

NOTES FOR PULSE OF THE PLANET VIDEO

Introduction

The Pulse of the Planet was produced by Goddard Space Flight Center of NASA. The images reflect a compilation of a number of "visualizations" produced by NASA.

You are not seeing, in most cases, the true scenes. In most cases, you are seeing what the satellite senses. Many satellite sensors are not using visible light, but light reflected off Earth or sent out by Earth that people are unable to detect. Thus, the visualizations are often "painted" by computer on a sphere surface. This helps you visualize changes to Earth.

The reason why this video is used to introduce the lesson is that almost all of the scenes reflect seasonal changes to Planet Earth. The "pulse of the planet" is truly the changes of Earth's seasons.

Opening

The movie opens with Antarctica and its changes between ice growth in winter and ice melting in summer.

Sequence of Scenes as Movie Goes Slowly

- Alaska glaciers
- Alaska glaciers again
- Alaska glaciers still again
- Breaking off of Antarctic ice shelf
- Changes to Arctic Ocean icepack in different seasons
- Great Lakes in Summer and Winter
- Mid-Atlantic States after a winter snowstorm
- The Wasatch Front in Utah in different seasons
- Midwest in fall and winter
- North America's changing plant life from winter (little green) to summer (lots of green)
- Shift in Africa plant life in seasons shown two different ways
- Earth's plant life in different seasons, following the sun
- Blue and Orange showing changes in temperature with El Niño
- View over Antarctica showing winter storms moving from west to east
- Scenes of the mid-Pacific illustrating El Niño
- Landslide along the California coast associated with intense winter rains

A series of scenes relating to visualizing Hurricanes

- Computer modeling of a Hurricane
- Views of the Atlantic in the busy 1995 hurricane season
- 3D view of Caribbean Hurricane Swirling
- Names of Hurricanes in busy 1995 season
- 3D structure of a hurricane modeled in profile
- Massive Hurricane over Mississippi and Georgia



Comparison of rain and cloud structure of a hurricane
Hurricane off west coast of Mexico
Different 3D views of hurricanes emphasizing the eye

View of the western Atlantic in green and blue showing ocean temperatures
View of the southeast, with changes in water color due to sediment washing out of rivers

Back to Hurricane scene of rain and cloud structure
Tropical storm
Tropical storm off southeastern Africa
Zooming into the eye of a hurricane
Precipitation patterns in December of 1999 over North America
Precipitation patterns over Latin America
Precipitation patterns over Africa

Series of scenes showing flooding (before and after) of Mississippi River, North Carolina, Utah

Fast Towards the End

A very fast series of images show fires, floods, Lake Chad drying up, dust storms, ozone depletion, tropical deforestation, city growth, and temperature changes detected by satellite

At the very end: pulsing beat

This is the seasonal change of rainfall over Africa, and a great connection to the lesson.

The green part of Africa is the vegetation that grows with rainfall. Note that the vegetation moves north and south. The rainfall follows the period of high sun. In other words, there is a belt of rainfall that flows north and south of the equator in summer. The rain moves north in the northern hemisphere summer, causing vegetation to grow. The rain moves south in the southern hemisphere summer (our winter), causing vegetation to die back in the north and grow in the south.

Rain comes when there is a high sun angle (summer). You are seeing the "pulse of the planet" in seasonal changes. This lesson involves calculating sun angles. The pulse of the planet is driven by these angles.