

COVER TBA

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INTRODUCTION

Welcome to the very first issue of the Hive's very own fanzine. For those of you not in the know, the Hive is a sometimes Doctor Who focused internet forum that is currently going through its own regeneration of sorts.

Heh, get it? My writing is as smart as Steven Moffat's if I do say so myself, which I don't! Saying that would make me an arrogant little dick, and I'm not, I'm average sized.

Anyway, the forum and its members are now putting out our own fanzine, imaginatively titled 'The Hive'; at least for now.

“What can we expect in the fanzine?” I hear you ask. I don't really, and I'm not going to answer the question you didn't ask, because I'm not even sure yet.*

You see, in a shocking turn of events, this little Doctor Who community isn't especially crazy about Doctor Who these days, especially not the revival era. Whatever we put out, don't expect much of it to be positive about modern Doctor Who or its spin-offs. Don't be surprised if some articles have nothing to do with the Doctor Who universe at all.

If you have a problem with that, don't read the fanzine. We don't care. Or you can join the forum and write your own content to be added in future issues. You will find the forum at www.thehiveforum.forumotion.com

*You could check the contents list on the previous page.



Make no mistake, this image is entirely unrelated to the fanzine and the Hive forum. It's just a waste to leave so much blank space, you know? Consider it a welcome gift.

Does Realism Matter if you are Killing the Moon?

I'm tired of people ignoring any scientific argument against Kill the Moon because the show has some science fiction conceits in it. It's the old "The Doctor's an alien who travels time and space in a phone box, it's always been nonsense!" line, and it's wrong as ever. Those ideas are entirely logical within the show. They're consistent. Just being a science fiction show doesn't mean literally any sequence of ideas falls under suspension of disbelief. By that stunning logic, the show shouldn't ever trouble itself to make sense. And obviously, it should.

First I just want to draw a distinction, for posterity. While I happen to think the science in Kill the Moon is bad even for Doctor Who, I'm not going to hate on people for whom it works. That's the thing irking me – people telling me, and others, to stop moaning purely because it's a sci-fi show with some fanciful and perhaps even impossible ideas at work in it. That's a specific gripe of mine - an ignorance of internal logic.

As I see it, we've all got our own personal tolerance or line in the sand, a point at which suspension of disbelief snaps. Some people are well within their comfort zones this week – and good for them. I get mad when I'm chastised for being detached from the story when I can't help that any more than not liking the episode. Apparently, I should force myself to like it, not complain if I can't and it's these micro-managing Gestapo fanboys that really fuck me off!

So let's tackle some examples of bad science that supposedly excuse the tragedy of Kill the Moon – despite being made decades apart. The Mind Robber is a special case, being set in an entirely separate universe where our laws pointedly don't apply. Full Circle has a rather fanciful evolution, though again, that's on an alien world we're unfamiliar with. "This," says Full Circle, "is how things work on Alzarius." The Claws of Axos probably counts as Time Lord ingenuity, incomprehensible to us, but the Doctor seems to know what he's talking about. A bit like TARDISEs in general. There's a logic to it, which is impossible to us but can be understood through analogies and metaphors. There's a great explanation in The Robots of Death. But I'd certainly agree that the science in episodes like Journey's End is, at best, pretty shameful and at worst, bowel-shatteringly hilarious. Dalek Caan broke the Time Lock. "But that's impossible!" "And yet, he succeeded." Er, Russ, what you have there is not an explanation.

Now then, Kill The Moon. The creature is unique. Although, I find it flat-out laughable that it could have laid another moon, especially since it didn't have a noticeably moon-sized (or shaped!) bulge in it, but again, that's my personal flim-flam-tolerance-zone and as for the moon itself? That's not so unknown to us. Certain rules apply - things the moon is, things the moon does in relation to the Earth, and

those things are part of the story.

It boils down to an impossible choice, wherein rules are even more important because they help us define the choices. If the thing hatches, we risk being crushed by chunks of the moon, to say nothing of Mothra, or whatever lies within. That's an alarming, and dramatic position to be in - and we get out of it because (quoting Clara) "The moon isn't made of rock and stone, is it? It's made of egg-shell." But she's wrong, isn't she? It might be the largest egg known to man, but it's not made of the same stuff as a chicken's egg. People have walked on the moon. The moon is, quite clearly, a big-ass hunk of rock. That's known fact, not the fantasy realm of The Mind Robber or the alien eco-system of Alzarius, and the episode resolves its dramatic conflict by pretending it isn't there. That is where Doctor Who starts to take the Piss. Tell me aliens can do amazing things with police boxes, fine. Tell me there's a universe where cars run on bananas, fine. Tell me the moon is made of cheese, or else egg-shell, and no, I start to struggle I'm afraid.

But you're welcome to not struggle, and I envy you if you loved the episode but it's no fun being on the outside looking in and not everything in the new series has been awful but I won't change my view on the show until the show changes for the better. People sometimes try defending Nu Who with what I call the Deadly Assassin defence. The Deadly Assassin was underrated when it came out 40 years ago, so what I should wait 40 years before watching the next series? I've seen comments like "stop watching then" and even "you don't deserve Doctor Who".

Even if Kill the Moon was the greatest episode ever, it's the people moaning about other people expressing an opinion who I really object to. If you feel someone on the internet not loving some TV show is ruining your life then don't read what they type. And then there is "you must be watching a different show," as if the moaner's opinion is intrinsic to it. It's also irritating when someone makes out that their views are objective while anyone who disagrees is being subjective.

And here comes the science...



Uh-Oh

Even several nuclear explosions are tiny when comparing them to planetary masses rather than the tiny fragile little creatures that live on the Earth's surface. Lunar Rocks regularly hit the Earth. The power required for a rock hit Earth is equivalent to that of making a 450 m crater. This comes from a 30m asteroid. The Tunguska event was caused by a 60m rock and had an explosive power equivalent to about that of a 15 MT nuclear weapon. The most powerful nuclear bomb is the Tzar bomb. At 50 MTs per bomb, 100 trillion Tsar Bombs would be required to blow the Earth apart. That's equivalent to the sun's entire output in a day. And according to <http://www.icanw.org/the-facts/nuclear-arsenals/> there are currently estimated only 15,000 of an unspecified size in the world right now. The radiation is the real threat to us not the force of the explosion and as the creature had been living in space it's doubtful whether it would be troubled much.

Now let's say that you were able to lift the entire force of the nuke to a perfect Earth intercept trajectory, the velocity leaving the Moon would be about 2.74 km/s. The velocity at Earth would be about 11.2 km/s, which is Earth Escape Velocity and you have the highest theoretical yield weapon that has been planned 100 MT. Energy effectively scales as the square of the velocity, thus there would be about a 16 times multiplier on the force of your nuke – in perfect conditions. That would become a 1.6 GT yield weapon equivalent. That's roughly the equivalent of a 300m asteroid impact, which occurs on average every 73,000 years. It would cause some local damage, maybe even regional, but certainly, wouldn't end life on Earth as we know it. If the rock broke in pieces it could again cause substantial damage even more than indicated above but would most likely be limited to a region, causing significant damage over the area equivalent to Australia (possibly causing a global cooling event) but would most likely not be a major event.

With enough extra mass to make the Moon's gravity Earth-normal, I guarantee there isn't going to be a single meteor escaping from the Moon's surface due to something as tiny as a couple of dozen nuclear bombs. So my real question is whether a creature that size would even notice a couple of dozen nuclear Bombs. Seriously, the Moon may be small if you compare it to the size of the Earth, but it's still massive.

It takes an unbelievable amount of energy to fully destroy a body the size of the moon. The reason is that all astronomical bodies are held together by gravity, and the aggregate gravitational attraction between all of their constituent bits, the so-called gravitational binding energy is astronomically huge. To fully rip a body apart you need to overcome this binding energy or at least a large part of it in order to ensure that you are breaking it up into chunks that will be flung away from each other rather than immediately coming back together. You would need 500 billion Tsar Bombs.

Where it really doesn't stand up is where is the mass suddenly coming from? I thought it was interesting that they made the Moon with Earth-normal gravity a plot point, but then the resolution was that they didn't really have one. Eggs don't get heavier. While the creature growing in the egg does get heavier, that's because it's ingesting the other stuff in the egg. The egg stays exactly the same mass.

And then the creature manages to lay an egg which was exactly the same size as the egg it just came out of? Well, since this creature apparently does have magical mass creation powers. That resolves everything, I guess! But honestly, that was the silliest idea ever.

Of course, the classic series had a pretty fraught relationship with science as well but if you take all the fissile material believed to be on Earth and convert it to energy as efficiently as possible you still wouldn't have enough explosive power to even dent the Moon. The idea that any creature as large as the Moon could ever be vulnerable to puny little humans like us is quite laughable. "Planetbuster" bombs really aren't plausible no matter what the technological advancement. The only real chance is to find some way to start a chain reaction so the planet started blowing itself up, using itself as fuel.

I do like the solar energy theory, though. After all the Sun is really, really massive so it presumably could solve the problem. The problem is that the Earth as a whole only receives enough energy from the Sun to make about 2 kilograms of mass every second. The Sun as a whole puts out about 10,000 times that much, but most of it doesn't hit the Earth. The Moon doesn't even receive that much energy, but let's assume for a moment that it does. In order for the Moon to gain enough weight to be as massive as the Earth, it would need to gain more or less the mass of the Earth. Since the mass of the Moon is a rounding error compared to the mass of the Earth that's 6×10^{24} kg so you'd need about 3×10^{24} seconds in order to be able to create that much mass. That would take about one quintillion years.

So let's assume it can somehow capture and store all the energy from the Sun (which would mean that life on Earth was extinguished since presumably, it would have been sucking up all the sunlight that would otherwise have hit the Earth) and goodness knows how and where it's storing all that energy. We've still only got it down to 100 quadrillion years. And since it's apparently not growing – just getting much, much denser – it wouldn't need as much mass as the Earth has in order to have the same gravitational attraction (since people on the surface of the Moon would be closer to the center of gravity). But even assuming that the Moon "only" needed to become six times as massive as it began to get Earth normal gravity, it would still need about one quadrillion years of the Sun's entire output – nope, not going to get that to work. It would have to be active about it and start eating the Sun itself. Then it could do it pretty quickly and without making much of a dent in the Sun actually. (The Moon isn't even a rounding error compared to the Sun.)

The only problem with that is if the Moon did start absorbing the Sun's mass while remaining in the same place, all life on Earth would be destroyed since the Earth is trapped "right next to" the Moon, cosmically speaking, and would be caught in the crossfire. So I think we still need to resort to magic to explain it.

So the science is nonsense but the real problem is the realism. We are talking about science fiction so we are told that the Cybermen have come from a planet that has been taken over by technology, OK. That's explained in the narrative. Any metaphorical interpretation is a bonus. It works the same with the Daleks and most other stuff in the series. The rationale may not withstand detail scientific scrutiny but

the presence is explained. Things don't just randomly happen. If the story had been working on that logic all along maybe it wouldn't be so jarring. I actually think the first half an hour of Kill the Moon is rather dull but inoffensive. Then there is the final fifteen minutes that compounds jarringly bad science with an absence of realism and overloads us with spurious morality. It's quite possibly the worst episode ever.



Fanfic Corner

TWO SIDES TO THIS WALL

Written by David Blyth

NOTE: This takes place during "For Tonight We Might Die", the opening episode of the DW spin-off CLASS, shortly after the character Ram has been dealt a personal blow by The Shadow-Kin.

Ram was unable to comprehend it at this moment in time.

He felt there was this wall where he used to be. Of which there was two sides.

The physical one, and the mental one. Both fused together. Both sides couldn't be climbed over.

Not yet.

The loss of so much this night had been overwhelming.

He looked around him, taking in the immense width of the room he was in. He hoped it would take one side of the wall, the one chained to his mind, off of dealing with the immense pain.

"So much" he whispered, hoping he wouldn't be heard.

Too late.

The Doctor caught what he said.

"So much pain?" The Doctor asked.

"So much...bigger" Ram said, raising his voice a little higher.

"Yes, you don't know how many times I've tried to shorten the length. I once had Santa himself complain to me about it, all those children of the universe writing letters back saying their toys were never quite as accurate in relative dimensions as this"

"What, you know Santa?" Ram asked.

"Doesn't everybody?" the man replied.

"Yeah, but he's...a story" Ram said.

"Everything's a story, a character, a play, I've never preferred the one-man shows though, imagine a whole room where there's no speaking parts but you and an audience that you have to inject with all of your ego-massaging. The sound of your own voice will never be the sound of drums, I've tried telling an old friend that a few times. She never listens."

"What happened...back there...in the halls, in the dark, it's just...I can't face it again," Ram said, his mind already racing back to the fragile final seconds of the life he'd lived before. A life with Rachel and an intact leg.

"What is it with you teenagers wanting to disconnect from the world, especially without realizing what you can do with it?" The Doctor asked, refusing to settle for

the pessimism.

"We wanted to be happy, to challenge the world in ways that don't...punish us you know? We wanted to scale the walls, not be pushed off a building," Ram said.

"Oh who are we fooling?" The Doctor countered, scanning the frightened teen with his sonic screwdriver, "The human race does nothing but climb, they ascend to the highest mountains, they plant the seeds for generations to grow taller. If someone comes and finds it so easy to cut you down, it doesn't stop you inspiring others to push harder so it's much more difficult to do so again. Don't just climb over the wall, break through it. Do I have your promise of that?"

Ram nodded. He didn't really buy the speech given to him, he just wanted the procedure over with so he could walk out of this strange blue box and back into the uninviting world. It may not be the world he desired, but he had to see where he now stood in it, and make up his mind later whether he should stand his ground there.

Rachel would have wanted that much for him at least.

"Careful now," said The Doctor as he grafted the artificial leg to the gaping hole that was once connected to Ram's original one, now severed from his body by the nefarious Shadow-Kin.

Ram felt a nerve-wrenching jolt as the leg snapped into place, but he held in the urge to yell, for his soul had deafened heaven and hell enough for one evening.

And something about this place felt calm, soothing. The elderly man working on him had done much to keep him and a band of other misfit sorts from further hall this cold and unkindly night.

As he walked back out of the blue box, he sat down and took in what the old man had to say. That there were tears in time and space, that Coal Hill Academy would serve as a beacon for all manner of alien terrors, things that would ensure things would never resemble a normal quality of life for any of them.

He said time had looked upon all of them, and then it would not forget.

And then he stopped.

And he stared.

He stared intently at something on the wall, a mural with names listed on them. Two names stood out to The Doctor.

O. Clara

P. Danny

He was immersed, interested, but distant.

Ram could sense something. Something all too familiar.

He couldn't tell how, he just knew, instinctively.

Part of him felt he should have sensed it earlier when he looked the old man straight in the eyes, for they were well-worn eyes, eyes that had seen billions of years of physical taxation and emotional heartache. His fancy speeches were all he could do to camouflage years of loss, years of struggle, internally and outwardly.

He should have seen it.

The Doctor was facing a wall. Of which there were two sides to it. Physical and mental.

And he couldn't breach either one of them.

The Ongoing Adventures of Professor Why

An Unearthly Man-child Part One

Dust swirled in the air of what may have looked like a rocky quarry, but was actually--definitely--an alien planet, as the QWOP materialised from the space-time continuum.

The QWOP is an advanced alien machine that allows those inside to travel through all of space and time. It is rectangular in shape, short in width and depth but tall in height. It is red in colour, with many transparent windows. On your planet you might recognise it as a form of public toilet, but on Mesomor-3--the planet of which the machine originates--it is disguised as a device they know as a telephone box. Telephone boxes are common on Mesomor-3, but time machines are limited to a special group of Mesomites who go by the title "Clock Leaders", as such, the machines are designed to attract little attention.

The Professor stepped out of the QWOP and was immediately met with confused looks from a group of workers... Human workers? Huh. I guess it was a quarry on Earth after all.

Now would be a good time to introduce myself. I am the Librarian, a Mesomite assigned to documenting the lives of several figures from my planet, and I am an extremely unreliable narrator. Professor Why is one of the figures I must document. An odd fellow currently on his third incarnation. You see, Mesomites have extremely long life spans, so long they can outlive our bodies. So when a body has reached the end of its cycle, or becomes too badly damaged to continue being, we will take a new form. This is known as reassignment. I believe Humans have a similar system, except it only applies to your sexual organs. How the professor went through his first two bodies is well documented, though they are tales for a different time.

It is also worth pointing out that 'why' is not his name, more a question that follows him around. Why does he attract trouble? Why does he have such strong affection for Humans? Why did he taste the contents of a litter tray to determine how fresh the contents were? The latter case is especially odd as he'd just watched the cat make its deposits.

I appear to have become side-tracked, and for now I am out of time. Fear not, the story will continue.

Until next time...