

APRIL 2015

**SPACE
EXPLORATION**

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**DEBATING
MATTERS
ISRAEL**

MOTION:

**“SPACE EXPLORATION
IS A WASTE OF TIME
AND MONEY”**

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CONTENTS

Introduction

Key terms

The space exploration debate in context

Essential reading

Backgrounders

Organisations

Audio/Visual

In the news

KEY TERMS

[Space Exploration](#)

[The Space Race](#)

INTRODUCTION

1 of 6

NOTES

1
1
2
4
5
6
6
6

In the 45 years since Neil Armstrong set foot on the moon, space exploration has continued to inspire awe and wonder around the world [Ref: [NASA](#)]. November 2014 marked the launch of the European Space Agency's Rosetta probe Philae lander to the surface of Comet 67P, after a journey lasting 10 years, the first time such a landing had been made [Ref: [ESA](#)]. With plans to send the first Israeli spaceship to the moon as part of the 'Google Lunar X Prize' competition [Ref: [Time](#)], the Jerusalem Posts argues that: "Israel is among the global leaders in many areas of space exploration" [Ref: [Jerusalem Post](#)]. Projects such as the Rosetta probe landing inspire many to laud achievements in space as feats of human ingenuity and technological advancement, with one commentator proclaiming that: "Projects such as this...represent the best side of human nature" [Ref: [Independent](#)]. From this perspective space exploration is viewed as a good in and of itself, allowing us to expand our field of knowledge of the world, the universe and the origin of both. However, for all of its supporters, there are critics who suggest that space exploration is a luxurious waste of time and money. Opponents suggest that we would be better off using the skills and knowledge dedicated to space exploration elsewhere, with author Gerard deGroot stating that: "Obscenely expensive manned missions, mean that practical, earth bound science suffers", all for the sake of: "An ego trip to the moon" [Ref: [Telegraph](#)]. And with developing continents such as Africa [Ref: [Guardian](#)] and countries such as India [Ref: [Diplomat](#)] now beginning their own space programmes, there has been growing alarm that space exploration is distracting us from tackling real world problems such as poverty, education and global warming. How, critics argue, can space exploration be a priority amid such pressing concerns [Ref: [Financial Times](#)]? Should space exploration really be a priority for any nation, including developed countries such as Israel?

An expensive and dangerous distraction?

Israel is considered a leader in some areas of space technology and has "...launched 13 satellites that have collectively accumulated 66 orbiting years and achieved 100% orbit mission successes" [Ref: [Jerusalem Post](#)]. The Israel Space Agency's [Ref: [ISA](#)] budget was increased to \$80 million in 2010 [Ref: [Wikipedia](#)], although some note that Israel's space program is: "...a minuscule operation compared to NASA or the European Space Agency" [Ref: [Scientific American](#)]. Commentator Michele Hanson notes that: "...down here we're on our way to hell in a handcart, battered by plagues, floods, famines, recessions, cold wars, blazing hot wars, displaced hordes, ruined lands and seas and general wretchedness, while they fritter their cleverness, energies and billions, poking about on a rock about 300 million miles away....never mind our origins, what about our future" [Ref: [Guardian](#)]? Why spend millions, if not billions, on space flights when, during the course of the last century, critics ask, deforestation has taken place at a rate of 50 football pitches per minute [Ref: [Guardian](#)] - shouldn't we look after our own planet rather than attempting to leave it? One writer answers this by cautioning that: "The urge to explore and push ourselves out into the universe, is not mutually exclusive from the effort to improve our own minds and environment" [Ref: [CNN](#)]. Moreover, although it cost £1 billion to finance the Philae mission, supporters observe that it actually cost half of what it costs to build a modern submarine, and: "...has been spread over 20 years of scientific and industrial activity, creating thousands of jobs" [Ref: [Guardian](#)]. For scientists such as Stephen Hawking, space travel is far from being an irrelevant and costly distraction - it is absolutely vital because: "...the human race has no future if it does not go into space" [Ref: [Guardian](#)]. Tied in with the issue of expense, the inherent risks involved in space exploration

mean that it will always be controversial [Ref: [EdQuestScience](#)]. Even American space scientist James Van Allen admits that to many, space exploration: "...is vicarious", and asks if: "...the great national commitment of technical talent to human spaceflight and the ever present potential for the loss of precious human life are justifiable" [Ref: [Guardian](#)]. As highlighted by Israel's first and, to date, only astronaut, Ilan Ramon, being killed in the Columbia space shuttle tragedy in 2003 [Ref: [jspacenews](#)]. But in the wake of the recent Virgin Galactic accident [Ref: [BBC News](#)], supporters still claim that we should not be put off, because it is only after mistakes and corrections that we achieve our goals: "...because that's how progress happens" [Ref: [Mashable.com](#)].

Human ingenuity or Superpower posturing?

Space exploration: "Speaks abundantly to our sense of human curiosity, of wonder and awe at the unknown" states Michael Griffin - in short, it inspires us [Ref: [Air&Space](#)]. As human beings, advocates point out, it is in our nature to explore, to overcome and conquer our environment. And the fact that we have managed to send the Rosetta probe a distance that equates to more than five times the distance between the Earth and the Sun, is evidence of this ingenuity [Ref: [Independent](#)]. Some of the technological advances made thanks to space travel have also impacted on our everyday lives: memory foam is used to manufacture prosthetic limbs, and Magnetic Resonance Imaging (MRI) is widely used in medicine [Ref: [Space.com](#)], and many other innovations [Ref: [The Journal](#)] were developed as a result of space exploration [Ref: [NASA](#)]. For example, in the 60 years since the first satellite, Sputnik 1 was launched in 1957 satellites have become central to our everyday lives [Ref: [BBC News](#)]. But others point out that historically the space race had more to do with international rivalries than science, innovation or human achievement [Ref: [Cold War Museum](#)], and was not: "...

THE SPACE EXPLORATION DEBATE IN CONTEXT CONTINUED...

3 of 6

NOTES

undertaken for the sake of knowledge, but (was) intrinsically tied to the military industrial complex” [Ref: [Guardian](#)]. One observer notes that it is: “Tacitly acknowledged” that “...there are obvious military applications to India’s space programme” which allied to its ballistics system, shows the world that it has long range missile capabilities [Ref: [Russia Today](#)]. In light of this, the start of a new space race is viewed by some as being between growing super powers China and India [Ref: [Telegraph](#)]. With America also showing its ambitions in December 2014, when NASA’s Orion system was sent into orbit with the aim of going back to the moon and, eventually, to Mars [Ref: [Telegraph](#)]. These developments prompted space exploration supporter Giles Whittell to admit that much of these: “...extraterrestrial activities are all about terrestrial swagger” rather than scientific innovation [Ref: [The Times](#)]. Even if this is true, it could still be argued that for all the Cold War logic behind them, the moon landings, for example, still inspire as a beacon of what can be achieved with technology, expertise and innovation, even 50 years on [Ref: [National Geographic](#)]. And others argue that the development of space technologies can encourage peace. Professor Berndt Feuerbacher, of the International Astronautical Federation, argues collaboration on space projects and exploration can forge close ties between countries – as with the United States and the USSR – and that: “In all modern economies, space-related research has had a huge value-added benefit, with the people and economy benefiting from the research in many ways” [Ref: [Times of Israel](#)].

Space and the developing World

For critics, space travel: “Is a luxury which (India) cannot afford”, and instead, it: “...should be diverting more funds towards the alleviation of poverty” [Ref: [Daily Mail](#)]. For a country in which two-fifths of children suffer from malnutrition, and where half

the population lack proper sanitation, is space exploration really what developing countries such as India should be concentrating on? “What if the 16,000 scientists and engineers now working on space development were instead deployed to fix rotten sanitation?” one publication asks [Ref: [Economist](#)]. With several African nations which receive aid from the UK, such as Nigeria, launching space programmes there are suggestions that Britain should not be subsidising: “...a space programme for a country in which more than 70% of the people live below the poverty line” [Ref: [Daily Mail](#)]. In response, supporter of new space programmes Priyamvada Gopal insists that: “Inquiry and exploration are not the prerogative of advanced capitalist Western nations” [Ref: [Guardian](#)]. An example of the fruits of this inquiry and exploration, is that a fierce monsoon in October 2014 killed very few people, compared with a similar strength one in 1999, which killed more than 10000, due in large part to improvements made to India’s weather satellites [Ref: [Economist](#)]. Furthermore, for developing countries, space exploration can show they are capable of much more than many outsiders would expect, acting as a: “...a shot in the arm for national self confidence” as one commentator puts it [Ref: [Russia Today](#)]. With all things considered, does space exploration signify the pinnacle of human achievement, embodying the spirit of innovation and ingenuity? Or, should we: “...keep a whole pile of dough for important and inspiring missions right here on earth” [Ref: [CNN](#)]? Is space exploration a waste of time and money?

ESSENTIAL READING

4 of 6

NOTES

Ending manned space exploration is the right thing

Steven Weinberg *New Statesman* 8 February 2010

Why we explore

NASA

FOR

The comet landing is fascinating, but what about the state of our own planet?

Michele Hanson *Guardian* 17 November 2014

Forget life on Mars; its life here that matters

Andrew Simms *Guardian* 3 June 2014

The space race is a pointless waste of money

Jeremy de Groot *Telegraph* 25 February 2009

AGAINST

The Rosetta mission shows us the very best of human nature

Joan Smith *Independent* 16 November 2014

One giant step

Tim Appleyard *The Times* 16 November 2014

Why this space story fills us with so much awe

Jonathan Freedland *Guardian* 14 November 2014

BACKGROUNDERS

Life on Earth is in peril: we have no future if we do not go into space

Robin McKie *Guardian* 7 December 2014

Astronauts lift our spirits: but can we afford manned spaceflight?

Robin McKie *Guardian* 7 December 2014

Why should we go to Mars? Because its there

Giles Whittell *The Times* 6 December 2014

Pushing into space: not free, but worth it

Gene Seymour *CNN* 15 November 2014

Let's take care of our own planet before we start messing around in space

Carol McGiffin *Mirror* 15 November 2014

Rosetta Mission: a triumph of human ingenuity

Guardian 13 November 2014

Rosetta's success will illuminate the origins of life – it's a billion well spent

Usama Hussan *Guardian* 12 November 2014

Space travel is dangerous. There will be no tourists

Chris Taylor *Mashable.Com* 1 November 2014

India's impressive space programme

Sudha Ramachandran *Diplomat* 13 October 2014

India's Mars mission could be a giant leap

Priyamvada Gopal *Guardian* 24 September 2014

Is space travel worth the money?

Conor Farrell *The Journal* 27 February 2014

Ilan Ramon: Remembering the Loss of Israel's First Astronaut

jspacenews.com 29 January 2014

China's Moon landing: the Space Race with India

Telegraph 14 December 2013

Why India's Mars mission is about more than power and prestige

Sreenam Chaulia *Russia Today* 7 November 2013

How can poor countries afford space programmes?

Economist 4 November 2013

Four more African nations that get billion in UK aid launch space programmes

Jack Doyle *Daily Mail* 9 August 2013

Should we let go of our space fantasies?

John Horgan *Scientific American* 26 August 2012

Mars can wait. Oceans cant

Amatai Etzioni *CNN* 17 August 2012

India 'Mars Fantasy' defies earthly woes

Victor Mallet *Financial Times* 3 August 2012

Space technology in everyday life

Mike Wall *Space.Com* 31 March 2011

Why are we giving India £1BN in aid when they have their own space programme?

Gerri Geev *Daily Mail* 10 February 2011

The reasons we explore space

Michael Griffin *Air&Space Magazine* 7 July 2007

Israel Space Agency

Wikipedia

Risks and dangers of space exploration

EdQuestScience

5 of 6

NOTES

IN THE NEWS

China's space program reaches new milestone on the moon

Scientific Times 13 January 2015

Pioneering Dragon space mission aborted

The Times 6 January 2015

African's urged to back continent's first moon mission

Guardian 5 January 2015

Mission success for 'Mars Ship'

Telegraph 5 December 2014

Philae lands safely on comet after ten year odyssey

The Times 12 November 2014

Virgin Galactic Pilot killed in crash

BBC News 1 November 2014

NASA space station rocket explodes during launch

The Times 29 October 2014

USA ready to return to the moon

Telegraph 3 February 2014

Israel's Mission to the Moon: Can a Small Country Win a Big Prize?

Time 8 March 2013

Space, the final frontier for peace?

Times of Israel 1 February 2013

Israel a leader in some areas of space exploration

Jerusalem Post 11 December 2012

Apollo anniversary: Moon mission inspired the world

National Geographic 16 July 2004

6 of 6

NOTES

ORGANISATIONS

European Space Agency

Indian Space Research Organisation

International Astronautical Federation

Israel Space Agency

NASA

ADVICE FOR DEBATING MATTERS

DEBATING MATTERS
**TOPIC
GUIDES**

www.debatingmatters.com

FOR STUDENTS

READ EVERYTHING

In the Topic Guide and in the news - not just your side of the argument either.

STATISTICS ARE GOOD BUT.....

Your opponents will have their own too. They'll support your points but they aren't a substitute for them.

BE BOLD

Get straight to the point but don't rush into things: make sure you aren't falling back on earlier assertions because interpreting a debate too narrowly might show a lack of understanding or confidence.

DON'T BACK DOWN

Try to take your case to its logical conclusion before trying to seem 'balanced' - your ability to challenge fundamental principles will be rewarded - even if you personally disagree with your arguments.

DON'T PANIC

Never assume you've lost because every question is an opportunity to explain what you know. Don't try to answer every question but don't avoid the tough ones either.

FOR TEACHERS

Hoping to start a debating club? Looking for ways to give your debaters more experience? Debating Matters have a wide range of resources to help develop a culture of debate in your school and many more Topic Guides like this one to bring out the best in your students. For these and details of how to enter a team for the Debating Matters Competition visit our website, www.debatingmatters.com

FOR JUDGES

Judges are asked to consider whether students have been brave enough to address the difficult questions asked of them. Clever semantics might demonstrate an acrobatic mind but are also likely to hinder a serious discussion by changing the terms and parameters of the debate itself.

Whilst a team might demonstrate considerable knowledge and familiarity with the topic, evading difficult issues and failing to address the main substance of the debate misses the point of the competition. Judges are therefore encouraged to consider how far students have gone in defending their side of the motion, to what extent students have taken up the more challenging parts of the debate and how far the teams were able to respond to and challenge their opponents.

As one judge remarked *'These are not debates won simply by the rather technical rules of schools competitive debating. The challenge is to dig in to the real issues.'* This assessment seems to grasp the point and is worth bearing in mind when sitting on a judging panel.

**“A COMPLEX
WORLD REQUIRES
THE CAPACITY
TO MARSHALL
CHALLENGING IDEAS
AND ARGUMENTS”**

**LORD BOATENG, FORMER BRITISH HIGH
COMMISSIONER TO SOUTH AFRICA**

