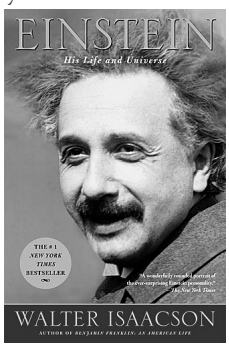
The human side of Einstein

BY **DANIEL CHARLEBOIS**

Albert Einstein is arguably the greatest scientist of the 20th century. In an era when even physicists themselves viewed the discipline as one with "nothing new to be discovered," as proclaimed by Lord Kelvin, Einstein's theories revolutionized physics.



COURTESY OF SIMON & SCHUSTER

EINSTEIN: HIS LIFE AND UNIVERSE
by Walter Isaacson
Simon & Schuster (2008)
ISBN: 978-0-7432-6474-7

Largely through interviews and Einstein's personal correspondences, Walter Isaacson, an author of several other biographies, covers all aspects of Einstein's life. This includes Einstein's struggle to secure an academic position (it took him nine years after obtaining his doctorate from Zurich Polytechnic to be offered a job as a junior professor) and philosophical issues pertaining to the nondeterministic view of the universe which were emerging from his quantum theory of radiation (interestingly, although one of the founders, Einstein, throughout his life, viewed quantum mechanics as heuristic). Isaacson also makes it clear that Einstein did not believe in a personal God, but rather "embraced [Spinoza's] concept of an amorphous God reflected in the awe-inspiring beauty, rationality, and unity of nature's laws."

Isaacson credits Einstein's passionate and rebellious nature, along with an extremely creative and visual mind, for his scientific achievements, which included the Nobel Prize for his paper on the photoelectric effect. Einstein deplored rote memorization and dogmatic teaching approaches, a sentiment which still rings true with many students today. Of the many quotes included in this book, Einstein's statement that "blind respect for authority is the greatest enemy of the truth" is surely one that supports the author's assertion.

The strength of this biography is that it allows one to peer deeply into Einstein's personal life and provides a behind-the-scenes look into his cultural, political and scientific views as well as the social climate surrounding his academic career, although, at times, minute details extracted from personal conversations and events could have been omitted as they offered no real insight into Einstein's life.

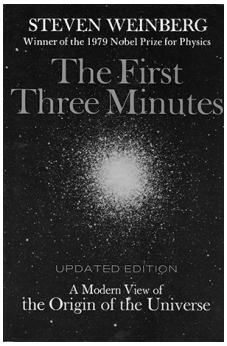
For any undergraduate physics student, the presentation of Einstein's theories will leave something to be desired. In order to appeal to a wide audience, the author introduces the reader to concepts such as special and general relativity in a simplistic manner, with little physical or mathematical rigor.

Einstein: His Life and Universe is an easy and interesting read suitable for anyone seeking to learn about the human side of one of history's greatest physicists as well as gain an elementary conceptual understanding of his work.

Celebrating 30 years of Steven Weinberg's *The First Three Minutes*

BY **PATRICK BRUSKIEWICH**

The actual title of this timeless and priceless little book is *The First Three Minutes: A Modern View of the Origin of the Universe*. Published two years before he won his Nobel Prize in Physics in 1979 for his work in particle physics, Weinberg wrote one of the finest contemporary physics books in a style that could favourably be compared with the writing of Einstein, Born, Dirac or Gamow.



COURTESY OF BASIC BOOKS

THE FIRST THREE MINUTES
by Steven Weinberg
Basic Books (1977)
ISBN: 0-465-02436-X

What makes Weinberg comparable to these four superb writers is the professional and direct manner in which Weinberg writes, being himself a physicist of merit. Over the past three decades, *Three Minutes* has been translated into 22 foreign languages and has had a number of printings.

This diminutive little book of 200 pages has served to introduce the general public as well an entire generation of physics undergraduates to the cosmology and high-energy particle physics of the first three minutes after the Big Bang. In terms of our modern understanding of the early beginnings of the universe, this book precedes the 1982 Guth theory of inflation; however, that being said, the rest of the physics outlined in *Three Minutes* is beautifully and accurately written, describing the astrophysics of the early universe at a level that is accessible by any science undergraduate.

In his book, Weinberg sets out to explain modern cosmology without pretty pictures and without trivializing the physics by leaving out its mathematical underpinnings. Instead, he groups together the required math in a number of notes in an appendix to the book known as "A Mathematical Supplement." The figures and pictures in his book are well-chosen. He follows in the fine tradition of Einstein, Born, Dirac and Gamow to share a flavour of the mathematical structure of which he writes at a level understandable to anyone who has a high school or undergraduate mathematics background.

Gamow, in his momentous popular science book *One, Two, Three Infinity*, sets the limit to what a lay public may wish to read in a popular science book as they leave their comfort zone and set out to better understand modern physics. Einstein, in his book *Relativity: The Special and General Theory*, still remains the book against which all other general science books should be compared. It is worth noting that mathematics is used in the body of this book and a minimum of figures or pictures. Words are used by Einstein in a thoughtful and accurate fashion to convey the conceptual underpinnings of his landmark theory. There is very little extraneous philosophy to be found.

Weinberg's writing style in *Three Minutes* deserves much praise. This contrasts to Stephen Hawking in his book *A Brief History of Time*, which has been described as "a least read best