

Lesson 35  
Space odyssey  
太空探索

First listen and then answer the following question.  
听录音，然后回答以下问题。

When will it be possible for us to think seriously about colonising Mars?

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

This may sound fantastic, but it is easily calculated. To escape from the Earth in a rocket, one must travel at seven miles per second. The comparable speed from the Moon is only 1.5 miles per second. 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. Moon-dwellers will be able to fly in space at only three per cent of the cost of similar journeys by their terrestrial dwellers will be able to fly in space at only three per cent of the cost of similar journeys by their terrestrial cousins.

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

- 1 'It's impossible -- don't waste my time.'
- 2 'It's possible, but not worth doing.'
- 3 'I said it was a good idea all along.'

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. Mars has an extraordinary fascination for would-be voyagers. America, Russia and Europe are filled with enthusiasts -- many of them serious and senior scientists -- who dream of sending people to it. Their aim is understandable. It is the one world in the Solar System that is most like the Earth. 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. It seems ideal for settlement.

7 DAYS, February 19, 1989

New words and expressions 生词和短语

- hub
- n. (活动的) 中心
- lunar
- adj. 月球的
- oxygen
- n. 氧气
- Apollo
- n. 阿波罗
- accelerate
- v. 加速
- terrestrial
- adj. 地球的

permanently  
adv. 永远地  
fascination  
n. 魅力  
senior  
adj. 资历深的, 年长的  
chasm  
n. 断层, 裂口  
canyon  
n. 峡谷

#### 参考译文

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。其原因在于月球的重力。因为月球的重只有地球的  $\frac{1}{8}$ , 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%。

这点听起来令人难以置信, 但却很容易计算出来。要乘坐一枚火箭飞离地球, 火箭的速度要达到每秒 7 英里, 而从月球出发的相应速度是每秒 1.5 英里。由于月球表面的重力仅是地球表面的  $\frac{1}{6}$  —— 还记得阿波罗飞船中的宇航员累松地跳跃 —— 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。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%。

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 “根本不可能, 不要浪费我的时间。”
- 2 “可能, 但不值得做。”
- 3 “我一直说这是个好想法。”

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。火星对未来的星际旅客说有着特殊的魅力。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。他们的目标是可以理解的。火星是太阳系里与地球最接近的一颗行星。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。看起来, 它很合适居住。