Black Hole Spin Turns-up the Radio

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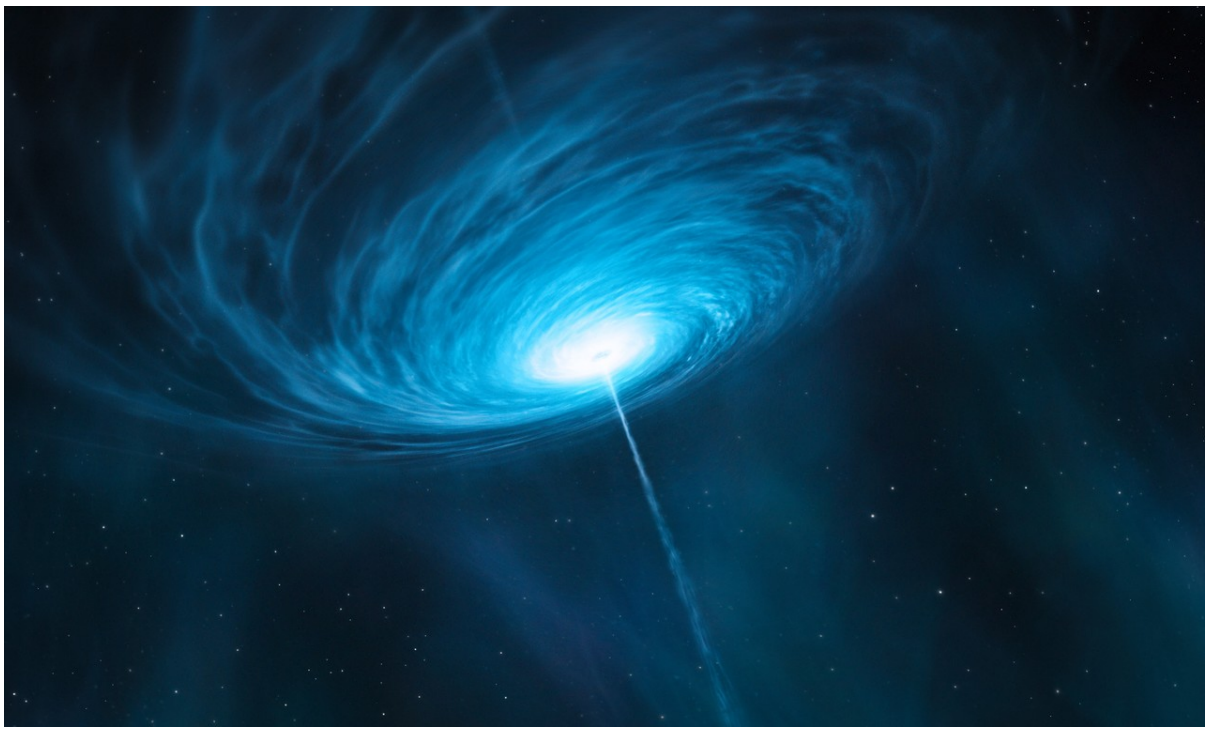

Astronomers just found a new way to turn up the radio: never mind spinning the volume dial, try spinning a supermassive black hole!

The songs we hear playing on the radio are actually sound waves travelling from the device to our ears. But they are sent to the device by "radio waves". Radio waves are a type of light that your eyes can't see, not a type of sound.

Radio waves send music, pictures and data invisibly through the air. This is happening around us all the time, in thousands of different ways. Mobile phones, Wi-Fi hotspots and thousands of other wireless technologies, all use radio waves to communicate.

Radio waves also come to Earth from outer space. Planets, stars and galaxies all give off radio waves. But the loudest sources are supermassive black holes.

In the artist's drawing above, a supermassive black hole is swallowing material. Before disappearing forever, the material from the star is accelerated to very high speeds around the black hole. This fast-moving material shoots out huge beams of radio waves into space.

But not all supermassive black holes give off the same amount of radio waves. This has mystified astronomers for a long time.

Recently, a team of scientists decided to look more closely at why this happens. They carefully studied 8,000 supermassive black holes, some with bright radio beams and some without. And it looks like they might have found an answer: spin.

The Universe is full of things that are spinning: the Earth, the Sun, the Galaxy. Black holes are no exception. Based on these new results it appears that faster spinning black holes beam out more radio waves!

Cool Fact

Unless something stops them, radio waves can travel forever. There could be radio waves that have reached worlds far beyond our Solar System. What would an alien race think about hearing a Beyoncé song?

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