

LETTERS

fair and balanced.

The detrimental results of the Congressional decision to proceed with the manned space station at the expense of all kinds of unmanned scientific explorations, especially within NASA, have already become evident. In this decade, a focal point for discussions on the formulation of science policy will continue to be the balance between broad-based, smaller-scale individual research projects and large-scale megaprojects dominated by considerations of national prestige and vested industrial interests.

NICOLAAS BLOEMBERGEN
American Physical Society
New York, New York

11/91

DALRYMPLE REPLIES: My 1 May 1991 testimony was to the Government Activities and Transportation Subcommittee of the House Committee on Government Operations, not to the subcommittee named by Eugene McKannan. My comments were based on an official position of the American Geophysical Union—namely that in view of the limited usefulness and extraordinary cost of Space Station Freedom, AGU has reservations about the wisdom of proceeding with its construction. The AGU council adopted this position in 1989 after a poll of a random sample of our membership and extensive deliberations by a panel of experts. At each step of the process the membership was informed and invited to comment. AGU has testified five times so far on Space Station Freedom, and the membership has been informed of the nature of the testimony each time. Based on the information received, it is clear that an overwhelming majority of the 28 000 members agree with the AGU position on the space station.

My testimony was restricted to those areas in which AGU has expertise, namely geophysics, space science and education. Contrary to McKannan's assertions, I did not comment on particulars of life science research.

As for the composition of the panel, I refer McKannan to the chair of the subcommittee, Barbara Boxer, and her staff, who issued the invitations.

Finally, McKannan perpetuates the myth that the cost of Space Station Freedom will be \$30 billion. The Government Accounting Office estimated the true cost of the space station to be \$118 billion over its 30-year projected lifetime, but GAO did not include all of the costs. The AGU estimate, which I presented to the subcommittee, is a minimum of \$180 billion. When one compares the very

limited research for which the space station is essential with the research that could be done in terrestrial laboratories and by unmanned spacecraft for a lesser sum, it seems highly unlikely that construction and utilization of Space Station Freedom can be justified.

G. BRENT DALRYMPLE
American Geophysical Union
Washington, DC

11/91

Atom Interferometry's Prior Patent

The Search and Discovery story entitled "Atoms Are the New Wave in Interferometry," by Barbara Goss Levi (July 1991, page 17), describes a fascinating application of quantum mechanics. Atom interferometers demonstrate that a composite structure like an atom can be made to move coherently in two separate directions and then recombined to interfere with itself. But we are disappointed that Levi was not informed that this atom interferometer concept is not new. Nearly two decades ago, when we were at TRW, we originated it in a 1973 US patent (3761721) entitled "Matter Wave Interferometric Apparatus." This patent discusses several potential applications in considerable detail, namely rotation rate sensors and gravity sensors, as well as magnetometers using ions instead of atoms. It also suggests the application to atomic wave holography.

SAUL ALTSHULER
LEE M. FRANTZ

Physical Science Interests
Manhattan Beach, California

9/91

Inventors' Rights Make America's Might

To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries.

—Article I, section 8(8), of the US Constitution

Article I, section 8(8), of the Constitution creates a "right" that is trebly unique:

▷ It is conferred only on certain individuals—namely, authors and inventors. Almost all other Constitutional provisions generally referred to as "individual rights" are deemed "natural rights," or rights sanctioned by custom, and the Constitution safeguards them for everyone. Or it denies them to everyone, as with patents of nobility.

Superconducting Magnets

Cryogenic Instrumentation



Nb, Sn Magnets
High Fields - High Quality
LOW Price!
Call for FREE Consultation!

- Superconducting Magnets
- Dewars
- Magnet Support Stands
- Vapor Cooled Current Leads
- Power Supplies
- Power Supply Programmers
- Energy Absorbers
- Computer Interfacing
- Helium Level Meters
- Helium Level Sensors
- Helium Level Controllers
- Helium Level Dipsticks
- Cryogenic Level Meters
- Cryogenic Level Sensors
- Cryogenic Level Controllers
- Cryothermometers

Call, Fax or Write:

American Magnetics Inc.

P.O. Box 2509
Oak Ridge, TN 37831-2509

Phone: 615-482-1056

Fax: 615-482-5472

Telex: 557-592

APS Show -#321

Circle number 15 on Reader Service Card