

- [Deadliest Catch](#)
- [Dirty Job](#)
- [Future Weapons](#)
- [Human Body](#)
- [Man Vs. Wild](#)
- [MythBusters Raw](#)
- [Planet Earth](#)
- [Shark Week](#)
- [Smash Lab](#)
- [Time War](#)
- [When We Left Earth](#)

GAMES

- [Game Central](#)
- [Interactive Central](#)
- [Puzzle Central](#)
- [Quiz Central](#)

EXPLORE BY SUBJECT

- [Animals](#)
- [Dinosaurs](#)
- [Egypt](#)
- [Global Warming](#)
- [History](#)
- [Planet Earth](#)
- [Sharks](#)
- [Space](#)
- [Survival Zone](#)
- [Technology](#)

NEWSLETTERS

- [Sign Up](#)

SHOP

- [DVDs](#)
- [Gifts](#)
- [Telescope](#)
- [Toys & Games](#)
- [Video Download](#)
- [When We Left Earth DVD](#)
- [Planet Earth DVD](#)



Eye-Shaped Camera Promises Distortion-Free Pics

[e-mail](#) [share](#) [bookmark](#) [print](#)

To email this article, type in your friend's name and email address, your name and email address, and a message. Then click "submit."

Friend's name:

Friend's email:

Your name:

Your email:

Optional Message:

AFP



advertisement

Download This Widget at Bottom!

Discovery NEWS

Widget

News Video

Blogs

[Interior Design: Eric Bland](#)

*Denying credit to these students was not based on

submit

Message Sent!
[close](#)

- [Yahoo! Buzz](#)
- [del.icio.us](#)
- [Digg](#)
- [Mixx](#)
- [MySpace](#)
- [Newsvine](#)
- [Reddit](#)
- [close](#)



Tapping Nature's Design

Aug. 6, 2008 -- Inspired by the human anatomy, researchers in the United States have created the world's first curved electronic "eye" camera, according to a study released Wednesday.

The size and shape of a human eye, the device weaves a network of silicon detectors into a flexible mesh, and could usher in a new generation of distortion-free digital and video cameras.

Experiments already under way are testing other potential applications, including a thin, pliable monitor to detect electrical signals travelling across the undulating surface of the human brain.

Its breakthrough design also points the way to the development of artificial electronic retinas that could one day help restore [sight](#), says the study, published in the British journal *Nature*.

"This approach allows us to put electronics in places where we couldn't before," said John Rogers, an engineer at the University of Illinois, who led the research along with Yonggang Huang of Northwestern University.

"We can now, for the first time, move device design beyond the flatland constraint of conventional wafer-based systems."

A curved array of detectors is "much better suited for use as [retinal implants](#)," Rogers said in a statement.

Animal eyes are naturally curved for capturing images, but up to now [artificial vision systems](#) have been limited to flat image-recording surfaces.

Engineers have been trying for decades to manufacture an electronic [eye system](#), but the goal of creating a working camera remained elusive.

[Next »](#) 21 « Previous

SPONSORED LINKS

- [Eye Glass](#)
 Get LASIK. Sat. Surgeries - Be Back
 At Work By Mon. Free Consultation!
www.LaserEyeCenter.com
- [Wholesale CCTV Cameras](#)
 Color Dome \$27, Outdoor IR \$44
 Cable, Connectors, DVR's & Power
www.Active-Vision.com
- [Cameras](#)
 Repair/Replacement Protection.
 Call Us Toll Free: 1-877-279-6417 !
GreenUmbrella.com
- [Machine Vision Specialist](#)
 Experienced CognexPSI
 Custom Vision Solutions that WORK
www.code-in-motion.com

religious discrimination or that the books contain

Earth Impacts : Larry O'Hanlon
 "Looks Like Mars, Smells Like Earth" and other Earth Round-Up stories...

Strike Slip: Michael Reilly
 "As sea ice in the Arctic keeps melting, the region is going to become one of the last great frontiers"

Free Space: Irene Klotz
 PHOTO: "Astronomers believe the galaxy was punched out by a small companion galaxy a few million years ago"

Friday News FeedBlog
 "It's the best thing since jet-puffed marshmallows," Gramma says.

Put this widget ON YOUR SITE >

THE **DISCOVERY CHANNEL** INSIDER NEWSLETTER

Get news, podcasts, schedules, interviews, games, puzzles and exclusive Web features.

[SIGN UP NOW!](#)

- [Deadliest Catch](#)
- [Dirty Job](#)
- [Future Weapons](#)
- [Human Body](#)
- [Man Vs. Wild](#)
- [MythBusters Raw](#)
- [Planet Earth](#)
- [Shark Week](#)
- [Smash Lab](#)
- [Time War](#)
- [When We Left Earth](#)

GAMES

- [Game Central](#)
- [Interactive Central](#)
- [Puzzle Central](#)
- [Quiz Central](#)

EXPLORE BY SUBJECT

- [Animals](#)
- [Dinosaurs](#)
- [Egypt](#)
- [Global Warming](#)
- [History](#)
- [Planet Earth](#)
- [Sharks](#)
- [Space](#)
- [Survival Zone](#)
- [Technology](#)

NEWSLETTERS

- [Sign Up](#)

SHOP

- [DVDs](#)
- [Gifts](#)
- [Telescope](#)
- [Toys & Games](#)
- [Video Download](#)
- [When We Left Earth DVD](#)
- [Planet Earth DVD](#)



Eye-Shaped Camera Promises Distortion-Free Pics

[e-mail](#) [share](#) [bookmark](#) [print](#)

To email this article, type in your friend's name and email address, your name and email address, and a message. Then click "submit."

Friend's name:

Friend's email:

Your name:

Your email:

Optional Message:

AFP



advertisement

Download This Widget at Bottom!

Discovery NEWS

Widget

News Video

Blogs

Motorcycles Designed to Run on Air
To clear the air, engineers build motorcycles that can run on air.

submit

Message Sent!
[close](#)

- [Yahoo! Buzz](#)
- [del.icio.us](#)
- [Digg](#)
- [Mixx](#)
- [MySpace](#)
- [Newsvine](#)
- [Reddit](#)
- [close](#)

Current digital cameras routinely cram more than 10 million pixels into an image, but have not overcome the long-standing problem of distortion created by a flat imager.

Conventional sensors cannot bend without damaging light-sensitive pixels -- the semiconductor wafers in which they are embedded are rigid and brittle, fracturing at strains of less than one percent.

Rogers and Huang overcame these limitations by linking the fragile light-sensitive pixels with tiny, flexible wires which can bend by as much as a 40 percent.

This electronic mesh was fitted against a rubber membrane stretched into the curved shape of a retina, and then transferred to a hemispherical glass dome of the same shape, creating the camera lens.

"This research is truly transformative," said Ken Chong, an advisor in the National Science Foundation Engineering Directorate, which funded the study.

"Using simple mechanics principles, the researchers have produced, for the first time, electronic devices on a hemispherical surface so that they can take images much like those captured by the human eye," he said in a statement.

In a commentary, also published in *Nature*, Takao Someya of the University of Tokyo said the new technology "heralds the advent of new classes of imaging devices with wide-angle fields of view, low distortion and compact size."

Related Links:

- [Eric Bland's blog: Interior Design](#)
- [Discovery Tech](#)
- [How Stuff Works: Vision](#)

Next »21« [Previous](#)

SPONSORED LINKS

- [JAI & PULNiX Cameras](#)
Compact industrial cameras with Camera Link or GigE interfaces
www.jai.com
- [FLIR Infrared Cameras](#)
Widest Selection of FLIR IR Cameras
Lowest Price on the Market
www.GoInfrared.com
- [CCD/ CMOS Lens Assemblies](#)
Board and S-mount camera lenses
Machine vision and Medical systems
www.ukaoptics.com/ccd.html
- [Programmable VGA Camera](#)
Standalone, 1/2 Watt, Vision System
\$99 OEM, x86-based w/ full dev kit
www.tern.com/ceye.htm

SITE SEARCH
SUBSCRIBE TO OUR [NEWSLETTERS](#)

CREDITS/AFP/Getty Images |
DISCOVERY SITES/Discovery Channel / [TLC](#) / [Animal Planet](#) / [Discovery Health](#) / [Science Channel](#) / [Planet Green](#) / [Discovery Kids](#) / [Military Channel](#) /
[Investigation Discovery](#) / [HD Theater](#) / [Turbo](#) / [FitTV](#) / [HowStuffWorks](#) / [TreeHugger](#) / [Petfinder](#) / [PetVideo](#) / [Discovery Education](#)

'Frankenrobot' Has Biological Brain

Meet Gordon the robot: mechanical body, biological brain. Is this the future of A.I.?

'Sputnik' Virus Orbits, Hijacks Other Viruses

A tiny virus that makes a living off the work of other viruses is the first of its kind.

'Sugar Coating' Used to Waterproof Paper

Scientists use sugarcane to make completely recyclable waterproof paper.

Military to Test NASA Space Plane

A prototype spaceship abandoned by NASA is now in the hands of the U.S. Air Force.

Put this widget ON YOUR SITE >

THE DISCOVERY CHANNEL INSIDER NEWSLETTER

Get news, podcasts, schedules, interviews, games, puzzles and exclusive Web features.

[SIGN UP NOW!](#)