



1  
00:00:02,230 --> 00:00:04,440  
Ten, nine, eight.

2  
00:00:04,440 --> 00:00:14,049  
NASA Launch Commentator Josh Finch: Seven,  
six, five, four, three, two, one, zero.

3  
00:00:14,049 --> 00:00:20,020  
Liftoff of the mighty Delta IV Heavy rocket  
with NASA's Parker Solar Probe, a daring

4  
00:00:20,020 --> 00:00:23,939  
mission to shed light on the mysteries of  
our closest star, the Sun.

5  
00:00:23,939 --> 00:00:25,119  
[engine noise]

6  
00:00:25,119 --> 00:00:38,550  
Telemetry officer: Three RL-68s look good  
in

7  
00:00:38,550 --> 00:00:39,550  
the full-thrust mode.

8  
00:00:39,550 --> 00:00:40,550  
[engine noise]

9  
00:00:40,550 --> 00:00:41,550  
Telemetry officer: Twenty-five seconds into  
flight.

10  
00:00:41,550 --> 00:00:45,480  
Chamber pressures continue to look good on  
all three boosters.

11  
00:00:45,480 --> 00:00:48,519  
Now 35 seconds in.

12  
00:00:48,519 --> 00:00:56,180  
Chamber pressure on the core booster is throttling  
down to the partial-thrust mode.

13  
00:00:56,180 --> 00:00:57,800  
Response looks good.

14  
00:00:57,800 --> 00:01:05,640  
Telemetry officer: Now 50 seconds into flight.

15  
00:01:05,640 --> 00:01:07,460  
Strap-on boosters look good in the full-thrust  
mode.

16  
00:01:07,460 --> 00:01:11,170  
Core booster looks good in the partial-thrust  
mode.

17  
00:01:11,170 --> 00:01:18,240  
Now one minute into flight.

18  
00:01:18,240 --> 00:01:32,740  
Vehicle trajectory looking good, right down  
the middle of the range track.

19  
00:01:32,740 --> 00:01:34,020  
One minute, ten seconds into flight.

20  
00:01:34,020 --> 00:01:35,020  
Coming up on one minute, 19 seconds into flight.

21  
00:01:35,020 --> 00:01:37,610  
Max Q, maximum dynamic pressure, and Mach  
1.

22  
00:01:37,610 --> 00:01:43,290  
Delta IV is now supersonic.

23

00:01:43,290 --> 00:01:47,650

One minute, 30 seconds into flight.

24

00:01:47,650 --> 00:01:50,640

Port and starboard booster engines continue to look good in full-thrust mode.

25

00:01:50,640 --> 00:01:58,170

Core booster looks good in the partial-thrust mode.

26

00:01:58,170 --> 00:02:07,020

One minute, 45 seconds into flight.

27

00:02:07,020 --> 00:02:11,330

Trajectory continuing to look good, right down the middle of the range track.

28

00:02:11,330 --> 00:02:14,930

ACS press valve has been opened.

29

00:02:14,930 --> 00:02:23,260

ACS pressure response looks good.

30

00:02:23,260 --> 00:02:27,390

Two minutes, 10 seconds in.

31

00:02:27,390 --> 00:02:29,890

Strap-on boosters continue to look good in the full-thrust mode.

32

00:02:29,890 --> 00:02:36,239

Core booster looks good in the partial-thrust mode.

33

00:02:36,239 --> 00:02:43,840

And Delta IV has gone to closed-loop guidance.

34

00:02:43,840 --> 00:02:52,490

Two minutes, 30 seconds into flight.

35

00:02:52,490 --> 00:02:56,239

And at two minutes, 39 seconds into flight,  
the Delta IV rocket now weighs just one-half

36

00:02:56,239 --> 00:03:06,459

of what it did at launch, burning propellant  
at a rate of almost 5,000 pounds per second.

37

00:03:06,459 --> 00:03:11,360

And launch vehicle is now 33 miles in altitude,  
49 miles downrange distance, traveling at

38

00:03:11,360 --> 00:03:14,860

4,500 miles per hour.

39

00:03:14,860 --> 00:03:17,629

Three minutes into flight.

40

00:03:17,629 --> 00:03:23,569

RL-68A engines in the port and starboard boosters  
continue to look good in the full-thrust mode.

41

00:03:23,569 --> 00:03:29,110

Core booster looks good in the partial-thrust  
mode.

42

00:03:29,110 --> 00:03:40,819

Three minutes, 15 seconds into flight.

43

00:03:40,819 --> 00:03:46,510

Trajectory continuing to look good down the  
middle of the range track.

44

00:03:46,510 --> 00:03:52,499

Approximately two minutes remaining in the  
boost stage of flight.

45

00:03:52,499 --> 00:03:57,090

Chamber pressures continuing to look good  
on all three boosters – port and starboard

46

00:03:57,090 --> 00:04:02,970

boosters in the full-thrust mode, core booster  
continuing in the partial-thrust mode.

47

00:04:02,970 --> 00:04:07,579

And standing by for strap-on booster throttle-down  
momentarily.