

## WICK AND THE CRICKET

Copyright 2010

By Wick, Crick, Kit, Caramel, and LabelWench



*Wick began this inspiring tale on ToeQuest,  
The likes of which may never be seen again,  
For it was the rarest of happenings unplanned.  
Crick, Kit, Carmel, and LabelWench soon joined in.*

*It takes place "somewhere/sometime"  
In the English countryside.*

### The Bamboo Cage

Far from the Many Worlds Pub, on the outskirts of town, a path winds its way into the hills overlooking the lights of the city below. The path terminates on top of a high hill, where several massive flat rocks gather warmth from the sun by day and release the warmth by night. A spring of cool water issues from beneath one of these rocks, giving rise to the pleasant music of water bubbling up from the earth and spilling down a narrow bed of smooth stones. Quaking aspen trees, rustling in the darkness, gather around the spring, where watercress and pepper grass grow in profusion.

It was to this place Wick resorted to sit in the moonlight and open the bamboo cage. It was his intent, to converse with the cricket, to establish once and for all whether the human race was free or not. He needed to know. It was a matter of conscience.

Softly, he crooned the words of his song to the bamboo cage. "Anything your heart desires will come to you." He strained to see into the cage, but the shadows were far too deep to reveal their contents. "I need my heart's desire, cricket!" Wick whispered.

The speed of light troubled poor Wick. It seemed like a chain that held the whole of the human race in a spacetime thrall. Wick's children had learned well the lessons of light speed and of relativity—a determinate universe! His children struggled with such a concept at first, but then embraced it. If the universe were determinate, if all events were ascertained at the moment of the Big Bang, then how

could anyone be held responsible for their actions. The universe as a whole held responsibility for all things. There could be neither evil or good. There could only be one truth—namely exactly what was.

And while this idea seemed liberating for his children (We can do what we want! There is no law but one! All things are lawful! The universe has declared it!) Wick felt the pangs of sorrow and of guilt. He did not want to abdicate responsibility for his sins to the universe. He did not want to live in a universe in which all things were lawful. He wanted to live in a universe of limits, a universe that held its occupants accountable for the joy or the sorrow they unleashed. He hope that the cricket might lead him to such a universe.

Yet, while he was a deeply moral man, Wick was also a man of very limited intellect. Who but a fool would confiscate a cricket with the sole intent of asking the insect the greatest mystery of all? Who but a fool would actually anticipate an answer from said cricket? And who but a fool would place said cricket in a bamboo cage with gaps so wide?!

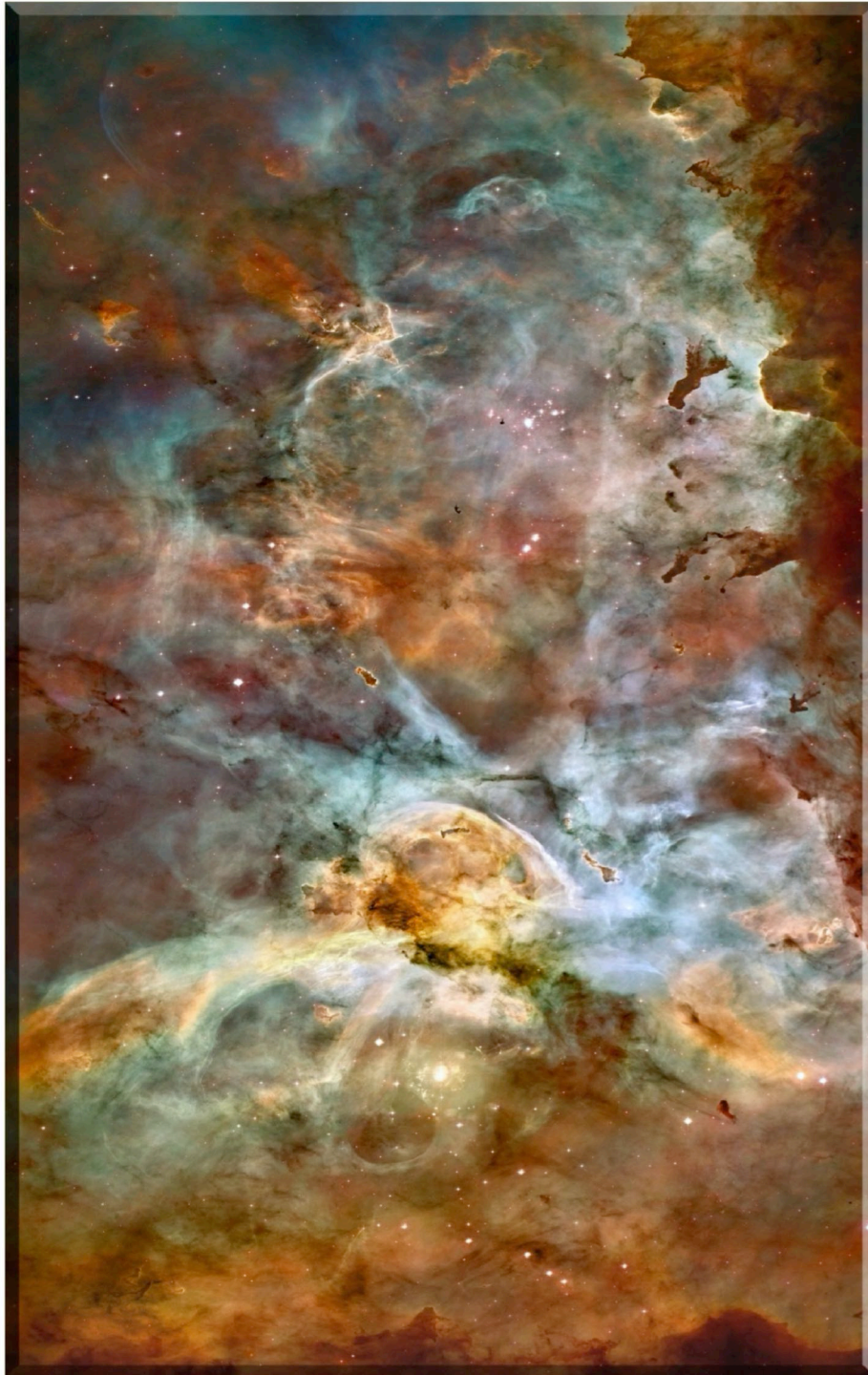
Wick bent over the cage, with the door open. "So cricket! I'm told that the determinate universe was born of two parents—the Constancy of Physical Law in All Reference Frames and the Constancy of the Speed of Light. Which of these two parents must I murder to become free of their tyrant son—the Universe? And how can I free my children, from the pretense of liberty that such a Universe offers them?"

He paused, but there was no answer... not even the occasional chirrup of cricket song inspired by the rapturous cool color of the moonlight. Only silence issued from the cage. The aspens quivered. The water chortled. But no cricket raised its voice in answer.

The rider and horse stood motionless on the hill, as the man knelt in front of the cage, engrossed as he was communing with that which remained hidden within.

The red mare, responding to her rider, stepped closer to the supplicant.

..."Seek not the seeker, seek rather what they sought", said the rider, by way of introduction.



Wick, like his namesake in 'The Secret Garden', knew nature inside and out and could communicate with all the species.

The cricket whispered to him in cricketese:

"Wick, you must be careful what you ask for. Do you wish that your actions of decisions not depend upon what lies before and beneath them, such as your personality, inclinations, memories, learnings, and associations?"

"Well, Cricket, I'm uneasy with determinism."

"Yes, it sounds like all is set in stone, but it really isn't; however, know well that the lack of determinism would be of unfounded undetermined actions."

"That sounds very scary, too; undetermined actions would, well, have no basis behind them. Sounds like randomness."

There was a silence as this other shoe dropped.

"There are some ways out of this," the Cricket encouraged. "What do you think they could be?"

"I could learn more things," said Wick, "and then have a wider range of choices, perhaps choosing differently tomorrow than I would today; but wouldn't that choice still be determined?"

"Yes, but your life would be richer. What else?"

"Use the learning by tapping into it."

"Wouldn't that be automatic?"

"Well, yes, but only if you also had the inclination to learn, plus the learning to ponder responses, for that is what is the difference between just reacting and discovering a more creative solution."

"I see. Like pausing to consider the scenarios, but isn't that just a modicum of free will?"

"Yes, but it's more than we might have had before. But still, we can't really will that which does the willing, although we can kind of tell it to go off and solve a problem and then get back to us."

"But all the results will still be dependent on who and what we have become."

"Yes, but is that so bad? Would you want it any other way?"

"Maybe there is some randomness in the quantum realm, or simply when something happens in nature that is so close that there is no preference or determination, such as 50-50?"

"Could be, but what of that from then on; it still goes as

it goes. However, we don't know enough about the quantum or the brain, yet. But, what would it be that lets events not be determined? And would that mean some strange 'surprises'?"

"I can predict many reactions from people."

"Many of us can do that, but, of course, some people are unpredictable, but I mean in a good way."

"They just know more and get into many diverse areas."

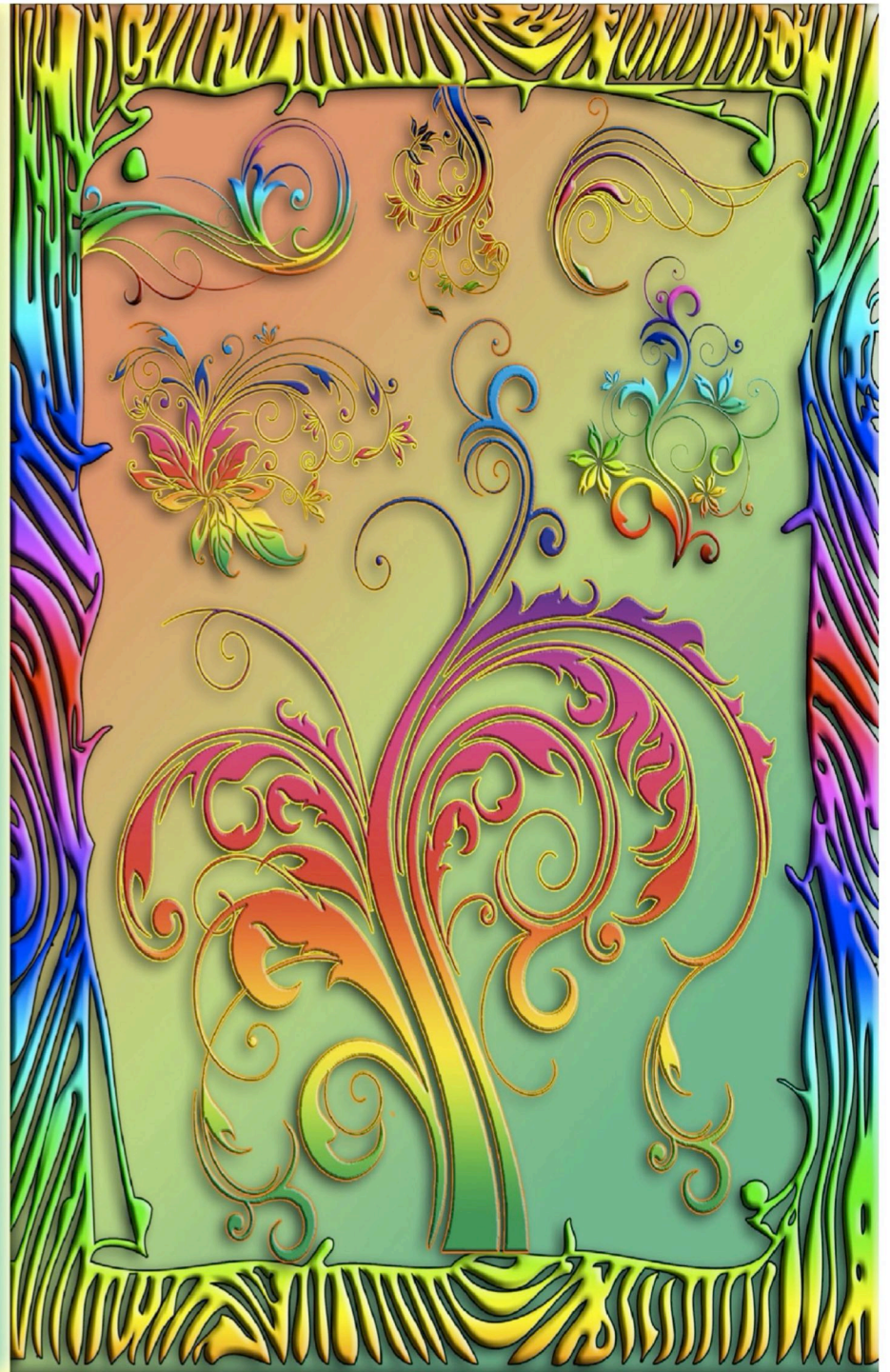
"True. There's learning happening again."

"What if any one of Hitler's ancestors did even one slight thing differently?"

"Well, if they did, and if they could have, then there would have been no Hitler."

"Tough stuff to think about. But why shouldn't all prior events contribute to the next?"

"I don't have an answer for that? It is tough to ponder and I wish I knew a real way out; it's a paradox of sorts, but we have whatever we have and that's the main thing. Life is presented to us all. We must deal with it; we must live it."



### The Red Mare

The red mare stood motionless and flicked her ears forward in response to the chirruping and rasping sounds coming from the man by the cage. There were two distinctly different intonations, although there only appeared to be one person. Without moving her hooves, the mare arched her elegant neck slightly. Aha, the second insect voice was coming from the cage, for as all her kind, the mare had a basic understanding of all things, although this species of insect was little known in the far north from whence they had journeyed.

The rider, greeting unrequited, sat quiet and observant upon the horse, allowing her mind to follow the thoughts of the trusted creature. There was no immediate danger here and the sight and sound of a fellow being engaged in a seemingly deep philosophical conversation with a species that she had been advised tasted like peanut butter when baked, even better if dipped in chocolate...

This was mildly intriguing. It would do no harm to wait a little longer and observe the outcome of this uncommon conversation...



### The Frozen River

Wick could smell a horse, somewhere behind him, perhaps even a horse and rider. There was no sense of malice in the smells that came softly on the wind, so Wick stared intently at the cricket and the moonlight that washed over the rock. He felt a little bit like someone had been putting words in his mouth.

Determinism? Could that feeling that he was being manipulated also be a sign that the universe was indeed deterministic.

And he felt a slight edge of suspicion that this cricket knew about Hitler. Somehow it didn't seem right that a cricket should know about one of humankind's ugliest representatives, especially given the fact that Hitler had died late in April of 1945. How many generations of crickets had come and gone since then? Did crickets have some kind of amazing oral tradition? Is that what they chirped about all night? Hitler? In all his days, Wick had never heard a cricket mention any dead human.

And this cricket seemed to have misunderstood.

Wick was not concerned about the kind of determinism that follows from the consequences of the past. He was fine with that. What troubled him was the structure of the universe. It wasn't so much Hitler. It was another German. It was Einstein.

"Cricket, I think were talking past one another. I'm not concerned so much about the consequences of our action. I understand that there are certain events which follow as a natural response to what has happened before. That's not what I'm talking about. That's not even what I call determinism.

“When I use the word determinism, I’m talking about the structure of spacetime, not about the formative nature of past consequences upon the present and future.

“Einstein’s relativistic universe stands like a frozen river. There is no flow. Even the source of this river, the Big Bang, is frozen in place. It has its place in spacetime. That ancient singularity is still there. It exists and remains there eternal and unchanging. And if we were to go back in time, we would see it, just as it unfolded so many billions of years ago. But so too is my birth and all the things I thought were decisions, choices, freedoms. But if Einstein’s universe is the true universe, then there are no decisions, choices or freedoms. All we have is illusory liberty.

“I refuse to believe in such a universe. We are free! There is occasional chaos. The river is not frozen. We are in motion, cricket!”

A slight shift in the wind, and in the energy of the person before her, made the mare and rider aware that their presence had been noted. They awaited an introduction, perhaps, or some further acknowledgment.

Not all beings were able to perceive them, and of those who could, not all were interested in making their acquaintance. The real/surreal aspect of spacetime was troublesome for most humans in this particular universe, although it troubled the mare not in the least.

It was she who had taught her rider about the journey, introducing an entirely new perspective to endurance riding! You just find yourself a time portal and pop on in for a look-see. Some of the finest grazing was to be found on these sojourns... the mare’s thoughts turned to her stomach...

Meanwhile, the rider was gently reaching out with her mind, trying to get a sense of what the individual before her was contemplating.

There was a great deal of circular energy, a sense of puzzlement, a broad central question, with several asides, impatience, an affirmation of sorts! Although neither horse or rider was fluent in the language of the chirping ones, they had discovered that the energy of time and place often permitted understanding on many levels, independent of language. Empathy? Telepathy? Communication without words, the connection between all things...

*What the heck am I doing talking to a cricket?*

A chirup answered him that said “Don’t worry. I won’t tell anyone.”

“Hello Cricket; how do you know so much?”

“I look back into time with a telescope; I am close to the early days. Its light is just arriving here.”

“And so you saw Hitler and Einstein, too.”

“Yes, and even some ‘I Love Lucy’ episodes.”

“Do we live in a frozen river of such snapshots?”

“I don’t know, but the deep past is arriving. I just write it down.”

“Can we move?”

“It seems so, unless it is really just a living film of frames.”

“What’s between and beneath the living film?”

“You are straining my brain. I just woke up.”

“Let’s take a short break from all this deep thinking. Who are your favorite poets?”

“Percy Shelley, Keats and Lord Byron, for the first explored both science and unveiled the spirit, the second enchanted the senses, and the third revealed the earth’s majesty.”

“Thus, they constitute the eternal golden braid of the romanticism of all life’s things. Any gems I might not know of?”

“Maybe, here’s a fragment by Shelley about a frozen river:”

ON KEATS,  
WHO DESIRED THAT ON HIS TOMB  
SHOULD BE INSCRIBED—

*‘Here lieth One whose name was writ on water.*

But, ere the breath that could erase it blew,  
Death, in remorse for that fell slaughter,  
Death, the immortalizing winter, flew  
Athwart the stream,—and time’s printless torrent grew  
A scroll of crystal, blazoning the name of Adonais!

Wick was getting impatient with the cricket. A telescope that sees into some human past? The cricket would have to be a might smaller for something like that to work, not to mention that light would have to be a might slower.

He jumped from the rock to think for a moment, plucked up a few nice bundles of alfalfa for the horse and a handful of watercress for the rider. He wasn't sure the rider would like watercress, but that was all he had.

The alfalfa and watercress, he placed on the rock, reserving a few sprigs of watercress for himself, then returned to the cricket.

"Show me your telescope, cricket."

The cricket looked sheepish.

"Well, I...I...I...I don't have it with me. I..."

"Didn't think so."

"Well, I..."

"Don't have such a telescope, do you, cricket?"

"Well...no...but telescopes do look into the past."

"Yes but not to earth's past, silly cricket. You'd have to be half way across the universe to see earth's past."

The cricket's eyes darted from the moon, to the watercress, to the penetrating eyes of Wick, and back to the moon again. His nervous wings twitched, producing a high pitched squeak that sounded to Wick curiously like cricket flatulence.

"You saw the 'I Love Lucy' episodes at the pub, didn't you? And all this stuff about Hitler and Einstein, your just twittering back snatches of conversation you've heard from Robert and Leskey and the others. Come on cricket... come clean..."

"All right there's no telescope..."

"And the 'I Love Lucy—"

"Pub television..."

"And the Einstein...?"

"Max and David... and Farsight... and..."

"And Hitler...?"

"A copy of 'Mein Kampf' someone threw into the blackberry bushes at the bottom of the hill..."

"You mean you can read German!?" Wicket was dumbfounded. And the poets..."

"It's amazing the snatches of poetry you hear when an eclectic bunch of toequesters over do it on the whiskey... Take Austin, for example..."

"So basically nothing you've said so far is true...?"

"Well I wouldn't..."

"Some conscience!" Wick was a bit irritated. "Let me tell you something about light..."

A sound of hooves on the turf caused Wick to turn his head slightly. The horse smell was growing stronger. The mare approached.

He felt no malice from the approaching mare and rider, and now he was fairly certain the rider liked watercress, so he continued his conversation with the cricket, this time in English:

"So you understand English as well?"

"Yes English and German, a little Russian..."

"Can you speak those languages, too?"

"Certainly, my observations at the pub have taught me a great deal!"

"Good, chirping in your language is murder on my lips and its beginning to cause a facial tick in my left eye. Besides I suspect two others are about to join us. I only hope the horse speaks English as well as you do."

"Now, as I was saying, just because light comes to us from the past bringing information about something observed 'back then' need not imply that the universe is determinate. Light is only information. It is not the person or thing observed. It is only a signal from the person or thing observed. What the observed subject chooses to do from moment to moment, assuming the observed has agency, is really up to him or her."

"But perhaps more importantly, much that goes on in the universe—very, very much—happens in the relative cover of darkness. Shall we disregard such happenings simply because no signal of light disclosed the information of that occurrence to our eyes or our instruments? And setting aside those things that happened under the cover of natural darkness, we must also take into account those things that happen under the cover of an apparent unnatural darkness—the darkness associated with dark matter and dark energy—though given its relative commonness, I suspect this 'unnatural darkness' is very much more natural in the observable universe than light is."

"As you probably know, it is considered a matter of fact that well over 95% of all that happens in the universe happens in the dark. Over 95% of what's real CANNOT BE OBSERVED."

The cricket pondered Wick's observation for a moment, as the smell of horse breath and bruised alfalfa drifted across the warm rock through the night air.

"So you're saying that we need to find a new constant?"

One that applies to everything in nature that has darkness as a natural property?”

“Yes. The velocity that we attribute to light can be blinding if we afford it more value than it’s worth. We make our theories, we rest on the laurels earned by others, we create our necessities of thought, our a priori givens, and then when the universe refuses to cough up her mysteries based upon what we consider ‘practically law’, we build systems filled with quantum retromotion, dimensions upon dimensions, time paradoxes and quantum foam—the ‘epicycles’ and ‘eccentrics’ of our current theories are every bit as prevalent today as they were back when we believed in Ptolemy’s geocentric universe.

“Perhaps the so-called speed of light is not worth the interferometer it was measured with! This is certainly true if we fail to understand what that mysterious velocity means.

“If light appears to propagate at a constant velocity in relation to all other objects in the universe then one of two things is true. Either light is indeed moving in this mysterious way, or the universe is moving in relation to the light.

“We have not even begun to consider the second possibility. We marched pell mell into the first possibility because we couldn’t bring ourselves to consider that perhaps, just perhaps, the universe is moving!! That there is a spatial axis along which the universe is moving which we have not yet observed or intuited—an orbit of sorts, through a space greater than the one we have heretofore imagined.

“Now if I have properly sensed the thoughts of the horse and rider behind me, they are both of the opinion that time is a navigable medium. But if I am right and the universe is moving, time is no more a navigable medium than is a warm rock or mouthful of watercress. If they are right, then I am the same fool I always was and no harm has been done to the universe. But if I am right, then all four of us are fools together!”

LIGHT IS A  
WAVE!

— 4 —

### The Offering

“An offering! This is at least a civilized place for all of the speaking in tongues.”

The rider smiled at her mount’s turn of phrase. For a creature that understood far more about the workings of space and time than herself, the horse was most honest and direct, particularly in matters culinary and tactile.

An interesting turn of events. The audible flow between the man and the cricket had transitioned to English, an open invitation to participate. She gave the mare permission to approach and partake of the gifts, unshod hooves making but slight impression and sound on the turf.

They were at the periphery of man and cricket, her horse keeping the rock between the beings and herself, while affording easy access to the fresh greens.

“Alfalfa! My favorite! And Nasturtiums!” The horse, so patient in other matters, lipped up a large mouthful of the grass and most of the watercress.

“Rather spicy in this place,” she conveyed to her rider.

“Thanks, Caramel, I believe the cress was intended for me, but glad you’re enjoying it. It may cause you a bit of grief later, but this small bit should do no harm.”

“Sorry”, the mare mumbled with her mouth full, “here, you want some too?” She picked up the remaining cress and turned her flexible neck back in the direction of the rider’s knee.

“Quite alright. Well maybe just this sprig that you haven’t managed to drool on, you intergalactic glutton. It appears that our hosts are of the opinion that we are most likely just figments of their imagination. Which in all prob-



ability is as good a theory as many that abound. Shall we join in, now that you have partaken of their offering on our behalf?”

Suddenly, the mare’s head shot up, ears pricked forward in her ‘far-seeing stance’. “Sorry to eat and run, but we have to get out of here, pronto! There is a shift happening at the time portal and the others are trying to tell me something. There’s something happening back on our resident timeline. Hang on!”

“But can we find this place, these beings again?” the rider asked the horse.

“I knew you’d ask, as intrigued as you are by such mysteries! I’ve already tagged their thought patterns. Unless they actively seek to avoid detection, we’ll be able to rejoin them. Aren’t I a good horse?”

“Simply the best, Caramel.”

As her horse performed a 180 degree rollback, and accelerated to 40 km/hr in three strides, the rider gave a wave and a nod to the man and the cricket.

“Thank you, and I’ll be back”, she said, before they were lost to view.



— 5 —

### **The Ptolemaic Will**

“Hi, Wick,” chirped the cricket. “Yes, My ‘telescope’ was just my looking at some Hubble photos on the internet. The internet’s data as well as all libraries and books are an extension of my mind.”

“Interesting, that mind and knowledge are not merely of the internal.”

“Yes, I can’t keep everything in my internal memory, so I often dip into the vast external memory and knowledge.”

“It’s another storage medium that supplements the brain. So, what’s new?”

“Well, not New York, for that is old now.”

“What’s old, then?”

“Ptolemaic type ideas such as that the sun and the other planets revolved around the Earth.”

“Yes, they had to do quite a reversal on that one.”

“Such, too, as your reversal of light to be no longer moving. This reversal approach is a good way to produce and examine new ideas.”

“What other ways are there?”

“Well, one can take two separate thoughts and combine them into a new thought, such as the quantum realm plus that of classical biology could be the secret of life—the élan vital.”

“You read that in another thread on ToeQuest.”

“Like, I say, my little cricket brain plus the world’s knowledge is what I am, for that is what I amount to in the end result of my actions.”

“Why are you wearing a red plaid shirt with green striped pants?”

"We don't have color vision—no need to evolve it."

"But you can see patterns. Plaid with stripes?"

"I got dressed in the dark. We come out after the fireflies have gone to bed."

"Ah, you only work the night shift; sorry to hear that."

"Yes, it's tough work, but it's only for three seasons, and the summer nights are rather short."

"Well, that's not a bad job. What does 'Katy did it' mean that you all seem to say."

"I shouldn't really gossip, so I won't."

"And towards the end of autumn, I only hear 'Ka—'"

"We are so cold and shivering that that's all we can say."

"What other reversals might we make?"

"Well, to continue the Ptolemaic one a bit deeper, why was it that they all wanted Earth to be the center of not just the solar system but also of the universe?"

"They saw themselves from only their one point of view."

"Yes, and while we are presumably rare, the universe is a big place and is mostly of stuff that is not us."

"Um, mammals, and, er, insects and all life are not the center and purpose of the universe?"

"Well, we don't know, but that's what comes out of the reversal. Of course, not all reversals are appropriate. However, in considering the species, we are not really the Kings of the Earth either. Nor were the dinosaurs."

"What was/is?"

"Bacteria, for we need them, but they don't need us, and they were among the first and foremost of life. We would die in two minutes without them. Plus, they labored for two billion years to make most of the oxygen in the atmosphere, as well as many of the carbohydrates."

"They do seem so important as well as long lived."

"Some of them are rather indestructible. They can even gorge on plutonium, the deadliest substance ever known."

"Yikes!"

"So, what are you working on now?"

"A quantum computer, for then I can follow all paths at once."

"That could be how the brain works."

"I know, but my brain is small and I need help, for the internet is too large for me to sort out all the boloney."

"GOOD LUCK!"

"Not so loud—you may disrupt the quantum state."

"ok".

Wick weighed what the cricket seemed to be saying, then decided to alter course a bit:

"Perhaps, the universe isn't about anything living. I mean why should we assume that bacteria or any organism is 'king'. I am of the opinion that law is king. I mean think about it. We are sitting here on a rock warmed by a sun and that sun is a few billion years old. But neither you or I matter at all to the rock or the sun, we are simply come to this point of the universe at this time to sit here and talk. But were it not for specific laws, the existing rules of order that established the sun which warmed the rock, the moon which now brings us light, the cress in the nearby stream, you and I would likely not be having this conversation.

"If we are here, talking together, we are here because the law has brought us here. The question I'm trying to understand is this: Is free will sustained by universal law, or is it only a ruse—an imaginary prison that puts on the pretty face of liberty while holding all in chains. If the free will is a 'legal status' in this universe, then it must be at least partially indeterminate. If free will is not a 'legal status', then determinism is the law and all of us stand at the beckoned whim of spacetime."

The cricket thought for a moment, trying to reestablish the quantum state Wick had disrupted with his outburst, then asked, "Does this mean that you can imagine a universe in which there are no humans or 'thinking' beings?"

"Oh, yes."

"Then you are not of the opinion that God created this universe for the express pleasure of man?"

"I don't currently find that particular question interesting. But if God did create the universe, I'm interested in knowing whether He created a universe of freedom, or a universe of constraint. Perhaps I even wonder if God was free to create the universe or was that creation a universal imperative. I would ask the same question even if there was no God. In other words, assuming there is no God, is the universe required to look in an already determined way tomorrow? Does that predetermined configuration of the universe already exist? Or will that configuration be a universal surprise?"

"I like to think it won't be too surprising."

"Why?"

"Because I want the sun to rise soon... I'm getting cold... And if the universe were to reconfigure in a surprising way,

tomorrow there might be no sun.”

“That’s not the kind of surprise I mean. I’m talking about the little things... whether the sunrise will be orange and magenta, or whether it will be all shot through with gold, or whether it will be a snowy, sun-obscured day. I trust there can be a supreme law without necessarily implying constraint. Children play soccer, for instance, in accordance with a set of rules, and the rules maintain order in the game, but the rules do not determine the direction the ball goes at every moment of the game. The rules are a framework within which the game flows. But the game flows nonetheless. The rules do not make the game determinate. If they did, no one would play... no one would watch.

“Am I making sense, cricket?”

...The mare stepped through the portal with caution, time and space having moved since her last visit. She looked above her, at the placement of the moon and stars; this appeared to be the correct locale. She had yet to discern the cricket and Wick and wondered if they lingered still.

She slowed her breath and listened, reluctant to leave herself vulnerable by using her talent of mind touching, alone as she was at present. Ah yes, they were in discourse by yonder stream near the big rock. The mare approached on silent hooves taking in the new course of the conversation and making her appearance just as Wick inquired, “Am I making sense, cricket?”

Sensing her approach, Wick intoned, “Greetings, Caramel. That is your name, is it not? Why are you come alone?”

“My companion is on our resident timeline, taking her rest. She believes me to be in the stable yard with the others, enjoying our hay and resting likewise. Might I interpose that there is both constraint and freedom? There are the constraints of the certain natural laws that you are only just beginning to comprehend your relationship to and within. Still, there is much freedom of choice, many which are available to each being or form.” The mare spoke English quite plainly in a low and slightly husky tone.

“And while we are at it, perhaps you might enlighten me why the concept of a teleporting equine is any harder to accept than a pub-crawling, multi-linguist cricket”, she added as she settled in to a more comfortable stance, resting her hind leg.

Wick almost felt that the mare was testing him. This was quite irregular.

“Come cold cricket,” suggested the mare. “Jump up on my my back and warm yourself. If I must leave for any reason, I shall give you sufficient notice of my departure.”

“Now where were we?”

“Hi Crick,” said Wick. “Did I wake you?”

“No, I’m just having trouble getting up from this heavy bed gravity.”

“Well, you’re counteracting the gravity of the entire earth to get up out of bed.”

“Hey, ya. I’m pretty strong, aren’t I?”

“Yes, in a way, but you did get up rather easily and so perhaps gravity is rather feeble.”

“Oh, well maybe it is that matter is very lightweight compared to how big it looks since all is mostly empty space. Thus, gravity doesn’t have to be so powerful.”

“True, a lucky thing for us, I guess, plus some entities are massless anyway.”

“Is there some extra bed gravity that makes it really hard to get up on some days?”

“No, that’s just a way of putting that it’s hard to move when one is still groggy.”

“I have to pick out some shirts to wear. Can you shine your flashlight so I can get a better look?”

“Sure, I’m pointing it to your collection of shirts.”

“Ok, let’s see. Oh, ugh, not that one. Hmmm, just wore this one. Oh, there’s a spot on this one. Oh, wore a similar color yesterday. Ah, here’s some good ones all about the same. Ill just close my eyes and pick one. Doesn’t matter which.”

“What was that ‘ugh’ about?”

“Oh, that’s all that a part of my nonverbal side of my brain could get out. It means ‘no’. It didn’t really tell me the details. I’m just saving that shirt for Halloween, I suppose, or I’d throw it in the trash.”

“Did you use free will to pick out a shirt, then?”

“No, but I used free choice from what I know and from what shirts were available. One cannot will that which does the willing.”

“How come?”

“The ‘will’ happens subconsciously, during brain analysis that we are not privy to.”

“Not privy?”

“Well, it’s just that the result is not available until the brain completes its analysis, that’s all, but when it’s mostly done, it gives us a peek at the result. We can still veto it, using a higher brain, if we have one and we pause to use it. This is called ‘free won’t.’”

“So, perhaps a lesser simpleton brain area says to do something and so this surfaces on the mind in consciousness, as usual, but then some kind of global review says ‘nope?’”

“Something like that.”

“But isn’t this ‘veto’ thing still determined by your brain and not really free will?”

“Yes, but it makes us think that our will is free.”

“Can we predict the outcome of a soccer game?”

“Maybe in theory, but in practice there would be  $10^{100000}$  calculations, so, we can never know the future. Life would be totally boring if we could know all of the outcomes.”

“What if we videotaped the Super Bowl, learned the score somehow, and then watched it later?”

“That’s different, plus knowing the outcome might take some of the excitement out of it.”

“So, what is the light that we see?”

“It’s the visible part of the wide electromagnetic spectrum. The non-visible contains x-rays, ultraviolet and all that other great stuff that gets used for something.”

“How do electromagnetic waves get someplace?”

“They are a self-renewing disturbance of electrical begetting magnetic begetting electrical... This discovery doomed the ‘required’ aether medium, but, ironically, electromagnetic waves are a kind of aether in themselves.”

“How do you know so much?”

“I Google.”

“There is a lot of junk out on the internet.”

“I know, so I just use stuff that has been proved. For example, although quantum mechanics sounds weird and counterintuitive, they’ve used its principles to manufacture stuff that works great, so I believe in it.”

“What are you doing tonight?”

“I have some interviews with some blind dates.”

“Will that ‘ugh’ first impression thing guide you?”

“Yes, I hope so.”

“You know cricket, sometimes we take the most obvious

things for granted. Take the horse you’ve been sleeping on. Here you and I have been talking and we have left poor Caramel out of the whole exchange. I’d be interested, Caramel in what you have to say, but I must say that what you think you did, and what you did seem completely different to the two of us.

“For instance, you thought you went through a time portal, but what I saw was you galloping (and a might slower than you thought) over the hill. There was no portal, no vanishing act, and your rider, I think is lying asleep in beneath one of the aspens over there. I still hold that time is not a navigable medium. People might think it is, they might convince themselves it is, but time is none of that.”

Caramel looked a bit taken aback, “You have no idea what you’re talking about. I maneuver my way through time as a matter of course. Its what I do!”

“Come with me, Caramel. Let me show you what I mean.”

Wick jumped from the rock and made his way along the stream to the stand of aspens with Caramel behind him and the cricket riding on the mare’s back. The leaves trembled on the dawning air, which shimmered with a silvery mist. Wick carefully laced his way through tall nettles and several clumps of leathery looking mushrooms until he finally found what he was looking for.

There in the grass lay the rider, sleeping in a bed of dewy grass, breathing deep and steady.

“You see, Caramel, I watched the whole thing. You were here all the time. You never left us. Now I’m not saying that you’re an untruthful horse. I’m only saying that what you perceive and what I perceive are different things. To date I have never seen a time traveler. I doubt I ever will. I don’t think the universe permits such motion.”

The cricket looked down at the sleeping rider.

“By the way, Cricket,” Wick added, “Most scientists describe light as anything that moves at the so-called speed of light. That includes all electromagnetic effects—radio, microwave, infrared, visible, ultraviolet, x-ray, gamma ray—they are all light. They all travel at the velocity ‘c’. What’s more, there are many animals which see beyond the “visible” spectrum. Snakes for instance see in the infrared spectrum and certain birds see in the ultraviolet spectrum. You are another example. Visible light for you includes primarily the spectrum of green and ultraviolet. Most other

kinds of light are not well understood by you, which is partly why you're having so much trouble with your clothes. Talking about light as if it were only that light in the visible spectrum is very misleading. We classify a phenomenon as light because of its behavior, not because of how it is perceived by various species. The peculiar behavior of all light has to do with the way it moves. Light moves through space at the assumed velocity 'c' in relation to all other things.

"What's more, you should not deceive yourself into thinking we know what light is. We don't. We do a pretty good job describing its behavior in terms of motion, speed, mass, neutrality, etc. But that is like describing a man by his motion, speed, mass and neutrality. We can have done that and still fail to understand what the man is. We know almost nothing about what light really is. If anyone tells you otherwise, he has allowed arrogance to blind him to his blindness."

"Visible light is the rainbow that a species can detect among all the other frequencies," said Crick.

"Other frequencies may be detected, too, but don't show up as visual."

"Yes, we both have a motion detector that lets us duck out of the way of things like a diving bird, but in crickets this is an even better one, as it has to be."

"How few photons can we see?"

"Humans can even make something out of about 3-5 photons?"

"Why is the speed of light the constant 'c'?"

"That's how fast protons spin, so that's the speed that photons are thrown off at."

"How were your blind dates? Did you have to go out with them as soon as you met them?"

"No, they were actually blind and could not see."

"Is this OK?"

"Of course, I am fair to all, but I must say, that, um, they will never be able to see the messes that I might make around the house."

"And so they couldn't nag you to clean up? But they could feel around for the messes and then ask you to tidy up."

"Well, I told them that I was deaf."

"You wouldn't do that, and neither would Austin!"

"I know, but this is just a story. You do know about how many marriages don't work out."

"Sure."

"Well, this would be the perfect marriage since I couldn't hear what she says to do and she would mostly not know about my messes."

"Not to mention that she could hear you and then have to take all direction from you. Oh, Crick!"

"Um, you're right. I'll tell her the truth and we'll make it work. I'll be neat and we'll converse both ways."

"So, no 'ugh' about her?"

"No, she is a 'wow' and I told her that I'm handsome."

Wick thought for a moment and then asked, "Does she know you can only see in green and ultraviolet? She's going to have to wear crazy makeup. By the way that thing about spinning protons casting off light—you made that up. Point particles don't spin in the way you mean and we have no way of detecting how fast they spin, and the electromagnetic reaction is mostly a reaction between photons and electrons, and the only thing protons are thought to cast off is gluons, and this whole description—the Standard Model of Particle Physics—is only barely different than your blind dates trying to find your messes. And. And. And..."

Wick looked at Caramel. She was standing, but she was fast asleep. And he wondered if cow tipping would work with a horse.

Caramel flicked an ear at Wick, without opening her eyes.

"Cows generally don't sleep standing up and they are quite difficult to sneak up on, making that rather a 'moo point', dear fellow."

"Besides which," the mare continued, "attempting to push a horse off its feet, unless the animal is tranquilized, would be considered an act of aggression and a breach of the 'Human-Horse Protocol', agreed to when my kind first came to the assistance of your species."

Cricket made a high pitched squeak, chortling in cricketese.

"I'll ignore your earlier remarks, Wick, and point out only that yon rider, sleeping 'neath the aspens is a construct of your mind, what you expect to see, as you recall her. Your memory of her is not entirely accurate and there are many inconsistencies. As for my departing speed, it was quite accurate. I have participated in barrel racing and been clocked. Objects viewed from a departing angle are quite hard to determine the speed thereof, enough said. Not that I

think you are an untruthful human, merely that your theories do not remain constant when you start adding an extra dimension or few.

“Now, in regards to your friend the cricket; the wardrobe challenged one has been using the plaids and stripes gig to distract you from the fact that he has been traveling between venues during the whole of your conversation. He is very quick and likely counting on the fact that individuals among his species look quite similar and that with the wardrobe as a constant, even one as astute as yourself, might not notice.

“These minor differences aside, I find both yourself and the multi-dimensional cricket quite good company, so let us continue in this vein. I’m not here to question anything, merely to observe and enjoy. By the way, the alfalfa and cress were very thoughtful. And here’s an inside tip. My companion, when next I bring her, likes Australian Shiraz or a good Cabernet. Does yonder pub have an off-sales policy? Pull that out of your hat and you’ll have her thinking you’re a mind reader.

“Now, if you’ll excuse me, I’ll continue my rest. Although horses appear to be sound asleep, we can only achieve REM sleep when we are laying down, and we seldom lay flat unless we feel secure, with one of our kind or a trusted species acting as sentinel. So no more thoughts of ‘cow tipping’, Wick, agreed?”



— 6 —

### **The Travels of Light and Time**

“So, Crick, what do you think about time travel?”

“Impossible.”

“How come?”

“No one ever came back here from all of the infinite future.”

“If they did, we would probably lock them up.”

“Oh, poor Robert!”

“His work life already has a lock on him.”

“They lay off people and give their work to those remaining.”

“What does visible light do for us?”

“We sense its waves, like anything else that we can sense, and represent it in our brains as brightness, reflection and luminosity and all that let’s us ‘see’.”

“It’s bright within our dark heads?”

“Yes, that’s part of our simulation model of the waves and stuff of reality that is really ‘out there’”

“That’s remarkable. Guess all things sensed only come to real life within our heads.”

“It’s a model, but it is hopefully a fair representation of what comes into it.”

“Is light alive and how does it go on forever?”

“Well, yes it’s alive in the sense of having a life of its own in the way that we described its propagation of self-renewal by electric-magnetic-electric-magnetic generation. The field actually creates a photon, destroys the photon, creates a new one, etc. It’s amazing!”

“It can indeed travel on its own to anyplace near or far.”

“It waves to us as it goes by.”

“What’s Mother Nature’s glorious and final word these days?”

“It’s the beautiful but boringly named ‘Standard Model.’”

“Yes, it’s probably the most amazing accomplishment in history and it does just about everything for us and is likely very useful for billions of years. What rather should we call it?”

“We could call it ‘Queen Mother of All Reality’ and stand up and bow whenever we refer to it.”

“God save the Queen!”

(You all must stand up and bow now. I am watching via a web cam.)

“Hi Wick,” said Crick, “I borrowed the proton/neutron spin rate from Jimbo’s Fluid Energy Theory, in which liquid energy forms whirlpools when two oppositely flowing currents pass each other, this taking even millions or billions of years to amount to a single neutron or proton, which then solidifies and throws off the photon as excess energy that is continuously collecting but is unusable by the already solidified particle. Even hurricanes and galaxies are whirlpools.”

“This theory has no standard model, but I’m intrigued. What is the spin rate?”

“Well, then, the highest known electromagnetic wave frequency is  $10^{23}$  waves per second, so I’m taking this as the spin rate of  $10^{23}$  revolutions per second (rps). So, you can do the math, but taking the diameter of a spherical neutron to be  $.954 \times 10^{-15}$  meters, as known, the surface speed of the spinning neutron then comes out to be exactly ‘c’! I was so amazed. All this sounded good as a reason for the speed of light.”

“I wonder what the real reason is?”

“Who the heck knows these kind of things! Do they matter?”

“Mass matters. And, hey, I thought you were interested in science.”

“Ha-ha. And mass even comes from stuff with nearly no mass. Going on dates has become more important to me than science.”

“Yes, for mass need not be conserved, but only energy, charge and momentum.”

“Who makes these laws?”

“The Queen Mother.” (All stand and bow)

“How could a law be forever defined as a law without even having been defined?”

“Maybe it was of the lawless, formless, and timeless.”

“Well, who cares, for I have a great girlfriend now. Although she’s blind, we only go about in the dark anyway, which actually gives her an advantage, for she’s used to not seeing anything. I guide her through twilight dawn and dusk and when the moon is out; otherwise she guides me through the darkness.”

“That’s cool.”

“Anyway, we have other senses.”

“What are they?”

“I don’t know—because Austin was lazy and didn’t look them up yet.”

“So what’s your girlfriend like?”

“Me.”

“You know what I mean.”

“She’s educated, lively, fun, inquisitive, creative, spontaneous, beautiful, a good planner, sexy and sings nice chirrup.”

“Getting married?”

“No, for we both agreed that then we might stop trying to impress and court each other. We are on a permanent honeymoon.”

“Well, then no one could ever say or do anything that wouldn’t be appropriate on a honeymoon.”

“You got it.”

“Is this relationship better than science and figuring out our essence?”

“Yes, existence must always take precedence over essence, for we are thrust into life and must deal with it. Essence can’t even be known, so who cares!”

“Ain’t that kind of the only truth, but it’s a fun hobby and you said that learning is good.”

“So I’m learning about my girlfriend now, and Google will tell me all the science answers.”

“Is the celebration of a wonderful relationship as the icing on a delicious cake more satisfying than intellectual pursuits?”

“Yes.”

“OK, I’ll try to pique your interest in science again. What’s dark energy and dark matter?”

“They’re not dark, they’re transparent.”

“Then how do we know they’re there?”

“Circumstantial evidence. We see the gravitational influence.”

“What’s dark energy specifically?”

“No one knows a dang thing about that, not even Google. I was hoping you wouldn’t ask.”

“Dark energy is everywhere; whereas dark matter is a very large halo about the galaxies.”

“Oh, so let’s say that dark energy is a standard part of everything, being 70% of all mass. Done.”

“That takes care of that one. What’s dark matter?”

“It’s a really large halo with a slight impurity in it called a galaxy.”

“Hey, good reversal. Actually, that’s kind of true as there is so much dark matter.”

“25% of all mass is dark matter.”

“Perhaps it is the lightest particle, one undiscovered as yet.”

“Or the darkest, ha-ha, but, yes, why not. OK, finished.”

“So we solved that one.”

“Any really hard questions? Those were too easy.”

“What the heck are we doing here thrust into this existence?”

“Please, not that hard.”

“Why did the chicken cross the road?”

“Please, easier ones than that!”

“Consciousness?”

“Ayeeeeeee. Too tough.”

“Why do squirrels run toward and under cars instead of away from them?”

“Impossible to answer! It makes quantum mechanics look easy by comparison!”

“How did astronauts land on the sun?”

“Ha, that’s easy—they went at night.”

“How many angels can dance on the head of a pin?”

“None, unless you are Catholic.”

“How far does the needle move when playing a record album on a turntable? You can round it to the nearest mile or kilometer if you wish.”

“About 4 inches.”

“How many grooves are there on the record album?”

“Two, one on each side.”

“You’re sharp today.”

“Love does that.”

“So it is a good time to think science.”

“True.”

“What is the longest month?”

“October, if it has an extra hour added for daylight savings time.”

“What is the thirteenth month?”

“Remember.”

“How many seconds are there in a year?”

“Thirteen, the second of every month.”

“Where do you find a no-legged dog?”

“Wherever you left him, the poor guy.”

“All this alertness comes from love?”

“Yes, it awakens every sense and brain cell.”

“What were two little animals doing cast adrift in a boat in the middle of the ocean?”

“They were two stinky skunks that were thrown off of the Ark.”

“How many animals of each species did Moses bring aboard the Ark?”

“Moses didn’t have an Ark, Noah did.”

“Was Noah’s wife named ‘Yesah’?”

“No, she was Joan of Arc.”

“Can you explain gravity?”

“The answer just got posted in the ‘Idea’ thread.”

“What happens after you die?”

“You are dead.”

“What else happens?”

“People note that you owed them money.”

“Could the Universe be God?”

“No, that is a distinction without a difference, such as the Universe is the Cosmos.”

“A rose is still a rose by any other name?”

“Yes, and I’m giving some roses to my girlfriend tonight.”

“Where are you two going?”

“There’s a great rotted tree where we can cuddle and rub our legs together.”

“Hey, you can’t say that stuff on ToeQuest.”

“It’s OK, that’s how we make those little chirps.”

“Perhaps you have found a quantum computer in your love, Cricket! Your mind is sharp as a quantum dot tonight! Your particular locality of the universe must be passing through the background of resting light faster than the rest of us. Amazing.”

Wick was feeling a bit worn out from the long and draining conversation with the love-struck cricket. He was also



feeling just a little bit envious... and tired. The sun was spreading out on the horizon like a sweet tear of joy!



— 7 —

### **Into and Out of the Yukon Snow**

Caramel was now nestled in the grass, as she had come to understand that Wick was only kidding about all the cow tipping nonsense. Wick felt envious of Caramel, too, but he couldn't sleep. There was so much he wanted to learn. When he closed his eyes, he found himself dreaming about cloven globes of wire and spinning sphere's. He couldn't help thinking that somehow everyone had misunderstood what the universe was trying to say.

Quietly, Wick reached into his coat and pulled out a bottle wrapped up tightly in brown paper—Australilian Shiraz. He leaned it against the horses neck and stroked the horses mane with calm compassion.

Behind him, the cricket was singing to the dying moon so passionately, Wick wondered if the little insect's heart might tremble and burst. Such love.

He thought he could sense someone coming up the path, so he left the overpowered cricket to his serenade and began his descent down the path towards the city and the Pub in search of the creature he thought might be coming...

The rider hunched her shoulders against the wind and drifting snow. The beam of her headlamp revealed little of the established path and she stepped off, filling her boot with snow and nearly upsetting the buckets of warm water she was carrying. No northern lights tonight.

All of the horses were accounted for except Caramel. By day, Caramel delighted in cavorting along the front fence line, putting on a show for her appreciative audience. Many neighbors had called to ask permission to feed the friendly

chestnut mare either carrots or apples, which Caramel took very gently when they were proffered. She was an excellent ambassador for her species.

“Probably had her fill of handouts today, and now sleeping it off.” The rider wasn’t concerned, knowing that Caramel, more than any other being, was quite capable of looking after herself.”

By the time she was returned from working the graveyard shift, she was quite certain that the jaunty red mare would be waiting for her.

Crickets have four songs, all about love and/or the insuring and protection of it. Tonight they sang the serenade song of love about to be consummated.

They sunk snug into the soft bed of the fallen rotted tree and showed up math and arithmetic when they two became one, this synergy actually making them more than the sum of two.

Rounded life was the symmetry of yin and yang together blending and swirling about one another and so they made their world go ‘round with love.

We all know how this is so we’ll skip ahead to some of their later conversations. Crick had related his conversations with Wick to her and that he had gone down the road, also telling of the graceful red mare, its rider and the northern lights.



— 8 —

### **Every Path Taken**

“The mind is a limited quantum computer,” she told Crick. “It uses all we know and anything that it can beyond that to almost instantly surmise the most probable thought or action to finally surface out of all the superimposed scenarios of consequences, going down every path of thought to action to thought to action as best it can, not knowing, of course, the respondent actions of the external minds reached out to.”

“That’s a heck of a lot of traversals of one hundred billion brain neurons and their connections!”

“Yes, and it even reaches beyond the brain proper to the nerve spindles all over the body.”

“That would makes sense, for they are as an extension of the brain proper, being connected and reporting to it.”

“That’s a good way to look at it. We can prepare to actionize, all over, yet not be thrown into spasms of actual movement that might not amount to anything sensible.”

“We can mirror many possible events, even learn from them, such as when a gymnast mentally reviews her moves when she is sidelined by a sore ankle.”

“We become what we envision or sometimes even what we see in others’ doings, as a monkey learns by seeing another dig up a potato, simulating that sequence of moves.”

“It could be dangerous to mirror learn about bad behavior observed, such as in TV Wrestling shows.”

“As so they say that learning is a dangerous thing.”

“The good thing about learning is that it strengthens the brain’s wirings and winkings, whether the learning is good or bad.”



“No one knows.”

“Might not the projections from the CMBR go way off after billions of years from a very slight mistake?”

“Yes, but they have the landmark happenings of history to use to recorrect back to the right path, such as the extinctions and the happening of Hitler’s birth and so forth. That’s the brilliance of the scheme.”

“What about from here on out?”

“Well, that is up in the air, as we are on a new course, going on whence we were not heading for from the initial CMBR configuration.”

“Hope they can work it out. What else do they use it for?”

“They can break any code within a few minutes or so and can readily learn the bad guys’ plans of evil upon us. This is another big secret.”

“To keep a secret, tell no one.”

“Uh, oh, I am a blabbermouth.”

“Well, of course, I’ll keep it, for it benefits the world.”

“Some of the keys to the codes involve the factors of very large prime numbers that would stump classical computers forever?”

“Yes, the classical computers must test every odd number for being prime up to its square root in a linear one-by-one fashion, whereas the quantum computer can do it all at once.”

“This is the beauty of the mysterious happenings of the quantum realm.”

“Don’t the bad guys wonder how we so often catch on to them?”

“They might, but they do succeed sometimes. The rest of the time we try to manipulate their failings, making them out to be just some bad luck, so they don’t get too suspicious.”

“Well, that’s ingenious, and at least a good organization is looking out for us!”

“They are like guardian angels, being above and beyond all nations and politics. They don’t even have a country of their own.”

“What are they called?”

“I can’t tell any more secrets.”

“Here’s a kiss for you.”

“Thanks. Well, they are called the Ninja Empire, as they were formed from those dedicated to the martial arts and

the honor and such that goes with that. Many ToeQuestors are members. In fact, Rascal is now the new GrandMaster of the Western Region.”

“Is all this kind of talk better than love and the celebration of it?”

“Well, almost, but it’s not really a case of any one thing being better, but of all things relating and boosting each other in a really aware state of life. Wick showed me that.”

“Come to me, lover!”



— 10 —

### Emergency

The Pentagon's main computer had just taken in a virus or a worm, reporting:

\* \* \* S O U L virus active \* \* \*

\* 16 minutes to completion \*

\* Enter 28 character password prevent destruction \*

The system operators didn't know what to do, so they entered 'SOUL' seven times:

SOULSOULSOULSOULSOULSOULSOUL

The virus reported:

\*\*\* Wrong answer \*\*\*

The destruction speed has just been quadrupled

4 minutes to completion

"What if we just turn off the computer? We have a backup of the data."

"It's not meant to be turned off that easily—it supports worldwide operations. Besides, someone has to go four stories underground to turn it off and that takes a really high level clearance. There's no time."

"Well, anyway, call the General."

"He's off playing golf; he'll never get here in time."

"Hey, holy smokes, the virus is not destroying our data, but is removing our security layers one by one."

"That's good."

"No it isn't good; the entire world will soon have access to all of our secret data."

"Ah, true, and there's no time to enter all combinations of 28 character passwords."

"Yes, and the virus will only quadruple its speed each time a wrong one is entered."

"We're doomed."

"We'll have to guess it right. It's probably concerning the definition of the soul."

"But the soul is defined such that it has no definition!"

"Well, there are still many suppositions such as that it is the spiritual or immaterial part of a human being or animal, regarded as immortal or a person's moral or emotional nature or sense of identity—the spirit, psyche, (inner) self, inner being, life force, vital force; individuality, makeup, subconscious, anima, pneuma or atman."

"So, then, what could be the embodiment, personification, incarnation, epitome, quintessence, essence; model, exemplification, exemplar, image, or manifestation?"

"Forget it! We're ill-fated, ill-starred, cursed, jinxed, foredoomed, damned and star-crossed. It's impossible!"

\* 2 minutes to completion \*

"We have only one layer of security left!"

"Call TOE Oversight."

"Wick here; I've been following; hold on. I have a good source for these types of things."

Wick had remembered that the cricket had really been in the zone lately, an effect of being in love—and had dialed him up.

"Crick, there's no time for social talk. We need the password to stop a worm virus that's attacked the Pentagon computer. Quick, what is a 28 character representation of 'S O U L'—this clue is all caps and there is a blank after 'S', 'O' and 'U'."

Crick answered, "It's all in caps because the soul is thought to be extremely absolute; the blanks indicate that the capitals stand for separate words."

\* 1 minute to completion \*

“Quick, Crick, we need the trick of the pick in the nick of time for the sick!” pleaded Wick in a lick.

“It will be a wild guess.”

“Guesses can have intuition behind them.”

“OK, give me a minute.”

“We don’t have a minute; you have 30 seconds; I need time to transmit the answer.”

“Ah, the pressure.”

The line fell silent. 20 seconds of eternity passed.

...

“Crick?”

“Try this, Wick:”

“Spirit Of Unconditional Love.”

The operators entered it, now willing to try anything.

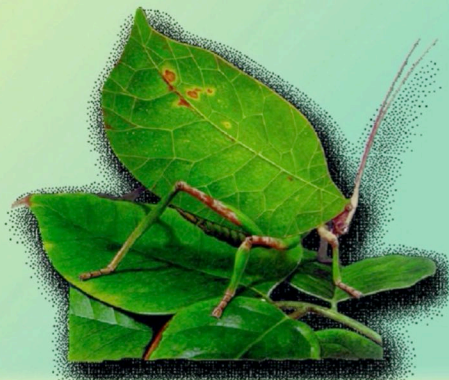
\*\*\* SOUL virus aborted \*\*\*

“Hurray! Reload the rest of the security layers.”

...

“Hey, Wick,” said one of the operators, “the 6-star General just called and would like to meet and congratulate your crypto source at the golf club restaurant over drinks and dinner.”

“OK, I’ll bring him right over. He’ll have the house salad.”



— 11 —

### **Delicious Nips**

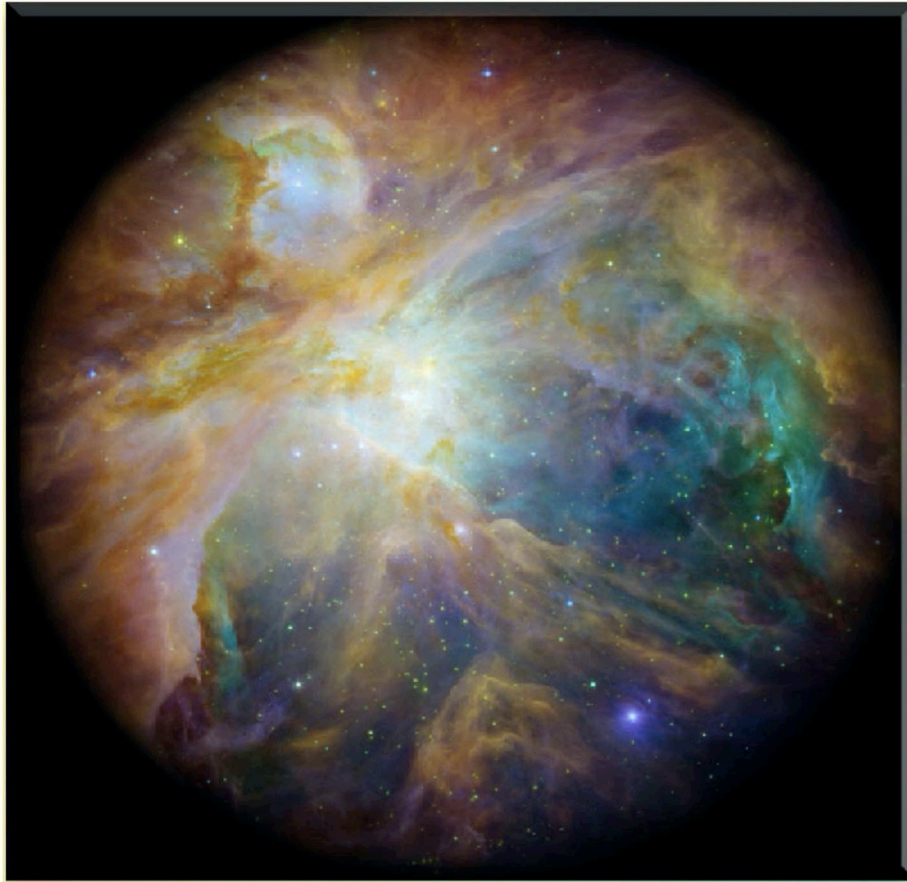
Having come to terms with Wick on the subject of cow-tipping, Caramel decided it would be a shame to allow the beckoning grass and soft turf to go to waste.

She sampled a few nibbles of alfalfa mixed with some yarrow, loving the herbal minty taste it left. She loved to waft her breath over her rider, who found this scent quite attractive, and would sometimes blow back into Caramel’s nostrils gently; a human who observed and understood the gestures of equine affection.

Then a small sip from the nearby stream, cool and refreshing. Returning to the grass, she selected her bed, lowering herself gently for a creature of her size. She remained on her sternum, legs gracefully tucked under and to the left, to give her the most advantageous position for a hasty departure.

Satisfied that Wick and the Cricket were still engrossed in solving the mysteries of the universe, she lowered her head and breathed deeply of the smells of this place. Better get used to it. It might be home for some time...

Her eyelids began to close over her wide-spaced luminous brown eyes.



— 12 —

### Three Selves

Wick was certain someone was coming. He sat upon a stump near the head of the trail and waited. He could hear the cricket singing brilliantly to the dawning sun. But as the sun climbed higher in the sky, he began to doubt... and his doubt comforted him. After all, the very idea that a person might have a premonition of the future implied (somehow) that the future might indeed be determinate. And Wick did not believe in a determinate future. He smiled to himself, pulled on a blade of grass until it gently gave way revealing a sweet juicy white core. He nipped the white part off with his teeth, crossed his legs on the stump, closed his eyes and began to think deeply.

Wick awaited the future, and of course it came with every rolling 'now', but it was the further future that could tell of determination if it arrived. Not just anyone coming done the path would mean that, for that was what paths were for; but, if a certain someone...

The cricket hopped aboard the sitting Wick, chewing some blades of grass as well. The future awaited them as they awaited it. They had just returned from a five-star restaurant dinner with a six-star General as now they rested their light-forms beneath a million-star sky.

"We are the stars of this reality show," Crick remarked.

"From the stars cometh our help."

They soon encountered a young man walking toward them. "He looks just like you, Wick," Crick noted, "though he's much younger."



"He sure does! Ho, it is me! It is my younger self. The past has arrived!"

"How do you know this? Maybe we're imagining it."

"Because, once, when I was his age, I met my older self, although I didn't believe anything that he told me at the time. I was stubborn, I just wouldn't listen, even though he knew my name, my history, and my future."

"And this future played out?"

"Yes, in general, but there was a more or lessness about it."

"Holy cripes! Look, Wick, your younger self is walking right up to us. He's real!"

Wick, the older self of the present said to his past and younger self, "Hello, my younger-self-same! Do you know my name?"

Said the younger self, "I know you not!"

"I told you" he said to Crick, "that he wouldn't know me."

"Well," Crick said, "at least you're older and wiser now than he."

They rested and bit off some more roots of grass for a while.

"Crimeny, Wick, uh oh! A very old man is now walking toward us. Don't tell me! He looks just like you, Wick, although he's much older than you."

"It is me, of course. He is my older self!"

"How do you know this?"

"I just have a feeling. Remember, I am wiser now."

The older self of the future said to the younger self of the present, "Hello, Wick, my younger-self-same! Do you know my name?"

Said Wick the younger self, "I know you, yes, I know you very well; you're my older selfsame! I thought you'd be coming along."

The old man smiled and walked on, rejoicing. "He knows me. He knows me!" They could hear him saying this over and over to himself as he went down the trail.

Wick fell off the stump. He hadn't slept for nearly 24 hours, and so he drifted off and fell.

He laughed as he lifted himself from a clump of columbine.

Stupid dream! Younger self! Older self!? Impossible.

The present point is where all things unfold, where horses named Caramel sleep, where would-be consciences look like crickets and fall in love. It is true I recognize my past self. It is precisely who I am today. And I recognize my future self as well. It, too is precisely who I am at this moment.

This moment is where we are... all of us. This moment is our universe, our eternity. And it just keep moving, on and on, at the velocity of universal free fall. And that's alright.

Every moment is a new configuration... a configuration of matter and energy that has never existed in this precise way before. The old configurations are neither stored nor preserved in spacetime. Spacetime belongs on the shelf with the Brothers Grimm. There are no paradoxes. There is only life and learning and a continuation of the shifting configurations that will happen forever on this moving 3-space we call the Present.

The cricket was still singing, high on the hill. He was starting to sound a bit gruff.

"He's going to wear his wings and legs away if he's not careful!" Wick whispered.

He crawled back onto the stump and waited...

"Chirrup, chirp. Did that elder-younger selfsame stuff really just happen, Wick?"

"It seemed like a dream."

"Do dreams count toward our experiences?"

"You mean, are they an input to what we become?"

"I thought I might have said that or such."

"Well, I guess they would, but, not so much, I'd say, since they tend to fade away from memory. I suppose that what we go through in them remains in us in some way."

"We wrote it down and so now it will come fully back to us when we read it again someday."

"Yes, and so it must still be in there."

"Do you think the felling of deja vu is from having been somewhere similar in a dream?"

"Sounds good to me."

"What if a dream came true?"

"Well, that might be likely since perhaps dreams are of what we wish for, sometimes, except for the nightmares, of course."

"I have a dream of figuring out resting light."

"Sleep on it and it may come to you."



"Thanks. Of what was your life made, Crick? What was the turning point?"

"When I was young and unlearned, I ran breathless through the meadows and forests, fast pursued by the stings of wind and rain. On and on I wandered, lost, wild without rest, searching for a haven from life's dull pain. The storms chased me till I could go no more; I stood helpless, backed up against a door, but, I fell through it before any harm could reach me, cushioned by all of the dreams supporting me. I had found the library."

"I take it this was before the internet," noted Wick.

"Yes. It was as a secret garden, one half as old as time, and had a courtyard in which poets and writers could live and write their words and rhyme—while the nightingale created the rose by moonlight magic from their thoughts sublime. The literary scenes unfolded before me, such as music often approaches one and surrounds, and then builds on the vibrance which in one is—to fill with beautiful sounds and visions."

"The library became your home away from home."

"It did, and such I brushed aside the webs of gossamer—life's rites and rituals, as came to life in me all that mankind should remember: my quick thoughts fell, condensing into dew, while living dreams unveiled much more than I knew. I wandered down memory's path, aglow in the soft beauty that it hath. I saw Johnny Keats kissing Fanny Brawne, as he spoke more than words but less than song, and Byron, endowing form with fancy, and Wordsworth, penning his thoughts to Lucy, and Shelley, my favorite poet, plumbing the depths of mystery; I read them all—now they're a part of me."

"The romantic poets of our England!"

"Yes, indeed, but deeper still I probed, looking in on it, and even heard Mrs. Browning reading a sonnet. Poetically, I took them all in, even the shadowy Emily Dickenson. So there I rested, near the library, up against a tree, savoring the feeling of their poetry, in another garden where all the flowers used in Shakespeare's plays grew together in a living bouquet. And there before me, beneath the rose tree, Old Khayyâm, yet alive through his quatrains, yet wrote his verse, looking younger than I am, and lived the proof of his philosophy of life, the writing of which was but secondary. All this I remember, and much more. I began to write my own poems."

— 13 —

### **Life, Passion, Emotion, and Reason**

Crick and his girlfriend Kit hopped and flew down to the waterside. Warm breezes were blowing from the west. The sun was low and so there was a wealth of diamonds sparkling on the water—a glitter path. They filled their cups and raised a toast to the zephyr: "To nature! May it ever run through us and we on through it! Life's love runs deep on a summer afternoon. May we ever float on its currents."

For dinner they ate the grass and leaves, along with some rhubarb and guavas. Night was falling. Soon the planets came out, just ahead of the stars, as they always did. "There's Mars and Venus!" she exclaimed, pointing. "Mars is the fourth planet from the sun and Venus is the second."

"What a pair they are, he answered, "for Mars represents war and Venus represents love."

"And here we are on the Earth, the third planet, situated right between those two opposites of love and war."

"Here on Earth we live in a perfect state of balance, although it is a rather delicate thing. We're a blend of war and peace, passion and reason, sobriety and drunkenness, adventurousness and foolishness, violence and forgiveness. That is our life! Oh, it is such a tenuous state of awareness!"

"We must walk the tightrope, balancing there between the foolish and the reckless. It's the point between up and down, the point between night and day, like that of half light dusk or dawn."

"Indeed, the greatest blunder in this life is to fear that you might make one."

"I love it! Your passion is so reasonable in this state of awareness."

"And your reasoning is so passionate!"

"That reminds me of a poetic joke I heard, from the poet Byron, though I've extended it slightly" she said, "but, as you know, there is some truth behind all jokes. This is sort of how it goes:"

*Let us have wine, lovers, song, and laughter;  
Water, chastity, prayer the day after.  
Such, we'll alternate the rest of our days—  
On the average, we'll make Hereafter!*

"It's funny, but true—a real golden mean."

"By our nature we're all a mixture of both 'good' and 'bad'."

"Yes, there is a beast within us, but it helps us to survive. It is the reason that we dance and dream, the reason that we feel and live with zest. It makes us push and try and climb. Without this beast within us, life would be so boring."

"We'd be perfect angels."

"But—we wouldn't be us."

"So—all's right with the world—just the way it is."

They laid back and looked up at the night sky again. "Look there," he pointed, "the moon is in a conjunction with Venus."

"I can hear them speaking. Listen."

The moon, representing cold chaste reason, said to Venus, with logic cool "Quench thy inner fire, fool, lest it destroy us and all the heavens with it."

Venus, the goddess of love and passion, answered, "I only know WHAT I feel, not WHY! So—I must be the one to rule!"

"Don't confuse me with feelings," said the moon.

"And don't you confuse me with facts," said Venus.

"I guess we can't always understand each other," the moon finally admitted after a long pause, having reasoned it out. "You have feelings that I could never understand. I have reasons that you could never feel. Let us try our best to temper each other, and then let's take it from there."

"Otherwise, your decisions would be heartless," said Venus.

"And sometimes your actions will be illogical."

"But I'll still do WHAT I feel is right," said Venus, "and sometimes you can tell me WHY, although it may not always matter."

"OK," said the moon, "we'll try to work together. Peace to you. Perhaps I am beginning to understand this thing that is called feeling. Perhaps, emotions play a very large role in making decisions."

All now became so very quiet. Starlight stabbed the utter darkness of night, causing new ideas to wink in their joined mind as sparkling thoughts from the eternal flame, as all the while the Cosmos played rhythm to their merged and singing souls. The night winds began to blow, so the lovers nestled deeper into the leaves. "Hold me, it's getting cool," she said when they were underneath. He held her snug, his front against her back, until they were warm. Then she turned and kissed him. "As long as love's kisses can live," she said, "neither age nor wear on our life will show."

He sighed, growing younger, for their love was very beautiful. "We are wealthier than the richest Sultans," she said. "I pity the poor Sultan. Even with his power and status he's not as free to live as we are."

"Yes, we are poor but rich, free yet home, famous but unknown."

"And the poor Sultan is stuck on his throne."

"And I am immersed in the boundless stream of your love, whereas the Sultan has only his paid-for-love harem."

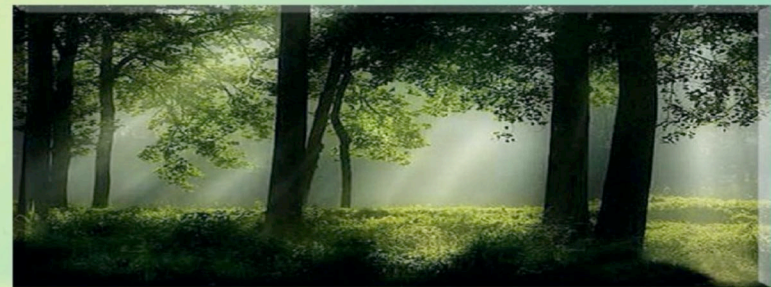
"I'm realizing you now with my whole body, mind, heart, and soul."

"They work well together, don't they?"

"Of course, they were built together and so they weren't meant to operate separately."

"Love is reason enough for all that we do."

"Through love, all things are possible."



### **Yukonian Visions**

...Caramel was standing with her sister, Madelaine. Their bodies were just touching, winter guard hairs aloft, the snow several inches above their knees. They stood still and silent, twin sentinels in the moonlight, columns of mist wafting regularly from their frost-rimmed nostrils, condensing into refractory crystals where it contacted their bodies.

The neighboring Eskimo dogs howled a serenade to the shimmering lights; the log cabin popped loudly in the -30F air, while the banked wood fire inside released the stored energy of summers gone by.

Caramel awakened, to the sound of the love-struck cricket wooing his significant other. The horse was still bedded on the soft grass in this strange place of debating humans and insects.

Actually, the debate seemed to have come to a sudden end about the time the cricket fell in love... and they say that houseflies have a short attention span.

And what was this, wrapped in paper and leaned gently against her neck? Caramel nosed it gently, surmising that it might be fragile from the sound of liquid contents.

Wick seemed to have wandered off for the present.

Delighted to find that her present surrounds were considerably warmer and more pleasing than circumstances at home, Caramel breathed deeply and closed her eyes once more. Either the cricket's paramour was blind to his wardrobe deficiencies, or perhaps, as was commonly said, love is indeed blind.

### **Unstumped Dreams**

Once again, Wick fell off the stump, but this time he didn't wake up. He nestled up in the columbine and dreamed.

In his dream, he was at the Pub, playing pool. Oddly, all the balls were white, and every time Wick would hit a ball, it would turn into a point particle that went waving across the table until it came to rest at which point it would pop back into the shape of a white ball.

"I wonder," Wick thought, "does the ball choose to become a point particle when it is struck, or is this some new law of nature that we have heretofore never observed.

The cricket, who by the way was brandishing a very small cue stick and was standing on the wooden rail of the table, struck out at a nearby ball and sure enough, the ball transformed into a point particle, but this time the particle traced a line of astonishing complexity as it moved across the table and came to rest near one of the center pockets.

Caramel was sitting a table, just like any human would do and was drinking Australian Shiraz with her rider. Snow was blowing through an open window and the crack of wood contracting in the bitter cold outside snapped Wick to his senses.

He looked in a mirror on wall near the pool table and as he saw his reflection he suddenly understood that he was dreaming.

Softly he took his leave of the Cricket and his consort, who were now transforming billiard balls into point particles with abandon. Watching the Cricket's beloved strike the balls was mildly humorous. Wick was certain that the

felt would be rags by morning. Robert was not going to be happy about the state of his table.

He opened the door and stole into the snowy landscape, surprised that the cold didn't bother him. Though he wore only sandals, the snow seemed somehow only a feathery texture with no real warmth or cold associated with it. Dreams are strange indeed.

He could smell horses and had a vague feeling that he was looking for someone. And it was then he realized that someone had followed him into the snow. It was Caramel's rider. The pub was gone. Snow was everywhere. A cabin in the distance cracked again beneath the cold, its windows looked like summer hiding behind glass. The smell of wood laced its way into his nostrils...

Caramel couldn't recall when she had last been in a pub, but it seemed perfectly normal to be seated in the Many Worlds Pub amongst friends. She and her rider were enjoying a delightful Australian Shiraz, compliments of Wick.

Cricket and his love were knocking back Grasshoppers and alternating with shooters of Tequila while challenging Wick and all comers over the billiards table, a most unusual game with particle theory, resting light theory and the Cricket putting his spin on the cue ball. Meanwhile Wick was trying to add some English of his own, each leaving the other tough.

At one point, Caramel and the lady cricket found themselves together in the powder room.

"Hey Sweetie," she chirped, "I see that Robert has a Karaoke machine behind the bar. Let's you and me bill ourselves as the 'Agents of Chaos' and have a blast!"

And so it came to pass that Caramel and Viola—a stage name—ended up performing an unforgettable and likely unrepeatable rendition of "Girls just want to have fun".

With Viola perched on her shoulder, Caramel crooned and cavorted while practicing her dressage moves on stage, daintily trotting in place, somewhat in time to the music. My goodness, but that lady cricket had a voice!

Cricket just had to join in, he was that proud of his lady! He started to play air guitar on his pool cue, while promenading along the edge of the table, which was situated conveniently in front of the small stage. Soon he was dancing the cancan as well, proudly displaying his legs, all three pairs, while flipping his air guitar solo to an alternate set.

Wick was finding it hard to maintain his academic demeanor, and a smile was definitely in the works. He was also tapping the fingers of his right hand, tucked nonchalantly under the opposite elbow and Caramel, from her vantage point, could see that his toes were soundlessly keeping time under the table as well. At the point that Cricket was trying to entice him into line-dancing, Wick politely excused himself and headed out the door.

Her rider almost aspirated the Shiraz when Caramel decided to add a flourish by flicking her mane and tail, forgetting in her exuberance, that Cricket had now joined them on the stage. Her long tail swept the cricket off the stage and he landed lightly and unharmed in one of the pockets of the billiard table, all six legs waving in the air, definitely not in time to their song. The girls were professional. They didn't skip a beat as they wound their way through one more chorus of the song. As Caramel and Viola held the final note, the rider was heading out the front door, sputtering and giggling alternately...

(LW, your descriptions of animal behavior are superbly exquisite, and Wick, you are very cool, too, to go along with the dream. As I was gone most of the weekend, I'll have to take some time to go find the cricket and see what's up with the little guy. This story sure seems undetermined. Maybe we will even get back to "light" eventually. I wonder why dark matter doesn't emit or absorb any light...)

Cricket's billiards' coach, analog, showed up, just getting out of the way of the horse and asked "Cricket, how's it going?"

"I'm making some impossible shots."

"I noticed. How did you get past that ball that was in the way while I was off getting a drink of 'HIJHLMNO'?"

"Well, during your H<sub>2</sub>O break, I launched the point particle cue ball, then quickly looked away, during which time it turned into a smear of an interference pattern and..."

"... it went right through the blocking ball. Do you think that I was born yesterday?"

"Darn, I missed your birthday!"

"Strangely enough, there is no birthday on one's birthday. I was but zero year's old."

"OK, I'll mark my calendar to celebrate your next birthday."

“OK, but that would only be an anniversary of my birth day.”

“Jeeese... what a goofy scheme, but I still made the shot.”

“You hit low on the cue ball and jumped it over the intervening ball, didn’t you?”

“Well, yes, if you must know, but I made a triple bank shot using the angles that you taught me.”

“Those are just luck, as they are outside of the precision that we can apply.”

“Oh, well, but at least dame fortune has smiled upon me.”

“Good luck with her, but be respectful of your girlfriend. It’s Wick’s turn to watch you; here he is.”

“Hey, Crick, what happened to the felt?”

“It’s now like a golf landscape with many hazards to negotiate. Plain old pool was just too easy.”

“Aye-yi-yi! So, what’s the downfall of modeling point particles to be in nature?”

“I just studied that. It’s that infinities crop up in some really great equations and make them meaningless because some particles have to end up in the exact same spot.”

“There’s more to it, and I’ll tell you another time since Austin doesn’t know all this stuff. So, how did they get rid of this problem and make some more pointless equations?”

“Ha, ha. They replaced the point with a wiggling string of 9 dimensions, and then added a 10th by proposing p-branes.”

“That seems rather extreme, like the convoluted contorted model that someone actually tried to build to show that the sun and all the planets revolved about the earth.”

“String theory too is quite a contraption. It also has  $10^{1000}$  solutions, but of course just one for the pocket universe that we are in.”

“What is it?”

“No one knows, but M-theory includes gravity.”

“Where are these branes?”

“Well, we are in one and there is another brane that collides with ours every trillion years. Only gravity can reach between the branes, nothing else; so, in effect, the branes are nearly totally separate and must ever be.”

“The collision is the big bang?”

“Yes, the big bang has to be from a collision since it couldn’t just come out of nowhere all by itself.”

“Interesting fantasy.”

“Scientists like to have the fun of imagination, too.”

“But I do like the idea that there must be something beyond our universe.”

“The branes are still here, even now, but are not colliding.”

“Well, whatever, but of course you’re right that there was an origin of the universe, although it’s not affecting us presently since a universe is not the same as its origin.”

“Well, I like that word ‘origin’, for this instance of our universe was not the first creation.”

“Really? Does the universe oscillate, expanding and then contracting back to a crunch?”

“Nope, that theory was killed dead four times over.”

“So, we’re on an escalating one way trip toward oblivion since dark energy is now dominating all else and is even increasing the rate of expansion of the universe?”

“Yes, that’s true, but, nope, no one-way trip, although dark energy is indeed spreading everything out faster and so all will be rather vacuous one day.”

“Crick, have you been drinking again? How does the next incarnation of the universe appear then?”

“I can’t tell you exactly until I read more of the ‘Endless Universe’ book, but the oscillating universe does come back from the dead in a big way.”

“I’ve got to hear this one, but of course I’ll have to wait. How is it that our universe was made with everything in the right proportion, even some stuff like dark energy and matter which don’t even come into play until some time afterwards?”

“The universe knew what it was doing since it is cyclical and keeps coming back in the same guaranteed workable way, while other not quite right universes failed and flopped or expanded forever in a way from which they could not return.”

“A cyclical universe is similar to an oscillating universe, but there is a distinction that makes a difference?”

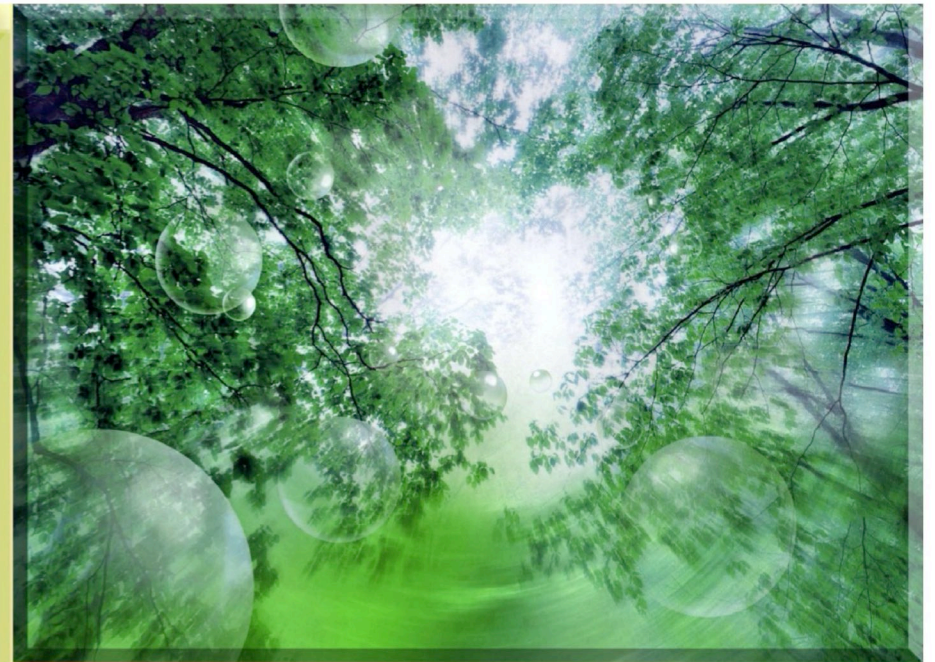
“I have to go now.”

“Crick...!”

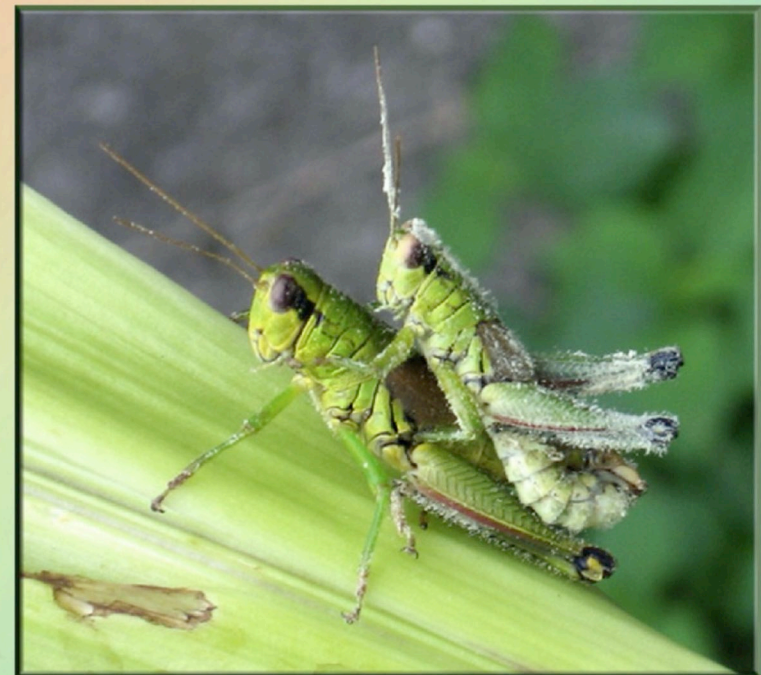




Old Autumn; he was out there somewhere. Then I sensed him going by, for some of the leaves on the tree right in front of me broke loose and floated away, hitting some other leaves on the way down and making that rustling sound that I'd heard earlier. Then it stopped, but soon it started up on the next tree, and then the next—and so I could very well follow the path of Old Autumn making his rounds in the misty morn."



(Summer's Dreams)



(Crick and Kit)

### Conjunctions

The deep stillness of snow rested still up Wick and the rider, punctuated only by the smell of burning juniper and the sound of the house.

“You’re not her, are you?” Wick asked

The rider was still and steady. Her eyes were kind. An air of mystery drifted around her like the warm breath of horses.

“I’m not the rider I appear to be. But whether I’m her or not depends on a great many things. I’ve come to help you find a conjunction.”

“A conjunction of what?” Wick asked.

“Of dreams. You are here in the snow. Caramel is drinking Shiraz in the Pub waiting for her rider to return. And Crick is at the pool table having a conversation with you. All of you are dreaming something near conjunction, but not quite. If your dreams converge, you’ll have done something most unusual.”

“I suppose things like that don’t happen very often.”

“Almost never,” said the rider who was not a rider.

“How do we manage such a thing?”

“You choose to,” there was something playful in the rider’s eyes, something deeper than a mere look, that reached into Wick’s soul and caused him to wonder what creature this rider really was.

“But how can free people choose to have the same dreams?”

“Perhaps that is the greatest mystery of all. It is not merely to dream, but to choose. Sometimes we choose what we want at the moment, but at other times we choose the

things we really want... the things that mean something... the thing worth sacrificing for. When free people choose to sacrifice the joy of the moment in order to usher in the joy for all time, then they achieve a conjunction of dreams.”

“Yes. I’ve felt that.” Wick whispered. Freedom of the moment can quickly become a prison like no other. Choices made without this conjunction of dreams you speak of bring only sorrow and suffering into the world—the price of freedom untempered by wisdom. There is no freedom in the moment. Freedom is born out of pure thought and out of a perfect understanding of the laws that govern all things.”

“Yes, Wick, that’s why I came to you in the winter two years past.”



“You did that?” Wick dropped to his knees in the snow. The countenance of the rider shifted a bit, and suddenly in air was a swirl of snow so bright that all the other snows seemed to ignite sympathetically and the whole landscape melted away into a sea of light.

“Light is at rest, Wick. It was then and it will ever remain at rest. The universe is on the move. Time is an illusion. The conjunction is coming, Wick, but it doesn’t depend upon the universe... it depends upon people... they must choose to work for more than themselves, to usher in a conjunction of dreams.”

No rider remained. All that remained was a bright, warm enveloping light.



— 17 —

### **The Living Poem**

Crick and his girlfriend, Kit, were as the splendour in the grass when a living poem arrived that they must have conjured up.

“What are you?” Crick asked of the living poem.

“I deal with ever enduring themes, those which are universal to everyone. As you can see, I am structured, intense, rhythmic, and melodic. I am a unified body of sensation, thoughts, and passions. I translate all that is felt, though often only very roughly.”

“Are you essence or existence?” Kit asked of the living poem.

“I am both—I am the form and the idea. I am an object that is born from one’s profoundest visions. I am the image in the diction of feeling. I am, at once, both the container and the contained.”

“You’re an expression of all that is difficult to express,” Crick added.

“I am truth fleshed in living words. I express thoughts that would otherwise go unapprehended. I lift the veil that separates mind from soul—and thereby show the proof of the hidden beauty. I am life’s image drawn in eternal truth.”

“You are immortal then?” Kit asked.

“Poetry makes immortal what is best in life by freeing the images in our spirits that are deeply impressed. I arrest the shimmering notions, clothe them in words, then send them forth, fully dressed.”

“How do I know if I’ve written a poem?” Crick asked.

“Well,” said the living poem, “use the highest powers of language and wit to translate your soul’s nature into the



poem's words. The reader will translate the words back into spirit; and then, if the reader's soul responds, you've written a poem!"

Crick and Kit tried to write a poem about love, for that was the greatest thing, but they couldn't get it to rhyme, due to a shortage of useful words that rhymed with "love". Finally, in desperation, they came up with the following:

#### The Trouble with "Love"

*Only a few words rhyme with the above,  
Like the overflown "dove", the heartless "shove",  
And the ill-fitting "glove". Alas, "love's" rhymes  
Remain unheard of, or aren't well thought of.*

and

An Escalating One Way Trip  
From a Fluke To Oblivion?

*The majority of the energy  
Of the universe is dark today,  
Although everything else passes  
Through it in every way.  
It's everywhere,  
Having a component that repels its own state,  
Which causes the expansion  
Of the universe to much accelerate.*



— 18 —

#### The Entropy of Bangs

The discussions continued in the confluence of the field of dreams where all things were possible...

"I'm back, Wick. I had to take Robert's pool table to the doctor."

"How's it doing now?"

"It's recovered."

"Ha."

"Only one 'ha'."

"Yes. What else are you up to, Crick?"

"Nothing less than saving the entire universe from going away forever."

"Wow! So, the oscillatory universe model has many lives, and it doesn't work, but our universe rises from the dead?"

"True, true, and true. After many people thought that the CMBR showed that the universe had an original beginning from the big bang, they eventually began to realize that this point was far from settled, so they began to think of it more as the big bounce."

"But, entropy always increases for an isolated system and a machine can't be perfectly efficient..."

"And so the universe cannot be 100% recycled since..."

"...it must release heat and energy unevenly, in a disordered form."

"Perpetual motion strikes out again. The universe cannot be restored back to the way it was an earlier time because the total entropy must increase from cycle to cycle."

"The entropy, mostly in the form of radiation, increases as stars and galaxies form during the expanding phase, but

then this new radiation, along with any from the previous cycles, is compressed into a tiny volume of space at the big crunch.”

“And, as a result, the subsequent big bang begins with a more radiation and a greater concentration of entropy than the previous one, making the next expansion start off faster, taking longer before it halts.”

“Then, Crick, there would have been an actual beginning, early on, as the previous cycles had to be shorter and shorter.”

“Yes, and so that was the first death of the theory. We held a wake and there was no dead ringer tolling the bell. Then the next fatal blow to the already dead was delivered when it was showed that tiny differences in the rate of contraction become greatly magnified, sending the big-crunch-bound universe into wild gyrations.”

“Instead of contracting equally in all directions, space contracted along two random directions and expanded along the third into a kind of a cigar shape. It then became an exploding cigar.”

“Yes, Wick, a cigar but no cigar, as for the smooth universe observed today, for it then contracted and expanded all over the place, like donut dough. They call it the ‘chaotic mixmaster’.”

“Let it rest in peace.”

“Yes, it rested in many mangled pieces, and the proposed singularity made Einstein’s fine equation into an infinite mush of meaninglessness.”

“And then the oscillatory theory that was twice dead was killed twice more again?”

“Yes, sad to say, for many loved it dearly. It was found that the expansion rate doesn’t slow down due to the gravitational self-attraction of matter; in fact, the expansion is accelerating, as we discussed previously. The funeral was quite glorious; there were lots of flowers.”

“Plus, the concentration of matter is too low and the universe is not closed.”

“WMAP showed a flat universe. We then tried CPR on the model that had been killed four times over.”

“And so the four fatal blows were somehow fended off and the concept of a repeating universe was revived? I’m amazed, Crick.”

“The four horsemen of the near apocalypse came to the rescue. They were extra dimensions, branes, dark energy,

and dark energy decay. They saved the day, making way for the newly named cyclic model...”

“What the heck? Hey, Crick, where did you go? Crick? What then of this tale of death and resurrection?”

A voice railed off into the distance. “I just received a telegrammed text message from my girlfriend. The heck with all this science stuff...”

Although this was all just a dream, Wick had a pencil with him and had written it all down on a pad laying on his chest as he slept.

*Doth the flame court the moth,  
or doth the moth court the flame?  
Enlightened and extinguished in the same instant.*

Ian Anderson of Jethro Tull sings:

“Moths”

*The leaded window opened  
to move the dancing candle flame  
And the first Moths of summer  
suicidal came.  
And a new breeze chattered  
in its May-bud tenderness ---  
Sending water-lillies sailing  
as she turned to get undressed.  
And the long night awakened  
and we soared on powdered wings ---  
Circling our tomorrows  
in the wary month of Spring.  
Chasing shadows slipping  
in a magic lantern slide ---  
Creatures of the candle  
on a night-light-ride.  
Dipping and weaving --- flutter  
through the golden needle’s eye  
in our haystack madness. Butterfly-stroking  
on a Spring-tide high.  
Life’s too long (as the Lemming said)  
as the candle burned and the Moths were wed.  
And we’ll all burn together as the wick grows higher ---  
before the candle’s dead.  
The leaded window opened*

*to move the dancing candle flame.  
And the first moths of summer  
suicidal came  
to join in the worship  
of the light that never dies  
in a moment's reflection  
of two moths spinning in her eyes.*



— 19 —

### Love

Kit opened her wings to take Crick in and they embraced lovingly, longingly, and thoroughly. They felt the unlimited power of the universe. She felt that she held the entire cosmos within her. They were weightless, warm, and together, drifting up through the forest canopy. There were no reference points, no walls, no rough edges. They became one as they floated heavenward, drifting up towards the clouds.

“You have enclosed my universe,” he said, “yet it is still boundless.”

She replied, “You have filled the universe that I enclose.”

“I will fill that emptiness with my fullness,” he added.

She said, “I will empty your fullness with my emptiness.”

“What ‘is not’ is equally as great as what ‘is’. We are equal partners in life and love. One cannot live by leaves and grass alone.”

“Yes,” she added, “celibacy is a crime against nature. One might as well stop eating, breathing, or any other such natural function.”

And so it went... they spoke of the philosophies gleaned from the learned books of life...

“When opposites are balanced, the edges of all things dissolve; time and space become as one; all dimensions are transcended.”

“Yes, everything melts into everything, yet remains as itself.”

“All is of a piece, yet, all is interconnected and related.”

“Yes, all things are interrelated; opposites are merely

different aspects of the same phenomenon—like a tear and a smile, light and dark, male and female.”

“As equal partners, male and female may achieve a perfect balance.”

Soon he was saying what she thought and vice versa, and now they were speaking as one, like the merged and fugal voices in the Pachelbel Canon.

“The tide of love supports us—carries us along with it.”

“We are carried together down the mountain stream to rejoin the sea, for therein lies completeness. Life is a diamond, a rainbow of many colors.”

“Human beings need each other.”

“Body and spirit cannot be separated, for they are integral parts of the human—they must operate in tandem to make the being human. They are inseparable. It is as the flower drawing life’s spirit from the soil.”

“A male and a female are drawn together by the same urge that’s between root and flower, leaf and soil, breath and wind, sun and water, star and planet.”

“Males and females cannot exist alone; the nature of one requires the other to be complete. When they join in love there is wholeness again.”

“Like the Yin and the Yang, the male is in the female and she is in the male.”

“From the hardness of the world, a male comes to the valley of the soft mountains to be overcome by the female. She is the roundness of Earth and moon, warm with promise.”

“The valley and the mountain each make the other possible; they are opposites, yet they are really one and the same.”

“My words to you are a faint echo of what my heart truly feels.”

“What ‘is’ and what ‘is not’ combine to make wholeness.”

“Love is lived by lovers. They come together, like mountain and valley, rain and river, air and mist, Earth and moon.”

“Yes, they go with the flow and give themselves to the moving whole.”

“Male and female are each the opposite twin of the other.”

“They are—just as we are each other’s satellite.”

“Yes, we are like twin planets, linked and traveling together through space.”

— 20 —

### Illusive Time

*[It was to this place Wick resorted to sit in the moonlight and open the bamboo cage. It was his intent, to converse with the cricket, to establish once and for all whether the human race was free or not. He needed to know. It was a matter of conscience.]*

*[“Yes, Wick, that’s why I came to you in the winter two years past.”]*

“You did that?” Wick dropped to his knees in the snow. The countenance of the rider shifted a bit, and suddenly in air was a swirl of snow so bright that all the other snows seemed to ignite sympathetically and the whole landscape melted away into a sea of light.”

“Light is at rest, Wick. It was then and it will ever remain at rest. The universe is on the move. Time is an illusion. The conjunction is coming, Wick, but it doesn’t depend upon the universe... it depends upon people... they must choose to work for more than themselves, to usher in a conjunction of dreams.”

“It is the space between the bars that holds the cage, Wick, but no cage has yet been designed that can imprison free thought ....”

The light faded and no rider remained.



— 21 —

### **Passion**

Kit and Crick were nestled in the leaves and looking up at the night sky that was full of electromagnetic radiation, some of it visible.

“Hey, Kit, I can hear the earth and the newly romantical moon conversing,” said Crick. “Listen.”

“I am thy co-planet,” said the moon to the earth, like Shelley would write, “thy constant satellite, thy paramour of day and night. Around you, above you, below you, and within your sight I whirl about in loving delight!”

“As I am yours, too, a twin-planet, as it turns out,” replied the earth.

“My heavenly love, I am your pearl. In a magnetic dance I twirl and whirl about you, attracted to you—the sun’s liveliest world. Around you like a necklace I’m aswirl. You may wear my afterimages as thy crystalline gem impearled.”

“That you are to me, as I am, too, to you.”

“I am always with you. Wherever thou must goest, ‘round and ‘round Apollo, I must turn and whirl, hurry and follow, meeting meteors and dust, traveling far and wide through space not hollow.”

“Likewise.”

“You are my heart light. Thy magnetic beam, like Cupid’s arrow, injects life and love into my heart for my tomorrow. Henceforth, I shine with this light I borrow.”

“We are involved,” replied the earth. “As twin planets, our orbits must convolve. Into each other our tidal motions have dissolved. Around a common center we revolve, gazing on each other from every side. It’s the focus from which our love evolves.”

"I follow you, as you do me. You are not a moon, but a planet."

"Yes, as twin planets, each other's way we pave through space with the push and pulse of our gravitating waves. We're captured by a romantic attraction, but not as each other's slave, for to the sun's light our orbits are always concave. This is unconditional love."

"Your love echoes in my heart and soul. I align my path with your magnetic lines of flux. I'm your constant paramour. Your world pours life and love on mine. On mine! Oh, it echoes. Dearest twin, I must be thine, must be thine, be thine... "

"Your love echoes and reverberates in me. A romantic beam emanates from thee, attracting me, holding me, caressing me, kissing me. Your tidal love washes freely over me, linking you and me for eternity."

"I feel the warmth. I am basking in your reflected light. Oh, I'm so bright, so very bright in your sight. In the love and light of your spirit bright, I need not ever face the endless night."

"The vibrations of your electromagnetic waves travel without a sound. They come from all directions to surround, while your affection touches me all around. I'm close to you in orbit; I'm love-bound!"

"We'll bathe in love's radiance, cleansing ourselves."

"Round and 'round each other, as twin planets, we dance, entranced in the whirl of our romance."

"Although we're as different as midnight and noon, we're drawn close by the forces of the sun. As lovers we merge in a sweet eclipse, when world meets world as a kiss on our lips."

"While your shadow of love covers me, I'm full, oh so full, in the shade of thee."

"Our worlds overlap; this union is 'us'. The 'you' is in me and the 'me' is in thee!"

"Thy heart hast touched my own; no, 'tis more I love thee!"

"Yes, much more thou art loved; the 'me' is now in thee."

"Thou art the soul of my soul and mine is of thine."

"Nay, 'tis more than that: thou art me and I am thee."

— 22 —

### The Future Past

*Then what is a mind?* thought Wick, *Is it not the cage that Providence has placed in every soul to catch the thoughts of a lifetime?*

His pillow of columbine was tangled around his ears. He extricated himself from the purple blossoms and pulled off a flower petal to nip away the tip of the spur and suck out the honey inside.

"Dreams? A convergence? How does one make sense of such mixed up imagery? It was all rather confused—Crick playing pool with Kit, the quantum pool table, the rider and Caramel drinking the Australian Shiraz, the rider in the snow, the cabin, the smell of cedar, the light.

"Do we chose our dreams?" Wick pruned the columbine a bit to fix some of the damage done. "I think not. It seem like an unwinding of thoughts, a mixture of past experience and future desire woven into a web upon which the sleeping mind crawls about. And as the mind moves along the crossings of the web, it must learn how to cope with what's gone and what's coming. The dream prepares the thinker for the future.

"Certainly my thoughts are still firmly caught in this bamboo cage I call my mind. They are mine, but I do not coerce them to stay. They stay of their own accord. They serve me as well as any cricket!

"And love... no cricket was ever so firmly caught as my would-be consciousness has been caught in the bamboo cage of love. His thoughts are firmly in the thrall of his Kit. And she owns his thoughts like no cage. He has submitted to her thrall. She owns his every thought... well... almost."

Wick made his way back up the path to where the cricket and horse were sleeping. He was tired of dreams. There was no peace in dreams. There never was...

Caramel was laying flat on her side in the grass, relaxed, outstretched legs gently flexed at knee and hock. Her eyes were moving beneath her closed lids, as evidenced by the dancing of her long auburn lashes.

Muzzle twitching, soft whuffling sounds issued forth, nostrils flaring with each rise and fall of her barrel. All four legs began a rhythmic promenade and her breathing increased pace. With a snort and a flip of her tail, Caramel startled herself into wakefulness, hastily rolling up on her sternum.

Had Wick cow-tipped her after all?

Eyes wide, the perplexed horse tried piecing together the back-story... it was starting to come clear.

She and her rider enjoying a fine Australian Shiraz; Wick, Crick and Kit playing a most unusual form of billiards; and of course their Karaoke performance. WICK-ED good fun!

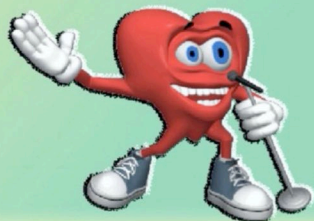
She recalled going in search of her rider, only to find knee deep snow outside the front door of the pub. As she was taking in the landscape of white, she briefly saw Wick and another silhouetted by a flash of light.... and then....

....And then.... now.... here.

Dream travel was no mystery to Caramel, but to be a dream within the dream of others, this was uncharted territory.

Caramel craned her long neck. And just where had that brown-wrapped package gone? It was nowhere in view and she would know if she were lying on it. Perhaps it had been meant for the honeymooning cricket couple.

Dazed and confused, Caramel was still attempting to ascertain which reality held sway at the moment when she heard familiar footsteps approaching....



## The Eternal Return

*Behind the Veil, being that which ev'r thrives,  
The Eternal Cycle has ever been alive.*

*Some time it needed to learn Everything for,  
And now well knows how these bubbles to pour,  
Of existence in this meant universe,  
That writes your poem and mine, every verse.*

*So thus thou lives on yester's credit line,  
In nowhere's midst—now in this life of thine,  
As of its bowl our cup of brew was mixed  
Into this state of being that's called "mine".*

*Yet worry you that this Cosmos is the last,  
That the likes of us will become the past,  
Space wondering whither whence we went  
After the last of us her life has spent...*

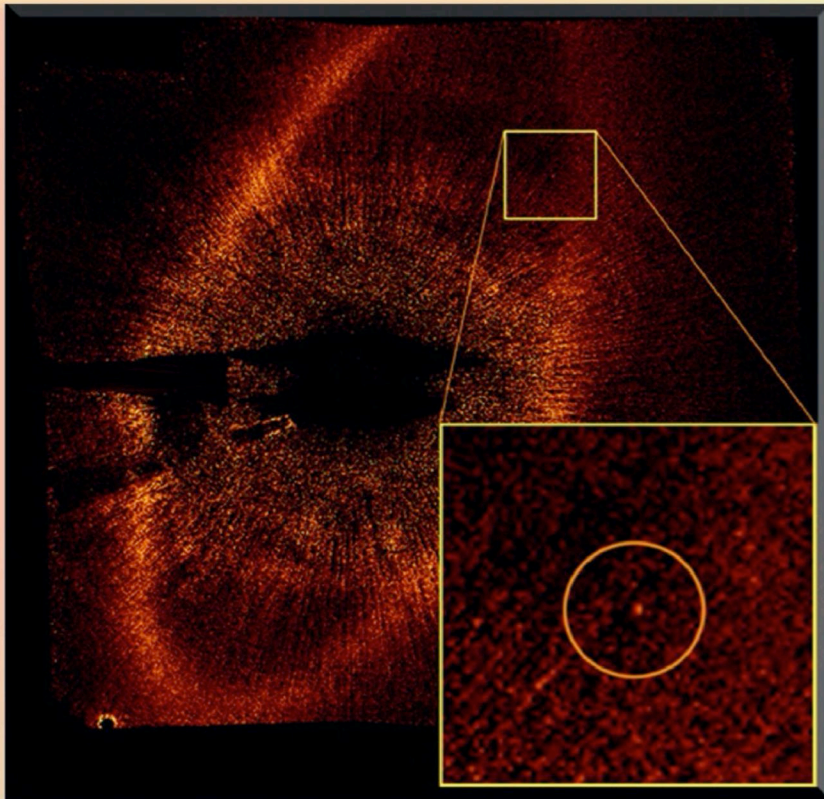
*The Eternal Cycle has thus formed  
Trillions of baubles like ours, and will form,  
Forevermore—the comings and passings  
Of which it ever emits to immerse  
The universal bubbles blown and burst.*

*So fear not lest a debit close your  
Account and mine, knowing the like no more;  
The Eternal Cycle from its pot has pour'd  
Zillions of bubbles like ours, and will pour.*

*When You and I behind the cloak are past,  
But the long while the next universe shall last,  
Which of our approach and departure knows  
As might the sea's self heed a pebble-cast.*

—Crick





*Hither wondering  
whither whence  
we went...  
After the last  
of us her life  
has spent...?  
The Eternal  
Saki has  
thus  
poured  
Trillions  
of  
baubles  
like  
thee,  
and  
will  
pour.*

— 23 —

### **The Source and the Cyclic**

“Hi Wick,” said Kit. “I going to get my antenna styled for the last dance tonight. Crick told me to tell you that he’ll be along soon. He’s goooooogling.”

“Well, he’s a fine guy and I wish you two all the best. Seems that a side effect of being in love and oogling you is to sharpen one’s wits in every area.”

“Yes, because wit lets one connect and combine original ideas from various places like Google and ToeQuest into larger notions.”

“Yes, such as who would have thought that quantum cosmology would become a new field.”

“True, Wick, for perhaps the age-old quantum fluctuations were magnified into large scale features of the present universe, such as black holes and galaxies.”

“Maybe, maybe not.”

“Crick says we can see beyond the dense hot plasma that covered the universe for up to 380,000 years after it began.”

“He may be exaggerating, for no light at all can pass through that.”

“He has another way. Says we can see the beginning.”

“That would be amazing, to see the actual start of the universe.”

“He said that it can be seen, but perhaps he meant ‘some day’.”

“Maybe. And if he sees something other than the signature of the singular-type big bang?”

“Then it’s goodbye inflationary model and hello cyclical universe!”



“I googled ‘Crick’ the other day. It said that he discovered DNA.”

“Ah, yes, that was Crick’s grandfather, Francis Crick.”

“I see.”

“Yes, and my Crick is now the CEO of a gigantic research company, GRC.”

“Wow. How many employees? And how did Crick get the money for this?”

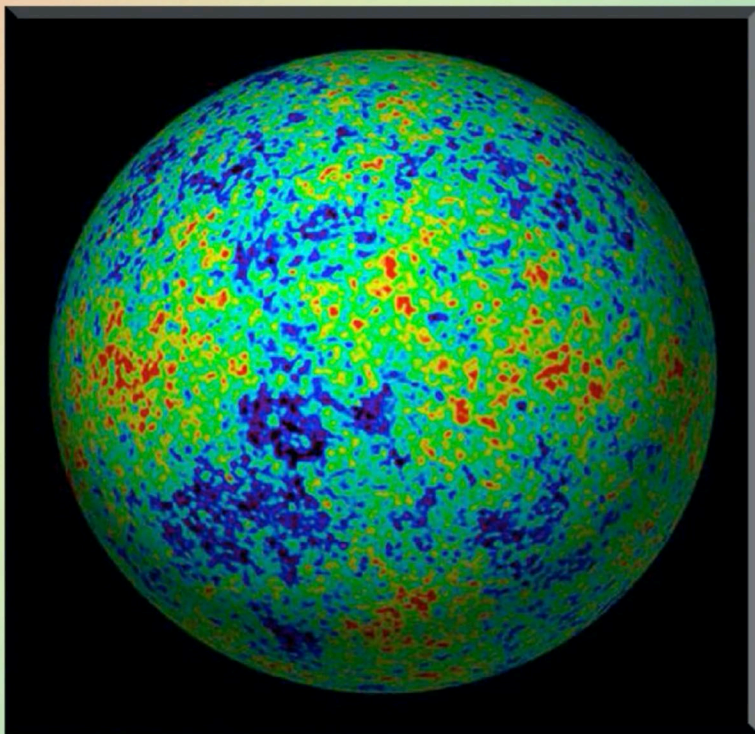
“The employees all work for free; they are everyone who contributes to the internet’s information.”

“It then all funnels into Mr. CEO Crick, as like it could to any one of us?”

“Yes, but he pays full attention. He’s also the President, the Board of Directors, the janitor and the only direct worker.”

“Oh boy, but I guess that’s really the way we all have people working for us all out on the internet. We do live in powerful times. And to think that Newton worked pretty much on his own!”

“Yeah. See you later, Wick. Have to go.”



— 24 —

### **Brains and Branes**

“I’m back, Wick,” called Crick. “Where were we?”

“We were stumped—sitting here on a stump.”

“No, really.”

“You were desperately trying to save the universe from being a one-time haphazard happening that will eventually die and spread out into sort of a wispy nothingness forever. How much time do we have left?”

“Oh, we have all of the dismal forever, but only about a trillion years until the universe becomes practically useless, but our sun will be gone in ten billion years.”

“How do we save the universe? Should we call Cricketman!”

“Yes, for I am thinking, as are you, that there is something outside the universe, in another dimension, unseen, which for me is the 10th dimension that separates 3-branes in string theory. As for the other extra string dimensions, they are curled up within the strings, so I’m not so concerned about those.”

“A 1-brane is a string, a 2-brane is a membrane, and a 3-brane is the space we live in?”

“Yes, and so maybe there is another 3-brane out there that collides with our 3-brane that then produces the next cycle of the universe, showering it with new radiation that annihilates any existing structures leftover from the previous incarnation.”

“So, it is this dimension between the branes that expands and then contracts to produce your cyclical universes, not the dimensions of space contracting in our universe—for they are hopelessly all spread out?”

“True, Wick. That’s the ticket to ride again and again. The branes remain expanded, nearly vacuous, parallel and smooth, the dark energy stretching them so by the end of the previous cycle; only the space between the branes shrinks to zero to cause the next universe to appear from the collision.”

“Then there is no infinite singularity of a big bang that drives Einstein’s equations crazy. Each new cycle begins with the same simple conditions as the one before. There are no wrinkles in the stretched out branes.”

“Yes, Wick, plus, the separation between the branes doesn’t matter if it varies from cycle to cycle, for the dark energy acts as a stabilizer, like a pneumatic door closer.”

“But none of our forces can communicate between the branes?”

“No, none except for gravity.”

“Why doesn’t the brane energy run out? Each collision of the branes converts some fraction of the branes’ energy into matter and radiation. The spring like force that draws the branes together should wind down.”

“During every cycle, a finite amount of gravitational energy is automatically converted into brane kinetic energy to compensate for the matter and radiation produced as the new universe. The branes then bounce back to their original positions.”

“Good, Crick. Conservation of energy is then not violated since gravity is a bottomless pit.”

“Yes, amazingly it is. Most forms of energy are positive, so there is a lower bound (zero) below which they cannot fall.”

“But gravitational potential is negative, and there is no known limit to how low it can go.”

“Yes, gravity acts like an engine to power all while still insuring the conservation of energy.”

“What about the increasing entropy density?”

“The entropy on the branes is never concentrated, as it would be during the big bang of the inflationary universe, for the branes continue expanding even during the contraction phase that only involves the extra dimension. Any pre-existing entropy is exponentially diluted.”

“And so when the branes collide...”

“THEN THERE IS LIGHT!”

“But there are a few problems with all of this, Crick.”

“Not according to Google!”

“Google, shmoogle, use your own brain and stop using the branes of others.”

“But its all right there, in black and white!”

“Never trust anything black and white... there are shades of grey in everything. I’m concerned, Crick, that you’re accepting as real something that is merely well thought out contrivances. The universe isn’t really like that. A physicist and a mathematician go into a bar, and this stuff you’ve been spouting is what comes out...”

“But there is evidence...!”

“There is nothing of the sort. Take dark matter and dark energy for example. I expect better from a sworn atheist, Crick. The universe behaves in a way we can’t explain... can’t explain in a really big way, so we contrive ‘dark matter’ and ‘dark energy’. If its so easy for you to believe in dark matter and dark energy, why is it so hard for you to take an only slightly greater leap and scream out, full throated, “I BELIEVE IN GOD!!

“Why, dark matter and dark energy are sort of like my son who seeing evidence of two red eyes looking out of the darkness of his open closet. He begins to scream. It’s 3 in the morning. He wakes me up, and into his room I run expecting to find a wet bed, or a puddle of puke.”

“Red eyes!” he screams, pointing to the open closet.

“I assure you, Crick there were no red eyes in my son’s closet. He was just doing the best he could with the information he had. But he was wrong. The universe didn’t have red eyes, any more than it has dark matter or dark energy. It simply had something my son couldn’t explain.

“And even after I took his toy fire truck out of the closet and showed him how the moonlight from the window was simply reflecting from the red lights on top of the cab of the truck, it took me a very long time to convince him that nothing evil was in the closet.

“Science is going way off the deep end, Crick. No scientist has ever seen a brane. I promise. A brane is a mathematical device. Its no more real than my hyperspheres are. These things may lead us to some truth, but they in themselves are not the truth. They are a contrivance!”

“But they’re in google, Wick!!”

Exasperated, Wick rubbed his hands over his bald head: “Caramel, where did you put the Shiraz?”

### Five Tests

“Hi Wick,” chirped Crick. “You’re right about the extra dimension and the brane. Those are contrivances, like God. As for dark energy and matter, we can detect their gravitational influence; we just don’t know their composition. Now, if I can show that there was no huge inflationary energy and no singular-type big bang, then we know that there was a different method of the origin of our universe.”

“Ah, yes, THEN THERE IS A SEARING WHITE LIGHT!”

“It’s like a biblical thing.”

“So how do we know the other 3-brane is really out there along with that extra dimension?”

“We don’t and it could be that the one-time inflationary universe theory is indeed correct instead of the cyclical one.”

“Crick, what is a female moth called?”

“A ‘myth’.”

“So couldn’t the extra dimension thing and the branes we can’t see be a total myth? Could you be making a myth-take?”

“True, as we said, but we have tests. At least for the model, if not for the actual brane and the extra dimension.”

“What tests can we perform?”

“Well, there are six tests, five of which support both theories, and a sixth that would doom all the inflationary theories and thus lend support for the cyclical theory.”

“I do get that the inflationary and cyclical theories differ but at the beginning and the end of the universe, being very similar in between. What are the first five tests that have been confirmed?”

“The first was the COBE satellite, which in 1992 gave the first indication that the cosmic background radiation temperature has a nearly scale-invariant variation across the sky. The second was that space was shown to be flat rather than curved, proved by WMAP and other detectors. The third milestone confirmed adiabaticity, meaning that ordinary matter and dark matter in the early were distributed in the same up-and-down pattern as the cosmic background. The fourth showed gaussianity, that the distribution has the random noise characteristics that is predicted, again via WMAP. The fifth milestone was the detection of a ‘tilt’ in the amplitudes of energy density variations, a systematic deviance from perfect scale-invariance, meaning that the density of matter and radiation can be expressed as a sum of waves with similar heights, independent of the wavelength. Sorry to condense all of this into an overview.”

“Actually it is called ‘red tilt’ because the waves with the smaller wavelengths are produced closer to the end of inflation. WMAP found this in 2006. So, five for five and both the inflationary and the cyclic universe are still in the running, as they should agree in these areas. What happened with the sixth and critical milestone?”

“I have to go on a date now, Wick.”

“I heard. Enjoy. No sweat. I’ll wait.”

“Then we crickets have to hibernate...”

“What! Really? Come back!”

“...We’re already two months late; it’s February.”

“See you in the spring. Hey, what’s the definitive sixth test that decides the cyclical versus the inflationary universe...”

“...Gravitational wave patterns that are totally distinctive will decide which model is right.” “Alright, but before you go let me tell you a little story, it’ll only take a minute.”



“It’s called...”

**The Voyage and Discoveries  
Of Flagellan the Flatlander:  
A Cautionary Tail to Spacelanders**

Long ago on a spherical expanding bubble (or at least what all Flatlanders would come to believe was a bubble), lived a young boy named, Flagellan the Flatlander. Most Flatlanders of his day moved about by little hairs that extended from their 2-dimensional bodies, but Flagellan was a mutant of sorts and was born with a single long hair protruding from his posterior which gave him the uncanny ability of traveling 100 times faster than his fellow Flatlanders.

At the time of his birth, it was generally thought all of Flatland was exactly that—a flat plane extending forever along the two axes of Length and Width, world without end. But in his youth, Flagellan postulated that the plane was not perfectly flat. You see there was another mutation of Flagellan—a pair of eyes, whereas all other Flatlanders had only one eye. Curiously, this mutation gave Flagellan the ability to see what he called “hypercurve”—an advanced form of depth perception.

Every Flatlander could see simple curve within the plane, for while all flat objects presented themselves to the view of Flatlanders as lines upon the horizon, the light of Flatland created a gradient shading upon curved and faceted objects which gave Flatlanders width perception. Flatlanders also had an intrinsic compass in their minds, which permitted them to orient themselves perfectly along the Length axis of north and south, and the Width axis of east and west. But Flagellan could sense more.

He was not able to see the actual curve of the plane, mind you, but he was able to see that the plane itself was oscillating in directions that he came to call “up” and “down”. He told his parents of this perception and was whipped brutally by his father for “telling such lies.” And after the beating, Flagellan wept in his room, listening to his father rail about his “mutant son,” casting every dispersion at God and the universe for cursing him with such a monster with “two eyes and a tail!!”

It was there, in his bedroom that Flagellan was suddenly struck with a remarkable inspiration. It was as if Someone was pouring light into his brain, but how could that be seeing that his brain was closed from the view of every observer? Yet the light poured in and suddenly, Flagellan knew something that no one on Flatland could imagine. The light—all light—was coming from somewhere outside the plane.

It suddenly occurred to him that the oscillations he could see were rather circular in shape and these circular patterns in the fabric of 2-space would spread and grow and interfere with one another. He was also able to detect that as the 2-space would move “up” and “down”, “up” places were somehow brighter and “down” places were somehow darker.

This new knowledge filled Flagellan with a remarkable sense of joy. He knew no one would understand him, that the beatings from his father would only increase if he shared what he knew, so he slipped away from the home of his birth and set out to discover the meaning of “up” and “down”.

He hadn’t gone far, when he made another important discovery. He noticed that the gradient effect of light upon objects became darker the further away an object was. And so, Flagellan began to wonder whether the whole plane was bending ever so slightly in a downward direction. If such was the case, then the bright spot where any observer was located would be called “up”, and as an observer moved, the “upness” of the world seemed to move with him.

“Wherever I go,” Flagellan mused, “I am always “up” and everywhere else is always “down”. It must be this way for everyone, but they can’t see it. Even though “down” is really the only direction I go, I find myself up. I can go “down” in the west and yet I find myself “up” in the west. I go “down” in the east and yet I find myself “up” in the east. I go

“down” in the south and yet I find myself “up” in the south. I go “down” in the north and yet I find myself “up” in the north.”

And then it struck him, like his father’s whip—only nicer. This relationship implied that if he kept going “down” in any direction, he would end “up” where he started. So Flagellan decided to circumnavigate Flatland. With the compass in his mind, and a few whips of his tail, he propelled himself at lightning speeds across the curvature of the spherical plane.”

Wick paused for a moment. Crick’s chin was resting in his front legs. Caramel shifted her weight, and slightly relaxed her right rear leg, her tail driving away the flies on her back.

“Did he come back to where he started?” Caramel asked, looking melancholy and thinking of the snows and her rider.

“Oh, yes. And he changed everything. When he returned the people of Flatland actually listened to him...almost. Even his father became proud of him...until the burning.”

The people were able to believe what he said about the plane moving up and down. They also believed that this motion of the plane was causing the thing they called light. But they were not able to believe that the light was coming from outside the plane. Most scientists held the position that the motion of the plane itself was the light. They insisted that if they could not see something passing through the plane from “up” or from “down,” they could not give such a wild theory credence.

Upon his return, Flagellan told the people that the world was growing at an alarming rate of speed, for his ability to tell the “upness” of his position was more difficult and the direction “down” seemed to be getting further and further away with every passing day. This alarmed the scientists greatly for they came to believe that they were living on a most unlikely “bubble plane”. The mathematicians took the data from Flagellan and came to the conclusion that the likelihood a universe such as theirs would arise at all was ridiculously small, that all creation was an improbable fluke, that the tenuous nature of the universe might eventually lead to a sudden collapse or an eternal expansion that would make life in the universe untenable.

Until he died, Flagellan tried to make the people understand that there was more to the universe than the “bubble

plane”. “Don’t you see,” he said, “there is something “above”! That’s where the light and the warmth comes from!! There is something “below”! That’s what determines the shape of our plane. We are dependent upon powers outside of this “bubble plane”! The universe has at least 3 dimensions!

The priests of Flatland would have nothing of Flagellan’s irreverent talk. The Arch Priest of the First Circle held a personal inquisition of Flagellan where he is recorded to have said: “Dependent upon powers outside of the Plane, indeed! Everyone must remember that God is Flat!”

Flagellan certainly could have escaped his captors, given his improved eyesight and tail-like conveyance, but he chose not to.

They burned him to death in the capitol city of Planopolis. They say that as he burned, he cried out to “God above” to forgive the priest of the Plane, for “they haven’t two eyes with which to see!” And then he gave up the ghost.

So you see, Crick, the inexplicable is sometimes hidden in a dimension above. There is something there. I believe we are moving through that something!! And that something is light!! The light isn’t moving, Crick! We are! And as we move, gravity and light and matter dance upon the surface of this 3-space we call the universe... light on the water, waves on the water, flotsam on the water, on a surface of 3 dimensions.

But the wind blows above the surface, and we fail to see it. The sun shines above the water, but since it is outside the surface of 3-space, we miss that, too. And below this surface are deep waters that determine the shape of the surface we call home. The universe is deeper than 3-dimensions, Crick!! We can’t see the dark matter and dark energy because they exist elsewhere, outside our 3-space. Yet they have their influence upon our universe—like sunlight, wind and deep water--above and below the 3-dimensions we see.”

“Thanks, Wick,” cheered Crick. “There has to be something outside the universe and I sure hope that it is still around; otherwise we’re really stuck. Also, you gave me hope for having my extra dimension.”

“Yes, and who knows what will come out of it, for sometimes a preliminary model even ends up matching the actual find later.”

“Too bad we can’t look at the ‘end’ of the universe and

just see what happens, not that I would want to be around then.”

“But you do say that you can look at the start, even through the dense plasma that hung around covering it for 380,000 years.”

“Yes, for sure—and anything outside the universe will surely have to be around then and exerting its influence. Ah, I’m getting too sleepy to think.”

“See you when the flowers bloom.”

“Yes, and there’ll be new WMAP data by then which will hopefully be conclusive either way. I’m off to the last dance of the year, after which we crickets will drowse away.”



— 27 —

### Shiraz

Caramel had experienced some difficulty in getting to her feet; the grass on which she had been resting seemed to be moving, or at least that was her perception.

Her mouth felt like she had been grazing on cotton-grass, and when she shook her mane to discourage any fly from landing, she wondered if her ears would fall off.

“I conjecture, before the conjunction, that in Theory, it was Resting Light, I mean right beside me”, she told Wick, with her straight face, when he asked about the wine. She gave him a long steady look, that he might know horses don’t lie, before she continued mischievously,

*“A question you ask, and hold me to task,  
On the whereabouts of the Shiraz.  
I seem to recall, at the Pub, one and all,  
‘Twas consumed amidst song and pizzaz.”*

The red mare ambled out of view, presumably to refresh herself, leaving Wick and Crick to their musings.

Caramel wandered over the rise in the front pen just as her flake of hay landed in it’s usual place.

“Oh, there you are, you gypsy,” laughed her rider, examining her horse. “And just how do you come to have a fly stuck in your tail, with two feet of snow on the ground?”

“Perhaps you can also tell me how a bottle of Australian Shiraz, of a brand not found in Whitehorse, came to be sitting on the front deck in a brown paper bag?”

Caramel and her rider shared a long gaze. As the rider walked away, Caramel distinctly heard her humming a familiar tune, “Girls just got to have fun....”



— 28 —

### Interlude

Having poured his heart into the story, Wick now watched the mare trotting over the hill and the cricket marching off to the dance with Kit holding the leash of her seeing-eye-potato-bug, Spot. He was alone again, and while the cricket seemed pleased with the story, it didn't make the impact Wick had hoped for.

He sat back on the rock where he had conversed with the Cricket and horse through the previous night. It was warm beneath him. There was the cage where he had left it the night before. If he could have crawled behind the safety of the bamboo bars, he would have done so. Perhaps a determinate universe was more desirable after all.

(Crick is still absorbing the impact of flatland since he was still stuck on the cyclic thing (plus it was already written), so that and all the future stuff here will still have great impact in all directions...)

(Crick's hibernation will pass as quickly as Austin can copy from a book, and maybe someone will describe the ice cold winter; then spring will quick arrive and we'll describe that and wrap up the amazing cyclical universe stuff... and then we'll all go undeterminedly where none have gone before, which is, who knows.)

(Hopefully, any off topics such as the quantum and cosmology stuff will still shed light on RLT and some will on determinism and grant some insights such as flatland expanding and/or being cyclically round.)

(I know that, Austin. I'm just playing along. Stop breaking character!!!

I suspect you'll both be back, and if you're not, there will be a very long soliloquy by Wick until spring comes and Robert will get bored and insert a cosmic vortex and Nazi's with pigish noses who worship crickets will come storming through to imprison Wick for placing a cricket in a bamboo cage, anything could happen...

I would prefer no intervention, though so I'll try to make any soliloquy as interesting as possible. But that's kind of like holding your breath, and it can't go on forever, so cherry trees may begin to blossom before the pigs come... you'll understand.)

— Wick



(Photon)

— 29 —

### Earth and Space

Crick and Kit slipped beneath the white sheets of snow and there they hibernated, snuggling in their nest, cradling, cuddling, and nuzzling, like kittens. The frogs, too glided deep below the surface of the pond. Sea yet came to shore, as the dark tide of sleep swept the frog and the crickets away, Kit and Crick resting warm within their quilted sleeping bag of sorts.

A full moon was rising, lighting the banks of a nearby stream; it provided an otherworldly glow, as like the mood of love. Above were the stars, those lamps of incredible brightness that shone from far away and long ago, suns, really, but their brightness had been dimmed by the incomprehensible distances intervening.

Some travelers through space up there somewhere, perhaps refugees from some barren and fruitless world, might be searching, ransacking the heavens, looking for an Eden of a world, hoping, that among those many lights that dance in the sky an oasis in space awaits somewhere—a world where flowers bloom and fountains spray—a paradise such as Earth—a world of boundless beauty and grace that perhaps has no equal, anytime or anyplace.

They would realize that, for all its hazards, Earth is still the be all and the end all, for Earth is among the best of all worlds due to its equipoise; it is a world balanced by sadness and smile, life and death, night and day, sun and flood, give and take, truth and doubt, plenty and drought, good and evil—for, you can't have the one without the other; therefore, Earth, just the way it is, is truly among the best of all possible havens.

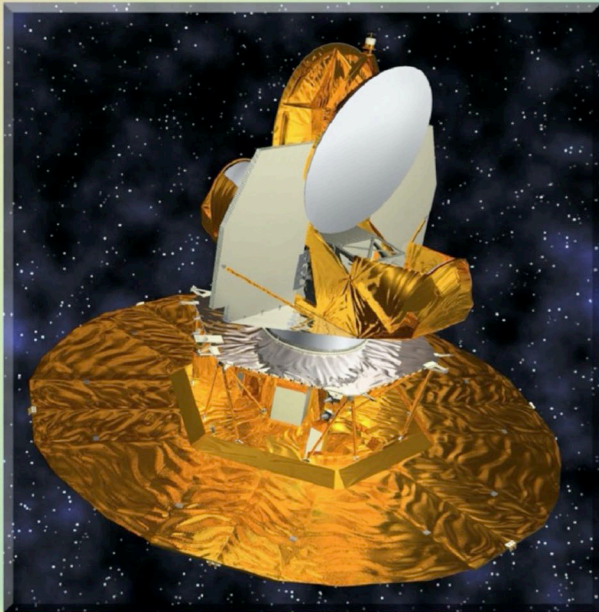


In their dreams, Crick and Kit left their bodies and floated weightless through the heavens and back—across the scenes of the centuries that they'd known: they spotted the first flying reptile, sighted near-man on the African savannah, swam in the sunken Druid cities of Atlantis, saw Merlyn building Stonehenge and burying the Crimson Chalice beneath it, watched the Sphinx weathering away—saved only by its sinking into the sand, witnessed the scaffolding around the pyramids that had formed the slow stone ramps, glimpsed the last temptation of Christ, beheld the fall of Constantinople, and observed Sultan after Sultan rising and then falling from the throne. Eventually they fell into deep slumber, cocooned in their embrace. Winter reigned.

Meanwhile:

<http://map.gsfc.nasa.gov/news/>

*“The new WMAP data rule out many mainstream ideas that seek to describe the growth burst in the early universe,” said WMAP principal investigator, Charles Bennett, of The Johns Hopkins University in Baltimore, Md. “It is astonishing that bold predictions of events in the first moments of the universe now can be confronted with solid measurements.”*



— 30 —

### **Hibernation**

*The ice was not in their veins, the freeze.*

*Nature Springs from Winter's tomb,  
The bloom already in the seed,  
The tree contained within the acorn.*

*Crystal fragments surround—sharp memories  
Of the ventures in which they shattered not.*

*Surging sprigs sprout from the soil;  
Spring showers make the Summer flower.*

*The seasonings arrive in turn at one's door,  
For all things come 'round to those who observe.*

*Summer wakes from Spring's dying kiss,  
Blooming when the rose does,  
Sunning after the Spring's running.*

*One could never be too warm who'd endured the frost;  
The kaleidoscope revolves: it's life's cycle.*

*Summer reigns upon the land,  
Eventually fading in the night.  
Life's second bloom shines upon middle age,  
Coloring the mind—a rainbow's shimmering.*

*Autumn Falls as Summer leaves,  
Harvesting its sum of days,  
Seconding the rose of Spring.*

*The hearthstone fire glows heartily with the self  
As one stokes the flames of the wondering soul.*

*The smile meets the tear—  
Fall's embers last through December.*

*It snows atop the trees, some falling in,  
Entombing the spring that waits for the miracle.*

*Ice winds stalk the weed flowers,  
The ghosts frosting the dead stalks,  
Snow crystals barring all that grows.*

*They're in hibernation, safe, snug, warm, and whole.*

*Winter is death cooled over;  
But melting snows form Spring waters.*



— 31 —

### **Resting Light**

As Crick and Kit slept, Wick studied the WMAP data: "It's like the Bible of science," Wick whispered, "A Genesis for cosmologists." And like the Bible each denomination has their own interpretation. Some cry, "Lo here!" and others cry, "Lo there!" But could it not be that there is an interpretation all denominations disregard simply because of assumptions so visceral and basic to science have blinded them to other possible truths?

Newton created Calculus, so called because it is based upon calculi or counting stones. "Upon this stone I will establish my church!" And it was established, but assumptions were made in its establishment. And over time there were schisms. The two great schisms aligned themselves with the Relativists and the Quantum Mechanists, and then there was the Holy Order of the Beautiful String, and the Quantum Loopers... "Lo here!" they cried, "Lo there!"

But none of them imagined that the universe might be moving. None of them dared to think that the universe might be racing through a "higher space" at the ridiculous velocity of "c". Nor did any imagine that the background of microwaves might simply be evidence of the universe's motion through that space... ripples on still water.

Everything is interpretation... everything... but the mega-religions of science have established their dogmas and will not be moved. The cross of their axes of time and space reign supreme in all their churches! Genuflect or be ignored!

*(Maybe the expansion of "space" is like the 3-D universe moving in the 4th dimension...)*

Wick's mind stirred. Crick was dreaming and the crickets musical thoughts pierced Wick's mind.

"Maybe the expansion of "space" is like the 3D universe moving in the 4th dimension..."

Yes, partly. Wick hoped that his thoughts would reach the hibernating cricket. But expansion is more related to the drag matter exerts upon the 3-space. A fabric of very loose weave makes a poor parachute. The air passes through without much drag and the parachutist perishes. But when the weave is tight the air becomes trapped and the fabric stretches upward against the parachute's descent.

In areas of 3-space where matter intersects the 3D surface, the fabric of the 3-space becomes tighter and the resistance against the entropward pull causes the matter-rich 3-space to stretch toward ord. The more matter accumulates in the ordward stretching 3-space, the greater the resistance and pull toward ord.

So the fabric of 3-space stretches more and more and more owing to the accumulating matter and the velocity of the 3-space. This happens acutely in the presence of tightly bound matter (such as the singularity of what we call black holes), but it happens less drastically in regions where the matter is dispersed (galactic clusters, etc.).

The reason why our region of galactic clusters appears to be moving away from all the other galactic clusters is because all the clusters are dragging toward ord while the rest of space is moving toward entrop.

Let me know if you can hear me, Crick.



— 32 —

## Spring

Meanwhile, the winter had passed by as hours and days had melted into weeks. Crick and Kit overslept a bit.

As the touch of spring awoke them, they slid from their cocoon, their silvery pinions yet wrapped and wet—and they breathed-in the moist and earthy air which had called them forth once again, and then they gently unbundled their wings and billowed them into flight. They flew and fluttered in flux, transitionally, but then transformed into a higher state that only few cricket couples could know, that of a sprite and nymph—as if so waved by some pixie hand, and arm-in-arm they flew and glided through the tall and growing grass toward the pond, bidden there, as are dragonflies, toward even fresher visions, so clear and bright, that drew them forward through all the summers of youth that they'd ever known, as there, at the water's edge, they looked into the still water, each of them seeing only the other's reflection looking back, cheerfully radiant and ever youthful...

Kit pointed out the aspects of the landscape, relating, "Here, the many falling chestnuts of yesteryear, as from our healthy tree of love; there, the wild-hearted roses gnarling among the branches of a spruce, like a strongly formed poem blossoming with meaning."

Flying and following the meadow trail along the wood side, they caught the secret scents of the jasmine, deciphered the messages of the honeysuckle, sensed the signals of wisteria, recalled the half-forgotten memories of the rosemary, inhaled the sweet breath of violets, heard the thoughts of pansies, and felt the early youth of the primrose.

As they entered the woods, the path became a serpentine writhe of roses, pink as a maiden's cheek, that led to a clearing where daffodils were arranged by nature's hand—all wearing their yellow pixie-dresses. Thence to the same stream flowing later on in the forest, where lilies exhaled their powerful sweetness. Drenched in fragrance, they passed ever deeper into the woodland, noting the fairy-frocks and even more daffodils brightening from the spirit light of morning into the fuller radiance of day.

Further on, there were brilliant clumps of blue delphiniums growing in the ruins of old cottages, happy dandelions everywhere, lilac bushes as large as a building, irises in their soft magnificence, and laughing pansies that were dewy-eyed and velvet smooth. Kit knelt to smell a rose, seemingly becoming it for a moment, and, so, Crick lifted her to his lips, as if she were a flower, and kissed her and drank the dew.

"The lilies-of-the-valley," she said, "came from Eve's tears as she left the Garden of Eden, taking much more than just the apple blossom."

"Every spring the world grows young again when the angels of nature reconstruct it. It is as cyclic as our universe. All is ever reproduced. A rabbit is not just pulled out of a hat; it has parents!"

"And there," he continued, "the golden-throated lilies sing, and here a maiden-flower blushes, its purity and virginity reborn."

She added, "And there a galaxy of sunflowers sways in the wind, echoing the luminosity of our love."

"Yes" he went on, "herein live all the flowers of nature's fragrant garden—even the silken saucers of the hollyhocks."

"In which someone caught a bee as a child, then shook it and held it against an ear to hear the aggravated buzz, even getting stung perhaps, then opening the flower and letting the bee fly away."

Such they were able to see far beyond cricket vision and on into the life of things. Time had slowed down for them—and so they could even catch flowers in the act of forming—by mirroring the pixies and obtaining their colors from the reflections. They watched as butterflies came to life in the souls of pansies—embodied there by an extension into the third dimension of fluttering flight, looking like flowers floating on air, and leaving only their dusty shadow prints behind on the pansies.

They could even see in the dark, for tulip lamps lit the path of the lane and the hollyhock torches illuminated the clearings. The secret hollows glowed at midnight from the crocuses that were cups of stored sunlight. In the luminous back wood haunts, the flowers could be seen growing from the touch of nymphs. They saw fairy's-frocks, made of elfin sowing, and lady's-lockets, or bleeding hearts—the two heart halves joined in love—a gift to the imagination from the spirits loosed from Eden, along with Adam and Eve. From the Virgin Virgo were strewn asters, or starworts, in the form of stardust and tears streaming down from the night sky. And wherever fairies had just romanced, wild pansies, once known as 'jump-up-and-kiss-me', soon sprouted and sprung from the amorous power of the sprites' images.

"The universe has expanded in the ord direction while we slept, Kit. I can sense it."

"Me, too. It isn't gravity that's holding us down; it is everything expanding that is pushing us up!"

"Hey, you're right. I can feel the lifting push of the earth on me."





— 33 —

### **Witnessing the Birth of the Universe**

[Recap]

[A possibility is that our Universe resembles a three-dimensional membrane—called a brane—embedded in a four dimensional space. The brane can move in the fourth dimension. Although we do not see this extra dimension, the motion of the brane along it has physical effects within the brane, not least because our brane is attached to another, located very nearby, tethered by a spring like force. The force pulls the branes together to create a huge impact. The branes then fly apart, only to be drawn together again in a trillion years or so. It is the oscillations and repeated collisions of the branes that create the cyclic behavior within our own brane.]

“Ah, hail, Wick, good friend,” came a chirupy voice from the garden.

“Hello, Crick. Did you have a good hibernation?”

“Ah, yes; it was the best; we even slept in a few weeks. I dreamt of the spherical flatland. There seems to be some connection of it to the Endless Universe in that there is another dimension beyond which touches us all in the name of what goes on behind the scenes.”

“Is that the name of the article you copied some stuff out of, ‘The Endless Universe?’”

“Yes. The author would want his theory promoted.”

“Hope so.”

“How was your winter, Wick?”

“London got clobbered with an inch of snow and no one could even move without falling down. Hey, did you get the thought I sent to you while you were sleeping?”

“Yes, thanks. I used it to invent that ‘Gravity is the 4th Dimension’. The earth is larger than us, so when it expands it presses against us. A ball thrown up doesn’t “fall” so much as the earth overtakes it. Gravity is acceleration. All this explains why objects of much differing mass ‘fall’ at the same rate.”

“You stole that from RascalPuff. He spent much of his life on that theory.”

“I, um, just borrowed it for a while. I’m giving it back soon.”

“So now, Crick, we’re actually going to distinguish the inflationary and cyclic pictures by looking back in time to see what actually occurred a few instants after some kind of titanic bang or collision”? Wow! If we can do that, we’d better move this thread to a more notable area than the Public Square.”

“Indeed, Wick, we are going to peer right on through the hot plasma cloud. As for this thread, it was undetermined that we’d get to this point, although each of us liking to have an extra dimension in our own way, so we can only hope the serious ToeQuestors pick up on it right here.”

“Seeing the newborn creation of the universe, my God, Crick! It is astounding beyond belief that some mammals with satellites can attempt this; but, to see through this barrier we’ll need to use a far more ethereal form of radiation, one able to pass unhindered through all the terrible and plasmatic denseness, which is ‘merely’ the whole entire early universe. Do you have such a flashlight hidden up your sleeve?”

“Fortunately, Wick, just such a ghostly source of radiation exists, one of the weakest, most ancient, and evanescent entities in the universe: cosmic gravitational waves. They are the key to the sixth and final test. They answer ‘The Last Question’ proposed by Isaac Asimov in his favorite story.”

“You copied some of this stuff from the internet!”

“Well, yes, but all those contributing people work for me, although they don’t really know it. The cyclic model has potential. You’re right that the gravitational waves are quite feeble, though, for they come from very tiny mass—there is quite a lightness of being in this universe.”

“True, even a light-ness. OK, so people freely publish information to the world; that’s fair game and lucky for us all. So, what are gravitational waves, really?”

“Gravitational waves are distortions of space that travel through the universe like ripples on the surface of a pond. As the waves move through space at the speed of light, they cause space to alternate back and forth between squeezing along one direction and stretching along a perpendicular direction...”

“...where both of these directions are at right angles to the motion of the wave.”

“Hey, Wick, do you google, too?”

“Sometimes, and I’ll accept for now that Resting Light Theory can, relatively speaking, show this, too, although the mechanics differ. Either that or Austin doesn’t know what to say here.”

“To picture the wave, think of it as a Slinky that is squeezed and stretched according to the way gravitational waves distorts space. If you were small enough or the wave was stronger, it would increase your height and squeeze you front to back.”

“That would please Austin as a weight loss plan.”

“Yes, but then just as he was becoming pleased by that outcome, the next part of the wave comes along and makes him short and fat.”

“Uh, oh, but luckily the effect is not really that large.”

“Yes, and whew! The waves from 13.75 billions years bombard us all the time, plus they are also created by any matter or energy that wiggles, sloshes around back and forth, or makes circles.”

“Yes, lucky that the waves are so weak as to leave us and our atoms undistorted, but then that means it’s very difficult to detect them without a highly sensitive instrument. I hear that the total amount of squeezing and stretching as the waves reaching the earth is typically less than the width of an atomic nucleus.”

“Yes, but it’s still possible to detect them, as we will see.”

“So, how do these waves distinguish the inflationary model from the cyclical model?”

“In the inflationary model, gravitational waves are generated through the quantum jitters of microscopic regions of space. These random quantum jitters create tiny warps and ripples in space all the time—even now, not just during

inflation. But normally they come and go so quickly that they leave no long-term vestiges. The warps created during inflation are different because they are rapidly stretched to extraordinary sizes and become long-lasting distortions of space. Whether stretched a lot or a little, the waves have roughly the same height and depth.”

“Hmmm. So, in the inflation model, small-wavelength gravitational waves are set in motion first, and then progressively longer-wavelength gravitational waves start moving as the universe evolves.”

“How did you know that? And so today those wavelengths range from a few meters to billions of light-years. Since they all begin with the same height for all wavelengths, the test for the inflationary universe model is to search for a scale-invariant spectrum of the gravitational waves.”

“Sounds good, plus I can’t really talk from myself since Austin is writing this. And, so, of course, that spectrum would be totally different for the cyclic model.”

“Yes, completely different, for two reasons. First, the energy density of the universe during the phase when long-wavelength gravitational waves are generated is miniscule for the cyclic universe compared to the inflationary case. Second, the gravitational waves produced in the cyclic universe are not scale-invariant.”

“Hey, cool, so, then, instead, their amplitude increases sharply as their wavelength decreases.”

“Good observation, Wick. This is because the gravitational waves are generated as the branes accelerate toward one another before the big collision. This acceleration causes the quantum jitters of space to increase as the branes approach, which enhances the height of the smaller-wavelength gravitational waves generated during the last instants before collision. The result is a cyclic spectrum of gravitational waves that cannot be confused with the inflationary prediction.”

“There’s those brainless branes again, Crick, but I do suppose that if we can disprove the inflationary model, then that shows that something else must be afoot.”

“Yes, like the bigfoot cyclical kickoff of the universe time and time again forever.”

“Crick, are the WMAP satellite results growing more relevant because the satellite obtains more information every day?”

“Yes, because gravitational waves leave a distinctive imprint on the cosmic radiation background radiation pattern. First, gravitational waves traveling across the universe distort the distance to the plasma that emitted the cosmic background radiation. The effect is to brighten or dim the radiation according to whether the path along which it travels is shrunk or stretched by the gravitational waves. The brightening and dimming creates hot and cold spots in the WMAP image on top of those caused by the variations in energy density.”

“Astounding, but can we separate and extract this entangled information easily?”

“Yes, by a statistical analysis of the pattern of hot and cold spots. For example, one approach is to count how the number of spots varies with size, where the size is measured by the number of degrees a spot subtends on the sky. The gravitational waves generated during inflation should produce a pattern with a nearly equal number of detectable spots of each size for sizes ranging from two degrees and upward. Variations in energy density produce a different pattern of hot spots and cold spots spanning all angles. By comparing the number of spots of various sizes, cosmologists can disentangle the gravitational wave and energy wave contributions. The simplest inflationary models predict that gravitational waves should be responsible for somewhere between 10 and 40 percent of the hot and cold spots spanning more than two degrees. I just got back from speaking with the WMAP team.”

“They talked to a cricket?” That’s strange.”

“Well, you are, too! They heard about the Pentagon virus thing and were curious to meet me so they gave me an audience.”

“Just joking.”

“They brought me up to date and will have more soon at a real big conference.”

“What did they say so far?”

“They found no gravitational signal down to the level of 35 percent, which rules out some simple inflationary models but leaves many others intact; however, soon we get to hear about their more sensitive test on the effects of gravitational waves on the polarization of the cosmic background radiation pattern.”

“Polarization.”

“Yes, I’ll have to copy some stuff verbatim, but also leave out some of the complexity of polarization for brevity.”

“At least you admit it. I’ll bet that some of it comes from a book and that it would take too long for you to retype it all.”

“How do you know these things? Is my skull transparent? Anyway, there’s not a whole lot new under the sun, so it’s all in the cross-relation of ideas much of the time, such as in this thread and in the book.”

“What about where the sun don’t shine.”

“That’s a dark matter.”

“What about where and what light really is, such as described by RLT?”

“That’s well covered in another thread, plus Austin isn’t so good at that stuff. He’s still trying to travel up, down and around a flatland globe. He had to leave bread crumbs to know where he had been.”

“OK. I’ll talk to you some more after the really big conference. It was actually held in 2006, you know.”

“Yeah, but I’m just pretending that it’s now in order to give some more drama to the story. I’m having trouble finding the percentage stuff in the 2008 report and later, especially because the 2009 one is in over a month from now. Anyway, although those will go to lower percentages and rule out even more inflationary models, WMAP is probably reaching the end of its abilities.”

“Aye, yi-yi—stay in character, Austin.”

“Well, some movie stars did that and it became permanent.”

“Oh. I guess one could become what they do and see if too many neurons connect and then further build on that by staying in character too long.”



— 34 —

## Polarization

“Chirp, chirrup.”

“Hey, Crick, is that you behind the sunglasses?”

“Yes, the polarized lenses keep out the polarized rays of the sun, leaving the rest alone, for even though the light from the sun and the hot plasma of the early universe is unpolarized, when it scatters off matter some of this outgoing radiation in some directions is polarized; thus, light from the sun scattering by roughly ninety degrees from molecules in the atmosphere arrives at the eye highly polarized, although not perfectly so.”

“So, the lenses block the predominant polarization but let through a small amount of light with the opposite polarization?”

“Yes, plus I am a movie star and so I don’t really need to be recognized.”

“What movie!”

“The ‘Genetic Code’ movie, in which we find that DNA holds some juicy secrets about our past, many of them not presently active and presumed as junk DNA, but are actually just turned off and still quite readable.”

“Alright already! What about polarization?”

“OK, I’ve just returned from the big conference. Now, skipping over some basic definitions, the cosmic background radiation became polarized when it scattered for the last time off the hot gas that filled the universe 14 billion years ago. This was because the plasma had some nonuniformity. Although the radiation now reaching us has been transformed from red-hot gas into microwaves, its polarization remains unchanged.”



“So, both the gravitational waves and the energy density are sources that cause polarization?”

“Yes. Energy density fluctuations produce only E-mode polarization, but gravitational waves produce a mixture of both E- and B-mode polarizations.”

“We can detect B-mode, of course?”

“Yes, and so if there is B-mode then the inflationary model wins and the cyclical model loses.”

“So, what did they say at the really big conference?”

“Oh, yes. The first part was a bit boring as they went over the quality of the instruments, but this demonstrated the validity of the data gathered. I almost fell asleep. I’m getting tired even thinking about it.”

“Crick!”

“Oh, yeah. Lyman Page proudly presented the first full-sky polarization map ever made, hastening to report, ‘The pattern we have measured is pure E-mode, with the gravitational waves contribution to the hot and cold spots having to be less than 28 percent, ruling out still more inflationary models.’”

“Even some of the most promising inflationary models?”

“Indeed. After the applause died down, there came the time for questions.”

“And of course you asked one.”

“I said to Lyman Page, ‘That map is fantastical and fabulous! With this experience of the polarization map produced by WMAP, how much further do you think we can push to search for B-modes and what is the best approach?’ Now remember, Wick, that Page is a meticulous scientist who bases prospects on conservative judgment...”

“Crick, tell me already!”

“OK. There’s good news and some not so good news.”

“Give me the good news first.”

“Page’s answer was crisp and unequivocal: ‘We can push the measurements from 28% to 1% percent using a new satellite dedicated to the purpose.’”

“Holy cow!”

“Yes, Wick it was like a canon going off! What an uproar ensued.”

“Page is calling for a satellite whose instruments and flight path are specifically designed to measure the polarization pattern!”

“Want the bad news, Wick?”

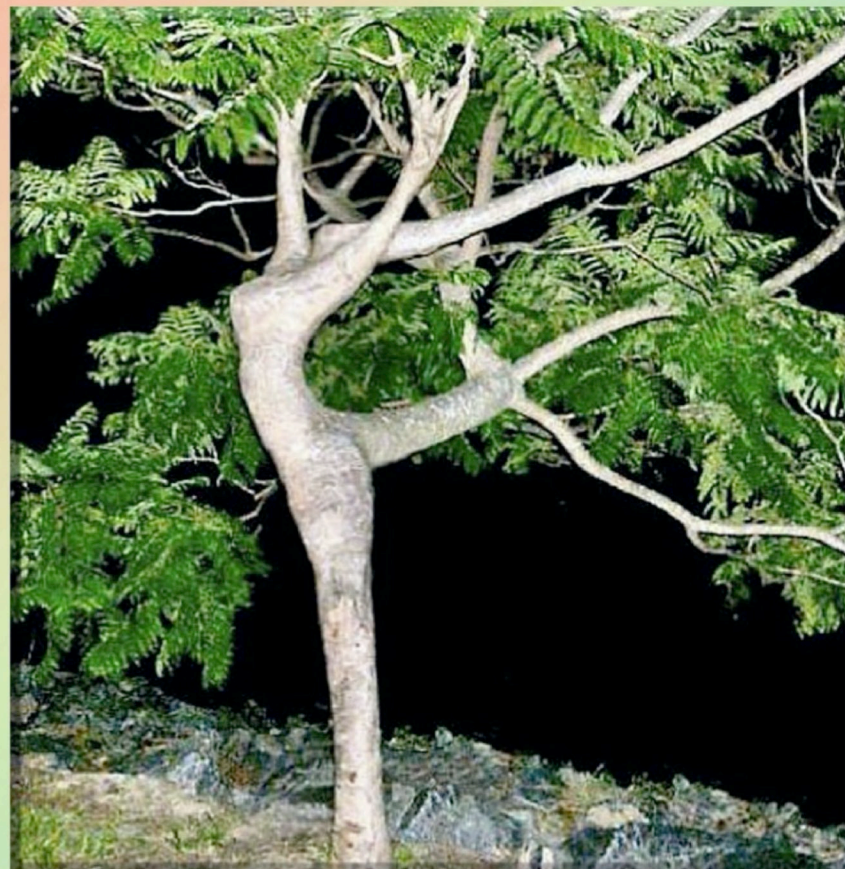
“Huh? What?”

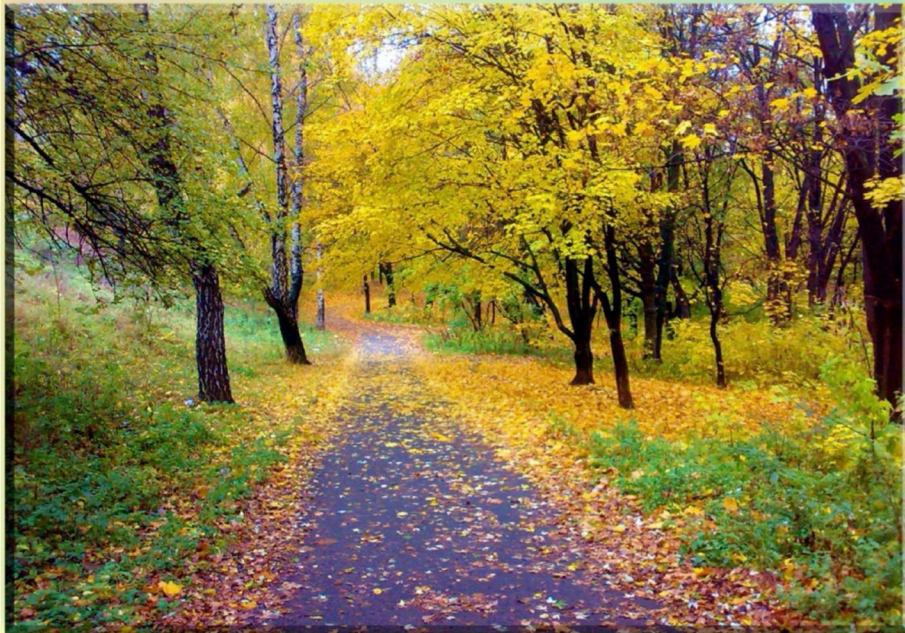
“Although this satellite could be ready in 5 years, NASA has recently redirected its focus toward a manned mission to Mars. The satellite is off the agenda until at least 2018.”

They were both happy and sad at the same time and exhausted from the dialog. As they drifted off into the haze of daydreams and a nap, Crick managed to whisper “there are some other hopes coming about that are not too far off, some even launching in 2009...”

“But space isn’t the final frontier, Crick. Its just a hole we keep falling into. The answers aren’t in the hole. They’re in the greater space of 4-dimensions. If we want to understand the universe, we have to look to a dimension higher. How do we get there? How?”

A gaddisfly buzzed around Wick’s nose as he drifted to sleep.





### Epilog

Caramel had such exciting news! She just couldn't wait to share it with Wick and the cricket.

She cast her mind over the rise, and through the portal, discernible only to those who knew where to seek same.

The friendly mare inhaled the loveliness that was spring in this place. New growth was everywhere, just as it would eventually return to the north and her habitual space/time. She reached down and took a few nibbles of the delicious taste that is sublimely spring. Chewing with her eyes closed in ecstasy, Caramel desired another bite, just a little one...

A rude taste assailed her sensitive tongue. Oh, no! She had nipped through a Crocus stem, and all horses know that Crocus is not for eating. Now Crocus would die, before achieving it's primal principle of propagation, and she was to blame.

What could she do to make amends? Caramel was quite distressed by her thoughtless action, unintentional though it was. Perhaps Wick or Crick might be of assistance.

Gently she picked up the flower and carried it with her until she came upon the sleeping Wick. No sign of Crick or Kit at present. Perhaps this was nap time for crickets as well.

Not wanting to wake the sleeping Wick, the red mare gently laid the Crocus on his chest. It was a lovely Crocus to her eye, perfect in every way for it's kind.

Backing away quietly, Caramel reflected on how her delight of the moment had become tragic for the Crocus, actions and reactions reflected throughout time and space everywhere.

Her exciting news was the furthest thought from her mind at this moment....

"Hey, Wick, wake up!" said Crick. "There's a crocus on your chest."

"What the heck!"

"Guard it with your life, for saffron is made from crocuses and sells for \$700 an ounce."

"A visitor must be about. I'll bet it's Caramel and rider."

"And maybe a whole herd of elephants jumped over us as we slept."

"Let's not get carried away."

"But dinosaurs might do that."

"Crick, are you all the way awake yet?"

"I guess not. Anyway, I don't know if we are falling through a hole but it still seems that I am being pushed outward."

"Ord and tempth."

"Oh, yeah. Do you think that there are more dimensions after the 4th, and so on?"

"I have to get back to you when I can write for myself."

"OK. But maybe there is no room left for any more extra directions and the 5th dimension is more like the possibility and superposition of all states below it, such as all possible universes. Thus, we could go anywhere possible in that dimension, even all at once, and this certainly kills determinism, doesn't it?"

"Actually, all possible universes could exist in the 4th dimension." Wick yawned. "Whether there is a 5th is beyond my ken, if you know what I mean. Its hard enough to consider a 4 dimensions, let alone a 5. Here is how you can think of a 4-space filled with all possible universes.

"You know there are stars, and planets almost without end, it would seem, traveling about in their own sphere's in the known universe. Try to imagine the universe as a planet. Instead of a surface, like earth has, with seas and continents, mountains and rivers, deserts and steppes, our universe has a surface of space and everything space contains. Every point in this universal planet is exposed as a surface to the view of a greater space through which the universal planet moves.

"Our universal planet orbits another body, which is also a universe—probably very different from ours—something akin to our sun. This universal sun has a 3-dimensional surface of hot plasma very much like the imagined beginnings of our universe after the big bang. It is also the anchor of a number of other universes of various natures and

sizes—as planets always are. In the far distance are other stellar universes, which are clustered together like our into a galaxy, and far beyond the borders of the universal galaxy are other universal galaxies, worlds without end.

“It like that old song ‘There’s a Hole in the Bottom of the Sea’, only we start with electrons and quarks, which rise up into atoms, molecules, elements, substrates, planets, star systems, star clusters, galaxies, galactic clusters, a universal planet, a universal system, universal galaxies, universal galactic clusters.

“But our mathematics becomes less elegant in the fifth and higher dimensions. I suspect that this tells us something about nature. Perhaps the fourth is highest, but who’s to say?”

“Have to go.”

...

Wick opened his ringing phone. “Speak!”

“Wick, it’s Crick. I’m in Quebec City. They just revealed the outline of the Super TOE of all that is and how it became. “May the light of the dimensions shine upon you, Wick, the candle of life burning and glowing from both ends, 3D and 4D.”

...

Things had been relatively quiet around these parts for a bit.

Kit and Crick were busy setting up house together, Wick was wool gathering and spinning new threads, weaving spirituality into the fourth, or was that the fifth dimension?

Passiona and Austin were off at some shoot-em-up in another space/time and the rest of the guys were off doing whatever it is they do when they aren’t testing some law of physics or checking out the dames.....

Robert was closed for renovations, taking strategic advantage of the lull in business while attending to some personal matters on a quest of his own.

Labelwench had some inkling of what was transpiring inside the hallowed walls of The-Many-Worlds-Pub on this particular thread. However, she was otherwise occupied in giving psychological counseling to her faithful companion, Caramel, who seemed to be going through a time of trauma, brought about by all these new revelations.

“But I can’t just go dashing about, as I used to!” the distraught mare exclaimed. “I might step on some kin of Kit or Crick. I could bring about the extinction of the Crocus with my carelessness. I might even bump into or step on Wick, as given as he is to sit or stand motionless when deep in contemplation.”

After a lengthy inspection of the immediate surroundings, Labelwench convinced Caramel that she could safely nibble on the greens of the area she had scouted, there being no crocus, cricket, or other life form that would be endangered by this activity.

“Relax your mind, Caramel, and you will sense any other approaching, just as they will note and respect your presence and right to exist.”

