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ИНСТИТУТ ЯДЕРНОЙ ФИЗИКИ  
Новосибирск 90, СССР



USSR ACADEMY OF SCIENCES  
Siberian Division  
INSTITUTE OF NUCLEAR PHYSICS  
Novosibirsk 90, USSR

Dear Norman,

We've had a big misfortune, our leader, teacher and friend Andrey Mikhaylovich Budker has died on July 4 of a sudden heart attack...

I am planning, indeed, to visit the USA next year for 2 or 3 months to work together with Joe Ford in Atlanta. I tell you later on as to my schedule. Would be happy to meet you somewhere and to discuss the stochasticity and around. I am involved now, together with Joe Ford and Giulio Casati of Milano University, into studies of the quantum stochasticity, that is the stochastic behavior in quantum dynamical systems. We are studying presently a quantum pendulum under the influence of external periodic perturbation in the form of a series of short 'kicks'. Although we observe a diffusion in energy close to a naive expectation based on the classical theory of stochasticity.

-2-

The behavior of a quantum system turns out to be much more sophisticated. In particular, we have failed to find any mixing property in the quantum system.

With my warmest regards to you, Charlotte and the children whom the latter I know only by a picture you have sent me once.

Boris

8/VII 77.



(2)  
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With my warmest  
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Dr. N.Y. Zabusky  
Math.-Engineering Depts  
University of Pittsburgh  
Pittsburgh, Pennsylvania

Sherry Christmas  
and  
Happy New Year

Charlotte + Norman  
Stacia, Erica, Alex

"Nursery of the Telegraph--July 5, 1872"  
by James Cummings Vail. The electro-  
magnetic telegraph was first publicly  
demonstrated here in 1838 by Samuel J.  
B. Morse and Alfred Vail, the artist's  
father. The Factory, a National Historic  
Landmark, is part of The Speedwell Village  
in Morristown, New Jersey.

Archives  
Morristown, NJ  
1872

Reynolds

SPINER  
CONCRETE



Dear Boris

I am just about getting used to university of Pittsburgh life. This past year I spent visiting Princeton Institute and University (with Martin Kruskal). I return to Pittsburgh next month and my family will move here in the summer.

The last time I saw Joe Ford he told me you were still planning to visit the U.S.A. I hope we will all have a chance to see each other and reminisce. There is so much to talk about.

Seasons Greetings  
and best wishes for the

New Year

Yours

See previous  
correspondence!

Problems of  
quantum mechanics  
Transition to the  
classics!

---



Dear Borya -

It seems like a very long time since we have been in touch, doesn't it? But we often think and talk about you, and Norman hears about you from Joe Ford.

As you know, Norman has been professor at the University of Pittsburgh for the past two years. The rest of us have not yet moved. Norman was home with us for the past few months. Last spring he spent two months at the Institute for Advanced Study in Princeton. Then, for the summer, he worked at Exxon. And during the fall term he was at Princeton University, working with Martin Kruskal. Now he is getting ready to go back to Pittsburgh in January. Probably we will all move there next spring, after Alex graduates from junior high school.

How are you and your family this year? Your daughter must be working hard at the University. And what about your dear aunt? I have just sent a note to your cousins Nadya and Mitya. And please remember us to your other cousins Kyril and Inge.

Our family is growing older all too quickly. Stacia is now 18 and is in her first year at Harvard University, our best college. She graduated from high school first in her class. This year she is taking a course in Computer Programming, but she is not going to be a mathematician. She still likes to write poetry and she likes literary analysis and languages. She doesn't know yet what she will major in. You once said you would like to see Stacia's poetry, and I will try to remember to enclose one or two of her best poems from last year. Last year, she and two friends wrote a play, theater of the absurd. It was produced by the high school and was very successful. It was very funny.

*Doti & Natalie*

Erica is 15 and is a good student, too, but she also has a good voice, and she wants to be a singer. She has a lyric ~~sp~~ soprano voice, very well suited to operetta. I bet she could learn a lot from your wife! (I'm so sorry we never had the pleasure of hearing her sing.) Now Erica sings Gilbert & Sullivan, light opera arias, Italian and French art songs, and even folk songs. But she really prefers musical comedy and wants to perform on Broadway!

✓ Alexander just turned 13, and - guess what! - last year he took up skiing and he loves it. He seems to be good at it and it is his favorite sport, although he likes all sports. He's also good at running.

As for me, I am teaching English to foreign students at a college in New Jersey, and I am also trying to finish my book about immigrants. My co-author and I have interviewed over 100 immigrants so far, and now we are interviewing a few of our famous immigrants. We expect to finish by next spring. It has been very interesting working on this book.

✓  
✓ We have absolutely no plans to travel in the near future, not even to Europe. Of course, we would very much enjoy visiting you in your country again, but we are now spending all our extra money on Stacia's college tuition. But what about you? Will you come to the United States soon? Our home is always open to you, so whenever you do make this trip, you must be sure to include enough time to stay with us for a while. It would be wonderful to finally be able to repay some of the warm hospitality you showed to us on our two trips to Moscow.

I am enclosing a beautiful postcard I have been saving for you for almost a year, from the wonderful Tutenkamen exhibit that toured ~~the~~ some of our cities. Also, there is a photograph I don't think I ever sent to you, of our last visit together in Moscow; and some ~~like~~!

nice stamps I think you will like.

We wish all of you a fantastic 1978, full of all the things you want. We hope it will include much health, happiness, success, good times, excitement, and JOY!

Affectionately,

*Charlotte*

*Maproff*



# The Final Hour -- Ma'alot Massacre 5/15/74

To know the final hour has come -  
the gun, pointing straight at you,  
eyes watering with silent tears.  
In your ears the whisper of a  
labored desert wind floats by,  
and beyond the point of the gun,  
green trees and brown earth  
can be seen outside the window.  
In your hands you feel the  
sweat of fear and heat, and  
tiny grains of sand have somehow  
found their way into your palm,  
and you feel good to feel the  
earth of your land beside you.  
Your terror mounts as time passes,  
the silent tears shining in your eyes  
but not falling.

And then a sound of thunder is  
heard, and a lead pellet breaks a  
window and falls to the ground inside.

Instant anger, and the gun is  
taken from you to fire out the  
window at the enemy - your friends.

In your mind, a feeling of relief  
comes quick and strong, but  
in your heart you know that  
this means greater danger for  
you and your captured friends.

You see nothing now; then the  
sound of your friends' screams  
penetrates the wall of fear you  
have built and you return to the  
reality of pain and blood which  
lives and dies around you.

And then the end of the gun  
is back, pointing towards you,  
and unbidden the silent tears fall.  
Your heart cries for rescue to  
come and save you, but you know  
it cannot be so.

And you pray to your God, and  
pray for your country and your  
loved ones, hoping they will  
survive better than you have done.  
And your heart dies before the  
bullet comes, and the screams you  
hear become your own and your  
blood bathes the floor and thus  
have you died, the grains of sand  
still clutched within your hands.

by Stacia Zabusky

## IMAGES

images fly-by-night-  
ly in my dreaming world,  
elusive to be tuned towards  
outer world's hysteria - -  
they fade unbelievably  
slipping like water through  
cupped hands,  
leaving only shine  
glistening in the light of  
my stare so brightly in  
the sun's eye:  
leaving only shine  
and fingers cooled by water,  
flowing like elusive  
girls never to be caught  
by outstretched arms which  
reach and reach and reach - -  
my feet slow but still are  
never caught by straining  
fingertips . . . in my dreams smile  
and there is love  
at least fly-by-night-  
ly.

Stacia Zabusky

## BROTHER

he does sleep, you know, however little -  
dozes with his eyes open, I think.  
his bed seems untouched mornings -  
at night, it could be empty;  
except I've gone in ~~there~~ to kiss him,  
and he's been there.  
but stars will shine too brightly for darkness,  
and wind will scream too loudly for quiet -  
restlessness is to be understood -  
even forgiven  
but know: I have kissed him in his dreams.

Stacia Zabusky

5

## Hurrah!

the new year's nymph got drunk with  
Arthur Fiedler -  
on champagne, no less  
there was wild dancing, but no orgy -  
she went unnoticed at the party.  
poor thing  
out of place in Grecian draperies,  
this nymph of the new year  
couldn't imitate trees or grasses, or us -  
Arthur didn't mind -  
complimented her with music  
and served her champagne.  
she wasn't there at the start -  
came in at the countdown  
you know:  
suddenly, she was there,  
materializing - as they say - from thin air.

Stacia Zabusky



the tree stood before her--  
large, it reached to the ceiling,  
green branches stretched to all sides--  
colored bulbs hung from the limbs--  
and strings of lights adorned the tree;

strings of light which flashed on  
and off in a haphazard pattern--  
lights of blue and green and  
red--and the star on the top  
sparkled silver--

the house was asleep--and she stood  
alone in the dark room, aware of  
the quiet, the dreaming bodies and  
the tree--and she shivered in her  
nightdress, for the air was cold--

finally, she lifted her arms and  
opened them wide, as wide as they  
would go--and she took one step  
towards the tree, bare feet trembling  
on the cold floor--

her nightdress flowed around her  
ankles, and she sighed--and  
took another step, until the  
outermost needles of the tree brushed  
her face--

and she trembled, cold and  
afraid--and she took another step--  
the gifts beneath her feet crinkled  
as the paper tore, and the  
ribbons were ripped away--

and her arms touched the  
branches, and she embraced the tree--  
the needles digging into her flesh,  
the fragile balls breaking and  
crashing to the floor

in little splinters, which her  
feet encountered--and blood flowed  
over her white feet--and then she  
began to feel the heat of the lights  
burning her young body--



and she cried out in pain, but  
pressed closer, as needles stung and  
heat burned her arms and her  
face--and her feet were cut  
from shattered ornaments--

the tree rocked as she held it,  
and she felt it quiver--and  
as if in a dream, the tree fell.  
slowly, gently, and she clutched  
the branches tighter--

the tree fell, knocking dishes off  
shelves and breaking china and  
glass--the lights shattered beneath  
her body, and she lay on top of  
the tree, feeling the glass cut her skin,

feeling the cold air, and the blood  
trickling in narrow red paths--  
and the house awoke and came  
running to find her lying atop  
the fallen tree--

and they pulled her up, and saw  
the blood, and felt the coldness of  
her body, and saw the tears glistening  
in her eyes--but they didn't  
understand why--

and they bathed her with warm  
water and put her in a bed  
beneath layers of blankets--and  
there was no explaining--for there  
could be no understanding--

and the house slept again--  
and she rose and went to  
the tree and stood beside it,  
where it lay on the ground, mangled  
and broken--

its needles and branches crushed--  
its decorative clothing smashed into  
tiny splinters of colored glass--and  
she wept, as she stood with her  
arms opened wide.

Stacia Zabusky



This letter has not passed!

Dear Charlotte and Norman,

Many thanks for your warm letters and postcards, beautiful pictures and stamps, and especially for Stacia's poetry which I am really enjoying. I especially like her 'Brother' (and I like her brother, too, and send him my best wishes, particularly, in (mountain?) skiing!) and 'Images', although I still haven't got accustomed to blank verses (too old, perhaps). But I am somewhat puzzled by her 'The Final Hour' - it seems to be a wrong theme for a callow girl... (don't take it offensive, please). If Stacia does like languages and poetry she could try the Russian to feel our classical poetry.

I have a suggestion as to Erica's singing. Some years ago we have got acquainted here with an American family, the Fooses. Prof. Richard Foose is a geologist, chairman at the department of geology in Amherst College (Amherst, Mass. 01002), not far from <sup>you</sup> I understand. And his wife, Mrs. Dorothy Foose, is a singer, and as far as I remember she did sing on Broadway! They spent much time in our home, and Dottie discussed a lot with Olya on singing, operetta and around. Try to contact her in our name, and extend to them our best wishes, please. Their home address: <sup>197</sup> ~~240~~ S. Pleasant St., Amherst, Mass. 01002.

Olya is now at the very end of her theater tour in a town, Saratov, on Volga river. It is, by the way, the native town of our famous writer and revolutionary of the last century N.G. Ch<sup>e</sup>rnyshevsky whose anniversary was celebrated last Monday around the country. Olya sang in his memorial home that day. Last year Olya began teaching vocal, and she is very enthusiastic about that. Galya has graduated this May from the University and she is to begin working in a month at here Institute of Cytology and Genetics.

My aunt in Moscow is quite healthy for her 93 year age! And my nephews and nieces-in-law (and not cousins, unfortunately) are also well.

Best wishes to you all,

Yours

Boris

28/VII 78.



# NATIONAL ACADEMY OF SCIENCES

OFFICE OF THE FOREIGN SECRETARY  
2101 CONSTITUTION AVENUE  
WASHINGTON D C 20418

March 22, 1983

Academician G. K. Skryabin  
Chief Scientific Secretary  
Academy of Sciences of the USSR  
Leninskiy prospekt 14  
Moscow V-71, USSR

Dear Academician Skryabin:

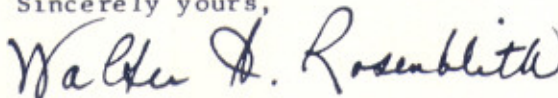
The National Academy of Sciences proposes the following American for a visit of one and one half months in the USSR within the framework of the interacademy agreement on scientific exchange and cooperation. This visit should be attributed to 1983 quota under paragraph two.

Dr. Norman J. Zabusky, Professor of Applied Mathematics at the University of Pittsburgh, has been invited by Academician R. Z. Sagdeyev to participate in the Second International Conference on Nonlinear and Turbulent Processes in Physics scheduled to be held in Kiev, October 10-25, 1983. The NAS is pleased to respond positively to this invitation and therefore nominates Dr. Zabusky for a one-and-one-half months' visit starting October 8, 1983.

Following the conference in Kiev, Dr. Zabusky hopes to spend one week in Novosibirsk, two weeks in Moscow, and one week in Leningrad discussing with colleagues his research in computer simulations studies, synergetic use of computers, and vortex and contour dynamics. He has requested to visit a total of sixteen institutes in these four cities, and the NAS would appreciate your efforts to arrange these requested meetings. Dr. Zabusky plans to be accompanied for the entire time by his wife and twenty-four year old daughter, whose expenses he is prepared to meet.

The customary biographic and bibliographic material submitted by Dr. Zabusky is enclosed. I look forward to learning if this visit as proposed is acceptable to you.

Sincerely yours,



Walter A. Rosenblith  
Foreign Secretary

enclosure





**University of Pittsburgh**

FACULTY OF ARTS AND SCIENCES  
Department of Mathematics and Statistics

INSTITUTE FOR COMPUTATIONAL MATHEMATICS AND APPLICATIONS

C. G. Cullen  
J. P. Fink  
C. A. Hall, *Exec. Director*  
D. J. Hebert  
P. R. Krishnaiah

T. A. Porsching  
W. C. Rheinboldt  
W. C. Troy  
N. J. Zabusky

May 18, 1983

Dr. Boris Chirikov  
USSR Academy of Sci.  
Siberian Division  
Inst. of Nuclear Physics  
Novosibirsk 90, USSR

Dear Boris:

I am planning to visit the Soviet Union in October to participate in the Second International Conference on Nonlinear and Turbulent Processes in Physics.

I have also been selected by the U.S. National Academy of Sciences to be an Interacademy Exchange Visitor. (See the enclosed letter from Dr. W. A. Rosenblith to Academician Skryabin.) I have proposed a visit to four cities in the four weeks following the conference, as outlined on the enclosed sheet. I look forward to sharing scientific progress, ideas, and future direction with you and colleagues in your Institute and I would be grateful for any help on your part to make my visit to Novosibirsk a successful one. I have already written a similar letter to Roald Sagdeev and O. Ladyzhenskaya.

I will be accompanied by my wife Charlotte and our twenty-four year old daughter Stacia. We are all looking forward to renewing old acquaintances and making many new ones.

Sincerely yours,

Norman J. Zabusky

NJZ/daw

Enclosure



Dear Norman,

I had learned on your visit to Novosibirsk even before I received your letter of May 18 - from the request of Moscow Academy. Now everything seems to be OK, so I look forward to see all of you here and in Kiev where I plan to come for a few days. In our Institute we would be interested in your talk on computational studies of nonlinear phenomena with some applications to plasma physics if possible. As you may have recognized already I personally don't use your term 'computational synergetics', and do prefer to speak, instead, just on numerical (computational) experiments which seems to me more natural. Do you know, by the way, that Dr. H.Haken from West Germany has 'stolen' this your term 'synergetics' for his own quite different purposes?

Warmest regards to you and Charlotte,  
as well as to your children  
all of whom I now know either personally  
or via poetry!

Yours

3/1/82. *Boris*  
Boris Chirikov

P.S. From your passionate review in J.Comp.Phys.(43(1981)195), I received some time ago, I understood (somewhat to my surprise) that you are still unaware of our different (opposite in a sense) approach to the FPU problem as a particular example of the dynamical stochasticity. If I knew that in Boulder I would educate you! Anyway, if you are still interested in the FPU history the reference is: Chirikov, Izrailev, Tayursky, Computer Phys.Comm.5(1973)11.



## Soviets expel Zabusky before lecture to 'refusenik' scientists

The surprising thing is that it had never happened before in the 25 years of bilateral exchanges between the US National Academy of Sciences and the USSR Academy of Science—even during periodic downturns in political relations between the two countries. The dismaying thing is that it happened when tensions between scientists are at their worst—even more vexing than in the period 1978–81 when Anatoly Shcharansky, Viktor Brailovsky and Andrei Sakharov were sent into “internal exile” or prison. The latest cause for concern is the expulsion of Norman J. Zabusky, a mathematical physicist at the University of Pittsburgh, who was booted out on 4 November apparently to prevent him from delivering a scientific lecture at a Saturday Evening Seminar of “refuseniks” (Soviet citizens whose applications for emigration visas have been turned down).

According to a State Department source, the science attaché at the US Embassy in Moscow was telephoned on 2 November by an official of the Soviet Academy who complained that Zabusky's conduct was “inconsistent with his status as a guest of the Academy.” Zabusky would have to leave by noon Saturday, 5 November, said the Soviet official. If not, the official added ominously, the Soviet Academy could not guarantee his safety. When the attaché asked for specific reasons for expelling Zabusky, he was told the Soviet Academy could not provide an explanation and that the matter was “out of our control.” Informed of the action against Zabusky, the US Academy's Foreign Secretary, Walter Rosenblith of MIT, sent a cable on 5 November to Georgy K. Skryabin, his counterpart at the Soviet Academy, asking for additional information. A month later, Skryabin replied, repeating the original one-sentence charge in essentially the same words.

**‘Wholly traumatic.’** Reached by telephone in Munich, where he is visiting the Max Planck Institut für Astrophysik before returning to Pittsburgh in January, Zabusky says his experience was “totally unexpected and wholly traumatic.” From his point of view, “it was perfectly legal to attend the Saturday Evening Seminar with scientific



ZABUSKY

colleagues,” he claims—though, of course, such meetings are outside official activities sanctioned by the Soviet Academy.

Zabusky applied to NAS last fall to attend the Second International Workshop on Nonlinear and Turbulent Processes in Physics, run by the Soviet Institute for Theoretical Physics in Kiev from 10 to 25 October. His application was approved in March without the customary interview because of his scientific distinction. Zabusky is a former head of plasma physics and computational physics research at Bell Telephone Laboratories from 1961 to 1975, when he joined the University of Pittsburgh. He is best known as co-discoverer (with Martin Kruskal of Princeton) of the peculiar properties of modern solitons—localized or solitary entities that behave like particles, propagating at a uniform speed in a fluid, without dispersing their energies or changing their shapes, even in collisions or interactions with other entities. For its part, however, the Soviet Union did not grant Zabusky a travel visa until September, by which time he, his wife and daughter were in Tokyo, on their way, by way of China, to the USSR.

NAS officials consider the long delay in obtaining a Soviet visa an indication of bureaucratic uncertainty about Zabusky. On an earlier visit to Moscow in 1980, he took part in a special congress

on collective phenomena that refuseniks ran in Brailovsky's apartment. A few months later, Brailovsky, a respected computer scientist, who organized the weekly seminars, was arrested on charges of “defaming the Soviet state and public order,” tried in 1½ days, with only his family and state-approved witnesses present in the courtroom, then sentenced to 5 years in exile within the Soviet Union.

In the past, the seminars, held on Sunday evenings under Brailovsky's leadership, attracted many prominent US scientists—among them, Kenneth Wilson of Cornell, Walter Gilbert of Harvard, James Langer of the University of California at Santa Barbara and Joel L. Lebowitz of Rutgers. In 1978, Arno Penzias of Bell Labs went directly from Stockholm after accepting the Nobel prize to a gathering of refusenik scientists in Brailovsky's apartment in Moscow. Discussions at the seminars frequently deal with aspects of theoretical physics because few participants work in research labs or institutes, having been sacked or demoted once they applied for emigration, and because even fewer have access to anything larger than pocket calculators. After Brailovsky's arrest, Soviet police prevented the seminars from taking place. The seminars resumed in the Moscow flat of Yakov L. Al'pert, an astrophysicist whose latest writings, *The Near-Earth and Interplanetary Plasma*, were recently published in the West (Cambridge University Press, 1983).

Upon arriving in Moscow in early October, Zabusky called Al'pert and was invited to the 8 October seminar, which concerned econometric modeling in industry. At the seminar, Zabusky agreed to lecture to the group on 5 November, once the Kiev conference was over.

**Scientific warmth.** Of the 80 Western scientists who were scheduled to attend the Kiev conference, only about half showed up. Six, including Zabusky, were from the US. One, Richard L. Morse of the University of Arizona, recalls that Soviet scientists seemed even warmer and friendlier than at previous meetings he has attended in the USSR. “They were very aware of



the shooting down of the South Korean passenger plane [on 1 September]," says Morse. "They were worried about the world political climate—even more now than they had been when Afghanistan was invaded. They weren't eager to talk about specific incidents, but they did voice their feelings about the need to continue scientific links, particularly now that both the US and USSR have virtually reduced exchanges to zero. They expressed concern about increasing impediments to scientific communications between both countries."

Zabusky has similar impressions. "There was an uneasy attitude that collaboration in science between our countries was in a deep freeze," he observes. "So, at Kiev there was a concerted effort to warm East-West relations in science." Besides delivering his paper, he participated in the opening and closing sessions. Zabusky hails the conference as "first-rate, especially in the theoretical realms of fluid dynamics, plasma physics and atmospheric physics. But there is little computational work going on in the Soviet Union in those fields—unlike the West. Compared with what our scientists have to work with, Soviet computers are still in a primitive stage."

Back in Moscow, he, his wife, Charlotte, and daughter, Stacia, were asked to dinner by Eugene Lifschitz, a collaborator of Lev Landau. But on 1 November, the day of the dinner, Lifschitz called to say they could not meet. This was Zabusky's first inkling that all was not well. The next day the US Embassy informed him he was being expelled.

Why did it happen? "Did they need me as an example?" Zabusky asks. "I don't really know. Things are not the same in the Soviet Union. Even some of the best and most trusted scientists are forbidden to travel to the West. I don't think this has anything to do with science. It has to do with politics."

**Political messages.** Zabusky's expulsion, observes a State Department official, "sends a message to Western scientists to 'behave yourselves' in the Soviet Union." If any message is directed to refuseniks, he says, "it is that the campaign for greater discipline is intensifying in all walks of life under Yuri V. Andropov. It's hard to believe that refuseniks need any reminder of that, however, considering the harassment and repression they continue to endure."

The picture that emerges from the Zabusky case is a Soviet policy toward science that is a mixture of bureaucratic rigidity, distrust of scientists and fears of non-conformist behavior of any sort. Frank Press, president of the National Academy of Sciences, has spoken forcefully on the current state

of US-USSR scientific relations. Testifying at a Congressional hearing on scientific affairs and international security on 2 August, he acknowledged that "Our scientific contacts are withering. The causes are manifold, including the concern of our own government about technology transfer; a further desire by government to restrict cultural, educational and scientific contacts as a means of punishing the Soviets for their actions in Afghanistan and Po-

land; the continuing secretive nature of Soviet society and the bureaucratic impediments imposed by the Soviet government; the politicization of the Soviet process for selection of exchange scientists; and, finally, the abhorrence on our part of the abrogation of human rights of Soviet scientists. Each of these impediments can alone seriously endanger the sensitive thread of communication that exists today between our scientific communities." —IG

## Physicists sign appeal for nuclear freeze

By late November 15 000 physicists in 44 countries had signed the following appeal for a nuclear freeze:

We call for an agreement to halt the testing, production and deployment of nuclear weapons and nuclear weapons delivery systems. Meanwhile, no further nuclear weapons or delivery systems should be deployed anywhere.

Over half of the living winners of the Nobel prize in physics were among the signers.

In mid-November groups of physicists presented the call to representatives of national governments and to international organizations. The presentations, like the circulation of the call, were conducted without any formal organization. On 18 November Philip W. Anderson (Princeton University), James W. Cronin (University of Chicago) and Robert Serber (Columbia University) met with Javier Pérez de Cuéllar, Secretary General of the United Nations, to present the call. (Sheldon Glashow of Harvard University was prevented by illness from participating.) Pérez de Cuéllar gave the group a sympathetic reception, according to Serber, and welcomed the appeal. He assured the physicists that he shares their goals and is doing all he

can to bring about disarmament, Serber told us.

Presentations were also made to officials of the governments of Finland, France, Italy, Japan (to the prime minister), Spain and West Germany, according to Rolf Hagedorn (CERN), one of the initiators of the petition. He told us that receptions for the most part were polite but negative.

In the US, signers made attempts to present the petition to President Ronald Reagan, Vice President George Bush, the Office of Science and Technology Policy, House majority leader Thomas P. O'Neill (D-Mass.), and Senate majority leader Howard Baker (R-Tenn.), without any success at this writing. Hagedorn did not know of any attempts to present the call in the USSR, where over 750 physicists signed the statement.

The idea for the call arose during a conversation at CERN in the summer of 1982. Daniele Amati (CERN), Nina Byers (UCLA), Rolf Hagedorn (CERN), Jack Steinberger (CERN), Victor Weisskopf (MIT) and Christophe Wetterich (CERN) discussed what they could do about the nuclear arms race. They wrote the appeal and sent it to 120 well-known physicists asking for their endorsements. Almost 80 re-



Petition presented at UN. From left: Jan Martinsen (UN under-secretary-general for disarmament affairs), Philip Anderson (Princeton), Javier Pérez de Cuéllar (UN secretary-general), Robert Serber (Columbia), Sidney Katz (coordinator of the presentation from the Center for Defense Information) and James Cronin (University of Chicago).

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### Cambr nucle

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The Draper guidan MX m 1800 p in Ca O'Conr admin million



Dear  
~~My Dear~~ Norman,

I've just read ~~about~~ in Physics Today  
about your adventures in Moscow.

I regret <sup>on</sup> what happened. Yet, I  
must confess <sup>that</sup> I <sup>has been</sup> ~~am~~ very much  
surprised by your "underground"  
activity. If you would <sup>have</sup> mentioned it  
to me in Kiev I would <sup>have</sup> strongly  
~~recommend~~ <sup>d/</sup> advised <sup>just</sup> to you <sup>to</sup> quit this.

~~It is a~~ ~~Norman~~  
~~to be a guest~~

I am sorry, Norman, but I <sup>have</sup> ~~should~~  
<sup>this to you</sup> to say <sup>that</sup> it is ~~as~~ a bad manner  
(not good) to be a guest and to act against  
hosts whether you like them or not.  
Hoping you will not take my criti-  
cism offensive, and will extend my  
regards to Charlotte and the children.

Sincerely,

Boris

6/II 84r.

Milano



## University of Pittsburgh

FACULTY OF ARTS AND SCIENCES  
Department of Mathematics and Statistics

INSTITUTE FOR COMPUTATIONAL MATHEMATICS AND APPLICATIONS

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W. C. Troy  
N. J. Zabusky

March 5, 1984

Dear Boris,

I was very pleasantly surprised to receive a letter from <sup>you</sup> from Milano. I was happy to see that you managed to make a visit to a good university outside the USSR. Most important, I appreciated your act of friendship in offering me your opinion of what you read in Physics Today. I do accept your remarks in a constructive sense, although I disagree with you, and I hope that our disagreement will not in any way affect our scientific relationship, our friendship, and the relationships of our families that began in 1966.

You and I come from different societies and we have different cultural and sociological perspectives, as well as access to different kinds of information. I believe this has much to do with what we perceive as the truth and what we consider proper actions and moral imperatives. However, I do want to make it perfectly clear that I did not engage in any "underground" (as you termed it) activities while I was a guest of the Soviet Academy of Science.

When I was accepted by the Soviet Academy to exchange scientific information, I vowed to spend as much of each day as possible discussing science. So in Kiev, I not only gave two lectures, but also held many conversations and discussions in small groups during the midday meal and after the evening meal. In Leningrad and Moscow I did the same. In fact, I turned down offers for sightseeing, because, as I told Yascha Sinai, my host, I was in the USSR mainly to interact with scientists and that this was more important to me than seeing the sights.

Furthermore, in all my interactions, I was completely open and generous in offering everything within my level of experience. I know that the Soviet Union lags behind the United States in the application of large-scale computation to problems in nonlinear science, and yet I was willing to share as much information as I had. So, according to my perception of this situation, I was conducting myself in a proper scientific manner, and I spent almost all of my time in official exchange activities under the auspices of your Academy, my hosts. And I did not participate in any illegal activities during my stay in the USSR. (I believe that visits to "Refusenik" scientists are not illegal according to Soviet law.)



In any case, I am happy that you took the opportunity to write and express your feelings. The important point is that I did not deal with any subversive, dissident, or anti-Soviet "underground" elements. I planned only to visit on my own time (Saturday evening) with free Soviet citizens and scientists (many world famous) who are temporarily displaced from the active pursuit of their profession. After all, if you had a scientific colleague who was ill and confined to his home, would you not help him out by visiting him and discussing with him scientific topics?

Please send my warmest regards to Shelepiansky, Izrailev, Kuznetsov, Buchelnikova, our colleagues in Moscow and Leningrad, and, of course, your dear family.

Sincerely,

A handwritten signature in dark ink, appearing to be 'Yasser Arafat', written in a cursive style.

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Professor Norman J. Zabusky  
Mathematics Dept.  
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USA

Dear Norman,

Many thanks for a reprint of your paper in Physics Today with fascinating pictures! Such a beautiful graphics certainly makes numerical studies much more convincing. I have only one historical comment: the integrability of Toda lattice has been discovered computationally by Joe Ford and coworkers (Prog. Ther. Phys. 50 (1973) 1547 ).

Best regards to you and Charlotte,

16/IV 85.

*Boris*

Boris Chirikov