

**Title:** Quantum Mechanics

**Genre:** Science Fiction Action Adventure

**Synopsis:** When world leaders learn that an impending disaster will wipe out life on Earth, they send a team back in time to accelerate innovation in the past, so that the present will have the advanced technology needed for humanity to survive.

Prologue:

Beijing, 1426.

An aerial view shows the newly built Forbidden City palace complex and gardens.

Guards lead a powerfully built man into a courtyard. The man (46) is dressed as a common prisoner and has his hands bound -- but he has the bearing of a prince.

The MINISTER OF PUNISHMENT addresses the prisoner as ZHU GAOXU, a commoner formerly known as the Prince of Han, and informs him that he has been sentenced to die for treason and rebellion against the Emperor, his uncle.

As NOBLE CONSORT XIA GONG ZHANG (26) watches with pleasure from behind a screen, the guards force Zhu Gaoxi to his knees. More guards carry in a huge bronze vessel and place it over him, covering him completely. Servants bring in charcoal and heap it around the kettle. The Minister of Punishment lights the charcoal with a torch.

But with a mighty effort Prince lifts up the vessel. As the woman watches with alarm, the Minister screams for more guards.

Act One:

Beijing, 2016.

An aerial views shows modern skyscrapers, with more under construction, iconic buildings like the "Bird's Nest" Olympic Stadium and the National Grand Theater, and other scenes of modern Beijing.

The 250-meter long LED billboard at The Place Shopping Mall welcomes the G20 Summit in a dozen languages.

In a reception hall, 20 world leaders greet each other and pose for pictures.

But inside a private meeting room the mood turns somber.

The CHINESE PREMIER welcomes the other leaders to Beijing and tells him that he wishes it was a happier occasion.

He indicates a giant wall screen, where a simulation shows an object approaching the Earth.

As they all know, the WN10 brown dwarf exo-star is scheduled to strike Earth in October – only six months away. Unless one of the proposed solutions works, this will be their last meeting.

The Premiere congratulates the other leaders for keeping the secret – there's no reason for the people of Earth to spend their last months in panic and chaos.

Showing news footage of a rocket launch, the AMERICAN PRESIDENT tells the group that NASA has launched the OSIRIS-REx mission, under the guise of studying an asteroid. They'll try to deflect the dwarf star with nuclear blasts, but there's little chance of success.

The FRENCH PRESIDENT comments that if only they'd had more of a "running start" the nations of Earth might have been able to do something – at least put human colonies on other worlds before life on Earth is destroyed.

The American President announces that American scientists may have developed just such a "running start."

Amidst a hubbub of excited questions, she introduces DR. ELI WILENSKY (40s) of MIT, who shows a video of a mouse being sent back in time a week. They believe they can do the same with human beings.

One of the other leaders asks about the paradoxes involved -- if they change the past, how can they send someone back in the present?

Dr. Wilensky shows an animation that explains how it works – changing the past will create a number of alternate futures. They hope that in at least one of them humanity will survive.

The Chinese Premiere introduces PROF. YANG CHU NI (30s). She says that an international committee of historians has identified three key points in history where they might be able to make a difference. She puts illustrations on the screen:

- the murder of the mathematician Hypatia in Alexandria, Egypt in 415, which led to the decline of the world's great center of learning and the loss of Greek science and technology until the Renaissance;
- during the life of Leonardo da Vinci in the 15<sup>th</sup> century, where many of his great inventions never got off the drawing board; and

- in Ming Dynasty China, when the Emperor suddenly cancelled the great voyages of Zheng He that were spreading advanced Chinese technology as far as Africa and the Middle East.

Prof. Yang says the committee believes that the Ming Dynasty is the most promising target.

Some of the leaders are skeptical. Some argue that the Chinese are only trying to advance their own interests and dominate history. The representatives from the EU and Middle East say that their regions should be tried first. A huge argument breaks out.

Dr. Wilensky points out that there's no guarantee that the technology will work at all – the team of “Quantum Mechanics” they send back to “fix” history could be killed by the process, or unable to accomplish their mission. But they need to start somewhere -- and he only has one device that can be ready in time. If they fail but survive, they can try another era.

The Chinese Premier says that he will put all of China's resources behind the effort to send a team back to Ming Dynasty China. He asks the other leaders to carefully study Prof. Yang's report before voting.

### Act Two:

Days later, the “Ming Team” assembles at Peking University. Eli Wilensky explains how his time travel equipment needs to be set up in an area that was open space on the date in question – they don't want to materialize inside a brick wall. Also, a relatively high point would be preferable.

Yang Chu Ni suggests Jingshan Park, just north of the Forbidden City. She offers to take him there to see if the location is suitable.

The next day, Chu Ni takes Eli on a walk through Jingshan Park, while Eli takes GPS readings of possible sites. She explains how it's an artificial hill constructed during the Ming Dynasty from soil excavated from the moats of the Imperial Palace and the nearby canals. She says that according to Feng Shui, it's favorable to locate a residence to the south of a nearby hill. When the imperial capital was moved to Beijing no such hill existed – so they had to build one.

Eli scoffs at the idea of Feng Shui and asks if Chu Ni really believes that nonsense. She points out that it's a practical rule – a hill protects against cold northern winds. She says that some ancient beliefs may be nonsense, but some are actually based on science.

Eli admits that he doesn't know much about Chinese science at the time of the Ming Dynasty. Chu Ni offers to give him a quick education.

She takes him to the China Science & Technology Museum and walks him through the exhibits on ancient Chinese technology, including astronomy, the compass, gunpowder, multi-stage

rocketry, metallurgy, and printing. She explains that while some of these inventions were put to practical use, others – like rockets used in fireworks displays – were mainly used for the entertainment of the Emperor.

She shows him a model of one of the great treasure ships of Admiral Zheng He – 500 feet long, it was five times the size of Columbus’s flagship, the Santa Maria.

Eli notices two people in the museum that he also saw in the park – a couple of big, scary-looking guys – one Germanic-looking, and one Middle Eastern. He suggests to Chu Ni that not everyone wants them to succeed.

Suddenly, the fire alarm goes off. As the museum visitors rush to the exits, the two scary guys drag Eli and Chu Ni into a storage room. The two men first try to bribe them to go back to another period in history, then threaten them. Eli and Chu Ni refuse and try to leave. When the scary guys try to stop them, Chu Ni attacks them, using impressive martial arts skills, and leaves them unconscious.

Eli is suitably impressed. Chu Ni explains that her skills as a historian aren’t the only reason she was picked for this mission.

They head back to Peking University. However, they soon realize that a car is following theirs.

They tell their driver to try to lose the following car, and their indirect route takes them through various neighborhoods of Beijing.

During the ride, Chu Ni tells Eli that 1424 should be the year they target – the last year of the reign of Zhu Di, the Yongle Emperor, who sent Zheng He out in the first treasure fleet expeditions. His eldest son and heir stopped the voyages when he became Emperor.

Eli, nervously eyeing the car that’s following them, asks what they should do – kill the oldest son?

No, Chu Ni explains – they just need to convince the Emperor to name his second son as his heir – Zhu Gaoxu, the Prince of Han. He was a great warrior and his father’s favorite. But he was proud and arrogant – he defied his father’s orders and was exiled to Shandong, where he lived as a farmer while secretly training an army.

Finally, they reach the university in safety. As Eli finalizes the calculations for their trip, he and Chu Ni are outfitted to suit their cover personas: he’s to pose as an ambassador from the five-year-old King Henry VI of England, and she’s to pose as his interpreter.

Eli thinks his period outfit (including tights) looks ridiculous. But he’s happier with the gadgets an international team of technicians has created for them:

- a ceremonial dagger that conceals a laser weapon;
- voice-recognition hand-held computers that look like leather bound “books” – they display information on electronic paper that looks like parchment. If anyone but Eli or Chu Ni touches them, they just display poetry;
- communications devices concealed inside earrings (Eli has to get his ear pierced for this); these will also allow Eli to understand Chinese if he’s separated from Chu Ni;
- a bio-array scanner that looks like a pen – it can perform medical tests and dispense cures for various diseases and poisons;
- a map of the ancient world, on parchment;
- some precious jewels, with transmitters embedded in the settings.

Finally, they’re ready. Dressed in their costumes, they bring the time travel device out to Jingshan Park under police escort, and the police set up a secure zone. (The police tell curious onlookers that they’re filming a movie.)

The world leaders offer Eli and Chu Ni need their best wishes.

Eli activates the device. He and Chu Ni (and the device) vanish from sight.

#### MIDPOINT

Eli and Chu Ni (and the device) arrive in the past. The park looks different, of course. They find a place to hide the device and make their way down the hill toward the palace.

Chu Ni asks passers-by what year it is and they confirm that it’s 1424. The locals eye Eli in his strange clothes, but he’s surprised that they aren’t more shocked to see him. Chu Ni tells him that in this period there were tens of thousands of foreign visitors – merchants, ambassadors, missionaries, etc. – who came to China in the wake of Zheng He’s voyages. He even brought back giraffes and zebras – Eli looks relatively normal in comparison.

They arrive at the palace and Chi Ni asks to see the Chief Eunuch. Through a series of bribes (with the bugged jewels) they manage to arrange an audience. Chu Ni explains that Eli is an ambassador from King Henry of England who wants to arrange an audience with the Emperor.

After further bribes, they are presented to EMPEROR ZHU DI (64), who looks unwell. Eli (with Chu Ni interpreting) presents the compliments of the King of England and says that he wishes to

enter into trade negotiations. He's heard of the great Admiral Zheng He and asks whether he could sail as far as England with goods to trade.

The Emperor's son and heir, the fat and phlegmatic CROWN PRINCE ZHU GAOCHI (46), cautions against wasting any more tax revenues on expensive adventures that don't benefit China. The Emperor berates him for having the soul of a tax collector, and has the admiral summoned.

ADMIRAL ZHENG HE (54) arrives in the audience chamber – he's almost seven feet tall, with a waist five feet around, glaring eyes, and a booming voice. Eli looks intimidated but Chu Ni's got a serious case of hero worship.

The Emperor explains about the proposed trip to England. Zheng He asks where it is and Eli presents him with a parchment map, annotated in Chinese. Zheng He examines it with great interest. But he's also savvy and suspicious – how did the English come by such a map, since they've never sailed as far as China?

Eli's temporarily at a loss, then says that in England there are great scholars who can measure the Earth as the Greeks did, using mathematics and observations of the heavens, and this knowledge combined with travelers' tales allowed them to create the map.

The Emperor feels sick and the royal physicians are summoned. Chu Ni seizes the opportunity and tells him that Eli is also a great doctor, and he would be pleased to offer his services to the Emperor.

The royal physicians and guards, of course, are not letting Eli anywhere near the Emperor. So Chu Ni asks if they can have just a single drop of saliva from the Emperor's mouth. The Emperor spits into his silk handkerchief and hands it to her. Eli tests it with the bio-array while the physicians administer an elixir to the Emperor.

The bio-array sends its data to the computer "book." Eli tells Chu Ni that the Emperor has high levels of arsenic and lead in his system.

Chu Ni asks for a sample of the elixir and Eli tests it. It also has high levels of arsenic and lead. Chu Ni tells the Emperor that the medicine is making him sicker. Eli looks up the symptoms of arsenic and lead poisoning and Chu Ni translates. The Emperor looks increasingly impressed as Eli ticks off his symptoms, while the royal physicians look increasingly nervous.

Eli suggests a course of treatment – starting with stopping the elixirs. The Emperor dismisses the physicians and now looks with favor on Eli and Chu Ni. He welcomes them and says that they'll be his guests.

In the guest quarters, Eli's encouraged that they've gotten the Emperor's confidence so quickly. But Chu Ni says it's not so simple – the palace bureaucracy and politics are incredibly complicated, and they've already made enemies of the royal physicians.

She checks her computer "book," which shows the conversations from the various people she gave the bugged jewels to. She tells Eli that everyone in the palace is talking about them, and the talk isn't friendly.

An invitation comes from the Concubine Xia Gong Zhang. She invites them to a banquet in their honor, in thanks for healing the Emperor.

Eli is titillated by the idea of dinner with a concubine. Chu Ni tells him to be wary: in four years, this concubine will be Empress of China. She sends Concubine Xia one of the bugged jewels in thanks for the invitation.

They attend an elaborate banquet, at which Chu Ni and Eli meet Concubine Xia (the woman behind the screen in the prologue). The Emperor, his son the Crown Prince, Admiral Zheng He, and the Crown Prince's son ZHU ZHANJI (27) are also guests.

Zhu Zhanji is a pleasant man who shows them his paintings of animals. Also his sickly-looking wife is present, he's clearly under the thumb of Concubine Xia.

(Chu Ni mentions to Eli that, although all Chinese Emperors were expected to paint, Zhu Zhanji was the only one who showed real talent for it.)

Eli is offered many exotic (to him) dishes. He gamely tries to eat them, as his hosts look on in amusement, but Chu Ni discretely uses the bio-array to warn him off the ones that are drugged.

Xia Gong Zhang sees that Eli and Chu Ni aren't eating any of the drugged dishes, and realizes that they're more formidable than she thought.

As the guests drink the discussion gets heated. Again, the Crown Prince criticizes the planned voyage to England. According to Confucian principles it's wrong to leave the country as long as one's parents are alive. And the foreign barbarians have nothing to offer China.

The Emperor tells him he's an idiot and has water in his veins. The Prince of Han is a real man – a warrior, not a bureaucrat or (he sneers at his grandson) a painter. The Prince of Han should be the heir. He's been in exile long enough – he's learned his lesson by now. The Emperor will send the order to recall him in the morning.

Concubine Xia looks very alarmed at this.

After the banquet, Eli is a little tipsy. He thinks the dinner went well – already the Emperor is bringing back the Prince of Han.

Chu Ni warns him that they're in mortal danger. Eli suggests that if they're going to die they might as well die happy – and he tries to kiss her. Chu Ni is amused and attracted to him, but reminds him that they have humanity to save -- they should keep their minds on their work.

Suddenly, Chu Ni hears excited talk on her ear-piece (linked to the bugged jewelry) -- the Emperor is dead, and so is the Crown Prince! History has changed -- the Emperor is supposed to fall in battle against the Mongols, and his heir should survive him for a year.

Chu Ni listens to the Concubine Xia and discovers that she has used the opportunity to murder the Emperor and his heir and blame it on the foreign sorcerers -- Eli and Chu Ni.

Guards are on their way to arrest Eli and Chu Ni. They'll be put to death by torture in the most painful possible way.

Using information from the bugged jewelry and her knowledge of the Forbidden City to guide them, Chu Ni leads Eli toward Admiral Zheng He's quarters. He has his own private guards and helps them fight their way out of the palace. Chu Ni also uses her martial arts skills, and Eli uses some of their high tech weapons.

Eli says that they have to get back to where they left the time travel device, so that they can go back to an earlier point in history and attempt to convince the Emperor to formally make the Prince of Han his heir before he's murdered.

But when they get to the location, the device is gone. Now they're trapped in the past -- and they still need to save the future.

### Act Three

Eli and Chu Ni decide to confide in Admiral Zheng He and tell them they're from the future. Chu Ni tells him that the new Emperor will allow only one more voyage -- before his wife, Empress Xia, has him murdered at 38 so that she can serve as Empress-Regent for her young son. She also tells him about China's isolation and the centuries in which it will lose its technological advantage.

The Admiral agrees to help them get to the Prince of Han -- even though he's 1,600 kilometers away in Le'an.

They make the long journey by road and river and along the coast. Aboard ship, the Admiral tells them although he was born a Muslim he honors all the gods -- and they honor him. Once, off the coast of India, his fleet encountered a hurricane. He prayed to the Taoist Goddess called

"The Celestial Spouse," and a divine light appeared on the tips of the masts. He took this as a sign, and the storm subsided.

(Eli comments to Chu Ni that it was probably just St. Elmo's Fire -- a natural electrical discharge. Chu Ni says that may be how the goddess speaks to mortals -- through natural phenomena.)

Finally they reach the exiled Prince of Han. He's mellowed during his exile, and at first he's reluctant to rebel against his nephew, the new Emperor. But when Eli and Chu Ni tell him what will happen to China -- and the planet -- if he doesn't -- he agrees.

Chu Ni feels she has to warn him that, in the original version of his history, his rebellion fails, and he's demoted to a commoner and killed by torture. He says he doesn't care about himself -- he cares about China and the survival of humanity.

Rather than waiting for the new Emperor to come to him, the Prince musters his private army and they set out toward Beijing. Along the way, Chu Ni and Eli discuss with the Prince and Admiral ways to use both existing Chinese technology and their modern gadgets to overcome the Emperor's superior forces -- 20,000 men to their 5,000.

They build multi-stage rockets and bombs, and plan to use hot air balloons to watch the enemy's movements and bombard the enemy troops from above.

The two armies meet in battle. Eli goes up in one of the balloons and relays information to Chu Ni using their communications devices. She translates it for the Prince and Admiral, who use it to direct their troops.

Eli also drops bombs on the Emperor's troops -- and sees that Concubine Xia is traveling with the army.

The new Emperor is overwhelmed by the battle and retreats to his tent. Concubine Xia takes over. She spots Eli's balloon and orders him shot down with fire arrows.

Chu Ni sees Eli's balloon crash in the middle of the Emperor's army and despairs. She realizes how much she cares for him.

Eli survives the crash. With the help of his gadgets (including a translation program that provides helpful Chinese phrases that he mangles), he makes his way through the fighting back to Chu Ni.

But Concubine Xia rides after him, and tries to kill the Prince of Han.

Chu Ni fights her and saves the prince. She's reunited with Eli. They fall into each other's arms and kiss passionately -- but briefly, as the battle is still raging.

Finally, the Prince and Admiral are victorious. The new Emperor is happy to abdicate. He never really wanted to be Emperor -- that was Concubine Xia's idea. He'd rather spend his days painting. He asks the Admiral to bring back more exotic animals like the giraffes and zebras so he can paint them.

In a ceremony, Eli and Chu Ni are honored for their services to the new Emperor -- Zhu Gauxi. The Admiral invites them to come along on his voyages -- when he gets to England he'll need an interpreter.

On the road back to Beijing with the combined armies, Eli and Chu Ni wonder if it will be enough -- will they save humanity?

### Epilogue

Beijing, 2017.

Archeologists digging outside the city discover a Ming Dynasty double tomb for a married couple. They're shocked that one of the inscriptions is in English as well as Chinese, and even more shocked that Dr. Eli Wilensky has a birthdate in the 20th century and a date of death in the late 15th century. One archeologist suggests that it's simply a mistake by a stonecutter who wasn't familiar with the western numbering system. Another notes that the man must have come back to China with Admiral Zheng He after his famous voyage to England.

Then the team members get into their floating cars and head back to Beijing -- which is far more futuristic than in its 2016 version.

As the archeologists display their finds on a news show, we rise above the Earth to show the news being watched on space stations that orbit the planet, in domed Moon cities, on Mars (in the process of being terraformed), and on a floating base on the ice sea of Titan.

Along the way we pass the WN10 dwarf star -- heading out of the solar system surrounded by a ring of orbiting thrusters that keep it pointed away from human habitations.

And leaving the solar system, we catch up with a generation ship heading to planets that circle the distant stars. The ship is called the ADMIRAL ZHENG HE.

FADE OUT.