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00:00:01,520 --> 00:00:04,980
>> Joining me now here in Mission
Control Houston on console is one

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00:00:04,980 --> 00:00:07,400
of our earth scientists from
the Johnson Space Center.

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00:00:07,400 --> 00:00:08,990
This is Melissa Dawson.

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00:00:08,990 --> 00:00:11,330
Uh, Melissa, thank you so much
for being here today with me,

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00:00:11,330 --> 00:00:12,510
and why don't you tell me a little bit

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00:00:12,510 --> 00:00:15,220
about what your role is here
at the Johnson Space Center.

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00:00:15,220 --> 00:00:22,180
>> Well, I'm in Current Observations, I'm an
earth scientist, and what we do is we have

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00:00:22,180 --> 00:00:27,360
about 300 sites around the world that we
like to have the astronauts take pictures of,

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00:00:27,360 --> 00:00:32,030
so we'll look at the station orbits for
that day, and then if they cross over any

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00:00:32,030 --> 00:00:36,880
of our targets, we will screen for weather
and see if they have adequate lighting

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00:00:36,880 --> 00:00:42,100

and then we can ask them to take a picture of that site for us and then they'll downlink it

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00:00:42,100 --> 00:00:48,080
to us and we'll catalogue it so you you know you can see this river or this city and things

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00:00:48,080 --> 00:00:51,530
like that in the picture, and if we're working with collaborators, then,

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00:00:51,530 --> 00:00:55,560
we'll send them the picture and they can do their research

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00:00:55,560 --> 00:00:57,480
or any other things that they need to do with it.

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00:00:57,480 --> 00:01:03,840
>> OK. So what are some the things you guys hope to accomplish with all these earth observations?

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00:01:03,840 --> 00:01:07,670
>> Well you know we've been doing this for a little over 10 years,

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00:01:07,670 --> 00:01:13,820
and so we take the pictures over time and we can look at what sort

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00:01:13,820 --> 00:01:15,710
of earth science we can actually view from these.

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00:01:15,710 --> 00:01:21,840
Say you want to look at how the [inaudible] are depleting over time, you can, you know,

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00:01:21,840 --> 00:01:23,860

do some science with that, or you can look

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00:01:23,860 --> 00:01:27,410

at how population growth is affecting certain places.

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00:01:27,410 --> 00:01:32,400

Um, you can look at city lights at nighttime and, say for instance, look at Houston

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00:01:32,400 --> 00:01:37,650

and see how it changes over, you know, over the past 5, 10 years and see if there was a lot

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00:01:37,650 --> 00:01:42,160

of population rising, and a lot of other aspects that we can really learn from our pictures.

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00:01:42,160 --> 00:01:45,440

>> OK, so basically a lot of really important aspects here

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00:01:45,440 --> 00:01:48,260

on the earth we can take just by looking at it from space...

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00:01:48,260 --> 00:01:48,350

>> Right.

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00:01:48,350 --> 00:01:49,830

>> We can learn a lot things.

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00:01:49,830 --> 00:01:53,650

So about how many pictures does each crew, you know, send down during their expedition?

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00:01:53,650 --> 00:01:55,050

How many are they taking?

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00:01:55,050 --> 00:01:59,490

>> Well recently with the time lapse videos, they've been taking tens of thousands

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00:01:59,490 --> 00:02:06,260

because each of these videos, you know, requires about an average of 500 pictures for each one.

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00:02:06,260 --> 00:02:12,640

And so it's really you know it's upped a little bit, but now it's about tens of thousands.

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00:02:12,640 --> 00:02:13,460

>> Tens of thousands.

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00:02:13,460 --> 00:02:17,320

OK. Well, why don't we talk a little bit about these time lapse videos,

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00:02:17,320 --> 00:02:20,840

and you're watching one now as this shows the station passing

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00:02:20,840 --> 00:02:23,220

over the eastern coast of the United States.

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00:02:23,220 --> 00:02:25,790

Now again, these are, these are collections of images.

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00:02:25,790 --> 00:02:27,170

These aren't actual videos.

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00:02:27,170 --> 00:02:29,960

So the crew isn't just sticking a video camera out of a window.

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00:02:29,960 --> 00:02:30,160

>> Right.

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00:02:30,160 --> 00:02:32,890
>> Why are you guys using
images instead of these videos?

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00:02:32,890 --> 00:02:36,420
>> Well, right now the cameras on
board have much higher resolution

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00:02:36,420 --> 00:02:40,810
than a video camera would, so we can
capture a lot of other things from our,

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00:02:40,810 --> 00:02:46,040
our videos if we use time lapse photography,
so instead of looking at a dim star field

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00:02:46,040 --> 00:02:51,580
from a video camera, we can see actual
constellations, and, you know, the Milky Way.

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00:02:51,580 --> 00:02:56,120
Or we can see city lights brighter
than ever, really, with these.

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00:02:56,120 --> 00:03:00,270
So until we get more advanced video
cameras on board, it's the best way to go.

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00:03:00,270 --> 00:03:03,870
>> OK. And about how long have you guys
been making these time lapse videos?

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00:03:03,870 --> 00:03:07,910
And again, this is easily some of the
most spectacular views we've ever had

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00:03:07,910 --> 00:03:09,080
in the space station.

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00:03:09,080 --> 00:03:10,740

And you came up with this idea.

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00:03:10,740 --> 00:03:14,330

>> Yeah, we've been doing it since mid-August, I believe.

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00:03:14,330 --> 00:03:19,730

They sent down something looking over North America going down to South America, and,

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00:03:19,730 --> 00:03:23,140

you know, I saw the images coming down and I noticed that, you know,

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00:03:23,140 --> 00:03:25,760

it looked like they had mounted a camera in the cupola and,

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00:03:25,760 --> 00:03:30,070

or another window, and they started just, you know, taking a picture every 3 seconds

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00:03:30,070 --> 00:03:33,970

or 5 seconds, and I put it together just to see what it would look like and it came

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00:03:33,970 --> 00:03:39,220

out spectacular, and so it's really just, it's gone a long ways.

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00:03:39,220 --> 00:03:43,200

>> And, again, they really are some of the most breathtaking views we've had in the station,

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00:03:43,200 --> 00:03:45,470

so I guess we all have you to thank.

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00:03:45,470 --> 00:03:51,920

Now, some of these, ah, you're seeing now storms

all across the earth as the station passes by at

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00:03:51,920 --> 00:03:58,980
about 17,000 miles an hour, and part of what
you guys are always researching are some fairly

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00:03:58,980 --> 00:04:00,260
unique phenomena.

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00:04:00,260 --> 00:04:04,740
Um, what are some of the more unique things
you're hoping to capture in the future

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00:04:04,740 --> 00:04:08,600
and again get a new look at
through these time lapse videos?

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00:04:08,600 --> 00:04:14,850
>> Well just recently, the commander,
Dan Burbank, found the Lovejoy Comet.

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00:04:14,850 --> 00:04:17,550
He got a great sequence on that.

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00:04:17,550 --> 00:04:22,240
And so, you know, that's one of the things
that we can, you know, kind of build on,

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00:04:22,240 --> 00:04:27,930
and also maybe, you know, if we can capture
shooting stars or, you know, just hurricanes

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00:04:27,930 --> 00:04:33,370
or anything really, it's a whole new vantage
point that we can see these things from.

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00:04:33,370 --> 00:04:38,000
>> OK. And, we've already been
doing this since about August or so,

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00:04:38,000 --> 00:04:40,970

and do you have any favorites
that have come down so far?

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00:04:40,970 --> 00:04:44,140

I mean I know the auroras have been
very popular for people to see.

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00:04:44,140 --> 00:04:46,390

Do you have any personal favorites?

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00:04:46,390 --> 00:04:50,860

>> Um, well, there was one of the aurora
australis that was really breathtaking back

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00:04:50,860 --> 00:04:54,220

in September or October, I
can't remember which one.

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00:04:54,220 --> 00:04:56,230

And also the Lovejoy Comet that we just saw.

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00:04:56,230 --> 00:04:59,870

I mean, that was a spectacular
video, and it made a lot of rounds.

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00:04:59,870 --> 00:05:03,250

I mean, people just loved that video
and we got a lot of comments from it.

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00:05:03,250 --> 00:05:04,560

It was great.

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00:05:04,560 --> 00:05:09,130

>> OK. And I mean, kind of an
easy question since, as you watch,

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00:05:09,130 --> 00:05:11,000

you can see these are just gorgeous videos.

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00:05:11,000 --> 00:05:13,200
Why do you think people are getting so excited

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00:05:13,200 --> 00:05:15,710
about seeing these, and you
know, asking about them?

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00:05:15,710 --> 00:05:19,580
>> Well honestly, it's a whole new vantage
point for people to see these things.

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00:05:19,580 --> 00:05:23,180
You know, they don't get to see these things
every day, and only astronauts get to see this,

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00:05:23,180 --> 00:05:29,710
and so, you know, people kind of get a sense
of how it looks from up there, and it's really,

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00:05:29,710 --> 00:05:33,400
it's breathtaking, the things
that you can see from up in space.

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00:05:33,400 --> 00:05:36,990
>> It really is, and that is one of the
things these astronauts always struggle with,

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00:05:36,990 --> 00:05:39,460
is just describing the views
that they get to see...

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00:05:39,460 --> 00:05:39,850
>> Right, right.

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00:05:39,850 --> 00:05:43,340
>> And since they're such a select
group, they don't get to always share it,

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00:05:43,340 --> 00:05:46,030
and now we're finally getting the chance
to share this with the whole world.

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00:05:46,030 --> 00:05:46,790
>> Exactly.

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00:05:46,790 --> 00:05:47,030
Yeah.

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00:05:47,030 --> 00:05:48,860
>> OK. Well, thank you Melissa.

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00:05:48,860 --> 00:05:51,790
It's been great having you on and we
really love the videos and we hope

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00:05:51,790 --> 00:05:53,540
to see many, many more in the future.