2008 GALLERY

IMAGES OF THE YEAR

This gallery showcases some of the year's most eye-catching science, from a close encounter with squid suckers that look like a carnivorous cartoon choir to mathematical forms given shape in purple yarn.

It also recalls some of the biggest science news stories: the staggering devastation wrought by Hurricane Ike; a Nobel prize for putting a glowing protein to work; and the ongoing robotic exploration of Mars.

Researched and written by Emma Marris.

J. HART, S. TAWFICK, M. DE VOLDER & W. WALKER/UNIV. MICHIGAN

NANOBAMAS

These half-millimetre-wide portraits of the next president of the United States are each composed of 150 million carbon nanotubes — the same figure as the number of people who voted in the US election. No prizes for guessing who John Hart, a mechanical engineer at the University of Michigan in Ann Arbor, supported.

F. ROVERO

HELLO, SENGI

In the northern Udzungwa Mountains of Tanzania, researchers discovered a new species of sengi, or elephant shrew. The grey-faced sengi (*Rhynchocyon udzungwensis*), the largest yet known, was introduced to the world in January in the pages of the *Journal of Zoology*.

S. N. POOL/GETTY IMAGES

THE IRE OF IKE

Hurricane Ike killed more than 100 people and did billions of dollars' worth of damage this year. Gilchrist, Texas, took a battering on 13 September.

FLUORESCENT VILLI

Stunning images of biological structures such as these intestinal villi — fingerlike projections that increase the surface area of the gut available to absorb food — are made possible by glowing fluorescent proteins used to tag specific proteins in cells. The technology won the Nobel Prize in Chemistry this year.

S. SCHULLER/WELLCOME IMAGES

D. TAIMINA

CUDDLY TOPOLOGY

Mathematician Daina Taimina of Cornell University in Ithaca, New York, displayed this crocheted hyperbolic plane as part of the 'Beyond Measure' exhibition at Kettle's Yard gallery in Cambridge, UK.

NASA/JPL-CALTECH

OPPORTUNITY ESCAPES

After investigating Victoria crater on Mars for almost a year, the rover Opportunity retraced its tracks out onto level ground in late August.

S. DALAL

NANOTINSEL

This coloured scanning electron microscope image shows zinc oxide nanowires grown on carbon fibres, each about 10 micrometres wide. The image, created by graduate student Sharvari Dalal, was part of the annual photo competition organized by the engineering department of the University of Cambridge, UK.

SPOT THE PLANET

Among the starlight and debris that surround the star Fomalhaut is a tiny dot (circled): planet Fomalhaut b. Researchers estimated in November that it is 25 light years from Earth and no more than three times the mass of Jupiter.

NASA/ESA/P. KALAS, J. GRAHAM, E. CHIANG, E. KITE (UNIV. CALIFORNIA, BERKELEY)/M. CLAMPIN (NASA GODDARD SPACE FLIGHT CENTER)/M. FITZGERALD (LAWRENCE LIVERMORE NAT'L LAB.)/K. STAPEL FELD, J. KRIST (NASA JPL)

SQUID SUCKERS

When deciding how to colour the various parts of a squid's suckers in this electron micrograph, Jessica Schiffman of Drexel University in Philadelphia, Pennsylvania, thought of the film *Little Shop of Horrors*. The resulting image won an honourable mention in the International Science and Engineering Visualization Challenge.

J.D. SCHIFFMAN & C.L. SCHAUER (DREXEL UNIV.)

NASA/JPL-CALTECH/UNIV. WISCONSIN

GHOST HEART

The rat heart at the top is recognizably red and fleshy. The bottom heart has been stripped of all its cells with detergent, and is now nothing more than collagen and other bits of the extracellular matrix. These structures could one day be used as scaffolds for engineered hearts, according to bioengineers at the University of Minnesota in Minneapolis.

H. OTT/T. MATTHIEN

TOMORROW'S TOMATO

A dash of snapdragon genes turns a run-of-the-salad tomato into a deep purple, anthocyanin-packed life-extender — at least for mice susceptible to cancer, says tomato-gene juggler Cathie Martin of the John Innes Centre in Norwich, UK.

JOHN INNES CENTRE

ORION OR ICARUS?

It "dropped faster than intended", explained NASA. This mock-up of the Orion crew exploration vehicle, lying nose down in the dust outside Yuma, Arizona, was undergoing a parachute test in July as part of NASA's Constellation programme to send human explorers back to the Moon.

NASA/JSC

MEET THE MILKY WAY

This is a section from a very long image of our Galaxy, as seen at infrared frequencies by the Spitzer Space Telescope. The full image, 60 metres long at full resolution, was made up of 800,000 frames and debuted at the American Astronomical Society meeting in St Louis, Missouri, in June.

▲

◀ COUGH!

Researchers at the gas-dynamics laboratory of Pennsylvania State University in University Park visualized a cough by tracking changes in air density, and provided compelling evidence that it really is polite to cover your mouth as you hack away.

A FORGOTTEN FIRST

This image of Earth was originally taken by NASA's Lunar Orbiter probe in 1966, making it two years older than the iconic 'Earthrise' picture taken during the Apollo 8 mission. The probe's pictures are being reconstructed from analogue data so that they can be compared with digital images from the 2009 Lunar Reconnaissance Orbiter mapping mission.

© 2008 MASSACHUSETTS MEDICAL SOCIETY. ALL RIGHTS RESERVED

NASA/LOIRP

N. COBBING

CRYSTAL CRASH PAD

Chemistry becomes art in *Seizure*. Artist Roger Hiorns and his assistants sealed off a condemned flat in London and filled it with 90,000 litres of hot copper sulphate solution, which formed crystals as it cooled, turning the space into a blue grotto.