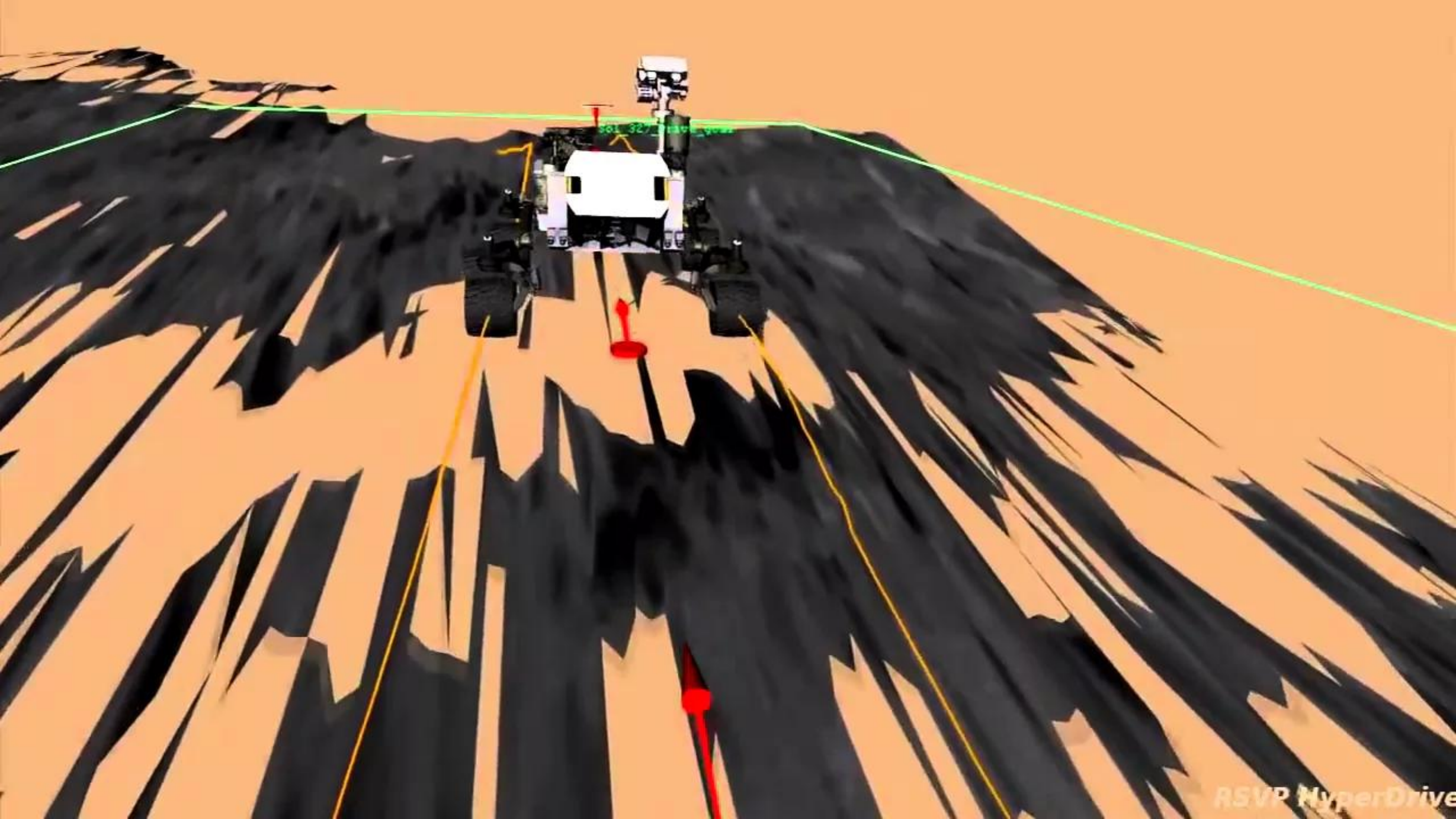
RSVP HyperDrive

1
00:00:00,570 --> 00:00:09,099
Hi, I am Jeff Biesiadecki, a rover planner
and flight software developer and this is

2
00:00:09,099 --> 00:00:11,639
your Curiosity rover report.

3
00:00:11,639 --> 00:00:15,089
After busily exploring the Glenelg region
of Gale Crater,

4
00:00:15,089 --> 00:00:16,250
Curiosity is moving on.

5
00:00:16,250 --> 00:00:20,310
The rover is starting a 5 mile, or about an
8 km trek southwest towards the foothills

6
00:00:20,310 --> 00:00:21,310
of Mt Sharp.

7
00:00:21,310 --> 00:00:23,930
Last fall, we found a great path into Glenelg.

8
00:00:23,930 --> 00:00:27,720
Now, we're going back the same way, so we
can quickly be on our way.

9
00:00:27,720 --> 00:00:31,320
Here is a view of our recent sol 327 drive.

10
00:00:31,320 --> 00:00:34,840
We're looking westward from above Glenelg,
where you can see our inbound and outbound

11
00:00:34,840 --> 00:00:35,840
tracks.

12

00:00:35,840 --> 00:00:39,180
And here is a look of that drive displayed
on terrain meshes created from Curiosity's

13
00:00:39,180 --> 00:00:41,379
stereo navigation cameras.

14
00:00:41,379 --> 00:00:44,829
A terrain mesh is a 3D representation of the
ground.

15
00:00:44,829 --> 00:00:47,120
This was a 40-meter long "directed drive".

16
00:00:47,120 --> 00:00:50,510
That's when we tell Curiosity to just drive
towards the day's goal without stopping along

17
00:00:50,510 --> 00:00:52,410
the way to look for and avoid hazards.

18
00:00:52,410 --> 00:00:56,430
40 meters is about as far as the NAVCAM terrain
meshes can reach.

19
00:00:56,430 --> 00:00:59,829
The orange lines show the path that the front
wheels will take and the red marks show where

20
00:00:59,829 --> 00:01:02,570
individual arc and turn commands will be started.

21
00:01:02,570 --> 00:01:06,170
The green box shows the "corral" given to
Curiosity as part of her drive plan.

22
00:01:06,170 --> 00:01:08,080
She will not go outside it.

23

00:01:08,080 --> 00:01:11,310
The red and white marker shows the goal location.

24
00:01:11,310 --> 00:01:15,030
Images and animations like these are how rover
planners document and present drives for the

25
00:01:15,030 --> 00:01:16,810
rest of the team.

26
00:01:16,810 --> 00:01:20,790
This directed-driving mode is how we'll start
each of our drives to Mt. Sharp.

27
00:01:20,790 --> 00:01:24,560
To extend our drives further, we'll use the
autonomous navigation mode that was part of

28
00:01:24,560 --> 00:01:27,190
Curiosity's recent software update.

29
00:01:27,190 --> 00:01:31,850
It enables Curiosity to decide on her own
when to periodically stop and image the terrain

30
00:01:31,850 --> 00:01:32,869
in front of her.

31
00:01:32,869 --> 00:01:36,800
She can then look out for large rocks and
ditches and drive around them.

32
00:01:36,800 --> 00:01:39,579
Using this mode, we hope to cover at least
100 meters per day.

33
00:01:39,579 --> 00:01:42,250
Here's a map view of our upcoming drive.

34

00:01:42,250 --> 00:01:46,040
We expect to get one final good look at the
tracks laid down last year.

35
00:01:46,040 --> 00:01:51,329
Curiosity should end this drive as seen in
the orange path, just south of the older tracks.

36
00:01:51,329 --> 00:01:55,130
And meanwhile, Curiosity's odometer is close
to reaching the 1 km mark!

37
00:01:55,130 --> 00:01:57,719
Just a couple more drives should do it.