education, the often unexpected benefits to society—than you? Who has greater credibility in discussing science than you? Who understands better than anyone the price our nation will pay if we fall behind in science and technology in the effort to downsize government?

"Is it self-serving to advocate support for science? Perhaps. But if the "self" is the American people and the position of leadership of the United States in all fields of science and technology in the twenty-first century, then I wouldn't worry too much about appearing self-serving.

"One thing that has been striking during this year of budget battles and, most recently, the shutdown is the perceived stony silence of the science and technology community—the universities, where most of the fundamental research is done, and with a few exceptions, business and industry, which depend on the knowledge and technologies research provides. And I can assure you that this perceived lack of concern has not gone unnoticed in Washington.

"Clearly, this is a time of great challenge for science and technology in America. But I believe we can seize this time as one of opportunity to work together in ways we have never done before, to raise our voices together to send out a clear and coherent message. This is not the time to plead for biology versus chemistry or astronomy versus engineering, or even basic versus applied research or technology. It's a time to speak out about the importance of the federal investment in science and technology, in research and education, in universities, in national laboratories and other institutions—and in the partnerships that have been formed with industry and other sectors that use the knowledge and technologies for the public good .

"I believe we are skating on thin ice. But, the good news is that we have an unprecedented opportunity—handed to us by the threats to the enterprise—to work together to prevent the ice from wearing thinner, by upholding the science and technology, research, and education necessary to keep this nation safely and prosperously above the deep."

Access NO_x and NO_y Measurements On-line

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An archive of previously published, but not publicly archived, in situ measurements of NO, NO_2 and NO_y (total reactive nitrogen) in the atmosphere is now accessible by anonymous ftp at the University of Michigan. Measurements from the nonurban surface, boundary layer, free troposphere and lower stratosphere, for all seasons over the past 10 years have been included in the archive. Any coincident measurements of other species or parameters, such as temperature or winds, have also been included. These data sets and the climatologies compiled from them will be used in conjunction with model results to assess our level of understanding of tropospheric photochemistry.

A summary of the archived data sets is given in Table 1. To access the archive, ftp to sassarch.sprl.umich.edu and access the directory /pub/ARCHIVE. Please retrieve the text files in this directory for protocol and file format information. Additional information may be obtained by contacting Louisa Emmons via the Internet at lkemmons@umich.edu.

The data are presently in a standard ascii file format and reside on a UNIX workstation. The archive will eventually be accessible from the Langley Distributed Active Archive Center (DAAC). The data protocol is similar to those of other archives; the data in this archive is not considered proprietary since it has been published. Those using the data, however, are encouraged to contact the principle investigators for the data prior to use to verify suitability. It is also recommended that users extend the option of coauthorship to the principle investigators for any publications or presentations that use their data.

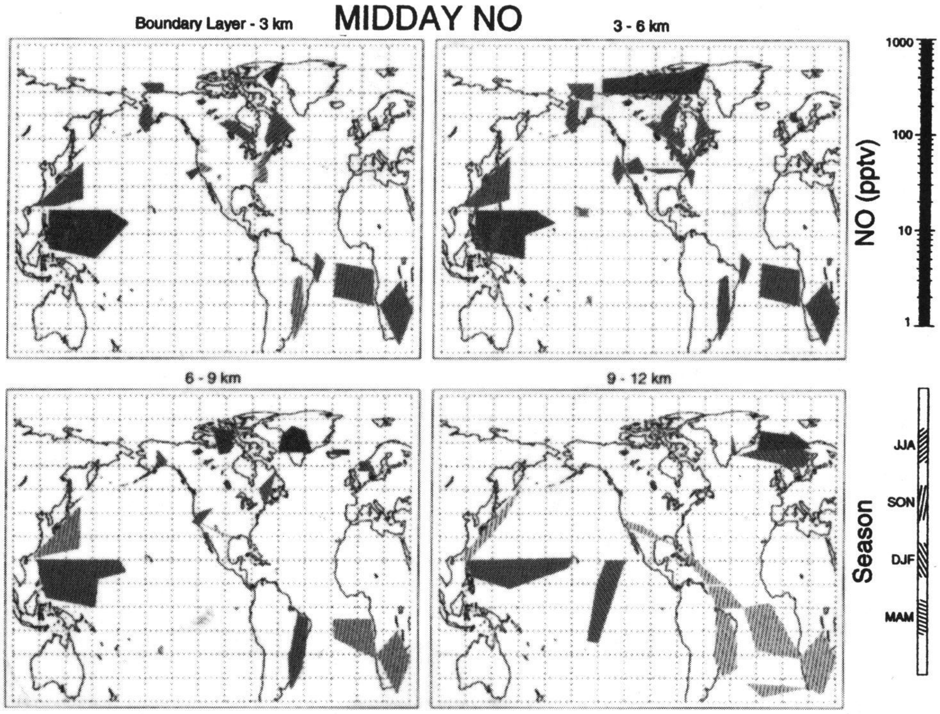

Fig. 1. Median values of midday NO mixing ratios in 3-km altitude ranges. The upper left map includes surface measurements in the boundary layer (indicated by asterisks) as well as airborne measurements between 0.5 and 3 km (shading). For clarity, surface measurements are shown for summer only. The type of shading indicates the 3 months during which the measurements were made. Original color image appears at the back of this volume.

The archived data, along with data from some of the Global Tropospheric Experiment (GTE) campaigns and the Airborne Arctic Stratospheric Experiments (AASE 1 & 2), were used to construct climatologies of NO, NO_x and NO_y. They were sorted by season and 3 km altitude regions, and the statistics for each campaign were calculated. An example of the climatologies as of September 1995 is shown here. Figure 1 shows the median values of midday NO for the boundary layer to 3 km, 3–6 km, 6–9 km, and 9–12 km. The stars indicate measurements from ground sites and the shading shows where airborne measurements were taken. The stars on Hawaii in the 3–6 km map represent measurements at Mauna Loa Observatory (elevation 3.4 km) during "downslope" flow, when free tropospheric air was sampled. The 9–12 km data represent tropospheric data that was filtered using coincident O_3 and N_2O or H_2O data.

Table 1. Archived Data Sets, With Locations, Types, Measurement Dates, and Species Sampled

Campaign (Location)	Type	Data	Species
MLOPEX-1 (HI)	gnd	May 1–June 4, 1988	all data
MLOPEX-2 (HI)	gnd	Sept. 15–Oct. 23, 1991	all data
		Jan. 15–Feb. 15, 1992	
		April 15–May 15, 1992	
		July 15–Aug. 15, 1992	
MLOPEX-2 (HI)	air	April 22–May 11, 1992	NO_y,O_3
ELCHEM (NM)	air	July 27–Aug. 22, 1989	NO,NO_2,NO_y,O_3
Barrow, AK	gnd	March–Nov., 1990	NO, NO_y
Shenandoah NP, VA	gnd	Oct. 1988–Oct. 1989	NO, NO_y,O_3,CO
Harvard Forest, MA	gnd	1990–1993	NO, NO_2, NO_y,O_3,CO
SOS/SONIA (NC)	gnd	Aug. 7–17, 1991	NO, NO_2,NO_y,O_3,CO
INSTAC-1 (W. Pacific)	air	March 5–10, 1989	NO, O_3
NARE (Nova Scotia)	air	Aug. 9–Sept. 7, 1993	NO_y, O_3
NAPS (BC, Ontario)	gnd	1980–1992	NO, NO_2,O_3
North Bay (Ontario)	air	July–Aug., 1988,	NO_2, O_3
		March–April, 1990	

MLOPEX: Mauna Loa Observatory Photochemistry Experiment
ELCHEM: Electrified Cloud Chemistry
SOS/SONIA: Southern Oxidants Study, SONIA site
INSTAC-1: International Stratospheric Air Chemistry Campaign
NARE (Nova Scotia): North Atlantic Regional Experiment
NAPS (BC, Ontario): National Air Pollution Surveillance

Information on how to access the GTE archive at NASA Langley is available from James Hoell (gte+archive@larc.nasa.gov) or the Langley DAAC WWW page (http://eosdis.larc.nasa.gov/).

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International Group Examines Earthquake Ruptures in Mongolia

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Four great and several moderate earthquakes have struck Mongolia and its surrounding area this century, leaving in their wake some of the most spectacular and well-preserved surface faulting in the world [*Baljinnyam et al.*, 1993]. Last August 22 foreign scientists, hosted by a team of Mongolian scientists, explored the extraordinarily well preserved surface ruptures of two major Mongolian earthquakes: the 1967 Mogod earthquake (M_w = 7.0) and the 1957 Gobi-Altay earthquake (M_w = 8.1). The group studied not only extraordinarily well preserved surface ruptures, but also the geomorphology of terrain responding to a cold, dry climate, where erosion is slow and fault ruptures cut pediment surfaces. Mongolia is an excellent laboratory for studying the surface expression of infrequent earthquakes, such as those that occur in the eastern United States.

During the Mogod earthquake of January 5, 1967, strike-slip faulting occurred along a 36-km-long, north trending zone and terminated at its southern end in a 13-km-long southeast-trending thrust rupture. Rupture of apparently frozen ground left huge tension cracks and mole tracks (pressure ridges) that attest to large strike-slip displacement, quantified by one measurement of 3–3.5 m of right-lateral slip. The thrust scarp, which is more than 2 m high along much of its length, corroborated the inference of relatively large slip. Faulting appears to have followed older geologic (Paleozoic?) structures. Throughout much of its length, the rupture seems to have cut pediment surfaces with little sediment on them. Perhaps most remarkable is the nearly complete lack of geomorphic evidence for recent faulting. Participants speculated that the last major event occurred from thousands to tens of thousands of years ago.

The Gobi-Altay earthquake of December 4, 1957, known as the Ih Bogd earthquake in Mongolia [*Florensov and Solonenko*, 1963, 1965], stands out as one of the great intracontinental earthquakes. Extraordinary preservation of the surface rupture (Figure 1) allows

Fig. 1. Photograph looking west-northwest along a segment of the Gobi-Altay rupture, where 6 m of left-lateral and 5 m of vertical slip occurred along an unusually well-preserved fault surface. One workshop participant stands near the top of an offset ridge, another is at its upslope continuation, and another is at its base.