

UNIVERSITY OF APPLIED SCIENCES  
RAPPERSWIL

$E = mc^2$ , BY DAVID BODANIS

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**Book & Chapter Summary**

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*Nikola Stanković, Robin Suter, Jonas Matter, Marcel  
Stocker, Patrick Scherler*

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# 1 Context

more is coming soon :) ...

## 2 Summary

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## 3 Character List

more is coming soon :) ...

## **4 Analysis of Major Character**

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# 5 Themes, Motifs, and Symbols

more is coming soon :) ...

## 6 Summary and Analysis

### 6.1 Bern Patent Office, 1905

*Hermann Einstein*, Albert Einstein's father, wrote to *Professor Wilhelm Osterwald* to please him to write a letter to Albert with a few words of encouragement, so that he might recover the joy of Einstein in living and working. Einstein felt profoundly unhappy with his lack of position in that time and his idea that he has gone off the tracks with his career. No answer from Professor Osterwald was ever received.

In the year 1905, Einstein wrote a series of papers that changed our view of the universe forever.

Einstein married a fellow student, *Mileva*, and worked in the patent office. He spent his time often in pub visits and long walks. Einstein's final university grades were unusually low. Teachers were irritated by his lack of obedience. Everyone in authority seemed to enjoy putting Einstein down.

Einstein and his wife had given away their first child, a daughter born before they were married. He couldn't even afford the money for part-time help to let his wife go back to her studies.

Even the hours he had to keep at the patent office worked against him. By the time he got off for the day, the one science library in Bern was usually closed. During the few free moments, he scribbled on sheets he kept in one drawer of his desk - which he jokingly called his "department of theoretical physics".

The first articles he wrote weren't especially impressive. He was always aiming for grand linkages

Einstein wrote his theory of relativity in just five or six weeks filling thirty-some pages. He sent his articles to *Annalen der Physik* to be published. A few weeks later he realized that he had left something out, so he delivered a supplement.

### 6.2 E is for Energy

More coming soon ...



**6.3 =**

**6.4 m is for mass**

**6.5 c is for celeritas**

**6.6 <sup>2</sup>**

### **Who was Voltaire?**

*Mr. Voltaire* was in fact *Francois-Marie Arouet* who supported Newton's laws by own means. He thought if Newton can find a rational explanation for the universe, Voltaire could find a rational explanation for the things going on on earth. e.g. the demanded obedience of the king, Aristocrats who got authority from the king which nobody is allowed to question this, the role of money, or other hidden forces in politics. After Francois returned from Paris, three years after that he pushed those ideas. Due to his writings the name Voltaire got more known than *Arouet*. The next thing he wanted to do was to find a place where he can put the seeds of his studies, as it would not be possible to change the nation at once. Which was Emilie du Chatelet.

### **What was Emilie du Châtelet like?**

Emilie was boy-like (a tomboy). She was strong, fast and had a good intellect which most of the time kept her away from getting friends with others. She was never really into men. More than that, she frightened them away and challenged them etc. she climbed trees and did stuff boys would do. Until she was 19. She then took a husband who was a soldier and was most of the time away. She did that intentionally. And both agreed that she could have affairs while he was out. One of those affairs was a twenty-something year old officer *Pierre-Louis Maupertuis*, who fulfilled her life until he left for a polar expedition. Emilie needed a replacement for him. Then Voltaire came to replace him. They shared the interest in political forms. Emilies husband (Du Chatelet) had a Chateau (old and abandoned) in Cirey (northern France), which was in his family since Columbus came to America. Emilie and Voltaire then used it for Scientific researches. The funny thing was, when Voltaire ordered the constructors to build a library she ordered them to build a salon, where he planned to place elms, she planted lime trees etc. Finally he still got a Library with seminar areas. The library was comparable to the Academy of Sciences in Paris. Voltaire did alot of gossip during his researches and was distracted many times by other stuff. Emilie was more eager than Voltaire and was ALMOST about to jump-start future discoveries. Finally she came up with the elementar key question: what is energy?

**What was the dispute between Leibniz and Newton about?**

**Why was this also a religious conflict?**

**How did du Châtelet prove that Leibniz was right?**

**Why is squaring the velocity of what you measure such an accurate way to describe what happens in nature?**

**What does it mean for mass when  $c^2$  is such a large figure?**

**8. Mass is simply the ultimate type of condensed or concentrated**

## **6.7 Einstein and the Equation**

### **6.8 Into the Atom**

### **6.9 Quiet in the Midday Snow**

### **6.10 Germany's Turn**

### **6.11 Norway**

### **6.12 America's Turn**

### **6.13 8:16 A.M. - Over Japan**

### **6.14 The Fires of the Sun**

### **6.15 Creating the Earth**

### **6.16 A Brahmin Lifts His Eyes Unto the Sky**

## 7 Study Questions

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