

Head Slate:

Slug: NASA's HD Fires, Ozone, and Air Quality 2008 Resource Tape

TRT: 19:56

GSFC Library # G2008-042HD

Super(s): NASA

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For more info: http://www.nasa.gov/centers/goddard/multimedia/hd_catalogue.html

Synopsis: Goddard Television communicates NASA research of the Earth and Space to 245 million Americans and other TV viewers around the globe. Goddard TV's vision is to provide insight into NASA and Goddard Space Flight Center, its missions, programs, discoveries, experts, and facilities. In line with this vision, Goddard is releasing its first set of high definition resource tapes, showcasing the highest quality visuals we have to offer. This tape highlights the many ways NASA monitors the air around and above us, and includes visuals of smoke, dust, and ozone levels.

Slug: NASA's HD Fires, Ozone, and Air Quality 2008 Resource Tape**Clip Slate: Fire Observation HD Visualizations**

Description: From space, we can understand fires in ways that are impossible from the ground. New Earth-observing satellites capture the significant impact of fires on our planet.

Section TRT: 8:51

Super(s): NASA

ITEM 1: Multisensor Fire Observations

In this visualization of fires around the globe in 2002, each red dot marks a new fire. Dots change color to yellow after a few days and to black when fires burn out. Fire pixel data are derived from the Moderate Resolution Imaging Spectroradiometer (MODIS) instrument on NASA's Terra and Aqua satellites.

TRT: 4:57

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002800/a002854/index.html>

ITEM 2: October 2007 Southern California Wildfires

A group of wildfires swept across southern California in late October of 2007, burning hundreds of thousands of acres and forcing nearly a million people from homes near Los Angeles, San Diego, and San Bernardino. NASA captured images of the fires from a number of orbiting satellites, illustrating the scale of the blazes. The following are daily images from October 22-26 obtained by the MODIS instrument on the Terra and Aqua spacecraft.

TRT: :15

For More Info: http://nasa.gov/vision/earth/lookingatearth/socal_wildfires_oct07.html

ITEM 3: Alaska Fire Particles Traverse Parts of Canada and the United States

Originally viewing the smoke from a fire in eastern Alaska as seen from MODIS, we pull back to get a better view of the microscopic, airborne dust and smoke particles that drift away from the fire to other areas of Canada and the United States. The aerosol particles were measured by the Total Ozone Mapping Spectrometer (TOMS). between June 29, 2004 and July 19, 2004.

TRT: :23

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002900/a002973/index.html>

ITEM 4: California Fires MODIS imagery and TOMS Aerosols from October 2003

This visualization sequences through MODIS imagery of the devastating California fires that raged from October 23, 2003 through October 29, 2003. The visualization resets to October 23, 2003 and zooms out to see the TOMS aerosol sequence.

TRT: :36

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002800/a002858/index.html>

ITEM 5: Canadian Smoke Invades the East Coast

Smoke from multiple large wildfires in Canada blanketed the Great Lakes and eastern United States. The enormous smoke plume was almost 200 miles wide. The first image was taken by the Moderate Resolution Imaging Spectroradiometer (MODIS) on the Terra satellite on July 7, 2002. The second image comes from NASA's Total Ozone Mapping Spectrometer (TOMS) on the Earth Probe Satellite.

TRT: :06

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002900/a002943/index.html>

ITEM 6: Portrait of Global Fires with Zoom to Rodeo/Chediski Fire

This visualization shows a unique picture of seasonal and yearly fire activity displayed as tiny particles on a rotating globe with each particle depicting the site at which a fire was detected. Daily fires between July 1, 2001, and August 20, 2002, are displayed at a rate of 10 days per second. During June 2002, a close view of the Rodeo-Chediski Fire in Arizona is shown.

TRT: 1:12

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002500/a002547/index.html>

Slug: NASA's HD Fires, Ozone, and Air Quality 2008 Resource Tape**Clip Slate: Stratospheric Ozone HD Visualizations**

Description: Ozone in the stratosphere is crucial to protecting life on Earth from the sun's harmful ultraviolet (UV) rays. Pollution from humans in the last few decades has created an "ozone hole" in the stratosphere that opens up over Antarctica every year between August and December. The following visualizations use data from NASA satellites to show the Antarctic ozone hole.

Section TRT: 3:57

Super(s): NASA

ITEM 1: The 2007 HD Ozone Hole from Aura

The area of the Antarctic atmosphere called the "ozone hole" opens up each year in mid-August and peaks in September. Last year the ozone hole reached its peak on Sept. 13, appearing blue and purple in this image created with data collected from the Ozone Monitoring Instrument (OMI) aboard the NASA Aura satellite.

TRT: :27

For More Info: <http://ozonewatch.gsfc.nasa.gov>

ITEM 2: The 2002 HD Ozone Hole from TOMS

This animation shows the stratospheric ozone hole over Antarctica, as measured by the Total Ozone Mapping Spectrometer (TOMS) from August 15, 2002, to September 29, 2002. The year 2002 was an anomalous one for the ozone hole as it actually split into two separate holes in late September.

TRT: :13

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002500/a002573/index.html>

ITEM 3: Total Ozone from Earth Probe TOMS: 1996-2001

This animation shows the total ozone in the northern and the southern hemispheres as measured by the Total Ozone Mapping Spectrometer (TOMS) from the earliest measurements by that instrument until 2001.

TRT: 1:03

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002200/a002284/index.html>

ITEM 4: TOMS Ozone Layer 1990

This animation shows data of ozone and aerosols from January 1 to December 30, 1990 using Total Ozone Mapping Spectrometer (TOMS) data. A version with date and height indicators and a "clean" version are included.

TRT: 1:20

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002900/a002940/index.html>

Slug: NASA's HD Fires, Ozone, and Air Quality 2008 Resource Tape
Clip Slate: Air Quality HD Visualizations

Description: Scientists at NASA's Goddard Space Flight Center, Greenbelt, Md. use satellites including Aura and the Total Ozone Mapping Spectrometer (TOMS) to study global air quality.

Section TRT: 3:41

Super(s): NASA

ITEM 1: China Dust Storm seen by Earth Probe/TOMS in April of 2001

A thick shroud of dust appears over China on April 6 and 7, 2001. The densest portion of the aerosol pollution travels east over China, Russia, Japan, the Pacific Ocean, Canada,

and the United States. The dust was observed by the Total Ozone Mapping Spectrometer (TOMS).

TRT: :15

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002800/a002859/index.html>

ITEM 2: Mount Pinatubo Particle Model

The global impact of the June 1991 Mount Pinatubo eruption in the Philippines can be seen in this particle model. Immediately following the eruption large amounts of sulfur dioxide and dust spread through the Earth's atmosphere.

TRT: :17

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002300/a002389/index.html>

ITEM 3: Terra/MOPITT Carbon Monoxide Full Earth

This visualization shows global carbon monoxide (CO) measured by the Measurements of Pollution in the Troposphere (MOPITT) instrument on NASA's Terra satellite from March 2000 through December 2000.

TRT: :30

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002100/a002150/index.html>

ITEM 4: Aqua/AIRS Water Vapor near southern California

This visualization shows 3D volumetric water vapor data obtained by the Atmospheric Infrared Sounder (AIRS) instrument on the Aqua satellite on January 1, 2003. As the camera moves down and around the data set, the low data values are faded out revealing only the highest concentrations of water vapor.

TRT: :15

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a003100/a003129/index.html>

ITEM 5: Aura's Microwave Limb Sounder

The Microwave Limb Sounder (MLS) instrument on NASA's Aura satellite, measures the chemistry of the lower stratosphere and upper troposphere. It also measures the temperature. The following visualizations show various MLS readings over the Antarctic pole in the lower stratosphere and upper troposphere between August 13, 2004 and October 14, 2004. In order, the visualizations show temperature, ozone, nitric acid, hydrochloric acid, water vapor, and chlorine monoxide.

TRT: 1:15

For More Info: <http://svs.gsfc.nasa.gov/search/Series/AuraFirstLight.html>

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Clip Slate: Earth Observing Satellite HD Animations

Description: NASA's Earth Observing fleet of vehicles constitutes a major milestone in the history of Earth science, facilitating the kinds of wide scale and synergistic research endeavors that until the last decade have been impossible to even consider. Remote sensors allow us to observe and quantify key atmospheric vital signs such as ozone concentrations, carbon monoxide and other pollutants, aerosols, particulates, and many more.

Section TRT: 2:20

Super(s): NASA

ITEM 1: NASA's Orbiting Earth Observing Fleet

This visualization shows the spacecraft in NASA's Earth Observing fleet. The relative altitudes, speeds, and sun position are correct for 12-01-2003 starting at 5:00 UTC. Aura was added as it would have appeared in orbit had it already been launched at that time.

TRT: :33

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a003200/a003227/index.html>

ITEM 2: The Aura Satellite

Since launching in July 2004, Aura has been retrieving information and producing valuable data of the Earth and its atmospheric properties. Each instrument works individually and alongside its counterparts to bring us ozone measurements, tropospheric maps of carbon monoxide and cloud ice, as well as measurements in the stratosphere. The following two animations depict the Aura satellite. The first is a “beauty pass” of the satellite. The second shows Aura collecting Ozone Monitoring Instrument (OMI) data over the Earth.

TRT: :47

For More Info: <http://svs.gsfc.nasa.gov/vis/a000000/a002900/a002948/index.html>

ITEM 3: The Geostationary Operational Environmental Satellite (GOES) Spacecraft

The Geostationary Operational Environmental Satellite (GOES) spacecraft help meteorologists observe and predict local weather events. In addition, GOES observations have proven helpful in monitoring dust storms, volcanic eruptions, and forest fires. This animation shows a GOES spacecraft monitoring the Earth.

TRT: :20