MICHAEL

CRICHTON

TIMELINE

“COMPULSIVE READING …
BRILLIANTLY IMAGINED …
A fast-paced story … [that] keeps the reader turning the pages … Crichton has so perfected the fusion thriller with science fiction that his novels define the genre.”
—Los Angeles Times

a cognizant original v5 release october 26 2010

“The present and the long-ago past collide…. [as] three young historians whisk themselves back to fourteenth-century feudal France to rescue a friend—and engulf themselves in all manner of mind-blowing intrigue.”
—Chicago Sun-Times

“In this book, futuristic quantum technology kicks into reverse, colliding with European history…. Cutting-edge scientists and scholars from 1999 go back six hundred years to encounter black knights, brigands, broadswords, and plenty of boiling oil. Readers will love this book for the way it commingles old and new: chivalry and physics, cauldrons and computers, photons and gunpowder.”
—USA Today

“Riveting … Truly fascinating … A thrilling story of cutting-edge technology … Crichton once more enlightens us as he entertains us.”
—Chattanooga Times

“A good, action-packed romp that ranks up there with the *Andromeda Strain* and *The Terminal Man.*”
—The Cleveland Plain Dealer

“Wonderful … Superb … [A] gripping Crichton fantasy adventure.”
—Forbes

“A FAST-PACED,
ACTION-PACKED ADVENTURE …
Sparkling narrative … Crichton scores again with *Timeline.*”
—Oregonian

“Readers turn to Michael Crichton’s novels for entertainment with relentless drive…. The problem for the astute reader of *Timeline* will be quelling the urge to turn pages ever faster to see how things end…. [A] thriller that will keep the brain in high gear long after the final page is turned.”

—*San Antonio Express*

“This is what Crichton does best: intermingling his prodigious research with his cut-to-the-chase writing to tell stories that become blockbuster books…. There is a deftness and a grace to his prose. His descriptions are as sharp and precise as scalpels.”

—*Buffalo News*

“A heart-pounding adventure … with *Timeline*, Crichton has written his best book since *Jurassic Park* …. Crichton is a master at explaining complex concepts in simple terms…. His plot is intriguing and his well-researched history and science are certain to prompt discussions. Highly recommended.”

—*Library Journal*

“One of the great storytellers of our age … The best Michael Crichton novels are … edifying reads, whose gripping plots contain real ideas.”

—*Newsday*

“Gripping … A swashbuckling adventure … Fast-paced, compelling.”

—*The Courier* (Conroe, TX)

By Michael Crichton

Fiction:
THE ANDROMEDA STRAIN
THE TERMINAL MAN
THE GREAT TRAIN ROBBERY
THE 13TH WARRIOR
(previously published as EATERS OF THE DEAD)
CONGO
SPHERE
JURASSIC PARK
RISING SUN
DISCLOSURE
THE LOST WORLD
AIRFRAME
TIMELINE
PREY

Nonfiction:
FIVE PATIENTS
JASPER JOHNS
ELECTRONIC LIFE
TRAVELS

TIMELINE

Michael Crichton

BALLANTINE BOOKS • NEW YORK

For Taylor

“All the great empires of the future will be empires of the mind.”

WINSTON CHURCHILL, 1953

“If you don’t know history, you don’t know anything.”

EDWARD JOHNSTON, 1990

“I’m not interested in the future. I’m interested in the future of the future.”

ROBERT DONIGER, 1996

INTRODUCTION
Science at the End of the Century

A hundred years ago, as the nineteenth century drew to a close, scientists around the world were satisfied that they had arrived at an accurate picture of the physical world. As physicist Alastair Rae put it, “By the end of the nineteenth century it seemed that the basic fundamental principles governing the behavior of the physical universe were known.” * Indeed, many scientists said that the study of physics was nearly completed: no big discoveries remained to be made, only details and finishing touches.

But late in the final decade, a few curiosities came to light. Roentgen discovered rays that passed through flesh; because they were unexplained, he called them X rays. Two months later, Henri Becquerel accidentally found that a piece of uranium ore emitted something that fogged photographic plates. And the electron, the carrier of electricity, was discovered in 1897.

Yet on the whole, physicists remained calm, expecting that these oddities would eventually be explained by existing theory. No one would have predicted that within five years their complacent view of the world would be shockingly upended, producing an entirely new conception of the universe and entirely new technologies that would transform daily life in the twentieth century in unimaginable ways.

If you were to say to a physicist in 1899 that in 1999, a hundred years later, moving images would be transmitted into homes all over the world from satellites in the sky; that bombs of unimaginable power would threaten the species; that antibiotics would abolish infectious disease but that disease would fight back; that women would have the vote, and pills to control reproduction; that millions of people would take to the air every hour in aircraft capable of taking off and landing without human touch; that you could cross

the Atlantic at two thousand miles an hour; that humankind would travel to the moon, and then lose interest; that microscopes would be able to see individual atoms; that people would carry telephones weighing a few ounces, and speak anywhere in the world without wires; or that most of these miracles depended on devices the size of a postage stamp, which utilized a new theory called quantum mechanics—if you said all this, the physicist would almost certainly pronounce you mad.

Most of these developments could not have been predicted in 1899, because prevailing scientific theory said they were impossible. And for the few developments that were not impossible, such as airplanes, the sheer scale of their eventual use would have defied comprehension. One might have imagined an airplane—but ten thousand airplanes in the air at the same time would have been beyond imagining.

So it is fair to say that even the most informed scientists, standing on the threshold of the twentieth century, had no idea what was to come.

:

Now that we stand on the threshold of the twenty-first century, the situation is oddly similar. Once again, physicists believe the physical world has been explained, and that no further revolutions lie ahead. Because of prior history, they no longer express this view publicly, but they think it just the same. Some observers have even gone so far as to argue that science as a discipline has finished its work; that there is nothing important left for science to discover. *

But just as the late nineteenth century gave hints of what was to come, so the late twentieth century also provides some clues to the future. One of the most important is the interest in so-called quantum technology. This is an effort on many fronts to create a new technology that utilizes the fundamental nature of subatomic reality, and it promises to revolutionize our ideas of what is possible.

Quantum technology flatly contradicts our common sense ideas of how the world works. It posits a world where computers operate without being turned on and objects are found without looking for them. An unimaginably powerful computer can be built from a single molecule. Information moves instantly between two points, without wires or networks. Distant objects are examined without any contact. Computers do their calculations in other universes. And teleportation—"Beam me up, Scotty"—is ordinary and used in many different ways.

In the 1990s, research in quantum technology began to show results. In 1995, quantum ultrasecure messages were sent over a distance of eight miles, suggesting that a quantum Internet would be built in the coming century. In Los Alamos, physicists measured the thickness of a human hair using laser light that was never actually shone on the hair, but only *might* have been. This bizarre, "counterfactual" result initiated a new field of interaction-free detection: what has been called "finding something without looking."

And in 1998, quantum teleportation was demonstrated in three laboratories around the world—in Innsbruck, in Rome and at Cal Tech. * Physicist Jeff Kimble, leader of the Cal Tech team, said that quantum teleportation could be applied to solid objects: "The quantum state of one entity could be transported to another entity…. We think we know how to † do that." † Kimble stopped well short of suggesting they could teleport a human being, but he imagined that someone might try with a bacterium.

These quantum curiosities, defying logic and common sense, have received little attention from the public, but they will. According to some estimates, by the first decades of the new century, the majority of physicists around the world will work in some aspect of quantum technology. *

:

It is therefore not surprising that during the mid-1990s, several corporations undertook quantum research. Fujitsu Quantum Devices