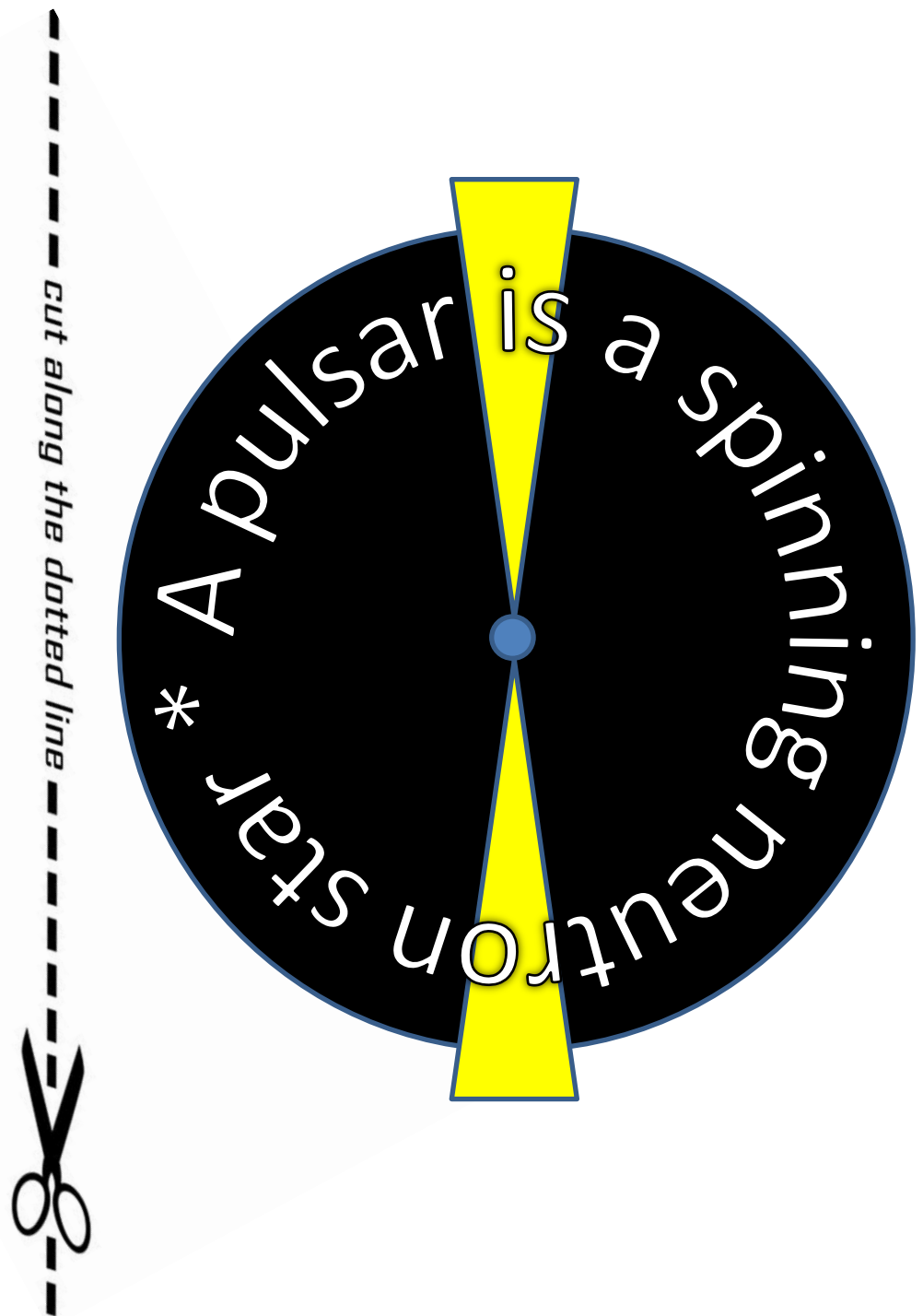


# Make a Spinning Pulsar

1. Carefully cut out your pulsar disc and decorate if you wish.
2. Using a ball of sticky tack underneath to help you, push a cocktail stick through the small blue circle in the middle.
3. Take 2 small, pea sized balls of sticky tack and use to fix the disc to the stick – one at the top, one underneath.
4. Make sure you have more stick at the top than the bottom.
5. Spin!

Last updated: April 2024



## DIFFERENT NEUTRON STAR TYPES

A neutron star is a dense core left behind after a massive star goes supernova and explodes. Though only about 10 to 20 miles (15 to 30 kilometers) wide, they can have three times the mass of our Sun, making them some of the densest objects in the universe, second only to black holes. A teaspoon of neutron star material would weigh 4 billion tons on Earth. There are several types of neutron stars.

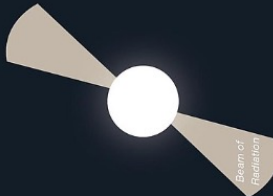
### MAGNETAR

A magnetar is a neutron star with a particularly strong magnetic field, about 1,000 times stronger than a normal neutron star. That's about a trillion times stronger than Earth's magnetic field and about 100 million times stronger than the most powerful magnets ever made by humans. Scientists have only discovered about 30 magnetars so far.



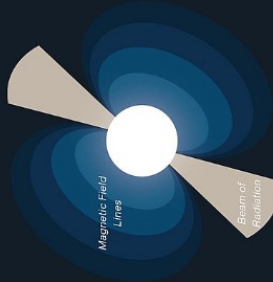
### PULSAR

Most of the roughly 3,000 known neutron stars are pulsars, which emit twin beams of radiation from their magnetic poles. Those poles may not be precisely aligned with the neutron star's rotation axis, so as the neutron star spins, the beams sweep across the sky, like beams from a lighthouse. To observers on Earth, this can make it look as though the pulsar's light is pulsing on and off.



### MAGNETAR + PULSAR

There are now six known neutron stars that are both pulsars and magnetars.



Facts accurate as of June 2020

# Neutron Star & Pulsar Facts

Neutron stars are created when giant stars die in a supernova and collapse in on themselves creating a very small, dense star.

Pulsars are simply spinning neutron stars, discovered in 1967 by Jocelyn Bell Burnell whilst she was a PhD student.

They have jets of particles streaming out from their magnetic poles. These jets produce very powerful beams of light. The beams of light from the jets sweep around as the pulsar rotates, just like the spotlight in a lighthouse.

Just as boats on the ocean see flashes of light from a lighthouse, we only see flashes of light from a pulsar as it rotates.

The time between each pulse or flash of light is extremely consistent, rivalling the timing of an atomic clock.

*Last updated: April 2024*