

GALILEO – The Musical

The Man Who Changed The Universe

Words and Music by PETER BAKER

www.GalileoTheMusical.com



1 - IN THE NIGHT – Galileo

It was on a dark evening in 1583 when the young Galileo Galilei sat in a chapel watching the fellow going round lighting all the hanging wick lights that were on long cords. The lamplighter pulled the lamps close to him with a rod, then after lighting, they'd swing back into position. Now, Galileo was a very observant and curious young man. He noted that no matter how big the swing of the lights, the time it took to swing from one side to another was the same, even as the lamp slowed down. And he thought ... why the heck was that happening? But Galileo's laws of pendulums were nothing to the revolution he was to discover, looking up at the night sky....

2 – FORBIDDEN – Senior Cardinals

But what WAS the “truth”? Galileo's talents were discovered early and in his 20's was Head of Mathematics at the University of Pisa. But he was in a terrible quandary. You see, the Church had interpreted the Bible as placing our planet at the centre of the whole universe with the moon, planets and stars stuck on these invisible, so called “revolving crystal spheres”. But Galileo's observations had concluded that this - was utter tripe.

Now he couldn't just bring out a book, and call it “Hey, Church, You Got it All Wrong” – that would mean a sure-fire visit from the deadly inquisition who would no doubt invite him out for a hot stake. Cleverly, he tried to write an “independent” book called “Dialogue Concerning the Two Chief World Systems”.

Where he *compared* the two models of the solar system. But the Pope and his senior cardinals in Rome, were not impressed.

3 - WE ONLY WANT TO KNOW – University students

Galileo didn't mix with the other staff at the university - and was a bit of a maverick. One day, instead of giving a lecture about equations or some stuff, he marched his students out to the Leaning Tower of Pisa to conduct a grand experiment. Students at the top released two lead weights, one huge, one tiny at exactly the same time. Both weights fell at the same rate and landed together, yet scientific knowledge was teaching that heavier things fall faster! But did his university colleagues carry him shoulder high in celebration of this great discovery? Oh, no. They didn't even see the experiment - they were probably still scoffing cake in their staff room. And when it came to his students, THEY also were very sceptical of the radical science Galileo was sneaking onto their syllabus!

4 - DOIN' THE MATHS - Galileo and Cosimo

Out of all his students, Cosimo II de' Medici, who came from a pretty posh family actually, was very smart at mathematics himself and admired Galileo's maverick stance at the University. Cosimo's father, the Grand Duke of Tuscany, had written to Galileo to ask to give extra tuition to his son, but of course, Galileo never got the letter as the pigeon holes were in the staff room he rarely went to. But Cosimo had more in his mind than just getting tuition, he wanted to actively help Galileo get recognition for his discoveries. So, after a particularly gruelling lecture at the university, Cosimo stayed behind to talk to the great man himself...

5 - THE MAN WITH HIS HEAD IN THE STARS – Marina

Galileo Galilei never married, but he had a relationship with his housekeeper, Marina Gamba, who he met on a lecture tour of Venice. In fact, he had 3 children with Marina, and although she was a smart cookie herself, being in unenlightened times, she didn't have the opportunity as a woman to study or to progress. But she was content to spend much of her days trying to keep Galileo's haphazard study tidy, cluttered with endless star charts and mathematical equations. Quite often, her man seemed more interested in his charts than with her, something that saddened her immensely.

6 - IMPOSSIBLE SCIENCE – University Chancellor and Head of Science

Meanwhile, back at the university, Galileo is causing great concern, not just from his fellow science lecturers but the Chancellor boss himself, about what the man was actually teaching their students at the University. Never mind "fake news", we're talking "fake science" here and the Church in Rome had already written to the Chancellor concerned about Galileo's latest book which seemed to run a steamroller through the beliefs the Roman Catholic Church had about the makeup of the Universe. Things were turning pretty ugly, fast.

7 - PUSH BACK THE FRONTIERS – Galileo

Galileo is back in his study at home, rummaging enthusiastically for some maths equations he wants to share with his new assistant, Cosimo. You see, there's often an unexplainable rush of adrenaline whenever you make a great discovery, whether it's cracking a complex mathematical problem, locating the parabolic track of a new planet, or just finding a few quid down the back of the sofa. Galileo is on a roll. No matter that the rest of the University think he's crackers, but when things are out there to be discovered, there's no time for tea and conversation.

8 - HEAVEN NEEDS ME – Galileo

Well, the exuberance of Galileo and his newly found assistant was in deep contrast to the solemn meetings about his discoveries down in Rome. It was just a matter of weeks, before Galileo received a summons to explain himself before the Grand Inquisitor himself, Vincenzo Maculani.

Now, you have to know that Galileo was not anti-church or religion in any way, he was a Christian believer, but his inner soul was being torn apart. He begins to question his own beliefs. Is it really God's plan that he should continue to work on a project that God's own Church strongly disagreed on?

9 - NEVER GIVE UP – Marina

Well, Galileo is pretty depressed and is warming himself up at the back of the house, by a fire, and is about to throw some of his own research books into the flames, knowing that will probably be the case anyway once the Church get their way.

However, Marina offers her encouragement to Galileo that if he really believes what he knows as the truth, he should have no fear.

10 – PICTURES IN MY HEAD

It has been said that you can get through any ordeal if you prepare well enough, and Galileo and Cosimo get together all the charts and equations and try to re-work everything to see if the Church's view of the Earth being at the centre of all, could actually be correct, so they could tip up at the trial and say, "Hey guys, sorry, you were right after all, let's go out for a pizza" .

But no matter how many times they re-calculate, it works out their conclusions are correct and the Earth travels around the Sun, against the interpretation of the Holy Bible.

Galileo is grateful for the gifts that God has given him, but why is he destined to get these pictures in his head of the "correct" way the universe is put together?

ACT 2

11 - THE MAGIC TUBE

Today, we're so lucky to enjoy amazing technologies, but also in Galileo's time, people were making discoveries and inventions.

In Holland, the lens maker Hans Lippershey was having his lunch and for a laugh put on two pairs of his own spectacles. Looking out the window he could see, the washing on his neighbours' line – magnified! Although this rather shocked him a little, he realised that he had discovered the "telescope". He started making tubes with lenses at each end, and sold them as novelties, so everybody could spy on their neighbour's undies. Now, Cosimo's dad was in Holland on business and sent one of these "Magic Tube" novelties home to his son. And this gave Galileo's young assistant an idea.....

12 - NEW AGE

Now, although Galileo has charmed Italy with his maverick stance and his amazing Magic Tube, which as we know he didn't actually invent, the proverbial chickens have unfortunately come home to roost.

His views on the universe in the new book have landed him in serious trouble in Rome. Summoned there by Vincenzo Maculani, the feared inquisitor and military henchman to the Pope, Galileo feared the worst; he packed his bags and said his farewells to Marina and his family.

As the great and the good from the Holy Office await the arrival of Galileo for his trial, his University chancellor meets with the senior cardinals to try to get his precious University "off the hook" so to speak.

13 - VERDICT COMPROMISE

In 1616, the Inquisition declared heliocentrism – where the Earth and planets move around the sun, to be formally heretical. Heliocentric books were banned, and Galileo was ordered to refrain from holding, teaching or defending heliocentric ideas.

Now, that was 17 years ago, yet Galileo had ignored the ruling. Even though the Pope, Urban the 8th, had generally supported science and mathematics and specifically Galileo's earlier books, the new book had taken a step too far as it even satirised the Pope's views himself.

So what view should he take tomorrow at the trial? Heretics were burnt at the stake, often on a whim, and here was a man who had openly ridiculed the Church and him personally.

But Galileo was, for his time, a celebrity, and what's more, now rather frail and ill. To torture or burn an old man of his standing – would he want to be associated with that?

14 - 1633 – GALILEO'S TRIAL

After a restless night in one of the church's guest houses in Rome he was allowed to use along with Marina and his assistant Cosimo, Galileo is led into the trial chamber to meet face to face with the Grand Inquisitor himself, Vincenzo Maculani.

15 - YOU HAD IT ALL

So, that was why Galileo was offered a luxury guest house in Rome days before his trial. It wasn't because of his high standing at all; it was so the inquisitor's henchmen could break into his study and bring all his charts and observation books to Rome for a public burning.

Marina watches the spectacle horrified from the public gallery.

16 – A LIFE IN FLAMES

Galileo, convicted of heresy, is sent to the cells and threatened with torture there; but after a nod from the Pope, he is left alone until the formalities regarding his house arrest are completed.

During the trial, he was pressured to recant his views about the Earth not being stationary and the centre of God's universe. Exhausted, he did so, just to stop the intense questioning.

That night, alone in his cell, he writes on the wall the phrase he muttered under his breath after he recanted his views during the trial. "E pur si muove" – referring to the Planet Earth, "...and yet, it moves".

17 – COSIMO'S SURPRISE - FINALE

He has been fortunate, Galileo is allowed to live back at his estate in Arcetri in reasonable comfort, albeit under formal house arrest. Entering his ransacked study though, fills him with great sadness.

His life's work has been destroyed. Maybe some of his books had made it out of the country, but his scientific workbooks had all the calculations and proof.

But suddenly, his assistant Cosimo calls round with some surprising news.

18 – GALILEO THEME SONG – THE ENCORE

In his 78 years of life on this planet, Galileo Galilei discovered so much about physics, astronomy and mathematics through his determination, attention to detail and incredible curiosity. He also invented devices such as a military compass, a thermometer and flood prevention machinery.

After his death, 8 years after his house arrest, more and more scientists acknowledged that the Earth and planets did indeed travel around the sun.

The Church gradually and begrudgingly left out the "Earth-centric" aspect of their teachings, and oh, yes, they did officially pardon Galileo, but it wasn't until 350 years after his death...in 1992.....

Words / Music 2019 Peter Baker

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