

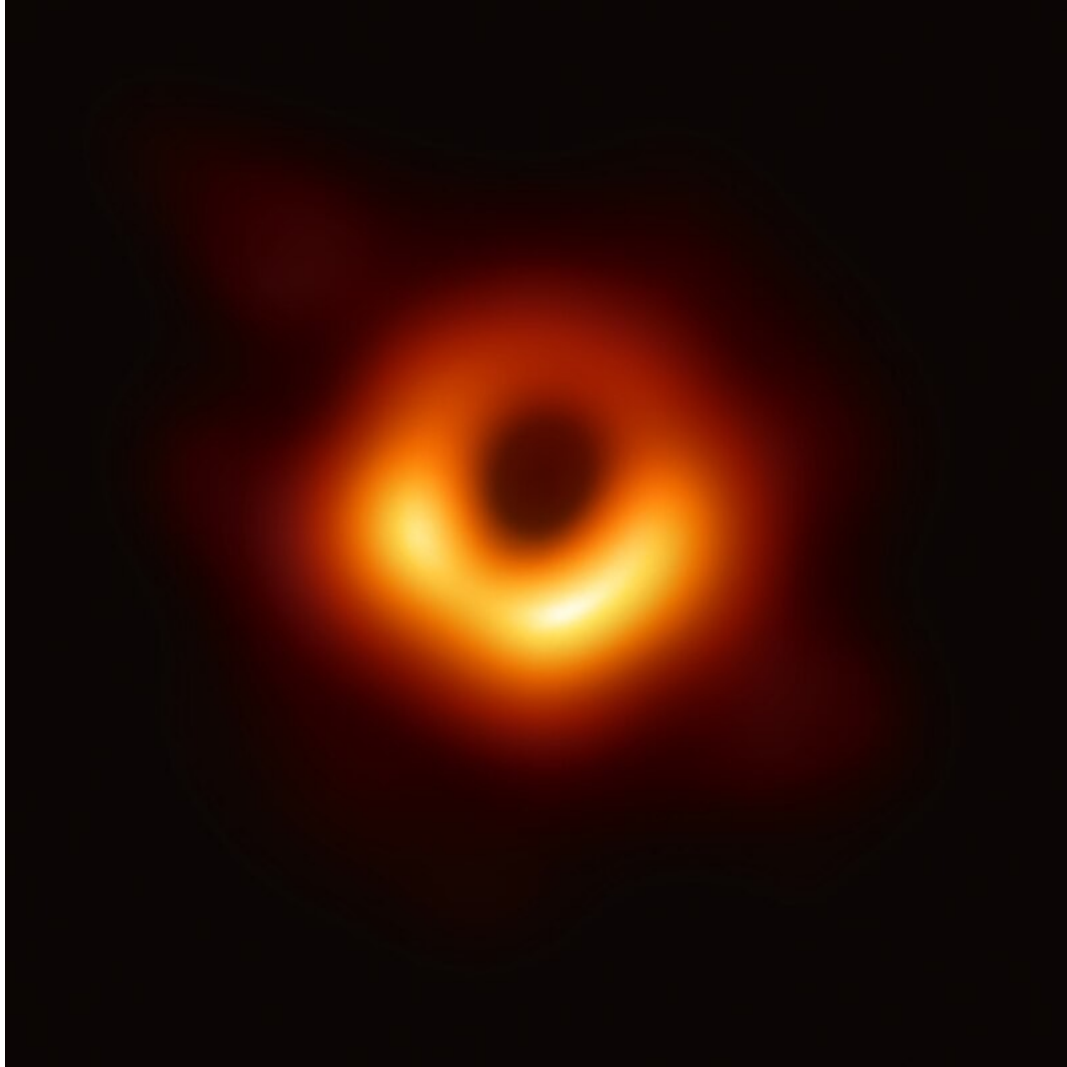
Event Horizon Telescope

The **Event Horizon Telescope** (EHT) is a large telescope array consisting of a global network of **radio telescopes**.

The EHT project combines data from several very-long-baseline interferometry (VLBI) stations around Earth, which form a combined array with an angular resolution sufficient to observe objects the size of a supermassive black hole's event horizon.

The project's observational targets include **the two black holes with the largest angular diameter as observed from Earth**:

the black hole at the center of the supergiant elliptical galaxy Messier 87 (M87*),
Sagittarius A* (Sgr A*) at the center of the Milky Way galaxy.



M87*, the black hole at the center of the supergiant elliptical galaxy Messier 87.

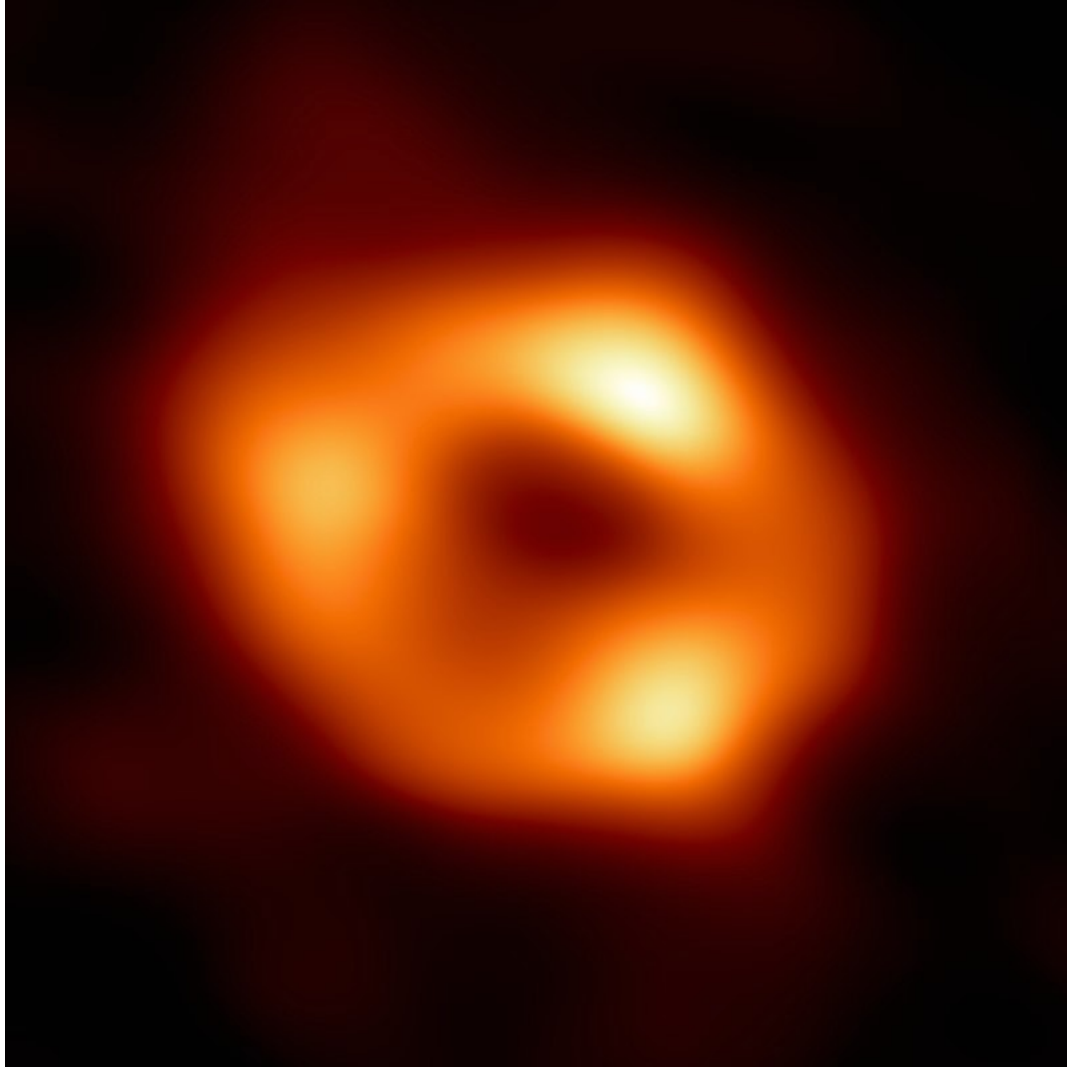
Its mass equals

$$M \cong 6.5 \times 10^9 M_{\odot}.$$

The Schwarzschild radius of the BH is around 120 AU (18 billion km).

The diameter of the accretion disk, as seen from Earth, is 42 μas (microarcsecond), and the diameter of the BH itself is 15 μas .

Image generated from data gathered by the Event Horizon Telescope.



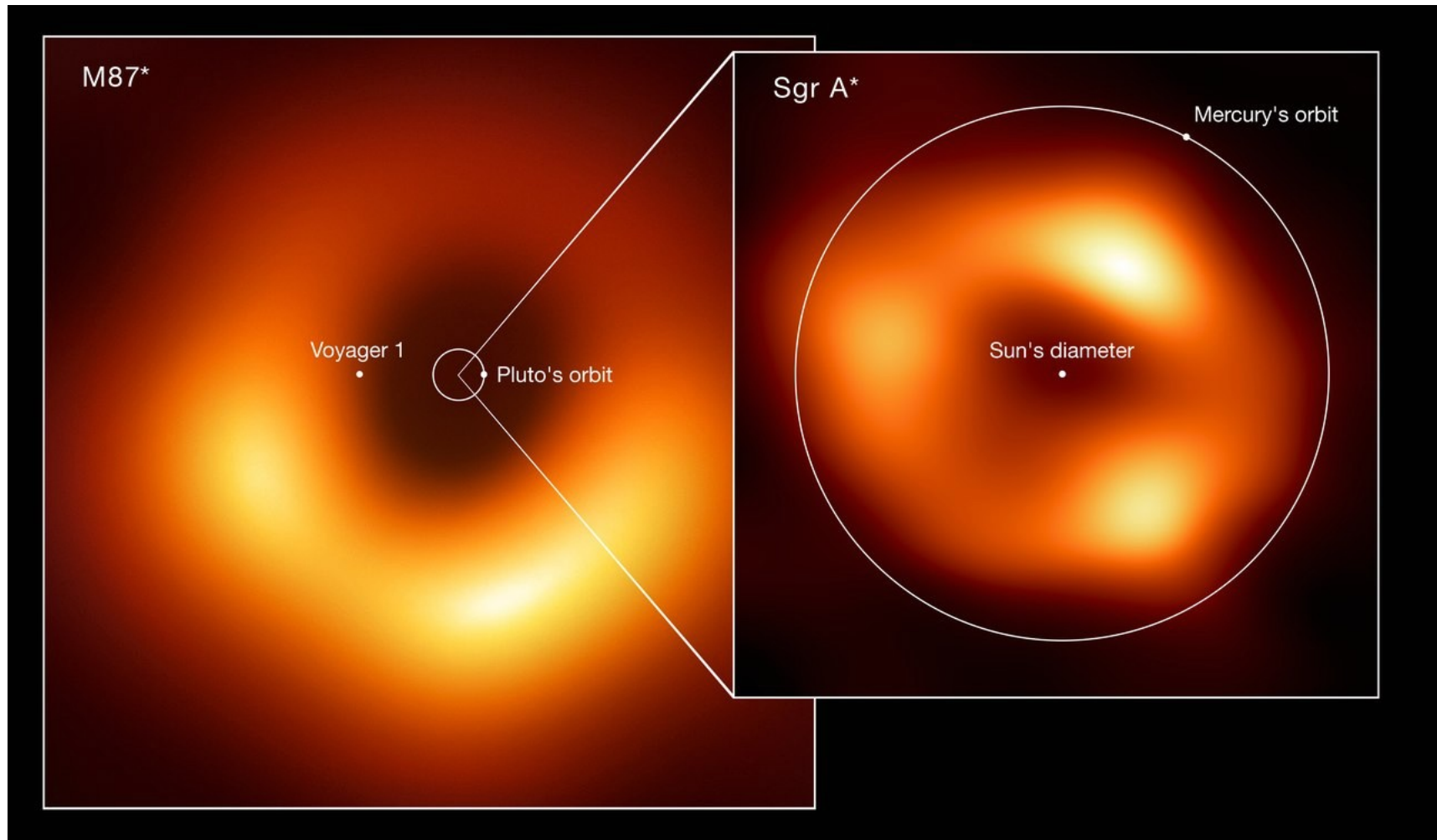
Sagittarius A* (Sgr A*),
black hole in the center of
the Milky Way galaxy.

Its mass equals

$$M \cong 4.3 \times 10^6 M_{\odot}.$$

An overall angular size for the
source of 52 μ as. At a distance of
26,000 light-years (8,000 parsecs),
this yields a diameter of 51.8 million
kilometres.

Image generated from data gathered by
the Event Horizon Telescope.



The diameter of Sagittarius A* is smaller than the orbit of Mercury.