

Re: Orbital precession w/o GR

Source: <http://sci.tech--archive.net/Archive/sci.physics.relativity/2007-11/msg02336.html>

- *From:* Eric Gisse <jowr.pi.nospam@xxxxxxxxxxxxxxxxxxxx>
 - *Date:* Fri, 30 Nov 2007 08:18:29 -0900
-

On Fri, 30 Nov 2007 14:12:32 -0000, "JMA" <NOSPAM@xxxxxxxx> wrote:

"Eric Gisse" <jowr.pi.nospam@xxxxxxxxxxxxxxxxxxxx> escreveu na mensagem news:aaauk39djfb8lruajkhssatrmfik2pkcsa@xxxxxxxx

On Fri, 30 Nov 2007 01:27:56 -0000, "JMA" <NOSPAM@xxxxxxxx> wrote:

"Eric Gisse" <jowr.pi.nospam@xxxxxxxxxxxxxxxxxxxx> escreveu na mensagem news:9cauk31i4hc3lo7posa24rtgod0c2ju55o@xxxxxxxx

On Thu, 29 Nov 2007 16:13:05 -0000, "JMA" <NOSPAM@xxxxxxxx> wrote:

"bz" <bz+spr@xxxxxxxxxxxxxxxxxxxxxxxx> escreveu na mensagem news:Xns99F6DA3E1FE47WQAHBGMXSZHVspammote@xxxxxxxxxxxxxxxx

"JMA" <NOSPAM@xxxxxxxx> wrote in news:5r6adjF1335cpU1@xxxxxxxxxxxxxxxxxxxxxxxx:

What
is
really
a
mystery
is
how

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people
talk
about
precession
of
mercury
orbit,
but
nobody
has
any
idea
what
precession
is

[quote
<http://www.thefreedictionary.com/precession>]

1. The
rotational
motion of
the axis of a
spinning
body, such
as the
wobbling of
a spinning
top, caused
by torque
applied to
the body
along
its
axis of
rotation.

2. The
motion of
this kind
made by the
Earth's axis,
caused
mainly by
the
gravitational
pull of the
Sun, Moon,
and other
planets. The
precession
of

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Earth's axis
has a period
of nearly
25,800
years,
during
which time
the
reference
points on
the
equatorial
coordinate
system (the
celestial
poles
and celestial
equator)
will
gradually
shift their
positions on
the
celestial
sphere. The
precession
of the
equinoxes is
the slow
westward
shift of the
autumnal
and vernal
equinoxes
along the
ecliptic,
resulting
from
precession
of the
Earth's axis.
See also
nutation.
[unquote]

For instance:
A 3 years old kid knows
very well what light is.
But a 3 years old kid knows
nothing about what light

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really is and
how he can be fooled by
light.

Some facts about
precession:
1 – Constant precession
requires constant torque.

No, it does not. Study rigid body motion.

Funny, it is you that needs to study rigid body motion.

Yaaaaawn.

I have gone through the rigid body mechanics sections of both
Goldstein and Symon. You still don't know what you are talking about.

Those books are very limited on the topic.

Yea, if you don't count the dedicated chapter Symon and the TWO
chapters in Goldstein dedicated to rigid body mechanics. You clearly
have never even opened either Symon or Goldstein, much less seriously
studied either.

I've already send you the PDF file with the most advanced
deviation on the topic.

Goldstein and Symon are better. I can make this judgement because I
have studied both and can say their treatment of rigid body motion is
more extensive.

Look here, let:
Precession angular velocity be $(\omega)_p$
Torque be T
Main angular velocity be $(\omega)_3$
Inertia moment along the main spin axis of the rigid body be
 I_3 .

Then,

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$$(\omega)_p = T / (I3(\omega)^3)$$

Since $I3$ and $(\omega)^3$ are constants, even a 10 year kid will see that when torque changes the angular precession velocity changes too.

Wrong as usual. Time for you to open a classical mechanics textbook...

Read page 32, equation 8.75.
You are a liar.

JM...JM...JM...

A special case proving your point does not mean you are correct. The /counterpoint/ to your argument is the torque free rigid body whose precessional velocity changes as a function of time. The derivation of which is in both Symon and Goldstein.

The body axes are NOT the same as the axes in which a body precesses, rotates, and nutates.

What a moron.
You simply show you ignorance whenever you say something.
If the body doesn't precess around its principal axis (rotating axis fixed to the body) around which axis does precession occur?

Key words: rotating axes fixed to the body. Those are not the same as the body axes.

I don't know if you are just ignorante, or a compulsive liar.

Where is the constant torque? The torque is highly variable.

Strawman, and the argument is motivated from classical mechanics.

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You always dance with rotation of the rigid body.

Why do you continue to think you know what you are talking about when two textbooks on classical mechanics explicitly disagree with you?

You never pointed anything that could disagree with me. Ever.
You just say and never show nothing.

Selective memory is a beautiful thing. You must be a happy person since you can forget, at will, anything you don't like.

2 – Where does the kinetic energy come from?

I believe kinetic energy comes from the kinetic energy fairy.

Since energy must be conserved, please tell me where the precession kinetic energy comes from.

Why do you continue to harp on the "WHERE DOES THE ENERGY COME FROM?" thing?

Because it doesn't come on your nice books.

Except it does. The work–energy theorem specifically and energy conservation in general is something harped upon long before any student hits rigid body motion.

Since you don't know nothing besides copy/past from books, no surprise you have no clue and always dance with questions that require understanding of something.

Again:
"WHERE DOES THE ENERGY COME FROM?"
I've already explained to you, but you cannot learn.

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You make the false assumption that it has to come completely from the potential energy of the system. You forget that the body can simply put some of its' kinetic energy /somewhere else/ – slow down one part to speed up another part.

Go back and study the freely rotating rigid body for a simple demonstration of this.

The kinetic energy comes
from the potential energy.

Nope. The sum is conserved and there is an
interchange of the two but
that does not mean one comes from the
other.

What a moron.

The energy conservation Law requires that the sum is
conserved.

I can prove this – can you?

Look, moron.

It was you who said:

««Nope. The sum is conserved and there is an interchange of the
two but that does not mean one comes from the other.»»

First you said NO, now you say YES.

Make up your mind, explain what you mean, or else go away.

You forget the third possibility which I have just explained and you
have never considered.

(always at any instant) and this repeats over and over around
all the physics.

You have kinetic energy involved (increasing) and no other
source for energy then potential.

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Whenever you want to talk physics you show the bluff you are.

Tried it before – you didn't understand. My study of classical mechanics has continued – have you looked at Symon or Goldstein yet, or do you still think you don't need to look at a book?

Books are good for learning.

Then why do you refuse to look at the ones I suggest?

After reading and learning it is time to understand.
Once you understand the subject you can talk about it.

So, please, say what you have learned, ONLY.

You probably still don't understand how to properly construct a Lagrangian for a system.

Come on, let me laugh more on you and tell me where the precession kinetic energy comes from.

Kinetic energy fairy.

Ignorant.

Stupid question, stupid answer.

Since energy is conserved, potential energy needs to be dissipated. That is, a smaller secondary motion, called nutation, occurs.

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If you knew that planets orbit in a plane and understood what nutation is you would see why what you said was really, really stupid.

Nutation is the motion orthogonal to precession and both of them orthogonal to the main spin axis.
I bet you going to say, no it isn't !
(plus the usual crap, learn ... bla-bla.)

Actually that is correct. Now explain to me how a planet nutates even though it moves in a plane.

The plane of the orbit precess and nutates.

Nope.

The plane of the orbit is fixed. That this is true is a 2 line proof assuming constant angular momentum can be assumed. If you can't, it expands to a 10 line proof.

$$dL/dt = 0$$

The orbital plane is thus fixed.

It is the plane of the orbit (like if it was a rigid body – remember rigid body?) that precess and nutates.

Nope. Planetary orbits are not like rigid body motion.

For you nutation is only a sound word.
Tell me something more about nutation.