

# A HALF MILLION YEARS

(story-narrative version)

**Dana Paxson**

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*From sums to products, a few thousand years;  
From products to exponentials, a few hundred years;  
What now?*

## FALL 16

Consciousness comes to me in shards, fragments, puzzle pieces that only slowly connect into thought. My eyes and ears and hands seem numb, inert, inaccessible.

The idea of ‘now’ gradually takes root in me. Both palms are down on a smooth, glassy surface. My right cheek and jaw rest on my right hand. It is dark and silent around me as I lie, coming to wakefulness, starting to gather and scramble until the emptiness and lack of signs and place warn me to stop.

Crowds of the people of my journey come and go in my mind. Visions of places emerge and pass. The room, the bridge, the landfills, the fields, the vastnesses of space, the oceans, the islands, the meadows, the cities, the jungle, the deeps. Language, metaphor, mathematics, cosmology, astronomy, astrophysics, biology, sociology. And more. Exhaustion gently blankets me over, here on this – cold? – smooth dark spot of nowhere. I lie still, my heart stirring its slow urgings of blood in me.

“Get up.” An unusual low voice, with a cadence and music all its own. “Get up, traveler. You have a long way to go.”

My thoughts form a reply. “I thought I had come a long way already. There is more? Much more?” It comes out in a groan.

The voice erupts in a huge laugh. “Always! There is always more, here! Stand up, small one!”

I feel my way to unsteady feet and stare into very-dim light ahead of me. Disappointment comes – it is the bridge again, except that now it is much wider than the hot-wire hair of my earlier high-wire passage and fall. “At least it looks harder to fall off this one.”

The laugh again. “Size matters. Now you are small. See?”

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<sup>1</sup> See more about this document, including an alternate version, at [bahai-library.com/paxson\\_half\\_million\\_years](http://bahai-library.com/paxson_half_million_years)

I stare around for the speaker. Ahead I see a dark heap, resembling something scaly. A claw? I strain to see it better, take a step or two, and my eyes trace upwards from the heap to a tower disappearing in darkness high above me. Far above, two glowing disks seem to look down at me.

“Here.” The two disks – eyes – blink, and I am now standing nestled next to the shining-feathered neck of a gigantic bird. *Bird, again.*

“Who or what are you?” I ask.

“You would call me Phoenix in your old ways of language, or Firebird. Or Simurgh. Or any of many other names. The names do not matter. I am here for your final great flight.”

“That sounds... rather final.”

“Do you not say to yourself, ‘I will die soon’?”

“Well, yes, I say a lot of things.”

“When you say truth, it matters most.”

I shiver.

“Traveler, it is time, and now you must hold on tightly. Listen now to the hummingbird. He will tell you a challenge.”

The tiny bird comes from darkness to hang vibrant by my ear.

*“As a further testimony to the greatness of the Revelation identified with Bahá’u’lláh may be cited the following extracts from a Tablet addressed by ‘Abdu’l-Bahá to an eminent Zoroastrian follower of the Faith:”<sup>2</sup>*

At this moment the voice of the warbler, clear and pure, comes through so close to me that I turn to look, but only heat.

*“Thou hadst written that in the sacred books of the followers of Zoroaster it is written that in the latter days, in three separate Dispensations, the sun must needs be brought to a standstill. In the first Dispensation, it is predicted, the sun will remain motionless for ten days; in the second for twice that time; in the third for no less than one whole month. The interpretation of this prophecy is this: the first Dispensation to which it refers is the Muhammadan Dispensation during which the Sun of Truth stood still for ten days. Each day is reckoned as one century. The Muhammadan Dispensation must have, therefore, lasted no less than one thousand years, which is precisely the period that has elapsed from the setting of the Star of the Imamate to the advent of the Dispensation proclaimed by the Báb. The second Dispensation referred to in this prophecy is the one inaugurated by the Báb Himself, which began in the year 1260 A.H. and was brought to a close in the year 1280 A.H. As to the third Dispensation—the Revelation proclaimed by Bahá’u’lláh—inasmuch as the Sun of Truth*

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<sup>2</sup> Shoghi Effendi, in *The World Order of Bahá’u’lláh*, in the section titled “The Dispensation of Bahá’u’lláh”, in the first subsection titled “Bahá’u’lláh”, p. 101.

*when attaining that station shineth in the plenitude of its meridian splendor its duration hath been fixed for a period of one whole month, which is the maximum time taken by the sun to pass through a sign of the Zodiac. From this thou canst imagine the magnitude of the Bahá'í cycle—a cycle that must extend over a period of at least five hundred thousand years.”*<sup>3</sup>

Disbelief forces words from me. “What is all this? The time scales, the predictions, the metaphors! It’s confusing me!”

The deep avian-alto laugh again. “The scales of your earth’s history, change, and destiny reach far outside the scales of your everyday lives, but you must work to reconcile it all in your minds and hearts.”

“Why? Religion interpenetrates and shapes our daily lives. It doesn’t have the reach of geological or astronomical eras.”

“Until now, that has been true. It is true no more. Now you must extend your understanding of religion’s true grandeur, even as you let its intimacies reassure you.”

“But... a half million years? If we reach all the way back to the era of Zoroaster just three thousand years in our past, this is overwhelming!”

“You begin to understand.”

## Background

I’m still floundering. “This duration of the Bahá'í cycle is baffling in this passage. How might it be reckoned? Its claim is staggering!”

Back comes the hummingbird.

*“Concerning your question relative to the duration of the Bahá'í Dispensation: There is no contradiction between Bahá'u'lláh's statement in the Íqán<sup>4</sup> about the renewal of the City of God once every 1000 years, and that of the Guardian [Shoghi Effendi] in the “Dispensation” to the effect that the Bahá'í cycle will extend over a period of at least 500,000 years. The apparent contradiction is due to the confusion of the terms “cycle” and “dispensation”. For while the Dispensation of Bahá'u'lláh will last for at least one thousand years, His cycle will extend still farther to at least 500,000.”*

*“The Bahá'í cycle is, indeed, incomparable in its greatness. It includes not only the Prophets that will appear after Bahá'u'lláh, but all those Who have preceded Him ever since Adam. These should, indeed, be viewed as constituting but preliminary stages leading gradually to the appearance of this supreme Manifestation of God.”*

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<sup>3</sup> ‘Abdu'l-Bahá, quoted by Shoghi Effendi, in *The World Order of Bahá'u'lláh*, in the section titled “The Dispensation of Bahá'u'lláh”, in the first subsection titled “Bahá'u'lláh”, pp. 101-102.

<sup>4</sup> In the *Kitáb-i-Íqán* Bahá'u'lláh sets forth the proofs of the truth of the periodic, progressive revelations from God, including especially His own.

*“After Bahá’u’lláh many Prophets will, no doubt, appear, but they will be all under His shadow. Although they may abrogate the laws of this Dispensation, in accordance with the needs and requirements of the age in which they appear, they nevertheless draw their spiritual force from this mighty Revelation. The Faith of Bahá’u’lláh constitutes, indeed, the stage of maturity in the development of mankind. His appearance has released such spiritual forces which will continue to animate, for many long years to come, the world in its development. Whatever progress may be achieved in later ages—after the unification of the whole human race is achieved—will be but improvements in the machinery of the world. For the machinery itself has been already created by Bahá’u’lláh. The task of continually improving and perfecting this machinery is one which later Prophets will be called upon to achieve. They will thus move and work within the orbit of the Bahá’í cycle.”<sup>5</sup>*

Awed, I mutter, “It’s as if we’re standing on the threshold of the entire cosmos.”

The phoenix spreads great wings, and we are aloft, moving easily above the bridge, which extends toward a lost point of light, like a star, in an impossible distance. The great bird’s voice brings a soothing hum that eases me. “The reckoning of time in ‘Abdu’l-Bahá’s exposition of the Zoroastrian prophecy is not a physically-defined process in any strict, symmetric, arithmetic sense. According to Him, the physical duration of the Dispensation of Muhammad treats each day in the Zoroastrian prophecy as a century; the physical duration of the Dispensation of the Báb treats each day as a year; and the physical duration of the Dispensation of Bahá’u’lláh apparently treats each day of the sun’s transit of a Zodiacal sign (a 30-day month, approximately) as lasting about 16,700 years, when seen as the entire overarching Bahá’í cycle.”

I interrupt. “But I’m left confused. There’s a shifting base on which these intervals are interpreted. There’s also a distinct difference between the simple treatments of the first two Dispensations and the more-complex treatment of the Dispensation of Bahá’u’lláh.”

“Your confusion is understandable. But to treat the half-million-year interval as a merely-physical measure is to overlook its richness and inner potency. Look at its interconnections of the physical, the metaphorical, the calendric, and the spiritual.”

“So there is a shifting of time scales, as I witnessed with the supernova and the copper and gold. Does that apply here as well, both physically and spiritually or prophetically?” We are gliding on what seems an endless arc in space over the line of the bridge below, and I feel relief that I don’t need to plod along it struggling to stay balanced.

Again the tiny hovering mote of the hummingbird croons with its wings.

*“Concerning the passage in the Dispensation of Bahá’u’lláh in which the Guardian [Shoghi Effendi] quotes ‘Abdu’l-Bahá’s interpretation of the prophecy referring to the times when the sun would stand still in the heavens, he wishes me to explain that the days referred to in this prophecy have to be reckoned differently. In the Scripture of various religions there are to be found frequent references to days, but these have been considered as indicating different*

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<sup>5</sup> Shoghi Effendi, from a letter dated 14 November 1935 written on his behalf to an individual believer.

*period of time, as for instance in the Qur'án a day is reckoned as one thousand years. The first ten days in the above mentioned prophecy represent each a century, making thus a total of one thousand lunar years. As to the twenty days referring to the Bábí Dispensation each of them represents only one lunar year, the total of twenty years marking the duration of the Revelation of the Báb. The thirty days in the last dispensation should not be reckoned numerically, but should be considered as symbolizing the incomparable greatness of the Bahá'í Revelation which, though not final is none-the-less thus far the fullest revelation of God to man. From a physical point of view, the thirty days represent the maximum time takes by the sun to pass through a sign of the zodiac. They thus represent a culminating point in the evolution of this star. So also from a spiritual standpoint these thirty days should be viewed as indicating the highest, though not the final stage in the spiritual evolution of mankind.”<sup>6</sup>*

The ethereal soft sound lingers, and the words “*thirty days in the last dispensation should not be reckoned numerically, but should be considered as symbolizing the incomparable greatness of the Bahá'í Revelation*” touch me, and I voice them quietly to myself. The phoenix flies on. Then come words again from the hummingbird’s visit, that the thirty days “*represent a culminating point in the evolution of this star.*” Incredulous, I repeat them to myself, then asking aloud, “Does the word ‘star’ here refer to the physical sun around which our earth orbits?”

The phoenix hears me. “The implications are overpowering. This assertion reinforces the paramount character of the Revelation of Bahá'u'lláh now beginning its unfolding. Your world has developed over billions of years. At no time has it seen such an elevation, an ascent, a transcendence of this nature, moving both in the greater worlds of God and in your physical world.”

Nightingale and hummingbird dance just ahead of me, the Nightingale singing.

*“That which hath been made manifest in this préeminent, this most exalted Revelation, stands unparalleled in the annals of the past, nor will future ages witness its like.”<sup>7</sup>*

As it disappears again, the hummingbird’s wings warm me with a little grace.

*“There are no Prophets, so far, in the same category as Bahá'u'lláh, as He culminates a great cycle begun with Adam.”<sup>8</sup>*

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<sup>6</sup> From the compilation *Lights of Guidance*, p. 472. Written on behalf of Shoghi Effendi to the National Spiritual Assembly of the United States and Canada. Quoted in an essay by Y. A. Ioannesyan, “Reflections on Some Messianic Prophecies in Shaykhi Works”

<sup>7</sup> Quoted by Shoghi Effendi in *The World Order of Bahá'u'lláh*, The Dispensation of Bahá'u'lláh, pp. 103-104.

<sup>8</sup> Found in *Lights of Guidance*, p. 473. Written on behalf of Shoghi Effendi to the National Spiritual Assembly of Australia and New Zealand, December 26, 1941. The “great cycle begun with Adam” embraces all the prophets and Manifestations of God from Adam to the time ending with the appearance of the Báb.

## Science, Religion, and Time

Skepticism still interferes with my wonder. “But all this relies on arbitrary-looking shifting scales and placements of time intervals. In science, such interpretations lack any apparent rational basis for their meaning. They seem to rely on the desires of the interpreters to make the scripture resonate with their own ideas of what the meanings should be.”

The phoenix is silent, and I go on. “Given all the ways one can generate connections in scriptures, it seems easy to make a scriptural prophecy mean whatever one wants it to mean. Metaphor and physical meaning seem to mingle and confuse the reader. How can such inconsistency of understanding be resolved?”

Emboldened, I add, “Science, properly practiced, is our very best means of reading and advancing our physical reality. And the continuing flood of marvels and advancements in our modern age testifies conclusively to the fact that scientists are practicing their profession properly and with great discipline and success. Is there any scientific resonance with the changes of time scales in authentic religious scriptures?”

Now my great guide rocks slightly back and forth in flight, rolling gently. It speaks in soft thunder, “Scientists are quite comfortable moving from one scale of time or space to another, as long as the change of scale does not violate the generally-accepted symmetries and conservation laws of your physical world. Orders of magnitude are no obstacle to science; they are its commonplace tools of comprehension. Do you recall your supernova story, when the burning of its initial hydrogen takes billions of years, while the collapse and rebound of the star at its end happens in milliseconds? The time scales differ by nine or more orders of magnitude.”

## Dispensation and Conservations

I respond, “Yes, I remember that. So the three calendric time periods of the hummingbird’s wing-sounds are 1,000 years, 20 years, and in excess of 500,000 years. These represent three distinct orders of magnitude, spanning roughly five orders.” The first two are defined as ‘dispensations’. What is a religious dispensation?”

The phoenix says, “It is a period during which the laws bestowed by a single divinely-appointed revealer hold effect. Those laws engender advancement, order, and stability in the human world.”

“All right. But the third is defined as a ‘cycle’.”

“A cycle is a greater interval embracing a series of dispensations. Recall the hummingbird’s *‘For while the Dispensation of Bahá’u’lláh will last for at least one thousand years, His cycle will extend still farther to at least 500,000’*. So this refers to the duration of the entire cycle within which a succession of Manifestations appears, beginning with Bahá’u’lláh Himself.”

“I still can’t make all these different time intervals into a meaningful pattern.”

“It takes some deeper consideration. Start here: Each new religious dispensation brings change, fiercely resisted by many who occupy positions of power and influence.” And again the Nightingale sings.

*“... had these people in the days of each of the Manifestations of the Sun of Truth sanctified their eyes, their ears, and their hearts from whatever they had seen, heard, and felt, they surely would not have been deprived of beholding the beauty of God, nor strayed far from the habitations of glory. But having weighed the testimony of God by the standard of their own knowledge, gleaned from the teachings of the leaders of their faith, and found it at variance with their limited understanding, they arose to perpetrate such unseemly acts.*

*"Leaders of religion, in every age, have hindered their people from attaining the shores of eternal salvation, inasmuch as they held the reins of authority in their mighty grasp. Some for the lust of leadership, others through want of knowledge and understanding, have been the cause of the deprivation of the people. By their sanction and authority, every Prophet of God hath drunk from the chalice of sacrifice, and winged His flight unto the heights of glory. What unspeakable cruelties they that have occupied the seats of authority and learning have inflicted upon the true Monarchs of the world, those Gems of divine virtue! Content with a transitory dominion, they have deprived themselves of an everlasting sovereignty. ”<sup>9</sup>*

“Now think of the ‘conservation laws’ of physics. Apply them to the energies and durations of these dispensations. If you use the 1,000-year period as a metrical standard, it looks like an order-of-magnitude approximation for the period between renewals of divine knowledge in the human world. That is along the lines of a regular, global course of study in the process of the education of the human species.”

“As if humanity is being schooled, all right. I understand that.”

“Good. As such a period ends, humanity is presumably in condition to receive the next revelation of divine knowledge and teaching, but human resistance is deep and powerful. The arrival of a revelation roils the whole world, releasing great transformative energies that dissolve the old order and initiate a new one. The greater the difference between the old order and the new, the greater must be the energies released to bring about the transformation.”

“Energies’ – I see where you may be taking this.”

“Anyone who predicted duration on the basis of past regularity would have expected the Báb's Dispensation to have a duration of a magnitude similar to that of Muhammad, and Bahá'u'lláh's Dispensation likewise. But this is not the case. Such an expectation is linear, without much change between durations at all, much less any change in order of magnitude. In the differences in the periods set forth in Shoghi Effendi's passage, you see that there is nothing at all linear or regular about this series of intervals.”

“Aha! The star took ages to burn its hydrogen, and milliseconds to collapse and explode. Is that the pattern you're describing?”

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<sup>9</sup> Bahá'u'lláh, *Kitáb-i-Íqán*, pp. 14-15.

“Yes! From a consistent pulse of about a millennium between successive past dispensations up through that of Muhammad, suddenly we see the brief flash of the Báb’s twenty-year dispensation, and then comes the overwhelming light of Bahá’u’lláh’s dispensation and cycle of unimaginable duration. When you open your gaze to the nonlinearities of both religion and nature, you can embrace the grandeur and majesty of both.”

“Another factor of interest distinguishes the revelations of the Báb and Bahá'u'lláh from all those of past human ages: their voluminous *written* character expressed through the pens of their two Authors, via their own Hands moved directly by revelatory information from outside the human world. This difference has no known historical precedent, not even in Islam. The presence of such written, preserved, revelatory material magnifies and propagates the pure, transformative energies it brings into your world. You can see this in your sciences of today, shining with unprecedented knowledge and wisdom.”

“In past dispensations, no recorded conferral of authority by the dispensation's Author was left you. Coupled with the lack of maturity of humanity in past times<sup>10</sup>, conflict and division among the followers arose and destroyed their unity and peace. But the Covenant of Bahá'u'lláh, written by Him in His own hand, has withstood assault after assault, disruption after disruption, to raise up and preserve a unified, stable, advancing, harmonious world community.”

“The vast upheavals arising from the explosive release of transforming energies by the Báb in His copious writings and addresses testify to the unprecedented power of those energies. And the Writings of Bahá'u'lláh are so voluminous that even after a century the preponderance of them have not been made generally available. Shoghi Effendi writes that Bahá'u'lláh produced a hundred volumes. Compare this output of revealed knowledge from beyond human range with the nearest comparable work from an earlier dispensation, the Qur’án: a single modest volume revealed to Muhammad over a lifetime. How vast a time scale must be needed to unravel the astonishing range of knowledge contained in what Bahá’u’lláh has revealed! Humanity is now faced with its emergence into its early stages of maturity.”

My head seems to sag inside. “Could we look at science again? I need to see some resonant parallels and illuminations.”

The phoenix abruptly performs a slow, smooth roll in flight, and I clutch desperately to stay at its neck, snatching at its great, hot-bladed feathers for grip. “Of course! But you had better not fall off. We are going to dance astrophysically with time, space, and scale now. Back to the supernova!” The bridge and darkness give way to blinding light.

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<sup>10</sup> Adib Taherzadeh, in his book *The Covenant of Bahá’u’lláh*, writes (p. 159): “A careful study of the history of religions will enable us to realize that the Manifestations of old... did not make an unequivocal written Covenant with their followers because of the immaturity of the people of the age, who could not have sustained the rigours, the tests, and the strict discipline which the observance of such a Covenant would inevitably have required.”

## The Process of a Supernova: Timescales

“Let us move through ten million years in a moment or two.” We hover at the surface of a blinding star 25 times the weight of the Sun, watching its native hydrogen burn into helium on the scale of ten million years. The star’s color and radiance shift.

“Now we move a million more years. The helium is now fusing mostly to carbon.” Again subtle change in the star’s coloration.

“The next stage is a thousand years, not more. The carbon is now burning to heavier elements.”

A short pause as again the star’s appearance shrinks and shifts. “The remaining elements – neon, oxygen, silicon, and other of similar weight – fuse in less than three years. During all of these stages of fusions, coming and going faster and faster, the energy released provides enough outward pressure to keep the star from collapsing. Note the tightening of the time scale from millions of years down to just a few. But each stage weakens that outward pressure.”

“In the end, the process leaves only nickel, cobalt, and iron. Here is the problem: none of these can fuse under the normal conditions existing within the star that generated them. With no fusion taking place, there is no outward pressure from fusion energy to support the star’s mass against its inward gravitational pull.”

We are now witnessing the final subsecond time interval of the star, our perceptions speeded to synchronize with the accelerating rate of events.

“The star collapses completely. It takes only *milliseconds*.”

Everything moves slowly. Nothing at first, since the outer shell of the star conceals the events at its core. “Let’s dive in,” says the phoenix, and in we go, plunging blinded into the wrack of ultrahot gas. We arrive to see the outer part of the star’s core speed inward at a quarter of the speed of light. But with our accelerated awareness, it seems a slow contraction.

“Hang on tight!” And I do that. Now there is only a small, compressed ruin of atomic nuclei jammed, fused into one giant nucleus, and as we watch, it rebounds, coming apart into monstrous fragments of superincandescent metal, fused from the iron, nickel, cobalt, and any remaining lighter nuclei further into all of the remaining heavier elements. Even though our time scale is accelerated to protect us, the phoenix is forced to dodge and twist desperately as I grip its neck, and we somehow avoid collisions. The star-fragments begin their outward flight to the universe.

“What is left there?” I point at what seems a brilliant coal.

“That is the core remnant. It is superhot neutronium. This is now a small neutron star, basically a single great atomic nucleus. It is not an atom, because it holds all of the electrons and protons that would normally be separate in an atom.”

“So from an ordinary star, living its long life, everything has changed! But we find all the elements on the star’s blown-away fragments at home on Earth. They didn’t exist before the star collapsed.”

“Yes. They are the building blocks of your material existence, the alphabet of nature’s discourse, from hydrogen through uranium and a few more.”

“So we have a ninety-two-letter alphabet of nature!”<sup>11</sup>

“You could put it that way.” And little by little our time passage seems to normalize, as the phoenix rises to draw us back into space and our stately journey along the bridge’s infinite-seeming span.

“It never occurred to me – these changing timescales of our life’s movements are far from uniform! Some processes take great swaths of time and then feed directly to others taking almost no time at all. But both are inseparable parts of a great chaotic, dynamic flow of development and change.”

“So it is in the scientific perspective. What does this tell you about the patterns of human processes of social and spiritual change?”

“They seem to apply changing timescales, on varying orders of magnitude, as well.”

### **The Process of History: Timescales**

The great bird’s deep voice has a soothing effect on me. “These three revelations in calendric terms – 1,000 years for Islam, 20 years for the Dispensation of the Báb, and in excess of 500,000 years for the Cycle of Bahá’u’lláh – vary in duration from two decades at the short end to more than 50,000 decades at the long end, amounting to about five orders of magnitude of difference.”

Sleepily, I ask, “What insights, whether they are metaphorical or natural, can you suggest for understanding the bold assertion concerning the duration of the Bahá’í Dispensation and cycle? It still makes me wonder. It’s unlike all the cycles that came before it. They had a regularity, a rhythm, that remained fairly consistent over many repetitions.”

The phoenix ruffles its neck feathers a little, letting me become a bit more comfortable. Its feathers are large, surprisingly soft, but with sculpted edges that seem to dissolve into a fractal kind of boundary. I look more closely at one of them, and each barb of the feather replicates the pattern of the feather, down to a next branching into barbules with the same convoluted edges. Peering closer, I see an even-smaller similar pattern. It is mesmerizing.

I ask, “Your feathers are so unusual. You said you are a phoenix. All I can remember about a phoenix is that it renews itself by fire – destruction and regeneration. Is that true?”

The sound that comes from the great bird is gusty, rhythmic, delightful, making me come sharply awake. Then it says, “You amuse me, and give me joy to answer. First, I am not a phoenix, or a Phoenix. I am phoenix. That means now that I am a phoenix, and I am Phoenix, and I am the type called phoenix, and the type of types, and inward to meaning. It is not the ideals of

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<sup>11</sup> The number 92 is approximate, because instability eventually causes a few elements, notably those heavier than lead and two lighter ones, to decay radioactively to others.

antiquity, the Platonic way. All these ways of realization blend for you, so that names gather in swarms around meanings, breeding, changing always. Names are living creatures of thought.”

“But... fire?”

“Yes, but there is more you need to understand. There are two varieties of process to consider: the cyclic and the transitional. Cyclic processes in a system, such as a heartbeat or a series of courses of study in a subject, or even the phoenix cycle of life and regeneration, imply a homeostasis or dynamic balance that keeps the process repeating. But transitional processes in a system, such as a supernova explosion or a student’s graduation from studies, imply a permanent or lasting change in the system from one dynamic balance to another – or to further transition.”

“This is sounding familiar. I remember, earlier in this journey, Kolme telling me about the Lorenz attractor, flipping from one set of cyclic states to another.”

“That is the heart of it. Here in our current place in the journey you can see that the two sets of states need not be symmetric – one may lead to the other, but there may be no return.”

“But your fire-change is cyclical – it returns again and again.”

Phoenix pauses for a long moment. “There will be something coming soon that will clarify much for you on that question. I’d rather not disclose it yet – you are not ready. Instead, let me explain transitions more fully.”

“In a transitional process, sufficient energy is stored up from the recurring cyclic processes preceding it to begin the transition. This stored energy, released in a brief spasm, overcomes the forces sustaining the dynamic balance of the cycles. The cyclic balance is disrupted completely, shifting the system into an entirely-distinct state, possibly with a new range and pattern of cycles. The supernova explosion illustrates the point. Modern physics treats such processes as parts of the dynamics of chaos and equilibria, which we have seen briefly here earlier<sup>12</sup>.”

“Now we look at the Revelations of the past, dating from earliest recorded history to the 19<sup>th</sup> century. Viewed together, they appear to us as great cyclic processes, each one bestowing new information and transformation on the human world. They are punctuated by brief transitions at their beginnings leading to their rapid ascendancy and stable continuation, with shorter historical cycles nested within them. These great cycles were of the order of 1,000 years, and the transitions from their predecessors shared similar patterns: revelation, obscurity, persecution, promulgation, acceptance, advancement, decay, and eventual replacement.”

“That seems clear, and historians rely on such patterns to frame their observations.”

“Until now. But the evidence we are seeing with these three Dispensations shows us that this pattern has now undergone a major transition of far greater power than ever before. It has replaced not only the most-recent cycle of that pattern but the entire pattern itself. It has happened with great suddenness – a global phase transition. The energies required for such a

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<sup>12</sup> The section titled **Two Misperceptions** characterizes chaotic dynamical systems having both cyclic and transitional behavior.

transition are staggeringly greater than those of the past transitions in the cyclic process of the past.”

“The Holy Qur’án was one single volume of 6300 verses. By contrast, concerning the Revelation of Bahá’u’lláh, let the hummingbird sing it to you.

*“With this book [Epistle to the Son of the Wolf], revealed about one year prior to His ascension, the prodigious achievement as author of a hundred volumes, repositories of the priceless pearls of His Revelation, may be said to have practically terminated—volumes replete with unnumbered exhortations, revolutionizing principles, world-shaping laws and ordinances, dire warnings and portentous prophecies, with soul-uplifting prayers and meditations, illuminating commentaries and interpretations, impassioned discourses and homilies, all interspersed with either addresses or references to kings, to emperors and to ministers, of both the East and the West, to ecclesiastics of divers denominations, and to leaders in the intellectual, political, literary, mystical, commercial and humanitarian spheres of human activity.”<sup>13</sup>*

“And the Nightingale calls so beautifully...”

*“Whereas the verses which have rained from this Cloud of divine mercy have been so abundant that none hath yet been able to estimate their number. A score of volumes are now available. How many still remain beyond our reach! How many have been plundered and have fallen into the hands of the enemy, the fate of which none knoweth.”<sup>14</sup>*

“And ah! Yet more!”

*“Now, following His manifestation, although He hath, up to the present, revealed no less than five hundred thousand verses on different subjects, behold what calumnies are uttered, so unseemly that the pen is stricken with shame at the mention of them. But if all men were to observe the ordinances of God no sadness would befall that heavenly Tree.”<sup>15</sup>*

It stuns me. “I can see now that when one considers the vast outpourings of the Báb and Bahá’u’lláh, rejuvenating the world with information from the greater existence, one must agree that any timescale to be generated must be correspondingly huge, and the upheaval of transition beyond imagination, even beyond that of a star gone supernova!”

Again that deep, rhythmic, heaving laugh. “Yes! You can see in the collapse, the ‘rolling-up’ of your crumbling world order, the utter obliteration of the former structures and dynamics of your long human past. In the moment of greatest collapse you can see in the Revelation of the Báb the formation of the entire ‘alphabet’ of the elements<sup>16</sup> of your new world order, your new range of human potentials and processes, and in the explosion of the Revelation of Bahá’u’lláh you can

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<sup>13</sup> Shoghi Effendi, *God Passes By*, XII, p. 220.

<sup>14</sup> Bahá’u’lláh, *Kitáb-i-Íqán*, pp. 199-200.

<sup>15</sup> The Báb, *Selections from the Writings of the Báb*, in the section titled “The Persian Bayan”, VI, 11.

<sup>16</sup> There will be more on this point in the upcoming section titled **The Coding of Realities**.

see the full, radiant efflorescence of all of the elements of this great range being spread out before you.”

“The Báb gave His estimate of having revealed 500,000 verses in was 1848. At that time, He was imprisoned in the fortress of Mákú (Mah-ku), and He still had two years to live before He was executed by a firing squad on July 9, 1850. His entire Dispensation had begun in 1844 and was to end nineteen years later in 1863, when Bahá’u’lláh publicly revealed His own station, beginning the half-million-year cycle we have been passing on this flight. The Prophet Muhammad revealed a total of around 6300 verses in all, and His Dispensation lasted for around 1260 years.”

“That is quite a difference!”

“It is! Now, if one were to consider each verse of the Báb’s Writings to be the equivalent in power and impact of one verse from the Prophet Muhammad, a linearly-proportionate length of time one might assign to the Báb’s Dispensation would be on the order of 100,000 years! Clearly the explosive, transformative power unleashed in the verses of the Báb alone, compressed into His all-too-brief 20-year ministry, beggars the imagination – no, rather, it defies all limits of human comprehension! To help you appreciate all this better, I will return to the astronomical setting.”

“But that hasn’t even considered the even-greater volume of the revealed works of Bahá’u’lláh, has it?”

“No. That is astonishment for later.” As the phoenix speaks, it banks and soars into the dark starry sky’s infinite emptiness. “Now we are about to *‘traverse the expanse of heaven.’*”<sup>17</sup>

## **The Process of Space: Timescales**

We emerge from darkness to circle the earth, and my bearer says, “Out here, the very meaning of time becomes transformed. You count our hours as 24ths of a day – but what is a day on a space station that circles the earth every two hours, or on an interplanetary probe? You count your year as the earth’s circuit of its solar orbit, but the year on Mars is longer. You mark your seasons by the ridings of the sun in warming your fields and forests. You count your months by the phases of earth’s moon. You are cradled on your planet – but you struggle in this extraordinary age to leave it. Are you ready to do this?”

A flash, and a great planet is before us. “What do you call a season or a day on the planet Uranus, where the planet’s axis is so tilted that the day is half of a Uranian year – which itself is about 84 earth years long? There, the season and the day seem to be the same.”

Another flash, and a star unlike the sun shines in our eyes. “And when you sail at last away into interstellar space, in which your nearest stellar neighbor, Proxima Centauri, is over 25 trillion

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<sup>17</sup> A phrase taken from *The Hidden Words of Bahá’u’lláh*, Arabic no. 40: “O SON OF MAN! Wert thou to speed through the immensity of space and traverse the expanse of heaven, yet thou wouldst find no rest save in submission to Our command and humbleness before Our Face.”

miles from the sun, how do you measure the passage of time? Indeed, can you even live in such an expanse in the same timescale as here on earth, in which your seconds are heartbeats? Your current space vessels seem like matchstick rafts with toothpick oars in such immensity. To travel between stars at the maximum speeds you can even consider in today's world, on the order of 1000 miles per second, would take 25 billion seconds, or given about 31 million seconds in an earth year, about 800 years at that speed – a bit more counting acceleration and deceleration<sup>18</sup>.”

I am numb. The great bird continues. “800 years is ten times a normal human lifespan, so to keep your hearts from wearing out, they would need to beat once every ten seconds. On the trip to Proxima Centauri, in effect, you have multiplied the duration of our ‘second’, as measured by the human heart, by a factor of ten.”

Words come slowly to me. “None of the sacred scriptures of the past contemplate such questions. There was no thought of them, no need to do so. But now, in this age of light, we confront this need! We see our universe's great variety and richness in every detail of its complex and bewildering rhythms. We are on our way outbound, into the stars.”

Again that mighty laugh. “Not just yet. The Nightingale warns you.”

*“O SON OF MAN! Wert thou to speed through the immensity of space and traverse the expanse of heaven, yet thou wouldst find no rest save in submission to Our command and humbleness before Our Face.”<sup>19</sup>*

“You have much work ahead. First you must learn your true alphabets, and become literate in the vast unknowns you are finding. You are just now at the very beginnings of all that.”

## **The Coding of Realities**

### *Alphabets*

*Put it all together and it spells,  
The mighty spell of language and of making,  
Signs, letters, and symbols can impel  
The mind to love the dawn as it is breaking.*

“Who are you?” A soft voice in my ear, and I almost lose my grip on the phoenix. I turn my head into a sweeping nimbus of long dark hair breezing around an entrancing feminine face that seems alight from within.

“I'm traveling,” I say. “This great bird is taking me along the way. Who are you?”

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<sup>18</sup> Many authors of science fiction, the present author included, have calculated the durations of interstellar travel using speeds consistent with known technologies, and the results teach us humility. Until we find ‘wormholes’ as theorized in the film ‘Interstellar’, or develop means of travel that transcend our current physical limitations, we are consigned physically to our own planetary world and our neighbors circling the sun. And as it happens, we have much work facing us long before we pack our bags for the stars.

<sup>19</sup> Bahá'u'lláh, *The Hidden Words of Bahá'u'lláh*, Arabic No. 40.

“You will know in time. I’ve been watching over you for most of your traveling. I have a question for you. You seem to be scanning and connecting inscriptions from all over your universe. What is this telling you?”

“It seems to me that both religion and science at their best can offer us pathways to decrypting, unpacking, and comprehending these inscriptions – but the process is an unending challenge.”

“Tell me some of the things you have found – examples.” She is close to me, beside and behind me, in the swirls and eddies of passing air.

I feel lightheaded, a list takes shape in my mind, and words come out as chanted verse, reminding me of the singers I’ve met.

*“We decipher a coded hotel room number on a door,  
A light burst from a dying star,  
An X-ray diffraction pattern from a crystal,  
A Babylonian multiplication table,  
An essay in Mayan glyphs on the question  
Of the beginning and end of time,  
A magnetic-resonance-imaging  
Scan of a human brain,  
A divinatory hexagram  
Of the characterized I Ching,  
A coded letter from a man to his lover,  
A sea of data points from an astrophysical survey,  
A trail of a deer’s hoofmarks in a forest,  
A marching parade of numbers in hexadecimal  
From a computer-memory dump,  
A word-weave of a novel called Finnegans Wake.”*

She is laughing, musically, nodding to my uneven tread of stresses. Encouraged, I shift the pattern and go on.

*“We are human.  
We strive to read reality.  
We make mistakes –  
We often misread,  
We try to read meaning  
Into gibberish –  
But we learn  
And we advance  
Past our mistakes.  
This is what we humans do.”*

“How sweetly you offer all this!” She has drifted around to face me, not holding on at all, and I see the hints of ethereal trceries of wings radiating behind her, still and yet vibrant. She beams, and I blink, my eyes tearing from the light.

She asks me, “Do you consider alphabets, abjads, and written sets of symbols of human language as the real tools of human representation? Do you leave aside those representations that come to you from nature: a light burst, a diffraction pattern, a molecular structure, an atomic nucleus, an evolving weather pattern, and others?”

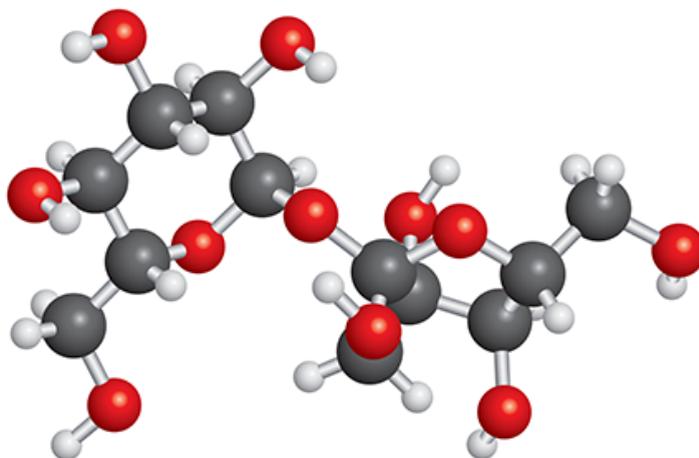
“We distinguish this way, yes.”

She nods. “But human representations in your alphabets and natural representations in atoms, molecules, spectra, and more are themselves members of a greater class of expressions performed using compositions of elements, yes?”

“That seems true.”

“Then each type of element comprises a letter used in the transcendent orthography of meaning: the ordered flow of information from the greater world to yours. Isn’t that the case also?”

I pause a moment, but she goes on, weaving an image in the air between us. “Spell out a sugar, with the formula  $C_{12}H_{22}O_{11}$ , in its molecular form. It is a word in nature’s organic alphabet of 92 chemical elements, written with only three of those letters. carbon, hydrogen, and oxygen. Because the placement and orientation of these three ‘letters’ is significant, many sugars can be spelled out that have the same formula of 12 carbon atoms, 22 hydrogens, and 11 oxygens. If the sugar to be spelled is sucrose – cane sugar – we can depict its spelling like this.” The image rotates between us.<sup>20</sup> (Figure 1):



*Figure 1 – Sucrose molecular model*

<sup>20</sup> Taken from <http://igoscience.com/sucrose-sugar-molecule-ball-and-stick-vector-model-c12h22o11-v1/>.

“But the arrangement of the ‘letters’, or atoms, in space is critical, just the same as for letters in a word on a page. Sucrose has the same constituent atoms in its makeup as does lactose, so that the formula  $C_{12}H_{22}O_{11}$  also applies, except that the atoms in lactose are arranged in a different pattern in space so that the two behave differently in the human body. That’s why some people can enjoy the sucrose in ice cream without discomfort, while others react strongly to the lactose that is in the milk used to make the ice cream.” And she laughs music again.

A thought come to mind, and I add, “All the same letters appear in the words ‘live’, ‘evil’, and ‘vile’, but they all very mean different things.”

“Yes, traveler. The world of nature is spelled out for you at many tiers of meaning and scale. Particles spell out atomic nuclei. Atoms spell out molecules. Molecules spell out structures in tissues and minerals. Tissues spell out organisms. Organisms spell out social entities. And in the unique and linear spelling that is the passage of time, all these things evoke and evolve meaning.”

### *Alphabets Natural and Human*

She is singing now, her voice enchanting, and the phoenix turns its head to listen with me.

*“Connect nature’s ‘alphabet’,  
That full range of chemical elements  
Formed in the forge of stellar explosions  
With your human alphabets,  
Those sets of letters and symbols  
For your words and ideas  
And with the greatest Alphabet,  
The one subsuming these two and all others,  
The unending flow of utterance  
Of the meaning that informs  
And sustains all things.”*

Nightingale melody picks up as she finishes her song.

*“No understanding can grasp the nature of His Revelation, nor can any knowledge comprehend the full measure of His Faith. All sayings are dependent upon His sanction, and all things stand in need of His Cause. All else save Him are created by His command, and move and have their being through His law. He is the Revealer of the divine mysteries, and the Expounder of the hidden and ancient wisdom. Thus it is related in the “Biḥáru’l-Anvár,” the “‘Aválim,” and the “Yanbú’” of Şádiq, son of Muḥammad, that he spoke these words: “Knowledge is twenty and seven letters. All that the Prophets have revealed are two letters thereof. No man thus far hath known more than these two letters. But when the Qá’im<sup>21</sup> shall*

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<sup>21</sup> ‘Qá’im’ is an Arabic title meaning “He Who arises”, and in Islamic traditions refers to a prophesied redeemer of Islam. The Báb writes: “He Who hath revealed the Qur’án unto Muḥammad, the Apostle of God, ordaining in the

*arise, He will cause the remaining twenty and five letters to be made manifest.” Consider, He hath declared Knowledge to consist of twenty and seven letters, and regarded all the Prophets, from Adam even unto the “Seal,” as Expounders of only two letters thereof and of having been sent down with these two letters. He also saith that the Qá’im will reveal all the remaining twenty and five letters. Behold from this utterance how great and lofty is His station! His rank excelleth that of all the Prophets, and His Revelation transcendeth the comprehension and understanding of all their chosen ones.”<sup>22</sup>*

She speaks softly, reflectively. “Only two elements: two letters, gradually generating the remaining twenty-five, and then came the explosion of meaning. It mirrors the evolution of the star that has one element, hydrogen, then helium, generating the next twenty-six. And then the star collapses, and all ninety-two elements are formed. It is as if the two letters of the Dispensations preceding that of the Báb evoke in the natural world the two simplest elements, hydrogen and helium, that formed the stars in the first place. And during the processes preceding the collapse of a star, whether supernova or not, out of those two elements are formed naturally the next 26 elements up through iron (26), cobalt (27), and nickel (28), which, taken with all of the elements beginning with hydrogen, comprise the initial stellar ‘alphabet’ of elements: another nice metaphorical resonance. And then came Bahá’u’lláh, and the ninety-two-letter alphabet!”

The Nightingale’s voice fills us again.

*“Every single letter proceeding out of the mouth of God is indeed a mother letter, and every word uttered by Him Who is the Wellspring of Divine Revelation is a mother word, and His Tablet a Mother Tablet.”<sup>23</sup>*

My angelic-seeming companion smiles. “The heavier elements, formed in the supernova process, constitute extensions to this ‘language’ of matter— an alphabet or script from which the vast compositions of the enduring substances in your material world are written out. How incomparably great are the possibilities!”

She seems to dance in the air before us now, merrily singing out. “And look at the genetic codings of your DNA, this long pair of molecular strands holding nucleic acids, or nucleotides. There are only four: alanine, cytosine, guanine, and thymine. The decoding process uses each

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*Faith of Islám that which was pleasing unto Him, hath likewise revealed the Bayán, in the manner ye have been promised, unto Him Who is your Qá’im, your Guide, your Mihdí, your Lord, Him Whom ye acclaim as the manifestation of God’s most excellent titles. Verily the equivalent of that which God revealed unto Muḥammad during twenty-three years, hath been revealed unto Me within the space of two days and two nights. However, as ordained by God, no distinction is to be drawn between the two. He, in truth, hath power over all things.” – from Selections from the Writings of the Báb, Excerpts from the Kitáb-i-‘Asmá, XVI, 18.*

<sup>22</sup> Bahá’u’lláh, *Kitáb-i-‘Iqán*, pp. 224-5.

<sup>23</sup> Bahá’u’lláh, *Gleanings from the Writings of Bahá’u’lláh*, from LXXIV, There is a fascinating connection here with the ways in which the Báb focused some of His learned commentaries, or tafsír, on the drawing forth of meanings from the individual letters of verses of the Qur’án. See Todd Lawson, “The Báb’s Commentary on the Súra of Wa’l-‘Asr” in his “The Dangers of Reading”, published in *“Bahá’i Studies Volume III: Scripture & Revelation”*. In the section cited, Lawson describes the rapidity and volume of the revealing of the commentary, presents a translation of the commentary’s unraveling of meanings from the first letter of the Súra (wáw), and outlines further aspects and passages from the work.

series of three successive nucleotides, called a ‘codon’, to synthesize a specific “building block” in the form of an amino acid. There are 64 possible codons, and they generate 20 distinct amino acids, along with start and stop markers for the construction process. One can consider the start and stop markers as punctuation, so there are 22 distinct outputs from the decoding process – 22 letters in the known genetic ‘alphabet’.”<sup>24</sup>

“These alphabets, these scripts, are uttered by the creation itself! They are pure information, giving form, pattern, process, and change to the existence of all things. They represent tiers of meaning bestowed in the eternal flow of information from the One Creator, the Self-Subsisting.”

My head swims. What enriched and elevated tiers of meaning, all coming from the same source of information! It’s all just a glimpse of the far-more-vast compositions of divine knowledge – pure information – being poured forth in this universal cycle of Bahá’u’lláh, in which a ‘letter’ isn’t just a single written symbol but rather a token of pure meaning. A single character, a word, a phrase, a sentence, a verse, or an entire document – any of these betokens meaning in the great teachings revealed to humanity. My eyes still lowered, I tell out these thoughts to the phoenix and the angelic one smiling at me.

### *Decrypting Reality*

The radiant face before me responds gently. “In past ages only a few people in human society understood the patterns of the world around them. Now, in this burst of revelation, you have come almost suddenly into a global society in which everyone can gain great understanding of those patterns. You are decrypting your world: making plain what is hidden. A subtle and rich task. It gets deeper at every turn.”

“As soon as you create a periodic table of all the chemical elements, hosts of questions spring up. You go on to create a table of subatomic particles, and that expands your periodic table into a table of the nuclides. And then you burrow into the world of these particles to unfold quarks and more.”

“Back to your DNA codons. They generate all the varied living tissues of earth.”

“And the music, oh, the music! Your alphabets proliferate into music! The electrons of an atom live in layers or ‘shells’ around the atom’s nucleus. When an electron, perhaps jarred by a passing photon of light, moves from a shell of greater energy to a shell with less, it emits a ‘note’: its own photon packet of electromagnetic energy. Each such note corresponds to a specific transit between electron shells of specific elements. The set of notes ranges freely up and down the electromagnetic spectrum, the way a player’s fingers can range freely up and down the neck of a violin to play different tones.”

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<sup>24</sup> Sources on the topic of molecular biology are many, and range from those with general appeal to the most-recent deep research results. General readers might try “Molecular Biology made simple and fun”, by David P. Clark, or “The Manga Guide to Molecular Biology”, by Masaharu Takemura and Sakura. Those readers wishing to investigate the field at a deeper level can read “Molecular Biology: Principles and Practice”, by Michael M. Cox, Jennifer Doudna, and Michael O’Donnell. Those wishing to sample the messy details of genetic engineering can track down a copy of “Short Protocols in Molecular Biology (2 volume set)”, by many contributors in the field.

This intrigues me. “It’s nature’s instrument! Not just a piano with fixed intervals, but any notes at all.”

She nods, laughing again. “A rich, continuous, unnumbered alphabet. Your astronomers extract its speeches from starlight. Each star sings different harmonies and discords. Each note maps to a specific element and a transition between electron shells of an atom of that specific element. Your astronomers can then determine what elements are in a star and burning to provide that star’s energy. It’s stellar decryption! The astronomer can create dynamic models of stars for predicting the evolution of stars of all kinds based on their constituency, their mass, and the nuclear reactions of their burning.<sup>25</sup> Modern astronomy!”

She exults. “And there is so much more! You have discovered the spectral variations in nuclear resonances. You look within the nucleus of an atom.”

“How does that work?”

“You learn the energies – the songs – of its radioactive decay emissions. These various notes of energies inform the nuclear physicist of the structure and dynamics of the interior of that nucleus. It’s nuclear decryption! The nuclear physicist can decrypt to create models of the atomic nucleus.”<sup>26</sup>

Again, the lovely Nightingale notes come to us.

*“...This is the Day of which it hath been said: ‘O my son! verily God will bring everything to light though it were but the weight of a grain of mustard seed, and hidden in a rock, or in the heavens or in the earth; for God is subtile, informed of all.’”<sup>27</sup>*

My eyes widen. *It seems we read our reality at all scales. And as we become literate in reality, we learn more and more to write it.* My angelic companion, laughing with delight, gathers herself into a spark of joy and disappears.

## **Astronomy and the Bahá’í Dispensation: An Aside**

The phoenix rumbles. “Now that your study of alphabets is concluded here, it is time to study time itself. Do you remember our visit inside the star, when we shifted the scale of time? Now we will look again at time, and what happens in half a million years.”

“Your own calendars of history are far too limited to encompass a half million years in any clear and accurate way. Even the greatest of them, such as the Mayan calendar with its Long Count of

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<sup>25</sup> Most readers can explore further with Kenneth R. Lang’s *The Life and Death of Stars*. Those more inclined to astrophysics can dig into Donald Clayton, *Principles of Stellar Evolution and Nucleosynthesis*, for the juicy, explicit details of stellar life.

<sup>26</sup> The investigating reader can find much concerning nuclear exploration at the U. S. Department of Energy’s Berkeley Laboratory Webpages, beginning with *The ABCs of Nuclear Science* at <http://www2.lbl.gov/abc/>. There, Chapter 6 of *Nuclear Science – A Guide to the Nuclear Science Wall Chart* explains nuclear energy levels, models, and measurement, at <http://www2.lbl.gov/abc/wallchart/teachersguide/pdf/Chap06.pdf>.

<sup>27</sup> Bahá’u’lláh, quoted by Shoghi Effendi in *The Dispensation of Bahá’u’lláh*, p. 107. Bahá’u’lláh Himself here quotes from the Qur’án, 31:16 (Luqman).

about 7885 solar years, reflect the brevity of past human history. All of your calendars are in constant need of adjustments. Gradual changes in the earth's orbit, the moon's orbit, and the orientation of the earth's axis evolve through great spans of time. In a half million years, many such changes will take place."

"Each solar day of your earth lengthens slowly over time, very slowly, to the tune of 0.0017 seconds per century, or 0.017 seconds per millennium. This makes an annual lengthening of the day of about 0.6 seconds per year. After 10,000 years, that's 6,000 seconds, making the day about 25 hours and 40 minutes long. After 100,000 years, the day comes out to 40 hours and 40 minutes in length."

I laugh. "That would call for a few extra meals each day, assuming that we haven't changed our dietary needs over that length of time!"

The phoenix rumbles with laughter. "And when finally you reach the end of the universal cycle at 500,000 years, each day is about a week long in contemporary terms. You will need some new ways of seeing your place and passage through time."

"Now I will show you a few of these natural 'calendar' markers of truly-long ages."

### *Galactic Time*

A flash in the darkness, we are no longer above the bridge, and a great sweep of stars and starlanes spirals in my vision. "Where are we?"

The phoenix says, "You are looking down at the disk of the Milky Way, and it is turning slowly. We are telescoping time to reveal its very-slow movement. This gives one of the longest intervals – the 'galactic year'. It's the immense time over which the entire solar system makes one complete orbit around the center of the Milky Way galaxy. There!"

A tiny spark gleams near a lane of soft-glowing dust. "Your solar system! It is orbiting the Milky Way center at about 143 miles per second in speed, which means that one complete circuit of the orbit takes about 250 million years. Such a huge span of time reaches back from your present to the beginning of what you call the Triassic Period, just after the mass extinction of biological life that marked the end of the Permian Period. Some of you theorize that such sweeping extinctions on earth may arrive with completion of these full orbits, but this is highly speculative at its very best. The galactic year reaches five hundred times beyond any relevance it might have to religion or science here."

It is a beautiful, stately sight.

### *Glacial Time*

Another flash, and we are now above a fast-changing earth, seeing swashes of white advance and recede around the poles. "You are seeing in an accelerated time perspective the shifting periods of glaciation on earth, in which the planet's surface temperature range varies from one supporting glacial ice sheets covering much of your temperate regions to one in which very little surface ice exists. These advances and retreats of glaciers take place over an approximate

100,000-year cycle, not considering any impacts from extinction events or human-driven heating processes. This cycle of intervals, five of which would span half a million years, seems closer to your area of concern, but it is too irregular to navigate time reliably. Glaciation is driven by many dynamic factors you don't yet fully understand."

"Do you understand them? Could we learn them from... you?"

That deep rumble again. "You humans like clocks, with their regularity, yes? This is not a good clock. There is a better one."

### *Precessional Time*

"Look at the axial precession of Earth's rotation, sometimes called the "precession of the equinoxes". The earth's axis changes its alignment with respect to the stellar background, rotating slowly, or 'wobbling', as the Earth spins so that the poles of earth's rotation appear to change place over a cycle of about 25,772 years in length."<sup>28</sup>

One more flash, and the earth now spins and wobbles like a toy top.

"What you now call the Pole Star will drift to where its rotation around the Earth's axis of spin will be more like that of other stars, and some other star will approach the still point of the axis of spin. After the completion of the 25-millennium-plus cycle, the Pole Star will appear in the sky as it did at the beginning."

"That sounds regular."

"Regular enough. You can work and play with this calendar. Nineteen of these steady precessional cycles almost span that half-million-year interval, and twenty such cycles constitute a period of about 515,000 years. That's just above the lower bound of time set forth by Shoghi Effendi for the duration of the Bahá'í cycle. This evokes a correspondence that might offer a speculative view of 'Abdu'l-Bahá's words regarding the Dispensation of Bahá'u'lláh, *'its duration hath been fixed for a period of one whole month, which is the maximum time taken by the sun to pass through a sign of the Zodiac.'*"

"Well... that's not a connection I can make, not yet."

"Your perspective is very limited. To see with universal vision is to clear away your restrictive assumptions."

"Assumptions?"

"First, you think in terms of a month lasting about one-twelfth of a year, or around 30 days. Also, you associate a sign of the Zodiac – a region of the sky about one-twelfth of the full circle of the heavens – with each 30-day month. You also assume that these regions of the sky are unchanging, and that you beings of earth will continue to see them over long timescales as you

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<sup>28</sup> Due to gravitational and geodynamic effects, the cycle of this 'wobble' of the earth's axis of rotation varies somewhat itself in duration over time.

see them now. None of these assumptions continues to hold over the thousands of years we are contemplating here.”

“That would make the birdsongs here give us incorrect information, wouldn’t it?”

“The birds sing what you can understand. Most of you do not bring the scientific vision to the birdsongs, not yet.”

An earlier statement comes back to me. “Oh, yes! I remember! You said that after 10,000 years our solar day will be over 25 hours long, and after 100,000 years, it’ll be over 40 hours!”

“Now you can see how much things change over immense periods of time. It makes most predictions harder to comprehend. You already know that over the course of the Earth’s axial precession, the tilt of its axis rotates in a full circle. This tilt affects the constellations in which the sun appears, in two distinct ways. First, it changes the constellation named as governing the Zodiacal period from one at a given celestial latitude to another at a different celestial latitude. Over the cycle, some of the northern zodiac constellations are replaced by southern ones at the same celestial longitude, and vice versa. This means that *the Zodiac itself changes* throughout the passage of this cycle of precession.”

“Second, it changes the seasons progressively – the seasons are driven by the axial tilt, which is slowly rotating. So for the sun to appear in the same celestial latitude *in exactly the same season* (celestial longitude) requires a full 25,772-year cycle of axial precession.”

”We are trying to hit a moving target in our understanding. Not only that, but 25,000 years covers more than all of past human history we know about.”

“Now do you understand the problem a bit better? Treat the great duration of the 25,772-year cycle as a single ‘day’. As a sign of an unending, sustaining flow of divine meaning, it unfolds a sense of the grandeur and infinite extent of the great cycle of the Revelation of Bahá’u’lláh. In the passage of just one such ‘day’, 25 millennium-long revelations, each of which is equivalent in duration to one of those in our human past, can be progressively unfolded to humanity.”

“Add to this Shoghi Effendi’s statement about the thirty days, that they *thus represent a culminating point in the evolution of this star*, and in our awareness the scope of the Revelation is magnified even further. A letter written on behalf of Shoghi Effendi mentions not only the immense span of time of the Bahá’í cycle but also offers a glimpse of even-greater impacts and reaches it may unfold.”

I hear the hummingbird’s wing-croon.

*“Regarding your questions: There is no record in history, or in the teachings, of a Prophet similar in station to Bahá’u’lláh having lived 500,000 years ago. There will, however, be one similar to Him in greatness after the lapse of 500,000 years, but we cannot say definitely that His Revelation will be inter-planetary in scope. We can only say that such a thing may be possible. What Bahá’u’lláh means by His appearance in ‘other worlds’ He has not defined, as*

*we could not visualize them in our present state, hence He was indefinite, and we cannot say whether He meant other planets or not....*”<sup>29</sup>

I sigh. “We are left with so many questions!”

The phoenix rumbles again, and now we track again the arc of the infinite-seeming bridge in darkness. “You now have just a glimpse into a human future so vast, fertile, potent, and diverse that as you stand poised, on this ‘cusp of historical time’, this ‘pinnacle ascended from your dark and turbulent human past’, you find yourselves and your world made altogether new. The universe awaits you. But first you have a few hells to deal with. Goodbye for now.”

## FALL 17

I am falling in emptiness once more, but this time the Nightingale circles around me, its caroling soothing my spirit..

*“This is the Day that shall not be followed by night, nor shall it be bounded by any praise, would that ye might understand!”*<sup>30</sup>

*“O Temple of Holiness! We, verily, have cleansed Thy breast from the whisperings of the people and sanctified it from earthly allusions, that the light of My beauty may appear therein and be reflected in the mirrors of all the worlds. Thus have We singled Thee out above all that hath been created in the heavens and the earth, and above all that hath been decreed in the realms of revelation and creation, and chosen Thee for Our own Self. This is but an evidence of the bounty which God hath vouchsafed unto Thee, a bounty which shall last until the Day that hath no end in this contingent world. It shall endure so long as God, the Supreme King, the Help in Peril, the Mighty, the Wise, shall endure. For the Day of God is none other but His own Self, Who hath appeared with the power of truth. This is the Day that shall not be followed by night, nor shall it be bounded by any praise, would that ye might understand!”*<sup>31</sup>

*“Know thou that every created thing is a sign of the revelation of God. Each, according to its capacity, is, and will ever remain, a token of the Almighty. Inasmuch as He, the sovereign Lord of all, hath willed to reveal His sovereignty in the kingdom of names and attributes, each and every created thing hath, through the act of the Divine Will, been made a sign of His glory. So pervasive and general is this revelation that nothing whatsoever in the whole universe can be discovered that doth not reflect His splendor. Under such conditions every consideration of proximity and remoteness is obliterated.... Were the Hand of Divine power to divest of this high endowment all created things, the entire universe would become desolate and void.”*<sup>32</sup>

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<sup>29</sup> from a letter written on behalf of Shoghi Effendi to an individual believer, December 24, 1941, quoted in *Lights of Guidance*, p. 473.

<sup>30</sup> Bahá'u'lláh, *The Summons of the Lord of Hosts*, p. 34/para. 63.

<sup>31</sup> *ibid.*, pp. 33-34.

<sup>32</sup> Bahá'u'lláh, *Gleanings from the Writings of Bahá'u'lláh*, XCIII.