TRANSCRIPT

Virtual media briefing about NOAA's next-generation GOES-T weather satellite.

Tuesday, Feb. 1 at 1 p.m. EST

Hosted by NOAA Satellites Public Affairs

Media advisory about briefing: Experts to preview March launch of NOAA's GOES-T satellite

1
00:00:04,320 --> 00:00:07,680
All right, good afternoon everyone and thank you for joining this virtual

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00:00:07,680 --> 00:00:12,080
media day for the upcoming launch and mission of NOAA's GOES-T satellite.

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00:00:12,640 --> 00:00:17,360
I'm John Bateman with NOAA Communications, and I'll be moderating today's briefing. If you have

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00:00:17,360 --> 00:00:22,640
any additional questions after the conclusion of today's media day, my colleague, John Leslie, and I

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00:00:22,640 --> 00:00:36,000
can both be reached by email at nesdis.pa@noaa.gov and I will spell that. That is n e s d i s (dot)

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00:00:36,640 --> 00:00:47,760
p a (at) n o a a (dot) g o v. John Leslie's contact information is also included in the media advisory.

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00:00:48,480 --> 00:00:53,840
Today's briefing will feature a short introductory video highlighting GOES-T's journey to Florida

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00:00:53,840 --> 00:01:00,960
ahead of its final preparations before launch. Then experts from NOAA, NASA, Lockheed Martin,

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00:01:00,960 --> 00:01:06,240
L3Harris, and United Launch Alliance will provide their perspectives on the technology

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00:01:06,240 --> 00:01:11,040
and partnerships that are critical to this mission, as well as discuss the benefits

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00:01:11,040 --> 00:01:17,920
GOES-T will provide once in operation. Lastly, our experts will be on hand to answer questions from

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00:01:17,920 --> 00:01:23,840
the media during our Q&A session after their presentations. For now though, let's watch this

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00:01:23,840 --> 00:01:29,600
video that shows the teamwork it takes to ship a satellite that is the size of a small school bus

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00:01:29,600 --> 00:01:35,648
from its home at Lockheed Martin's base in Littleton, Colorado to NASA's Kennedy Space Center.

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00:01:36,095 --> 00:01:40,478
On November 10, 2021, the GOES-T satellite arrived in Florida

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00:01:40,478 --> 00:01:44,334
for final preparations for its upcoming launch.

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00:01:44,334 --> 00:01:46,714
Shipping a satellite is no small feat.

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00:01:46,714 --> 00:01:50,157
GOES-T is the size of a small school bus and weighs over 6,000 pounds!

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00:01:51,544 --> 00:01:58,703
The spacecraft team at Lockheed Martin in Littleton, Colorado, where GOES-T was built, carefully packed the satellite in a special shipping container.

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00:01:58,703 --> 00:02:04,535
that protected its sensitive instruments and functioned as a miniature clean room during transport.

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00:02:05,394 --> 00:02:10,130
GOES-T was transported to Buckley Space Force Base,

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00:02:10,130 --> 00:02:14,302
where it hitched a ride aboard a C-5 Super Galaxy transport to Kennedy Space Center.

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00:02:24,987 --> 00:02:30,382
After landing at Kennedy, the satellite was taken to Astrotech Space Operations

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00:02:30,382 --> 00:02:40,867
where it was removed from its container, inspected, and placed onto a test stand.

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00:02:41,726 --> 00:02:46,902
GOES-T will now undergo final preparations for a planned March 1, 2022 launch

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00:02:46,902 --> 00:02:51,034
from Cape Canaveral Space Force Station.

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00:02:51,549 --> 00:02:56,705
When GOES-T reaches orbit, it will be renamed GOES-18.

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00:02:57,134 --> 00:03:01,345
After the instruments and systems are checked out, the satellite

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00:03:01,345 --> 00:03:05,681
will go into operation in the GOES West position, replacing GOES-17.

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00:03:06,196 --> 00:03:10,515
In the GOES West position, GOES-18 will watch over the U.S. West Coast,

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00:03:10,515 --> 00:03:15,876

Alaska, Hawaii, Mexico, Central America, and the Pacific Ocean.

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00:03:16,461 --> 00:03:22,887
There, it will detect and monitor weather systems and environmental hazards

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00:03:22,887 --> 00:03:30,934
such as wildfires, atmospheric rivers, coastal fog, dust storms, and volcanic eruptions.

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00:03:31,999 --> 00:03:36,481
Additionally, GOES-18 will monitor the sun for solar eruptions and detect

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00:03:36,481 --> 00:03:41,366
space weather that can disrupt communications, GPS signals, and power utilities on Earth.

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00:03:43,235 --> 00:03:48,292
Stay tuned as GOES-T prepares for its journey to geostationary orbit.

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00:03:55,520 --> 00:03:59,920
I hope you enjoyed that presentation. With that, I will now introduce our experts who

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00:03:59,920 --> 00:04:06,080
will be presenting today. Our first expert is Pam Sullivan, the Director of NOAA's GOES-R Program.

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00:04:06,640 --> 00:04:11,360
Our second presenter is Dan Lindsey, Ph.D., the Program Scientist for NOAA's GOES-R Program.

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00:04:12,080 --> 00:04:17,120
Next will be Jim Yoe, Ph.D the Chief Administrator for the Joint Center for Satellite Data Assimilation,

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00:04:17,680 --> 00:04:24,160
followed by Candace Carlisle, the GOES-R Flight Project Manager at NASA-Goddard. Our next presenter

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00:04:24,160 --> 00:04:30,240
will then be Jagdeep Shergill the GOES-T Program Manager from Lockheed Martin,

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00:04:30,240 --> 00:04:35,920
then Larry Crawford, the Advanced Baseline Imager Program Manager from L3Harris Technologies will speak.

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00:04:36,720 --> 00:04:41,840
Following Larry will be Scott Messer, the Program Manager of NASA's Launch Services

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00:04:41,840 --> 00:04:49,120
at United Launch Alliance. Next we have Rex Engelhardt, [GOES-T] Mission Manager with NASA's Launch Services Program,

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00:04:49,120 --> 00:04:56,026
and finally, we will hear from the Director
of NASA's Joint Agency Satellite Division, John Gagosian.

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00:04:56,576 --> 00:05:00,606
We will now kick off the presentations with Pam Sullivan from NOAA. Pam-

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00:05:03,680 --> 00:05:08,160
Thanks John, and thank you all for joining us to hear about the upcoming launch of our GOES-T

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00:05:08,160 --> 00:05:14,320
satellite. NOAA's geostationary satellites provide the only continuous coverage of weather and

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00:05:14,320 --> 00:05:19,760
hazardous environmental conditions in the Western
Hemisphere, protecting the lives and properties of

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00:05:19,760 --> 00:05:26,160
the one billion people who live and work there.
The observations from these satellites are even

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00:05:26,160 --> 00:05:30,800
more critical now when the U.S. is experiencing
a record number of billion-dollar disasters.

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00:05:32,080 --> 00:05:37,840
GOES-T is the third satellite in the GOES-R series [-R, -S, -T, -U], which is NOAA's newest generation observing system.

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00:05:38,720 --> 00:05:43,360
The GOES-R satellites are bringing advanced new
capabilities to help forecasters better monitor

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00:05:43,360 --> 00:05:48,160
and predict dangerous environmental conditions
like hurricanes, thunderstorms, floods, and fire.

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00:05:49,120 --> 00:05:54,080
Compared to the previous generation, GOES-R
satellites deliver 60 times more imagery and

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00:05:54,080 --> 00:05:58,800
they have a new lightning camera to track severe
storms that spawn tornadoes and damaging winds.

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00:06:00,480 --> 00:06:04,800
GOES-T is part of a multi-generational family
that began with the first geostationary

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00:06:04,800 --> 00:06:10,480
weather satellite in 1974, and it will
continue its operation into the 2030s.

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00:06:11,520 --> 00:06:15,680
To ensure these critical observations
continue after that, NOAA is now planning

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00:06:15,680 --> 00:06:20,640
its sixth generation geostationary observing
system called GeoXO [Geostationary Extended Observations] which will operate into

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00:06:20,640 --> 00:06:25,280
the 2050s and provide even more advanced

observations of the weather and environment.

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00:06:26,880 --> 00:06:31,040
GOES-T was developed by a team of
people from NOAA, NASA, industry, and academia,

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00:06:31,600 --> 00:06:35,520
It continues the decades-long NOAA-NASA
partnership to get the best technology

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00:06:35,520 --> 00:06:40,240
into space for accurate up-to-the-minute
forecasts and for long-term climate monitoring.

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00:06:41,520 --> 00:06:45,200
Our primary industry partners for
the GOES-R system are Lockheed Martin,

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00:06:45,200 --> 00:06:51,680
which developed the spacecraft, the lightning
mapper, and solar imager, and L3Harris which

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00:06:51,680 --> 00:06:56,080
built the main camera—the advanced baseline
imager—as well as our operational ground system.

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00:06:57,440 --> 00:07:01,200
GOES-T carries three additional instruments
that help monitor space weather conditions.

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00:07:01,760 --> 00:07:05,520
They are a particle flux sensor built
by the Assurance Technology Corporation,

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00:07:06,080 --> 00:07:12,880
a solar irradiance monitor from the University of
Colorado, and a magnetometer developed by NASA's

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00:07:12,880 --> 00:07:18,000
Goddard Space Flight Center. GOES-T will be
launched on an Atlas V launch vehicle built

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00:07:18,000 --> 00:07:23,680
by the United Launch Alliance. I'll now hand you
over to our GOES-R program scientist, Dan Lindsey.

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00:07:26,400 --> 00:07:31,840
Thank you, Pam. The weather and science communities
are very excited to begin working with data from

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00:07:31,840 --> 00:07:40,000
GOES-T. After launch, GOES-T will be launched
into the 89.5 West center position, which is over

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00:07:40,000 --> 00:07:45,040
the center of the U.S., and it will remain there
for approximately two months where it will undergo

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00:07:45,040 --> 00:07:51,920
post-launch testing. After that, it will be drifted
to the west out to about 137 West longitude, which

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00:07:51,920 --> 00:07:56,800
is over the east Pacific Ocean, and from that
location, it will continue its post-launch testing

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00:07:57,360 --> 00:08:03,680
for really the rest of the calendar year or
so. And then the plan is for in early 2023,

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00:08:04,240 --> 00:08:08,960
GOES-18 will replace GOES-17 as
the GOES West operational satellite.

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00:08:09,840 --> 00:08:16,240
One of GOES-18's most important jobs as GOES West is for fire detection. As everyone has heard,

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00:08:16,240 --> 00:08:21,840
the fires have been very active across the western continental U.S. and so GOES West is in an ideal

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00:08:21,840 --> 00:08:28,320
position out there to get a really close look at those fires. Its Advanced Baseline Imager, or ABI,

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00:08:28,320 --> 00:08:33,680
is ideal for detecting the thermal signature or the hot spots from the fires, and sometimes

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00:08:33,680 --> 00:08:38,480
it's even able to detect the fires before they're reported from the public. This is really critical

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00:08:38,480 --> 00:08:42,640
information to get to firefighters so they can take care of the fires before they come become

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00:08:42,640 --> 00:08:49,200
out of control. The ABI can also track the smoke from the fires in order to alert forecasters on

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00:08:49,200 --> 00:08:54,560
when the smoke plumes are entering major cities. Another really useful application from GOES West

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00:08:54,560 --> 00:09:01,280
is for the aviation industry. If you've ever taken a flight from North America to say, East Asia,

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00:09:01,280 --> 00:09:06,560
you have likely gone over the north Pacific Ocean,
and this is the same area that GOES West monitors.

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00:09:07,120 --> 00:09:12,080
There are aviation hazards out there, for example,
volcanic ash erupting from volcanoes in the

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00:09:12,080 --> 00:09:17,920
Aleutian Islands, atmospheric turbulence, which the
ABI is able to detect, as well as lightning from

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00:09:17,920 --> 00:09:24,000
thunderstorms, which we're able to detect from the
Geostationary Lightning Mapper [GLM]. One recent thing

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00:09:24,000 --> 00:09:30,480
that we learned from both GOES East and West that
we didn't know previously, is these instruments...

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00:09:30,480 --> 00:09:37,120
the ABI is able to detect pressure waves from
volcanic eruptions. I'm sure you all heard

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00:09:37,120 --> 00:09:43,040
about the Tonga eruption, which happened a couple
of weeks ago. The volcano near there.

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00:09:43,040 --> 00:09:47,600
You may have seen a movie of a pressure wave
moving out and circling the globe multiple times.

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00:09:47,600 --> 00:09:53,920
That was actually taken by taking differences
between successive images on GOES-16 and -17's ABI.

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00:09:55,200 --> 00:09:59,040

Next, I'm going to hand it off to Dr. Jim
Yoe from NOAA's National Weather Service.

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00:10:01,360 --> 00:10:07,280
Thank you Dan. As the operational GOES West
satellite, GOES-T will be vital for achieving

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00:10:07,280 --> 00:10:12,720
NOAA's weather-ready nation goals, helping to
save lives and to protect property and resources.

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00:10:13,760 --> 00:10:17,920
GOES-T will help improve NOAA's numerical
weather prediction models, which are used by

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00:10:17,920 --> 00:10:22,880
National Weather Service forecasters by providing
measurements of wind speed and direction at

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00:10:22,880 --> 00:10:27,280
different levels in the atmosphere, and other
data that will be assimilated into those models.

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00:10:28,240 --> 00:10:32,640
Since many of the weather systems over
the United States move from West to East,

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00:10:32,640 --> 00:10:39,120
GOES-T, as GOES West, will improve model
forecasts for the entire country. The GOES-T

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00:10:39,120 --> 00:10:43,440
imager and lightning mapper will be used for
making warnings and forecasts of significant

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00:10:43,440 --> 00:10:48,960
weather events, including severe storms, hurricanes

in the eastern Pacific, including those near Hawaii,

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00:10:50,240 --> 00:10:55,280
atmospheric rivers that bring significant rain and
related hazards such as flooding and landslides to

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00:10:55,280 --> 00:11:03,040
the western United States, and wildfires. Finally
GOES-T's space weather sensors

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00:11:03,040 --> 00:11:07,920
will provide observations that will enable
the National Weather Service Space Weather

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00:11:07,920 --> 00:11:13,840
Prediction Center to detect and issue warnings
for solar storms that can threaten critical power

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00:11:13,840 --> 00:11:20,800
communications and navigation systems. In sum,
directly and indirectly, GOES-T will help citizens,

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00:11:20,800 --> 00:11:27,280
industries, and local state and federal agencies
make informed decisions and take proper actions

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00:11:27,280 --> 00:11:33,040
before, during, and after high-impact weather events.
And I'll hand off to the next speaker, Candace Carlisle,

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00:11:33,040 --> 00:11:39,840
the GOES-R Flight Project Manager.
NASA Goddard is responsible for the GOES-R

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00:11:39,840 --> 00:11:45,920
series satellites and instruments. To give you an
analogy of what that's like, it's like you want to

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00:11:45,920 --> 00:11:51,920
remodel your kitchen, and your sister is a general
contractor, so you bring her in to help you out.

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00:11:51,920 --> 00:11:57,920
She works with you to figure out what needs to
be done, brings in the electrician, the plumber,

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00:11:57,920 --> 00:12:02,560
does a little bit of the cabinetry, and then makes
sure you have a really great kitchen at the end.

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00:12:03,360 --> 00:12:10,240
Likewise, NASA's GOES-R team works
with NOAA to determine the requirements.

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00:12:10,240 --> 00:12:16,240
We contract with companies such as Lockheed
Martin and L3Harris to provide the satellite

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00:12:16,240 --> 00:12:22,800
and the instruments, and we oversee their work.
Goddard also built the GOES-T magnetometers

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00:12:22,800 --> 00:12:27,840
in-house that will provide more accurate
measurements to help predict space weather.

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00:12:28,800 --> 00:12:35,360
We also have the GOES-R mission operations
support team. They completely check out

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00:12:35,360 --> 00:12:41,680
the GOES-T spacecraft on orbit, and then
they hand it over to NOAA for operations,

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00:12:41,680 --> 00:12:48,400
and then that support team provides engineering
support throughout the life of the mission.

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00:12:48,400 --> 00:12:51,055
Next up is Jagdeep from Lockheed Martin.

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00:12:52,464 --> 00:13:02,000
Thanks candace. From building the first ever weather satellite to building NOAA's current GOES-R series, we here at Lockheed Martin are passionate about supporting

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00:13:02,000 --> 00:13:07,360
our customers mission, especially as climate change
drives interruptions in current weather patterns.

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00:13:08,480 --> 00:13:13,200
In the life of GOES-T, there were years
of design and development and hardware built

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00:13:13,200 --> 00:13:17,840
followed by integration of all that hardware and
software into the spacecraft, and it was capped off

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00:13:17,840 --> 00:13:24,160
with a rigorous test campaign to ensure that
GOES-T is really ready for space. We completed

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00:13:24,160 --> 00:13:29,680
the last two years of GOES-T's integration in
Littleton, Colorado during this global pandemic.

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00:13:30,320 --> 00:13:35,360
Our team shifted seamlessly to a hybrid work
environment ensuring personnel safety as our

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00:13:35,360 --> 00:13:41,120

number one priority. And I'm happy to say the team is still able to deliver this critical satellite

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00:13:41,120 --> 00:13:46,080
for our customer. I'm so very proud of our Lockheed Martin team for getting us here safely.

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00:13:47,760 --> 00:13:54,400
In addition to designing and building the GOES-T spacecraft, Lockheed Martin's Advanced Technology

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00:13:54,400 --> 00:13:59,200
Center in Palo Alto, California, provides two of the instruments on the GOES satellites. The first

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00:13:59,200 --> 00:14:05,760
ever Geostationary Lightning Mapper, better known as GLM, as well as the Solar Ultraviolet Imager,

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00:14:05,760 --> 00:14:11,920
or SUVI. Once GOES-T was fully assembled with its instruments, we subjected it to the environments it

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00:14:11,920 --> 00:14:17,440
will experience in space. Vibration and acoustic testing simulated the ride the spacecraft will

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00:14:17,440 --> 00:14:22,400
have on the rocket as it launches into space, and thermal vacuum testing simulated the

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00:14:22,400 --> 00:14:27,280
extreme hot and cold temperature swings it'll see in the vacuum of space during its mission.

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00:14:29,200 --> 00:14:33,760
After we successfully completed this rigorous

test campaign, we shipped the spacecraft here

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00:14:33,760 --> 00:14:37,840
to Astrotech Space Operations in
Titusville, Florida in November of last year.

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00:14:38,800 --> 00:14:43,840
In Florida, Lockheed Martin, Astrotech, and
the United Launch Alliance work together

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00:14:44,400 --> 00:14:50,240
alongside NASA's launch services provider to get the spacecraft ready for launch.

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00:14:51,040 --> 00:14:56,240
This includes things like final testing, fueling of
the spacecraft, and encapsulation with the fairing.

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00:14:57,360 --> 00:15:02,160
This launch is truly the culmination of years
of hard work by a huge team of engineers

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00:15:02,160 --> 00:15:08,560
from Lockheed Martin, NOAA, and NASA, as well as
countless other teams. We are so honored to help

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00:15:08,560 --> 00:15:14,320
bring forecasters the data they need to save
lives when it's needed the most. And speaking

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00:15:14,320 --> 00:15:22,990
of groundbreaking, I'd like to throw
it over to Larry Crawford from L3Harris Technologies.

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00:15:25,040 --> 00:15:31,760
L3Harris has multiple roles on the GOES satellite
system. We provide the primary instrument on the

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00:15:31,760 --> 00:15:39,280
GOES-T spacecraft—the Advanced Baseline Imager, or
ABI. The imager is assembled in Fort Wayne, Indiana,

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00:15:39,280 --> 00:15:46,960
and our environmental testing is performed at our
L3Harris facilities in Rochester, New York.

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00:15:46,960 --> 00:15:53,920
ABI images the earth using 16 channels. It provides
three times more spectral information, four times

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00:15:53,920 --> 00:15:59,600
the spatial resolution, and five times faster
coverage rate than the previous GOES imager.

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00:16:01,200 --> 00:16:06,880
As you've already heard, it's used for a wide range
of applications related to weather, oceans, land, and

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00:16:06,880 --> 00:16:13,760
climate hazards, such as fires, volcanoes, floods,
hurricanes, and severe storms that could possibly

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00:16:13,760 --> 00:16:19,840
spawn tornadoes. The L3Harris team also provides
support during spacecraft integration and test

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00:16:19,840 --> 00:16:27,360
campaigns, and provides operational support for all
on orbit assets. Our L3Harris enterprise ground

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00:16:27,360 --> 00:16:35,760
system operates from two primary locations: at the
NOAA satellite operations facility, or NSOF, that's

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00:16:35,760 --> 00:16:41,520
in Suitland, Maryland, and the Wallops Command
Data Acquisition Center at Wallops, Virginia.

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00:16:41,520 --> 00:16:46,400
There's a third operations facility at Fairmont,
West Virginia, and that serves as our consolidated

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00:16:46,400 --> 00:16:53,200
backup in case of a systems communication failure
at either or both NSOF and Wallops facilities.

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00:16:54,240 --> 00:17:00,880
Satellite data is received at Wallops in the
backup facilities leveraging six L3Harris

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00:17:00,880 --> 00:17:07,440
16.4 meter tri-band antennas, and three of
those antennas are installed at each of those sites.

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00:17:09,520 --> 00:17:14,640
Now I turn it over to Scott Messer, who will
discuss the role of United Launch Alliance.

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00:17:17,680 --> 00:17:23,120
Thanks Larry, and on behalf of United
Launch Alliance, I just want to say how excited

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00:17:23,120 --> 00:17:29,440
we are to be here as we prepare to launch
GOES-T for NOAA in collaboration with NASA.

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00:17:30,320 --> 00:17:34,480
The Atlas V rocket is currently being
processed in preparation for launch.

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00:17:35,520 --> 00:17:40,240

The team began stacking the vehicle in our
vertical integration facility yesterday,

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00:17:41,120 --> 00:17:48,000
and the first stage was successfully stacked
yesterday and today we've added

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00:17:48,640 --> 00:17:54,640
one of four solid rocket motors that
will help propel GOES into orbit.

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00:17:54,640 --> 00:18:01,760
On Saturday, we will stack the second stage on
top of the vehicle. Meanwhile, over in the

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00:18:01,760 --> 00:18:08,480
payload processing area, we are preparing and
working with the GOES spacecraft in preparation for

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00:18:09,120 --> 00:18:17,920
encapsulation of the spacecraft inside the payload
fairing. And then on the 15th of February, we will

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00:18:19,600 --> 00:18:27,200
mate the encapsulated spacecraft onto the top of
the vehicle. Once the rocket is fully stacked, we

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00:18:27,200 --> 00:18:33,840
will perform a series of integrated operations
and tests and final preparation for launch.

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00:18:35,200 --> 00:18:40,880
We are certainly proud and excited to be at
this stage in the processing, and look forward to

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00:18:40,880 --> 00:18:47,040
another launch of a GOES satellite.

ULA and our heritage launch vehicles, Atlas

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00:18:47,040 --> 00:18:51,920
and Delta, have launched every GOES satellite
that's ever been ever been launched, including

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00:18:51,920 --> 00:18:59,360
the revolutionary GOES-R and -S spacecrafts which
launched on the Atlas V rocket. The first GOES

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00:18:59,360 --> 00:19:07,840
satellite was launched on a Delta rocket in 1975.
The rocket being processed out of the pad is an

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00:19:07,840 --> 00:19:14,800
Atlas 541 configuration, and it'll deliver
GOES-T into an optimized geosynchronous

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00:19:14,800 --> 00:19:21,280
transfer orbit. This orbit is designed to place
the spacecraft closer to its final destination and

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00:19:21,280 --> 00:19:29,040
conserve the satellite's fuel supply for a longer
mission life. The vehicle has a five meter fairing

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00:19:29,040 --> 00:19:35,680
and as mentioned, four solid rocket motors.
When it's fully stacked, it will be 196 feet tall,

190
00:19:37,040 --> 00:19:42,320
it will weigh close to a million pounds, and at
liftoff will produce more than two million pounds

191
00:19:42,320 --> 00:19:52,640
of thrust. This will be ULA's 149th launch, and our
22nd launch in partnership with the NASA LSP. It'll

192
00:19:52,640 --> 00:20:01,120
be Atlas's overall 92nd launch and Atlas 5 has demonstrated 100% mission success for all of our

193
00:20:01,120 --> 00:20:06,880
customers on all of our launches. And so with that, in closing, I'll just say thanks to our mission

194
00:20:06,880 --> 00:20:14,000
partners. The entire ULA team is looking forward to another successful launch of a GOES satellite.

195
00:20:14,000 --> 00:20:20,880
And now I'll turn it over to Rex Engelhardt, the Mission Manager from the NASA Launch Services Program.

196
00:20:23,600 --> 00:20:28,480
Good afternoon, this is Rex Engelhart and I'm one of the Mission Managers for NASA's Launch

197
00:20:28,480 --> 00:20:34,800
Services Program here at Kennedy Space Center. We consider ourselves Earth's bridge to space

198
00:20:35,440 --> 00:20:40,160
for NASA. We procure and then provide the launch services for

199
00:20:40,800 --> 00:20:50,960
all the NASA spacecraft that launch. Our charter is to not only procure the launch vehicle but to

200
00:20:50,960 --> 00:20:55,840
get in between the spacecraft and launch vehicle and help them in the integration of the spacecraft

201
00:20:55,840 --> 00:21:01,200
onto the launch vehicle, and in the meantime we're
also procuring the ground processing facilities

202
00:21:01,200 --> 00:21:06,800
that they will need at the launch site to do final
processing of the spacecraft. And then we have a

203
00:21:06,800 --> 00:21:14,560
highly experienced launch team that steps in and
helps with the launch campaign. My job as a mission

204
00:21:14,560 --> 00:21:21,840
manager is to lead that team. I've had the pleasure
of being the lead for GOES-S, and I'm also working

205
00:21:21,840 --> 00:21:29,840
GOES-U, which is the next and last one of this four-spacecraft GOES series. I can't say enough about

206
00:21:29,840 --> 00:21:36,480
the team that we've been working with. We have
NASA Kennedy Space Center, NASA Goddard. We've

207
00:21:36,480 --> 00:21:42,480
got NOAA, we've got Lockheed—those are the primary
people involved with the integration of this

208
00:21:42,480 --> 00:21:48,800
spacecraft onto the rocket. That all launches as
a system. It's all one system when it launches, so

209
00:21:49,360 --> 00:21:53,280
the integration phase of this... in this case
we did it fairly quickly in about two years.

210
00:21:53,920 --> 00:21:59,680

It's critical to do that and make sure that it
all works well together when the launch occurs.

211
00:22:00,800 --> 00:22:05,600
As Scott just mentioned, things are going
well with the ground processing right now.

212
00:22:06,240 --> 00:22:10,880
The rocket... they put the first stage up
yesterday, and they'll be testing that next

213
00:22:10,880 --> 00:22:15,280
week, and while they're doing that, they'll be
encapsulating the spacecraft over at Astrotech

214
00:22:15,920 --> 00:22:21,440
and getting ready. Then a week
after that, we'll mate the spacecraft to the rocket

215
00:22:21,440 --> 00:22:24,880
and the week after that we'll do the final
closeouts and take the covers off all the

216
00:22:24,880 --> 00:22:29,920
instruments, make sure everything's clean. And then
we'll do launch, which I'm sure will be successful.

217
00:22:32,240 --> 00:22:37,280
Finally, the last person that's going to speak
today is going to be John Gagosian, and he's

218
00:22:37,280 --> 00:22:41,730
the Director of NASA's Joint Agency Satellite Division.

219
00:22:43,551 --> 00:22:50,400
Thank you very much, Rex. As you said, I'm John Gagosian, Director of NASA's Joint Agency Satellite Division.

220
00:22:50,400 --> 00:22:56,480
Our division is part of NASA's Science Mission Directorate and we manage, on NOAA's behalf, the development and deployment of

221
00:22:56,480 --> 00:23:02,240
operational weather satellites like GOES-T. We've partnered with NOAA for more than 50 years on the

222
00:23:02,240 --> 00:23:08,480
nation's terrestrial and space weather satellites in polar geostationary and vibration point orbits.

223
00:23:09,440 --> 00:23:14,080
Our partnership has been very successful, having significantly advanced the nation's

224
00:23:14,080 --> 00:23:20,000
earth observation capabilities to improve weather forecasting, severe storm and hurricane prediction,

225
00:23:20,000 --> 00:23:25,920
and climate observations. And over the years the NOAA-NASA partnership has successfully deployed

226
00:23:25,920 --> 00:23:32,560
more than 60 weather satellites. As you heard from Candice, NASA is responsible for the formulation

227
00:23:32,560 --> 00:23:39,440
development launch and initial operation of the GOES-T satellite. NASA and NOAA are committed to

228
00:23:39,440 --> 00:23:45,440
the continued success of the GOES-R program and its final mission, GOES-U, set to launch in 2024.

229

00:23:46,080 --> 00:23:51,840
In addition, as Pam indicated, moving forward in
the formulation of the follow-on program known as

230
00:23:51,840 --> 00:23:58,000
GeoXO, our teams have established collaborative
working relationships and are striving to meet the

231
00:23:58,000 --> 00:24:03,440
weather and environmental monitoring requirements
of the U.S. and the world. I'm confident that

232
00:24:03,440 --> 00:24:08,480
our partnership will continue to be strong and
successful. And now I'll turn it back to John Bateman.

233
00:24:12,160 --> 00:24:16,880
All right, thanks so much John and everyone else.
Now we will open the briefing to questions

234
00:24:16,880 --> 00:24:22,320
from the media. To ask a question, please
find the Q&A box located at the bottom

235
00:24:22,320 --> 00:24:28,799
right of your screen. Type in your name,
affiliation, your question, and the

236
00:24:28,799 --> 00:24:33,840
specific expert you would like to answer it,
if possible. We will wait for some of those

237
00:24:33,840 --> 00:24:38,352
questions to come in, but we already have one,
so I will read that off now.

238
00:24:38,834 --> 00:24:47,760

This question is for Jim Yoe. Jim, the question is "how will GOES-T help with things such as forecasting wildfires

239
00:24:47,760 --> 00:24:51,440
and atmospheric river systems that are such a problem in the western U.S.?"

240
00:24:54,000 --> 00:24:58,640
Thank you, John. I'm delighted to address this
question, and really, it's two questions here that

241
00:24:58,640 --> 00:25:05,360
I'll take in turn. I'll start with the question
of wildfires, because it's almost impossible to

242
00:25:05,360 --> 00:25:15,680
overstate what a significant factor GOES-T will
be in the forecasting and responding to

243
00:25:15,680 --> 00:25:20,880
wildfires. In the first place, the armature
for GOES-T monitors the land surfaces,

244
00:25:20,880 --> 00:25:26,480
including the vegetation health. That gives us a
background information outlook, if you will, for the

245
00:25:26,480 --> 00:25:32,160
potential for wildfires to occur. So even before
a wildfire is happening or likely to happen,

246
00:25:32,160 --> 00:25:37,920
we have some idea of where to be looking. The
lightning mapper—because lightning is one of

247
00:25:37,920 --> 00:25:43,040
the potential sources of ignition for wildfires,
especially in areas where there aren't people—

248
00:25:43,680 --> 00:25:49,920
will give us ideas of locations
where potential fires could be ignited

249
00:25:49,920 --> 00:25:54,960
by lightning strikes. Dan Lindsey talked
about how the thermal imagery of the

250
00:25:55,680 --> 00:26:00,560
armature can be used to detect hot spots and
the ignition of fires once they've occurred

251
00:26:01,200 --> 00:26:07,600
early, that helps us deploy resources for
fighting fires and to move people from harm's

252
00:26:07,600 --> 00:26:12,720
way as quickly as possible, and he also talked
about the smoke trails where we can see

253
00:26:14,560 --> 00:26:22,320
the impacts on citizens living far away from
the fire who need to be protected from air

254
00:26:22,320 --> 00:26:28,640
pollution and whatnot. Finally, after a
fire has occurred we're still looking at the

255
00:26:28,640 --> 00:26:34,960
Earth's surface. We can see burn scars
for years after, we can monitor the recovery of

256
00:26:34,960 --> 00:26:41,760
the areas impacted by wildfires, how that
might impact flooding and other industries

257

00:26:41,760 --> 00:26:47,760
such as forestry for years to come. So before the
fire happens, while it's happening, immediately

258
00:26:47,760 --> 00:26:55,680
after, and way after it occurs, the data from GOES-T will be helping to make informed decisions

259
00:26:55,680 --> 00:27:02,000
and take proper actions. Atmospheric rivers of
course, where you can look at the cloud imagery

260
00:27:02,000 --> 00:27:07,840
from the Advanced Baseline Imager that will help
us see the formation of atmospheric rivers

261
00:27:07,840 --> 00:27:12,560
coming from the Pacific Ocean to the West Coast
typically, we'll be able to have some knowledge

262
00:27:12,560 --> 00:27:17,600
about the size of them, how wide they are, we'll
be tracking the winds that are pushing them, and

263
00:27:17,600 --> 00:27:24,000
that in turn tells us how quickly they'll
arrive. We'll use that information in combination

264
00:27:24,000 --> 00:27:31,280
with moisture soundings from microwave sensors
on NOAA's polar satellites in order to get an

265
00:27:31,280 --> 00:27:36,560
idea of the quantitative precipitation amounts
that will be brought to bear there. Thank you.

266
00:27:39,760 --> 00:27:44,160
All right, thanks so much Jim. The next question

I think I can take a stab at. This is from

267
00:27:44,720 --> 00:27:50,960
Joe Witte from Aquent. He asked if there's a
website address with images and video for GOES-T.

268
00:27:50,960 --> 00:27:56,240
Yes, Joe there is. Probably the easiest
thing to do is check out the link that is

269
00:27:56,240 --> 00:28:00,480
in the bottom left-hand box on your screen.
You should see it there to the bottom left.

270
00:28:00,480 --> 00:28:04,640
There's a link for the media advisory
page, and the link to the GOES-T

271
00:28:05,520 --> 00:28:10,560
webpage is located in that media advisory. If
you have any issues, just let us know.

272
00:28:10,560 --> 00:28:13,840
You can reach out to us by email
and we'll send that to you. But to everyone,

273
00:28:13,840 --> 00:28:18,080
that media advisory link in the bottom left
should have that to link for you for GOES-T.

274
00:28:18,960 --> 00:28:26,000
All right, the next question we have... let me go up to
here... our next question is from Marsha Smith.

275
00:28:27,120 --> 00:28:32,880
Marcia asks, "what was the root cause
of the ABI degradation on GOES-17

276
00:28:32,880 --> 00:28:37,450
and how was it fixed for GOES-T?" I'm
thinking uh Larry, can you field that one?

277
00:28:44,699 --> 00:28:48,141
And if so, you may have to take yourself off mute...

278
00:28:48,638 --> 00:28:58,800
Yes, um, the investigation on GOES-17 determined that the most likely root

279
00:28:58,800 --> 00:29:04,320
cause of the thermal performance that you're
referring to was caused by foreign object

280
00:29:04,320 --> 00:29:11,601
debris, or what we refer to as FOD, blocking
a flow of coolant in our loop heat pipe system.

281
00:29:12,230 --> 00:29:20,000
For GOES-T and GOES-U, changes have
been implemented to eliminate that.

282
00:29:20,000 --> 00:29:25,520
Uh basically, the hardware
that was at fault, or we determined was

283
00:29:25,520 --> 00:29:30,160
most likely cause for that FOD,
has been eliminated from the design

284
00:29:30,720 --> 00:29:38,225
and basically, that design has
been thoroughly reviewed and extensively tested.

285
00:29:41,520 --> 00:29:46,720

All right, wonderful. This was actually a
two-part question from Marsha Smith.

286
00:29:46,720 --> 00:29:53,840
This one, maybe Pam, you could answer. "What is
GOES-17's future? Is it going to be decommissioned?"

287
00:29:55,920 --> 00:29:59,920
Yeah thanks for that question.
You know GOES-17 is still a

288
00:29:59,920 --> 00:30:04,640
very capable satellite. The Advanced
Baseline Imager is still delivering more

289
00:30:04,640 --> 00:30:08,904
than 90 percent of the planned data,
and all the other instruments are...

290
00:30:09,134 --> 00:30:19,125
[SILENT]

291
00:30:19,760 --> 00:30:24,000
Okay, I think we lost your audio
there, Pam. Are you still speaking?

292
00:30:24,309 --> 00:30:29,613
[SILENT]

293
00:30:29,840 --> 00:30:35,054
All right, we may come back to that... we
may come back to you again, Pam, for that in just a second.

294
00:30:35,226 --> 00:30:38,880
In the meantime though, we do have another question from Jeff Foust

295

00:30:38,880 --> 00:30:41,560
from Space News. Uh, the question from Jeff is

296
00:30:41,560 --> 00:30:49,708
"Are there any improvements or any other changes in the GOES-T launch campaign versus GOES-R and -S?"

297
00:30:49,708 --> 00:30:54,422
Good question. Uh, this one could be for Scott or Rex. Who wants to take this one?

298
00:30:55,859 --> 00:31:00,960
This is Scott. I'll take this real quickly. So the biggest

299
00:31:00,960 --> 00:31:07,760
change that we've made is with each successive
GOES satellite, we have gone through a process

300
00:31:07,760 --> 00:31:16,400
of optimizing the trajectory that we fly in order
to provide a better injection orbit to allow more

301
00:31:16,400 --> 00:31:24,640
spacecraft life, and I think for example in
this case, we were able to do something that gave

302
00:31:24,640 --> 00:31:31,360
the spacecraft another four or five years worth of
lifetime, so Jeff, that's the biggest change

303
00:31:31,360 --> 00:31:35,680
that we've made. Other than that it's been very similar to what we did on the other ones.

304
00:31:38,412 --> 00:31:42,104
All right, thanks so much Scott. We're going
to go back to the question we had before

305
00:31:42,104 --> 00:31:45,384

from Marcia Smith about GOES-17's future.

306
00:31:45,384 --> 00:31:49,395
I believe John Gagosian was going to be able to
answer that for us. John, are you there?

307
00:31:51,600 --> 00:31:57,520
Yeah I'm here, and if Pam's not back on the
line yet... um so GOES-17 will be moved into

308
00:31:57,520 --> 00:32:05,600
an on-orbit spare configuration so it will be
available as needed in the future as a backup.

309
00:32:09,360 --> 00:32:13,920
Wonderful, thank you. The next one... you know,
I'll let anyone who feels they could

310
00:32:13,920 --> 00:32:19,040
best answer this to answer it... this is from
Marcia Dunn from AP: "What is the cost of the

311
00:32:19,040 --> 00:32:25,320
satellite itself, and how is GOES-17 holding up,
and can it keep doing its job until next year?"

312
00:32:28,000 --> 00:32:31,520
So John, this is Pam. I'll take that.
So sorry for the internet foibles...

313
00:32:32,880 --> 00:32:39,680
Um, so we don't typically price the
satellites one by one. The total cost

314
00:32:39,680 --> 00:32:43,680
for the program, which includes all
four satellites, the ground system,

315
00:32:43,680 --> 00:32:50,821
and 30 years of operations... the the total life
cycle cost is 11.7 billion dollars,

316
00:32:50,980 --> 00:32:58,480
which you know is a significant investment of course,
but that value is returned to the

317
00:32:58,480 --> 00:33:05,280
U.S. public in the benefits that's provided. Um, you know, more than a factor of the investment.

318
00:33:09,040 --> 00:33:13,840
All right, thank you. Next question from
Rachel Densing... Oh I'm sorry, were you finished, Pam?

319
00:33:17,680 --> 00:33:24,160
Next question from Rachel Densing, WNCN, Raleigh,
North Carolina. The question is,

320
00:33:24,160 --> 00:33:30,480
"GOES-T will become GOES West once operational, so
please explain just how improvements in

321
00:33:30,480 --> 00:33:34,800
weather satellites over the West Coast will
help improve numerical weather prediction for

322
00:33:34,800 --> 00:33:38,017
the entire country." Uh, who'd like to take this
one?

323
00:33:38,876 --> 00:33:47,200
I think this is a question for me. This is Jim Yoe from the National Weather Service. As I mentioned in my opening remarks, a lot of the

324

00:33:47,200 --> 00:33:53,600
weather systems over the continental United
States tend to move from west to east, so we

325
00:33:53,600 --> 00:33:59,120
think of the west as being upstream and the east
is being downstream, so if we're able to look at

326
00:33:59,120 --> 00:34:04,160
the conditions over the Pacific
Ocean and over the western United States,

327
00:34:04,160 --> 00:34:09,920
those contain the seeds of the weather that's
going to devolve from today into

328
00:34:09,920 --> 00:34:16,400
the weather over the eastern United States
in three, five uh days or a week. Likewise,

329
00:34:16,400 --> 00:34:22,800
our GOES East gives data that benefits
our partners in Europe, for example.

330
00:34:27,280 --> 00:34:30,720
All right, great. Thanks so much, and I'm
sorry, I wanted to revisit the second

331
00:34:30,720 --> 00:34:34,240
part of that question, that we may
have not had a chance to do that.

332
00:34:34,240 --> 00:34:38,240
The second part of the question
we had before was about can GOES-17

333
00:34:38,240 --> 00:34:43,200

keep doing its job until next year, and Pam or
Candace, would either one of you like to take that?

334
00:34:47,200 --> 00:34:54,160
Yeah hi, this is Pam. Um, yes GOES-17 is operating currently for us and we don't expect any

335
00:34:54,160 --> 00:35:00,000
significant change in the performance for
the next year while we're checking out GOES-T.

336
00:35:02,960 --> 00:35:06,000
all right wonderful let me see if we
have any other questions coming in

337
00:35:09,920 --> 00:35:15,840
All right, I believe that is all the questions that I am seeing so far, is that correct?

338
00:35:20,640 --> 00:35:24,640
And just one more reminder before we
wrap it up. If there is anyone who does still

339
00:35:24,640 --> 00:35:28,080
would like to ask a question.. or does
still want to ask a question, I should say,

340
00:35:28,720 --> 00:35:33,360
you can please find the Q&A box located at
the bottom right of your screen. Just type in

341
00:35:33,360 --> 00:35:38,640
your name, affiliation, your question,
and the specific expert if possible

342
00:35:38,640 --> 00:35:43,840
that you'd like to answer it. If we don't
have any more, I can start wrapping this up.

343
00:35:48,560 --> 00:35:54,720
Okay, um we do have one, it looks like here, from
Marcia Smith again from Space Policy Online.

344
00:35:55,360 --> 00:36:00,640
Dan, maybe you could answer this one, it looks
like. "What surprised you about ABI's ability

345
00:36:00,640 --> 00:36:02,960
to detect the pressure waves from volcanoes?"

346
00:36:04,960 --> 00:36:12,240
Uh hi Marcia, great question. So um, several things
surprised me. I would say number one was not so

347
00:36:12,240 --> 00:36:18,080
much the satellite detection, but more so the fact
that a volcanic eruption could be so powerful

348
00:36:18,080 --> 00:36:23,440
that it could have a wave that would travel around
the Earth multiple times. And I believe it was even

349
00:36:23,440 --> 00:36:28,800
detected something like a week after, and as it
became weaker and weaker with time, that in itself

350
00:36:28,800 --> 00:36:34,480
to me was unbelievable. um I don't remember
a volcano such as that in the past.

351
00:36:34,480 --> 00:36:39,120
I know there was the Mount Pinatubo eruption back
in 1991 in the Philippines that was extremely

352
00:36:39,120 --> 00:36:44,160

powerful as well, and of course most of us are
familiar with the Mount Saint Helens eruption

353
00:36:44,160 --> 00:36:52,560
in the U.S. in 1980, but in terms of the GOES-16's ABI detecting the pressure wave, we don't

354
00:36:52,560 --> 00:36:56,640
have these things happen very often, and so
we just haven't had the chance, I guess,

355
00:36:56,640 --> 00:37:01,280
or the opportunity to try to detect such
a thing before. And so scientists used the

356
00:37:01,280 --> 00:37:05,920
data and started looking carefully at it.
They filtered it, they took time differences,

357
00:37:05,920 --> 00:37:11,200
and you know, after only a few hours, the
scientists were able to sort of extract that

358
00:37:11,200 --> 00:37:16,640
signal and make maps of it. It was all over social
media. So really, just quite an unbelievable event.

359
00:37:20,480 --> 00:37:26,480
All right, thanks so much Dan. And I believe uh...
okay I'm sorry, we do have another question

360
00:37:26,480 --> 00:37:34,240
that's coming in, again from Rachel Densing from
WNCN. She asked, "How long from once GOES-T

361
00:37:34,240 --> 00:37:38,560
gets into orbit will we start seeing imagery
from it?" Who would like to answer that one?

362
00:37:45,120 --> 00:37:52,000
So John, this is Pam. So our current plans are
for the "first light" imagery, as we call it,

363
00:37:52,000 --> 00:37:58,320
to be available in May of next year. That won't
be operational, but that's the first images that we

364
00:37:58,320 --> 00:38:04,080
get after we go through the outgassing phase, open
the doors, and and take the first checkout pictures.

365
00:38:04,720 --> 00:38:13,040
So that's in the May time frame. We
expect by July that the ABI data... we expect

366
00:38:13,040 --> 00:38:20,560
to be flowing in a non-operational sense to
the weather forecasters. But this is something

367
00:38:20,560 --> 00:38:24,240
new that we're actually doing for GOES-T,
where we're making the data available early

368
00:38:25,040 --> 00:38:28,800
to weather forecasters during the checkout
period, so that they have the benefit

369
00:38:28,800 --> 00:38:33,920
of the extra imager on board. And
that's again in the July time frame.

370
00:38:37,280 --> 00:38:43,600
All right, thank you. Looks like we have another
question from Marcia Dunn, AP, for Dan. Maybe you

371
00:38:43,600 --> 00:38:50,880
can answer this one again. "How much better would the data have been if GOES-18 (or GOES-T)

372
00:38:50,880 --> 00:38:54,692
had been observing the Tonga eruption versus the current GOES?"

373
00:38:55,620 --> 00:39:02,160
So the answer is it would have been very similar, maybe slightly better. If you looked carefully at lots of different

374
00:39:02,160 --> 00:39:08,160
channels from the GOES-17 ABI of the eruption, there may have been a few stripes... um, a little bit of

375
00:39:08,160 --> 00:39:14,080
I guess "noisy" data, that's the effect of the anomaly. But really quite minor.

376
00:39:14,080 --> 00:39:20,322
With GOES-18, that will be absent, and so I would say the
answer is slightly better, but not noticeably so.

377
00:39:23,440 --> 00:39:28,000
Okay great! Thanks so much, Dan. I believe that is the the last of our questions. I don't see

378
00:39:28,000 --> 00:39:32,960
any more coming in... oh I'm sorry, as soon as I speak it looks like we're getting some more.

379
00:39:32,960 --> 00:39:36,800
Uh all right, this one is from Stephen Clark from Space Flight Now.

380
00:39:36,800 --> 00:39:42,640
The question from Stephen is "How many GOES satellites are currently in NOAA's fleet?"

381
00:39:47,040 --> 00:39:50,160
Yeah John, this is Pam. We have two from the GOES-R series that

382

00:39:50,160 --> 00:39:54,720
are on orbit, and then there's two from the previous generation

383
00:39:54,720 --> 00:40:02,160
that are also in operation, or I'm sorry, in
on orbit storage for us right now, so four total.

384
00:40:02,160 --> 00:40:07,840
And then there is another spacecraft from the previous generation that we have actually

385
00:40:08,400 --> 00:40:14,560
given to the U.S. Space Force, and they are currently operating that over Asia.

386
00:40:18,880 --> 00:40:26,960
All right, thanks so much Pam. And now let's see... all
right, I believe that was the last of our questions.

387
00:40:26,960 --> 00:40:33,040
Uh we are going to start wrapping up media day if that is the case. I want to thank all

388
00:40:33,040 --> 00:40:37,840
of our presenters and participants for joining us today for NOAA's GOES-T media day launch.

389
00:40:38,800 --> 00:40:43,040
A recording of this media briefing will be available later today by the way. For those of

390
00:40:43,040 --> 00:40:49,760
you looking for it, it will be on the online media
advisory on NOAA.gov as well as on NOAAsatellites

391
00:40:49,760 --> 00:40:55,360
YouTube channel. Now if anyone from the media
has additional questions or informational needs,

392
00:40:55,360 --> 00:40:59,840
please feel free to reach out to John

Leslie and myself (again, I'm John Bateman)

393
00:40:59,840 --> 00:41:07,120
at our email address. And I will say it and
spell it one more time. That is: nesdis.pa@noaa.gov.

394
00:41:07,120 --> 00:41:22,080
That is n e s d i s (dot) p a (at) n o a a
(dot) gov. And once again, our contact information

395
00:41:22,080 --> 00:41:29,360
is also available in the media advisory.
Thanks so much for joining us everyone.