



1
00:00:12,629 --> 00:00:09,750
certain faculty on titan is the best

2
00:00:14,230 --> 00:00:12,639
case yet of a cryovolcano in the outer

3
00:00:16,070 --> 00:00:14,240
solar system

4
00:00:17,590 --> 00:00:16,080
in fact it appears to be two

5
00:00:21,109 --> 00:00:17,600
cryovolcanoes

6
00:00:23,590 --> 00:00:21,119
separated by a low area

7
00:00:26,710 --> 00:00:23,600
where we see some sand dunes

8
00:00:28,390 --> 00:00:26,720
here we see data from radar and the

9
00:00:30,470 --> 00:00:28,400
visible and infrared mapping

10
00:00:33,030 --> 00:00:30,480
spectrometer

11
00:00:35,750 --> 00:00:33,040
this is false column to distinguish the

12
00:00:37,590 --> 00:00:35,760
different compositions of the surface so

13
00:00:39,990 --> 00:00:37,600

the green areas are what we think are

14

00:00:42,470 --> 00:00:40,000

the volcanic areas

15

00:00:44,069 --> 00:00:42,480

while the blues would be fields of sand

16

00:00:46,869 --> 00:00:44,079

dunes

17

00:00:50,630 --> 00:00:46,879

now we change the color scheme the reds

18

00:00:52,950 --> 00:00:50,640

and yellows are highs the blues are lows

19

00:00:55,750 --> 00:00:52,960

when we got the topography we see this

20

00:00:58,150 --> 00:00:55,760

tall mountain is about a thousand meters

21

00:01:00,630 --> 00:00:58,160

tall when you have a tall mountain and a

22

00:01:03,270 --> 00:01:00,640

deep crater and a low bait flow-like

23

00:01:06,070 --> 00:01:03,280

feature coming out of it then it's very

24

00:01:08,789 --> 00:01:06,080

likely to be a cryovolcano

25

00:01:11,830 --> 00:01:08,799

on earth volcanoes are formed by molten

26
00:01:14,870 --> 00:01:11,840
rock or magma that when it comes out is

27
00:01:18,149 --> 00:01:14,880
called lava on titan and

28
00:01:21,109 --> 00:01:18,159
other icy bodies such as saturn's moon

29
00:01:23,270 --> 00:01:21,119
enceladus we have cryovolcanism that is

30
00:01:25,109 --> 00:01:23,280
very cold volcanism

31
00:01:28,070 --> 00:01:25,119
and the

32
00:01:31,429 --> 00:01:28,080
material inside this body is the quotes

33
00:01:34,550 --> 00:01:31,439
magma is not molten rock is actually a

34
00:01:37,190 --> 00:01:34,560
watery mixture is water with probably

35
00:01:39,590 --> 00:01:37,200
ammonia and maybe methanol and other

36
00:01:40,390 --> 00:01:39,600
things materials being brought from the

37
00:01:43,990 --> 00:01:40,400
interior

38
00:01:45,590 --> 00:01:44,000

of the moon or the planet to the surface

39

00:01:46,950 --> 00:01:45,600

this is important for a number of

40

00:01:49,590 --> 00:01:46,960

reasons and

41

00:01:53,350 --> 00:01:49,600

one of them is that if you still have

42

00:01:56,469 --> 00:01:53,360

heat and enough heat to actually

43

00:01:59,030 --> 00:01:56,479

cause a cryovolcanism to occur

44

00:02:01,109 --> 00:01:59,040

and if you have water then those are two