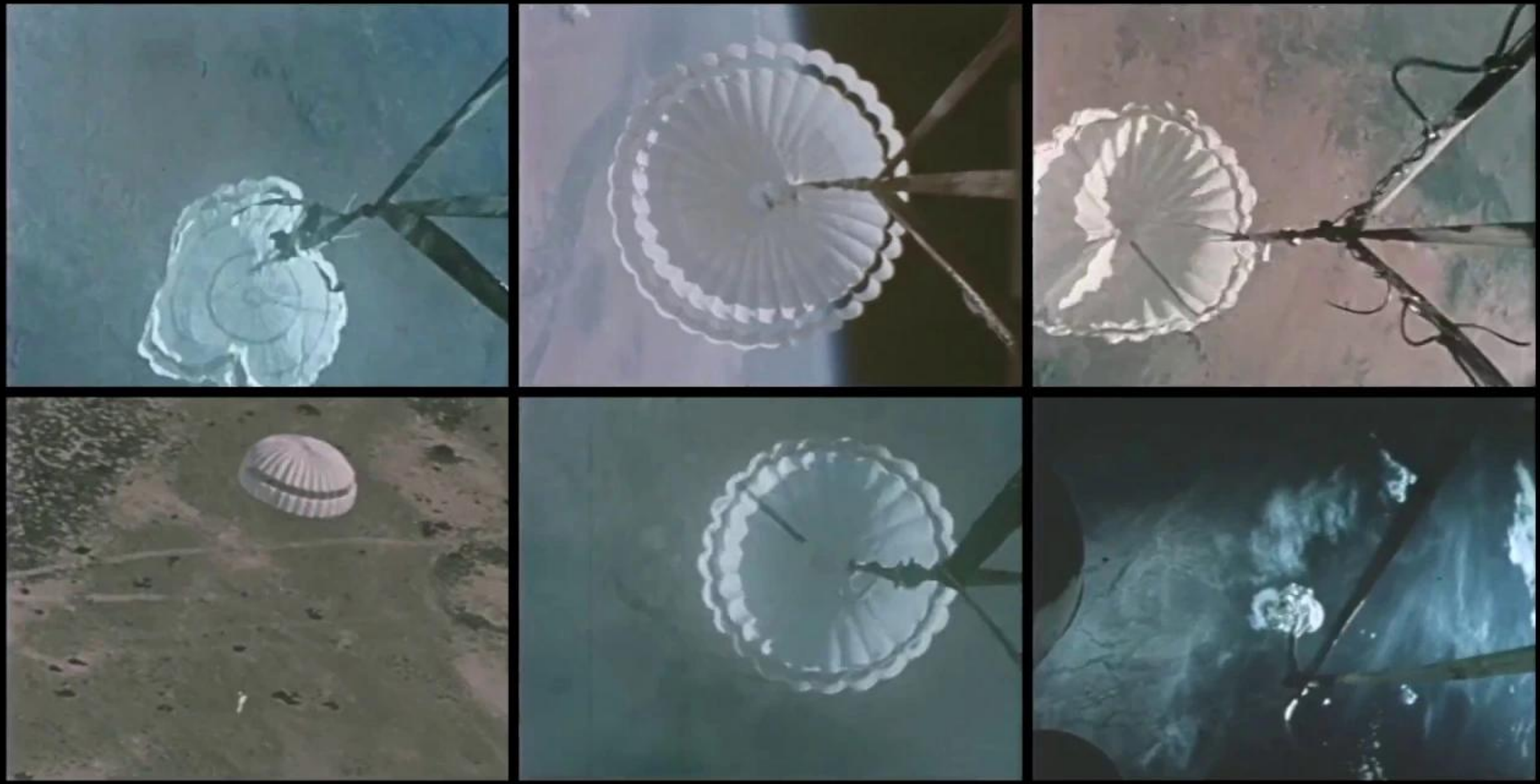

1
00:00:06,279 --> 00:00:11,939
High above the Eastern Shore of Virginia a rocket is hurtling through the atmosphere at nearly twice the speed

2
00:00:12,790 --> 00:00:17,580
Attached is a three thousand pound payload that is designed to test a parachute for Mars

3
00:00:18,730 --> 00:00:25,680
Onboard a computer is calculating the altitude and speed to determine the precise time that it will signal to dep

4
00:00:26,710 --> 00:00:29,130
These aren't the first tests of parachutes from ours

5
00:00:29,590 --> 00:00:36,270
50 years ago NASA began lofting parachutes to altitudes and speeds meant to simulate the conditions of Mars

6
00:00:36,550 --> 00:00:42,629
those early tests demonstrated the challenges of inflating lightweight materials in a 1500 mile an hour wind and

7
00:00:42,940 --> 00:00:46,500
Having them survive. Well enough to help enable a safe landing on the Red Planet

8
00:00:47,379 --> 00:00:49,829
Today as our missions become ever more daring

9
00:00:49,950 --> 00:00:57,419
We need new parachutes capable of surviving those strenuous environments and we need ways of testing the

10
00:00:57,820 --> 00:00:59,820
To make those tests a reality

11
00:00:59,920 --> 00:01:07,439
Engineers at NASA's Jet Propulsion Laboratory worked with NASA's Wallops Flight Facility to develop a new te

12
00:01:07,630 --> 00:01:10,019
parachute inflation research experiments or

13
00:01:10,270 --> 00:01:17,159

aspire project uses a two-stage black Brant 9 sounding rocket to carry its payload to the conditions needed to s

14
00:01:17,830 --> 00:01:25,439
Rocket is launched out over the Atlantic Ocean and ascends to altitudes where the atmosphere of Earth mimic

15
00:01:26,049 --> 00:01:29,639
The third and final aspired test launched on September 7th

16
00:01:29,680 --> 00:01:33,029
The parachute was deployed at nearly twice the speed of sound in

17
00:01:33,189 --> 00:01:37,949
Less than half a second 200 pounds of nylon Kevlar and tech Nora go from a small

18
00:01:38,020 --> 00:01:44,369
Drum sized bag with the density of wood to an inflated parachute with the volume of a large house generating

19
00:01:45,009 --> 00:01:46,869
70,000 pounds of drag

20
00:01:46,869 --> 00:01:54,479
Here in slow motion images you can see the rapid emergence of the parachute as it begins generating the drag

21
00:01:54,970 --> 00:02:00,269
These images give us amazing insights into the physics and early behaviors of a supersonic parachute

22
00:02:00,850 --> 00:02:08,489
Inflation the apparent ease of the unfurling and unfolding in the parachute belies the severity of the extreme en

23
00:02:10,440 --> 00:02:16,039
Awaiting below were a recovery team who had to retrieve both the parachute and the payload and return them

24
00:02:16,620 --> 00:02:20,840
The parachute was then meticulously rinsed and hung to dry before inspection

25
00:02:21,510 --> 00:02:29,209
Miles and miles of thread and over 3 million stitches are used to hold the parachute together and we will exami

26
00:02:30,000 --> 00:02:32,360
after three successful tests of aspire