

FTL Travel

The Urth list — 16 messages, 8 voices, 18 Nov 2002

<https://urth.darkrealm.vip/thread/urth/3585>

Exported from an unofficial mirror of a public mailing list. Copyright in each message remains with the person who wrote it. Email addresses are obscured as `user at host`, the form the original archive published. This file was rebuilt from parsed fields rather than retained headers, so it is faithful in content but not byte-exact.

James Wynn — 18 Nov 2002, 15:56

Don asks:

Please explain. Is this the usual SF take on FTL or is there a physics explanation that makes backward time travel the most likely? I'm pretty ignorant on this.

Crush responds:

As one moves faster and approaches the speed of light, time slows down, exponentially, until time stops at the speed of light. I am informed by Stephen Hawking (not personally) that it takes an infinite amount of time and an infinite amount of energy to reach the speed of light.

It is simple mathematics that as one moves faster than the speed of light, time moves in the opposite direction. No doubt, there are other mathematical models.

Hence, a FTL generation ship is unnecessary.

-- Crush

Roy C. Lackey — 18 Nov 2002, 19:09 · follows James Wynn

Crush quoted and wrote:

Don asks:

Please explain. Is this the usual SF take on FTL or is there a physics explanation that makes backward time travel the most likely? I'm pretty ignorant on this.

Crush responds:

As one moves faster and approaches the speed of light, time slows down, exponentially, until time stops at the speed of light. I am informed by Stephen Hawking (not personally) that it takes an infinite amount of time and an infinite amount of energy to reach the speed of light.

It is simple mathematics that as one moves faster than the speed of light, time moves in the opposite direction. No doubt, there are other mathematical models.

Hence, a FTL generation ship is unnecessary.

Thanks for taking the question. I would only add that, in the wake of Einstein's (and other's) theories, such theoretical considerations spawned someone to pen a limerick several generation ago. (From memory.)

"There was a young lady named Bright,
who traveled far faster than light.
She set out one day,
in a Relative way,

and returned home the previous night."

-Roy

Andy Robertson — 18 Nov 2002, 19:48 · follows Roy C. Lackey

This is not quite accurate.

What is accurate is that travelling FTL in one inertial frame, from the point of view of one observer, will ****always**** be travelling back in time in another inertial frame, from the point of view of another observer.

God may see the universe as a four-dimensional whole, as has been discussed.

Travelling FTL requires that you have the vision of God - that you see time, not as a progression, but as a dimension

----- Original Message -----

From: "Roy C. Lackey" <rclackey at stic.net>
To: "urth" <urth at urth.net>
Sent: Monday, November 18, 2002 7:09 PM
Subject: Re: (urth) FTL Travel
Crush quoted and wrote:

Don asks:

Please explain. Is this the usual SF take on FTL or is there a physics explanation that makes backward time travel the most likely? I'm pretty ignorant on this.

Crush responds:

As one moves faster and approaches the speed of light, time slows down, exponentially, until time stops at the speed of light. I am informed by Stephen Hawking (not personally) that it takes an infinite amount of time and an infinite amount of energy to reach the speed of light.

It is simple mathematics that as one moves faster than the speed of light, time moves in the opposite direction. No doubt, there are other mathematical models.

Hence, a FTL generation ship is unnecessary.

Thanks for taking the question. I would only add that, in the wake of Einstein's (and other's) theories, such theoretical considerations spawned someone to pen a limerick several generation ago. (From memory.)

"There was a young lady named Bright,
who traveled far faster than light.
She set out one day,
in a Relative way,
and returned home the previous night."

-Roy

--

James Wynn — 18 Nov 2002, 20:10 · follows Andy Robertson

Nicely done, but place our explanations side by side and I think you can see why I explained it the way I did <g>.

-- Crush

-----Original Message-----

From: Andy Robertson [mailto:andywrobertson at clara.co.uk] Sent: Monday, November 18, 2002 1:49 PM To: urth at urth.net Subject: Re: (urth) FTL Travel

This is not quite accurate.

What is accurate is that travelling FTL in one inertial frame, from the point of view of one observer, will ****always**** be travelling back in time in another inertial frame, from the point of view of another observer.

God may see the universe as a four-dimensional whole, as has been discussed.

Travelling FTL requires that you have the vision of God - that you see time, not as a progression, but as a dimension

----- Original Message -----

From: "Roy C. Lackey" <rclackey at stic.net>
To: "urth" <urth at urth.net>
Sent: Monday, November 18, 2002 7:09 PM
Subject: Re: (urth) FTL Travel
Crush quoted and wrote:

Don asks:

Please explain. Is this the usual SF take on FTL or is there a physics explanation that makes backward time travel the most likely? I'm pretty ignorant on this.

Crush responds:

As one moves faster and approaches the speed of light, time slows down, exponentially, until time stops at the speed of light. I am informed by Stephen Hawking (not personally) that it takes an infinite amount of time and an infinite amount of energy to reach the speed of light.

It is simple mathematics that as one moves faster than the speed of light, time moves in the opposite direction. No doubt, there are other mathematical models.

Hence, a FTL generation ship is unnecessary.

Thanks for taking the question. I would only add that, in the wake of Einstein's (and other's) theories, such theoretical considerations spawned someone to pen a limerick several generation ago. (From memory.)

"There was a young lady named Bright,
who traveled far faster than light.

She set out one day,
in a Relative way,
and returned home the previous night."

-Roy

--

--

cilluff1 at optonline.net — 18 Nov 2002, 20:14 · follows James Wynn

Andy wrote:

<<<

<<Travelling FTL requires that you have the vision of God - that you see time, not as a progression, but as a dimension >>>

Although I do not pretend to be versed in the mathematics of FTL travel (I was an English lit. major way back when, no hard science!), I'm not sure I agree with this assertion, or at least I would be interested, as a layman, in a little more explanation as to why FTL travel would require the traveller to have the vision of God (which was eloquently put, btw). After all, we who can move voluntarily only in three dimensions may not be able to perceive all three (for example, someone blind in one eye may have poor depth perception, or for that matter, someone blind in both eyes would not be able to perceive any, but he still travels in three dimensions). As a layman I would really be interested to hear more of your reasoning.

- Joe

Andy Robertson — 18 Nov 2002, 20:32 · follows cilluff1 at optonline.net

Shoot, I'd have to do the maths: and there is an end to all civility.

I think it is quite clear that Wolfe shows FTL travel to be a doorway to a divine realm. Consider the Ship, the corridors of time, the mirrors.

And yes, I do believe Wolfe is ****intentionally**** conflating the Gd-outside-time of the Catholic Boethius with the time-as-fourth-dimension of the relativistic Physicist.

Modern theoretical Physics is after all descended from Theology: Her bastard with the Blacksmith Hephaestos/Technology..

----- Original Message -----

From: <cilluff1 at optonline.net>

Although I do not pretend to be versed in the mathematics of FTL travel (I was an English lit. major way back when, no hard science!), I'm not sure I agree with this assertion, or at least I would be interested, as a layman, in a little more explanation as to why FTL travel would require the traveller to have the vision of God (which was eloquently put, btw). After all, we who can move voluntarily only in three dimensions may not be able to perceive all three (for example, someone blind in one eye may have poor depth perception, or for that matter, someone blind in both eyes would not be able to perceive any, but he still travels in three dimensions). As a layman I would really be interested to hear more of your reasoning.

- Joe

Josh Geller — 18 Nov 2002, 21:06 · follows Andy Robertson

On Mon, 18 Nov 2002, Andy Robertson wrote:

Shoot, I'd have to do the maths: and there is an end to all civility.

I think it is quite clear that Wolfe shows FTL travel to be a doorway to a divine realm. Consider the Ship, the corridors of time, the mirrors.

And yes, I do believe Wolfe is ****intentionally**** conflating the Gd-outside-time of the Catholic Boethius with the time-as-fourth-dimension of the relativistic Physicist.

The idea of time as a dimension is much older than Boethius and very widespread.

Modern theoretical Physics is after all descended from Theology: Her bastard with the Blacksmith Hephaestos/Technology..

These are all recent developments, Aquinas, Aristotle, all of it.

You find 'advanced' ideas about time among indigenous Africans, Americans, Australians, Polynesians and 'heathen' Europeans, as well as in ancient Middle-Eastern and Indian books.

.

Andy Robertson — 18 Nov 2002, 21:28 · follows Josh Geller

----- Original Message -----

From: "Josh Geller" <dclxvi at dclxvi.best.vwh.net>

I think it is quite clear that Wolfe shows FTL travel to be a doorway to a divine realm. Consider the Ship, the corridors of time, the mirrors.

And yes, I do believe Wolfe is ****intentionally**** conflating the Gd-outside-time of the Catholic Boethius with the time-as-fourth-dimension of the relativistic Physicist.

The idea of time as a dimension is much older than Boethius and very widespread.

Possibly, and what of it?

I'd bet any amount that it is the Catholic sources that Wolfe is drawing from.

And modern theoretical physics IS descended from medaeval Catholic theology. On the wrong side of the blankets. Maybe some other brat in some other land could have squalled the same song, but that is this one's mothering and suckling.

hartshorn

Don Doggett — 19 Nov 2002, 07:28 · follows Andy Robertson

----- Original Message -----

From: "Andy Robertson" <andywrobertson at clara.co.uk>

I think it is quite clear that Wolfe shows FTL travel to be a doorway to a divine realm. Consider the Ship, the corridors of time, the mirrors.

And yes, I do believe Wolfe is ****intentionally**** conflating the Gd-outside-time of the Catholic Boethius with the time-as-fourth-dimension of the relativistic Physicist.

This dovetails nicely with the idea of Silk's enlightenment and the Whorl's (alleged by me) FTL travel happening simultaneously.

Don

Jerry Friedman — 19 Nov 2002, 22:28 · follows Don Doggett

--- James Wynn <crushtv at HotPOP.com> wrote:
Nicely done, but place our explanations side by side and I think you can see why I explained it the way I did <g>.

-- Crush

-----Original Message-----

From: Andy Robertson [mailto:andywrobertson at clara.co.uk]
Sent: Monday, November 18, 2002 1:49 PM
To: urth at urth.net
Subject: Re: (urth) FTL Travel

This is not quite accurate.

What is accurate is that travelling FTL in one inertial frame, from the point of view of one observer, will ****always**** be travelling back in time in another inertial frame, from the point of view of another observer.

God may see the universe as a four-dimensional whole, as has been discussed.

Travelling FTL requires that you have the vision of God - that you see time, not as a progression, but as a dimension

----- Original Message -----

From: "Roy C. Lackey" <rclackey at stic.net>
To: "urth" <urth at urth.net>
Sent: Monday, November 18, 2002 7:09 PM
Subject: Re: (urth) FTL Travel

Crush quoted and wrote:

Don asks:

Please explain. Is this the usual SF take on FTL or is there a physics explanation that makes backward time travel the most likely? I'm pretty ignorant on this.

Crush responds:

As one moves faster and approaches the speed of light, time slows down, exponentially, until time stops at the speed of light. I am informed by Stephen Hawking (not personally) that it takes an infinite amount of time and an infinite amount of energy to reach the speed of light.

"...that it *would* take..."?

It is simple mathematics that as one moves faster than the speed of light, time moves in the opposite direction. No doubt, there are other mathematical models.

I wouldn't call it simple mathematics. What Andy Robertson is talking about is that if observers moving with some velocities see an object move from A to B faster than light, then all observers with other velocities see the object move from B to A faster than light. You can use this fact to show if FTL travel or even communication is possible, you can send messages to your own past. This doesn't say anything about what would be experienced by someone traveling faster than light, if such a thing is (were) possible. I think it probably isn't possible, and if it is, no one has the slightest idea what someone traveling FTL would experience.

In reality, sending messages backward in time is often cited as a refutation of FTL, a *reductio ad absurdum*. In Wolfe's fiction, time travel is possible already, so FTL is no problem. Severian makes this connection, by the way--it must be near the end of *Citadel*, after the secret of the universe.

Hence, a FTL generation ship is unnecessary.

...

That one I agree with (with an exception that's probably unimportant to BotLS). I see no evidence at all that the *_Whorl_* is capable of FTL. I agree with Andy Robertson that Wolfe associates FTL with transcendence, and would add that the *_Whorl_* seems to be entirely secular. (I don't think I'm the first person to say that on the list.)

Jerry Friedman

James Wynn — 20 Nov 2002, 00:14 · follows Jerry Friedman

Don asked:

Please explain. Is this the usual SF take on FTL or is there a physics explanation that makes backward time travel the most likely? I'm pretty ignorant on this.

Crush does his best to help:

As one moves faster and approaches the speed of light, time slows down, exponentially, until time stops at the speed of light. I am informed by Stephen Hawking (not personally) **that it takes** an infinite amount of time and an infinite amount of energy to reach the speed of light.

Jerry Friedman asks facetiously:

"...that it *would* take..."?

Crush explains to Mr. Friedman:

Why no. Everyone knows that Hawkings has a FTL wheelchair. ;-) Nit. nit. nit.<g>

Crush goes on responding to Don's question:

It is simple mathematics that as one moves faster than the speed of light, time moves in the opposite direction.

Jerry Friedman bristles at this bowdlerization of the theory of Relativity: I wouldn't call it simple mathematics.

Crush responds to Jerry Friedman:

Neither would I, as my response to Hartshorn was intended to convey. But the general concept of why a *possible* implication of FTL travel is that one would move into his own past is one of the most straightforward concepts in this realm. I believe Don's question was whether or not all this had the scientific pedigree of dilithium crystals. I don't think my answer was misleading given the context.

You have heroically attempted to clarify Hartshorn's beautiful explanation, but I've got a dollar that says that a majority of the readers of this list -- still - have no more than the vaguest understanding of what you are describing or its implications (unless a majority of the people on this have a B.A. in Physics).

Remember Kypris explaining possession to Silk?

-- Crush

James Wynn — 20 Nov 2002, 15:15 · follows James Wynn

Crush said:

...unless a majority of the people on this have
a B.A. in Physics

Crush reconsiders:

A *B.A.* in Physics is what I might have but, of course, most people get a B.S.

Andy Robertson — 20 Nov 2002, 15:38 · follows James Wynn

I have BA in Physics. You get a BA in Physics unless you go to One Of Those Other Universities.

----- Original Message -----

From: "James Wynn" <crushtv at HotPOP.com>
To: <urth at urth.net>
Sent: Wednesday, November 20, 2002 3:15 PM
Subject: RE: (urth) FTL Travel

Crush said:

...unless a majority of the people on this have
a B.A. in Physics

Crush reconsiders:

A *B.A.* in Physics is what I might have but, of course, most people get a
B.S.

--

Gareth Jelley — 20 Nov 2002, 16:57 · follows Andy Robertson

I have BA in Physics. You get a BA in Physics unless you go to One Of Those Other Universities.

Ha!

Gareth,

BA in English from The University of...

Jerry Friedman — 20 Nov 2002, 18:37 · follows Gareth Jelley

--- James Wynn <crushtv at HotPOP.com> wrote:

...

Jerry Friedman bristles at this bowdlerization of the theory of Relativity:

I wouldn't call it simple mathematics.

Crush responds to Jerry Friedman:

Neither would I, as my response to Hartshorn was intended to convey. But the general concept of why a *possible* implication of FTL travel is that one would move into his own past is one of the most straightforward concepts in this realm. I believe Don's question was whether or not all this had the scientific pedigree of dilithium crystals. I don't think my answer was misleading given the context.

I think it was. I had the impression that people who didn't know physics were gathering that FTL means time going backwards, either visiting your past or "watching the movie in reverse". There's no reason to expect that, though I guess if FTL turns out to be possible, that could be what happens.

(Also, the "simple mathematics", taking the Lorentz factor literally with a speed greater than c , gives you imaginary time--with a square root of -1--not negative time. Whatever either of those would mean.)

You have heroically attempted to clarify Hartshorn's beautiful explanation, but I've got a dollar that says that a majority of the readers of this list -- still - have no more than the vaguest understanding of what you are describing or its implications (unless a majority of the people on this have a B.A. in Physics).

I'm not taking your bet.

As you seem to know, explaining the part about sending a message to your past takes only high-school level algebra (square roots), but this isn't the place. I was just trying to keep people from getting false impressions. I don't think I did that very clearly.

Remember Kypris explaining possession to Silk?

And I'm not even pretty.

Jerry Friedman

James Wynn — 20 Nov 2002, 20:56 · follows Jerry Friedman

Jerry Friedman (J.F.) persists:

I think [Crush's explanation] was [misleading]. I had the impression that people who didn't know physics were gathering that FTL means time going backwards, either visiting your past or "watching the movie in reverse". There's no reason to expect that, though I guess if FTL turns out to be possible, that could be what happens.

(Also, the "simple mathematics", taking the Lorentz factor literally with a speed greater than c , gives you imaginary time--with a square root of -1 --not negative time. Whatever either of those would mean.)

Crush concedes:

Well, if you say that that 90 years of popular scientific articles and Nova/Discovery Channel documentaries are whacked in asserting that FTL speed is a likely method of backward time travel (presuming FTL travel is not an absurdity), then I'm in no position to dispute it. I capitulate to your evident exceeding technical expertise (I had to take college algebra twice).

J.F, coyly self-effaced:

Remember Kypris explaining possession to Silk?<<<

And I'm not even pretty.

Crush toasts:

I don't know about that. You have lovely posts.

<J.F. socks Crush in the eye>