

A HALF MILLION YEARS

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

The trace of our journey so far has grazed the realms of language, of metaphor, of mathematics, of cosmology, astronomy, and astrophysics, of biology, and more. Now we can bring this trace's elements together to investigate an extreme example of the dance of religion and science.

The scales of our earth's history, change, and destiny reaches far outside the scales of our everyday lives, but we work to reconcile it all in our minds and hearts. We do not usually think of religion as having the reach of geological or astronomical eras. We think of religion as interpenetrating and shaping our daily lives.

But we can think on many scales. Why not extend our understanding of religion's true grandeur, even as we let its intimacies reassure us?

First, we look at this deeply-challenging passage from *The Dispensation of Bahá'u'lláh*, by Shoghi Effendi:

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: '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 when attaining that station shineth in the

¹ See more about this document, including an alternate version, at bahai-library.com/paxson_half_million_years

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.²

Compare this half-million-year time interval with that reaching back to the era of Zoroaster roughly three thousand years in our past. Such a bold comparison, such a drastic contrast of orders of magnitude of time!

Background

Readers often find the final statement of the duration of the Bahá'í cycle baffling in this passage, especially concerning how it might be reckoned, but more especially concerning how staggering is its claim. Responding to a query via his secretary, Shoghi Effendi's response to a query clarifies the above statement:

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*³ 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.

A clear reaffirmation, but following it comes an even-greater claim:

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.

Shoghi Effendi goes on to explain the key idea illuminating these points: the coming of age of our species in the universe.

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

² From Shoghi Effendi, *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.

³ 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.

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.⁴

In every way that is humanly conceivable, we stand on the threshold of the entire cosmos.

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. The inquiring reader is left with bewilderment both at the shifting base on which these intervals are interpreted and at the distinct difference between the simple treatments of the first two Dispensations and the more-complex treatment of the Dispensation of Bahá'u'lláh.

To treat the half-million-year interval as a merely-physical measure is to overlook its richness and inner potency. To gain a fuller appreciation of its living meaning we will attempt to explore its interconnections of the physical, the metaphorical, the calendric, and the spiritual. We'll close our introduction of the theme with one more view.

Setting the stage, an essay by Y. A. Ioannesyan, *Reflections on Some Messianic Prophecies in Shaykhi Works*⁵, provides an excellent starting point and much clarifying insight. Ioannesyan offers a quote from the following letter, in which the differentiated method of interpreting time periods employed for this prophecy is explained as follows:

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 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

⁴ Shoghi Effendi, from a letter dated 14 November 1935 written on his behalf to an individual believer.

⁵ From "Reflections on Some Messianic Prophecies in Shaykhi Works", by Y. A. Ioannesyan, in the collection titled *Lights of 'Irfán*, Book Eleven, p. 21 ff.

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.⁶

In this passage, Shoghi Effendi states clearly that 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’. He goes on to make an assertion, even more remarkable than that of the half-million-year span he asserted elsewhere, that the thirty days “represent a culminating point in the evolution of this star.” The word ‘star’ here appears in one sense to refer to the physical sun around which our earth orbits. The implications of this observation, so easy to overlook in reading, reinforce the understanding that the Revelation of Bahá’u’lláh, now beginning its unfolding, is paramount both in the greater worlds of God and in our familiar world, considered across the entire multibillion-year span of the earth’s existence.

This point is reinforced throughout the Bahá’í Writings. In Bahá’u’lláh’s Words, ‘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.’⁷ A letter written on behalf of Shoghi Effendi states clearly, ‘There are no Prophets, so far, in the same category as Bahá’u’lláh, as He culminates a great cycle begun with Adam.’⁸

That the terms ‘dispensation’ and ‘cycle’ are not used with interchangeability indicates to us that we must consider their relationship carefully in what follows. It should be sufficient for now to observe that the Dispensation of Bahá’u’lláh appears to refer here to the culmination of the cycle begun with Adam and carried through the dispensations of all of the subsequent prophets through Muhammad, and onward from our time until the appearance of another Manifestation of God, not before the passing of at least another thousand years.

Science, Religion, and Time

Interpretation of scriptural time periods relies on seemingly-arbitrary shifting scales and placements of time intervals. To a reader schooled in contemporary science, such interpretations lack any apparent rational basis for their meaning, seemingly relying on the desires of the interpreters to make the scripture resonate with their own ideas of what the meanings should be. Given the numerous 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.

But if religion and science must be consistent, how can this evident inconsistency of understanding be resolved? Three concerns present themselves.

⁶ 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.

⁷ Quoted by Shoghi Effendi in *The World Order of Bahá’u’lláh*, The Dispensation of Bahá’u’lláh, pp. 103-104.

⁸ 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.

First, the many commonly-known religious interpretations of time and prophecy often seem contradictory and of little or no use. Examples illustrating the problem are superabundant in history, and there is no need to attempt a list of them. Wars have been fought over clashing beliefs concerning the times and conditions of the appearance of prophesied events.

Second, our views into religion may be flawed. Examples abound here as well. We humans generate an appalling volume of ecclesiastical rubbish: traditions, textual alterations and perversions, tortuous exegeses, contentious diatribes and attacks, all of which obscure, even smother, the original revealed texts and principles of their sources. Yet certain views of time and its interpretation among scholars reveal consistencies of reckoning that suggest careful evaluation.

Third, our science is incomplete. Many would assert that science may be incomplete but that its incompleteness does not significantly invalidate its received interpretations. This overlooks the great changes that overtook science in the 19th and 20th centuries with the advent of relativity, quantum mechanics, molecular biology, and advanced mathematics. By the end of the 20th century, much of the accepted science of the 19th century and before had been set aside except as a pedagogical initiation into its many deep and subtle fields of specialization.

Some would also assert that the incompleteness of science is far removed from the same kind of falsehood and contention that afflict religious belief and dogma. No one has ever fought wars over science, except over suppression and perversion of its knowledge and power in order to serve the purposes of the powerful.

One must admit that there have been deeply-contentious struggles among scientists that prompted Thomas Kuhn's observations in *The Structure of Scientific Revolutions*⁹. As the religious read scriptures, the scientists read the physical realities; misreading happens to us all, and even though scientists can and do rely on phenomenal evidence to disprove an idea, the interpretation of that evidence can be a fragile process.¹⁰

But everyone must still concede that science, properly practiced, is our very best means of reading and advancing our physical reality. Furthermore, 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? 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 our physical world. Orders of magnitude are no obstacle to science; they are its commonplace tools of comprehension.

Another powerful aspect of science is its ability to trace and connect distinct manifestations of evidence concerning a single event or an ensemble of events. To do so sometimes uses time

⁹ Thomas Kuhn, op. cit.

¹⁰ Nassim Nicholas Taleb has written extensively on this point.

intervals to fix relationships between pairs of events and the evidences they leave behind. For example, if two pulses of light arrive in a telescope exactly 1.723 seconds apart, and hours later two bursts of cosmic rays arrive in a detector spaced the same, one might infer a connection between light rays and cosmic rays that is worth exploring.

Such connections appear in many patterns in human history.

Dispensation and Conservations

Three calendric time periods mentioned earlier are 1,000 years, 20 years, and in excess of 500,000 years, falling clearly in three distinct orders of magnitude. Each represents the duration of a separate and distinct religious epoch, the three falling in a time sequence unbroken from the first through the last. The first two are defined as ‘dispensations’. What is a religious dispensation? 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. The third is defined as a ‘cycle’: a greater interval embracing a series of dispensations. As quoted above, Shoghi Effendi makes clear the distinction: “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”. In the case of the Dispensation of Bahá’u’lláh, we consider the duration of the entire cycle within which a succession of Manifestations appears, beginning with Bahá’u’lláh Himself.

But each new religious dispensation brings change, fiercely resisted by many who occupy positions of power and influence. Bahá’u’lláh writes in the *Kitáb-i-Íqán*:

... 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.¹¹

Let us suppose for a moment that a ‘conservation law’, analogous to those proven in physics, applies to the energies and durations of these dispensations. If we use the 1,000-year period as a metrical standard, it can be seen as an order-of-magnitude approximation for the period between

¹¹ Bahá’u’lláh, *Kitáb-i-Íqán*, pp. 14-15.

renewals of divine knowledge in the human world - along the lines of a regular, global course of study in the process of the education of the human species.

At the completion of such a period, 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.

Given the common general period of 1,000 years between changes of dispensation, one who predicted duration on the basis of past regularity would have expected the Báb's Dispensation to have a duration of a similar magnitude, 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, we see that there is nothing at all linear or regular about this series of intervals.

We might search across some of the different ways to see this nonlinear pattern in any orderly way. It appears at first glance almost random, arbitrary. 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. The comfort of simple, consistent patterns is abruptly denied us. When we open our gaze to the nonlinearities of both religion and nature, we can embrace the grandeur and majesty of both.

A first observation: Major differences distinguish the revelations of the Báb and Bahá'u'lláh from all those of past human ages, for example, their voluminous *written* character expressed through the pens of their two Authors, via their own Hands moved directly by revelatory information. This difference has no known historical precedent, not even in Islam. The presence of such written revelatory material magnifies and preserves the pure, transformative energies it brings into our world.

Such a difference links directly to the Covenant of God as expressed in each dispensation. In past dispensations, due in part to the lack of recorded conferral of authority by the dispensation's Author, and due in part as well to the lack of maturity of humanity in past times¹², 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.

A second observation: The Dispensation of the Báb is intimately linked with that of Bahá'u'lláh following close after it. The vast upheavals arising from the explosive release of transforming energies by the Báb in His copious writings and addresses testify to the unprecedented level of those energies.

¹² 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."

A third observation: 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, in *God Passes By*, 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. Such a distinction prompts the beholder to consider how vast a time scale might be needed in order to unravel the astonishing range of knowledge contained in what Bahá'u'lláh has revealed – a range that attests to the emergence of humanity into its stages of maturity.

We return to science for some resonant parallels and illuminations.

The Process of a Supernova: Timescales

The above observations concerning energies and volume of information suggest nonlinear patterns of change and advancement. Such patterns are common in physics and other branches of science: additive growth, polynomial growth, exponential growth, and others. An extreme example from astrophysics, its processes and models explored, developed, and validated in the 20th century, illustrates the most-nonlinear kinds of growth and change. What follows is a fairly-detailed account of this illustration and its outcomes. We shall see how the twin Revelations of the Báb and Bahá'u'lláh can evoke consideration of the collapse and explosion of a mighty star.

For a star 25 times the weight of the Sun, its native hydrogen burns (fuses) into helium on the scale of ten million years, its helium on the scale of one million years becomes mainly carbon, the carbon burns to heavier elements in about a thousand years, and the remaining elements – neon, oxygen, silicon, and other of similar weight – fuse in less than three years. During all of these fusions, the energy released provides 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 in the end, the process leaves only nickel, cobalt, and iron. 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. The star's collapse follows.

The collapse takes only *milliseconds*, with the outer part of the star's core speeding inward at a quarter of the speed of light. So much energy is generated in the collapse that the star's matter compresses tightly and rebounds, in the process fusing some of the iron, nickel, cobalt, and any remaining lighter nuclei further into all of the remaining heavier elements. These elements we find on Earth. They are the building blocks of material existence, the alphabet of nature's discourse.

For the purpose of improving our understanding of timescales, consider the orders of magnitude of time involved in the supernova process. They range from over ten million years at one extreme to a few milliseconds at the other: roughly 17 orders of magnitude (multiples of ten). Since a natural sequence of processes involves such staggering differences of timescale, it is reasonable to consider that a human, historical sequence of processes can do something much the same. We chart human history in the context of natural history and geological history in a similar

way: On Earth, life has existed for over four billion years, land life for half a billion years, human life for half a million years, and historical record for a few tens of thousands of years, with modern human records dating back only a few thousand, and the explosion of modern human knowledge only a few centuries. From a billion to a hundred spans seven orders of magnitude in time.

It should be clear that timescales are far from uniform when viewed in the perspective of the order of the processes of existence. Some processes taking great swaths of time connect directly to others taking almost no time at all, yet both are inseparable parts of a great chaotic, dynamic flow of development and change. Once this insight is understood, the efforts by the prophets and the wise to lay out the order of human processes of change can be seen more clearly as using orders of magnitude instead of calendric time to mark the relationships of events and processes.

The Process of History: Timescales

Now to draw back and survey the timescales of the history of the three revelations as cited 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 Dispensation of Bahá'u'lláh: 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, with 1,000 years or 100 decades in the middle range about three orders of magnitude smaller than the long interval. We have good scientific basis and validation for our models of stellar evolution in nature – what insights, whether metaphorical or natural, can we find for understanding 'Abdu'l-Bahá's assertion concerning the duration of the Bahá'í Dispensation?

Two varieties of process come to mind: the cyclic and the transitional. Cyclic processes in a system, such as a heartbeat or a series of courses of study in a subject, imply a homeostasis or dynamic balance that keeps the process repeating. 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.

In a transitional process, sufficient energy is stored up from the recurring cyclic processes preceding it to begin the transition, overcoming the forces sustaining the dynamic balance of the cycles. The release of this stored energy takes place over a comparatively-brief timescale, disrupting the balance completely and shifting the system into an entirely-distinct state and process. The supernova explosion described earlier illustrates the point. Modern physics treats such processes as parts of the dynamics of chaos and equilibria, which we have seen briefly here earlier¹³.

The Revelations of the past, dating from earliest recorded history to the 19th century, appear to us as cyclic processes each 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. The cycles were of the order of 1,000 years, and the transitions from their

¹³ The section titled **Two Misperceptions** characterizes chaotic dynamical systems having both cyclic and transitional behavior.

predecessors shared similar patterns: revelation, obscurity, persecution, promulgation, acceptance, advancement, decay, and eventual replacement.

Evidence we are seeing here shows us that this pattern has now undergone a major transition of far greater power than ever before, one that has replaced not only the most-recent cycle of that pattern but the entire pattern itself. The energies required for such a transition are staggeringly greater than those of the past transitions in the cyclic process of the past.

Given this demand for energy of change, the outpouring of information from the Revelation driving that change is necessarily commensurate. More detail on the third observation made above clarifies the situation. The Holy Qur'án was one single volume of 6300 verses. By contrast, concerning the Revelation of Bahá'u'lláh, Shoghi Effendi writes:

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.¹⁴

Moreover, concerning the Revelation of the Báb, Bahá'u'lláh Himself writes:

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.¹⁵

The Báb Himself clarifies the scale of His own work:

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.¹⁶

When we combine the vast outpourings of the Báb and Bahá'u'lláh from their stations as the Twin Manifestations, we can see that any timescale to be applied must be correspondingly huge.

What does all this have to do with a star gone supernova? Some readers may have already seen the connection. In the collapse, the “rolling-up” of the old world order, we can see the utter

¹⁴ Shoghi Effendi, *God Passes By*, XII, p. 220.

¹⁵ Bahá'u'lláh, *Kitáb-i-Íqán*, pp. 199-200.

¹⁶ The Báb, *Selections from the Writings of the Báb*, in the section titled “The Persian Bayan”, VI, 11.

obliteration of the former structures and dynamics of our long human past; in the moment of greatest collapse we can see in the Revelation of the Báb the formation of the entire ‘alphabet’ of the elements¹⁷ of the new world order, and in the explosion of the Revelation of Bahá’u’lláh we can see the full, radiant efflorescence of all of the elements of that new order being spread out before us.

When the Báb gave His estimate of having revealed 500,000 verses, it 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 referred to here. The Prophet Muhammad revealed a total of around 6300 verses in all, and His Dispensation lasted for around 1260 years. 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 appreciate better what we are grappling to understand we must now turn again to the only comparable realm in our world: the astronomical. In doing so, we will leave for additional astonishment the consideration of the even-greater volume of the revealed works of Bahá’u’lláh.

The Process of Space: Timescales

Once we leave the comfortable nest of our earth to ‘traverse the expanse of heaven’¹⁸, the very meaning of time becomes transformed. We 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? We count our year as the earth’s circuit of its solar orbit, but the year on Mars is longer. We mark our seasons by the ridings of the sun in warming our fields and forests. We count our months by the phases of earth’s moon.

We are cradled on our planet – but we are preparing, in this extraordinary age, to leave it.

What do we call a day or a month on Titan, circling Saturn? What do we 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.

And when we sail at last away into interstellar space, in which our nearest stellar neighbor, Proxima Centauri, is over 25 trillion miles from the sun, how do we measure the passage of time? Indeed, can we even live in such an expanse in the same timescale as here on earth, in which our seconds are heartbeats? Our current space vessels seem like matchstick rafts with

¹⁷ There will be more on this point in the upcoming section titled **The Coding of Realities**.

¹⁸ 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.”

toothpick oars in such immensity. To travel between stars at the maximum speeds we 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 deceleration¹⁹.

800 years is ten times a normal human lifespan, so to keep our hearts from wearing out, they would need to beat once every ten seconds. On the trip to Proxima Centauri, in effect, we have multiplied the duration of our 'second', as measured by the human heart, by a factor of ten.

The sacred scriptures of the past do not contemplate such questions, simply because there was no need to do so. But in this age of light, we confront the need. Now that we are thinking in terms of a half-million years, we are capable of contemplating our universe's great variety and richness even in the details of its complex and bewildering rhythms. We are on our way outbound, but we have much work ahead of us. With prescience, Bahá'u'lláh writes:

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.²⁰

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.*

We scan and connect the inscriptions of our universe. Both religion and science, practiced at their best and most-elevated levels, offer us the pathways to decrypting, unpacking, and comprehending these inscriptions. 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 (MRI) scan of a human brain, a divinatory hexagram of the *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*. We are human. We strive to read reality. We make mistakes – often we misread, or we attempt to read meaning into gibberish – but we learn and advance past our mistakes. This is what humans do.

¹⁹ 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 before we pack our bags for the stars.

²⁰ Bahá'u'lláh, *The Hidden Words of Bahá'u'lláh*, Arabic No. 40.

We usually consider alphabets, abjads, and written sets of symbols representing human language as the real tools of human representation, leaving aside those representations that come to us from nature: a light burst, a diffraction pattern, a molecular structure, an atomic nucleus, an evolving weather pattern, and so much more. But human representations in our alphabets and natural representations in atoms, molecules, spectra, and more are themselves members of a greater class of expressions performed using compositions of elements. Each type of element comprises a letter used in the transcendent orthography of meaning: the ordered flow of information from the greater world to ours.

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 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 this²¹ (Figure 1):

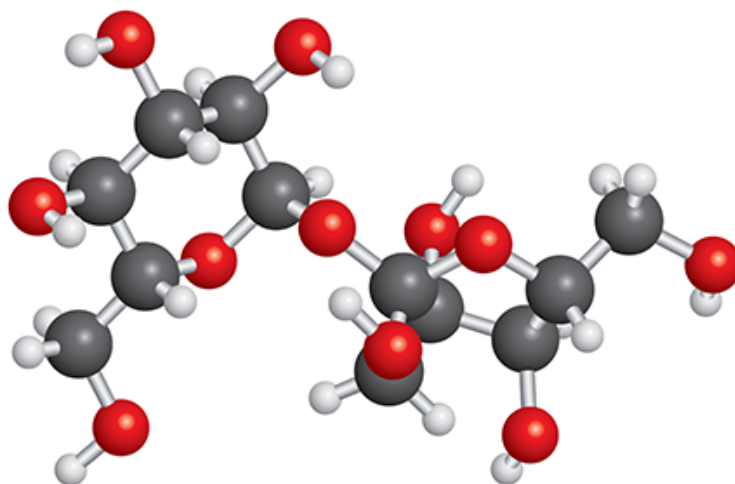


Figure 1 – Sucrose molecular model

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.

All the same letters appear in the words 'live', 'evil', and 'vile', but they all very mean different things.

²¹ Taken from <http://igoscience.com/sucrose-sugar-molecule-ball-and-stick-vector-model-c12h22o11-v1/>.

The world of nature is spelled out for us 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

There are metaphorical bridges connecting: 1) nature's 'alphabet' – the full range of chemical elements formed in the forge of stellar explosion; 2) the human alphabets – the various sets of letters and symbols we use to form words and ideas; and 3) the greatest alphabet, subsuming these two and all others – the unending flow of utterance of the information that orders and sustains all things. We begin with a passage from Bahá'u'lláh, referring to the Báb's Revelation:

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'im²² shall 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.²³

The extremely-brief duration of the Báb's Dispensation in which the formation and explosion of meaning took place mirrors the extremely-brief period during which the formation of the majority of the natural elements happens in stellar evolution. More specifically, 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

²² ‘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 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 Miḥdí, 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.

²³ Bahá'u'lláh, *Kitáb-i-Íqán*, pp. 224-5.

with all of the elements beginning with hydrogen, comprise the initial stellar ‘alphabet’ of elements: another nice metaphorical resonance.

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.²⁴

From this alphabet of physical elements, much of the perceptible matter in the universe is composed. 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 our material world are written out. With such extensions to the capacities of the realm of nature, and in our metaphor to those of the greater realm as well, how incomparably great are the possibilities!

There exists a similar mirroring metaphor when we examine the genetic codings of deoxyribonucleic acid, or DNA. DNA is comprised of a long pair of molecular strands holding nucleic acids, or nucleotides. There are only four such nucleotides: alanine, cytosine, guanine, and thymine. In RNA, the single-strand form transcribed from DNA, uracil replaces thymine. As the single strand is translated (decoded) for the construction of a living organism, the decoding process uses each 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 since some codons produce the same amino acid, these 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’.²⁵

We have now seen the alphabet of atoms that make up the infinite volumes of molecules and molecular structures, and we have also seen the alphabet of genetic codes that make up the infinite varieties of forms of life. 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 Creator.

²⁴ 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.

²⁵ 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.

We can view the revealed knowledge granted us in the divinely-bestowed Revelations as enriched and elevated tiers of meaning from the same source of information. From the potentials released by the profuse combinations of written and spoken letters, revealed and released in all their varied and glorious formulations into the world of humanity, we can begin to see the far-more-vast compositions of divine knowledge – pure information – being poured forth in this universal cycle of Bahá'u'lláh. It is important here to view a ‘letter’ not just as a single written symbol but rather as a token of meaning, whether expressed in a single character, in a word, in a phrase, in a sentence, in a verse, or in an entire document. Each of the great teachings revealed to humanity can be considered as such a token of meaning.

Decrypting Reality

From past ages in which only a few people in a society understood the patterns of the world around them, we have come in our time almost suddenly into a global society in which everyone can gain great understanding of those patterns. We are decrypting our world: making plain what is hidden. We are discovering the subtlety and richness of this task.

No cipher alphabet we invent seems adequate. As soon as we create a periodic table of all the chemical elements, hosts of questions spring up; we go on to create a table of subatomic particles to expand the periodic table into a table of the nuclides; then we burrow into the world of these particles to unfold quarks and bosons.

Likewise with our grasp of the tetrad of bases of DNA: alanine, cytosine, guanine, and thymine. We see these four ‘marks’ or ‘strokes’ of molecular chemistry; we see them forming triplets, or codons, the ‘alphabet’ for forming the 21 amino acids essential in living creatures; we witness the assembly of the amino acids into all the varied living tissues.

Our alphabets proliferate. 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.

These notes comprise a rich alphabet. Using it, astronomers extract from starlight an electromagnetic spectrum that shows for each star the notes that star is singing. Each note maps to a specific element and a transition between electron shells of an atom of that specific element. The astronomer can then determine what elements are in a star and burning to provide that star’s energy: stellar decryption. In this decryption process, the astronomer creates 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.²⁶

²⁶ 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.

Using the same electron alphabet of energy transitions, the chemist develops and applies models that predict the shapes and behaviors of molecules in their interactions and reactions.

The spectral alphabet of electrons has a counterpart in the spectral variations in nuclear resonances. We can look within the nucleus of an atom by studying the energies of its radioactive decay emissions. These energies fall into levels that inform the nuclear physicist concerning the structure and dynamics of the interior of that nucleus: nuclear decryption. In this decryption process the nuclear physicist creates models of the atomic nucleus.²⁷

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.’²⁸

With widening eyes, we read our reality at all scales. And as we become literate in reality, we learn more and more to write it.

Astronomy and the Bahá’í Dispensation: An Aside

What natural, physical intervals suggest themselves in our search for meaning in this 500,000-year assertion? Periodic occurrences in astronomical and geological timescales often serve to mark events and projections in human history and prophecy.

Our own calendars of history have become 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 about 7885 solar years, reflect the brevity of past human history. All of our calendars are in constant need of adjustments as 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.

For example, each solar day 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. That would call for a few extra meals each day, assuming that we haven’t changed our needs over that length of time!

And when finally we reach the end of the universal cycle at 500,000 years, each day is about a week long in contemporary terms. We need some new ways of seeing our place and passage in time.

²⁷ 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>.

²⁸ 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).

Moving out from our familiar solar and lunar years, months, and days, here are a few of these natural ‘calendar’ markers of long time.

Galactic Time

We begin with what may be the longest interval that carries any relevance for events on our earth, the “galactic year”: the immense time over which the entire solar system makes one complete orbit around the center of the Milky Way. Our solar system 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 our present to the beginning of the Triassic Period, just following the mass extinction of biological life that marked the end of the Permian Period. Some authors have theorized that such sweeping extinctions on earth may arrive with completion of these full orbits, but work in this area is highly speculative at its very best. The galactic year reaches five hundred times beyond our consideration of any relevance it might have to religion or science in our present exploration. That’s far too long for us.

Glacial Time

The next range of intervals to consider are the somewhat-irregular periods of glaciation on earth, in which the planet’s surface temperature range varies from one supporting glacial ice sheets covering much of our current 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 our area of concern, but it lacks a reliable fixed period of nature by which to navigate time. Glaciation is driven by many dynamic factors we don’t yet fully understand.

Precessional Time

Third, we examine a steadier calendar cycle: 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 our rotation appear to change place over a cycle of about 25,772 years in length²⁹. This means that what we 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 cycle, the Pole Star will appear in the sky as it did at the beginning.

We can work and play with this calendar. Nineteen of these steady precessional cycles almost span the half-million-year interval, and twenty such cycles constitute a period of about 515,000 years – 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 the Master’s

²⁹ 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.

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.'

Now we map each precessional cycle to a day, and each 500,000-year period as a month – but this gives us about 20 'days' in our speculative 'month'. The combination does not map to our customary understanding of the relationship between month and day.

This view derives from combining the Earth's axial cycle of precession with the 20-year duration of the Báb's Dispensation.

How is this step to be justified? Referring back to the vast outpourings of knowledge revealed by the Báb and Bahá'u'lláh, only such a great timescale makes any sense in the context of progressive revelation over the course of human history. Bahá'u'lláh makes the power of the outpouring clear in passage after passage, for example:

The world's equilibrium hath been upset through the vibrating influence of this most great, this new World Order. Mankind's ordered life hath been revolutionized through the agency of this unique, this wondrous System—the like of which mortal eyes have never witnessed...

Immerse yourselves in the ocean of My words, that ye may unravel its secrets, and discover all the pearls of wisdom that lie hid in its depths.³⁰

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.

Caution

But from the original passage cited, 'Abdu'l-Bahá's words, Shoghi Effendi's assertion, and this cycle do not seem mutually consistent at this stage³¹. One can see that a month of 30 days or so seems unsuitable for any possible resolution of the problem using the cycles we have chosen here, even though it is consistent with contemporary views on the movement of the sun through a sign of the Zodiac: 30 days x 12 signs = one year, roughly speaking. Furthermore, Shoghi Effendi has cautioned us about looking at such possible resolutions too literally. From a passage of his quoted earlier:

³⁰ Bahá'u'lláh, *Kitáb-i-Aqdas*, by p. 85.

³¹ The author hopes that his seeming brashness in attempting to elicit some harmony from these distinct evidences may be excused! We are just at the dawn of this amazing age, and it is certain that understanding will advance well beyond anything presented here.

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.

Even so, his explicit mention of the 500,000-year interval presents itself as an opportunity to reflect and explore – and to marvel. In doing so we may gain a deeper appreciation of both religion and science.

For the sun to return in the same season to the same place in the slowly-cycling Zodiac, the 25,772-year cycle is required, but the 30-day month offers no sensible pattern that approximates the assertion of Shoghi Effendi, 'From a physical point of view, the thirty days represent the maximum time taken by the sun to pass through a sign of the zodiac.' Note his use of the word 'represent', which appears to uncouple "thirty days" from its literal meaning.

Note that 'Abdu'l-Bahá lived in the time when the calendars of the human world were (as they still are) in a state of transition. At the moment of His writing the quoted words to a Zoroastrian individual, a form of the new Badí Calendar was already in effect in the Bahá'í world. In that calendar each month has 19 days, and the year consists of 19 months with four or five Intercalary Days inserted: 19 months plus a fraction.

The Báb's Dispensation lasted from 23 May 1844 until 29 April 1863, just under 19 years by the Western solar calendars, and about 20 years by the lunar calendar of Islam in use at the time of the Báb's Declaration.

The Precessional 'Day'

Physically in mundane terms, the sun moves in its position against the stellar background through the twelve constellations of the Zodiac in an annual cycle. We are not considering the situation in purely-physical terms – to gain consistency of viewpoints we must integrate our physical understanding with that of prophecy and metaphor. We can take a step toward discernment by applying the terms 'day' and 'month' on a scale and in a fashion befitting both the Revelations of the Báb and Bahá'u'lláh and the vast sweep of time we are contemplating. On that scale, the Zodiac itself changes in cyclic fashion.

We can consider each 25,772-year cycle as a 'day' in the following manner. In such a cycle, the earth's axis rotates (or wobbles) in one full circle, during which the seasons drift through the complete solar cycle of months. This drift of seasons takes place because the changing axis of the earth's rotation also shifts the timing of the solar exposure changes – the seasons – of any point in the northern or southern hemisphere. This means that after a quarter of the cycle, the seasons will have shifted by one, after a half of the cycle, summer and winter will have been interchanged, and after a full cycle, the seasons will be back in their original relationships with the solar calendar. Only then will the first day of spring again fall on the calendar date that it did over 25,000 years earlier.

In the course of this cycle of axial rotation, the earth's axis shifts so that the stars nearest to the unchanging point in the sky – the 'pole stars' – also change. From an astronomy course Web page:

While the Pole Star in the northern hemisphere is now Polaris, in 3000 B.C., the north celestial pole coincided with Thuban, a star in the constellation of Draco. In 14,000 A.D. Vega, in Lyra, will be the northern pole star.³²

An aside: given the long duration of this cycle, however, one finds that the stars themselves move individually in the sky in different directions, so that the night sky never finds the same exact configuration of stars when the cycle returns to its starting point.

After the full cycle, the seasons will be back in their original timing, and the sun will have returned to its same position in Earth's sky in the same season as at the start of the cycle. At that point, the first day of spring will occur with all the stars in the same approximate orientation they were in 25,772 years earlier.

This full cycle could be considered a 'precessional day', in which the sun stands in the same position in the same exact point in the solar calendar at the start and end of the cycle, just as in the cycle of any ordinary day.

A 'Month' of 'Days'

Corresponding to the 20 lunar years of the Bábí Dispensation, a span which can be viewed as a month of days in the Badi' calendar, we can treat or map each such lunar year as a precessional day. This mapping parallels many others similar to it in traditional prophetic usage. To requote from Shoghi Effendi:

As to the third Dispensation—the Revelation proclaimed by Bahá'u'lláh—inasmuch as the Sun of Truth 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.

Calculating time the interval for 20 such 'days', we finally arrive at 515,000 years, quite near Shoghi Effendi's lower bound of 500,000 years, and sufficient to include the duration of all the Dispensations of our past.

A reflection concerning the length of the 'day' signifying such a lengthy period of time comes to mind. In the Súriy-i-Haykal (Tablet of the Temple), Bahá'u'lláh writes:

This is the Day that shall not be followed by night, nor shall it be bounded by any praise, would that ye might understand!³³

³² From http://www.astro.cornell.edu/academics/courses/astro201/earth_precess.htm. The changes in stars nearest the poles are listed in many places, and the current Wiki page on axial precession (as of February 2017) gives a good discussion: https://en.wikipedia.org/wiki/Axial_precession .

³³ Bahá'u'lláh, *The Summons of the Lord of Hosts*, p. 34/para. 63.

This allusion concludes a verse of much-greater scope than any astronomical, worldly significance can attain:

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!³⁴

In this passage, it is clear that no earthly temple or being is referred to, just as no earthly day or duration is referred to. In order to develop appreciation of the duration of the Bahá'í Dispensation on earth, we turn to one other passage in the Writings of Bahá'u'lláh, one which offers the means by which the greater world's meaning can be discerned in the signs manifested in the physical realm:

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.³⁵

Appreciation

Thus the great duration of the 25,772-year 'day', treated as a sign of an unending, sustaining flow of divine meaning, unfolds a sense of the grandeur and infinite extent 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. Also, 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, stating this:

³⁴ *ibid.*, pp. 33-34.

³⁵ Bahá'u'lláh, *Gleanings from the Writings of Bahá'u'lláh*, XCIII.

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.³⁶

The speculative exploration of the original quotes offered in the present essay is internally consistent, although it incorporates elements from diverse contexts. It also offers a rather-attractive integration and harmonization of the scientific, spiritual, and human aspects of the Revelation of Bahá'u'lláh.

Best of all, it offers a glimpse into a human future so vast, fertile, potent, and diverse that as we stand poised, on this cusp of historical time, this pinnacle ascended from our dark and turbulent human past, we find ourselves and our world made altogether new. Now, the whole universe beckons.

³⁶ from a letter written on behalf of Shoghi Effendi to an individual believer, December 24, 1941, quoted in *Lights of Guidance*, p. 473.