we're off in a minute we're gonna cut

away let you hear the DDO call out the

final countdown

enjoy the launch everybody a Tuesday

video otoscope or taken finally this

said thank god

a reversible

how do those ridiculous

development is what we do

and so we are underway did you see at 8

p.m. local time and right on time an

aerial 5 began her mission lifting off

beautifully showing a lot of power right

from the ground here in French Guiana
with a lot of fire beginning her second

mission of the year the 2010 ITV going
to the international space always

impressive for the people at the

observation sites around the base in

their cars around the beaches Aryan

lifting off in her trail of gold she's

making a turn now she's gonna pass

overhead we're about 15 kilometers from

a launch pattern even here you can still

follow the sensation of launch but if

you're watching from my closest viewing

station which is only five kilometres

away you can really experience that
sensation of acoustic noise from those
two solid rocket boosters as they provide right now 90% of a frost
propelling the launch along its trajectory and ever higher velocity it really is quite sensational as the witness we're in to can how many launches have you witnessed I've been fortunate to witness two from the truss tonight from here 777 tons of weight lifted DDO is saying that everything is ok onboard she's burning if you can believe at 5 tons of fuel every second 5 tons of fuel every second 2.5 tons in
each booster plus the core stage the

44
00:02:18,120 --> 00:02:22,769
lower stage burning another 300 kilos

45
00:02:20,069 --> 00:02:24,599
per second the launcher now following

46
00:02:22,769 --> 00:02:27,150
the program in the onboard computer

47
00:02:24,599 --> 00:02:29,039
which gives all the orders including

48
00:02:27,150 --> 00:02:31,650
stage separations which will soon begin

49
00:02:29,039 --> 00:02:33,689
to see we are in the first of four

50
00:02:31,650 --> 00:02:35,909
flight phases will describe each in turn

51
00:02:33,689 --> 00:02:38,039
so you can follow Ariane right now the

52
00:02:35,909 --> 00:02:40,229
first flight phase the single Vulcan

53
00:02:38,039 --> 00:02:41,429
core stage burning with the boosters the

54
00:02:40,229 --> 00:02:43,109
boosters are going to burn for another

55
00:02:41,430 --> 00:02:45,530
four or five seconds and then they will

56
00:02:43,110 --> 00:02:48,720
be extinguished and you'll see them

57
00:02:45,530 --> 00:02:50,219
probably looks like the extinction of
the boosters you can see them falling

away on either side the orange lights

are the boosters flailing out and the

single point of light in the middle of

your screen is arian continuing to burn

yes video has announced the separation

of the two solid rocket boosters and

coming at a time at 65 kilometers in

altitude

take a look Simon at the left side of

your screen on the upper left you have

the cursor crawling up a line below that

some letters and some numbers a and V

can you explain yes so looking at this
screen this is Aaron's trajectory it's showing us how the flight is progressing

the curve it's a computer simulation of the actual trajectory and that white dot

on the curve this is the actual position of a launch vehicle right now they're actually two trajectories one is the optimal trajectory and the real-time trajectory as long as one on top of the other were right where it should be right exactly superimposed perfects of a

V means velocity and right now we are traveling at 2.4 kilometers per second

and be a this is the altitude to nowhere
106 kilometers already we're out of the Earth's atmosphere or will be shortly which means the fairing can be jettisoned there it is coming right on time out kilos we're using a new fairing separation system tonight that's right and in the past few years workspace in Switzerland the Ariane 5 fairing manufacturer they have been developing a new system to support the fairing separation event in this new system with the aid of pyrotechnics with Frank first separates from the area and around its circular base happens very very quickly
very quickly indeed 56 7 milliseconds to

be precise and during this time of

separation it's aided by a series of

very precisely tuned Springs around the

body of our en I saw at this point we

can say the fairing has been separated

only by a few millimeters moment then a

command is sent to separate referring to

halves the whole event is over in less

than a hundred milliseconds now they

wanted also a new design a shock

reduction system a low shock yes

exactly the whole concept miss

endeavours to minimize the shock

environment transmitted to the aryans
passengers today it's the first mission of his system so a special hello to the whole work team in Switzerland the new shock reduction system was five years in the making a fairing separated first horizontally then pushed up and away laterally we're in the second powered flight phase the single core engine burning Simon what's the role of the single core stage when the EPC this is the main cryogenic stage in it for some details it's five point four meters in diameter and it's 31 meters long it's powered by one Vulcan
two engine but burns liquid hydrogen

and liquid oxygen the volcan to engine

provides up to 1,400,000 Newton's of

frost in the vacuum of space and it's

nozzle it's its gimbal to provide pitch

in your pitching your control for the

for the area and vehicle we're doing

fine on board area and performing

flawlessly more the mission in a moment

but for now the latest news from ariane

space