

# InsideGNSS

GPS | GALILEO | GLONASS | BEIDOU

ON THE COVER

## 48 GPS Receiver Performance On Board a LEO Satellite

### The Navigation and Occultation eXperiment

André Hauschild, Markus Markgraf, and Oliver Montenbruck

A test and evaluation program demonstrates that a commercial GPS receiver can operate as a spaceborne research tool.



Cover photo courtesy of DLR – German Aerospace Center

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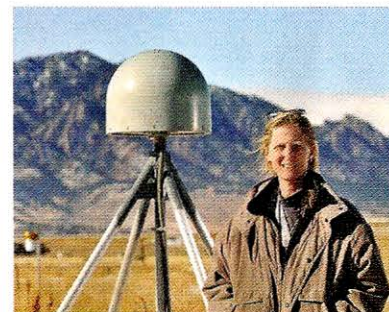
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## 36 Environmental Sensing

### A Revolution in GNSS Applications

Kristine M. Larson, Eric E. Small, John J. Braun, and Valery U. Zavorotny

Increasingly sophisticated uses of GNSS observables have led to a new era in remote sensing. A team of researchers describe the results of the applications of interferometric reflectometry to measure snow depth, vegetation water content, and soil moisture.



## 58 A Universal GNSS Software Receiver Toolbox

### For Education and Research

Sanjeev Gunawardena

GNSS software defined radio receivers and associated research are proliferating rapidly as computer processing power increases and costs decline. The author describes the latest version of a universal GNSS SDR processing toolbox that is distributed as a plug-in for high-level algorithm development.

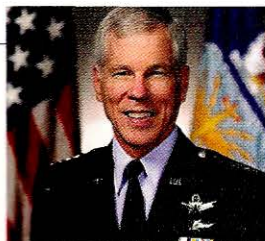
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## 22 Washington View

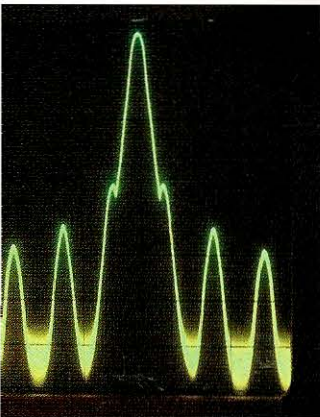
### New Leaders at the GPS Helm

Dee Ann Divis

Changes across the board as new threat to spectrum emerges.







## 30 GNSS Solutions

How do measurement errors propagate into GNSS position estimates?

Mark Petovello

## 68 Working Papers

Assessing the Performance of GNSS Signal Acquisition:  
New Signals and GPS L1 C/A Code

Myriam Foucras, Bertrand Ekambi, Fayaz Bacard,  
Olivier Julien, and Christophe Macabiau

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#### 12 Thinking Aloud

The Next Big Mac  
Glen Gibbons

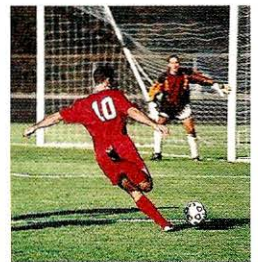
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