emission. This would come from atoms that have had electrons stripped away to become ionized.

Researchers at Los Alamos National Laboratory in New Mexico and at the California Institute of Technology are looking into the possibility of using sonoluminescence for waste water treatment. The temperatures inside the bubbles are high enough to cause compounds, such as solvents, in the water to break apart. The ultraviolet emissions from the bubbles could be effective in killing bacteria in the water.

Another area of research at the Naval Postgraduate School involved measuring the size of the bubble with a laser scattering technique. A laser is shone on the bubble, which scatters the light. Two detectors are used to look at the scattered light from two angles for greater accuracy. The

Federal funding falls to partisan posturing

On July 12, a senseless debate in the House of Representatives stripped research into sonoluminescence of its chance for federal funding. As a result, a tiny $1 million appropriation into the field was removed from the Department of Energy's (DOE) appropriations.

Earlier this year Rep. Dana Rohrabacher (R-Calif.), chairman of the Subcommittee on Energy and Environment of the House Committee on Science, commented during hearings on the sonoluminescence work at Lawrence Livermore National Laboratory, and tied it to the possibility of obtaining fusion energy. The Livermore researchers were quick to point out to Rohrabacher's office that sonoluminescence research is a basic science project, in an effort to dispel any notion of its foreseeable use as a source of fusion power.

Nonetheless, when the report on the Energy and Water Development Appropriations Bill, 1996, came out, the following was included under basic energy sciences for the DOE: "Within available funds, $1,000,000 is provided to fund peer-reviewed research on the potential energy applications of sonoluminescence." This money was clearly earmarked for Livermore.

One million dollars would be a drop in the bucket of DOE's overall budget, but would be a major boost to sonoluminescence research, which has heretofore operated on a shoestring. With a $1 million budget, experiments could be carried out that would begin to bring our understanding of the phenomenon to a new level.

Rohrabacher's office tried to justify the funds as being a small investment with a potentially large return, but even that time-tested battle cry was not enough to rally House Republicans to stop an amendment by Rep. Mike Ward (D-Ky.) to strike them. To his credit, in introducing his bill, Ward conceded that sonoluminescence was a "legitimate course of study," and that the funding was not "a piece of pork."

So what's his beef? Since neither the DOE nor Livermore requested the money, it is then specially earmarked. And Ward and many other congressmen are against earmarks in general, which are usually a means of funding pet projects. But what really stuck in his craw was that there was not any mention of this money in any hearings, and that it was part of some 60 pages of report language which was added to the bill. According to Ward's office, the subcommittee's Democrats argued that they had not had sufficient time to review the material in the report and therefore opposed its inclusion, but they were outvoted by the Republicans.

Responding to Ward's bill to cut these funds, Rohrabacher argued, "This is exactly the kind of program the federal government should be doing." He continued that "small research programs that have high potential . . . never get the money, because they do not have lobbyists." But Rohrabacher is not without his axe to grind, i.e., to support the small programs and to chop away at "mega-programs," a pragmatic approach that ignores their complementarity.

In a arrogant display of smug sarcasm, Rep. Fortney Stark (D-Calif.), whose district includes Livermore, blasted the research: "This is a wonderful project," he said, "shooting light on these bubbles will cause a lot of wonderful things." Then he continued, "Do you know what else they make in Livermore, California? . . . It is right in the middle of the finest champagne country in the world. What this will do is irradiate that champagne that comes from California, much to the disadvantage of New York, where they do not make such very good champagne. . . . I want to say to you that if you want to waste $1 million trying to make California champagne better, which you cannot do, then we welcome this money."

Stark's theatrics had the desired affect. When the House vote was taken, Ward's bill passed 276-141. Some 85 Republicans joined in voting against it.

While such bipartisan short-sighted, know-nothing pragmatism should not be surprising, it makes one wonder: If a small, creative science project with such great potential for broadening our knowledge of the physical universe, can be cut, what's left?