



## DATA POINTS: DUST DEVIL

The debris and combustion particles resulting from the destruction of the World Trade Center on September 11, 2001, have compromised lung function in surviving rescue workers. Medical researchers are studying members of the Fire Department of New York City (FDNY), who are tested regularly to see how much air they can exhale through a tube.

Number of exposed FDNY rescue workers: **11,766**

Number who arrived before or during the collapse: **1,660**

Two days later: **8,185**

Three or more days later: **1,921**

Median liters of air workers could exhale in one second during their last test before 9/11: **4.30**

During their first test after 9/11: **3.93**

Percent who had below-normal capacity before 9/11: **6.8**

After 9/11: **15.3**

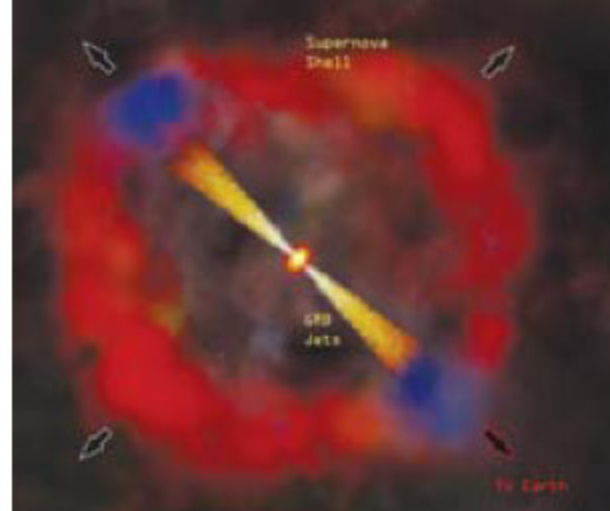
Equivalent years of aging for lungs, one year after 9/11: **12**

SOURCE: American Journal of Respiratory and Critical Care Medicine, August 2006

## COSMOLOGY

# That Way Lies Confusion

Astronomers know that if they point their telescopes at quasars, they will spy an average of one “foreground” galaxy in front of every fourth quasar. Because the universe is uniform, the number of foreground galaxies should be the same for, say, a group of observed gamma-ray bursts. Only it is not. In a paper that is generating considerable buzz among the stellarati, Jason X. Prochaska of the University of California, Santa Cruz, finds an average of about one foreground galaxy for each of 15 bursts. If the result holds, then astronomers are misinterpreting a key aspect of foreground gas—potentially posing a serious cosmological problem, because they use the gas to estimate the composition of the earliest galaxies and the distribution of dark matter, which makes up 90 percent of the matter in the universe. Foreground galaxies might be unexpectedly dusty, obscuring some quasars; they might be focusing light from gamma-ray bursts, causing astronomers to miss fainter ones. Or the supposed galaxies might be gas from the bursts themselves, the researchers note in the September 20 *Astrophysical Journal Letters*. —JR Minkel



**COSMIC MYSTERY** involves galaxy counts between quasars and gamma-ray bursts, such as GRB 020813, in which gas from a supernova surrounds a black hole producing two particle jets (artist's rendition).

## TRANSGENIC CROPS

# Cotton-Picking Results

Cotton genetically modified to produce a pesticide from the microbe *Bacillus thuringiensis* does not guarantee long-term financial benefit. Cornell University researchers and their colleagues interviewed 481 Chinese farmers in five major cotton-growing provinces. For years Bt farmers there reaped at least a third more profit than conventional growers from the money saved by slashing pesticide use up to 70 percent. But then Bt-resistant insects, such as mirids, proliferated (though for at least one season, an unusually cool, wet summer led to a large mirid outbreak). The new pests forced the farmers to spray crops as much as conventional growers did. That ate away the profits, because Bt seed costs three times more than conventional seed. The scientists, who presented their findings at the July 25 American Agricultural Economics Association meeting in Long Beach, Calif., suggested targeting secondary pests with natural predators or modifying cotton even further to resist them.

—Charles Q. Choi

## HEALTH

# Womb Woes

The so-called fetal origins hypothesis predicts that poor health in utero should be followed by chronic disease in adulthood, and indeed studies of brief famines back up the claim. But an analysis by Columbia University economist Douglas Almond indicates that problems for the less robust unborn extend to socioeconomic success, too. He zeroed in on people who were prenatally exposed to influenza during the 1918 pandemic. Detailed census data from the 1960s to the 1980s show that members of this group were up to 15 percent less likely to graduate from high school, had among men 5 to 9 percent lower wages (because of disability), and were 15 percent more likely to be poor compared with siblings and others of their generation, Almond reports in the August *Journal of Political Economy*. Policies aimed at improving prenatal health could accordingly have a strong effect on future earnings, he notes.



**FETAL HEALTH** sets the tone for adult well-being.

—JR Minkel