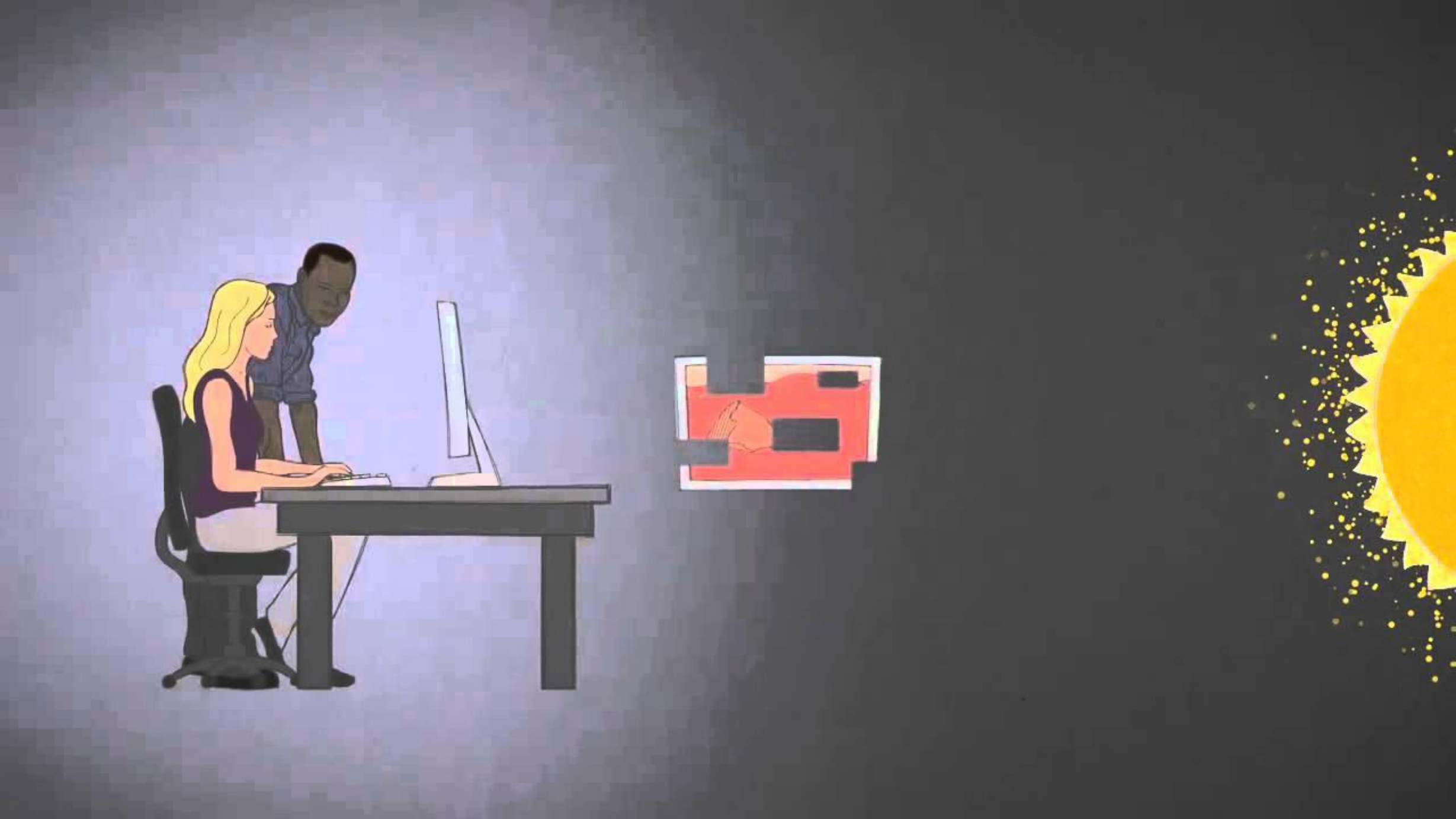

1
00:00:00,000 --> 00:00:03,000
(music)

2
00:00:03,000 --> 00:00:06,000
What happens when the sun blocks our signal?

3
00:00:06,000 --> 00:00:10,000
About every two years, Earth and Mars wind up on opposite sides of the sun.

4
00:00:10,000 --> 00:00:12,000
That's called 'solar conjunction.'

5
00:00:12,000 --> 00:00:15,000
It's like being on either side of a huge bonfire:

6
00:00:15,000 --> 00:00:19,000
we can't see Mars, and our landers, rovers, and orbiters can't see us.

7
00:00:19,000 --> 00:00:23,000
If our spacecraft send back signals, charged particles from the sun could interfere,

8
00:00:23,000 --> 00:00:25,000
causing gaps in the data that reach us.

9
00:00:25,000 --> 00:00:29,000
That's not a big deal: if something's missing, it can always be resent later.

10
00:00:29,000 --> 00:00:32,000
But, no way do we want to lose data when we send up commands.

11
00:00:32,000 --> 00:00:37,000
Receiving a partial command could confuse the spacecraft, putting them in grave danger!

12
00:00:37,000 --> 00:00:43,000
So, mission controllers plan ahead by sending up simple to-do lists, including regular health check-ups.

13
00:00:43,000 --> 00:00:47,000

Back home, this break in communications lets team members catch up on other work...

14
00:00:47,000 --> 00:00:50,000
or take a well-deserved vacation!

15
00:00:50,000 --> 00:00:52,000
Solar conjunction lasts just a few weeks.