t minus 31 seconds they say the handoff

has occurred 25 solid rocket booster

nozzle gimble check firing chain is

armed sound suppression water system

activated t minus 13 12 11 10 9 8 go for

main engine start six five four three

two one zero and liftoff of space

shuttle Atlantis the crest of its

historic achievements in space

Oh Roger roll

Houston is now controlling

the roll maneuver is completed lanta

tha's in a head

on course for a 51.6 degree 136 by 36
statute mile for bed

as a three main engines on Atlantis it

now been throttled down to seventy-two percent of rated thrust as the orbiter

prepares to pass through the area of maximum dynamic pressure on the vehicle

in the lower atmosphere

engines now beginning to throttle back

up Atlantis you are no problem

all three engines looking really good

back at full throttle now it lifts off

the fully fueled Shuttle boosters and external tank wait four and a half million pounds it now has burned half of
that liftoff weight and propellant one

three auxiliary power units that provide

in good shape as are the fuel cells

systems on board atlantis is already 19

miles an altitude down range from the

Kennedy Space Center 20 miles traveling

2,500 miles per hour coming up on

staging the point at which the twin

solid rocket boosters burn out and

separate from the orbiter

booster separation confirmed the onboard

00:02:45,409 --> 00:02:52,099

00:02:49,909 --> 00:02:54,379
guidance system has done its job of setting out any of the dispersions that have been introduced at the booster.

separation Atlantis's performance thus far as exactly as planned as Atlantis heads into orbit flying heads down wings.

level into a historic sunset on its 32nd mission you are to engine cow copy that Atlantis can now reach as aragh ossa in Spain in the event of a single engine failure however all three main engines are still operating at full throttle 104 percent of rated thrust the auxiliary power units still in great shape as are the fuel cells Atlantis's traveling.
58 00:03:36.879 --> 00:03:42.289
3,700 miles per hour at an altitude of

59 00:03:39.530 --> 00:03:45.819
47 miles down range from the Kennedy

60 00:03:42.289 --> 00:03:45.819
Space Center now 88 miles

61 00:04:05.930 --> 00:04:10.159
Atlantis is getting a boost from the

62 00:04:08.598 --> 00:04:13.009
orbital maneuvering system engines on

63 00:04:10.158 --> 00:04:14.539
the tail of the vehicle those have been

64 00:04:13.009 --> 00:04:17.230
burning now for about one and a half

65 00:04:14.539 --> 00:04:17.230
minutes

66 00:04:31.379 --> 00:04:39.459
Atlantis your negative return copies

67 00:04:35.829 --> 00:04:41.589
guard rate of return negative return

68 00:04:39.459 --> 00:04:43.418
means Atlantis can no longer return to

69 00:04:41.589 --> 00:04:45.250
the Kennedy Space Center in the event of

70 00:04:43.418 --> 00:04:48.668
an engine failure it's already traveling

71 00:04:45.250 --> 00:04:52.990
too far too far I and too fast to return
to the launch site now traveling 6,000 miles per hour 180 miles from the Kennedy Space Center at an altitude of 62 miles or about 330,000 feet this view from a camera on the external tank looking down the length of the orbiter as Atlantis heads into orbit on its 32nd voyage into space Atlantis you are pressed ATO practically Atlantis can reach orbit on 2 engine should one fail at this point however all three are still in great shape I've got a report that the flash evaporator system providing cooling to all of the
systems is also operating normally as

well Atlantis is traveling 7700 miles

per hour 278 miles downrange 67 miles

out in altitude

Atlantis your single-engine ops three

legged up three standing by for the

guidance system to take over control of

Atlantis and roll the vehicle to a heads

up position this role to heads up allows

for Atlantis you are press to Meco and

gle single-engine zaragoza 104 copy press to

Meco think I didn't dare go for 10 4

Atlantis can reach a safe orbit on two

engines now lucky dog that reference to

the guidance systems choice of the roll

00:07:03,668 --> 00:07:08,978
maneuver nominal shut down on all three

00:07:06,490 --> 00:07:14,590
you will be go for the plus-x go for the

00:07:08,978 --> 00:07:18,098
pitch is copy nominal set off go fill up

00:07:14,589 --> 00:07:19,929
our tech go for the picture good read it

00:07:18,098 --> 00:07:22,269
and that roll the heads-up provides a

00:07:19,930 --> 00:07:25,930
good satellite communications linked

00:07:22,269 --> 00:07:28,658
with Atlantis continuing its travel into

00:07:25,930 --> 00:07:31,209
space approaching 77 minutes into the

00:07:28,658 --> 00:07:35,728
flight Atlantis your single-engine press

00:07:31,209 --> 00:07:38,049
10 for basic elected pres whoa for

00:07:35,728 --> 00:07:40,389
Atlantis can reach orbit on one engine

00:07:38,050 --> 00:07:44,408
now should to fail however all three are

00:07:40,389 --> 00:07:48,699
still in good shape Atlantis is now

00:07:44,408 --> 00:07:50,199
traveling 13,000 miles per hour five
hundred eighty miles away from the Kennedy Space Center of an altitude of three hundred forty thousand feet or about 64 miles shortly the three main engines will begin throttling back to maintain the structural limits on the orbiter as it approaches loads near three times gravity all quiet here in Mission Control with all systems in great shape Atlantis is traveling fifteen thousand five hundred miles per hour approaching eight minutes into the flight downrange 740 miles at an altitude of 64 miles 300 37,000 feet
standing by for main engine cutoff

confirmation as Atlantis is in excellent shape heading into orbit main engine
cutoff confirmed standing by for

separation from the external fuel tank

Atlantis now flying away from the external tank after separation plus X

burn maneuver being performed by a commander ken ham nominal Miko almost one night not required preliminary ohms
to TIG will be 37 colon 30 we'll meet you in the post ohms one procedure and

welcome back to space for you and your attention crew