

letters

face during the past few thousand years? All of the above should be the case if Velikovsky is correct, but the answer in every case is a resounding "no." In the face of such evidence, arguing about what might or might not be possible seems rather pointless.

DAVID MORRISON

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10/27/80

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THE AUTHOR COMMENTS: David Morrison is right that Sagan's probability calculations are not only "very wrong" but also irrelevant.

Immanuel Velikovsky put it very succinctly, in his answer to Sagan: "It should also be borne in mind that the basic subject to be addressed by opponents is 'did it happen' and not 'how likely was it'" (*Velikovsky and Establishment Science*, Kronos Press, 1977 p. 34).

The following quotation from Velikovsky's answer to Sagan is applicable to the questions raised here by Morrison (*V and ES* "Preface"):

"... Sagan seems not to know of the existence of *Earth in Upheaval*, where the geological, paleontological, and climatological evidence of global catastrophes, is presented, and especially of the global changes of 34 and 27 centuries ago. Sagan asks '... And what of the archaeological and paleontological evidence? Where are the extensive faunal extinctions... and where is the evidence of extensive melting in these centuries...?' But the 300 pages of *Earth in Upheaval* are an unbroken record of exactly this."

To answer Morrison's questions, by way of example, we will quote from the section "Dropped Ocean Level" from *Earth in Upheaval* by Immanuel Velikovsky (Doubleday, 1955, p. 181-183):

"R. A. Daly observed that in a great many places all around the world there is a uniform emergence of the shoreline of 18 to 20 ft. ... Daly proceeds: 'Marine terraces indicating similar emergence are found along the Atlantic coast from New York to the Gulf of Mexico; ... along the coast of eastern Australia; along the coast of Brazil, southwest Africa, and many islands of the Pacific, Atlantic, and Indian Oceans; in all these and other published cases... the emergence seems to have been simultaneous on every shore' (Daly, *Our Mobile Earth*, p. 178)... 'In thirty-odd years following Daly's first paper many further instances have been recorded by a number of investigators the world over, so that this recent shift is now well established.' (P. H. Kuenen *Marine Geology*, 1950, p. 538)... it is not the result of a slow change; in such a case we would have intermediate shorelines... but

there are none... Kuenen writes: 'The time of the movement was estimated by Daly to be probably some 3000 to 4000 years ago' (ibid)."

For reversals of the earth's magnetic field we could quote from the section "Magnetic Poles Reversed" (*E in U* p. 143-147).

For sediments, see the section "The Floor of the Seas" (*E in U* p. 104-107), and for later sediment findings see Velikovsky's article in *The Velikovsky Affair* (University Books, 1967, pp. 241-243).

For sudden climatic changes, see chapter XI "Klimasturz" (*E in U* pp. 173-187). In this chapter there is also a section on "Tree Rings." For recent studies on tree rings H. C. Sorensen's article in *Pensée* (vol. 3 no. 2) is very instructive.

The last melting on the moon was discussed by Velikovsky in his memorandum to H. H. Hess of July and August 1969, and in his article "When was the Lunar Surface Last Molten?" (Both reprinted from *Pensée* in *Velikovsky Reconsidered*, Doubleday, 1976).

Morrison's criticism of Velikovsky's work, without reference to *Earth in Upheaval*, is a measure of the serious consideration Velikovsky has received from those scientists who "confronted" him; for, like Sagan, Morrison participated in the volume *Scientists Confront Velikovsky* (Cornell University Press 1977).

In *SCV* Morrison had brought only astronomical arguments, the main one being his objection to the credit Velikovsky received for his advance claim that Venus would be found to be hot with internal heat because of its recent ejection from Jupiter. Morrison, like Sagan, insisted the heat is due to a greenhouse effect. Since this is a cardinal point in the controversy, it is worth noting that Morrison has not brought this up again. Is it because, as Kerr summarised in *Science* (18 January 1980): "The much ballyhooed greenhouse effect of Venus' CO₂ atmosphere can account for only part of the heating, and evidence for other heating mechanisms is now in a turmoil. When Pioneer Venus' probes looked at the amount of radiant energy passing through the atmosphere each one found more energy being radiated up from the lower atmosphere than enters it as sunlight."

Since Velikovsky wrote *World in Collision* (1950), Venus was found to rotate retrogradely, to be 900°F near its surface, and to have inexplicable amounts of argon-36, which indicate that Venus was "formed differently." All these findings contradict existing models. Is it not time that they be tried on a model of a young planet hot from within?

S. F. KOGAN

Haifa, Israel

12/4/80

Junk mail

I'm writing to drum up recruits for a costless campaign to stamp out junk mail. It clogs the mailbox and the postal service and irritates the hell out of me. I've gone from dutifully reading it or throwing it away unread to my present stratagem of stuffing it back in the postage-paid envelope enclosed and shipping it back to the sender. (Or, if there's no postage-paid envelope I put on a one-cent stamp and make them pay the postage due!)

I fantasize the effect on the junk tide if millions of people—or just every physicist—did the same. Or do you have a better idea for dealing with this malaise of the mailbox?

HENRY BLOSSER

11/19/80

East Lansing, Michigan

Juicy particles

To each of the four fundamental forces in nature (strong, electromagnetic, weak and gravitational) there now corresponds a physical theory (chromodynamics, electrodynamics, flavor dynamics, geometrodynamics). The third of these is an abhorrent etymological anomaly, which I propose to correct. Frederic Peachy of our classics department informs me that the Greek work for flavor is γεῦσις, whence *geusidynamics*, which, by the customary rules of Anglicization, is to be pronounced "juicy-dynamics".

DAVID GRIFFITHS

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11/24/80

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Meeting complaint

As a recent participant in the APS Plasma Division meeting in San Diego, I strongly object to the official pressure of the Fusion Energy Foundation at this meeting. Their attacks on opponents of nuclear fission power plants are unbecoming and counterproductive. By questioning the morality of people who have legitimate concerns about the safety of nuclear power plants, they are applying ethical standards to a problem that should be judged on its technical and economic merits. If the Fusion Energy Foundation is allowed to participate in future APS meetings, then in the interest of fairness a group with opposing views should also be invited.

REX GANDY

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11/26/80

THE DIVISION CHAIRMAN REPLIES: Rex Gandy's points were well taken, and allow us to clarify the current division policy on peripheral activities at our