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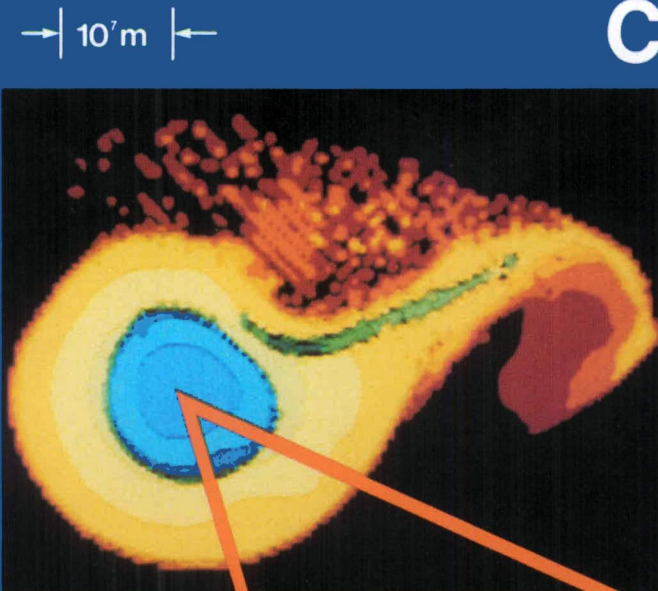
# BULLETIN

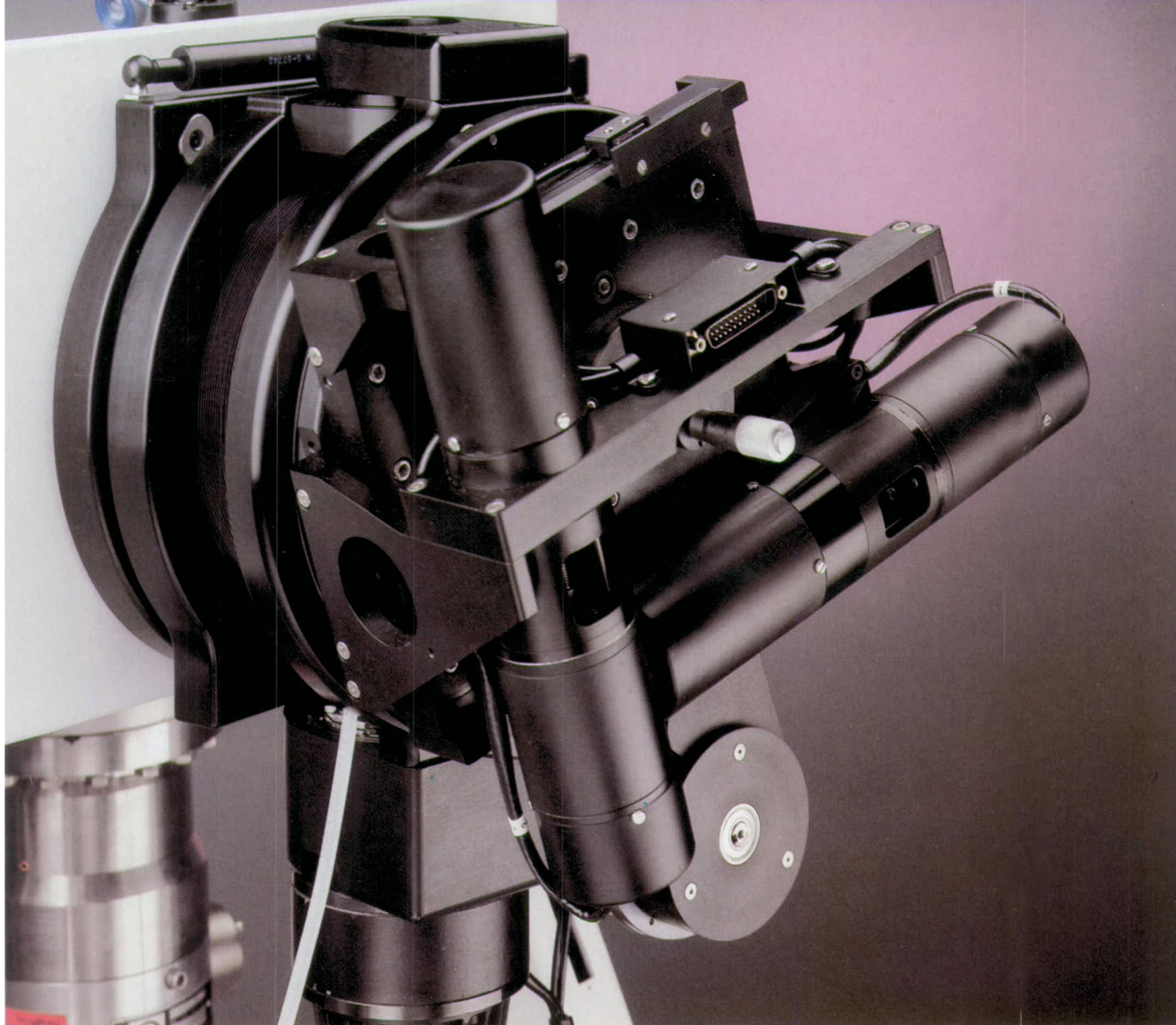
February 1988

Volume XIII, Number 2

Serving the International Materials Research Community

## Computer-Based Modeling in Materials Science



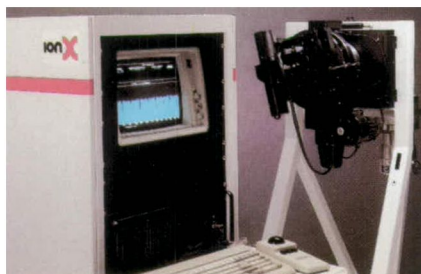


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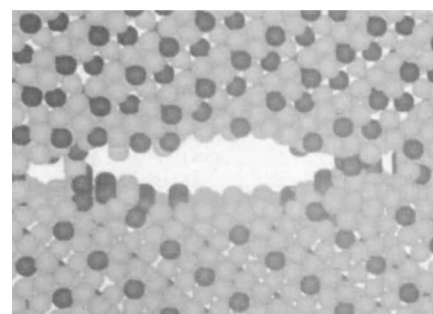
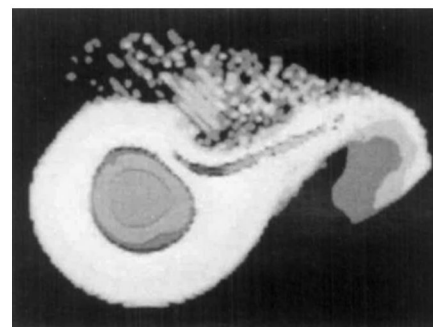
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**ON THE COVER:** Composite figure shows the range of behaviors that can successfully be subjected to computer simulation. The top figure illustrates the birth of the moon through impact of the early Earth with a large planetoid. (The false color represents density and composition variations.) This simulation was carried out using conventional continuum mechanics (as discussed in "Continuum Modeling" by L. Davison on p. 16 in this issue) and mechanical models suitable for the materials and conditions found inside planets. The bottom figure is from a dynamic simulation of cracking at a tilt boundary in  $\text{Ni}_3\text{Al}$ . (The yellow atoms are Ni and the green, Al.) This atomistic simulation used molecular dynamics techniques, where the atomic interactions were modeled using the embedded-atom method (as discussed in "Atomic-Scale Simulation in Materials Science" by M. Baskes et al. on p. 28 in this issue). The lunar impact figure was supplied by M.E. Kipp of Sandia National Laboratories.



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Materials Research Society • 9800 McKnight Road, Suite 327 • Pittsburgh, PA 15237

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I. W. Boyd  
University College London  
Dept. of Electronic and  
Electrical Engineering  
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London WC1 E7JE  
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01-387-7050  
ext. 3956 or 7340

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France  
(88) 28 65 43

### Editor

G. A. Oare  
(412) 367-3036

### Assistant Editor

F. M. Wieloch  
(412) 367-3036

### Design/Production

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### Editorial Assistant

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Department of Physics  
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University of Tokyo  
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### EMANUELE RIMINI

University of Catania  
Department of Physics  
57 Corso Italia  
I 95129 Catania, Italy  
telephone: 37-70-61  
telex: 911554 INFNCT I

### RUSTUM ROY

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### TAKUO SUGANO

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Oak Ridge National Laboratory  
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The Society's interdisciplinary approach to the exchange of technical information is qualitatively different from that provided by single-disciplinary professional societies because it promotes technical exchange across the various fields of science affecting materials development. MRS sponsors two major international annual meetings encompassing approximately 30 topical symposia, as well as numerous single-topic scientific meetings each year. It recognizes professional and technical excellence, conducts short

courses, and fosters technical exchange in various local geographical regions through Section activities and Student Chapters on university campuses.

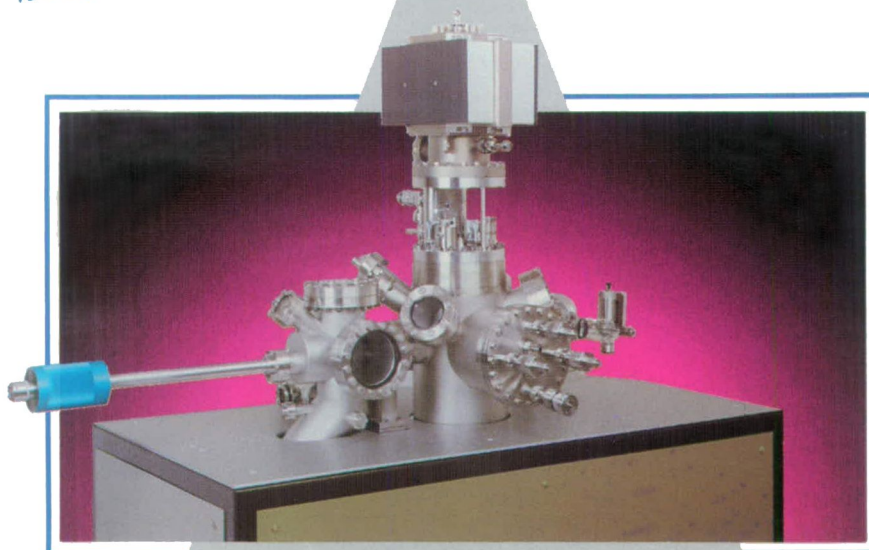
MRS is an Affiliated Society of the American Institute of Physics and participates in the international arena of materials research through associations with professional organizations such as European MRS.

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