

**Goddard Institute for Space Studies**  
New York, N.Y.

+ NASA Portal  
+ Goddard Space Flight Center  
+ GSFC Earth Sciences Division

**FIND IT @ NASA:**

+ GO

---

– RESEARCH
+ DATA & IMAGES
+ PUBLICATIONS
+ SOFTWARE
+ EDUCATION
+ ABOUT GISS

## RESEARCH

Research at the Goddard Institute for Space Studies emphasizes a broad study of global change, an interdisciplinary research initiative addressing natural and man-made changes in our environment which occur on various time scales from decades to millennia and which affect the habitability of our planet. The research combines analysis of comprehensive global datasets with global models of atmospheric, land surface, and oceanic processes and includes study of past events on Earth such as paleoclimate change and the study of other planets as an aid to prediction of future evolution of Earth on a planetary scale.

### 2010 News, Briefs, and Features

This page lists news releases and science briefs for the current year. Archives are also available for [2009](#), [2008](#), [2007](#), [2006](#), [2005](#), [2004](#) and [2003](#).



#### GISS Best Publication of 2009

GISS scientists voted "Saturn atmospheric structure and dynamics" by Del Genio et al. as the top work among over 100 papers by institute staff published in 2009. (Apr '10)  
[+ Read More](#)



#### From Ash in the Wind to Smoke from the Stack

Aerosols don't just come from spray cans. Any airborne particle or droplet, whether from a canister, the smokestack of a factory, or a dust storm, is an aerosol. (Apr '10)  
[+ Read Feature](#)



#### Cold Snaps Plus Global Warming Do Add Up

Even as the globally averaged temperature trends upward, extended periods of regionally cool weather and even historic snowfalls can still occur. (Feb '10)  
[+ Read Feature](#)



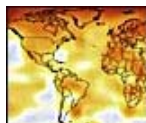
#### Road Transport Emerges as Key Driver of Warming

A new NASA study indicates that motor vehicles are the greatest contributor to atmospheric warming. They release gases that promote warming while emitting few aerosols that counteract it. (Feb '10)  
[+ Read News Release](#)



#### Discussing Climate and Economic Sectors

GISS scientist Nadine Unger discusses a study that assessed which segments of the economy impact the climate the most, and what direction they push it. (Feb '10)  
[+ Read News Q&A](#)



#### 2009 Ends Warmest Decade on Record

A new NASA analysis of global surface temperature shows that 2009 was statistically tied for the second warmest year in the

## PROJECTS

[Global Aerosol Climatology Project \(GACP\)](#)

[Glory Mission Science](#)

[GISS Surface Temperature Analysis \(GISTEMP\)](#)

[International Satellite Cloud Climatology Project \(ISCCP\)](#)

## RESEARCH THEMES

### Global Climate Modeling

GISS is a world leader in the development and use of three dimensional general circulation models (GCMs) to study Earth climate.

[+ Read More](#)

### Earth Observations

Accurate input data are necessary to better model climate and to monitor trends the atmosphere's state. A focus at GISS is observing global cloud coverage, and we host the International Satellite Cloud Climatology Project.

[+ Read More](#)

### Atmospheric Chemistry

Reactions in the atmosphere between natural elements, man-made chemicals, radiative and the atmosphere's circulation affect us in the near term through processes such as ozone depletion and in the long term through climate change.

[+ Read More](#)

### Radiation

Atmospheric processes are ultimately driven by the Sun's energy, as solar radiation interacts with the surface, clouds, aerosols and gases. The heat emitted by Earth may also be trapped by clouds and gases.

[+ Read More](#)

### Climate Impacts

Having modeled a potential future climate, the next step is

modern record. (Jan '10)  
[+ Read News Release](#)



**Discussing the Temperature Record**  
 GISS climatologist Gavin Schmidt answers several questions about the meaning of global temperature reports and how the numbers are determined. (Jan '10)  
[+ Read News Q&A](#)

to assess its effect on human and ecosystems, including the effects of rising ocean levels and altered agriculture productivity.  
[+ Read More](#)

**Paleoclimate**  
 Examining past climates tells about the evolution of Earth and its atmosphere. It also helps us better understand the complex models with which we base projections of future climate.  
[+ Read More](#)

**Planetary Atmospheres**  
 Our understanding of atmospheric processes may be tested by observing and modeling the atmospheres of other planets.  
[+ Read More](#)



[+ NASA Privacy Policy and Important Notices](#)



GISS Website Curator: Robert B. Schmunk  
 Responsible NASA Official: James E. Hansen  
 Page updated: 2010-04-26