



1  
00:00:14,320 --> 00:00:12,730  
Phoenix is a mission to land near the

2  
00:00:16,900 --> 00:00:14,330  
North Pole Amar's kind of up in the

3  
00:00:18,520 --> 00:00:16,910  
Arctic Circle area we're in an area

4  
00:00:20,680 --> 00:00:18,530  
where the Sun doesn't get very high in

5  
00:00:22,780 --> 00:00:20,690  
the sky where the summer isn't very long

6  
00:00:24,940 --> 00:00:22,790  
and it's that type of environment that

7  
00:00:25,420 --> 00:00:24,950  
actually Foster is what we're going to

8  
00:00:27,430 --> 00:00:25,430  
study

9  
00:00:31,240 --> 00:00:27,440  
it's believed from Mars Odyssey data

10  
00:00:33,490 --> 00:00:31,250  
that there is water ice or frozen ice

11  
00:00:34,990 --> 00:00:33,500  
near the pull of Mars that we can

12  
00:00:37,930 --> 00:00:35,000  
actually go down with our robotic arm

13  
00:00:39,670 --> 00:00:37,940

and sample directly in the north polar

14

00:00:43,030 --> 00:00:39,680

region outside of the polar caps that we

15

00:00:44,980 --> 00:00:43,040

see there actually is maybe up to 80

16

00:00:48,729 --> 00:00:44,990

percent water in the top meter of the

17

00:00:50,140 --> 00:00:48,739

soil so our job is to dig deep not to

18

00:00:51,760 --> 00:00:50,150

drive out like some of the rover's have

19

00:00:53,620 --> 00:00:51,770

done in the past and so we have the

20

00:00:55,690 --> 00:00:53,630

robotic arm with its scoop onboard our

21

00:00:57,340 --> 00:00:55,700

spacecraft to sample the dirt on the top

22

00:00:59,670 --> 00:00:57,350

and dig down and sample the ice and

23

00:01:03,460 --> 00:00:59,680

deliver those to the onboard experiments

24

00:01:06,160 --> 00:01:03,470

we're hoping that we can learn more

25

00:01:09,129 --> 00:01:06,170

about the long-term climate of Mars by

26

00:01:12,550 --> 00:01:09,139

looking at the ice we're hoping to

27

00:01:13,779 --> 00:01:12,560

understand more about the polar regions

28

00:01:17,289 --> 00:01:13,789

of Mars which is a place we've never

29

00:01:19,989 --> 00:01:17,299

gone to and finally we're really

30

00:01:22,289 --> 00:01:19,999

interested in looking for a habitable

31

00:01:25,359 --> 00:01:22,299

zone a place where life might have

32

00:01:28,629 --> 00:01:25,369

existed in the past if you get to a

33

00:01:30,819 --> 00:01:28,639

place where there's ice for instance you

34

00:01:32,139 --> 00:01:30,829

wonder if over time the climate could

35

00:01:34,959 --> 00:01:32,149

have changed the point where that ice

36

00:01:37,469 --> 00:01:34,969

melted now if you have liquid water and

37

00:01:40,300 --> 00:01:37,479

you have soil and you have sunlight

38

00:01:42,519 --> 00:01:40,310

you've got a lot of the ingredients not

39

00:01:45,039 --> 00:01:42,529

all but a lot of the ingredients that

40

00:01:48,279 --> 00:01:45,049

can lead to a place where life could

41

00:01:50,769 --> 00:01:48,289

actually take a foothold and we call

42

00:01:53,050 --> 00:01:50,779

that the habitability of the soil

43

00:01:55,179 --> 00:01:53,060

now whether life actually did take that

44

00:01:57,129 --> 00:01:55,189

foothold and whether the one place we

45

00:02:00,580 --> 00:01:57,139

land actually contains that life is a

46

00:02:02,409 --> 00:02:00,590

different question so this is not an

47

00:02:03,830 --> 00:02:02,419

easy search and our goals are a little

48

00:02:06,440 --> 00:02:03,840

more limited than

49

00:02:09,050 --> 00:02:06,450

we must find life we will find if that

50

00:02:11,240 --> 00:02:09,060

zone is habitable and if it is then we

51  
00:02:14,449 --> 00:02:11,250  
would suggest to the community this is a

52  
00:02:16,430 --> 00:02:14,459  
good place to go and look for life I'm

53  
00:02:17,990 --> 00:02:16,440  
very excited about Phoenix I came from

54  
00:02:20,059 --> 00:02:18,000  
the Mars exploration Rovers and that was

55  
00:02:22,430 --> 00:02:20,069  
a very different kind of mission em er

56  
00:02:24,440 --> 00:02:22,440  
was all about driving about roving about

57  
00:02:26,600 --> 00:02:24,450  
going up to rocks and grinding through

58  
00:02:28,339 --> 00:02:26,610  
them the science that Phoenix needs to

59  
00:02:30,530 --> 00:02:28,349  
do is a very different type of science I

60  
00:02:31,520 --> 00:02:30,540  
think of em er as the scratch-and-sniff

61  
00:02:33,650 --> 00:02:31,530  
mission

62  
00:02:36,259 --> 00:02:33,660  
whereas Phoenix is really the the

63  
00:02:38,270 --> 00:02:36,269

grabbed in each mission we have science

64

00:02:41,449 --> 00:02:38,280

instruments that are designed to ingest

65

00:02:44,089 --> 00:02:41,459

soil and it gives you really a kind of a

66

00:02:45,380 --> 00:02:44,099

laboratory class knowledge of the

67

00:02:47,270 --> 00:02:45,390

surface of Mars which is something that

68

00:02:50,180 --> 00:02:47,280

Meor with the instruments that it had

69

00:02:52,880 --> 00:02:50,190

wasn't able to do so while Phoenix has

70

00:02:54,860 --> 00:02:52,890

its limitations in terms of mobility and