

大家好！
我是 Ethan，我和 Evelyn 是雙胞胎兄妹，現在是一名物理系大一學生。除了物理學外，天文學也是我的最愛，觀星和想像宇宙之外的世界很有趣喔！伽利略是我喜歡的科學家。



Evelyn & Ethan

Learn about

天文奇景血月傳說

written by
illustrated

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本日課程選單

讀之前想想看

What do you think about when you look at the moon?



Tomorrow is the lunar eclipse! But what does that mean?

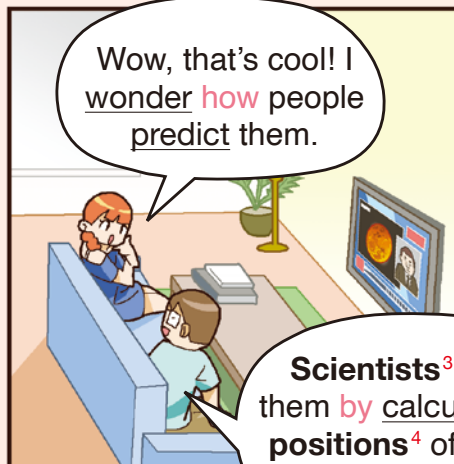


It happens when the sun, Earth, and the moon are in a **straight¹** line.



So, Earth's **shadow²** blocks the whole moon?

Right! This only happens during a full moon.

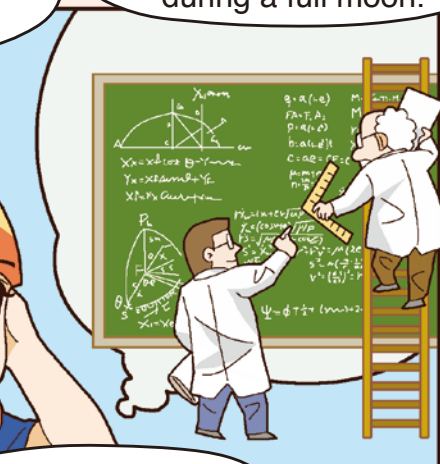


Wow, that's cool! I wonder **how** people predict them.

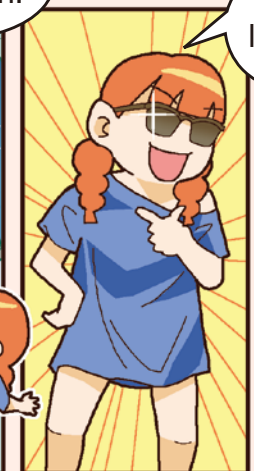


They can really do that?

Scientists³ predict them **by calculating the positions⁴** of the sun, Earth, and the moon.



Yes, and ancient eclipses even helped people **learn about** Earth's shape. They learned about the sizes of the sun and moon, too!



Can we look at the lunar eclipse with just our eyes?



Yes. We don't need special glasses like for a **solar eclipse**.

And Ethan Lunar Eclipses

['lunə] [r'klips] (n.) 月食

— 揭祕「月食」之謎

Rebecca Miller
by Weily



嗨！我是 Evelyn，
是社會系大一生，我熱衷於
探索和觀察人類與動物的行為。
是擁有 3 隻貓咪的貓奴，對動物
學也很感興趣。雖然我和哥哥
的專業不同，但我們都熱愛
新知，經常互相發問與
討論。

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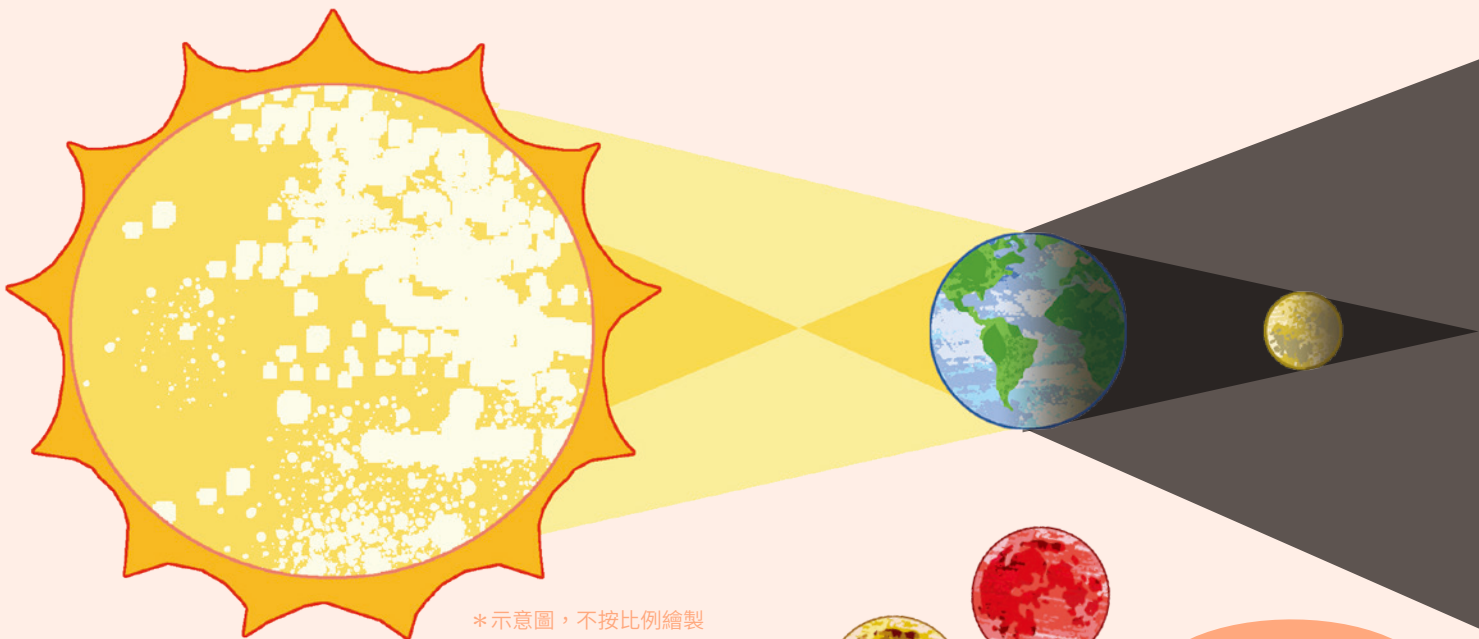
本日課
程選單

讀之前
想想看

What are some famous stories about the moon?

Lunar eclipses happen about twice a year. Some years have **none**¹, one, or even a **maximum**² of five! However, only 29% of lunar eclipses are total lunar eclipses. A lunar eclipse can last **up to** two hours.

The moon usually appears red during a total lunar eclipse. This is because Earth's atmosphere scatters other colors of **light**³. So, only red light passes through the atmosphere and **shows up** on the moon.



*示意圖，不按比例繪製

Dust and clouds in Earth's atmosphere can also **affect**⁴ how the moon looks. They make the moon appear different colors during an eclipse. These colors are usually yellow, orange, or brown. **A+**

Lunar eclipses
happen once in
a blue moon ... I
mean red moon!



Word Power

◇ 為1200字 ◆ 為2000字 ◁ 為進階單字

- ◇ 1. **straight** [stret] *adj.* 直的
This is a **straight** road. You can see the end of it from here.
這是一條筆直的道路，你從這裡就可以看到路的盡頭。
- ◆ 2. **shadow** [ʃædo] *n.* 影子；陰影
We sat under the tree's **shadow** to keep cool during our picnic.
野餐時我們坐在樹蔭下乘涼。
- ◆ 3. **scientist** [ˈsaɪəntɪst] *n.* 科學家
Scientists are trying to make new machines to help people stay healthy.
科學家正在嘗試製作新的機器來幫助人們保持健康。
- ◆ 4. **position** [pəˈzɪʃən] *n.* 位置
Can you show me my current **position** on the map? I can't find my way to the school.
你可以在地圖上指出我現在的位置嗎？我找不到去學校的路。

認識字彙 (文章中畫底線字詞)

- wonder [ˈwʌndə] *v.* 想知道；疑惑
- predict [prɪˈdɪkt] *v.* 預測
- calculate [ˈkælkjə,leɪt] *v.* 計算
- solar eclipse [ˈsɒlə] *n.* 日食
solar *adj.* 太陽的

換你試試看

1. 請合併以下兩句，並將其改寫為間接問句：

- Maggie doesn't know it.
- Why didn't her friend show up to the party?

→ _____

2. 句子重組：將下列詞組排列成正確的句子。

learned about / was surprised / death / when he / the famous singer's / Frank

→ _____

解答請參閱 p. 70

★ Magic Box ★

★ wh- 名詞子句當作間接問句

* wh- 疑問詞可形成**直接問句**，句型如下：

Wh- 疑問詞 + beV/aux. + S...?

須倒裝

How do people predict them?

人們是怎麼預測月食的？

* wh- 疑問詞亦可形成**間接問句**，併入主要子句使用，此時亦稱為 wh- 名詞子句，在此作為句子的受詞使用。

* 含間接問句的句子，其句尾需加句點或問號視主要子句決定。句型如下：

主要子句 + wh- 疑問詞 + S
+ (aux.) + beV/V...

不倒裝

→ 利用上方的直接問句即可改為本課句子：

主要子句 間接問句

I wonder how people predict them.

我很想知道人們是怎麼預測月食的。(how 所引導的名詞子句當動詞 wonder 的受詞，使語意完整。)

★ by + V-ing/N... 表示「藉由...」

* 介系詞 by 有「藉由，透過 (某種方法)」的意思，後面加動名詞或是名詞帶出達成目的的手段。

- Jerry helps his mom clean the house **by mopping** the floor.
Jerry 藉由拖地來幫媽媽打掃家裡。
- My father goes to work **by car** every day.
我爸爸每天開車上班。

★ learn about (phr.) 得知

The typhoon is coming! I **learned about** it from the news on TV.

颱風要來了！我從電視新聞得知這個消息。

