Quantum Leaptop

Using my spare time wisely, I moseyed on over to a 3-day conference on the future of computing, especially in the afternoon when Doctor's Sydney, Quimby and Rochelle were speaking. I had heard about the theory of quantum computing around the millennium but thought it was many decades off. The theory was a bit wild, as was the research from what I read. Dr. Sydney changed my mind on the matter in just a few hours and I was excited to think about the possibilities of this type of computing power.

Being an engineer, I was fascinated by some of the theories that both Sydney and Rochelle were hinting at, while sitting with my new, slow laptop. For those not in the know, our computers do the computation digitally, with billions of tiny transistors. All data is actually a binary bit, a 0 or 1, the computational power used to translate the data to something useful and recognizable to us humans. Quantum computing uses an entirely different process to compute. Not to get too detailed in quantum physics, sufficient to say that the mechanism called quantum superposition and qubits are a huge leap in potential computing power. Computations that take weeks with our most powerful computers could be solved in seconds!

I waited for Sydney to speak. He continually hinted that quantum computing was within reach of present technology, citing machines like the experimental D-Wave this year. On the front of it, science put off this technology to the far future, calling the theory in its infancy. Dr. Sydney said, "The speed of computations offered by a quantum computer is obvious. Take a computer password cracking program for instance. A highly cryptic password may be nearly impossible to crack, taking many months, even years. What takes our most powerful computer a year could be done in seconds with quantum computing power." Amazing stuff. As the speech ended. I waited for his talk to end and was surprised that no one went up to speak with him. I took the opportunity to introduce myself. "Hello Dr. Sydney, my name is Pete Jesson. Do you really think we're close to quantum computing?

"You have a Bostonian accent Pete?" he replied.

"I'm from Boston doctor but running around the wild west, looking for a missing scientist right now." We made small talk for a while. I mentioned my research in zero point energy. He asked, "What exactly is your specialty Pete. You work for your detective Dad, yet you sound like a scientist?" I answered, "I'm a mathematician by education, engineer by trade and a detective by fate." He laughed and I could tell he was anxious to continue talking about quantum computing and I let him. "You see Pete, the biggest challenge is the phenomenon of quantum decoherence." "Using lasers instead of conventional circuitry is absolutely necessary."

"I think I understand doctor, please continue."

“We have the technology for a focused low intensity laser beam, yet it scatters due to the laws of nature in computing. If we can get around this problem, quantum computing will be possible sooner rather than later.” Laser beams would carry the data at light speed, replacing wires and their problems like resistance and corrosion. Dr. Rochelle had packed up everything and had now joined us in the conversation. Dr. Sidney went a bit starry-eyed saying, “Just think, one could collect every piece of data transmitted!” Just as he was going to say more, Dr. Rochelle interjected with a fake cough. Too late doc, I thought, checking my smile, I’m a detective. I had a quick flashback to our case, It’s a Gas, where Edward Siegfried invented a high powered gas laser and subsequently disappeared for almost a decade. Then, out of the blue I said to the doctor, “as low powered the lasers are in a system like that, the advantage of much less circuitry and light speed communications are certainly worth the challenge of solving erratic laser pulsed quantum gates doctor, don’t you think” I really don’t know where that came from but it obviously impressed Dr. Quimby who quietly walked over to our impromptu meeting and nodded enthusiastically.

Then Sydney asked, “Have you ever held a clearance Pete?”

“Yes, several of them. Why doctor?” I asked curiously.

“I’m heading northwest and perhaps we could meet again?” Sydney said, handing me his card.

“I’d be happy to doctor,” I replied. Perhaps quantum scientists were few and far between.

“We’ve had some security issues at the lab, and perhaps you and Pops could help with something like this? I nodded, seeing a little desperation on the good doctor's face. I wondered where a quantum computer lab would be if it wasn’t at a university. We were both getting tired and I asked the doctor how far away we were from a working quantum computer. “A few ye —,” catching Dr. Rochelle’s blink, he continued, “a decade maybe, if we can solve some of these other problems." I wondered how close we really were to such computational power and what we would do with it. With a promise to meet again, we both left.

I went back to the hotel. Dad was talking but I wasn’t listening too much, my mind still on Sydney’s comments. “Do you know what I mean Pete?”

“I hear you Dad. I’ll start typing up a final report. So are we done with this case?”

“Yeah, why, do you have another case for us out here?” Dad wanted to go to Tucson to see and old friend.

“Maybe.” Dad was just getting used to using a new, top of the line, laptop, now he’ll have to make a quantum leap, I thought. “We’ve been invited to a quantum computer research facility, are you ready to go?” Hot on the trail of the missing Dr Higgenbottom and Merle Rollins (The Missing Math Man), his answer amazed me. “You’re not getting us into another quantum entanglement, are you son?”