Virus-X Debate Round 1

My Reply

Sent Thu, 27 Nov 2003 16:51:00 -0500:

> You're attempting to use special effects as a barometer, when, if you're as intelligent as you say you are, you'd know that that isn't always possible.

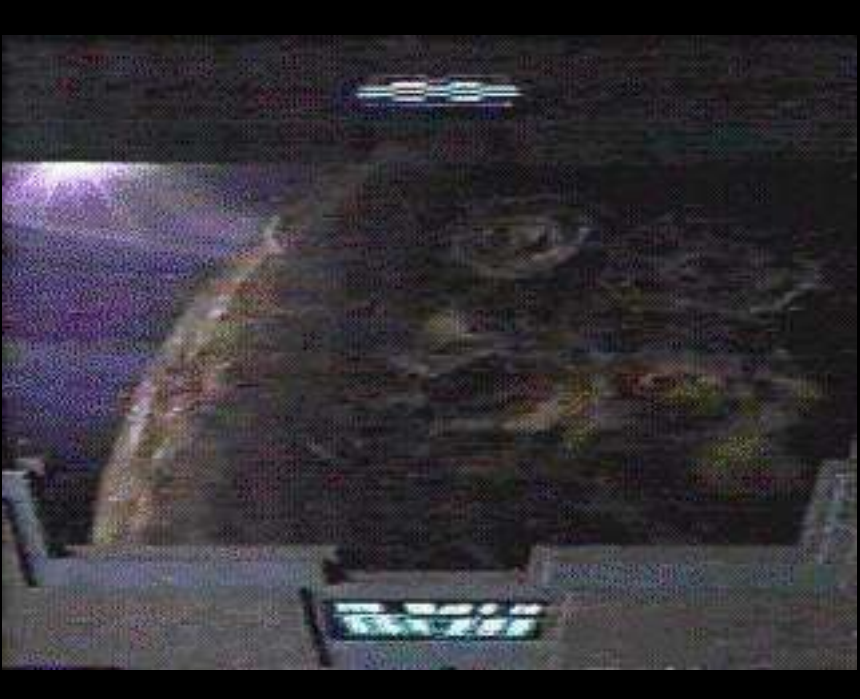
So, when faced with a TV show whose producers have *deliberately* made it look a certain way, you propose we throw that out in favour of semantics? I see. And how does this attitude imply any superiority of intelligence on your part, Junior?

> Generally, however, you are more than willing to take the special effects of the Star Wars series as teaching and learning tools, and more than willing to exclude Trek's effects to keep your double-standard going.

Wow, you know how to cast generalizations without a shred of evidence! Nice going, Junior. Now try to provide an actual EXAMPLE of me ignoring visuals in Trek.

> I interpret the massive explosions completely differently, and you can insult me all you wish, but it will be just as meaningless as trying to dispute the events through a mere complaint.

What "massive explosions?" Oh wait, you mean the dull brown rings which aren't even heating up the atmosphere, right? Let's look at them in all of their dull brown glory:



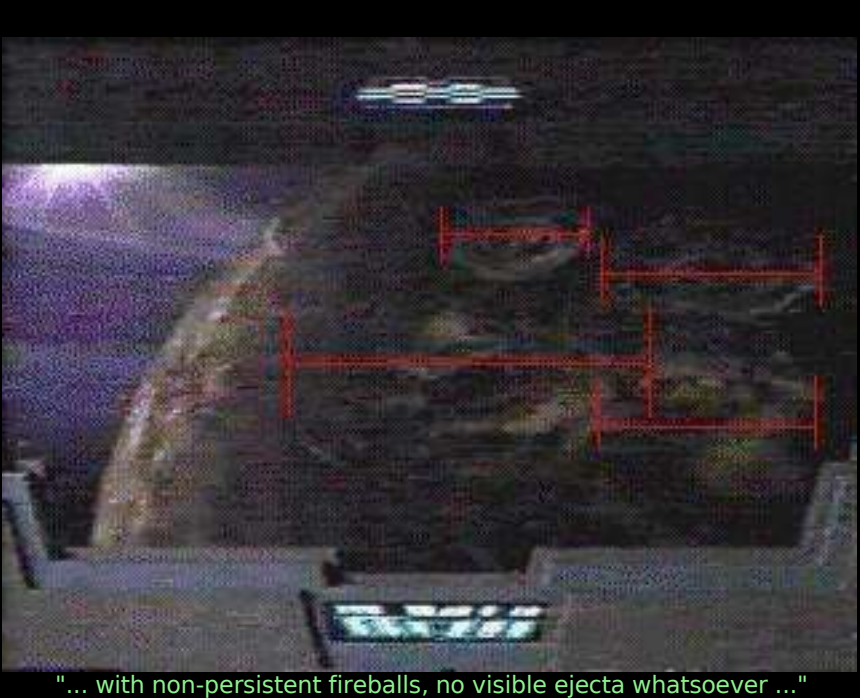
> The viewer image is the favorite image of the anti-Trek side, depicting the fading of several massive explosions, once the bombardment of only a handful of seconds had concluded. Here, you can already see the shockwaves spreading out across the planet, thanks to Romulan plasma torpedoes & disruptor cannons, alongside Cardassian phaser cannons. The explosions are clearly massive. In addressing: "...less destruction at surface level than a large asteroid strike," not too many "...large asteroid..." strikes render "30% Of the planetary crust destroyed in opening volley..." ("The Die is Cast", Episode No: 467, Air Date: 05.01.1995, Stardate: Unknown).

Obviously, you have absolutely *no* idea what a massive explosion should actually look like. The first thing you get from a nuclear-level or greater blast is radiative ionization of an isothermal plasma sphere around the blast. This sphere will achieve temperatures far greater than the Sun's core. As it cools and radiates energy to its surroundings while simultaneously expanding, you will eventually reach "hydrodynamic separation", where the expansion catches up to the radiative fireball growth and begins to push out and create a shockwave. This shockwave (initially moving at tens of km/s for a kT-range blast) heats the air to many times the surface temperature (and brightness) of the Sun due to friction. It does not become transparent until the point of "breakaway", when it has cooled to roughly half the Sun's surface temperature and has slowed down to roughly 4 km/s (ref: Carey Sublette's Nuclear Weapons FAQ).

In short, the problem with high-energy atmospheric detonations is that the air can only hold a certain amount of energy before it becomes plasma, and the laws of thermodynamics only allow it to expand and shed this energy to its surroundings at a limited rate due to blackbody radiation and hydrodynamics, so you invariably get a brilliant fireball with any sufficiently large release of energy in an atmosphere, and the more energy you have, the longer the fireball lasts.

Hence, we have obvious proof that these blasts are not the monster explosions you think they are (as if this isn't obvious from just *looking* at their dull brown glory). The fireballs which should result from, say, gigaton-level energy releases should last for many minutes, and it is simply NOT POSSIBLE for shockwaves to move at hundreds of kilometres per second without glowing far brighter than the Sun. Don't you know what happens when you try to push something through air at hundreds of kilometres per second, Junior?

> Below is a picture with red lines to enhance and more clearly define the diameter and radii of the explosions, the largest of which coming from a Romulan plasma torpedo detonation.



"... with non-persistent fireballs, no visible ejecta whatsoever ..."

You quote my description of the scene as if you think the picture disproves it. Are you saying that you DO see persistent fireballs and visible ejecta in the above shots? If so, where? Do you even know what the terms "persistent fireball" and "visible ejecta" refer to?

> Fiery mushroom clouds do not form, immediately upon detonation. They are the result of the implosion, as flaming debris is brought back in to ground zero, where it collides and goes upwards into the air, along with tons of soil.

Who said anything about mushroom clouds? I'm talking about the nuclear *fireball*, Junior. Please learn to read.

By the way, I enjoyed the part where you claimed a nuclear blast is an "implosion" rather than an explosion". You have obviously heard a teeny little bit of nuclear terminology and tried to run with it. There IS a such thing as an implosion-type nuclear weapon, but it still makes an explosion, not an implosion! Its name comes from the fact that it compresses the fissile mass with high explosives on its outer surface, hence it uses an implosion in order to initiate the nuclear reaction. But the EFFECT of this reaction is most definitely an explosion. Why do you feel compelled to bluff about things you obviously don't understand? Mushroom clouds are caused by a simple phenomenon known as convection, Junior. Look it up.

> The fiery bursts seen more closely resemble Wilson Clouds.

Wow, you looked that up on Google, didn't you? Clever boy; you get a bonus mark for effort! Too bad you're still wrong (but kudos on packing so many mistakes into a single sentence; as Londo Mollari would say, "how efficient of you"), because:

1. Wilson clouds only occur around nuclear fireballs in humid air, and this phenomenon was uniform across most of an entire planetary hemisphere. Do you think this planet somehow had uniform humidity across an entire hemisphere?
2. Wilson clouds are caused by short-term condensation in the small pressure drop immediately behind the expanding shock front outside the fireball. Small problem: the brown rings in "The Die is Cast" are still moving at hundreds of km/s, which means the air will be far too hot to permit condensation (indeed, it should be hotter than the Sun) and breakaway from the fireball has not yet occurred. Do you *really* think you can push something through air at hundreds of km/s without heating it up, Junior?
3. Wilson clouds do not eliminate the requirement for a persistent fireball.
4. There are no "fiery bursts" in your picture.
5. An upper-atmospheric phenomenon or Trek subspace ring (a la Praxis, which is all the proof we need that such phenomena are possible in Trek) is the only reasonable explanation for the brown rings. A surface-level gigaton level blast will create fireballs that glow brighter than the Sun for minutes, never mind the monster million-gigaton blasts you're talking about.

Congratulations on figuring out how to use Google, but you'll need to do better than that.

> Ok. Going against a world that was, again, ~12,734 km/7,926.385 miles in diameter, the area of effect that the Romulan torpedo explosion fireballs covered was ~±35% planetary diameter, or ~4,456.9 km/~2,763.278 mi. in diameter. The measurement is based on the fact that the Founders' World is listed as being Earth-like.
>
>> Founders' homeworld. Sunless Class-M planet located somewhere in the Omarian Nebula in the Gamma Quadrant. The planet was the home of the reclusive civilization of shape-shifters known as the Founders and the central planet of the Dominion. ("The Search, Part 1" [DS9]). In 2371, the Tal Shiar and Obsidian Order launched a massive attack against the Founders' homeworld, bombarding the planet's surface with a fleet of 20 starships. Neither attacker realized that the Founders had evacuated the planet, or that they had a fleet of 150 Jem'Hadar ships waiting to destroy the invaders. ("The Die is Cast" [DS9]. SEE: Lovok, Colonel; Tain, Enabran.

Wow, all of that just to say "let us treat the planet as Earth-like". Congratulations, Junior! You win the "superfluous detail" award!

> It should be noted that while the shockwave was clearly visible as a blast-front, what was mostly visible was the gigantic fireball, however, both pieces of visual evidence must be examined carefully and objectively. A fireball doesn't, ordinarily, spread out that quickly, though the shockwave can through superheated air. Something moving that quickly and being fiery as it was could only be one thing: a Wilson Cloud. Remember: Preceding the actual fireball, in some instances, is the formation of what could be a gigantic "condensation cloud', or "Wilson Cloud' (so-called, due to it's being analogous to those created by scientists in the Wilson Cloud Chamber, back in the 20th century). With the detonation of a nuclear weapon, there is the passage of a supersonic, high-pressure shock front through the air, which, in turn, is followed by a rarefaction (or suction) wave. During the blast (called the compression phase), air temperatures rise, and, during the decompression (or the suction phase), it falls. Moderately low blast pressures can have temperature drops falling below it's original, pre-shock value, so that if the air contains a fair amount of water vapor, condensation accompanied by the formation of a cloud occurs.

And you think that a million-gigaton blast would produce "moderately low blast pressures", or that "moderately low blast pressures" would be sufficient to push a shockfront through the atmosphere at hundreds of kilomeres per second? You're a funny guy, Junior. I do like the way you produce these big paragraphs to say what I can say in a couple of sentences (see point #2 of my rebuttal to your Wilson clouds above).

> Back in 1946 during the ABLE Test at Bikini, a thermonuclear warhead was detonated. Since the device had been detonated just above the surface of a lagoon, the air was near-saturated with water vapor and the conditions were more than suitable for the formation of the Wilson Cloud. In photographs, it is clearly seen that the Wilson Cloud formed some distance ahead of the fireball. The reason was due to the shock front's travelling a considerable distance, before the blast pressure had fallen sufficiently to allow a low temperature to be attained in the following decompression phase. By the time the temperature had dropped far enough as was required for condensation to occur, the blast wave front had moved even further away, and could even be seen where the disk-like formation on the surface of the water indicated the passage of the shockwave. When there's relatively high humidity (such as over or under water), as with the famous Bikini tests of 1946, conditions for seeing a nuclear Wilson Cloud are very favorable, and forms about 1-2 seconds after detonation. However, about 1-2 seconds later, after the air had begun warming up, the condensation cloud disappears. They can appear dome-shaped, and change shape (such as into rings), as they disappear. Wilson Clouds appear after the fireball has emitted most of it's thermal rays, so it really doesn't have any effect on this radiation, while it is simultaneously true that fairly thick cloudcover can attenuate thermal rays from reaching the earth from the fireball.

Way to go, you win a second "superfluous detail" award! Too bad you just quoted a bunch of stuff that actually disproved your own point, since the Bikini test Wilson clouds formed at the 1-2 second point, which is well *after* the so-called fireball "breakaway" point for a detonation of that size, so the shockwave has already slowed down.

Debating tip for Junior: large copy-paste blocks may look impressive, but when they disprove your *own* point, you're better off leaving them out.

> Also, when considering the surface was "...destroyed...", there is very little reason to expect to see your "...visible ejecta...". There were no significant structures on the surface (such as large buildings), and plasma torpedoes would probably completely incinerate into vaporization anything they destroy. The Cardassian phasers were on unknown settings, but, if they were at full power and similar to those of UFP Starfleet phasers, fragments would be exceedingly small. Let's also not forget the fact that this was being viewed from hundreds upon of hundreds of kilometers of distance; probably highest orbit.

"Fragments?" Who said anything about "fragments?" When the K-T mass-extinction "dino-killer" asteroid struck the Earth some 65 milion years ago, it produced a plasma jet of ionized matter which was hurled into space. This plasma jet glowed so brightly that it would blind anyone who looked at it, and when it came back down, it began to condense into liquid droplets and eventually superheated solid particles which showered down and started wildfires all over the entire planet. Yet this blast was totally inadequate to destroy 30% of the planet's crust, and you have the audacity to claim that the feeble-looking dull brown clouds in your pictures are far *more* powerful than the dino-killer was!

It is painfully obvious that you have no real grasp of the kind of energies you're talking about. All of your arguments are clearly couched in the language and mentality of mundane low-yield chemical explosives, not the kind of nuclear explosions or other mass-extinction events which merely scratch the surface of the kind of numbers you'd expect from wiping out a third of a planet's crust.

>> "In fact, the ONLY evidence that the ships in orbit were capable of anything more than surface-level destruction was one of several possible interpretations of a piece of dialogue, which is to say no conclusive evidence at all."
>
> Patently untrue. There is absolutely nothing ambiguous about "30% Of the planetary crust destroyed in opening volley." Any such ambiguities that could possibly be there were injected by Star Wars zealots that were disappointed in the fact that they were finally, decisively and conclusively whipped by their whipping boy, Star Trek. There is no reason to try running off to interpret "...30% Of the planetary crust destroyed in opening volley..." in any other way than it was said, except by those attempting obfuscation of the obvious facts through smoke-screening.

I see lots of rhetorical attacks on "Star Wars zealots", but curiously, *not one word* to *explain* your assertion that the dialogue in question should be taken literally. In the 1980s, it was commonly said that the superpowers' nuclear arsenals could destroy the Earth; did you also take that literally?

> From the official Star Trek website (www.startrek.com), their synopsis is equally direct:
>
>> <snip *entire plot synopsis* whose only relevant line is "destroying part of the surface"; you win a *third* "superfluous detail" award>
>
> The sentence stating: "The fleet then reaches the Founders' planet and opens fire, destroying part of the surface," very well reinforces the Romulan bridge officer's analysis: "30% Of the planetary crust destroyed in opening volley." Like I've already said, any so-called and alleged ambiguities are manufactured by those that have wild eyes that they keep shut, as is the case when dealing with the average Star Wars absurdist.

Oops, you just shot yourself in the foot! Did it hurt? Look at your quote again, Junior. It supports *my* contention that they were only talking about the surface, not the entire crust (which happens to extend well *below* the surface). And given that they were probably talking only about killing off the liquid blob that constitutes the Founder "ocean" on the surface, this is even less impressive. Once again, I feel I must remind you that it's just not good debating technique to post information that refutes your own argument.

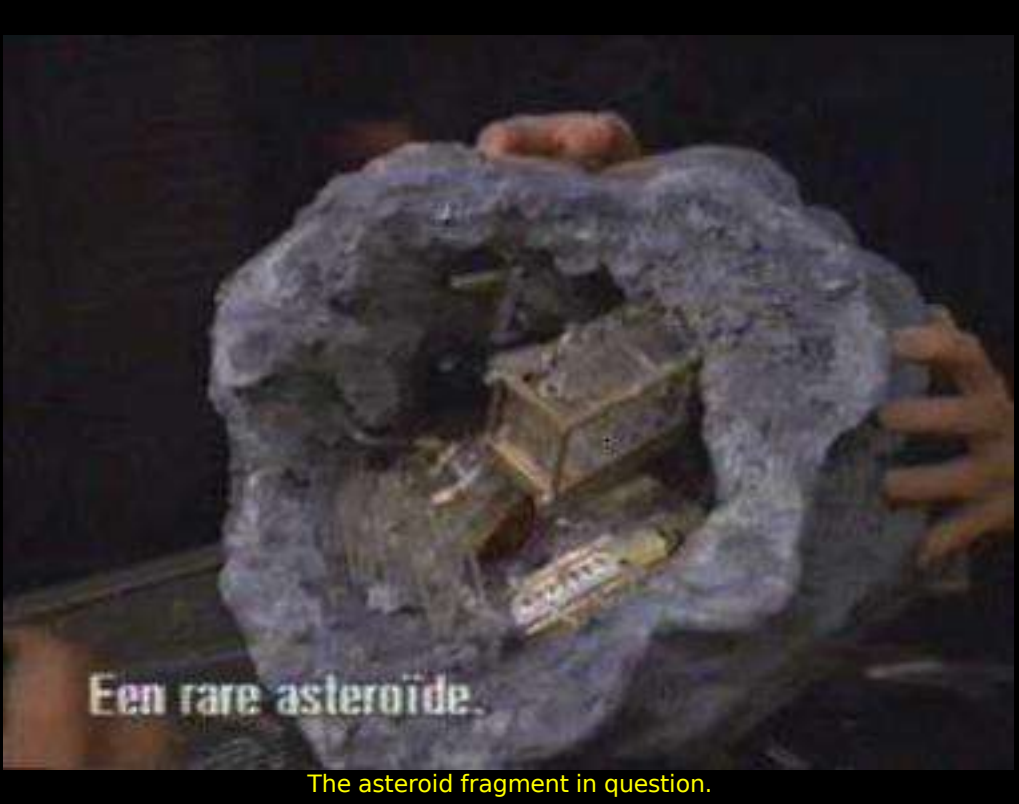
>> "Contrast this to their various attempts to destroy asteroids in "Rise"..."
>
> In the episode "Rise" (Star Trek: Voyager, episode 60, teleplay by Brannon Braga, story by Jimmy Diggs, directed by Robert Scheerer), it was stated quite clearly that Voyager's firepower was more than adequate to destroy the asteroid, and it was treated as a mystery as to why they didn't. Had you taken to time to further elaborate, you should've brought up the fact that the asteroids were, in fact, artificial. These asteroids of yours were revealed to be weapons of mass destruction, used to pummel planets into submission and destruction.
>
> Furthermore, these asteroids should've been destroyed. In fact, not only destroyed, but vaporized, as the script clearly reveals:
>
>> Janeway: "Fire."
>>
>> Tuvok: "The asteroid is fragmenting. But, most of the debris is still on a collision course with the planet."
>>
>> Janeway: "Target the fragments. Destroy them."
>>
>> Chakotay: "That asteroid should have been vaporized. What happened?"
>>
>> Kim: "I'm not sure. Sensors showed a simple nickel-iron composition. We shouldn't be seeing fragments more than a centimeter in diameter."
>
> (Sklar tells of the similar outcome of their own efforts on previous asteroids.)
>
>> Tuvok: "I've destroyed most of the debris, Captain. However, targeting scanners were unable to track two of the fragments. They have already entered the upper atmosphere.
>
> (Tuvok's report comes at 1:10 in the episode, 28 seconds after the asteroid was first hit, and 20 seconds after Janeway's order to destroy the fragments.)

This is your fourth "superfluous detail" award. You'll have to make room on the mantle, Junior. The only relevant part of that entire section was:

>> Chakotay: "That asteroid should have been vaporized. What happened?"
>>
>> Kim: "I'm not sure. Sensors showed a simple nickel-iron composition. We shouldn't be seeing **fragments** more than a centimeter in diameter."

And guess what: you just shot yourself in the foot again! What's that word I highlighted in Kim's line? Oh yes, it says "fragments", doesn't it? Not vapour, but "fragments". Sorry, but not only does this disprove your claim that it was "vapourized", but it also proves that your habit of literalist dialogue interpretation is bogus. You'll have to do better than basing entire arguments off a single word choice ("crust" vs "surface" or "vapourize" vs "shatter"). Also note that this was the *expected effect upon an ordinary nickel-iron asteroid*, so all of your upcoming blather about the asteroid's actual structure is irrelevant.

> Four minutes into the episode, we learn something interesting from a Nisu scientist named Vadum, "our most prominent astrophysicist," as per the Ambassador's statements.
>
>> Vadum: "Ambassador, I've been analyzing the debris, and I've discovered disturbing evidence that the asteroids are not what they seem! They are composed of artificial materials. I must meet with you immediately . . ." (garbling, then transmission cuts out)
>
> Courtesy of http://www.st-v-sw.net/STSWrise.html
>
> Then, the same episode further clarifies that the asteroids had an anomalous physical composition:
>
>> Torres: "I've completed the mineralogical scans. The rock is composed of trioxine, olivine, . . . waitaminute. I'm reading a concentration of triatium."
>>
>> Ambassador: "Triatium? Isn't that an alloy?"
>>
>> Torres: "Yes."
>>
>> Chakotay: "B'Elanna, give me a hand with this."
>
> (Chakotay has used a pick to crack the outer layer. He and Torres now pull the two pieces apart, revealing the rock's technology-innards.)
>
>> Torres: "This doesn't look like any asteroid I've ever seen, but I'll bet it's the source of our triatium."
>
> Courtesy of http://www.st-v-sw.net/STSWrise.html



The asteroid fragment in question.

Hmmm, looks like "superfluous detail award #5" for you, Junior. All of that just to say the asteroid was artificial, eh? How does this change the fact that they only expected to pulverize a *normal nickel-iron asteroid of the same size?* And as long as we're asking questions you can't answer, how tough do you think this "triatium" is if Chakotay could crack it open with a pick?

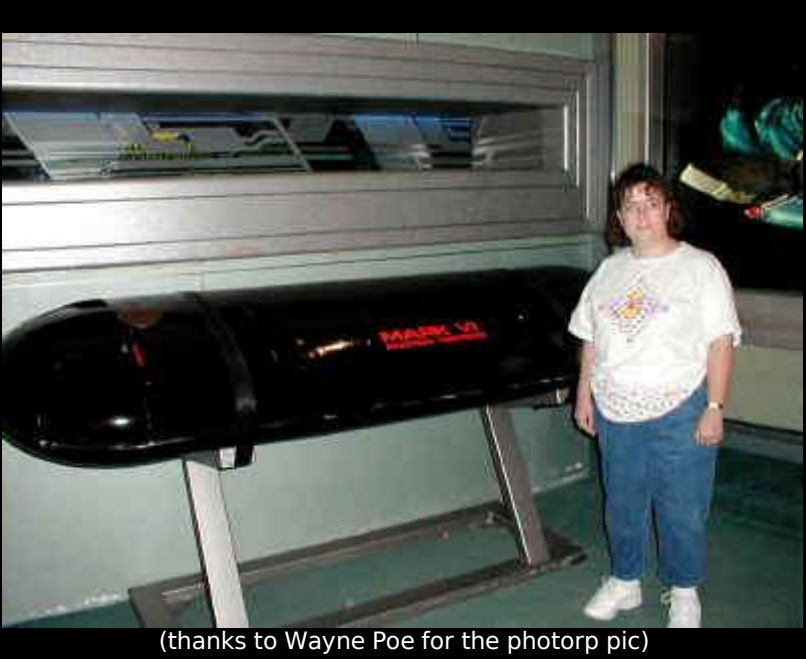
I don't think you grasp the numbers you're throwing around, Junior. If you could actually destroy 30% of an Earthlike planet's crust (not "surface"; we know your argument lives or dies on a single word) with a single volley of torpedoes (let's say it was 300 torps), then a *single* torp should be able to destroy *20 million* km^3 *of crust*. Yet we discover in "Rise" that it is only expected to *fragment* a nickel-iron asteroid which is perhaps 100 metres across at most (not even 0.01 km^3), and you shrug it off by suggesting that it's made of "triatium" so there's no problem? You flunked math class, didn't you?

> Commonly, Star Wars zealots fail to point out that the concentration and heat of vaporization of triatium is completely unknown, and, is quite probably fairly high.

Oh of course, there's the answer! Triatium must have billions of times the latent heat of vapourization of rock, right? And we'll just ignore the fact that they didn't even expect to vapourize a 0.01 km^3 asteroid in "Rise". Here's a suggestion for you: in future, try proof-reading your arguments for absurdity. You'll save yourself a lot of embarrassment that way.

> How large was this asteroid?
>
> From here, scaling the torpedo is a simple matter. For the sake of being conservative, I will assume that Voyager's torpedo is fired in a portward direction (i.e. toward the observer) . . . this will have the effect of making the torpedo glow area smaller. It should be noted that it is pretty clear from the episode that Voyager was shooting roughly dead-ahead. However, making the torpedo appear to be smaller will have the effect of making the asteroid seem smaller, making this a conservative estimate.
>
> Scaling off of Voyager's port side, and using the torpedo as it appeared two frames after being fired, the central glowing area of the torpedo (i.e. not including the streamers) is approximately 10 meters in diameter. Now, I shall take the asteroid as it appeared two frames before torpedo impact (image below). (The image one frame before impact shows an illumination of the asteroid surface, and I do not want my estimate thrown off as a result). I count the torpedo as being a grand total of four pixels wide, with the central glowing area constituting two pixels or so of width. The asteroid is sitting at an angle of about 45 degrees in the shot . . . tipping it so the long axis is vertical, we have an asteroid length of 78 pixels, with a width varying between 37 and 50 pixels. I shall treat the asteroid as if it were a rough cylinder.
>
> If one pixel equals five meters, this gives the asteroid an approximate length of 390 meters, with a width varying between 185 and 250 meters.

"approximately 10 metres in diameter", eh? So you're saying that photon torpedoes are more than 30 feet wide? How *long* do you think they are? A *hundred* feet? You've never even *watched* Star Trek, have you? Here's a picture of the Star Trek photon torpedo, which has not changed since ST2:

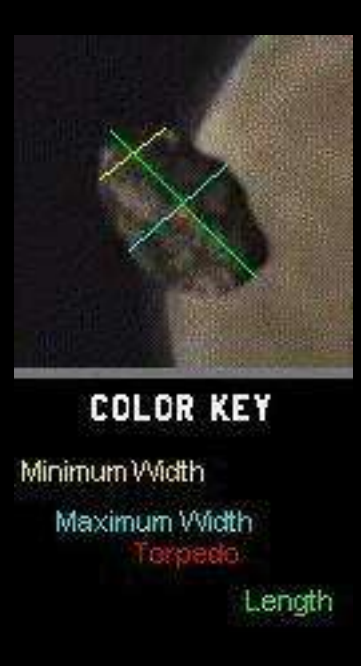


(thanks to Wayne Poe for the photorp pic)

Sorry, but that doesn't look like a 30 foot diameter, Junior. Like far too many single men, you obviously have a habit of exaggerating your measurements.

By the way, none of this even remotely substantiates your claim that this incident can be reconciled with your "people never say anything that isn't perfectly literal" approach to dialogue and its consequent conclusion that the dull brown clouds in "The Die is Cast" represent 6 billion cubic kilometres of rock being destroyed. Even if the asteroid in Rise really was 390 metres wide, so what? How does their expectation of shattering it support your notion that a photon torpedo can blow away 20 million km^3 of rock?

> Courtesy of http://www.st-v-sw.net/STSWrise.html



> That's a pretty big asteroid. Utilizing similar methodologies, you came up with your own estimate for asteroid sizes in Episode 4, and none of the destroyed asteroids were estimated to be anywhere near approximate to "...390 meters, with a width varying between 185 and 250 meters."

Wrong. My estimates for asteroid sizes in TESB (Episode 5, not 4) were not based on any kind of assumption remotely as absurd as your contention that ST photon torpedoes are 30 feet wide. Try again.

> "...and "Pegasus"..." This is another manifest un-truth. Your implication that they lacked the power to destroy the asteroid in which the Galaxy-class Enterprise had been trapped is a lie, as the script plainly states:
>
>> "The asteroid's internal structure is highly unstable. Any attempt to cut through the rock could cause the entire chasm to collapse."

This has *nothing* to do with the *relevant* quote from Riker (see my Canon Database), which says:

> RIKER: I recommend we destroy the asteroid. It would take almost all our photon torpedoes, but it would preclude any possibility of the Pegasus falling into Romulan hands.

Sorry, but Commander Riker says it would take most of the E-D's payload to destroy a 5km wide asteroid with sufficient violence to eliminate the evidence. This is consistent with my estimates of photon torpedo yield, but *not* with yours. Try again, Junior.

> This was spoken by whom you call "...the supposedly infallible Data ...".

Of course, since Data is obviously not infallible. Oh wait a minute, you're trying to use that phrase to *support* your use of Data's quote, aren't you? Holy apostle-buggering Christ, you don't realize I was being *sarcastic* when I called him "the *supposedly* infallible Data?"

> As for the episode "Cost of Living", most Star Wars absurdists and zealots deftly avoid a description given as to the material composition of the asteroid in question. Why? Because it was composed of unknown substances that had an unknown heat of vaporization and level of durability. Let's take a look:

Photon torpedo strike against asteroid as Enterprise pursues.

> "Note also that the "Rise" asteroid is not the largest asteroid we've seen destroyed by torpedoes, or the densest. "Cost of Living"[TNG] shows the Enterprise-D using two torpedoes to destroy an asteroid, and the first torpedo is not even visible for most of the second torpedo's trip.

The fact that a 3 foot wide (*not* 30 foot wide) torpedo is not visible at TV resolutions halfway to its target hardly proves that it's gigantic. If it were that large, then even the fragments we saw should have posed a serious threat to the planet. The Tunguska object was projected to be just 30 metres wide.

By the way, drop the constant attacks against unnamed anonymous "Star Wars absurdists and zealots". This is a debate between you and me, and if you're going to complain about something that I have done, you must show *examples* of *me* doing it, rather than casting vague generalizations about Star Wars fans. It's pretty obvious that you've been corresponding with Darkstar; not only are your arguments copied from his website, but your incessant ranting about this unnamed cabal of enemies comes straight from his playbook. Why don't you try thinking for yourself instead of copying the behaviour and arguments of an uneducated help-desk operator?

> "This asteroid is shattered, not vaporized. The asteroid was large enough, however, to have a differentiated core composed of "densely compressed nitrium and chrondite", and the remaining core was of sufficient size and density to cause planetwide damage to the planet below. Even if we merely assume a 10-15 megaton blast similar to Tunguska, that's still an asteroid of tremendous size, tremendous density, or both (at somewhat less tremendous levels). Data concluded that another torpedo would be unlikely to damage the core, but was able to shatter the core with a technobabble particle beam from the deflector. Judging by the beam, the core remnant was the size of the secondary hull of the Enterprise. The remaining core fragments no longer posed a danger, and were then flown through by the Enterprise on her way out of the system: "
>
> - Courtesy of http://www.st-v-sw.net/STSWrise.html

More arguments copied and pasted from Darkstar's website, eh? You need to pick better allies. Darkstar's arguments only sound good when you avoid reading rebuttals to his material because you buy into his claims that they're all dishonest. It seems to me that you've never learned the political rule that the guy who spends most of his time talking about integrity is probably the biggest liar of them all.

Even if the impact were 50 times greater than Tunguska (ie- 500 megatons), you would only need a nickel-iron asteroid of roughly 100 metres diameter at typical Earth-crossing object velocities. Did you know that? And how much energy does it take to fragment a 100 metre wide nickel-iron asteroid? Roughly 5 kilotons for a buried explosion. Even if we crank up the impact by another order of magnitude to 5 gigatons, you're still only talking about a roughly 220 metre wide asteroid, which you can fragment with a 50 kiloton buried explosion. Sorry, but you're not going to find any evidence here for your notion of a photon torpedo destroying tens of millions of cubic kilometres of rock.

> What do you know about nitrium?
>
> Nitrium. A metal alloy used in the construction of Federation starships. Nitrium is used in the interior construction of such ship's systems as inertial dampening field generators, power transfer conduits, and the matter/antimatter reaction chamber. ("Cost of Living" [TNG]).
>
> -Star Trek Encyclopedia, a Reference Guide to the Future (Updated and Expanded Edition), "Nitrium", pg.: 325. Written by Michael Okuda and Denise Okuda, with Debbie Mirek.

And what's this supposed to prove? If you think you've just proven that nitrium is billions of times tougher than any other known solid material (as necessary in order to rationalize your "Die is Cast" argument), you're wrong.

> You are quick to assume everything in favor of Star Wars, but always quick to try to double-standard it against Star Trek, but, that's to be expected from someone that says they're biased against Star Trek.

For the umpteenth time, if you're going to attack the man rather than his statements, then not only are you guilty of the ad-hominem fallacy but you must also provide *examples* rather than generalizations. Either put up or shut up.

> This is further evidenced by such dismissive insults as "...not with the unreasonable extrapolations derived from optimistic interpretations of dialogue that are common to wild-eyed Trekkie fanatics...", which is merely an attempt to pre-emptively discredit and dismiss perfectly valid points.

Yet you have failed to prove this statement untrue. You took an example of Voyager expecting to shatter a 0.01 km^3 nickel-iron asteroid, you claimed it was consistent with your claim that a single photon torpedo volley can destroy 6 *billion* km^3 of rock, and you expect me to classify that as anything *other* than "wild-eyed"? What is it then?

>> 2) The common use of TESB as a maximum benchmark (rather than a ridiculously conservative lower limit) for Imperial firepower is actually a joke in light of the fact that Slave-1 was effortlessly pulverizing multi-kilometre wide asteroids in AOTC. It's precisely analogous to saying that you saw an M1 Abrams' 120mm smoothbore punch through drywall, so you're going to take that as a firepower limit for a 120mm smoothbore even though a comparatively miniscule handgun can do the same thing, and the published specs for a 120mm smoothbore are much higher. Having said that, the calculations show that it takes around a third of a megaton to vape one of those asteroids as shown, although ISD guns are actually much more powerful than that.
>
> This paragraph was, quite frankly, a waste of time to even compose, though I do agree with you that turbolasers mounted on Imperial and Imperial II class star destroyers are far more powerful than megaton, more accurately being in the range of ~418(10^{18}) J/100 gigatons of TNT. In any event, if neither of the asteroid field scenes were considered benchmarks, what is?

They are lower-limits, not benchmarks. Do you understand the concept of lower limits? If you saw an M1 Abrams' 120mm smoothbore punch through drywall, you could use that as a lower limit, but it would not be a reasonable estimate, nor would it constitute an upper limit. This is why I object to the use of TESB as a benchmark, because "benchmark" generally implies that it can be used as a reasonable estimate.

> The Death Star certainly isn't, because superlasers aren't mounted on most ships, with the obvious exceptions of the Eclipse and Sovereign classes (both of which were less powerful than the superlaser mounted on the original Death Star).

The Death Star used a superlaser rather than a turbolaser, so you figure that's an excuse to dismiss it? Don't be ridiculous; since the Death Star superlaser is described as a compound turbolaser in the literature, your attempt to claim that DS firepower cannot be used as an upper limit is obviously mere sophistry. Moreover, since we know that superlasers can be scaled down all the way to the small ones on the LAAT gunships in AOTC, it would be utterly absurd for the Empire not to use them on capital ships if they are somehow vastly more powerful than normal turbolasers of equivalent size.

Summary

Your "rebuttal" boiled down to 6 points:

1. On the use of visuals: you dismiss the "suspension of disbelief" method by simply accusing me of a "double standard" and hurling some vague, baseless generalizations. Note that none of this has anything to do with the *validity of the method*, hence it constitutes an obvious "ad hominem" fallacy. Ad-hominem is about *evading points by focusing on the man*, not just being rude, and that's exactly what you're doing here, Junior. If you think you have some better, *consistent* method of interpreting SW and ST, then describe it.
2. On "The Die is Cast": you seem to think that it's somehow possible to have massive crust-destroying explosions *without* a persistent fireball, thanks no doubt to your ignorance of thermodynamics. That same ignorance seems to underlie your belief in a ground-level shockwave which somehow moves at hundreds of km/s through the atmosphere *without heating it up until it glows* (in fact, you believe it remains so cool that you can have water condensation behind the shockfront, thanks to a childish misinterpretation of the Bikini atoll tests). In the end, your entire argument on "The Die is Cast" boils down to a single character's choice of a single word ("crust" vs "surface"), and is directly contradicted not only by the visuals of that episode but also by startrek.com's official synopsis and every other photon torpedo detonation in the history of Star Trek.
3. On "Rise": your *own* quote from the show indicates that they *expected* to fragment a *nickel-iron asteroid of that size* rather than vapourizing it, so all of your arguments relating to the asteroid's exotic materials are irrelevant. And your estimates of its size are based on the assumption that photon torpedoes are 30 feet wide; a ridiculous claim which is easily disproven by pictures.
4. On "Pegasus": you completely ignore Riker's statement and focus on a totally irrelevant comment made elsewhere in the episode by Data.
5. On "Cost of Living": you make no attempt to estimate the size of the asteroid except to assume that it must be "tremendous", and in fact, your entire argument on this episode contains not a single piece of *numerical data* anywhere. However, I can remedy that situation for you by applying a number to the value of the resulting argument: zero.
6. On TESB and benchmarks: your "superlaser is not a turbolaser, so it doesn't count" excuse doesn't fly. AOTC shows clearly that they can scale these things down to arbitrary size, so they could easily replace turbolasers with mounted superlasers on capships if the difference were as great as you think.

Too bad, so sad, but it's not hard to see why you're a creationist. Better luck next time, Junior.

It took almost a week for him to reply to a mere ***two paragraph*** *argument; how long will it take this time? Tune in next week, same bat-time, same bat-channel!*

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