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#### 35 PALAEOLOGY

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#### 37 PLANETARY SCIENCE

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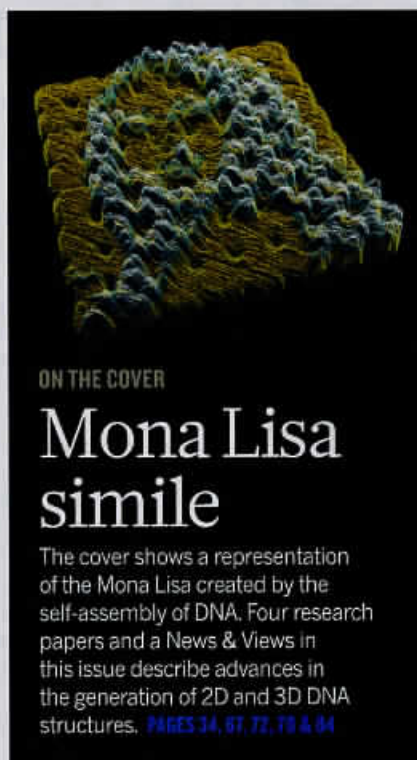
##### Quantum-teleportation experiments turn 20

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ON THE COVER

## Mona Lisa simile

The cover shows a representation of the Mona Lisa created by the self-assembly of DNA. Four research papers and a News & Views in this issue describe advances in the generation of 2D and 3D DNA structures. PAGES 34, 67, 72, 78 & 84

#### 51 PARKINSON'S DISEASE Structure of PINK1 in complex with its substrate ubiquitin

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#### 57 MOLECULAR BIOLOGY A transfer-RNA-derived small RNA regulates ribosome biogenesis

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#### 63 ASTRONOMY Direct detection of a break in the teraelectronvolt cosmic-ray spectrum of electrons and positrons

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#### 67 NANOTECHNOLOGY Fractal assembly of micrometre-scale DNA origami arrays with arbitrary patterns

G Tikhomirov, P Petersen & L Qian

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#### 72 NANOTECHNOLOGY Programmable self-assembly of three-dimensional nanostructures from 10,000 unique components

L L Ong et al. SEE N&V P.34

#### 78 NANOTECHNOLOGY Gigadalton scale

#### shape-programmable DNA assemblies

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#### 84 NANOTECHNOLOGY Biotechnological mass production of DNA origami

F Praetorius et al. SEE N&V P.34

#### 88 PLANETARY SCIENCE Primordial clays on Mars formed beneath a steam or supercritical atmosphere

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#### 92 PALAEOLOGY Reconciling taxon senescence with the Red Queen's hypothesis

I Žilobaitė, M Fortelius & N C Stenseth

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#### 96 EVOLUTION Genetic diversity of the African malaria vector *Anopheles gambiae*

The *Anopheles gambiae* 1000 Genomes Consortium

#### 101 IMMUNOLOGY Immune evasion of *Plasmodium falciparum* by RIFIN via inhibitory receptors

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#### 106 EVOLUTION Maternal age generates phenotypic variation in *Caenorhabditis elegans*

M F Perez, M Francesconi, C Hidalgo-Carcedo & B Lehner

#### 110 CELL BIOLOGY IL-11 is a crucial determinant of cardiovascular fibrosis

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#### 116 CANCER Inactivation of DNA repair triggers neoantigen generation and impairs tumour growth

G Germano et al.

#### 121 CANCER IMMUNOTHERAPY PD-1 is a haploinsufficient suppressor of T cell lymphomagenesis

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#### 126 MOLECULAR BIOLOGY Promoter-bound METTL3 maintains myeloid leukaemia by m<sup>6</sup>A-dependent translation control

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#### 132 CHEMICAL BIOLOGY Genetically programmed chiral organoborane synthesis

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