role in driving divergence (*2*). In contrast, models of allopatric speciation do not generally invoke a direct role for natural selection and might thus be expected to proceed more slowly. By showing that allopatric divergence does not lead to rapid ecological change, Peterson *et al.* may have provided some of the best evidence that sympatric sister species have evolved in situ.

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Oldest Printed Star Charts

That "Albrecht Dürer's woodcuts of the constellations (1515) were the first printed star charts" (Kevin B. Marvel, CD-ROM Review, *Science*'s Compass, 20 Aug., p. 1216) may well be true for the European cultural sphere, but charts published in China in a woodcut edition around 1094 by the polymath Su Sung predate Dürer's by more than 400 years and are generally considered the oldest printed star charts in the world. Su Sung's charts, like Dürer's, depict stars arranged into constellations as they appear to a terrestrial observer. Although no examples of the original edition of Su Sung's work [entitled *Xin yixiang fayao* (New method for an armillary sphere and celestial globe)] are known to have survived, the transmission of the text is well documented (*1*), and star charts in later editions, such as those illustrated by Needham (*2*), are considered close copies of the originals.

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How a Geologist Finds the Truck

In his News of the Week article "GPS's 'dress rehearsal' for year 2000 problem" (6 Aug., p. 816), Richard A. Kerr uses the example of the field geologist mapping in Nevada who needs his global positioning system (GPS) receiver to determine the shortest distance back to his truck. I can assure you that any geologist who has just finished mapping doesn't need a GPS receiver to tell him where he is in Nevada. Since he is mapping, he has to know exactly where he is or else his maps are worthless trash. As far as finding the shortest distance to his truck at the end of the day, a geologist does not use a GPS receiver for that purpose because evolution has already solved that problem. Every geologist who has worked in the desert instinctively knows that the shortest distance to the truck is the route that is the shortest distance to the nearest cold beer.

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To Be a Good Teacher

In the Random Samples item "Glenn Commission launched" (30 July, p. 661), Deborah Lowenberg Ball, a professor of education at the University of Michigan, is just plain wrong when she states that "'almost none' of what you learn as a math major 'has anything to do with the K–12 curriculum.'" (Her statement was made to caution the Glenn Commission to not recommend that every teacher have a major in a content area.)

The topics that students learn and review in college courses such as calculus, statistics, geometry, and modern algebra can be found throughout the K–12 curriculum (although more at the secondary level). For example, the learning of calculus requires an understanding of many concepts of high school algebra, along with the application of basic geometric ideas that are featured in the K–12 curriculum. The elementary, secondary, and undergraduate mathematics curricula are connected in both obvious and subtle ways.

The philosophical implications of Ball's statement are also questionable. The reason many universities, including mine, require prospective teachers to select a major is to ensure that the teachers are masters of the subject matter they are teaching. It is not enough that teachers just have the gist of the subject: they need to be experts. Proper training in a content area means that teachers will be more flexible intellectually and therefore better able to take the risks necessary for effective teaching. These teachers will be better prepared to advise students and parents about curricular issues and college plans, and they will also be more effective leaders in their schools. Although a major in a content area is not necessary for someone to be a teacher, it is vital if he or she is going to be a *good* teacher.

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