



1  
00:00:17,000 --> 00:00:22,000

The Rosetta spacecraft was launched by the European Space agency ten years ago on its really long journey t

2  
00:00:22,000 --> 00:00:29,000

catch up with a comet. Right now the spacecraft is in the orbit of the comet getting its lander ready for this

3  
00:00:29,000 --> 00:00:31,000  
historic event.

4  
00:00:31,000 --> 00:00:35,000

It'll be the first time humanity has ever attempted a landing on the surface of a comet.

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00:00:35,000 --> 00:00:41,000

Nobody knows how easy or how hard it is to land on a comet because nobody has done it before.

6  
00:00:41,000 --> 00:00:44,000  
We don't know what to expect.

7  
00:00:44,000 --> 00:00:52,000

This is not a friendly comet to land on, there are boulders, there's dust, there are jets and the shape is

8  
00:00:52,000 --> 00:00:55,000  
just truly bizarre.

9  
00:00:55,000 --> 00:01:00,000

You have to look at all of the landing sites, you have to find a smooth spot, the slopes can't be too steep,

10  
00:01:00,000 --> 00:01:04,000  
cant be really large rocks there.

11  
00:01:04,000 --> 00:01:10,000

The lander will be ejected from the mother spacecraft and fall to the surface of the comet.

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00:01:10,000 --> 00:01:17,000

Since this is an unpowered landing, this spacecraft is just free falling to the surface

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00:01:17,000 --> 00:01:23,000

It's going to be responding to the gravity of the comet and to the pressure of the gas pushing against the

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00:01:23,000 --> 00:01:27,000

spacecraft. Both of these things we have no control over

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00:01:27,000 --> 00:01:34,000

Gravity on the comet is very low, that's why we have anchoring harpoons which we will fly immediately at

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00:01:34,000 --> 00:01:37,000

touchdown to keep the lander on the surface.

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00:01:37,000 --> 00:01:43,000

Being able to touchdown and to be able to scoop up some of that primordial material this is going to open the

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00:01:43,000 --> 00:01:45,000

doors to us.

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00:01:45,000 --> 00:01:50,000

It's scientifically sexy. its going to give us so much information, so much science.

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00:01:50,000 --> 00:01:57,000

Finding out whats inside the comet will tell us what our solar system was like 4 1/2 billion years ago.

21

00:01:57,000 --> 00:02:03,000

It's going to be unknown. The whole world is watching. Is the landing going to be successful?

22

00:02:03,000 --> 00:02:12,000

We are already successful because we undertake missions like this. we show the human spirit of exploration.