TED演讲者: Bur?in Mutlu-Pakdil | 布奇·穆特鲁-帕克迪

演讲标题:A rare galaxy that's challenging our understanding of the universe | 一个罕见的星系挑战了我们对宇宙的认知

内容概要: What's it like to discover a galaxy -- and have it named after you? Astrophysicist and TED Fellow Bur?in Mutlu-Pakdil lets us know in this quick talk about her team's surprising discovery of a mysterious new galaxy type.

发现一个新的星系并以你的名字命名它是一种什么感觉?天体物理学家和TED研究员布奇·穆特鲁-帕克迪,在这个简短的演讲中向我们介绍了她的团队令人惊喜的发现:一种神秘的全新的星系。

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There are more than a trillion galaxies in the universe.	宇宙中有超过一万亿个星系。[00:13]
And my team discovered an extremely rare one, a galaxy tha	
doesn't look quite like anything observed before.	们见过的其他星系都不同。[00:17]
This galaxy is so peculiar , that it challenges our theories and	这个星系是如此的特别, 以至于动摇了我们对于 宇
our assumptions about how the universe works.	宙运行规律的理论和设想。[00:26]
The majority of the galaxies are spiral , similar to our own	大多数星系都是螺旋状的, 就像我们的银河系一
Milky Way.	样。[00:37]
We have strong theories about how these common galaxies	我们可以很好地解释这些 常见星系的起源和演化
form and evolve.	过程。[00:42]
But we don't understand how rare galaxies form and evolve.	但是我们并不理解其他 罕见星系的形成和演变过
but we don't understand now rare galaxies form and evolve.	程。[00:48]
An especially puzzling rare case is Hoag's Object.	霍格星系就是这样的一个 令人费解而罕见的例
	子。[00:55]
It has a very symmetric central body surrounded by a	它由一个非常对称的中心天体 和环绕它的圆形外
circular outer ring, with nothing visible connecting them.	环组成, 而这两部分之间并没有 可见的物质连接它
	们。[01:00]
Hoag-type galaxies are among the rarest types of galaxies	霍格星系属于最罕见的星系类型之一。[01:10]
currently known.	
trillion: n.[数]万亿/adj.万亿的/num.[数]万亿 observed: adj.观察的;观测	
peculiar: adj.特殊的;独特的;奇怪的;罕见的/n.特权;特有财产 spira	
旋形/vi.盘旋;螺旋形上升 similar to: 与相似;和相同 Milky: adj.乳	
puzzling: adj.使迷惑的;使莫名其妙的 symmetric: adj.对称的;匀称的 rai	rest: adj.最珍贵的(rare的最高级);最稀罕的
There are fewer than one in 1,000 galaxies.	他们只占星系总数的不到千分之一。[01:16]
It's a mystery how the stars in the outer ring are just floating	外环中的恒星如此整齐的 漂浮在那里的原因 依旧
there in such an orderly manner.	是一个谜。[01:21]
That's interesting, right?	非常有意思,对吧? [01:30]
Hold on.	別急。[01:32]
Things are about to get more mysterious .	还有更加神秘的事情。[01:34]
The galaxy that my team discovered is even rarer and much	我们团队所发现的星系比霍格星系 更加罕见,也更
more complex than that.	复杂。[01:37]
You know, sometimes, you search and search for these	有时,我们不停地寻找一些天体,却什么也找不到。
objects, and you find nothing.	[01:44]
But sometimes, it just appears in the background, when you	但也有时候,它就会在你甚至 没有刻意找它的时候,
are not even looking for it.	出现在背景里。[01:50]
This system looks very similar to Hoag's Object, with its	这个星系与霍格星系非常相似, 也有中心天体和圆
central body and circular outer ring.	形的外环。[01:58]
We got very excited and thought we discovered another	我们当时非常激动, 以为又发现了一个霍格星系。
Hoag's Object.	[02:05]
But my research showed this is an entirely new galaxy type,	但是我的研究表明, 这其实是一种全新的星系, 大
now commonly referred to as "Bur?in's Galaxy."	家现在叫它""布奇星系"。(布奇是演讲者的
Tiew commonly referred to as barriers dataxy.	名字) [02:10]
(Laughs)	(笑) [02:21]
(Cheers) (Applause) We will not be visiting this galaxy	(欢呼) (掌声) 我们要过很久才能探访这个星
anytime soon.	系。[02:22]
mysterious: adj.神秘的;不可思议的;难解的rarer: adj.更稀罕的;更珍贵	
也;普通地	
It is approximately 359 million light years away from Earth.	它与地球的距离大概有 三亿五千九百万光年。
11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	[02:31]
You may think this is far.	你可能觉得这很远。[02:38]
Well, actually, this is one of the nearby galaxies.	其实这个星系已经离我们相对很近了。[02:40]
I study this object in different light in ultraviolet, optical	我对这个星系在不同的 电磁波长下的样子进行了
and near-infrared .	研究——包括了紫外线,可见光,和近红外线。
	[02:45]

Small details on our body, like a scar or wrinkles, tell the story of our lives. Similarly, a galaxy's structure in different light can help us trace back their origin and evolution. How do I look for these details? How do I look for these details? How do I look for these details? Scaptùze順速呢? (03:07) Scaptùze何速呢? (03:07) Scaptùze介证のののののののののののののののののののののののののののののののののののの		
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#an我们回溯 它的起源和演变过程。[02:59] How do!look for these details?		
How do I look for these details? I model the bright central body and remove my model from the image to check for any hidden features, because a bright structure in a galaxy may blind our views of faint features, just like using sunglasses when you are blinded by the intense light. approximately: adv.大约.近似地近于 ultraviolet : adj.紫外的; 紫外线的/n.紫外线輻射、紫外光 optical : adj.光学的; 眼睛的, 视觉的 near-infrared: 近红外 scar: vt.伤害,给留下伤痕/vi.结疤,痊愈/n.创伤,伤痕 wrinkles : n.皱纹,皱褶(wrinkle的复数形式)/v.起皱(wrinkle的第三人称单数形式) trace back : 追溯 sunglasses : n. 太下脫,凸透镜(sunglasson复数) blinded : adj.瞎的;不知情的;不知情的;不分情的,不会理的/v.使失明,使黑暗(blind的过去分词),使眼花缭乱 intense : adj.强烈的; 紧张的; 非常的; 热情的 The result was a big surprise. This galaxy doesn't just have an outer ring, it has an additional, diffused inner ring. We were having a hard time explaining the origin of the outer ring in Hoag-type galaxies. Now we also need to explain this mysterious second ring. There is currently no known mechanism that can explain the existence of an inner ring in such a peculiar galaxy. So the discovery of Bur?in's Galaxy clearly highlights the gap in load on the works. This discovery tells us that we still have a lot to learn, and we should keep looking deeper and deeper in space and keep searching for the unknown. Thank you. (Applause) diffused: adj.散布的.扩散的;普及的/\ \natty \	Similarly, a galaxy's structure in different light can help us	
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approximately: adv.大约,近似地,近于 ultraviolet: adj.紫外的; 紫外线的/n.紫外线輻射, 紫外光 optical: adj.光学的; 眼睛的, 视觉的 near-infrared: 近红外 scar: vt.伤害,给留下伤痕/vi.结疤,痊愈/n.创伤,伤痕 wrinkles: n.皱纹;皱褶(wrinkle的) 复数形式)/v.起皱(wrinkle的第三人称单数形式) trace back: 追溯 sunglasses: n.太阳镜,凸透镜(sunglass的复数) blinded: adj.瞎的;不知情的;不合理的/v.使失明;使黑暗(blind的过去分词);使眼花缭乱, intense: adj.强烈的; 紧张的; 非常的; 热情的 The result was a big surprise. This galaxy doesn't just have an outer ring, it has an additional, diffused inner ring. We were having a hard time explaining the origin of the outer ring in Hoag-type galaxies. Now we also need to explain this mysterious second ring. There is currently no known mechanism that can explain the existence of an inner ring in such a peculiar galaxy. So the discovery of Burzin's Galaxy clearly highlights the gap 所以,布奇星系的发现凸显了我们的 星系演化理论的 our knowledge of galaxy evolution. Further research into how this extremely rare galaxy was formed can provide us with new clues on how the universe works. This discovery tells us that we still have a lot to learn, and we should keep looking deeper and deeper in space and keep searching for the unknown. Thank you. (Applause) (第声) [04:33] diffused: adj.散布的扩散的:普及的/v.散布,传播(diffuse的过去分词),使分散 highlights: n.拔萃集锦,挑染(highlights) diffused: adj.散布的扩散的:音及的/v.散布,传播(diffuse的过去分词),使分散 highlights: n.拔萃集锦,挑染(highlights) diffused: adj.散布的扩散的:音及的/v.散布,传播(diffuse的过去分词),使分散 highlights: n.拔萃集锦,挑染(highlights) diffused: adj.散布的扩散的:在1.5元,以本元。104:33]	just like using sunglasses when you are blinded by the	
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