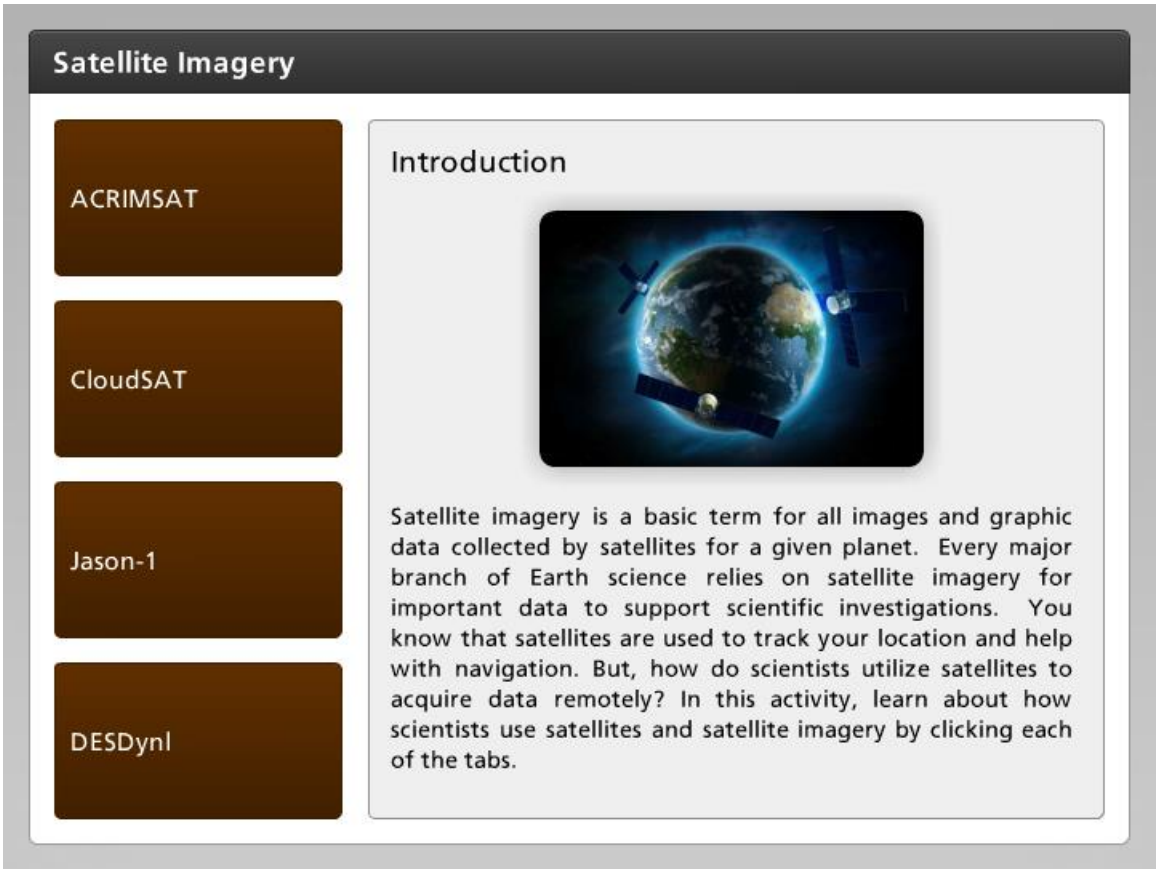
Module 2: Mapping
Topic 4 Content: Satellite Imagery Notes

Introduction



Satellite imagery is a basic term for all images and graphic data collected by satellites for a given planet. Every major branch of Earth science relies on satellite imagery for important data to support scientific investigations. You know that satellites are used to track your location and help with navigation. But, how do scientists utilize satellites to acquire data remotely? In this activity, learn about how scientists use satellites and satellite imagery by clicking each of the tabs.

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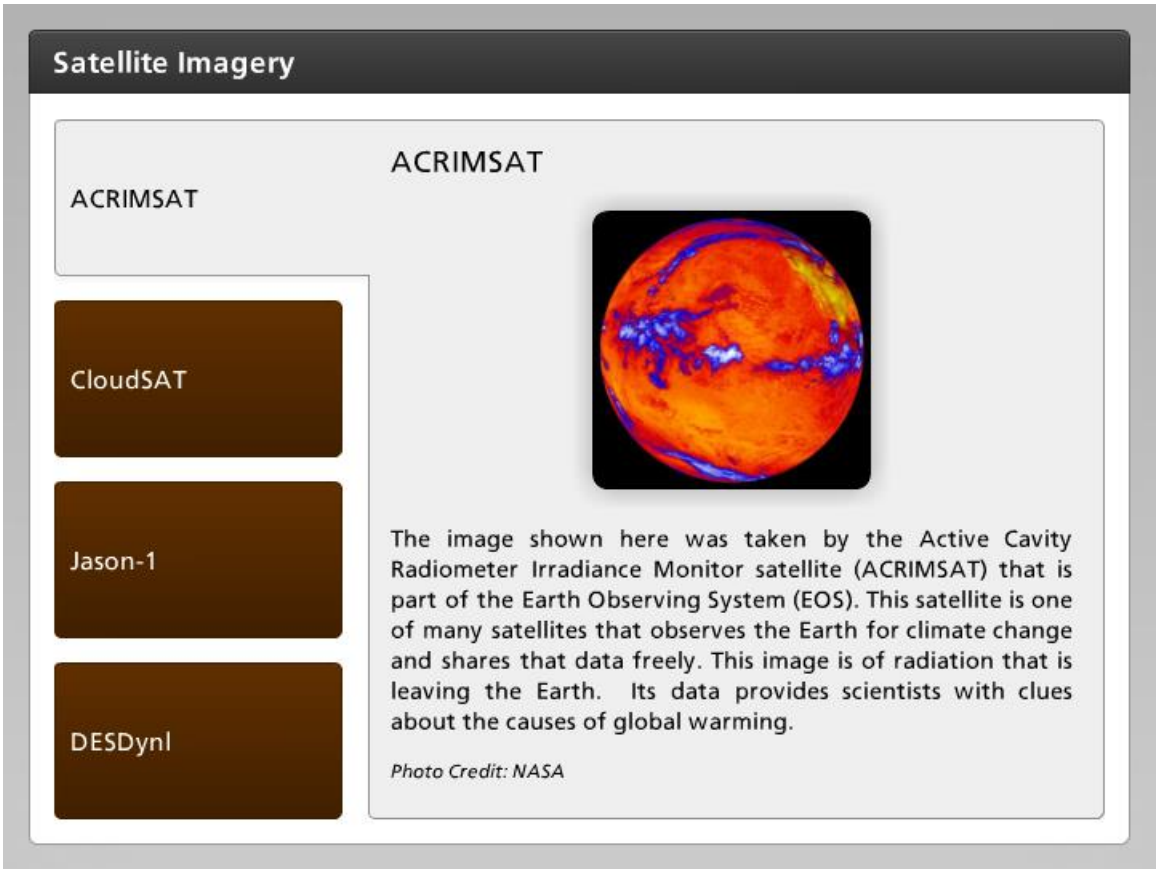
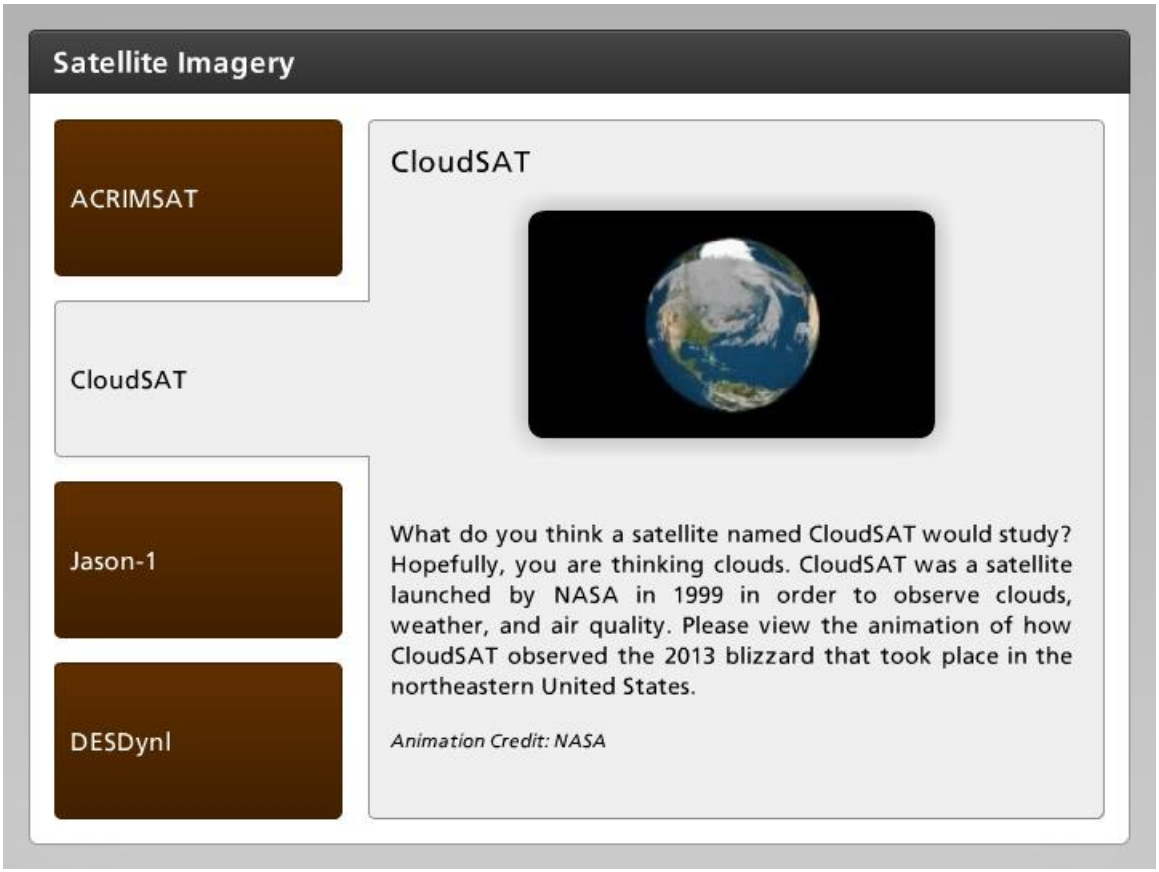
ACRIMSAT



The image shown here was taken by the Active Cavity Radiometer Irradiance Monitor satellite (ACRIMSAT) that is part of the Earth Observing System (EOS). This satellite is one of many satellites that observes the Earth for climate change and shares that data freely. This image is of radiation that is leaving the Earth. Its data provides scientists with clues about the causes of global warming.

Photo Credit: NASA

CloudSAT



What do you think a satellite named CloudSAT would study? Hopefully, you are thinking clouds. CloudSAT was a satellite launched by NASA in 1999 in order to observe clouds, weather, and air quality. Please view the animation of how CloudSAT observed the 2013 blizzard that took place in the northeastern United States.

Animation Credit: NASA

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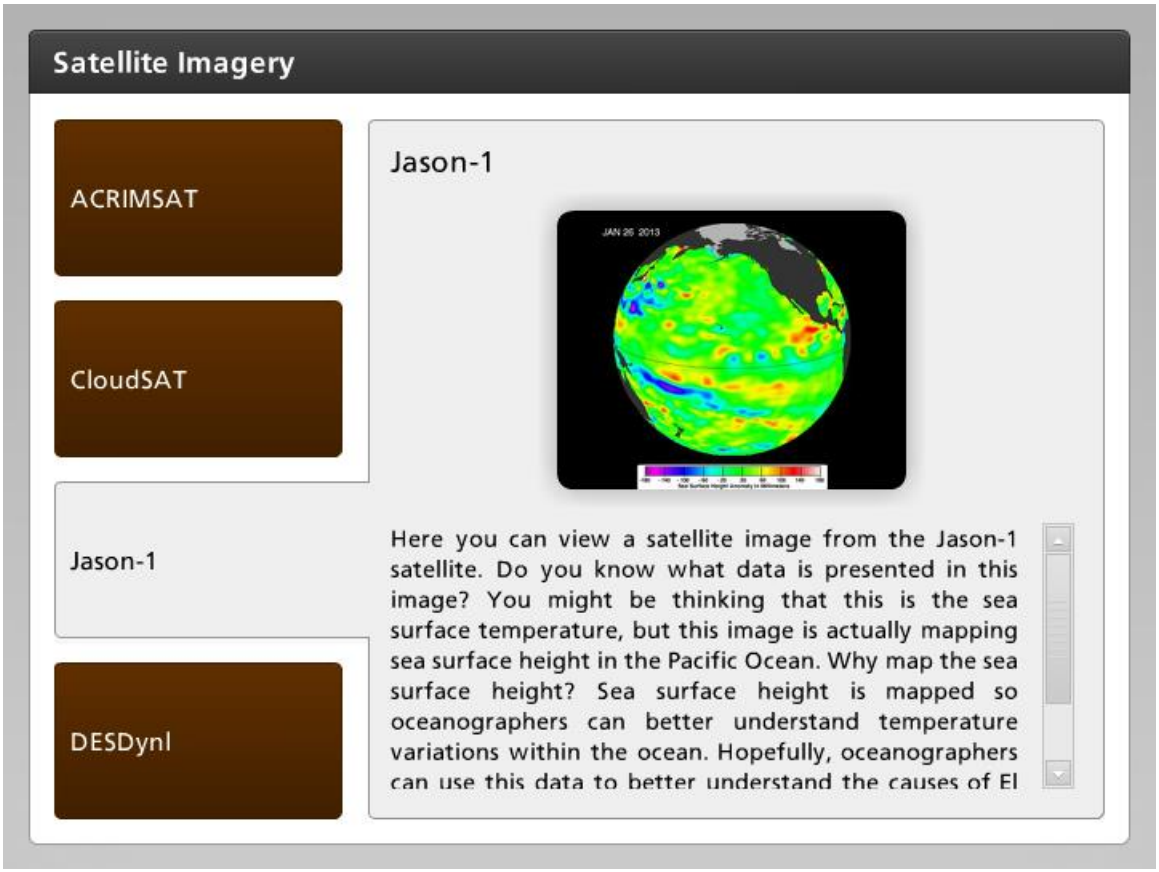
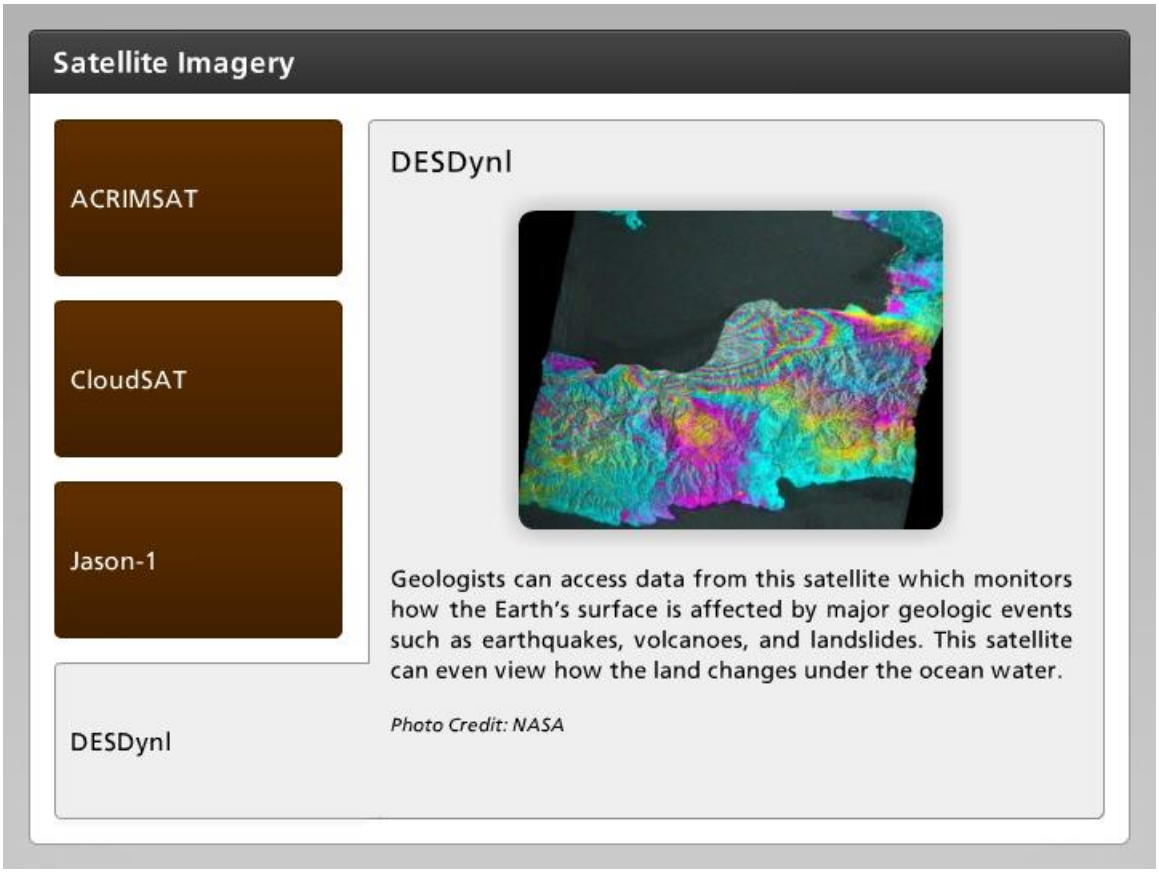
Jason-1



Here you can view a satellite image from the Jason-1 satellite. Do you know what data is presented in this image? You might be thinking that this is the sea surface temperature, but this image is actually mapping sea surface height in the Pacific Ocean. Why map the sea surface height? Sea surface height is mapped so oceanographers can better understand temperature variations within the ocean. Hopefully, oceanographers can use this data to better understand the causes of El Niño, a phenomenon occurring in the Pacific Ocean.

Photo Credit: NASA

DESDynl



Geologists can access data from this satellite which monitors how the Earth's surface is affected by major geologic events such as earthquakes, volcanoes, and landslides. This satellite can even view how the land changes under the ocean water.

Photo Credit: NASA

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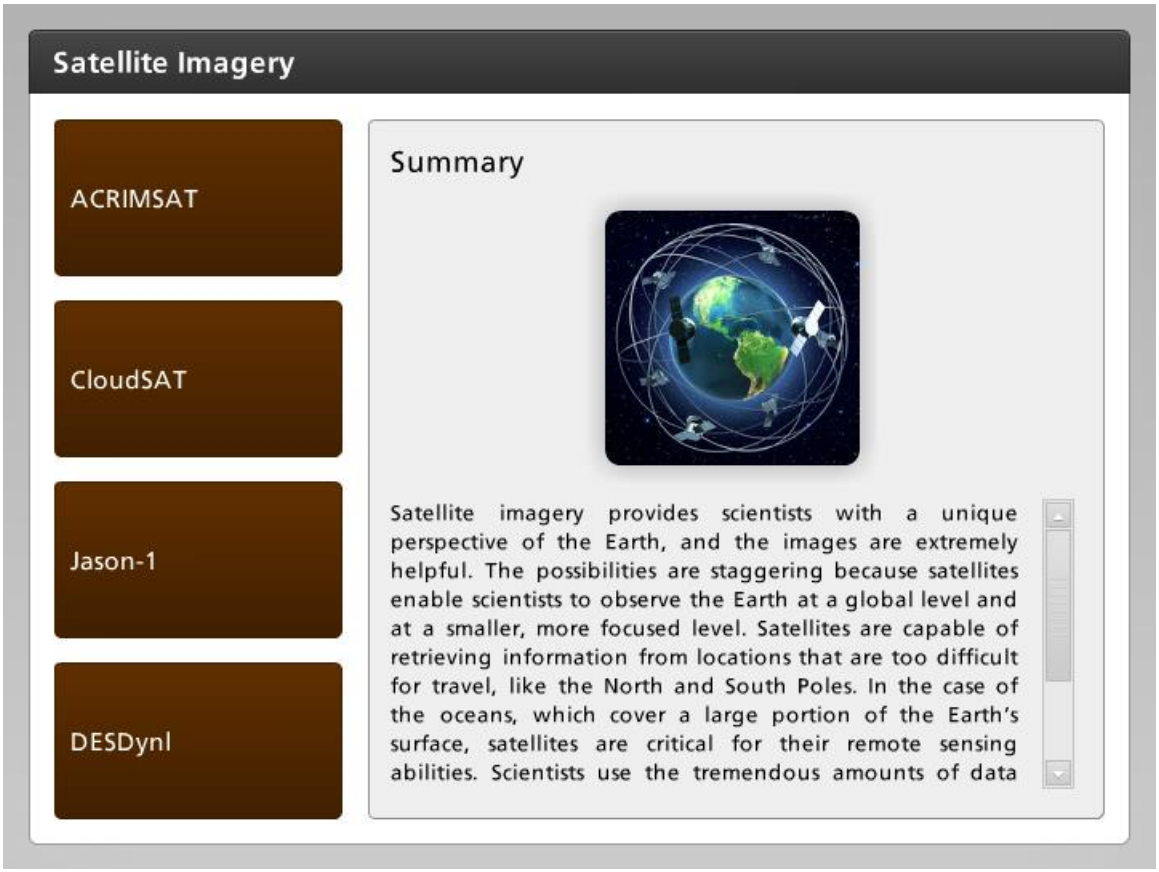
Summary



Satellite imagery provides scientists with a unique perspective of the Earth, and the images are extremely helpful. The possibilities are staggering because satellites enable scientists to observe the Earth at a global level and at a smaller, more focused level. Satellites are capable of retrieving information from locations that are too difficult for travel, like the North and South Poles. In the case of the oceans, which cover a large portion of the Earth's surface, satellites are critical for their remote sensing abilities. Scientists use the tremendous amounts of data collected from satellites to identify patterns, make predictions, and pinpoint problems or issues that require more attention. In this activity, you have learned about just a few of the many satellites used to gain information about Earth.