

Is Stephen Hawking right about aliens?

Level 2 • Intermediate

1 Key words

Fill the gaps in the sentences using these key words from the text. The paragraph numbers are given to help you.

motive	astronomer	orbit	alien	light year
galaxy	millennium	cosmos	interstellar	radar

1. An _____ is someone who studies the stars and planets using scientific equipment, including telescopes. (para 1)
2. An _____ is a person or creature from a planet other than Earth. (para 1)
3. The _____ is a term meaning *the whole universe*. (para 2)
4. A _____ is an extremely large group of stars and planets. (para 3)
5. The planets of our solar system _____ the sun. (para 3)
6. _____ communication is communication between different stars. (para 3)
7. A _____ is a system that uses radio signals to find the exact position of something. (para 5)
8. A _____ is the distance that light travels in a year. (para 5)
9. A _____ is a period of one thousand years. (para 6)
10. A _____ is the reason you do something. (para 9)

2 Find the information

Find this information in the text as quickly as possible.

1. How many stars are there in our galaxy?
2. How far has the oldest broadcast already travelled from Earth?
3. How long would it take for a message from a planet 1,000 light years away to reach Earth?
4. Where is the SETI Institute?
5. What kind of moon is Endor?
6. How many cells do 'extremophiles' have?

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Stephen Hawking thinks that making contact with aliens would be a very bad idea indeed. But with new, massive telescopes, we humans are stepping up the search. Have we really thought this through?

Alok Jha
30 April, 2010

- 1 The hunt for intelligent species outside Earth is something we often see in literature and film – but it is happening in real life, too. Space probes are searching for planets outside our solar system, and astronomers are carefully listening for any messages coming to us through space. How incredible it would be to get confirmation that we are not alone in the universe and to finally speak to an alien race. Wouldn't it?
- 2 Well, no, according to the eminent physicist Stephen Hawking. "If aliens visited us, the result would be the same as when Columbus landed in America, which didn't end well for the Native Americans," Hawking says. He argues that, instead of trying to find and communicate with life in the cosmos, humans should be doing everything they can to *avoid* contact.
- 3 Hawking believes that because of the huge number of planets that scientists know must exist, we are not the only life form in the universe. There are billions and billions of stars just in our galaxy, and we should expect that an even larger number of planets orbit these stars. And we can also expect that some of that alien life will be intelligent, and capable of interstellar communication. So, when someone with Hawking's knowledge of the universe advises against contact, it's worth listening, isn't it?
- 4 Seth Shostak, a senior astronomer at the SETI Institute in California, the world's leading organization searching for signs of alien existence, is not so sure. "This is an unwarranted fear," Shostak says. "If their interest in our planet is for something valuable that our planet has to offer, there's no particular reason to worry about them now. If they're interested in resources, they have ways of finding rocky planets that don't depend on whether we broadcast or not. They could have found us a billion years ago."
- 5 If we were really worried about letting aliens know we were here, Shostak says, the first thing to do would be to shut down the BBC, NBC, CBS and the radars at all airports. Those broadcasts have been sending messages into space for years – the oldest is already more than 80 light years from Earth – so it is already too late to stop aliens watching our TV programmes.
- 6 There are lots of practical problems involved in hunting for aliens, of course, mainly the distance. If our nearest neighbours were life forms on the (fictional) moon of Endor, 1,000 light years away, it would take a millennium for us to receive any message they could send us. If the Endorians were watching us, the light reaching them from Earth at this very moment would show them our planet as it was 1,000 years ago; in Europe that means lots of fighting between knights around castles and, in north America, small bands of natives living on the great plains. It is not a timescale that allows for a quick conversation – and, anyway, they might not be communicating in our direction.
- 7 The fact that we have not received any messages from aliens has not, however, prevented astronomers and biologists (not to mention film-makers) from producing a whole range of ideas about what aliens might be like. In the early days of SETI, astronomers were trying to find planets like ours – the idea being that, since the only biology we know about is our own, aliens would be something like us. But there's no reason why that should be true. You don't even need to step off the Earth to find life that is very different from our experience of it.
- 8 'Extremophiles' are species that can survive in places that would quickly kill humans and other 'normal' life forms. These single-celled creatures have been found in boiling hot jets of water that come through the ocean floor, or at temperatures many degrees below the freezing point of water.

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The front ends of some creatures that live near deep-sea jets are 200°C warmer than their back ends.

- 9 On Earth, life exists in water and on land but, on a huge gas planet, for example, it could exist high in the atmosphere, eating food from the air around it. And, as aliens would be so different from us, guessing their motives and intentions if they ever got in touch seems to be something that even Hawking cannot explain.

- 10 Paul Davies, an astrophysicist at Arizona State University argues that alien brains, with their different architecture, would interpret information very differently from ours. "Lots of people think that because they would be so clever and knowledgeable, they would be peaceful," adds Stewart. "I don't think you can say that. I don't think you can put human views onto them; that's a dangerous way of thinking. Aliens are alien. If they exist at all, we cannot simply believe they're the same as us."

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3 Comprehension check

Are these statements true (T) or false (F) according to the text?

1. Stephen Hawking believes we are the only life form in the universe.
2. Hawking thinks it is a bad idea to try to contact aliens.
3. The BBC, CBS and NBC are sending radio messages in order to contact aliens.
4. Aliens that are 1,000 light years away would see the Earth as it was 1,000 years ago.
5. Aliens would definitely be peaceful.
6. On a gas planet, life could exist high in the atmosphere.

4 Find the word

Find the following words and phrases in the text.

1. a two-word noun meaning *a vehicle containing cameras and other equipment that is sent outside the Earth's atmosphere to collect information* (para 1)
2. an adjective meaning *important, respected and admired* (para 2)
3. a two-word noun meaning *living thing* (para 3)
4. an adjective meaning *not necessary* (para 4)
5. an adjective meaning *invented for a book, play or film* (para 6)
6. a noun meaning *the period of time when something happens or is done* (para 6)
7. a noun meaning *someone who studies the physical and chemical structure of the stars and planets* (para 10)
8. an adjective meaning *knowing a lot about different subjects* (para 10)

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5 Two-word expressions

Match the beginnings and endings to make phrases from the text.

- | | |
|-------------|-----------|
| 1. freezing | a. life |
| 2. solar | b. year |
| 3. light | c. point |
| 4. life | d. maker |
| 5. film- | e. form |
| 6. real | f. system |

6 Word-building

Complete the table using nouns from the text.

	verb	noun
1.	hunt	
2.	confirm	
3.	contact	
4.	exist	
5.	intend	
6.	know	

7 Discussion

Do you believe that aliens exist? Why? Why not?

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KEY

1 Key words

1. astronomer
2. alien
3. cosmos
4. galaxy
5. orbit
6. interstellar
7. radar
8. light year
9. millennium
10. motive

2 Find the information.

1. billions and billions
2. 80 light years
3. 1,000 years (a millennium)
4. California
5. a fictional one
6. one

3 Comprehension check

1. F
2. T
3. F
4. T
5. F
6. T

4 Find the word

1. space probe
2. eminent
3. life form
4. unwarranted
5. fictional
6. timescale
7. astrophysicist
8. knowledgeable

5 Two-word expressions

1. c
2. f
3. b
4. e
5. d
6. a

6 Word-building

1. hunt
2. confirmation
3. contact
4. existence
5. intention
6. knowledge