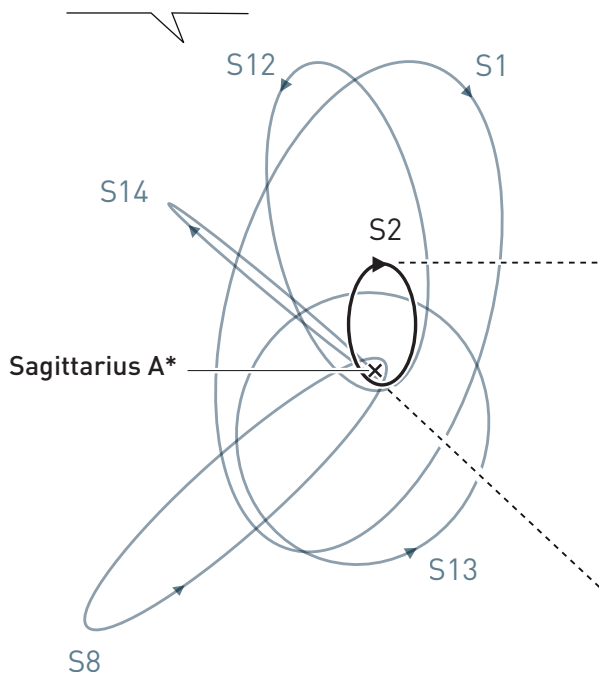


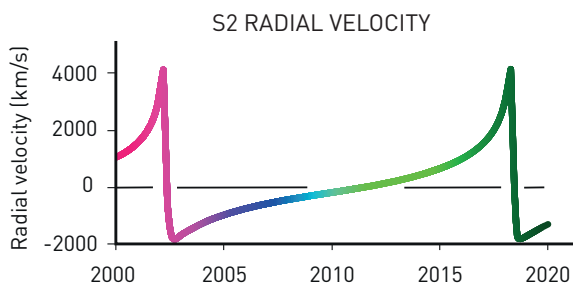
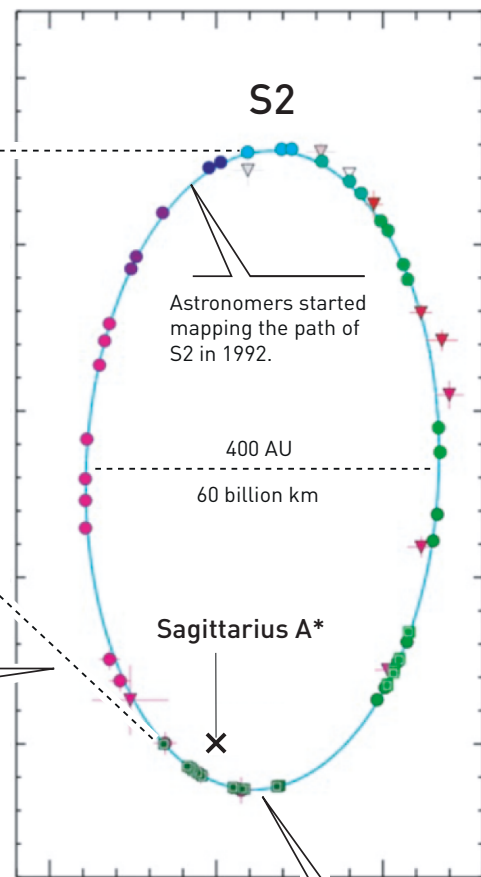
# Stars closest to the centre of the Milky Way

The stars' orbits are the most convincing evidence yet that a supermassive black hole is hiding in Sagittarius A\*. This black hole is estimated to weigh about 4 million solar masses, squeezed into a region no bigger than our solar system.

Some of the measured orbits of stars close to Sagittarius A\* at the centre of the Milky Way.



Astronomers were able to map an entire orbit of less than 16 years for one of the stars, S2 (or S-02). The closest it came to Sagittarius A\* was about 17 light hours (more than 1000 million kilometres).



The S2 star's radial velocity increases as it approaches Sagittarius A\* and decreases as it moves away along its elliptical orbit. Radial velocity is the component of the star's velocity that is in our line of sight.

Closest to Sagittarius A\* (in 2002 and 2018), S2 reaches its maximum velocity of 7 000 km/s.