

To: Jeffrey Epstein[jeevacation@gmail.com]
From: Lisa Randall
Sent: Sun 10/4/2009 6:30:43 PM
Subject: Re:

What happened? I'll skip bad spacetime continuum joke.
I'll be back about 6. Let me know if you will have time.

Jeffrey Epstein wrote:

> if 2 is good is there a number to call?

>

> On Sun, Oct 4, 2009 at 12:34 PM, Jeffrey Epstein <jeevacation@gmail.com><mailto:jeevacation@gmail.com>> wrote:

>

> 2pm?

>

>

> On Sun, Oct 4, 2009 at 11:21 AM, Lisa Randall

> <[REDACTED]>>

> wrote:

>

> Any availability in the spacetime continuum today or tomorrow?

>

> Jeffrey Epstein wrote:

>

> joking, for me , space and time are disconnected as my
fingers hunt for keys

>

> On Fri, Oct 2, 2009 at 6:00 PM, Lisa Randall

> <[REDACTED]>

> <[REDACTED]>> wrote:

>

> Oops. Problem of email. No offense intended. I was really
a little
confused. Or were you joking?

>

> Jeffrey Epstein wrote:

>

> sorry,

> On Fri, Oct 2, 2009 at 5:41 PM, Lisa Randall

> <[REDACTED]>

> wrote:

> I think I'm reaching the limits of my ability to
disentangle
grammar
and spelling but here goes:

>

> Jeffrey Epstein wrote:

>

> thanks , question , what does it look like if

> time is
> running
> backward , wouldn't it be decelerating,, into
> flat space
> from
> the singularity outward,, therefore explosion than
>
> [then]
> expansion.
> It looks like big bang, not inflation before
> horizon. So not
> explosive expansion.
>
> but always slowing after
>
> crossing the horizon .
>
>
> after crossing horizon there isn't really a
> cosmological
> interpretation anymore. Time and space have
> switched back.
>
> looking in reverse it appears things accelerate
>
> as they approach,, charged would be as a
> result of the
> deceleration.
>
> don't understand this last comment.
>
>

> On Fri Oct 2 2009 at 5:27 PM, Lisa Randall



>>> wrote:

> Hi Jeffrey. It was interesting-as always.
> For your question, let's first straighten
> out that
> there are
> 3 types
> of bhs we might be discussing:
> Schwarzschild, charged,
> and Kerr. I
> didn't say much about Kerr--I mostly
> discussed charged--

> since they
> are changing with time and a bit more
> complicated but
> indeed they
> have 2 horizons (just like charged black
> holes).
>
> Two horizon scenario means time and space
> switch twice
> so at
> singularity you are back to ordinary time space
> identification. So
> let's first just consider Schwarzschild
> (uncharged, not
> rotating). In
> that case you are on the right track.
> Reversing time and
> coming from
> the singularity, it pretty much looks like
> a 2d big
> bang scenario
> (with the other 2d in a compact sphere).
> Space expands out
> until you
> reach the horizon and eventually goes over
> into flat
> space.
> It's not
> really accelerated expansion but still
> somewhat along
> lines you
> suggested.
>
> If there are two horizons (charged black
> hole case)
> and you
> are in
> between them (we called this Whoville
> because it looks
> like space
> has shrunk to zero but actually spacetime
> has not and
> there is a
> finite time between them so there's a whole
> world
> invisible
> to the
> outside) what happens is you alternate
> between big
> bang and big
> crunch in the full extended spacetime.
>
>
>
> Jeffrey Epstein wrote:
>
> Lisa . thanks,, for your time, and
> patience if i
> understand the
> Kerr equations , and your explanation

> correctly , time
> and space
> appear to exchange coordinates , inside
> a black
> hole. ,
> that
> assumes that time is unidirectional.
> doesn't it appear
> that if
> you ran negative time , it would look
> like any other
> explosive
> transaction. great acceleration.
> emanating from
> the second
> horizon outward slowing to a mere
> expansion . It
> would
> appear
> that " time" got shot out of the black
> hole.
> created by a
> space
> collapse at the singularity.
>
> --
> *****
> communication is The information contained in this
> privileged, may confidential, may be attorney-client
> intended constitute inside information, and is
> only for the use of the addressee. It is the
> property of Jeffrey Epstein
> of this Unauthorized use, disclosure or copying
> strictly communication or any part thereof is
> prohibited and may be unlawful. If you have
> received this communication in error, please notify us
> immediately by return e-mail or by e-mail to
> jeevacation@gmail.com <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>>
> <mailto:jeevacation@gmail.com> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>>>
> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>>>

> *****
> The information contained in this communication is
> confidential, may be attorney-client privileged, may
> constitute inside information, and is intended only for
> the use of the addressee. It is the property of
> Jeffrey Epstein
> Unauthorized use, disclosure or copying of this
> communication or any part thereof is strictly prohibited
> and may be unlawful. If you have received this
> communication in error, please notify us immediately by
> return e-mail or by e-mail to jeevacation@gmail.com
> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>
> <mailto:jeevacation@gmail.com>>
> <mailto:jeevacation@gmail.com <mailto:jeevacation@gmail.com>>
> <mailto:jeevacation@gmail.com
> <mailto:jeevacation@gmail.com>>>, and
> destroy this communication and all copies thereof,
> including all attachments.
>
>
>
>
> --
> *****
> The information contained in this communication is
> confidential, may be attorney-client privileged, may
> constitute inside information, and is intended only for
> the use of the addressee. It is the property of
> Jeffrey Epstein
> Unauthorized use, disclosure or copying of this
> communication or any part thereof is strictly prohibited
> and may be unlawful. If you have received this
> communication in error, please notify us immediately by
> return e-mail or by e-mail to jeevacation@gmail.com
> <mailto:jeevacation@gmail.com> <mailto:jeevacation@gmail.com
> <mailto:jeevacation@gmail.com>>, and
> destroy this communication and all copies thereof,
> including all attachments.
>
>
>
> --
> *****
> The information contained in this communication is
> confidential, may be attorney-client privileged, may
> constitute inside information, and is intended only for
> the use of the addressee. It is the property of
> Jeffrey Epstein
> Unauthorized use, disclosure or copying of this
> communication or any part thereof is strictly prohibited
> and may be unlawful. If you have received this
> communication in error, please notify us immediately by
> return e-mail or by e-mail to jeevacation@gmail.com
> <mailto:jeevacation@gmail.com>, and
>
> destroy this communication and all copies thereof,
> including all attachments.
>

>
>
>
> --
> *****
> The information contained in this communication is
> confidential, may be attorney-client privileged, may
> constitute inside information, and is intended only for
> the use of the addressee. It is the property of
> Jeffrey Epstein
> Unauthorized use, disclosure or copying of this
> communication or any part thereof is strictly prohibited
> and may be unlawful. If you have received this
> communication in error, please notify us immediately by
> return e-mail or by e-mail to jeevacation@gmail.com
> <<mailto:jeevacation@gmail.com>>, and
> destroy this communication and all copies thereof,
> including all attachments.