port, produced no false positives, compared with between 3 and 21 percent for other methods. The rheumatoid factor also correctly identified 40 percent of newborns with CMV infections, which compared favorably with some other tests that were as low as five percent but did not compare favorably with several others that were as high as 92 percent. So the rheumatoid factor test appears to be a quick, convenient, inexpensive and moderately accurate assay for congenital CMV, Stagno and his colleagues conclude. They see it providing pediatricians with one more tool for pinpointing congenital CMV infections, particularly in large numbers of asymptomatic neonates.

Even if all CMV-infected newborns were rapidly, conveniently and accurately identified, though, it would not mean that they would be successfully treated. No drug has been found that is both effective and safe against CMV. Nonetheless, rapid, convenient, inexpensive and accurate identification would have some value. It would alert medical staff and parents that a child might later in life acquire CMV-triggered disorders, notably hearing loss. That way a victim might be outfitted with a hearing aid before he or she fell behind in learning because of undetected deafness. Or if other disorders developed, a battery of time-consuming and costly diagnostic tests could be avoided because the cause of the possible disorders would already be known. □

A mammoth Soviet clone?

Soviet scientists would like to clone a mammoth. The current object of their attention, according to the March 4 New York Times, is Dima, the frozen baby mammoth discovered in an ancient Siberian riverbed in June 1977 (SN: 3/18/78, p. 167). Viktor M. Mikhelson, a research scientist in Leningrad, says that Soviet scientists are examining tissue samples from Dima for living cells or cells that were not damaged when the animal froze about 40,000 years ago. If living cells are isolated and if they can be cultured, says Mikhelson, a mammoth cell will be combined with a sex cell from an elephant. In a technique similar to that used to clone frogs, but not known to be successful with mammals, the nucleus of the elephant cell — probably an egg — would be removed and replaced with the nucleus of the mammoth cell. The altered egg would then be implanted in an elephant's uterus and, it is hoped, would yield 18 to 20 months later the first mammoth in 10,000 years. Previous Soviet attempts to culture cells from frozen mammoths have been unsuccessful. But a group of scientists has been set up by the Soviet Academy of Sciences to obtain candidate cells as soon as a mammoth is found. □

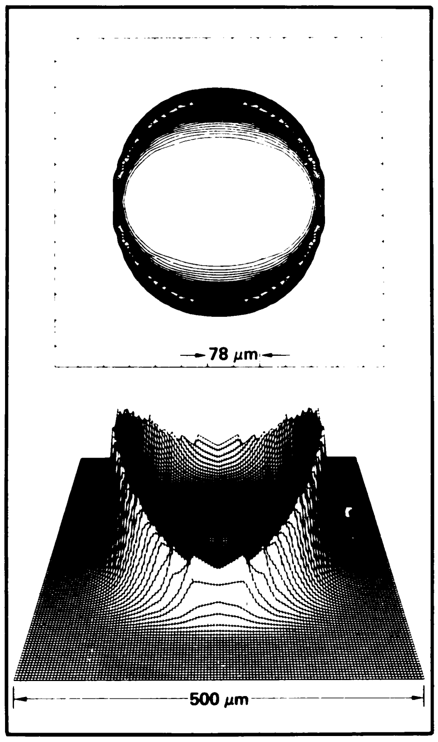
X-rays from a fusion implosion

The fuel pellets that are crushed by laser light in thermonuclear fusion experiments disappear in an extremely short puff of time. They are extremely small, too. A characteristic diameter is about 300 micrometers, a third of a millimeter. Determining the best way to do it requires an understanding of the details of the temporal and causal sequence of events in an action so transient in space and time. Much effort and expense has gone into computer programs that simulate these sequences of events. Now the computer program and the choices it has recommended are being compared with data from the actual experiments, data such as pictures from the implosion.

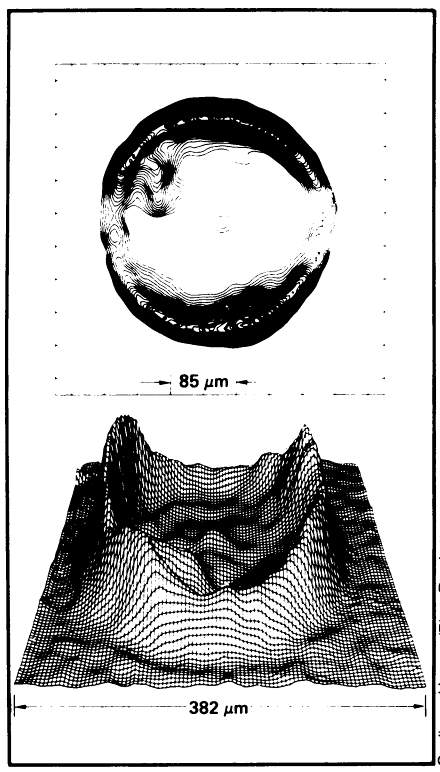
The pictures are high-resolution images of the suprathermal X-rays emitted in the implosion, the first such from laser-driven targets, according to N. M. Ceglio and J. T. Larsen of the Lawrence Livermore Laboratory, who published them in the March 3 PHYSICAL REVIEW LETTERS. The targets are of the "explosive pusher" type. That is, the actual fusion fuel is surrounded by a substance that readily absorbs energy from laser light and explodes. This drives the implosion of the fusion fuel. The suprathermal X-rays are generated by interactions between electrons with suprathermal energies that have been detached from their atoms in the implosion and the background ions. The X-rays provide information on the mechanisms of production and transport of the suprathermal electrons, and this, in the words of Ceglio and Larsen, is "vital to an understanding of laser-driven implosions." And the X-rays can give a picture of the shape of things at a certain stage of the implosion, the distribution of the relatively cold pusher material in the early stages of the process.

The targets in this series of shots were a mixture of deuterium and tritium gas surrounded by glass microshells, 300 to 325 micrometers in diameter and 1.5 micrometers in thickness. They were irradiated in the Shiva facility by 20 beams of laser light (1.06 micrometers wavelength) grouped in opposing 10-beam clusters. The pulses lasted 90 picoseconds and delivered between 17 and 20 terawatts to the target.

The pictures were taken with a zone-plate camera. They show spatial inhomogeneities in the production of the suprathermal electrons and evidence that the pusher breaks up in an asymmetric way in the early stages of the implosion. Both these findings could influence future decisions on shapes of targets and the arrangement of the irradiating beams. The pictures also appear to agree qualitatively with simulations of the same stage of things by the LASNEX computer program. □



Life imitates art. These are pictures of the early stages of the implosion of a laser-fusion fuel pellet. Upper images are of "suprathermal" X-rays produced in the implosion. Lower are three-dimensional representations of the information. They show the general distribution of "pusher" material, material from the outer shell of the fuel pellet. Top box shows how the LASNEX computer program drew it up before hand; lower box, real life. Life is not as smooth as art, but the qualitative agreement between the two representations is pronounced "good" by the experimenters.



Ceglio and Larsen/Phys Rev Letts