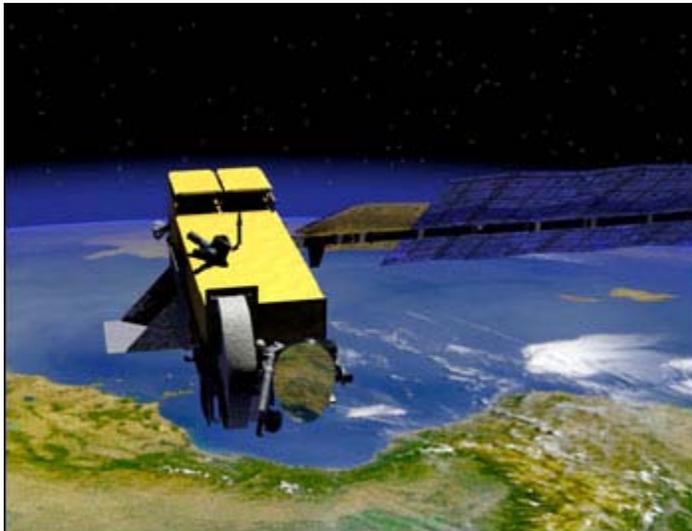




ULTRAVIOLET RADIATION: HOW IT AFFECTS LIFE ON EARTH

Predictions and Monitoring

Our best predictions of the amounts of UV-B we should experience in the near future are based on our predictions of the extent of ozone recovery, as well as on cloud cover. Ozone levels in the stratosphere are predicted to recover in around 50 years at the earliest. This expected recovery depends on full compliance by all national signatories to the international agreement known as "[The Montreal Protocol](#)" and subsequent amendments, which limit the production of chemicals that deplete stratospheric ozone. Greenhouse gas emissions may delay the recovery of ozone by 15 to 20 years beyond 2050. Although greenhouse gases warm the lower atmosphere, they cool the stratosphere. Cooling increases cloud formation in the stratosphere, and ozone-depleting chemical reactions take place on ice crystal surfaces in those clouds.



Instruments aboard NASA's EOS-Aura satellite will measure the amount of UV radiation that reaches the Earth's surface. They will also help to determine whether the stratospheric ozone layer is now recovering, as predicted by scientific models. (Image courtesy Jesse Allen, NASA GSFC Visualization and Analysis Lab)

Data from NASA's satellites, coupled with observations on the ground, are essential to resolve critical questions about the impacts of increased ultraviolet radiation due to ozone depletion. The suite of TOMS (Total Ozone Mapping Spectrometer)

"OZONE LEVELS IN THE STRATOSPHERE ARE PREDICTED TO RECOVER IN AROUND 50 YEARS AT THE EARLIEST."

Ultraviolet Radiation

[Introduction](#)

[Effects on the Biosphere](#)
[What Determines UV at the Surface?](#)

[How Much Are We Getting?](#)

[Predictions and Monitoring](#)

[References](#)

missions will provide us with ozone and UV-B surface exposure data. NASA's [Aura](#) mission, to be launched in 2003, will monitor the status of stratospheric ozone and will enable the scientific community to determine whether or not the ozone layer is recovering as scientific models predict. Until the ozone layer recovers, Aura will help us to better predict how much UV-B exposure we can expect to receive at the surface.

next: [References](#)

back: [How Much Are We Getting?](#)

[Subscribe to the Earth Observatory](#)

[About the Earth Observatory](#)

[Contact Us](#)

[Privacy Policy and Important Notices](#)

Responsible NASA Official: Lorraine A. Remer

Webmaster: Goran Halusa

We're a part of the [Science Mission Directorate](#)

view printable format
of full article

