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# Content • • •

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16

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**VOLUME 46 ISSUE 11** 



## Departments & Columns

#### **10 EDITORIAL**

Our continuing mission ...

#### **16 LIGHT SPEED**

- **Business and Markets**
- · Detection market catches fire
- CVI Laser marks 40th anniversary
- · Dark energy camera achieves first light

#### 22 TECH PULSE

Research and technology headlines of the month

- Replacing "consumer electronics" with "consumer photonics"
- Record pulse provides new tool for observing quantum mechanics
- Superstable laser could power atomic physics

#### 66 GREENLIGHT

- Significant ecophotonics developments
- Spinach power boosts silicon solar cells

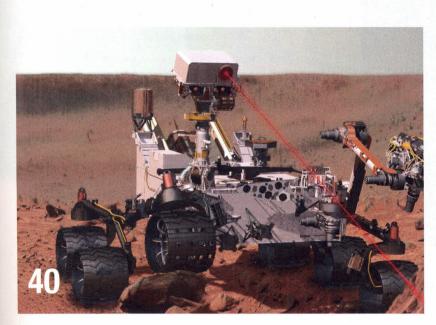
- **71 NEW PRODUCTS**
- **79 HAPPENINGS**
- **81 ADVERTISER INDEX**
- 82 LIGHTER SIDE

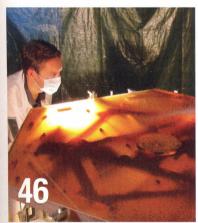
#### THE COVER

On Mars, in space and back on planet Earth, lasers are making headlines. Design by Senior Art Director Lisa N. Comstock.



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#### **SPECIAL 16-PAGE INSERT**

# THE COMMERCIAL LASER LINES, DETECTOR RANGES & OPTICAL MATERIALS WALL CHART

The wall chart, inserted between pages 26 and 27, displays the major commercial laser lines, detectors and optical materials in the ultraviolet to the far-infrared and beyond. Additional copies can be ordered online at www.photonics.com/wallchart.

### Features

**39** ISSUE FOCUS: SPACE

#### LASERS FIND VARIED USES IN SPACE APPLICATIONS

by Valerie C. Coffey, Science Writer On the Mars rover Curiosity, in cutting-edge telescope technology, and in guide star adaptive optics, lasers are space pioneers.

#### 46 TELESCOPES REQUIRE POLISHING TO PERFECTION

by Hank Hogan, Contributing Editor Farsighted projects such as the ESO's gargantuan Extremely Large Telescope, to be installed in 2022, require advances in polishing technology.

#### 52 STORAGE KEEPS PACE WITH DATA FROM SPACE

by Marie Freebody, Contributing Editor Storing the images collected by space researchers is not especially burdensome, but the data's subsequent transfer and handling can present challenges.

#### 56 IN SITU METHOD OPTIMIZES OPTICAL COATINGS

by Allan Jaunzens, Evatec Ltd. Automated industrial tools integrate thin-film coating production processes from film design to real-time re-optimization of the recipe.

#### **60** SUPERPOLISHED OPTICS ENABLE HIGH-SENSITIVITY LASER APPLICATIONS by Trey Turner, Reo Inc.

Cavity-enhanced absorption spectroscopy, ring laser gyroscopes and green HeNe lasers all require sub-angstrom surface roughness.

