howdy I'm Bob Behnken spacewalker on sts-130 and you're watching NASA TV

endeavour Houston good morning especially good morning the bobs good

morning Houston thank you very much for

that for I wake up music this morning

and a special good morning tamiya life

Megan who I really do look forward to

seeing here in just a handful of days

now so can't wait to be back in your

arms and feedback in Florida and then

back in Houston

this is Mission Control Houston as
you've heard now the wake up song played

for the on-orbit crew that song was

entitled parabola performed by tool for

Robert Bankin the crew will now have a
couple of hours of personal time for

their start of day they'll have a

personal time for breakfast and hygiene

before starting with their task

primarily the relocation of the

pressurized mating adapter number three

that will be relocated at the end of the

space station robotic arm from its

position on the harmony module to the

now open port on the tranquility module
other task for the day include the internal outfitting of the cupola that piece of hardware was relocated overnight during the crew day and now installed in its permanent location on the earth-facing port of tranquility on board crew also continue with some other interior outfitting work and then have the afternoon off they'll wrap up their day with a procedure review for the third and final spacewalk of this mission it will be conducted by rubber bankin and nicholas patrick this is Mission Control Houston with the
view on the outside of the International

Space Station and Space Shuttle Endeavor

complex the morning of activities will

focus on the relocation of the

pressurized mating adapter number three

from its temporary location on the

zenith or top of the Harmony node to its

location on the end of the new

tranquility node tranquility is seen

here about in the top center view with

the cupola now on the earth-facing port

the top in this view inside the new

tranquility node three astronaut soichi

noguchi is doing a checkout procedure

for the advanced resistive exercise
device which has been relocated to that

node the biomedical engineers and flight

surgeons are monitoring that check out

from Mission Control through video as

the first check out is an unmanned

configuration Gucci's set maneuvering

the device within it's a vibration

isolation system and then as part of the

check out to to exercise sessions will

be conducted by two different crew

members on the device later today okay

Houston station is one to eric 06 is

complete and old auntie scopa 20 within

15 seconds and to each he were still
with you on one that was a great views

for the why and the x axis but we're

still going to need for you to

reposition the camera for Z and sorry we

weren't clear about that okay so I want

to repeat the V

just come to a cpcs loud about it so you

can check the view at your convenience

we have the view suite g and it looks

great this is looking out the port side

of the International Space Station

through a small window on the hatch on

tranquility on the end of the node where

the pressurized mating adapter number
three will be relocated today a check go

ahead zambo JPM le check cashed at three

decimal nine pressure was zero at gmt

that's a good number Zambo no need to repeat that okay great

shuttle commander george Samko reading down the pressure reading for the

pressurized mating adapter number three that he completed in preparation for the relocation of that element a view inside the station's Destiny laboratory where commander jeff williams and flight engineer sweetie noguchi are working

through the procedure to release the

00:05:58,620 --> 00:06:02,040
bolts that are holding the pressurized

00:06:00,420 --> 00:06:06,180
mating adapter number three to the

00:06:02,040 --> 00:06:09,000
Harmony node there are 16 bolts that

00:06:06,180 --> 00:06:10,970
secure an element into place on the

00:06:09,000 --> 00:06:14,220
common berthing mechanism and the

00:06:10,970 --> 00:06:16,140
procedure goes through releasing a half

00:06:14,220 --> 00:06:21,960
of those bolts first and then the second

00:06:16,139 --> 00:06:25,199
half subsequently actually the release

00:06:21,959 --> 00:06:27,539
of an element includes a releasing four

00:06:25,199 --> 00:06:30,449
bolts at a time the capture of an

00:06:27,540 --> 00:06:37,830
element to when it is installed is done

00:06:30,449 --> 00:06:39,209
in the two-stage fashion the crew

00:06:37,829 --> 00:06:46,139
members are in the step of the procedure

00:06:39,209 --> 00:06:48,750
to remove the first set of four bolts in
this view you also see endeavors mission specialist Nicholas Patrick getting set up at the robotics workstation he will be working with astronaut Bob Behnken to operate Canada too and relocate the pressurized mating adapter number three after it has been removed from harmony Canada arm too has a firm grasp on the PMA three at the moment this is a view on the outside of the International Space Station canadarm2 is working from its operating base on the outside of the Destiny lab on the right side of the view and it is extended down below this
view and connected to the pressurized mating adapter number three while it is currently attached to the Xenocide or space facing side of the Harmony node.

the PMA three will be positioned at the end of Tranquility which this is a view inside of the hatch behind astronaut TJ creamer the background of the view is where the PMA three will be relocated to and it is being positioned there to provide additional coverage or protection from micrometeoroid debris at on that port astronauts terry virts and k hire working on a procedure to outfit

the cupola vestibule it's a new location

and a permanent location now on the earth-facing port of Tranquility verts

and higher working through that procedure to connect power and data

utility cables the Operations Support Officer here in the International Space Station flight control room can see that

the fourth set of bolts have been removed all 16 volts then disengaged from holding the pressurized mating adapter number three in place and now the four latches are being deployed and on the big loop the latches are deployed
SSRS as a go for PMA three maneuvers

00:09:14,339 --> 00:09:28,889
hf SS rms operator copies that we are go

00:09:17,879 --> 00:09:30,808
for the PMA 3 maneuver two sets of crew

00:09:28,889 --> 00:09:32,579
members working side by side inside the

00:09:30,808 --> 00:09:34,948
International Space Station on the

00:09:32,578 --> 00:09:39,778
process to relocate the pressurized

00:09:34,948 --> 00:09:40,979
mating adapter number three station

00:09:39,778 --> 00:09:43,318
commander jeff williams and flight

00:09:40,980 --> 00:09:45,539
engineer sweetie noguchi completed the

00:09:43,318 --> 00:09:48,929
procedure to release the bolts securing

00:09:45,539 --> 00:09:50,639
the PMA 3 in place I fill ground steps

00:09:48,929 --> 00:09:57,149
are in place you have a go to do your

00:09:50,639 --> 00:09:59,999
fill part 1 and also just deployed the

00:09:57,149 --> 00:10:04,039
four latches inside the common berthing

00:09:59,999 --> 00:10:07,589
mechanism on harmony got being worked
now astronauts Bob bankin and Nicholas Patrick will operate the station's robotic arm canadarm2 which already has a grapple or a hold on the PMA 3 they will be working at this robotics workstation inside the Destiny lab to remove p.m. a three from the zenith port or space facing port on harmony and placing it on the port end of the tranquility node in this view on the outside of the space station you can see the pressurized mating adapter number three is being removed from its location on the space
facing or zenith port of the Harmony

deck

this is Mission Control Houston with the

BU back outside the International Space

Station with the pressurized mating

adapter number three being relocated by

the station's robotic arm canadarm2 the

robotic arm is being operated by

astronauts Bob bankin and Nicholas

Patrick from inside the station's

destiny lab it is being relocated to the

port side of the station on the the end

of the tranquility node the port is

visible here as the adapter is being
maneuvered closer and closer to its installation point.

you can see the earth below as the station and shuttle complex orbit 217 statute miles above the earth to the east of the Philippines.

this is a view from a camera inside the port that PMA three will be attached to and is a camera set up for precise alignment of the element while it is being maneuvered in for installation.

Houston station on the big loop we are ready for the CBC SVU to monitor to copy.

Bob we will put that in work the
movement of the canadarm2 to relocate

00:13:35,559 --> 00:13:40,299
the pressurized mating adapter number

00:13:37,389 --> 00:13:43,480
three is paused at this point in the

00:13:40,299 --> 00:13:47,459
procedure as the camera views are

00:13:43,480 --> 00:13:47,460
reconfigured for the final installation

00:14:05,799 --> 00:14:10,729
station astronauts Jeff Williams and

00:14:08,200 --> 00:14:12,470
Sweetie noguchi have prepared the

00:14:10,730 --> 00:14:14,420
tranquility nodes common berthing

00:14:12,470 --> 00:14:16,310
mechanism for the attachment of the

00:14:14,419 --> 00:14:19,309
pressurized mating adapter number three

00:14:16,309 --> 00:14:22,189
and shuttle astronauts Nicholas Patrick

00:14:19,309 --> 00:14:25,309
and Bob Behnken will resume maneuvering

00:14:22,190 --> 00:14:29,870
canadarm2 to bring the adapter in for

00:14:25,309 --> 00:14:35,899
its attachment to tranquility 13 of 1.5

00:14:29,870 --> 00:14:38,289
10 for robotics these season copies on
00:14:35,899 --> 00:14:38,289
the big loop

00:14:44,938 --> 00:14:50,409
Canada arm two is now in motion again to

00:14:47,970 --> 00:14:53,619
move the pressurized mating adapter

00:14:50,409 --> 00:14:56,759
number three into its new location on

00:14:53,619 --> 00:14:56,759
the tranquility node

00:15:31,190 --> 00:15:36,110
Euston station on the big loop for

00:15:33,259 --> 00:15:39,409
robotics we're at eight centimeters for

00:15:36,110 --> 00:15:43,210
showing only RTLS three and four and we

00:15:39,409 --> 00:15:46,370
think that a positive pitch is I'm sorry

00:15:43,210 --> 00:15:52,129
we think a negative bitch is what we

00:15:46,370 --> 00:15:57,919
need we're missing one and two houston

00:15:52,129 --> 00:16:02,689
concur negative pitch okay here comes a

00:15:57,919 --> 00:16:04,639
negative pitch the pressurized mating

00:16:02,690 --> 00:16:06,860
adapter number three has made initial
243 00:16:04,639 --> 00:16:09,939 contact with the mechanism on

244 00:16:06,860 --> 00:16:12,620 tranquility but only half of the four

245 00:16:09,940 --> 00:16:14,810 indications have been received that the

246 00:16:12,620 --> 00:16:19,970 element is in place and ready to be

247 00:16:14,809 --> 00:16:22,549 latched in place Houston we've got just

248 00:16:19,970 --> 00:16:26,590 RTL number Q missing now so we'll give

249 00:16:22,549 --> 00:16:26,589 you a negative bitch and positive y'all

250 00:16:30,279 --> 00:16:35,470 concur on negative pitch positive yah

251 00:16:41,690 --> 00:16:46,250 when Euston station on the big loop

252 00:16:44,779 --> 00:16:49,100 we're going to give our go to the CBM

253 00:16:46,250 --> 00:16:56,870 operator that maneuver to RTL is

254 00:16:49,100 --> 00:16:58,790 complete Houston copy the pressurized

255 00:16:56,870 --> 00:17:01,490 mating adapter number three is in place

256 00:16:58,789 --> 00:17:03,439 and ready for station crew members Jeff
Williams and Sweetie Noguchi to pick up

with the procedure to secure it in place

using four latches first and then

securing the 16 bolts in place in a two-stage fashion this is a view inside

two-stage fashion this is a view inside

the tranquility node looking down at the hatch way into the cupola where astronauts can hire and Terry Virts had been meeting the power and data connections into the cupola restaurant

Steve Robinson also in view working with them astronauts at Nicholas Patrick and Bob Bank and are done with their activities for the day until they
reconvene with the rest of the crew

00:17:43,279 --> 00:17:48,289
members to review the procedures for the

missions third spacewalk that is

00:17:48,289 --> 00:17:54,349
scheduled to start just after three a.m.

00:17:50,180 --> 00:17:56,420
central time and then bankin and Patrick

00:17:54,349 --> 00:17:58,579
will spend their night inside the

00:17:56,420 --> 00:18:02,019
station's quest airlock to prepare for

00:17:58,579 --> 00:18:02,019
their spacewalk Tuesday evening

00:18:05,440 --> 00:18:09,830
astronauts k hirer and terry virts are

00:18:07,970 --> 00:18:12,529
working inside the new tranquility node

00:18:09,829 --> 00:18:14,629
this is the hatchway leading into the

00:18:12,529 --> 00:18:16,549
cupola that they're making the

00:18:14,630 --> 00:18:21,170
connections for power and data for that

00:18:16,549 --> 00:18:24,079
new observation deck future robotic arm

00:18:21,170 --> 00:18:27,170
operations will be able to be conducted
from the cupola once the spare robotics workstation inside the Destiny lab is relocated into the new element that is scheduled to occur on flight day 11.

Outfitting of the new cupola will continue over the next day also while the mission spacewalk is ongoing.

Including installing an auto audio terminal unit so that crew members can use the station’s communication system while inside the cupola as well as that power ports for equipment and the spacewalkers will be removing the thermal covers on the
outside of the element and crew members

inside will be checking out the shutters

on the windows this is a view on the

outside of the International Space

Station and Space Shuttle Endeavor as

the two vehicles orbit together 217

statute miles above the earth over the

South Pacific Ocean they are passing

through an orbital sunset

you

this is Mission Control Houston the

expedition 22 and STS 130 endeavour

crews have joined together inside the

unity note on board the International
Space Station for lunch unity was the first U.S. built element of the International Space Station launched and assembled to the Zarya module, the first element to launch for the space station. Unity was launched by the space shuttle Endeavour in December of 1998. It is a little bit shorter than the European built Node 2 and Node 3, the Harmony and Tranquility nodes. This is now viewed on the outside of the complex provided by a video camera on Endeavour looking at the new Tranquility node. Tranquility is attached to the port side of Unity on.
the other side of unity is the station's quest airlock the unity node also serves as a passageway between the Russian segment of the station in the u.s.

Destiny laboratory module and the European and Japanese laboratories

petrelli from some human interest story shop for pilot Gerry bird sitting down some video the crusin dubs has recorded over the course of their day in space

deviled eggs here and Terry we're getting we're getting good video and audio don't have to talk over a too much something to do they're good
morning after shave his face with intensive lactating Oh over here from the movie get things that the guild in order to incident is more positive of Ireland which is where the way I didn't matter no Jordan are recognizable yeah choice for breakfast this morning Jeff comes he comes over quite often for meals for breakfast for us the technique of us eating your food to bag that way it doesn't make as much a mess here are Nick and Bob doing the robotic ops today they got to move module called p.m. 83 which is a connecting module and they
moved it from a temporary storage location back to the left end of the port and of those trees and that is now where Cooper was when we launched so it's been a little bit of a shell game moving modules around to make sure they all fit they cleave the main operator and Bob was helping the mouse diaper service good night view the kooples how will we have the whole we got all the covering and everything open so we really had our first use of the coop with it over to join eyes and God right there is the port in a no true
which is now we're p.m. a truth that you give it an Essie so what you hear there is the sound of that thing.

repressurizing we were letting air from the station go into that market all that humming and hissing of stuff was they're going in there she can ck down there doing work in the coupon I'm getting some tools you can tell both getting the cupola wired up today and so there's just a lot of things going on there was a lot of hey reg activity which is that exercise machine right above the cupola so that it's been a very busy place
you'll notice the Air Force Academy

better there on the side what you know

it's you ready for a crew lunch this was

really nice Jeff put together a crew

watch for it for the whole cruise down

there and node one having once together

Bob so everybody has utensils idea

rockton gay hello you got your formal

hair and there's one more in there ok

wrote something there

she was part of the sushi food

and so proper

it's already some of this is that wrong

because what is that sweetie it's a

space machine in space sushi with
Simon's space cooked sushi yeah anyone

to make once again let me get casey

kasem space in 1840 number five russian

food and japanese food three to get that

space sushi forth and i was a really

good lesson to lube up out for american

truth

oh yeah

ah

Oh generico NASA sabbagh she know this

is entirely the marmalade I wish you may

wish it was normally

that's the version with a stripper

intellectualizing marmo days which is
the eddy hooked know the story behind

the mark marmalade is we got a toxic

shot dry run out it's free frozen that

is it's ok it's good oh that is more

money but amazing no it's hoping our

mother okay oh yeah he's doing homemade

it's it's a yeah my um really did really

we can't get we made stuff said

second try to help me sell Ojai today

getting back in chan suspension pelvic

room is K has a Mardi Gras banner up

there is yet the moon pies which were

that the best food to having spacious

all right sweetie noguchi son I'm scheme
in the mower epic for this tonight here

three key with his Japanese ski team

skis on nice job sweetie to the farm

slalom and downhill on the same one but

now

speed 100 miles per hour away all right

good job all right all right then hey

demonstrating your shooting at triple

Lindy here

okay ready sting

oh very good very nice very nice round

the world can we love that for angular

momentum Russians good all right sweetie

nice job
okay there you go

00:30:58,589 --> 00:31:01,589
r32

00:31:14,249 --> 00:31:20,940
hey stop man gimme yeah

00:31:21,798 --> 00:31:31,129
somewhere I'll be clear for diving nice

00:31:26,900 --> 00:31:31,130
can you spread yards

00:31:33,849 --> 00:31:42,939
your hands can take that moves in this

00:31:35,500 --> 00:31:45,788
rotation there you go that and here are

00:31:42,940 --> 00:31:48,429
is our crew getting ready for the state

00:31:45,788 --> 00:31:49,839
for tomorrow every day before spacewalk

00:31:48,429 --> 00:31:51,788
we have a briefing where they talk about

00:31:49,839 --> 00:31:53,619
how we're going to go out the door how

00:31:51,788 --> 00:31:55,329
they're going to conduct this space log

00:31:53,619 --> 00:31:57,629
can do their different tasks and that

00:31:55,329 --> 00:31:57,629
was it