### THE PHYSICS TEACHER

#### CONTENIDO

#### VOLUME 50 No. 1 JANUARY 2012

#### **PAPERS**

- About the International System of Units (SI) Part III. SI Table. Gordon J. Aubrecht II, Anthony P. French, and Mario Iona.
- How Can "Weightless" Astronauts be Weighed?

  Jesus Carnicer, Francisco Reyes, and Jenaro Guisasola.
- The Monty Hall Problem as a Class Activity Using Clickers. *Stephen H. Irons*.
- 17 Surface Bubbles in the Bathtub and Reflections on Ripple Tanks. *Thomas B. Greenslade Jr.*
- Teaching Galileo? Get to Know Riccioli! What a Forgotten Italian Astronomer Can Teach Students About How Science Works *Christopher M. Graney*.
- More on Systematic Error in a Boyle's Law Experiment. *Richard P. McCall.*
- Rolling Motion of a Ball Spinning About a Near-Vertical Axis. *Rod Cross*.
- 28 Removing the Mystery of Entropy and Thermodynamics Part I. *Harvey S. Leff.*
- 32 An Unexpected Heat Engine. *K. P. Trout and Charles A. Gaston.*
- 35 Angular Acceleration Without Torque? *Richard D. Kaufman.*
- Two Simple Activities to Bring Rainbows into the Classroom. Hakan Isik and Kemal Yurumezoglu.
- Diurnal Astronomy: Using Sticks and Threads to Find Our Latitude on Earth. *Néstor Camino and Alejandro Gangui*.
- 42 Creativity and Introductory Physics. *Ildefonso (Fonsie) J. Guilaran.*

- Using a High-Speed Camera to Measure the Speed of Sound. William Nathan Hack and William H. Baird.
- Helping Students to Think Like Scientists in Socratic Dialogue-Inducing Labs.

  Richard Hake.
- The Numbers Speak: Physics First Supports Math Performance. *Howard M. Glasser*.

### **COLUMNS**

- **6** Letter to Editor
- 6 Cartoon by Doug Stith.
- 8 **Figuring Physics.** Sleep Well.

Paul Hewitt.

56 Trick of the Trade.

Wavetank in a glass. *Dave Van Domelen*.

56 Fermi Questions.

Larry Weinstein.

57 Physics Challenge for Teachers and Students.

Boris Korsunsky.

**YouTube Physics.** 

Diane Reindeau.

59 For the New Teacher.

Insider conference tips.

Jill Tennant.

60 Little Gems.

Overhead projector in a wastebasket.

Max Ziegler.

WebSights.

Dan Maclsaac.

**Book Reviews** 

Quantitative Understanding of Biosystems: An Introduction to Biophysics. Thomas M Nordlund, Keith Weninger reviewer. And A Thread Across the Ocean: The Heroic Story of the Transatlantic Cable, by John Steele Gordon, Herman Erlichson, reviewer.

# Inside Back Cover What's Happening!

# This Month's Cover...

Is the frontispiece of Amagestum Novem, depicting Riccioli's Assessment of the debate over whether the Earth moved. In his paper beginning on p. 8 Christopher Graney discusses how he uses Riccioli's wrong answers" to Teach students about science.