

COUNTDOWN TO MARS



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1
00:00:00,450 --> 00:00:13,589

[Music]

2
00:00:17,670 --> 00:00:14,789
the type of research

3
00:00:18,470 --> 00:00:17,680
i like to do for mars specifically is

4
00:00:20,470 --> 00:00:18,480
studying

5
00:00:22,230 --> 00:00:20,480
the near surface water cycle

6
00:00:23,830 --> 00:00:22,240
specifically i look at

7
00:00:26,390 --> 00:00:23,840
what's called atmosphere regolith

8
00:00:26,950 --> 00:00:26,400
interactions that's basically looking

9
00:00:29,429 --> 00:00:26,960
into

10
00:00:30,390 --> 00:00:29,439
how the regolith breeds the little water

11
00:00:33,510 --> 00:00:30,400
vapor that's

12
00:00:35,430 --> 00:00:33,520
on the surface of mars and what happens

13
00:00:36,310 --> 00:00:35,440

to that water vapor once it's inside the

14

00:00:37,910 --> 00:00:36,320

regolith

15

00:00:39,750 --> 00:00:37,920

so is that water vapor joining with

16

00:00:42,470 --> 00:00:39,760

salts and making liquids

17

00:00:43,750 --> 00:00:42,480

and are those liquids habitable to life

18

00:00:46,150 --> 00:00:43,760

as we know it

19

00:00:48,069 --> 00:00:46,160

the perseverance rover is taking along

20

00:00:49,830 --> 00:00:48,079

with it two really cool instruments i'll

21

00:00:51,029 --> 00:00:49,840

be able to help answer these type of

22

00:00:52,790 --> 00:00:51,039

questions

23

00:00:54,790 --> 00:00:52,800

one of those instruments is called the

24

00:00:57,189 --> 00:00:54,800

mars environmental dynamics

25

00:00:58,950 --> 00:00:57,199

analyzer or meta and the other one's

26

00:01:02,310 --> 00:00:58,960

called the radar imager of mars

27

00:01:03,910 --> 00:01:02,320

subsurface experiment or rimfax the type

28

00:01:04,710 --> 00:01:03,920

of data that those instruments are going

29

00:01:07,030 --> 00:01:04,720

to give us

30

00:01:07,830 --> 00:01:07,040

on the environment the near surface

31

00:01:11,350 --> 00:01:07,840

environment

32

00:01:18,789 --> 00:01:11,360

help us understand

33

00:01:24,149 --> 00:01:21,830

for me the most exciting

34

00:01:25,030 --> 00:01:24,159

discovery that the perseverance rover

35

00:01:29,109 --> 00:01:25,040

could give us

36

00:01:29,749 --> 00:01:29,119

is actually in situ evidence of liquid

37

00:01:32,789 --> 00:01:29,759

formation

38

00:01:34,069 --> 00:01:32,799

on mars today we've had some tantalizing

39

00:01:36,310 --> 00:01:34,079

evidence of this occurring

40

00:01:38,870 --> 00:01:36,320

by the phoenix lander we saw liquid

41

00:01:40,390 --> 00:01:38,880

droplets maybe forming on the struts

42

00:01:43,030 --> 00:01:40,400

but they didn't form there naturally

43

00:01:45,670 --> 00:01:43,040

they formed there after the phoenix

44

00:01:46,550 --> 00:01:45,680

landed and it was all nice and warm

45

00:01:48,469 --> 00:01:46,560

right

46

00:01:50,950 --> 00:01:48,479

as the perseverance rover is trucking

47

00:01:53,109 --> 00:01:50,960

along the rimfacts experiment will be

48

00:01:54,069 --> 00:01:53,119

sending radar waves into the subsurface

49

00:01:56,149 --> 00:01:54,079

and those radar waves

50

00:01:57,910 --> 00:01:56,159

will be able to detect naturally

51

00:01:59,429 --> 00:01:57,920

occurring liquid on mars

52

00:02:01,590 --> 00:01:59,439

and if it finds that that's going to

53

00:02:09,430 --> 00:02:01,600

revolutionize what we think about the

54

00:02:11,830 --> 00:02:09,440

present day habitability of mars