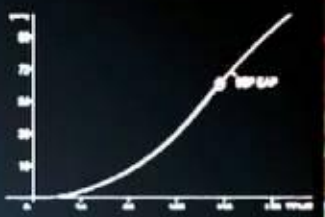

A = 59.6 km

V = 2.04 km/s

1
00:00:13,200 --> 00:00:21,990
here

2
00:00:22,000 --> 00:00:43,110
decorations

3
00:00:47,670 --> 00:00:45,430
well we lost her to the low clouds early

4
00:00:51,910 --> 00:00:47,680
but in a blaze of light there she is

5
00:00:55,350 --> 00:00:53,750
everything is normal propulsion and

6
00:00:57,830 --> 00:00:55,360
trajectory

7
00:01:00,470 --> 00:00:57,840
in a blaze of light and a trail of gold

8
00:01:03,430 --> 00:01:00,480
as aryan 5 reaches into the skies above

9
00:01:04,950 --> 00:01:03,440
french guyana on her way

10
00:01:06,870 --> 00:01:04,960
to deliver

11
00:01:09,429 --> 00:01:06,880
atv3 which will make her way to the

12
00:01:11,270 --> 00:01:09,439
international space station next week ah

13
00:01:12,789 --> 00:01:11,280

we've lost her through the crowd so the

14
00:01:18,070 --> 00:01:12,799
launch vehicle first clears the pad in a

15
00:01:22,390 --> 00:01:19,510
and the launch vehicle has just passed

16
00:01:25,510 --> 00:01:22,400
mac one is past the speed of sound

17
00:01:27,630 --> 00:01:25,520
six kilometers in altitude 317 meters

18
00:01:31,109 --> 00:01:27,640
per second

19
00:01:34,149 --> 00:01:31,119
773 tons at liftoff she's burning five

20
00:01:36,149 --> 00:01:34,159
tons of fuel every second 2.5 tons in

21
00:01:37,270 --> 00:01:36,159
each booster those are the big flames on

22
00:01:39,510 --> 00:01:37,280
either side

23
00:01:41,990 --> 00:01:39,520
and the epc the core stage and the

24
00:01:44,230 --> 00:01:42,000
center is burning another 300

25
00:01:46,230 --> 00:01:44,240
kilos per second

26
00:01:47,830 --> 00:01:46,240
ariane following the program in the

27
00:01:49,990 --> 00:01:47,840
onboard computer which gives all the

28
00:01:51,830 --> 00:01:50,000
orders including stage separation which

29
00:01:53,670 --> 00:01:51,840
we will soon see

30
00:01:55,030 --> 00:01:53,680
because the boosters and the first stage

31
00:01:57,510 --> 00:01:55,040
are burning down the boosters will burn

32
00:01:59,990 --> 00:01:57,520
another maybe 20 seconds and then

33
00:02:01,109 --> 00:02:00,000
get the order from the onboard computer

34
00:02:02,469 --> 00:02:01,119
you know

35
00:02:03,350 --> 00:02:02,479
in all they will burn for around two

36
00:02:05,030 --> 00:02:03,360
minutes

37
00:02:05,990 --> 00:02:05,040
and they will deliver 90 percent of the

38
00:02:07,190 --> 00:02:06,000

thrust

39
00:02:09,830 --> 00:02:07,200
at liftoff

40
00:02:11,510 --> 00:02:09,840
boosters burning their 240 tons in just

41
00:02:12,790 --> 00:02:11,520
over two minutes

42
00:02:14,790 --> 00:02:12,800
you can see the three points of light

43
00:02:16,390 --> 00:02:14,800
there the two on either side

44
00:02:18,710 --> 00:02:16,400
if they come back it looks like we lost

45
00:02:23,589 --> 00:02:18,720
to the clouds again two on either side

46
00:02:27,110 --> 00:02:25,190
luca on the left on the upper left of

47
00:02:27,990 --> 00:02:27,120
the screen there's a cursor and a bottom

48
00:02:29,750 --> 00:02:28,000
left

49
00:02:32,949 --> 00:02:29,760
a and v

50
00:02:35,430 --> 00:02:32,959
that's right a the altitude we had 63

51
00:02:38,070 --> 00:02:35,440
kilometers already two minutes and 20

52
00:02:41,670 --> 00:02:38,080
seconds and we are at 67 kilometers from

53
00:02:45,350 --> 00:02:43,910
just called out the successful

54
00:02:46,550 --> 00:02:45,360
extinction and separation of the

55
00:02:47,990 --> 00:02:46,560
boosters you see what that looks like

56
00:02:49,350 --> 00:02:48,000
there's one on the other side out of

57
00:02:52,150 --> 00:02:49,360
camera range

58
00:02:54,150 --> 00:02:52,160
dropped right on time and on target

59
00:02:55,910 --> 00:02:54,160
before the boosters are empty their push

60
00:02:57,589 --> 00:02:55,920
diminishes and this is what the onboard

61
00:03:02,790 --> 00:02:57,599
computer senses at the drop in

62
00:03:07,350 --> 00:03:04,869
separation occurs one second after the

63
00:03:09,430 --> 00:03:07,360

onboard computer has detected this speed

64
00:03:12,149 --> 00:03:09,440
loss did you mention the altitude and

65
00:03:15,190 --> 00:03:12,159
the speed right so v the speed as you

66
00:03:16,790 --> 00:03:15,200
can see 2.24 kilometers per second per

67
00:03:18,790 --> 00:03:16,800
second not per hour

68
00:03:20,390 --> 00:03:18,800
and if we look at the curve the curve is

69
00:03:22,630 --> 00:03:20,400
a projection of where it should be and

70
00:03:24,630 --> 00:03:22,640
the dot is the actual position of the

71
00:03:26,630 --> 00:03:24,640
launch vehicle so as long as the dot

72
00:03:29,589 --> 00:03:26,640
remains on the curve everything is going

73
00:03:31,030 --> 00:03:29,599
very well so it's real time superimposed

74
00:03:32,470 --> 00:03:31,040
on optimal

75
00:03:37,830 --> 00:03:32,480
thanks a real trajectory and

76
00:03:42,630 --> 00:03:39,750
okay we're waiting for the fairing

77
00:03:46,949 --> 00:03:42,640
jettison so the pharyn is a 17 meter by

78
00:03:49,830 --> 00:03:48,229
you can see how that happens there are

79
00:03:51,750 --> 00:03:49,840
two halves actually the other is out of

80
00:03:53,589 --> 00:03:51,760
camera range on the other side

81
00:03:55,509 --> 00:03:53,599
blown away by what a series of uh

82
00:03:57,509 --> 00:03:55,519
pyrotechnic chords i think that's right

83
00:04:00,309 --> 00:03:57,519
so it's actually a very light structure

84
00:04:04,630 --> 00:04:00,319
although it is 2.4 tonnes but it's 17

85
00:04:07,110 --> 00:04:04,640
meters high 5.4 meters wide it's a

86
00:04:10,229 --> 00:04:07,120
carbon fiber honey um sandwich around

87
00:04:12,229 --> 00:04:10,239
100 aluminum cone and it protects

88
00:04:14,550 --> 00:04:12,239

the payload from the dense atmosphere as

89
00:04:16,069 --> 00:04:14,560
it goes through then once we get out of

90
00:04:18,150 --> 00:04:16,079
this dense atmosphere around 100

91
00:04:20,069 --> 00:04:18,160
kilometers up we don't need the ferry

92
00:04:21,990 --> 00:04:20,079
anymore so we have a vertical separation

93
00:04:24,390 --> 00:04:22,000
system the horizontal separation system

94
00:04:25,909 --> 00:04:24,400
they break the fairing into separation

95
00:04:27,909 --> 00:04:25,919
you don't need it it's just dead weight

96
00:04:29,430 --> 00:04:27,919
why not get rid of it back with more of