2. R. B. Freeman, Amer. Econ. Rev. 65, 27 (1975).
3. American Institute of Physics publications R 151.12 and R 151.13.

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8/24/78 *Blacksburg, Virginia*

Pauling and Sakharov

A telephone call from a PHYSICS TODAY staff member, who asked me about a letter to me from Andrei Sakharov, has prompted me to write this statement.

I went to Moscow to participate in the International Conference on Biochemistry and Molecular Biology, sponsored by the International Union of Pure and Applied Chemistry, the International Union of Biochemistry and the USSR Academy of Sciences, and to receive the Lomonosov Medal. In Moscow I was approached by a man who spoke with a pronounced Central European accent. He gave me a letter, which he said was from Sakharov, and told me I should have it translated by some reliable person. Before I could find a reliable person I was informed by several reporters, including ABC television, that Sakharov had released the text of the letter, and that in it he had asked me to make a statement in defense of three Soviet scientists who had been sent to prison. I replied that I had signed statements and had written letters about scientists and other people whose rights have been reported to have been violated by the USSR government and other governments, although I could not remember with confidence whether or not I had taken action about these three men. I added that all governments are immoral, and cited the example of the United States government, which in 1952 refused me a passport and thus prevented me from participating in the two-day symposium in London on the structure of proteins that had been organized by the Royal Society; I was scheduled to give the opening address, and most of the papers dealt with the discoveries made by my coworkers and me.

I do not know whether my statements were published or broadcast. On my return to California, however, I found that my local paper, the *Palo Alto Times*, had on the same day as my interviews, 25 September 1978, published an article about Sakharov's letter to me, including the sentences "He urged the US chemist to come out in defense of three Soviet scientists—physicist Yuri Orlov, mathematician Alexander Bolonkin, and biologist Sergei Koralev—who have been sent to prison for dissident activities. Pauling did not make the statement requested by Sakharov, and he could not be reached for comment on Sakharov's appeal."

I consider it improper for Sakharov to have given his letter to the press before I could get it translated by a "reliable person" and could take action on it. I think that this episode was planned to take place the way it did. I admire Sakharov, and I shall continue to support him. I feel, however, that in the future he should be more careful in his selection of advisors and agents.

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More on Velikovsky

In his "review" of *Scientists Confront Velikovsky* (August page 56), George Abell repeats propaganda that has often been refuted. His not realizing this could have been caused by his lack of ability to research the subject he so vehemently opposes, or by his lack of interest in obtaining the facts. The latter is probably the case, because Abell appears to believe that he already knows the "truth" about the recent history of the solar system.

It seems to make Abell and others of Velikovsky's opponents feel better about their irrationality if they convince themselves that only functional psychos would consider Velikovsky's work seriously. I have a PhD in physics and am a member of APS. I have given many talks about Velikovsky's ideas to sections of the AIAA, IEEE, SPE, MENSA, and physics departments of universities. The talks were well received, and the audience realized that Velikovsky's ideas have considerably more support than one would conclude from reading the "acceptable" journals. The range of PhD physicists actively investigating Velikovsky's work includes experts in celestial mechanics, spectroscopy, thermodynamics and plasma physics. Numerous scientists trained in fields other than physics are also investigating the ideas. Therefore, the only way Abell and others can claim that scientists consider the theory "absurd" is to define "scientist" as a person who agrees with their outdated ideas.

It is surprising that Abell only picked on Derrall Mulholland and did not mention any of the mistakes made by Sagan. His paper was so replete with distortions, misrepresentations, inaccuracies and illogical statements that surely a person with Abell's training should easily see them. In fact, Sagan's paper contained so many errors that one must conclude that either he is extremely stupid (which he obviously is not), exceedingly careless (your guess) or fraudulent. The fact that Sagan proved incompetent at refuting Velikovsky does not, of course, make Velikovsky's theory correct, but since Sagan's demonstrably false article is considered the best refutation, it does make it obvious that the subject should not be closed.

Those interested in the details about the errors found in *Scientists Confront Velikovsky* should read *Velikovsky and Establishment Science* and *The Age of Velikovsky* (Kronos Press, Glassboro State College, Glassboro, N.J.: *The Age of Velikovsky* paperback is by Delta). The latter book also reviews the theory, some of the scientific support for it and the attempted suppression of the ideas.

It is ironic that the issue of PHYSICS TODAY with Abell's review also contained letters about continuing concern for oppressed scientists in other countries. Beginning with the origin of this concern, the freedom of dissemination of ideas has been one of the major issues. Yet, in 1971, PHYSICS TODAY wrote me that Velikovsky's ideas need no longer be discussed in that periodical. Just this year, *Science News* canceled continuing ads for *Velikovsky and Establishment Science* and *The Age of Velikovsky*. *Science News* said that they would no longer run ads on "that subject." However, the following week *Science News* ran an ad for *Scientists Confront Velikovsky*. What both periodicals obviously meant to say was that discussion of only one side of the issue would be allowed. The Soviets claim suppression of ideas protects the public from confusion. From the actions of some scientists here, one could easily conclude that they believe in the selective use of "protective" measures.

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THE AUTHOR COMMENTS: Since writing my review I have learned that the Velikovsky cult does count among its members a small handful of people with scientific credentials. Perhaps this is not surprising, considering the tens and thousands of men and women with scientific training. I understand that there are also physicians who still practice medical astrology in making diagnoses. At least it is a *nearly* unanimous view of physicists and astronomers that Velikovsky's ideas are not tenable in light of modern knowledge.

There is no scientific conspiracy against Velikovsky. Scientists do not generally count themselves as his enemies or "opponents;" most simply do not have time to become involved in a futile debate with committed believers, and are more likely to regard the whole matter with mild amusement. Scientific journals have not accepted papers by Velikovsky, if he has ever submitted any, because his astronomical ideas are not carefully developed scientific theories but vague speculations without quantitative justification. On the other hand, I would strongly oppose actual suppression of any views, including Velikovsky's, so long as they were not misrepresented as being those of the scientific community. But one can hardly make a case that Velikovsky has been