



Answers

1. **(00:00-00:28)** What does Brian Cox believe is being neglected during these times and why? What idiom does he use to suggest that something is being attacked?
Public spending for science, particularly curiosity-led science and exploration. He uses the idiom “in the firing line”: *“Certainly in the firing line at the moment is public spending for science”*.
2. **(00:25-00:28)** What does Brian Cox aim to achieve in the 15 minutes of the TED talk?
To convince us that it is ridiculous and ludicrous to cut public spending for science.
3. **(00:28-01:00)** What does Brian Cox’s first slide illustrate, and why is it significant?
It illustrates the budget for science in relation to the total budget for public spending. The budget for science is 3.3 billion out of a total of 620 billion budgeted for public spending. It shows through the tiny ‘blob’ that this is a tiny percentage of overall public spending.
4. **(01:47-02:31)** What two objects can we see in the first picture, and what is surprising about their positions in relation to each other? (Don’t worry about spellings here!)
It shows the moon ‘Encaladus’ with Saturn in the corner. The surprising thing is that Saturn is actually in the background of the picture, when it looks like it is in the foreground.
5. **(02:35-03:15)** What phenomenon do we see which is so beautiful about the moon in the picture? What is powering this beautiful phenomenon?
We see faint ‘wisps’, which are fountains of ice rising up from the surface of the moon. This is powered by lakes of liquid water beneath the moon.
6. **(04:59-05:16)** What are the exact words that Brian Cox says during these 17 seconds, and what are the 2 questions he asks?
[see page 4 for a transcript and accent guide]
7. **(05:18-05:45)** Brian Cox shows a very famous picture named “Earthrise” taken by Apollo 8. What have many people said about the picture, and why did they say it?
They have said that “it is the picture that saved 1968”, because 1968 was a turbulent year with student riots in Paris and the height of the Vietnam War.



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8. **(05:45-06:04)** What has former US Vice President Al Gore said about the picture many times, and why did he have that opinion?
He said that it was the beginning of the environmental movement, because we saw our world not as a solid, immovable, indestructible place, but as a very small, fragile-looking world just hanging against the blackness of space.
9. **(06:04-06:48)** What do governments often fail to mention about the Apollo Program and space exploration?
Many studies have shown the economic effectiveness of the Apollo Program. One study showed that for every \$1 dollar spent on the Apollo Program, \$14 came back.
10. **(06:39-06:48)** What does Brian Cox think that the Apollo mission did for young people?
It inspired young engineers and scientists 14 times over, so exploration can pay for itself.



Answer to Question 6 and Guide to Some Features of a Northern English Accent

Transcript of the video (04:59-05:16)

Key - Some differences between the Scottish accent and Standard English:

Red text	In central and Northern accents of the UK, the 'u' sound is much different . The 'u' sound used here is much stronger with rounded lips. The phonetic symbol is /ʊ/ and it sounds much shorter and stronger than a standard English 'u'.
Green text	'l' sounds can sound very strong, long and very nasal in North-West and central Northern English accents This actually makes the 'l' sound much clearer than in Southern UK accents
Light grey text	Missing 'r' sound In most English accents, the 'r' sound is deleted if it is not followed by a vowel, or by a vowel at the start of the next word. This is one of the main consonant differences between English and US accents. For example, the word 'card' is pronounced 'caad'
Blue text	't' replaced by a 'glottal stop' This occurs in many accents of the UK. When a 't' is at the end of a word or followed by a consonant, it sounds like it is simply deleted. However, it is replaced by a hard stop in the middle of the word called a 'glottal stop'. This causes a lot of difficulties for listeners to understand. There are not so many examples of this in the text below.
Small text	'filler' words such as 'are / to / a / can / of / for / from' are reduced to very quick sounds which are hard to hear. Each of these words contains some form of 'schwa' sound, which is a kind of lazy 'uh' sound. This occurs in all accents, including US accents. This lazy 'uh' sound is in fact the most common vowel sound in both British and American English. It is used also in formal and professional settings, and it is in fact essential to maintain the natural rhythm of the English language. This is used consistently in the text below.
Grey text	The real transcript of the video

Our exploration_{ev} the sol^{ll}ar system_{hz} taught us_{tht} the sol^{ll}ar system is beautif^{ll}
Our exploration of the solar system has taught us that the solar system is beautiful.

I. may a^{ll}so_{hv} point^{ed} the way to answerin one_{ev} the most profound questions_{the}
It may also have pointed the way to answering one of the most profound questions that

you_{cn} possibly ask, which is "are we a^{ll}one in the universe?" Is there any ^uther use to
you can possibly ask, which is: "Are we alone in the universe?" Is there any other use to

expl^{ll}oration_n science ^uther_{thn} just_e sense_{ev} w^under?
exploration and science, other than just a sense of wonder?