

# US to launch most powerful rocket ever

Forty-two years after man first set foot on the moon, there's still much to explore in space. But in a time of economic difficulty, should we still be reaching for the stars?



SCIENCE  
DESIGN & TECHNOLOGY



The Saturn V rocket which put men on the moon in 1969. NASA's new launch system hopes to surpass it.

It will be the most powerful rocket ever built, capable of blasting 130 tonnes of cutting edge technology into space. As NASA's newest project, the Space Launch System (SLS) promises to be an exciting launchpad for America's extra-terrestrial future.

Powered by liquid hydrogen and oxygen, the SLS will be capable of propelling the equipment needed to support humans for long stays into space. It will be used to visit asteroids, carry out work on satellites that orbit the Earth, and will even mean that today's aspiring explorers can dream, realistically, of one day walking on Mars.

Former astronaut Charles Bolden says the SLS truly embodies NASA's desire to 'be bold and dream big'. By recycling several parts from the recently retired Space Shuttle, though, it also embraces the more cautious atmosphere of recession. The thriftiness is necessary. President

Obama cancelled NASA's last human space-flight programme, Constellation, in 2010, and this alternative has been controversial. You don't have to be a rocket scientist to guess why: by the time of its first launch in 2017, the US treasury will have spent \$18 billion on SLS – a cost that could rise to \$62 billion over the next 14 years.

The space programme has been widely criticised as a black hole of flashy technology, which does nothing to help people here on Earth. So why would America want to spend so much?

There are, of course, practical benefits. SLS will create 2,000 jobs, generate income through patents, and encourage more young people to study engineering and science by giving the subjects glamorous publicity. Space travel has resulted in the development of many new technologies and could even, some speculate, be essential in the future, if environ-

mental pressures force humans to look beyond Planet Earth for somewhere to call home.

## THE FINAL FRONTIER?

For some scientists, however, the economic impact of space travel is beside the point. By journeying to stars, they say, we push the boundaries of human achievement. Now that most of our own planet is known, space really is the final frontier of adventure and knowledge, the place to find answers to the big questions of what life and the universe is really all about.

Others argue that investment in space travel should take second place to more immediate, if mundane, concerns. Space might be fascinating, but we need to respect, care for and try to understand our fellow earthlings before going on the hunt for E.T.

## Q & A

**Q So is the USA currently sending astronauts into space?**

**A** At the moment, American astronauts need to use Russian launchers to get into space, so it's a matter of national pride that they develop their own launcher. During the Cold War – when relations between communist

Russia and America were very tense – the two countries were caught in a 'space race', competing to develop the best space exploration programme.

**Q What kind of technology has space exploration helped develop?**

**A** Space travel has been really important in the invention of satellite communications, which have influenced computers, TV, mobile phones and global banking. Experiments in

weightless environments have also led to important medical advancements in osteoporosis and balance disorders.

## SOME PEOPLE SAY...

'Space travel is expensive and pointless.'

WHAT DO YOU THINK?