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## Astronomical Wagers

Sarah Goforth

For most scientists, a career in research is gamble enough. But Scottish physicist Jim Hough couldn't resist when the British betting house Ladbrokes offered 500:1 odds against the possibility that scientists will directly detect gravity waves before 2010. As director of Geo 600, an observatory in Germany designed to do just that, Hough had to lay down some pounds sterling.

First predicted by Einstein's general theory of relativity, gravity waves are ripples in the fabric of spacetime. When black holes collide or stars explode—whenever a very big celestial object does something very fast—gravity waves carry the fingerprint of the event out into the cosmos. They scarcely interact with matter at all, which makes them notoriously difficult to detect. Since they surge through space virtually unchanged, however, they carry a revealing picture of their origins. If gravity waves can be registered and studied, Hough says, "they are the first signals that will let us see right into the heart of these [events]."

Five gravity-wave detectors are up and running, including the Laser Interferometer Gravitational-Wave Observatory (LIGO), which consists of two labs in the U.S. Even these detectors, which are the most advanced, are sensitive enough only to make detection plausible, not likely, says Barry Barish, LIGO's director. It is scheduled for a major upgrade sometime around 2010, when the Ladbrokes offer expires. After that time, Hough says, success is "virtually guaranteed."

Ladbrokes made the offer on the morning of August 26, at the prompting of the British magazine *New Scientist*, but by the time Hough placed his £25 wager (about \$45, the maximum allowed) just after lunch, the odds had fallen to 100:1. By evening, they were 5:1. Betting closed two weeks later at a paltry 2:1, leaving Ladbrokes with a six-figure liability. Spokesman Warren Lush, who set the odds, is hoping the detectors don't pick up a ripple. "Otherwise," he says, "I'll be eating a nice helping of humble pie."

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