

Electronic Nose to Return from Space Station (w/ Video)

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The ENose flew for six months on the International Space Station monitoring the air the astronauts breathed. Image credit: NASA/JPL

(PhysOrg.com) -- Sniffing out any potential contaminants on the International Space Station where it was stationed for the last six months, the JPL-built electronic nose, or ENose, is homeward bound.

While on the space station, the ENose sampled the air with 32 sensors that can detect various odors and pinpoint which ones are dangerous to humans. The sleek, shoebox-sized ENose, the third generation of its kind, monitored the air for 10 contaminants continuously.

"Our six-month test went very well. The ENose identified formaldehyde, Freon 218, methanol and ethanol, but all of them were at harmless levels," said Amy Ryan, principal investigator of the ENose at NASA's Jet Propulsion Laboratory, Pasadena, Calif. Ryan built the ENose at JPL

and has managed the project from its early beginnings in 1996. "An instrument like this could one day remain on the Space Station and monitor air quality in real-time."

In the future, the ENose could be used in monitoring crew cabins for vehicles to the moon and other destinations or be stationed on a moon base. Other potential applications include detecting a smoldering fire before it erupts, sniffing for unexploded land mines and monitoring for chemical spills in a work area. There are also possible applications in medical diagnosis.

"A human nose is not always as sensitive to chemicals as the ENose and our noses cannot even detect some hazardous chemicals," said Ryan. "The ENose can smell trouble and give people advance warning before contamination levels cause harm."

The ENose was flown to the [International Space Station](#) by the Space Shuttle Endeavour STS-126 mission in December 2008. It is set to return home today on the Space Shuttle Discovery STS-128, after its 13-day flight.

Provided by JPL/[NASA](#) ([news](#) : [web](#))

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