



1  
00:00:05,799 --> 00:00:11,789  
Curiosity is getting ready to make a grand  
entrance!

2  
00:00:11,789 --> 00:00:16,860  
\h  
The largest rover ever sent to another planet,

3  
00:00:16,860 --> 00:00:21,750  
will touch down in the middle of the night,  
after a spectacular entry into the Martian

4  
00:00:21,750 --> 00:00:25,499  
atmosphere and descent to the surface.

5  
00:00:25,499 --> 00:00:29,051  
\h  
And liftoff of the Atlas V with Curiosity.

6  
00:00:29,051 --> 00:00:32,480  
\h  
Curiosity rover made a picture-perfect launch

7  
00:00:32,480 --> 00:00:33,920  
in November 2011.

8  
00:00:33,920 --> 00:00:42,300  
And Now, after more than 8 months and 350  
million miles, it's time to get down to

9  
00:00:42,300 --> 00:00:43,300  
business.

10  
00:00:43,300 --> 00:00:47,160  
\h  
But first Curiosity must get down to that

11  
00:00:47,160 --> 00:00:49,300  
surface safely.

12

00:00:49,300 --> 00:00:52,620

\h

When she arrives at Mars, Curiosity has seven

13

00:00:52,620 --> 00:00:57,690

minutes to go from 13,000 miles an hour to a soft landing.

14

00:00:57,690 --> 00:01:03,710

These so called "seven minutes of terror" encompass a sequence of steps that we cannot

15

00:01:03,710 --> 00:01:09,860

control or even witness in real time because signals take fourteen minutes to reach Earth

16

00:01:09,860 --> 00:01:11,640

from Mars.

17

00:01:11,640 --> 00:01:14,010

\h

Curiosity's heat shield burning at nearly

18

00:01:14,010 --> 00:01:19,160

3000 degrees Fahrenheit will protect the rover as she slows down rapidly.

19

00:01:19,160 --> 00:01:25,770

On the way down, the spacecraft fires thrusters to stay on target for Gail Crater.

20

00:01:25,770 --> 00:01:33,830

\h

Then, at 1000 miles per hour, the chute opens,

21

00:01:33,830 --> 00:01:36,680

slowing the spacecraft below the speed of sound.

22  
00:01:36,680 --> 00:01:44,600  
Next, the heat shield is jettisoned, and Curiosity begins looking for the surface with landing

23  
00:01:44,600 --> 00:01:51,720  
radars that lets onboard computers know how far it is above the ground.

24  
00:01:51,720 --> 00:01:55,390  
\h  
About five minutes into entry, the spacecraft

25  
00:01:55,390 --> 00:02:04,780  
is moving 200 miles per hour and is about a mile up, the Descent Stage with curiosity

26  
00:02:04,780 --> 00:02:11,319  
tucked underneath, drops from the parachute, fires up its landing engines and slows the

27  
00:02:11,319 --> 00:02:14,410  
system to a near stop.

28  
00:02:14,410 --> 00:02:17,270  
\h  
Curiosity first gets to stretch her legs at

29  
00:02:17,270 --> 00:02:22,160  
approximately 2 miles per hour, about 60 feet above the ground.

30  
00:02:22,160 --> 00:02:29,580  
With wheels deployed, Curiosity is lowered on a Skycrane to the surface.

31  
00:02:29,580 --> 00:02:36,350  
After touch down, the Sky Crane's work is done and it cuts loose to fly a safe distance

32

00:02:36,350 --> 00:02:42,590

away from our newest rover on Mars.

33

00:02:42,590 --> 00:02:47,380

\h  
As Curiosity stands up her mast, she will

34

00:02:47,380 --> 00:02:54,561

give us our first close up of Gale Crater—an  
impact crater 96 miles wide with a 3-mile

35

00:02:54,561 --> 00:02:56,610

high mountain at its center.

36

00:02:56,610 --> 00:03:03,010

The crater's rock layers were laid down  
and then eroded, showing us a cross-section

37

00:03:03,010 --> 00:03:04,860

of Mars' history.

38

00:03:04,860 --> 00:03:11,140

Liquid water was necessary to form the geology  
we've seen from orbit...and that makes Gale

39

00:03:11,140 --> 00:03:19,490

Crater a great place to look for evidence  
of places that could have once harbored life.

40

00:03:19,490 --> 00:03:23,100

\h  
During her two Earth year primary mission,

41

00:03:23,100 --> 00:03:28,020

Curiosity will tell us about Mars' geology,  
weather and current radiation levels, which

42

00:03:28,020 --> 00:03:31,390

are key to sending humans there someday.

43

00:03:31,390 --> 00:03:37,080

The rover's laser will examine rocks and will help find places to take samples for

44

00:03:37,080 --> 00:03:43,709

the onboard chemistry lab that can identify minerals and organic materials—the building

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00:03:43,709 --> 00:03:46,540

blocks of life.

46

00:03:46,540 --> 00:03:50,050

\h  
This nuclear-powered, one-ton rover will take

47

00:03:50,050 --> 00:03:58,180

us ever closer to examining deep layers of history, and perhaps closer to an answer to