



**D**oes your city or town have “bad air” days in the summertime? Are you reminded to wear sunscreen when you go out to play? The same gas—ozone—that is the main factor in “bad” air also protects us from the sun’s harmful effects. How can one gas be both good and bad?

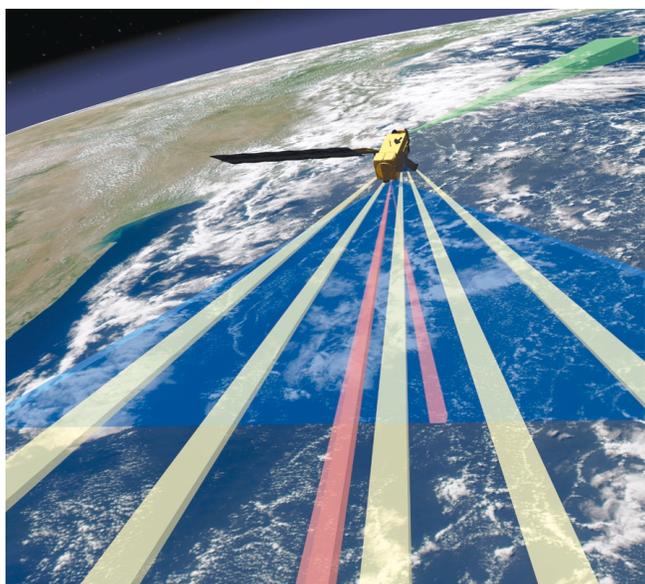
Ozone is a gas that occurs naturally in very, very small amounts in the Earth’s atmosphere. But human beings make more ozone every day. Ground-level ozone is formed when exhaust from cars, trucks, factories, and lawn mowers interact with sunlight—especially in the late spring and summer. When ozone is close to the ground, it can irritate lungs and trigger asthma attacks. Some communities offer free bus rides, encourage carpooling, and ask people to mow lawns or fill gas tanks in the evening on high ozone days.

But we wouldn’t want to get rid of ozone entirely. Ozone is our protection from the sun’s ultraviolet (UV) light, which can cause sunburn, skin cancer, and eye damage. High in the atmosphere, about 25 kilometers above the Earth, ozone serves as a protective layer that absorbs harmful UV light.

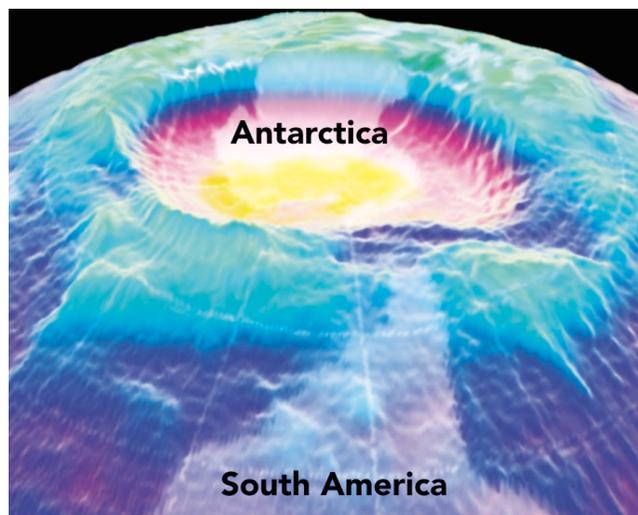
Certain materials, such as those used in air conditioners, refrigerators, and spray cans, can damage the ozone layer. When damage occurs, more UV light leaks through. Each fall, the results are visible over Antarctica, where an “ozone hole” forms. Because this “hole” has so little ozone, it allows lots of UV light to leak through. The red and yellow areas in the image [far right] show the location and size of the “ozone hole” over the South Pole during October 2001.

NASA will soon launch a new satellite into orbit around Earth to measure ozone. Called AURA, the satellite will measure many other gases, as well as smoke and dust in both the lower and upper atmospheres. It will also be able to measure and track chemicals that produce ozone. Look for the launch of this new NASA satellite in January 2004!

World leaders have agreed to work together to reduce the amount of ozone-depleting substances released into the atmosphere. You can reduce the amount of ground-level ozone by walking, riding a bike, taking public transportation, or carpooling. By lowering the number of automobiles on the road, we can reduce the amount of pollution in our air.



Drawing of the AURA satellite as it will appear in orbit 700 km (435 miles) above Earth. Image courtesy of NASA.



View of the South Pole from the TOMS (Total Ozone Mapping Spectrometer) satellite 740 km (460 miles) above Earth. South America and Antarctica are labeled. Blue and green areas have relatively large amounts of ozone, and the yellow and red areas have very little.

