Chapter One
Introduction

Recent studies in the field of the history of Islamic science (to be defined later in this chapter) have made significant interpretational changes toward Islam's contribution to the grand narrative of the history of science. Increasingly, these studies demonstrate that a substantial amount of genuine science was undertaken in the Islamic civilisation at least up until the sixteenth century leading to major discoveries, which predated similar discoveries in the West and which also impacted upon the European Renaissance. For example, in the late 1950s, E. S. Kennedy and his students at the American University of Beirut discovered an important work of a fourteenth century Muslim astronomer, Ibn al-Shātir (d.1375), showing that his astronomical inventions were the same type of mechanism used by Copernicus a few centuries later,[1] and may have played a key role in the Copernican revolution.

An unprecedented acceleration of research in the history of Islamic science started from the 1950s onwards. More recently, eminent historian of Islamic science George Saliba informs us that Shams al-Dīn al-Khafrī (d.1550) was a brilliant astronomer whose ability to work with the mathematics of his time was unsurpassed even by Nicolaus Copernicus (1473-1543). In fact, al-Khafrī could use mathematics much more fluently and competently than Copernicus.[2]

Interestingly, recent studies in the history of Islamic science illustrate that Islam's contribution to science was even richer and more significant than was previously thought. Islamic science was not only important for the rise of the Renaissance of the twelfth century in Europe, but it also played an important part in the development of the exact sciences during the Renaissance of the sixteenth century. Jan P. Hogendijk and Abdelhamid Sabra have recently argued that 'the Islamic tradition in the exact sciences continued well into the nineteenth century, and abundant source material is available in the form of unpublished manuscripts in Arabic, Persian, and other languages in libraries all over the world.' Because important sources have not been identified and studied, there exists no reliable survey of the entire field.[3] Still newer discoveries may lie just over the horizon.

In chapter two I will justify the above claims using recent evidence from the fields of the history of Islamic mathematics, astronomy and medicine. It is important to state at this point, however, that this study does not attempt to provide new insights into the extent of the scientific work that was undertaken in the Islamic civilisation, nor their significance in the grand narrative of the history of science. Sufficient literature on this already exists. This work is essentially a detailed critique of one of the most disputed aspects of the history of Islamic science: the fate of Islamic science after the eleventh century. There is hardly a book on the general history of science, or the history of Islamic science, that does not attempt to offer an explanation for the fate of Islamic science after the eleventh century, or the so-called golden age.

In their attempt to provide explanations for this fate, the great majority of authors periodise the scientific achievements of the Islamic civilisation into a golden age and a decline age.[4] This periodisation stipulates that before Islam there was no science worth mentioning.[5] A period of translation (the