

MYSTERIES AND DISCOVERIES  
OF ARCHAEOASTRONOMY

# MYSTERIES AND DISCOVERIES OF ARCHAEOASTRONOMY

FROM GIZA TO EASTER ISLAND

GIULIO MAGLI



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# Introduction

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Introductions are perhaps best left unwritten.

The fact is, if you really want to read this book, it's pointless for me to introduce it, since you're going to read it anyway. If instead you don't want to read it, there's little I can do to convince you otherwise (assuming, of course, that you read the introduction). So I'll just try to tell you, in as few words as possible, why I subjected myself to the task of writing this book, and why I'd like to subject *you* to the task of reading it.

Reading has become our habitual mode of learning, and writing is what comes naturally to us as the most effective means of passing on knowledge. Oral tradition does not exist anymore, and when for some reason there is a lacuna in the written sources that *narrate* something that is otherwise right there beneath our noses, we tend to go mad trying to figure out what we are looking at.

For example, let us consider the dome of Santa Maria del Fiore in Florence. By the end of the 14th century, Giovanni di Lapo Ghini had brought construction of the cathedral to the point where the octagonal drum, the base for the cupola, was complete. In 1420 Filippo Brunelleschi won the competition to build it with a project (perhaps already outlined by Ghini) based not on the traditional rounded arch (which would form a hemispherical dome), but on the nearly insane idea of a pointed arch on a polygonal base, which effectively meant conjoining eight colossal vaults, one for each side of the octagonal drum—a project that posed technical difficulties so enormous as to be deemed impossible.

The great architect, as can be plainly seen, pulled it off. Yet he did not leave behind a single written word about his insights or methods—or, more accurately, nothing has been found. Consequently, seeing as the cupola cannot be dismantled and reverse engineered, modern scholars have had quite a time trying to reconstruct the techniques used by Brunelleschi for his masterwork, conducting innumerable experiments and publishing reams of studies. And this is hardly the empty academic exercise it may seem, given its necessity for the conservation and restoration of the dome.

Santa Maria del Fiore is a monument that remains a symbol of the intelligence and tenacity of every person who constructed it, from the master architect Brunelleschi to the humblest stonemason who worked on it. It was built less than 600 years ago, yet scholars of today had to work arduously and patiently, and above all with due respect for the intelligence behind the structure, before understanding its secrets.

In this book we will be sifting through the clues of knowledge far more ancient than this. One could say that the aim of this book is to search for a new way of reading the past, a way that would enable us to meet the challenge of understanding the minds of people who conceived, engineered, and built monuments as grandiose as Stonehenge, the Great Pyramid of Giza, and the Pyramid of the Sun of Teotihuacan, without leaving us any descriptions or plans, without even having written language in some cases—a challenge that one might define as *predicting the past*, building the study of the past as a science capable of developing models and testing its predictions in the field, and from these proofs build new models. Nothing radical, just doing what all the other sciences do.

One concrete possibility for exploring the thought of our predecessors is analyzing the relationship they had with the sky, which in fact is the guiding thread of this book. But do *not* mistake this for an original idea. Norman Lockyer had already thought of it in the late 19th century, after which it remained more or less forgotten until the 1960s, when the famous work on the astronomy of Stonehenge by Gerald Hawkins and on the astronomical connections of various other megalithic sites by Alexander Thom helped establish a new discipline, most often referred to by the rather unfortunate term *archaeoastronomy*. It is a science that has not yet found, at least in my view, its true conceptual identity. It is still rough around the edges, knocking about in that limbo between “exact sciences,” particularly physics, and “human sciences,” the salient one for our purposes being archaeology. This is an opportunity, then, from which we might draw advantage, and try to build a methodology that would in some way be new, free from the majority of existing schemas and devoid of the customary prejudices that often encumber our vision of the past.

To accomplish this, I will take you on a virtual trip around the world in search of the traces, almost always both spectacular and enigmatic, of the astronomical knowledge possessed by the ancients. Dealing in depth with *all* the ancient civilizations that studied astronomy would be impossible, given that they all seem to have done so. Instead, we limit ourselves to prehistory, the megalithic cultures of Northern Europe, Malta, Egypt, Mesopotamia, India, China, Japan, North America, Mexico, Peru, and Easter Island, visiting such extraordinary sites as Karnak, Ggantija, Abu

Simbel, Newark, Chaco Canyon, Teotihuacan, Chichen Itza, Cusco, Machu Picchu, and Nasca.

Since this book is not a technical treatise, the purpose of the journey we are about to take is not to catalogue in detail all of the astronomical achievements of the past so much as to try and see them as a whole, in a comprehensive way that would show the depth and breadth of the thought behind them. Because the thought of the ancients—and particularly the scientific thought—has often been misconstrued, maligned, or, worse, dismissed. To understand the extent to which this has occurred, just open any volume written by the renowned historian of science Otto Neugebauer, according to whom: “The requisites for the applicability of mathematics to problems of engineering were such that ancient mathematics never found any practical application.” I do not agree, and in the first part of this book I will endeavor to convince you that I am right, and I will do so in an unusual way: by relying only on facts.

Once we have the facts, we will interpret them, look within them for models that will enable us to evolve our knowledge of the past, even if just a little. This is what the second part of the book is about. Our point of departure is the pact that we make to stop seeing the past through prejudices and preconceptions, to rely as little as possible on our tendency to schematize reality, on that whole set of mental habits that often pop back up even as we are trying to eliminate them. We will then see emerge a possible interpretive model that is founded on the relationship the ancients had with nature, intended in the sense of everything that surrounded them—the *cosmos*. The numerous astronomically aligned monuments of the past then become interpretable as acts of will, expressions of power on the part of those who held it—the will to replicate the heavenly plane here on earth, the will to build sacred landscapes.

Consequently, in the closing chapters I will take you on another journey—an in-depth examination of the most compelling, the most intensively studied, certainly the most famous and, until recently, the most misunderstood sacred landscape on earth: Giza, Egypt.

## Author's Note

As we shall soon see, the ancients had very clear ideas about what goes on in the sky, and consequently, in order to get the most out of this book, the reader will need to know at least the basics. Unfortunately, though, we hardly ever raise our eyes to the sky nowadays, and while the annual solar cycle and its relative terminology (solstices, equinoxes, etc.) are more or less familiar, once we start talking, for instance, about the 18.6-year lunar node cycle, we enter into an area of knowledge that, if we ever studied it at all in grade school, has most likely been long forgotten. For this reason, I had originally thought to put the appendix, "The Sky with the Naked Eye," at the beginning of the book, but a unanimous chorus of opposition from those unfortunate souls who were subjected to reading the early drafts of this book made me change my mind. So whenever a term is unfamiliar, be it *Milky Way* or *precessional cycle*, turn to Appendix 1 at the end of the book for an explanation.

I should also point out that, in the interest of further easing your reading, I have chosen to forgo footnotes completely.