

The case for and against human spaceflight

Should we just call the shots from home? Read through our background information and then decide for yourself

Ever wondered why Britain has never launched its own astronauts into space? British people who have been to space before have gone on other countries' spacecraft. Tim Peake, due to go to space in November 2015, will go on behalf of the European Space Agency rather than the UK Space Agency.

Many well-known figures in the field have argued against human spaceflight. They say it is more expensive and riskier than sending robots. If a robot crash-landed into Mars there would be disappointment and the loss of years of work, for sure, but that doesn't compare to the loss of human life. And, they say, robots can do many of the jobs that humans can do plus many that they can't.

The history books certainly show that space travel is dangerous: the Challenger and Columbia space shuttle disasters together claimed the lives of 14 astronauts. There

have been other fatalities and close calls too, with Apollo 13 perhaps the most famous narrow escape. No one has ever died in space – the deaths have all occurred during launch and re-entry.

Is risk a good enough argument for not pushing the boundaries of what is possible? What if Columbus, Cook and Cabot had decided sailing out into uncharted waters was too much of a risk? What if we had never ventured out of our caves in the first place? Or out of Africa?

Sending humans into space has led to many technological developments. Would the same innovations have been made if we restricted ourselves to robots? Then there is the inspiration factor: many of the scientists of today were inspired by the daring accomplishments of the Apollo astronauts. Imagine the impact of seeing a fellow human set foot on Mars for the first time.

400,171

The furthest humans have travelled from Earth, in kilometres
(Apollo 13, 1970)

19.5 billion

The furthest an unmanned spacecraft has travelled, in kilometres. (Voyager, 1977–present)

ABOUT THIS RESOURCE

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Land covered on selected missions

	Date of Mission	With or without humans	Distance covered (km)	Time (days)
Spirit rover	2004–10	without	7.73	2,695
Opportunity rover	2004–present (2015)	without	42.2	4,082
Apollo 15 rover	1971	with	27.8	12
Apollo 17 rover	1972	with	35.74	12

PROS

- Humans can make on-the-spot decisions – a robot can only follow its (admittedly sophisticated) programming or wait for significantly delayed instructions from Earth.
- Astronauts can currently cover a lot more ground on the surface of a planet or moon and can use more advanced equipment to explore.
- Some healthcare advancements have come directly from preparing the astronauts.

CONS

- Humans need to be kept alive. This means bigger, more expensive missions carrying everything needed to sustain life.
- It is risky. The consequences of a mission going wrong are much more serious.
- It's too expensive – missions would cost less without humans.

REFERENCES

[NASA: Driving distances on Mars and the Moon](#)

[Wikipedia: Opportunity \(rover\)](#)

[NASA: Where are the Voyagers?](#)

[Space.com: Extreme human spaceflight records](#)

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