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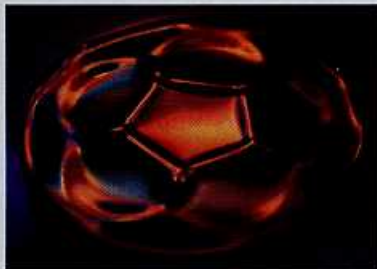
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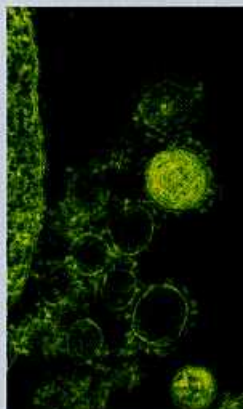
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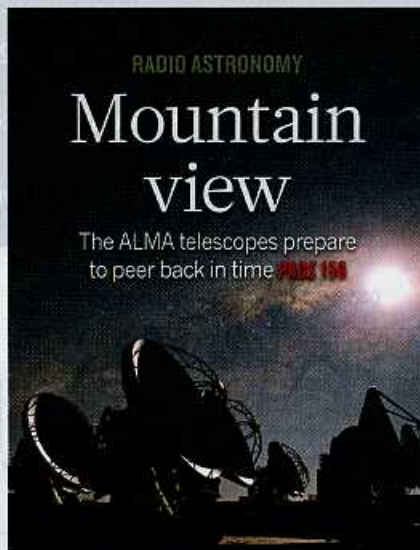
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Tom Gallagher & Stanley Perlman  
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#### 177 EARTH SCIENCE

**Core composition revealed**  
Oxygen and silicon as the light elements in Earth's outer core  
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**Alternative energy for neuronal motors**  
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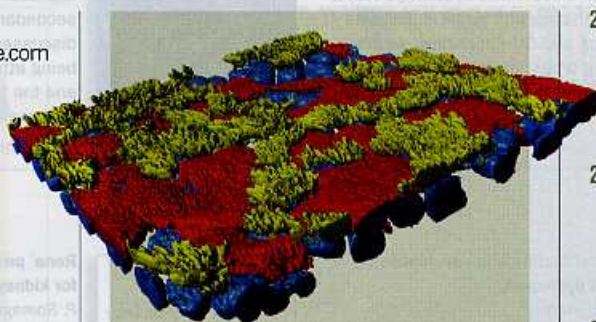
**Anatomy of an ovarian cancer**  
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- 193 **PLANT GENOMICS** Patterns of population epigenomic diversity  
R J Schmitz et al. **SEE N&V P.181**



### ON THE COVER

## Viral target

The cover graphic represents dipeptidyl peptidase 4 (red), the human receptor for the emerging pathogenic coronavirus HCoV-EMC, found on non-ciliated but not ciliated cells (yellow) in primary bronchiolar epithelial cell culture. **PAGES 176 & 251**

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- 210 **PHYSICS** Coherent state transfer between itinerant microwave fields and a mechanical oscillator  
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- 215 **MATERIALS SCIENCE** Mesoporous TiO<sub>2</sub> single crystals delivering enhanced mobility and optoelectronic device performance  
E J W Crossland et al. **SEE N&V P.180**
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- 223 **NEUROBIOLOGY** CALHM1 ion channel mediates purinergic neurotransmission of sweet, bitter and umami tastes  
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- 227 **STEM CELLS** CXCL12 in early mesenchymal progenitors is required for haematopoietic stem-cell maintenance  
A Greenbaum et al.

- 231 **STEM CELLS** Haematopoietic stem cells and early lymphoid progenitors occupy distinct bone marrow niches  
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- 236 **DEVELOPMENTAL BIOLOGY** PRC1 coordinates timing of sexual differentiation of female primordial germ cells  
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- 241 **STEM CELLS** Ovarian surface epithelium at the junction area contains a cancer-prone stem cell niche  
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- 246 **PLANT SCIENCES** Naturally occurring allele diversity allows potato cultivation in northern latitudes  
B Kloosterman et al.

- 251 **VIROLOGY** Dipeptidyl peptidase 4 is a functional receptor for the emerging human coronavirus-EMC  
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- 265 **STRUCTURAL BIOLOGY** The sarcolipin-bound calcium pump stabilizes calcium sites exposed to the cytoplasm  
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