FEATURE: "Dare a Scientist Believe in Design?" – Owen Gingerich (First in SERIES)
科学家竟敢相信创造论– 欧文・劲格瑞斯

VOICE: Professor, have you even looked at some object in nature and exclaimed, "what wonderful design!"?

教授，你是不是曾看到自然界的物体而惊叹 "多么美妙的创造啊!"？

PROF.: Yes, I have. In fact, even some atheists agree on that.

是的, 我有过, 现实上, 甚至一些无神论者也相信这个观点。

Let's listen to a professor at one of the world's best-known universities explain his ideas about design in nature.

让我们来听一位来自其中一所世界上最好的大学的教授, 解释他对有关自然界的创造的观点。

TAPE: THEME AND ANNOUNCEMENT

PROF.: Prof. Dr. Owen Gingerich is Professor of Astronomy and the History of Science at Harvard University. He is senior astronomer at the Smithsonian Astrophysical Laboratory.

欧文・劲格瑞斯教授博士是一位哈佛大学的天文学和科学历史的教授, 他是一位史密森天文物理实验室的高级天文学家。

He is an internationally-recognized expert in the interpretation of the spectra of stars. He has also earned numerous awards for excellence in teaching.

他是一位国际公认的解释星光谱的专家。由于他出名的教学, 他还获得许多奖励。

VOICE: One of Dr. Gingerich's lectures is entitle, "Dare a Scientist Believe in Design?" It appears as a chapter in the book entitled *Evidence of Purpose*, edited by John Marks Templetion.

其中一个劲格瑞斯博士演讲的题目是 "科学家竟敢相信创造论?" 它以一章在约翰·汤伯顿编辑的本名为《有目的的证据》书中出现。

He begins by referring to an unusual mollusk.

他开始提及一种不寻常的软体动物。

PROF.: *Conus cedonulli* [KOH-nus sed-oh-NOO-lee] is, literally, the "I yield to none" cone. In the eighteenth century this handsomely-patterned molluscan shell became the prize of the king of Portugal.

在十八世纪, *Conus cedonulli* 这种有漂亮花纹的软体动物的贝壳（螺）成为葡萄牙国王的奖品。

The anatomy of cone shells includes a toxic harpoon that can spring out of the apex end of the shell. In some species the sting can be deadly even to humans.

锥状贝壳的解剖结构包括能伸出贝壳尖端的有毒叉子。 在某些种类的软体动物中的刺是可致命的。

Our first reaction upon hearing about the cone shells may well be: "What wonderful design!" ... To think in terms of deliberate design is an almost intuitive response, yet such thoughts have become strangely taboo in contemporary scientific circles.

当听到锥状贝壳时，我们的第一个反应会是："多么美妙的创造啊!" 如果认为有目的创造几乎是直觉反应的话，那么这样的想法在同一时代科学圈里会变成极其避讳的。

VOICE: I've noticed that many people ridicule the idea that nature is designed. Why is that?

我注意到许多人嘲笑自然是被创造的这个观点, 这是为什么呢?

PROF.: Dr. Gingerich continues, quote, "The response shows clearly the current philosophical orthodoxy about the non-directed nature of evolution." End quote. In other words, a majority of scientists can impose its opinion on others, and suppress the rights of others to interpret the facts in light of their own logic.

劲格瑞斯博士继续说, "这个反应清楚地表明关于无方向性的进化的自然哲学的正统说法。" 换句话说, 大多数科学家能把一种观点加在其它人身上, 同时抑制其它人解释他们自己逻辑的权利。

He continues, quote, "What is now seen as the zigzag, largely accidental path to amazing organisms with astonishing adaptations, was in earlier times routinely interpreted as the design of an intelligent Creator."

他接着说, "现在所看到的通向精美生物体的曲折的危险性大的路, 是在早期反复被解释为一个智慧创造者的创造。"

VOICE: Would one example of that be the giraffe's long neck – enabling the giraffe to survive in an environment where most of the food grows high off the ground?

长颈鹿的长脖子会不会是个例子呢? 这长脖子使得长颈鹿能在食物长在高于地面的环境下生存呢?

PROF.: Yes. The late British philosopher William Paley described this kind of detail as a, quote, "mark of contrivance, in proof of design, and of a designing Creator." End quote. French philosopher Jean-Jacques Rousseau declared, quote, "It is impossible for me to conceive that a system of beings can be so wisely regulated without the existence of some intelligent cause which affects such regulation... I

believe, therefore, that the world is governed by a wise and powerful Will." End quote.

是的，已故的英国哲学家威廉・佩利描述这样的细节是“发明的标记，创造的证明和一个设计的创造者。” 法国哲学家金・杰奎斯卢梭宣称，“这对我来说是不可能的去接受，如果没有影响这种运转的智慧能力的话，现有的系统能够如此有规律地运转. . . 因此，我相信世界是由一个智慧和全能的旨意所主宰的。

Johannes Kepler had said, quote, "Great is our Lord and great his virtue and of his wisdom there is no number! Use every sense for perceiving your Creator."

琼汉斯・开尊勒曾说过，“我们的主是伟大的, 祂的善和唯一无二的智慧是伟大的！用每根神经来感觉你的创造者。”

VOICE: That reminds me of a book title by twenty-first century astronomer Hugh Ross. He calls the various complexities of physics, *The Fingerprint of God*. And several times on this broadcast we have said, "Nature is an effect, whose cause is God."

这使我想起了一本由二十一世纪的天文学家休・罗斯所著的书, 他称物理学上的各种的复杂为*上帝的指纹*。在我们节目中好几次我们说过，“自然是结果，它的源头是上帝。”

PROF.: Dr. Gingerich continues, quote, "Yet, despite the articulate denials of cosmic [purpose] by the leading evolutionists of our age, there still remain enough astonishing details of the natural order to evoke a feeling of awe – so much so that cosmologists have even given it a name: the anthropic principle. The discussion arose originally when some physicists noticed that even small variations in some of the constants of nature would have led to a universe in which life could not exist.

劲格瑞斯博士接着说，“尽管宇宙的目的被我们同时代领先的进化论学家们清楚地否认，但仍然保留着对之产生敬畏的，足够的自然秩序的精彩细节—宇宙学家们给它起了一个名：人类的原则。当一些物理学家就引发了这讨论，注意到甚至某些自然界常数的小变化会导致产生固定无生命存在的一个宇宙。

For example, [if] the original energy of the Big Bang explosion [had] been less, the universe would have fallen back onto itself long before there had been time to build the elements required for life... Had the energy been more, it is quite possible that the density would have dropped too swiftly for stars and galaxies to form. These and many other details were so extraordinarily right that it seemed the universe had been expressly designed for humankind.”

例如, 如果大爆炸的原始能量少一些, 宇宙会在它自己有时间产生生命所要的元素之前, 回到它原有的状态, 如果能量多一些, 这是相当可能的密度会迅速地减少, 以致于星星和银河系不能形成, 这些和许多其它细节是这么正确, 以致于好像宇宙是特定为人类创造的。”

VOICE: At the beginning of the program you said even some atheists admit that they see design implied in nature.

在节目开始的时候, 你说甚至一些有无神论者, 承认他们看到了创造隐含在自然界中。

PROF.: Yes. For some of them, the reasons are quite complex. Prof. Gingerich explains that life as we know it could not exist if carbon did not exist. Carbon is unique as the chemical basis of life. Astrophysicists believe carbon is made deep inside stars.

是的, 对于这些创造中的一些原因相当复杂, 劲格瑞斯教授解释如果碳元素不存在的话, 我们所知道的生命就不会存在, 碳元素是唯一的生命基本元素, 天文物理学家相信碳元素是在星星的深处形成。

A carbon nucleus can be made by merging three helium nuclei, but a triple collision is very rare. It would be easier if two helium nuclei would stick together to form beryllium, but beryllium is not very stable. Nevertheless, sometimes before the two helium nuclei can come unstuck, a third helium nucleus connects to it，and a carbon nucleus results. This situation gives precisely the right ***resonance*** to generate a carbon atom.

虽然三个氦核能结合形成一个碳原子核, 但是一个三次碰撞是很少的。 这会容易些, 如果两个氦核粘合在一起形成, 但是不很稳定。 然而, 有时在两个氦核能分离之前, 第三个氦核与它连接, 就产生了一个碳原子。 这种状态精确地产生了合适的共振来产生一个碳原子。

PROF.: Dr, Gingerich illustrates resonance: Opera singers such as Enrico Caruso reportedly could shatter a glass by singing just the right note with enough volume. He says that, in the lectures at the Science Center at Harvard, about half a dozen wine glasses are shattered each year using sound waves. The instructors tune the audio generator through the frequency spectrum to just the exact frequency where the glass begins to vibrate – and they turn up the volume so that the glass vibrates more and more violently until it flies apart.

劲格瑞斯博士解释说明共振 : 据说, 歌剧演唱者如安瑞科・卡路素能用足够的音量唱相应的音调使一个玻璃杯粉碎。他说在哈佛大学的科学中心的演讲上, 每年用声波使大约半打的酒杯粉碎。演示者透过频率谱调节声频发电器以得到能使玻

璃杯开始震动的精确频率—他们同时放大音量, 因而使玻璃杯越来越剧烈地震动直到粉碎分离。

VOICE: Is resonance the process that makes carbon from lighter elements?

共振是不是从较轻元素产生碳元素的过程呢?

PROF.: Yes. Prof. Gingerich continues, quote, “The specific resonances within atomic unclei are something like that, except in this case the particular energy enables the parts to ***stick together*** rather than to fly apart. In the carbon atom, the resonance matches the combined energy of the beryllium atom and a colliding helium nucleus. Without it, there would be relatively few carbon atoms.” End quote.

是的, 劲格瑞斯教授继续说，“在原子核中的特定共振就是类似于这样的过程，除了在这情况下，特定的能量使得各部份粘合在一起而不是分开的，在碳原子中，共振满足了原子和一个碰撞的氦核的复合能量，没有共振，碳原子数量就相当少。

But making carbon is only half the process. If our understanding of astrophysics is correct, carbon can also be ***destroyed*** by the resonance process. If another helium nucleus merges with it, the carbon turns into oxygen. If that process were slightly easier, our supply of carbon would become much smaller.

但是形成碳原子只是一半的步骤, 如果我们对天文物理学的理解正确的话, 碳原子也能被共振过程推毁, 如果另一个氦核与它结合, 碳原子就变成氧原子, 如果这个过程容易一些的话, 碳原子的供应就会变得极少。

VOICE: Because much more of the carbon would be converted into oxygen?

因为越多的碳元子会转化成氧原子?

PROF.: Yes. Oxygen can be formed by combining helium and carbon nuclei, but the corresponding resonance level in the oxygen nucleus is half a percent too low for

the combination to stay together easily. ***If the resonance level in the carbon had been 4 percent tower, there would be essentially no carbon.*** If that level in the oxygen had been only ***half a percent higher,*** nearly all of the carbon would have been converted to oxygen.

是的, 氦核和碳核结合能形成氧核, 但是在氧核中的相应共振程度比他们粘合在一起低0.5%。如果碳原子中的共振程度低4%的话, 基本上就没有碳元素了, 如果氧核中的共振程度仅仅高0.5%的话, 几乎所有的碳原子会转化成氧原子。

VOICE: A large percentage of the human body is carbon. So I think you're implying that without an abundant amount of carbon, none of us would be alive.

人体中的多数百分比是碳元素, 因此我认为你在暗示如果没有大数目的碳元素的话, 我们没有一个人会活着。

PROF.: Right. And if the resonance levels of carbon were slightly higher or slightly lower, there would be much less carbon.

正确。如果碳核中的共振程度高些或者稍低些, 碳原子就会很少。

Dr. Gingerich continues, quote, "I am told that Fred Hoyle, who... found this remarkable nuclear arrangement, has ***said that nothing has shaken his atheism as much as this discovery***. Hoyle wrote in the November 1981 issue of the Caltech alumni magazine, quote: Would you not say to yourself, "Some supercalculating intellect must have designed the properties of the carbon atom; ... the chance of my finding such an atom through the blind forces of nature would be utterly minuscule." Of course you would... ***A common sense interpretation of the facts suggests that a superintellect has monkeyed with physics***, as well as with chemistry and biology, and that ***there are no blind forces worth speaking about in nature***. The

numbers one calculates from the facts seem to me so overwhelming as to put this conclusion almost beyond question."

劲格瑞斯接着说，“据说弗雷德赫利，就是他发现了这个不平常的原子结构，他说没有甚么能像这个发现一样动摇了他的无神论，赫利在1981年11月号的杂志上写道：你会不会不对你自己说，“一些超智慧的一定创造了碳原子的性质，在自然的盲目力量中我找到这样的碳原子的机会会是完全地微小。” 当然你会对这些事实的共同解释说明了超智慧与物理学有关系，也与化学和生物学有关系，没有盲目力量值得在自然中说起，从事实得到的数目对我来说看起来如此大，以致于结论几乎超越了这个问题。”

VOICE: So even an atheist sees that nature contains design made by a superintellect.

因此甚至一个无神论者看到了自然有超智慧的创造。

PROF.: Yes. Dr. Gingerich comments, quote, “Fred Hoyle and I differ on lots of questions, but on this we agree: a common sense and satisfying interpretation of our world suggests the designing hand of a superintelligence.

是的，劲格瑞斯评价说，“弗雷德• 赫利和我在许多问题上看法都不一致，但是在这个问题上我们有一致的看法，对我们这个世界的一个共同和满意的解释说明了超智慧者之手的创造。

“Impressive as the evidences of design in the astrophysical world may be, however, I personally find even more remarkable those from the biological realm. Even Hoyle… seems to agree that the formation of DNA, is so improbable as to require a superintelligence."

与天文物理世界的创造的证据一样可能印象深刻的, 然而我本人从生物学现实中找到了甚至更值得注意的证据, 甚至赫利好像同意DNA的形成, 是如此不可能以致于需要一个超智慧的神。”

VOICE: Prof. Dr. Gingerich’s question was “Dare a Scientist Believe in Design?” It sounds as if his answer is yes.

劲格瑞斯教授博士的问题是, “科学家竟敢相信创造论呢?” 听起来好像他的答案是肯定的。

PROF.: Yes. We have summarized the first half of his chapter. Let’s conclude it next week.

是的, 我们概述了他的章节的前半部份, 让我们在下周做总结。

But before we close, let’s summarize. Complex phenomena like the resonance level of carbon, complex molecules like DNA, and complex organisms such as the *conus cedonulli*, all seem to point to a degree of complexity that many scientists say indicates an intelligent creator. The more we learn, the less logical atheism seems.

但是在我们结束之前, 让我们来概要一下今天的内容: 复杂的现象如碳原子中的共振程度, 复杂的分子如DNA, 复杂的生物如康纳斯· 萨欧奴利(软件动物)所有能好像要指出, 许多科学家说的复制程度, 这种复杂性表明了一位智慧的创造者, 我们知得越多, 无神论好像就越不逻辑。

TAPE: THEME AND ANNOUNCEMENT

© Copyright 2001 David Ernest Fisher. All rights reserved.