

My Discussions with Einstein by Immanuel Velikovsky

I never thought I would ever discuss physical problems with Einstein. But, as explained above, my work on natural upheavals of the past led me to consequences which I could not disregard. Going now to see Einstein, I knew I would not be able to explain all that I had thought through about the role of electrical and magnetic forces in the solar system, although I had it in writing. He received us on the terrace at the back of his house, overlooking the yard with tall trees; he was wearing sandals, and greeted us with his unique kindness and smile. Two hours passed in a discussion, my daughter listening. I did not feel like saying - "I have found some of the premises of the astronomers to be wrong"; my intent was to prepare him through the reading of my manuscript to wonder about the conflict that presents itself between the theory of changeless orbits and the conclusions that ask to be drawn from the material I had assembled. I left with him the first half of my manuscript of *Worlds in Collision*, the part dealing with Venus. Three days later he already wrote his answer:

July 8, 1946

Dr. Immanuel Velikovsky
526 West 113 Str.
New York City

Dear Mr. Velikovsky:

I have read the whole book about the planet Venus. There is much of interest in the book which proves that in fact catastrophes have taken place which must be attributed to extraterrestrial causes. However it is evident to every sensible physicist that these catastrophes can have nothing to do with the planet Venus and that also the direction of the inclination of the terrestrial axis towards the ecliptic could not have undergone a considerable change without the total destruction of the entire earth's crust. Your arguments in this regard are so weak as opposed to the mechanical-astronomical ones, that no expert will be able to take them seriously. It were best in my opinion if you would in this way revise your books, which contain truly valuable material. If you cannot decide on this, then what is valuable in your deliberations will become ineffective, and it may be difficult finding a sensible publisher who would take the risk of such a heavy fiasco upon himself.

I tell you this in writing and return to you your manuscript, since I will not be free on the considered days.

With friendly greetings, also to your daughter,

Your

Albert Einstein

The letter contained one positive statement and two negative ones, expressed with vigor and finality not given to appeal or reconsideration. To have Einstein subscribe to the thesis of global catastrophes in historical times and, furthermore, to make him agree with the extraterrestrial origin of such events can be counted as an achievement: this acceptance immediately carried Einstein into the camp of the catastrophists—not even a camp, because hardly anyone in the mid-twentieth century believed in the notion of global catastrophes. Astronomers had not produced a single man from among their ranks who would have conceded as much as Einstein did in that letter.

But I found no satisfaction in the concession obtained at the beginning of the letter because I hoped for more. I hoped that I would be able to continue the discussion started on July 5th and to lead it to the subject that was the purpose of that discussion, namely, the consequences for celestial mechanics that followed from the historical events presented in my work. My stand was later formulated in the Preface to *Worlds in Collision*: "If, occasionally, historical evidence does not square with formulated laws, it should be remembered that a law is but a deduction from experience and experiment, and therefore laws must conform with historical facts, not facts with laws." I had planned to spread before Einstein the many facts that all point to the unjustified omission of two all-pervading and interdependent natural forces, electricity and magnetism, from all and every consideration of being active agents in the plan of the universe, and in the mechanics of the solar system.

----snip----

Already at one of our earlier meetings, Einstein said to me: "I know how to explain the great global catastrophes that occurred in the past." He spoke then of vestiges of an ice cover that were observed in the tropics and referred to an unpublished theory of Charles Hapgood, who thought that growing ice caps can cause a slippage of the terrestrial crust relative to the interior, thus displacing the poles. This evening Einstein returned to the same idea and said that terrestrial causes could have been responsible for the catastrophes. I told him that the problem of the displacement of the terrestrial pole was already much discussed in the last century by astronomers and geologists. "By whom and

where?" he asked. "Here," I said, about to leave, and showed him the second (of three) files of the manuscript of *Earth in Upheaval*, "Here you may find the arguments of that old discussion." First he was reluctant to take another manuscript for reading. The daily mail alone takes so much of his time, he said, and standing at the top of the staircase, while I was a few steps down, showed with his hands how thick was the bundle of his daily mail. But, hearing that the physical problem of the terrestrial crust moving over the core is discussed in that file, he took my manuscript.

The next day I wrote two letters:

May 21, 1954

Dear Professor Einstein:

It may be that I said more than I was aright to say when yesterday evening I expressed myself that Einstein is humanly obliged not to be indifferent to the wrong that was and is still done by an organized group of scientists. But because of your position of a recognized leader among scientists and fighter for human rights, I feel obligated to you not to keep you uninformed.

These are two problems, entirely independent: Am I right in my theory? I am striving to prove it. Have I the right to express in writing the conclusions to which I came in an honest endeavor? Though the answer is elementary, this right was so mistreated that, following an attack this month, after some hesitation, I decided to ask more than just a few minutes of your most precious time.

With sincere regard,

Immanuel Velikovsky

----snip----

Two days after our meeting Einstein wrote me a long handwritten letter - which was rather unusual, since most of his letters were dictated and typed. He also returned my file and supplied some of the sections with numerous marginal notes.

22.V.54.

Dear Mr. Velikovsky!

Remarks on the part of your manuscript "poles displaced."

The first impression is that the generations of scholars have a "bad memory." Scientists generally have little historical sense, so that each single generation knows little of the struggles and inner difficulties of the former generation. Thus it happens that many ideas at different times are repeatedly conceived anew, without the initiator knowing that these subjects had been considered already before. In this sense I find your patience in examining the literature quite enlightening and valuable; it deserves the attentive consideration of researchers who according to their natural mentality live so much in the present that they are inclined to think of every idea that occurs to them, or their group, as new. *The* idea of a possible displacement of the poles as an explanation of the change of climate in any one point of the earth's crust is a beautiful example. Even the idea of the possibility of a sliding of the rigid crust in relation to the plastic, or fluid deeper strata of the earth, was already considered by Lord Kelvin (and was in fact rejected).

The interpretation of the vote mentioned on pp. 159-160² as an attempt at a dogmatic fixation of the "truth" is not obvious to me. It is simply interesting for the participants of a congress to see how opinions concerning an interesting question are divided among those present. I don't think that the underlying idea was that the outcome of the voting would somehow insure the objective correctness of the outcome of the vote.

From p. 182 on starts a wild robbers' story (up to p. 189) which seems to rely more on a strong temperament than on organized considerations. Referring to p. 191: Blacket's idea is untenable from a theoretical point of view. The remark about the strength of magnetization seems to be unjustified (p. 192); it could for example depend essentially upon the speed of cooling as well as on particle shape and size. The direction of the magnetic field during solidification must however quite certainly determine the direction of magnetization. Bottom 192 etc.: wild fantasy! from here on marginal remarks with pencil in the manuscript.

The proof of "sudden" changes (p. 223 to the end) is quite convincing and meritorious. If you had done nothing else but to gather and present in a clear way this mass of evidence, you would have already a considerable merit. Unfortunately, this valuable accomplishment is impaired by the addition of a physical-astronomical theory to which every expert will react with a smile or with anger—according to

his temperament; he notices that you know these things only from hearsay—and do not understand them in the real sense, also things that are elementary to him. He can easily come to the opinion that you yourself don't believe it, and that you want only to mislead the public. I myself had originally thought that it could be so. This can *explain* Shapley's behavior, but in no case *excuse* it. This is the intolerance and arrogance together with brutality which one often finds in successful people, but especially in successful Americans. The offence against truthfulness, to which you rightly called my attention, is generally human, and in my eyes, less important. One must however give him credit that in the political arena he conducted himself courageously and independently, and just about carried his hide to the marketplace.

Therefore it is more or less justified if we spread the mantle of Jewish neighborly love over him, difficult as it may be.

To the point, I can say in short: catastrophes *yes*, Venus *no*. Now I ask you: what do you mean when you request of me to do my duty in this case? It is not clear to me. Be quite frank and open towards me, this can only be good in every respect.

With cordial greetings to both of you,

Your

A. Einstein.

It took me seven weeks before I replied to him. With my first drafts I was dissatisfied. So many problems were raised that I could not possibly compress them into a letter of reasonable length. I decided on the strategy of challenging Einstein's contention that terrestrial, not extraterrestrial (astronomical) agents caused the global catastrophes.

I decided not to answer in a direct way his questioning my competence to handle physical problems and, instead, by presenting my arguments, intended to confront him with the measure with which I *can* handle these problems. I omitted to meet his challenge "Venus *no*" - in our debate this was premature; he agreed that there were global catastrophes, some in the memory of mankind; so next I had to show that only extraterrestrial agents could have been the cause, without identifying the agent.

June 16, 1954

Dear Professor Einstein:

During the three weeks since I received your kind letter, I have composed in my mind many answers to you, and made a few drafts. I realized soon that I would be unable to compress all the problems into one letter and I decided to try to achieve with this writing only one step - to bring you closer to the insight that the global catastrophes of the past were caused not by a terrestrial but by an extraterrestrial cause. Before discussing this, I would like to say that I am very conscious of the fact that you give me of the most precious in your possession - your time; and I would not have asked to pay attention to these matters if I did not believe that my material may, perchance, serve you too, whatever your conclusions should be. My delay in replying you is certainly not an act of lack of attention; just the opposite - not a quick reply, but a well thought through is a real courtesy.

You agree that (1) there were global catastrophes, and (2) that at least one of them occurred in the not too remote past. These conclusions will make you, too, to a heretic in the eyes of geologists and evolutionists.

----snip-----

It appears to me that today you keep no longer the second objection in that definite form; you presently assume that the terrestrial crust, rather catastrophically, moved over the interior of the earth; the experiences that the human kind must have had in such a plunge, would satisfactorily explain the phenomenon of the retreating sun (the cause of a great wrath in the days of Joshua and of Velikovsky as well), the change of cardinal points, of latitudes, of seasons and climate, and the inability of the ancient water- and sun-clocks to show correctly the time of today. It would, however, not explain the change in the number of days in the year, of which all ancient calendars (Maya, Inca, Hindu, China, Persia, Egypt, Babylonia, Assyria, Palestine, Greece, Rome) concur ("Worlds in Collision," pp. 312-359: these pages would certainly impress you).

Against a terrestrial cause of global catastrophes:

The surmise that an asymmetrical growth of polar ice caused in the past a sudden shifting of the terrestrial crust

(1) disregards all references in the folklore to the celestial phenomena accompanying the catastrophe: meteorites and “bursting of the sky,” also darkness.

(2) disregards the geological find of unusual concentration of meteoric iron and nickel in the ocean bed (I attach a section of my new manuscript, “The floor of the seas,” with a description of the work of M. Pettersson of Goeteborg Oceanic Institute).

(3) disregards the magnitude of the force necessary to move the terrestrial crust over the equatorial bulge. Ice covers of the polar regions are placed in the least favorable position to disrupt the balance. The seasonal migration of ice and snow from one hemisphere to the other never induced the slightest displacement of the poles. And finally, the most important counter-argument concerns the mass and the form of the terrestrial crust:

(4) “The data secured from observations . . . of the transmission of seismic waves indicate that the earth is either solid throughout with the rigidity of steel, or that it is solid to a distance approximately 2000 miles below sea-level, with the solid portions having a rigidity greater than that of steel . . . This seems to indicate a contradiction between isostasy and geophysical data.” (W. Bowie, “Isostasy,” in *Physics of the Earth*, II, 104).

The theory of isostasy was conceived in 1851 when J. H. Pratt found that the Himalayas do not deflect the plumb line as expected considering the mass of the mountains. It was assumed that the crust is thin and lighter than the magma and that every mountain has a mirror image protuberance immersed into the magma, thus the excess of the mass of the mountains is counterbalanced by a defect in the mass (difference between the lighter granite of the crust and the heavier magma). This, however, would signify that in order to move the crust over the very dense magma (twice the weight of granite) the isostatic protuberances (besides the equatorial bulge) will present obstacles that cannot be overcome by an asymmetric position of polar ice. If, moreover, the crust is 2000 miles thick, its mass represents a very substantial part of the globe.

What are the arguments against an extraterrestrial cause of the global catastrophes?

Arguments against extra-terrestrial agents are:

1. Ancient solar eclipses would not have taken place in appropriate times. Answer: As shown in my answer to Stewart, there is not a single case known where they actually did. By the way: the same argument, if true, would be good against the motion of the terrestrial crust in historical times.

2. Earth’s axis of rotation would wobble: It does.

3. Things would have flown away if unattached: This depends on the time element.

4. Waves of translation and hurricanes would be generated: they were. A section from the first file of my geological work is attached, and explains, partly, the “wilde Raubergeschichte,”⁶ in the (second) file you just read.

Argument against a massive comet: The observed comets are of small mass. In answer:

1. Even Jupiter, as all other planets, was once in the category of comets, according to the planetismal and tidal theories.

2. The origin of the terrestrial planets (Mercury, Venus, Earth, Mars) from the large planets (to explain the difference in the specific weights) is an old legitimate story.

Arguments against the mechanism of disturbance: A gravitational pull by a passing body could not disturb the rotational velocity of the earth or the inclination of its axis. Answer: In *Worlds in Collision* I brought historical material leaving astronomers to choose:

1. Either the earth was disturbed in rotation,

2. *or* the axis of rotation changed its inclination to the plane of the ecliptic.

Once more, I left for astronomers to choose: The earth was disturbed by entering

1. into a thick cloud of dust,

2. *or* into a magnet field.

In *Worlds in Collision* I left open the problem which of these mechanisms was in action (p. 386). You are indignant at the idea that magnetic fields had anything to do with the disturbances. You oppose such explanation

1. because magnetic actions are excluded from the celestial mechanics. Answer: At usual distances. But at close approaches the magnetic fields could be felt.

2. because in a cloud of iron particles there is no reason for all of them to have the same magnetic orientation. Answer: The same question is asked concerning the polarized light of fixed stars that supposedly passes through clouds of gases or dust particles. Also: would the earth, which is a magnet, and possibly has an iron core, moving through a large charged cloud of dust preserve the direction of its axis or not?

The real cause of indignation against my theory of global catastrophes is the implication that celestial bodies may be charged. It was argued that only an astronomer can imagine the degree of coincidence between the calculations based on the gravitational theory and the observed planetary motions. But this very degree of coincidence is disturbing in the face of many facts known about the sun (behavior of protuberances), the planets (influence of radio-transmission), the comets (self-illuminating; behavior of tails), the fixed stars (strong magnets), the meteorites (magnets). Even for the cases of observed anomalies magnetic or electric charges were not considered, as if they were a tabu in celestial mechanics. Of the many unexplained phenomena presented in my address before the Forum of the Graduate College, you have explained only the apparent spherical form of the sun (and was it correct to disregard the very low atmospheric pressure on the sun in calculating its expected shape?), but not why the sun rotates quicker on the equator, nor many other similar violations of mechanical laws.

Of course, I am a heretic, for I question the neutral state of celestial bodies. There are various tests that could be made. For instance, does Jupiter send radio-noises or not? This can easily be found, if you should wish.

If planets are charged, gravitation is a short range force, a terrible statement to make. Cavendish experiment with varying distances between the attracting bodies would easily disprove such notion. But if I am not wrong, the Cavendish experiment is not performed in a Faraday cage. It should be easy to find out the constant in a cage. But not easy for me. Especially since Shapley in a relentless effort made me "out of bounds" for scientists.

You, too, would not have had any suspicion about my motives in my book on folklore and ancient literature, were it not for the campaign initiated by Shapley. The few pages on astronomy in my book were edited by Lloyd Motz, professor of astronomy at Columbia University. Too early you have thrown the mantle of Jewish compassion over Shapley: you have seen only the beginning of the file of the documents concerning the "Stargazers and Gravediggers" and their leader. His being a liberal is not an excuse but an aggravating circumstance. My appeal to you to investigate this material was prompted by a new attack, a few days before I last saw you. Then I immersed myself in my work and calmed down.

Cordially,

Immanuel Velikovsky