre for a convenience or other purpose. The design of the Uni-

towards Endospheric is a description, but if they are brought to light

the relationships, the connections of the various parts, such as e.g. the behavior-

ment of the lines of action of the electromagnetic field, then

you have an explanation.

D20 - What exactly is meant by curvature, radius of

curvature, flat space and curved space?

R20 - We already talked about flat space in Chapter IV

and curved space.

Here we specify further. As already said, it doesn't make sense

consider the curvature as an intrinsic character of the spa¬

physical uncle. There is no "space in itself" (see General Relativity,

R 15), nor «time itself», i.e. there is no empty space of

jets, nor time empty of events, but things exist, bodies,

events and processes.

As long as we remain (Chap. IV) in the interpretative field offered

According to analytical geometry, space-time can take the form

suggestive aspect of a cone (Minkowski), of a cylinder (Ein-

stein) or a hyperboloid (De Sitter). In this representation

ne geométrica of the chronotope the spatial coordinates are re-

ducts to two (circumference); the third is the representation of the time

bit. This third coordinate in De Sitter's universe showed up
ta curve; it is not about the curvature of time which has no other
no sense, but a mathematical requirement to represent
the universe itself.
It has already been said that geometric space is flat if it holds in it
the Pythagorean theorem; if this doesn't apply to you, geome-
non-Euclidean tries. It is now necessary to add what is meant by cur-

vature null or different from zero. If on a straight line we can
however fix three points, they will always be aligned. Self
on a curved line (like a circle) we fix three points anyway
these are never aligned.
The radius of the circle passing through a triad of non-aligned points
neati has a certain non-zero length that it characterizes
non-Euclidean space.
If K is a curved line and its radius of curvature we have
the relation K = 1/r. A space in which each of its lines (geodeti-
ca) has an infinite radius of curvature, it is called flat. A space in
which we have (geodesic) lines that have radii of curvature fi¬
nid is said to be curved.
Q21 - What is a black hole?
R21 - It is an invisible body because of gravitational actions
that collapse there are so large that they do not allow the
any radiation leakage; that is, there is an absence of light, i.e
a «black hole», this is a purely hypothetical interpretation
of celestial phenomena in a uniform space (see R lé).
D22 - What does «time dilation or compression» mean?
ral»?
R22 - In Chapter IV we mentioned the transformation

of Lorentz 1 = 1' \¡ 1 - v 2 /c 2 referring to a special treatise
lysed of Special Relativity.
Analogous is the expression x = x' - v 2 /c 2 relative to time
x whose explanation is linked to the development of Special Relativity
(See Ch. IV and R,j). It is understood that from a physical point of view
Special Relativity has great practical importance; in the-
nuclear physics laboratories, in which, for the purpose of producing
high-energy ticells (Synchrotrons, Betatrons, etc.), it is used
they created gigantic machines based precisely on the laws of Re¬
Restricted lativity.
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This important experimentation, however, takes place in distances
relatively short terrestrial, where the space is still approximate-
matically uniform while remaining acceptable the speed of light
c, calculated by Fizeau (Ch. III).
D23 - Why is the concave earth seen as convex?
R23 - Table X shows the vault of the sky in the two
systems.
The observer sees a celestial object, e.g., in B', but Pog-
jet is actually located at B. The 45° angle under which P observes
sees the celestial object is the same both with respect to B' and with respect
a B (isogonality of the inversion) because the observer is not in
able to establish where the object actually is, despite being
led to affirm that this object is found in B' by attributing
in space a Euclidean nature; except by attributing to the spa¬
uncle a non-Euclidean nature, the observer claims instead that Pog-
jet is found in B. Since the physical impossibility is proved (Chap.
III) of the Euclidean behavior of light, the real object
is found in B.

It is the same phenomenon by which it is said that the earth is concave
appears convex (Pl. V). The astronaut in H sees the earth as
pernicana at points i, k, j of the convex part through which the Earth
that he sees is convex only in appearance, because, for the demonstration
strata circular reversal, he sees instead, even by taking a
photography, under the same angle the points F, B, G of the surface
concave of the Earth (see Chap. XIII, R,).

D24 - How can it be explained in the context of the Endo-
spherical the "proportionality" of the Doppler effect which demonstrates
Would the galaxies escape?

R24 - Hubble's law would prove a continuous expansion
sion of the Universe, considered by official science as the
most "bewildering" discovery of the 20th century, while the point remains
most discussed of the numerous exospheric cosmological theories: yes
admits a recession constant of direct proportionality.

In the book of a cosmologist we read: «This law is established
lita on solid experimental bases», except that this is not, because it is
Euclidean space is just a hypothesis connected with multiple points
weak points of the classical theory, in particular the «light-year».
No "expansion" therefore of the Universe, but rather a
phenomenon of gradual energy concentration towards the Centre
Stellar.
The interpretation of the redshift of the re-
spectral ghe is only a hypothesis together with that of flat space
no of the classical world and of the rectilinearity of such radiations.

Q25 - How do you explain the absence of gravity in space?

R25 - All celestial bodies have a force of attraction
(Newton). Such actions, as in the case of Earth, are intense

close to the earth's surface and gradually more intense at mi-
sura advancing towards its center. Outside these actions
they fade as you move away from the Earth.
The same happens with the Solé, which has very strong attraction actions.
to more intense than those of the Earth whose mass is much lower
to that of the Sun.
However, there is an intermediate space closer to the Earth than
to the Sun, in which the solar and terrestrial actions are equal and of
opposite direction and therefore balance and cancel each other out;
in that space there is no gravity. Beyond that space takes the
windward of the solar attraction. The same happens with lines
curve action, in the Endospheric Theory.
D26 - We read that «the distance in space-time is zero».
What does this mean?
R26 - It is necessary to explain more fully the page. 145 of the million
volume of 1960. The characteristic property of the eucli¬ space
deo b given by the Pythagorean relation
(1) l 2 = x 2 + x 2 + x 2
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This property can be extended to abstract hyperspaces at 4 o
more dimensions. The space-time of classical physics is constituted
from the Euclidean space characterized by the invariant or absolute
(1), with the addition of an independent coordinate proportional
nal at time ct = X 4 (c speed of light). The new invariant
te is also written Euclidean
(2) l 2 = x 2 + x 2 + x 2 + x 2
where l 2 is no longer the squared distance of two spatial points
but of two events.
To express the constancy of the speed of light c, Einstein

and Minkowski posed the following condition

(3)

X 2 + X 2 + X" 2

x| 4 X 2 4 X 3 _

c 2

in which the new coordinate ct = x 4 is not independent of the other three spatial coordinates. The new invariant of space-time relativistic is (3) which can be written like this

(4) x2 + x2 + x2 — x2 = 0

Einstein admitted the expression

(5) s 2 = x] + x 2 + x 2 — x 2

where s is the space-time squared distance of two points;

but this new relativistic invariant differs from the invariant classical (2) for the sign of the time interval squared x 2 .

The two invariants (2) and (5) have a very different meaning.

The vanishing of (2) says that the two event-points coincide (ac-

fall in the same place and at the same time), while he canceled it

larsi of (5) coincides with (4) which can be written like this

(6) x2 + x2 + x2 = x2

where the first member is a space squared distance and the second is a distance squared in time, therefore the distance

space-time za is zero, as results from (4). The two points non-coinciding, however, can be joined by a ray of light.

Relativistic space-time arises from the condition (3) im¬ posed by Einstein: this condition is hypothetical, as is the «co-universal room» c of the speed of light.

However, it should be noted that in the context of Special Relativity

ta and limited to the terrestrial spatial region of the laboratories
the resulting formulas are of great practical importance
technology for the production of high energy particles (synchrotro-
ni, betatrons, etc.).
See R 22 - In the Endospheric Theory the perianth chronotope
it is a reality limited to the terrestrial space of the laboratories, where
the paths traveled by the radiations are minimal and the space is almost
yes Euclidean.

Chapter XIV
SUN AND MOON ECLIPSE AND LUNAR PHASE
In Tables VIII, XII and XIII the well-known fe-
names of solar and lunar eclipses and lunar phases. To these fe-
nomeni seen classically the transformation for is applied
mutual vector rays. For reasons of clarity, they are not
respect the proportions.
In Table VIII on the upper right the phases of the moon are represented
ri according to the Euclidean nature of space. By applying the pre-
said transformation the real phases of the moon are obtained, still
remaining the observational data.
No further explanation is needed: just observe that each
Euclidean line changes into the corresponding non-Euclidean curve.
Around the classical Earth, the images can be seen externally
seen by the terrestrial observer; internally we represent the
actual stages like the play of light, shadow and penumbra at all
known. The same applies in the figure below where the observer
terrestrial (see arrows) is located on the earth's concavity.
Let us pass to the classical eclipses of Table XII: the eclipse of the sun
occurs when the moon is placed between the Sun and the convex Earth

know, while the eclipse of the Moon when the earth is interposed between the Sun
and the Moon. Note the games of shadow and classical penumbra¬
well-known mind. In Tab. XIII, with our procedure of
inversion, we have the same images seen classically. How many
where the moon crosses the pseudo-funnel with pseudo-spherical walls
between the terrestrial observer and the Stellar Center we have the eclipse of Lu¬
na which penetrates the shade and penumbra determined by such
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pseudo-funnel and the same images appear to the observer
visual gins, whether he is on the convex Earth or not
you find instead on the concave Earth. The eclipse of Solé occurs when
do the Moon crosses the other pseudo-funnel placed between the So¬
lé and the terrestrial observer.
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Chapter XV
PLANETARY ORBITS
Demonstration that in the endospheric system the outer planets,
although they orbit around the stellar center, from any point
of space appear to orbit around the Sun. This demonstrates
tion was carried out by Mr. Mario Pavone.
— The observation point O is given, on the plane of the orbit,
of CO' and O'O coordinates in a rectangular system with
the origin in the reversal center C and with a through axis
for the sun O'.
— Consider a generic point P on a line of sight
coming out of O.
— The distance OP and Pangólo «a» that the view forms with
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the normal 00' alia joining the Solé with the center of inversion

are considered as polar coordinates in a system
but with the pole in O.
— These coordinates are transformed into straight coordinates
tangential in a system with the origin in O: are obtained
OP' and P'P.
— O'P” and O'P' are the coordinates of P in a straight system
tanangular with the origin at O'.
— CO' is added to O'P”: we have the coordinates CP”
and P”P of P in a rectangular system with the origin in C.
— These coordinates are transformed into a po-
lare with the pole in C: the distance CP and Pan¬ are obtained
golo «b».
— The point P”' corresponding to P in the inver-
sion by dividing the square of the inversion radius R by
the CP distance.
— The distance CP'” and the angle «b» are taken as
polar coordinates in a system with the pole at C.
— These coordinates are transformed into a system ret¬
tantangular with the origin in the center of the mechanical limits of
machine tracking, corresponding to infinity.
The axes of this system are parallel to the trac¬ plane
challenge.
The figure accompanying said demonstration has the purpose
to ¡Illustrate all the operations of the procedure, while being
only approximate (P and P'” for example, which correspond
in the geometric transformation, results are not located in points
exact); the plates made with the help of sus-
HEWLETT PACKARD electronic sites and on which follow here
some important clarifications.

We consider the case of a hypothetical observer who, alio sco¬
po to verify the validity of the Endospheric Theory, put in
a point in space to ascertain whether Mars orbits the
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Solé or around the Stellar Center.
We start from the heliocentric configuration by considering three
several observation points lying in the plane of the orbit of the
net:
1) a point outside the orbit;
2) a point inside the orbit;
3) a point on the Solé.
For each of the three cases a bundle of visual lines is considered,
which in the Copemic conception are obviously straight lines,
departing from the observation point and directed towards various points of the
the orbit of Mars (similar to a circle).
Here the curved lines are built which in the System Co-
smocentric correspond to these visual straight lines.
To do this, one is considered on each visual line
series of equidistant points starting from the observer up to the
net. For all the points of the same straight line they have been calculated
the corresponding points in the drawings of the observing Computer is in-
pronounced with O; the Sun and the Stellar Center with two dots.
The exospheric situations have: numbers 1,2,3 with which
the corresponding endospheric situations are indicated.
133
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Chapter XVI

CLASSIC WEAK POINTS OF THE THEORY

HEXOSPHERE IN THE LIGHT OF THEORY

ENDOSPHERIC

1) Cepheids and their common behavior

De Sitter wrote: 'All our knowledge about breadth

of the galactic system and on the dimensions of the Universe are

fundamentally based on the variable stars called Cepheids».

Miss H. Leavitt derived a fundamental law for the deter-

mination of celestial distances, which binds absolute greatness

M of a Cepheid in his period P. Armeilini observed that

bra demonstrated that the Cepheids are pulsating stars, depending

the duration P of their pulsation from their mass and therefore from

their absolute magnitude M.

Out of 171 Cepheids Margaret Güssow found about a hundred with

period ranging from one day to one month. Among these there are

not a group of 40 or 50 of approximately equal period

(on average 5 days); «the Cepheid variables of the same period»,
writes Eddington, they are all very similar; then a Ce¬
feide of the period of 5 days, wherever discovered, goes practically
regarded as a copy of 5 Cephei.
These common characteristics would lead one to think of a
what a physical link, to reciprocal actions due to proximity, but
astronomical calculations tell us that the distance between star and star
it is immense.
To a question of mine addressed to Prof. Leonida Rosino of the
Padua Astronomical Observatory, on 12/17/57 he answered me
deva: «That there are in other Cepheid Galaxies having the same

period, but not physically associated, it is possible, but it would be
a purely random event.
Now, while Euclidean kilometers measure constant distances
and, the space being homogeneous and isotropic, the energy in them is di¬
stribuya uniformly, the non-Euclidean kilometers of space
non-homogeneous and non-isotropic endospheric, they measure distances
rehabilitated functions of the local radius of curvature; the more you ac-
they burn the more dense is the energy distributed in them.
Gathered towards the cosmic center they predictably are
not physically associated: their great similarity attributed
«to chance» in the classical system, in the new system it is susceptible
of a rational explanation.
2) Cosmic rays and their symmetrical fall on the earth's surface
rest
«The Earth, writes Vercelli, is constantly immersed in one
incessant hail of very fast atomic particles, which pro-
they come from all over the Universe, enter the atmosphere, ur-

the molecules causing conspicuous effects by reaching many
of them to the ground.
About 20 particles entered the atmosphere from free spaces
cm 2 and per minute. Most of these particles are
protons with a small percentage made up of nuclei more pe-
saints.
The earth, a gigantic magnetic field, deviates from their course
cosmic rays and allows only particles to enter the atmosphere
which have energy above certain limits, measured in electro-
volt (ev) equal to 1,6.10— 12 erg, very small units for which we use
often the multiple mega-electron-volt equal to a million ev.
Cosmic rays pass through our bodies every day and pass
healthy unnoticed". Armellini writes: «These radiations cannot
they are from the Sun and not even from the Stars. I'm prob-

due to the processes of formation of the elements that have
no place in the nebulae or in the very tenuous matter diffused in the
interstellar space". A circumstance of the highest interest is revealed
Eddington: "Since cosmic rays fall symmetrically through
I go back to the earth's surface, astronomy reveals nothing to us
which presented the required symmetry.
Perhaps we could find in cosmic rays an argument a
favor of closed spherical space, because in a non-closed system
it would be a strange combination for the earth to be located
cata so centrally as to receive the rays in equal measure from each
part". It would undoubtedly be a strange combination!
In the Endospheric Earth this symmetry of fall, being
do the source of cosmic rays in the center of the Universe, it is a fact
entirely predictable and natural.

3) Planck and the analogy between the atom and the planetary system

Lámmel writes: «we live in an immense space in which
finds relatively little matter, so we can with reason
call it desert. Even Eddington, referring to the universal space
pour them, he says empty, deserted. «There is a star for every twenty par-
cubic secs» informs us Armellini.
Recall that a parsec is a length equal to 3.085* 10 12
Km, i.e. more than 30 million million kilometres.
Supposed stars distributed evenly, imagining of
find us on a star, to reach me another, traveling to the ¬
the speed of light (300,000 km per second) will take longer
of 6 years.
Eddington calculates an initial average density of matter
of the Universe equal to 1,05*10“ 27 gr. per cm 3 , i.e. an atom of
hydrogen for every 1580 cm. For Armellini, if all matter
stellar were evenly distributed in space, one would have
a density of matter equal to one gram for each cube it has
137
100,000 kilometers sideways.
An important circumstance is revealed by the great German physicist Max
Planck (1858-1947): «According to the very fertile theory of Niels Bohr
(1885-1902) the electrons of an atom move around the nú¬
cleo according to laws very similar to those according to which the planets yes
move around the Solé. In place of gravity takes over
here the attraction of the opposite charges of the nucleus and of the electrons.
But there is a singular difference: electrons can surround
only in well-determined orbits, and differ from one another
the other in a discrete way, while in the case of the planets no or-
bita seems to be preferred over another.'

This does not happen in the Endospheric Universe, where the planes
equipotential surfaces, i.e. discrete levels of the
non-Euclidean space of the field. Perianth called singular diffe¬
resistance with respect to the electronic orbits of the atoms disappears: in
planetary system the planets travel across equipotential surfaces
i.e. energy levels, the analysis being fully acceptable
logy between the atom and the planetary system.

4) Rigid and non-rigid motions - Inertia - Gulliver - Measurements

The rarity of the material cannot fail to surprise you. This is
a show of uniformity, for which, except for a few points since
formed by some celestial bodies, the classical space can
consider oneself «empty», «desert», so that each of its points, each of its own
position, does not differ in anything from any other point, from any
either in another position, in stark contrast to the multifaceted variety
of nature, which is change, constant renewal, pro-
incessant toilet: never repeats itself.

«Physical space cannot be devoid of characteristics (cur-
vature)» says Eddington. It is usually repeated in physics that all the
Normal state hydrogen atoms have the same size
or the same range as their electric charge. But what

do we mean by that? Or, to put the matter into form
conversely, what would it mean to say that two atoms of hydrogen
no they are of different sizes, similar in structure but
built on a different scale? In «Gulliver's Travels» the Lilliputians
they were about 15 cm. high, their tallest trees reached 2
m., animals, houses were large in proportion. To Brobdin-
gnag people were as tall as our steeples, a cat look-
it's three times bigger than an ox.

Intrinsically Lilliput and Brobdingnag were exactly that
same; this was precisely the principle on which Swift had co-
constructed his story. We needed a Gulliver who came from outside
— an extraneous length sample — for it to be detected
the difference. As for our comparison of the two atoms of hydro-
geno the case of Lilliput and Brobdingnag is repeated: to give a si-
meaning to the difference it takes a Gulliver who possesses the ubi-
quit.

Einstein said that what he called a meter is a fraction
constant tion of the radius of curvature of space-time for that
place and that direction; measuring in meters equals measuring
in terms of the local radius of curvature that is the real Gulliver
having the gift of ubiquity; and that is the constant submultiple of
radius of curvature of the place where the object to be measured is located.
Two hydrogen atoms have the same size as quan¬
to, although they are in two different places, yet they have the same
submultiple of the local radius of curvature.

In all our measures we do nothing but compare
lengths and distances by the same submultiple of the radius
of curvature which is locally. Every point and every direction of the¬
the endospheric space are characterized by the local curvature
of space.

Eddington finds a space endowed with character more plausible.
characteristics (curvatures) than a flat space. The space is not
clidean of the endospheric world is of variable curvature, what com¬
brings the non-rigidity of the motions. The ordinary experience at first

approximation presents us with rigid movements, but not just
reflect eg. to the common phenomenon of temperature, which con¬

draws and dilates the bodies, and to the fact that, if you move from one point
at another the temperature undergoes variations (large or small
that they are) it must be admitted that even in ordinary space,
and limiting ourselves only to the temperature, the motions are never rigid.
Einstein asserted: «The gravitational field distorts my regulations
you stiffen them." The endospheric space is not inertial because it is in it
acceleration is never zero.

5) The light years

A previous chapter is entirely devoted to the so-called
«light-year», of which we have demonstrated the physical impossibility
with a wealth of valid arguments to which we refer the reader
bull.

6) Dispersion of almost all of the energy emitted by the sun
and from the stars of the classical system

Also on this important topic we have dedicated a
previous chapter, «the law of conservation of energy», in
which is emphasized that the enormous quantities of solar energies
and stellars in the Exospheric Universe go largely irremediable
devilishly lost in contrast with the principle of the mínima
action, which Maxwell called "the great law of parsimony
of nature".

Said colossal quantity of energy, Lammel noted, in yes
classic stem "one sinks into the infinite and unattainable nothingness".
Such radiations, on the other hand, travel in the endospheric spaces without both
even minimal dispersion.

7) The Earth is the densest of bodies in the classical solar system

Internal planets are the planets that are on this side of the zone
of the asteroids, i.e. Mercury, Venus, Earth and Mars being these

st the last one both superior and internal.

We will thus distinguish the planets: the superior ones beyond the zone of the asteroids, called external, while the others are called internal. With-

let us now consider the following table in which the upper row in¬ say the density with respect to water of the sun and the planets and the line lower the minimum distances of the planets and the Sun from the Earth (le distances are expressed in millions of kilometres):

Earth

Venus

Mars

Mercury

Sun

Jupiter

Saturn

Uranus

Neptune

5.5

4.9

4

3.8

1.41

1.3

0.7

1.3

1.6

0

42

78

ninety two

150

629

1578

2692

4351

The table of distances has been obtained, for the superior planets by subtracting from their average distance from the Sun the Earth-Sun; for the lower planets by subtracting from the Earth-Sun distance their average distance from the Solé.

In the increasing succession of distances (Solé included) corresponds a decreasing sequence of densities (except for Saturn and Neptune). In the classical solar system, therefore, the planet the denser the Earth.

The outer planets and the Sun have a much lower density than that of the inner planets.

The celestial bodies of the solar system, the farther they are from Earth the less density they have. It is striking that the Earth has a very particular, privileged situation in this field ta. We would have always expected a position of this kind. never for the Solé in the classical system; instead the Earth is the star of the denser classical solar system.

To this is added another circumstance: as the distance from the Earth the density of the celestial body decreases (with slight exceptions

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tions). This fact also places the Earth in a unique position regular compared to the other stars.

It's a "strange combination," Eddington would say.

In classical theory the Earth is a planet like any other, to the point that, by extrapolating, a physicist like Castelfranchi has re-

raised The consistency of «the geometric clock of the inhabitants of
our tiny planet. Of privilege, therefore, not even the shadow
bra.
In the new theory a more rational line is always followed
agree with the observed facts. The same fact follows from
same structure of the world. Said succession in the new concept
to reverses.
The Earth, constituting the peripheral zone of the Universe, is a lot
less dense than the celestial bodies found near the
people of the field, where the spatial curvatures are very sensitive,
the energy is very concentrated and the masses of the celestial bodies are very dense
self. The facts revealed in the new conception no longer have a
accidental character as in the old system, but satisfying
to the principle of sufficient reason, they are explained rationally. Me
I have already referred to the density of the Earth in chap. VIL
8) Comparison between the seasons in the two systems
Recall that the classical Earth, when it is in the peri-
lio, is closer to the Solé by about 5 million kilometers than quan¬
do is found at the aphelion (northern hemisphere) in the winter season,
contrary to what might be expected.
Said difference (5 million kilometers compared to almost 150)
is basically explained by official science through
the cosine law, for which the incident intensity decreases with
the increase of the obliquity of the rays on the constant unit of surfaces
hit here. The effect of continentality of the emi-
northern sphere, which prevails over that of the determining radiation

a lower mean winter temperature in the northern hemisphere
than in the southern one. Another cause is the action of the oceans

extended daily in the southern and northern hemispheres.

The causes of temperature differences in the various seasons

are: in the summer semester in each hemisphere the day is longer

It is night time, and the Earth receives more heat than it loses

(vice versa happens in the winter semester). The main reason

however, it is related to Lamben's first law of the cosine, general

use of the inverse square law of distances

_ i what

E = -^

And it is the intensity of illumination directly proportional to the

the emission intensity ie at what formed from the normal to the

th incident with the struck surface and is inversely proportional

tional to the square of the distance from the source.

The famous physicist Fred Hoyle builds a model that reproduces

there is the disposition of the Sun and of the planets by making a reduction

of scale of about one billion. And he got this result: II Solé

having m. 1.4 in diameter and the Earth a diameter of about 1.5 cm.

If we place this Solé at a distance of m. 150 from a ball

line of diameter cm. 1.5 it will certainly not be possible to re-

heating the ball to 50 degrees above zero in the area

equatorial and at 70 degrees below zero in the polar areas of the sphere

straight.

In Table VII it is represented with the upper figure

the phenomenon of the seasons (a figure familiar to all students)

with a grave mistake: the earth is represented at a distance

za from the sun enormously closer than it actually is

he wants it to happen. Observing Table XI, it can be observed that the difference

difference between the half-line rectilinear solar rays reaching the point

to 6 pm passes the half-line that reaches the 12th point of solo

6,370 km., i.e. a negligible difference compared to 149,600,000

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Euclidean km (Earth-Sun distance). The intensity with which the radiation
solar radiation reaches both the equator and the poles in the classical system
so it can be considered identical. Not the same happens in the new
vo concept.

Numerically the distances and the differences of distances above
considered in the two systems are almost identical. In the world
do endospheric but the calculated Km are not Euclidean. That meant
fica which, as can be seen in tables XI and XVI when the Solé
is found eg. alio zenith of the equator its radiation reaches
the equator, point 12, perpendicular to the poles, point 6 pm,
tangentially (and so far nothing different happens in the system
classic); but now we will feel an important difference: the ra¬
endospheric diaction which at point 12 reaches the equator, has
a geometric length (see Table XI) equal to 2/3 of the length
za of the radiation reaching the pole (point 6 pm). So
The solar energy that reaches the pole is more rarefied (weaker
therefore) of that which reaches Pequator.

In an electromagnetic field (Plate XI) the radiation that reaches
The equator arrives is more intense (the energy is less rarefied) than
the one that reaches the pole, while in the classical system the ra-
Solar effects are admitted almost all equally intense!

We examined the scaling of about a billion
do carried out by the physicist Fred Hoyle who builds a model re-
producing the classical arrangement of the sun and planets. Such
model highlights, while understanding the space requirements
uncle, the error of the relationships, the enormous disproportion of the real figures
Sun-Earth rooms as taught in schools (see di-

sign at the top of Table VII).

In the cosmocentric concept, things change profoundly.

as shown in the lower part of the table. VII where

the endospheric seasons are represented there. The figure represents

feel the spiral path of the Sun in the sky. The line that unites

detects all points around the stellar band where the sun is observed

at noon, during all the days of the year, it is the ecliptic, lo

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zodiac or the apparent path in an entire year. For a

observer at point N the upper turns represent the inver-

no, those in the center for spring, the lower ones for summer, and then

again those in the middle of autumn, and again high school

We'll tell you. The daily circular route of the sun can be seen in form

expanded by the earth as we see the whole area also expanded

helical mino.

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Chapter XVII

THE TWO SYSTEMS

Archimedes

In geometry one can easily study the solitary figures

de with straight edges. Archimedes undertook to find a way

mula to calculate the area of the spherical surface, except that

struggled with the difficulty of developing this surface on the plane, unlike

ference of other developable solids.

He arrived at his famous formula by seeking a solid development

pable on the plane equivalent to the non-developable surface of the ¬

the sphere. He achieved his goal by building with uni sheet metal

thickness forms the surface of a sphere and a circumscribed cylinder

to the sphere whose base is a circle equal to the great circle

mo of the sphere.

Archimedes ascertained - and this is his discovery

- that the sheet metal of the spherical surface and that of the cylinder surrounding conscripted to the sphere they had the same weight.

By developing the surface of the cylinder on the plane, he obtained a rectangle with base equal to the aforementioned great circle and other height equal to the diameter of the sphere:

2 rrr (base of rectangle) x 2 r (height of rectangle), and wrote the famous formula 2nr x 2r = 4nr 2 . Since the sheet metal of the sphere and that of the cylinder had the same weight assumed as surface area of the sphere The above formula A = 4nr 2 (which found confirmation about 1800 years later in the related calculus inté¬ Newton's grain).

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Developable and non-developable solids

The cylinder can be developed on the plane; to its development is applied Euclidean geometry is bile, while the sphere is not developable e geo¬ is not applicable for the search of its surface area Euclidean metric.

The two geometric figures of equal surface areas (measures) li, i.e. equivalent, have a different structure, Tuna eucli¬ goddess and the other non-Euclidean. The two theories of the universe, exosphere co and endospheric, similarly have two equivalent spaces, seat both of a cosmos having equal amount of matter, but with different physical structures: the first has straight lines of force- nee to which Euclidean geometry applies, the second has lines of curvilinear force, to which a non-Euclidean geometry applies, pur being equivalent to each other (they have the same amount of matter).

Geometric transformation

The two equivalent spaces are linked by a geo¬ transformation
métrica that allows you to pass from one space to another (and vice versa
sa) regardless.
The difference between them lies in the way in which they are distributed
matter varies: in the first enormously rarefaría, except for a certain
number of singular points, in the other enormously concentrated.
Both two spaces match each other so that each
point of the first corresponds to one in the other (and vice versa). Ta¬
the geometric correspondence is supported by an algébri operation¬
ca and geométrica called transformation by reciprocal vector rays.
In the annexed figure (Plate II) at point 2 outside the cor¬ circle
the point 1/2 inside the circle answers. In fact leading from
point 2 two tangent lines to the circle at points a and b the conjunction
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People of these two points cut the line joining at the 1/2 point
point 2 with the center of the circle.
Similarly, the corresponding points 3 and 1/3 are obtained,
etc.... Since a 1/2 is the reciprocal of 2, the correspondence takes ¬
de the name of transformation for reciprocal vector rays. The infi-
nite exterior points correspond to the infinite interior points and vice versa
pour.
It can be shown that two line segments even of different length
length are both equally made up of infinitely many points.
Galileo and the infinite
In his «Dialogue» Galilei wrote: «An infinite greater than
the infinite seems to me a concept that cannot be understood in any way.
These are difficulties that derive from the discussion that we make
let us with our finite intellect go around the infinities, giving them
those attributes that we give to finished and completed things... To them

infinite, one cannot be said to be greater or less than or equal to-
the other... When I am asked, give several lines of unequal length
length, how can it be that in the major ones there are no more points
that in the minor ones, I reply that there are neither more nor less,
nor as many, but each infinite».

Comparison between exospheric space and endospheric space

In the aforementioned transformation the straight lines of a figure do
change into curved lines. The entire exospheric universe dominated by
straight lines changes into the whole universe dominated by curved lines;
in the first dominates the Euclidean geometry, in the second a geo¬
non-Euclidean metric.

Given the homogeneity and isotropy of the exospheric space two
Euclidean kilometers represented by straight segments equal in

length between them change into non-Euclidean kilometers represented
feel yourself in a non-homogeneous and non-isotropic endospheric space
by equal or unequal arches depending on whether they have equal or
unequal finite radius of curvature.

The measurement of a length always involves comparison with
a sample length. In a space to which we apply the geo¬
Euclidean metría straight lines have zero characteristics because in each
point have an infinite radius of curvature. In a space where
we apply the non-Euclidean geometry to the arcs or sectors of
circumference have a finite radius of curvature.

The international meter is the same everywhere in Spain
uncle, Euclidean, while in a curved, non-Euclidean space,
the meter is a submultiple of the local radius of curvature. To say
that two hydrogen atoms have the same size means
that the size of each of them is the same fraction of the radius

curvature of space in the place where they are.

Rigid movements are typical of a space devoid of character

teristics which is the Euclidean one, while the non-rigid movements

are proper to a non-Euclidean space of variable curvature in

which bodies, moving, do not numerically change theirs

size; changes however the unit of measurement with respect to which the bodies are

not measured, since this unit of measurement is not a submultiple of the

local radius of curvature, i.e. of the place occupied by the body,

instant by instant, during its motion. The endospheric field

is subject to processes of contraction and expansion.

Einstein said: «The gravitational field deforms my

stiff throats". An observer following a moving body

could in no way verify such contractions or di¬

latations, since he too, together with his E¬

sura, would be subject to the same laws to which this body is subject.

Whatever the definition accepted by the pure geometra, the

physicist must define space as something that is characterized

established at each point by an intrinsic greatness that can be

used as a basis for measuring the objects placed there. The spa-

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physical uncle cannot be devoid of characteristics. In terminol¬

gía geométrica the characteristics of the space are designated thus

me curvatures.

Ser i ve Eddington: « Undifferentiated identity and non-nothingness

they can be distinguished in a philosophical way. The realities of physics are

no inhomogeneity, events, changes». The uniformity of spa¬

uncle and the consequent rigidity of the motions constitutes one of the points

weaker than the exospheric conception of the Universe.

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Chapter XVIII

GREATNESS OF THE UNIVERSE

Kant said: «The head is in space, and yet space
it's in the head." The great philosopher meant that he fascinated her
greatness of the universe has an essential foundation
subjective you.

What does it mean to say that the universe is large?

Let's see what Lammel (4) said: «We live in an ¡inmen¬
I know space, in which relatively little matter is found, so that with
reason we can call it desert.

Also Eddington (1), referring to the universal space, the
it says "empty", "desert". Armellini notes (9): «One has a star
every 20 cubic parsecs. Recall that a parsec is a length
length of 30 million million kilometers. Imagining of
find us on a star, to reach me another at the speed of the
light (300,000 km per second), it would take more than 6 years. An¬
Cora Eddington (1) calculates an average density of matter in the
the Universe equal to one atom for every 1500 cubic centimeters. There
star Antares has a density 2000 times less than that of the
ria: this means that if we wanted to go to that star not
we would not even find it because we would almost sail in it
more extreme emptiness!

When, therefore, the man in the street is fascinated by the ¬
the greatness of the classical Universe is not fully realized
that for him greatness means extension; as to matter in
the Universe, on average, there is very little. The charm, therefore, of the ¬
the grandeur of the universe is reduced to the fascination of the unlimited

almost deserted extension!

Let's move on to this other consideration: if the man on the street we asked if he thinks the zest of an orange is bigger or its seed, he would probably answer: the rind. Per¬ because for him the extension is great. But the philosopher would answer: the seed. Because in the seed there is the genetic code of countless orange plants.

For the philosopher great is the content, it is the creative power, the development, the vastness of the vital force. If we consider the sco- loss of the energy contained in an atom, energy that has signifi- fied the destructive capacity of an atomic bomb (let's think of Hiroshima), if we consider the dimensions! of the nucleus of an áto¬ mo calculated around one millionth of a millionth of a centí¬ metre, we will understand that magnitude cannot be evaluated in the sense I know of the extension, but in that of the potency.

Therefore whoever suspected that the gigantic walls of the con- terrestrial cavities enclose a tiny universe should re- believe and reflect on the psychological nature of an evaluation subjective view of the acclaimed extensional greatness of the Univer- so classic, a grandeur which corresponds almost to an unlimited desert!

The endospheric Universe, with its hyper-central firmament dense and its immense potential energies, must appear to the eye attentive servant infinitely great, because I am in it in potential and in act an endless number of living beings, of animals, plants, cells and atoms.

This firmament that dominates us and leaves us in awe has an infinite greatness. In place of the "empty" extension, of the dissipation and dispersion, inherent in the classical system, we have, in the cosmocentric system, conservation, concentration

and the power.

The new idea of the world suggests concepts of collaboration

tion, solidarity, union, synthesis. The infinitely great

de potential coincides with the infinitely small geometric.

Aristotle's potency and act seem to find a

physical reason in the cosmocentric system. The Universe is an organ

living smo. Laplace said: «Nature has the same models in

different sizes". The Earth is an immense cell that it encloses

The universe, where life sprouts and where greatness is identified

with the absorbed thought of the man who aspires to knowledge

za and alia truth.

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c

Angle of

depression

dt'horizon

give of

definition

de H'or monte

-- OR-

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•>»*» <* Jti eponu - romisuoio 3AHU0 r7

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alie parallel rectilinear Euclidean correspond¬

give the non-Euclidean curvilinear parallels;

the angles, under which the lines intersect

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The path aicoidala or expiring from the farra returned to the fixed star

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The mato from the Moon returned to the Sola

«V

Fig. sup.: An object, located at a distance of 6,400 Km- from

farra, aa puesta linked by straight attractive lines.

Fig. right: The same lines of attraction, in the endospharic concept,

are curved, the angles under which they intersect the remain unchanged

concave surface of the Earth.

follows TAV. IX

The attractive lines in the two systems.

178

AV. x

THE SYSTEM OF THE HORIZON _ The molodo p»r coordinated the Colosti degrees with the degrees

dolí'orco dolía volta appeared dol dolo.

Poincaré's non-Euclidean world.

179

TAV. XI

Day and night in the two Systems.

180

Solé eclipse and lunar eclipse in the Heliocentric System.

181

Solé eclipse and lunar eclipse in the Cosmocentric System.

TAV. XV

TAV. XVII

CUNTO D. OBSERV. 5UL SUN

INVERS10NE ROOIO

79,000,000 KM j

onm of mars /

EACH 1 STRAIGHT SECTION

THEY CORRESPOND TO AN ANCOLO

AT THE CENTER OI 10 GRAO)

SIGHT LINES! /

ANOOLO WAS OUE LINEF

AD1ACENTI- 20 OrAd!

MELLA*OUAL DIRECTION

E. SEEN THE TEÜRA

186

TAV. XVIII

187

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JtSi

33,000 lire (...)