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## Chapter 1: Introduction

**B**iblical creationists (Christians who believe the Bible and its history) have long been concerned about *the time of travel of light across the vast distances of the visible universe* within the six thousand years since the creation.

We live in a universe that is truly enormous in size. So large that distances are commonly measured in *light-years*. One light-year is the distance light travels in one year. Light travels very fast indeed; so fast, in fact, that we don't normally perceive it in our daily experience. Yet it has been measured at about 300,000 kilometres (about 186,000 miles) per second. This means that a light-year represents a distance of about ten trillion kilometres (six trillion miles).

I don't dispute the commonly held view that the visible universe is about twenty-eight billion light-years across (i.e. its diameter). At first glance, that would mean it should take a beam of light about fourteen billion years to travel to us from the outer limits of the universe (i.e. along its radius).

The Bible tells us (in Genesis 1) that the earth was created four days before the creation of the stars in the universe. It also reveals the time when our oldest ancestor Adam lived—God created him only two days after the stars, on the fourth day of Creation Week. So, considering the size of the universe, questions arise: 'How did Adam see the stars?' or 'How do we see distant stars?' For creationists this has been

one of the most difficult problems to solve if we are to accept Genesis at face value, i.e. the way the Lord Jesus and all the New Testament writers took it, as well as most of the Church Fathers and all the Reformers—as straightforward history.<sup>1</sup> Even the nearest star (other than our sun) is 4.3 light-years away, and most of the rest of the stars in our galaxy are hundreds to thousands, even tens of thousands, of light-years away. And *from the biblical text alone*, we cannot determine a period of time greater than about seven thousand years since the creation of the universe. Most biblical scholars conclude that the text is intended to convey to us that little more than six thousand years have passed since the creation of all things.<sup>2</sup>

But this would seem to mean that we would only be able to see out into space to a distance of about six thousand light-years, or about a quarter of the distance to our galaxy's centre—certainly we shouldn't be able to see the cosmos with all its wonders *as we do*. Modern telescopes like the Hubble Space Telescope (HST) in orbit above Earth's atmosphere, and the group of four 8-metre telescopes at high altitude in the Atacama desert in Chile, called the Very Large Telescope (VLT), have revolutionized our view of the heavens. Truly 'the heavens declare the glory of God' as the psalmist tells us. But how do we see the stars and galaxies in the universe, *most* of which are much more distant than the six- or seven-thousand-light-year limit?

For some, this has been reason to disbelieve the straightforward meaning of Genesis and compromise



with the origins teachings of so-called modern science, which does not hold to the view that the universe started with God creating *ex nihilo*, as described in Genesis. For them, it has been this 'intractable' problem that has caused them to abandon the Bible as the arbiter of real history. Yet it was only the belief in a consistent and lawful creation, a concept straight from the history given in the Bible, that made scientists strive to understand this creation in the first instance. It is no coincidence that modern science blossomed in Western Europe following the Reformation's emphasis on the Bible, as many secular philosophers agree,<sup>3</sup> because Christianity provides the presuppositions necessary for science to work.<sup>4</sup>

Science is a wonderful tool, but scientific explanations, even ones that seem as straightforward as the notion that light must take ten billion years to travel ten billion light-years, are always tentative. The history of science is littered with instances in which a previously assured 'fact' was overturned in a subsequent generation. And the universe, including the created laws that describe the way it normally operates, often turns out to be far more ingeniously constructed, and at the same time elegant, than previously imagined.

Given that, and given the way in which the history in the Bible is authenticated by the Lord Jesus Christ, the Creator Himself, we should therefore think carefully before assuming that a seeming 'fact' should overturn the authority of the Word of God. In a world in which we have been stunned by the notions of relativity, and mystified by the counter-intuitive

results of quantum mechanics, is it not more likely that there is an explanation we have not thought of yet? One of my non-physicist friends in creation ministry often tells his hearers: ‘I would not like to have to stand in front of the Creator at the end of time and have to admit, “Lord, I didn’t trust what your Word so clearly said, merely because my feeble mind couldn’t work out how you (God) could possibly have done the trick of making a universe that was both very large and very young.”’ In short, when there is an apparent conflict between science and a clear teaching of the Bible, we need to humbly assume that it is more likely that our understanding of the universe is deficient. When we do this, i.e. use biblical history as our starting point, we will be led to a greater understanding of His universe, as this book shows.

### **‘Everyone knows ...’**

There was a time when ‘everybody knew’ that the sun travelled around the earth—it was a ‘fact of observation’. When some people pointed out that the motions of the planets did not seem to fit that picture, instead of looking for another explanation (after all, that might mean abandoning the ‘fact of observation’), people just invented even *more* complicated theories (‘epicycles’) to ‘explain away’ these inconvenient observations.

In this book, we show that a similar thing happened in more recent times in regard to astronomy—complicated explanations were invented to ‘explain away’ inconvenient facts. When Newton’s seemingly all-conquering laws of physics failed to explain

certain astronomical observations, scientists dreamed up various 'fudge factors', such as an unknown hidden planet, to explain the discrepancy. In reality, what was needed was new physics that would still encompass Newton's laws, but expand our understanding—this arrived with Einstein.

In our day, a similar thing is happening, in another area—one which is not only instructive as background, but one which provides a major key to resolving the starlight travel issue. As this book will show, because of the insistence by the majority on the unbiblical 'big bang' model, a whole new suite of 'fudge factors' has been postulated to explain certain puzzling observations. These fudge factors include unknown and invisible ('dark') forms of matter and even energy. Once again, the point is that what is needed is new physics. Similarly, if we take the starlight travel issue, not as some impossible conundrum, but rather as an *observation* to be explained (we *do* see distant starlight in a cosmos which *is* only thousands of years old), then it is clear that here, too, new physics is required. In this book, I will introduce you, in an understandable way, to new physics that does away with the need for the big bangers' mysterious 'dark' fudge factors—and almost as a neat 'aside', it resolves the starlight/time issue.

This new physics, which does away with all those 'fudge factors', fits what we observe on all scales in the universe and is consistent with Einstein's relativity theory. And what 'falls out' of the very same equations is an explanation of how light can traverse the vast reaches of the cosmos in only a



matter of days (see chapter 7). It indicates that Adam would most definitely have been able to see the stars in our galaxy (the Milky Way) *very* shortly after he was created.

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## References

1. For a brief but powerful summary, see the popular booklet *15 Reasons to Take Genesis as History*, by Don Batten and Jonathan Sarfati (*Creation Ministries International*).
2. This includes many so-called liberal scholars who, though they do not believe the text of Genesis to be true, readily point out what it was *clearly meant to convey*: six ordinary-length earth-rotation days, a global flood and a universe thousands of years old.
3. Stark, R., *For The Glory of God: How Monotheism Led to Reformations, Science, Witch-hunts and the End of Slavery*, Princeton University Press, USA, 2003; Stark R., *The Victory of Reason: How Christianity Led to Freedom, Capitalism, and Western Success*, Random House, NY, USA, 2006.
4. Batten and Sarfati, ref.1, pp. 25ff.

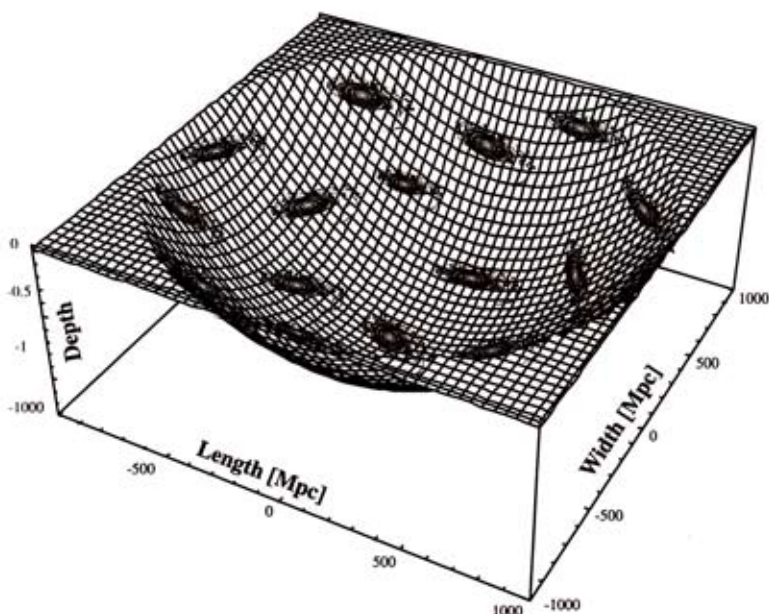
## Chapter 2: Starlight and time

**T**he starlight-travel-time problem was significantly addressed by Russ Humphreys in his popular book *Starlight and Time*.<sup>1</sup> Certainly the 1994 publication of his book will go down in history as a turning point. His cosmological model attempted to give an explanation for the creationist problem in a 'young' universe. Humphreys helped us search 'outside of the box.' The 'box', in this case, was the idea that time is absolute. We needed to be reminded that relativity has long taught us that time and space are not universal absolutes but depend on the circumstances of the observer. In this case, the rate at which time flows is not the same everywhere in the universe.

Humphreys described a situation where the universe could be considered to be a gravitational well with all the galaxies distributed around the well and our galaxy in the bottom at the centre (see fig. 2.1). The universe is finite, with an edge—a boundary beyond which there are no galaxies—but there is space beyond. He had the universe expanding from a white hole (a black hole running in reverse, with matter pouring out instead of falling in), permitted by the equations of relativity. In such a universe, due to well-known and tested effects of gravity, the light we see coming from the outer limits of the universe should be blueshifted. This means that the photons gain energy as they fall down the gravitational well. This then provided a mechanism for time-dilation. That means that clocks in the cosmos would run faster than the same type of clocks on Earth. No detail was



**Figure 2.1: Gravitational potential well from a spherically symmetric distribution of galaxies with our galaxy at the centre. (Schematic only and not to scale.)**



provided in the book, and it appears now that this mechanism does not give sufficient time-dilation. Nevertheless, I see *Starlight and Time* as a first step towards the correct understanding of the cosmos, and towards a potential solution to the light-travel-time problem. But as Humphreys himself readily and repeatedly acknowledged, it was only the beginning.

It was, he said, meant to stimulate others to look into this new direction of creation cosmology—and it certainly achieved that. In such a ‘time dilation’

# Solving the starlight travel-time problem!

Despite increasingly compelling arguments for biblical creation, many still doubt the Bible's clear timescale because, they think, it is impossible for light to have reached Earth in only a few thousand years from stars that are millions of light-years away. This misconception is often the ultimate stumbling block to a straightforward acceptance of the Bible—even the gospel itself.

Positively, the answer to the creationists' starlight problem 'falls out' of the same equations that, in the process, do away with many of the props for big bang thinking. Inspired by the pioneering creationist physicist D. Russell Humphreys, and building on the work of secular cosmologist Moshe Carmeli, physics professor John Hartnett employs the evidence which demands another revolution in cosmological physics.

Supporting technical papers make up a series of technical appendices, so that the main text of *Starlight, Time and the New Physics* is easily digestible for the intelligent layperson.

*"The idea that God created the universe in six days just a few thousand years ago is now not only intellectually respectable, it's a far better explanation for what we observe than its competitors."*

**Alex Williams**  
Former consultant to the UN's  
International Atomic Energy Agency



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