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Lingohack 英语大破解

Could the Large Hadron Collider help solve the mystery of dark matter?

宇宙奥秘：大型强子对撞机能否解开暗物质之谜？

本集内容

Could the Large Hadron Collider help solve the mystery of dark matter? 宇宙奥秘：大型强子对撞机能否解开暗物质之谜？

文字稿

Dr Clara Nellist, Particle Physicist, Cern
"We can't see it. We don't know what it is."

克莱拉·奈莉丝特博士　　欧洲核子研究组织（Cern）粒子物理学家
"我们看不见它，也不知其为何物。"

Dark matter is one of the unsolved mysteries of the Universe.

暗物质是宇宙中尚未被解开的谜团之一。

Scientists are hoping the Large Hadron Collider might finally shed some light on it.

科学家们希望大型强子对撞机终将揭开这个谜团。

The Large Hadron Collider has already made one huge discovery – the Higgs boson.

科学家已利用这台大型强子对撞机做出一项重大发现，希格斯玻色子。

Scientists say they may finally have unlocked the secrets of the Universe.

科学家们称，他们可能终于破解了宇宙的秘密。

Ten years on, it's been upgraded and is even more powerful.

十年过去了，大型强子对撞机已经升级，功能也更强大。

What is the Higgs boson?

到底什么是希格斯玻色子？

Without the Higgs boson and its energy field, nothing would exist.

没有希格斯玻色子及其相关的能量场，任何事物都不存在。

No galaxies, no stars, no planets, no life on Earth.

没有星系、恒星、行星，地球上也没有生命。

Named after Peter Higgs, who predicted it over 45 years earlier, it explains how subatomic particles gain mass.

希格斯玻色子以彼得·希格斯命名，他早在 45 多年前就预言该粒子的存在，希格斯玻色子解释了亚原子粒子是如何获得质量的。

At an atom's heart are smaller particles like protons and neutrons.

原子的中心有更小的粒子，如质子和中子。

Inside these, are smaller particles still.

在这些粒子中，还有更小的粒子。

The Higgs boson and its associated energy field act like a cosmic glue that sticks to electrons and quarks, giving them substance.

希格斯玻色子及其相关能量场就像粘附在电子和夸克上的宇宙胶水，赋予它们物质。

Dr Clara Nellist, Particle Physicist, Cern
“When particles interact with the Higgs field, they get mass, and the Higgs boson is what we can discover in our experiments to show that the Higgs field exists.”

克莱拉·奈莉丝特博士　　欧洲核子研究组织（Cern）粒子物理学家
“当粒子和希格斯场相互作用时，就会获得质量，希格斯玻色子是我们可以在实验中发现的，它的发现可推测出希格斯场的存在。”

Scientists say this is how particles gained mass after the Big Bang.

科学家们说，这就是大爆炸后粒子获得质量的方式。

This is why it was nicknamed the 'God' particle.

希格斯玻色子也因此又被称为“上帝”粒子。

How do the Large Hadron Collider experiments work?

大型强子对撞机实验是如何进行的？

The Large Hadron Collider at Cern is a 27km loop of powerful electromagnets.

欧洲核子研究组织的大型强子对撞机是一个长达 27 公里的强大电磁线圈。

It fires protons close to the speed of light in opposite directions.

它向相反方向发射接近光速的质子。

They crash together, breaking into smaller particles.

质子对撞，破碎成更小的粒子。

The data collected may shed light on more mysteries of the Universe, like dark matter.

实验收集的数据可能会揭示更多宇宙奥秘，如暗物质。

Dr Clara Nellist, Particle Physicist, Cern
"Dark matter makes up between 80 to 85 per cent of the matter in our Universe. We can't see it. We don't know what it is. If it is a particle, perhaps it can be created in the collisions here at Cern. But it could be something else entirely."

克莱拉·奈莉丝特博士　　欧洲核子研究组织（Cern）粒子物理学家
"暗物质占宇宙中物质的 80%到 85%。我们看不见它，也不知其为何物。如果它是粒子，也许可以在欧洲核子研究组织所展开的碰撞实验中产生。但它也可能完全是另一种东西。"

The Universe still contains so many mysteries.

宇宙中仍有诸多奥秘。

Scientists like Clara could help make the next big discovery.

像克莱拉这样的科学家可以帮助做出下一个重大发现。

Dr Clara Nellist, Particle Physicist, Cern
"I was here when we discovered the Higgs boson."

克莱拉·奈莉丝特博士　　欧洲核子研究组织（Cern）粒子物理学家
"当我们发现希格斯玻色子时，我就在这里。"

Professor Peter Higgs, Nobel Prize-winning scientist
"An incredible thing that has happened in my lifetime."

彼得·希格斯教授　　诺贝尔奖获得者 科学家
"这是在我有生之年发生的一件不可思议的事情。"

Dr Clara Nellist, Particle Physicist, Cern
“The memory of that discovery drives me on in working in these teams to try and find what dark matter is or other secrets of our Universe.”

克莱拉·奈莉丝特博士　　欧洲核子研究组织（Cern）粒子物理学家
“对希格斯玻色子这一发现的回忆给予我动力，激励我继续在团队中工作，试图揭开暗物质的本质和宇宙中的其它秘密。”

视频链接

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