

Relativity, a broken reed

Walter van der Kamp

“Give me but one firm point on which to stand, and I will move the Earth”, Archimedes (287-212 B.C.) exclaimed, thereby putting a finger on the irremediable shortcoming of all empirical astronomy. This science is ostensibly unable to point out somewhere in space a solid platform from which to judge matters of motion and rest.

Antiquity and the Middle Ages, owing to the lack of any evidence to the contrary, adhered to a static Earth. Today, however, we have convinced ourselves that we know better. For Einsteinian relativity, it is assumed, has caused Science to return to the position Archimedes hinted to be inevitable. The case for astronomy, as Sir Fred Hoyle has said, is “one of motions only.”¹ In keeping with this way of thinking the late Isaac Asimov assures us that in cosmology “any object or system of objects (any frame of reference, that is) can be taken with equal validity as being at rest. There is no object, in other words, that is more really ‘at rest’ than any other.”² And as far as our Solar System is concerned, at first sight there appear to be no problems with this assumption. Even Newton already somewhat reluctantly admitted: “It may well be that there is no body really at rest to which the places and motions of others may be referred.”³ But what about the stars?

It stands to reason that any theory of the Cosmos also has to render an account of its predictions with respect to the system of countless luminous objects wheeling night after night from East to West around us.

Twentieth-century astronomy gratefully grasped Einstein’s “special relativity” to countermand the Earth-centered model affirmed by all experiments that vainly tried to show our “planet” to be in motion. Unbelievable though it may sound, however, the profession has never yet paid much attention to the role of the stars in the economy of the Solar System. With respect to the status of the Earth this oversight is therefore still leading to contradictory aphorisms about our position in the entire scheme of being. Stephen W. Hawking holds on to an “obvious”⁴ Sun-centered Solar System, but for Asimov’s understanding of Einstein this is going a bit too far. According to him an Earth-centered hypothesis, using Hoyle’s dictum, “is as good as anybody else’s - but no better.”⁵

In any case, a geocentric Universe remains “unthinkable”.⁶ Physically considered the Earth is as a matter of fact a next-to-nothing in the stupendous realm of the far and widely scattered stars. To suggest that it could be the king-pin around which Sun and Moon, and the stars also, are just dancing attendance for the benefit of mankind would be downright preposterous, surely?

Well, no, it is not, and what is more: this updated Tychoonian configuration of the world, taking the

¹ Fred Hoyle, *Astronomy and Cosmology*, p. 416.

² Isaac Asimov, *Understanding Physics*, Vol. II, p. 249.

³ Dorothy Michelson Livingston, *The Master of the Light*, p. 253.

⁴ Stephen Hawking, *A Brief History of Time*, p. 1-2.

⁵ Hoyle, *Frontiers of Astronomy*, p. 304.

⁶ Ronald W. Clark, *Einstein. The Life and Times*, p. 80.

stars into account, **will turn out to be the only one ontologically and logically possible in our present mode of being.**

When we consider the Heavens we instantly come up against Asimov's credo and the necessity to choose between two views, both of them encompassing the whole of discernable reality. Do the Sun and the starry dome "out there" diurnally rotate and annually revolve with respect to the Earth, or does the Earth rotate and revolve with respect to the system of the Sun and all other fixed stars? We clearly see the former motions occur, but have been conditioned to believe the latter. That is to say: learned and unlearned alike are convinced that if they could levitate themselves to a secure anchorage in space they would find this consequence of Copernicus confirmed. Mother Gea is no more than a satellite of a humdrum star in the Milky Way, we feel sure.

There are, however, problems with this subconscious mental exercise. To quote no one less than a famed philosopher, the late Bertrand Russell (1872-1970): "Whether the Earth rotates once a day from West to East as Copernicus taught, or the Heavens revolve once a day from East to West, as his predecessors believed, the observable phenomena will be exactly the same". And that, Russell concludes, "shows a defect in Newtonian dynamics, since an empirical science ought not to contain a metaphysical assumption which can never be proved or disproved by observation."⁷

What is more: even this unpermitted supernatural assumption is already in itself an invalid argument. The late Michael Polanyi made this trenchant remark: "Every object we perceive is set off by us instinctively against a background taken to be at rest."⁸ But to set off an Earth not empirically proven to be moving against a Cosmos instinctively taken to be at rest, and this with respect to a space we have no hold on – whatever that means – it certainly does not clinch the matter for him who keeps Archimedes in mind.

Einstein's 1905 paper is still supposed to have salvaged the Copernican Revolution. It won astronomy over by mathematically – courtesy of Lorentz – underpinning the "we move, but cannot prove it" of Poincaré and his "principle of relativity". Nicholas of Cusa (1401-1464) expressed a medieval precursor of this idea: it seems that we are in a Universe of which the center is everywhere and the circumference nowhere. To quote Hoyle a second time: "Since the issue is one of relative motion only, there are infinitely many exactly equivalent descriptions referred to different centers – in principle any point will do, the Moon, Jupiter..."⁹

It is with this assurance that the misapprehension of all post-Copernican theorizing reveals itself. That may sound unbelievable, yet in what follows it will be proven. Not by theorizing, of which, I agree with Hawking, "you can never be sure,"¹⁰ but by logical disproof.

In Shakespeare's "Merchant of Venice", Lorenzo asks his Jessica to see "how the floor of heaven is thick inlaid with patins of bright gold."¹¹ Four hundred years ago that was still an allowable view, as well as poetically up to par. Actually it comes nearer to the reality than we are now conditioned to believe. It is not for nothing that Hawking holds on to an "obvious" with respect to the Earth

⁷ D. W. Sciama, *The Unity of the Universe*, p. 102-103.

⁸ Michael Polanyi, *Personal Knowledge*, p. 12.

⁹ Hoyle, *Nicholaus Copernicus*, p. 1.

¹⁰ Hawking, *Brief History*, p.10.

¹¹ Act V-i.

going around the Sun. All modern cosmology stands or falls with this concept being correct, even though, to quote a text approved by Einstein himself:

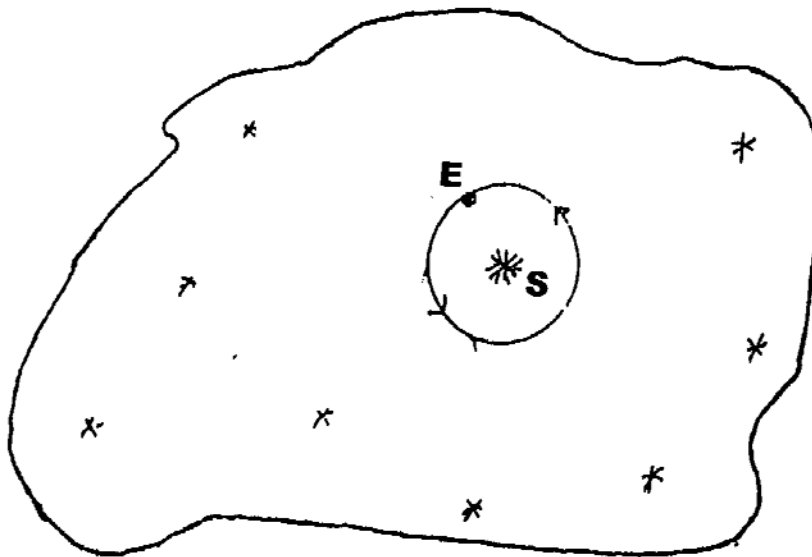
We can't feel our motion through space, nor has any experiment ever proved that the Earth is in motion.¹²

It is well-known how, after the probing efforts of Fitzgerald, Lorentz and Poincaré to overcome this contrariety, in 1905 Einstein resolved the problem to almost everybody's satisfaction. We cannot prove the Heliocentric Theory, it is agreed, but of course it is true. The 149.5×10^6 km semi-major axis of the Earth's orbit furthermore provides us with a solid base line for trigonometrically determining the distance to many nearby stars. More still: starting from these measurements cosmology has been considered able to map out the Universe by estimating, inferring and intelligently guessing one thing after another.¹³ Yet these procedures have engendered a hodgepodge of weird and implausible hypotheses, their devisers squabbling about them *ad infinitum*, to say the least.

It is these considerations which lead to the thesis of the present paper. To wit: the invalid concept of relativity demonstrates by indirect proof that an updated and amended version of the geocentric theory proposed by Tycho Brahe is for our present mode of being the only one possible.

To forestall any misunderstanding: the daily rotation of the Heavens, and Russell's dubiety about that phenomenon, do not concern us in the present context. The quite different portent taken up here is the one slow oblique circuit, which we yearly see the Sun traversing against the daily rotating background of the fixed stars that form the twelve signs of the Zodiac, strung along the circle of the Ecliptic, which is inclined at a 23.5° angle to the Earth's Equator.

Reducing the matter to its essentials, the annexed Figure, I will make these evident. Avoiding any theoretical position with respect to parameters and properties or potentialities of spaciality, the simple drawing two-dimensionally betokens a section of the plane of that Ecliptic.



¹² Lincoln Barnett, *The Universe and Dr. Einstein*, p. 73.

¹³ George Abell, *Exploration of the Universe*, p. 378.

Figure 1

It shows the Sun encompassed by the orbit of one of her satellites, in this case the Earth, and a few fixed stars of the Zodiac. Now take a pencil, the point of it representing our “planet”, and trace with that point our trajectory around the Great Light. Then all definite observable facts duly will support the truth of the Copernican Revolution of 1543.

Mankind, with its habitation rotating and revolving and gyrating through the Heavens, daily sees the Cosmos turning around us, and we observe the Sun yearly traversing the Twelve Signs of the Zodiac. Only two particulars remain to be accounted for. As James Bradley discovered in 1726: the static stars do not completely stand still, but annually describe small circlets of equal size. These “aberrations” can, however, plausibly be explained. They are only apparent; our orbital velocity of 30 km/sec around the fixed star Sol requires us to tip our moving telescopes slightly forward in order to observe any celestial object. The other phenomenon is that of a number of stars exhibiting still secondary minuscule epicyclic circuits. These so-called “parallaxes” are considered to originate from the observance of stars so near to us that by triangulation their distance from the Sun can be calculated.

So far, so good and not much room for doubt left if only we could complete the heliocentric picture by verifying the Earth’s orbital velocity. But we cannot get this done!¹⁴ And it is here that the principle of relativity is supposed to put things straight. Wherever we are and whatever we do, our experiments will always inform us that moving we do not move. Of course Copernicus is right, but theoretically it is six of one and half a dozen of the other whether we hold the Sun to go around the Earth or the Earth around the Sun. As among professionals the saying goes: Einstein is “every day proven in the lab”. They could not be more wrong.

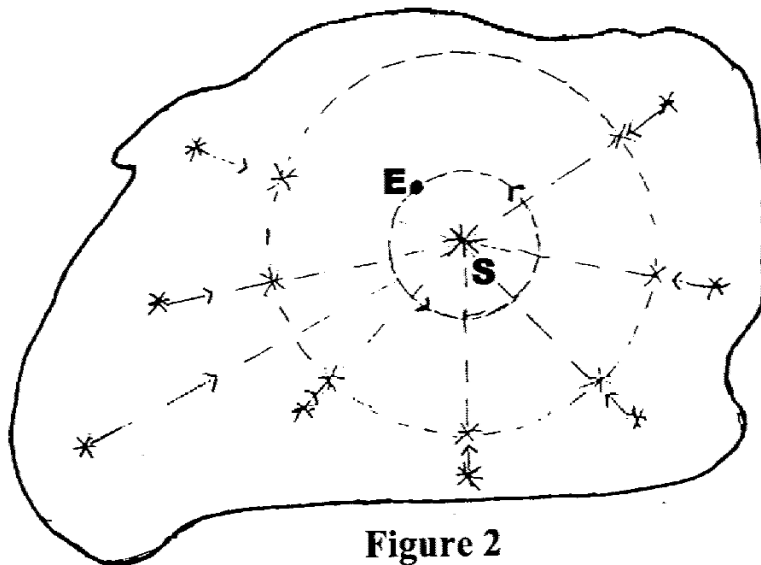


Figure 2

¹⁴ See my *The Bradley-Airy-Einstein Syndrome in Astronomy*, St. Petersburg, 1994.

To begin with: rotating the paper, *i.e.*, the plane of the Ecliptic and the stars on it, with respect to the pencil point, *i.e.*, the Earth, does not work, for then we will not see the fixed star Sun annually traversing the Zodiac. “True”, it will be conceded, “but what about visualizing the Earth’s orbit by shuffling the paper in such a way that the pencil point stays at rest and yet traces out our the orbit of our “planet” ?”

At first sight this seems to vindicate Einstein's 1905 justification of the – he, begging the question, wrongly wrote – “already proven”¹⁵ Copernican view. On reflection it will become clear, however, that for him and his disciples here the wish has been the father of the thought: the principle of relativity is not applicable to the case under consideration. With our Earth comparatively at rest in regard to the Cosmos as a whole no motions will be measurable for the great majority of the stars making up our supposed Milky Way Galaxy. Only for nearby luminaries our telescopes may observe small annual shifts or circuits, which these fixed “lesser lights” will traverse concordantly with our Great Light’s annual orbit. Stars on the Ecliptic will, of course, only shift back and forth by a small amount. Depending on their position on the celestial globe, all the others will appear to describe more or less “flattened” elliptical paths. Perversely: this is not what we behold. We cannot, untrue as we think we know it is, – to quote a well-known textbook on astronomy – “avoid the impression that the sky is a great hollow spherical shell with the earth at the center” and “the stars embedded in it like tiny jewels.”¹⁶ That is to say: Bradley's avouched, but never yet positively verified, “apparent” aberrations are astral orbits of about equal size, indicating (see Figure 2) the stars to be arranged in such a spherical shell, the *Stellatum* of old. Clearly: Hoyle's argument about “infinitely many exactly equivalent descriptions” falls to the ground.

Preparatory to drawing a few conclusions, which logically follow from the foregoing, it may be well to quote a *caveat* of Sir Arthur Stanley Eddington (1882-1994), one of the first theorists accepting Einstein’s 1915 General Theory of Relativity.

For the reader resolved to eschew theory and to admit only definite observational facts, all astronomical books are banned. There are no purely observational facts about the heavenly bodies. Astronomical measurements are, without exception, measurements of phenomena occurring in a terrestrial observatory or station; it is only by theory that they are translated into knowledge of a universe outside.¹⁷

Clearly: Eddington’s “definite facts”, observed by learned and unlearned alike, do not allow the ruling paradigm. Science cannot “save the appearances” by means of a hypothesis according to which, as Asimov asserts, Earth and Sun “can be taken with equal validity as being at rest” in respect to the stars. But what then?

With Hawking¹⁰ and the renascent medieval philosophy of science we should be averse to declaring any theory physically “proven”. Only the self-evident logical principle of the excluded middle can sometimes deliver indirect proof. And now it so happens that we here have an issue in which this principle exactly fits the case.

Does the observable Cosmos, with everything in it, oscillate with respect to the Earth, or *vice versa*? As Russell rightly remarks “the observable phenomena will be exactly the same” At the same time, however, the two paradigms are also mutually exclusive. Disproof of the latter indirectly but

¹⁵ A. Einstein, *Zur Elektrodynamik Bewegter Körper*, p. 891.

¹⁶ Abell, *Exploration*, p. 11-12.

¹⁷ Edward R. Harrison, *Cosmology*, p. 226.

unassailably, establishes the truth of the former.

The Copernican model has never yet empirically been demonstrated, though an experiment that might disprove it has been proposed.¹⁸ Relativity as I have shown, fails coherently to account for the observational facts. For an Earth “taken to be at rest”,² a view “as good as anybody else’s,” Einstein simply does not work. Hence the geocentric approach has to be accepted. Which means that an old, already forgotten model becomes viable again. To wit the already mentioned but not yet enunciated image of the Cosmos of Tycho Brahe (1546-1601). Today it remains only remembered as a historic curiosity. With respect to the Solar System it “is in reality absolutely identical with the system of Copernicus, and all computations of the planets are the same for the two systems.”¹⁹ *In fact for our mode of being, Tycho held and holds the key to the only logically possible integration of all branches of astronomy and a cosmology in disarray.*

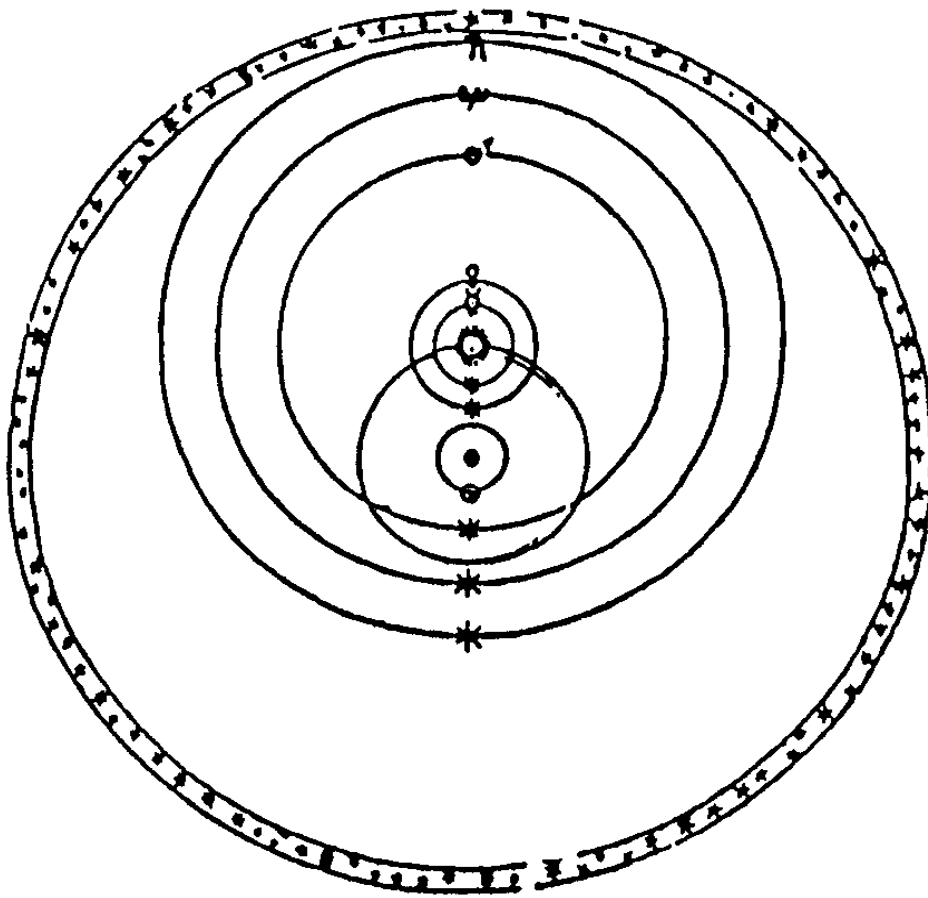


Figure 3

In this Dane's Geocentric System Moon and Sun circumrotate a static Earth, and the planets revolve

¹⁸ John Byl, Martin Sanderse and Walter van der Kamp, “Simple first order test of special relativity”, *American Journal of Physics*, Jan. 1985, pp 43-45.

¹⁹ J. L. E. Dryer, *A History of Astronomy from Thales to Kepler*, p. 363.

around the Sun. (**Figure 3**). Only in one aspect his model has to be updated. Tycho anchored the sphere of the fixed stars on the Earth. Actually, as Bradley observed and refused to believe, but Airy's "failure" confirmed: the Sun is at the center of the astral dome and carries it and the Solar system along when orbiting our abode in the Heavens.¹⁴

Lastly: allow me a tongue-in-cheek approach to the matter, underlining that in space and time Einstein's 'proven' relativity and Hawking's "obvious" reality cannot be reconciled. Imagine a solipsist Einstein mentally producing our celestial framework in which Eddington's "observational facts" are facts. Centering himself on any of the countless fixed stars relatively "at rest", then, viewed from that star, the Earth will be seen year after year describing a minute circlet around the static star Sun, the perceived size of that circlet depending on the chosen star's distance from our "planet". Conversely, when our Solipsist makes the Earth the pivot of the Solar System, then mankind's astronomers will behold all the stars displaying small circlets of a size inversely proportional to their distance from our telescopes.

If this were the state of affairs in the Universe as it is, relativity would be established and together with it the heliocentric theory vindicated. Unhappily that is not what we Earthlings observe. Notwithstanding their supposedly widely varying distances from us, the so-called "aberration" is the same for all stars. Only by therefore rearranging those heavenly pinpoints of light in a Stellatum controlled by the Sun, our model-making fantast will bring the truth in line with fact. But this at the cost of renouncing relativity together with Copernicus and all his works!

To sum up the ins and outs of the foregoing: it is the Stellatum, the spherical stratification of the fixed stars, that points to the observable finite Cosmos being centered on the Sun. This Sun orbiting an Earth hung upon nothing" . as Aristotle would have agreed with Job²⁰ has been assigned the labour of dividing the day from the night, and of doing this for signs and seasons with the planets and the starry dome in its train.

Whether – witnessed from "outside space and time" of that old and wise Stagirite²¹ – either the Earth or the Cosmos diurnally rotate is another question. For reasons set apart from any science I hold it to be the Cosmos. What here concerns us are only two logical conclusions. With the Copernican misapprehension no longer disorienting its efforts, Cosmology can be rebuilt on a solid foundation. And Solar Astronomy at last will come into its own – the first inklings are already appearing in the literature! It can begin to research how, wondrously fine-tuned, the Planetary System upholds, protects and regulates life on Earth, for which task it was called into being.²²

Preceding article made available by Paul Ellwanger, as a memorial to the late Walter van der Kamp
origins10@verizon.net

²⁰ Job 26:7.

²¹ C. S. Lewis, *The Discarded Image*, p. 96-97.

²² Catholic tradition has it that when in 1139 A.D. St. Malachy O'Morgair, Archbishop of Armagh, Ireland, was visiting Pope Innocent II, he gave this Pontiff a list of Latin phrases, prophetically alluding to the "Servants of servants" still to come after him until the end of our age. About the value of these auguries *per se* I withhold comment, but the motto for the second-last bishop of Rome on St. Malachy's list is "*De Labore Solis*" – the Labour of the Sun.