

Christian Cosmology and Climate Astronomy

Sermon at Kippax Uniting Church, 1 January 2023 by Robbie Tulip <https://rtulip.net/theology>
Lectionary Readings: Psalm 148; Isaiah 63:7-9, Hebrews 2:10-18; Matthew 2:13-23

Our reading today from Isaiah speaks of the abundant steadfast love of God. I will take this opportunity to share with you some of my thinking about how God's abundant love is manifest in our world, and in our cosmos. We heard in the Epistle to the Hebrews that all things exist for and through God, whose love is seen in the suffering of Jesus. Psalm 148 reinforces this message of divine universal love by calling for the whole natural creation to respond by praising God. Pope Francis used Psalm 148 for his great encyclical *Laudato Si*, calling for a new theology that fully integrates care for creation with care for humanity. Pope Francis argues that "because all creatures are connected, each must be cherished with love and respect. The entire material universe speaks of God's love, his boundless affection for us. Soil, water, mountains: everything is, as it were, a caress of God."

These ideas of a new integral ecology are confronting for much conventional religion, but as John Williams has said in his sermons here at Kippax, the Gospel is bigger than we think it is. We need to integrate modern scientific understanding with the message of faith. As we contemplate how the deep incarnation of God in Christ reveals divine presence in the whole of creation, we need to find ideas that can reconcile faith and reason, placing our religious understanding in the wholistic context of scientific knowledge. Such an integral approach can enhance and deepen our understanding of the message of Christ in the Bible. Seeing faith in the light of logic and evidence helps us to reflect on the meaning and purpose of the Gospels, as we seek to uncover the symbolic meaning of the story of God's loving presence in the person of Jesus.

Discussion of the scientific context for faith must recognise that Christianity faces major challenges to regain wider social credibility, with the widespread view that science and religion are in conflict. My view is that we can help to address this problem through dialogue to produce a systematic theology, grounded in observation. We can place the statement in the Epistle to the Hebrews that we exist through and for God against a scientific context. If we exist through and for God, then God is present in all life, and we are called to see all the complexity of all life as sacred and holy. The deep incarnation of God offers the glory of salvation through the suffering of Christ. God suffers in solidarity with the whole world, in all our complex living ecosystems and societies. The call for a systematic theology challenges us to construct a philosophy that begins from observation of the natural world and logically builds a cohesive story of the abundant love of God for our world, with Christ at the centre.

This challenge is far from simple. Systematic thinking cannot start by taking the supernatural language of the Bible literally. Rather, the need is to address the weak reputation of Christian faith across the broader secular world by working to provide a convincing rational justification for belief in God. That involves reading much of our faith tradition as allegory and symbol. The challenge is to show how the incarnation of God in Jesus Christ tells a unique and encompassing story of the connection between fallen humanity and God. To be systematic, we have to start with observation and build coherent theory upon what we see, to see how God is revealed in the consistent order of the cosmos.

My view is that such a justification of faith is possible, but that it requires a completely new approach. We have to ask what scientific observations are able to ground a systematic Christian theology. My view is that the starting point must be in the orderly observations of astronomy. Both modern and ancient astronomy provide a wholistic science that gives us a window onto the divine grandeur of eternity and infinity, seen in the orderly patterns of the Sun and Moon and stars. Imagining how God is present in the cosmos helps us to consider what the authors of the Bible meant by heaven, and what heaven and hell can mean for us today. A systematic approach can start from observing the regular visible order that encompasses our planet. As we see God revealed in nature, we can also learn to respect the ultimate nature of God as a glorious mystery. That means the presence of God on Earth can be revealed in all the complexity of life and in how Earth connects to the cosmos.

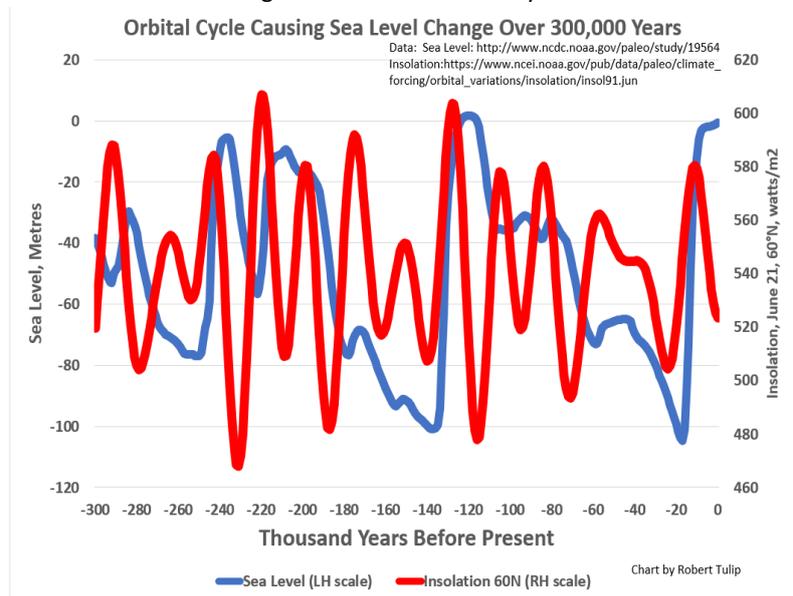
The starting question for systematic theology, as I see it, is therefore how the actual relationship between our planet and our cosmos can underpin and support our Christian faith. The Bible tells us that the grandeur, the glory, the greatness and the grace of God are revealed in the stable visible order of our cosmos. As Job 38:32

says, God brings forth the constellations in their seasons, and knows the laws of the heavens to set up dominion over the earth. My view is that we can begin to understand the meaning of these traditional ideas by study of how God provides the consistency and unity and direction of the universe. The order of the cosmos is seen in how our own planet connects to the whole universe. If we are asking how God is incarnate on Earth, we therefore need to study the cosmic scale of the Earth, in terms of space and time. This sublime natural story reflects a complex message of divine love, that God has made our universe in a way that enables life to flourish abundantly on Earth.

The Biblical message of salvation is about how our world can return to a state of universal flourishing, reconciling spirit and nature. That means seeing salvation in social and global and ecological terms, rather than the conventional individual perspective. Understanding the love of God in terms of natural order can justify our faith in Jesus Christ, placing the Gospel vision of Christ as word made flesh into a scientific framework, seeing the word of God as revealed in the consistent mathematical laws of physics.

I will now introduce my own thinking on what it means to say our planet has an orderly connection to the cosmos. Our world connects to an underlying cosmic order through one of the big discoveries in astronomy over the last century, the connection between Earth's climate and the stable order of our solar system. The Serbian astronomer Milutin Milankovitch found that the Ice Ages over the last million years followed orbital cycles of light, known as insolation.

Each Ice Age lasted one hundred thousand years, matching a repeating pattern of insolation. I have used this information to make this chart of how sea level has risen and fallen by more than 100 metres in response to the planetary cycle of light and dark. The dotted blue line, representing sea level, follows a pattern that is just to the right of the solid red line, representing northern summer light. This is a cause-and-effect relationship well recognised in mainstream climate science, showing that the pattern of insolation causes sea level change by freezing and melting vast volumes of glacial ice.

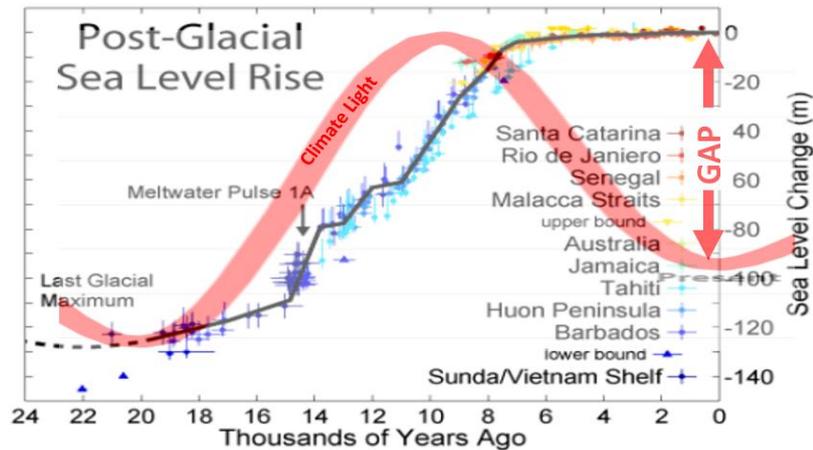


I am sharing these ideas to explore how this encompassing climate pattern for our planet relates to a systematic Christian cosmology. This orbital pattern of light causes the rise and fall of sea level, together with the advance and retreat of glaciers. This Ice Age cycle is a primary stable order that has governed life on Earth for millions of years. Against our historic context of millennia, the stable million-year patterns of the ice can be imagined as a sign of the presence of the eternal God in our planet. Insolation varies the amount of sunlight through the seasons with repeating stable orbital changes over tens of thousands of years. When northern summer light was high, sea level was high, because more winter ice had melted. The pattern of Arctic freezing in the north governed the glacial cycles of the Southern Hemisphere as well. And when northern summer light was lower, the Ice Ages grew deeper, reaching their coldest point every 100,000 years.

This northern summer climate light cycle was the main cause of natural climate change until it was swamped by the rise of agriculture and greenhouse gas emissions from ten thousand years ago. Human emissions have stopped the natural return to an ice age that occurred each hundred thousand years in previous cycles. The problem we face is that human industry has destroyed this connection between orbit and climate. Greenhouse gas emissions have disrupted the natural link between the heavenly patterns of light and our climate. At the same time, human culture has separated from the natural context that provided ecological order and stability.

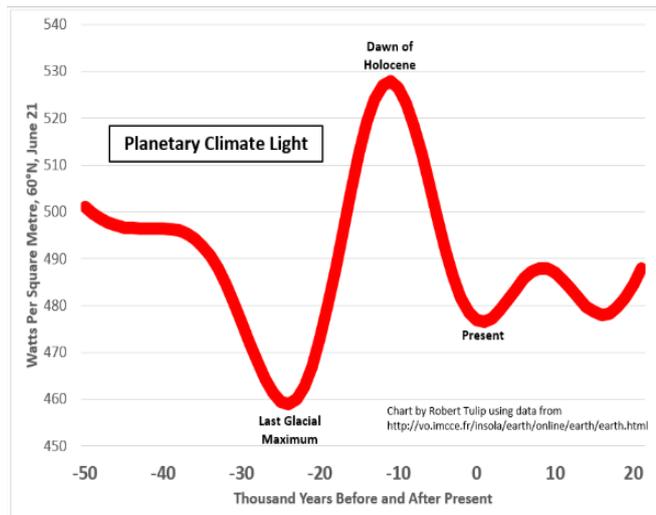
I am sure you are wondering how this planetary climate cycle might relate to Christianity. In The Lord's Prayer, Jesus calls us to pray that the will of God may be done on Earth as it is in Heaven. If we see Heaven as revealed in the stable order of the cosmos, this material shows the direct physical causal connection between patterns of heavenly light and the primary patterns of planetary climate on Earth, providing the natural context for the big cosmology of religion.

Here is a diagram showing sea level over the last 20,000 years, steeply rising for ten thousand years and then remaining stable. The red line of northern summer light that used to govern the sea level is also shown, termed climate light.



We can see that the previous close tracking between climate light and sea level no longer occurs. Light has decreased but sea level has stayed constant. My view is that this gap that has emerged over the last ten thousand years is a measure of human alienation from nature, correlating to what the Bible calls the fall from grace into corruption. The problem we now face is that sea level is set to suddenly rise because our civilization wrongly imagines we can just ignore our natural context. Will we leave our grandchildren to live in a world without beaches, and with a highly unstable climate?

Looking further into the relation between climate cycles and Christianity, this next chart of planetary climate light shows northern summer light, calculated from 50,000 BC to 20,000 AD. This primary natural planetary pattern governed our climate until ten thousand years ago, and also has a direct correlation with the Christian story. The incarnation of Christ marks the turning point of time in Christian theology. This diagram shows this occurred at the point in the cycle when climate light stopped decreasing and started ascending.



This model of Christ as turning point applies both annually with the Christmas incarnation story and millennially in this pattern of climate light, providing the basis for the world calendar.

Christian faith sees Christ as the dawn of a new covenant, uniting the last and first through the presence of the eternal within time. These images correlate to the present slow shift from descending to ascending light over thousands of years that we see in the orbital climate pattern.

The Epistle to the Hebrews tells us that Jesus came "to make a sacrifice of atonement for the sins of the people." My sense of how we can interpret this message of the atonement of Christ today is to ask how our culture can be integrated with nature, seen at one planetary scale. That means approaching climate change as the great strategic challenge for global stability, peace, prosperity, justice and security, informed by the love of God in Christ, from cradle to cross to crown. My view is that the first strategic task to achieve this integration of culture and nature is to begin to restore and repair the climate. That requires that we should balance the forces of warming and cooling through an immediate focus on increasing planetary brightness.

Climate light was on a falling path for ten thousand years from the dawn of the Holocene. This cycle of light reached a low point around the time of Christ, when the direction began to reverse, like the annual pattern in

winter. The light cycle is only now starting to rise, and will continue to rise for the next ten thousand years. My view is that this natural planetary model can help us to understand the Christian vision of time.

The Christian story places the incarnation of Christ at a low point in the Biblical history. The Jewish people had suffered through the captivity in Babylon and the conquests by Assyria, Egypt, Greece and Rome. This situation reflects the theological idea that after the fall from grace with the expulsion from Paradise, life continued to get worse, even after the Flood, until the incarnation of Christ, when the Gospel message revealed the path to restore a state of grace. But the proclamation of the message of Christ only started the reversal. The power of evil and destruction is so great in the world, putting us on a path to hell, that we still cannot be certain that humanity will continue to flourish in the long term.

As a message that the whole world was full of depravity and corruption, Saint Matthew tells the story of the massacre of the innocents by the evil tyrant King Herod. Consumed by delusion, violence, greed and desire, the world of evil represented by Herod was unable to see the King of Glory. Herod was determined to tear Christ from his cradle and destroy the bringer of salvation, rather than see any challenge to the unchecked power of sin and death that served his personal interests. Like autocrats today, Herod preferred a depraved trajectory of social and ecological destruction, wrecking everything to support his delusions of power and pride. As a result, Matthew says Jesus and his holy family became refugees in Egypt, just as millions of people today have been uprooted from their homes as refugees in the face of murderous tyranny.

Christ entered the world at the low point of the natural climate cycle, as I have explained. This was a time when the depravity of the Roman Empire was also at an extreme level. The story of the cross symbolises the power of depravity, how the authorities and the broad culture despised and rejected truth and love. However, the story of the resurrection, with Christ crowned as Lord of all, provides the basis for confidence in a transforming strategic vision of love, where good will triumph over evil.

My view is that placing the story of the incarnation within the framework of the planetary climate cycle helps to imagine the future in an optimistic way, with the idea that we are now entering a slow time of planetary ascent, pointing to a gradual increase of hope and peace. However, this model also suggests that our dominant world culture is still mired in the descending trajectory toward destruction that Jesus confronted. The inertia and momentum of world politics are toward the hellish risks of war and plague and famine and death. We face the major world challenge of working out what is involved in the profound reversal of cultural direction needed to align with the resurrection message of Christ.

Traditional theology used the model of Psalm 90:4 that a thousand years are like a day for God and the Genesis story of seven days of creation to say 6000 years of fall will be followed by 1000 years of recovery. There is a close match between this old story and our planetary orbital mechanics as I have explained it above. Just like the annual seasons, our planet had slow climate seasons each lasting about 6000 years that governed climate through the Ice Ages. We are now at the point in the cycle soon after the winter solstice, with the last six millennia in the climate season of autumn. It seems reasonable to regard this underlying cycle of light as the governing pattern for our planet, reflecting a divine order.

I am not suggesting the authors of the Bible knew about modern climate science. Rather, it is that this regular natural pattern of climate light is like the annual seasons or the daily tides, a cycle that governs everything within it. As we try today to understand the incarnation of Christ, the sublime story from cradle to cross to crown, we can explore how we might integrate our story of faith with our natural planetary order, seen in the grand cycles of the heavens that have governed our climate. The Gospel hope for the return of Christ to be crowned as King reflects the common need of humanity to work together for good and confront the power of evil, to enthrone love and truth as our sacred values.