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00:00:08,090 --> 00:00:12,900

Narrator: The world's oceans play a crucial role in life on Earth, especially in relation

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00:00:12,900 --> 00:00:19,610

to its influence on weather. The seas heat and cool, they humidify and dry the air, and

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00:00:19,610 --> 00:00:23,230

they can control wind speed and direction.

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00:00:23,230 --> 00:00:29,400

To help scientists continue studies from the vantage point of 830 miles above the Earth,

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00:00:29,400 --> 00:00:36,210

NASA will launch the Jason-3 satellite early in 2016 from Vandenberg Air Force Base in

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00:00:36,210 --> 00:00:42,440

California. Since 1992, this will be the fourth in a series of spacecraft providing scientists

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00:00:42,440 --> 00:00:46,940

with essential information about global and regional changes in the seas.

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00:00:46,940 --> 00:00:51,850

Joshua Willis: These satellites measure the height of the ocean from space and that's

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00:00:51,850 --> 00:00:56,600

important for oceanographers because it tells us about ocean currents, about tides.

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00:00:56,600 --> 00:01:01,320

Narrator: The more that is understood about the level of the world's oceans, the better

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00:01:01,320 --> 00:01:06,550

experts can predict the changing dynamics of weather and climate of Earth.

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00:01:06,550 --> 00:01:12,000

Data from Jason-3 will provide information about oceans that forecasters need to better

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00:01:12,000 --> 00:01:18,530

predict severe weather and devastating hurricanes before they arrive onshore. The satellite

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00:01:18,530 --> 00:01:22,670

also will help scientists track rising global sea levels.

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00:01:22,670 --> 00:01:28,050

Since the data acquired by Jason-3 will have global applications, it's appropriate that

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00:01:28,050 --> 00:01:30,410

the mission is a joint international endeavor.

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00:01:30,410 --> 00:01:35,630

Armando Piloto: The actual spacecraft was built in France by Thales Alenia under contract

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00:01:35,630 --> 00:01:41,630

to CNES. And the spacecraft was delivered to the launch site back on June 18, 2015.

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00:01:41,630 --> 00:01:48,810

Narrator: CNES is the French space agency -- the National Centre for Space Studies.

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00:01:48,810 --> 00:01:54,170

NASA will launch the satellite for NOAA, the National Oceanic and Atmospheric Administration,

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00:01:54,170 --> 00:02:01,270

and EUMETSAT, the European Organization for the Exploitation of Meteorological Satellites.

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00:02:01,270 --> 00:02:06,810

Tim Dunn: Jason-3 will launch from Vandenberg Air Force Base on the central California coast

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00:02:06,810 --> 00:02:12,459

into a polar orbit. That's important for the mission because Jason-3 in an ocean topography

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00:02:12,459 --> 00:02:18,379

mapping mission. And going into a polar orbit around the Earth, with the Earth rotating

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00:02:18,379 --> 00:02:24,290

underneath the spacecraft, enables Jason-3 to see as much ocean on a recurring basis

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00:02:24,290 --> 00:02:25,079

as possible.

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00:02:25,079 --> 00:02:30,090

Narrator: The Jason-3 satellite will be boosted to orbit by a SpaceX launch vehicle.

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00:02:30,090 --> 00:02:36,760

Dunn: The Jason-3 spacecraft will launch on the Falcon 9 rocket. Falcon 9 is manufactured

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00:02:36,760 --> 00:02:40,080

by SpaceX in the Los Angeles area.

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00:02:40,290 --> 00:02:47,420

The NASA Launch Services Team has been working very methodically over the past few years

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00:02:47,420 --> 00:02:51,620

and certainly during this intense period of the launch campaign at Vandenberg Air Force

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00:02:51,620 --> 00:02:57,560
Base over the past several months in making sure we are ready to fly Jason-3 successfully.

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00:02:57,560 --> 00:03:03,609
Once Jason-3 reaches orbit, there is still work to be done to prepare for its job of

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00:03:03,609 --> 00:03:05,439
measuring the ocean surfaces.

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00:03:05,440 --> 00:03:12,069
Piloto: The first thing that happens after the spacecraft separates from the launch vehicle

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00:03:12,069 --> 00:03:15,780
is that the solar panels will be deployed.

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00:03:15,780 --> 00:03:23,760
Once the spacecraft is stable, charged, and communicating with the ground stations, then

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00:03:23,760 --> 00:03:31,180
you can send commands to the spacecraft to initiate the checkout of the subsystems on the spacecraft

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00:03:31,189 --> 00:03:36,389
Dunn: NASA's Launch Services Program is very excited about the Jason-3 launch campaign.

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00:03:36,430 --> 00:03:42,480
It's exciting science; we're excited to work with SpaceX. The joint commercial and government