not quite Father Inire's mirrors . . .

The Urth list — 17 messages, 8 voices, 08 Jun 2011

https://urth.darkrealm.vip/thread/urth/6033

Steve Case — 08 Jun 2011, 11:13

Not yet, anyway: "Moving mirrors make light from nothing":
http://www.nature.com/news/2011/110603/full/news.2011.346.html

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David Stockhoff — 08 Jun 2011, 11:57 · in reply to Steve Case

Nicely put:

"Quantum theory predicts that a vacuum is actually a writhing foam of particles flitting in and out of existence."

The most apparent limitation of the sails of the Ship is that (you would think) they shouldn't generate as much "lift" away from a star, when they would want to go very fast, as they do very near one, when they would want to go very slow.

If they can actually generate a little more pressure from space itself, that's less of a problem.

> On 6/8/2011 7:13 AM, Steve Case wrote:
> Not yet, anyway: "Moving mirrors make light from nothing":
> http://www.nature.com/news/2011/110603/full/news.2011.346.html
> _____

Gerry Quinn — 08 Jun 2011, 15:32 · in reply to David Stockhoff

> From: "David Stockhoff" <dstockhoff at verizon.net>
> Nicely put:
>
> "Quantum theory predicts that a vacuum is actually a writhing foam of particles flitting in and out of existence."
>
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> If they can actually generate a little more pressure from space itself, that's less of a problem.

The mirror experiment described won't help in propulsion (it causes accelerated mirrors to emit radiation, which would slow them down). In any case the emissions were a function of acceleration rather than velocity.

Howeer, Severian writes in _Claw_:

"How foolish to call them mirrors. They are to mirrors as the enveloping firmament is to a child's balloon. They reflect light indeed; but that, I think, is no part of their true function. They reflect

reality, the metaphysical substance that underlies the material world."

Perhaps reflected reality generates more pressure than reflected light! (Of course, Inire's mirrors may not be identical to Tzadkiel's sails, even if they share some properties.)

- Gerry Quinn

Lee Berman — 08 Jun 2011, 17:08 · follows Gerry Quinn

> Gerry Quinn: Perhaps reflected reality generates more pressure than reflected light! (Of course, Inire's mirrors may not be identical to Tzadkiel's sails, even if they share some properties.)

Well, I think we have four examples of mirrors: Father Inire's, the Old Autarch's book, Hethor's and the ship sails. I am inclined to think all four are meant to be essentially the same sort of thing with the same properties, transportation among them.

I don't think the ship sails are meant to be light sails. There seems to be no stellar origin to its propulsion (aside from some dreamy, perhaps misinformed poetic report by Severian). It seems to confine its travels to the void. Moreover, iirc, when it travels to the higher universe it passes through the primeval soup of our own universal origin, where all the stars are clumped together. I'd think all that light would push intensely hard against light sails, rather than draw them in.

I'm content with the notion that, in their function they reflect "reality" whatever that means, rather than light. How else to explain inter-universal travel? (esp. in writings from 30 years ago)

Dan'l Danehy-Oakes — 08 Jun 2011, 17:13 · in reply to Gerry Quinn

> Gerry Quinn wrote:
> "How foolish to call them mirrors. They are to mirrors as the enveloping firmament is to a child's balloon. They reflect light indeed; but that, I think, is no part of their true function. They reflect reality, the metaphysical substance that underlies the material world."

I think what they really reflect is a great deal of handwaving on Wolfe's part, and a not insignificant quantity of willing suspension of disbelief on the reader's part.

Dan'l Danehy-Oakes

DAVID STOCKHOFF — 08 Jun 2011, 17:39 · in reply to Gerry Quinn

> --- On Wed, 6/8/11, Gerry Quinn <gerryq at indigo.ie> wrote:
> From: Gerry Quinn <gerryq at indigo.ie>
> Subject: Re: (urth) not quite Father Inire's mirrors . . .
> To: "The Urth Mailing List" <urth at lists.urth.net>
> Date: Wednesday, June 8, 2011, 11:32 AM
>
> From: "David Stockhoff" <dstockhoff at verizon.net>
>
> Nicely put:
>
> "Quantum theory predicts that a vacuum is actually a writhing foam of particles flitting in and out of existence."

> The most apparent limitation of the sails of the Ship
> is that (you would think) they shouldn't generate as much
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> reflect light indeed; but that, I think, is no part of their
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> substance that underlies the material world."
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> Perhaps reflected reality generates more pressure than
> reflected light!? (Of course, Inire's mirrors may not
> be identical to Tzadkiel's sails, even if they share some
> properties.)
>
> - Gerry Quinn

True, the experiment doesn't give much cover for Tzadkiel's sails as quantum propulsion systems. Especially since the effect isn't supposed to show up until the mirror is moving almost at c anyway.
But what is a sail on a ship if not a propulsion system? What good is a mirror that reflects reality without obeying quantum mechanics?
Since starsails have been part of SF for decades, it follows that Izadkiel's sails would or could work that way, but with a twist. Perhaps the twist is simply that with 100% reflectivity---or, if you will, >100% reflectivity, along the lines of "darker than black" and "whiter than white"---you somehow get more reflected out than you thought you were putting in, thus also allowing an amplifying effect between 2 such mirrors.
"Virtual particles" seem to provide a plausible explanation even if they postdate the books: a perfect mirror would "see" the foam that makes up space as well as everything occupying or passing through that space.

Dan'l Danehy-Oakes — 08 Jun 2011, 17:46 · in reply to DAVID STOCKHOFF

> DAVID STOCKHOFF wrote:
> "Virtual particles" seem to provide a plausible explanation even if they postdate the books:

Actually, they were first proposed by Paul M.A. Dirac in 1930, so no problem there. The positron was conceived of as a "hole in the Dirac sea" before it was recognized as an anti-electron and demonstrated in
1932.

Dan'l Danehy-Oakes

Steve Case — 08 Jun 2011, 18:22 · follows Dan'l Danehy-Oakes

Actually, the article made me think of the mirrors in Father Inire's chambers that created the fish. Weren't they spinning? I don't quite recall.

-Steve

Gerry Quinn — 08 Jun 2011, 18:49 · in reply to Dan'l Danehy-Oakes

> From: "Dan'l Danehy-Oakes" <danldo at gmail.com>
> Gerry Quinn wrote:
>
> "How foolish to call them mirrors. They are to mirrors as the enveloping firmament is to a child's balloon. They reflect light indeed; but that, I think, is no part of their true function. They reflect reality, the metaphysical substance that underlies the material world."
>
> I think what they really reflect is a great deal of handwaving on Wolfe's part, and a not insignificant quantity of willing suspension of disbelief on the reader's part.

Indeed, the whole idea that the Ship tacks across the photon winds...

Apheta: "The worlds are very far apart. If one of our ships goes from one to another as fast as the starlight, the voyage takes many centuries. It does not seem so to those on the ship, but it does. If the ship goes even faster, tacking in the wind from the suns, time runs backward so that the ship arrives before it sails."

...might be considered a clear indication that when Wolfe finds a conflict between neat ideas and valid science, the neat ideas win out. Tacking across the photon wind is a neat idea, but obviously it only works if you can get some sort of traction on the vacuum. And if you could do that, special relativity would be completely DOA.

- Gerry Quinn

DAVID STOCKHOFF — 08 Jun 2011, 18:59 · in reply to Dan'l Danehy-Oakes

Stupendous!

I should never be surprised at how much older ideas turn out to be than one thinks, or than the technology that seeks to employ them.

> --- On Wed, 6/8/11, Dan'l Danehy-Oakes <danldo at gmail.com> wrote:
> From: Dan'l Danehy-Oakes <danldo at gmail.com>
> Subject: Re: (urth) not quite Father Inire's mirrors . . .
> To: "The Urth Mailing List" <urth at lists.urth.net>
> Date: Wednesday, June 8, 2011, 1:46 PM
> DAVID STOCKHOFF wrote:
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> problem there. The positron was conceived of as a "hole in the Dirac
> sea" before it was recognized as an anti-electron and demonstrated in
> 1932.
>
> --

> Dan'l Danehy-Oakes
> _____

António Pedro Marques — 08 Jun 2011, 21:17 · in reply to Gerry Quinn

Gerry Quinn wrote (08-06-2011 19:49):

> ...might be considered a clear indication that when Wolfe finds a
> conflict between neat ideas and valid science, the neat ideas win out

Count me in!

> Tacking across the photon wind is a neat idea, but obviously it only
> works if you can get some sort of traction on the vacuum. And if you
> could do that, special relativity would be completely DOA.

I don't know that that's the only problem with the 'photon wind', but the idea I have from the current and not-so-current panorama is that there isn't a single established theory that hasn't big holes in it - meaning that even as they are useful for Technological Progress, one shouldn't be completely shackled to their Fundamental Implications.

Son of Witz — 08 Jun 2011, 23:59 · in reply to Dan'l Danehy-Oakes

> On Jun 8, 2011, at 10:13 AM, "Dan'l Danehy-Oakes" <danldo at gmail.com> wrote:
> Gerry Quinn wrote:
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> "How foolish to call them mirrors. They are to mirrors as the enveloping
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> Wolfe's part, and a not insignificant quantity of willing suspension
> of disbelief on the reader's part.
>
> --
> Dan'l Danehy-Oakes

+1

I always trip out at the level of scientific analysis around here. How big the moon should look in the cover pic, and such. Very interesting, but it cracks me up. I had a laugh when I read about the photon wind driving the sails. I took it as a peotic notion, and not hard science fiction. I think Wolfe's poetic side wins out over his engineer side quite often.

David Stockhoff — 09 Jun 2011, 03:04 · in reply to Son of Witz

Someone needs to write a space opera with a song titled "Tacking Across the Photon Winds."

> On 6/8/2011 7:59 PM, Son of Witz wrote:
> On Jun 8, 2011, at 10:13 AM, "Dan'l Danehy-Oakes"<danldo at gmail.com> wrote:
>
> Gerry Quinn wrote:
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> "How foolish to call them mirrors. They are to mirrors as the enveloping
> firmament is to a child's balloon. They reflect light indeed; but that, I
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of disbelief on the reader's part.

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_____

Jeff Wilson — 09 Jun 2011, 04:54 · in reply to Lee Berman

On 6/8/2011 12:08 PM, Lee Berman wrote:

Gerry Quinn: Perhaps reflected reality generates more pressure than reflected light!
(Of course, Inire's mirrors may not be identical to Tzadkiel's sails, even if
they share some properties.)

Well, I think we have four examples of mirrors: Father Inire's, the Old Autarch's book, Hethor's and the ship sails. I am inclined to think all four are meant to be essentially the same sort of thing with the same properties, transportation among them.

There's a fifth set, the mirrored portion of Hall of Meaning at the House Absolute where Domnina and Thecla were playing. This may or may not be the first place Domnina saw the fish.

I don't think the ship sails are meant to be light sails. There seems to be no stellar origin to its propulsion (aside from some dreamy, perhaps misinformed poetic report by Severian). It seems to confine its travels to the void. Moreover, iirc, when it travels to the higher universe it passes through the primeval soup of our own universal origin, where all the stars are clumped together. I'd think all that light would push intensely hard against light sails, rather than draw them in.

That's at the end of Chapter XV in URTH, right? But tat the beginning of Chapter XV, Sev makes it clear the ship was traveling away from the brightness: "....behind us, where once I had seen the corona lucis of the young suns, I now saw our universe..."

Jeff Wilson - jwilson at io.com
Computational Intelligence Laboratory - Texas A&M Texarkana
< http://www.tamut.edu/CIL >

Jeff Wilson — 09 Jun 2011, 05:33 · in reply to António Pedro Marques

On 6/8/2011 4:17 PM, Ant?nio Pedro Marques wrote:
but the idea I have from the current and not-so-current panorama is that
there isn't a single established theory that hasn't big holes in it -
meaning that even as they are useful for Technological Progress, one
shouldn't be completely shackled to their Fundamental Implications.

I'm not sure what you mean here. People educated in actual science from the first half of the 20th century later are aware that knowledge of the physical world is limited by the physical laws of observation, and that comprehension itself is limited by the incomplete nature of logical contemplation.

Jeff Wilson - jwilson at io.com
Computational Intelligence Laboratory - Texas A&M Texarkana
< http://www.tamut.edu/CIL >

entonio at gmail.com — 09 Jun 2011, 08:46 · in reply to Jeff Wilson

No dia 2011/06/09, ?s 06:33, Jeff Wilson <jwilson at io.com> escreveu:

> On 6/8/2011 4:17 PM, Ant?nio Pedro Marques wrote:
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That we may merrily make use of E = m c^2 or calculate the distribution of electrons around an atom regardless of the importance we attach to the philosophy of relativity or of the quanta.

Lee Berman — 09 Jun 2011, 12:27 · follows entonio at gmail.com

> David Stockhoff: But what is a sail on a ship if not a propulsion system? What good is a mirror that reflects reality without obeying quantum mechanics?...it follows that Izadkiel's sails would or could work that way, but with a twist. Perhaps the twist is simply that with 100% reflectivity---or, if you will, >100% reflectivity, along the lines of "darker than black" and "whiter than white"---you somehow get more reflected out than you thought you were putting in, thus also allowing an amplifying effect between 2 such mirrors.

Some good ideas are being tossed around. David mention of the "darker than black" concept made me consider the (unlikely) possibility that Wolfe had anticipated dark matter. Could the ship be propelled using that, somehow?

Thanks to Jeff for the clarification on the universe jumping scene.

I agree that Apheta's words were a good excuse for Wolfe to wax poetic. But I think there is a certain Wolfean philosophical theme being engaged also. Apheta (and others at different points in the story) is doing her best to explain things to a primitive beast in terms he can understand. It doesn't matter how accurate the words are if at least some knowledge is transferred. Sort of like a modern scientist being forced to explain lightning to an ancient Greek. He'd have to say things like, "to generate the static electric potential, Zeus must rub two woolly clouds together..." or something like that.