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Clive Tickner B.A. BSC;

clivetickner@aol.com

# Did the Black Hole image make history?

ABSTRACT
Whatever the 'photographic' image represents, that was found recently by the Event Horizon telescopes, it cannot be a record of a black hole.
I explain why.

KEYWORDS
Relativity, Gravity, Back Holes, Worm Holes, Mass, Gravitational mass, speed of light, Spacetime, Event Horizon telescopes, Accretion disc, Energy, Frictional heat and light,

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## Did the Black Hole image make history?

Whatever the 'photographic' image represents, that was found recently by the Event Horizon telescopes, it cannot be a record of a black hole.

The published photograph is said to show a black hole's silhouette against a background of hot, glowing matter that is being inexorably pulled into the hole by its powerful gravity.

Quotes from the claim;
"The halo's crescent-like appearance in the image is caused by the particles in the side of the disc rotating towards Earth, being flung towards us faster than those in the darker areas, thus appearing brighter. The dark shadow within marks the edge of the event horizon, the point of no return, beyond which no light or matter can travel fast enough to escape the inexorable gravitational pull of the black hole."
"Here, 55 million light years away, a volume of 6.5 billion suns are compressed into a single point".

On behalf of all the physicists involved, Sheperd Doeleman presented both the 'photograph' of the black hole, as recorded by these united telescopes, situated all around the world (having had their data stitched together by a super-computer), and a *simulation also* made on a super-computer. He is pleased, rather than curiously suspicious about the extraordinary closeness when one resembles the other.

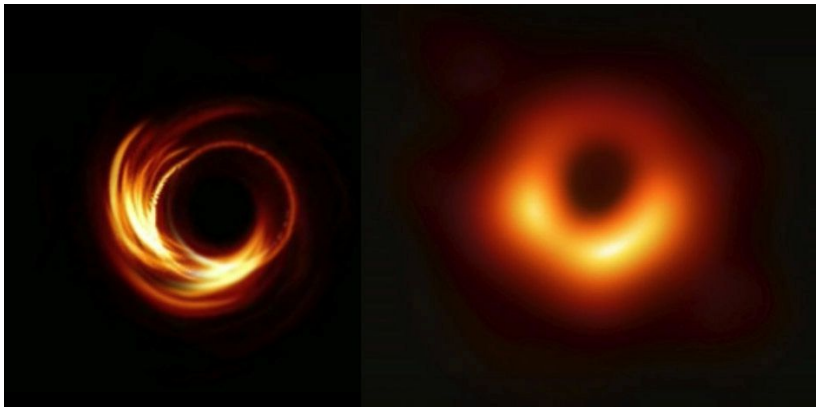

Diagram 1; the super-computer's two images.

The first issue is that black hole 'advocates' consider that the effects of the incredible gravitational force of the super massive, but extremely compacted remains of a collapsed star, will attract light from a *local* area, and those photons will be drawn down a *funnel shaped tube* as water is drawn down a whirlpool.
They see the Event Horizon as "a cosmic trapdoor" from which "neither light nor matter can escape – therefore, initially agreeing that a black hole itself is un-seeable"

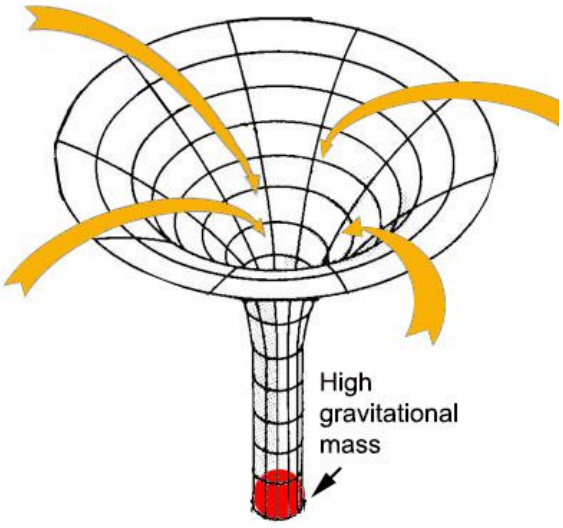


Diagram 2; The common (mis)understanding of a black hole's appearance

Doeleman describes the way in which a black hole functions when he says,

"you are almost seeing a black hole puncture through spacetime, when it goes so deeply in, then there's a point at which light orbits the black hole".

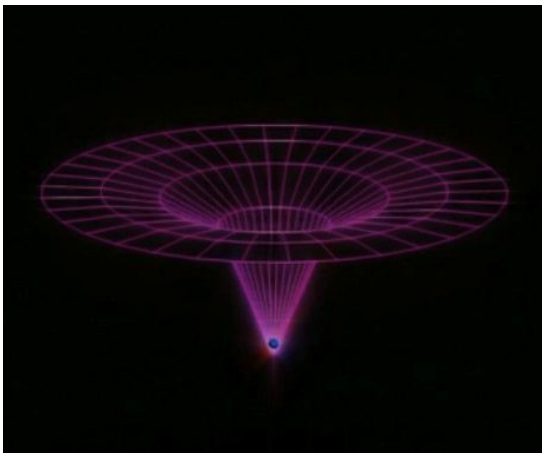

Diagram 3; The common misunderstanding continues. An image from Doeleman's lecture

This offers several conflicting issues.

1) Why isn't light attracted to the huge gravitational mass *from all directions* around it. Artist's impressions like the two above, although widely accepted by the scientific community, are completely naive in providing only a two dimensional vision (a penetrated flat plane) of their expectations, where the mass only attracts from a *single* standpoint. (in this case *downwards* only).

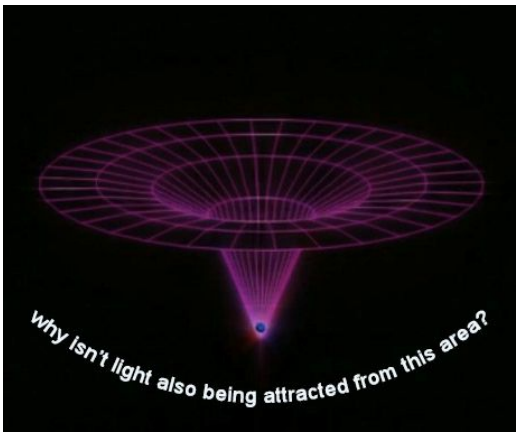


Diagram 4' The crucial question!

If a black hole functions according to current physics, then it should be *globe* shaped, attracting light etc from *all around*, with the Event horizon a spherical enclosure at the limit of the gravitational pull. (as diagram 6)

2) Should a black hole actually be constructed like the funnel of diagram 2, then the 'mouth' would *have to face* Earth *directly* for us to be able to look at the hole and its surrounding ring of revolving gas, as is maintained by the EHT physicists.

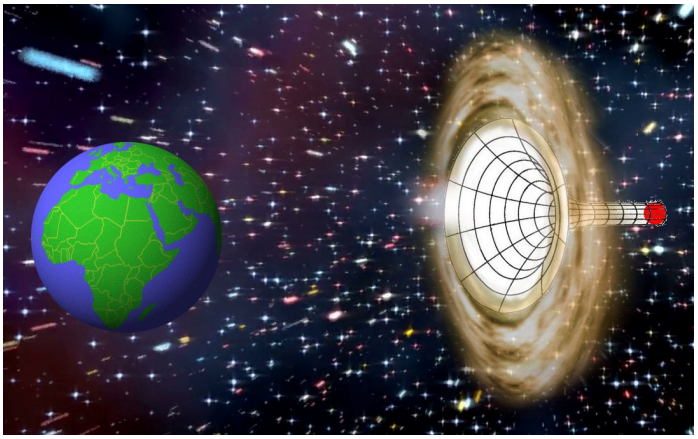

Diagram 5; the unlikely circumstance of a hole facing earth.

3) If  light was attracted from *every* direction, which would make better sense, an Event Horizon would be a surrounding ball of energy, only just avoiding being drawn towards the *central* mass. Thus *occluding* any central 'shadow'.

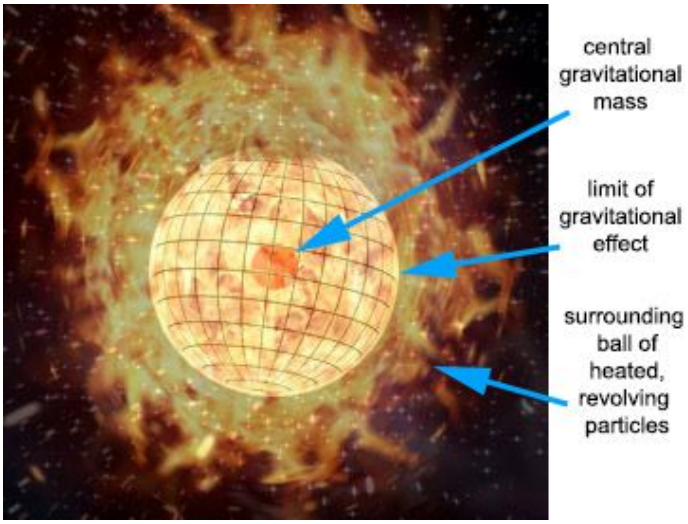


Diagram 6; the more likely construct of a black hole

4) If *this* was the case then we *would not* be able to look into its mouth and the black hole could not be distinguished from other fiery, celestial objects.

5) The 'funnel' like concept allows for further errors.

<u>Escape</u>

It is claimed that the mass of a black hole allows *nothing* to escape from its clutches; not even light. However physicists now assert that black holes *can emit* streams of plasma!
Plasma has a greater mass than light (photons are actually considered to be mass-less particles). Therefore it make no sense that plasma can escape from the hole. To add to the confusion, the ESO astronomers have also apparently witnessed brief, powerful flares of gas being generated *from* the black hole. Again, how do they account for this?

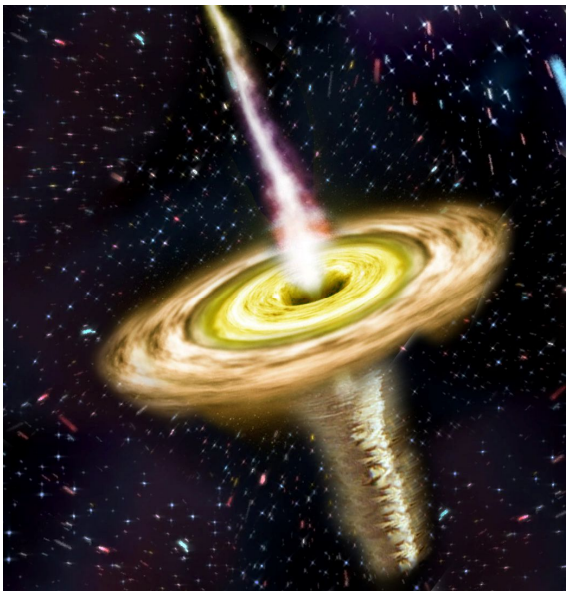

Diagram 7; impossible gases escaping from a misconceived black hole.

So how do the EHT physicists argue that they have photographed a black hole?

Their explanation;

"A black hole itself is completely dark – it neither reflects nor gives off any light. So there's nothing to photograph, no matter how advanced the technology. But to the Event Horizon Telescopes the black hole is recorded as a central dark area, referred to as the black hole's "shadow."

"It is *central* to a *ring* of light that stems from the hot gas that's swirling around the black hole, which gets heated as it falls into the hole."
"So, our telescopes are able to pick up the light as long as it comes, not from the immediate vicinity of the black hole, but just outside it,"
"When the light falls into the event horizon, that part is dark in the image. Whether or not shadow is the perfect word, it imprints this darkness on the surrounding emission."

Accretion disc

The above explanation concludes that the EHT picks up radiation emitted by particles within a disc, named an 'accretion disc', spinning at the limit of the Event Horizon, which are heated to billions of degrees as they swirl around the black hole at close to the speed of light, before vanishing *down* towards the gravitational mass.

Again this implies, the implausible notion of a funnel-shape to a black hole- dismissed above. Further to this; '*down*' presumes *a direction,* and there are no directions in space.

"It is the 'shadow' at the centre of this disc which the ETH equipment records as being the black hole".

The two dimensional term 'disc', and the associated images, continue to refute what *would have to be* a three dimensional event.

The action of this bright, incredibly energetic (virtually flat) ring of particles, as they swirl around the black hole, is, apparently, the tearing to shreds of the revolving matter, caused by the intense gravity of the hole's mass; material that has yet to fall inside the black hole.

To extrapolate further on my point 5, we are asked to believe that the hole's massive gravitational pull has the strength to tear apart matter *before* it drags that material towards its mass. Current physics would expect these two events to be the other way round.

Energy

For this 'accretion disc' to be present, it is presumed that a black hole rotates naturally, and that this produces large amounts of energy through the 'Penrose process' in the black hole's Ergosphere, an area just outside its event horizon.

Frictional heat and light

Friction here is considered to be generated by photons speeding around the black hole's perimeter, (event horizon), where they are being forced to occupy the diminishing volume of the black hole's 'mouth', when being swallowed. This, it is claimed, produces the light and heat that can be recorded on Earth.

So, this compressing 'friction' is being created at the hole's immediate perimeter; definitely *outside* of the event horizon, but, somehow, this matter *is still* being affected by the hole's gravitational mass. (otherwise the material would not be being pulled into the hole).
Therefore, friction is somehow being caused by particles as they travel around the *outside* of the black hole, *beyond* its gravitational forces, but, for the swallowing and compressing to occur, they *also* have to be *within* the black hole's gravitational influence, *beyond* the event horizon. The two cannot exist together.

A second source of abrasion is addressed. "Friction and the high velocity of material *forming out of a black hole* (yes, yet another item is allowed to escape the hole's gravity) produces X-rays, and the presence of this matter super-heats any surrounding material enabling the phenomenon to be visible over huge distances". (i.e. Earth) However, friction requires a second material against which this matter must bear. This second substance is not revealed.

Conflicts

But all this is a circular argument as, contrarily, this *visible* energy produced by this spinning motion is subsequently considered to be at the *expense* of the black hole's *rotational* energy. This surely would cause the spinning hole to

slow down. However to conserve its angular momentum, the black hole's rate of rotation, we are told, *speeds up*.

A back-up explanation

There is also a confusion in Doeleman's account, when he further describes a second way of how a dark celestial object might be seen.

Here, light from *behind* the black hole (with regard to the Earth) is *bent* by the hole's gravity, such that it is conveniently focused upon the telescopes on Earth, leaving an *absence* of light in the *centre* of the approaching photons, and that allowing a further belief in the presence of a black hole.

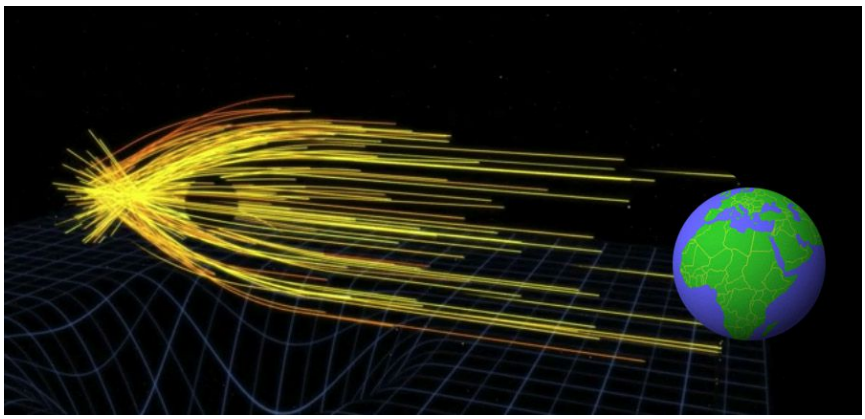

Diagram 8; a second explanation of how to photograph a black hole.

The physics of black holes, have, since Hawking, been disputed by many.
This new 'photograph' only adds to the riddles.
Current physics precludes the claims of the EHT physicists.

END

Clive Tickner