

Spiralling
inwards

is

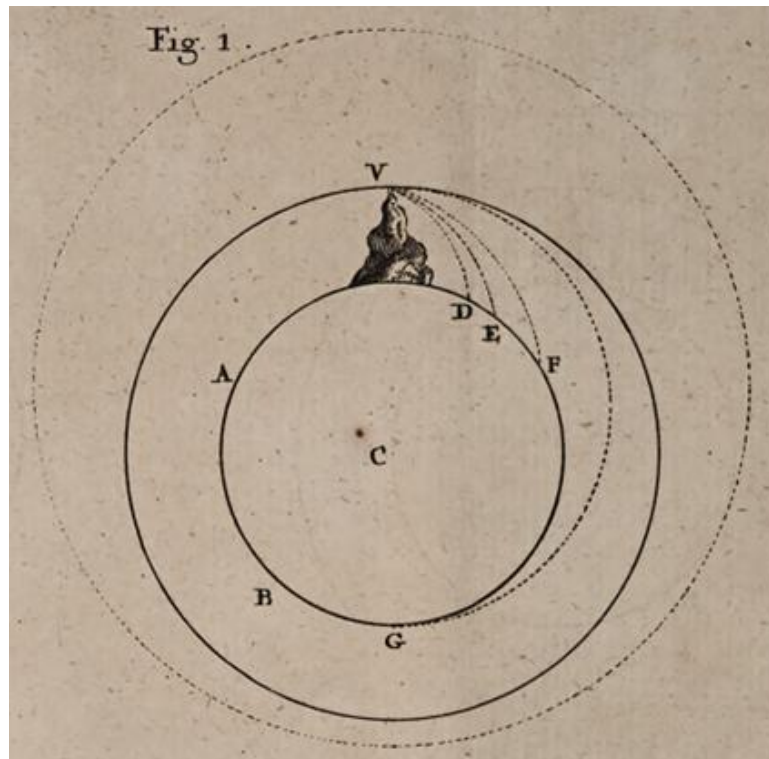
IMPOSSIBLE!

Shouldn't a **spiral** be
at least one full orbit,
yielding another radius?

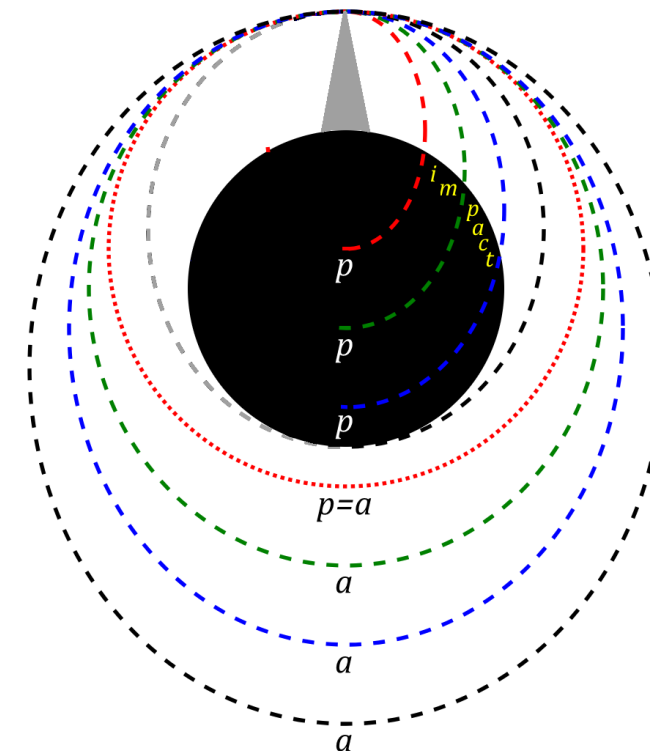
Classical mechanics, Kepler I:
*The orbit of a planet is an **ellipse***
with the Sun at one of the two foci.

An ellipse is not a spiral.

Impact vs. orbit:



From: DE MUNDI SYSTEMATE
 LIBER ISAACI NEWTONI (1643–1727),
 MDCCXXVIII (1728, i.e. posthumously).
*It essentially is Liber Tertius of the Principia,
 which does not contain this image.*



My own similar drawing.
Erratum: the $p = a$ orbit should
 have been concentric with Earth.
 Hendrikus Insanus.

All are ellipses!

Impact occurs
IF & ONLY IF
trajectory intersects
object's surface.

If it does not impact
within *half* an orbit,
it will orbit indefinitely!
(Ignoring atmospheric drag etc.).

Half an ellipse
definitely is
not a spiral!

BTW: *any* impact is due to a *lack*
of *angular momentum / energy*.

But that's *classical mechanics*.

Let's go *relativistic!*

<https://henk-reints.nl/astro/HR-Deflection-of-light-passing-a-mass.pdf>

shows (@p.27–28 as of 2026-01-30):

relativistic gravity
is stronger
than Newtonian.

Relativistic gravity is stronger than Newtonian.

Very near a gravitating (point-like) mass, gravity is (way) stronger than Newtonian.

Doesn't this imply an impact
will be even earlier,
imply ***within*** half an orbit?

That's not a spiral!

***And still, an impact is only due to a
lack of angular momentum / energy.***

KONINKLIJKE AKADEMIE VAN WETENSCHAPPEN TE AMSTERDAM.
VERSLAG VAN DE GEWONE VERGADERING DER WIS- EN
NATUURKUNDIGE AFDEELING VAN ZATERDAG 27 MEI 1916.

<https://henk-reints.nl/astro/KNAW-Droste-Zwart-Gat-NL-Black-Hole-EN.pdf>

In the English translation, there's a mistake @p.207, 7th line after "(29)": it says $r = \alpha$ instead of $r = 3\alpha$.

Shortly after Karl Schwarzschild,
Johannes Droste

independently found the *very same*,
but he went into *way more detail*.

He wrote [p.173(NL) & p.207(EN)]:

Within $r = 3\alpha = 3r_s = \text{ISCO}$,
an orbiting body spirals OUT
towards this ISCO, never reaching it,
& a body orbiting outside it
***cannot get inside* it.**

In the Schwarzschild/Droste solution
of the **E**instein **F**ield **E**quation,

spiralling inwards

would **NOT** be **POSSIBLE!**

An object from far outside

would **not** get **within ISCO!**

Outside ISCO:
stable orbit,
not getting inside it.

Inside ISCO:
unstable orbit
spiralling **OUT**,
asymptotically towards it.

Me myself:

<https://henk-reints.nl/HR-Newsteinian-mechanics.pdf>

<https://henk-reints.nl/astro/HR-general-relativity-and-black-holes.pdf>

Newsteinian mechanics

(built on *New*tonian potential energy
& *Einst*einian special relativistic kinetic energy)

renders:

$$\text{ISCO} = \frac{1}{2}r_s$$

within it: $\beta_{\text{orb}} > \beta_{\text{esc}} \therefore$ spiral ***OUT***.

Within the *Newsteinian* ISCO,

$$\rho_{\text{ISCO,NS}} = \frac{1}{2}$$

the required orbital velocity: $\beta_{\text{orb,NS}} = \sqrt{\frac{\rho+1}{2\rho^2+\rho+1}}$

exceeds the free fall velocity: $\beta_{\text{ff,NS}} = \sqrt{\frac{4\rho+1}{(2\rho+1)^2}}$

Hence, an object outside it, even if it freely fell from infinity, lacks the energy to orbit within it.

If it falls too steeply,
it **will** impact into the central body,
which will not be a spiral,
but less than half an orbit.