



On The Horizon

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The Incredible Hulk and Gamma Ray



Gamma rays are blamed for making Bruce Banner the Incredible Hulk. But what are gamma rays and what can they really do?

Gamma rays are the highest energy form of light. The rainbow of visible light that we are most familiar with is just part of a far broader spectrum of light, the electromagnetic spectrum. Past the red end of the rainbow, where wavelengths get longer, are infrared rays, microwaves and radio waves, while beyond violet lie the shorter wavelengths of ultraviolet rays, X-rays and, finally, gamma rays.

A gamma ray packs at least 10,000 times more energy than a visible light ray. Unlike the Incredible Hulk, gamma rays are not green — lying as they do beyond the visible spectrum, gamma rays have no color at all that we can describe. Exactly how Bruce Banner survives his transformation is unclear.

Just as high doses of X-rays are typically lethal, so too would an explosion of gamma rays kill the average person.

Gamma rays can knock electrons around like a bowling ball would bowling pins. These charged particles can then disrupt any chemical bond they come across, wreaking havoc on the delicate chemical machinery of the cell and generating molecular fragments that can act as toxins.

To put it gently, a gamma bomb in the real world would not turn Bruce Banner into the Incredible Hulk. Rather, it would likely quickly turn him into a corpse dead from radiation sickness, if not incinerating him instantly.

Still, gamma rays can have medical applications — a medical device known as the gamma knife can kill tumors by aiming gamma rays at a patient's brain.

When Bruce Banner becomes the Incredible Hulk, his body swells with muscles seemingly from out of nowhere. Intriguingly, gamma rays can be so powerful that they can actually create matter. This is because, as Einstein's formula $E = mc^2$ explains, energy can get converted to matter, and vice versa. Extraordinarily high-energy gamma rays, such as ones that black holes can generate, can yield pairs of electrons and their antimatter counterparts, known as positrons.

(Whether the Incredible Hulk uses gamma rays to violate the law of conservation of matter and grow is another question.)

Indeed, just as the Incredible Hulk is strong enough to destroy the entire planet, so too can a gamma ray burst kill life on this world. A "death star" was recently discovered that might one day explode with a gamma ray burst directed straight at us — although it might readily miss.

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Star Trek: All The Next Generations

These days, when you hear about a "Trek" veteran, it's almost always original series alums William Shatner, Leonard Nimoy, or George Takei. NextGen Captain Patrick Stewart picked up another iconic role as Professor Xavier in the "X-Men" films, but the captains of subsequent series have disappeared, as if in a tragic transporter accident. Brent Spiner briefly returned to "Enterprise" as his android character's grandpa (yeah, I don't understand either), former Ferengi Armim Shimerman had a one-season run as a mortal human bad guy on "Buffy" and even Colm Meaney's once-ubiquitous Irish accent has been little-heard. All in all, former Trekkers have been getting most of their work doing cartoon voices.

Robots we know and love

Half the fun of Science Fiction is the memorable creatures that come from TV shows and movies. For example to most Star Trek fans Data is the first robot that comes to mind, although his character emphatically state that he is an android not a robot. Who could forget Data's evil twin, Lore or his daughter Lal? Does anyone remember Norman who pretended to be a member of the Enterprise crew from the original Star Trek series? There was also Harry Mudd's women who were also all androids, each with her own specific number and function.

As a child I was enthralled with the movie "The Day the Earth Stood sStill." It was my first encounter of the robot kind and Gort fascinated me. After that there were a long stream of robot characters, some I saw and some I only heard about.

According to a recent pole done at just prior to the premier of the new moving "Wall-E" these were some of the most memorable robots from TV and film, The Fembots from "Austin Powers," Commander Data from "Star Trek," Robo Cop vs ED-209, "The Terminator," Ash from "Aliens," R2D2 and C-3PO from "Star Wars," Robby from "Forbidden Planet," my old buddy Gort, and the Fake Maria who threatened "Metropolis." Of course the question that spawned the survey is "Will Wall-E become as memorable as these other robots, androids, of the past?" If it is as cute of a movie as the trailers show my answer would be "Yes."

XO's Log



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I am not sure why I write this column. I guess it is a small forum for my thoughts about different subjects. Lately my thoughts have been on learning. I often wonder what life would be like without learning new things. My job is definitely a daily learning experience while we switch from our beloved Novell network to the Windows network. New ways to think about things and new ways to do old stuff. Let me just say this about the old adage regarding teaching old dogs new tricks, "T'aint necessarily so." This ol' dog has had to relearn old tricks and quite a few new ones.

I look at other opportunities to learn things and outside of formal learning I realize that my TV is a fascinating teacher. The Learning Channel, History Channel(s), A&E, and of course my favorite The Food Network all offer up a veritable buffet of learning opportunities. Of course most of what I seem to absorb is the trivial knowledge. Maybe they just seem trivial because they are tidbits that others don't

know because they don't watch the same programs.

My latest endeavor is to learn Irish Gaelic. So far it has been a bit frustrating because it is so different from English. The cool thing is I will now be able to semi understand the words on the "Celtic Woman" CD. I'll let you know how it goes. Learning is a good thing and makes a good day.

William Shatner a Renaissance Man



Why did William Shatner cross the road? Why has he ever? To get to the other side. To see what's out there. To find out stuff and inhale the universe in his singular Shatnerian way. It's the story of his life — and the lives of the characters he has breathed, spoken and shouted into existence over a 50-year performing career.

It's the story of "Boston Legal" bombast Denny Crane, racing to experience all life's pleasures before Alzheimer's drags him not-so-gentle into that good night. It's the story of the Priceline Negotiator, that discount-travel maniac who barnstorms across the planet to get us better deals on hotels and flights. It's the story of James T. Kirk, the wise and womanizing starship captain who led a crew of 23rd-century explorers across interstellar backroads.

And it's the story of Shatner himself — a man governed by his passions and interests, a man who crosses new roads every day, gleefully ignoring those who dismiss him and conquering frontiers he never dreamed possible. A cultural phenomenon who, despite tales of his galactic ego, seems strikingly down to Earth as he shapes and basks in the third golden age of his career.

, he's been pilloried over the years — perhaps justifiably here and there — for his roundhouse method-actor style, for his apparent obliviousness of his own over-the-topitude, for his primal, all-encompassing Shatner-ness.

But being snide about William Shatner is so 1997. He is 77 now, post-post ironic, doing precisely what he wants to — and, finally, no longer terrified about making a living. "Live life like you're gonna die, because you're gonna," he sang a few years ago. And he does: "There is so much going on with me right now, it's difficult to believe all of it," he says.

You name the subject, he's fascinated. Global warming. Asian soap operas. The sentience of fish. Afghan politics. The turkeys he deep-fries in a "multimedia show" every Thanksgiving. And his timeless loves — his wife Elizabeth, his three daughters and his racehorses.

The guy lives large. He portrays decisive, humane, driven men. His emotion is his strength. He may be Canadian, but he exudes an American frontier spirit that he breathed into his most enduring alter ego so well that one of my younger son's two middle names is Kirk. Don't judge.

We often think of performers' roles as secret decoder rings — that if you put everyone ever portrayed by Shatner into a blender and pressed frappe, you'd have Shatner the man. That's absurd. But being around Shatner, the debt that the characters owe the man is clear.

At Priceline.com, Shatner has been frontman for a decade, urging people to name their own price. of this star who came to a commercial shoot and started developing the character.

"You're a celebrity (and) you're asked to do a 30-second television spot. It's not the most glamorous thing in the world. But he dives in," Brett Keller, Chief Marketing Officer at Priceline says. Market research, Priceline says, has shown an affinity for Shatner across age groups and demographics.

"Everyone knows William Shatner," Keller says. "You either love him or you hate him, and I think most people love him."

He has always favored unusual paths. You don't make an entire horror movie in Esperanto ("Incubus," 1964) otherwise. You don't open an equestrian camp to help disabled Israeli and Arab children get along. And you certainly don't serenade George Lucas by dancing with storm troopers while singing a personalized version of "My Way."

Let's even put this on the table: William Shatner is vulnerable.

With these choices, Shatner has carved himself a unique place in the culture through a complicated blend of sincerity, bombast, wink-nudge irony and self-parody. Hate him or love him, rarely has an entertainer

Shatner

straddled giggles and glory so adeptly. And rarely does a performer have three distinct and separate careers, each building on the last:

Shatner No. 1: I'm a Very Serious Actor. This one played tortured men in two "Twilight Zone" installments, a slick racist in 1962's "The Intruder" and created the role of the iconic Captain Kirk in the original "Star Trek." This Shatner was drama on steroids, and he endured through the 1980s with the tough-as-nails "Hooker" and a Captain-Kirk reprise in seven "Star Trek" movies.

Shatner No. 2: I Laugh At Myself And You Can Too. Emerged around 1997. There were hints of this Shatner earlier — well-played comedy in a couple "Trek" episodes and a deadpan cameo in "Airplane II." But Shatner really jumped into self-parody in a 1997 film called "Free Enterprise," in which he played a heightened version of himself. Then came his appearance as the alien leader on "Third Rock From The Sun" and his first Priceline ads, which cast him as a zeitgeisty, lounge-lizard joker.

"Something's happened out there," he told me a decade ago in the middle of this period. "People are perceiving me as funny, and they want funny things from me." He laughed all the way to the bank, and we marveled at his ability to reinvent himself.

Shatner No. 3: We Laughed Until We Cried. The most sophisticated Shatner of all.

For years, it was assumed that Shatner equaled Kirk. Then came Denny Crane, a Boston law firm's rainmaker enduring the beginning of "the mad cow." Denny is loudmouthed, sexist, self-obsessed and terrified at what age is stealing. Only his much younger colleague, Alan Shore, understands the panic behind the bluster.

"He brings to the moment everything you know about him," says David Fisher, who collaborated with Shatner on the new autobiography. "He's not a fresh face. We know who William Shatner is, as an audience. We know what he's been through. We know the ridicule he's received, we know the plaudits he's received. He's been part of our lives for so long."

Shatner as Kirk may be a memory. While Leonard Nimoy will be featured as an aging Spock in J.J. Abrams' reboot of the "Trek" franchise next year, Shatner isn't coming aboard; his character died in 1994's "Star Trek Generations" and will be played in the new film by the young actor Chris Pine.

Other than that, all things seem possible, from racing horses to developing a pet project called "Shiva Club," which follows two young comedian wannabes who, trying to network, crash the wake of an old-school Jewish comic.

"I have all of the hungers and passions and desires of when I was 20," Shatner says. "There's nothing I can't do."

After all this time, he lives life like he's gonna die, because he's gonna. But when the time finally comes to take that trip, don't be surprised if William Shatner tries to name his own price.

Star Trek: All The Next Generations

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Ocean-monitoring satellite blasts off from California

VANDENBERG AIR FORCE BASE, Calif. - A rocket carrying a U.S.-French ocean-monitoring satellite lifted off early Friday from the central California coast.

The Delta 2 rocket blasted off at 12:46 a.m. PT (3:46 a.m. ET) after what officials called a "remarkably smooth" countdown. Video showed the satellite separating from the rocket moments after the launch.

"We can see the spacecraft gently drifting away," said the project's telemetry manager, Mark Lavigne.

The satellite, called Ocean Surface Topography Mission-Jason 2, will use a radar altimeter to precisely measure the height of the ocean surface, which changes depending on temperature. The data will be used to monitor effects of climate change on sea level and to improve global weather, climate and ocean forecasts, NASA said. Such observations began in 1992 with a spacecraft dubbed TOPEX/Poseidon and have continued with the current Jason 1 satellite. The two Jasons will fly in tandem.

The National Oceanic and Atmospheric Administration expects to use the new satellite to improve hurricane forecasting.

Seeing Stars in the Night

Ariel explosives have a long history, going back even before the introduction of gunpowder from China to Europe in the 1300s. Originally fireworks were exclusively materials of war. Military "fire makers," however, perfected their skills through the centuries and thus produced the fireworks to celebrate both peace and victory. Producing the elaborate fireworks of today is a guarded blend of art and science.

The "stars" are the guts of the firework. They are blackish lumps of explosives made from a special recipe of black powder, metals, salts and other secret ingredients. The stars are then surrounded by black powder, rather like sand, to fill in the space between the stars and setting off a colorful crackle at the proper time. A time delayed fuse sets each section off at a specific interval.

Black powder provides the crackle but what about that loud whistle? That sound is produced by smaller cardboard tubes filled with chemicals and then plugged with clay at one end. When the chemicals burn, hot gas rushes through the tube and makes the high pitched squeal.

So what makes those cool colors in the night sky? Each color is produced by a certain chemical or chemical compound within the firework. Deep blues and violets are considered the hardest to produce, because they have a very narrow bandwidth requiring a perfect chemical reaction.

The chemicals that produce the colors are:

Strontium Salts = Red

Magnesium, Aluminum and Titanium = Purple

Copper compounds = Blue

Sodium = Yellow

Barium Salts = Green

Keeping Cool in the Zoo

A Roman zoo is feeding its animals a daily treat of frozen fruits to help them cope with the hottest early summer temperatures in 20 years.

Zoo-keepers throw solid blocks of frozen kiwi fruit, melon, grapefruit and apples — prepared by children taking part in a summer school at the Bioparco zoo — into the animals' enclosures.

For hungrier animals like the Balkan brown bear, a main course of frozen fish follows.

It's just one of the measures taken to help animals like the Japanese snow monkeys, accustomed to temperatures as low as minus 15 degrees Celsius, to adapt to the Mediterranean climate.

Hermione Grows Up



Instead of sitting around counting the money she's made from the "Harry Potter" movies, Emma Watson, aka Hermione Granger, is said to have inked a big-bucks deal with Chanel. British press is reporting that under the terms of a two-year contract, Watson, 18, will become the new face of Chanel fragrance Coco Mademoiselle, and will earn about \$6 million. "This is such a perfect fit for Emma," said a source close to Watson. "She's not going to end up like these other Hollywood train wrecks, she just isn't. This is going to be money in the bank so she can just live a life doing whatever she wants down the road, and it's something she can be proud of. No one is going to be saying, 'I never wanted to see Hermione in that light.'"

Could the source be alluding to Watson's "Potter" counterpart Daniel Radcliffe, who will shortly be reprising his "Equus" role on Broadway? (Radcliffe has a nude scene in the play, in case you missed the frenzy around the play's opening in London.)

"No one is judging Radcliffe," the source pointed out. "Let's just say Emma has always made good decisions, and always will."

The Battery Operated Girlfriend



TOKYO - She is big-busted, petite, very friendly, and she runs on batteries.

A Japanese firm has produced a 15-inch tall robotic girlfriend that kisses on command, to go on sale in September for around \$175, with a target market of lonely adult men.

Using her infrared sensors and battery power, the diminutive damsel named "EMA" puckers up for nearby human heads, entering what designers call its "love mode."

"Strong, tough and battle-ready are some of the words often associated with robots, but we wanted to break that stereotype and provide a robot that's sweet and interactive," said Minako Sakanoue, a spokeswoman for the maker, Sega Toys.

"She's very lovable and though she's not a human, she can act like a real girlfriend."

EMA, which stands for Eternal Maiden Actualization, can also hand out business cards, sing and dance, with Sega hoping to sell 10,000 in the first year.

Japan, home to almost half the world's 800,000 industrial robots, envisions a \$10-billion market for artificial intelligence in a decade.

George Takai is Getting Married



West Hollywood, Calif. - "Star Trek" star George Takai is ready to "live long and prosper" with his partner of 21 years.

Takai will marry 54-year-old Brad Altman on September 14th in Los Angeles.

The 71-year-old actor, known for his role as Sulu on the "Star Trek" sci-fi TV series, was the first to pay \$70 for a marriage license in West Hollywood early Tuesday. The marriage license is good for 90 days.

Takai was jubilant, saying, "It's going to be the only day like this in our lives and it is the only day like this in the history of America."

He told reporters and a swelling crowd outside the West Hollywood city auditorium "may equality live long and prosper."

The California Supreme Court has legalized same-sex marriage.

USS Horizon Calendar

- Jun 27-29** (Fleet) 2007 [International Conference](#) in Ithica, NY at the Airport Ramada Inn 607-257-3100 or 800-272-6232. The IC web site is at: www.ic2008.org/
- June 28** (Mission) Monthly Meeting at Fellini's at 700 Broadway, 573-256-5025, at 1:30 pm. After the meeting we Will go to the first showing after 4pm of "Wanted" at Forum 8
- July 19** (Fleet) Missouri Sector BBQ—Cosmo Park, Nichol Shelter Columbia, MO 11- ? Cost \$8.00
- July 26** (Mission) Monthly Meeting at [The Pasta Factory](#) at 1020 E. Broadway, 573-449-3948, at 1:30 pm. After the Meeting we will go to the first movie after 4pm Of "Batman: The Dark Knight" at Forum 8.
- Aug 23** (Mission) Monthly Meeting at [The Hidelberg](#) at 410 South 9th 573-449-6927, at 1:30 pm. After the meeting we Will go to the first showing after 4pm of "The Fifth Commandment" at Forum 8.
- Sep 27** (Mission) Monthly Meeting at the Upper Crust 3107 Green Meadows Way, 573-874-4044 at 1:30pm. After The meeting we will go to see a movie TBA.
- Oct 25** (Mission) Monthly Meeting at [Cracker Barrel](#), 3304 Clark Ln, 573-474-9977 at 1:30pm. After the meeting we Will go to see a movie TBA.

Things That Make You Say HmMMM

The latest in lottery marketing is a smelly affair.

When is a lottery scratch ticket not just a scratch ticket? When it's a scratch and sniff ticket. Starting Monday, the Colorado Lottery began selling \$3 Scented Crossword tickets through lottery retailers statewide. They're available in three varieties: Crossword Bouquet, Chocolate Crossword and Coffee Crossword. Lottery officials say the scents are activated when players scratch off the latex on the tickets' play area, since that area is covered in scented ink.

Colorado Lottery scratch product manager Todd Greco says the chocolate and floral crossword tickets will have a special appeal for female players, who make up a large percentage of the lottery's crossword game customers.

The odds of winning any prize in the crossword games is one in 3.43.