



1
00:00:08,080 --> 00:00:04,030
Music

2
00:00:08,100 --> 00:00:12,120
Desert RATS is Desert Research and Technology Studies.

3
00:00:12,140 --> 00:00:16,150
It's a field campaign out of Black Point Lava Flow, in Arizona

4
00:00:16,170 --> 00:00:20,190
and basically they're testing technologies that could be used on a future

5
00:00:20,210 --> 00:00:24,210
man mission to the moon, Mars, or possibly asteroids. One of the

6
00:00:24,230 --> 00:00:28,230
goals of Desert RATS this year is to simulate more of an asteroid

7
00:00:28,250 --> 00:00:32,240
expedition as opposed to last years focus was on more of a lunar

8
00:00:32,260 --> 00:00:36,300
expedition. The big pieces we have on the field this year again are the space exploration

9
00:00:36,320 --> 00:00:40,350
vehicles one and two and then also we have what we're calling this year

10
00:00:40,370 --> 00:00:44,410
the deep space habitat. So this is a large habitat where both

11
00:00:44,430 --> 00:00:48,450
the crew members would live but also we have an analytical lab there

12
00:00:48,470 --> 00:00:52,490
with some new instruments; one of which is coming from Goddard this year, the VAPoR

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00:00:52,510 --> 00:00:56,520

instrument. Basically VAPoR is just a miniature pyrolysis mass

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00:00:56,540 --> 00:01:00,540

spectrometer instrument. And it's designed to heat up samples to really high temperatures

15

00:01:00,560 --> 00:01:04,560

to release gases. But also we're looking for resources

16

00:01:04,580 --> 00:01:08,580

the water, which can be broken down into hydrogen and oxygen could be used

17

00:01:08,600 --> 00:01:12,630

for rocket fuel, astronauts could potentially drink the water

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00:01:12,650 --> 00:01:16,680

even; and so these are the resources that we're looking for with VAPoR.

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00:01:16,700 --> 00:01:20,720

As a crew member I'm just one small part of the over

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00:01:20,740 --> 00:01:24,760

all science team. So I'm the part that's in the field doing the field work but there is a much

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00:01:24,780 --> 00:01:28,790

larger portion of the science team that works in a science back room that this year will

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00:01:28,810 --> 00:01:32,820

be housed at Houston as well as over in Europe. So the science team

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00:01:32,840 --> 00:01:36,840

supports all the activities that we will be undertaking out in the field and they really

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00:01:36,860 --> 00:01:40,860

help direct us on to what steps to take next. And they have much more

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00:01:40,880 --> 00:01:44,870

capability at looking at the data we've collected to help us do the best science

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00:01:44,890 --> 00:01:48,930

we can while we're in the field. And one of the big things that the science back room

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00:01:48,950 --> 00:01:52,990

is dealing with this year is trying to understand communication time lags. If your

28

00:01:53,010 --> 00:01:57,040

talking to the moon, it's only a one or two second lag between when you speak and when the

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00:01:57,060 --> 00:02:01,090

astronauts hear you, but at a near asteroid it might be a minute or two.

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00:02:01,110 --> 00:02:05,120

So we're trying to understand the best way to go about that, trying to test out

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00:02:05,140 --> 00:02:09,150

things like using text messaging instead of voice communication. We'll also be testing

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00:02:09,170 --> 00:02:13,190

ExPED, which is Exploration Portable Electrostatic Device. And

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00:02:13,210 --> 00:02:17,210

essentially what this is, is a portable electric field sensor that we

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00:02:17,230 --> 00:02:21,230

could either attach to a suit, on a human, or we can attach it to a rover

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00:02:21,250 --> 00:02:25,240

and essentially monitors the local electric field. So just

36

00:02:25,260 --> 00:02:29,290

like you can collect static charge when you're walking around on a carpet,

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00:02:29,310 --> 00:02:33,340

you could also potentially collect electric static by walking around on the

38

00:02:33,360 --> 00:02:37,390

dusty moon or surface or an asteroid. It's a charge

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00:02:37,410 --> 00:02:41,420

hazard alert, so to let them know their charged estate,

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00:02:41,440 --> 00:02:45,450

they can decide, hey I'm not going to go touch that border,

41

00:02:45,470 --> 00:02:49,480

touch that piece of equipment cause it might get destroyed and their out in

42

00:02:49,500 --> 00:02:53,500

space; don't want to be without your equipment. Desert RATS

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00:02:53,520 --> 00:02:57,520

is always exciting. It's very cool to get on the ground and actually

44

00:02:57,540 --> 00:03:01,540

test out these things. I'm very optimistic that we're going

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00:03:01,560 --> 00:03:05,590

have a good year this year with VAPoR and excited to be apart of this expedition.