

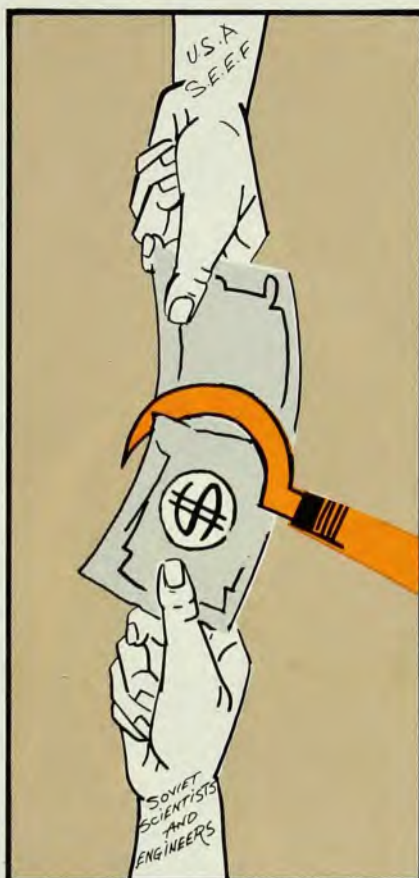
## Soviet emigrant fund imperiled

We are taking this opportunity to report on the activities of the Scientists and Engineers Emigrant Fund (SEEF). In 1973 a group of physicists began sending small sums of money by regular bank draft to a few colleagues in the Soviet Union who had lost their jobs and were in need, as a result of applying for exit visas. As time passed, and more information arrived here about the "refuseniks," we added engineers, chemists, and mathematicians to the list of those being helped.

In 1974 SEEF was organized, chartered in the Commonwealth of Massachusetts as a charitable trust. In our role as Trustees, we the undersigned, have received (tax-exempt) contributions from over 1000 members of the US scientific and engineering community, solicited primarily from the Fellows of The American Physical Society and from the Members of the American Mathematical Society. These funds have made it possible to send gifts averaging \$50 a month to some 30 different individuals—usually heads of families—for a total of about \$20 000. (Contributions can be sent to Scientists and Engineers Emigrant Fund, c/o David H. Frisch, Room 24-036, Massachusetts Institute of Technology Cambridge, Massachusetts 02139). Communications from recipients still in the USSR, and from those who have managed to emigrate, have told of the importance of this financial and moral help, not least as an indication of support by the international scientific community.

Recently the Soviet Government announced two rulings that will seriously hinder our efforts and those of others: 1) a new 30% tax in addition to the approximately 35% now deducted will be imposed on all foreign-currency gifts, starting 1 January 1976; 2) even more important, there will be a drastic reduction in the effective exchange rate applied to such gifts. The combination of these two makes an almost confiscatory effective exchange rate. This will cripple our efforts, and also those of many individuals, especially emigrés who try to support their families in the USSR with periodic remittances.

Given the very small magnitude of the sums involved in gifts compared with that of the Soviet economy, we conclude that the purpose of these new regulations is to discourage emigration



further by imposing even more difficult sanctions on those individuals who claim this basic right.

As the Trustees of SEEF, we are concerned by this new turn of events that is so contrary to the announced spirit, if not the letter, of the Helsinki agreement and we call it to the attention of our colleagues, especially those who deal directly with the Soviet Union.

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## Sunday in Moscow

Every Sunday at noon some thirty Soviet scientists gather in the tiny Mos-

cow apartment of Mark Azbel for a weekly seminar, which represents their only remaining opportunity to practice the science to which they have devoted their professional lives. Azbel is an internationally known theoretical physicist, formerly a member of the prestigious Landau Institute near Moscow. Two and a half years ago he applied to emigrate to Israel and was immediately dismissed from the Institute. For him and the others in the Seminar there has been no further opportunity to participate in Soviet scientific life. They are shunned by practically all of their former colleagues. Access to libraries and laboratories is forbidden; telephone service is cut and all mail is intercepted, including subscriptions to Western scientific journals. Although these scientists live in a constant state of personal fear and deprivation, they make a determined effort to remain intellectually alive through the Sunday Seminar and the occasional participation of visiting scientists.

Recently, the undersigned participated in a Soviet-American physics symposium in Moscow sponsored by the Academies of Sciences of the US and USSR and the National Science Foundation of the US. On the Sunday preceding the opening of the symposium, six members of the American group attended the Sunday Seminar. Azbel invited us to speak to the group, postponing that day's scheduled lecture by one of the regular participants in order to listen to discussions of current research. So we took turns standing at a worn-out blackboard in the small crowded apartment lecturing about optical properties of crystals, with Azbel interrupting periodically to summarize sections of the lecture in Russian and to translate questions. The audience was enthusiastic and the Seminar continued for four hours.

On Monday 26 May, the official symposium began—a five-day marathon of lecture sessions and laboratory visits. During the symposium we met many distinguished Soviet scientists and visited several impressive research laboratories. We found the opportunity for first-hand interaction highly rewarding and stimulating, particularly with those scientists who have not been allowed to travel abroad and whom we have previously known only through their pub-



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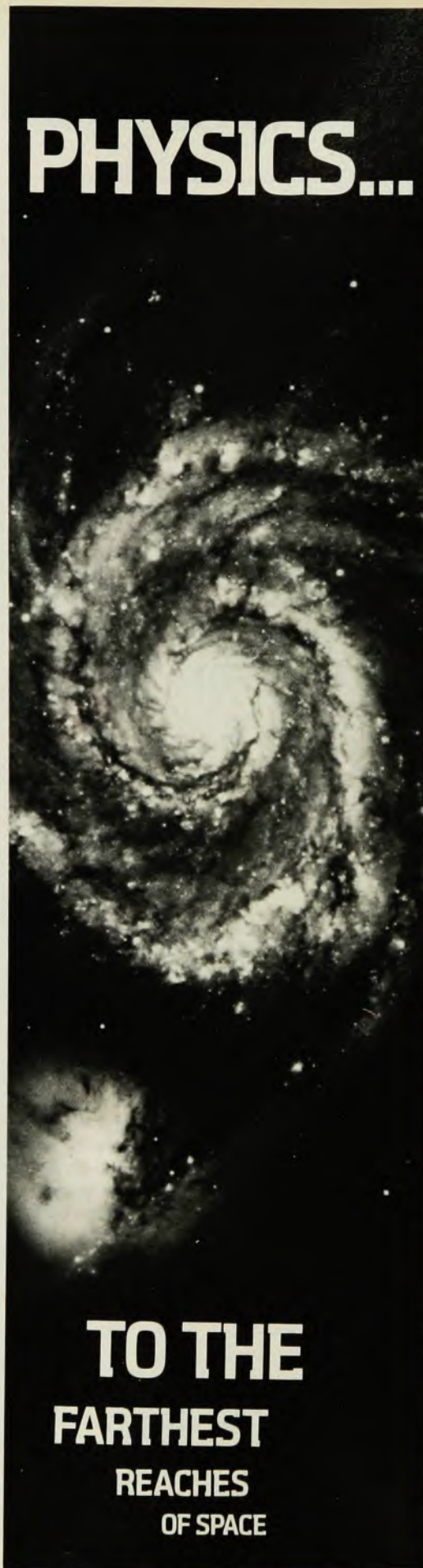
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## letters

lished work. We established warm friendships with many of the Soviet participants who spared no effort to make our visit enjoyable and useful.

On Tuesday 27 May, two days after our visit to the Sunday Seminar, Azbel received a summons to report to KGB headquarters on the following day. When he appeared, he was informed that the Sunday Seminar is viewed by the KGB as a "group participating in anti-Soviet propaganda aimed at undermining the Soviet power and contacts between the USSR and the West" and that criminal action, including a possible charge of treason, would be initiated against him unless the seminar is stopped. (*The New York Times*, 8 June 1975.)

We saw Azbel twice more during that week. Clearly concerned by the gravity of the KGB threat, he was nevertheless adamant in his determination to continue the Sunday Seminar; to discontinue it would mean abandoning the last means of maintaining any level of professional activity, particularly for the younger participants. Furthermore, he asked that Western scientists who have the opportunity to visit the Soviet Union continue to come, and that they also attend the Sunday Seminar and bring current issues of scientific journals in physics, chemistry, mathematics and biology—all disciplines represented by some of the regular participants. He stressed the importance of this infusion of outside scientific information and the additional visibility that it gives to the Seminar.

The emotional impact of this entire experience was overwhelming. In both the Sunday Seminar and the official symposium we met many fine men and women who are excellent scientists. Yet the second group carefully avoids any possibility of contact with the first. We were deeply saddened by the aura of fear that seemed to weigh so heavily on the entire Soviet intellectual community.

We must now consider how to shape our own future actions and attitudes in view of these experiences. Recently, there have been numerous calls for a total boycott of further scientific exchange with the Soviet Union in view of the persistent violations of human rights. Although boycotts of particular events can be effective for protesting specific Soviet actions, we believe that the most effective means of exerting humanitarian pressure on the Soviet hierarchy is by an active participation of concerned scientists in the US-USSR scientific exchanges. We believe that these exchanges should continue, but that each event should be consistent with the basic ideals of free scientific inquiry. We hope that those who par-

ticipate in these exchanges will use the occasion to express their insistence on the freedom so basic to both the spirit and practice of science and that those who visit the Soviet Union will insist that their freedom to attend the Sunday Seminar, and meet freely with other Soviet scientists, is necessary to their participation in the official exchanges. We urge our fellow scientists not to abandon our brave and dedicated colleagues.

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## Why no moon for Mercury?

I want to report an explanation of the fact that Mercury has no satellites. Believe it or not, the explanation comes from a paperback popular book by Isaac Asimov, entitled *Of Time And Space And Other Things* (New York: Lancer Books, Inc., 1965; Mercury Press, Inc., 1959).

On page 96, Asimov shows the fact that the Roche limit (the distance from the planet's center at which the satellite moon would be broken up by tidal forces—2.44 times the planet's radius) prohibits a moon from existing close enough to Mercury to avoid an appreciable tug-of-war with the Sun's gravitational force, which would make the moon's orbit greatly elliptical.

The author adds the following remark, which encourages one to have patience with exercises with pencil and paper by which Asimov came to his discovery:

"In actual truth, no satellite has been located for Mercury but, as far as I know, nobody has endeavored to present a reason for this or treat it as *anything other than an empirical fact (emphasis mine)*. If any Gentle Reader, with a greater knowledge of astronomic detail than myself, will write to tell me that I have been anticipated in this, and by whom, I will

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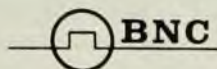
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