CHAPTER THREE

COLLAPSING TESTS OF TIME

It would appear that someone has stolen the rocks of the Earth. In North America, 35 epochs, comprised in 250 rock formations which are formed of a great many less thick and distinct strata, have been recognized as composing the geologic column back to the "beginning of life," the Paleozoic of 570 million years ago [1]. [Lately a billion years.] The Pre-Cambrian before this is thought to have consumed 2,000 or perhaps even 4,000 million years [2].

But the formations are never present for inspection in one place. If every different stratum that was ever labelled were heaped up in its maximum deposited thickness, the pile would tower into the stratosphere. According to the accounts rendered of the world Geologic Column, there should be 400,000 feet or 80 miles thick of sediments [3]. Furthermore, the heap should cover the whole globe, unless somebody else has been digging rock from the oceans and carrying it up the continental shelves For the ocean bottoms are scarcely sedimented [4]. And they are of a different rock than the continents. "In the whole of geophysics there is no other law of such clarity and certainty as...that there exist two preferred levels in the Earth's crust."[5] Or perhaps someone has been burning sediments to make granites for the sial. The origins of granite are mysterious [6].

If this seems to be nonsense, the nonsense may be in the idea, not in the telling. There is no such heap, no complete geologic column. And a geologist would be foolhardy to defend its historical presence.

Eighty miles up is 75 miles above Mt. Everest. Eighty miles down probably everywhere on Earth, one has passed through the plutonic rocks, is well beyond the critical Moho discontinuity, and is deep into the molten mantle.

To account for all such presumed material, one would have to be an extreme catastrophist. For, allowing that continental land (or sial) covers only 40% of the globe and the sediments lay on the average only 4 miles thick upon the 20 mile thick sial, which is one-fourth of 80 miles, then 4/80 of 40/100 = two per cent. Ninety-eight per cent of the Earth's sediments have disappeared.

There is a kind of saving argument which is, however, self-defeating. The layers added together to reach 80 miles are of known maximum deposits, not average ones. Sheer guessing might halve the maxima, making the total column 40, not 80, miles in height. So the 2% would become 4%. Then 96% of the sediments are missing. Adding abyssal sediment would hardIy matter.

These crude estimates are perhaps adequate to solve the mystery of the great land robbery. Half of the stolen sediments were never there. Great forces, operating in short periods of time, have fluxed the crust of the Earth so thoroughly that a great many strata of false identity and false age have been created. The other half of the sediments was stolen by "Uranus Minor" and stashed away on the Moon: the method will be explained in Chapter 7.

RAPID SEDIMENTATION

Rates of sedimentation are usually estimated on the basis of contemporary rates. Allowances are made for demonstrable past events but these are interpreted on gradualist lines. If the Grand Canyon's age is calculated as an eroded river channel, its age is great. But if it is regarded as a transverse branch of the fissure-fracture of the East Pacific followed by deluge and tidal erosion, then it could be of holocene age [7].

Ocean sedimentation recently examined under conventional premises (with the "help" of potassium-argon techniques), have dated the present ocean basins at nowhere more than 200 million years, incomparably younger than by former calculations [8]. The sediments were found to be astonishingly meager.

Yet, contrary even to this new dating, the ocean sediments could be provided readily from catastrophic sources in a thousand years after the basins formed, as Chapter Seven will show. Furthermore, the ocean bottom, which is under enormous pressure, contains only unconsolidated sediments, a sign of newness [9]. And if the oceans had once been land and the land ocean, then certainly great rock formations should line the bottoms.

In addition, at the rate at which uranium is now flowing into the oceans, the oceans and their sediments have accumulated a supply representing less than 100,000 years of flow, and when the flow off the continents is calculated as a negative exponential curve, the age of the ocean becomes holocene [10]. For most sediments would have been dropped or transported in the earliest years.

Sedimentary rocks are given very great ages in part because the "normal" visible rates of deposit are slow. But a single cometary train might lay down a "hundred million years" of till or detritus-clay and gravel-in a day [11]. A coal deposit can be launched by a high-energy "bulldozer" in a matter of hours, covered over the next day by clay and baked until ready; it does not need the "millions" of years of development insisted upon by uniformitarian sedimentary calculations [12]. Petroleum deposits are not proof of long ages, whether terrestrial or extra-terrestrial [13].

Geologist E. M. Larrabee studied a deposit of maximum thickness of one meter [14]. It was laid down by the Shenandoah and Potomac Rivers at Harper's Ferry (Va.) between 1861-64. Over 100 strata could be identified. Historical research suggested that two or three floods, each lasting a few days, produced them.

In the history of geology anomalous discoveries in supposedly old sedimentary deposits are numerous: a Roman coin ploughed up from the prairie of Illinois [15]; a doll sucked from under till and lava in Idaho [16]; a fossil fish below hundreds of feet of Wyoming shale pirouhetted among many layers of annual varves [17]; a "4000 year-old" log ensconced in a "billion year-old iron deposit of Labrador;"[18] a fossil 80-foot skeleton whale poised

upright amidst some “million years” of diatomaceous (organic) deposits [19]; a fossilized set of startled extinct “bullheads” in English lower Old Redstone marking millions of years [20]; a 100-foot diameter boulder nestling in a large pure clay deposit in Timor [21]; a house-high muck of smashed bones in Alaska [22]; human bones and sophisticated artifacts amidst extinct animal remains and Tertiary fauna under California lava [23]; and so on. Each one warns: “Stop the clock!” All together, they say, “Question all deposits as alternatively quantavolved and evolved.”

Shelton’s marvelous, though uniformitarian, photographic book of geology should be quoted here. After remarking that laminated clay deposits (varves) can permit a time estimate of each layer, he says

> “For the common sediments... we have no accurate knowledge of how long individual beds took to accumulate or of how much time elapsed between the deposition of each...Some thick beds accumulate in a short time, some thin ones take much longer, and in all probability the period of nondeposition that separate most layers represent far more time than is represented by the strata. As Charles Darwin pointed out over a hundred years ago, with far fewer facts to go on than we have today, from the standpoint of time, the sedimentary record is very incomplete - just an entry now and then with long pauses between.”[24]

How did Darwin know the pauses were long? How long is long? Indeed Darwin’s idea of “long” is “short” according to today’s scientists.

Again I quote Shelton: “Unfortunately most sediments do not contain reliable clues to how fast they were deposited---or to the duration of intervals between layers... Observed rated of sedimentation range from almost immeasureably small fractions of an inch per century to many feet per hour and make it almost impossible to estimate the average for my large deposit...”[25]

CORAL REEFS

Among the most complex challenges to quantavolutional geologists, uniquely related to sediments, would appear to be the

coral reefs of the world, both living and fossil. An ordinary statement of the conventional case in the following:

> "Because the coral polyp's existence is tied to that of the algae, coral reefs can grow at depths no greater than around 180 feet -- below this not enough light penetrates to permit algae to carry on the process of photosynthesis. The brittle material we call coral is the polyps' protective external skeleton. The tiny animals absorb calcium salts from the ocean, allowing them to build these calcium carbonate structures around their bodies. New generations of coral polyps attach themselves to the skeletons of dead polyps. In this way the coral reef grow larger - layer upon layer, generation upon generation. Expanding at the rate of only few centimeters a year, some present-day reefs have been developing for 100,000 years and more."[26]

The author does not mention fossil coral found at considerable depths beyond 180 feet. One must suppose a land-sinking or that the water level was rising as the coral grew; the lower coral would die, the higher would grow faster. Suppose the water temperatures were higher; the coral might grow faster; Suppose the amount of calcium salts in the water increased; the polyps would flourish. The opaqueness of sea-water is not an absolute, nor, for that matter, is the radiance at the surface. The algae supply has many variables determining it, including species adaptations and mutations that may cause greater or lesser light requirements. Can coral polyps feed upon bluegreen algae? Do shallow warm lava bottoms and new limestone accelerate coral growth? All those questions can make the coral reef an "anomaly" in short-time reckoning, reminding one of the "anomalies" that are similarly handled by uniformitarians in regard to apparently catastrophic phenomena such as vast "river-formed plains" or the "gradual" erosion of the Grand Canyon.

Even by conventional dating, long-term and carbondating-assisted, the seas are supposed to have been over 100 meters lower 20,000 years ago, before the "great ice melt", and, before then, the sea-level was abruptly higher and the coral could not have survived [27]. Hence a continuous coral reef vertical development "for 100,000 years" would be highly improbable. Further, the 180-foot live-depth figure may be more nearly half that -- or 80 feet maximum live depth [28]. The vertical growth rate of coral can be from 1 to 12 meters per thousand years. The

lower limit is actually zero, depending upon thermal, chemical, nutritional, wave-energy, and pollution conditions. The highest rate, for all we know. may be limited only by the speed with which the sea-level is rising.

Fossil coral, not heretofore mentioned whether beneath coral growth of the past eleven thousand years, or separately discoverable, as in the Arctic Circle, or at depths of hundreds of meters elsewhere may have originated in the swamps and shallow seas of Pangea, the wholly continental Earth-crust that we postulate in this book. Some of the fossil coral beds may, like the continents, have been displaced and rafted to new locations.

Much of the reasoning employed in the case of coral growth here may also be used to argue the case of limestone caves and their stalactites. That is, subject to discussion in a forthcoming volume, the limestone caves of the world may be taken to be largely new, a product of large-scale electrical discharge of the Earth, water-accelerated. Arguments may be advanced farther, to wit, that the drip-formed stalactites and stalagmites can be grown in short times under non-uniformitarian conditions and yet be strong enough to stand against heavy seismic shock [29].

RADIODATING

William Thomson (Lord Kelvin, 1824-1907) estimated in 1899 that the Earth might be no older than 24 million years if its matter were chemically inert and its heat only the primordial remnant. Other scientists disagreed, opting for longer durations to accomplish evolutionary processes.

How uncertain were the stratigraphic estimates of time that geologists relied upon before new radiometric techniques came into use a generation ago is revealed in their quick surrender to radiometry: it is common joke that the earth has aged a billion years per decade for several decades, all owing to new tests of time by radiochronometry [30].

Certain elements, such as potassium-40 and uranium-238, which are to be found in rocks of the crust of the Earth, especially at or near surface levels, are radioactive. They are sometimes called

"parent elements" insofar as they decay into "daughter" elements by giving up electrons or by other means [31]. They began their decay as soon as they were formed. One calculates their life-span by figuring backwards from today's rate of decay as witnessed in a sample of the element. A rock matrix presumably will contain the parent element and the daughter element in proportion to its age, unless it had undergone some exceptional experience. The dozen or so transformations used for dating purposes include uranium-238 decaying into lead-206, of potassium-40 decaying into argon-40, and of rubidium-87 decaying into strontium-87 [32].

None of these methods is useful directly for the period since 14,000 B.P. because the decay into daughter elements is too slow to detect over the short time. However, radiodating challenges our model of quantavolution indirectly when it produces long-term dates where short-term dates are expected. For example if, by potassium-40 argon-40 dating, the ocean floor appears to be 100 to 200 million years old, then it cannot have been formed between 13,000 B.P. and 9,000 B.P. Also, when igneous rocks associated with hominid bones of the Olduvai gorge, dated by the same technique, produce an age of about 1.75 million years, then the bones cannot be of the holocene epoch.

Major problems occur with radiodating. One is in the setting of a rate of decay and therefore setting a date for "time zero" within a reasonable margin of error. Regarding the "time zero" problem, the radio "clocks" work on vast ages, from one billion to five billion years of age. Adjustments in the so-called decay constant may move all tested rocks up and down the time scale by many millions of years. Although such adjustment never approach a short-term position, they cause doubts as to whether there is in fact a constant rate of decay to be discovered.

A second kind of difficulty deals with high-energy events. Radio-chemical methods of determining pre-historic age are extensions of the uniformitarian premise that the chosen chemical elements have remained unchanged in a closed system, save for the decay process, since the clock started to tick. They assume that nothing would affect the parent or daughter element, apart from the expected normal decay from one to the other;

nothing could tamper with the clock. Recent studies cast doubt upon this theory; high forces can break and enter the clock.

The concept of "half-life" is used in radioactive decay time measurements. The half-life of an aggregate of an element is the length of time required for half the atoms of the aggregate to decay into the new element. The half-life of uranium-238 is 4.5 billion years, calculated backwards from presents rates of decay. Can the process of decay be so regular [33] ? Decay is the losing of an electron from an atom that is unstable; it therefore amounts to a transmutation. The occasion of the decay is a force. The force is another particle from another statistical aggregate. This force is regularly and randomly applied to the "A" aggregate causing a regular rate of loss. Each "A" atom has an equal chance of being hit in the bombardment. Hence whatever affects the bombarding aggregate will affect the rate of decay of "A".

And all "A's" may not be identical. Some "A's" may be "harder to hit," "resist cleavage," or "repel the projectiles." Still, as an aggregate, "A" might respond uniformly to the force causing is transmutation.

Radiation physicist H.C. Dudley [34] has insisted that the equations describing radioactive decay rates were crudely derived long ago: "Bluntly, they are incorrect; but they nonetheless appear in our latest textbooks...Studies have varied the decay characteristics of 12 other radionuclides [besides 7Be and 90Nb] with changes in the energy state of the orbital electrons; by pressure, temperature, electric and magnetic fields, stress in molecular layers etc.," citing G. T. Emery.

Dudley further asserts that in certain cases, the "decay event A is causally related to decay event B occurring later, such that the time distributions of all decay events were no longer truly random, as required by current theory. There appears to be a chain type reaction operating...similar to that observed in neutron induced sustained nuclear fission," here citing chemists J. L. Anderson and G. W. Spangler.

Dudley asks for the incorporating in decay theory of "the energy state of the entire atom [not just the nucleus] and on parameters of interaction with an energy-rich subquantic medium."

The work of Anderson Spangler and Dudley implies this for revolutionary primevalogy: decay rates for radioactive elements are dependent upon high-energy forces in the environment, and may be varied little or much. Radioactive decay can be compared with chain reactions in nuclear fission. Hence, at certain points in time, especially when the phenomenon of the catastrophic tube occurred, time pressures (based on today's retrojections) would have been instantly and completely disrupted.

RADIATION TURBULENCE

We are conjecturing further, here, that major disturbances in the parent-daughter relationship may occur as a result of radiation storms and typhonic impact explosions. Lesser and more localized in effect, and often inter-connected with radiation storms are jovian bolts, phaetonic atmospheric penetration, titanic large body encounters, and dense material fall-outs. These operate as follows:

Cosmic radiation consists of high-energy particles that bombard the earth sufficiently at the present time to permit the presence in the atmosphere of atoms of all chemical elements. Both the particles striking earth and the transmutations of particles are varied. When, according to quantavolutionary theory, age-making and age-breaking episodes occurred, the earth passed near to heavily radiating bodies and was also subjected to heavy radiation storms from a distance. In fact, every change in the earth's atmosphere lessened or increased the reception of radiation: the cloud canopies, the lowering or dropping of canopies, the rising of exploded vapors, the destruction of biospheres and the loss or gain of atmosphere from comets, meteors and planets.

In all of this, the parent and daughter elements involved in radio clocks have experienced a turbulent history. No pair of elements can be granted to have remained locked in their crystallized rock interior since the beginning of its time. There is no way of

commencing the history of potassium and argon at the bottom of the sea. The bottom formed in a turbulent atmosphere and hydrosphere, first wet, then drowned shallowly. then deeply submerged but all the while actively spreading. The waters that poured in came directly from the skies, through skies via the sea and earth evaporation, and through runoffs loaded with detritus.

Under such circumstances the clocks might be deemed invalid. They were set wrongly to begin with. They have maintained a semblance of agreement of very old ages by first of all having had similar recent experiences within their rocks, and through laboratory fudging of tests and samples back and forth.

Yet even “normal” experience of today’s solar system presents a severe problem. Nitrogen contained in air and in radioactive mineral undergoes a considerable transmutation of isotropic elements. Lead undergoes the same. The cause is neutron-promoted transmutations. As a result, the decay process of uranium into lead is paralleled by neutron-to-lead activity. When as in certain Katanga and Canadian ore bodies, a neutron-promoted corrective factor is introduced into the uranium-to-lead decay process, the daughter element that isowed to uranium decay is so reduced as to produce a zero age result [35].

This kind of problem is rendered even more difficult under solarian conditions by problems of selecting and sampling rocks, by the fluxing and painting of the surfaces of rocks where trace elements aggregate, and by the need to transfer (with dubious validity) the findings of a test in one part of the lithosphere to conclusions about tests in other parts.

Problems of leaching and fluxing are severe. Rivers carry an estimated average of 6×10^{10} grams per year of uranium down to the oceans. If the lead is left behind in the rocks this escaping uranium is effectively turning back the clock [36]. Parents are leaving their daughters, and the remaining parents are being charged with their existence. The amount of uranium in the ocean, moreover, is so small (10 to the 17the power grams) as to have been produced even under non-exponential solarian conditions within about 10 million years. With quantavolutionary

theory, the exponential rate of deposit would eradicate even this time calculation.

Helium in the atmosphere is originated radioactively from the uranium and thorium in the lithosphere and from cosmic rays from the galaxy and beyond. Conventional ages of the lithosphere require that 10^{20} grams of helium should have been released into the atmosphere whereupon some of it would escape into outer space. However, the rate of escape is too slow under solarian conditions to explain why so little helium exists in the atmosphere. Given the amount of helium present there, it has been calculated that the age of the atmosphere must be only 12,000 years [37]. That is, some 12,000 years ago, the atmosphere was reconstituted.

Radioactivity was discovered a century ago but time-measures of radioactivity are largely a post-World War II development. Despite the shortness of its life, changes in the field have been numerous and radical. Its leaders turn quickly in new directions whenever problems are encountered, introducing new half-lives, slicing experimental rocks differently, and giving their favor now to one, and again to another technique.

POTASSIUM-ARGON DATING

Potassium-argon dating has become highly favored recently, for reasons too byzantine to develop here. For, the criticisms that can be addressed to uranium-lead dating hold also against 40K/40A dating. Indeed, argon (one of the “noble gases” whose exclusiveness or slipperiness gave them their name) is generally to be suspected of vagrancy. Also, the stability of potassium is in question. “Potassium can be made to diverge widely form conventional abundance by countercurrent electromigration.”[38]

Argon-40 will be present in a rock if potassium-40 is present and has had time to decay. Only igneous, and certain types of once-melted metamorphic rock, can be tested. Sediments cannot. The half-life of 40K is so long (1.3 billion years for half the decay to occur) that almost no argon-40 is to be found in a young rock, and therefore tests are not yet considered valid for less than 100,000 years.

Dates produced by related tests are often discordant. Material taken from the Salt Lake Crater on Oahu, Hawaii, dated from 200 to 3,300 million years [39]; the Moon has been dated as older than the universe [40]; and 200-year old lavas, that should show zero Argon, produced enough to allow 12 and 20 million-year old dates at Kilauea, Hawaii [41]. I shall only mention that, under such circumstances, in other cases, the problems of full and open reporting may become serious in the field of chronometric science; as in public affairs, there arises a temptation to dismiss, "fudge" or even conceal some of the evidence [42].

Argon, like uranium and radioactive trace elements generally, tends to rise to the surface of the Earth. Hence surface rocks (and these include all that have been measured) will be high in argon content. Argon also can be infused into hot rocks from the air and kept there as the rocks cool. This could have happened to Earth if Mars, thought now to be rich in atmospheric argon, encountered Earth 2,700 years ago; the same Martian argon may be what is making Moon samples, so young in some respects, so old by 40K - 40A dating [43]. The U.S. Venus probe of 1978 found astonishing quantities of argon-36 and possibly argon-40 in the burning atmosphere.

Argon, being "exclusive," "slippery," and "noble," leaks. It escapes into the atmosphere; it flows horizontally. It prefers rocks of certain types to other rocks. On the Island of Naxos, Greece, Poul Andriessen found side by side metamorphic rocks which, in tests performed in his Dutch laboratory, produced ages of 5 to 15 million, and of 200 million years (amphibolite ultrabasic rock) [44]. Australian tektites have given 700,000 to 860,000 years by the 40K - 40A method in 7 to 20 thousand-year-old strata [45].

Funkhauser and Naughton, faced by the Hawaiian incongruities, speculated that excess argon could be held in crystal irregularities and imperfections such as grain boundaries and dislocations in the rocks. This likely theory would appear to throw the K-A ratio upon the mercy of petrology rather than chronology.

Granted argon is more abundant in rocks nearer the surface, a lava flow will erupt melted surface rock first, than lower rock, then still lower rock. This may falsely date a set of lavas, although the law of superposition is correct. As the law demands, the strata of lava on top will be younger (and hold less argon) than the strata below (with more argon); moreover all will be very old for the reasons given above. As matters stand, it would be a grave risk for geology to rearrange the phanerozoic scale according to 40K - 40A dating principles.

THE RADIO-HALO PROBLEM

Radio-chronometricians pass restlessly from one measure to another, despite their elaborate equipment, which critics have alleged to be too burdensome to discount and abandon (over 100 laboratories exist today for carbondating alone). While continuously asserting the validity of the great time intervals they have discovered - and indeed imposing this belief upon the geologists and anthropologists - nevertheless they are engaged in a quest for improvements and for new tests that are less vulnerable to complaint.

There are at least a dozen parent-daughter, radioactive decay tests, each with its problems of the type already displayed in the discussion of 40K-40A tests. Discordant time readings within and among individual tests, demonstrable leaking and leaching of elements, and proven possibilities of elements being created under catastrophic heats and pressures are vexing problems, even more than the problems of sampling and contamination.

If, to this time, the restlessness of chronometricians has been excused as a search for technical perfection, that excuse has now worn out its acceptance. The reduction of the uniformitarian ideology is permitting a clear view that elements in varied isotopic forms can and have been engendered by natural and human forces.

The implications of various studies, writes Melvin Cook, are that “apparently all the elements are available in cosmic radiation at very high energies as bombarding particles, and that the synthesis of high mass atoms in large decrements of mass increase is possible. It is therefore only necessary for our earth

(or its accretion materials) to come close enough to the source of cosmic radiation to effect a complete equilibrium distribution of atoms. At present, the earth itself is too far away form the source of cosmic radiation (owing possibly only to the protecting influence of its atmosphere and magnetic field) to maintain nuclear equilibrium in respect to U, Th, K^{40}, Rb^{87}, and other radioactive atoms [46].

These remarks should be taken in connection with the possibilities of catastrophic typhoons or tubes, described in the last chapter, and fluctuations in solar activity recently discovered.

The studies of R. V. Gentry are especially threatening to radiochronometry [47]. He examined over 100,000 radiohalos in the decade just ended. A radiohalo (or pleochroic halo) is a spherical colored ring around a radioactive nucleus denoting the escape of an alpha-particle and its ionizing of a surrounding zone. The ring's size is determined by the speed of escape. When uranium (U238) decays, it does not decay immediately into lead (Pb 206) but produces seven other isotopes *en route*, from thorium, radium, radon and polonium. There occur, then, with decayed U238 eight concentric rings, of which five are distinguishable.

Gentry discovered, however, that many halo systems *begin* with polonium; they exhibit no uranium or other supposedly preceding halos. And polonium 210, the longest lived of the polonium isotopes, has a half-life of 140 days. If some of the oldest rocks of the world contain this isotope, without a uranium-thorium predecessor, it follows that the host rocks must have been formed in days. Promptly, then, one would have to drop a billion years from the history of the Earth, for the original rocks are supposed to have taken a billion years to crystallize.

Parentless polonium atoms may be primordial, as are uranium-238 and thorium-232 atoms, but this would imply that polonium halos "represent evidence only a brief period between 'nucleosynthesis' and crystallization of the host rocks."[48] Incredibly, rocks would form immediately upon the synthesis of the elements in them. Reporting upon a telephone interview,

Stephen Talbott says that Gentry "finds compelling reasons to question the entire dating scheme which undergirds our concept of geological time."[49]

Other studies of coalified wood from the Colorado Plateau, buried in rocks of the Jurassic-transition, evidenced such an abundance of uranium and lack of lead that ages of at most 100,000 years had to be assigned to the coal. Then Gentry, in examining the radiohalos, had to report that the coalification required only days, not millions of years [50].

Sykes has shown by experiment that a magnetic field of the flux density of 0.1 tesla is enough to increase the mean decay count of radioactive cobalt-60 and to skew the distribution of decay incidents from the normal. The "decay constant" was increased by about 2%; correspondingly, the half-life of cobalt-60 decreased [51].

RADIOCARBON (CARBON-14) DATING

Cosmic rays of the galaxy strike and explode atoms of the atmosphere. These give off neutrons that interact with nitrogen of the air to make carbon-14 or 14C. This passes into carbon dioxide and then into plants and other living organisms through their food supply. Living organisms also ingest carbon-12 which does not decay. When anything that has lived dies, it ceases to ingest radioactive carbon-14, and the carbon-14 within its cells begins to decay into nitrogen-14. Half of it might decay in 5,730 years, the other half in another 85,000 years, according to conventional theory.

Thus, any once-living organic substance can be tested for the amount of 14C that it now contains in relation to the amount that was originally ingested. The carbon-12 level can be used as the base of measurement. However, not all species ingest 14C in the same amounts, so that specific rates must be calculated for different species. More importantly, "the amount that was originally ingested" may vary [53].

All that has been said about the effects of high-energy forces upon the atmosphere applies to carbon-14. How much nitrogen was in the primeval atmosphere is unknown and is presumed on

today's measure. The carbonization (burning) of the biosphere and the sudden proliferation of flora will directly affect the rate of generation of 14C. Also, if carbon-14 was heavily generated in the atmosphere by electrical phenomena and radio storms, in the times when Uranus, Saturn and Jupiter were worshipped, it was ingested extensively by organisms. Matter of this period would test as "younger" today, provided that several other "constants" remained constant.

As disasters diminish in intensity following chaos, relatively less 14C would be created; matter would grow "older." Several disasters involved the desiccation or saline ruination of large areas of the world; this would cause less carbon dioxide to discharge from plants. During short periods of burning, great amounts of non-radioactive carbon are discharged into the air and waters, and therefore contribute to a temporary "aging" of the new life of the time that follows. Whenever both a cosmic brilliancy and a conflagration occurred, today's tests would be contradictory, and averages would mislead. (see Figure 5.)

Libby and Lukens have estimated a "perturbation of about 1%" occurring in the production of radiocarbon of tree rings by lightning bolts [54]. This represents a neutron supply added to the supply produced by cosmic rays. The estimates are based upon present-day assumptions, also upon highly varied conditions and inexact knowledge of the extent of lightning or its effects [55]. It does not consider lightning discharges occurring solely in the atmosphere, and especially the mega-bolts that can be a thousand times more powerful than the average earth-striking bolt and were recently discovered by satellites.

Aside from what is happening in the biosphere, a fixed 14C component of the atmosphere, upon which the test is based, depends upon a constant encounter rate between cosmic particles and nitrogen that produces 14C. Since radiation storms occurred and long-term radiation levels were diminished and increased from time to time, intervals of the 14C scale must have been rendered invalid, except for mere coincidence. Only in the years from about 500 B.C. TO A.D. 1900 might the amount taken in by organisms have acquired some constancy. Even so, strange aberrations of the 14C/12C ratio occur, as with shellfish and coral growths.

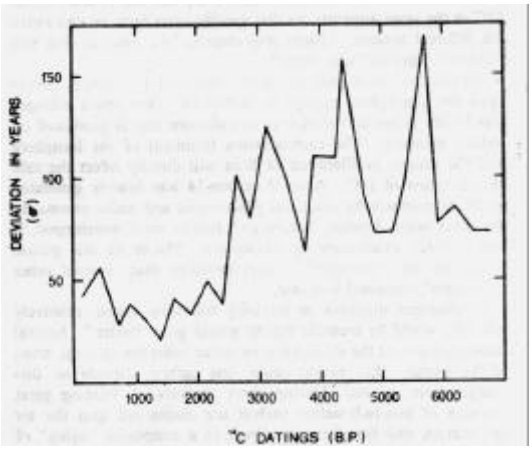

Figure 5. RADIOCARBON DATINGS AS INDICATORS OF ECOLOGICAL STRESS. (Click on the above picture to get an expanded view. *Caution: Image files are large*.)

The left-hand scale (σ) registers the standard deviation of the "true" curve from the trend curve -- the number of years by which the radio carbon dates of each 250 year period deviate from the average of the whole group of dates of that period. The bottom scale represents the years before the present (taken as 1950 A.D.). As the chart shows, the dates begin to be erratic increasingly around the time of the Martian encounters (-2687 B.P. by this book's 2000 B.P. standard). The time scale goes to - 6750, and thus carries one through the Martian, Venusian, Mercurian, and Jovean ages. However, even the erratic swings shown here do not portray the true extent of atmosphere and ecological disturbance, because, as the text asserts, a succession of quick changes in the atmosphere is possible, from low to high radiocarbon intake therefore by the biosphere, and this phenomenon would cause an evening-out of still a second and possibly much more serious form of deviation. Within a time of several years, an organism could ingest widely varying amounts of 14 C. Hence I suggest that radiocarbon dating may be useless before about 2500 years ago and there may have been a completely different radiocarbon cycle, as M. Cook maintains, before the Lunarian catastrophes.

(Source: Damon *et al*, extended and applied [47] by G. W. Oosterhout Half-life is 5730 years.)

There are many anomalies in C14 dating, a few of which are mentioned elsewhere in this book. Artifact dating has become quite common, with most of the apparent successes occurring on artifacts and substances of the recent historical past. But it is precisely the problem of C14 dating that, by our theory, it is

almost surely wrong in the earlier periods when the tests are most needed.

A group of scientists recently excavated "Little Salt Spring, Florida: A Unique Underwater Site." Among many remains they found in a lower level a tortoise carapace, which provided a date of 13,450 ± 190 B.P., and a wood stake used to pry open the animal, which gave a date of 12,030 ± 200. Some 1400 years of difference. Yet this is not the only problem. The whole range of time may be in question. For a base of a carved oak mortar was discovered and dated to 9080 B.P. and then declared to be similar in style to a piece recovered at Key Marco, 130 km to the South, and dated at about 1200 years ago [56].

The quantavolutionary hypothesis is disruptive of carbondating, as it has been conceived. An adjusted curve is impossible because the revolutions of the atmosphere in precisely the most critical millenia in primevalogy cannot be positioned and defined sufficiently well for them to be employed in weighing the scale intervals. The 14C method will be useful for dating the past 2,400 years, when allowances are made for short-term atmospheric fluxes owing to extraordinary cosmic, volcanic, solar, industrial, nuclear explosional, or other activity disturbing to the atmosphere.

Mysteriously, corroboration of some of our conclusions comes from a retrogressive calculation by Melvin Cook of the amount of 14C in the ancient atmosphere. Granted the present level of carbon-14 and the fact that it is rising slightly, he found that all the 14C would have had to arrive in the atmosphere within the past ten to twelve thousand years [57]. Far from being constant, prior radio-carbon was at this point wiped out statistically and theoretically a new atmospheric accumulation began. This would appear to be about the time of the climactic Lunarian catastrophe. However, this calculation, as Dr. Cook might grant is more useful as a *reductio ad absurdum* than as a plotting of the true history of atmospheric carbon.

TREE-RING TIME

Dendrochronology has discovered only one tree whose rings can be used to date associated events back into periods of interest to

primevalogy. Such is the hard bristlecone pine, which may achieve 5,000 years of age by ring count. By matching fossil pine with living pine, the ages may be traced back further; perhaps 8000 years B. P. have been claimed by matching . (if conditions of fossilization were uniform millions of years of matching would be theoretically possible!) It is assumed that rings have always grown on an annual basis. Not surprisingly, quantavolutionists have adversely criticized the technique [58].

“Annual” is a relative standard, presently derived from a revolution of the tilted globe of the Earth around the Sun. Changes in astronomical motions can change the number of rings; if a “year” is shortened, the rings may be increased within the normal lifetime, something that may have caused the Methusalah phenomenon in early reported human ages of the Bible and elsewhere [59]. Also, the rings may increase or decrease if climatic conditions introduce a doubling of seasonal cycles within the same year-time.

The tree has to be matched with human or natural objects of known age, or used to calibrate radiocarbon dating. But tests cannot calibrate each other without reference to a third test. This third test is often a historical date, but such dates rarely exceed 3000 years and even before then are hotly disputed. Furthermore, there occur in the cross-matched trees gaps of rings that may correspond to revolutionary incidents in the arboreal environment. Electron microscopes can find exceedingly thin rings, but cannot explain aberrations among them.

Despite all of this, if bristlecone pines could be calibrated over a span from 5000 to 8000 years, this would mean that the solar system has existed that long in a form not radically different from its present form. Also, no important element of the atmosphere or climate affecting rather similar biological organisms would have changed. Further no major annual motion of the Earth respecting the Sun must have changed (orbital distance; orbital speed; rotational speed of the Earth); or all three motions, if changed, must have added up to the same total solar-exposure time.

MAGNETISM

When rocks are near melting, they are stamped with the direction of the magnetic pole. When cooled, they keep this directional stamp. If reheated, they lose it and acquire whatever new stamp is indicated by the current magnetic pole. Also, if a rock changes its position, its magnetism will point away from the location of the magnetic pole towards which it was originally oriented. If also it is heated in a new position, the imprint will be oriented differently upon the rock. Paleomagnetism studies the changed magnetic orientation of rocks. It also judges the ages of rocks, but within severe limits [60].

Great belts of ocean basin rocks are imprinted with a polarity that is reversed from today's. Moving away from the great hot ocean ridges, alternating belts of reversed polarity occur. It is believed that these reversals occur at intervals, whether a few thousands or millions of years apart. It has been shown that the belts grow older (by fossil record, by inference from land studies, and by 40K-40A tests),as they move outwards from the ridges. It is believed that many millions of years show up in the magnetic bands.

But magnetic reorientation depends upon the last heating of the rocks that contain the imprint and upon their movement. If the ocean bottom is moving much faster than assumed, then the time between reversals is shortened in proportion. And vice versa, if the reversals occur rapidly, then the ocean bottom must be moving much faster then believed. Probably both have occurred: the ocean bottom moved rapidly and magnetic reversals occurred repeatedly, both within a period of several thousand years, probably between ten and thirteen thousand years ago, or so we shall argue in a later chapter.

Magnetic reversals occur for reasons unknown. Why they should happen at long intervals of time rather than short intervals is also unknown. Short-time intervals between reversals are probably connected with an impulse towards or an actual change of the axial inclination (now 23°+) of the Earth. Impulses were frequent in revolutionary ages. I shall be proposing later, with the support of legendary and geological evidence that the Earth's

axis probably tipped on various occasions, both gradually and sharply.

After each abrupt change, the globe may have rocked for a time before stabilizing. The rocking took many years; the multiplex worldwide legends of Hamlet's Mill [61] may reflect this perceived motion. In that case, the belts of differently imprinted rocks would represent rapid growth of ocean basins with a rocks would represent rapid growth of ocean basins, with a slowly wobbling axis of spin and a reversing magnetic field.

A prior period of wobbling of the axis could even produce, in a period of accumulating ice, a succession of seeming advances and retreats (or the illusion of the "ice ages"). But also, pluvial intervals would occur, with melting in-between. The penchant of early man and mammals for living near ice-fields is understandable only because the Earth beyond the ice was not cold (since the ice might come from above). However, it is too early here to take up a position on the "ice ages," which are dealt with in the third volume of this work.

Two terms are used to discuss magnetized rock: natural remnant magnetism and thermal remnant magnetism. Geophysicist T. Nagata of Tokyo has shown that the two are the same. Remnant magnetism, furthermore, will occur and increase with any temperature increase above 200°C.

Magnetism decays. The exact coefficient of decay is unknown. The half-life of paleomagnetism may be only 5,000 to 10,000 years; all magnetism, according to M. Cook, may be less than 70,000 years old [62]. (Nagata guesses 1 million years.) Therefore, paleomagnetic bars of the ocean bottoms or land cannot well be used to measure time. Any considerable intensity must record a young age. *A priori* paleomagnetic ocean bottom measurements showing millions of years of age must be wrong. The position here taken is that any magnetism of the crust is primordial except where the crust has suffered a melt or welled up as new crust from the interior magma.

FOSSIL RECORD AND MUTATING TIME

Organisms that die in a mineralizing setting may become fossils that are recognizable unless subsequently melted or crushed. Fossils are the principal means of dating sedimentary rocks, and, by inference, such igneous and metamorphic rocks as may be connected to them. If two rocks, no matter where they are found, contain the same fossils, the rocks are usually from the same period of time. The more numerous the identical species of the two fossil assemblages, the surer their common age. When the rocks appear to be in superposition, the fossils help to assign them a relative date. Once this is done, if afterwards the same rocks occur in isolation or not in superposition, the fossils which they contain enable their dates to be inferred.

A fossil may be wrongly dated. The record of its period and species may be incomplete. Or the fossil assemblage of various species may have been zoned and then have been transported to another area and placed, say, above a younger assemblage. Or the method of dating may be fallacious. For example, at the Schefferville (Canadian) iron mine, fossil wood specimens, radiocarbon dated at 4,000 years and largely unchanged chemically, were found imbedded (but not intrusively) in iron ore of pre Cambrian age ("over a billion years ago" and before trees evolved) at depths of several hundred feet [63].

Attempts at correlating results of radiodating with established fossil dating have not helped. They have thrown the phanerozoic scale into disorder. Acceptance of radiodating provides numerous anomalies in traditional fossil successions. Basic difficulties in both methods come out of high-energy processes that devastate the atmosphere, build sediments and transport life forms quickly.

Plant and animal species require time to adapt to environments (life niches), to proliferate and to become extinct. So long as high-energy expressions are absent, it is reasonable to assign long periods to these processes and long life to the species. Originally, evolutionists were composing calendars that were under 100 million years in all. The discovery of natural mutation introduced a dynamic of change, but a successful mutation

turned out to be, in theory at least, a most rare event. So more time was needed.

Now a billion years or more is allotted for the evolution of species. But quantavolutionary theory permits short mutation intervals, quick and widespread extinction, the opening up of a great many life niches for pre-existing and new species, and the possibility of less restricted and therefore exponential growth of population. Hence all the time may not be needed to explain evolution, even as evolution is understood by neo-Darwinians today.

CYCLES AND ANNIVERSARIES

That the world was created, destroyed, re-created and destroyed again, repeatedly, has never been doubted by any culture anywhere or anytime, except by the modern uniformitarian culture [64]. Five great ages are found in ancient Greece, India, Tibet, Peru and Mexico. Seven ages are put forth in another Hindu source; in Mazda; in Hebraic sources; in the Sybilline oracles; among the Mayas. The Hawaiians and Icelanders count nine; the Chinese reported ten ages up to Confucius. All may be taken as valid relative to localized definitions and experiences. All may be regarded as authentic challenges to the ages set by geochemistry and radiochronometry thus far. There occurs, nevertheless ,an urge to straighten or blend cycles into a helix, even in mythologies obsessed by repetitive chaos of creation.

“The final step in Aztec speculation, as indicated by their great Stone Calendar, is to assign the four earlier world ages to the four world directions, with the satisfying result that the present age belongs to the center of the world, the place where man likes to think of himself existing...The terror of experiencing a derangement of the cardinal points is transmuted by systematization into the comfort of knowing that all resulted in placing man at the center”.[65]

Very recently, however, it has become clear that the competition for chronological veracity is going to be framed in the ancient cyclical - or, as I have termed it here, helical - mode. Natural scientists are becoming “helicalists”. Writes Umbgrove, “What creature is this that breathes so heavily every 250 million years

[66]? He refers to the Earth and to the cycles of "death and resurrection" that characterize so many earth processes. As we have seen, paleontologists, ice age specialists, solar experts, diastrophists, and electromagneticists - each in their own way- are discerning helices of the ages [67].

Also York and Farquahar, radiometricists:

> "Radiometric dates obtained on rocks from a single continent tend to cluster into definite groups. Ages are not uniformly distributed in time."

Furthermore, the timing of the groups seems to be similar over all continents. One can guess from their data that quantavolutions recur and affect the whole Earth [68].

Every cycle began with a kind of creation or rebirth. There was little of regularity on earth. Life was a continuous commotion. An obsessively fearful race projected itself into the sky. When planet Saturn became the great god, he was king of man and destroyer of man, but also bringer of wisdom and bountiful food. The Saturnalia began and have persisted to this day in jubilee days that follow days of sorrow and fasting. The Jovean anniversaries took over the Saturnalian. The Venusian and Martian came then in the spring near the vernal equinox while the old anniversaries centered around the shortest day of the year (in the northern hemisphere).

From full moon to full moon gave an easy method of counting in the Age of Saturn and it could usually be observed in the often misty nights. Moon calendars, sun calendars, and planetary calendars were often possible in the periods between changes of motion and place. A lunar month can, and does, change its length, without requiring a major social change except to revive terror and encourage religious ritual and related behaviors. Not until the last of the disasters had ended, in 2687 B.P., did a stable moon or sun calendar that was correct by present standards appear. Long afterwards and even until this day in many parts of the world, nothing in the order of skies is taken for granted, and, for calendar anniversaries, for festivals, and for public policy decisions, expert moon-watchers of the priesthood decide precisely when a moon should be termed full or new.

Practically all human constructions that have survived from earliest times are temples, temple-connected, or astronomical. The megaliths, found in many the age of surviving records, that is, the Middle Bronze (Mercurain) and Late Bronze (Venusian) Ages, scientific observations of solar, lunar, stellar, and planetary movements were recorded in several countries; they differ from the observations that scientists today would make of the same movements.

The ancients numbered scientific observers among them, and states were sometimes dominated by astronomer-theocrats. Water-clocks, that measured time by the passage of water, and sun-dials were built; specimens have been found; they mark a time, however, which differs from the present day.

These early observations were made by dedicated, highly-disciplined corps of observers and are to be trusted. If they were dedicated and disciplined, it was ultimately because the skies could not be trusted; humans, god-driven, harnessed themselves to the observation of the skies, their pragmatic distrust reinforced by the ever-present subconscious illogic: “To watch is to control.”

58 TESTS IN DISPUTE

The quantavolutionist offers his tests of time. They usually lack tubes, needles and gauges and require a general vision of history. The quantavolutionist looks amiably upon tests that mix human evidence with natural evidence, joining an ancient legend or an invention with a change in appearance of the Moon or Mars. To the evolutionist, the quantavolutionist appears fuzzy-minded, gullible, and fanciful. But to the quantavolutionist the evolutionist seems narrow-minded, technocratic and historically lame-brained.

The quantavolutionists say this: Consider all the great natural forces that operate today. Read the ancient myths and accounts to discover how much greater were the expressions of these forces in the beginning. Extrapolate the effects of these forces as known. Then state what must have been the condition of the skies, the earth, and life in the earliest days of human

recollection. Then, if interested, go back even farther, to what might have happened before.

The evolutionist offers his tests of time. When these tests are applied, we see time as very long and change as very slow, point-by-point, drop-by-drop.

The tests are very many. It would take an encyclopedia to discuss them properly. But on the chart of tests (Figure 6 on pp. 60-67), I have displayed four things: the test itself, a brief phrase on its unique quality, the main position of evolutionists in respect to its validity and the contrasting position of the quantavolutionists.

Although it is beyond the capacity of this book to carry explanations and analyses of the fifty-eight listed measures of time, the major objections to their evolutionary interpretation can be set forth. I shall do so, following the categories of the chart, with apologies for the necessary exaggerations and exclusions.

The main objection to accepting the evolutionary explanation of the prominent features of the Earth's surface in Category I is that they are all based upon unproven constancies in the forces working to form the surfaces. High heat and pressures, hurricane winds and tides, or movement of the Earth's crust can form all of these features in short intervals of time. One can move over the surface of the Earth and offer an alternative quantavolutionary explanation of all singular features.

The main objection to the biological measures of evolutionism is again that they may all occur through quantum jumps under high energy impulsion. Once granted that mass extinctions and arrivals of species occur in correlation with catastrophes, then it is only necessary to point out that "successful" mutations themselves are so rare that large numbers of mutations are required, which implies that atmospheric catastrophes are needed. Biological and geological quantavolutions are the basis of the ecological changes that produce the evolution of species.

The third category of radiochronometry almost entirely depends upon a constant radioactivity of certain elements over great stretches of time. Very recent studies have shown, however, that

(a) we do not know the original state of the elements and hence the history of their radioactivity, and (b) undecayed and decayed elements have become separated somehow, sometime, and their ratio cannot be now regarded as a measure of time. In the case of item 8, the uranium elements are not found in expected oceanic and atmospheric abundances for a long time record. In the case of item 11, catastrophically produced materials such as water and natural gas are found in an abundance under high pressures that long-term effects should have erased [69].

Of the astronomical motions, the fourth category, it can be said that (a) proof of constancy of motion is only available for a very short time; (b) even if the laws of motion suggested a history of motion, they do not *write* the history; (c) some motions are mysterious in origin and best explained as fossil motions from some radically different ancient motion; (d) evolutionary science has been loath to consider the history, presence, and effects of electricity in regards to star systems, solar systems, and the Earth (as to both its external and internal force fields).

Click here to view Figure (Table) 6

In the fifth category, evolutionists have wrongly, yet persistently, defied a multitude of ancient voices even when these voices are in consensus on events and time sequences, They have blighted the growth of the science of mythology. Moreover, they have not considered catastrophes in the explanation of discontinuities of excavations, whether strata were disrupted or erased entirely. As Claude Schaeffer declared in his monumental survey of Near East excavations, “Our inquiry has often been rendered difficult by the rarity in most reports of observations on beds of destruction.... Some reporters have regarded these beds as a nuisance or of little interest.”[70]

It should be clear, therefore, that the hints given in Figure 6 can be expanded into major criticisms of each category of tests. In addition, several general criticisms may be directed at off categories.

One may object to the frequent unwarranted claim that the skies, air, waters, rocks and biosphere have changed always at the same rate and under the same conditions as we see them charging today. Inconstancy afflicts most gauges of time. The more that the quantavolutionary hypothesis is insisted upon, the more that the past processes seem to deviate from present ones - geological, biological, chemo-physical, astronomical or cultural. The planet Jupiter, for example, has become more and more of an ogre since Velikovsky predicted its radio noises in 1950, and a scientific dragnet is now out to trap all indications of its stormy past, present, and future behavior.

A second reproof is that evolutionists have committed often the same scientific misdemeanors that they accuse the quantavolutionists of. Possessed of two results, each based on a common or different debatable assumption, they claim that the results, since they agree, are certainly true. They have concealed anomalies, allowed the contamination of samples, exaggerated the certainty of their observations, generalized from insufficient data, pleaded their premises as proof, selected the evidence, used special cases as proof, and been thoughtless when it comes to larger theories.

Moreover, observations are often uncertain and unreliable in the tests of time. Significantly, progress in instrumentation many have the effect of disclosing hitherto unobserved phenomena that tend to nullify the aim of the measurement. For example, C14 dating aimed at using a constancy to establish dates, but it has helped greatly in discovering inconstancies. The brilliant and thorough attempts to perfect radiocarbon dating have already given some needed proof of the Martian and Venusian catastrophes"[71] and may paradoxically end up as a most valuable source of information on the ravaging of the atmosphere before Solarian times.

Also, the search for pure samples to test for dates has sometimes shed more light on other problems than upon time. Analysis of Thera(Aegean Sea) explosions ash samples has led to studies distinguishing earlier eruptions of Ischia (Italy) and casts doubt upon various cultural modes of dating for the Eastern Mediterranean [72]. Hydrocarbons from widespread fires have

lately been discovered in “normal” land and off-shore cores drilled in the eastern United States [73].

Frequently a lack of data hampers conclusions about time. Whole realms of nature are missing from the annals of times past. Catastrophic events not only compress time but also destroy the evidence of time. Floods, tides, and hurricanes can erase levels of the biosphere completely; it is permissible to argue that all centers of civilization of the Saturnian age to be described later were completely eliminated, that all “neolithic” discoveries are of survivors, especially of peripheries of cultures - just as the Hebrews, Sumerian, East Indian, and other legends declare. Then, too, the subsequent Bronze Ages chronology for the ancient Near East has lately been shown to be awry, largely because catastrophic premises provoked a re-examination of the domestic and international problems of the dynasties of Egypt [74].

Finally, the evolutionary theory has had the services of practically all scientists and scholars of all disciplines for 150 years. By contrast, quantavolutionary theory has survived without media or funds and only enough scholars to make rare guerrilla forays into opposition-held country. From lack of focused case studies, the revolutionary time-tables have been excessively imaginative, including that which is to come in the next chapter.

It is fair to say that the five classes of time-tests of Figure 6 include practically all techniques of telling prehistoric and ancient time. One should stress that tests on a given site or material or problem are often multiple, as they should be, to see whether the tests support one another. If they do, of course, the probability of validity is increased. It may seem appropriate to annual or ignore the results of one test on particular or general grounds such as contamination or even general theory; but it is hard to knock out several tests on the same grounds. Nevertheless, one should bear in mind the set of general problems confronting tests of time, the special problems inherent in each category, and the particular problems inherent in each testing technique as indicated in the chart. In the case of several areas - sedimentation, potassium-argon tests, radiocarbon dating, tree-ring dating, paleomagnetism and the fossil record - my

comments have been sufficiently extended to show that the debate is generally complex and ramified in respect to all types of time-testing techniques.

I have by no means exhausted the range of criticism. For instance, I credit thermoluminesce dating, involving its decay since the last high heat of its matrix, with "promise." Yet the pioneers of the field are commonly frustrated: " There is a gross discordance between the TL age and the radiocarbon age.." of sedimentary samples baked by lava from the Massif Central's *Chaine des Puys* (France), the one giving 26,000 years, the other about 11,000 years [75].

Still I can sympathize with the person who, after all is said and done, consults the conventional time-tables and reasons as follows:

"Thousands of scientists of many fields have worked with one or more of some fifty tests. Even if nobody is an expert in more than a couple of test areas, the scientists all lean on each other. And all agree on the long-range thrust of the many tests. Their agreement should add up to a certainty for either long-range evolutionism or long-range revolutionism. Short-range revolutionism must be wrong."

In reply, I can only stress what has already been said above and elsewhere in the book:

"Every test has its problems of design, administration, reading, and interpretation. Fifty problems do not make a solution. I could readily declare that ancient catastrophes are absolutely proven because not 50, but 150 or 500 cultures unanimously declare that they survived universal disaster. But *more* than this proof by agreement of sources is needed, in my view."

THE DISSOLUTION OF TIME

The idea of long-range time is the bedrock of present-day intellectualism. It is ideological. It performs a great, but fundamentally non-rational, service. By extending time to inconceivable lengths, one makes of it, in effect, a constant, which need no longer be accounted for in factoring the causes of

ancient events. Nevertheless, every ideology or "ism" is at best a model, at worst a blinded mule, pacing a circle endlessly.

Of the 58 tests listed, only 1 (one) does not depend upon the empirical experiential proposition that the processes of nature have been proceeding at a constant pace with only minor lapses.

The one exception is the principle of superposition of strata (I. 3). It is a logical principle. It can only come into effect when natural and human material is laid down; it is only valid when the material is not overturned or undermined by igneous or over other intrusions.

The reluctance of "Nature" to tell her true age is perennially a frustration. In a day when even solar time is not accurate enough for some functions and tests, and when even star-time is introduced, the fact that some people must be wrong by hundreds of millions of years in telling historical time cannot help but make one wonder if the minority, at least, is not mad, or whether the whole of science is a sham. Neither is the case.

Knowing how wobbly and weak a grip the human mind has upon time it should come as no surprise that "Nature's" time is disconcerted and disparate. Only by the greatest exertions and mutual discipline and only at the highest peak of group organization are we able to hold a tenuous grip upon a schedule of time; even then, the individual's psychological as well as active deviations from the severely imposed bonds of time are very many and dominant, if one were to be brave enough to count the undisciplined vagaries of time in relation to the ordered ones.

If this temporally disordered mind has difficulty in ordering time in relation to the ordered ones time in its immediate contexts of group cooperation, it is not to be expected that its farthest expeditions into space, species, and events could establish a nice clockwork. Historians like to tell a story: God, according to Isaac Newton, had set the machinery of the world to move like a clock, but had to intervene upon occasion to make adjustments in its regularity, (an idea that reminds us forcibly of Plato's God at the tiller of the world ship). Whereupon Leibnitz was

prompted to remark that Newton had not only made of God a clock-maker, but a poor one at that.

OF MAMMOTHS AND AMBER

If, as the preceding pages imply, there may be a general failure and collapse of long-term methods of time-reckoning, a need for a radically alternative chronology arises. But where lies the possibility of such ?

Quantavolutionism brings to bear on the problem the abilities of great forces to compress astronomical, geological and biological time. By adding human testimony to anomalous current scientific findings, enriching these with new evidence, especially of an electrical nature, and integrating them within a new hypothetical structure, it can propose a new chronology of the holocene period.

There is little chance that a single technical device. a test, will calibrate the ages. A holistic method must prevail. A thing to be dated must be evaluated by every technique available, in as broad a context as possible; and, even while it is being tested, it is testing the test. For example, Carbon-14 presents us with dates between 30,000 B.P and 21,000 B.P. on three different frozen mammoths; then, for the carbon-14 dates to be acceptable, Siberia must have remained frozen for the duration of the period, else two of the carcasses would have rotted [76]. But then the mammoths would have suffered three catastrophic time-points of sudden death and sudden preservation, by asphyxiation and deep-freezing. A peculiar repetitive kind of disaster would have to characterize this long period of time. If we believe that the species was exterminated at once, then the carbon-14 method cannot be at all valid here. We must still await a definitive study of this long-discussed puzzle. Its solution is important; the utility of carbondating hangs upon it.

Another case involves the fossilized resinous exudation of dead pine forests, amber. The Greeks cherished it for its beauty and its electrical properties; its name was “electron.” At Pylos, a Mycenaean city, whose buildings collapsed under intense heat, large stores of amber were found [77]. The substance was in ancient times transported by well-known routes sacred to Apollo

from the coastal towns of the Baltic Sea [78]. There it was being washed ashore from vast sunken pine forests. Recent radiocarbon dating of pollen conflicts with conventional belief, according to which the Baltic basin was filled 70 million years ago, and places the flooding of the Baltic Sea in the middle of the second millennium [79], a catastrophic period that will be described in the tenth chapter story of Venus. Presumably, only after several hundred years was the amber fossilized, exuded, washed ashore, evaluated, and incorporated into international trade.

Isaacson has independently established the burning of Pylos in the period of cosmic perturbation involving the newly great god Mars, that is, the eighth and seventh centuries [80]. Fossils themselves tend to be proof of local or general disaster. The abandonment of a precious store of amber also indicates natural disaster, not an aftermath of a battle or accident or ordinary earthquake. Might it not be that no one was left to dig up the treasure? It would appear that all evidence can be put into a mutually supportive context that is much broader and convincing than a set of dates contributed by single technique. Reasoning from the sacred, the commercial, the behavioral elements, one has grounds for disputing the geological theory that assigns millions of years of age to the Baltic inundation; how could amber have been so abundant that it was still washing ashore in quantities sufficient to support a thriving business? The origin of the mysterious amber was carried in Greek myth: the Heliades, sisters of Phaeton, who drove uncontrollably the solar chariot and was sent crashing to Earth by a bolt of Zeus, wept amber tears in grief for their brother [81].

SCHAEFFER AND VELIKOVSKY

Still another type of reasoning can be shown in relation to Schaeffer's demonstration of widespread concurrent site destructions in the second millennium B.C. [82]. Schaeffer follows conventional Egyptian chronology and dates the periods of destruction by the association of Egyptian artifacts with the site level artifacts under scrutiny, whether at the site or elsewhere [83]. That is, the Egyptian chronology was regarded as absolute, just as the radiocarbon dates were once so regarded, and still are given significant shifts and weights.

The revision of Egyptian chronology by Velikovsky, now being completed, shifts whole centuries forward and about, and shifts the whole Greek-Near East chronology with it [84]. For the moment, confusion reigns, and there is bitter resistance. But soon it will become clear that innumerable historical and archaeological problems will be solved simply by switching to the new chronology. Thus, all that Schaeffer "automatically" consigns to the end of the Middle Bronze Age, at around 1750 B.C. I assign to the same time, but dated at about 1450 B.C. The many destructions that he consigns to 1200-1300 B.C., I assign to 800-700 B.C., granting special consideration to exceptional cases.

The results are remarkable. Suddenly, the vast "hiatus" between "13th century" destruction and 6th century proto-classical times becomes only a brief hiatus. It is clear that the vast movements of "the peoples of the seas" were a fiction [85] employed by scholars to explain the widespread natural disasters of the 8th and 7th centuries, the Mars disasters of our calendar.

It is tempting to conclude this discussion of current problems of chronology with remarks made lately about Lord Kelvin's three methods of arriving at the age of the Earth in the 19th century. "All three methods employed unproved assumptions and very shaky estimates; nevertheless, they conveniently agreed on the age of the earth." Geologists promptly adjusted their figures to his lead and although "it was not a case of 'fudging', it still took a lot of lively imagination for all those different scientists using different dubious methods to come up with the same erroneous result."[86]

Since Kelvin's day, chronometricians have overlept one another in their eagerness to add time. Even most catastrophists have been catapulted into the race. Long-term catastrophists heap scorn upon short-time catastrophists in order to keep in the running. They may be warned, however, that long-term catastrophism is thus asking for more and more time to do nothing. L.J. Salop [87] has discussed the effects of a 1% increase in the solar constant which causes an increase of ultra-violet, hard radiation by 100,000 times. There would occur one of the many vast destructions that mark the history of the

biosphere. A natural catastrophe may not require as rare a combination of events as is believed even by non-uniformitarians. Hence, the greater the success of the long term catastrophists in proving historical disasters, the more implausible is it that these disasters were separated by hundreds of millions of years of time. The catastrophist theory will itself demand a compression of geological and biological time.

Should the moment arrive when the far-flung outposts of time represented by radiochronometry have to be pulled back, they will probably not be able to pause at chronological defenses of the old geology; all the troops of tests would retreat to the confines of short-time chronometry.

With this, I think enough has been said in this chapter of the tests of time to obtain permission to try in this book and its successors a radical calendar that largely disregards radio chronometry; that treats carbondating as exponentially erroneous as it moves backward in time; that subjects geological stratigraphy to catastrophic premises; and that regard human legendary reports to be correct and reliable in the large. Since all long-term measures of time have become suspect, we can proceed by using only as much time as we need for the accomplishment of the studied events. Whereupon 14,000 years delimits our temporal structure.

Notes (Chapter Three: Collapsing Tests of Time)

1. "Dating" (1974), V *Encyclopedia Britannica*, 490 ff.

2.

Figure 34*
A GENERALLY ACCEPTED TIME-SCALE
Inapplicable to the present work

Age	Duration (in million years)	Cumulative Total From Present to Beginning (in million years)
QUATERNARY		
Recent (Holocene)		0.015
Pleistocene	1.7	1.715
TERTIARY		
Pliocene	13	15
Miocene (oligocene)	13	33
Eocene (paleocene)	9	42
CRETACEOUS	55	108
JURASSIC	27	135
TRIASSIC	23	155
PERMIAN	33	158
CARBONIFEROUS		
Pennsylvanian	41	191
Mississippian	33	232
DEVONIAN	390	304
SILURIAN	22	326
ORDOVICIAN	57	383
CAMBRIAN	92	475
PRE-CAMBRIAN (from crustal formation to first life)	2000	2475

*Note: This table appears at the end of the printed version of this book.

3. Shelton (1966) 304.

4. Heezing, Thorp, and Ewing, 1959.

5. Jordan, quoting (chap. III) Defaut.

6. Juergens (Fall 1977), fn. 29, p. 17.

7. Cook (1963); (1966).

8. Heezing and Hallister, 633.

9. Sullivan, 118-9.

10. Cook (1957).

11. This is Donnelly's "Age of fire and gravel" in *Ragnarok* (1883) *cf*. Beaumont (1925) 162, 176.

12. Francis (1961) Preface, 14-17, 46,625; Francis (1972); Cook (1966); Velikovsky (1955) 44-6, 119-22, 214-19; Gentry *et al*, 194 *Science* (1976) 315.

13. Velikovsky (1950) 54-8, 67-8 *et passim*; (1955) 218-9, 261-2; Wilson (1962).

14. Larrabee (1962).

15. Corliss (1974) Vol. MI, 104.

16. Wright (1978).

17. Walworth and Sjostrom (1977) 33-4.

18. Cook (1966); (1963) letter Nov. issue, p.5.

19. "Don't rock the Ark," 68.

20. Miller (1841).

21. Ager, 37.

22. Hibben (1973).

23. Tuolumne (1981).

24. (1966) 70, 72.

25. *Ibid*., 304.

26. Winchester (1972)c217.

27. Adey (1978) 835, fig. 4.

28. *Ibid*., 834.

29. Williams and Herdklotz (1977).

30. The joke may be originally Knopf's 85 *Sci. Monthly* (1957), 225.

31. Cook (1966); York and Farquahar (1972); Wager (1964) for a history.

32. On rubidium-strontium see Wright (1972).

33. Anderson and Spangler (1974); Dudley (1972); Mackinnon (1977).

34. Unpublished paper, delivered at Imperial College (London) and U. Cambridge, November 1977. *Cf. Chem & Engineering News*, April 1975., "Guest comments: Radioactivity reexamined."

35. Cook (1964) 12-22; (1966) 54-5. The Katanga ore had been dated at 600 m/y, the Canadian 1650 m/y.

36. Cook (1964) 3.

37. Cook (1957).

38. Robins (1978), citing Rankama.

39. MacKinnon (1977) 11 citing Funkhauser and Naughton (1968).

40. Velikovsky (1972) 19.

41. Mackinnon (1977) citing Noble and Naughton.

42. E.g. Treash (1972); Ash (1973-4); Ransom (1976) 175-8, 200.

43. Ransom (1976) 134-6; II *Kronos* 1, 105.

44. Personal conversation, June, 1976, Naxos.

45. Chalmers (1979).

46. (1966) 26; Juergens as quoted in Ransom (1966) 183-4.

47. S. Talbott (1977); Gentry (all); MacKinnon (1977); Juergens (1977).

48. S. Talbott (1977).

49. Gentry (1975) quoted by Talbott (1977) 6.

50. MacKinnon (1976) 15, citing *et al* (1976).

51. Sykes (1978).

52. Libby (1973), Table 1, p. 8. Sea shells are notably deviant; Cook (1961-2) (1966) (1970). For discordancies, see MacKinnon (1977), fn, 39.

53. Damon (1972); Oosterhout (1976).

54. (1973), 5903.

55. Komarek (1964), (1971); “Lightning Superbolts....” (1977).

56. Clausen *et al*. (1979), 611.

57. Cook (1970).

58. Ransom (1976) 157-64; Sorenson (1973).

59. Rose (1974).

60. Sullivan (1974), ch. 6; Juergens (1978); Cook (1966), Hapgood (1970) 36.

61. *Cf. Hamlet's Mill* (Santillana & Von Dechand) where the legend is described and integrated as an ancient view of the precession of the equinoxes and its reversal over a long time, an idea which I find untenable. It does show what high skills are attributed to archaic man by two renowned scholars of ancient science and legend.

62. Cook (1966) 283.

63. Cook (1966) 332-3.

64. Campbell (1949) 261-9.

65. Mullen (1974) 41.

66. (1974).

67. See e.g. Schindewolf (1963).

68. (1972) 116; fig. 9.1.

69. Cook (1966).

70. (1948), 7.

71. *Cf.* the Oosterhout demonstration above of the indication of radiocarbon disturbances in these periods (p. 50, Fig. 5.).

72. Cadogan *et al*. (1972); Vitaliano (1969); *infra*, chap. X, p. 233.

73. Blumer and Youngblood (1975).

74. Velikovsky (1952) (1967) (1968).

75. Huxtable *et al*. (1978) 208.

76. Cardona (1976a) 82-3.

77. Graves no. 148-11, p. 222.

78. Semple, 224-7.

79. MacKinnon (1977).

80. Isaacson (1973).

81. MacKinnon (1977).

82. See Geoffrey Gammon in IV SISR (Spr. 1980), upcoming.

83. Schaeffer (1948) 19 *et passim*.

84. Velikovsky (1952); (1977); (1979, in press).

85. Vaihinger (1924).

86. Ransom (1976) 32, quoting 44 *Am. J. Physics* (May 1970) 495-6.

87. Salop (1977) 35.

CHAPTER FOUR

A CATASTROPHIC CALENDAR

If nature and human nature were catastrophized by events of the past 14,000 years, a calendar of the events becomes a practical necessity. Hence we conjecture that from an original primeval chaos to the world of A.D. 2,000, the human race and its natural environment passed through eight phases. They are posted on the adjoining chart, Figure 7.

The set of cases is too small for statistical treatment, but, for heuristic purposes, the typical phase may be said to have begun in general natural destruction, passed through a period of recovery and reconstruction, and then entered upon a second catastrophic set of events. Figure 8 depicts the catastrophic cycle, as it might be dealt with by the topological mathematics of catastrophism. Of the first age of Pangea, no beginning is described here; nor is any end foretold to the present age of Solaria, which began about 1,600 years ago.

This calendar takes up 14,000 years of time, and corresponds in geology to the holocene epoch. The solar system was transformed; so were in consequence the surface of the earth, the atmosphere, life and humanity. The transformations took the form of cycles, but the transformations of one era were the inheritance of the next one. Hence it might be more exact to speak of a spiral of history.

The impulses for the great changes of the world came from the skies. There the greatest forces of the universe abide and interact. In each age, celestial bodies signalled and inaugurated revolutions of the earth and life. Earth forces and life forces reacted. Humans, too, reacted, although from the beginning they dreamt of controlling the skies and earth and themselves as well. Unhappily the control was mostly managed by a set of illusions

and delusions. Human arrogance has been a reciprocal of pitiable fear.

The ages of the human earth are called, with the exception of earliest "Pangea" (all land), by astronomical names. They are named after their apparent governor in the sky. The calendar is to be construed hypothetically, not dogmatically. It will no doubt be often adjusted in the light of future discoveries. Vita-Finzi, in discussing the boundary between the Pleistocene and Holocene, praised "the one virtue of an arbitrary date, namely, its arbitrariness."[4] I, too have this final plea in mind.

In each planetary age there were celestially provoked disasters of water, fire earth and air. Each age except Pangea developed cultures of its own, which it passed over partly to the next age. The gods were different while being the same. The Greek "Aphrodite" had traits of an original moon goddess and had many alternative names in many cultures; furthermore she later become confused with Venus, the goddess, and also the planet Venus, which had its scores of god-names too [5]. Jupiter was himself but partly Saturn too; the Chinese "Saturn" was a thunderer who announced time by great noises, whereas the Greek "Saturn" gave time and was called Kronos (Chronos) and the Greek "Jupiter" was especially Zeus, the Lightning-hurler, who was also called the Thunderer. The Calendar is but a rough path chopped through the dense thicket of early history.

THE NUMBER OF CATASTROPHES

Plato in his *Politicus* paints a mythical representation of what he indeed believed to be the historical reality: that a supreme being directly controls the movement of the world ship through boundless space; that the master skipper retires from time to time, leaving the ship to founder in a sea of confusion; but then he returns to the tiller from time to time in order to save the world from complete shipwreck [6].

What can cause one to think that there was a set catastrophes rather than a single disaster, or perhaps two? And why would a baseline for the set be placed at about 14,000 years ago?

Click here to view Figure (Table) 7.

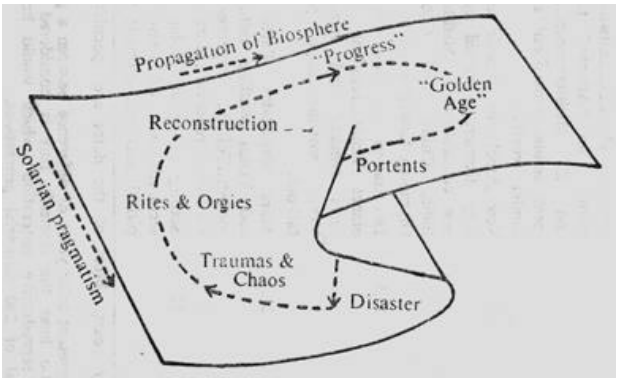

Figure 8. QUANTAVOLUTIONARY PRIMEVALOGY FITTED TO THOM'S CUSP MODEL OF CATASTROPHE. (Click on the picture to view an enlarged version. *Caution: Image files are large.*)

René Thom has been instrumental in developing a new area of topological mathematics to describe catastrophes. The above model is called the "cusp" model and is suited to portray phenomena as varied as a typical stock market cycle of "boom and bust" and the model of the historical cycle dealt with in this book, as here portrayed. Perhaps from six to twenty or more regional or global cycles will ultimately be found to fit this model. In the drawing, the dotted line pursues the course of human events from one disaster to another. After the disaster the human mind moves against the scale of solarian pragmatism, then proliferates along with the biosphere and grows confident, and enters a period of "blissful amnesia" and sublimation with many practical accomplishments; then there is a short period usually, when the environment is seen to be destabilizing, and finally there is a catastrophe. Afterwards, the survivors begin the cycle once more."[3]

Catastrophism on a long-time basis is on its way towards acceptance in paleontology. The work of the late Professor Otto H. Schindewolf of Tubingen University is remarkable in demonstrating widespread generic and geographic destructions of phyla at the boundaries of the pre-Cambrian and Cambrian strata, the Permian-Triassic strata, and the Cretaceous-Tertiary strata [7]. A Pliocene-Pleistocene boundary catastrophe is also apparent [8], as is increasingly the Pleistocene-Holocene disasters of the "End of the Ice Ages."[9]

The 14,000 years boundary that is a major concern of this book is, of course, the last of these - the Pleistocene-Holocene. But as the last chapter would suggest, we shall probably have to collapse the time intervals of earlier catastrophes, perhaps even back to the Permian-Triassic boundary, if we are to use some of the evidence that we think belongs in the past 14,000 years.

Further classifications of the age of mankind will need reconsideration. Today scientific conventions are given over to discussions of “Paleolithic and Neolithic Ages,” “Early, Middle, and Late Ages of Bronze,” and “The Iron Age”. These referents are no more sophisticated in their general configuration than those of ancient scholars such as Hesiod and Ovid. These ancients furthermore introduce cycles of creation and destruction within each age and sometimes a long linear or spiral development running through the cycles reflecting “progress” or “degeneration.”[10]

Although superior in detail, there is no great scientific advantage in the optimistic, linear, evolutionary schemes of Frazer, Morgan, Engels, Spencer and others who perceived a rational technological sequence moving from hominid to contemporary mankind, and whose ideas are dominant in archaeology and paleo-anthropology today. Archaeologists and historians have coined hundreds of local designations that are poorly coordinated, even after strenuous and painstaking field and museum studies. Like geologists, they have produced a surfeit of types in order to make local distinctions, and in the process have hampered theoretical integration.

All of the most ancient peoples reported that the world moved through time in a series of creations and destructions. When the Spanish explorers encountered the Aztecs of Mexico, the Aztecs were in their Age of the Fifth Sun; the earlier “suns” had ended in catastrophe [11]. There is no exception; there could be none, until the present age. This age -- which is termed here the Solarian -- combines a seemingly stable solar system with a science that has made great technological progress by following a liner or uniformitarian theory, with a general contempt for the ideas of early men.

In dividing historical time, cultural change is the most logical concept to use. Since ages must be arranged, let them be arranged by peaks of change that correlate with peaks of catastrophism. Since ages will be given names, let them perhaps be named after the sequence of great gods - those anthropomorphised expressions of disaster. For when the human race was cast down, it was by natural forces; and the forces of nature originated in the skies; and these forces were called gods and as such invaded the mind and history.

But if the scientific community, sensitive to its public image, wishes to stringently avoid any hint of association with astrologers, then an Age of Mars or an Age of Venus may be embarrassing. How to rename the ages is in itself a political and sociological problem. (There is still a U.S. cavalry long after the *cavallo* has disappeared in favor of machines.) Whereupon we may resort to Roman numerals and speak of Holocene I, Holocene II, and so forth to Holocene VIII.

Probably no two catastrophists will agree about the timing of the ages. They will agree that “energy has killed time” Some will then say “If such is granted, I ask no more. It is acceptable to me if millions of years are used to fill in the gaps between catastrophes.” No doubt this view prevails among the scientists who are first to leave the fold of uniformitarianism. Of these, certain writers ascribe the catastrophes to extraterrestrial sources, such as Urey and Ager, others to internal stresses of the Earth.

At the other extreme of catastrophism would be scientists such as Donald Patten, who holds closely to a time schedule permitted by the Bible. Calculating back from Biblical references, he hypothesizes the Universal Deluge of Noah (caused by a near passing astral body) at 2800 B.C. and then musters as much scientific evidence as he can to show that this is possible and provable. Patten also matches up other catastrophic references in the sacred scriptures to a set of dates involving planets Mercury and Mars between the Deluge and the seventh century B.C. Moreover, he adds a pre-Deluge, astrally caused catastrophe sometime within 100,000 years of the Deluge, that brought coal, oil, and other products and gases into the earth, and refers to the outer planets as their source.

Most astral or extra-terrestrial catastrophists, who see the earth as victim of intrusions from outer space, believe that at least one great catastrophe has occurred within the memory of man. Usually, like Patton, they assign this to the Great Deluge of Noah and place the Deluge in the Early Bronze Age. Terrestrially-confined catastrophists, as, in his archaeological works, Claude Schaeffer, rest simply upon the evidence of widespread destruction by fire, flood, and earthquakes during the Bronze Ages.

WHY 14,000 YEARS?

The tentative date of 14,000 years ago is chosen to form the baseline of the holocence calendar because the criteria and evidence of later catastrophes, if accepted and carried back, seem to devolve into a set of catastrophes with a beginning around 14,000 years ago. Many natural disasters seem to have been concentrated around that time, some of which are lumped into a scientific fiction called “the end of the ice-ages.” True human activity began to appear in full array at this time, too, and human cultures seem to recall this period of their birth.

The calendar began with the evidence that I. Velikovsky brought to bear upon catastrophic events in the first and second millennia B.C. There appeared to be scientific value in considering the planet Mars to have been directly involved in disasters upon Earth in the period from 777 B.C. to 687 B.C. and the planet Venus to have been a direct cause of grave natural and cultural destruction in the period between 1450 and 776 B.C.

“One who mounts the tiger cannot dismount,” goes the old Chinese saying so one was compelled to reason that 1) other great gods had existed earlier, 2) practically all types of phenomena that had occurred during the Venusian and Martian ages had been reported of the times of those earlier gods, 3) a fully developed human mind and culture was indicated and implicated in these earlier times, and hence 4) a series of catastrophes had occurred. Moreover, the earth had come so close to total destruction in these episodes that the list of earlier episodes could not be indefinitely long. It had to return to a baseline of a time of systematic stability.

Therefore, if Uranus by its many names seemed to be the end of the line of gods in all religions, the system from which Uranus had originated had to be stable. this stable age before Urania could be called Pangea, meaning that all the land was together then and all the world was land -- covered [12]. Then I turned my attention to the possible physics of a stable heaven that could have preceded the sky of today. Finally a model of it seemed possible, which is described in the next chapter.

In respect to the lives of the gods, multitudinous findings of very recent physics, nuclear chemistry, geophysics, astrophysics, oceanographic and aerospace exploration have exposed an unstable basis of nature that is congenial to the catastrophic view point. These could be correlated with archaeological field work.

In the chapters to come, many revolutionary natural events can be shown to have occurred during the periods following the Uranian and Lunarian ; but a heavy and primordial concentration of disasters can be shown to have begun with the advent of the Uranian period around 14,000 B.C. Vital to the establishment of the baseline and subsequent periods is chronometry. Here, as I have shown, various fundamental weaknesses in the new highly touted radiometric dating techniques are being exposed, just when these techniques have dispossessed the old geological dating methods!

With respect to the beginnings of human nature the principle offered is one that most psychiatrists are ready to accept: that human behavior is most compulsively regular on matters that were once uncontrollably and disastrously irregular. An obvious signal of this great obsessiveness of the non-instinctual primate called man is the sky-struck calendarizing that seems to have preoccupied humans from the moment of their creation as such. All of these calendars of earliest human cultures were short in years and began with creation episodes. It is too early to assert that any revolutionary primevalogist has succeeded in organizing a system around these perspectives. Indeed, scientific reconstruction is likely to occur first as the failure of the established foundations of science, not as acceptance of a new system. Conventional and uniformitarian scientists are

overloading their camel until finally they will add the straw that breaks its back.

Obviously, there is no single experiment, no body of science, no pre-existing general theory, by which one could have proposed this schedule of events and, by so doing, could have satisfied the demands of any single science, much less any established religion. A combination of new methodological perspectives engendered the schedule.

In all of this work, one is trying to construct a new model of science on the inconsistencies and irregularities of the old. To pragmatists and instrumentalists, it is not only heartening but also easy to accept William James' often quoted remarks to the effects that from the anomalies of an old science spring the theory of a new science. "And when the science is renewed, its new formulas often have more of the voice of the exceptions in them than of what were supposed to be the rules."[13]

Notes (Chapter Four: A Catastrophic Calendar)

1. Temple (1976) adduces evidence of the Dogons carrying "hard" astronomical facts for thousands of years. Similarly, East Africans have distinct knowledge of iron-making techniques that stratigraphy appears to prove go back to the early solarian (present era) or before.

2. C. Wells (1964); Miller (1970); physiological generation was half the present "western" time down to modern times but most statistical studies of burial grounds show "old people" at the extreme of the distribution.

3. For discussion of Thom's theory, see Thom (1977), Steen (1974) and Kolata (1977).

4. (1973) 47.

5. See also below, p. 178.

6. 272:3, 273:1.

7. Schindewolf (1963); Salop (1977); Lantzy *et al*. (1977); D. H. Clark *et al*.(1977); Golonetsky, *et al*. (1977); Newell (1962) (1967); Hatfield (1970). Schindewolf counters the general argument that gaps in the fossil record conceal the fact of uniformitarian changes; "the lowest percentage of gap in the strata in the whole of the history of the Earth would occur precisely on the boundary between the Permian and the Triassic." (p.20) Thus one of the very earliest of uniformitarian and evolutionary as against quantavolutionary, defenses, proposed by Darwin himself, collapses. *Cf*. Velikovsky (1955), 237-9.

8. Salop (1977) 30-1; Ericson *et al*. (1963).

9. Velikovsky (1955); Eiseley (1943) (1946); Flint(1971).

10. *Cf*. Eliade (1963) 113 and ch. IX.

11. Mullen (1974) 41; Velikovsky (1950) 34 quoting von Humboldt *et al*.

12. Continental drift theorists, stemming from Seuss and Wegener, employ the term “Pangaea” to mean the continental crust, when it was intact and surrounded by the existing oceans. *Cf*. Sullivan.

13. William James (1896) 301.

CHAPTER FIVE

SOLARIA BINARIA

Searching backward for ever older memories of disasters brings one to a point where Uranus is father of the gods and corresponds to a huge heavenly body. But what kind of body is it that is close-in, luminous, draped by clouds after a period of imperceptibility, but nevertheless, from its first perception, a second glowing sun ?

Contemplation of this problem leads to a conjecture: the solar system might have been a binary system, which early humans could actually have experienced. “This is the heyday of the cataclysmic binary,” declares Cecilia Payne-Gaposchkin [1].

Among the earliest products of the human mind are certain legends, statements, and symbols that may be interpreted to support the theory that a binary system occupied the sky. Most important among these is the reported occurrence of a second “sun” that can be distinguished from the present sun, a bright star, a nova, or the moon.

As late as five thousand years ago, in Egyptian, Babylonian, Hebrew and other cosmogonies there is presented a heavenly body in the “North” that is luminescent by day and radiant by night [2]. The body is accorded divine status, and is called by dozens and perhaps hundreds of names around the world. Were it to be granted that the binary system could carry into the time of observant mankind, then much proto-history that would otherwise seem to be nonsense will appear to be probable.

The discoverable properties of star systems offer a number of indications that the solar system can be modelled as a binary system. Existing knowledge of the solar system can be regrouped around the concepts necessary to a binary model [3].

If in 14,000 B.P. our solar system was multiple, it would be in the company of perhaps half of the star systems of the universe [4]. Instead of one sun there would have been two or more suns orbiting each other. Of the nearest twelve star-systems four are multiple, three of these are binary, and three of them have dark companions that possess masses of 1% or less of the mass of the sun [5]. In this book, I am not only postulating such a binary system as our own, but also am suggesting that it persisted down to about 14,000 years ago.

Alpha Centauri A, a three-star system which, at 4.3 light years' distance, is our nearest neighbor, has nearly the same absolute magnitude as the Sun, 4.8 as against 4.86 for sun. It is in all ways, also, an ordinary medium-sized star system. Binary components frequently have similar separations to the planet-Sun distances within the solar system.

"Has the Sun a Companion Star?" asked E.R. Harrison (1977). He wonders whether a slight acceleration of the solar system detected by pulsar observations may be due to an orbiting binary partner. "The companion star is presumably either a faint white or red dwarf in closed orbit around the Sun, or a gas-accreting nearby neutron star or black hole in open orbit."[6] Harrison adduces Oort to say that a cloud of comets extends a distance of about 10^5 A.U. and this, he maintains, could envelop the Sun and its companion star.

Besides the Sun, there would have been a body that can be called Super-Uranus [7]. The postulated system is here referred to as Solaria Binaria. Between the Sun and Super-Uranus there would have to be a connection, a great axis of fire, an electrical current discharging its powerful pulses across the axis of the binary. Figure 9 shows this and other features of the system. An excessive charge on the Sun would occasion the current or arc.

THE MAGNETIC TUBE AND PLANETS

Around this gigantic axial current, a magnetic field would be induced. This field was composed of ionized gases and contained a number of the chemical elements in atomic and molecular form, including especially water in its three forms.

The field rotated around the central axis. Within the outer envelope of the rotating gases were a set of planets, including the Earth. They had budded and grown there in the atmosphere of the tube.

Binaries can have planets [8]. Several binaries show exchange of significant clouds of ionized gases between the stellar components. These carry both charge and matter. In Solaria Binaria, hydrocarbons may well have been plentiful in the gases that passed from the Sun to Super-Uranus.

Nearby binaries contain dwarf companions, a situation similar to Super-Uranus in relation to the Sun. Such dwarf companions have sometimes been seen to flare up, that is, to briefly resemble a small nova [9]. This seems to have happened both to Super-Uranus around 11,500 years ago and later to Super-Saturn around 6000 years ago, when it separated from Jupiter to retire farther into space.

The inner planets rotated around the central “axis of fire” along with the gases of the tube, in a motion that remains today as their rotation around their individual axes. The outer planets were all contained in Super-Uranus. Earth, Mercury, and Mars perhaps retain this fossil motion, whereas the rotations of the outer planets -- Jupiter, Saturn, Neptune, and Uranus -- are new rotations, as is the retrograde motion of Venus.

Figure 9 pictures Solaria Binaria as a “stacked” system where the planets spin like balls in the gaseous medium that revolves around the central axis between the two binary bodies. The axis itself wheeled around the Sun, on what will become the “plane of the ecliptic.” On the other hand, the Sun was losing, and finally lost almost entirely, its tendency to orbit around its binary. Rather, it undulated “as if” it were trying to perform such a motion [10], and this motion is probably what Harrison, as indicated above, refers to.

The observed binaries of our galaxy are engaged in heavy discharge of gases among the members [11]. This type of gaseous exchange is presumed here to have constituted the magnetic tube between Sun and Super-Uranus. Since gaseous exchanges must be electrified and have direction, it may be

presumed that a current was discharging between the two binary bodies. This current would be radiant and may even be the mysterious “central fire” referred to by the ancients and specifically by Plato in his dialogue, *Timaeus* [12]. But, also, the rim of the magnetic tube would alight with cooler, slower gases, admitting a luminescence to the contents of the tube including the planets.

Figure 9 has Earth nearest the Sun and the other planets in positions unlike their present ones. The Earth itself is considered to have moved least, and of having been closely passed by other planets in recent history. The total distance between the binary bodies must have been much less in those days. This is suggested not only because observed distance between present binaries vary greatly and can be quite small but also because the ancients appear to have had a knowledge of the planets and to havesuffered from interactions among them that indicate a close ingrouping. The planets would have moved outwards because of changes in the Sun as an accumulator and discharger of electricity.

THE BINARY PARTNER

Like the Sun Super-Uranus was a charged gas cloud with a high density but volatile core. It might have contained about 4% of the mass of Solaria Binaria. It was not unlike the planet Jupiter of today, save that it was radiant and may have carried much more water in its high clouds. Indeed, on occasion, Jupiter has been termed a defunct or vestigial binary. Super-Uranus could not be seen by the hominids of Earth, or by whatever aware beings may have existed on its other planets if they had merely human vision. Its vast cloudy environment and the intervening atmosphere of the tube disguised its appearance.

In Solaria Binaria the Sun had 96% of the total mass and more of the angular momentum than does the presents Sun, mainly because it was rotating or, better, undulating around its partner. The remainder of the mass, 4% in Super-Uranus, accounted for most of the orbital movement within the system. The period of the binary was perhaps months long. (The earliest known calendars in Egypt and Meso-America were of 260 days.)[13] Both the Sun and Super-Uranus exhibited rotation around their

axis. In the case of the Sun, the rotation was gradually reduced by intense gaseous discharges and matter flowing from the star's equator. On Super-Uranus, the rotation was increased as the electrified particle stream impinged upon its surface, whipping it like a top. These particles arrived with great energy because they were continuously accelerated as they flowed from the sun to Super-Uranus, whose potential was less negative than that on the Sun.

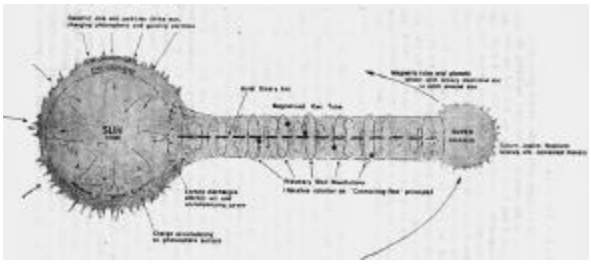

Figure 9. THE ORIGINAL STACKED BINARY SYSTEM (SOLARIA BINARIA)
(Click on the picture to view an enlarged version. *Caution: Image files are large.*)

The average separation between binary components is 20 astronomical units[14] (20 times the distance between the Earth and Sun today). However in some binaries, the partners are much further apart, in other much closer together. The division of the total mass among the components shows little pattern. "A mass ratio of about 1 to 20 could occur about 5% of the time, and under such circumstances a solar system might form."[15]

The periods that binaries take to rotate about each other extend from the order of a day or less to upwards of thousand years. The period varies inversely with the net interaction between the two bodies. Thus, if the attraction diminishes, the period increases.

The planet Jupiter has a composition resembling that of a star much smaller than the Sun. It had more star-like traits in the past, when it was at least twice as massive. From the radiation it emits, Jupiter is thought to have a subsurface temperature somewhere between 12,000° and 50,000°C. Its chemistry

resembles more the gaseous Sun than the inner planets, or even its own satellites; it consists largely of hydrogen in various states, and holds some water [16]. Furthermore, the chemistry of planet Saturn resembles Jupiter, lending support to the theory that these two planets were once one. In Proclus, citing the *Parmenides* of Plato, occurs a statement that Jupiter separated himself from Saturn; interpreted physically, this suggests a fission."[17] There exists, in fact, much literature on the interaction between Jupiter and Saturn, not only in Greek thought but also in other works of Near and Middle East cosmogony [18].

The high density of the inner planets suggests that they have had different careers than Jupiter and the outer planets. Venus is an exception to be discussed later, but the others probably existed long before Solaria Binaria began to disintegrate around 14,000 B.P. They each could have supported many forms of life. The chemical elements were fully represented on all of them, because the axial current of the binary circulated along the center of the gaseous tube, literally an electrico-chemical factory. All of the planets would have had similar climates.

Radioactive elements existed in great quantities, but under the electrical and magnetic conditions of the great tube atmosphere, their rates of decay into other elements were high [19]. This rapid decay, which diminished with the general de-electrification of Solaria Binaria, may account for the great ages obtained in tests of radioactive minerals today; their "decay constants" have continually and drastically slowed down.

Without recourse to the ancients, contemporary astronomers have come to the question, as D. McNally of the London University Observatory put it, "Are the Jovian Planets 'Failed' Stars?" "If they can be classified in this way." writes Eric Crew, " this means that any deductions about Jupiter are likely to apply to the other gaseous type planets, Saturn, Uranus, and Neptune. An event in one of these may also be linked to events in others, so the problem of cosmic catastrophes is that much simpler."[20]

THE STACKED BINARY SYSTEM

Up to the moment, catastrophists and uniformitarians have conducted their debate on the premise that the planes have always orbited close to the plane of the ecliptic. Whenever catastrophists have invoked planetary or cometary deviations to explain titanic encounters, they have assumed them to occur on or about the imaginary line that defines the orbit of the planet Earth about the Sun. Thus, Venus is said to have been launched into an elliptical comet-like orbit moving in or near the plane of the ecliptic when it created havoc amongst the inner planets [21]. All the collisional mishaps that might have occurred to other bodies -- the meteoroid impacts upon Mars, Mercury, Moon, and Venue, the creation of asteroids from Apollo -- were also supposedly events of a single plane.

A new developmental theory is offered here. It is compatible with quantavolutionary theory and solves simply many important problems, so that I do not hesitate to advance it now. This possibility describes how a binary system reduces to a solar system in the time of humankind. In its primal form it was a stacked binary system where the planets ringed and revolved around the axial electric current that ran between the Sun and Super-Uranus. The magnetic forces circulated around this same axis. The axis is in its present form the plane of the ecliptic. The present planetary rotations are derived from their primeval motions around the old electrical axis. If today the planets are slightly off the axis, and stray slightly around their average position, these are probably ghost motions of their much larger historical rotational orbits.

The planetary orbits that ringed the great axis of fire descended to their centers on the axis that once linked the Sun and Super-Uranus. Thus the electrical system was transformed into what appears to us as an inertial system. I say “inertial” because explanations of motions within the solar system of today are described almost entirely as inertia (with electrical forces admixed as circumstances demand them). The laws of gravitation describe the existing motions as if they had come down unchanged from a uniformitarian past. Not “cosmos without gravitation,” as Velikovsky once put it [22], but gravitational laws without gravitation.

The axial rotation orbits of the Pangean planets were proportional to their size and to the intensity of the local electromagnetic current density within the axial tube connecting the binary components. The current would everywhere be uniform. The local current density could vary. The farther from the Sun and hence the farther up the tube, the smaller the diameter of planetary rotation. The planets were enveloped in the outer gases of the magnetic tube, which also were their primordial atmospheres. Heat came from the gaseous clouds in which they were enveloped, and indirectly from the axis of fire, as well as from the great binary bodies.

The primeval human observers could see the incandescent light produced by the central current. The more dense gases near the axis glowed like a huge interrupting neon arc. The perimeter gases of the magnetic tube were probably also radiant. People could not see the Sun or its binary partner through the clouds. The axis of each planet was aligned parallel to the electrical axis; thus the equators all faced the binary axis. The axes of the Sun and Super-Uranus were perpendicular to the electrical axis; as cathode and anode they exchanged electrical current between the closest points on their equators.

DECLINE OF THE ELECTRICAL SYSTEM

The source of the electricity of the system was, and is, cosmic, principally galactic, which, using a mechanism described by Juergens [23], would have charges built up in the corona of the Sun being continuously discharged along the tube to Super-Uranus, which was less negatively charged. The magnetic current whirling around the electrical current was directed oppositely. The planets within the gaseous tube shared its potential which, like Super-Uranus, was lower than that of the Sun.

The charge on the Sun had “always” been diminishing, owing to a steadily decreasing input current from the millions of other discharging bodies within the galaxy. Little by little, over a long time, its ability to radiate along the line of current thus diminished. Today the magnetic field of the Sun, carried as the “solar wind” into billions of miles of space, stretching even

beyond the planet Pluto, is a greatly diffused relic of the great Pangean binary axis current. It presently covers a wide band that strikes into space far above and below the plane on which the planets orbit, and may even be circumglobal; in any event, the band is wide enough to have at one time encompassed the axially rotating planets [24].(see Figure 10.)

The solar flares that are so important a part of solar behavior, and planetary behavior as well, occur largely between the surface and the corona of the Sun. They develop new sunspots within hours, are immensely energetic, and often penetrate the corona into over 500,000 kilometers of space. The radiation and particles they emit affect the Earth's atmosphere and possibly its motions. Gribbin and Plagemann significantly titled an article in 1973 "Discontinuous Change in Earth's spin rate following great solar storm of August 1972." Often a surge of gas accompanies a flare. Often a single flare, and many occur, has enough energy to provide theoretically a million years of electric power for the whole Earth.

"The physical causes of flares are still unknown, though it is believed that the energy released by a flare..must come from the intense magnetic or electric fields associated with the solar active region."[25] Bruce describes the Sun as sending out arc discharges continually from its photosphere [26]. The arcs fall back, in my understanding, and become the glow discharge of the chromosphere, because there is no longer an anode binary and a great enough voltage gradient to project the arc through interplanetary space. The solar behavior recited here may be sufficient to understand how I have come to construe the present solar system as a fossil binary, viewing the electricity and gases of the solar flares as "attempts" to reestablish the ancient current, transporting the radiation and elements that the original current carried.

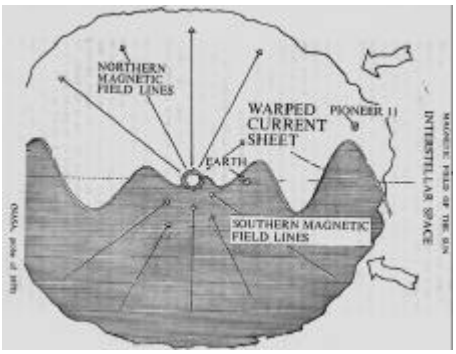

Figure 10. MAGNETIC FIELD OF THE SUN
(Click on the picture to view an enlarged version. *Caution: Image files are large.*)

Finally the motions of Super-Uranus were affected as the charge it was receiving declined. As the central current lessened, the power within the magnetic tube, which depended upon the strength of the current, also began to lessen; the planets began to convert their axial rotation into self-centered rotation. They moved toward the diminishing "central fire." That is, their angular momentum about the central axis was converted into an angular momentum based about their planetary rotational axes.

The planetary atmospheres cleared partly because of a general lessening of density of the magnetic gases and because of deluges of water from vapors once more evenly distributed within the magnetic tube. Individual planetary atmospheres became separate. From Earth, Super-Uranus began to be seen in the North and the Sun in the South. Super-Uranus, much nearer to Earth, would, if at some 20 million kilometers distance, appear as a colorful live body twice the size of the sun or moon today.

THE BREAK-UP OF SUPER-URANUS

Super-Uranus had been rotating rapidly, whipped by the charged central current like a spinning top. Now it began to slow its rotation and break apart. Great electrical disturbances resulted; meteoroids penetrated the gaseous region of the binarian axis even as they exploded into farther space. The planets moved

away from the Sun even as they were receiving more direct radiant energy from it.

Uranus Minor, a fragment produced as the larger body exploded, arched through the solar system along the plane of the ecliptic. This initiated the first of the set of catastrophes that dominated the recent post-Pangean history of Earth, the Lunarian disaster (about 11,500 B.P.). Uranus-Minor passed the Sun, lunged farther into space, then returned to the system, no longer aligned with the other planets on the axis of the binary, but orbiting along the plane now defined by the present solar system.

Super-Uranus (or "Super-Saturn" it should now be called) continued to fragment as it slowed further. In the next great catastrophe (6000 B.P.), it blew off its charged surface shell and fissioned. It became a nova. Vsekhsviatskii, Director of the Kiev Observatory, has described such an event, ascribing it to a time of 100,000 to 500,000 years ago and claiming that some 10^{25} grams of material, much of it ice, was erupted into space, bombarding the planets and exciting secondary volcanism everywhere [27]. It is probably significant, that, as Shklovskii and Sagan wrote: "It now seems very possible that all novae occur in close binary systems."[28] When novae occur luminosity increases and the expelled mass is about 10^{-4} to 10^{-5} of the mass of our Sun. Saturn has .02859% of the mass of the Sun [29]. The expelled minor portion of what was Super-Saturn retreated into farther space, where eventually it became the present planet Saturn [30]. The Earth was deluged with water. The major part of post-explosion Super-Saturn became Jupiter. It maintained its position at the end of the axial current of Solaria Binaria.

The new planet Jupiter's rotation was erratic; its temperature cooled; its charging wind was drastically reduced. Yet it was still the most electrified of the planetary bodies. Jupiter attempted to reestablish its electrical line to the Sun. Sometimes discharges from the Sun and Jupiter would actually make contact across the vast spaces, but the lessened potential made the intervening gas a poor conductor. Only upon occasion did the discharge resume; when it did it wrought destruction upon the Earth, which was closing its orbit around the diminished

electrical axis. Earthlings viewed these discharges with consternation.

PLANETARY BEHAVIOR

The Planets reacted to the drop in electrical power in the gaseous magnetic tube by moving inward towards the present plane of the solar system ecliptic. Their axial rotational speed changed into self-rotational motion. The hemisphere of the Earth that faced towards the disintegrating binary was increasingly illuminated as the gas clouds disappeared.

When the time came for the Earth and other dense planets to transform their minor orbits into individual rotations, they changed the tilts of their axes. The circum-current orbit of the equator described the circular motion of its minor orbit; thence the Earth's poles were perpendicular to this orbit.

But, as the Earth moved in upon the dying central current, its equator slowly shifted to the solar ecliptic. Its poles also shifted until they became nearly perpendicular to this plane, as did the poles of the other planets. Since the guiding reins of the central current were exceedingly loose now, individual axial tilts became possible, and did occur on occasion; a strict rule of perpendicularity could not be enforced.

The change from Solaria Binaria would be eased by electrical transitions, which are smoother than mechanical ones and by the quantitatively transforming binary atmosphere; hence the Earth would have been protected against sudden wrenching changes of motion and abrupt temperature changes of an utterly destructive kind.

The clearing skies brought the other planets and the binary bodies into view; they became the cynosure of the human eye in its infant self-consciousness [31]. The binary side was the boreal region, the north; there man saw first super-Uranus, then later Saturn; each in his turn ruled the world. The greatest drama of human history was observable; the birth, struggles and deaths of the gods, From the skies came fires, stones, waters, and also winds.

Why all the planets, having once lost their original circular orbit around the Sun-Super Uranus axis and having moved back and forth on the solar ecliptic plane, should then have reassumed almost circular orbits around the Sun in a plane now perpendicular to the "old" axial orbits is explainable [32]. Circular orbits, taken alone, are a mystery that conventional astrophysics has not yet considered. Even an original circularity was unexplainable under Newtonian laws of gravitational motions. My answer is speculative but all that has been said here necessitates it. The answer is dictated by electrical behavior which dominated the solar binary.

Gravitational forces can maintain stable elliptical orbits because of the interaction between orbital inertia and centripetal attraction. In a closed system electrical forces cannot. Charged bodies in an electrical field will give up to, or take from, the field whatever charges they need for electrical equilibrium, changing all motions necessary in the process. Gravitational fields are conservative. An electrical field does not yield a conservative field.

All of the movements depicted here represent the change from a highly charged electrical system to a low-charged largely inertial system. Electricity is still vital to the system and not only because it produces heat for the Earth. If the galactic electrical sources were denied the Sun, it would collapse upon itself, as would the low density planets. Neutralized, bodies of the system would continue to orbit but purely by inertial attraction, not much different from that which we now observe but without excess radiation and interplanetary plasma. Then the solar system would be truly a fossil system.

In all of these hypothetical adjustments, the Earth maintained "miraculously" smooth phasing in the transition from Solaria Binaria to the solar system (but, of course, every unpredetermined survival is a miracle). People on Earth would actually have observed all that the ancients claim to have observed and left us as myth. Earth and all other planets would have suffered damage in varying degrees at the times claimed in our analysis.

COMPLETION OF THE TRANSFORMATION

As long ago as 1952, Otto Struve described a fast-moving series of events occurring in the Pleides star-cluster, particularly, Pleione. With unconscious irony, the article was called, “Pleione -- A Story of Cosmic Evolution.”[33] By 1905, this star had been observed to lose mass, by minor fissions perhaps. It maintained a very fast rotation, 100 times the rotational speed of the Sun. Then in 1938, Pleione acquired a ring. In 1952, gaseous atoms began to flow with increasing spread outward from the photosphere and reversing layer. They filled an envelope, developed a shell, and then the whole of it disappeared into outer space. The ring had disappeared.

Struve conjectured that the observed sequence was common, and that massive material is lost in space thereby. The process is less violent than novae, Wolf-Rayet stars, P Cygni and SS Cygni stars. Payne-Gaposchkin’s comments on the nova cycle make clear that although there can be discerned phases of the Pre-outburst, outburst, and decline to “normality,” every nova is different. “Novae...cycles (if any) must be reckoned in centuries [34]. Even in the outburst phase, novae have observably varying behaviors. In the present transform model of Solaria Binaria, we are allowing more time; we discern several novas, and we grant the near total disappearance of the huge atmospheric tube that was the birthplace of the planets and biosphere. Only the Earth’s atmosphere, the interplanetary plasma, and some vestigial planetary atmosphere remain.

There is some coherence between this scenario of events and the writings of Bruce, Velikovsky, Rose, Vaughn, Juergens, Milton, Crew, T. Gold, Eddington, Vsekhsviatskii, Ovenden, Bass, and other modern writers, not all of whom are catastrophists, much less supportive of a short-time scale. It is not of incidental significance that astronomers (for instance, Sagan, Isaacman, and Dole)[35] have calculated and published, seemingly without reason or because “the exercise is thought to be suggestive”, sets of profiles for “alternative planetary systems.” They line up and distribute groups of planets in altered masses and positions along the plane of the ecliptic, and exercise they are compelled to perform despite no conscious theoretical justification for engaging hours of large-computer time to make the simulations.

I would say that their results suggest that the order of planets, their masses and their evolutions vary greatly; there are many simulations to be performed, guided by an appropriate theory. One such theory is the system advanced here: that of a largely electrical binary system, transforming (under the eyes of humanity) into a largely inertial-electrical system and redistributing bodies, motions, gases and charges as it evolves.

THE WORLD OF PANGEA

Life on planet Earth flourished in the binary system. The circumference of the globe was less then. The ocean basins were absent. Mountains were absent as well.

The globe was luminescent but not brightly lit, for the Sun was not visible as such. The skies were always cloudy, and the clouds dropped fresh water, usually in condensations. Occasional rains replenished shallow seas, swamps, and ponds. Hundreds of miles above, a canopy of waters diffused the celestial light. This canopy sky became part of the traits of the great god “Heaven” or “Uranus” to the first true humans, as will be detailed in the next chapter. The Moon was absent from the sky. The climate was equable and warm.

The atmosphere contained oxygen and supported a nitrogen cycle. Most of the species of today existed. So did dinosaurs and nimble hominids. Ecological development proceeded according to uniformitarian principles of a competition for survival. But the extinction of a species was a rare event. So, too, was the birth of a species. As a condition gradually changed, so changed a ratio between and among species; a biological equilibrium was maintained, without abrupt interruption.

The crust of Pangea was sial, heavy in silicon and aluminum elements, as is the crust today. Its depth was uniform; at about 30 kilometers it developed, but very gradually, into heavier silicate magnesium mixtures (sima). Great sedimentation had occurred. It amounts now to $5x10^8$ km^3 or $1.3x10^{24}$ gm.,[27] but twice as much was on the original crust of Pangea. All the recent vulcanism, seismism, and crustal churning has added little to the

sial, for the magma below is not provided with the materials for its manufacture.

There is no evidence that the oceans have destroyed and buried continental material, or could have, since the sial and its sediments are lighter than the sima of the ocean floor. In Rittmann's work on volcanoes, we find the following words: "Since the subcrustal magma is not capable of providing sial by differentiation, we must conclude that little has been added to the sial since the beginning of geological history."[36]

If this mass of land had been accompanied from the early assigned ages by the oceans and ocean basins, it would not have eroded into the sea, for the sea normally pushes back erosion [37]. An exception is the mouths of rivers, but river deltas explain only a small fraction of the vast continental shelves and slopes. The fossil marine beds that are found upon the land today, even high up in the Himalayas, are once-flooded land-beds or they are Pangean shallow water formations. They are the relics of deluges, tides and certain risings visited upon the world by post-Pangean catastrophes. There are few fossil marine beds laying conformably upon plutonic or basaltic sima. The ocean basins did not have to exist to explain them today. Both the uniform and equable climate and level topography of Pangea were the results of a uniform equable atmosphere and a stable solar electrical system. Both ended suddenly.

THE SKY-WATCHERS

That the solar system was originally (in Pangea) a Solaria Binaria seems to be evidenced by the most ancient memories of humanity. First came the high clouds, a canopy system. Then came the "planets", actually first the dark sun primary, Super Uranus, with several nearby bodies. Then appeared the true Sun and the Moon, at roughly the same period. Finally came the stars and constellations, as the skies largely cleared.

Earliest *homo sapiens* or "intelligent human" was a sky-watcher but not a star-watcher. The stars were a later revelation. He watched first the rupture of the canopy, then the heaving off and break-up of the dark, enormous Super-Uranus, then the nearby occasionally lit up Saturn-Jupiter, then the Sun and Moon, then

the fiery all-conquering Jupiter and thereafter the stars and the progress of the constellations. The stars developed as creations of the planets and became their creatures, minions, stopping places, and mnemonic markers.

If the skies had been always as they are now, the Sun and Moon would be portrayed early and alone, they would have been the chief gods, and they would have been benignly worshipped, if worshipped at all. The Moon, inasmuch as its birth was attendant upon disaster and its presence was obvious, was more significantly worshipped than the Sun. Over time, its worship became less schizophrenic and paranoid, less brutal, than planetary worship. Still, since its origins were more startling and its apparition more varied, it has been a more powerful and disturbing divinity than the Sun.

The Sun grew upon the scene gradually. It was wreathed in gas clouds at first. The clouds let it through more and more distinctly. For a long time it could not be seen in the “Northern” hemisphere that pointed its pole at Super-Uranus.

Helios, the Greek sun god, was treated familiarly, sometimes almost with contempt. Generally he was respected, well-liked, and rarely gave offense. If the more terrible gods effaced him or displaced him, he resumed his unceasing round as soon as he could or after a period of persuasion by the gods. Unlike the planetary gods, who shone fearfully at night upon many occasions, he shone only by day. He never visibly exploded. He did not throw fits ; he did not frighten people to death. For these reasons, one must doubt the theory that the catastrophes of Earth were owing to solar inconstancies that worked upon an otherwise orderly planetary system.

If the stars would have appeared as they now appear in the clear night skies, then earliest calendars would have been sidereal. No primitive time-reckoners used the rising of a star to measure a day and a year. Yet it is easiest of all to calculate under today’s bright skies. Some scholars have sought star calendars. The Egyptians, for example, were supposed to have a Sirius calendar; more likely, Velikovsky argues well, this was a Venus calendar. The Egyptians give the earliest indications of

understanding sidereal time, but they first used a lunar, then a Venus, and then much afterwards a purely solar calendar.

The reasons for a calendar were originally to watch for bad happenings in the sky and celebrate their non-occurrence or their anniversaries as good-evil ambivalent events. Only later and secondarily were calendars applied to pragmatic ends as, for example, saying when to plant seeds or collect tribute.

Since the stars appeared dimly and with apparent irregularity, at first and until the Age of Jovea, there was no chance of developing a map of the heavens. The constellations were unknown until about 5000 B.P. Nor, therefore, could the sidereal movements be plotted against time. When, on occasion, observers exclaimed at the movements of the stars, the movements that they referred to were movements of the Earth on which they stood. The ancient late Saturnian analogies in legends of the rocking mill, the rocking churn, the ashwood rotating firestick, referred not to the precession of the ecliptic but to the wobbling to and fro of the polar axis over a short period of years upwards to a century or more, following a catastrophe.

When later the Great Pyramid of Ghiza was built (ca. 4500 B.P.), the regular movements of the stars on the celestial plane were known but not necessarily the 26,000 year precession of the equinoxes. Saturn, as god of the North, had been dethroned. The earliest navigation might follow coastal lines, and then the newly emplaced Moon would permit guidance. The stars were later used for geometry and navigation. But they were not worshipped. The Great Pyramid itself was oriented toward an apparently stable star that then marked the boreal opening, by this time correctly regarded as the North Pole. The North Pole, that is, was operationally defined as the earthly point corresponding to the celestial point marked by the stationary star.

Any boreal star might serve that did not move, and this would mark the celestial North Pole and correspond to the geographical North Pole at that moment in time. Then a structure oriented to it would change its geographical “true-north” orientation only if the ground on which it stood moved. However, the Earth could

(and did) shift afterward; and the Earth might even turn completely reversing "north" and "south"; still the geographical North would remain the same.

The Great Pyramid points, within several minutes of error, to the present geographical north pole [38]. Hence, the only possible changes of the ground on which it stands would occur (a) by an improbable sliding from one position at one time and a sliding back into about the same position later, (b) by any amount of longitudinal movement - that is, east and/or west (which would preserve the north polar orientation), and (c) by the aforesaid several minutes of deviation observable presently in the orientation of the Pyramid, which, if it happened all at one time, would have been a considerable disaster from interrupted rotation and earthquake, or as an earthquake settling the lithosphere after a past catastrophe. Subsumed under the last clause is the possibility that the Earth's shape was not yet accommodated to the approximately 1500-year-old tilt of its axis which would have required an emergence at the old poles and new equatorial region and a flattening at the new poles. However, as stated above, the chances would always be good that, if the Earth's axis tilted, some star would show up to be the "North Star" so far as the orientation of the Great Pyramid was concerned.

EARLY ASTRONOMICAL IDEAS

Evidences of even earlier orientations of the first geometricians to geographical north are important indicators of a boreal hole in the cloud canopy, which centered invariably upon (unless it was somewhat magnetically affected by the magnetic pole) the geographical north pole. Thus, even without stars, the skies encouraged a science of geometry, surveying, and navigation to achieve some development before the skies could be mapped.

None of this could happen before mankind had become aware, and employed symbols. The theory of Plato's *Timaeus* affords significant evidence of the thought processes that might have been employed by early human astronomers. It demonstrates the proper role to be assigned to the development of primeval mankind.

As the planets became visible and their effects forcefully experienced, their behavior was studied. It was observed that the planets, gods, that is, visited among the stars. According to the Pythagorean and Platonic theory, each human soul dwelt embodied upon a planet. If a good person, his soul would find its star. Each human should had such a star. If bad, he was reincarnated in a woman's form and successively "lower" forms until he arrived among mere turbulent elements. But, by regaining control of the turbulence through the exercise of rational faculties, he might return to his star.

Depending upon its navigational scheme, each planetary boat had its own ports of call among the stars. The stars and constellations became known by the spectacular events that occurred when one or another planet was visiting them. The planets, too, and therefore the gods, were tied in story and myth to the stars. Thus planet Mars, the "Fox star" Era (Alcor), the third deluge, the Pleiades, Ursa Major, Achilles, and the Fall of Troy are all intermingled in Greek and Near Eastern mythology. "There are, indeed, too many traditions connecting Ursa and the Pleiades, with this or that kind of catastrophe to be overlooked."[39]

Having ordered the heavens and settled the fate of man in relation to the heavens, so goes the platonic myth, the Demiurge retired and "the time machine was switched on." This would have been Super-Uranus (Ouranos, the god of Heaven) in the first age of splendid light. Then, as Taylor interprets the *Timaeus*, "the subdivision of the circle of the Other into seven, to correspond to the planetary orbits, is a fresh and subsequent procedure on the part of the Demiurge."[40] This would be the beginnings of individual planetary motions, observable by mankind, and would occur in the age of Saturn.

Hundreds of stories of the travels of gods and heroes, although they appear to take place on Earth, "actually" take place among the stars and represent planetary movements, uniform and erratic. Von Dechend learned this lesson after spending a year among 10,000 pages of Polynesian myths [41]. The bloodiest and most terrible stories deal with planetary gods when the planets are misbehaving, acting even more erratically than usual.

Myth and legend are almost always anchored in earlier world ages, if not in the dawn of mankind [42]. The contents are elaborated, obscured, even deliberately edited, but their forms and force come from the aboriginal events that they sought to report. The *Odyssey* of Homer, for example, is sung as a story of heroic travels after the Trojan Wars on an East-West Mediterranean axis. I would place its immediate events at around 695 to 675 B.C., its framework in the two centuries preceding.

A second underlying framework, however, may go back to earlier north-south travels from Scandinavia to Nigeria, when the morphology of the area was much different, that is, across low "Alps" and along a "Saharan Sea."[43] The Arcadians, most ancient among the Greeks who had maintained a political community, "pro-Selenians" who had existed before the Moon, came from the areas of the present day Po Valley and Switzerland and may have pursued this axis of commerce.

But I have identified Odysseus as an *alter* ego of Athena, the great goddess, who is also identified with the planet Venus, as will be seen. So he is a celestial traveler too. The routes are employed by real cultures, but at the same moment they correspond to celestial travels of gods among stars. The "cosmic" ancient paths of England and other countries, that do not take short and easy routes, are probably celestially influenced, as well as electromagnetic [44].

SUMMARY REFLECTIONS UPON THE CHANGING WORLD SYSTEM

Over some ten thousand years the heavy-body motions of Solaria Binaria transformed into those of the present solar system. The composition of interplanetary space also changed. The process was begun as the breakdown of an electrical system that then took on the additional features of a gravitational disruption. Many life-forms may have existed on other planets. But except for the possible continued existence of viral and bacterial forms elsewhere, only on Earth was a rich biosphere preserved and transformed.

The “exceptional” unexplained features of the present solar system support a stacked binary system theory - the differently oriented “fossil” axes of planets: rotational differences; binary behaviors of Jupiter; certain qualities common to the group of inner planets and others common to the group of outer planets; the presence of an electrical character of the solar system today which is only partially governing but could have been fully governing; certain “librations” and eccentricities of planetary motions; the futile efforts of solar flares to establish an interplanetary arc-current, except for the solar wind which behaves like an interplanetary gas and reaches to farthest interplanetary space; the varying orbital and rotational speeds of the planets; the very existence of the plane of the ecliptic which resembles a dead wire; the small deviations from the dead wire plane; the fact that the planets do not orbit in conjunction

Comets seem to be of recent origin; so do the bodies of the meteoroid and asteroid belts; so indeed do Mercury, Venus, and Saturn and by extension perhaps all planets - features which are acceptable under the postulated model.

Ancient beliefs and observations are compatible with the postulated natural history - ancient knowledge of the physical traits of the planets; legends of the behavior of the gods; confirmation of ancient astrology and of Stoic. Platonic, and other philosophical beliefs.

Certain contemporary theories are also compatible: on the sources of and the ravaging of atmospheres; the variety of elements found on the planets; the heating and cooling of the planets; and the order of the inner planets.

Reasons are found both for resemblances and differences between the sun and the outer planets in their chemical composition, behavior, and temperatures. They may be rotating as turned-off dynamos in part.

Causes of the revolutionary mass extinction and creation of species of flora and fauna become clearer.

The history of the solar system appears to be thenceforth more in line with the gross electrical and explosive behavior of the stars,

galaxy, and universe. Concepts of gravity can describe a stable system but what disestablishes a system introduces electrical dynamics.

One can cope with the evidence that more than one comet, or planet, such as Venus was involved in disruptive behavior. The binary, theory explains why all bodies would have to move. Even the sun would have lost its undulating movement almost entirely following the dispersal of the focused binary mass.

There is no ancient comment or legend that describes the solar system a it is; there are many statements as to what it was; the binary system theory is a better reconstruction of the system as it was anciently discussed.

The presence of a heavy atmosphere - the magnetized gas tube - up to the end of the Jovian period is seen to have provided an electrified environment for many major events.

The planets moved out into space, increasing their orbital diameters gradually, as they moved nearer to the central current (now “the ecliptic,” which is a motion in space) and were blown by it towards the Jupiter node. But the movements were spacing out in both directions. The ultimate spacing may not be incomprehensible; the intervals may follow “Bode’s Law,” or a type of the same, as the result of the expulsion of the outer planets into farther space. Bruce in 1944 asserted that when formed by fission in a nova, the separation of binary stars increases gradually [45]. The process of spacing out had begun with the original supernova of the sun, which has produced the binary system in the first place.

The idea that the planets were much more highly charged before than they are today receives support, as do the phenomena (and disasters) that occurred when they were losing their charges to other bodies and to inner and outer space.

The break-up of “Apollo” is more explainable under the present theory than before. Ovenden’s proposal that a planet of 90 earth masses existed in the present asteroidal belt until some 16 million years ago invoked only a completely conjectural intruder as the cause of its explosion. More of Apollo’s fate is described

below in Chapter Nine, as is the behavior of Jupiter. Jupiter still gives signs of instability in its surface features, clouds, temperatures, satellites and motions. This is in conformity with the binary theory.

Electrical “machines” operate less explosively during phase shifts than mechanical “machines”. This may help to explain the transition from one system to another without total explosion except in an outright collision. The “Principle of Least Interaction Action.” recently introduced by Bass and Ovenden to explain planetary spacing movements, has much more the connotations of electrical dynamics than gravitational dynamics in it. (The “principle” is merely definitive, not analytic; it holds that solar system bodies tend to position themselves so as to minimize possibilities of collision.)

Solaria binaria as an electromotive system resembles strikingly the human inventions of electrical motors based upon electrical principles [46]. Perhaps the solar system today can also be represented - as an electrified inertial system. Little in existing theory of the solar system and its history stands against a new binary theory. The latest discoveries about solar system behavior, as related in the final chapter of this book, seem, indeed to invite a radical change in conception.

Notes (Chapter Five: Solaria Binaria)

1. (1977) 669.

2. D. Talbott (1977); Gibson (1977); D. Cardona (1977); Tresman and O'Gheoghan (1977).

3. The history of the solar system before 14,000 B.P., but including as well as a thorough development of these pages, is being prepared by Earl R. Milton and the present author.

4. Batten (1973); "Binaries" *Ency. Brit.* (1969) 586-95; Jordan (1971) Appendix; Temple, 225; Ransom (1972) 16 ff; Shklovskii and Sagan, 149-50; *Scientific American*, "The Solar System" a number by now greatly exceeded.

5. Shklovskii and Sagan, 150.

6. Harrison, 325.

7. Super-Uranus is named for Ouranos (Greek) and Uranus (Latin) father of the gods, and not for Uranus, the present-day planet, accidentally named so (and discovered to have rings in 1977), but the planet Uranus is deemed here to have originated out of Super-Uranus, like the other major outer planets.

8. "Binaries" (1974*) Ency. Brit.*

9. Liller, 352. This report of the important discoveries concerning the dark primary in relation to AM Herculis (a white dwarf) pictures the gaseous exchange between stars in a way to add plausibility to the model of solaria binaria which I had drawn the year before.

10. Shklovskii and Sagan, 150 and Figure II-6 on the wavy, undulation orbiting of binary components. The Sun's complex sections rotate variously and there seems to be no way of determining whether any parts of these movements are eccentric, anomalous motions of the gravitational-electrical barycenter. Gribbin and Plageman (1974) write (p.130): "The orbital motions of the planets, in addition to generating tides on the Sun,

also move this star in an irregular special orbit about the center of gravity of the entire solar system. This movement has a distance of twice the solar radius; it generates centrifugal or coriolis forces that may disturb convection within the Sun itself."

11. Bruce (1975).

12. *Timaeus* and *cf.* L. Rose, in article to be published in Kronos 1980, on Philolaos.

13. Coe (1975) 14-5.

14. Kuiper, quoted Shklovskii and Sagan, 155. But *Encyclopedia Britannica* "Binaries," (1971) 595e gives 10 A.U. as the average separation.

15. 595e.

16. But see Juergens (1976); "The bulk chemistries of both Jupiter and Venus are now unknown." (15) Its mass could contain a rocky core of some 40 earth-masses or else would have to achieve a metallic hydrogen state in large part.

17. Proclus (1953).

18. See de Santillana and von Dechend, *seriatim*. The great astronomer-astrologists divided the major epochs of history into 800 year periods, based upon conjunctions of "fiery triplicity" of Saturn and Jupiter (399-400).

19. Sykes (1978).

20. Crew (1976), I *S.I.S.R.*, letter, 24-5.

21. Rose and Vaughan (1972).

22. Velikovsky (1946).

23. (1972).

24. NASA, News release 1977, based on data radioed from Pioneer XI. As predicted by Velikovsky in 1946 and verified by

Pioneer XI in 1977, the magnetic field of the Sun extends beyond Pluto.

25. *Ency. Brit*. v. 17, 807.

26. (1944) 6.

27. (1962) (1967).

28. 149.

29. *Ibid*. Bruce (1944) 9.

30. Shklovskii and Sagan discuss "runaway stars" that are cast into space with a "slingshot effect" when their primary body supernovas (157-8). Our theory here calls for several such "effects" over several thousand years. Anthropologically and mythically, this would be the likely source of the fundamental psychological and theological "*deus otiosus* effect," the retired indifferent god.

31. Isaac Vail (1840-1972), at the end of the 19th century, drew the most brilliant picture of the clearing heavens and their effects upon man. His citations are unfortunately incomplete because his original manuscript was destroyed in a fire.

32. Sherrerd (1972); Williams (1971).

33. Struve (1952).

34. (1977) 672.

35. Sagan (1975) 11.

36. 265; 206.

37. Donnelly (1883, 1971) 78-9.

38. Walter Sullivan, "Study of Pyramid hints on Earth" *New York Times* (February 28, 1974); Tompkins (1976).

39. Santillana and von Dechend, 386.

40. T. Taylor, ed. and trans., The *Timaeus of Plato in re* 36-d-6 of Timaeus.

41. Santillana and von Dechend, X.

42. Eliade (1954).

43. Research hypothesis recounted to the author by Livio Stecchini.

44. Michell (1969); Underwood (1969).

45. (1944) 13, presenting data from Russell, Dugan and Stewart, II *Astronomy* (1938) 703-4.

46. The electromagnetic theories of Juergens, Bruce and Crew appear to be consistent with the model of Solaria Binaria, and are to be preferred to the usual history of the solar system as a gravitational model.

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