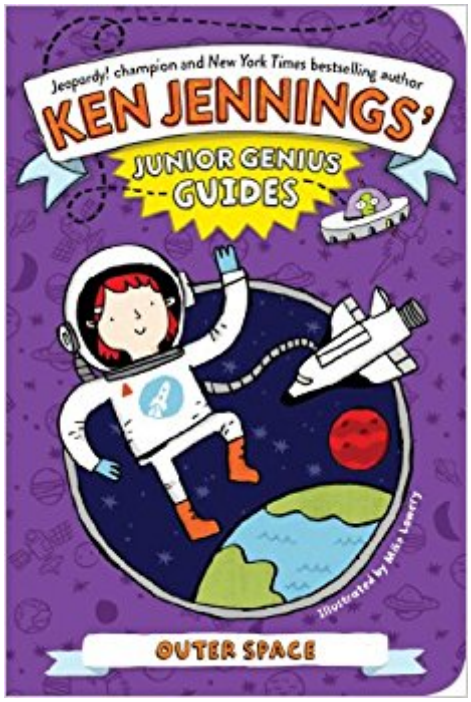
Outer Space (Ken JenningsÃ¢â‚¬â„¢ Junior Genius Guides)



Synopsis

Let your inner astronaut explore outer space with this interactive trivia book from Jeopardy! champ and New York Times bestselling author Ken Jennings.With this book about space youÃ¢â ¬â„¢ll become an expert and wow your friends and teachers with out-of-this-world facts: Did you know that Mars has a volcano bigger than the state of Arizona? Or that thereÃ¢â ¬â„¢s a star with a diamond the size of our moon at its core? With great illustrations, cool trivia, and fun quizzes to test your knowledge, this guide will have you on your way to whiz-kid status in no time!

Book Information

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Age Range: 8 - 10 years

Grade Level: 3 - 5

Customer Reviews

Ken Jennings grew up in Seoul, South Korea, where he became a daily devotee of the quiz show Jeopardy! In 2004, he successfully auditioned for a spot on the show and went on an unprecedented seventy-four game victory streak worth $2.52 million. JenningsÃ¢â ¬â„¢s book Brainiac, about his Jeopardy! adventures, was a critically acclaimed New York Times bestseller, as were his follow-up books Maphead and Because I Said So! Jennings lives outside Seattle with his wife, Mindy, his son, Dylan, his daughter, Caitlin, and a small, excitable dog named Chance.Mike Lowery is an illustrator and fine artist whose work has been seen in galleries and publications

internationally. Mike is the illustrator of Moo Hoo and Ribbit Rabbit by Candace Ryan; The Gingerbread Man Loose in the School by Laura Murray; and the Doctor ProctorÃ¢â ¬â„¢s Fart Powder novels by Jo NesbÃƒÂ¸. Currently he is a professor of illustration at the Savannah College of Art and Design in Atlanta, Georgia, where he lives with a lovely German frau, Katrin, and his super genius daughter, Allister. Visit him at MikeLowery.com.

Outer Space 3> Have you ever complained about the Sun, Junior Geniuses? Ã¢â ¬Å“ItÃ¢â ¬â„¢s too hot today!Ã¢â ¬Â• Ã¢â ¬Å“Ugh, thatÃ¢â ¬â„¢s bright.Ã¢â ¬Â• Ã¢â ¬Å“No more sunscreen, Mom!Ã¢â ¬Â• Well, after todayÃ¢â ¬â„¢s lesson, I never want to hear you bad-mouth the Sun again! The only reason that life can exist on Earth at all, everything from figs to walruses to TV repairmen, is because of the light and warmth we get from our nearest star. This is the Sun. Wait, thatÃ¢â ¬â„¢s not right. Why would the Sun need to wear sunglasses? Think about it; how would that help? LetÃ¢â ¬â„¢s try that again. No Crayons Allowed Please donÃ¢â ¬â„¢t color this drawing with a yellow crayon, Junior Geniuses. Not only would that deface this fine book, it would also be scientifically inaccurate! Sunlight only looks yellow to us because weÃ¢â ¬â„¢re seeing it through our atmosphere. From space the Sun is perfectly white! When you look at the SunÃ¢â ¬â •wait, hold on. Public service announcement: The light is so intense it can literally cook the retinas in your eyes. To observe the Sun, glance and then look away. DonÃ¢â ¬â„¢t stare. There are health faddists called Ã¢â ¬Å“sungazersÃ¢â ¬Â• who claim they get all their nutrition from staring at the Sun a few minutes a day. But that really doesnÃ¢â ¬â„¢t work, so please donÃ¢â ¬â„¢t try this. Okay. When you briefly glance at the Sun, youÃ¢â ¬â„¢re actually looking back in time! Sunlight travels at the speed of light, which means it takes an average of eight minutes and twenty seconds for it to reach the Earth. So the Sun outside your window isnÃ¢â ¬â„¢t actually where you think it is. By the time you see it, the real Sun has moved forward two Sun-diameters in the sky. But weÃ¢â ¬â„¢re going to travel back in time even further: not eight and a half minutes but 4.5 billion years! ThatÃ¢â ¬â„¢s when the story of our solar system begins. 4> Over 4 billion years ago a nebulaÃ¢â ¬â •a gigantic space-cloud of gasÃ¢â ¬â •collapsed on itself, possibly due to the shock wave from a nearby exploding star. As it shrank, the whirling cloud began to spin faster and faster and grow hotter and hotter. It flattened into a big pizza-shaped thing called a protoplanetary disk, and soon thereafter (just 50 million yearsÃ¢â ¬â •thatÃ¢â ¬â„¢s Ã¢â ¬Å“soonÃ¢â ¬Â• in cosmic terms!) the middle of the disk got hot enough to light its nuclear furnace. The Sun was born! A lot of the leftover dust and gas spinning around the new baby Sun began to clump together, which is how planets form. But these werenÃ¢â ¬â„¢t the planets we

know today! There were probably hundreds of little planets zooming around and smashing into each other, until they merged into bigger ones. Others collided at such high speeds (due to the immense gravity of big planets like Jupiter and Saturn) that they shattered into tiny chunks called asteroids. Today, just eight main planets survive, most of which weÃ¢â ¬â„¢ve named for different gods of Roman mythology. Pop Quiz! Since classical times, weÃ¢â ¬â„¢ve used special symbols to refer to the planets and most refer to mythology. The Venus symbol, , looks like a mirror, because she was the goddess of beauty. Mars looks like a spear and shield, , because he was the god of war. What is the Neptune symbol, , supposed to be? 4> But that diagram isnÃ¢â ¬â„¢t quite accurate, because the solar system is much, much bigger than we can draw in a book. The Sun is massively bigger than everything else, for one thing. It accounts for 99.8 percent of the mass of the solar system! (Jupiter is most of the rest.) The distances between planets are even harder to imagine. LetÃ¢â ¬â„¢s pretend that a superpowerful alien has somehow shrunk the eight planets of our solar system to fit inside a baseball stadium. (This alien is apparently a big baseball fan.) The solar system is so big that our massive Sun would be the size of a golf ball, sitting at home plate! At this scale, Mercury is a dust speck in the batterÃ¢â ¬â„¢s box, while Venus and Earth are grains of sand near the edge of the home plate circle. Mars is another dust speck one-third of the way to the pitcherÃ¢â ¬â„¢s mound. Jupiter and Saturn are the sizes of apple seeds, with Jupiter sitting just past the pitcherÃ¢â ¬â„¢s mound and Saturn at second base. Uranus is a pinhead near one of the foul poles, and Neptune is a pinhead at the fence in deep center field. (Pluto got kicked out of the ballpark in 2006 for arguing with the umpires. Hit the showers, Pluto.) HereÃ¢â ¬â„¢s the bottom line, Junior Geniuses: Space is incredibly big. Our little solar system by itselfÃ¢â ¬â •our own tiny neighborhood in a vast galaxyÃ¢â ¬â •is so big that it fries even my amazing brain when I try to think about it.Junior Genius Joviality! Ask a grown-up how far itÃ¢â ¬â„¢s possible to see on a clear day. I guarantee they will guess low! The correct answer, as long as you can see the Sun, is Ã¢â ¬Å“93 million miles.Ã¢â ¬Â• ThatÃ¢â ¬â„¢s also known as one Ã¢â ¬Å“astronomical unitÃ¢â ¬Â•Ã¢â ¬â •the distance from the Earth to the Sun. 4> Today we take it for granted that the planets of the solar system spin around the Sun, but for most of history people have assumed that the Earth was the center of the universe! Five hundred years ago heliocentrism (Ã¢â ¬Å“hee-lee-oh-SENT-rizz-umÃ¢â ¬Â•), or the idea that the Sun was the center of things, was so controversial that people who believed it could be put on trial. The great astronomer Galileo spent the last ten years of his life under house arrest for insisting it was the Earth that moved around the Sun, not the other way around. ButÃ¢â ¬â •sorry, Galileo!Ã¢â ¬â •that doesnÃ¢â ¬â„¢t mean the Sun is the exact center of the solar system! Gravity works both ways, Junior Geniuses.

The Sun tugs on each planetÃ¢â ¬â •take Jupiter for instanceÃ¢â ¬â •in a big way, because the sun is so massive. But, at the same time, Jupiter is tugging on the Sun in a small way. Instead of saying that Jupiter orbits the Sun, itÃ¢â ¬â„¢s more accurate to say that they both orbit a third point, called a barycenter, which is about thirty thousand miles above the surface of the Sun. Are You Sitting Still? The Earth is moving at a pretty good clip right now: spinning on its axis at 1,000 miles per hour and whirling around the Sun at 66,000 miles per hour. But donÃ¢â ¬â„¢t forget that the Sun is moving too, spinning around the Milky Way like a giant pinwheel at about 483,000 miles per hour. And today scientists can use leftover radiation from the Big Bang to measure how fast our whole galaxy is moving through the universe: 1.3 million miles per hour! We donÃ¢â ¬â„¢t feel any of this motion, of course, because everything around us is moving at the exact same speed we are. But the next time a grown-up says, Ã¢â ¬Å“Have you been sitting in that chair all day? Get up and get some exercise!Ã¢â ¬Â• tell them youÃ¢â ¬â„¢ve already covered a few million miles today, and youÃ¢â ¬â„¢re pooped! 4> But letÃ¢â ¬â„¢s take a close-up look at the Sun. (NOTE: AGAIN, DO NOT TAKE A REAL CLOSE-UP LOOK AT THE SUN. IT IS VERY BRIGHT.) Luckily, Mr. Sun produces a lot of energy, or we would be very cold right now and bumping into things all the time. But where does that energy come from? At the middle of the Sun is a very dense core, where the pressure gets pretty intenseÃ¢â ¬â •over one hundred times what it is at the bottom of EarthÃ¢â ¬â„¢s oceans, in fact. All that gravity pushes atoms together with a pressure of one hundred tons per square inch, enough to crush atoms into each other. Hydrogen atoms fuse together to form helium atoms, and that process produces the energy that powers the Sun.Lighter than Air Helium is the second most common element in the universe (after hydrogen), but it went undiscovered until 1868, when astronomers spotted the wavelength of a new element in the sunlight emitting from an eclipse. Earth has large underground deposits of helium gas, but the element was discovered millions of miles away on the Sun almost thirty years before it was discovered right here under our feet! The fusion in the SunÃ¢â ¬â„¢s core produces little energy particles called photonsÃ¢â ¬â •but they donÃ¢â ¬â„¢t radiate out into space right away. In fact, they bounce around inside the Sun for thousands of years before making their way to the surface. So the sunlight you see in the sky today might have been born in the SunÃ¢â ¬â„¢s core as much as 170,000 years ago! All that fusion produces a lot of energy. In fact, the Sun produces the equivalent of 77 trillion atomic bombsÃ¢â ¬â •every second. If we could somehow collect just one secondÃ¢â ¬â„¢s worth of that energy, it could power human civilization for the next half a million years! Despite all that, the weird thing about the surface of the Sun is that itÃ¢â ¬â„¢s not very hot. Well, okay, itÃ¢â ¬â„¢s almost ten thousand degrees Fahrenheit, which is pretty hot for, say, a bowl of ramen.

But itÃ¢â ¬â„¢s not that hot on a cosmic scale. Right here on Earth, a bolt of lightning is five times hotter than the surface of the Sun, which doesnÃ¢â ¬â„¢t seem right. The temperature at the core of the sun is 27 million degrees Fahrenheit, while its outermost layer, the corona, is 3.5 million degrees Fahrenheit. So why is the bright photosphere so much chillier than the dark corona? For many years scientists were baffled, but a new discovery may partly explain the problem. We now know that, believe it or not, there are thousands of giant magnetic tornadoes swirling around the upper levels of the Sun at speeds greater than six thousand miles an hour. Some are the size of the United States! These twisters pull heat from the inner layers of the Sun and inject it out into the corona. 4> Giant megatornadoes arenÃ¢â ¬â„¢t the only thing the surface of the Sun has going for it. In fact, thereÃ¢â ¬â„¢s a lot to see on the Sun. (NOTE: AGAIN, DO NOT TRY TO SEE THINGS ON THE SUN. IT IS DANGEROUSLY BIG AND SHINY.) DO NOT LOOK AT THE SUN! 3> What are they? Huge loops of gas that surge out into space and can hang around for weeks or even months. Cool, but why should I care? Because theyÃ¢â ¬â„¢re huge! The biggest ones on record extended half a million miles into space. 3> What are they? Dark, cool dots on the SunÃ¢â ¬â„¢s surface caused by magnetism. They come and go in an eleven-year cycle. Cool, but why should I care? They may have helped cause an ice age! In the late seventeenth century, a period of low sunspot activity called the Maunder Minimum corresponded with a period of bitterly cold weather. 3> What is it? A constant stream of invisible but electrically charged particles the Sun releases in all directions. Cool, but why should I care? It could interrupt your cartoons. Strong solar wind can mess up radio and TV signals. It also causes the auroras that shine in the sky over the North and South Poles. 3> What are they? Sudden bright flashes on the Sun that eject a massive amount of energy from the corona. Cool, but why should I care? They could literally light you on fire! The Carrington Event was a massive solar storm caused by a flare on September 1, 1859. The northern lights extended all the way south to the Caribbean that day, and were so bright you could read by them all night. Birds started chirping at midnight, and people accidentally got up and went to work. Telegraph poles all over the world sparked, and some telegraph machines built up so much charge they could send messages without being plugged in! In Washington, DC, an arc of fire jumped from the telegraph to the head of its operator, badly burning him. 3> The solar wind is also what puts the tails on comets! Comets are chunks of ice and dust a few miles wide that come from two areas with funny names way out at the edge of the solar system: the Kuiper Belt and the Oort cloud. Their very long orbits occasionally bring them near the Earth, and we can see their 60-million-mile-long tails of gas and dust being Ã¢â ¬Å“blownÃ¢â ¬Â• away from the coma (the Ã¢â ¬Å“headÃ¢â ¬Â• of the comet) by the solar wind. THE TAIL DOESNÃ¢â ¬â„¢T TRAVEL Ã¢â ¬Å“BEHINDÃ¢â ¬Â• THE

COMET AS IT MOVES . . . IT ALWAYS POINTS AWAY FROM THE SUN. 4> SHOEMAKER-LEVY 9. Crashed into Jupiter in 1994, leaving scars that were visible from Earth for months. SWIFT-TUTTLE. Causes an amazing meteor shower called the Perseids in the night sky every August as Earth passes through its debris trail. THE COMET THAT KILLED THE DINOSAURS. Sixty-six million years ago something crashed into a shallow sea off the coast of Mexico, kicking up dust that killed 70 percent of all the species on Earth. Today many scientists believe the extinction bomb was a comet. WILD 2. Visited in 2004 by a NASA probe called Stardust, which collected dust samples from its coma and shot them back to Earth in a little capsule for analysis. HALLEYÃ¢â ¬â„¢S COMET. Swings by Earth every seventy-five years, so weÃ¢â ¬â„¢ll see it next in 2061. The writer Mark Twain was born in 1835, when HalleyÃ¢â ¬â„¢s Comet was in the sky, and said he expected to go out with it as well. Sure enough, he died in 1910, one day after the cometÃ¢â ¬â„¢s return.Panic in the Streets When HalleyÃ¢â ¬â„¢s Comet passed by Earth in 1910, one astronomer predicted that the gases in the cometÃ¢â ¬â„¢s tail might be poisonous. The public freaked out, and crooked businessmen made a killing selling gas masks, Ã¢â ¬Å“comet-proof umbrellas,Ã¢â ¬Â• and Ã¢â ¬Å“anti-comet pillsÃ¢â ¬Â• that cost a dollar a pop! 4> The Sun wonÃ¢â ¬â„¢t burn forever, of course. At some point itÃ¢â ¬â„¢ll run out of hydrogen to fuse, and the lights will go out. That collapse will happen in about 8 billion yearsÃ¢â ¬â •but look at the bright side, Junior Geniuses. It will finally be safe to look at the Sun without a grown-up nagging you! But before it gets colder, the Sun will do something worse: It will get hotter! In about 3.5 billion years, the seas will boil, and Earth will become unable to support life. Hopefully the human race will have found someplace better to live by then.

Ken Jennings has publicly said cruel things about our president’s child. It reveals his poor character. I DO NOT recommend supporting this man by purchasing any of his Children’s books.

I really enjoyed my kids having these books until ken Jennings revealed his true self. He’s a bully. Not just to anyone though , to 11 year old children. Way to make yourself look like a steaming pile of manure.

Author Ken Jennings posted this on Twitter today: "Barron Trump saw a very long necktie on a heap of expired deli meat in a dumpster. He thought it was his dad & his little heart is breaking". Making fun of the Presidents son after his seeing a photo even Chelsea Clinton called disgusting, and the author wants your kids to read his books? I think I will pass.

Read his tweets. You decide

Wouldn’t let Ken Jennings within a mile of my grandchildren.

Don’t waste your time with this garbage

Absolute garbage.

Pure garbage.