

## Biggest bets in the universe unveiled

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Betting on the greatest unsolved problems in the universe is no longer the preserve of academic superstars such as [Stephen Hawking](#). From Thursday anyone will be able to place bets on whether the biggest physics experiments in the world will come good before 2010.

For two weeks, British-based bookmaker Ladbrokes is opening a book on five separate discoveries: life on Titan, gravitational waves, the Higgs boson, cosmic ray origins and nuclear fusion.

“We’ve taken bets on life on Mars before,” says Warren Lush, Ladbrokes’ novelty bets expert, “and we wanted to provide something completely different.” The initiative follows an approach from **New Scientist**, and the full 10-page feature, *Monsters of the Universe* appears in the print edition of the [magazine](#).

Bookies’ odds are not straightforward probabilities. They also take into account how much the company can afford to lose in case they have to pay out. For example, Ladbrokes reckon the odds of finding the Loch Ness monster alive and well are 66-1, so anyone betting \$1 would win \$66 if it turned up.

But these apparently low odds reflect the fact that thousands of people have placed bets on Nessie, rather than the likelihood of the monster’s existence. To work out the odds on the physics experiments, Lush consulted physicists and astronomers. He

expects "the odds will spark debates".

## **Cosmic rays**

Ladbrokes say the most likely conundrum to be cracked is the origin of cosmic rays - high-energy particles from outer space which continuously bombard Earth. No one is certain where they come from or what gives them energies 10 million times greater than the most powerful man-made particle accelerator.

Working on the problem are physicists at the Pierre Auger experiment in Mendoza, Argentina. Utilising 1600 detectors spread over 3000 square kilometres, it has been running since January 2004. Ladbrokes are offering 4-1 that the mystery will be solved by 2010.

They are also giving good odds on a successful hunt for the missing Higgs boson which, particle physicists believe, is responsible for giving everything in the subatomic world its mass. And it is one of the key reasons for building the Large Hadron Collider at the CERN laboratory near Geneva, the world's most powerful particle accelerator. The LHC should be complete by 2007 and Ladbrokes put the odds of finding the Higgs before 2010 at 6-1.

"I'd be tempted to take a bet on the Higgs at 6-1," says Brian Foster who heads the particle physics group at the University of Oxford in the UK. "I've been quite instrumental in betting the taxpayers' money on us finding it, so I'd better put my money where my mouth is."

## Power bet

Ladbrokes are more bullish about the chances of nuclear fusion becoming a commercial reality than most physicists. The bookie reckons the odds of a fusion power station turning on by 2010 are 100-1. Meanwhile, physicists are still wrangling over where to build ITER, the first fusion reaction designed to churn out 10 times more power than it guzzles.

Serious betters might want to take a 500-1 punt on the LIGO detectors finding gravitational waves - tiny ripples in the fabric of space-time caused by colliding black holes and massive imploding stars.

"I will certainly have a flutter," says Jim Hough at the University of Glasgow in the UK and a member of the LIGO team. He is confident that LIGO will catch a gravitational wave before 2010. "I would have put the odds between 2-1 and 10-1."

In fact, a flurry of bets came in straight away on Thursday for LIGO, one of which was for £50. If successful, this anonymous punter will scoop a whopping £25,000. Ladbrokes responded swiftly to these bets by slashing the odds on LIGO down from 500-1 to 100-1, and later to just 10-1.

According to Ladbrokes, the rank outsider is the Cassini spacecraft, currently orbiting Saturn. On Christmas Day, Cassini will release the wok-shaped Huygens probe on a 20-day journey towards Titan, Saturn's largest moon. Ladbrokes has set the odds of finding intelligent life on Titan by 2010 at 10,000-1, the maximum odds allowed.

Mark Leese, who manages the surface science package on the Huygens probe at the UK's Open University, is not surprised by the long odds. "Huygens isn't really designed to find life," he says. "The only way it would is if something sang into its microphones."

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