

Satellites may obscure our views of the stars

29th December, 2019



Astronomers are concerned that our views of the heavens are becoming more and more obscured. Their warning comes ahead of a whole series of satellite launches by a variety of companies. Thousands of

satellites are being launched into orbit throughout 2020 to make high-speed Internet more readily available across the world from space. The scientists say the skies will be so littered with arrays of satellites they will compete for our attention with the stars. They say the satellites will link up to form "mega-constellations" that could interfere with radio astronomy and the quality of images from optical telescopes. The astronomers said the satellites will appear as dazzling white streaks of light that could be mistaken for stars.

Technology analysts say there are plans to launch as many as 46,000 satellites into space over the next few years. This is five times more than the number of objects sent into space since the launch of Sputnik 1 in 1957, over six decades ago. Satellites from companies like SpaceX and Amazon will provide much faster Internet speeds to even the remotest areas of the world. They will provide global connectivity across the globe. Even today, about 14 million people in the USA live in rural areas with zero Internet coverage. SpaceX will launch 120 satellites in January and has plans to send a further 12,000 into orbit in the next decade. Astrophysicist Dr Dave Clements called the initiative a "tragedy".

Sources: cnbc.com / bbc.com / spacedaily.com

Writing

We should not fill space with satellites and other equipment. Discuss.

Chat

Talk about these words from the article.

astronomers / views / heavens / warning / variety / high-speed Internet / satellites / technology / analysts / a few years / space / connectivity / rural area / orbit / tragedy

True / False

- a) The article said it is becoming more difficult to see heaven. T / F
- b) Companies will launch thousands of satellites into space in 2020. T / F
- c) Astronomers say satellites will compete with stars for our attention. T / F
- d) The article said satellites look like dazzling streaks of blue light. T / F
- e) Over 45,000 satellites could be launched in the next decade. T / F
- f) The first satellite was launched into space nearly 50 years ago. T / F
- g) Amazon is one of the companies launching satellites into space. T / F
- h) An astrophysicist said the number of satellites was a tragedy. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|---------------------|------------------|
| 1. concerned | a. things |
| 2. whole | b. countryside |
| 3. launched | c. entire |
| 4. littered | d. none |
| 5. streaks | e. disaster |
| 6. objects | f. filled |
| 7. remotest | g. worried |
| 8. zero | h. most isolated |
| 9. rural | i. lines |
| 10. tragedy | j. blasted off |

Discussion – Student A

- a) What do you think about what you read?
- b) What do you think of astronomy?
- c) Why are people interested in astronomy?
- d) What do you know about Sputnik 1?
- e) How satisfied are you with your Internet connectivity?
- f) How will the world change if everyone had the Internet?
- g) How much of a "tragedy" is space being full of satellites?
- h) What questions would you like to ask the astronomers?

Phrase Match

- | | |
|--|---------------------------|
| 1. our views of | a. more readily available |
| 2. make high-speed Internet | b. coverage |
| 3. the skies will be so | c. of light |
| 4. interfere | d. as many as 46,000 |
| 5. dazzling white streaks | e. littered |
| 6. there are plans to launch | f. areas of the world |
| 7. to even the remotest | g. with radio astronomy |
| 8. They will provide global connectivity | h. initiative a "tragedy" |
| 9. zero Internet | i. across the globe |
| 10. Dr Dave Clements called the | j. the heavens |

Discussion – Student B

- What do you know about astronomy?
- How much do you like watching the stars?
- How important are satellites?
- Should governments limit the number of satellites in space?
- What do you think of 46,000 satellites going into space?
- How sad would you be if satellites spoiled our view of the stars?
- What can go wrong with thousands of satellites being in space?
- How important is it to keep space clear of objects?

Spelling

- a yarietv of companies
- more erlidya available
- littered with ysraar of satellites
- eenretfir with radio astronomy
- images from cotplai telescopes
- lindzazg white streaks of light
- Technology nlatysas say there are plans
- the number of tbsjoec sent into space
- They will provide global tynccvieotni
- rural areas with zero Internet raeevcgo
- send a further 12,000 into trboi
- Clements called the enitaitiiv a "tragedy"

Answers – Synonym Match

1. g	2. c	3. j	4. f	5. i
6. a	7. h	8. d	9. b	10. e

Role Play

Role A – Earth

You think Earth is the most beautiful thing in the heavens. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least beautiful of these (and why): constellations, the moon or shooting stars.

Role B – Constellations

You think constellations are the most beautiful things in the heavens. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least beautiful of these (and why): Earth, the moon or shooting stars.

Role C – The Moon

You think the moon is the most beautiful thing in the heavens. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least beautiful of these (and why): constellations, Earth or shooting stars.

Role D – Shooting Stars

You think shooting stars are the most beautiful things in the heavens. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least beautiful of these (and why): constellations, the moon or Earth.

Speaking – The Heavens

Rank these with your partner. Put the most beautiful things in the heavens at the top. Change partners often and share your rankings.

- | | |
|-----------------------|------------------|
| • Shooting stars | • Earth |
| • Solar eclipses | • Constellations |
| • The Aurora Borealis | • The Milky Way |
| • The moon | • The sun |

Answers – True False

a	F	b	T	c	T	d	F	e	T	f	F	g	T	h	T
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Answers to Phrase Match and Spelling are in the text.