

VELIKOVSKY AND THE AAAS: WORLDS IN COLLISION

It was time for a scientific day of atonement

For 24 years Immanuel Velikovsky has demanded a hearing from the scientific establishment. It finally came this week at the San Francisco meeting of the American Association for the Advancement of Science. Before an audience of about 500, including some ardent supporters, Velikovsky defended the controversial theories that have brought him fame and ridicule, and expressed his disdain for the scientific community that has ostracized him for over two decades.

Velikovsky's book, *Worlds in Collision*, has gone through 72 printings since SCIENCE NEWS first predicted in 1950 that it might "excite almost as much controversy as did the Scopes "monkey trials" (SN: 4/15/50, p. 229). Arguing from a literal interpretation of ancient texts, including the Bible, Velikovsky states that around 1500 B.C. the planet Jupiter spewed forth a gigantic mass of material that streaked along, cometlike, sideswiping earth and Mars several times and finally settled into a circular orbit around the sun as the planet we now call Venus. Among the natural catastrophes resulting from these collisions, he believes, were the biblical ten plagues in Egypt, the parting of the Red Sea, the rain of manna from heaven and the apparent stopping of the sun in its course during an Israelite battle.

Any proponent of such views could reasonably have expected skepticism from astronomers, but organized opposition developed within the scientific community and pressures on Velikovsky's publisher to suppress the book brought an outcry from nonscientific intellectuals who made the author a literary hero.

Partly because of this ground swell of popular support, which refused to evaporate before the scholarly pressure of astronomers, geologists and historians, and partly because of a persistent sense of guilt over what Velikovsky's harshest critics now concede was a shabby breach of academic freedom, the AAAS invited the 77-year-old author to debate his views in a public forum.

Baruch College sociologist Norman Storer opened the program by declaring that the "norms of science and the norms of common courtesy" had been violated in the early treatment of Velikovsky. But such treatment, he said, must be viewed against the backdrop of legitimate fears among scientists of the time that Cold War anti-scientism would

any day spill over to wreck their personal and professional lives. Threatened by McCarthyism and confronted by a man only marginally distinguished from a crackpot, Storer concluded, the scientific community acted with human petulance instead of polite skepticism.

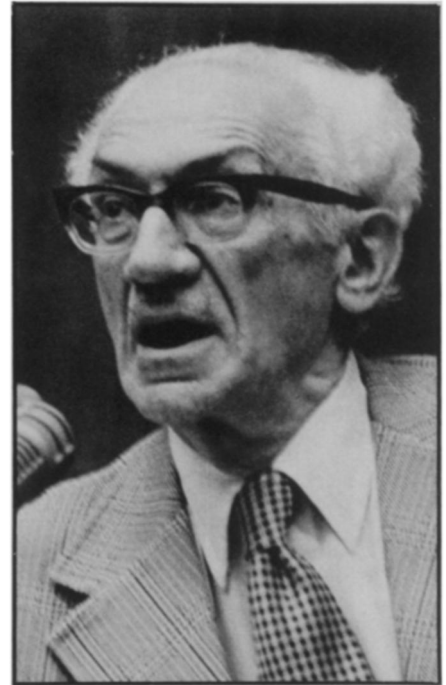
Velikovsky doesn't see things that way. According to him, the repression of his ideas was only the latest in a long series of injustices visited upon dissenters by the established powers of science. Drawing comparisons with Copernicus, Bruno and Darwin, Velikovsky concludes, "A motive is at play that may appear as scientific principle what is but wishful thinking." Just as 16th Century people did not wish to believe the earth was not the center of the universe, "Even much less man wishes to face the fact that he travels on a rock in space on a path that proved to be accident prone."

Only the "trained eye of a psychoanalyst, "which revealed the common theme among ancient mythological texts, could have enabled Velikovsky to understand the resistance he and other iconoclasts meet from established scientists is only a manifestation of anxiety over an "unwelcome truth." At last he claims vindication has come: "My work today is no longer theoretical. Most of it is incorporated in textbooks and it does not matter whether credit is properly assigned. . . . Nobody can change a single sentence in my books." (Standing ovation by some of the audience.)

Some of Velikovsky's predictions—radio signals from Jupiter, a hot surface on Venus, the existence of a magnetosphere around the earth—have indeed been verified and entered in the textbooks. But most scientists dispute the author's claim to originating these ideas and saying that even when he is right, it is for the wrong reasons. And, they say, more often, he is out-and-out wrong.

The most outspoken of the panelists taking this view was Cornell astronomer Carl Sagan, who in a detailed critique drafted ten new plagues for Velikovsky:

To eject Venus from Jupiter would take as much energy as the sun radiates in a year. The probability of an ejected planet colliding repeatedly with earth and Mars as Velikovsky describes, is one chance in 10^{23} . No interaction with Venus or Mars could slow the earth's rotation and start it up again as de-



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scribed. Geological evidence supports the view that mountains were pushed up over millions of years, not in a brief, recent event. To account for manna falling in enough abundance on one spot to feed the Israelites would require 10^{28} grams of the stuff to have been produced—some of which would certainly still be around.

Velikovsky says the clouds of Venus are composed of hydrocarbons; none have been found and recent evidence indicates the clouds are mostly sulfuric acid instead. Velikovsky predicts that "Mars emits more heat than it receives from the sun"; the opposite has been observed. The surface of Venus is saturated with craters, suggesting a lifetime of billions, not thousands, of years. Comets show no tendency to settle into circular orbits in so short a time as Venus was said to have done.

Sagan's 56 pages of criticism would ordinarily be sufficient to lay to rest for all time such a picked-apart theory, but Velikovsky's supporters are not easily dissuaded, and the controversy is sure to continue.

The vehement response of Velikovsky's supporters to these objections suggests the controversy will continue to rage. The AAAS is planning to publish proceedings of the seminar, which Owen Gingerich of Harvard hopes will give some reference point for future discussions. Velikovsky remains confident that new data from Venus space probes will vindicate his theory, he continues to make new predictions. Isaac Asimov, on the other hand, several years ago wrote that the controversy is likely to continue simply because "there is no belief, however foolish, that will not gather its faithful adherents who will defend it to the death." □