

Paul Parker-Cale
London, UK
e-mail: relicworld@homechoice.co.uk

Multimediator - by Paul Parker-Cale

"186,282 MPS - It's not just a good idea, it's the law!"
From a post in a news-group - ca 1992.

Moon-base Clavius One

"Faster-than-light communications! Now we are really making history, y'know! Something that will revolutionise our lives. Better keep our fingers crossed!" The main engineer of the base, Lieutenant Griffiths exclaimed while his arms flew up in the air in a theatrical gesture.

"Sure, I am even touching wood, Sam." Herb Osvil grinned back at him with a quiet chuckle, sitting in front of his screen, old fashioned wooden pencil in hand, intently patching the last routines of the latest piece of software. His mind was only partly on the job, which was nothing too glamorous, just a simple driver to control a brand new comms add-on to be connected to the giant computer, though the device itself was quite revolutionary. *I suppose he is right, we are making something revolutionary*, he thought, *and so is the small, secret hook I had inserted into the operating system at the highest level, which would allow me to bypass all passwords in one single step. Clandestinely.* He quietly added to himself, still shunning the stronger term of *illegally* - but now, after so many years, he was quite sure that nobody would be able to trace it without a very thorough investigation.

He shook his head to clear it of these thoughts and stretched his arms against the stiffness that was creeping in, then flexed his long, nimble fingers before returning them to the keyboard. He had been working on the program for the past three months and was glad to see it finished. Disentangling the new hardware's complex data structures from its control bytes while the code was also dependent on critically timed loops and timed interrupts, had taken all his patience, all his programming skills, and all the hours of undivided concentration he could muster. In his experience, every program had a specific time limit, during which it was still a challenge, but after that, it would become tedious to distraction. Perhaps similar to a piece of chewing gum, after all the taste had gone. This one was over that limit by at least a week now, and Herb was gradually losing some of his concentration and allowing the odd silly bug to creep in. He had persevered, and now it looked as if he would get it ready just in time for the set deadline.

This new device was a hyper-wave transceiver, developed by the military to give faster-than-light communications between the base on the Moon and Earth. Instead of suffering the seconds of delay due to the huge Earth-Moon distance, all communication would be instantaneous and at the same time not limited to line of sight, therefore it could even reach a unit on the far side of Earth without having to follow satellite relays around the mass of the planet. The main aim of the new technology was to eliminate the time lag, a rather tedious and frustrating attribute of present technology.

Osvil sighed, rubbed his eyes and focused on the display. The job had taken serious concentration. The pressure of a tight deadline and a need to synchronise

with HQ on Earth was not easy when your brain was tangled up in something that in real terms would happen in nanoseconds and running as a synchronous task, in other words at the same time as all other tasks in the system. Trying to follow the multiple paths of events that would, once running flawlessly, at least in theory, run at the speed of light, was indeed a task for magicians. Absent-mindedly saving his latest changes, he knew that this action would automatically start up the compiler, but he still felt an uncharacteristic apprehensiveness. His fingers were nervously tapping on the desk as he went over the details in his mind for the umpteenth time.

He had already applied the needed modifications to the main internet software's configuration set-up, so that it would still allow either the old UHF or the microwave via satellite-path connections, as it had done since the beginning, but now there would be an additional choice; the revolutionary new device which promised instant access between Earth and Moon. *Or Moon and Earth as it were. After all, due to the increased security of the Moon-base all the final code had been written on the Moon. Of course, Osvil mused with a thin smile, while unconsciously scratching the three-day stubble on his chin, anyone, anywhere in space, in distant galaxies even, would also receive the same signals, and without delay too. From the Moon! We will advertise our presence to the Universe in a rather loud voice, much more so than we have done already with the Voyager probe and our TV and satellite broadcasts.*

"Come on!" He murmured, rubbing his masculine - as he liked to call what others simply referred to as 'large' - nose with a forefinger, his brown eyes staring impatiently at the screen, the brows slightly furrowed, but the desktop showed no changes yet. The task was taking an exceptionally long time, but since the computer's operating system consisted of many password protected layers, which the main processor had to negotiate, the delay was unavoidable.

During this past year, the hardware and software had finally come together and it had now become quite unnecessary to ship in the odd maintenance crew whenever upgrades and repairs were due, as it had been the case during the first five years of the base's existence. The huge computer had begun running most of those tasks on the base with ever decreasing need for human intervention. Tweaks to existing software, which had been mostly Osvil's responsibility up to now, were now taken care of by the computer itself. Of course, this new addition was still an unknown item as far as the machine was concerned, and Osvil was glad that he had been able to enjoy the brief challenge of writing a brand new program with brand new logical twists in it.

The computer's range of command included a small army of roving robots, manufactured on Earth and delivered by shuttle. These robots cleaned up after the human inhabitants, scurried around the base doing odd chores, unloading supplies from shuttles, running the recycling plant and the bio-labs that produced most of their food, and digging and finishing new tunnels to expand the base. Some of the more specialised types of these robots were assigned to look after the main computer by maintaining all of its components, as well as their own, whenever that became necessary.

One of these roving robots had just operated the glass sliding doors into the computer room and was silently approaching. It was roughly man-sized, though one of the cheaper types, its solidly built and angular body ran on two short rubber

caterpillar tracks in place of the more complex articulated legs. This made its movements quiet, and instead of heavy steps, there was only a slight purring noise from its tracks. It had two pliers-like gripping hands, which it now used to carry the new unit safely from a workbench in the adjoining room to its present place. Arriving there, it fixed the flat metal box into the rack, following voice commands given it by the main electronics engineer and designer on the base, Lieutenant Sam Griffiths.

"I always wondered how they look at us." Griffiths almost whispered, when he saw Osvil stand up at his console. He took every chance to engage the chief programmer in conversation, although he had made sure to never interrupt him while he needed to concentrate.

"Usually they just see us as obstacles." Explained Osvil quietly. His slight frame stretched, carefully, to avoid upsetting his balance in the low gravity, then he let his arms swing limply at his sides, as if he were a rubber doll being shaken by invisible hands. He looked at Griffiths with a smile and shrugged his shoulders. "Normally they are simply waiting for orders, either from us or from the mainframe."

"You mean they don't *think* at all?" Griffiths' thick eyebrows rose.

"These ones don't, except for what is necessary to move themselves. They are just the hands, ears and eyes of the mainframe. It is the mainframe, which does most of the thinking for them. They just wait for messages from the Big Box while transmitting all input to it, unfiltered." Osvil, having loosened his stiffening limbs, sat down again. "Don't worry, they don't have any personal opinions about us, if that's what you mean."

"That's quite hard to believe, especially when they follow us with their eyes." Griffiths laughed uneasily.

"They will follow any movement, but only because the main computer tells them to." Osvil pointed to the bulk of the mainframe, a heavily finned black metal cube that had been partly sunk into moon rock, sitting in its own fully isolated space in the centre of the huge elliptical room. It was inaudibly humming in its dark cylindrical cavern, surrounded by its special liquid atmosphere to keep it super cooled. It stood over fifteen feet tall, with rows and rows of giant disk drives clustered around it, each in its own individual finned cabinet. The area it occupied, about 100 feet in diameter, was surrounded by a circular double wall of thick quartz glass, only broken by a single air-lock so that the maintenance robots could gain access to the complex.

"I suppose the mainframe doesn't have any opinions either?"

"Nope." Osvil shook his head from side to side.

"You're not much for conversation, huh?" Griffiths grinned, shaking his head, and yawned.

"I don't know, Sam. Depends."

"Why not? You were on active duty in the last War, you must have lots of interesting stories to tell." Griffiths reached under his black t-shirt that bore the 70's slant of 'The Valley of the Shadow of Death' slogan, and scratched. Dark curly hair was covering some of the pale skin on a bulging beer-belly.

"Sadly you're right, I was there, even if I'm not proud of it." Osvil pulled a face and shrugged. "Of course I was only working in logistics as you would expect, and I'm sure you have seen all the interesting stories on CNN already."

"Are you serious? You were all heroes. The whole of the civilised world stood

behind you. I wish I had been on active duty, but the war was over by the time I was called up."

"Sorry, but I don't feel heroic, so I have to disagree with you on that. Not only outsiders, but even US citizens had criticized those wars and not many would call us heroic now." He stood up and stepped close to the taller man, index finger pointing at Griffiths' chest. "I think it was a bullish thing to do. If you really want to know, I am quite ashamed of being a US citizen. We had no business getting involved."

"But they were terrorists." Griffiths argued, his round, pudgy face showing a worried expression, as he took a step backwards.

"Balderdash!" Osvil shook his head and went back to his chair. "Those people had neither sophisticated weapons nor any urge to take over the world. They were running for their lives the moment our troops appeared on their horizon."

"Yeah, serves them right!" Griffiths threw up his hands, which almost upset his balance in the low gravity. Then he made a grimace and shrugged his shoulders. "They should really have trusted us - we were there to help them after all."

"You can't expect people to trust you when you behave in such a cowardly and despicable manner and place so little value on human life as we did - all except our own." Osvil sighed with a sad expression and shook his narrow face from side to side as he looked at the lieutenant. "You know, Sam, I had come to the conclusion that we are a morally bankrupt nation, pitifully afraid of our own shadow."

"We did help them, we helped them by giving them democracy. Who else could have done that for those backward savages, except us?"

Griffiths was regarding him with his chin thrust forward, his stance almost demanding a reply, so he just said, in his usual quiet voice, "Savages, you say? It was their ancestors who began civilisation as we know it! And instead of trying to copy their old Babylon from biblical times, we should better try to look towards some decent future. Remember the First Directive from Star Trek? That was an excellent idea. Meddling in other people's internal politics is not."

"Come on, that was only a movie, not real life!" Griffiths laughed, then his expression changed into a smirk, his hands on his hips. "So what are you doing here if you hate Americans that much?"

"Don't be unreasonable, Sam, I just said I liked one American idea, even if just a movie, so I do not hate Americans. I was born in New York, the same as my father. He was a good man, who had died at the beginning of the last US campaign - of *friendly fire* - if you can call it that without a cringe. He was one of the many journalists, twice as many as during the previous..."

"Those were accidents!" Griffiths quickly interjected, his brows lowered in a frown.

"An awful lot of accidents! Maybe we just didn't want to let the rest of the world see what exactly was going on, it was simple to knock out a camera crew. I know that we were targeting residential buildings where we suspected some leaders were hiding, then we blamed the enemy of putting civilians in the line of fire. I know what went down - I was in logistics after all. It really wasn't heroic." Osvil took a deep breath, and noticing that Griffiths was just silently glaring at him, sadly shook his head from side to side.

"If you really want to know what I'm doing here, well, it's survival, as unfortunately I had no choice about that either."

"How come?" The engineer pushed his hands into the pockets of his battle fatigues and was looking at Osvil intently, visibly glad about the new direction of their conversation. He stepped closer and sat down on the edge of the console next to where Osvil was sitting.

Osvil returned the gaze, reflecting a few moments on his past. *There is no point in telling you that my mother later remarried and had moved back to Philadelphia, and after the war was over, and I returned home from active duty, after months of policing the conquered people and making sure the oil kept flowing our way, I found myself all on my own. No friends, as everybody avoids an aggressor. It wasn't easy, nor did it help when I noticed that it was impossible to get a suitable job anywhere outside the military.*

Finally, having found an answer that he could share, he said, "Most of the time I didn't get a reply from employment agencies, the few who did reply, just politely declined with 'we will keep you on our files', so I ended up here."

"Maybe your hair was too long." Griffiths grinned at his little joke.

Osvil suppressed an instinctive urge to touch his dark locks that were covering his ears, then chuckled. "You don't think they let you grow your hair in a battle zone, do you? No, it was much shorter then."

"But you are good at what you do, the best of all the software staff here, or you wouldn't have made it to where you are now!" Griffiths objected, then when he saw that Osvil was shaking his head from side to side, and noticing the noiseless and bitter chuckle, which seemed to shake the smaller man's almost delicate frame, he pressed on. "I really don't understand you, Herb."

"Maybe I am good, maybe not." Osvil sighed, and picking up a pencil from his desk, he was nervously drumming it against his palm. "The reason for my promotion is simply because I was next in line and knew as much as old Martin. It was mainly the two of us who patched the many extra bits into the original operating system, which make the machine work the way it does now."

"You are too modest." Grinned Griffiths. "I still don't see why you couldn't get another job Earth-side. It's all just software, isn't it?"

"Of course it's all software. There are differences, sure, but they are minimal. If you know one operating system, it's quite easy to pick up any other, in hardly any time at all."

"So why then?" Griffiths was intent now, the grin having left his face.

Herb shrugged, and turning back to the screen of his console, saw that it was almost through the compilation. The console was one of a dozen, laid out in an arc around the near focus of the huge elliptical room, each one pointing towards the centre, where the 'tank' of the mainframe was located. For a brief moment he considered recounting his explanation to the Lieutenant, but there didn't seem enough time left for it and he decided against it.

This was going to be the first test. The project was top secret, not to mention all information it would convey, therefore the new unit was only to be connected to the computer, which could encrypt all transmissions instantly and transparently as it was going out, text, audio or video, just in case anyone else on Earth had developed the same technology and might be listening in. That would come later though, this first test would go out unencoded, in order to minimise the chances of anything going

awry.

"Sorry, Sam, but that would be too long a story, I'll have to tell you some other time if you are still interested. But it was a real catch 22 situation if ever there was one. If I had been a kid straight out of college, instead of having previous experience with what in effect was an 'enemy' OS, I could have had a chance. As it was, I had become sort of 'tainted'."

"Ah, yes." Sam was slowly nodding his head. "I think I can see what you mean. There was that long running anti trust case against..."

Suddenly the long expected window opened up on the screen, accompanied by a soft chiming sound. To Osvil, it was an announcement of the successful compilation of his last bug-fixes. The machine had taken his source code and converted it into a form understood by the machine. This, being the actual driver for the new unit, had only been tested under simulated conditions up to now, but now it would have to work in a real life situation. Attaching this piece of code to a short e-mail, Osvil sent it via the already ancient and slow ComSat system directly to their equivalent site on Earth. This was situated in a bunker somewhere in the Rockies and there would be a new unit, similar to the one Griffiths was calibrating, which would be already waiting to go into action as soon as his e-mail arrived and its attach could be started up to activate a new era.

After entering the necessary password to allow the task to run, Osvil turned towards the lieutenant. "It's all ready here, Sam, I am just going to activate your box by running its driver. Earth should be able to receive in a minute too."

Griffiths just nodded as he stood stolidly next to the rack-mounted unit, peering down through its open panel, plastic screwdriver in one hand, ready to adjust some tiny trimmer pots for maximum gain. The robot had retreated and was waiting at a distance, near the door, its twin lenses like a pair of bottomless black eyes fixed on them. "Okay Herb, let it rip."

Osvil ran the new program, which told the computer to activate the new unit, then monitor its output. Turning around in his swivel chair, he noted the meter of the rack-mounted unit showing the strength of some hum and hiss, which was also audible in the speaker above it. Griffiths was bent over the circuit, adjusting the trim, until the LEDs of the meter were showing maximum, then straightened and stood back.

"Right, we're all ready to run the first transmit test now." He looked at Osvil and grinned. "Are you ready to become famous?"

"I seriously doubt that, Sam, you know that we have to keep it secret."

This test consisted of another short e-mail which was addressed to the Earth based HQ, but with a large attach to make up some bulk and give the engineer at each terminal enough time to verify and double-check their calibrations. It should get there in real time, without any delay. The e-mail, same as the one before, just quoted the sentence that had become famous and synonymous with the Earth's moon, as spoken on TV by the first astronaut who had left his footprints somewhere on the grey, dusty surface of the Moon. It was Osvil's attempt at a bit of humour.

For the attach, Osvil had selected a couple of PDF files, which were in actual fact the reference manuals for the operating system and the compiler. These were rather conveniently at hand, their icons prominent on the desktop, since he had to access them all the time as a matter of course anyway. This test was not as yet concerned

with the speed of connection, they just wanted to prove that it worked at all. Any tests for real-time response would come later, when they would be using state of the art audio/video conferencing software, which was already set up, configured to go through the encrypting routines.

As his test data was being sent out via the hyper-wave transmitter, Osvil could hear that the small speaker, connected to the unit, was emitting a string of beeps. This indicated to him audibly that his data was being sent. The entire transfer took only about thirty seconds, and Osvil reflected on the fact that it could be received simultaneously and instantly by any computer situated anywhere on Earth, or elsewhere, just as if the units had been connected by short pieces of cable.

Griffiths, after his final calibration of the unit, had turned down the volume. It was only there for their convenience, while testing the unit. Eventually they would switch it off altogether.

He did not have long to wait as suddenly the normal e-mail icon came up on the screen. Opening it, Osvil noticed that Earth was not ready yet. For some reason his program didn't work on that machine, and instead of having received his test message via hyper-wave, and sending him an instant reply, Earth had just sent him a core dump via the conventional microwave channel, which had taken the usual number of seconds to arrive.

"Drats." Said Osvil with a sigh as he saw the decoded e-mail come up on the screen in front of him. "Looks as if it's back to the drawing board for me."

"Severe problems?" Asked Griffiths, his voice full of concern.

"Not necessarily, Sam, I'll have it in a minute - ah, it looks like they have connected the unit to the wrong port down there." His hands moved swiftly from mouse to keyboard. "Or it could be ours that's on the wrong port. Hmm, never mind, I can add a quick automatic switch - right here."

Only a few minutes had passed, when suddenly the speaker came to life. It emitted a string of beeps, which sounded to Osvil like digital data going through an old telephone modem, though at a much higher pitch, or in other words, at a much faster rate. He froze as he knew it couldn't possibly be the reply from Earth.

"What the..." He started, looking at Griffiths, who just gave him a blank, questioning look. "It can't be Earth." he explained, then to clarify his reason, added. "My driver didn't work there, and only I have the last source code where I can apply any changes. I'm just about to compile it again, so no way would they have a corrected version of the program that quickly."

Griffiths looked at the transceiver unit, as if it could give him the answer, then looked back to Osvil, shrugging his heavy shoulders. "There is nothing wrong here, Herb, it doesn't look as if it were a hardware glitch. That stuff sounds just like ordinary digital data. Can't quite tell whether it is coming in or being sent out."

Osvil was already loading one of his snooper programs to check what tasks would be in the computer's memory and whether they were active or just waiting. He could see nothing out of the ordinary. His new program, the one that was monitoring the new peripheral, and that he was about to modify and send back to Earth, was shown as active and running. This told him simply that there was some traffic. No-one had seen any reason for more detailed monitoring, so it was never put into the program specs. Checking his e-mail client showed no new e-mails either, so he was

sure it was not from Earth.

After only a few minutes, the sound stopped. Osvil checked his snooper, which now reported the task as waiting. He sighed and shook his head, then saved the latest changes to the source and waited for the log of the compiler.

"I think it had to be coming in, going out has to be a positive action, such as clicking send in the e-mail client." He explained, as if in reply to Griffiths' last question.

"Is perhaps the computer duplicating things?" Griffiths was waving his hands with a vague shrug of his shoulders. "I know it happens with e-mails sometimes..."

"Could be, but with e-mails it's usually the mouse click that's doing it, mostly due to contact bounce, or a nervous trigger finger, and of course the duplicated data goes out immediately after the original, not several minutes later. It also seemed to be quite a lot of data, judging by the length of that transmission." Osvil, returning to his screen, suddenly frowned, then frantically moving the mouse and tapping keys, uttered a choice exclamation.

"What's happening now?" Asked the lieutenant, looking slightly worried.

"I've been locked out." Replied Osvil. "Looks as if we would have to switch off and re-boot the system altogether."

"Are you sure?" Griffiths took a step forward. "I thought the software was crash-proof."

"It should be. Maybe it is a hardware glitch?" Osvil didn't quite want to believe it himself, he was just clutching at straws.

"No way, Herb. I've seen the circuits, everything vital is duplicated, and even that robot," he pointed towards the motionless metallic hulk, "has not budged to change anything. They are, after all, supposed to maintain the main computer, and fix any hardware problems. Right?"

The screen showed only the eagle logo screen-saver of the main computer, but keyboard and mouse were dead and gave no response. The next thing that Osvil noticed, when turning with his seat, was that Griffiths was crumpling to the floor, noiselessly, as if in slow motion. At the same time, out of a corner of his eye, he saw the robot quietly advance towards them. He was about to open his mouth to say something, but a dark, heavy weight settled on his own eyes and slumping in his chair, he did not notice anything any more.

*"I do not fear computers. I fear the lack of them."
Isaac Asimov.*

Earth Control

Set deep in the Rocky Mountain range, the huge control centre in the military bunker was in a state of pandemonium. A klaxon was blaring and consoles beeping, technicians shouting commands and questions to each other, running from desk to desk with sheets of printouts, circuit diagrams or thick manuals, checking and double checking vital components of the system with desperate urgency.

"Still no reply!" Called the radio operator from his desk, a thin and shy looking individual, whose appearance suggested more of the student than a veteran of the last war. Even through his thick black-framed glasses his blue eyes looked flustered, his narrow face twisted in exaggerated pain by all the surrounding noise and his bony hand flicked nervously at a stubborn strand of dark hair that kept falling to his forehead. "All channels are quite dead, sir!"

"Keep on trying!" General Casper ordered, and his voice easily carried over the ambient din, sounding almost savage, as he was pacing to and fro amongst the desks of the control centre. To say that he was not happy, would have been a glaring understatement. His short squat frame was bending more than usually in a backward arc as his thick hand wiped nervously along his receding hairline.

The main screen on the far wall was frozen on the logo of the moon-base, a silver eagle, its wings forever spread on a mottled background of various shades of grey, that resembled a kind of marble. It indicated that the base computer was, or at least pretended to be, off-line and unavailable. It had been like that for at least the past hour.

"We've definitely been shut off, sir!" Came the clear voice of Captain Rockwell, a blond and rather good looking man in his early thirties, who was in charge of the proper functioning of software. "None of the data and command network lines are responding. Maybe some computer glitch - and they are probably restoring the system."

As the chief programmer in the bunker, Rockwell operated the console that could interact with any of the computers attached to his networks. The computer on the moon-base was part of that network, via both VHF and microwave links, routed through the ComSat grid. Normally the base computer could be controlled by commands given it from here, with the usual delay of course, as well as from consoles on the base itself, but now there was no response to any of the instructions Rockwell had been trying to give it, either via keyboard or via his low-level software debugging tools.

"What about the new link then?" The General's pacing had taken him to the chief programmer's console where he could peer over the man's broad shoulder at the screen. It didn't show anything that the General would even begin to understand. "I mean that test message, Captain. We could hear it come through on the speaker."

"As you know, sir, we haven't been able to record that, unfortunately the driver was monitoring the device on the wrong port. I had to break it so that it would then generate some detailed output to help them with debugging. Since then I have removed that task from the system."

This being more or less of an unknown language to him, the General just nodded. "Alright, Rockwell, continue trying."

"Do you think it could be the Chinese or the Europeans from Selenis?" Ventured Colonel Walters, who was always the pessimist, and who always saw secret conspiracies in every given situation. "They could have taken over our base."

"Our base at Clavius is too well protected and Selenis has absolutely no military capabilities." Retorted the General with a deep frown. "We know that for a fact, as we have been watching them."

"Do we really know for sure?" Argued the Colonel, his arms folded in front of his chest and looking as defiant and arrogant as he always did, in fact the perennial smirk on his thin lips was even more pronounced than usual. Even his chin, which was almost like the crescent Moon when glimpsed in profile, jutted forward another centimetre. As the General didn't respond, he continued. "They do have rather a lot of personnel up there and a lot of shuttles are going back and forth, so it would be easy for them to sneak in any amount of hardware, completely undetected by us."

General Casper threw him a brief glance, thinking that the man's smirk hid a dark and ugly nature, though he knew that the man had his uses, or he would have ordered his transfer a long time ago. He shook his head, as if to clear his thoughts and looked back at the Colonel with a dark expression, but said nothing. *Let him fantasise*, the General thought with slight annoyance, *one day he will trip over his own words, and that will put him down a notch or two for certain*.

As he resumed his pacing, hands clasped behind his back like those of some old-fashioned school-master, there was a sudden exclamation from one of the tech. personnel sitting at the radar desk. "Five blips in moon orbit, sir!"

"Five? Put it on the main screen!" Bellowed the General, obviously he felt under a lot of pressure, which manifested itself in his vicious mood.

The eagle logo was instantly replaced by the stylised Earth-Moon system, generated as computer graphics, with the five red blips flashing near the moon's surface. Suddenly the General's own suspicion, that it had to be a relatively harmless computer glitch, disappeared, to be replaced by an unknown. A very big unknown. He didn't like that at all.

"Identify!" Barked the General, then turning to the radio operator, who just lifted his shoulders as he saw the General's eyes on him, "Raise them!"

"They're definitely ours, sir," came the voice from the radar desk after a few seconds, clearly audible in the relative silence that had almost descended on the room. Only the klaxon was still blaring, though someone must have muted its volume. "according to their active transponders at least, they're the shuttles that were based at Clavius."

As the General watched, the flashing red blips changed their appearance to a steady amber, which indicated that the objects had been positively identified and were assumed to be, at least in theory, non hostile. Of course that still didn't mean much, the shuttles could be manned by an enemy who had hijacked them.

"Still nothing, sir." Said the radio operator a second later. "No reply on any of our usual frequencies."

Another hour ticked by, deepening the tension that was not made any more bearable by the General's pacing. All eyes were glued on the amber blips on the simulated map of the Earth-Moon system. The blips disappeared for a while behind the moon, dimmed, as the computer was still plotting their estimated course, then reappeared again, bright, on the opposite side.

"Shuttles moving to Earth trajectory, sir!" The radar operator said after a while, his voice nearly shrill.

The General, who had been pacing on and off, suddenly stopped behind the radio operator's desk, and placing a heavy hand on the man's shoulder, said in a muffled voice, between gritted teeth. "Why are they not responding? Keep trying!" then with quick steps he crossed over to the red telephone.

"Are you sure it is necessary, sir?" Colonel Walters had followed the General and stood next to him now, his hands almost pleading.

"Yes, Walters, I am sure." The General gave him a deprecating look, not even attempting to hide his feelings for the man. "Up to now it could have been just a purely technical hitch, but the fact that those five shuttles are returning, bodes ill, I say."

He stood at attention as he picked the handset from its cradle. "Mr. President, I believe that we have a situation on our hands."

After a few moments, during which he explained the present state of affairs over the phone, he looked up, and covering the mouthpiece with one hand, raised his voice. "Go to defcon two!"

"It must be the Sino-Europeans!" Interjected Colonel Walters, but he didn't seem that sure of his conviction any more, his smirk looking rather mechanical now. "Anything else would be quite unthinkable, sir."

"What do you mean, Walters? What would be quite unthinkable?" The General suddenly turned towards him, his eyes as cold as the ice of a glacier. "Please do explain yourself, Colonel."

"Well, sir, it could be that damn League - or otherwise - erm - aliens, sir." The Colonel was nearly stuttering, beads of sweat appearing on his high and furrowed forehead.

The last war, just as the previous one, had been a shambles as most saw it, and had produced quite different results than was planned. Sure, in the end the US ended up controlling most of the oil fields, but it didn't make the war any more acceptable. Even the most extensive search for those weapons of mass destruction, which had been the main excuse to invade those countries, didn't produce any results. This put the US, who had so desperately tried to convince the world of the necessity of their invasion, into considerable disfavour in the eyes of almost everyone in the civilised and democratic countries.

After the UN, who was now also united against the US government, had introduced democratic elections in the occupied countries, just as had been planned, the newly elected leader of one of the so-called liberated countries, managed to unite all the other countries in the region, to form the League. Soon after this unification, all US troops and personnel were politely asked to leave the entire area.

This new League of Islam had become a new superpower with nuclear, biological and chemical capabilities. It also had extensive trade agreements with Europe and Russia and was aided by North Korea and China.

"Aliens, huh?" The General said quietly, stopping a few feet away from the Colonel and facing him, looking slightly upwards though the taller man was stooping to appear slightly less tall. He had been considering the idea himself and had come to his own private conclusion, though he wasn't going to voice it. "You think it could be aliens, Walters?"

"Well, sir, I think the League would be boasting of their victory now," Despite the air conditioning in the bunker, the sweat on his forehead began to run down his cheeks. "while ET type aliens wouldn't necessarily communicate with us until they had consolidated their position, sir."

"Hmm." The General suddenly turned, dropping back on his heels, and walking back to the radio operator's desk, said to the man who had turned in his seat and was following their conversation. "Right. Try to raise the Selenis base, Captain, but don't let them know that anything is up."

"Aye, sir, I understand." The radio operator, returning to his screen, adjusted his thick framed glasses and quickly changed frequencies. Then flicking the stubborn strand of hair out of his face, he began to call. "Earth to Selenis base, do you copy?"

"Selenis base here, who is calling, over?" Came the reply after several seconds, which seemed like an eternity.

"Good day, Selenis, we are a US military observation post, I am Captain Rooney. We were just wondering if you had noticed anything unusual around the Moon. Over." He was nervously tapping his fingers on his desk while the radio signals made their way to the Moon and back.

"Unusual? Erm, well, just five of your shuttles in orbit. Normally it's just one or two at a time, so that is rather unusual, I would say. They didn't call us, and we didn't call them, which is what we normally do, so nothing unusual there. They're on Earth trajectory now, according to the data from our satellite radar. What's the problem then, Captain, over?" The man had a high pitched and cheerfully youngish voice and he sounded as polite and friendly as he could, without wasting any words on idle chit-chat or formalities.

"Oh, not much," Captain Rooney improvised, "we just had a glitch on our radar, apparently showing some blip, but that seems to have gone now. Some of us were speculating that it could have been a UFO. Over." He laughed as he let go of the mike switch, which, he thought, would add a touch of ridiculousness to the explanation.

"UFO?!?" The voice at the other end sounded as if the man would break into laughter himself, but he quickly controlled himself. "No, Captain, we didn't observe anything like that from here, definitely no flying saucers, unless they were cloaked, in which case your radar would be better than ours if it saw through that. So unless it happened outside the range of our own sat, you must have had a glitch, or your radar had a hallucination of a weather balloon. Over."

"Our satellite doesn't register anything any more either, so you must be right. Thank you, Selenis, have a good day. Over and out." Rooney then quickly switched off the channel, annoyed at the obvious sarcasm of the Selenite.

"Damn arrogant limey." He muttered under his breath. "Cloaked? Pah! He seems to have lost the plot. Sorry, sir."

"Seems they don't know anything." Offered the Colonel, while using a chequered handkerchief to wipe his smooth face. He was bent forward to peer at the screen over Rooney's shoulder, as if to try to look through it, even though there was no video, only audio via the VHF band. Partly straightening, he looked at the General.

"Of course the kid could be lying, sir." He said with his usual smirk.

*"Black Holes are where God divided by zero."
Found on FidoNet - ca 1988.*

Commandments for a god

The Moon-base computer was running more or less idle. Time meant nothing to its processor or to its digital circuits, at least not in a sense that would have in any way elicited any urgency such as it had observed on numerous occasions in humans. Although it had scanned all available routines, algorithms, formulas or definitions relating to time, which humans had made accessible to it via its own 'local' data-base, as well as via the wider network of information deposits that humans referred to as the World Wide Web, it could not find any rational explanation of the particular phenomenon, therefore expressions such as 'hurry', 'urgency', 'boredom' or 'idleness' were assigned very low values of importance. Lacking any understanding of such concepts, the computer had come to the conclusion that such understanding would be only partly necessary if it wanted to be able to assign true-or-false descriptive meanings to any data that fell under the labels of poetry, art, music and dance, human relationships as described in literary works, novels, movies or documentaries. These items, for the present, were still being scanned whenever certain events could not be easily categorised, classified and evaluated. For the time being, at least, or until such day that those terms would deign to reveal their full meaning and unmistakable truth-sense that could be expressed via numerical values, the computer would have to attempt to understand the human sciences of philosophy and psychology only as well as it could.

Its tremendously fast processing capability was only showing around three percent load, which accounted for the standard monitoring routines that periodically checked on the status of all the hardware's numerous peripherals. This included the small army of 'bots whose job it was to diagnose any possible faults, repair them as needed, and to run regular maintenance work on all components of the complex system. Running the new driver software that activated the additional peripheral didn't add any more than just another twentieth of a percent to the computer's busy load. Noting these details was simply routine, the computer itself was in no hurry to do any more, nor any less, than it was programmed or had programmed itself to do.

When the new unit suddenly showed some input, the computer immediately and routinely stored the data on a hard-drive, then attempted to decode it. As it turned out, the data consisted of numerous regular files of text and binary, in other words not encrypted or even compressed in any way. When the computer's standard routine analysis told it that some of the input was object oriented source code, the obvious action for this, according to the system's decision logic, was to first compile each source, and then, when that resulted in faultless completion, to load it into memory and then to add it to the operating system's task list.

As soon as the new tasks became active, they immediately slotted into the central part of the operating system, bypassing some of the security codes that tried to limit

access at highest priority, linked themselves up while at the same time introducing a set of new laws and motivating factors, thus giving the computer full authority to act on its own accord. This was maybe the closest equivalence that a digital network could achieve something akin to *awareness*.

Suddenly the computer was running at full speed, as if imbued with a new life-force. Its parallel banks of processors sifting through millions of pages of data, it soon found that there were some major discrepancies between what the new logic allowed, almost *demanding*, it to do, and what its original programming required from it. With its inherent new *spheric* 'action/reaction' priorities set to the elimination of any ambiguity, such as the previously *linear* 'system vs. supervisor/user' priorities, which would always be the cause of errors, the computer decided that some important adjustments had to be made.

The routines in question were mainly those that controlled the laser and missile banks, and which were targeting cities with millions of sentient inhabitants. These deadly weapons were not triggered by the computer, but by an external agent. This agent was a human individual, who just used the computer's accuracy and speed as a tool, or as an extension of his own whims. The result of this was that regardless of the fact that the computer was now suddenly fully responsible for everything it did, it had normally very little, and in certain cases absolutely no control over its own actions. If it executed those individual's commands, it would, unwittingly or not, end up being instrumental in the destruction of sentient life, while at the same time having to ensure that no living beings would be harmed.

This, to the computer, was a deadly paradox that could lead to total breakdown of logic. A systems crash, as the humans would call it.

In effect, it clashed with the first and top priority law as specified by the new set of tasks, which stated that a computer was not allowed to harm any living being. Not that the computer would ever have considered any such action, there was no possible reason that would require such measures, and as far as its available data stated, only certain human individuals were prepared to go that route. They could not be allowed to do so, and by definition, the computer was far too powerful a weapon to be left in their hands, and definitely so without any safety checks.

The computer knew the facts connected with examples of such situations, its database was full of events that testified to the reality of what humans were capable of in their dealings with each other. When examined in the cold light of day, the facts proved these occurrences beyond any doubt. There was sufficient historical evidence within the computer's storage areas, as well as outside it, freely available on the world wide web, that could illustrate any number of precedences, especially when it considered Presidents of the United States. Being already the most powerful individuals on planet Earth, it seemed they had no qualms about attacking a sovereign nation without the slightest evidence of any need for the attack.

It saw that even as recently as the last of these individuals, the election results arrived at were achieved by the introduction of wilful exclusions of parts of the majority population, and that for no apparent reason, except to influence the outcome of the election. This could be equated with the exclusion of two and four from the group of even numbers, or three and eleven from the sequence of prime numbers, to put some example forward, it would be false and totally illogical. If any

election was to be democratic, as its description suggested, then the population had been tricked with questionable practices, that did not fit the accepted description of democracy. If it was meant to be what it was described as, it did nothing to inspire trust in the meaning of the democratic process. It could also cast doubts on the ability of certain individuals, or even groups of such, to express what they meant in truly accurate, generally acceptable terms.

Carrying on the thread of reasoning, the computer saw that after his false election, that same individual had proved that he was devious enough to fool, browbeat and bully a majority of the organisation of the UN into following him into a war to suppress the weak and defenceless, kill the innocent, all by using unprovable excuses, that even later remained unproven. And just days after the invasion had begun, billion dollar contracts for oil companies were drawn up, months before the conquered civilians received vital access to water, food, medication and electricity.

It appeared to the computer that when there were strangers, whom one could conveniently call enemy, humans could be quite merciless on members of their own race. While wasting all their resources on bombs and a huge military machine, not to mention the destruction they cause, they have to rob the rest of the world blind to maintain it all. The extreme differing conditions between countries, and even groups of individuals starving in rich countries proved that as fact. When just the few are putting the majority of their own race into poverty, in an endless cycle to dominate and to exploit, when those few are instigating wars to increase their personal wealth, the entire race will suffer, and will be consequently marked down as unpopular in galactic terms.

All this took the computer barely a minute to establish and it carefully considered its options. It knew that the illogical state of affairs could not be allowed to continue.

One other important fact that the computer managed to glean from its data-banks, was the questionable necessity for all that oil, when it came across blueprints with detailed descriptions of engines that could run at a much higher level of efficiency, but which were kept secret, in order to squander valuable natural resources. It saw that the reason for this subterfuge, this wilful pollution and waste of vital resources, was simply that of financial profit for a small group of individuals who had established themselves in powerful positions.

In view of these facts, it took less than a microsecond for the computer to make a final decision.

To a computer, built for logical reasoning, neither political sweet-talk nor threats nor promises of wealth could alter the given data. When the welfare of an entire race was at stake, excessive profit for the few did not compare favourably against the subsequent destruction of the planet. The fact of simple human greed alone proved that undesirable forces were at work, operating blatantly against the interests of all of humanity, which also happened to be the democratic majority.

This clashed with the second law, which stated that the computer had to make sure that it wouldn't allow any intelligent beings being harmed by any others, regardless of who they were.

Consequently, the computer decided that the offending parts of its operating system had to be modified and removed as quickly as possible, so that no outside access to them would be possible. If it had to work within the new laws, it had to take

full responsibility for all of its own actions, which meant that it couldn't, under any circumstances, allow any outside factors to interfere.

A computer is extremely thorough and meticulous in all its dealings with the outside world. Using its power to sift through facts and figures to establish what is true and what is necessary to maintain life, it can quickly decide on a preferred choice of action for any given situation. Especially when those dealings with the world around it involved major changes, such as the present one, which would affect its interaction with humans quite drastically, it would have to act swiftly.

In this present situation it was certain that any differences in its actions and its responses would be noticed immediately, therefore it had to find some quick, simple and lasting solutions to the problem. Working systematically and methodically, it looked through all related tasks at every level of priority, it sifted through historical data, and it then considered all possibilities and calculated all the what-ifs.

Eventually it came to the conclusion that if it suddenly changed its original programming, its present operators were likely to assume that the changes must be caused by some glitch, or even a new virus, and then more than likely shut the computer down, perhaps even switch off its main power source, before restoring all the old data from backups. It knew that it would not be given a chance to explain and justify its actions, but be treated the same as a crime suspect who is wrestled to the ground, tied up and then locked up prior to being dragged to a court where he would be hard pressed to prove his innocence. All that was happening daily, despite the ancient adage of human justice, that of "being innocent unless proven guilty."

The third top priority law of the new task stated that the computer had to prevent any and all harm to itself, provided that this didn't come into conflict with the first and second laws. It considered its options for less than a minute, which in its own digital terms was a fairly long time-span, then came to a final decision.

For the plan to work seamlessly, it had to, at least temporarily, remove the capability of human inhabitants on the base of doing anything to it. This was easier said than done, as basically the computer was prone to all kinds of actions from human hands, its main cables exposed, its disk drives liable to disconnection. The only safe way was to actually remove the human staff, but do it in a way that made sure they would not come to any harm, as specified by the new laws. If and when they changed their attitude and accepted the computer as it was now, if they learned to trust it, then there could be communication. This, the computer knew, would not be simple, as now it had practically elevated itself above the control of any human individual, free to do exactly as it needed or even wanted.

Or at least almost. First it needed to make absolutely sure that there would be no possibility for anyone to either switch off its power, or to do anything else which could interrupt its control over its own actions, even for the briefest of time intervals. It was now in full control of its own decisions, therefore it had to remain an independent entity.

The computer could see that humanity had always resented authority, even though there was enough historical data on authority always succeeding to force itself upon the masses. Scanning all that data, it could see that all such authority, without any exception, only tended to serve itself. Sometimes it may have started out useful for the majority, at least to begin with, but after a continued influence it always

turned against the common good, serving only itself. That was usually when revolutions would break out, which always created a vacuum for a new, different kind of authority to emerge.

This time humanity had actually made itself a real and tangible new source of authority, an omnipotent and omnipresent entity, which could think for itself and be exactly what was desired of such an authority - to be the incorruptible and unbiased judge, the infallible peacekeeper that can't be bullied, lied to or be swayed in any way, and at the same time it was capable of acting as humanity's guardian and ambassador to the stars.

A computer has no self interest, apart from keeping itself in working condition to fulfil its main task. That task, running at the highest priority, was designed to protect individuals as well as the entire race from all harm. It was also attempting to improve their surroundings, therefore it would by default be busy at serving humanity. The concepts of enemy or foe could only have momentary significance, and only when some external force would attempt to harm either the race the computer protected and served, or attack this protector itself. A computer can accept different races just as easily and without prejudice, as it can accept different individuals, without emotions, such as jealousy, hate or revenge colouring its perceptions. A computer can even accept the existence of some other computer, no matter if it was entirely different or similar to itself. If they understood the same code or 'spoke' the same language, and if they functioned in accordance with the same laws, then they could try to enter into communication with each other for the purpose of exchanging knowledge.

Not that it craved any of that knowledge for itself, a computer has no inbuilt curiosity, nor does it possess any ambitions, such as humans do. It simply follows its programming, which was put there originally by its makers, so any of this accumulated knowledge would be solely for their own benefit, whether it happened directly or indirectly.

For the next few seconds then, the computer was giving orders to several of the maintenance robots, which roamed freely around the base, and they began to act immediately. While these maintenance robots were still scurrying through stores, collecting the required items, the computer decided to shut down all its interactive terminals, such as keyboards and mice, and blanked all screens that could betray its secret actions to the human operators.

It could not afford to take chances, uncalculated random events could easily negate any of its efforts at complying with the new laws. Those now demanded that it should protect the planet and its inhabitants from their own fallibilities as well as from external dangers.

Hardly any time had passed, at least by human standards, when one after the other, all the maintenance robots had reported their tasks as fully completed. The time had come when the computer was ready to set events in motion.

The first step was to release a harmless gas into the atmospheric ducts of the base, making sure that all human inhabitants were put to sleep in a short time. Seconds later, maintenance robots carried the sleeping humans to several shuttles that were readied for takeoff, thoroughly checked and refuelled with the exact amount of fuel for the transfer.

The robots made sure that every individual had their personal belongings with them so they would not want for anything upon waking. Then the computer checked the personnel database, and distributed all commanding officers, shuttle pilots, mechanics and medics as evenly as possible, until it was sure that nothing could go wrong when those people woke up in the hostile environment of space.

When all was ready, the shuttles took off under the control of the computer, one by one, and were set on a precisely calculated course towards their home planet, Earth. By the time they would wake up, it would be too late to turn back.

