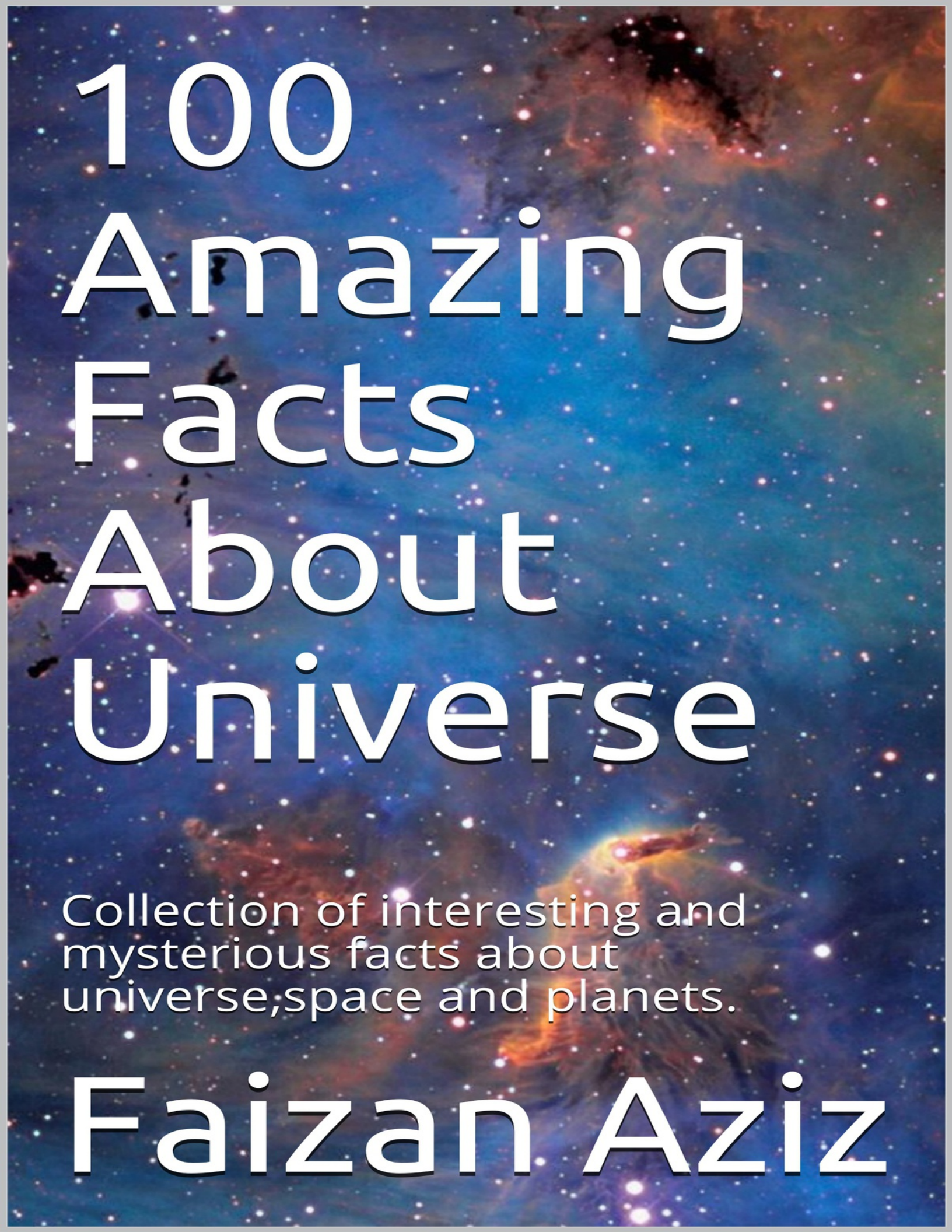

100
Amazing
Facts
About
Universe
Collection of interesting and mysterious facts about universe,space and planets.
Faizan Aziz

100 AMAZING FACTS ABOUT UNIVERSE

The Universe is all of space and time and its contents, i.e. moons, planets, stars, galaxies intergalactic space and all matter and energy.

Universe has continued to amaze mankind for thousands of years, from early cave man to modern human the sky has been a mystery to mankind. Billions of dollars has been spent each year for space and universe exploration. Today, man is in search for other habital zones and planning to settle on other planets like MARS. Space travel will be a reality in coming years, people like Elon Musk, Richard Branson are working on new spectrums and technologies to make it possible in near future.

There is continuous discoveries everyday about what we know about Universe and space, below are some of the facts which will amaze you about this ever expanding universe.

1. Exoplanet covered in burning ice

Gliese 436 b is a Neptune-sized exoplanet located about 33 light-years away in the constellation Leo. Astronomers believe that it embodies exotic states of water that causes its surface to be covered in burning ice. The pressure on the planet forces the ice to stay solid, but the extreme surface temperature of 570° F (300° C) superheats the water, causing it to come off as steam.

2. Eau de Cosmos

Though it is impossible to smell space directly or through a spacesuit, astronauts report that upon returning from a spacewalk, their gear smells distinctively like seared steak, hot metal, and arc welding fumes. The source of this odor could be byproduct from dying stars, the traces of which can be found throughout the universe.

3. Intergalactic kegger

About 10,000 light-years away in the constellation Aquila, there is a cloud of alcohol with a diameter 1,000 times larger than our solar system. The amount of ethyl alcohol present in the cloud could serve up to 400 septillion (400, followed by 24 additional zeros) drinks.

4. Closest neighbor

The Andromeda galaxy is our closest galactic neighbor, roughly 2.5 million light-years away. Though it is 140,000 light-years across, it isn't bright enough to be seen in the night sky by our eyes. If it were brighter, it would appear six times larger than the full moon.

5. Earth under pressure

Black holes are formed when some very large stars collapse and condense all of their mass into a very small area, known as the Schwarzschild radius. Earth's Schwarzschild radius is just below nine mm (1/3 inch), and if it were to be compressed below that size, our

planet would become a black hole. For a person to become a black hole, they would have to be compressed smaller than a proton.

6. Stellar nursery

Though the birth and death of stars don't happen instantaneously, the process happens fairly frequently. By using observed star formation and supernova events within the Milky Way, astronomers have estimated that 275 million stars are born and die throughout the observable universe each day. This totals more than 100 billion over the course of a year.

7. Galactic year

It takes 24 hours for Earth to rotate on its axis to make a day, and 365 days to orbit around the sun for a year. It takes around 230 million years for our solar system to complete a single orbit around the Milky Way. The last time it was in its current position, the earliest dinosaurs had just appeared, and flowering plants wouldn’t evolve for another 100 million years.

8. Macerated Milky Way

Our solar system may smell like hot metal and seared steak, but what about the middle of the Milky Way? According to recent research from the Max Plank Institute, it smells like raspberries and tastes like rum. They found that ethyl formate, a key chemical component for both raspberries and rum, can be readily found at the center of our galaxy.

9. Time flies

If you have ever wished there were more hours in the day, just be patient. Every century, Earth's rotation slows down by about 1.4 milliseconds. When the dinosaurs were around, a day lasted about 23 hours. NASA reports that Earth's rotation was exactly 24 hours in 1820, but is now off by 2.5 milliseconds.

10. Habitable zones

There are anywhere between 200-400 billion stars in the Milky Way and an estimated 100 billion planets. Around one in five stars are like our sun, and astronomers have estimated that about 22% of them have planets the size of Earth in their habitable zone, where water can exist as a liquid. This means there could be 8.8 billion planets within the galaxy capable of supporting life.

11. White noise

When analog television sets aren't tuned to a channel correctly, it results in static and white noise. Around 1% of that is radiation left over from the Big Bang, better known as the Cosmic Microwave Background (CMB). This interference between overlapping signals actually allowed Arno Penzias and Robert Wilson to discover the CMB in 1965.

12. Quasar query

Quasars occur when gas swirls around a black hole very quickly, and friction causes it to heat up, emitting light. Astronomers have discovered a group of 73 quasars that are over 6.5 times larger than the average quasar group. This structure is over four billion light-years wide, and actually cannot be explained by the Theory of General Relativity. Theoretically, it shouldn't even exist.

13. Pulsars

Pulsars are magnetized neutron stars that spin incredibly fast and blast out a beam of radiation, kind of like a lighthouse beacon. The fastest known pulsar is PSR J1748-2446ad, located around 18,000 light-years away in the constellation Sagittarius. Though it is of average size for a neutron star, it spins an astonishing 716 times per second. This is nearly a quarter of the speed of light, and exceeds what theories say is possible.

14. Our sun is one of at least 100 billion stars, just in the Milky Way. Scientists calculate that there are at least 100 billion galaxies in the observable universe, each one brimming with stars. There are more stars than grains of sand on all of Earth's beaches combined.

15. In 1995, the first planet beyond our solar system was discovered.

Now, thousands of planets orbiting sun-like stars, also known as exoplanets, have been found.

16. The Milky Way is a huge city of stars, so big that even at the speed of light (which is fast!), it would take 100,000 years to travel across it.

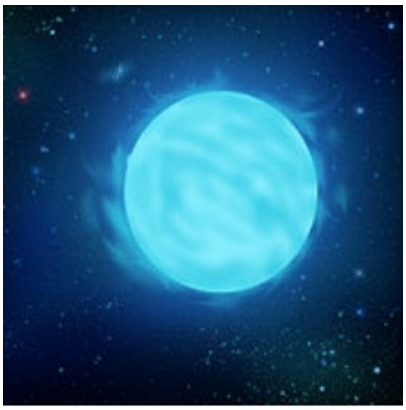
17. Roughly 70 percent of the universe is made of dark energy. Dark matter makes up about 25 percent. The rest — everything on Earth, everything ever observed with all of our instruments, all normal matter — adds up to less than 5 percent of the universe.

18. The universe began with the Big Bang, which happened around 13.7 billion years ago

19. Do you know that the stars you see in the sky may be dead? As they are billions of light years away from us and it will take billions of years for the light to reach earth, which means that the stars light which you see now is billion year old lighting. So they may be dead now.

20. According to the estimates of scientists, there are around 20 trillion galaxies in our universe.

21. R136a1 is the most luminous and massive star, which is 8.7 million times brighter than sun, it is present in the Large Magellanic Cloud.



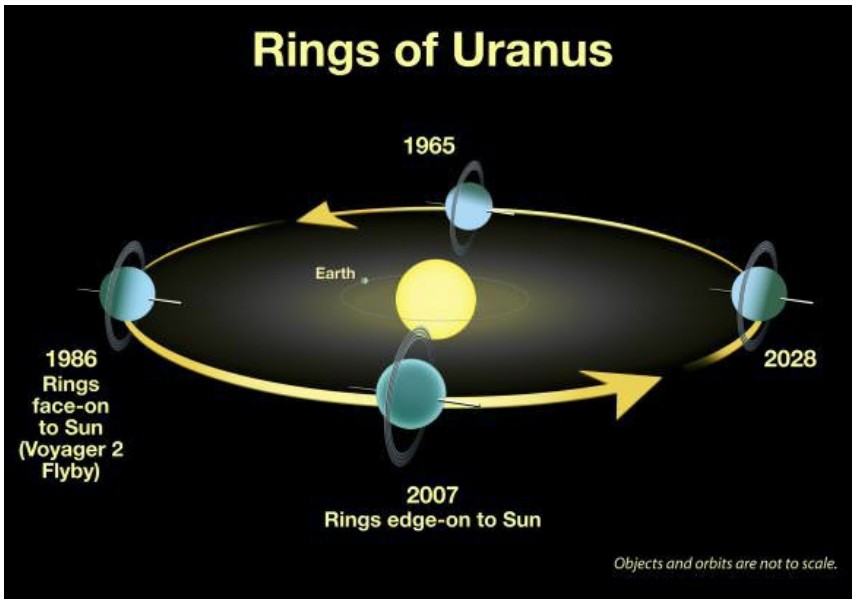
22. **When you look into the night sky, you are looking back in time**

The stars we see in the night sky are very far away from us, so far the star light we see has taken a long time to travel across space to reach our eyes. This means whenever we look out into the night and gaze at stars we are actually experiencing how they looked in the past. For example, the bright star Vega is relatively close to us at 25 light-years away, so the light we see left the star 25 years ago; while Betelgeuse in the constellation of Orion is 640 light-years away, so the light left the star around 1370.

23. Olympus Mons on Mars is the **tallest mountain** on any of the planets of the Solar System. The mountain is a gigantic shield volcano (similar to volcanoes found in the Haiiwain Islands) standing at 26 kilometres tall and sprawling 600 kilometres across. To put this into scale, this makes the mountain almost three times the height of Mount Everest.

24. Most of the planets in the Solar System spin on an axis similar to the Sun's; slight tilts in a planet's axis causes seasons as different parts become slightly closer or further from the sun during their orbit. **Uranus** is an exceptional planet in many ways, not least because it spins almost completely on its side in relation to the Sun. This results in very long seasons – each pole gets around 42 Earth years of continuous summer sunlight, followed by a wintry 42-year period of darkness. Uranus's northern hemisphere enjoyed its last

summer solstice in 1944 and will see in the next winter solstice in 2028.



25. The Search for Extra-Terrestrial Intelligence (SETI) is a project to discover whether intelligent life exists elsewhere in the universe and how we may contact extraterrestrial species. The search includes looking for life on other planets and moons. For instance, some of Jupiter's moons (such as Io) are promising places to look for evidence of primitive life, but the search for extraterrestrial life includes scientific research on Earth.

26. If scientists can discover evidence life has generated independently more than once it would suggest life could occur in more than one place, for more than one time. For this reason scientists are searching for evidence that life could have happened more than once on earth, with intriguing prospects for the universe as a result.

27. Our Sun is essential to us, the centre of our Solar System, and our source of light and energy, but it is just one of many, many stars that make up our home galaxy, the Milky Way. Current estimates suggest there are around 400 billion stars sharing our galaxy.

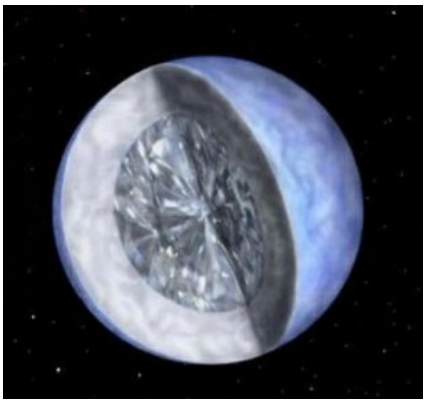
28. Scientists searching for extraterrestrial life focus on "Goldilocks Planets"; these are planets which fall into a star's habitable zone. Planet Earth seems to have exactly the right conditions for life to

exist – its distance from the Sun means the temperature is right, water can exist as a liquid solid and a gas, and there are the right combination of chemical compounds available to build complex life forms. Other planets thought to have similar features are known as Goldilocks planets.

29. In the Milky Way alone there are estimated to be 500 million potential Goldilocks planets, so if life can exist in places other than Earth there is a huge number of potential planets on which it might thrive. If these numbers are applied to all the galaxies in the universe there could be a staggering variety of planets capable of supporting life. Of course, we have no evidence life exists elsewhere, but if it does there are plenty of places for it to set up home.

30. Different calculations provide different numbers for how many galaxies there are in the observable universe – that is the part of the universe we can see from Earth with our current technology, there may be many more but they are simply too far away for our telescopes to detect. Using data from the Hubble Telescope astronomers have calculated there are likely to be around 170 billion galaxies in the observable universe.

31. Astronomers have discovered the largest known **diamond in our galaxy**, it's a massive lump of crystallized diamond called BPM 37093.

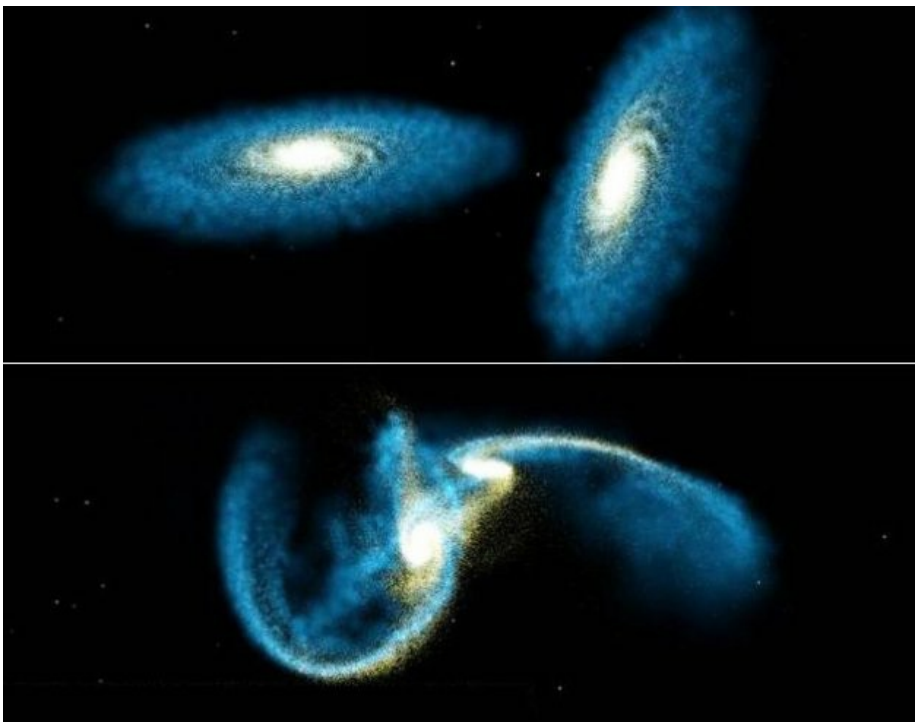


32. Strangely enough Venus completes an entire orbit around the sun before it manages to turn on its axis once. This means that its day is actually longer than its year and in Venusian time.

33. The nearest black hole to the earth is about 16,000 light years away.

34. There are five dwarf planets that haven't completed their orbit yet named Ceres, Huamea, Eris, and Makemake. Pluto is recently classified as a dwarf planet

35. The definition of *cosmic cannibalism*is the act of one galaxy colliding with and swallowing another. It doesn't have to be a whole galaxy; it could be partial parts of it such as stars or planets. Our neighbor, the Andromeda Galaxy has been suspected for some time of being a predator gobbling up smaller galaxies that got too close. According to Alan McConnachie of the Herzberg Institute of Astrophysics, "there has been proof found, spotted leftovers in Andromeda's wake including half a dozen remnants of stars and dwarf galaxies that got too close to the giant .



36. A comet's tail is made as it nears the Sun and begins to melt. A vast

plume of gas millions of kilometers across is blown out behind by the solar wind. The tail is what you see, shining as the sunlight catches it.

37. Solar flares reach temperatures of 10 million °C and have the energy of a million atom bombs.

38. The moon is the only other world that humans have set foot on. Because the moon has no atmosphere or wind, the footprints planted in its dusty surface in 1969 by the Apollo astronauts are still there today, perfectly preserved.

39. A day on Mercury lasts longer than its year! Mercury moves around the sun faster than any other planet – making its year the equivalent of 88 Earth days. While a day on Mercury – the interval between one sunrise and the next – lasts 176 Earth days!

40. Our sun is estimated to be about 4.6 billion years old and should keep shining for 5 billion more years. The rays of the sun take about 8 minutes to make the journey across 93 million miles between the surface of the sun and that of the earth. Those rays though began their life over 30,000 years ago at the core of the sun through an intensive nuclear fusion process in which the sun consumes helium and hydrogen. Once our sun runs out of hydrogen to burn it will begin utilizing helium alone, which will cause it to become a “Super Nova”.

41. It’s become a much more accepted idea that we live in a universe that is one of many. It originates from the theory of eternal inflation. The theory states that after the Big Bang, space and time expanded at different rates and in different places. This allows the opportunity for bubble universes to exist, each one functioning with its own set of physics. Imagine two soap bubbles colliding; where they intersect with each other, there exists another circle that could be according to the eternal inflation theory, a bubble universe.

42. The elements found on Earth come from the stars. That means all the things that make up the earth including the life present is comprised of stardust. According to Carl Sagan, “The nitrogen in our DNA, the calcium in our teeth, the iron in our blood, all made from the interiors of collapsing stars. We are made of star-stuff”. If you take time to think about that, it’s absolutely mind-blowing to think we are so deeply connected with the stars in the sky that we look out on. If not for the death of stars we would not have life.

43. All the Galaxies, Planets and Stars Only Make Up 4 Percent of the Universe

With all that we can see in space there is 96 percent of it that we can’t see. We can’t even identify or understand what that 96 percent is made of. Some scientists call it dark energy or dark matter. Unfortunately there is no way of really deciphering what this dark energy or matter is. We can work mathematical formulas and estimate the gravitational pull of these entities, but there is no sure way of proving what the invisible part of our universe is made up of. The majority of the universe may remain a mystery forever.

44. In our galaxy, the Milky Way, the star formation rate is about 3 solar masses per year. As one solar mass is equal to the mass of our Sun, there is enough material to construct about three suns every year. What does that mean? Well astronomers use this logic to apply it to galaxies as well. So if we have enough for three stars per year

and we multiply that by the estimated number of galaxies in existence, which is 50 billion, which equates to 150 billion or 400 million stars, born per day! That's 4,800 stars born per second!

45. A huge chunk of it is made up of things we can't see

Different wavelengths in the electromagnetic spectrum such as those of radio waves, infrared, x-rays, and visible light have allowed us to peer into the cosmos and 'see' huge portions of it. Unfortunately, an even larger portion cannot be seen by any of these frequencies.

And yet, certain phenomena such as gravitational lensing, temperature distributions, orbital velocities and rotational speeds of galaxies, and all others that are evidence of a missing mass their probable existence. Specifically, these observations show that dark matter exists. Another invisible entity known as dark energy, is believed to be the reason why galaxies are speeding away at an accelerated rate.

46. There is no such thing as the Universe's center

The earth is not the center of the Universe. It's not even the center of the galaxy. And no again, our galaxy is not the entire universe, neither is it the center. Don't hold your breath but the Universe has no center. Every galaxy is expanding away from one another.

47. Large Scale Structures of the Universe

Considering only the largest structures, the Universe is made up of filaments, voids, superclusters, and galaxy groups and clusters. By combining galaxy groups and clusters, we come up with superclusters. Some superclusters in turn form part of walls, which are also parts of filaments.

The vast empty spaces are known as voids. That the Universe is clumped together in certain parts and empty in others is consistent with measurements of the CMBR that show slight variations in temperature during its earliest stages of development.

48. The Earth is not flat – but the Universe is

Based on Einstein's Theory of General Relativity, there are three possible shapes that the Universe may take: open, closed, and flat. Once again, measurements by WMAP on the CMBR have revealed a monumental confirmation – the Universe is flat.

Combining this geometry and the idea of an invisible entity known as dark energy coincides with the widely accepted ultimate fate of our universe, is a Big Freeze.

49. The Universe spans a diameter of over 150 billion light years

Current estimates as with regards to the size of the Universe pegs it at a width of 150 billion light years. Although it may seem peculiarly inconsistent with the age of the Universe, this value is easily understood once you consider the fact that the Universe is expanding at an accelerated rate.

50. It will be cold when it grows old

Observations made especially on galaxies farthest from us show that the Universe is expanding at an accelerated rate. This, and data that show that the Universe is cooling allows us to believe that the most probable ending for our universe is that of a Big Freeze.

That is, it will be devoid of any usable heat (energy). It is due to this prediction that the Big Freeze is also known as the Heat Death. Accurate measurements made by the Wilkinson Microwave Anisotropy Probe (WMAP) on the current geometry and density of the Universe favor such an ending.

51. The universe may not be unique, it could be one of many in a finite or even infinite multiverse system.

52. Between half a billion and a billion years after the Big Bang the Universe had grown to around one fifth the size it is now, it began to darken and cool down to just a few degrees above absolute zero allowing atoms in the denser areas to bind together and eventually collapse under the force of their own gravity, leading to the formation of the first stars and cores of galaxies. Over the next 12.5 billion years the Universe filled with billions of galaxies each

containing billions of stars and continues to expand.

53. Dark Energy

Up until the late 20th century it was thought that the rate the Universe was expanding must be slowing down due to the attractive forces of gravity. Then in 1998, due to observations by the Hubble Telescope it was discovered that the Universe is actually expanding quicker now than it was in the distant past. This unexpected discovery shook the world of science as they tried to figure out what was causing this accelerated expansion.

The solution was Dark Energy, an unknown property in the Universe that was affecting its expansion, creating space and sending galaxies away from each other. It is thought that around 73% of the Universe is made up of Dark Energy and is the dominant force, but we don't actually know what it is. Even though we know it is there and how it affects the Universe it is still in essence a complete mystery

54. The End of the Universe

Due to the passage of time everything has a lifespan, planets, stars and galaxies will all eventually cease to exist and the Universe and time itself will come to an end. As the Universe expands matter becomes more dispersed, the gases and material that make up stars will be scattered over larger distances, areas in the Universe that will have enough density to produce star forming regions will become less and less until eventually no new stars will be born.

By this time all the large stars and smaller sun like stars will be gone, all that will be left will be their burnt out remnants in the form of black holes and black dwarfs. The only stars that will remain will be the Red Dwarfs, small dim stars that burn their fuel at a very slow rate allowing them to exist for trillions of years. Any intelligent life that is lucky enough to be on a planet that orbits a Red Dwarf will look up at a black night sky, void of any bright points of light.

These Red Dwarfs too will eventually burn themselves out until only

their core remains in the form of a faintly glowing ember known as a White Dwarf, these will be the only tiny points of light left in the Universe. The Universe will exist in this state for trillions of years, but even the small amount of light given off by these White Dwarfs will eventually fade to nothing as any remaining heat disappears. It is now a Black Dwarf, an incredibly dense object made from the cold ashes of a long dead star. These too will be broken down and dispersed until eventually absolutely no matter will remain in the Universe, not even a single atom. The Universe will be a cold, empty unchanging void as time itself will come to an end.

This can seem like a very depressing future but the good news for us is that it won't happen for a very, very long time. The Universe will continue to form new stars and galaxies for trillions of years, if you consider that at the moment it is only 13.7 billion years old you begin to realize that the Universe is just in its infancy, a baby if you like. Its future in a sense has just begun.

55. GALAXY ORIGINS

Most astronomers suggest that galaxies formed shortly after a cosmic "big bang" that began the universe some 10 billion to 20 billion years ago. In the milliseconds following this explosion, clouds of gases began to coalesce, collapse, and compress under gravity to form the building blocks of galaxies.

Scientists are divided on just how galaxies first formed. Some believe that smaller clusters of about one million stars, known as globular clusters, formed first and later gathered into galaxies. Others believe that galaxies formed first and that only later did the stars within them begin to gather into smaller clusters.

56. GALACTIC MERGERS

Some galaxies occur alone or in pairs, but they are more often parts of larger associations known as groups, clusters, and superclusters.

Galaxies in such groups often interact and even merge together in a dynamic cosmic dance of interacting gravity. Mergers cause gases to flow towards the galactic center, which can trigger phenomena like rapid star formation.

Our own Milky Way may someday merge with the Andromeda galaxy —just two million light-years away and visible to the naked eye from Earth's Northern Hemisphere.

These intergalactic processes may be part of natural evolution by which irregular galaxies transform into one of the other shapes, and by which spiral galaxies eventually become elliptical galaxies—as scientists believe they must.

TYPES OF GALAXIES

Galaxies are classified into three main types: spiral galaxies, elliptical galaxies, and irregular galaxies.

57. ***Spiral galaxies***, such as the Milky Way, consist of a flat disk with a bulging center and surrounding spiral arms. The galaxy's disk includes stars, planets, dust, and gas—all of which rotate around the galactic center in a regular manner.

This spinning motion, at speeds of hundreds of kilometers per second, may cause matter in the disk to take on a distinctive spiral shape like a cosmic pinwheel. Some spiral galaxies obtain even more interesting shapes that earn them descriptive names, such as sombrero galaxies.

Older stars reside in the bulge at the center of the galactic disk. Many new stars also form in spiral systems, and their disks are surrounded by a halo, which scientists believe is rich with mysterious dark matter.

58. ***Elliptical galaxies*** are shaped as their name suggests. They are generally round but stretch longer along one axis than along the

other. They may be nearly circular or so elongated that they take on a cigar like appearance.

Elliptical galaxies contain many older stars, up to one trillion, but little dust and other interstellar matter. Their stars orbit the galactic center, like those in the disks of spiral galaxies, but they do so in more random directions. Few new stars are known to form in elliptical galaxies. The universe's largest known galaxies are giant elliptical galaxies, which may be as much as two million light-years long. Elliptical galaxies may also be small, in which case they are dubbed dwarf elliptical galaxies.

Galaxies that are not spiral or elliptical are called irregular galaxies. Irregular galaxies appear misshapen and lack a distinct form, often because they are within the gravitational influence of other galaxies close by.

59. As of today, NASA has confirmed 3,502 exoplanets.

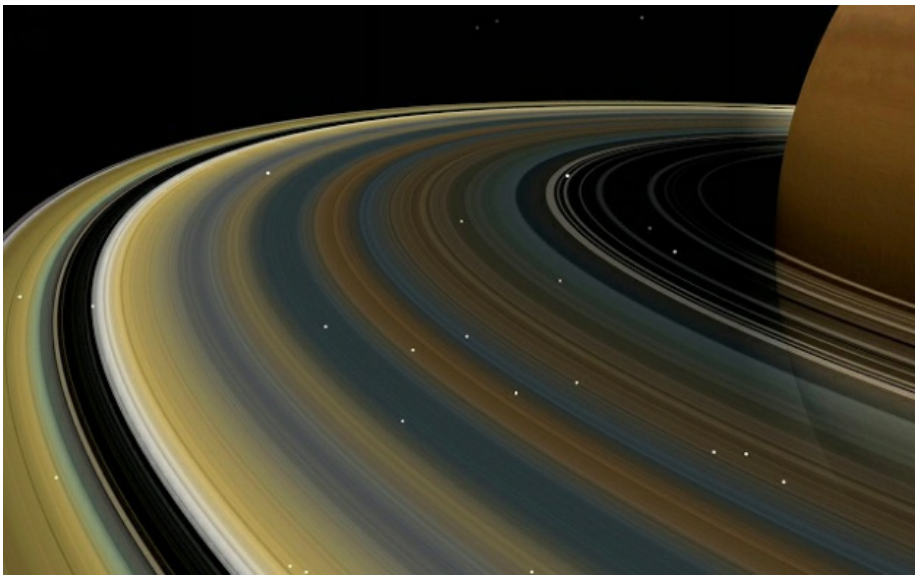
60. Saturn's moon Titan has plenty of evidence of organic (life) chemicals in its atmosphere.

61. The full cost of a spacesuit is about $11 million although 70% of

this is for the backpack and the control module.

62. Halley predicted that a comet he had discovered would return in 1758, 16 years after his death, and it really did. It was the first time a comet's arrival had been predicted, and the comet was named after him as Halley's Comet.

63. Saturn's rings are sets of thin rings of ice, dust and tiny rocks, which orbit the planet around its equator.



64. Ceres is the biggest asteroid in the Solar System – 940 km across, and 0.0002% the size of the earth.

65. Neptune's mood Triton is the coldest place in the Solar System, with surface temperatures of -236°C.

66. Jupiter's moon Europa may have oceans of water beneath its dry surface and it is a major target in the search for life in the Solar System.

67. Neutron stars are the smallest and densest stars known to exist.

68. The Sun has sunspots, the dark spots on the Sun's photosphere (surface), 2000°C cooler than the rest of the surface.

69. You can see another galaxy with the naked eye: the Andromeda Galaxy, 2.2 million light years away.

70. The Virgo Cluster is 50 million light years away and is made up of 1000 galaxies.

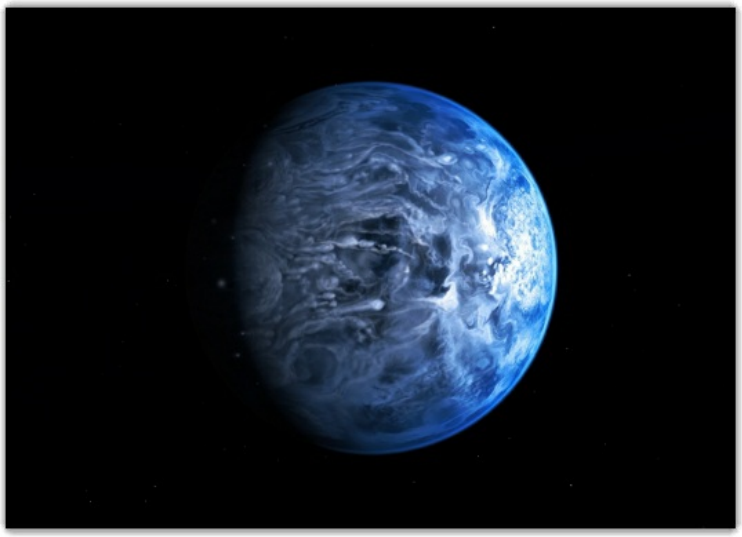
71. An average supernova releases more energy in one second than the Sun will over its entire 11 billion year lifetime... **By ten times**. Also, there is one supernova in the galaxy roughly every 50 years, which means that across the universe one supernova occurs every second. There have probably been over 50 by the time you've read this far.

72. Unlike the burnt smell of universe, our Milky Way Galaxy has a much pleasant smell. After the research by Max Plank Institute it had been found out that the middle of our Milky Way Galaxy smells like raspberries and has the taste of Rum! The smell and taste is mainly due to ethyl formate which is readily found in center of Milky Way galaxy.

73. Since we know how universe and our Milky Way smells like; we came a bit closer to home and found out that our moon smells too. Astronauts who visited moon while on the Apollo mission described the smell of moon powder as that of gun powder! The source of this smell had not been discovered yet.

74. A planet where it rains glass

NASA's Hubble space telescope has discovered a planet situated 63 light years away called HD 189733b. This most interesting phenomenon happening on this cobalt blue planet is the sideways glass rain. Droplets of glass are continuously raining on this planet and it's raining sideways due to the 5,500 mph wind that is blowing on its surface.



75. White noise

When analog television sets aren't tuned to a channel correctly, it results in static and white noise. Around 1% of that is radiation left over from the Big Bang, better known as the Cosmic Microwave Background (CMB). This interference between overlapping signals actually allowed Arno Penzias and Robert Wilson to discover the CMB in 1965.

76. A year in Venus, meaning how long it takes to orbit the sun, is the same as 224 days on Earth. But a day, meaning how long it takes for the planet to rotate on its axis, is 243 Earth days. Furthermore, this is the only planet that actually rotates backwards. What a mixed up world!

77. With powerful telescopes, astronomers can see galaxies 2 billion light years away. This means we see them as they were when the only life forms in Earth were bacteria.

78. The fastest spinning objects in the Universe are neutron stars – these can rotate 500 times in just 1 second.

79. Astronauts learn Scuba diving which helps them to deal with space walks

80. Weightlessness makes astronauts grow several centimeters during a long mission

81. The heart of a star reaches 16 million °C. A grain of sand this hot would kill someone 150 km away.

82. The brightest stars in the night sky are not actually stars, but the planets Jupiter, Venus, Mars and Mercury.

83. The constellation of Cygnus, the Swan, contains the very biggest star in the known universe – a hyper giant which is almost a million times as big as the sun.

84. The brightest star in each constellation is called the Alpha Star, the next brightest Beta, and so on.

85. Twice during Mercury's orbit, it gets so close to the Sun and speeds so much that the Sun seems to go backwards in the sky.

86. A day in Mercury lasts approximately as long as 59 days on earth.

87. Mercury is quite small with a diameter of 4878km, (2/5th of Earth) and only 5% Earths mass. Its gravity in the surface is 1/3rd of Earth.

88. Mercury has almost no atmosphere and is blasted by the Sun during the day and exposed to cold space during the night. This means that it undergoes some of the widest temperature swings of anybody in the Solar System with temperatures reaching +430 C and dipping down to -180 C

89. Because Mercury is so close to the Sun, it is only ever seen with the naked eye just before sunrise and just after sunset. At all other times it is masked by the brightness of the Sun.

90. The swirling gases around a black hole turn it into an electrical generator, making it spout jets of electricity billions of kilometers out into space.

91. The Universe may have neither a centre nor an edge, because according to Einstein's theory of relativity, gravity bends all of space time around into an endless curve.

92. The Sun travels around the galaxy once every 200 million years – a journey of 100,000 light years

93. The Milky Way galaxy is whirling rapidly, spinning our sun and all its other stars at around 100 million km per hour.

94. The Universe is probably about 15 billion years old, but the estimations vary.

95. When a person sees the Milky Way at night, they are seeing only about 0.0000025% of the galaxy's hundreds of billions of stars

96. It would take a phenomenal amount of energy for a star or other object to leave the galaxy. Stars must reach speeds 1 million mph faster than the 600,000 mph at which objects already speed around

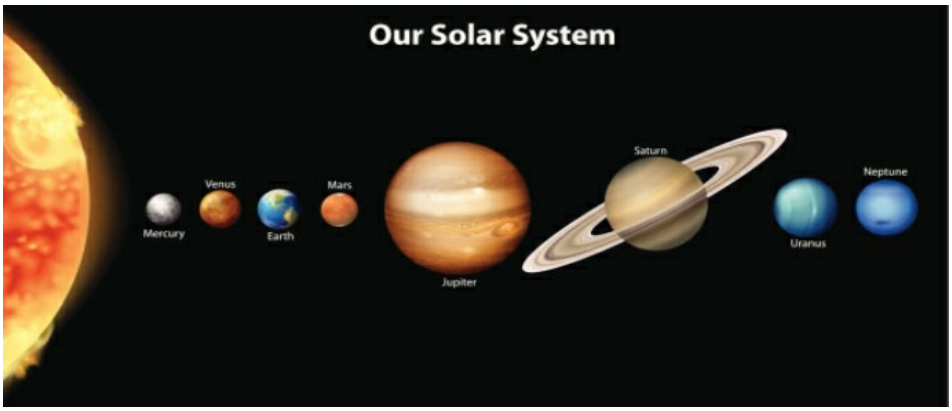
the Milky Way. Astronomers have discovered 18 such giant blue stars being ejected out of our galaxy. Scientists are unsure how the stars are being propelled

97. The center of the Milky Way is full of mostly old stars. Its spiral arms contain more newborn stars.

98. The Milky Way galaxy is 100,000 light-years from edge to edge. If a rocket could travel at the speed of light, it would take 100,000 years to cross the galaxy. By comparison, light can go from Earth to the moon in just one second

99. The orbital speed of the solar system around the center of the Milky Way galaxy is about 220 km/s, or 0.073% of the speed light. It takes about 1,400 years for the solar system to travel 1 light-year

100. The sun, Earth, and the rest of the solar system are located about 27,000 light-years away from the Milky Way's Galactic Center, on the inner edge of a minor arm of the galaxy, Orion Arm.



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