

letters

discrimination and mockery reserved for those with ethnic identification. The ethnic animosity is instigated and provoked by the authorities as a means of supplementary pressure exerted on refuseniks, and as a way of deflecting the Soviet citizenry from criticizing the party-state apparatus (was this not what the Nazi rulers did, and did we not see the same arguments in their defense not so long ago?).

Second, Bevc's assertion that "every allegation of Soviet iniquity has a commensurate counterpart in the US" seems to me utter nonsense. I challenge him to try to refer the reader to any analogous article in the Soviet physics journals criticizing Soviet society to the extent Bevc criticized American society. Is Bevc jailed, exiled or dismissed after publication of his letters? Would he like sharing the fate of Brailovsky or Shcharansky?

Third, Bevc's explanation of how Soviet citizenship is renounced by the "own free will" of everyone applying for emigration seems a pure lie. The authorities approach it differently. There are some Russians in the West who live outside of the Soviet Union for decades and keep Soviet passports which they receive before leaving the USSR (I would not be surprised if Bevc is one of them). The others are *compelled* to sign special applications renouncing their citizenship. Unless they sign, their applications for emigration are rejected without examination.

Fourth, his argument that allegations of Soviet antisemitism are not credible because many Jews, Trotsky, Kamenev and Litvinov for example, were "architects of the Soviet system" is a cheap trick. The discussion in *PHYSICS TODAY* concerns the problem as it exists today. Bevc chose to obscure it by references to events that happened sixty-six years ago. Trotsky, Kamenev and Litvinov paid for their involvement with their lives more than forty years ago. What does it prove or disprove?

Fifth, it is interesting that Bevc is at ease with the lack of freedoms in the USSR. He even found it proper to equate the situation in which Andrei Sakharov and his wife suffer exile, humiliation, assault and many other terrible things with the conflict in which Charles Schwartz was involved with the Lawrence Radiation Laboratory here in the US. One question to Bevc: Will Sakharov be able successfully to "sue before he gains access" (at least to his own apartment in Moscow) as Schwartz did? What a shameful position!

YURI I. LURYI

University of Western Ontario
London, Canada

2/83

Early computer history

This is a belated comment on a letter from John Brainerd in January (page 13). The correspondence concerns the early history of the ENIAC and EDVAC.

I suggest that a suitable reference on the subject is a pair of articles that appeared by Marshall Ledger in the *Pennsylvania Gazette*: "The Case of the ENIAC," in the October 1982 issue and "The ENIAC's Muddled History," in the November 1982 issue.

The second article quotes Nancy Stern in *From ENIAC to UNIVAC: An Appraisal of the Eckert-Mauchley Computers*, to wit: "It is necessary to keep in mind the unconscious or even conscious tendency of principal participants to reconstruct selectively the details of events in a manner that emphasizes their own contributions." It appears quite clear that both Ledger and Stern refer primarily to Brainerd in this matter.

This agrees with other observations. Mauchley has made no secret, either verbally or in writing, of his feelings that Brainerd was a principal impediment to the ENIAC. My father felt precisely the same way about Brainerd's contributions to both the ENIAC and the EDVAC. Brainerd has the advantage of having outlived them both, and so is relatively free to make statements without fear of contradiction by the other participants.

YALE JAY LUBKIN
Ben Franklin Industries
Casey Creek, Kentucky

3/83

Directed-energy weapons

At the 1981 APS Spring Meeting, we had a Symposium of the Forum on Physics and Society on directed-energy weapons that was filmed by the BBC for a documentary on the arms race. The first speaker, Douglas T. Tanimoto of the Defense Advanced Research Projects Agency, showed a film of a propeller-driven dark red drone plane that was destroyed by an infrared laser that focused on it for a period of several seconds as it slowly circled at a relatively close distance. I asked Tanimoto if it was not cheating to use a close, slow-moving, dark red drone to simulate a large number of fast-moving, distant, polished metal targets, and he admitted that it was cheating "a little." The last speaker, Kosta Tsipis of MIT, presented conclusive evidence that the technology needed to develop effective ABM Directed Energy Weapons did not now, and probably never would exist!

At the 1982 Spring meeting, I attended the APS Council Meeting and learned that they intended to hold off on taking a stand on the nuclear freeze

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issue until after heating the results from the Forum Symposia on this question. One of the Forum speakers, Hans Bethe, gave a talk that showed beyond a reasonable doubt that the US was the aggressor in the nuclear arms race and that the Russians have been desperately trying to catch up! At the final Forum meeting I called for a vote on the question of a nuclear freeze, and there was almost a 100% show of hands!

At the 1983 Spring meeting, George A. Keyworth II, President Reagan's science adviser and the director of the Office of Science and Technology Policy, gave a talk in which he asked for help from the physics community to develop the technology for future anti-ballistic missile systems. I was the first to comment on his talk, and I argued that development of these types of weapons would expand the arms race and bankrupt the economy! The loud applause in support of my argument left little question that a large majority of the physicists have had enough of the arms race and would not support the development of Reagan's "Star Wars" weapons.

BRYAN G. WALLACE
St. Petersburg, Florida

5/83

More on Bronx Science

The fact that I am a graduate of the Bronx High School of Science heightened my interest when I read the article about the Science class of 1950 "One high school yields 8 PhDs and 2 Nobel laureates in physics" in February (page 53).

The two Nobel Prize winners notwithstanding, this yield of 8 PhDs was not unusual even after the three-or four-year period mentioned in the article. My graduating class (Science '57) produced 10 PhDs in physics and one in astronomy. Besides Leonard Susskind and Lillian Hartman, who were mentioned in the article, the people who went on to get PhDs in physics are: Leonard Feldman (Bell Labs), Lance Heiko (self-employed), Steven Holt (NASA), Ivan Kramer (University of Maryland), Leslie Levine (Federal Government), Michael Moldover (NBS), Ken Pickar (self-employed), and myself. Eugene Milone (Rothner Astrophysical Lab, Canada) received a PhD in astrophysics.

SAMUEL MARATECK
New York University
New York, New York

3/83

I would like to add my name to the list of Bronx Science graduates (class of 1960) who later went on to receive a PhD degree in physics. The research

for my doctorate, received in October 1971, was an experimental study of vortices in helium-2.

MARVIN STEINGART
Hughes Aircraft Company
Fullerton, California

3/83

In the excellent news story by Gloria Lubkin about the Bronx High School of Science, a list is presented of graduates of the school between 1940 and 1960 who became physicists. Since I am identified as the compiler of the list, I wish to assure my fellow alumni that it was not meant to be complete as published, both because there were many more that I knew of than could conveniently be listed, and because I do not believe that I have identified all physicist alumni of Bronx Science. Since the article was published, a number of physicists who were not listed have written to me, identifying themselves and sometimes other graduates who became scientists. I very much appreciate this, and I would be happy to hear from other graduate of Bronx Science, physicists or otherwise, who would like to tell me something about their experiences at the school.

GERALD FEINBERG
Columbia University
New York, New York

5/83

Secular correction

Regarding "New inflationary universe: an alternative to the Big Bang" (May, page 17), I would have expected the "three-week worship" to have been held at Canterbury rather than Cambridge.

JOHN S. MCINTOSH
Wesleyan University

5/83

We did not mean to imply a religious gathering; the correct word, of course, is "workshop"—Editor.

Nuclear arms education

Congratulations on the fine special issue in March on nuclear arms education. The authors were obviously well selected, the topics most appropriate, and the emphasis on the normative role physicists have (as emphasized especially by Hans Bethe) makes it one of the most important issues ever published.

Many of us are teaching about the arms race. I teach a course on the topic in the College of Liberal Arts of the Rochester Institute of Technology. Normal enrollment in my course is 45 and I teach five sections per year—thus reaching 225 students directly. One of the outcomes of the classroom teaching has been frequent contact with stu-

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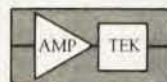
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