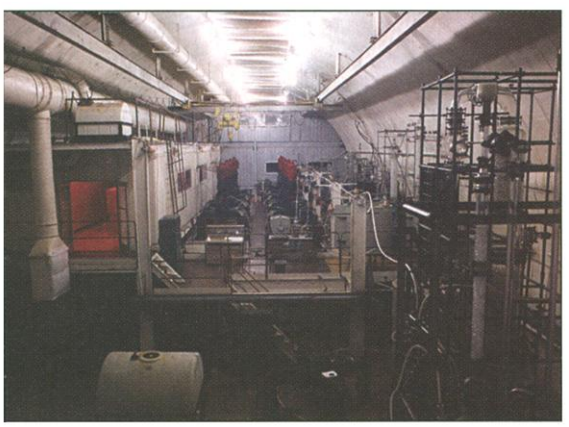
you could have any other interpretation" than an impacting meteorite that carried in the noble gases. "There appears to be an extraterrestrial component in the [P-T] boundary layer," agrees Pepin. "I think they've demonstrated that rather convincingly." Still, even noble gas workers want to see more. "This result needs to be replicated by somebody else," says Farley, "as any such measurement does."

–RICHARD A. KERR

ASTROPHYSICS

New Headaches for U.S.–Russia Experiment

MOSCOW—A tug-of-war over 60 tons of precious gallium is threatening to undermine a major neutrino experiment. This week, officials at the Baksan Neutrino Observatory in Prielbrusye are asking a court to stop a government order to sell off some of the liquid metal, which serves as an underground detector. It's the latest round in a long-running battle over the fate of the material, which has a market value of $500 to $600 per kilogram.



Under siege. Major solar neutrino detector may be shut down early if court affirms gallium sale.

A child of the Cold War, the $60 million Soviet-American Gallium Experiment (SAGE) is one of the largest collaborations between Russia and the United States. Its 60-ton gallium detector sits in a mine shaft in the Caucasus, deep below Mount Andyrchi. Run since the mid-1980s by Moscow's Institute for Nuclear Research, the detector studies neutrinos streaming from the sun. Low-energy neutrinos can transform gallium nuclei into germanium-71 atoms, which are extracted and counted. SAGE is best known for confirming an unpredicted shortfall of solar neutrinos.

The tussle over the silvery white metal began in 1997, when the Ministry of Fuel and Power Production asked the Cabinet for permission to sell the gallium, at a third of its market value, to Russia's State Research, Development, and Design Institute of Rare-Metal Industry (GIREDMET) plant in Moscow. It presumably would resell the gallium to foreign buyers—it's used in gallium-arsenide semiconductors—and reap the profits (*Science*, 11 April 1997, p. 193). SAGE officials caught wind of the impending gallium grab and organized a protest letter from 12 Nobel laureates to then–Prime Minister Viktor Chernomyrdin, followed by an appeal from U.S. Vice President Al Gore. The strategy worked: Chernomyrdin halted the transaction.

Later that year, however, a deputy prime minister decreed that at least 7 tons of gallium should be handed over to the fuel ministry. Project scientists resisted, arguing that the detector's sensitivity would be so diminished that the experiment would no longer be worth running. (It's slated to continue through next year.) Shortly after, thieves bungled an attempt to break into the observatory and steal the gallium (*Science*, 14 November 1997, p. 1220).

Last summer, President Vladimir Putin told Prime Minister Mikhail Kasyanov to review that order, which had not been carried out. In the meantime, the fuel ministry and the GIREDMET plant lodged a complaint against Baksan, arguing that observatory officials were interfering with efforts to procure and sell 7 tons of gallium. In December, the Arbitration Court in Moscow ruled for the plaintiffs; a hearing on the observatory's appeal was scheduled to begin on 22 February.

But the GIREDMET plant isn't waiting for the court's decision, which could take weeks. Earlier this month, GIREDMET experts, who accuse Baksan officials of "squandering," or hoarding, the gallium, showed up to measure the metal while escorted by local police. The process involves removing the liquid from its tank and weighing it. Partway into the exercise, however, the GIREDMET team gave up and read the calibration marks on the tank.

Vladimir Gavrin, Baksan's director, believes that he has smoothed things over with local authorities: "Very soon, the militia understood that there was no squandering of the gallium, and we started to treat each other with respect." But he can't say the same for the GIREDMET staff, who he claims were intent on finding some infraction that could be used to justify the gallium's removal.

If the observatory loses its appeal, Gavrin says that his last hope is a government decision to rescind the order.

–VLADIMIR POKROVSKY AND ANDREY ALLAKHVERDOV

Pokrovsky and Allakhverdov are writers in Moscow.

ENDANGERED SPECIES

West's Energy Woes Threaten Salmon Runs

The combination of a dry winter and a power shortage could be bad news for endangered salmon in the Pacific Northwest. Last week, California's energy crisis forced the Bonneville Power Administration (BPA), the region's energy supplier, to exceed federal guidelines for the release of water through its turbines. But with reservoir levels already low, the utility might not have enough water available this spring and summer to help juvenile salmon on their run to the sea.

"What we see time and time again is that when the going gets tough, fish take it on the chin," says Rob Masonis, who heads northwest conservation efforts at American Rivers in Seattle. "That's untenable and irresponsible. We need a real commitment to salmon recovery in the region, not just a few museum fish in the river," he says.

BPA spokesperson Dulcy Mahar concedes that the spring water releases may fall short, but says that the agency has no choice. BPA is required to supply power to its customers. In this case, releasing extra water was the cheapest way to do it. "We are seeking to appropriately balance the needs of fish and electricity consumers during a serious drought," says acting BPA administrator Steve Wright.

In normal years, BPA buys power from California suppliers during the cold winter months, when demand peaks in the Northwest, and sells it back to California in the summer, when demand peaks there. This year, however, California hasn't had a megawatt to spare. What's more, because of low rainfall and smaller-than-normal mountain snowpacks, BPA's system of 29 federal dams has been able to generate only about 80% as much power as usual. The agency has been forced to buy the excess at market rates, at up to 10 times the usual price, putting a big dent in reserves earmarked for repaying its federal mortgage. Says Mahar:

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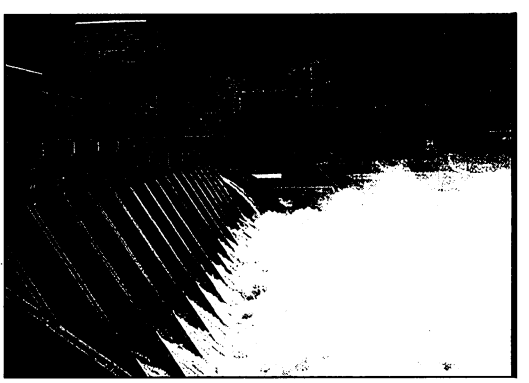

Thirst for power. Dam spills to generate more electricity this winter may threaten salmon runs in the spring.