



1
00:00:01,296 --> 00:00:03,236
>> Josh: This is Mission
Control to Houston.

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00:00:03,236 --> 00:00:05,946
We are going to go down to
NASA's Marshall Space Flight

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00:00:05,946 --> 00:00:08,916
Center now in Huntsville Alabama
where Laurie Megs is standing

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00:00:08,916 --> 00:00:11,796
by at the Payload
Operation Integration Center.

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00:00:11,796 --> 00:00:14,526
Laurie, we hear that the
team there is getting ready

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00:00:14,526 --> 00:00:15,746
to mark a big milestone.

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00:00:18,236 --> 00:00:19,006
>> Laurie: That's right, Josh,

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00:00:19,006 --> 00:00:22,746
12 years of continuous
24/7 operations here

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00:00:22,746 --> 00:00:24,446
at the Payload Operations
and Integration Center.

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00:00:24,626 --> 00:00:25,776
If you are not familiar
with the team,

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00:00:25,776 --> 00:00:26,666

let me tell you what they do.

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00:00:27,116 --> 00:00:29,026

This team of flight
controllers plans,

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00:00:29,026 --> 00:00:32,116

coordinates all science
activities on the space station

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00:00:32,116 --> 00:00:34,306

and leading that team is
someone called a Payload

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00:00:34,306 --> 00:00:35,396

Operations Director.

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00:00:35,726 --> 00:00:36,976

Joining me now is Katie Presson

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00:00:36,976 --> 00:00:38,916

and she is the Payload
Operations Director here

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00:00:38,916 --> 00:00:39,426

at Marshall.

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00:00:39,766 --> 00:00:41,376

Katie, first of all tell,
us what you guys do here.

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00:00:41,906 --> 00:00:43,796

>> Katie: Well, as a
Payloads Operations Director,

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00:00:43,796 --> 00:00:46,136

we are responsible for
managing all the science

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00:00:46,486 --> 00:00:49,356
on the International
Space Station.

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00:00:49,356 --> 00:00:52,186
We coordinate with
the Flight Director

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00:00:52,186 --> 00:00:54,266
for any NASA science
activities that we have.

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00:00:54,746 --> 00:00:57,056
And so pretty much all
science activities,

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00:00:57,056 --> 00:00:58,686
NASA science activities
go through us.

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00:00:58,686 --> 00:01:00,366
>> Laurie: And that's
no easy job.

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00:01:00,366 --> 00:01:02,506
About how many hours a week
are we talking about right now?

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00:01:02,986 --> 00:01:05,586
>> Katie: Well right now
we have been averaging

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00:01:05,806 --> 00:01:09,026
around 35 hours a week, but
sometimes they get up to 40

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00:01:09,026 --> 00:01:10,626
or 50 hours a week
so we have a lot

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00:01:10,626 --> 00:01:11,786
of science going on right now.

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00:01:12,266 --> 00:01:14,476
And those are only
crew-tended operations.

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00:01:14,476 --> 00:01:16,266
We also have a lot
of science going

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00:01:16,266 --> 00:01:18,566
on that the crew is not
necessarily operating for us,

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00:01:18,896 --> 00:01:21,296
so we can control a lot of our
experiments from the ground

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00:01:21,296 --> 00:01:23,696
which means 24/7 operations.

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00:01:24,206 --> 00:01:26,036
>> Laurie: You say they are
like your hands and your feet

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00:01:26,036 --> 00:01:27,726
out there too right
there, the crew is.

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00:01:27,726 --> 00:01:28,866
You build a relationship
with them.

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00:01:29,016 --> 00:01:29,566
>> Katie: Right.

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00:01:30,076 --> 00:01:32,446
Because we work with the
crew for around six months

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00:01:32,726 --> 00:01:35,746
and because we train them
and gotten them ready

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00:01:35,946 --> 00:01:39,486
to operate our experiments, we
develop relationships with them.

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00:01:39,836 --> 00:01:42,046
So we have a lot of fun
with them often times,

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00:01:42,046 --> 00:01:45,006
and because we can't always see
what they are doing they are our

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00:01:45,006 --> 00:01:48,026
hands and feet and they --

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00:01:48,136 --> 00:01:50,276
we try to help them as
much as we can but we rely

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00:01:50,276 --> 00:01:52,446
on their expertise because we
can't be up there with them.

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00:01:52,956 --> 00:01:54,046
>> Laurie: And I know
you guys are gearing

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00:01:54,046 --> 00:01:56,966
up for a big anniversary as we
mentioned, the 12th anniversary

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00:01:56,966 --> 00:01:59,106
of operations here but
you are not celebrating

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00:01:59,106 --> 00:02:00,656

with a typical cake and party.

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00:02:00,856 --> 00:02:03,506

You guys are actually going out into the community and talking

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00:02:03,506 --> 00:02:06,526

to schools about what you do and inspiring those students.

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00:02:06,636 --> 00:02:07,726

Tell us about that.

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00:02:07,826 --> 00:02:10,536

>> Katie: Yes, well, we were trying to think of a way

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00:02:10,536 --> 00:02:13,776

to commemorate our anniversary and we thought what better way

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00:02:13,776 --> 00:02:16,326

than to try to get students excited about what we do here?

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00:02:16,696 --> 00:02:19,046

One day they'll be doing our jobs, and so we want

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00:02:19,046 --> 00:02:21,206

to give them an opportunity to learn about what we do

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00:02:21,206 --> 00:02:24,556

and get them excited about all the student activities

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00:02:24,556 --> 00:02:25,116

that we have.

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00:02:25,526 --> 00:02:28,916

And so for one of our activities
we will be having a live

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00:02:28,916 --> 00:02:29,826

event here.

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00:02:30,156 --> 00:02:32,426

The room we are standing
in will have about seven

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00:02:32,426 --> 00:02:34,686

of our cadre members,
and they will be in here

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00:02:34,686 --> 00:02:36,856

and they'll be talking about
their careers, we will talk

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00:02:36,856 --> 00:02:38,966

about some of the
different science experiments

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00:02:38,966 --> 00:02:41,886

that we have, and we will try
to relate some of the benefits

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00:02:41,886 --> 00:02:43,676

of the science experiments
in a way

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00:02:43,676 --> 00:02:45,306

that the students can understand

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00:02:45,756 --> 00:02:48,626

and also always the fun
question and answer session.

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00:02:48,746 --> 00:02:50,086

So that should be a lot of fun.

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00:02:50,306 --> 00:02:51,976

>> Laurie: That's going out
to a lot of schools, right,

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00:02:51,976 --> 00:02:53,476

this digital learning
network programme

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00:02:53,476 --> 00:02:54,416

that you are talking about?

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00:02:54,926 --> 00:02:55,186

>> Katie: Right.

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00:02:55,186 --> 00:02:57,186

We will have a few that
will actually be live

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00:02:57,186 --> 00:03:00,116

but it will be broadcast
on the web so schools

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00:03:00,116 --> 00:03:01,376

around the country can view it.

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00:03:01,376 --> 00:03:04,426

And we hope to also
have follow-on events,

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00:03:04,426 --> 00:03:06,296

so maybe this will not be
the only one that we do.

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00:03:06,426 --> 00:03:08,336

And in addition to that,
we will also be going

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00:03:08,336 --> 00:03:09,166
out into the schools.

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00:03:09,516 --> 00:03:11,566
You know, not every school
has the equipment to be able

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00:03:11,566 --> 00:03:14,396
to support that kind of
activity, so we also want to get

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00:03:14,396 --> 00:03:17,936
out into the schools, have
more one on one experience

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00:03:17,936 --> 00:03:21,106
with the students and show
them some different experiments

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00:03:21,106 --> 00:03:23,666
and relate that to what we
do on the space station,

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00:03:23,666 --> 00:03:25,836
and talk about how we
got to be where we are.

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00:03:26,136 --> 00:03:28,336
>> Laurie: What's the number one
thing that you can tell students

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00:03:28,336 --> 00:03:31,606
to inspire them about the
work that you do here?

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00:03:31,926 --> 00:03:34,606
>> Katie: I think the
most important thing is

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00:03:34,606 --> 00:03:37,586

to get them excited
about science,

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00:03:37,586 --> 00:03:39,476

technology, engineering
and math.

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00:03:39,476 --> 00:03:41,266

There are a lot of things
we do at a space station

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00:03:42,106 --> 00:03:43,796

that they may not know about;

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00:03:43,796 --> 00:03:47,186

they may not understand the
benefits of those experiments.

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00:03:47,186 --> 00:03:49,186

And we want to get them
excited because they are going

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00:03:49,186 --> 00:03:50,286

to be doing our jobs one day.

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00:03:50,586 --> 00:03:51,326

>> Laurie: That's right.

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00:03:51,326 --> 00:03:52,846

And a good job that
you do, Katie.

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00:03:52,846 --> 00:03:54,146

Thank you so much
for sharing with us.

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00:03:54,146 --> 00:03:56,816

And as you mentioned, there

are lots of ways that students

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00:03:56,816 --> 00:04:00,386
and educators can get involved
in space station experiments.

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00:04:00,386 --> 00:04:03,346
For example, the SPHERES
Zero-Robotics competition.

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00:04:03,606 --> 00:04:06,386
Now SPHERES stands for the
Synchronised Position Hold,

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00:04:06,686 --> 00:04:09,416
Engage, Reorient, Experimental
Satellites experiment.

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00:04:09,686 --> 00:04:11,736
The SPHERES Zero-Robotics
investigation opens

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00:04:11,736 --> 00:04:13,946
up the space station for
high school students to use,

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00:04:14,276 --> 00:04:16,056
providing them with
the opportunity to act

113

00:04:16,056 --> 00:04:19,326
as ground controllers for
research in space using spheres

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00:04:19,486 --> 00:04:21,936
which are bowling ball-size
spherical satellites.

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00:04:22,376 --> 00:04:23,656
They're used inside

the space station

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00:04:23,656 --> 00:04:25,946
to test autonomous rendezvous
and docking manoeuvres.

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00:04:25,946 --> 00:04:28,196
As part of the Zero-Robotics
competition,

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00:04:28,196 --> 00:04:30,816
students write algorithms
and design software

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00:04:30,816 --> 00:04:33,636
for the satellites to accomplish
complex tasks in space

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00:04:33,946 --> 00:04:36,306
such as docking, assembling
and formation flight.

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00:04:36,836 --> 00:04:38,706
The algorithms are
tested by the SPHERES team

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00:04:38,706 --> 00:04:40,866
at the Massachusetts
Institute of Technology,

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00:04:41,206 --> 00:04:43,416
and the best designs are
selected for the competition

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00:04:43,636 --> 00:04:46,126
to operate the SPHERE
satellites on board the station.

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00:04:46,586 --> 00:04:49,246
SPHERES Zero-Robotics provides a

unique and valuable opportunity

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00:04:49,246 --> 00:04:53,236
to maintain student interest in
science, technology, engineering

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00:04:53,236 --> 00:04:54,696
and mathematics careers.

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00:04:55,036 --> 00:04:57,786
And many other educational
opportunities have already taken

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00:04:57,836 --> 00:05:01,766
place to date: 49
countries, 25,000 schools,

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00:05:02,066 --> 00:05:04,086
2.8 million teachers and more

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00:05:04,086 --> 00:05:07,166
than 43 million students have
participated in experiments

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00:05:07,166 --> 00:05:08,316
on board the space station.

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00:05:08,586 --> 00:05:10,776
Now, if you or your school
would like to participate in any

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00:05:10,776 --> 00:05:14,056
of these activities, you
can go to nasa.gov/station,

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00:05:14,256 --> 00:05:17,686
and on the right side there
you will see a space station

136

00:05:17,686 --> 00:05:19,886
for kids and space
station for educators,

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00:05:19,886 --> 00:05:22,276
and you can learn more about
how you can get involved.

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00:05:22,276 --> 00:05:23,426
And that will do it for us

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00:05:23,546 --> 00:05:25,476
from the Payload Operation
Integration Center here

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00:05:25,476 --> 00:05:25,976
in Huntsville.