t-minus 38 seconds and counting

coming up on a go for autosequence start

do you - 25 seconds Discovery's onboard

computers have primary control of the

vehicles critical functions 20 seconds

t-minus 15 seconds and the sound

suppression water system has been

activated

we have a go for main engine start three

two one zero booster

and liftoff of discovery blazing a trail

to scientific discoveries aboard Space

Station

I had to roll discovery
into a heads-down position putting it on course for one point and eventually the International Space Station.

Discovery's 3 main engines are now throttling down to reduce stress on the shuttle as it travels through the area of maximum dynamic pressure discovery is already at an altitude of 4.7 miles or 6,500 feet traveling discovery go at throttle up traveling 1,000 miles per hour Tabriz engines are now throttled back up and performing and full capability at the docks shuttle weighed
more than four and a half million pounds

and now one minute and 27 seconds into

the flight the main engines and solid

rocket boosters have reduced that weight

by about half solid rocket rocket

boosters alone or by burning 11,000

pounds of propellant per second and the

external tank is now 3,000 pounds

lighter than when it began Discovery's

now 21 miles away from its launch pad

and 22 miles in altitude traveling 2,700

miles per hour all three main engines

are working just as expected the three

fuel cells are generating power and
three auxiliary power units are all

00:02:43,389 --> 00:02:49,238
producing pressure in short everything

00:02:45,370 --> 00:02:56,920
performing well two minutes and seven

00:02:49,239 --> 00:02:58,209
seconds into the sts-131 mission the

00:02:56,919 --> 00:02:59,829
booster officer in the Mission Control

00:02:58,209 --> 00:03:01,209
Center has confirmed solid rocket

00:02:59,830 --> 00:03:03,519
booster separation

00:03:01,209 --> 00:03:06,030
all systems continuing continuing to

00:03:03,519 --> 00:03:06,030
function well

00:03:10,580 --> 00:03:15,090
- orbital maneuvering system engines on

00:03:13,169 --> 00:03:17,129
Discovery's tail are now firing as well

00:03:15,090 --> 00:03:19,500
providing the shuttle an extra boost

00:03:17,129 --> 00:03:23,848
into orbit engine burn will last one

00:03:19,500 --> 00:03:32,759
minute and 44 seconds discovery - engine

00:03:23,848 --> 00:03:34,679
tau l call indicates that discovery can
now reach Marone in Spain should one of
the three main engines fail however all
three of those main engines are
currently working well two minutes and
59 seconds into the flight in Discovery
is now 79 miles away from Kennedy Space
Center in Florida 48 miles in altitude
and traveling at 4,500 miles per hour
special discovery also
the first of many sunrises of the STS
3131 mission
discovery Houston you are- return
discovery is now flying too high and too
fast to return to the Kennedy Space
Center and they have been of an engine failure that's not currently a problem however as all engines are continuing to perform as expected four minutes and 15 seconds into Discovery's flight shuttles traveling 6,000 miles per hour at an altitude of 63 miles and is 181 miles away from Kennedy Space Center you you you environmental systems officer here in Michigan drills confirm that the flash evaporator system has been activated to
provide cooling to the shuttle system

until the shuttles cargo bay doors open

and devil as radiators

discovery press to ATO discovery copies

should to the shuttles three main engines fail after this point that can still reach us safe they'll lower than

planned orbit as that call from Capcom

Rick sturckow indicated Discovery's now

5 minutes and 42 minutes seconds into

flight 367 miles an altitude and 351
miles away from Kennedy Space Center

00:06:38,079 --> 00:06:41,560
discovery could still make it across the

00:06:39,579 --> 00:06:43,689
Atlantic for an abort landing even if

00:06:41,560 --> 00:06:45,310
two of the three three main engines

00:06:43,689 --> 00:06:47,850
failed at this point all engines are

00:06:45,310 --> 00:06:47,850
performing well

00:06:59,889 --> 00:07:04,560
it's good right now flying more than ten

00:07:02,319 --> 00:07:07,209
thousand miles per hour

00:07:04,560 --> 00:07:10,620
sixty-six miles in altitude and 430

00:07:07,209 --> 00:07:10,620
miles away from Kennedy Space Center

00:07:10,709 --> 00:07:20,289
Discovery press to Meco can we go and

00:07:18,819 --> 00:07:23,439
that call indicates the discovery can

00:07:20,290 --> 00:07:25,629
reach its planned orbit of 136 536

00:07:23,439 --> 00:07:27,370
statute miles even if one of the engines

00:07:25,629 --> 00:07:30,219
fails all three engines are still
working well as are the auxiliary power units and the three fuel cells

discovery you are single-engine press your shutdown plan is nominal go for the plus X go for the pitch maneuver
even if two engines were to fail at this point discovery could still make its planned orbit with just one that shouldn't be necessary however as all three engines are still performing at full capability also Capcom Rick

stuckow they're letting commander alan poindexter know that discovery will cut off its three main engines as plant and
that he has to go ahead then to pitch
discovery up to allow for photos of the
e external tank to be taken after its
e external after its separation
discovery now 7 minutes and 48 seconds
into its mission traveling at 15,000
miles per hour 63 miles in altitude and
730 miles downrange from Kennedy Space
Center
the booster officer here in Mission
Control is reporting that Discovery's
three main engines have been shut off
now waiting for external tank separation
discovery Houston nominal Miko ohms one
is not required

there is the external tank separation 8 minutes and 53 seconds into the sts-130

mission discovery now safely in orbit 66 miles above the air and traveling at

17,500 miles per hour

also 1,000 65 miles downrange from the Kennedy Space Center