

# Why is it important to teach about space and spaceflight? A short history

**Dave Eagle, STEM Ambassador, amateur astronomer and mobile planetarium operator, gives his views on the importance of teaching about space and spaceflight**



**Figure 1** The iconic image of Buzz Aldrin standing on the Moon's surface (NASA)

**O**n 21 July 1969, two Americans stepped on to the Moon's surface. This outstanding achievement was the pinnacle of a race between two superpowers, the United States and the Soviet Union, fulfilling President Kennedy's goal of landing a man on the Moon and returning him safely to the Earth.

## Debunking the myths

Fifty years on, this monumental event is a distant memory in people's minds. In fact, it is a sobering statistic that only about 20% of the people alive at that time are still with us. When people of the older generation were growing up, they relied on newspapers and live television and radio broadcasts to learn what was going on. How times have changed! Children today are faced with a bewildering amount of information that is freely available to them 24/7. Internet and social media interactions bombard us with a constant avalanche of information. Knowledge is now available to everyone, enabling people to make

more informed choices, and long may this continue.

Unfortunately, mixed up with all this extremely useful and accurate information is a sickening amount of misinformation. The term 'fake news' has really come to the fore recently, taking over many aspects of the media. There is now an ever-growing band of people who believe that the Apollo lunar landings never happened, despite the overwhelming evidence supporting the fact that they did. Space enthusiasts like myself spend a lot of time debunking the non-evidence that is frequently presented to support this

misguided belief. Just don't start me talking about 'flat-earthers'!

But who cares? Space is so far out there, does it really have any relevance to us in our daily lives down here on Earth? Absolutely it does! The knock-on effect of benefits passed down from space exploration is staggering, from a multitude of domestic items to computers and medicine.

I spend lots of time going into schools educating children about space and telling the story of Tim Peake's *Principia* mission (Figure 2). From December 2015 he spent six months orbiting 250 miles above the

Key words: ■ Inspiration ■ Equality

# at space



Earth aboard the International Space Station, landing back in Russia on 18 June 2016. Tim was our first 'official' astronaut, paid for by UK taxpayers. He launched in a blaze of publicity, with big events, such as in the London Science Museum and across the country. There was also high-profile media coverage of the event. It was a big thing. Tim really did inspire lots of children to be more interested in space and continues to do so. It is hoped that more children will take up science, technology, engineering and maths (STEM) subjects as a result. Girls are especially under-represented within these subjects, so the more we can encourage them the better.

### Daring to dream

Of course, not everyone can become an astronaut like Tim: it takes grit, determination and a high level of competence in the many necessary skills. Supporting the astronauts, however, are thousands of much-needed personnel, of all skill and ability levels: space scientists, astronomers, engineers and support staff are all needed to support crewed space missions.

The more we can inspire children with stories of space travel and break the stereotypes of who does these jobs, the more we will attract into these fields. Let's hope that the circumstances exemplified in the book (and film) *Hidden Figures* (see

end), about African-American female mathematicians who worked as 'human computers' supporting the US space programme, are never repeated. Although many children will never go into the space industry, they will be picking up very valuable transferable skills along the way, helping them to further their careers in other industries.

### Has Tim Peake's mission inspired children?

Two years ago, I attended one of Tim Peake's book signings (Figure 3). There were many young children present,

which I found extremely encouraging. At the end of the presentation there was a question-and-answer session. One question was from a boy called Isaac who asked:

*Our teacher told us to think of a challenge and how to overcome it. My challenge was to become an astronaut and I would overcome it by working really hard and being accepted into the NASA space program. My teacher wasn't happy with this and said I ought to pick something realistic. How did you stay motivated and never give up on your dream to become an astronaut?*



**Figure 2** The author talking about Tim Peake's *Principia* mission to the International Space Station at a STEM school assembly



**Figure 3** Tim at a book-signing event well attended by young children

This just about reduced me to tears. How dare anyone say that to a young aspiring person and burst their wonderful bubble? Tim, of course, told him that if he worked hard and had the right mindset, he could achieve his goals. More importantly, he should never believe that there was anything that he couldn't achieve if he put the work in to get there. And how did Isaac finish his conversation? *'You're my hero Tim Peake.'*

That evening made me feel very emotional, with the realisation that Tim's mission had that effect on young people. They had really been inspired by him and what he had achieved. Listen to the questions at the end of the *YouTube* video of the event (see end) to hear Isaac's question.

### **Making memories**

People have very short memories. Although Tim Peake is often introduced as the first UK astronaut to go into space, he definitely is not the first UK citizen to have been launched into orbit. In 1991, Helen Sharman (Figure 4) spent just over a week on the Mir space station with the Russians. She was a chemist, working for the company who make Mars bars. Her landmark achievement should be utilised to great advantage to act as an enormous inspiration to many young girls. But in the clamour surrounding Tim's success, Helen sadly seems to have been largely forgotten. Like the Apollo Moon missions, her memory too is fading into historical obscurity. I always ensure Helen is mentioned in

my presentations to try to compensate for this.

In my many visits to schools I have also noticed the emergence of something even more alarming. It has only been four years since Tim finished his mission. Over the last year or so, when questioning children, an increasing number of them cannot identify my life-size cut-out model of Tim that I drag around with me (Figure 5). So even Tim himself, although launched much more recently than Helen Sharman, also seems to be fading from view. This is probably because many of the children coming through today were too young to remember Tim's mission as it happened. They have therefore had no ongoing exposure to his mission or what he achieved during his six months in orbit.

### **Onwards and upwards**

It is important that we keep alive and fresh in children's young inquisitive minds the past achievements of all of these celestial pioneers. Seeing what they have been able to achieve is certainly an inspiration to us all. If we put in the hard work, ignore anyone who could deter or distract us from our path, and aim for the stars, who knows what we can achieve? Crewed missions are scheduled to go back to the Moon in 2024 and we hope on towards Mars. To support these missions, a steady supply of eager and



**Figure 4** Helen Sharman, Britain's first astronaut (National Space Centre)

trained personnel ready to support them will be needed. The UK works alongside the Americans, Russians, Japanese, the EU and many other countries across the world on the International Space Station. In a world where nations appear to be getting more divided day by day, the space industry sees many countries working together. This has got to be a positive thing.

I am really passionate about the importance of exciting and inspiring children about space and spaceflight.

I will continue to visit schools, both as a STEM Ambassador and using my mobile planetarium, to keep educating, enthusing and entertaining children about our rich and exciting space heritage and increase their awareness of the wonderful universe that surrounds us. If I can inspire at least one child, especially a girl, to embark on a STEM-orientated career, I would be very proud, although I am certainly aiming to inspire more than just a single child over the years.

Most of us may never be able to touch the stars, but if I can use them to help guide many others, I will have achieved my goal. How about you?



**Figure 5** Flat Tim and Buzz ready to greet children visiting the planetarium

## Some useful resources

- *A galaxy of her own: amazing stories of women in space* by Libby Jackson (Century, 2017) – 50 stories of inspirational women who have been fundamental to the story of humans in space, from scientists to astronauts to some surprising roles in between.

- *Hidden figures: the untold story of the African-American women who helped win the space race* by Margot Lee Shetterly (Collins, 2016) – moves from the Second World War through NASA's golden age, touching on the civil rights era, the Space Race, the Cold War, and the women's rights movement, interweaving a rich history of scientific achievement and technological innovation with the intimate stories of five women whose work forever changed the world.

- *Ask An Astronaut Live with Tim Peake* – video of book launch: [www.youtube.com/watch?v=ekQtOdz2\\_G4](https://www.youtube.com/watch?v=ekQtOdz2_G4)

**Dave Eagle** has a life-long passion for astronomy and spaceflight and was elected a Fellow of The Royal Astronomical Society in the mid 1990s. He creates fully immersive planetarium shows and presentations, organises and runs astronomy workshops and has had a number of articles and books published on many aspects of astronomy.

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