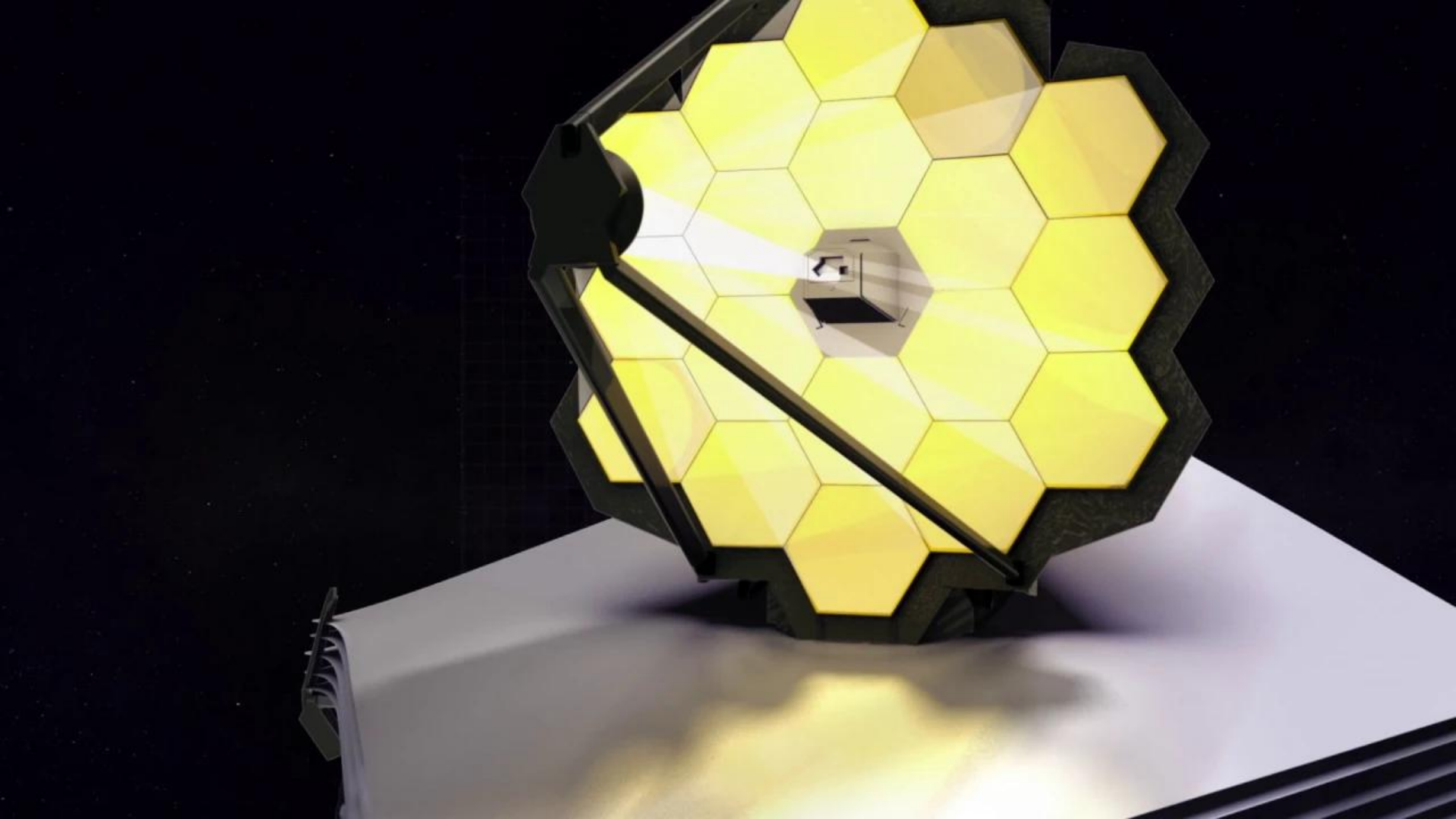

1
00:00:00,200 --> 00:00:03,303
After launch, engineers on Earth
will need to make corrections to

2
00:00:03,303 --> 00:00:05,339
the positions of Webb's primary
mirror segments to bring them

3
00:00:05,339 --> 00:00:06,673
into alignment.

4
00:00:06,673 --> 00:00:10,077
This will ensure they will
produce sharp, focused images.

5
00:00:10,077 --> 00:00:13,714
Webb's primary mirror segments
can be adjusted in extremely

6
00:00:13,714 --> 00:00:15,315
minute movements.

7
00:00:16,950 --> 00:00:21,288
In steps of about 1/10,000th the
diameter of a human hair!

8
00:00:23,457 --> 00:00:26,260
Engineers determine how much
each segment must be moved

9
00:00:26,260 --> 00:00:30,397
through a process called
wavefront sensing and control.

10
00:00:30,397 --> 00:00:34,201
During this process, engineers
point Webb at a bright star and

11
00:00:34,201 --> 00:00:36,336

take 18 out-of-focus images of
that star, one from each

12
00:00:36,336 --> 00:00:38,906
primary mirror segment.

13
00:00:38,906 --> 00:00:42,743
They then use computer
algorithms to determine

14
00:00:42,743 --> 00:00:50,317
how much they must move the
mirror segments to align them.

15
00:00:51,118 --> 00:00:54,855
Alignment begins about 40 days
after launch, taking

16
00:00:54,855 --> 00:00:56,657
several months to complete.

17
00:00:56,657 --> 00:00:58,892
Once Webb makes observations,
its mirrors will be checked