

1

THRESHOLD THE BIG BANG

13.8 BILLION YEARS AGO

13.6

The Primordial Era epochs of the first million years											
Grand Unification		Electro-weak				Quark	Hadron	Lepton	Photon	Dark Ages	
Time after the Big Bang											
0 seconds	10 ⁻⁴⁰ seconds	10 ⁻³⁵ seconds	10 ⁻³⁰ seconds	10 ⁻²⁵ seconds	10 ⁻²⁰ seconds	1 quadrillionth of a second	1 billionth of a second	1 thousandth of a second	1 second	1 day	300 years
											32 million years

The Stelliferous Era epochs of the next 10 billion years							
Reionization							
Time after the Big Bang							
Billions of years after the Big Bang							
100	300	500	700	900	11	13	

The Big Bang remains a mystery in many ways. We have a lot of evidence for what happened just after the event but can only guess what existed before it, if anything, and what conditions made it possible. Even so, we know the Big Bang is an important threshold because it created time, space, and the “building blocks” for everything in the known Universe.

INGREDIENTS
& GOLDBLOCKS
CONDITIONS

We'll never know!



NEW
COMPLEXITY

The Universe

Energy (gravity & electromagnetism)

Matter
(electrons & quarks)

QUESTIONS

What can an event
billions of years
ago tell us about
our world today?

What came before
the Big Bang?