



**Stephen Frick**  
**STS-122 Commander**



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00:00:02,910 --> 00:00:06,680

\h NARRATOR: NASA will help Europe make its mark on the International Space Station

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00:00:06,680 --> 00:00:12,640

\h this week when space shuttle Atlantis carries the Columbus laboratory into orbit.

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00:00:12,640 --> 00:00:17,880

\h The Columbus lab was named after a great explorer and is designed to sail through the

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00:00:17,880 --> 00:00:27,250

\h ocean of space as a crucial part of the space station. It will host teams of astronauts hoping to unlock ne

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00:00:27,250 --> 00:00:31,630

\h The module from the European Space Agency will ride into orbit aboard space shuttle

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00:00:31,630 --> 00:00:36,730

\h Atlantis to take its place on the cutting edge of space science.

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00:00:36,730 --> 00:00:41,830

\h Atlantis is also carrying a crew of veteran astronauts and first-time flyers

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00:00:41,830 --> 00:00:47,680

\h who will attach Columbus and then activate the laboratory in orbit.

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00:00:47,680 --> 00:00:52,700

\h STEPHEN FRICK: Well, to this point, we've spent a lot of time building the infrastructure of the space st

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00:00:52,700 --> 00:00:58,170

\h So we're really looking forward to getting some of the laboratory modules and other

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00:00:58,170 --> 00:01:03,510

\h facilities that will actually be able to use the space station for research, and Columbus is a big part of the

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00:01:03,510 --> 00:01:07,680

\h NARRATOR: It is another critical mission for NASA and its international partners

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00:01:07,680 --> 00:01:12,760

\h as they set the stage for years of intense research in microgravity.

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00:01:12,760 --> 00:01:19,530

\h STAN LOVE: So, yeah, no pressure. A lot of folks are going to be watching us and it's very important that

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00:01:19,530 --> 00:01:28,740

\h NARRATOR: Live from Kennedy Space Center, this is the STS-122 Astronaut Webcast.

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00:01:28,740 --> 00:01:31,730

\h ALLARD BEUTEL: Welcome, and thanks for joining us today as we take a backstage tour of the

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00:01:31,730 --> 00:01:36,860

\h 24th space shuttle mission to the International Space Station, STS-122. I'm your host,

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00:01:36,860 --> 00:01:41,650

\h Allard Beutel, news chief here at NASA's Kennedy Space Center, where space shuttle Atlantis is going

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00:01:41,650 --> 00:01:44,990

\h through some final preparations before liftoff. On today's webcast,

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00:01:44,990 --> 00:01:50,390

\h we're going to take an in-depth look at the mission and the work that awaits the Atlantis seven crew members.

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00:01:50,390 --> 00:01:54,950

\h We'll also be joined by a special guest, Dr. Robert Satcher, who will be sharing

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00:01:54,950 --> 00:01:57,510

\h some of his perspective on preparing for a mission to the station.

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00:01:57,510 --> 00:02:01,880

\h He will also take some of your questions that you e-mailed through the NASA.gov Web site.

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00:02:01,880 --> 00:02:06,600

\h That's all coming up, but first, let's focus on the main purpose of the STS-122 mission.

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00:02:06,600 --> 00:02:11,470

\h The addition of the Columbus research laboratory sets the stage for a major boost in science on the station.

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00:02:11,470 --> 00:02:17,490

\h Here's a closer look at the European Space Agency's largest contribution to the space station.

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00:02:17,490 --> 00:02:22,110

\h NARRATOR: The Columbus laboratory is Europe's first crewed spacecraft and it will be the

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00:02:22,110 --> 00:02:27,900

\h second module designed for research duties to reach the International Space Station.

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00:02:27,900 --> 00:02:36,340

\h NASA's own science segment, called Destiny, has been in orbit since 2001. A third, from the Japanese

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00:02:36,340 --> 00:02:43,700

\h is due to reach space early in 2008. Columbus began its life in Turin, Italy, as a 23-foot-long,

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00:02:43,700 --> 00:02:51,510

\h 15-foot-wide cylinder enhanced with micrometeoroid shields and other structures so it could survive in s

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00:02:51,510 --> 00:02:58,030

\h It was taken to Bremen, Germany, to extensively outfit its interior to host 10

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00:02:58,030 --> 00:03:03,360

\h phone-booth-size racks that will make up the module's research ability.

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00:03:03,360 --> 00:03:08,380

\h Four of the racks are designed for specific experiments into microgravity fields,

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00:03:08,380 --> 00:03:15,900

\h including human reactions to space, and studies into how fluids and crystals grow and behave.

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00:03:15,900 --> 00:03:23,160

\h A fifth rack designed to store specialized equipment is also packed onboard Columbus for launch.

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00:03:23,160 --> 00:03:29,860

\h The racks and experiments will be activated shortly after Columbus is attached to the space station.

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00:03:29,860 --> 00:03:38,640

\h Spacewalkers will also connect a pair of experiments to the outside of the module that will take advantage

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00:03:38,640 --> 00:03:46,540

\h The experiment racks and other gear were loaded into the Columbus module at NASA's Kennedy Space Center

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00:03:46,540 --> 00:03:52,850

\h The module itself was flown aboard a modified transport plane to Kennedy in 2006

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00:03:52,850 --> 00:03:57,650

\h to go through an intense schedule of preparations before launch into space.

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00:03:57,650 --> 00:04:03,530

\h Since arriving, Columbus has been put through extensive testing, including being lowered into a

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00:04:03,530 --> 00:04:07,440

\h vacuum chamber to make sure its air will not leak into space.

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00:04:07,440 --> 00:04:12,400

\h A team of European Space Agency officials and European contractors were joined by

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00:04:12,400 --> 00:04:19,070

\h NASA and contractors to prepare the module for launch. It was moved to the launch pad in early

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00:04:19,070 --> 00:04:24,340

\h November and is now carefully cocooned inside Atlantis for its launch.

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00:04:24,340 --> 00:04:27,340

\h BEUTEL: And now we're pleased to welcome our guest, astronaut Dr. Bobby Satcher,

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00:04:27,340 --> 00:04:29,330

\h to the show. Bobby, thanks for joining us.

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00:04:29,330 --> 00:04:29,960

\h SATCHER: Thanks for having me.

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00:04:29,960 --> 00:04:31,470

\h BEUTEL: Appreciate you coming down here for the launch. It's a good show tomorrow.

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00:04:31,470 --> 00:04:38,120

\h You've obviously led a very accomplished career. You're a medical doctor, a researcher, a surgeon.

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00:04:38,120 --> 00:04:44,830

\h Why astronaut? Again, were you thinking that you needed to pad your resume?

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00:04:44,830 --> 00:04:47,070

\h Are you an overachiever? Why astronaut?

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00:04:47,070 --> 00:04:52,250

\h SATCHER: It's just something that I wanted to do ever since I was a little kid.

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00:04:52,250 --> 00:04:58,050

\h I looked up like every other little kid at the night sky and said wow, it would be great to actually

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00:04:58,050 --> 00:05:05,010

\h go there and be able to participate in exploring space. So back in 2004, they were looking for another cl

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00:05:05,010 --> 00:05:11,940

\h I applied back then and was lucky enough to be selected and it's been a great adventure ever since.

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00:05:11,940 --> 00:05:18,890

\h BEUTEL: Well, we're lucky to have you onboard the astronaut corps. Medical school and now astronaut

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00:05:18,890 --> 00:05:22,670

\h I'm not going to ask you to compare the two because it's certainly not fair to say which

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00:05:22,670 --> 00:05:25,650

\h one's harder, but how do they compare, the training that you've had for both?

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00:05:25,650 --> 00:05:32,960

\h SATCHER: They have some similarities but there are differences which does make it a little bit like com

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00:05:32,960 --> 00:05:40,920

\h But I think the similarities are enlightening. I mean, it takes, really, almost two years to get

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00:05:40,920 --> 00:05:48,690

\h through the basic curriculum to become an astronaut. Medical school, of course, is four years.

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00:05:48,690 --> 00:05:54,930

\h But it really, medical school is two years of studying and then, you know, two years of practical stuff.

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00:05:54,930 --> 00:06:02,770

\h And I think it really helped a lot in terms of allowing me to prepare to be able to assimilate a

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00:06:02,770 --> 00:06:11,880

\h large amount of material in an intense environment, and that's really what the astronaut training program

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00:06:11,880 --> 00:06:17,540

\h You've got a very diverse and large volume of material that you have to learn.

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00:06:17,540 --> 00:06:22,150

\h You have to learn about all the different systems, the space station, the space shuttle.

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00:06:22,150 --> 00:06:28,310

\h We also fly jet trainers called the T-38s and you have to be proficient with that.

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00:06:28,310 --> 00:06:32,930

\h You have to learn about scuba diving so that you can do all the EVA training and you've

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00:06:32,930 --> 00:06:37,350

\h got to do all of that, and you do a lot of classroom learning too.

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00:06:37,350 --> 00:06:42,940

\h So it's physically demanding, mentally demanding and, you know, very challenging.

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00:06:42,940 --> 00:06:51,130

\h But it prepares you very well for when you're going to actually go and fly in outer space so that you feel

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00:06:51,130 --> 00:06:54,440

\h BEUTEL: Well, you've done research on the skeletal system. It's one of your research areas.

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00:06:54,440 --> 00:06:58,620

\h That's obviously one of the areas that NASA looks at for long-duration spaceflights.

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00:06:58,620 --> 00:07:03,940

\h You have to overcome these – space is hard on people. It's not a friendly environment for us to be there

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00:07:03,940 --> 00:07:07,750

\h But if we're going to go back to the moon and on to Mars for long periods of time,

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00:07:07,750 --> 00:07:11,180

\h we need to have that kind of research. How does your background

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00:07:11,180 --> 00:07:13,680

\h help us prepare for that and help NASA get ready for that?

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00:07:13,680 --> 00:07:19,320

\h SATCHER: You know, in my former career, I did do a lot of research on the musculoskeletal system.

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00:07:19,320 --> 00:07:26,780

\h NASA, of course, has a very specific interest in knowing what happens to the body when you go into our

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00:07:26,780 --> 00:07:32,840

\h The funny thing is that we do adapt. So there is some programming within us or whatever that

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00:07:32,840 --> 00:07:38,130

\h makes it possible for us to adapt to being in a low-gravity environment.

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00:07:38,130 --> 00:07:44,810

\h So that's interesting in itself just to think about. And you know, specifically,

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00:07:44,810 --> 00:07:48,820

\h what you have to do when you're in outer space is you have to do resistant

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00:07:48,820 --> 00:07:54,650

\h exercises so that you preserve the mass of your skeleton and your muscular mass.

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00:07:54,650 --> 00:08:02,640

\h And you know, on a long-duration mission like going to Mars, we also right now are trying to prepare for

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00:08:02,640 --> 00:08:10,540

\h the contingency that a crew member may get sick or something like that and might not be able to work o

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00:08:10,540 --> 00:08:18,650

\h So, you know, of course there are other measures that are possible to preserve the skeleton – pharmaco

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00:08:18,650 --> 00:08:26,350

\h and this is really the main area, I think, of the physiology research going on right now.

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00:08:26,350 --> 00:08:31,270

\h BEUTEL: Well, one of the things that we often talked about is being a surgeon, you have good hands.

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00:08:31,270 --> 00:08:34,640

\h We've heard the same thing on the NASA side, that spacewalkers, you have to have good hands

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00:08:34,640 --> 00:08:41,010

\h to be able to do all the construction that we're doing up there and any kind of work to do up on the moon

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00:08:41,010 --> 00:08:43,290

\h How do the two compare?

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00:08:43,290 --> 00:08:51,700

\h SATCHER: Well, I think we have the example of some previous doctors who have, you know,

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00:08:51,700 --> 00:08:57,380

\h flown and gone aboard the space station that we can reference, like Dr. Parazynski.

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00:08:57,380 --> 00:09:03,510

\h He's not a surgeon, he's an emergency room doctor, but nonetheless, you know, his remarks were that,

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00:09:03,510 --> 00:09:12,110

\h you know, the space station was a very special patient. And of course, he did a wonderful job repairing t

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00:09:12,110 --> 00:09:18,300

\h So I think there is a precedent that says that doctors can make pretty decent astronauts too.

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00:09:18,300 --> 00:09:22,830

\h BEUTEL: Well, not that you're making a pitch for your next flight, but that's good experience.

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00:09:22,830 --> 00:09:25,960

\h And actually, most of the space station missions do require multiple

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00:09:25,960 --> 00:09:31,170

\h spacewalks and they also include hard work to make maintenance.

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00:09:31,170 --> 00:09:36,490

\h In this particular case with the STS-122 mission, three spacewalks are planned and possibly a fourth,

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00:09:36,490 --> 00:09:41,800

\h along with a lot of robotics work, which you've got experience in. Let's listen to what some of the

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00:09:41,800 --> 00:09:47,200

\h STS-122 crew members had to say as they prepared for their mission aboard the International Space S

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00:09:47,200 --> 00:09:53,040

\h NARRATOR: The crew of STS-122 is led by a veteran astronaut, Commander Stephen Frick.

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00:09:53,040 --> 00:10:00,630

\h He flew aboard Atlantis as a pilot during the STS-110 mission, which attached the central section of the

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00:10:00,630 --> 00:10:06,890

\h outside of the International Space Station. With Atlantis taking another key component into orbit,

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00:10:06,890 --> 00:10:12,200

\h Frick said the commanding role means he must have broad knowledge of every crew member's work.

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00:10:12,200 --> 00:10:15,390

\h FRICK: I wouldn't say it was learning anything specific. It was more kind of

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00:10:15,390 --> 00:10:18,690

\h expanding the scope from the first mission when I was the pilot.

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00:10:18,690 --> 00:10:24,910

\h I had very defined duties and so you can really dig your teeth into learning all the systems on the orbiter.

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00:10:24,910 --> 00:10:30,480

\h So being the commander, having to learn a lot more about spacewalks and the details of the Columbus

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00:10:30,480 --> 00:10:35,150

\h itself and what the goals are with that laboratory module were the challenges, I think.

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00:10:35,150 --> 00:10:42,260

\h NARRATOR: Astronauts will make several spacewalks during STS-122 to connect Columbus and outfit

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00:10:42,260 --> 00:10:45,110

\h Stan Love will be one of the spacewalkers.

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00:10:45,110 --> 00:10:51,820

\h LOVE: My job on the spacewalk will be to ride on a special toeclip on the end of the station's robotic arm

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00:10:51,820 --> 00:10:58,530

\h from that position, I will be carrying two large science instruments out of the shuttle's cargo bay

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00:10:58,530 --> 00:11:06,810

\h and mounting them on the outside of Columbus module, which we will have just added to the space station

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00:11:06,810 --> 00:11:11,750

\h NARRATOR: Love will also operate the space station's robot arm during other spacewalks.

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00:11:11,750 --> 00:11:16,150

\h It's a different perspective for tasks that are already difficult to master.

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00:11:16,150 --> 00:11:20,540

\h LOVE: There's no similarity. They're totally different things and in fact, that is one of the

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00:11:20,540 --> 00:11:26,390

\h difficult parts of it since I have both roles on the flight and often the two are at odds with each other.

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00:11:26,390 --> 00:11:31,360

\h It's often a challenge remembering which hat I'm supposed to be wearing each time.

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00:11:31,360 --> 00:11:35,920

\h NARRATOR: Astronaut Leland Melvin, also making his first space shuttle flight,

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00:11:35,920 --> 00:11:40,560

\h will drive the shuttle's 50-foot-long robot arm to maneuver spacewalkers around the

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00:11:40,560 --> 00:11:45,310

\h outside of the station and Columbus. By the time he does it in space, he will have

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00:11:45,310 --> 00:11:49,510

\h practiced the precise work for hours on end in simulators.

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00:11:49,510 --> 00:11:55,310

\h MELVIN: When we get up to space to do the installation, it should be second nature and it should just g

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00:11:55,310 --> 00:12:00,140

\h NARRATOR: Melvin also talked about the excitement of getting assigned to his first mission.

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00:12:00,140 --> 00:12:04,340

\h MELVIN: When I first got the call, the call was on my cell phone and I was at home at the time.

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00:12:04,340 --> 00:12:12,210

\h I just got out of the shower and I hung the phone up and started jumping up around celebrating.

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00:12:12,210 --> 00:12:19,930

\h I have a dog, Jake is my dog, and he was looking at me like I was crazy. It was a very good day, a very

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00:12:19,930 --> 00:12:24,300

\h NARRATOR: Love, who worked in astronomy before joining NASA's astronaut corps,

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00:12:24,300 --> 00:12:29,630

\h said he does not expect to have much time to look at the sky during the shuttle mission.

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00:12:29,630 --> 00:12:33,960

\h LOVE: And honestly, I'm not going to do much astronomy from the shuttle.

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00:12:33,960 --> 00:12:37,860

\h Our opportunities to look out the window are very limited.

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00:12:37,860 --> 00:12:43,110

\h Back in the day, when the shuttle would launch up and pop out a satellite and hang out for a couple day

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00:12:43,110 --> 00:12:47,490

\h they had time to look out the window and photograph the Earth and things.

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00:12:47,490 --> 00:12:52,880

\h I am hoping I can find enough time to look out and I suppose the thing I'll be

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00:12:52,880 --> 00:12:57,810

\h most interested in seeing is the planet Earth, because it's big and close and you can see stuff.

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00:12:57,810 --> 00:13:01,010

\h NARRATOR: The astronauts know that they could return to the space station

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00:13:01,010 --> 00:13:04,850

\h in the future for a much longer stay as an expedition crew member.

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00:13:04,850 --> 00:13:12,190

\h MELVIN: I think, you know, getting exposure to space on an 11-, 12-day mission is great.

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00:13:12,190 --> 00:13:16,880

\h I would jump at the chance to go for a six-month stay.

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00:13:16,880 --> 00:13:22,350

\h BEUTEL: They sound like they're ready to fly. Bobby, several people have submitted questions through

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00:13:22,350 --> 00:13:26,580

\h And before you answer a few, I do have one of my own. I want to indulge myself.

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00:13:26,580 --> 00:13:31,540

\h It's been known that astronauts since the beginning of the Mercury Program, for decades,

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00:13:31,540 --> 00:13:37,900

\h have been taking personal items up with them – mementoes, things that will help them make the transit

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00:13:37,900 --> 00:13:42,330

\h When you take your flight, not to put you on the spot and not to make it too personal,

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00:13:42,330 --> 00:13:45,880

\h but what are some of the things you're thinking about taking up with you?

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00:13:45,880 --> 00:13:48,560

\h SATCHER: That's the first time anybody's asked me that.

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00:13:48,560 --> 00:13:50,210

\h BEUTEL: Won't be the last.

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00:13:50,210 --> 00:13:55,720

\h SATCHER: Won't be the last, you're right. I think I'll probably take some pictures of

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00:13:55,720 --> 00:14:03,430

\h family members and take some sort of device that'll allow me to bring music up that I want to hear.

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00:14:03,430 --> 00:14:09,270

\h And then probably, there'll be some other suggestions from people in terms of memorabilia.

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00:14:09,270 --> 00:14:11,670

\h I'm sure there'll be no shortage of that.

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00:14:11,670 --> 00:14:13,300

\h BEUTEL: Your friends and family will help you with that.

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00:14:13,300 --> 00:14:14,610

\h SATCHER: I think so.

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00:14:14,610 --> 00:14:17,770

\h BEUTEL: Alright, we'll get to the questions that people submitted. Bill from Buffalo,

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00:14:17,770 --> 00:14:21,370

\h New York, asks, well, it's a good question: What type of science will be done on

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00:14:21,370 --> 00:14:25,280

\h Columbus that makes it different from what's currently being done on the space station?

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00:14:25,280 --> 00:14:31,590

\h SATCHER: That's a good question. You know, our ability to do scientific experiments is

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00:14:31,590 --> 00:14:40,050

\h actually limited right now because the only platform we have for it is the U.S. lab. And you know,

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00:14:40,050 --> 00:14:43,950

\h the U.S. lab is actually smaller than it was originally planned to be.

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00:14:43,950 --> 00:14:49,150

\h So the Columbus module greatly expands our ability to do experimentation.

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00:14:49,150 --> 00:14:55,910

\h There's a whole host of experiments that are sort of backlogged that we want to do, and

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00:14:55,910 --> 00:14:59,960

\h and so this is going to be a wonderful addition to the space station and allow us to

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00:14:59,960 --> 00:15:02,460

\h get to some of these additional experiments.

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00:15:02,460 --> 00:15:10,840

\h There are sort of four main categories that the Columbus has the capacity for. The first category is, you

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00:15:10,840 --> 00:15:18,660

\h biomedical experiments on human physiology. Then we also have the capacity to do microscopic experi

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00:15:18,660 --> 00:15:32,360

\h bacteria and viruses and microorganisms. There's another palate which primarily is for experimenting on

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00:15:32,360 --> 00:15:37,140

\h so looking at the behavior of fluids in microgravity. And finally, there are

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00:15:37,140 --> 00:15:40,510

\h some palates that will go outside of the Columbus module that are attached

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00:15:40,510 --> 00:15:48,780

\h to it which allow us to evaluate the behavior of materials in outer space.

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00:15:48,780 --> 00:15:53,800

\h BEUTEL: The Columbus module is the European Space Agency's largest contribution to the space station.

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00:15:53,800 --> 00:16:05,800

\h 2008 really is a year for NASA for its international partners, really dedicated to various laboratories and

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00:16:05,800 --> 00:16:08,100

\h which leads to the next question from Nate from Grand Rapids.

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00:16:08,100 --> 00:16:11,180

\h He asks what kind of language training do the astronauts go through that perform

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00:16:11,180 --> 00:16:16,200

\h their missions to the space station considering Russia and Japan play pivotal roles?

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00:16:16,200 --> 00:16:22,230

\h Do all NASA astronauts know how to speak Russian or Japanese or do they have a translator on board?

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00:16:22,230 --> 00:16:27,490

\h SATCHER: Well, the main language that most other astronauts know how to speak is Russian.

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00:16:27,490 --> 00:16:35,570

\h We actually have a language center and there's a dedicated faculty of people that teach us different languages.

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00:16:35,570 --> 00:16:41,330

\h So you can learn any language that you actually want to. I think Russian has been the

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00:16:41,330 --> 00:16:47,410

\h most important language because of the relationship between, you know, NASA and the

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00:16:47,410 --> 00:16:51,590

\h Russian space agency in building the International Space Station.

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00:16:51,590 --> 00:16:58,570

\h But there are astronauts who also know how to speak Japanese, French, German, etc.

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00:16:58,570 --> 00:17:08,310

\h I've just started my training in Russian and I hope one day to be fluent in it. I'm not there. Got a ways to

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00:17:08,310 --> 00:17:14,370

\h BEUTEL: You're a lot better than I'm doing. Tatiana, age 10 from Los Angeles, asks us (it's a historical c

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00:17:14,370 --> 00:17:19,080

\h Who developed the first space shuttle and what has the been the space shuttle's effect on history?

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00:17:19,080 --> 00:17:24,420

\h SATCHER: That's a good question. You know, NASA has developed and flown the space shuttle.

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00:17:24,420 --> 00:17:34,080

\h It started flying back in the early '80s and we expect that it's going to fly through 2010, when we complet

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00:17:34,080 --> 00:17:40,360

\h Maybe they'll even fly beyond that, but you know, we certainly don't have a mandate for that yet.

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00:17:40,360 --> 00:17:47,240

\h But the space shuttle has made it possible to build the space station and, of course,

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00:17:47,240 --> 00:17:53,660

\h these are all sort of baby steps that we have to take to be able to explore the solar system

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00:17:53,660 --> 00:18:00,130

\h first and then go beyond it. I think, you know, the next thing that we'll be doing is actually

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00:18:00,130 --> 00:18:08,440

\h building a colony on the moon and we'll use what we learn from building the space station to facilitate th

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00:18:08,440 --> 00:18:14,730

\h And of course, this all goes back again to the space shuttle, which was really the beginning of it all.

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00:18:14,730 --> 00:18:19,570

\h So a very important program that's existed for us.

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00:18:19,570 --> 00:18:23,090

\h BEUTEL: Well, that actually leads me to our final question. Eddie from Belfast, Ireland, talks about –

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00:18:23,090 --> 00:18:29,380

\h we just went from the beginning of the shuttle program and he asks a question about the end of the shuttle

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00:18:29,380 --> 00:18:34,120

\h When is the current fleet of space shuttles being retired (we kind of alluded to that) and what is taking its

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00:18:34,120 --> 00:18:41,210

\h SATCHER: Well, the next space vehicle is Orion and that's what we're going to use to

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00:18:41,210 --> 00:18:50,310

\h continue our trips to the space station and to go on to the moon. So that should be in service sometime

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00:18:50,310 --> 00:18:57,450

\h you know, seven to eight years. Right now, I think the projections are for around 2013 or so.

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00:18:57,450 --> 00:19:03,250

\h So, you know, we're all looking forward to that. I certainly hope to be able to fly on that vehicle also,

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00:19:03,250 --> 00:19:07,030

\h and we're definitely looking forward to going back to the moon.

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00:19:07,030 --> 00:19:09,770

\h BEUTEL: The last part of his question was is it being tested now in secret and Eddie,

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00:19:09,770 --> 00:19:14,130

\h I'll take the hit on that. Obviously, I'm not doing my job promoting it enough, so

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00:19:14,130 --> 00:19:17,670

\h I'll let you know if you want to find out more information about the Orion spacecraft,

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00:19:17,670 --> 00:19:23,690

\h go to [www.nasa.gov/exploration](http://www.nasa.gov/exploration). Well, again, that was our last question. Thank you for joining us.

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00:19:23,690 --> 00:19:30,040

\h We appreciate you coming here and answering our viewers' questions and, of course,

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00:19:30,040 --> 00:19:33,230

\h we want to thank all of our Web viewers for submitting those questions in the first place.