“Through the Eye of the Needle” by Michael Carabott

The universe is a big place. Insanely big, really. We all know it, intellectually at least, if perhaps not with the same bone-deep certainty with which we know those things that we can see, touch or observe directly. The experts tell us that the universe is big, and so, like rational sophonts, we nod vigorously and say “I understand”, even though the concept of a million miles is too big for us to truly comprehend, let alone a million lightyears.

Those same experts, at least those who adopt a cautious measure of conservatism, then compound the problem by telling us that the universe has a built-in speed limit: the speed of light. If this most ethereal of energies, unbound by the trappings of solidity, cannot pierce the heavens in a mortal lifetime then what hope have we, sheathed as we are by the constraints of flesh and mass? None, and so we are trapped, doomed to rot in the prison of physics, cruel in its indifference.

It therefore makes sense that when an intelligent species is faced with distances so great that a lifetime of travel at conventional speeds, even a thousand lifetimes, barely gets you out of your own stellar neighbourhood, then that species will inevitably go looking for shortcuts. Those depressing certainties, which we so begrudgingly acknowledged previously, will inevitably become infected by the pathogen of doubt, and that more dangerous contagion, hope. Once that infection has taken root the death of certainty is sure to follow, and great things may become possible, despite any weight of evidence to the contrary.

It was with this hope burrowing its way into our minds that a small number of us started Project Echo. If light would not move fast enough under its own power, then we would crack the whip of science until it did. We would give it no other option than to haul us to the stars.

We fed our luminous beast of burden, splitting and bending light before feeding it back into itself in strange harmonics that shook the very fabric of spacetime. With each failure our hope grew, for the screams of our obstinate continuum grew ever more desperate as we pried away its secrets one by one, until the day that certainty lay dead. We saw the dawn of the new smaller universe our hope had promised. We had broken light in spirit, if not yet in body.

We had achieved faster than light communication.

Project Echo had managed to circumvent reality at the most incorporeal level. Information. We soon learned how to send and receive messages instantaneously. Initially just single bits, then bytes, then an endless flood of ones and zeros that spewed across this new spectrum. It showed us that the prison door was open, if only just ajar, and that soon we would step across the threshold and punch the warden of physics squarely in his jeering face.

Our work continued. Project Echo was taken over by the world government and nationalised. We had more resources than ever before. More money, more minds, more hope. The light-beast quailed once more under the onslaught of our instruments, the new implements of torture we had devised.

But we could not break its body, try as we might. We had mastered FTL communication, which had spread like wildfire to all corners of our society, but FTL transportation still eluded us. No matter how much energy we fed into the spacetime continuum we couldn’t tear a hole big enough that would allow anything physical to pass through. Our hope gradually diminished as the prison door slammed shut once again, the warden taunting us from behind the safety of the bars, unhurt and unconcerned.

Still we toiled, unwilling to let the corpse of certainty rise from the grave to shackle us once more. For decades we pumped colossal energies into the hidden spaces of the void and listened intently to its squealing cries.

Until one day, something happened.

We heard voices, or at least the noises of intelligence. A fellow prisoner knocking on the other side of the walls of infinity. What else could we do but knock back?

Eventually the knocking turned into sounds, foreign words whispered to each other when the warden wasn’t looking. We built a lexicon and learned to understand each other, and a flood of information began crashing back and forth.

Our fellow prisoners were a race known as Humanity, located far beyond our own galaxy, in one they called the Milky Way. Like us they had tried to tame light to enable FTL transportation. Like us they had failed. But although it seemed that our peoples would never be able to meet face to face, we came to know each other anyway.

Light carried our missives through the secret pathways we had forged. Pictures and sounds, then video and eventually pure data, encoded in agreed formats that we both could understand. We swapped our science and technology, we swapped our arts and history, and we swapped our hopes and dreams.

We saw the beauty of Humanity and came to love them as our cosmic siblings. Our two peoples clung to each other like lifebuoys in a sea of emptiness, alone together.

Imagine our surprise when strange new ships appeared, as if from nowhere, on the outskirts of our solar system. Gargantuan in size, they drifted silently inward, overlooking or ignoring our attempts to hail them. Had they tamed the beast and mastered FTL transport, or were they sailors, plying the interstellar seas like the Human mariners of old? We had to know.

We could not bear to simply wait for their slow approach, so our outer colonies sent their fastest ships to intercept and greet the newcomers, who were still on the system's distant fringes. It was farther than any of our crewed missions had ever travelled before. Hasty ship modifications were made to extend their range, at the expense of cargo and safety. The crews were selected from our best and brightest, those with the requisite bravery and fortitude.

As our ships approached the mystery fleet, they began to broadcast a greeting using every spectrum we knew of. Our experience communicating with the Humans had taught us much about first contact, and we used it all again.

"Hello" we said. "Your arrival brings us great joy. Welcome to our home."

We received only silence in response.

More ships were sent when the first returned home to resupply. All were left ignored, hovering in front of our gargantuan visitors like mere insects.

Months later the leading vessel of the visitor's fleet neared our outmost colony, which clung to the moon of a cold gas giant, eking out a living mining ice and crude organic compounds. The colony broadcast the same greeting our previous envoys had sent. This time there was a response.

Ruby fire erupted from the nearest visitor, a laser that cut the small colony in half. When the last wisps of its atmosphere had vented into the vacuum of space, the visitor launched ships that swarmed the colony, taking it apart piece by piece. The last transmissions we received spoke of black chitinous monsters storming through the airless corridors, snatching bodies of both the living and the dead.

Their task seemingly completed, the visitors moved on, to slowly creep deeper into our system and the spoils that lay there. Sailing towards us.

We mobilised our forces, which were minimal at best. We had not fought a war in centuries, and the hereto enduring silence of our local galaxy had left us passive and unconcerned with military matters. The fleets we sent to defend our colonies were quickly broken by the visitors, who cruised on indifferently, destroying outposts and harvesting our citizens with impunity.

We screamed for help across the void, and the Humans gave us all they could. Designs for ships and weapons streamed constantly across the supra-light connection, as well as new techniques for manufacturing and logistics, as quick as they could be developed. The Human scientists worked tirelessly to advance our military technology, analysing the records of our failed engagements with the enemy. Our manufacturing base increased ten-fold, but it was not enough. Our adversary's ships were tough, heavy hitters whose weapons could cleave through our best capital ships and destroy a hundred fighters in an instant. Our crews died in droves, an uneven trade for the few enemies they were able to destroy.

With surrender impossible we began to contemplate evacuation, but it was only a fantasy. There were simply too many of us and no interstellar ships to carry us. All that evacuation could accomplish was slow deaths of starvation and asphyxiation, adrift in hostile space.

We asked the Humans to remember us fondly when we were gone.

"We will not forget" they replied.

But there was more.

"We will not forget a brother in trouble, or a sister in peril. We will not forget an enemy's slight or a villain's betrayal. We will not look up to the stars and know that our family died there, alone and afraid, in the wretched claws of evil. We will pass through the eye of a needle before we ever forget a friend in need."

Then it came. New data, new designs. Fantastic machinery, nanoscopic in scale, so complicated and intricate that we could not believe that such a thing was even possible. There were instructions on how to build it, and how to power it. We focused all our energies into its construction, hoping that the enemy's advance would remain slow and give us the time we needed. We lived in constant fear that, with the end in sight, they would lunge forward for the final killing blow.

The result of our labours was a cube, no bigger than a hand's width. It was to be the first of many. The instructions dictated that we place these cubes on large stockpiles of raw matter. We placed it on a small planetoid, a failed moon that had never fully coalesced, dense with minerals.

The cube came apart into a thousand glittering shards that soaked into the rock. The asteroid seemed to melt where the shards touched it, the new rivulets of material flowing together into a silver pool. From this pool a structure rose, skeletal, like the frame of some predatory nightmare from ancient times. Metal flesh flowed around it and the artificial creature grew. When its form looked complete it came to life, striding out of the liquid metal with jerky motions, up on to clear ground. In its place a new skeleton began to take shape.

The first construct halted, standing motionless for several minutes. Our sensors showed it radiating heat as unseen processes continued to shape its interior. Then we detected a supra-light connection, reaching out across the universe, back to the Milky Way. Massive amounts of data streamed across it over the next hour, before trailing off to nothing.

Lights came to life and the thing seemed to shudder. Limbs stretched out to full extension and cycled through their range of motion. Gone was the jerkiness that the thing had shown in its first movements, replaced by the sinuous grace of something almost biological. When the motions finished the machine strode toward our observation post, walking on two legs with surprising agility over the rough terrain of the asteroid.

As it drew near to the observation post it issued forth a voice.

"Hello" it said. "I'm Colonel Ari Hill. Terran Navy, First Regiment."

Behind it stretched an ever-growing line of copies, crawling their way out of the silver pool, which had now swelled to many times its original size as the cube's nanotech chewed its way through the asteroid's crust. The frames of larger constructs grew from it at several points, resembling the superstructure of spacecraft.

"We've come to help" the Colonel said.

Behind him his soldiers formed ranks. Old minds in new bodies.

Hundreds of thousands of humans had volunteered to shed their mortal forms and digitize their minds, so that they could be squeezed through the interstices of spacetime, a space smaller than the eye of any needle. They would then be downloaded into artificial bodies. Bodies built for war.

They could not go back, except into more synthetic flesh. Their original bodies were gone. They had sacrificed their humanity by exercising its greatest virtues. Empathy. Compassion. Courage. They had chosen to stand with us, come what may.

They will fight by our side. The dark certainty of death is once more infected by hope, delivered to us through the auspices of light. With them we are whole, and hopefully that will be enough.

I think it will.