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Connectomic and optical analyses of neural circuitries in the retina  
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155 SOLAR SYSTEM

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**Solution proposed for ice-age mystery**  
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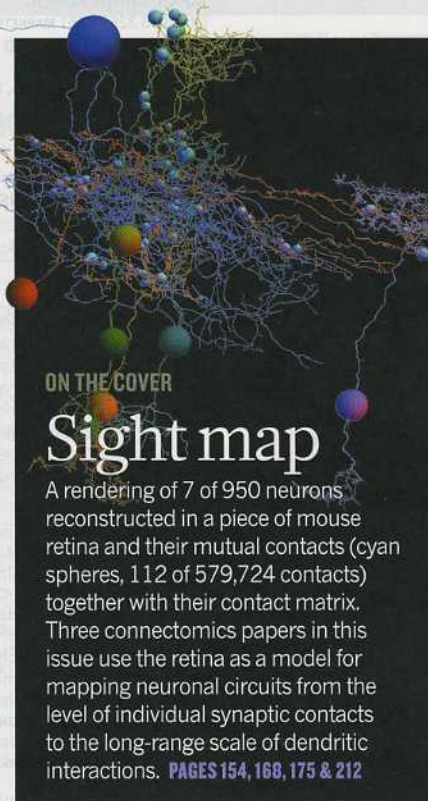
**Jurassic fossils and mammalian antiquity**  
Two new haramiyidan fossils from the Jurassic period  
Richard L Cifelli & Brian M Davis  
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ARTICLES

- 163 EVOLUTION** A Jurassic mammaliaform and the earliest mammalian evolutionary adaptations  
C-F Zhou, S Wu, T Martin & Z-X Luo  
**SEE N&V P.160**

- 168 NEUROSCIENCE** Connectomic reconstruction of the inner plexiform layer in the mouse retina  
M Helmstaedter et al. **SEE N&V P.154**

- 175 NEUROSCIENCE** A visual motion detection circuit suggested by



ON THE COVER

**Sight map**

A rendering of 7 of 950 neurons reconstructed in a piece of mouse retina and their mutual contacts (cyan spheres, 112 of 579,724 contacts) together with their contact matrix. Three connectomics papers in this issue use the retina as a model for mapping neuronal circuits from the level of individual synaptic contacts to the long-range scale of dendritic interactions. **PAGES 154, 168, 175 & 212**

**Drosophila connectomics**

S-y Takemura et al. **SEE N&V P.154**

LETTERS

- 182 PLANETARY SCIENCE** An observed correlation between plume activity and tidal stresses on Enceladus  
M M Hedman et al. **SEE N&V P.155**

- 185 OPTICS** Squeezed light from a silicon micromechanical resonator  
A H Safavi-Naeini et al.

- 190 CLIMATE SCIENCE** Insolation-driven 100,000-year glacial cycles and hysteresis of ice-sheet volume  
A Abe-Ouchi et al. **SEE N&V P.159**

- 194 ECOLOGY** Nitrogen losses in anoxic marine sediments driven by *Thioploca*-anammox bacterial consortia  
M G Prokopenko et al.

- 199 PALAEOLOGY** A new arboreal haramiyid shows the diversity of crown mammals in the Jurassic period  
X Zheng, S Bi, X Wang & J Meng  
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- 203 MOLECULAR EVOLUTION** A latent capacity for evolutionary innovation through exaptation in metabolic systems  
A Barve & A Wagner

- 207 GENETICS** The haplotype-resolved genome and epigenome of the aneuploid HeLa cancer cell line  
A Adey et al.

- 212 NEUROSCIENCE** A directional tuning map of *Drosophila* elementary motion detectors  
M S Maisak et al. **SEE N&V P.154**

- 217 STEM CELLS** Generation of inner ear sensory epithelia from pluripotent stem cells in 3D culture  
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- 222 EPIGENETICS** Vitamin C induces Tet-dependent DNA demethylation and a blastocyst-like state in ES cells  
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- 227 VIROLOGY** Molecular basis of binding between novel human coronavirus MERS-CoV and its receptor CD26  
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- 232 IMMUNOLOGY**  $T_{reg}$  induction by a rationally selected mixture of Clostridia strains from the human microbiota  
K Atarashi et al.

- 237 CHEMICAL BIOLOGY** Pyrimidine homeostasis is accomplished by directed overflow metabolism  
M L Reaves, B D Young, A M Hosios, Y-F Xu & J D Rabinowitz **SEE N&V P.157**

- 242 CORRIGENDUM** Domain organization of human chromosomes revealed by mapping of nuclear lamina interactions  
L Guelen et al.

- 242 CORRIGENDUM** Immune surveillance by CD8 $\alpha^+$  skin-resident T cells in human herpes virus infection  
J Zhu et al.

- 242 ERRATUM** Integrated genomic characterization of endometrial carcinoma  
The Cancer Genome Atlas Research Network