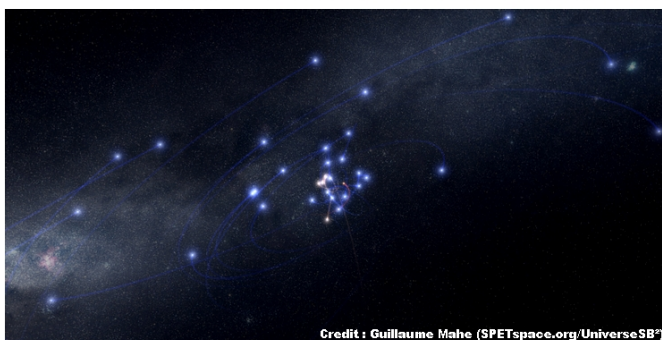
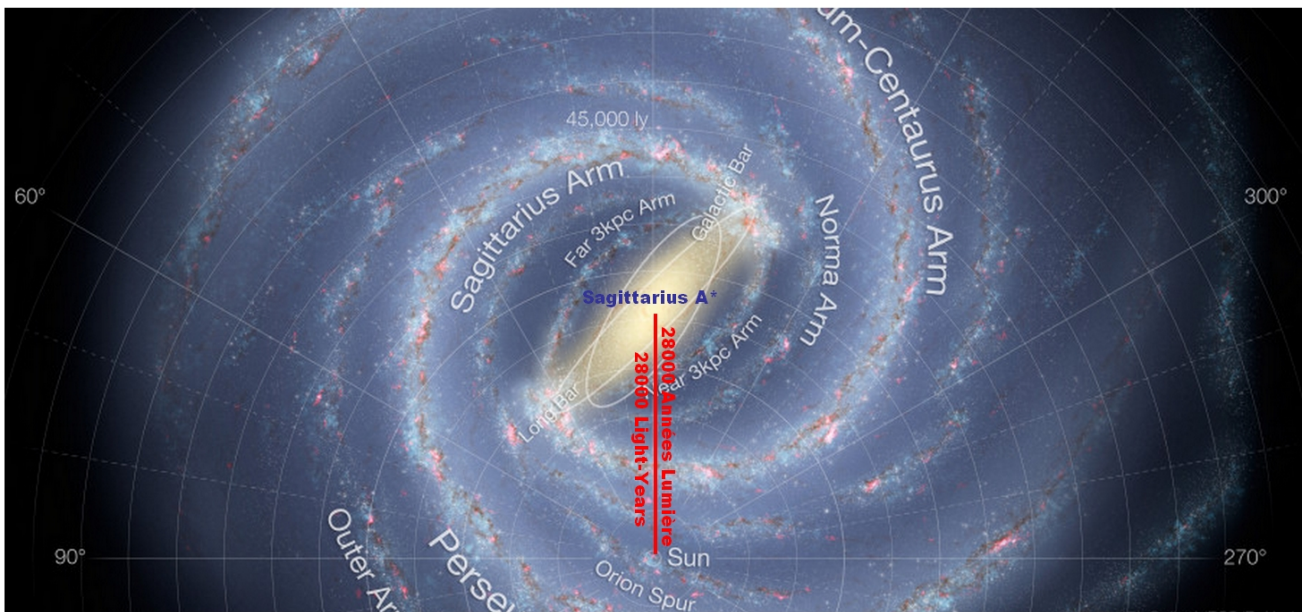


The Black Hole of our galactic center : Indirect observation and maximum size



Credit : Guillaume Mahe (SPETspace.org/UniverseSB[®])

Our galactic center is a zone of the transmitting Milky Way of strong radio waves, located at 28000 l-y in the constellation of Sagitaire. Its discovery was made in February 1974 by Bruce Balick and Robert L. Brown with the observatory of Bank Green. It is only after several years, that the zone Sagittarius A* was associated with a massive Black Hole. This place of the Galaxy, being at 28000 years light of the Earth and by the extrem high luminosity of the stellar density of this area like by the multiple layers of dust can block for direct observation, the astronomers use the radio telescopes in field radio operator, infra-red, X and gamma. It is obvious that we cannot a Black hole also directly but always in an indirect way with its effects of gravitational lens in its halo and by the orbital movements of stars around. This last technique of observation was used between 1990 and 2005, by observing a star which turns around of the galactic center over a 15 years period. The result of this observation is the proof of the presence of a very massive object and not emitting any light. There is a Black Hole in the center of our Galaxy.

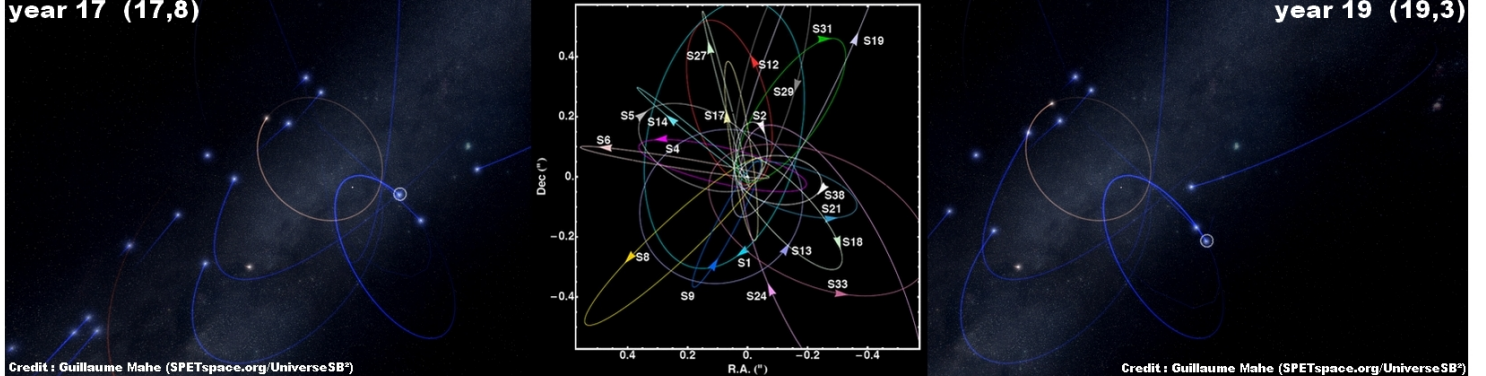
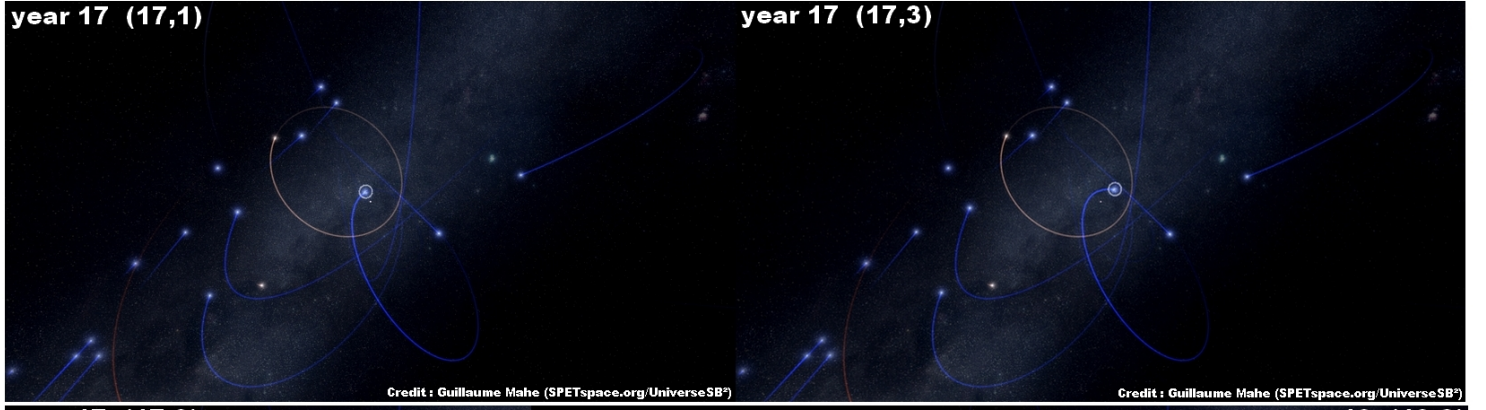
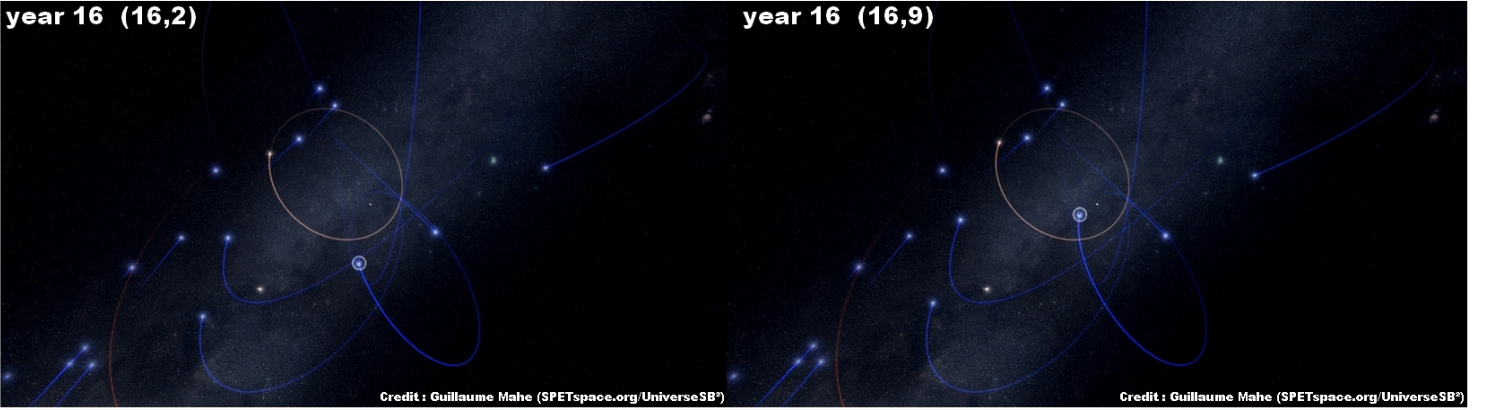
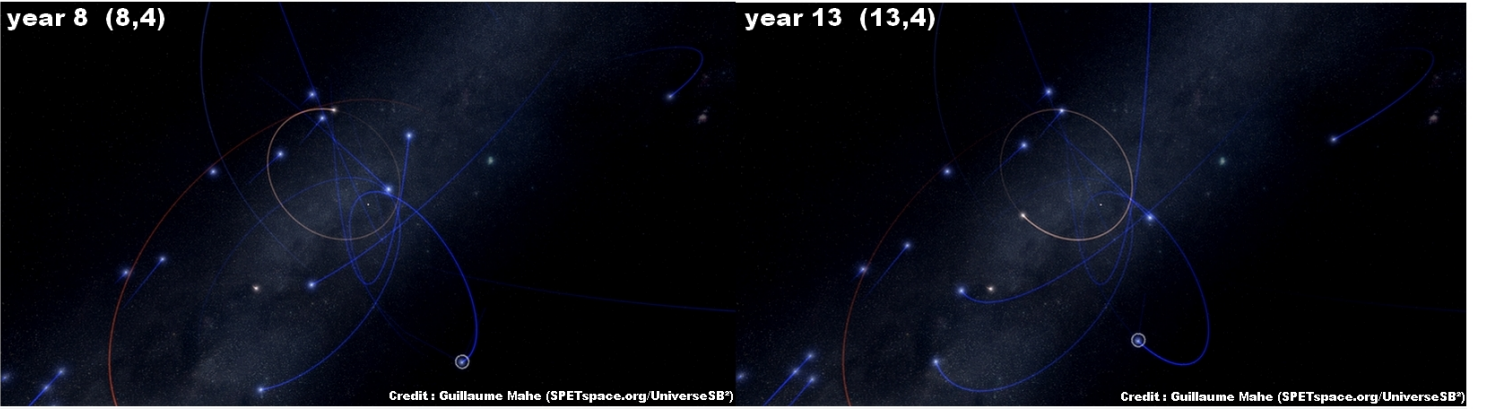
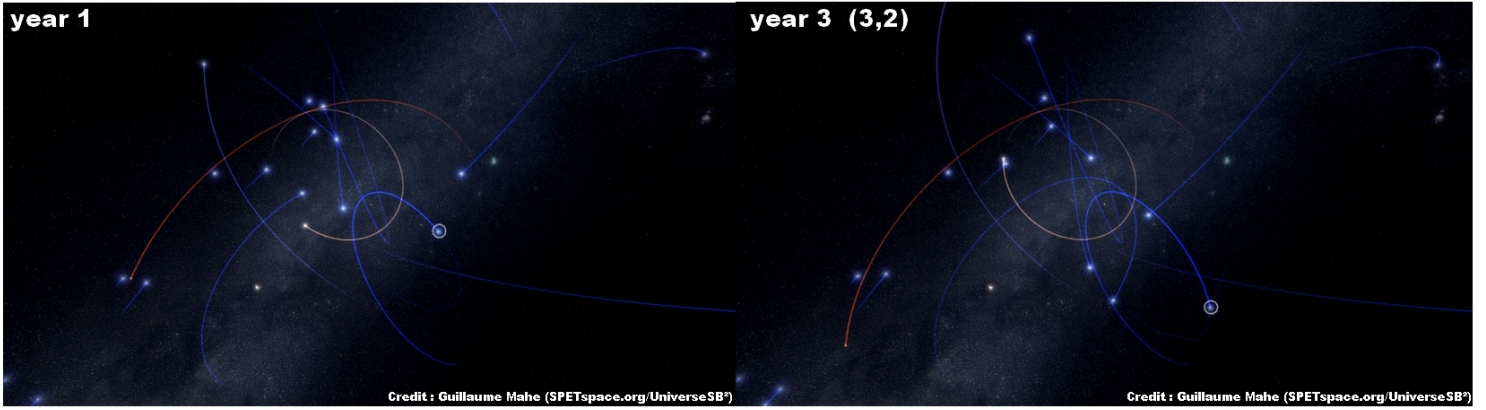


Credit : Guillaume Mahe (SPETspace.org/UniverseSB[®])



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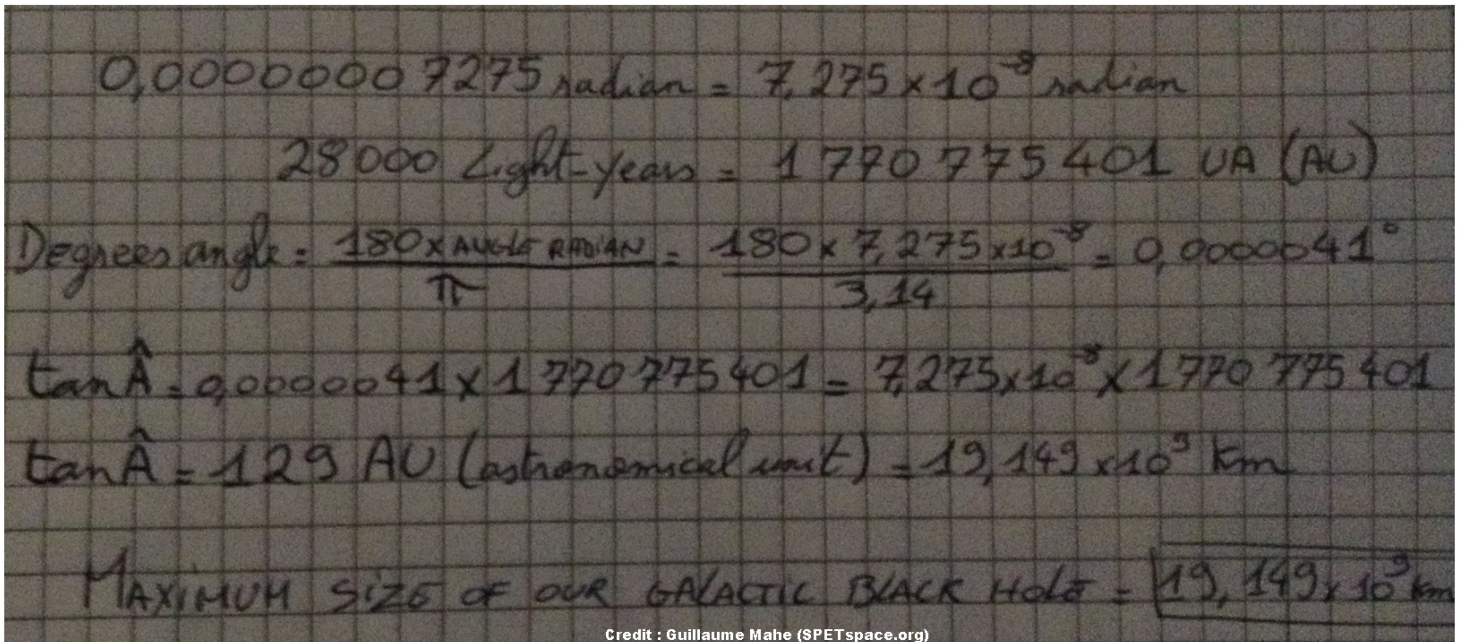
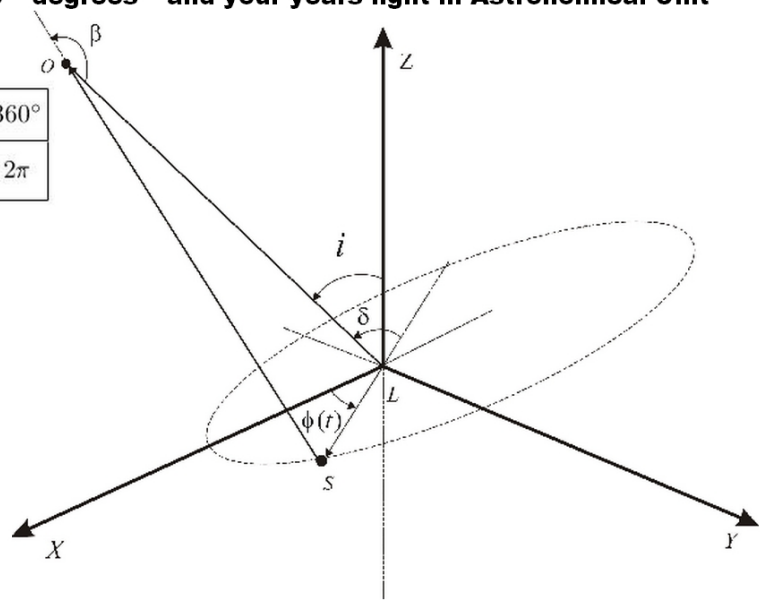
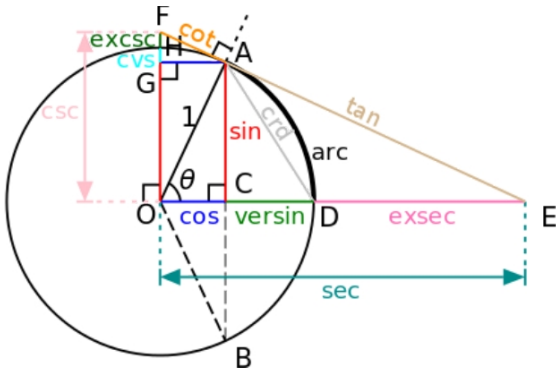
Observation of the star S2 (S-02) :



Which is the maximum size of our galactic Black Hole (Sagittarius A*) ?

We know that at the time of its passage nearest, the S2 star is with an angle of 0.0000007275 radian compared to an observation of the Earth and that the galactic center is at a distance of 28000 years lights. You must convert your angle "radian" into "degrees" and your years light in Astronomical Unit (1 UA = 150,000,000 km)

| | | | | | | | | | | |
|---------|----|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|-------|--------|
| Degrés | 0° | 30° | 45° | 60° | 90° | 120° | 135° | 150° | 180° | 360° |
| Radians | 0 | $\frac{\pi}{6}$ | $\frac{\pi}{4}$ | $\frac{\pi}{3}$ | $\frac{\pi}{2}$ | $\frac{2\pi}{3}$ | $\frac{3\pi}{4}$ | $\frac{5\pi}{6}$ | π | 2π |



According to the result, the galactic Black Hole Sagittarius A* has a maximum size of 129 AU, that is to say a size of 19,149,000 000 km. Into comparative, a distance from 129 AU corresponds to the beginning of the trans-neptunian zone of our Solar System. Also let us note that our galactic Black Hole is only far from active, without close matter to nourish it. Indeed, the observations of other galactic cores show more active black holes at the time of their youth or at the time of collision of galaxies.

Guillaume Mahe

