

Exploring the Solar System I – Robots on Mars




Exploring the Solar System I **Robots on Mars**

Mars and Martians

Landers and Rovers

What Have They Found?

What Next?

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Mars and Martians

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Surface of Mars


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Exploring the Solar System I – Robots on Mars

Landers and Rovers

	<i>Landers</i>	<i>Rovers</i>	
1976	Viking		
1997	Pathfinder	Sojourner	
2004		Spirit	
2004		Opportunity "Oppy"	
2008	Phoenix		
2012		Curiosity	
2018	Insight		
2020		Perseverance "Percy"	

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Viking 1976



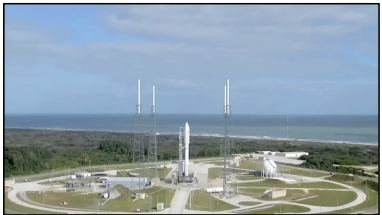
First colour images



Carl Sagan provides scale for a model of the Viking lander


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Perseverance Launch




To get Perseverance to Mars needed a small Atlas rocket.

Apollo missions to the Moon in the 1960s needed the much larger Saturn V rocket.



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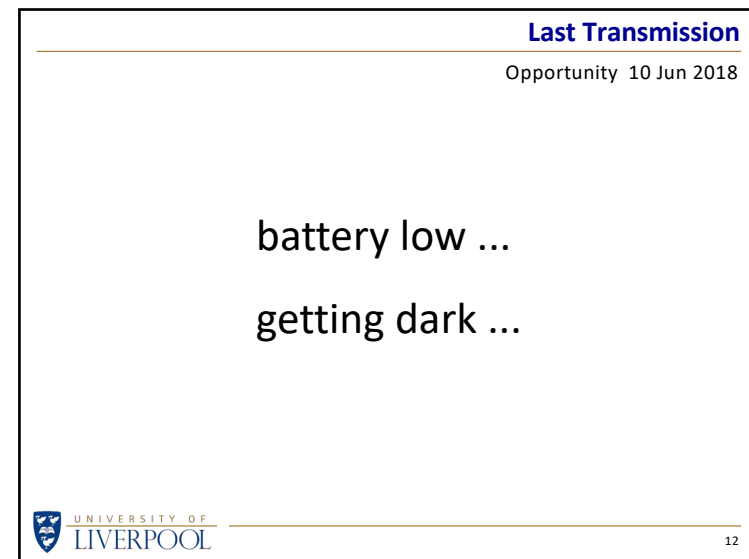
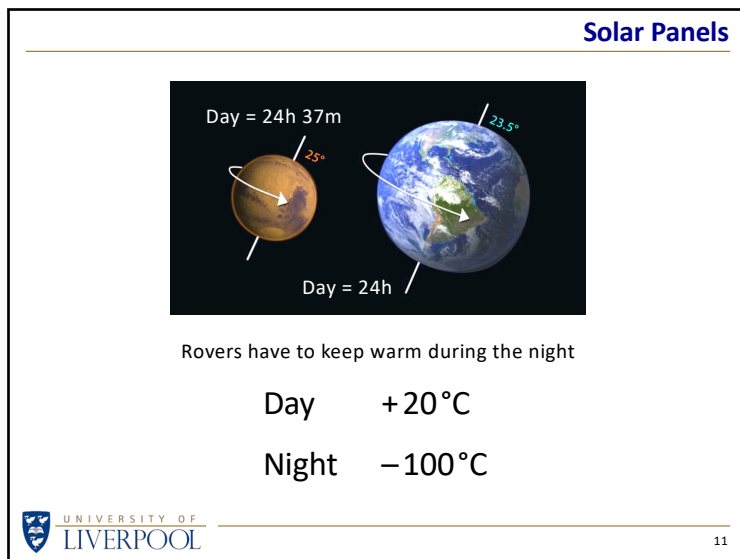
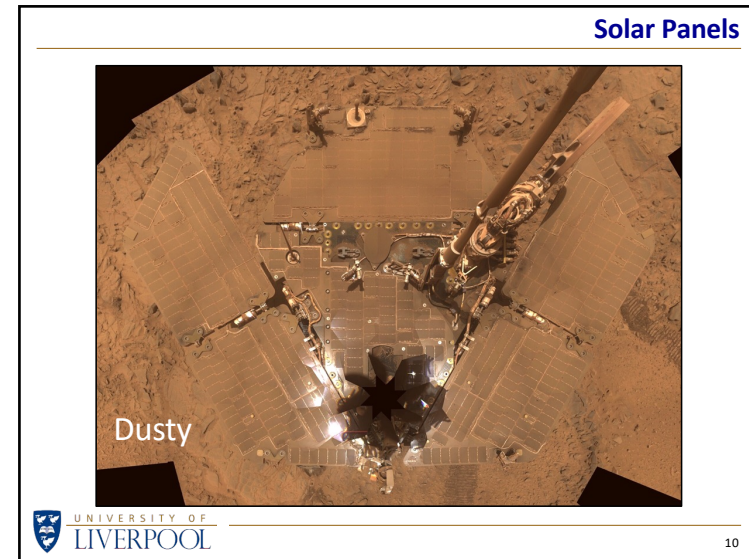
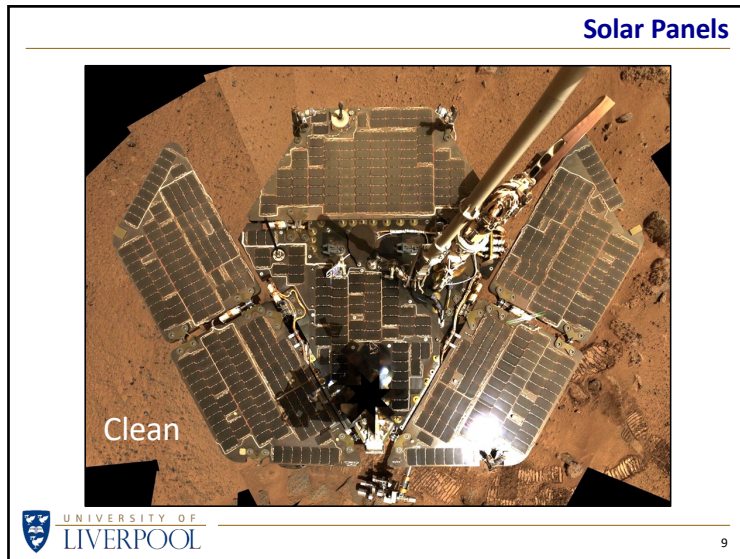
Spirit and Opportunity

CGI

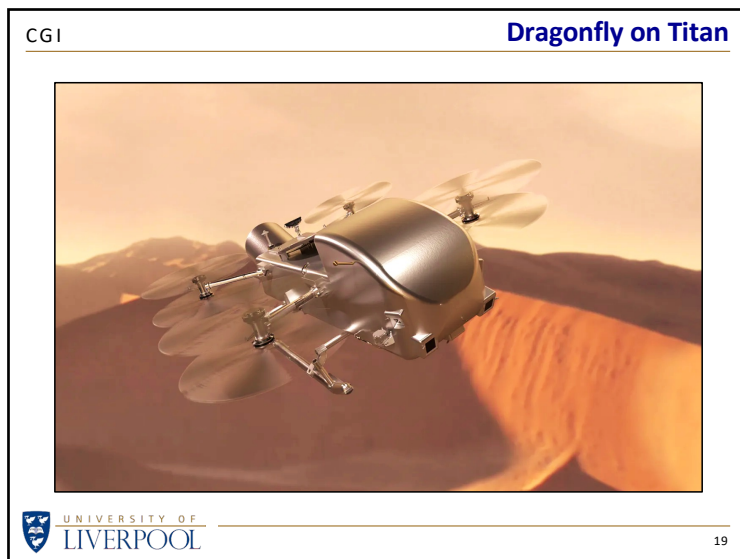
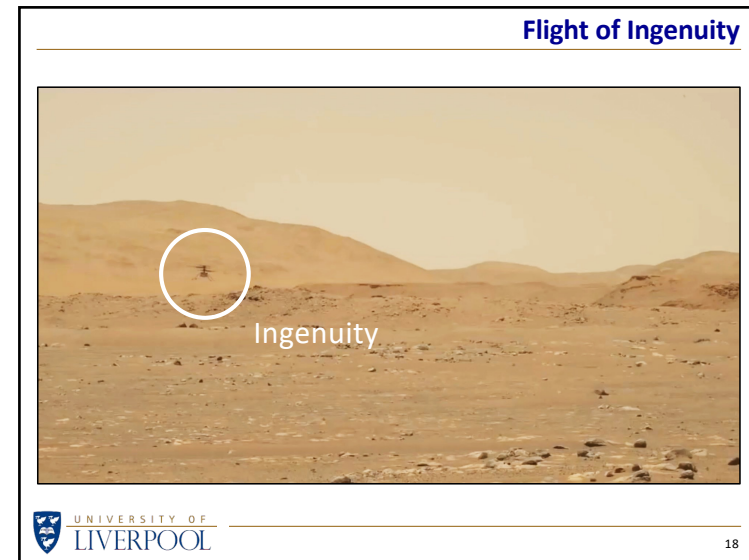
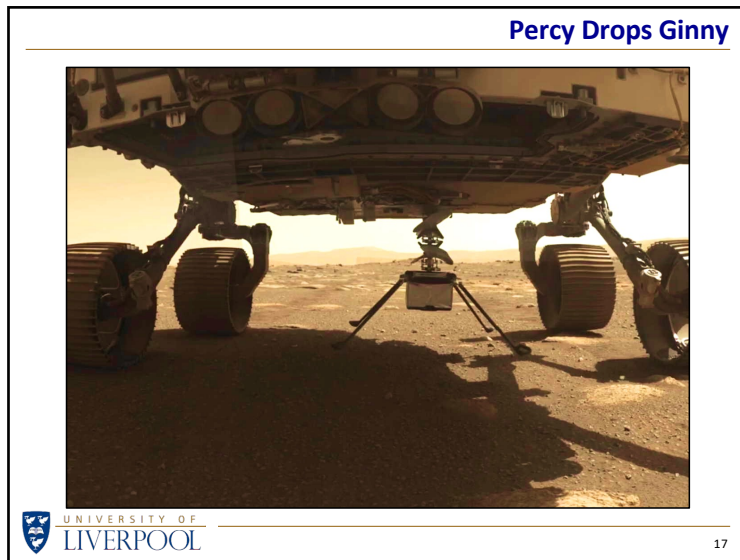


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Exploring the Solar System I – Robots on Mars

Exploring Mars

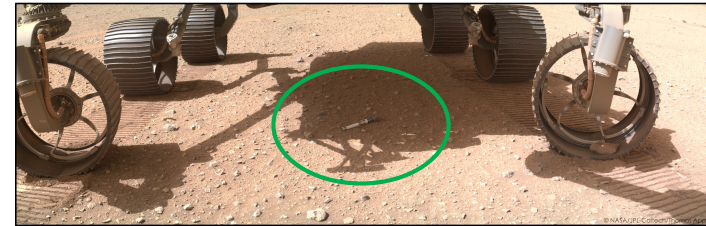
Why explore Mars?

To study its geology and climate

Does life exist, or did it ever exist?

To prepare for human exploration

Mars Sample Return

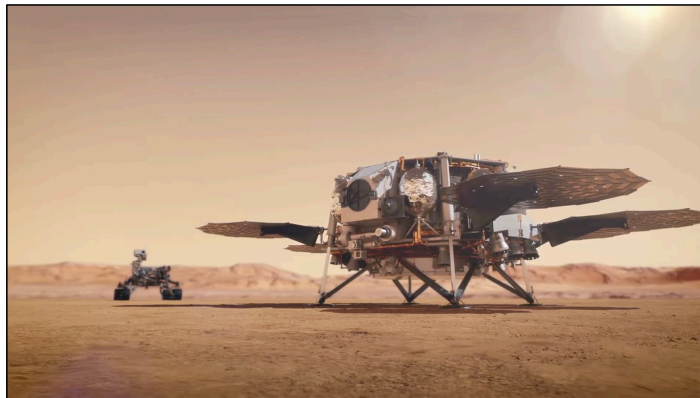


Perseverance is collecting rock and atmosphere samples and leaving a trail of sample tubes behind as it explores the Martian surface.

How will we get these samples back to Earth for more detailed study?

CGI

Mars Sample Return



CGI

Mars Sample Return



Exploring the Solar System I – Robots on Mars

What's Next



esa
2028

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25

This slide features a 3D rendering of a futuristic rover with six wheels and a large solar panel array. The ESA logo and the year '2028' are positioned in the top left. The University of Liverpool logo is at the bottom left, and the number '25' is at the bottom right.

Airbus UK



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This slide shows a photograph of a rover being assembled in a cleanroom. Several technicians in white protective suits are working on the rover. The University of Liverpool logo is at the bottom left, and the number '26' is at the bottom right.

Want To Know More?



NASA.gov ESA.int CASC.cn

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This slide displays the flags and logos of the United States (NASA), Europe (ESA), and China (CASC). Below each logo is its respective website: NASA.gov, ESA.int, and CASC.cn. The University of Liverpool logo is at the bottom left, and the number '27' is at the bottom right.

Exploring the Solar System – I
www.liverpool.ac.uk/~sdb/Talks



ROBOTS ON MARS

Dr Steve Barrett
UoL 13 Nov 2024

This slide features a photograph of a rover on the surface of Mars. The text 'ROBOTS ON MARS' is overlaid in large white letters. At the top, it says 'Exploring the Solar System – I' and provides a website link. At the bottom, it identifies the speaker as Dr Steve Barrett and the date as UoL 13 Nov 2024.