aration from immediate family members, and most have long been denied the right to work in their profession or at all.

Physicist Yuri Cherniak, suffering from heart disease, has been in refusal for 10 years, although his last exposure to state secrets was 16 years ago; the mathematician Benjamin Charny, a cancer patient, has been in refusal for 8 years, despite the fact that he has not worked with sensitive material since 1971; entomologists Igor Uspenskii and Inna Ioffe, both refuseniks for 7 years, have never done classified work; Vladimir Raiz, a young biochemist in Vilnius, was first refused an exit visa 14 years ago, just after completing work on his unclassified doctoral thesis; Vladimir Kislik, a radiation physicist who last worked with sensitive materials in 1966, has served part of his 14 years of refusal in a labor camp and in a psychiatric hospital; and the physical chemist Emil Mendzheritsky has been separated for close to 10 years from his children and grandchildren who live in the United States, despite the letter he holds from his former place of employment stating that the work he did there would no longer be considered sensitive after 1983.

There are now at least 805 scientists, engineers, and physicians (and their families) who have been denied exit visas. Of these, 122 have waited for more than 10 years, and 659 for between 5 and 10 years.

We appeal to the government of the U.S.S.R. to grant our colleagues their basic human rights, thus allowing them to emigrate and to take up their professional lives once again.

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## Aurora Hypotheses

Richard A. Kerr's Research News article (28 Aug., p. 974) and the letter from Robert McPherron with Kerr's reply (4 Dec., p. 1340) concerning interpretation of the finding of Bruce Tsurutani and Walter Gonzalez (*1*) that high intensity long duration continuous aurora events (HILDCAAs) are caused by large-amplitude Alfvén waves was a stimulating discussion.

The idea that the southward turnings of the interplanetary magnetic field associated with the wave fluctuations lead to magnetic reconnection between the interplanetary and the Earth's magnetic fields is highly plausible and was discussed in depth by Tsurutani and Gonzalez. However, in testing this hypothesis, they obtained inconclusive results. It was determined that although data from the NASA/ESA (European Space Agency) International-Sun-Earth Explorer (ISEE)-3 satellite orbiting about the sun-Earth libration point made a fundamental contribution to the discovery of the relation between HILDCAAs and Alfvén waves, it was inadequate for the determination of details of the solar wind–magnetosphere energy transfer mechanism. This is because ISEE-3 was located at distances ($\sim 1.5 \times 10^6$ kilometers) from the Earth-sun line and Earth's magnetosphere that were large in comparison with the Alfvén wave lengths under consideration. Thus, Tsurutani and Gonzalez suggested using Earth-orbiting satellite data to determine the details of the energy transfer mechanism.

Meanwhile, other ideas (*2*) involving auroral energization processes that are alternatives to magnetic reconnection should not be ignored or left untested. Even if magnetic reconnection is found to be the principal cause of HILDCAAs, it is still possible that reconnection may not be of the classical type (*3*) during these very intense auroral events. In this aspect, qualitative coupling function studies, such as those involving impulse response functions (*4*) that use data from spacecraft placed immediately upstream of Earth's bow shock will be very helpful to elucidate basic differences among possible reconnection modes that are alternatives to the classical picture and the relative importance of other energization processes.

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## Murine, Not Human, Cell Line

It has come to our attention that one of the cell lines examined in our report "Hormone conjugated with antibody to CD3 mediates cytotoxic T cell lysis of human melanoma cells" (22 Jan., p. 395) is of murine, not human, origin. By means of fluorescent antibodies to transplantation antigens and flow cytometry we have examined the two principal cell lines used in that study and it appears that one (B16F10) is murine; the other (M1313) is clearly human. Although our mistake is regrettable, it in no way affects the validity or significance of the reported observations. The point of the paper is that a chemically coupled complex, formed by linking a hormone to an antibody to the antigen-specific receptor complex on T cells, activates cytotoxic T cells and targets them on cells having receptors for the hormone. Like other peptide hormones, melanocyte-stimulating hormone is specifically bound by cell receptors of diverse vertebrate species; thus whether the targeted cells are mouse or human is immaterial. Indeed, the effectiveness of the conjugate in mediating destruction of murine cells by human cytotoxic T lymphocytes (CTLs) [and, reciprocally, of humans cells by murine CTLs with the use of a different targeting arrangement (*1*)] emphasizes the potential power of this general approach. We are particularly chagrined by our error because B16F10 is so widely known and appreciated for its value in studies on tumor metastases (*2*).

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*Erratum*: In the Research News article "Solutions to Euler equation" by Barry A. Cipra (29 Jan., p. 464), the equation in the first line of the fourth paragraph was incorrectly printed. It should have been "$x^4 + y^4 + z^4 = u^2$."