



1
00:00:26,509 --> 00:00:24,630

[Music]

2
00:00:29,279 --> 00:00:26,519

we all want to know where we came from

3
00:00:32,460 --> 00:00:29,289

everybody asked that question and also

4
00:00:34,590 --> 00:00:32,470

could life exist elsewhere a little

5
00:00:36,389 --> 00:00:34,600

piece of the puzzle is actually if you

6
00:00:37,860 --> 00:00:36,399

want to look for life on other icy

7
00:00:39,640 --> 00:00:37,870

worlds other than Earth then you have to

8
00:00:59,470 --> 00:00:39,650

understand life on earth first

9
00:01:05,119 --> 00:01:03,200

it beautifully simulates how a

10
00:01:07,450 --> 00:01:05,129

hydrothermal system under the right

11
00:01:09,500 --> 00:01:07,460

pressure and temperatures would flow

12
00:01:26,649 --> 00:01:09,510

continually

13
00:01:28,790 --> 00:01:26,659

[Music]

14

00:01:30,200 --> 00:01:28,800

everything requires energy input

15

00:01:31,760 --> 00:01:30,210

especially when you're talking organic

16

00:01:33,320 --> 00:01:31,770

synthesis the great thing about these

17

00:01:35,000 --> 00:01:33,330

hydrothermal vents is you have a lot of

18

00:01:37,370 --> 00:01:35,010

free energy already there and you really

19

00:01:39,080 --> 00:01:37,380

can start to link up these organic

20

00:01:40,490 --> 00:01:39,090

molecules and form longer chains and

21

00:01:45,410 --> 00:01:40,500

those longer tunes are really the key to

22

00:01:48,010 --> 00:01:45,420

getting to DNA synthesis it's all worth

23

00:01:50,900 --> 00:01:48,020

it to really show how you can test these

24

00:01:52,190 --> 00:01:50,910

reactions almost the same scale that you

25

00:01:54,499 --> 00:01:52,200

have on the bottom of the ocean it's

26

00:01:56,740 --> 00:01:54,509

very rewarding to see it really come

27

00:02:05,500 --> 00:01:56,750

about and come to fruition

28

00:02:09,520 --> 00:02:07,810

we're starting to just explore these are

29

00:02:11,440 --> 00:02:09,530

icy moons and racing worlds where you

30

00:02:14,440 --> 00:02:11,450

could possibly be reproducing the same

31

00:02:17,770 --> 00:02:14,450

things that we find on earth today with

32

00:02:19,660 --> 00:02:17,780

these Rockwater interactions so it's

33

00:02:21,640 --> 00:02:19,670

important for understanding how do we

34

00:02:24,430 --> 00:02:21,650

search for life on other planets and