

## **BLACK HOLES**



A black hole has a gravitational pull so hard and so intense that not even light can escape it once inside the area called the Event Horizon. As stars and gas are sucked in, everything is heated to very high temperatures, this then turns into X—ray light. As a black hole sucks things in, some is thrown back out at nearly the speed of light. The material being spit out carries a magnetic field and emits large amounts of energy that turns from radio waves to visible light, then to X—ray light.

https://www.nasa.gov/vision/ iniverse/starsgalaxies/black\_hole\_description.html

### 3 Types of Black Holes

Primordial Black Holes—oldest black holes, thought to be formed after the Big Bang.

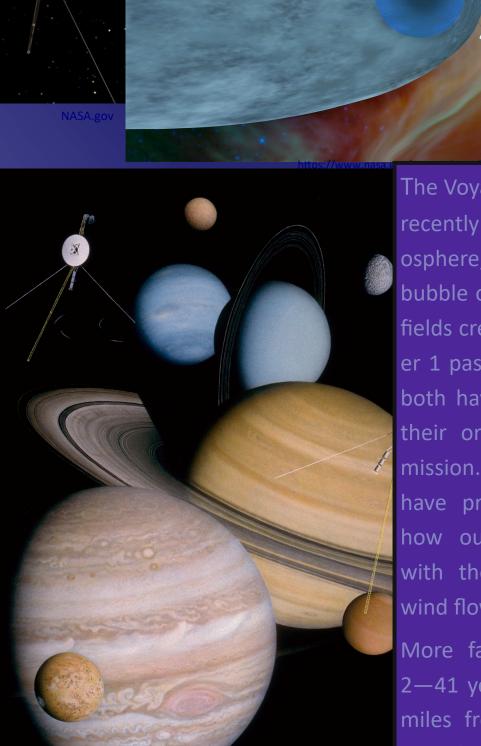
Stellar Black Holes—the center of a massive star that collapses in itself.

Supermassive Black Holes—formed when a galaxy is formed and the same size as a galaxy.



### NASA's Voyager Z Reaches Interstellar space





The Voyager 2, launched in 1977; recently passed through the heliosphere, which is the protective bubble of particles and magnetic fields created by the sun. Voyager 1 passed through in 2012 but both have gone on way beyond their originally planned 5 year mission. Together, the Voyagers have provided more detail on how our heliosphere interacts with the consistent interstellar wind flowing.

More facts about the Voyager 2—41 years in space , 11 billion miles from the sun, 1 golden record, 290 millions miles every year.

https://en.wikipedia.org/wiki/File:Voyager probes with the outer worlds.jpg



A full NASA space suit costs 12M dollars. 70% of the cost is the control module and back pack.

No one knows how many stars are in space. The estimate of stars in the milky way alone is 200-400 billion.

The foot prints on the Moon will be there for 100 million years. It has no atmosphere, so no water or wind will change the surface.

One day on Venus is longer than one year on Earth. It takes 243 Earth days for Venus to rotate once.

e-facts/ Psys.org

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# EARTH QUIZ

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#### **1.** What is Earth's true shape?

A. Sphere

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- **B.** Round
- C. Oblate Shape
- 2. 67,000 mph (107,862km/h) represents what speed?

- A. Earth's rotation around it's axis
- B. Earth's orbit around the sun
- C. Earth's movement through the Milky Way?

#### **3.** Roughly how old is Earth?

- A. 4.54 million years
- B. 4.54 billion years
- C. 6,000 years
- 4. 134 degrees F ( 56.7 degrees C) was the hottest temp. ever measured on Earth; where?
  - A. El Aziza, Libya
  - B. Death Valley, CA
  - **C. The North Pole**
- 5. Minus 100 Degrees F (minus 73 Degrees C) was the coldest temp. on Earth; where?
  - A. The North Pole
  - B. Anchorage, Alaska
  - C. Vostok Station, Antarctica

**6.** Since the early 19th century, which of these has moved northward more than 600 miles?

planet??

A. New York City

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- B. Earth's magnetic North Pole
- C. The Equator
- **7.** What's the largest mountain chain on the planet?
  - A. The Everglades
  - B. The mid—ocean ridge
  - C. The Himalayas
- 8. What's the deepest place in the ocean?
  - A. The Bermuda Triangle
  - **B.** The Mariana Trench
  - C. The middle of the Atlantic Ocean
- 9. Where's the lowest place on land, (below sea level)?
  - A. Antarctica
  - **B. Death Valley**
  - C. The Dead Sea
- **10.** Roughly how often does lightening strike some where on Earth?
  - A. 100 times per hour
  - B. 100 times per second
  - C. 100 times per day

Answers on page

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# Check out this video of 2018 space highlights!

It features awesome footage of Falcon Heavy launching, the planet hunter, "TESS," a NASA solar probe launched, the Insight Probe

landing on Mars, and more!!!

<u> https://www.youtube.com/watch?v=DpfvkckDM2g</u>

Meghan Morris; Press Secretary January 2019 EARTHOTERIC.com

