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https://www.100test.com/kao_ti2020/207/2021_2022__E6_96_B0_E4_B8_9C_E6_96_B9_E8_c96_207320.htm 45 The Source of Energy

A summary of the physical and chemical nature of life must begin, not on the Earth, but in the Sun. In fact, at the Sun's very center. It is here that is to be found the source of the energy that the Sun constantly pours out into space as light and heat. This energy is liberated at the center of the Sun as billions upon billions of nuclei of hydrogen atoms collide with each other and fuse together to form nuclei of helium, and in doing so, release some of the energy that is stored in the nuclei of atoms. The output of light and heat of the Sun requires that some 600 million tons of hydrogen be converted into helium in the Sun every second. This the Sun has been doing for several thousands of millions of years. The nuclear energy is released at the Sun's center as high-energy gamma radiation, a form of electromagnetic radiation like light and radio waves, only of very much shorter wavelength. This gamma radiation is absorbed by atoms inside the Sun to be reemitted at slightly longer wavelengths. This radiation, in its turn is absorbed and reemitted. As the energy filters through the layers of the solar interior, it passes through the X-ray part of the spectrum eventually becoming light. At this stage, it has reached what we call the solar surface, and can escape into space without being absorbed further by solar atoms. A very small fraction of the Sun's light and heat is emitted in such directions that after passing unhindered through interplanetary space, it hits the Earth. 能

量的来源 概说生命的物理和化学特性必须始于太阳--确切地说，是太阳的核心，而非地球。能量来自太阳的核心。在这里，太阳不停地以光和热的形式向空间倾泻出能量。数十亿计的氢原子核在太阳的核心碰撞并且聚变生成氦。在此过程中一部分原本储存于原子核中的能量被释放出来。太阳所产生的光和热需要每秒将六亿吨氢转化为氦。这样的转化在太阳中已经持续几十亿年了。核能在太阳的核心被释放为高能伽马射线。这是一种电磁射线，就象光波和无线电波一样，只是波长要短得多。这种伽玛射线被太阳内的原子所吸收，然后重新释放为波长稍长一些的光波。这新的射线再次被吸收，而后释放。在能量由太阳内部一层层渗透出来的过程中，它经过了光谱中X射线部分，最后变成了光。在此阶段，能量到达我们所称的太阳表层，并且离散到空间而不再被太阳原子所吸收。只有很小一部分太阳的光和热由此方向释放出来，并且未被阻挡，穿越星空，来到地球。100Test 下载频道开通，各类考试题目直接下载。详细请访问

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