about mistakes they've made in their careers. I am not advocating that the approach be too casual, but we should make it clear that mistakes are a part of every human endeavor and that if a student does not do well on a particular quiz or messes up one experiment, it does not mean that the student is a failure. Let us not exaggerate the "perfection" of science and scientists.

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Helen Quinn's Reference Frame points in a useful direction, and it certainly improves on the typical middle-school oversimplification of what scientists do and how and why they do it. However, it maintains one idealization: that we lab scientists choose our problems based on a desire for understanding and consistency. In many cases, driven by funding imperatives, we choose our problems based on the needs of nonscientists. In those situations, we cast our choices in such a light that nonscientists will believe we are solving their problems. For example, SLAC might not have been built or maintained were it not perceived by the public that particle physics has practical consequences.

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A light correction

In Robert Crease's interesting biographical discussion, "Charles Sanders Peirce and the First Absolute Measurement Standard" (PHYSICS TODAY, December 2009, page 39), one small error crept in. As Leon Golub and I explain in our book *The Solar Corona* (2nd ed., Cambridge University Press, 2009), spectroscopy was first used at total solar eclipses in 1868 and 1869, with helium and what was at first called coronium (now known to be a highly ionized state of iron) as the spectral discoveries. Crease has checked his references and confirmed that the argon he mentioned in his article was later reported by Peirce to have been observed not at the 1869 eclipse in Kentucky but in an aurora at about the same time.

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Galileo, Kepler share IYA anniversary

Here's a little postscript to the International Year of Astronomy 2009. Although it celebrated the 400th anniversary of the telescopic discoveries of Galileo, the IYA was the quadricentennial of another monumental event in the history of astronomy and physics—the publication of Johannes Kepler's *Astronomia Nova*. In that work Kepler stated his first two laws of planetary motion: the ellipticity of planetary orbits, which finally broke the circular mindset of his predecessors, and the sweeping of equal areas in equal times (conservation of angular momentum). Surely his text deserves celebration as well, for it led directly to Newton's law of universal gravitation later in that century.

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