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新世纪英语阅读套餐

# 知 识 篇

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## 前 言

外语是吸取人类一切进步文明成果和对外交流合作的重要工具,一直受到各国的广泛重视。我国是世界上学英语人数最多的国家,但是,正如李岚清副总理多次指出的那样,我国外语教学“总的情况是不能令人满意的,花的时间长,相对效果较差”。可以说,李岚清副总理的讲话切中时弊,简要概括了我国外语教学的现状。我们十几年的教学实践让我们清楚地看到了这样一个严酷的现实:大多数英语专业的学生经过十多年的学习仍看不懂原著,不能与外国人进行正常交流,无法进行一般性学术讨论,不能适应工作需要。非外语专业的毕业生学习外语几乎就是为了通过各种考试,又“聋”又“哑”,根本无法用外语进行交流。造成这样结果的原因除了教学观念落后,一切围绕课堂转,学习方法枯燥乏味,缺乏一个适合中国人学习外语的教学模式,教学管理体制僵化等外,还跟我们学生了解外国历史、社会文化、风土人情、生活习性,接触原始真实材料不足等密切相关。

正因为如此,我们经过长时间的思考,并与多方英语教育专家学者讨论,编辑了这套英语套餐读物,旨在通过有趣的广泛阅读,让读者在轻松愉悦的环

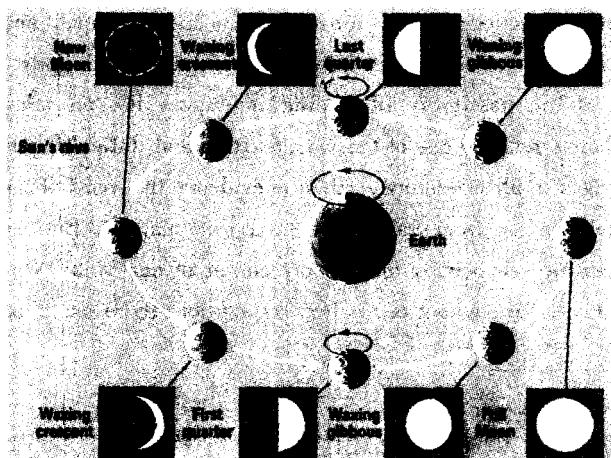
境中学习英语增长知识,了解异域文化。它包括《城市篇》、《情感篇》、《社会篇》、《演讲篇》、《知识篇》等。这些材料选材新颖、广泛,融知识性、趣味性为一体,注重寓教于乐,有助于建立一个英语学习新概念,全面提高学生的综合素质,适应我国社会、经济、科技和文化发展的迫切需要。

为了帮助不同层次的英语学习者,凡文章中的疑难单词和句子均在当页下端给予注释或翻译,免去了查阅词典的麻烦。在每篇文章前,我们都编写了简短的中文导言,以便指导读者更好地阅读。另外,每篇文章均配有图片,栩栩如生,让人耳目一新。该套丛书面向初、中级英语水平的大学生和具有一定英语基础的广大英语爱好者。

# *1. The Sun, the Moon, and the Earth*

## 太阳、月亮和地球

人类对宇宙的认识是逐步的,在进入新世纪的时刻,我们对最近的天体太阳和月亮的认识有多少,我们了解的知识有多少,这篇小短文里的知识内容你知道多少?



A few thousand years ago, people did not know whether the Earth was round or flat. A few hundred years ago they knew it was round, but thought it was at the center of the universe. Astronomers<sup>①</sup> continued to observe and measure. They discovered that the Earth is one of a family of nine planets revolving around the Sun. They worked out that our solar system was born about 5 billion—5000 million—years ago and that the atomic reactions raging at the Sun's center will go on for at least another 5 billion years. We also know that our Sun is only a very ordinary star among billions strewn throughout space<sup>②</sup> and forming our galaxy—the Milky Way<sup>③</sup>. Farther out still, the mysterious universe contains countless other galaxies—*island universes*—in many shapes and size, with vast distances between one island and the next.

The possibility of finding intelligent life on other planets remains one of the most exciting and difficult challenges in all of science. There is evidence that most of the stars we see from Earth have their own planets. But the stars we see occupy only a tiny corner of our Milky Way galaxy. Throughout our galaxy as a whole there could be

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① astronomer 天文学家

② our Sun is only a very ordinary star among billions strewn throughout space 在宇宙间众多的星体当中,我们的太阳只不过是一个非常平常的星星而已

③ the Milky Way 银河

one billion planets on which intelligent beings could thrive<sup>①</sup>. And our galaxy is only one of millions upon millions in the known universe. Among those countless planets there must surely be another Earth, while our Sun is about a quarter of a million times closer than the next nearest star.

Now let us review some of the very useful facts of our Sun.

The diameter<sup>②</sup> of our Sun is 1,392,000km, 109 times as wide as the Earth. The temperature at the surface of our Sun is 6000 degrees Celsius while the temperature in the center reaches 15,000,000 degrees Celsius! It completes a circle around its orbit in about 25.38 days and it is 149,600,000 km away from us, or from the Earth. Scientists believe that our Sun is as old as 4600 million years of age and its nearest cousin, another sun or another star is 4.3 light years away, that is, the nearest galaxy from our galaxy, the Milky Way, is that far.

Then how about our own nearest planetary neighbor, say, the neighbor of the Earth—the Moon?

The moon is nearly as wide as the United States! But we see it almost as big as the Sun. This is because the Moon is much closer to us than the Sun is. The Sun

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① intelligent beings could thrive 有智慧的生命可以生存

② diameter 直径

shines on half the Moon, which is the part we see shining in the sky. As the Moon goes around the Earth, we see a different view of this sunlit half<sup>①</sup>. The changing shapes are called phases. It takes 29 and a half days for the Moon to pass through a complete phase cycle<sup>②</sup> from new Moon to new Moon—the lunar month<sup>③</sup>. There are eight phases in the phase cycle, and we call them New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Last Quarter, and Waning Crescent.<sup>④</sup> It is always a great pleasure to look up at a clear, dark blue night sky and figure out in what phase the Moon is and what the lunar date it should be.

Now, let us study our own home planet—the Earth. The Earth is the fifth largest planet in the Solar System<sup>⑤</sup>. Scientists believe that it began as a whirling cloud of dust and gas that shrank into a fiery, semi-molten mass. An outer layer<sup>⑥</sup> formed which cooled and hardened into rock. Beneath this layer the Earth is still hot and volatile and

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① sunlit half 太阳照射到的那半边

② phase cycle (月亮盈亏变化的)周相

③ lunar month 太阴月(约 29 1/2 日)

④ New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Last Quarter, and Waning Crescent. 新月、娥眉月、上弦月、凸月、满月、残月、下弦月和娥眉月(上半月和下半月分别都有娥眉月,区别是它们的月牙弯的方向不同。)

⑤ the Solar System 太阳系

⑥ outer layer 外表层



the underground forces that gradually push up mountains and move continents also cause earthquakes<sup>①</sup> and volcanic eruptions<sup>②</sup>. Other forces disturb the Earth's surface too. Above us, the warm and cold air masses that make the winds blow can build up into destructive tornadoes and hurricanes<sup>③</sup>. The movement of the oceans, which constantly erodes<sup>④</sup> the land, sometimes produces devastating tidal waves<sup>⑤</sup>. These are just some of the things that make the varied surface of our planet a restless place of constant change.

Scientists estimate that the Earth is about 460 - 0million years old, the land area covers only 29% of the total surface of the Earth while the other 71% is covered by water. The average depth of the ocean is 3795 meters below the sea level, while the average height of land is 840 meters above the sea level. The atmospheric<sup>⑥</sup> blanket that covers us from the outer space is mainly constitutes of nitrogen, which takes up 47% of the total and oxygen takes up only 21%, with a small fragment of other elements to form the atmosphere. The understanding of the

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① earthquakes 地震

② volcanic eruptions 火山喷发

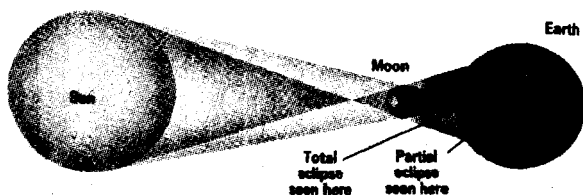
③ destructive tornadoes and hurricanes 破坏性的台风和飓风

④ erode 腐蚀

⑤ devastating tidal waves 毁灭性的海啸

⑥ atmospheric 大气层的

Earth is a gradual process of many years. It was Nicolaus Copernicus who reintroduced<sup>①</sup> the idea that the Earth revolves<sup>②</sup> around the Sun at a time when most people believed the opposite.<sup>③</sup>



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① reintroduced 重新提起,再次引入

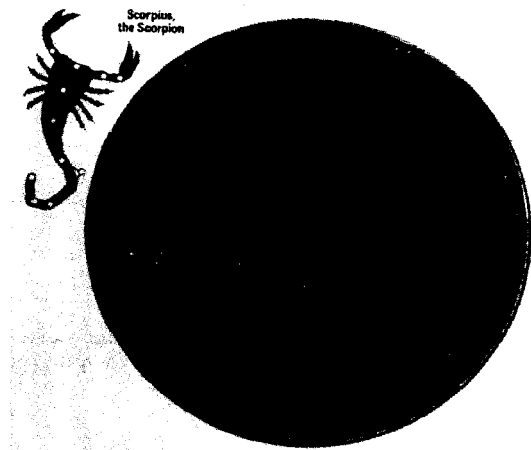
② revolve 旋转

③ at a time when most people believed the opposite 当大多数人们都不相信(这一说法)的时候

## 2. The Birth of Stars

### 星体的形成

就我们目前对宇宙的认识来看,宇宙间的大多数物质都以星体的形式而存在。当然,我们的太阳也是一颗星。这些星都是由气团构成的,这正和我们传统的道家朴素唯物主义观点有异曲同工之处,那么到底是些什么样的气,现代的科学家人又是如何解释星体形成的过程呢?要知道,这些研究可是当今天文学研究的热门课题。



So far as we know most of the matter in the Universe is in the form of stars. The majority of stars, including our Sun, are clouds of gas which are maintained at a high temperature by the energy liberated by thermonuclear<sup>①</sup> reactions in their centers. Most of our knowledge of stars and how they evolve comes from the study of the visible light they emit<sup>②</sup>. The birth of stars, however, cannot be followed by an optical telescope<sup>③</sup>, since it takes place in regions of space from which light cannot escape<sup>④</sup>. To study this process, therefore, astronomers have to make use of telescopes operating at other wavelengths. The recent technical developments in radio, millimeter-wave and infra-red astronomy<sup>⑤</sup> have turned the study of star-formation into one of the most exciting areas of astronomy.

The birth of a star is a rare, slow event; all but a very few of the stars visible to the naked eye<sup>⑥</sup> have existed longer than mankind. We must therefore first consider the evidence that new stars are now being formed at all.

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① thermonuclear 热核的

② emit 散发, 发射

③ optical telescope 光学望远镜

④ since it takes place in regions of space from which light cannot escape 因为这一过程(指前半句中所说的 the birth of stars)是在宇宙当中光所不能射出的区域

⑤ radio, millimeter-wave and infra-red astronomy 射电天文学、毫米波天文学和红外天文学

⑥ naked eye 肉眼(指不借助于任何仪器设备)

The energy which a normal, so-called “main sequence” star radiates into space is generated by the conversion of hydrogen to helium<sup>①</sup>. If we compare the mass of hydrogen “fuel” in a main-sequence star with the rate at which energy is being emitted we can estimate its potential lifetime. It is found that the main sequence lifetime of a star depends strongly on its mass; low mass stars are small, cool and long-lived, while high mass stars are large, hot and short-lived. Our sun is now half-way through its total main sequence lifetime of 1010 years, but a star with a mass thirty times greater than the Sun would live for only a few million years. The fact that such bright stars are seen to exist now implied that star formation must have taken place over the past few million years; since our Galaxy is some ten thousand million years old it is therefore reasonable to assume<sup>②</sup> that somewhere in the galaxy the same process is taking place even now. Moreover, the fact that these hot bright stars are almost always found in the vicinity of interstellar gas clouds leads to conclude that it is out of such clouds that new stars con-

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① conversion of hydrogen to helium 从氢转化为氦

② assume 假设

dense<sup>③</sup>.

The evolution of a cloud of interstellar gas depends on a balance between internal gravitational forces<sup>②</sup> tending to make it contract, and thermal pressure<sup>③</sup> tending to make it expand. James Jeans, in 1926, first showed that a cloud of a given<sup>④</sup> temperature and density<sup>⑤</sup> can collapse only if its mass is greater than a certain minimum value<sup>⑥</sup>; a typical cloud with a temperature of 100 k and a density of 100 hydrogen atoms per cu cm<sup>⑦</sup> has to be 3000 times more massive than the Sun in order to start collapsing. However, later theoretical work showed that once the collapse process has started and the density has risen significantly, fragmentation<sup>⑧</sup> into progressively smaller cloudlets (protostars)<sup>⑨</sup> is possible. These cloudlets eventually collapse to form individual stars. The theory of gravitational

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① Moreover, the fact that these hot bright stars are almost always found in the vicinity of interstellar gas clouds leads to conclude that it is out of such clouds that new stars condense (lead to 导致) 另外, 这些又热又亮的星星总是存在于星际间的气团周围这一事实, 则导致这样的一个结论: 正是这样的气团浓缩成新的星体

② internal gravitational forces 内部引力

③ thermal pressure 热压

④ given 特定的, 定指的

⑤ density 密度

⑥ a certain minimum value 一个最小的值

⑦ per cu cm 每立方厘米

⑧ fragmentation 裂成碎片

⑨ protostars 原始的星

condensation therefore predicts, in agreement with observation, that new stars form in clusters containing hundreds of thousands of stars rather than as isolated entities<sup>①</sup>.

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① isolated entities 独立的整体

### 3. Physical Figures

## 我们身体的数学统计

“我们最熟悉的莫过于我们自己了。”这是真的吗？我们的身体到底有多么奇妙，从生物学和统计学的角度看，一定会有不少新感想。





Our body is our good friend, for it goes with us wherever we go. It is also our devoted servant, for it does whatever we want it to do. To make it fair, we need to learn something about our body.

Our body is made up of 50 million cells. It has a network of blood vessels that comprises 100,000 km (60,000 miles) of tubing and more than 500 chemical processes take place in the liver alone.<sup>①</sup> The body regulates temperature, blood pressure, water concentration, digestion and countless other aspects of our physical wellbeing<sup>②</sup>. Its control center, the brain, records and stores a much greater range of information than any computer.

Too much growth hormone<sup>③</sup>—from the pituitary gland—can make a person a giant and too little can make them a dwarf. The tallest known person was 2.7 meters tall and the shortest was 0.7 meters. Today, children with pituitary disorders<sup>④</sup> can be treated so that they grow to normal size and height. However, boys may continue to grow until the age of 23, whereas most girls are full grown by about 20. At 9 years old, an average healthy, well-

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① more than 500 chemical processes take place in the liver alone 仅在肝脏就有多达五百多种化学反应在进行

② physical wellbeing 身体的健康状况

③ growth hormone (促进)生长的荷尔蒙

④ pituitary disorders 脑垂体(功能)紊乱