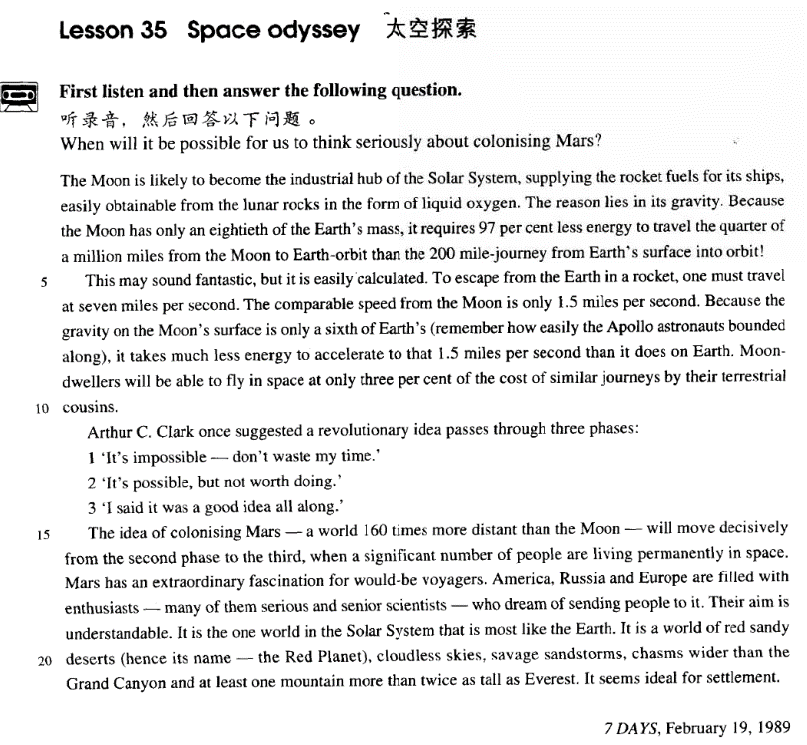
Book



课文

The Moon is likely to become the industrial hub of the Solar System supplying the rocket fuels for its ships, easily obtainable from the lunar rocks in the form of liquid oxygen.

月球很可能成为太阳系的工业中心。从月球上的岩石中很容易提炼出液态氧，作为航天飞船的燃料。

The reason lies in its gravity.

其原因在于月球的重力。

Because the Moon has only an 1/80 of the Earth's mass,

因为月球的重只有地球的1/80，

it requires 97% less energy to travel the quarter of a million miles from the Moon to Earth-orbit than the 200 mile-journey from Earth's surface into orbit!

因此，从月球到地球的25万英里所消耗的能量要比从地球表面进入地球轨道的200英里所耗能量少97%。

This may sound fantastic, but it is easily calculated.

这点听起来令人难以置信，但却很容易计算出来。

To escape from the Earth in a rocket, one must travel at seven miles per second.

要乘坐一枚火箭飞离地球，火箭的速度要达到每秒7英里，

The comparable speed from the Moon is only 1.5 miles per second. Because the gravity on the Moon's surface is only 1/6 of Earth's (remember how easily the Apollo astronauts bounded along),

而从月球出发的相应速度史是每秒1.5英里。由于月球表面的重力仅是地球表面的1/6 -- 还记得阿波罗飞船中的宇航员累松地跳跃 --

it takes much less energy to accelerate to that 1.5mps than it does on Earth.

在月球上加速到每秒1.5英里比在地球上所用能源要少得多。

Moon dwellers will be able to fly in space at only 3% of the cost of similar journeys by their terrestrial cousins.

月球居民在太空遨游的费用仅是地球上朋友飞越同样路所需费用的3%。

Arthur C. Clark once suggested a revolutionary idea passes through three phases:

亚瑟.C.克拉克曾提议，一种创新的想法要经过以下3个阶段：

1. 'It's impossible -- don't waste my time.'

1 “根本不可能，不要浪费我的时间。”

2. 'It's possible, but not worth doing.'

2 “可能，但不值得做。”

3. 'I said it was a good idea all along.'

3 “我一直说这是个好想法。”

The idea of colonising Mars -- a world 160 times more distant than the Moon -- will move decisively from the second phase to the third, when a significant number of people are living permanently in space.

如果有相当数量的人永久性地住在太空，征服火星的计划 -- 一个比月球远160倍的星球 -- 就可以明确地从第2阶段进入第3阶段。

Mars has an extraordinary fascination for would-be voyagers.

火星对未来的星际旅客说有着特殊的魅力。

America, Russia and Europe are filled with enthusiasts -- many of them serious and senior scientists who dream of sending people to it.

美国、俄罗斯和欧洲都有许多热心此项事业的人 -- 其中的不少是认真和资深的科学家，他们一直梦想着把人送上火星。

Their aim is understandable.

他们的目标是可以理解的。

It is the one world in the Solar System that is most like the Earth.

火星是太阳系里与地球最接近的一颗行星。

It is a world of red sandy deserts (hence its name -- the Red Planet), cloudless skies, savage sandstorms, chasms wider than the Grand Canyon and at least one mountain more than twice as tall as Everest.

这是一个红色沙漠的世界（因而得名：红色行星），无云的天空，凶猛的沙暴，比大峡谷还宽的裂缝，起码有一座山有珠穆朗玛峰的近两倍高。

It seems ideal for settlement.

看起来，它很合适居住。

词汇讲解

Lesson 35 Space odyssey

accelerate [ək'seləreɪt]

v. 加速；（使）加快，促进

accelerate v. 1. (of a vehicle or person) to start to go faster 加速

The car accelerated to overtake me.

The runners accelerated smoothly around the bend.

accelerate v. 2. to happen or to make sth. happen faster or earlier than expected（使）加快，促进

Inflation continues to accelerate.

Exposure to the sun can accelerate the ageing process. “celer”= swift

accelerate “ac” = to accelerator n. 加速器acceleration n. 加速

celerity n. 敏捷，迅速

decelerate “de” = down v.（使）减速terrestrial [tə'restriəl]

adj. 地球的；陆生的，陆栖的

terrestrial adj. 1. connected with the planet Earth 地球的

terrestrial life

terrestrial adj. 2. (of animals and plants) living on the land, rather than in water, in trees or in the air 陆生的，陆栖的

terrestrial species / animals / plants

celestial adj. relating to the sky or heaven 天空的，天堂的

Gravity governs the motions of celestial bodies. “ter(r)” = earth

terrestrial adj. 地球的；陆生的，陆栖的

extraterrestrial “extra” = beyond adj. 地球之外的，来自天外的

territory n. 领土

terrace n. 阶地；梯田；台阶terrain n. 地形，地貌，地势inter “in” = into v. 埋葬，安葬interment n. 埋葬，安葬disinter v. “dis” = contrary 挖出disinterment n. 挖掘

subterranean “sub” = under adj. 地下的

Mediterranean “medi” = middle n. 地中海；adj. 地中海地区的

fascination [7fæsɪ'neɪʃn]

n. 魅力；迷恋，着迷

fascination n. 1. a very strong attraction, that makes sth very interesting

魅力

have a … fascination for …

Mars has an extraordinary fascination for would-be voyagers.

For him, caves have the same peculiar fascination which high mountains have for the climber.

exert a … fascination on …

Antique shops exert a peculiar fascination on a great many people. fascination n. 2. the state of being very interested in something, so that

you want to look at it, learn about it etc. 迷恋，着迷

fascination with / for …

the public's enduring fascination with the Royal Family He had a childish fascination for battles and revolutions. in fascination

The girls listened in fascination as the story unfolded. fascinate v. to attract or interest sb. very much 使某人着迷Cats never fail to fascinate human beings.

I immediately embarked on an experiment which, even though it failed to get rid of the ants, kept me fascinated for twenty-four hours.

senior ['si:niə(r)]

adj. 年长的；资深的senior adj. 1. older 年长的He is *ten years* senior to me.

senior adj. 2. with a high rank or position 资深的

a senior officer / teacher / manager

She is senior to me, since she joined the firm before me.

senior n. 1. (Am. E.) a student who is in the last year of high school or college 高中或大学毕业班的学生

freshman sophomore junior senior

senior n. 2. a senior citizen 年长者，老年人

Her husband is *fifteen years* her senior. be senior to … 比……年长，资历深be junior to … 比……年幼，资历浅

be superior to … 优于……

be inferior to … 差于…… be prior to … 早于……

be posterior to … 晚于……

The Moon is likely to become the industrial hub of the Solar System, supplying the rocket fuels for its ships, easily obtainable from the lunar

rocks *in the form of liquid oxygen*.

hub n. 1. the central part of a wheel 轮轴

More likely, Ford Escort will be hub to hub with Renault or Mercedes, but rarely with bicycles made for two.

hub n. 2. the central and most important part of an area, system, activity etc., which all the other parts are connected to = center / centre 中心

hub of …

the commercial hub of the region

London is the hub of Britain's financial world.

obtainable adj. that can be obtained = available 可以获得的

easily / readily obtainable from / at / on …

easily obtainable materials

The form is obtainable at your local post office.

The dried herb is readily obtainable from health shops. Information on the subject is easily obtainable on the Internet. lunar adj. 月亮的

solar adj. 太阳的

lunar / solar calendar

a total / partial lunar / solar eclipse in the form / shape of …

… but a medicine that had worked so well in one form of illness would surely be of equal benefit in another, …

Convinced of the importance of education, modern states 'invest' in institutions of learning to get back 'interest' in the form of a large group of enlightened young men and women who are potential leaders.

… they have not received adequate treatment unless they are able to carry home with them some tangible remedy in the shape of a bottle of medicine, a box of pills, or a small jar of ointment, …

The reason lies in its gravity.

lie v. (of abstract things) exist or be found（抽象事物）存在He must decide where his future lies.

The hardest part of the competition still lies ahead of us.

lie in … 在于……

The problem lies in deciding when to intervene. The difficulty lies in knowing what to do next. The cure for stress lies in learning to relax.

The key to a solution of that problem lay in an everyday observation. Because the Moon has only an eightieth of the Earth's mass, it requires 97 per cent less energy to travel the quarter of a million miles *from the Moon*

*to Earth-orbit* than the 200 mile-journey *from Earth's surface into orbit!*

an / one eightieth two eightieths

(Br. E.) per cent / (Am. E.) percent

… per cent / percent less / more

How about ten-percent less?

The output of cars in the U.S last year was 24 per cent less than in 1973. A Harris poll shows that women have 25 percent less leisure time than men do.

A car with a natural gas-powered internal-combustion engine emits 87 per cent less nitrogen oxide, 70 per cent less carbon monoxide and 25 per cent less carbon dioxide than a car with an engine that uses petrol, according to research by the Honda Motor Co.

The survey of 7,500 people found multi-sneaker buyers were 50 percent

more likely to be very assertive and 47 percent more likely to be spontaneous.

Women with fuller lips are 28 per cent more likely to be seen as a fun date than marriage material, while their thin-lipped rivals were 57 per cent more likely to have long relationships, the Leicester University study found.

The idea of colonising Mars ― a world 160 times more distant than the Moon ― will move decisively from the second phase to the third, …

it … less / more … to … than …

造句：从北京到上海坐火车比坐飞机要少花 60%的钱。

It costs 60 per cent less money to travel from Beijing to Shanghai by train than by plane.

in / into orbit

Space stations are designed to remain in orbit for years.

Once in space, the spacecraft will go into orbit around the Earth. This may sound fantastic, but it is easily calculated.

fantastic adj. 1. not practical or sensible 不现实的，荒诞的

fantastic dreams / stories

Where do they get these fantastic ideas?

fantastic adj. 2. extremely good, attractive, enjoyable etc. 了不起的，极好的

She's a fantastic swimmer.

You passed your test? Fantastic! fantastic adj. 3. extremely large 极大的

Their wedding cost a fantastic amount of money.

The raid was all over in three minutes, for the men scrambled back into the car and it moved off at a fantastic speed.

this may sound …, but …

This may sound trivial, but I assure you it is quite important!

To escape from the Earth in a rocket, one must travel *at seven miles per*

*second*.

at prep. used to show a price, rate, level, age, speed etc old books selling at 10 cents each

You should have more sense at your age. The Renault was travelling at about 50 mph.

Moon-dwellers will be able to fly in space at only three per cent of the cost of similar journeys by their terrestrial cousins.

The comparable speed *from the Moon* is only 1.5 miles per second. comparable adj. similar to sb./sth. else and able to be compared 相似的， 可比的，相应的

The girls are of comparable ages.

A comparable house in the south of the city would cost twice as much.

By contrast, the comparable figure for the Netherlands is 16 per cent. be comparable to / with …

Farmers were meant to get an income comparable to that of townspeople. The risk it poses is comparable with smoking just one cigarette every year.

Because the gravity on the Moon's surface is only a sixth of Earth's *(remember how easily the Apollo astronauts bounded along)*, it takes much less energy to accelerate to that 1.5 miles per second than it does on Earth.

Apollo program

The Apollo program, also known as Project Apollo, was the third United States human spaceflight program carried out by the National Aeronautics and Space Administration (NASA), which accomplished landing the first humans on the Moon from 1969 to 1972.

Apollo 11 was the spaceflight that landed the first humans on the Moon, Americans Neil Armstrong and Buzz Aldrin, on July 20, 1969. Armstrong became the first to step onto the lunar surface six hours later on July 21. Armstrong spent about two and a half hours outside the spacecraft, Aldrin slightly less, and together they collected 47.5 pounds of lunar material for return to Earth.

bound v. to run with long steps, esp. in an enthusiastic way 蹦着跑

The dogs bounded ahead.

The dog cleared the gate in one bound. by leaps and bounds: very quickly

He's growing very quickly.

He's the tallest of three boys.

He can jump high.

He has to leave today at there.

M: Your little nephew is growing by leaps and bounds. W: Yes. He must be at least three feet tall already.

Q: What do the speakers say about the woman’s nephew? Answer: (A) He's growing very quickly.

along adv. going forward 向前

The man took heart and, sure enough, on New Year's Eve he was able to hobble along to a party.

It suddenly dawned on me that this express was not roaring down the line at ninety miles an hour, but barely chugging along at thirty.

Moon-dwellers will be able to fly in space *at only three per cent of the cost of similar journeys by their terrestrial cousins*.

The city dweller never experiences anxieties of this sort.

While they enjoy the comfort and banal luxury of their dwelling, they do not realize that they are deprived of the necessities of life.

similar journeys *made by their terrestrial cousins*

make a journey

He makes a journey to Moscow three times a year.

cousin n. a way of describing people from another country who are similar in some way to people in your own country 另一国家的类似的人

one’s … cousins

Many politicians want to foster closer links with our European cousins. Whereas West Germans drink wine, their Eastern cousins prefer Schnapps.

Arthur C. Clark once suggested a revolutionary idea passes through three phases:

'It's impossible ― don't waste my time.'

'It's possible, but not worth doing.'

'I said it was a good idea all along.'

Sir Arthur Charles Clarke (16 December 1917 – 19 March 2008) was a British-Sri Lankan science fiction writer, science writer and futurist, inventor, undersea explorer, and television series host.

New ideas pass through three periods: It can't be done.

It probably can be done, but it's not worth doing.

I knew it was a good idea all along!

― Arthur C. Clarke

All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident.

— Arthur Schopenhauer

suggest v. to say that something is likely to exist or be true 指出，提出The cause of the problem, as Hutton suggests, is the leadership's refusal to accept any form of criticism.

phase n. 1. stage in a process of change or development 阶段，时期

during the first / next / last phase the initial / final phase of the project

But this phase of our development is now finished.

phase n. 2. each of the shapes of the moon as we see it from the earth at different times of the month 月相

They have found that it is connected with the passage of days and the

phases of the moon.

all along: from the very beginning 始终，一直，早就

I knew all along that it wasn't his real name. Do you think he's been cheating us all along?

He thought Dr. Jeffries would get the job.

He's not sure Dr. Jeffries will be a good chairperson.

He doesn't know Dr. Jeffries very well.

He thought it took too long to make the decision.

W: The dean just announced that Dr. Jeffries is going to take over as Chairperson of the English Dept.

M: I knew it all along. He was the obvious choice. Q: What does the man mean?

Answer: (A) He thought Dr. Jeffries would get the job.

The idea of colonising Mars *― a world 160 times more distant than the Moon ―* will move decisively from the second phase to the third, when a significant number of people are living permanently in space.

colonize / colonise v. establish a colony in an area 建立殖民地

Britain colonized many parts of Africa. semi-colonial and semi-feudal society

decisive adj. 1. definite and clear in a way that leaves no doubt 确定无疑

的

The answer was a decisive no.

All efforts have failed to locate decisively the birthplace of Columbus. decisive adj. 2. very important for the final result of a particular situation 决定性的

a decisive victory / battle / moment

The injury to their key player could be a decisive factor in the game. Germany had been decisively beaten and disarmed.

decisive adj. 3. able to decide sth. quickly and with confidence 果断的，

当机立断的

decisive management

government must take decisive action on gun control.

If we had acted more decisively it might not have come to this. Mars has an extraordinary fascination for would-be voyagers. have a … fascination for …

exert a … fascination on …

would-be adj. [only before noun] used to describe sb who is hoping to become the type of person mentioned 希望成为某种人的

a would-be actor

advice for would-be parents

voyager n. a person who goes on a long journey, esp. by ship to unknown parts of the world 长途旅行者，驾船探险者

America, Russia and Europe are filled with enthusiasts ― *many of them*

*serious and senior scientists* ― who dream of sending people to it. enthusiast n. a person who is very interested in sth. and spends a lot of time doing it 热心于某事的人，……爱好者，……迷

a football enthusiast

an enthusiast of jazz

Some really keen enthusiasts go so far as to build their own computers. America, Russia and Europe are filled with enthusiasts ― many of them (being) serious and senior scientists ― who dream of sending people to it.

Apart from an interesting-looking carved dagger, the box was full of crockery, much of it (being) broken.

In the nineteenth century, a novelist would bring his story to a conclusion by presenting his readers with a series of coincidences ― most of them (being) wildly improbable.

dream v. to think about something that you would like to happen or have

梦想

dream of / about (doing) sth.

He had often dreamed of retiring in England and had planned to settle down in the country.

They had the kind of house we could only dream about. dream (that)

She dreamed that one day she would be famous. Their aim is understandable.

It is the one world in the Solar System that is most like the Earth. most like 最像……

Manchester City strike me as being most like China.

Here is another instance where he is most like Jesus Christ.

It is a world of red sandy deserts *(hence its name ― the Red Planet)*, cloudless skies, savage sandstorms, chasms wider than the Grand Canyon

and at least one mountain more than twice as tall as Everest. hence adv. 1. (fml.) for this reason 因此

Crime is on the increase, hence the need for more police.

His grandfather was Greek, hence the surname. Alcohol can cause liver failure and hence death. hence adv. 2. (fml.) from this time 从此时起

The project will be completed at the end of the decade, *two years* hence.

The true consequences will only be known *several months* hence. chasm n. a deep crack or opening in the ground 深坑，深渊，峡谷

This immense chasm has been formed by an underground stream which

has tunnelled a course through a flaw in the rocks.

canyon n. a long deep valley with very steep sides made of rock 峡 谷 The Grand Canyon is a steep-sided canyon carved by the Colorado River in the state of Arizona in the United States.

Everest / Mount Everest

the highest mountain in the world. Everest is in the Himalayas, on the border between Tibet and Nepal.

Since its discovery, it has become a sort of potholers' Everest. It seems ideal for settlement.

ideal adj. the best or most suitable that something could possibly be 理想

的，最佳的，最适合的

Even if you travel in ideal weather, sea journeys take a long time. ideal weather *for* a holiday

He's the ideal husband *for* her.

The sandy beaches are ideal *for* families with young children.