1
00:00:12,410 --> 00:00:14,510
To me, Volcanism is important
to study

2
00:00:14,530 --> 00:00:17,700
because it is one of the most
common and fundamental geologic

3
00:00:17,720 --> 00:00:19,890
processes that occurs in our
solar system.

4
00:00:19,910 --> 00:00:21,930
It's a window into

5
00:00:21,950 --> 00:00:24,110
the history of our own planet,

6
00:00:24,130 --> 00:00:25,120
of the moon,

7
00:00:25,140 --> 00:00:27,880
and the other planets and moons
in our solar system.

8
00:00:27,900 --> 00:00:32,090
My name is Brent Garry, and I
am a Geologist at NASA Goddard
Space Flight Center.

9
00:00:32,110 --> 00:00:34,130
I specialize in planetary
volcanology,

10
00:00:34,150 --> 00:00:38,270
so it's my job to study the
evolution of volcanoes and lava
flows

11

00:00:38,290 --> 00:00:42,410
in our solar system -- primarily
on the Earth, the Moon, and
Mars.

12
00:00:42,430 --> 00:00:47,590
What we're trying to answer is:
How did these volcanoes evolve
over time?

13
00:00:47,610 --> 00:00:48,700
When did they erupt?

14
00:00:48,720 --> 00:00:52,810
And kind of, what went on
during the eruption process
itself?

15
00:00:52,830 --> 00:00:54,910
When we get images back

16
00:00:54,930 --> 00:00:59,960
from the moon of these long,
meandering depressions, called
Sinuous Rilles,

17
00:00:59,980 --> 00:01:04,010
that look like rivers here on
Earth -- you know, we want to
understand:

18
00:01:04,030 --> 00:01:06,220
Are these the remnants of
collapsed lava tubes?

19
00:01:06,240 --> 00:01:12,380
Did the lava carve its way into
the surface of the moon to
leave these giant channels?

20
00:01:12,400 --> 00:01:14,570

Or in the case of Mars, the
debate is whether or not

21
00:01:14,590 --> 00:01:23,400
these were carved by water, or
fluvial activity, or if they
were carved by lava flows, or
volcanic activity.

22
00:01:23,420 --> 00:01:25,550
One of the best ways to answer
these questions is by

23
00:01:25,570 --> 00:01:29,590
comparing the information and
data we get back from the Moon
and Mars to

24
00:01:29,610 --> 00:01:31,750
geologic features that we have
right here on Earth.

25
00:01:31,770 --> 00:01:35,900
One of the exciting parts of my
job is I get to travel around
the world.

26
00:01:35,920 --> 00:01:39,980
I get to go to New Mexico,
Hawaii, even Iceland to do my
research.

27
00:01:40,000 --> 00:01:43,160
I love this part of my job
because I get to I hike up
volcanoes all day,

28
00:01:43,180 --> 00:01:46,270
we're hiking around desolate,
you know, fields of lava,

29

00:01:46,290 --> 00:01:49,450
we're taking helicopter rides
over these flow fields,

30
00:01:49,470 --> 00:01:52,530
we're looking at active lava
flows that are going on,

31
00:01:52,550 --> 00:01:56,760
and even collecting samples of
these features to study.

32
00:01:56,780 --> 00:02:01,050
"Taadaa! Don't try this at home
kids."

33
00:02:01,070 --> 00:02:04,260
Our field team uses a wide
range of instruments to do our
work.

34
00:02:04,280 --> 00:02:07,360
We use things like a
Differential GPS,

35
00:02:07,380 --> 00:02:10,550
which gives us the topography
of the lava flows.

36
00:02:10,570 --> 00:02:12,740
We use a Ground-penetrating
radar,

37
00:02:12,760 --> 00:02:16,920
which allows us to see in the
subsurface of the flow field.

38
00:02:16,940 --> 00:02:18,930
And we also use a thermal
imaging camera

39
00:02:18,950 --> 00:02:23,430
which allows us to see the
differences in temperature
across an active lava flow.

40
00:02:23,450 --> 00:02:27,430
A lot of people might think
that studying geology is just
looking at boring rocks all day.

41
00:02:27,450 --> 00:02:31,780
But my job here at NASA proves
that geology is an adventure.

42
00:02:31,800 --> 00:02:32,810
It takes you around the world