Just Curious About Science, Jeeves

Jack Mingo, Erin Barrett
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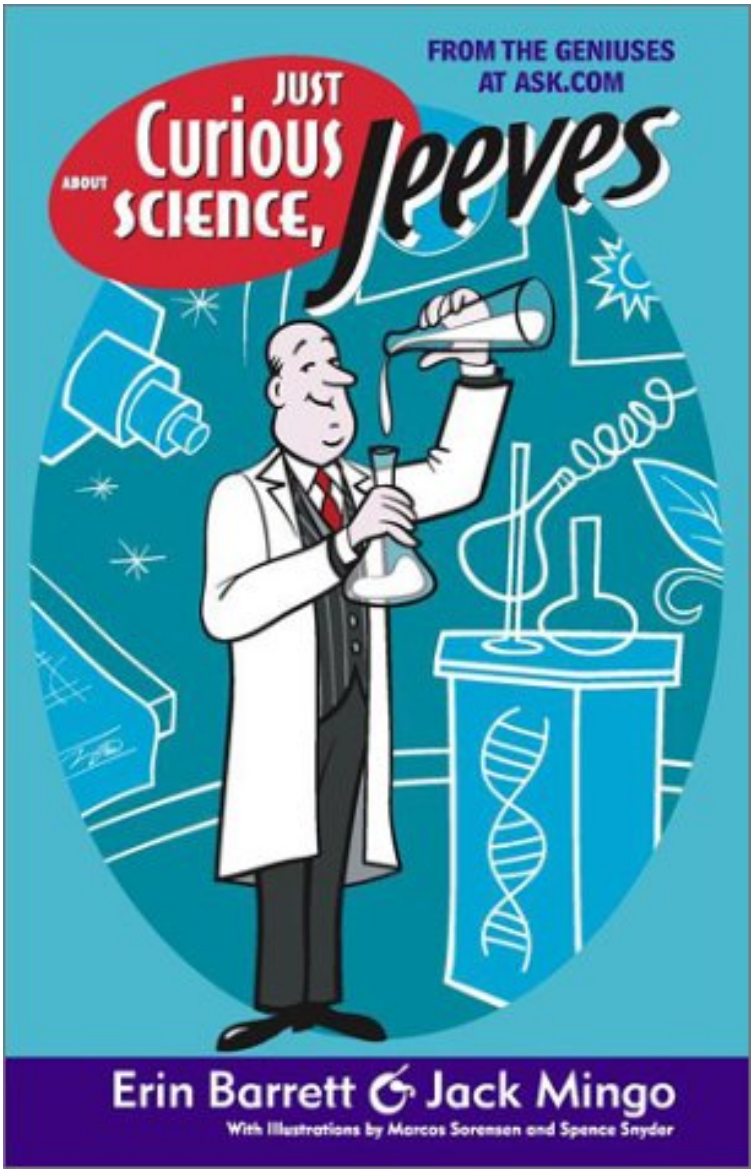

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Jack Mingo, Erin Barrett : Just Curious About Science, Jeeves before purchasing it in order to gage whether or not it would be worth my time, and all praised Just Curious About Science, Jeeves:

Why does it rain frogs in Mexico? Will a yo-yo "sleep" in zero gravity? How long is a jiffy? How much does an eyeball weigh? In the field of science there are often more questions than answers. Curiosity is the root of all

discovery...and with Just Curious About Science, Jeeves, you're likely to make a few new findings of your own. Based on the scientifically stimulating questions culled from the popular Ask Jeeves Web site, Just Curious About Science is a treasure trove of information that brings you from the Big Bang -- boom! -- all the way to the high-tech world of today. From cosmic dust to cloning, E=MC2 to E-mail, and microencapsulation to microwaves, you'll expand your scientific know-how to include such subjects as astronomy, biology, kitchen chemistry, physics, meteorology, and more. So whether you're looking to measure the speed of light (about 186,355 miles per second) or solve the mystery of inhaled helium (it's all about good vibrations), look no further than Just Curious About Science -- located just 149,597,890 kilometers from the sun.

About the AuthorErin Barrett and Jack Mingo are the information wizards behind hundreds of articles, the syndicated newspaper column "Random Kinds of Factness," and some twenty books, including Dracula Was a Lawyer; Doctors Killed George Washington; Just Curious, Jeeves; Just Curious About History, Jeeves; and Just Curious About Animals and Nature, Jeeves. They live in the San Francisco Bay Area, with kids, two cats, and a life-size cardboard replica of America's favorite virtual butler.Fast Guys and Other Racy Topics How fast does the space shuttle have to go to leave the atmosphere? It has to accelerate 2,000 mph every minute for the first eight minutes of its journey to leave Earth's atmosphere. In terms of speed, from liftoff to exiting Earth's atmosphere, the shuttle goes from 0 to 17,500 mph. Has there ever been sex in space? Sure, there've been several experiments involving sex while in orbit. None of them, alas, have involved humans -- at least, according to NASA. That makes it sound as if we don't believe them. Frankly, we do, for a couple of reasons: 1. Until recently, space trips have been relatively short -- certainly not long enough for astronauts to start making "master of my space domain" wagers with each other. 2. It's against official guidelines for astronauts to engage other astronauts in sexual activity on space missions. Why would they jeopardize such a great job? 3. The astronauts stay pretty busy during a mission, with all those buttons and instrument panels. 4. Where, exactly, would one get the privacy necessary to do the deed? 5. If one guy's getting action, the jealousy among the other guys who aren't would be pretty intense. 6. Most convincing, however, is the effect zero gravity reportedly has on male genitalia (and presumably on female genitals, as well). Blood flow just isn't as efficient as it is on solid ground. There are psychologists at NASA who study the emotional health of those in orbit. They admit that with longer and longer space missions being instigated, astronauts' sexuality should be looked at more closely, as, for most people, sex plays a vital role in staying content and happy. But officially, no specifics have been bandied about, and sex remains strictly taboo. Oh, and just in case you were wondering whether the Russian space program is more open-minded on the issue, Mir-25 flight engineer and cosmonaut Talgat Musabayev says, "A lot of different commissions -- moral, ethical, and medical ones -- that were discussing this finally ruled that one must not do it so far, because the consequences are unknown for those who would be born." As to whether there has been sex in space up to this point, he responds, "Definitely not, although there is a lot of idle talk around this. We laugh, because we just have no opportunity for this, and the Americans are very disciplined people." Ground Control to Major Tom How many people have died on missions to outer space? Have any accidentally floated away? None have floated away. So far that's just the stuff of fiction and pop songs. As a matter of fact, all of the deaths to date have occurred during launch or reentry from outer space. The first to die was Vladimir Komarov in 1967. Several mechanical failures upon reentry into Earth's atmosphere caused his spacecraft to crash into a field. Along with the 2003 Columbia space shuttle disaster, in 1971 the entire crew of the Russian Soyuz 11 died when a valve remained open during the spacecraft's reentry. Oxygen and atmospheric pressure leaked out, and all three crew members suffocated. To avoid any similar disaster, all Russian cosmonauts wore pressure suits in subsequent missions during launch and reentry. The next death in space was in 1986 when, soon after takeoff, the space shuttle Challenger's external tank blew open in midair, killing all seven members aboard. This was the deadliest of all space accidents. They weren't in space, true, but the accident aboard the Apollo I was a space program tragedy nonetheless. In 1967, during an exercise prior to countdown, a fire broke out and trapped and killed all three of the astronauts on board. Although the Apollo 13 astronauts made it safely back to Earth in 1970, their flight is worth noting here. In a long four-day near miss with death, the crew had to cancel their lunar landing when their craft malfunctioned. It was on this mission that flight commander Jack Swigert made the famous understated one-liner, "Houston, we've had a problem here." (These famous words got mysteriously changed along the way to "Houston, we have a problem." It's more dramatic, for sure, but not accurate.) Their flight was documented by Hollywood in the 1995 movie Apollo 13, starring Tom Hanks and Kevin Bacon. Can an astronaut land on the dark side of the moon? No, and here's why: At the lunar equator, daytime temperatures can reach about 273 degrees Fahrenheit -- a temperature that astronauts can tolerate in their space suits (although we're sure they'd prefer a slightly cooler spot). At night when it's dark, with no atmosphere to hold in the heat of the day, the temperatures plummet drastically to a chilly 2243 degrees Fahrenheit, a temperature that's not as easy to withstand. This, plus a lack of visibility, makes it impractical for them to land in the dark. But really, there isn't one "dark side" of the moon. It's dark on one side for about fourteen days, until it's rotated around and cooled on the other side for fourteen days. There is a constant near side of the moon as well as a constant far side, however. Because the moon is stuck in a steady gravitational orbit with Earth, from here we always see the

same side of the moon -- the near side. This is the side of the moon that all astronauts land on. Not just because it's closer, but also because if there were a big moon stuck between the spaceship and ground control, all radio contact would be lost. Pigs...in...Spa-a-ace! What animals have been sent into space? The predictable list includes dogs, monkeys, rats, mice, rabbits, and fish. No pigs, as of yet, but guinea pigs and pigtailed monkeys have all been put into orbit, as well as the eye lenses of pigs, cows, and sheep. Some not-so-likely animal crew members have included jellyfish, bees, spiders, tortoises, hornets, wasps, and incubating quail eggs. Over the years, space programs have put pretty much everything imaginable into orbit to examine the effects of high speeds and weightlessness. As a matter of fact, one of the very first launches in history was of a low-altitude, black-powder rocket in the early 1800s, which carried a feline and a squirrel a short distance into the air before parachuting back down. The rocket landed successfully with cat intact but no sign of the squirrel. It seemed one of the passengers got mighty hungry on its short journey. Needless to say, cats haven't been used much since then. You Wanna Talk Trash? How much man-made debris is in space? The U.S. Space Command in Colorado Springs, Colorado, tracks about 10,000 objects in low-Earth orbit (300 to 1,200 miles up), and most, if not all, of these are man-made. They consist of about 100 space probes, 3,000 satellites (functional and not), and around 6,000 bits and pieces: lumps and chunks of debris. This sounds like a lot, but it's not even the half of it. Space Command can't detect items smaller than a baseball if they're farther than 600 miles away. Most satellites alone are at least 22,000 miles away, where objects must be considerably bigger to be seen by Space Command. One 1999 study suggested that, in reality, there were at least 110,000 objects measuring a half inch or more, weighing over 4 million pounds altogether, and traveling at speeds of 17,500 miles per hour in low-Earth orbit. Rubber sealing rings, paint, screws, whole and partial nonworking satellites, fuel tanks, and the like are just some of the trash we've put into space. When a mere flying speck of paint can dent the outside of a space-shuttle window, keeping tabs on these hurtling objects becomes a matter of utmost importance, to say the least. NASA continues to work on ways of cleaning up these hazards. Here are some of the more intriguing items lost -- or not so lost -- in space: Edward White, astronaut on the 1965 Gemini 4 mission, lost a glove. It stayed in orbit for a month before careening off. During its month-long orbit, it became known as the most dangerous garment in history, flying at a speed of 28,000 kilometers an hour. During the first ten years of its mission, space station Mir "dropped" over 200 items. Ironically, most of them were trash bags. The very first piece of man-made debris in space came in 1958 from the second satellite launched by the United States. The Vanguard I, although only operational for six years, is still flying around today. It Won't Work at Weight Watchers How do I find out how much I weigh on another planet -- say, Jupiter? Multiply your weight by 2.4. That's how much you weigh on Jupiter. For the sake of clarity, let's say you weighed an even 100 pounds. On Jupiter, you'd weigh about 240. Multiply your same 100 pounds by .38 and discover that on Mercury you'd be about 38 pounds. On the moon (multiply by .17), about 17, and the sun (multiply by 27.07), 2,707 pounds. You could figure out the other planets on your own with a pretty simple equation, but you'd have to know the mass of each planet and how far its surface is from its core...a little over most of our heads. It's easier to search for a planetary weight calculator on-line. In the meantime, however, these four formulas are freebies. Impress your friends. ...And Bells on Our Toes Are there rings around Uranus? Planetary rings, found only on the outer planets, consist of pieces of ice and dust. In 1977 it was discovered that there were, indeed, rings around the planet Uranus. This was a surprise, as the rings are so dark that they'd been completely invisible up until that point. What made it possible to detect them was a star. In its orbit, Uranus passed in front of a distant star, which highlighted the planet from behind. Astronomers saw a flicker just in front of the planet as it began to pass the star, and an identical flicker as the backlit Uranus continued past the bright star. With closer scrutiny, nine rings were initially spotted around the planet. Voyager 2, in 1986, spotted two more. Although Saturn's six main rings are legendary, all of the other outer planets also have them. Besides Uranus's eleven rings, Neptune has at least four, and Jupiter has a large main ring and an outer ring system, made up of many smaller rings. Saturn's rings are so brilliant, they were discovered over 400 years ago in 1659. None of the other planets' rings, however, were found until the late 1970s. Seems a Little Loony Is it true there's a moon crater named after Scooby Doo? The moon has over 30 thousand billion craters that measure at least a foot wide, half a million of those with diameters over a mile. That's a lot of holes and pockmarks, and there are a lot of names that have been given to moon craters over the years. Alas, "Scooby Doo" isn't one of them. The closest in name would be the crater Scobee (over 130 feet in diameter), named in 1988 for Francis Richard Scobee, a member of the Challenger spacecraft crew. There are strict and long-standing nomenclature guidelines for moon craters, and cartoon characters just don't make the cut. Besides recent additions of famous literary figures like A. A. Milne, most craters are named after historical astronomers, scientists, mathematicians, and physicists. What you may be thinking of is the recently named rocks on Mars. One of those was officially dubbed "Scooby Doo." When the Mars probe Sojourner began sending back pictures of the red planet, scientists -- trying to either boost public opinion of the Mars probe or prove they're really cool guys stuck in nerdy jobs -- named the rocks on their screens after cartoon characters they resembled. Besides Scooby Doo, there's Yogi Bear, Casper, Asterix, Gumby, and Ratbert, to name a few. The scientists also saw animals in the boulders on Mars's surface. Names of these include Lamb, Frog, Iguana, Chimp, Kitten, Duck, and Ant Hill. Not a distinguished Ptolemy, Galileo, or Einstein to be found in this group. Which planet has the most moons? New planetary moons are discovered all the time. At this

writing, Jupiter wins, hands down, with a total of thirty-nine -- sixteen well-known moons and some lesser-known, more recently discovered moons. All of Jupiter's major moons are named after mythological characters. Jupiter's four large moons are Io, Europa, Ganymede, and Callisto. Jupiter's smaller moons are Metis, Adrastea, Amalthea, Thebe, Leda, Himalia, Lysithea, Elara, Ananke, Carme, Pasiphae, and Sinope. The Sky Is Falling I don't get it. What are the differences between comets, asteroids, and meteors? It does get confusing, so let's see if we can clear things up a bit. Asteroids, sometimes called minor planets or planetoids, are small (in comparison to larger planets) planetlike rocks that orbit the sun. They usually reside in the Asteroid Belt, which lies between the orbits of Mars and Jupiter. Some believe they're the remnants of another planet that once resided in that spot; others believe asteroids consist of rocky debris that never quite banged together to form another planet or become part of an existing planet. Still others suspect they're the chipped-off pieces of existing planets, caught in orbit. Comets are in a separate class of large careening space objects because they're not made of rock. The nucleus or inner core of a comet consists of frozen gases or liquids mixed with dust and dirt. Comets have been compared to large snowballs orbiting the sun. As a comet gets near the sun in its orbit, the heat predictably begins melting the outside of the frozen nucleus, forming a large surrounding field of melted gases and liquids that can sometimes trail 100 million miles behind the core. This forms the commas and tails that make comets so distinctive in the sky. As with asteroids, comets are believed by some to be the leftover parts of the icy outer planets -- like Neptune, Saturn, Uranus, and Jupiter -- that didn't get integrated into the planets when they were being formed. After it's made one too many trips into the inner solar system, a comet is eventually worn down by the heat. It either becomes a fast-moving meteor, entering Earth's atmosphere, or the remaining dust and rock pieces in the nucleus become a small, orbiting asteroid. A meteor is a "shooting star." It forms when an object -- often a broken piece of an asteroid or comet -- falls into Earth's atmosphere. The speeding object (called a meteoroid) hits Earth's atmosphere at about 20 miles per second. Since Earth is traveling at about 18 miles per second, the friction on impact is intense, causing the meteoroid to melt and burn, producing quite a light show. If the meteoroid doesn't completely burn up before hitting Earth's surface, it's called a meteorite. Meteorites are usually no bigger than a pebble, but can also be quite large. Arizona's famous Meteor Crater, measuring 570 feet deep by 4,180 feet wide, is an example of where a large meteorite (probably an asteroid) hit Earth about 50,000 years ago. Spin Cycle How fast does Earth spin? At the equator, Earth spins at about 1,070 miles per hour. As you move north or south from there, the speed slows. Exactly at the poles -- Earth's axis points -- the spin is much slower. Picture a record spinning. If you placed a toy at the center, then moved it an inch away from the center, then two inches, etc., the toy would have to travel farther and farther to make one full rotation. Each revolution on Earth, no matter how slow the turn, is equal to one day. Earth also moves in an orbit. One rotation around the sun, at about 67,000 miles per hour, equals one year on Earth. But wait, there's more. Our solar system is spinning around the Milky Way at about 558,000 miles per hour, and the Milky Way is spinning with other clusters of neighboring galaxies at the rate of 666,000 mph. Hold on tight! What would happen if the world stopped spinning? If Earth suddenly stopped, you'd experience quite a jolt. The atmosphere, of course, would still be in motion at the same speed that Earth had been rotating. This would lead to winds that would rub away mountains and land, smoothing Earth's surface and removing every lump, bump, nook, and cranny on it. A gradual slowing down -- as is happening now -- is the far more likely scenario. Days will grow longer, leading to higher temperatures during the daytime. The Van Allen belt -- the protective magnetic shield that covers Earth and protects it from intense solar winds -- would presumably weaken as rotation slowed, allowing more and more dangerous solar rays into the atmosphere, mutating and then killing off every living thing. During the longer and longer nighttimes, temperatures would drop so low, no life could withstand them, either. But don't worry, this won't happen for at least another few billion years. Do all planets spin in the same direction as Earth? No. Uranus, Venus, and Pluto all spin in the opposite direction. And Even More Racy Topics How fast are other galaxies speeding away from us? That all depends on which galaxy, as they're speeding away at different rates. On top of that, everything that's speeding away from the Milky Way is accelerating. Here's a sampling on either end: One of the slower galaxies is speeding away at about 5,040,000 mph. That's like going from one side of the United States to the opposite side in about 2 seconds, give or take a little. One of the farther and faster galaxies is going so fast, it would take it about a second to go all the way around the world. It's being clocked at about 93,600,000 mph. The general rule is that the farther the galaxy is from the Milky Way, the faster it's going. Is Earth slowing down or speeding up? Earth has been on a gradual slowdown since its birth. The day lengthens every 100 years by about .0015 seconds. It's not much, mind you, but in several billion years it all adds up. At that time, for instance, a month will have increased from 27.3 days to 47. But don't worry: we won't be around to experience it, anyway -- the expanding sun will have gotten us by then (see page 12). A.K.A.: I Lean Why is Earth's axis tilted? No one knows for sure, mind you, but many theorize that it was the result of a collision with a large planetoid during the last stages of Earth's formation over 4.5 billion years ago. The theory is that the impact with this small, rocky planet not only knocked Earth to a tilt but also tore away a chunk of Earth, forming the moon. Time and spinning smoothed Earth's and the moon's surfaces back into a sphere. Or so the theory goes. Regardless, this tilt gives Earth the seasonal variations necessary to support the variety of life -- from plants to animals. Look at the Size of Those Teeters! What's the Chandler wobble? How is it done? No, it's not a dance move! The Chandler wobble is a slight wobbling of Earth on its axis. It got its name from the guy who discovered it

was happening in 1891 -- S. C. Chandler. Still want to know how it's done? If you've ever worked on a pottery wheel, you're familiar with the concept. Earth is spinning, but it's ever-so-slightly off center in its rotation. If there were big pens sticking out of the North and South Poles that were scribbling on giant pieces of paper, we'd end up with irregular circles. In reality, these circles measure anywhere between 10 and 50 feet in diameter -- not much of a wobble, really, but sometimes enough to throw you off by about one-fifth of a mile if you're navigating by the stars. Size Matters What's the biggest planet in the solar system? Jupiter. Pluto, still officially called a planet, is the smallest. How can the sun look so huge at sunset, and yet small at other times? It's a matter of comparison. At sunset the sun is usually positioned near Earth's horizon instead of directly up in the sky. The mind unconsciously compares its size to the size of the objects nearby. Next to trees, houses, roads, or buildings, it looks huge. Next to blue sky and clouds, it looks smaller. Believe it or not, the sun is actually over 3,700 miles closer to Earth at noon than it is when it's setting. When compared to the total distance that separates Earth from the sun, however, 3,700 miles just isn't that big of a deal. Fade to Black What's the difference between a solar and a lunar eclipse? A solar eclipse happens when the moon's shadow crosses Earth. A lunar eclipse occurs when Earth's shadow crosses the moon. As Earth and the moon rotate, periodically they will fall into a perfectly straight line with the sun -- it's called syzygy. If Earth is in the middle of that lineup, with the sun on one side and the moon on the other, Earth's shadow falls on the moon, causing a lunar eclipse. If the moon is in the middle of the line, with Earth on one side and the sun on the other, the moon's shadow falls on Earth, causing a solar eclipse. Think of the sun as a huge backlight. Which type of eclipse occurs depends on whether Earth or the moon is in front of the light. They're both amazing to see. Whereas special eye protection is needed to watch a solar eclipse, a lunar eclipse is perfectly safe to watch. It'll Be a Cold Day in Hell Will the sun ever go out? What would happen to Earth? The sun will eventually go out. By looking at the rate at which the sun is consuming its fuel, scientists have estimated that it has about 5 or 6 billion more years of life in it before it begins to fade away. Actually, it will be less of a fade than a violent burst of explosions that will end in fizzle. As the sun's hydrogen (the sun's fuel) levels in its inner core get low, it will begin to burn hydrogen located outside its core, causing a burst of fiery expansion. Its parameters will expand outward, sort of like a big balloon. The balloon will extend past Mercury's and Venus's orbit and perhaps into Earth's atmosphere, killing everything, regardless of how far it reaches. The seas will boil, and life on Earth will be totally consumed by heat. Even if life survived this phase of death -- the sun's red-giant stage -- the ensuing white-dwarf stage would do it in. The white-dwarf stage begins this way: As the outside hydrogen is consumed, helium burns in the core of the sun and produces solid carbon. This carbon hardens and thickens into a small, glowing planet-size ball. The gases that this burning carbon core give out to the universe are collectively called a nebula. Eventually, everything but a cold black ball will be burned away, and the heat will slowly subside. The sun will enter its black-dwarf stage -- pretty much the end of the line. A Nice Dinner, A Little Wine, Some Dancing What happened before the Big Bang? The theory of the Big Bang is that nothing -- not space, not time -- was here prior to the creation of the universe. About 15 billion years ago, a primeval atom exploded, sending debris off in every direction at astronomical speeds. The theory itself will never be proved. The evidence for it, however, is compelling. Solar systems are created in similar ways. We know, because we've seen them form. In addition, all galaxies are speeding away from us very quickly, still being propelled from a central source. There's also cosmic radiation throughout the universe -- a common byproduct of a large cosmic explosion. None of this proves the theory, mind you. It simply makes the most sense. What was here before our solar system? There was a cloud of gases, the leftover stuff of dead stars. Debris -- bits and pieces of various elements from rocky sources -- swirled in the gassy cloud. Over time, this large cloud collapsed in on itself and compressed into a rather large spinning disk. The disk continued to spin, further condensing the middle into a big ball. This innermost part -- the bump in the center of this disk of condensed gases -- grew very hot as the gases inside reacted with each other. Over time, the heat intensified, causing more and more pressure to build. Like a pressure cooker, the center of the disk blew open when the pressure inside became too great to be contained. The hot winds from the explosion blew out the debris that formed the planets -- including the carbon that eventually became life on Earth. The central burning-hot core that remained became the sun. All in all, this process took one hundred million years. That may sound like a long time, but our solar system, to date, has been around a lot longer than a mere hundred million. The sun, Earth, and other eight planets are over 4.5 billion years old. In the last twenty years, scientists have spotted similar spinning disks of gaseous clouds around new stars, confirming at least the basis of this theory. How is a star different from a planet? It's only a matter of size. The reason the sun "burns" is because it's so big. The weight of the sun's mass on itself crushes everything within its core -- including tiny, usually uncrushable atoms. When atoms are broken, their innermost parts -- the nuclei -- freely bounce around and run into each other, causing nuclear reactions. Nuclear reactions produce energy and, consequently, heat. Earth is large enough to produce enough energy to melt rock, but not enough to squash atoms. Jupiter, at eleven times the size of Earth, is large enough to produce enough pressure on its core to almost glow, but not quite. The very smallest star is still about forty to fifty times bigger than Jupiter. So somewhere between the size of Jupiter and the smallest star, mass gets heavy enough to cause nuclear reactions and glow, and technically be considered a star. Evidence of Things Not Seen What exactly is a black hole? A black hole occurs when a large star (much larger than our sun) runs out of fuel. The remaining mass in the star collapses in on itself, causing a vacuum and

sucking everything around it -- including light -- into the "hole." That said, scientists have never actually seen a black hole. They are what's called dark matter -- they aren't visible. So how do we know they exist? From the effects they have on visible matter around them. For instance, sometimes a large supply of magnesium, silicon, oxygen, and sulfur is detected on and around a living star. None of these gases are produced by visible stars in large amounts; they are, however, produced in large quantities when a dying star -- like a supernova -- is burning much, much hotter. Black holes often pull at neighboring stars, too, causing them to wobble. Scientists also know that when black holes suck in parts of a nearby star, X rays are emitted, so when big surges of X rays are detected around living stars -- particularly when one or more of these other indicators is present -- it's a fairly clear sign that a black hole is present. Great Balls of Fire I can't find the constellations in the sky. None of them look like the names they were given. How come? It's true. For most of us, telling the difference between Orion and Gemini would be next to impossible. It would seem like the ancients -- those who named the star clusters -- had a little more imagination than they should have. Like cloud-watching, stargazing is a very personal thing. Each culture saw something different in the heavens. For instance, what we call the Big Dipper was to the ancient Greeks a part of their constellation Ursa Major, or "Big Bear." The ancient French and Irish called it "Chariot," while the old British dubbed it "Plough." The Laplanders? They saw this same group of stars as a reindeer. The Arabs saw our Little Dipper as a coffin, while it was a little bear to the Greeks and a spike to the ancient Scandinavians. Interpretation aside, there is another reason why constellation spotting is hard today. Back when most of these bodies were named, the people used them as navigational tools. It made sense to find obvious pictures in the sky, which could help travelers at night find their way. What they didn't bank on, though, was that the names they chose would linger on without change all these years later, even as the sky itself was ever changing. The universe is expanding, which means that all the stars are moving and changing positions, obscuring the earlier pictures. Since stars die and come into being with some regularity, this too contributes to the changing scenery in the heavens. For instance, the main stars in the constellation Cassiopeia used to form an obvious W; now they look more like a squiggly line. The Big Dipper once looked more like a revolver. In about 50,000 more years, it will look like a digital number five. It's a good thing, then, that we rely on technology instead of the old star system to navigate today. If you're hell-bent on stargazing, though, astronomers recommend a comprehensive book on the constellations with exact pictures of what the constellations look like in today's night sky. They also suggest, for those more creatively inclined, that you find and create your own names for the pictures in the stars. What's the name of the star that's closest to our sun? Proxima Centauri, a.k.a. Alpha Centauri C. It's 4.2 light-years away. What's in a Name? What does the name of the star Betelgeuse mean? Betelgeuse is the bright red star in the Orion constellation. The name is Arabic, and it generally means "the armpit of the mighty one." If you look at the constellation, you can see it firmly planted where the hunter's pit would be. Why do some stars have normal-sounding names while others have totally uncreative names, like the "HD 209458" star recently in the news? What's up with the naming system? Some of the brighter, more prominent stars in the sky were given formal names -- usually by the ancient Arabians -- while others were named by European astronomers in the seventeenth and eighteenth centuries, based on the Greek constellations they resided in. The vast number of stars in the sky, however, soon ran these old naming systems dry. Catalog systems for naming stars have become increasingly popular, especially now that we're capable of seeing so many more stars with better and stronger telescopes. Some of the catalog systems include the Bonner Durchmusterung (BD) system, the Smithsonian Astrophysical Observatory (SAO) system, the Positions and Proper Motions (PPM) system, and the Bright Star Catalog (Harvard Revised Photometry -- HR), to name a few. The HD system (Henry Draper catalog) was used in naming the star you heard about in the news. Sometimes, though, especially for the brighter stars in the sky, the systems have overlapped. A good example of this is Betelgeuse. As mentioned above, it's a very prominent star in the constellation Orion, so it's been named again and again by various astronomers. Its many names include Betelgeuse, PPM 149643, SAO 113271, HD 39801, and Alpha Orionis. The surefire way to pin down a specific star, then, is to know as precisely as possible where it's located in the sky when you look for it in one of the many catalogs.