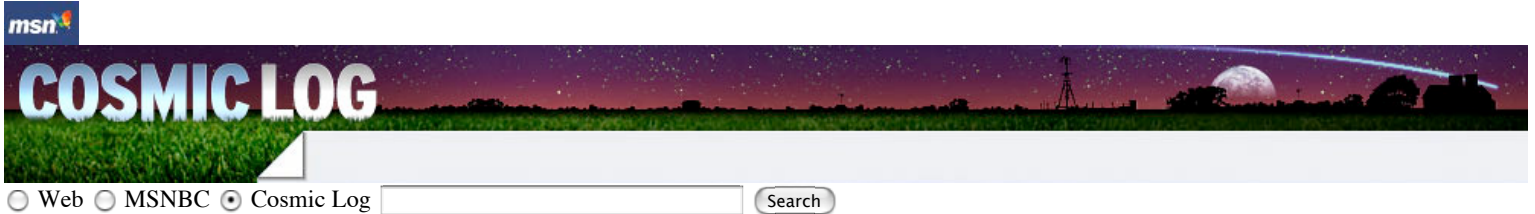


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Quantum fluctuations in space, science, exploration and other cosmic fields... served up regularly by MSNBC.com science editor Alan Boyle since 2002.



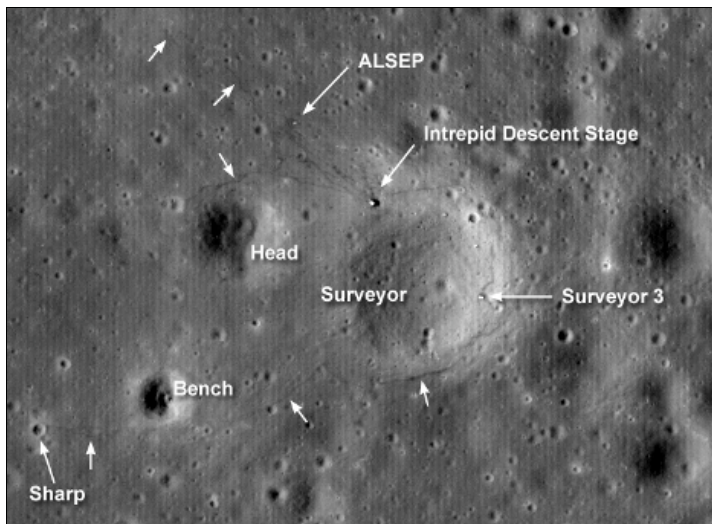
Alan Boyle covers the physical sciences, anthropology, technological innovation and space science and exploration for MSNBC.com. He is a winner of the [AAAS Science Journalism Award](#), the [NASW Science-in-Society Award](#) and other honors; a contributor to "[A Field Guide for Science Writers](#)"; and a member of the board of the [Council for the Advancement of Science Writing](#).

Check out Boyle's [biography](#) or send a message to Cosmic Log via cosmiclog@msnbc.com.

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Posted: [Friday, September 04, 2009 7:10 PM](#) by Alan Boyle



NASA / ASU

This image from NASA's Lunar Reconnaissance Orbiter shows the Apollo 12 landing site (with the Intrepid descent stage) as well as the Surveyor 3 lander, the ALSEP experiment package and tracks leading to other surrounding points of interest.

Broader views of the universe are among the richest payoffs to result from space exploration, as demonstrated by the latest installment of "[Month in Space Pictures.](#)" But those views becomes even richer when you see them from a completely different perspective. Some of the latest gems from space do just that, energizing scientific sleuths and confounding conspiracy theorists in the process.

Here's a quick sampling of completely different perspectives to peruse during the long Labor Day weekend:

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[Naked molecule](#)

[exposed](#)

Posted: [Thursday, August 27, 2009 8:10 PM](#) by Alan Boyle

Scientists have traced the structure of a complete molecule in all its glory, using the sharpest pen ever devised: an atomic force microscope tipped with a single molecule of carbon monoxide.

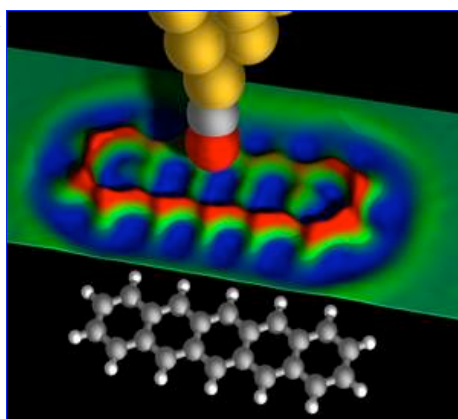
The experiment, detailed in Friday's issue of the journal [Science](#), could help open up a new frontier for molecular-scale circuitry and construction.

Researchers have been [imaging molecules](#) and their constituent atoms in crystals [for decades](#), but the trick is to get a fine-resolution fix on the structure and behavior of an entire, self-contained molecule as it sits on a surface.

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IBM Research - Zurich

[Click for video:](#) This graphic shows how scientists used a carbon monoxide molecule on the end of a metal tip to map a pentacene molecule. Click on the image to watch a video from NBC's "Nightly News."

[Three faces of a](#)

[nebula](#)

Posted: [Wednesday, August 26, 2009 5:20 PM](#) by Alan Boyle

The [latest view of the Trifid Nebula](#) serves as fresh evidence that good things definitely come in threes: This star-illuminated cloud of gas and dust gets its name from its three-lobed appearance (via the Latin word "[trifidus](#)"), and the European Southern Observatory's crowd-pleasing picture puts the "three faces" of the nebula on full display.

The Trifid Nebula, which lies thousands of light-years away in the constellation Sagittarius, was first observed by French astronomer Charles Messier in 1764 - who listed it as No. 20 in his [famous catalog](#) of interesting sky objects. It was English astronomer John Herschel who gave it the "Trifid" tag 60 years later.

In the centuries since then, the nebula has been imaged thousands of times, by the [Hubble Space Telescope](#) and other telescopes [great](#) and [small](#). Today the ESO showed off its own view of the nebula, captured by the Wide-Field Imager attached to the MPG/ESO 2.2-meter telescope at the La Silla Observatory in Chile.



ESO

The Trifid Nebula reveals three faces in this ESO view. Click on the image for a larger version.

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[X-rays solve](#)

[artistic mystery](#)

Posted: [Wednesday, August 19, 2009 6:00 PM](#) by Alan Boyle



N.C. Wyeth / Christina Bisulca / Univ. of Delaware

This 1919 illustration was covered over with another painting in the 1920s by artist N.C. Wyeth, but the color scheme was reconstructed through X-ray imaging.

Eighty-five years ago, American illustrator N.C. Wyeth painted one work of art over another, hiding a dramatic fistfight beneath a placid family portrait. Now X-ray vision has brought the long-hidden colors of that fight scene back to life - without disturbing the brush strokes layered on top.

The experiment, [described today](#) at the American Chemical Society's national meeting in Washington, is just the latest example showing how science can reveal secrets concealed beneath the surface of paintings and manuscripts.

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Posted: [Friday, August 14, 2009 11:50 AM](#) by Alan Boyle



Denis Balibouse / Reuters

A meteor streaks past stars in the night sky at the Mont-Tendre near Montricher in the Jura Mountains, north of Geneva, late Tuesday during the Perseid shower. This view was captured with a fisheye lens. [Click on the image for a larger version.](#)

Long after summer vacations are over, the experience lives on in slideshows, photo albums and computerized file folders filled with exotic snapshots. My weeklong vacation in Quebec produced some [personal favorites](#) - but the real action was in the skies above, highlighted by the [annual Perseid meteor shower](#). Stunning images also came down from Mars, Saturn and frontiers beyond the solar system. Here's a rundown of the week's visual highlights:

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[DNA twisted](#)

[into pretzels](#)

Posted: [Thursday, August 06, 2009 3:40 PM](#) by Alan Boyle

Scientists are improving their technique for bending DNA into origami shapes. [The latest twist](#) uses custom-made chemicals to turn bunches of molecules into smoothly curving circlets and gears - a trick that eventually could set the stage for practical nanomachines.

DNA origami is a technique for folding the double helixes into programmed patterns. Some of the experiments have produced [whimsical demonstrations](#) such as a microscopic "happy face" or a map of the Americas. But the purpose behind all this is not mere child's play.

"Instead of just programming abstract software, we're programming matter," Harvard biochemist William Shih, one of the researchers behind the latest yoga tricks, told me today.

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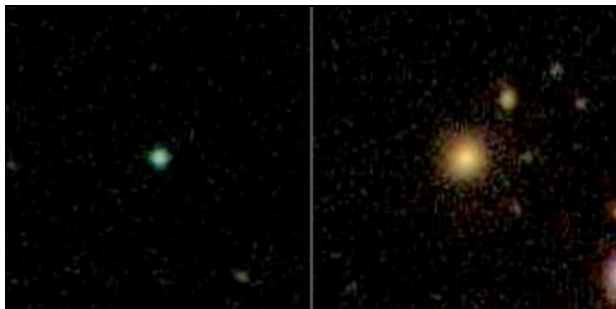


H. Dietz / TUM

This schematic shows some of the nanoscale shapes made from DNA. [Click on the image for larger view.](#)

'Green Pea' galaxies spotted

Posted: [Monday, July 27, 2009 5:50 PM](#) by Alan Boyle



Carolyn Cardamone and Sloan Digital Sky Survey
A "Green Pea" galaxy, at left, isn't like the typical galaxy at right.

[Galaxy Zoo's](#) legions of mouse-clicking [citizen astronomers](#) have chalked up another discovery: "Green Pea" galaxies that look more like garden vegetables than the traditional spiral galaxies we all know and love. Read more about the research, to be published in the Monthly Notices of the Royal Astronomical Society, in [this announcement from Yale University](#) posted to the EurekAlert Web site.

I'm out of the office today, putting the finishing touches on "[The Case for Pluto](#)" and dealing with other matters, but here's more must-see science to peruse while I'm semi-gone:

- [New Scientist: Is Pluto a planet after all?](#)
- [Wired: Eclipse shadow on Earth seen from space](#)
- [YouTube: Buzz Aldrin mentions the Phobos monolith](#)
- [Space for All: Amateurs discover Soap Bubble Nebula](#)

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See Jupiter's Great Black Spot

Posted: [Friday, July 24, 2009 4:25 PM](#) by Alan Boyle



H. Hammel (SSI) / NASA / ESA / Jupiter Impact Team
The Hubble Space Telescope's brand-new Wide Field Camera 3 took this picture of the expanding black spot on Jupiter on Thursday.

Even though it's in the middle of a post-makeover checkout, the Hubble Space Telescope was turned toward

Jupiter this week to capture a picture of the bruise left behind by a comet or asteroid - and it's a [real beaut](#) of a shiner.

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[Moonwalk video gets a makeover](#)

Posted: [Thursday, July 16, 2009 7:01 AM](#) by Alan Boyle



NASA / GSFC

[Click for video:](#) A side-by-side comparison shows a frame from NASA's archival video of Apollo 11's Neil Armstrong making his way down the lunar module's ladder at left, and a restored version of the same frame at right. Click on the image to watch a video in which NASA's Dick Nafzger explains the differences in depth.

That's one small step for a man, one giant leap for video restoration.

[Forty years after the fact](#), some of the most historic moments of Apollo 11's televised moonwalk have been brought into sharper focus using computerized image processing techniques.

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[Galaxies go into shock](#)

Posted: [Monday, July 13, 2009 8:26 PM](#) by Alan Boyle



NASA / CSC / CfA / CFHT / Coelum

Composite photo shows optical and X-ray views of Stephan's Quintet, a galactic collision that has generated a powerful shock wave (indicated here in light blue).

A [shockingly beautiful image](#) of a galactic smash-up known as Stephan's Quintet highlights the powerful

shock wave created by a cosmic bullet.

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