THE AMAZING, UNBELIEVABLE, FREAK EARTH

— NEW DISCOVERIES —

An Analysis by

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CONTENTS

PREFACE

Our Earth formed from extremely hot gases, some 10'000 degrees Kelvin, condensed and cooled sufficiently to have a thin rocky skin about 3.65 billion years ago. This was explained in a companion book 'Our Solar System' and an excerpt is included in Appendix B as part justification.

This book explains how the Sun's ejected material; collected into a disc which in turn shrank into a ball over some millions of years. This gave plenty of time for the main dozen or so elements to settle into layers in the ball according to density, plus some chemical combination between the elements.

Some reasons are given for the magnetic field which the Earth possesses which has nothing to do with the ficticious electric currents. The reason for large land masses and even larger oceans is given, which both explains the violent freakish history of the planet, the distribution of similar large animals on unconnected land masses, and a new set of Reference Eras for geology. This last item is a much better explanation of geology than plate tectonics and allows prehistoric events to be related separately to the Water Era, Basic Era, Primary Era, Secondary Era, Tertiary Era, and the present Quaternary Era.

Darwin extended Wallace's theory to describe the world wide patterns of life, evolution and survival of the fittest. This book similarly extends Darwin's theories to the laws of universal evolution from hydrogen gas to Mankind. ie. gas-galaxies-stars-planets-geology-chemistry-eozoon-algae-plants-fish-animals-man.

The main assumption in this book is that the Sun is a normal, average, star. All the theory follows from this, and is amazingly accurate in fitting all the observed facts.

This book is intended to give cohesion to the many phenomena now observed which appear to be independent and unclear. An illustration of the situation pertaining is:

A man came to the door of a large old house. On the left of the front door was a piece of matting on which he could make out the markings '˥ƎM'. On the right another piece of matting had markings 'ƎWOƆ'. He could see that the mats were similar in texture and size so he fitted them together, the more jagged edges indicating that they mated with the markings 'ƎWOƆ≡˥ƎM'. Sensing something familiar, he turned it around and read '**WELCOME**'. From the apparently meaningless facts, manipulation gave a meaning or 'sense'.

This is what this book has done,

WELCOME

1

CONSTITUENTS OF THE EARTH

It has been shown in the author's book 'Our Solar System' that the Earth developed out of the Sun which is an average star, and therefore generally contains the average constituents of the universe. The sun was formed in the galaxy core as an extremely hot gas about 50'000 K. At this temperature even carbon is gaseous – it vapourises at about 4'200 K. Originally the Earth was a gaseous disc in the Sun's disc and subsequently contracted into a sphere. Then two things happened. The gases settled out with the densest material at the centre and the lightest outside, and chemical reactions took place to produce the simplest of molecules. After gravity had moulded the Earth into a sphere, the elements automatically segregated into layers at this high temperature according to density, allowing some combination according to proximity. Figure 1A shows roughly the section of nesting spheres of gases ejected by the Sun to form the Earth. While still gaseous at some 12'000 K temperature outside, the settling by density gave the following results.

Hydrogen was and is the outer layer, helium next, some neon, shown by the aurora in the layer 100 to 150 km above the Earth's crust, ammonia and methane traces, then a 100 km thick layer of nitrogen beneath this, and some carbon dioxide. The two latter gases were originally thoroughly mixed because :

i. They were the two densest gases of appreciable quantity at 300 K temperature,
ii. they had similar densities (1.5 and 1.3 kg/m^3)
Nitrogen is relatively inert and separated sufficiently from the hydrogen layer, minimizing ammonia formation, and heat from the Sun passed through the gases with little heating effect until it hit the impenetrable Earth's crust the surface of which heated and caused convective currents to keep the lower gases, up to 30 km high, thoroughly mixed.

The liquifying and solidifying temperatures determined the Earth's crust contents and gases outside it. This is why the simple compound, hydrogen oxide (water) is the liquid between the gases and the solids. Relatively speaking, very little uncombined carbon is left as most of it was used up in the Sun disc to form methane, (CH_4) and a small amount of sodium came out on top of the solids. Calcium and magnesium are similar density solids, but not too different from silicon, and even aluminum occurred in significant quantities, all of which participated in forming most of the Earth's crust. An iron/magnesium compound

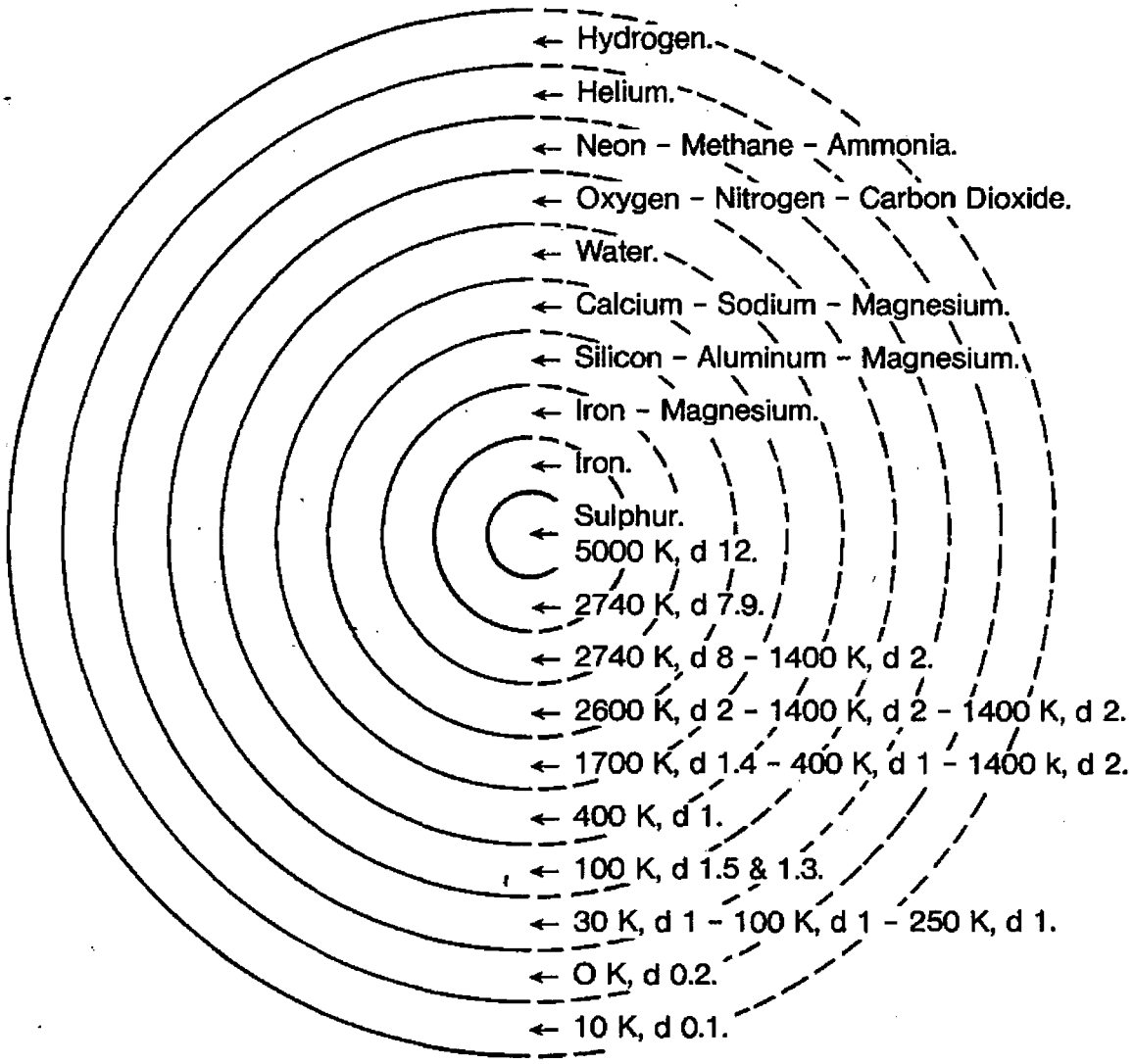


Figure 1A Schematic layers of elements in density sequence.

mantle, with an iron core, completed the sequence, (see figure 1A). The oxygen of the time combined with the solidifying elements and compounds so that the Earth's crust is mainly composed of magnesium – aluminum – silicates and some sodium and calcium compounds. Most of the compounds are sulphates or chlorides, S + 3H = Cl ie. sulphur + hydrogen = chlorine, when hot enough to combine. The iron core appears to have liquified millions of years ago, but the central ultra-dense sulphur gas, is still gaseous.

These of course are only generalities and all possible elements can in fact be extracted in pockets in the earth's mantle though the quantities involved are not significant when compared with totals. Earth, mud and stone, including limestone, granite, and basalt, are all combinations of magnesium– aluminum–silicon–

oxygen molecules, and form the solid Earth's crust which even though 50 kilometres thick, is still only a skin on the 12'756 km. diameter sphere. Under this skin the earth is plastic, and inside this it is liquid, while the sulphur core is still gaseous. Granite is a little less dense, but has a little higher melting point than basalt, and so it solidified first. These considerations, together with the actual proportions of the four main elements, determined the type of earth or stone, and the length of time it has been formed, while depth in the earth, elevation, folding, or proximity of other compounds determined the final form of the earth's crust.

The Earth's crust has an *average* composition of 47% oxygen, 28% silicon, 6% aluminum, 5% iron, 4% calcium, 3% sodium, 3% potassium and 2% magnesium. This means that almost all natural compounds are oxides, including carbon*ates*, nitr*ates*, and so on. It also means that the crust is basically silicon with only 20% aluminum–iron–calcium, plus only 10% sodium–potassium–magnesium. This is a comparable formula to slag which floats on top of molten iron in a furnace (just like the Earth) which 'cleans' and insulates it.

The elements in the Earth and the proportion of these same elements in the Sun are not exactly equal, but almost. For instance, silicon, iron, silver and manganese, are evenly balanced, but the Sun has slightly more nickel, chromium, copper, and ruthenium, whereas Earth has a little more aluminum, potassium, barium, strontium, and lithium. The foregoing is further proof that the Earth came from the Sun which one day will be a huge cool 'earth', hurtling towards the galaxy core and rebirth.

Summary

The Earth being formed of a conglomeration of heavier elements blasted out of the Sun's core, enveloped by a mixture of the Sun's gases, in the order of 10'000 K, and settled into a set of concentric spheres of material according to density. Earth is a good average sample of the Sun's material at the time of formation.

Initially all the materials were gaseous, surrounded by an almost perfect insulator, a vacuum. The Earth eventually cooled, and with density changes on liquifaction, and solidification, the order of the spherical shell layers changed a little. However a silicate crust, containing most of the heavier minerals or compounds eventually formed, with all the 'permanent' gases outside it, including steam, which on cooling sufficiently, deposited a layer of water on the crust.

2

PHYSICAL LAYERS OF EARTH'S MATERIAL

The density-temperature section of table 21 shows which order, or layer is taken up by the elements and compounds. At Earth's present surface temperature (in the order of 300 K) the gaseous elements above the crust are oxygen, nitrogen, neon, with perhaps traces of methane and ammonia, then helium and hydrogen outside in that order. For this crust we have water and the following elements in order of density : magnesium, calcium, sodium, silicon, aluminum, sulphur and iron.

In only one cubic kilometre of sea water (1.1×10^9 tons) are : 31×10^6 tons of sodium chloride ; 4×10^6 tons of magnesium chloride ; 2×10^6 tons of magnesium sulphate ; 1.5×10^6 tons of calcium sulphate ; and 1.2×10^6 tons of potassium sulphate ; plus small amounts of many elements.

As there are many cubic kilometres of sea water, much of the Earth's sodium, magnesium and some of the calcium, sulphur, potassium and chlorine is accounted for as solutions. In the hot gas stage of formation, some of the density orders were different and chemical combinations between elements of mutual affinity took place, which accounts for a fair amount of 'overlap' between 'zones' of pure elements. However, generalising, the Earth's crust is magnesium– aluminum–silicates which leaves most of the magnesium, sulphur and iron for the inside. The basic Earth's skin was granite with some contaminations, but when this had solidified, it split five times catastrophically. The splits were filled with basalt, whose present surface area is twice the original granite area. This basalt layer continued downwards to a depth of about 400 km where it changes its constitution, and on down to the 1'000 km depth. Below this is a less viscous plastic mantle of magnesium – iron. (see figure 2A.)

From nearly 3'000 km deep the magnesium – iron layer changes to nickel – iron which carries on down to some 5'000 km deep. Here the core changes to liquid iron with gaseous sulphur inclusions at ultra high pressure and temperature. The liquid iron core extends down to 6'368 km depth (where it is estimated that its density is over 11, (normally 8) at nearly 1'000 tons per sq. cm. pressure and several thousand degrees temperature).

As the internal gases, under terrific pressure and high temperature, cool, they do so from the outside in, and consequently they liquify on the outside first. The sulphur which is gaseous down to 500 K at normal pressure, was originally in the magnesium– sulphur– iron mixture, but as the magnesium– iron liquified, probably in the 2 to 3000 K range, most of the sulphur remained gaseous, though obviously some iron sulphide formed. However, as the metal liquified on the

Table 21

Table 21. Chemical Constitution of the Universe and the Earth In Order of Abundance

Groups	Chemical		Atomic			Density			Critical Temp.		In Order of Density at Temp.					
				Ratios		gas	liquid	solid	Boil	Melt	6000	3000	2000	1000	300	70
			Weight	Atoms	Weight	g/litre	g/cm³	g/cm³	(K)	(K)			(K)			
Major Gases	Hydrogen	H_2	1	1000	1000	0.09	0.07	-	20	14	H_2	H_2	H_2	H_2	H_2	H_2
	Helium	He_1	4	150	600	0.36	0.147	-	4	1	He_1	He_1	He_1	He_1	He_1	He_1
High-Average Gases	Oxygen	O_2	16	0.7	11	1.43	1.14	1.43	90	55	CH_4	CH_4	CH_4	CH_4	CH_4	N_2
	Neon	Ne_1	20	0.3	5	0.9	1.2	-	27	24	NH_3	NH_3	NH_3	NH_3	NH_3	H_2O
*	Carbon	C_2	12	0.3	4	1.07	2.3	2.0	4500	3800	H_2O	H_2O	H_2O	H_2O	Ne_1	Na_2
	Nitrogen	N_2	14	0.1	1	1.25	0.81	1.02	71	63	Ne_1	Ne_1	Ne_1	Ne_1	N_2	O_2
Low-Average Minerals	Silicon	Si_2	28	0.03	0.8	2.5	-	2.33	2600	1700	C_2	N_2	N_2	N_2	O_2	Ne_1
	Magnesium	Mg_2	24	0.03	0.7	2.14	-	1.74	1400	925	N_2	O_2	O_2	O_2	A_1	A_1
	Sulphur	S_2	32	0.02	0.5	2.85	1.80	2.07	520	392	O_2	A_1	A_1	A_1	Mg_2	Ca_2
	Iron	Fe_2	56	0.01	0.4	5.0	-	7.6	3000	1840	A_1	C_2	C_2	C_2	Na_2	Mg_2
Minor Gases (Compounds)	Methane	CH_4	16	-	-	0.71	-	-	112	90	Na_2	Na_2	Na_2	Ca_2	H_2O	C_2
	Ammonia	NH_3	17	-	-	0.76	-	8.5	240	195	Mg_2	Mg_2	Mg_2	Na_2	Ca_2	S_2
	Water	H_2O	18	-	-	0.8	1.0	0.9	373	273	Al_2	Al_2	Si_2	Mg_2	C_2	Si_2
	Argon	A_1	40	0.004	-	1.8	1.4	1.65	87	84	Si_2	Si_2	Al_2	Si_2	S_2	Al_2
Minor Minerals	Sodium	Na_2	23	0.002	-	2.05	-	0.97	371	361	S_2	S_2	S_2	Al_2	Si_2	Fe_2
	Aluminum	Al_2	27	0.002	-	2.41	-	2.7	2350	950	Ca_2	Ca_2	Ca_2	S_2	Al_2	CH_4
	Calcium	Ca_2	40	0.002	-	3.56	-	1.55	1710	1125	Fe_2	Fe_2	Fe_2	Fe_2	Fe_2	NH_3

* Originally at 10'000 K, Carbon was a light gas, as listed here. Much carbon combined to form Methane, CH_4. solid

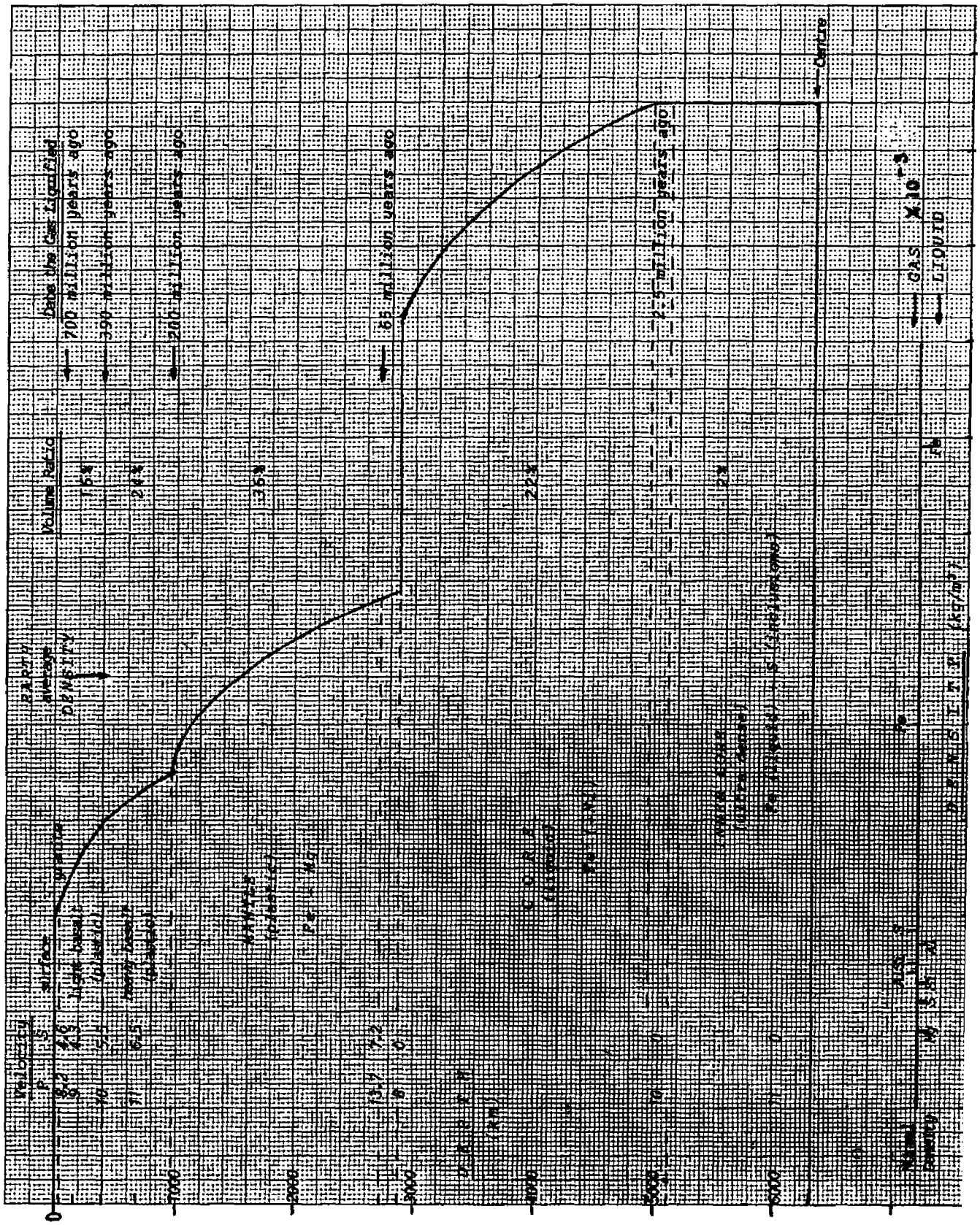


Figure 2A. Earth density - depth.

'outside', the gaseous parts including the sulphur molecules stayed inside until all the iron– magnesium had liquified. The gases under the terrific pressure of many thousands of atmospheres are more dense than the liquids and slowly migrate to the centre of the Earth. When there is no more magnesium left to liquify, at about half way to the centre of the Earth, the iron continues the same process with the excessively dense sulphur *gas* dropping to the centre.

The pressure on a particle inside the Earth is due to the total force of the particles above it lying on a radial line. This averages out to something like 1'000 to 1'500 tons per cm^2 at the centre of the Earth.

Summary

The outer silicate layer is composed of magnesium–aluminum–silicates, generally of a lighter compound called granite, and a heavier one called basalt, the granite being of the order of 50 km thick, and the basalts up to about 1'000 km thick. Below this level is a mantle of magnesium– iron, to nearly 3'000 km deep, leaving just over 3'000 km core of iron, which includes a central core some 1'000 km radius heavily contaminated with sulphur. The reason for the sulphur being at the centre of the Earth is that it remains gaseous and very compressible to a higher density than its surrounding material, including compressed iron.

3

TEMPERATURE AND EFFECTS IN EARTH'S LAYERS

The temperature of the Earth at the crust, is in the order of 300K. On going down a mine shaft into the Earth, the temperature increases 1° per 100 feet or 30° per kilometre deep. Extrapolation would indicate that at 50 km. deep the temperature is 1'500 / 2'000 K, and this is consistent with lava flow temperatures, all of which appear to originate at this depth all over the world. Undersea depths would be less, as the crust is thinner, but this does not affect the position materially.

The temperature of the granite crust is in the order of 300 K at the surface to, say, 600 K below, and the basalt from its 600 K outer surface to over 1'500 K at its inner surface, some 50 km deep. The iron–magnesium mantle is plastic, which means it is in the order of 2'000 to 3'000 K. The iron core is liquid, as is shown by the absence of 'S' waves at the depth of the core, during an earthquake.

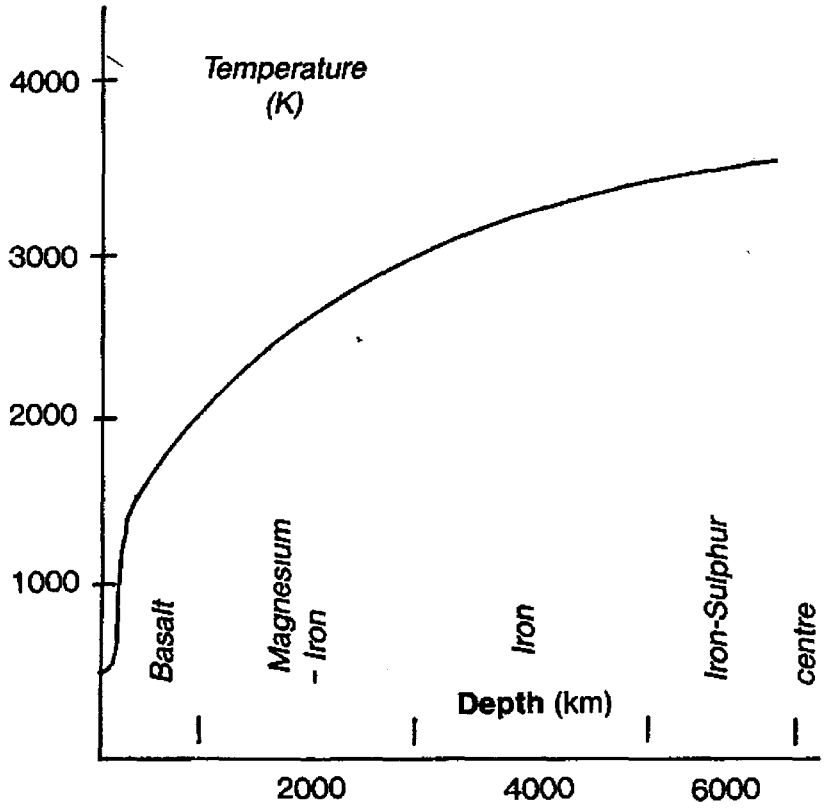


Figure 3A. Temperatures inside the Earth.

The internal temperatures of the Earth are approximately as shown in graph figure 3A. As the iron core is still mainly liquid at 3000 km deep, the liquid can migrate somewhat, and temperature increase will only be in the hundreds, not thousands of degrees.

The temperatures of the gases above the Earth's crust, are due to the heating by the Sun. The present oxygen / nitrogen layer was probably originally a nitrogen / carbon dioxide / carbon monoxide layer which the first plants converted into a nitrogen / oxygen layer of very similar density. Subsequently, the splits in the crust at 700, 390, 200, 65, and 2.5 million years ago, together with the water evaporating, thoroughly mixed the Earth's 30 km thick atmosphere of air. Over these last 2.5 million years, the thorough mixture settled out into (a) one upper layer of nitrogen between heights of 50 and 80 km above the Earth, (b) one lower layer of oxygen between heights of 20 and 50 km, and (c) one bottom convection turbulent layer of oxygen / nitrogen from the crust up to 20 km high, (the action of winds and jet streams will never let the layer of air below about 20 km settle out into layers of oxygen and nitrogen).

Neon occupies the band above the 80 km level up to 500 km which are the observed limits of the aurora, though most displays appear about 100/110 km. Above this is helium to some 2'000 km, and finally outside is hydrogen. Temperature sensing balloons and rockets have not been able to measure levels above 80 km for quite practical reasons.

Referring to figure 3B, nitrogen does not absorb infra-red or ultra-violet radiation from the Sun, and as the air is four fifths nitrogen and one fifth oxygen, the air layer up to 20 km is warmed from the Earth. Its temperature therefore, reduces as we leave the Earth. Oxygen however, does absorb some radiation heat from the Sun, and above the tropopause, the hotter gas is less dense and rises to its density limits, giving an increasing temperature gradient from the air surface (20 km), to the stratopause (50 km). Here, the layer changes to nitrogen, which as before mentioned, does not absorb radiation. It is warmed from the oxygen below, and thus goes colder as we go higher. The limit is reached at the mesopause (80 to 90 km) where the slightly less dense neon starts. Neon, even at low pressures, absorbs some radiation heat, and therefore gets hotter as we go higher.

Molecular weight measurements indicate that the element gas distribution is correct, in that neon atomic weight is 20, nitrogen molecular weight is 28, air 29, and oxygen 32, and measurements up to 90 km high average 29. Average measurements reduce to 25 by 130 km and are down to 16 by 400 km height, which agrees reasonably with the above sequence of air– oxygen– nitrogen–neon (at low pressure). The molecular weights of helium and hydrogen are eight and two respectively, so they must be outside the 400 km range. (The hydrogen reaches in the order of 10'000 up to 25'000 km above the Earth.

A third confirmation of the heights and layer elements, is shooting stars or incandescent meteors, which are observed at 60 to 120 km high, and flash out of sight if they come to the lower levels. The neon friction warms them, but not to

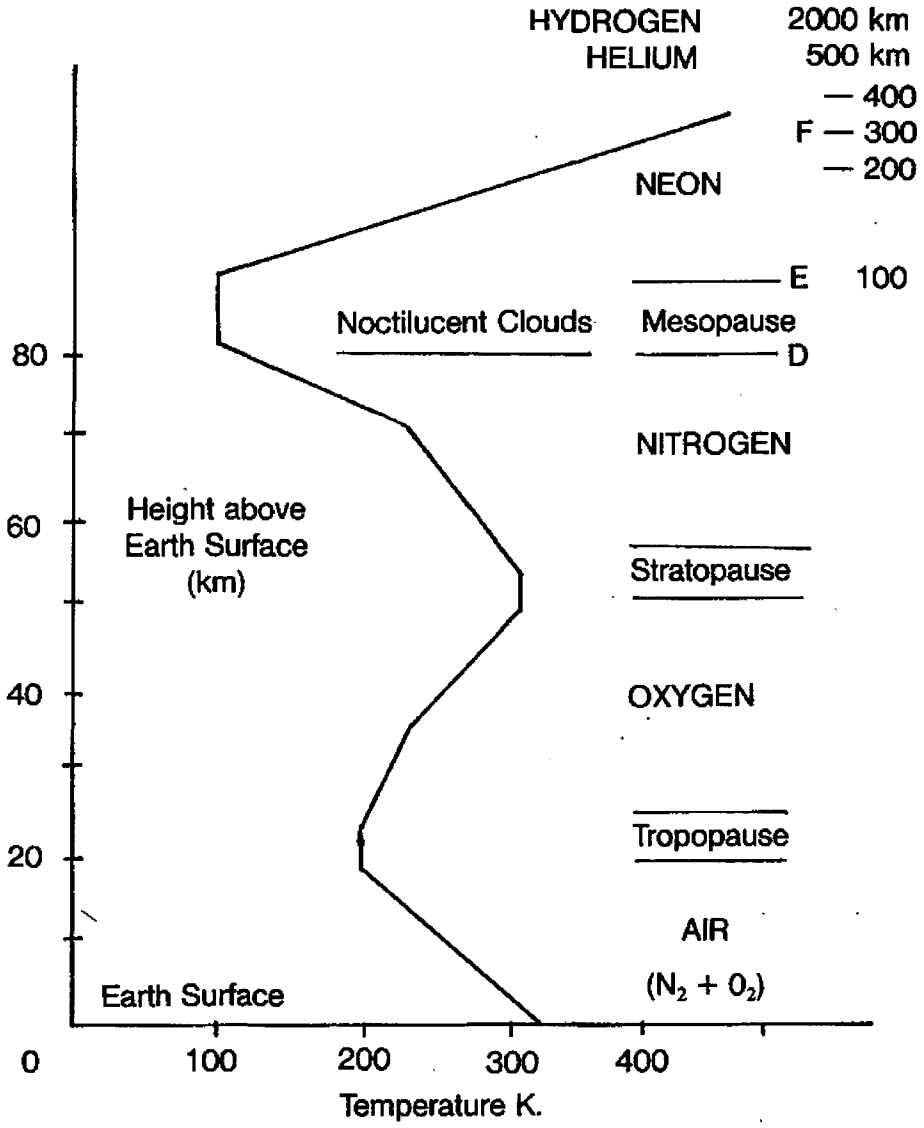


Figure 3B. Atmospheric Layers and Temperatures.

high temperatures until they hit the mesopause. Then, on traversing the much denser nitrogen layer, they melt, and shine. Large meteorites may travel far enough to hit the oxygen layer about 50 km high, before they slow down enough to extinguish, and there is a bright flash of oxidation which may be observed.

The auroras occur near both north and south poles. They form a ring of oval shape, the shorter axis being in the direction of the Sun. The ovals are completely on the night side of the Earth, the short axis starting about 10° from the terminator, and normally ending about 40° from the terminator (see figures 3C and D). The diameters of the ovals grow with the flare activity of the Sun, and shrink with its inactivity. The Earth has two geographic and two magnetic poles, four in

all, and the two ovals *between them* always contain one but never more than two of the four poles.

The auroral ovals centres average some 60° to 80° latitude, north to south, the short axis covering some 10° to 20°. The long axis of the oval is some 2'000 km which, near the poles, extends some 80° longitude. The aurora is not the result of the solar wind, as they do not have a constant appearance, which would be expected from the relatively constant solar wind.

The mechanism producing the aurora depends basically on (a) ejection of particles from the Sun coming out via the flares plus sunspots, and (b) the neon gas layer above the air, oxygen, and nitrogen layers, which starts about 90 km above

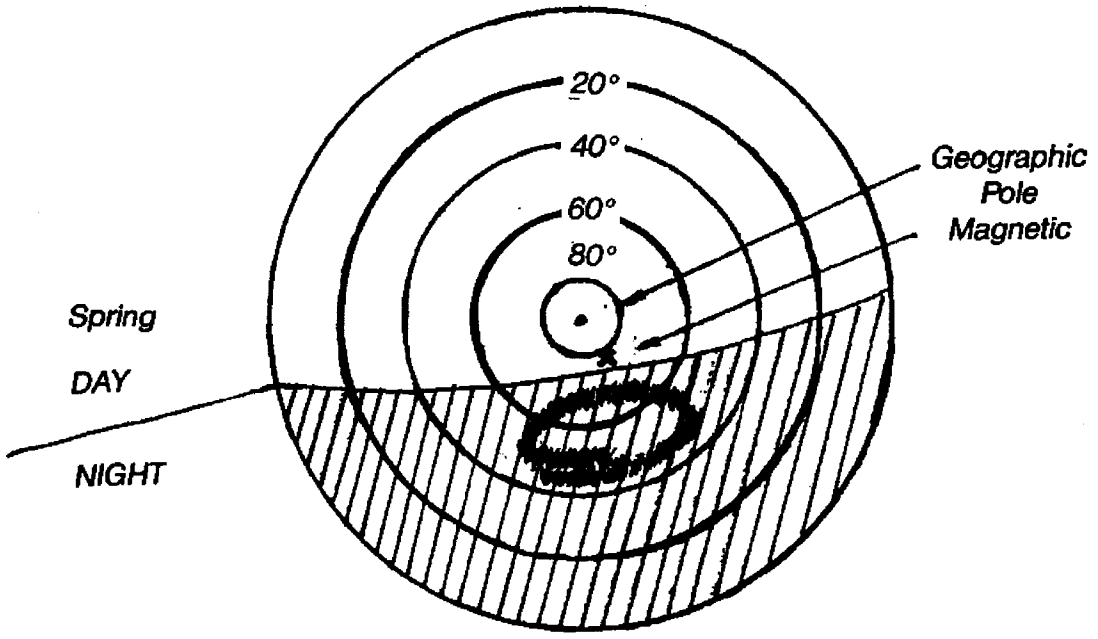


Figure 3C. Auroral distribution

the Earth surface up to some 500 km above. Referring to figure 3D, the ejecta arrives like the sunlight at the Earth in parallel streams but, whereas the sunlight illuminates the day face of the Earth, the charged particles are deflected to the sides of the Earth by its magnetic field. The latter is strongest towards the equator and weakest near the poles, and figure 3E shows the particles being consequently bunched round the Earth mainly towards the poles.

Sunspots have been shown to be the result of ejecta from the interior of the Sun, but they are not so numerous as flares, and are insufficient to explain all the auroras. Auroras therefore correlate well with the observed number of flares on the Sun, the ejecta must be travelling faster than the Sun's escape velocity of 680 km/s to leave the Sun. The material which arcs over the Sun's surface and returns, is travelling radially slower than 680 km/s. However, as in all explosions, fine particles initially at least, travel faster and farther than heavier ones, and it is

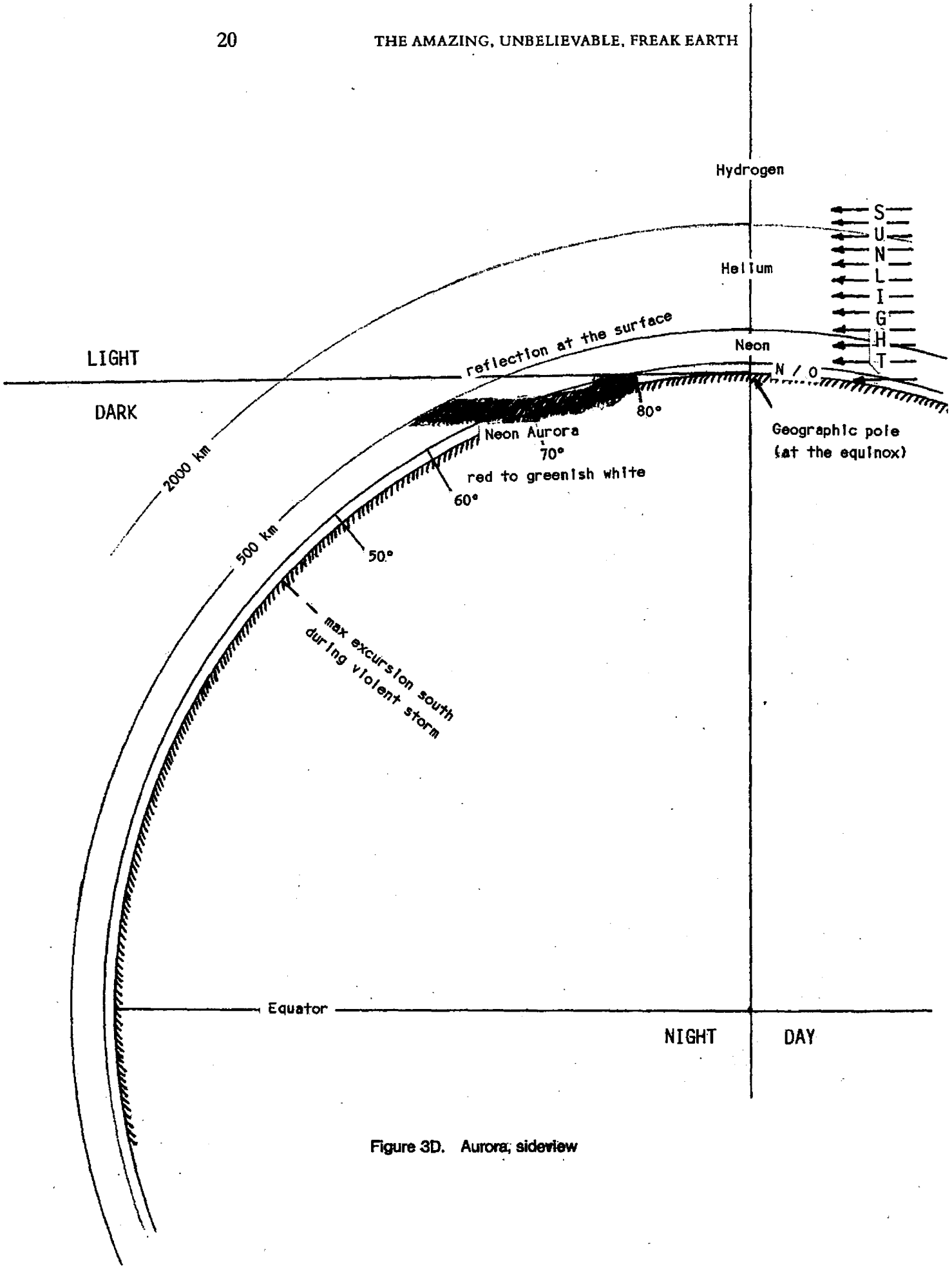


Figure 3D. Aurora, sideview

estimated that a 30 hour travel time over the 150 million km from the Sun, gives an average speed of 1400 km/s for the particles (double the minimum).

These particles skim the surface of the Earth through the air near the poles, and passing the terminator, travel above the dark Earth. Still travelling roughly in a straight line they pass through the oxygen layer above the air, (figure 3D), then the nitrogen layer above the oxygen, and then into the neon layer above the nitrogen. At this time these closest to Earth particles are some 10° from the day / night terminator. These Sun charged particles light up the neon in streams appearing as bands, curtains, fans, rays, etc. The particles carry on through the 400 km thick neon layer where they would normally transfer to the helium layer, having travelled some 40° more from the start of the neon.

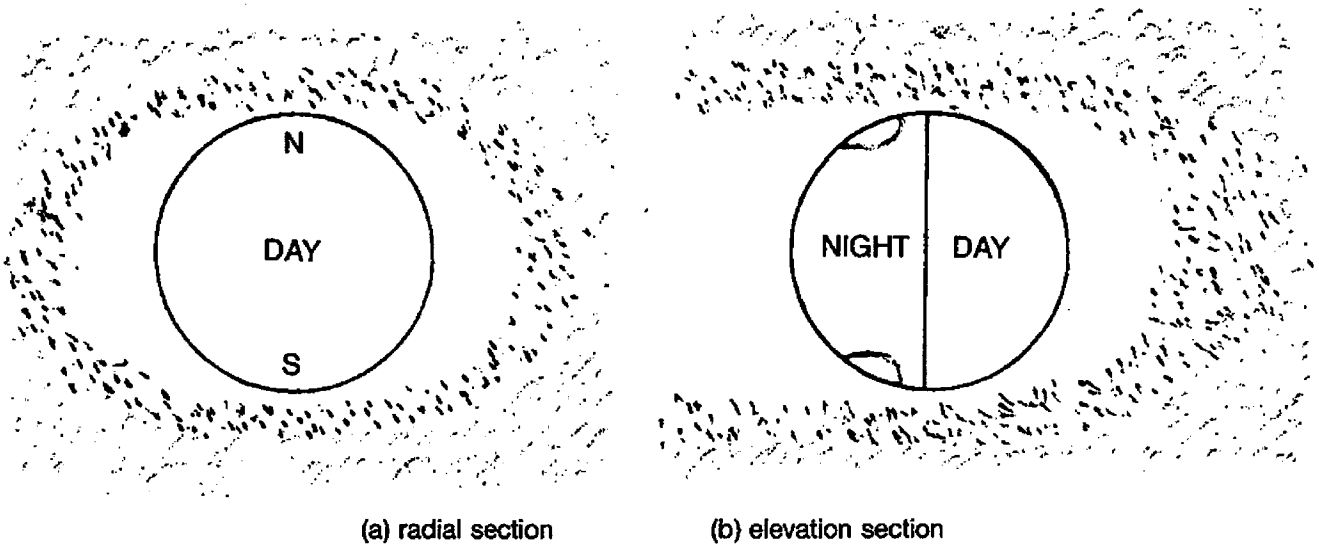


Figure 3E. Clustering of Solar ejecta by Earth's magnetic envelope.

There is another consideration. Particles from a strong central flare on the Sun, may travel over 50° from the terminator, or as much as 70° from the pole (to 20° latitude) at midsummer when the Earth is tilted 23.5° outside the terminator. This is because the particles have some tiny mass, and are therefore attracted by the Earth, which means that their path is slightly bent towards the Earth, giving a longer path in the sparse neon gas. Thus bigger flares or sunspots, appearing near the middle of the Sun, should produce strong aurora some 24 to 48 hours after their first appearance. Also both Auroras (Borealis and Australis) should happen at the same time, though not necessarily equally.

Figure 3F is similar to figure 3D, but looked at from the left side of 3D, that is from the night side of the Earth towards the Sun. The deflection of the particles towards the poles and their concentration passing through the neon layer should give an oval patch of light in the dark sky near the pole. However, as the particles are all of like charge they mutually repel, forming a concentration at the periphery of the oval.

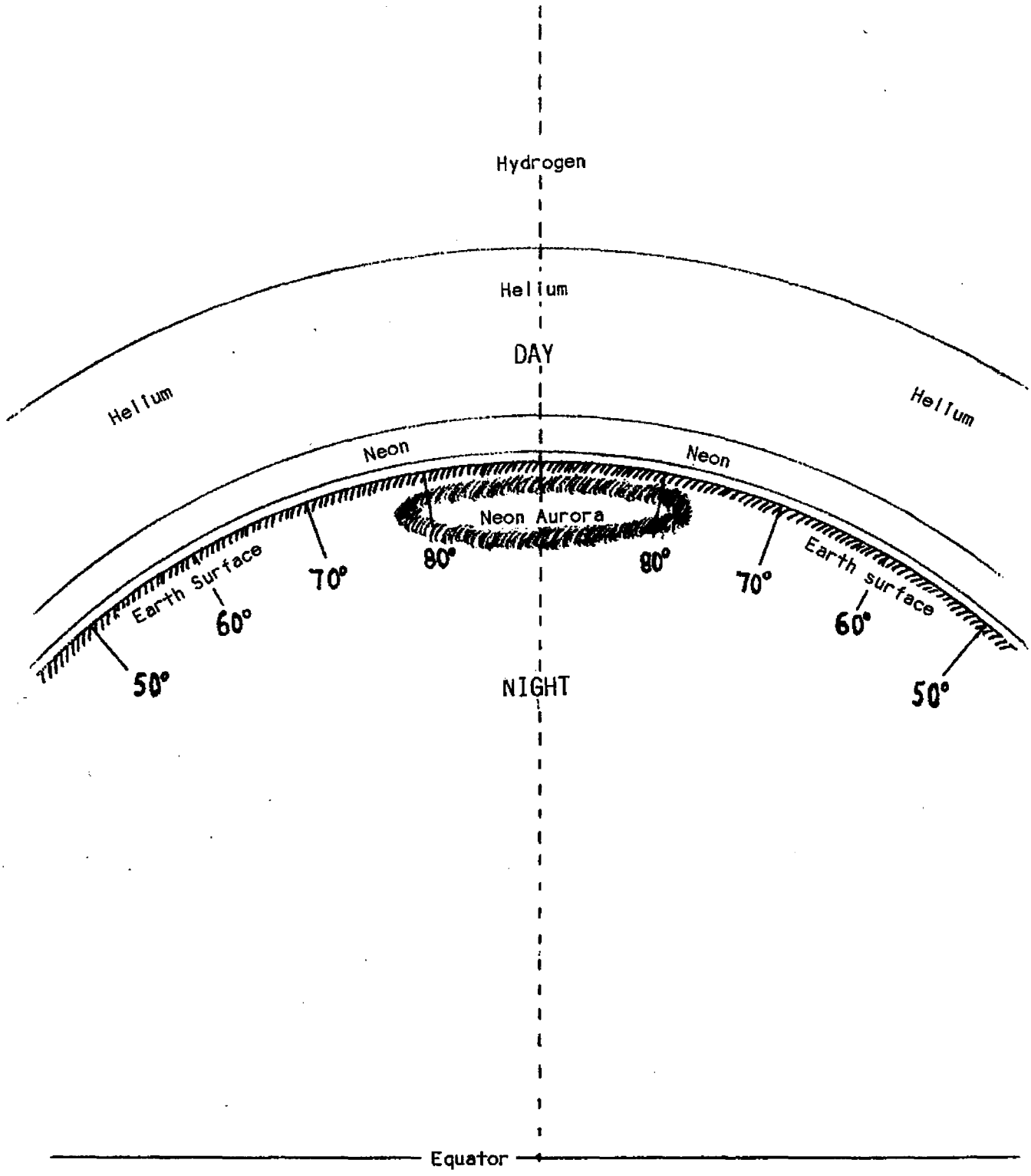


Figure 3F Aurora, rear view

Summary

The temperature of the surface of the Earth is 96% due to the Sun radiating energy, so that only a small amount penetrates from inside through the silicate skin, and the lower atmosphere layers only absorb a small amount of infra-red, passing most of the heat to the Earth surface.

The Earth's gases were in the order of 10'000 K when they contracted into a spherical shape, and even now after three and a half billion years the centre is still about 4'000 K, though we are about 300 K at the surface. The tens of kilometres of rock, supported by the almost perfect insulation of space has maintained the high central temperatures over this long period. Thus the rocks below the crust are plastic, the magnesium– iron is also plastic, and the iron core is mainly liquid, with a plastic centre of sulphur– iron at high temperature and pressure.

Travelling outward from the Earth's surface at 300 K we find air cooling as we rise to 200 K at 20 km. Above this air of 80% nitrogen and 20% oxygen, is the few kilometre thick tropopause which is the transition to the oxygen layer. The temperature rises as we go up to 50 km and some 300 K again, at the stratopause transition to the nitrogen layer. Rising further it goes colder (to about 100 K) through the nitrogen to the mesopause at 80 to 90 km. Above this is a sparse but thick layer of neon to 500 km. The helium layer takes us to 2000 km and hydrogen to some 10 or 20'000 km.

Shooting stars are meteoric material and can be seen passing through the outer layers down to nitrogen (the highest layer dense enough for friction) which starts them glowing brightly and constantly from about 130 down to 100 km high. If they are big enough to penetrate the 80 km level they flash brilliantly in the oxygen, slow in the thicker gases and fall to earth as melted oxidised meteorites. The other aerial phenomena is the aurora, due to charged particles from Sun flares energising the only sensitive layer, neon, and forming an oval of light patterns in the order of 2'000 km diameter just inside the dark side atmosphere of the Earth some $70 \pm 20°$ latitude at both poles.

In the opposite direction down into the Earth, we encounter solid and plastic granite down to about 100 km, where it changes to 'light' basalt. At approximately 400 km the 'light' changes to 'heavy', and this goes down to almost 1'000 km, where the plastic mantle of magnesium– iron starts. There is a significant transition layer about $2'900 \pm 100$ km shown by P-wave changes from 13.7 to 9 km/s and the S-wave changes from 7.2 to zero km/s indicating a liquid core of iron. The next transition is at 5'000 km deep, below which the iron has a significant percentage of sulphur gas, making the inner core to 6'368 km plastic, and some 4'000 K, 1'000 tonnes/cm^2 conditions.

4

MAGNETIC / GEOGRAPHIC POLE DRIFT

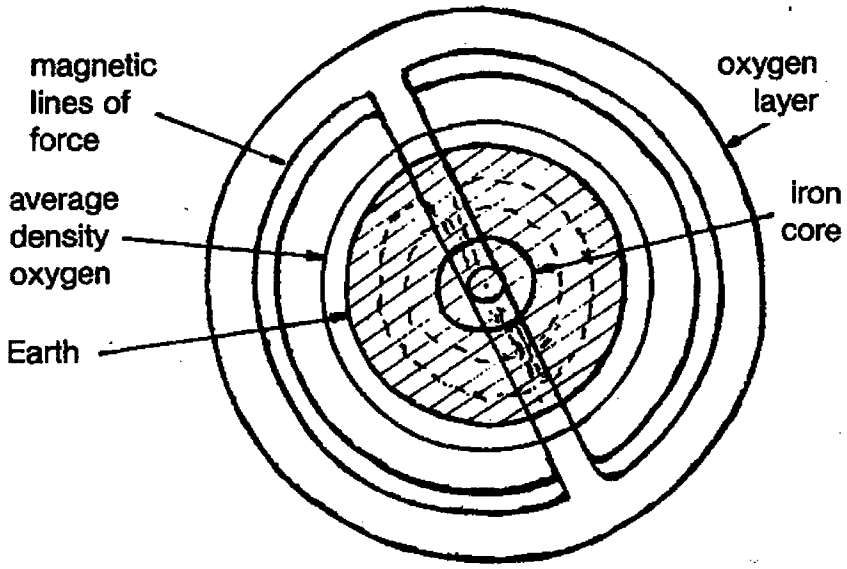


Figure 4A. Magnetic section of Earth with iron core

The magnetic oxygen gas layer close to the Earth provides a magnetic field in response to the Sun. The Earth's iron core (figure 4A) is well above the Curie temperature and has no ferromagnetism, but is responsible for the *concentration* of magnetic lines, so that we on the surface measure apparent poles in the Sverdrup Islands, Canada, and also in Antartica. Lines of force measured in gauss down a mine, and at the bottom of the sea, register slightly more than at the Earth's surface. The iron core is not a permanent magnet as it is too hot, nor does it have terrifically powerful circulating electrical currents as they have no source, nor is there any reason for the iron core not to conduct electricity in all directions at once, making nonsense of circulating currents. The magnetic field is induced by a vast magnetic oxygen layer! and the magnetism is mainly due to the thin bottom slice of a vast layer of oxygen some 100 km thick lying on a sphere 12'756 km diameter and its average density height no more than a few kilometres above the surface.

The lines of force in the oxygen gas on Earth are aligned north and south to match the Sun's magnetism. The lines of force are like circles of longitude but when they come to the poles, all the northern ends together repel one another, and as there is a large weak paramagnetic iron core, they dip down into it. Similarly the southern ends coming together at the south pole dip into the iron core to join with the northern ones at the centre. This leaves a continuous unmoving set of oval lines of force centred on the Earth.

The position of the poles on the Earth should then be on a circle 23.5° round the pole circling once a day. As the Sun's magnetic field is 4° off the axis the circle should wobble ± 4°. However, the iron core of the Earth, while not producing the magnetism is a major player in the effect, and has a considerable quality of remanence (from the BH curve). Thus although the oxygen layer tries to move the magnetic pole all day, the iron core restrains movement and averages out the Earth / Sun axis tilt at 10 to 14° generally.

Further, this circular band average from the geographic pole is the outside average, and as the iron core is quite remanent the circular band is averaged across its diameter. This average is zero, the pole itself! Thus over a long period the magnetic pole should slowly respond to cumulative discrepancies and wander over many years between the 14° average and the zero average. Figure 4B due to a great deal of painstaking work by Dr DuBois shows just this.

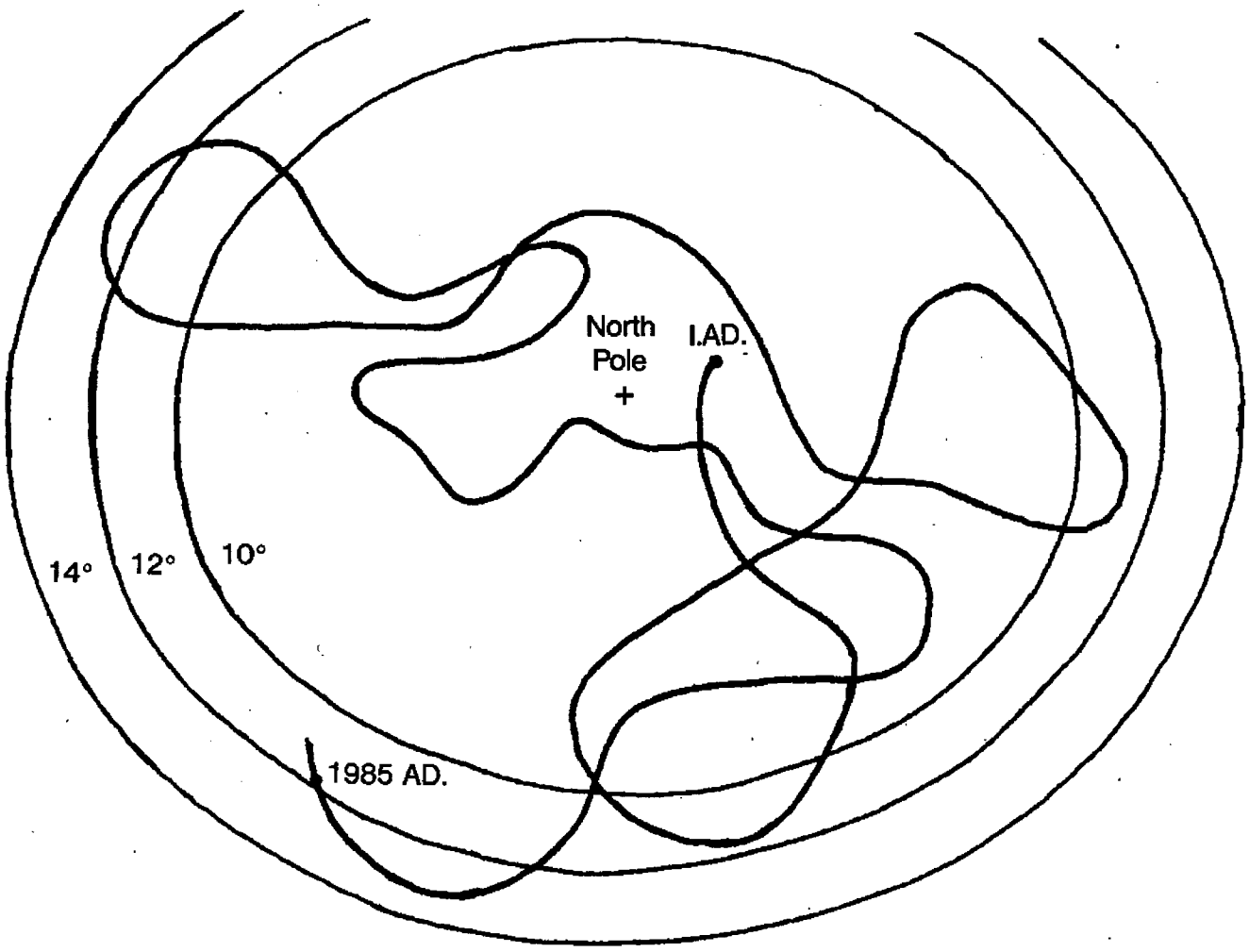


Figure 4B. Magnetic Pole wandering over the last 2'000 years.
(after Dr DuBois)

More proof that the Earth's magnetism arises from the magnetic skin of oxygen round it, is that the Sun has a magnetic field similar in pattern, 4° declination from its geographic poles, but the Sun does not have a magnetic iron core. Estimates of 40 gauss at the equator falling to 10 gauss some 300 km away (the lowest measurements that can be made from here) show that the Sun's field is much stronger than the 0.6 gauss maximum for Earth.

Sunspots are usually in pairs, (that is two significant spots plus some close 'splashes'), one always an outlet for magnetic lines and the other always an inlet. For one eleven year cycle in say the Sun's northern hemisphere, the leading one is a north pole, while for the next eleven year cycle the leading one is a south pole. This system is opposite in the southern hemisphere for that cycle, but all effects reverse each subsequent eleven year cycle. The average period between maxima of the cycles is 11.1 years and the average between minima of the cycles is 10.9 years, although the Sun's polarity does not change for thousands of years. Thellier has reported a field of one to 4'000 gauss total on the Sun, and several places on Earth have measured a daily change in the Earth's field relative to the Sun's field direction.

The bursting of the Earth five times with the consequent rebalancing wobble from the increase in size, and the redistribution of the granite skin, has caused several superimposed variations in the geographic as well as the magnetic poles. The variation between these poles arises from the fact that they result from two different sources – the magnetic from the oxygen shell, and the geographic from the Sun's disc plus the split–balancing wobbles.

The magnetic oxygen shell provides the magnetic field very easily by aligning the magnetic 'dipoles' in the gas. The gas molecules form these dipoles which are normally random orientation, and so normally do not exhibit an effect. However in the Sun's magnetic field, the dipoles, having little mechanical inertia, orient themselves in line, moving no more than half a turn, which requires little energy, to form an immense magnet. It also follows that a change in the Sun's magnetic field can affect the Earth's field. For instance if the Sun should reverse its polarity, then the Earth would reverse at the same rate.

The Sun has in fact done this about an average of once every one and a quarter million years, which is negligible in a sense, but many reversals have been recorded (in rocks and even pottery) and many have occurred in the life of the Earth. Figure 4C shows the reversal sequence and there does not appear to be any terrestrial event correlation. The mechanism is probably connected with sunspots, which start towards the top and bottom poles of the Sun, and occur closer and closer to the equator during the Sun's eleven year cycle. The sunspots start in pairs, plus a few extra splashes, with usually a strong east / west direction component.

This reversal in magnetism is of the *same intensity*, both in the Sun and the Earth, its magnetic slave, at the same time. This reversal can occur at any time, though infrequent and irregular, and because it is the Earth's oxygen providing the magnetic field, the magnitude of the field remains constant. Paleomagnetic

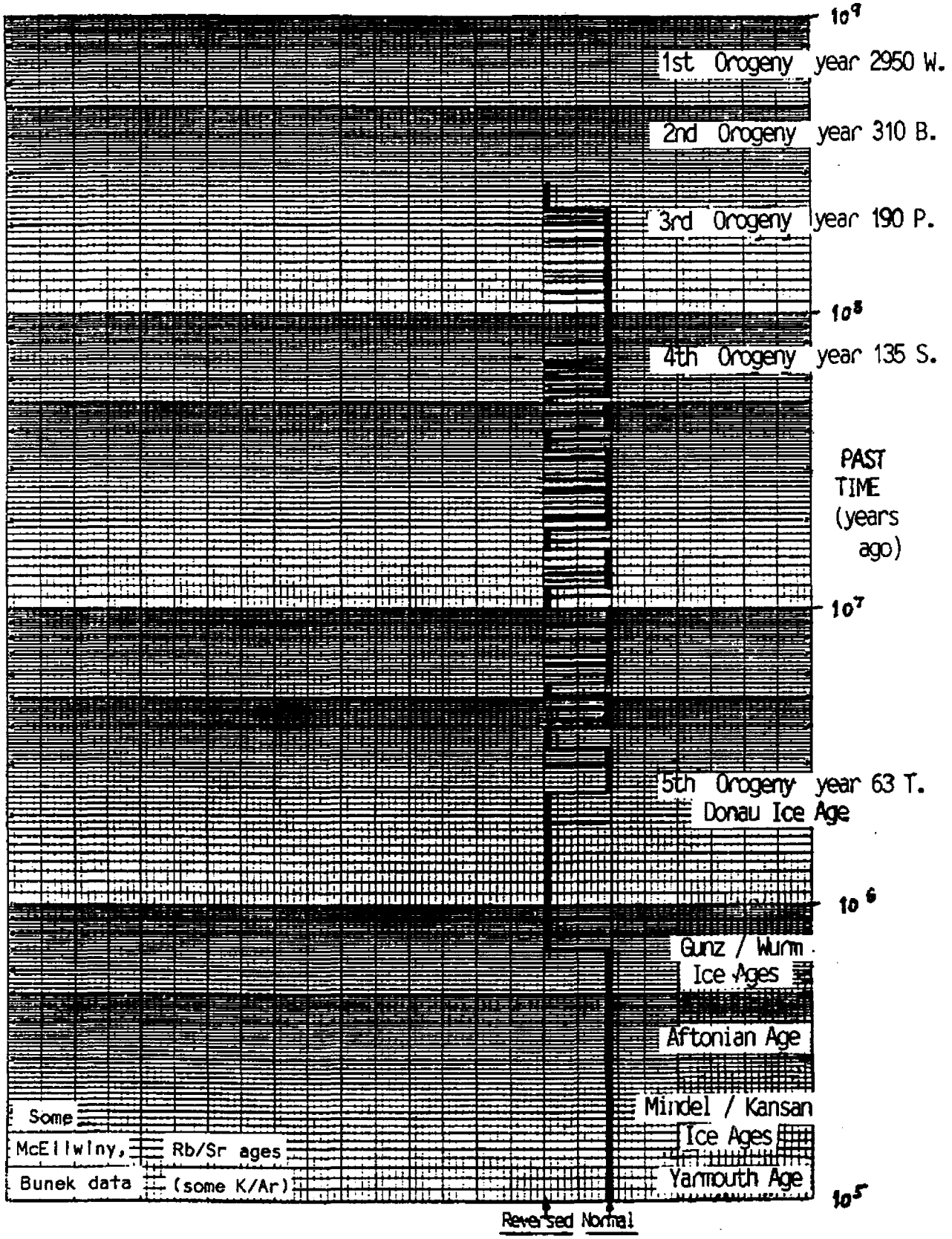


Figure 4C. Paleomagnetic Polarity

stones in the Earth were oriented while the Earth's crust was still plastic in line with the magnetic field at that time. On cooling below the Curie Point, they locked in alignment with the Earth's field. There are several instances of change in their position relative to the Earth's present magnetic field, but the largest disparity is in Australia, further proof of the sweep of Australia across the face of the world.

Originally Australia was lying north – south as against the present east – west, adjoining east Africa and east India! This original position is where the paleomagnetic stones were oriented in solid earth.

After the Indian Ocean burst, opening Australia and India away from Africa, and later when the western Pacific Ocean burst, sucking Australia and New Guinea away from the Indian Ocean, Australia swept eastwards some thousands of kilometres to the edge of the now southwestern Pacific Ocean. This not only moved it geographically 20° south, but 30° east as well, turning it nearly a right angle rotationally. This explains the discrepancy of the order of 70° between paleomagnetic stones and the Earth's field (Figure 4D). It has been mentioned previously that the Japanese Islands were originally straight, but paleomagnetic stones have registered the present bend, indicated in Figure 4E.

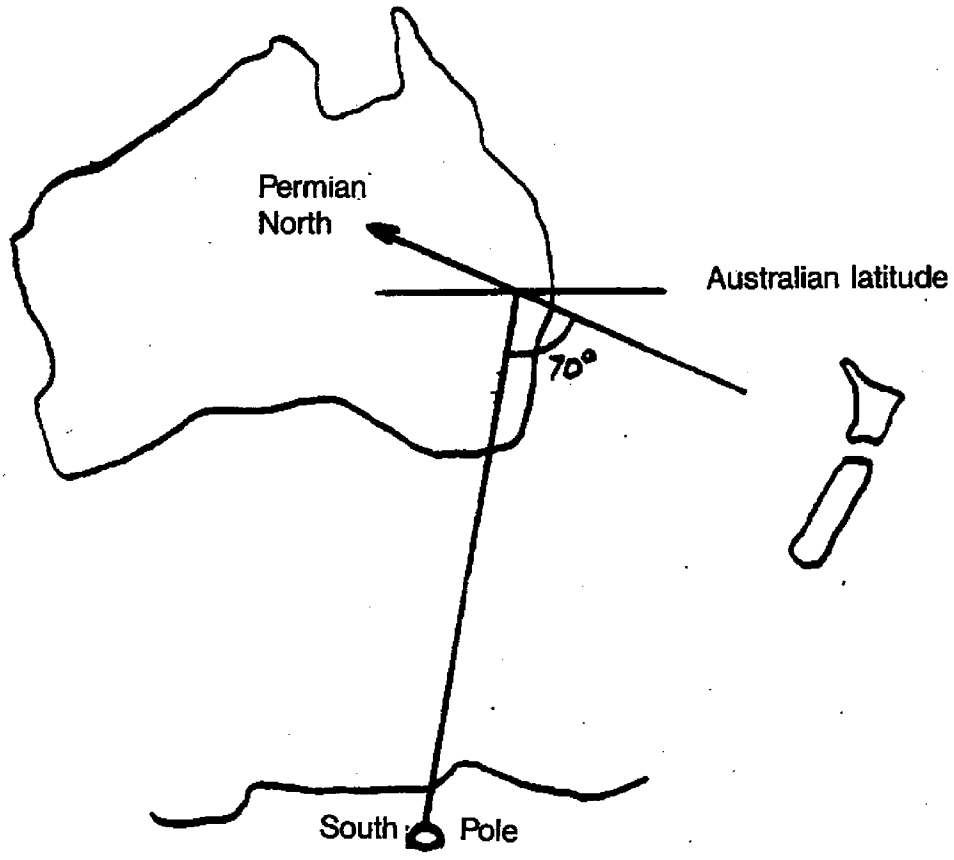


Figure 4D. Australian rotation

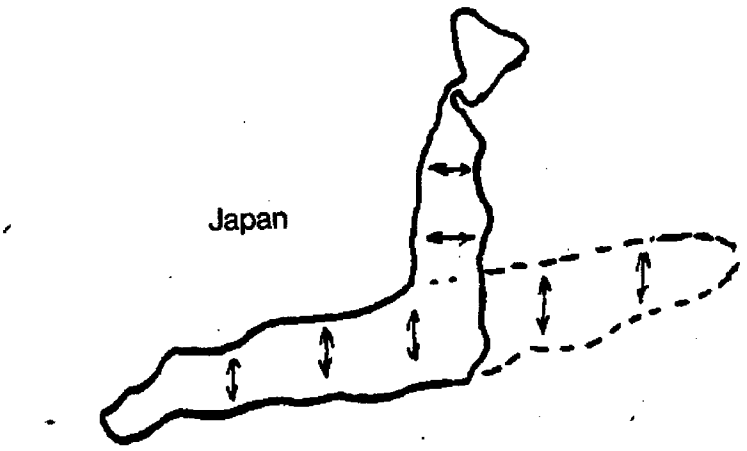


Figure 4E. Bending of Japan

Various natural materials have differing magnetic characteristics with a considerable range in strengths. The diamagnetic and paramagnetic types have reactions mutually at right angles, while the Earth's field is weakly magnetic and ferromagnetism (iron) is even magnetic when hot. Ocean bottoms are very deep, and largely uniform basalt, under magnetically inert water, so that magnetic variation anomalies are seldom more than one or two percent over the oceans. Anomalies are much greater on land and can in some cases even bring about reversals of direction.

The contour diagrams 4F to 4I give various magnetic intensities up to considerable heights above the Earth, between 0.01 and 0.7 gauss and from the Earth's surface to 18'000 km away. The total, vertical, and horizontal intensities vary according to mineral anomalies in the Earth. The measurements enable figure 4J to be produced which arises, it is suggested, from the skin of oxygen round the Earth, the average height of its mass being 4 km to 6 km. More than 10 km above the Earth the magnetic intensity varies relatively evenly, and reduces smoothly. Figure 4A is a very simplified diagram of the oxygen shell and its effect, and figure 4J shows a more accurate configuration, which is as much as has been determined at present.

Figure 4K plots the examples of magnetic intensity for various heights above certain places marked on the maps 4F to 4I, and it can be seen that at great heights there is a direct logarithmic relationship between height and field strength, and also that peak magnetism coincides reasonably with average mass height of oxygen. Finally the map of magnetic inclination, 4L, indicates a fairly even spread between isoclinic lines, made rather oval shaped because the Earth sphere is spinning about its polar axis, and the spherical oxygen shell (above the air mixture) has its poles some 11° away from the geographic pole.

The diagram 4M shows the map of the Earth looking down on top of the north pole, and various other 'north poles' are marked using a scientist's calculations derived from measurements of the remanent magnetism in lavas which were molten and cooled in Mesozoic times (65 to 200 million years ago).

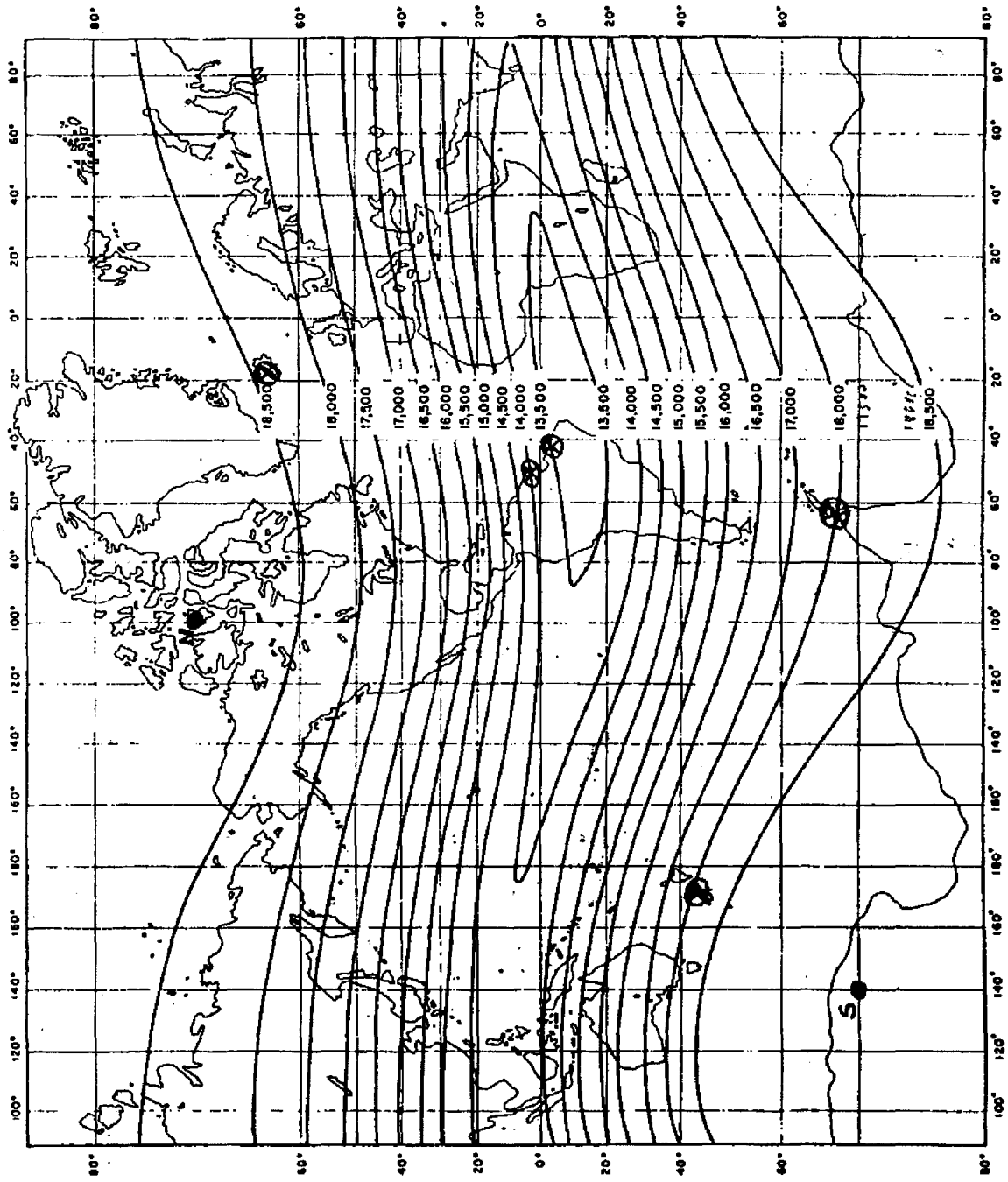


Figure 4F. Altitude (13000 to 19000 km) of constant total intensity surface, 0.01 gauss. (Earth's surface a 6378 km radius, 0.25 to 0.7 gauss)

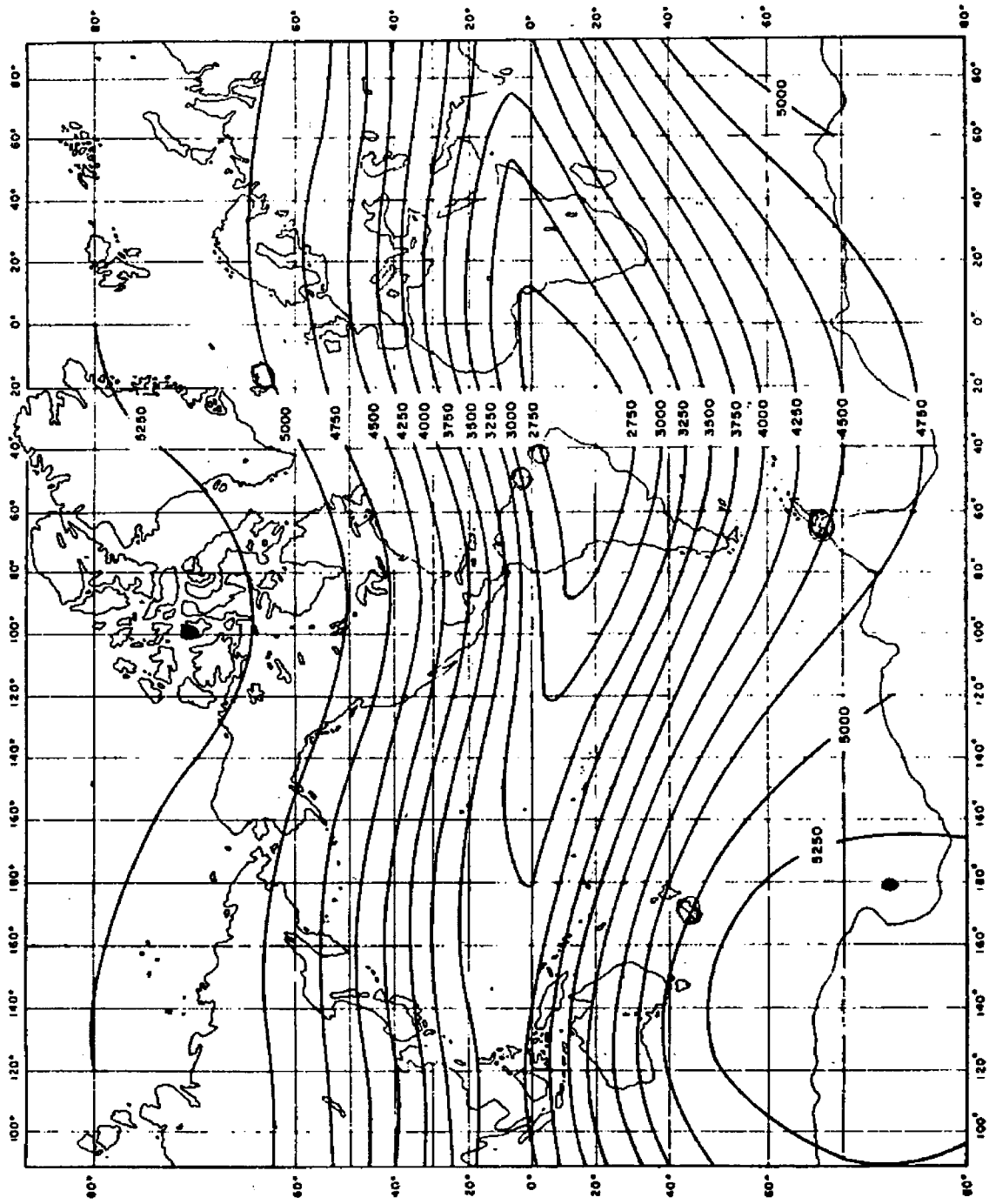


Figure 4G Altitude (2700 to 5300 km) of constant total intensity surface 0.1 gauss. (Earth's surface at 6378 km radius 0.25 to 0.7 gauss)

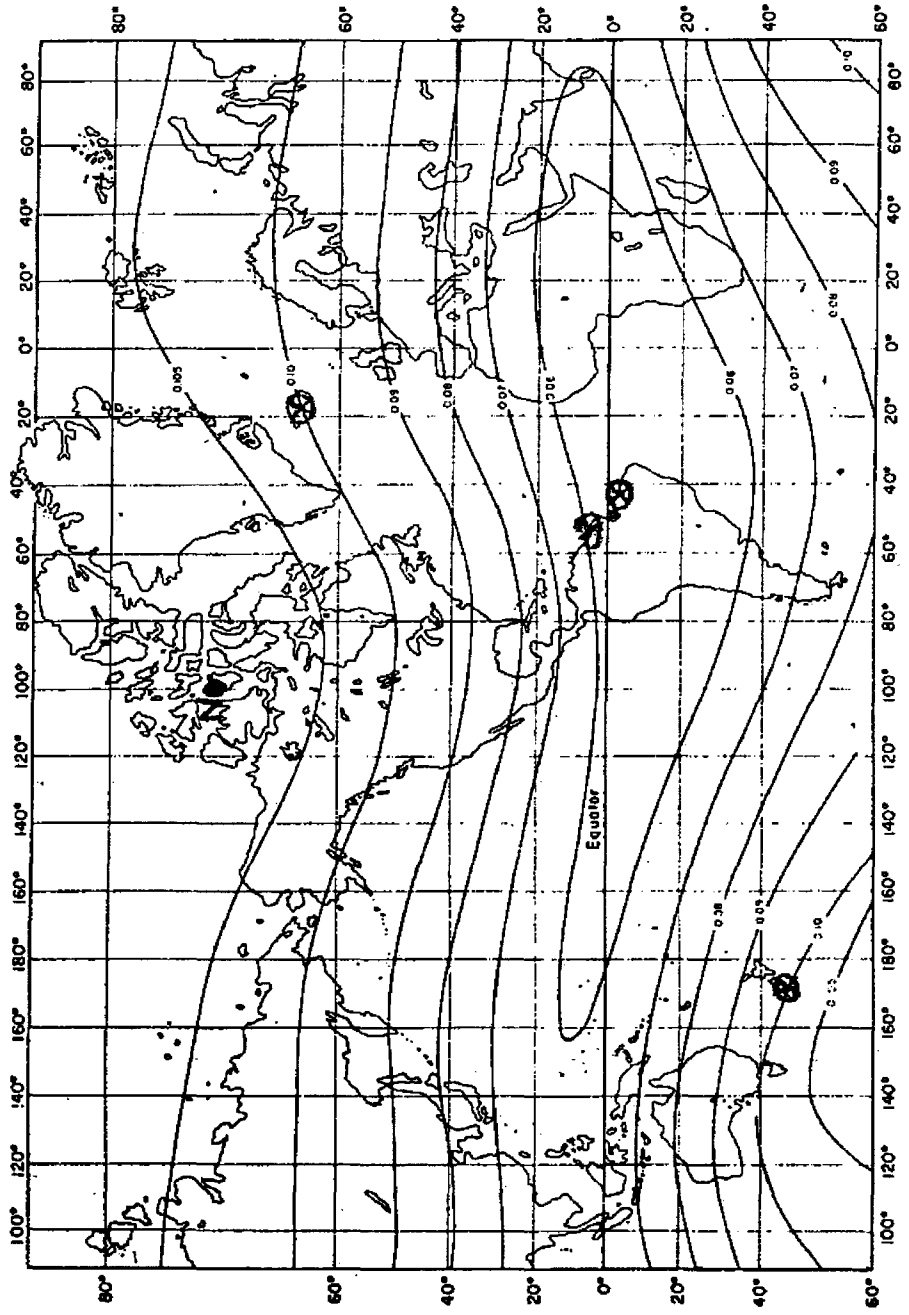


Figure 4H. Altitude 5000 km total magnetic intensity.

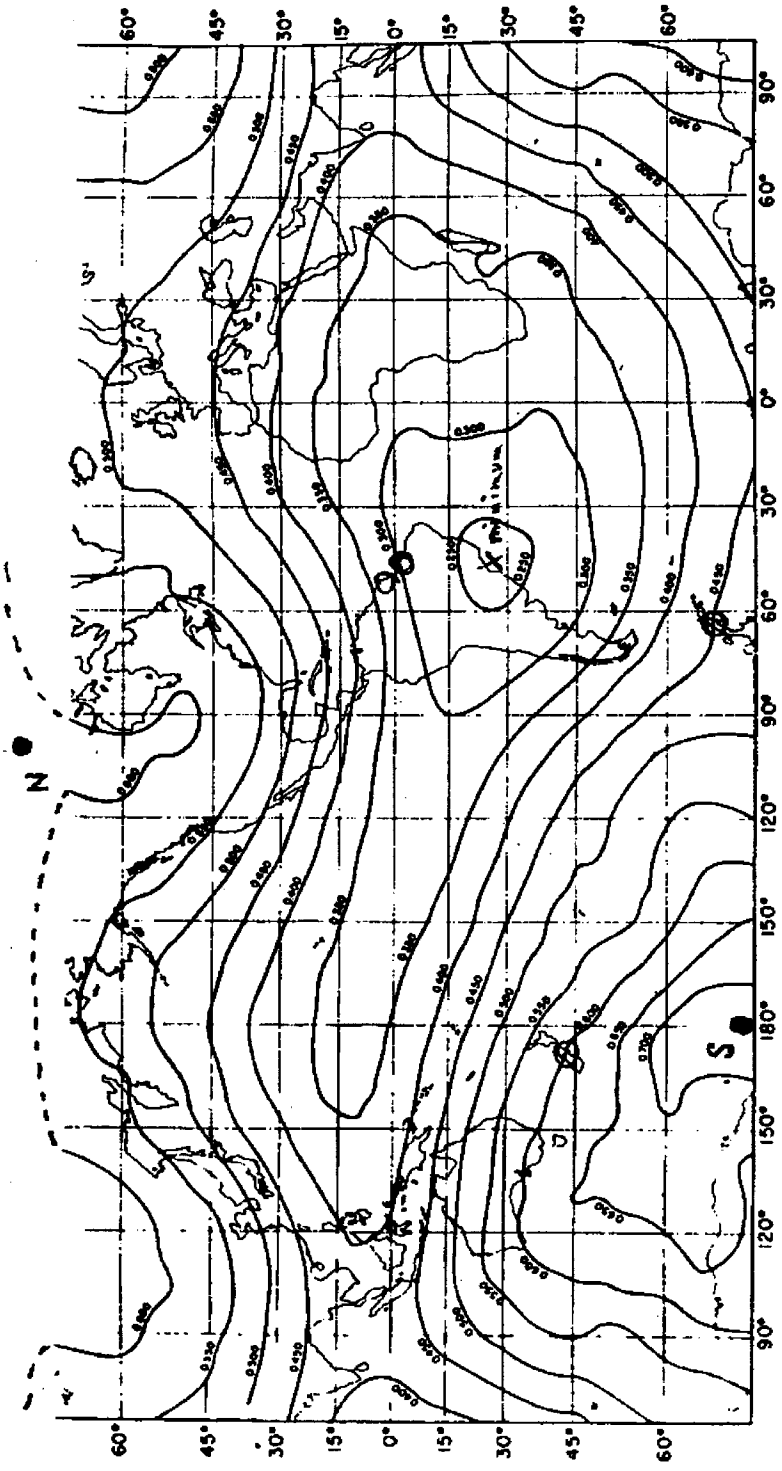


Figure 4l. Earth's surface total magnetic intensity (6378 km rad.)

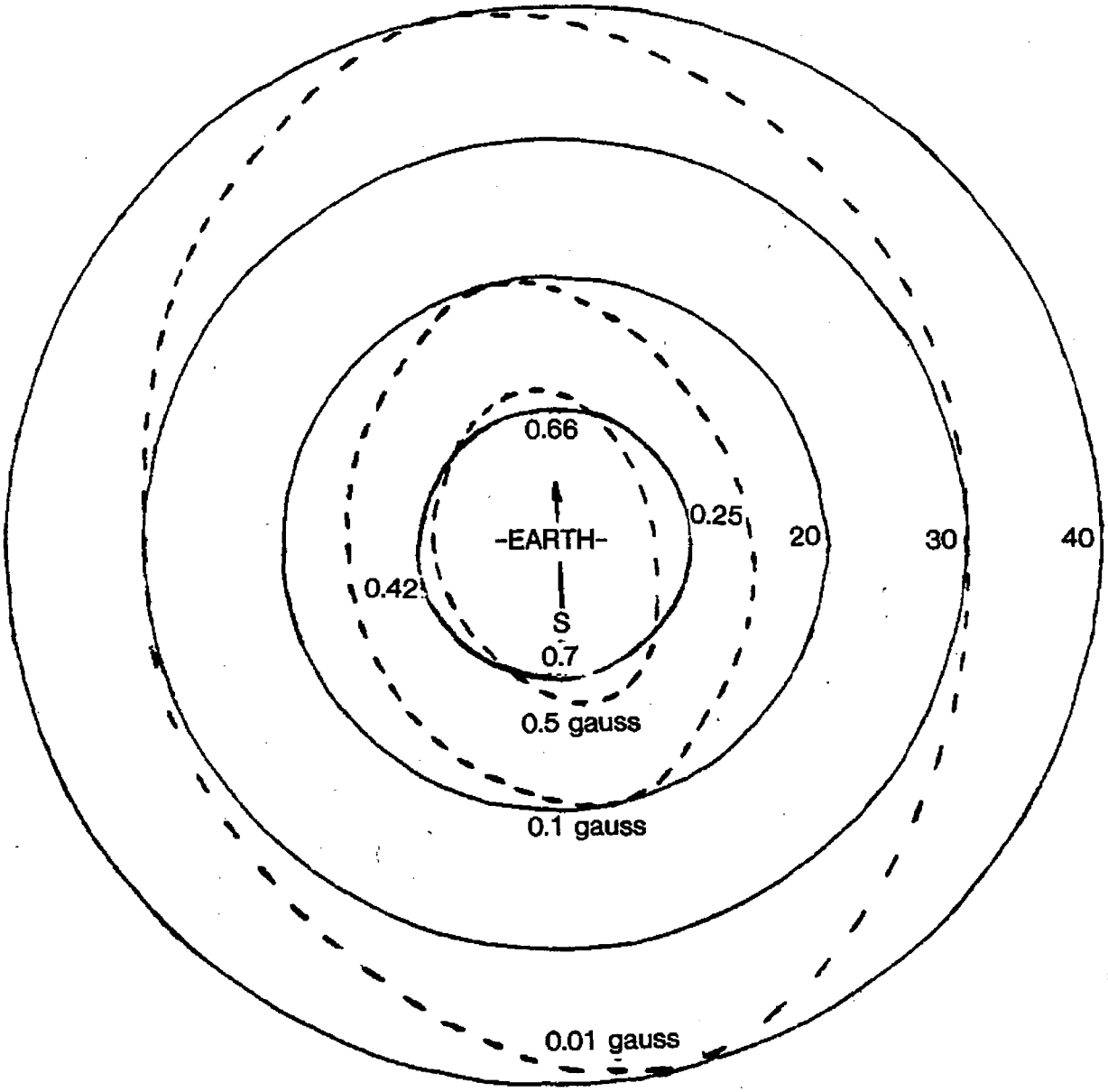


Figure 4J. Total magnetic intensity of the Earth's field

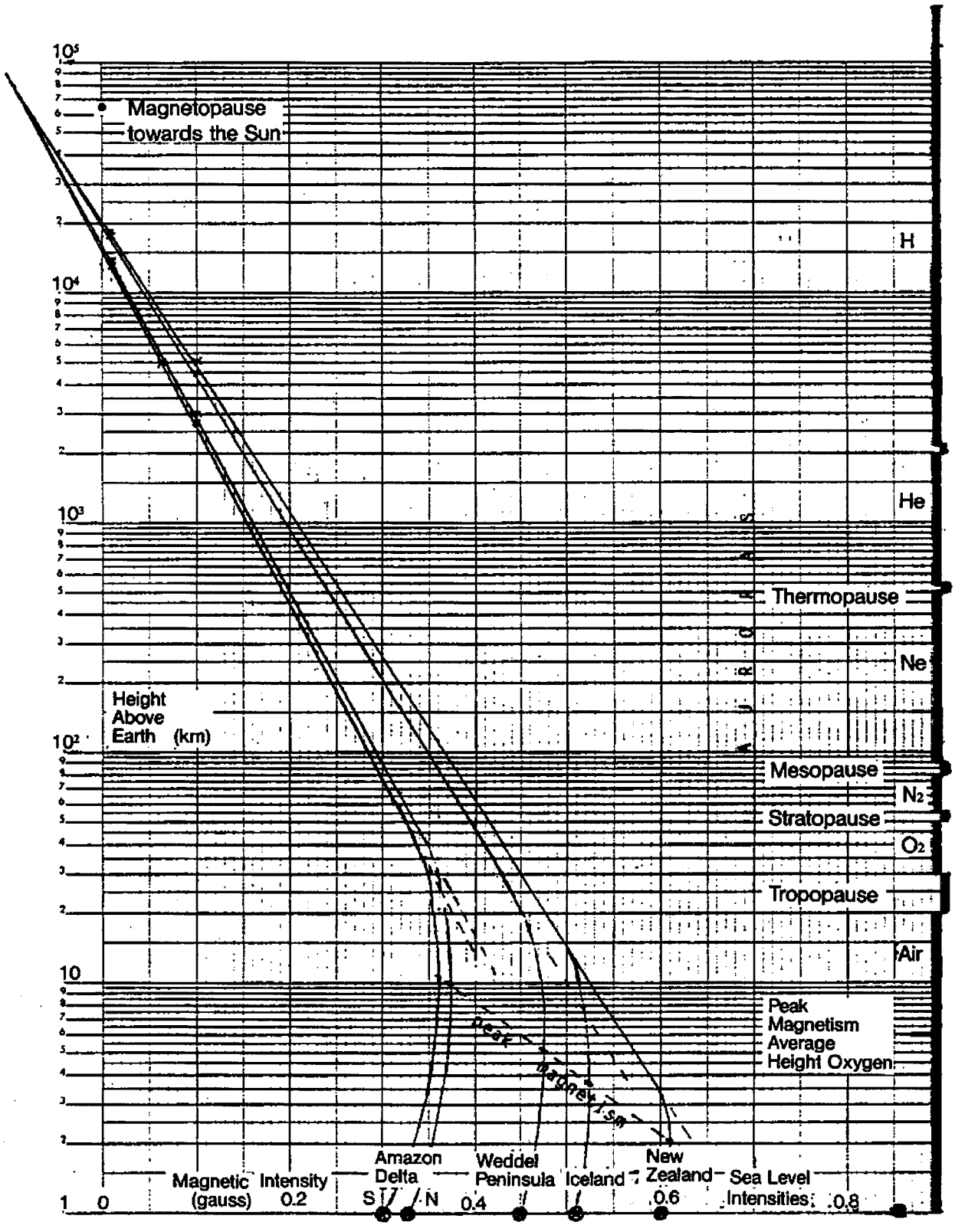


Figure 4K. Magnetic intensity of atmospheric oxygen

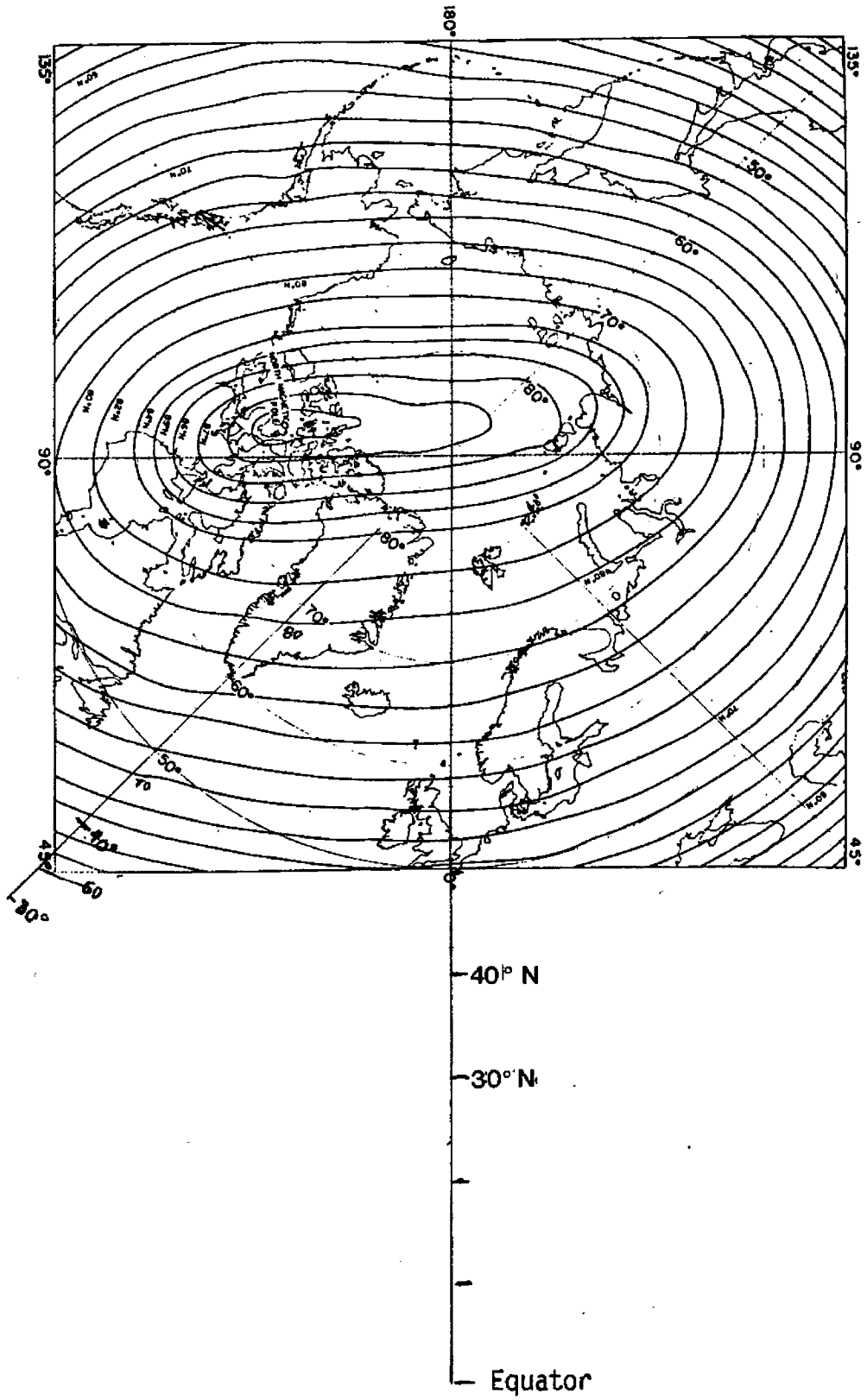


Figure 4L Isoclinic lines for Earth's magnetic inclination

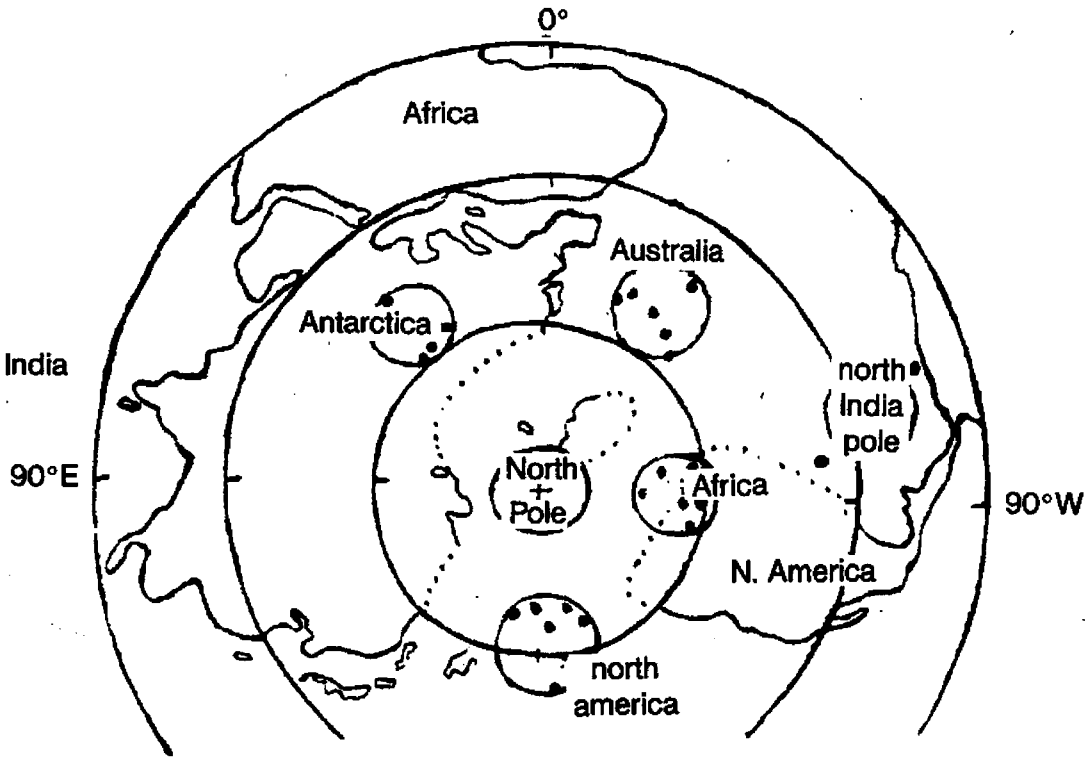


Figure 4M. North Pole groups (as measured now) in Late Mesozoic, material from areas outlined (not dotted).

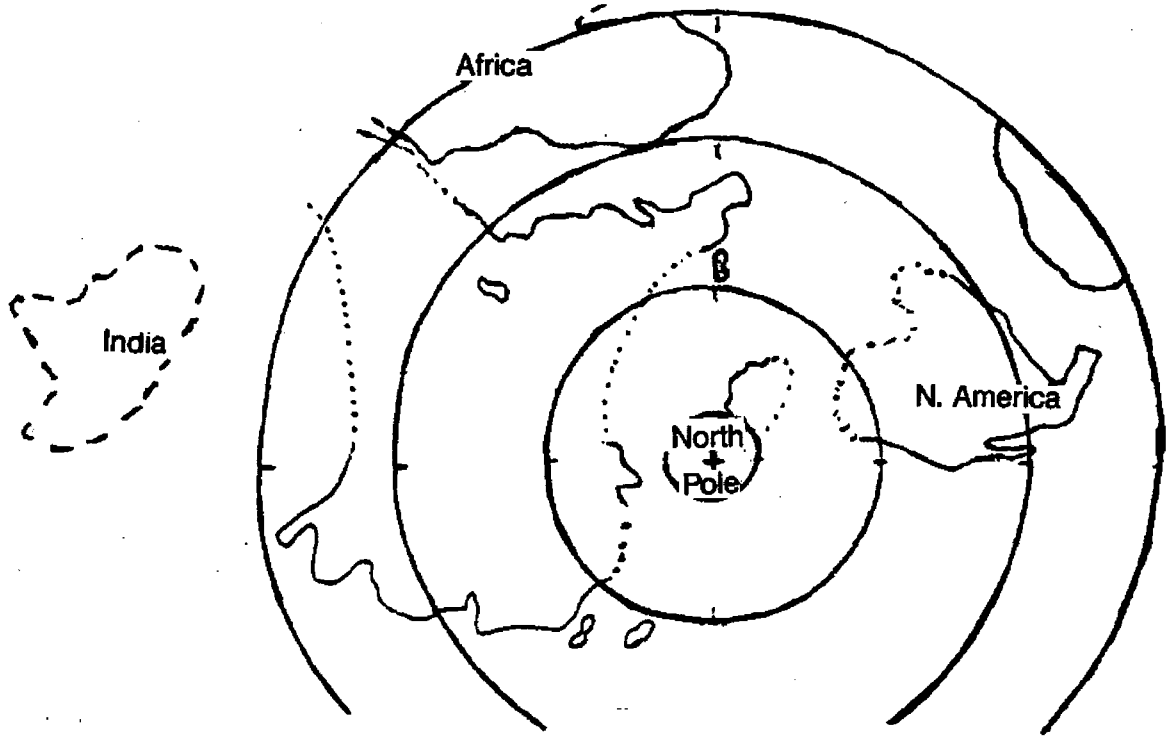


Figure 4N. Continents moved to collect all the North Poles into their correct position. *(India was further away, Antartica was closer).*

The various countries produced several results which agreed on a position for the magnetic pole in Mesozoic times. However, as there was only one magnetic north pole for all of them in those times one must move the maps of the countries to bring all the poles into line, which has been done in figure 4N. This indicates that during the orogeny the countries moved relatively. India for instance, was much further to the south and a little west of where it is now.

It is a fact that the maximum number of solar prominences occur at the same time as the maximum number of sunspots, and that active or eruptive prominences which occur anywhere on the Sun, are due to ejecta which only just break the surface. The blobs which are ejected from the core, of dense heavier elements, are at that inner Sun temperature, still gaseous and fast moving, so that when they reach the Sun's surface, they have expanded some thousands of times in volume.

Bursting through the nuclear burning hydrogen, a large area, thousands of square kilometres, is ejected. These prominences may fall back after 'only a few thousand kilometres', or they may cool sufficiently to become invisible before they fall back to the Sun's surface. On the other hand, the ejecta which achieve speeds of 680 km/s or more, leave the Sun's surface and not only travel thousands but may travel millions, even billions of kilometres, as there is virtually no resistance in space. They all fall back into the Sun, especially now that the Sun is old and relatively weak. However any which are effected approximately at the equator take up a position in the ecliptic, depending on their speed in orbit round the Sun. Normally the orbit is elliptical, and when the large hot gases cool they form carbonaceous chondrites and are sometimes picked up on Earth, being different from the Aster's meteorites (stoney and iron). Northern blobs stay northern and southern blobs stay southern. North and south spots were counted from 1883 to 1889 and 64% spots were northern, 36% southern.

The number of flares per day = 6.1% R, the monthly sunspot number. Several flares can occur in a spot group's lifetime eg. nine flares per day from R = 150. The most likely place for flares is 50'000 km behind the preceding spot, perhaps starting at the edge of the penumbra of a major spot. Often flares repeat in the same place a few hours apart. All funnel prominences and loop prominences are associated with sunspots, and surges and puffs radiate from sunspots.

It has been found that certain physical correlations exist between sunspots and events on the Earth (see figure 4.O). For instance magnetic storms, temporary shifts in compass variation, and radio interference, are all at a maximum with maximum number of sunspots. Maximum auroral displays occur just after maximum sunspots appear. The solar constant, wavers slightly above and below average, being above with maximum sunspots. There is also a maximum number of prominences at maximum sunspot time, and, as may be expected the spot positions and number, influence the solar corona.

On the other hand correlation between sunspots and weather on Earth is very weak, which may be expected from understanding the cause. Further confirmation that sunspots and prominences arise from the same cause, are that the Sun's

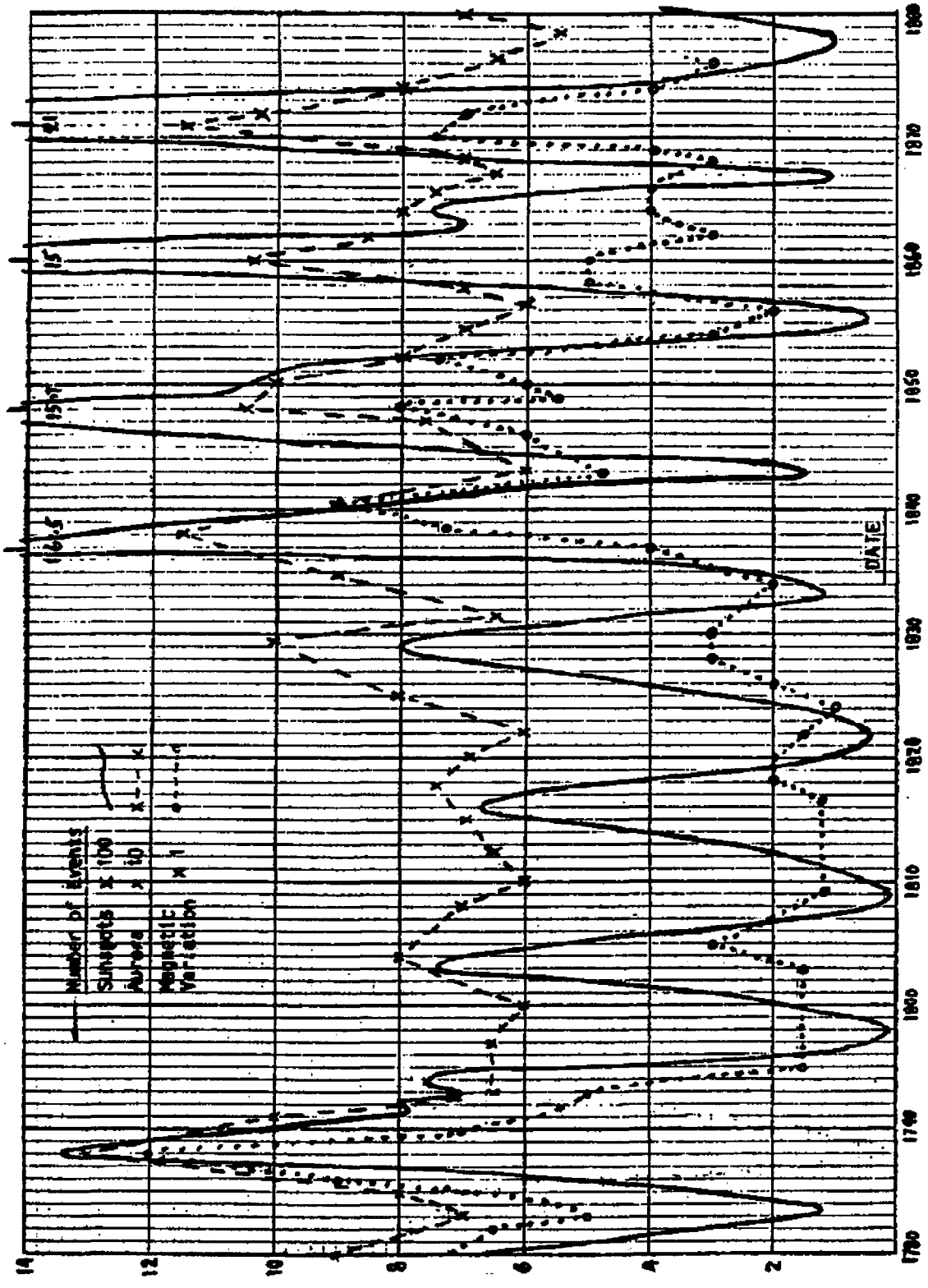


Figure 4.O Correlation between Sunflares, Aurora, and Magnetic Variation.

surface is mainly hydrogen, with some helium and some calcium. These same elements are contained in quiescent prominences (which only just poke up at the surface) but eruptive prominences contain magnesium and iron as well, which come from the 'mantle' below.

High in the atmosphere the molecules of oxygen (formula O^2) have an atomic weight of 32, whereas the layer above is nitrogen, (formula N^2) having an atomic weight of 28. This mismatch in impedance between two homogenous gaseous layers, causes a refraction / reflection of any radioelectric impulses which arrive at more than the critical angle, and the surface is called the lower Heaviside–Kennelly Layer (and has no need to be ionised.). Further, neon, formula Ne1, has an atomic weight of 20, and this further mismatch of nitrogen / neon about 150/250 km high, gives a second impedance mismatch refraction, and is called the upper Heaviside– Kennelly Layer for radio signals. There is also a mismatch between the neon, (20) and helium, (8), at 800/1000 km high, and even one at the helium / hydrogen (atomic ratio 8/2) mismatch below 1'000 km, but these latter only seem to affect long distance radio waves from Earth, as the sparseness of the gases lowers the consistency of refraction / reflection, and high frequency waves pass right through.

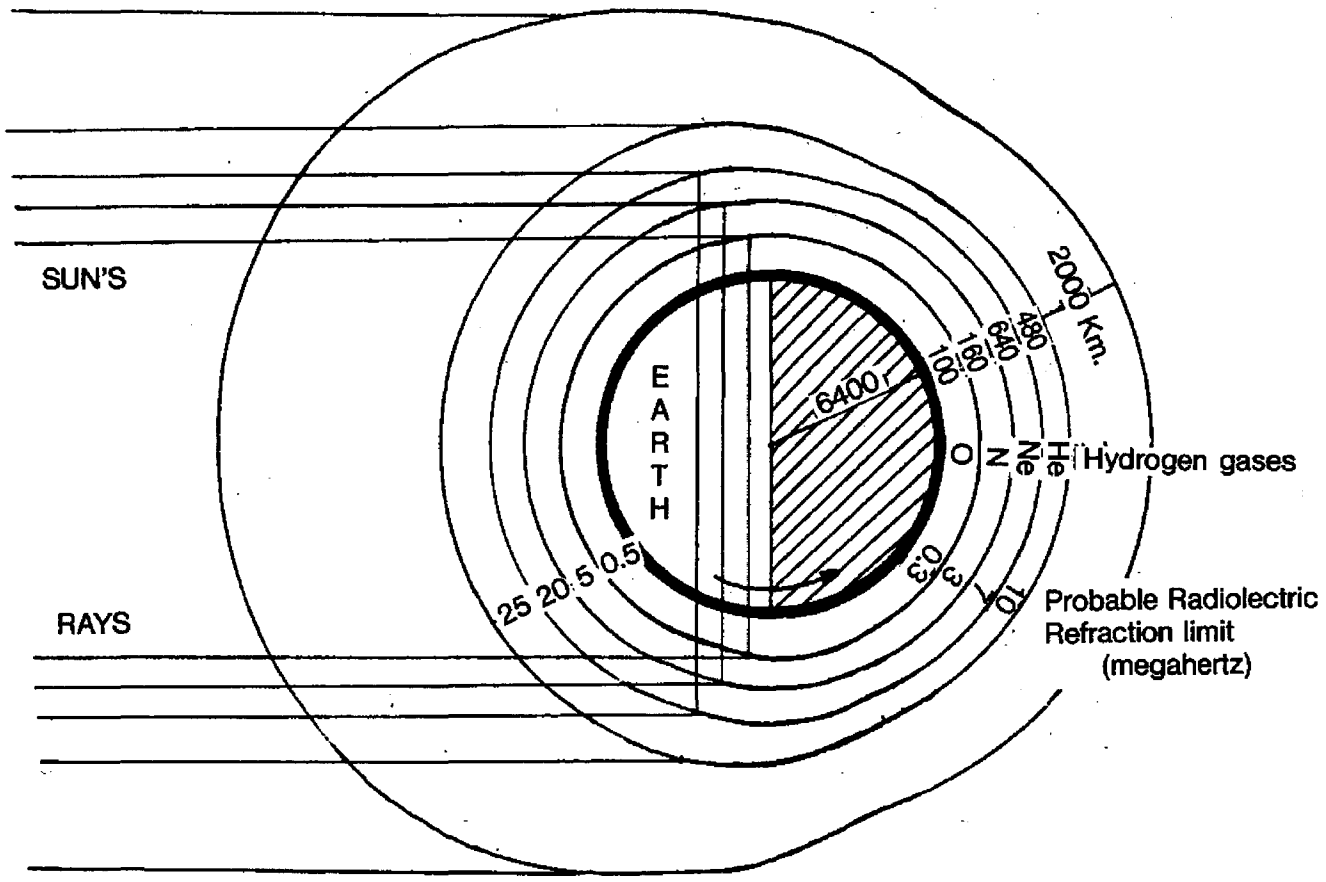


Figure 4P. Gas Layers round the Earth (not to scale)

These layers of gases form concentric spheres with the Earth in the centre, and have sequential density, air being the lowest sphere, and hydrogen the highest. These concentric spheres are warmed by the Sun on the nearest side, mostly by infra-red frequency energy, and thus the thickness of the gas layer above any place on Earth depends on what part of the day it is and what is the infra-red absorption rate of the gas. For instance in figure 4P the Sun shines its rays on the Earth (the relatively skin thick layers are exaggerated) and the layers of gas are heated in proportion to their absorption of infra-red energy.

A circular patch of the gas layers facing the Sun is always heated, and in a sense orbits the Earth daily just as the Sun appears to do. This thickening of the layers with warmer, less dense gas, means that the refracting ability for radiolectric waves, changes according to the heating pattern. That is, the cooler, more stable, denser mismatch at night between the oxygen and nitrogen layers etc refracts radiolectric waves more efficiently and consistently than in the daytime.

We therefore obtain radio reception via the groundwave during the day at the same strength as at night (with the same power radiated). But, when the distances are too great for the ground wave, the reflected waves from the gas transition layer, are poor in the daytime and good at night, and higher frequencies are required for transmissions during the day. During the morning heating, and evening cooling cycles, we may get fading as well as the average strength growing or weakening from the change in efficiency due to density, ie. more or fewer molecules per volume. The fading is caused by the uneven consolidating or dispersing of the layers or even convection during heating or cooling, and the reflecting, more from one layer, then more from the other, or the changing in phase between two layer reflections, alternately reinforcing or negating the total signal. A further detail on the fading of transmissions over long distances is that the helium layer is so sparse that the infra-red heat rays pass through it as well as heating it along the layer above the neon so that the circular heated patch is extended cylindrically farther round the Earth than in the outer layer. This results in a longer period of fading (hours) on long distance transmissions such as London to Singapore or Johannesburg.

Sunspots are the welling up of lower temperature helium to the Sun's surface and provide small, relatively dark spots at 3'000 K in constrast to the general 6'000 K surface. These dark spots radiate more infra-red energy, and as a consequence the top sensitive layer of helium is more affected when there are more sunspots. Hydrogen has a very high specific heat and changes little. Therefore, long distance transmission of up to 10'000 km can expect to have longer or more intense fading periods with more sunspots, as this is the layer the long distance transmissions use. Figure 4Q by T.W. Bennington shows the correlation between the amount of fading experienced between London and Johannesburg (8'480 km) or Singapore (10'080 km), measured over several years.

A further figure, 4R by Bennington shows the maximum transmission frequencies which can be used according to the time of day between London, and Montreal, or Buenos Aires, or Johannesburg or Hong Kong. Observation of the

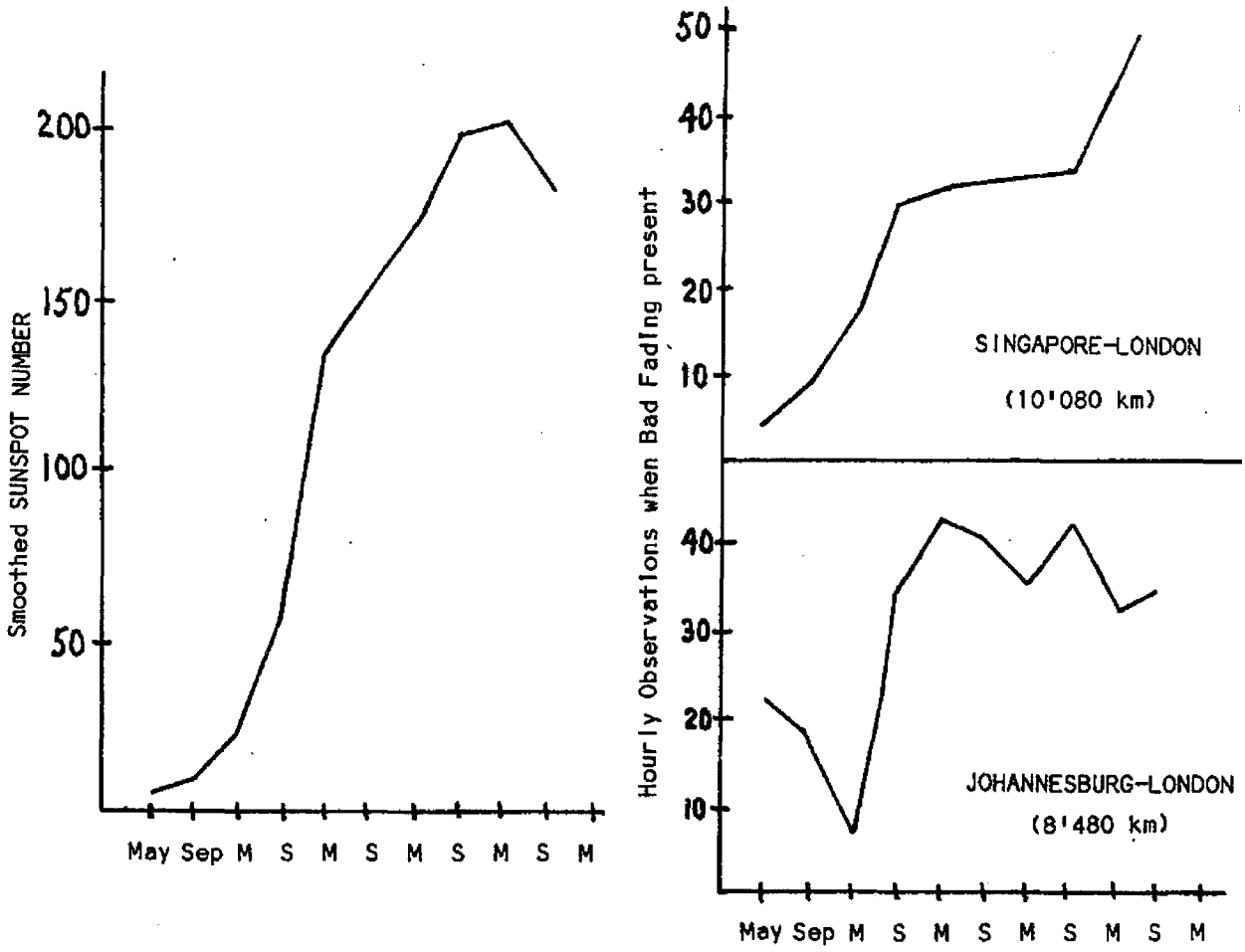
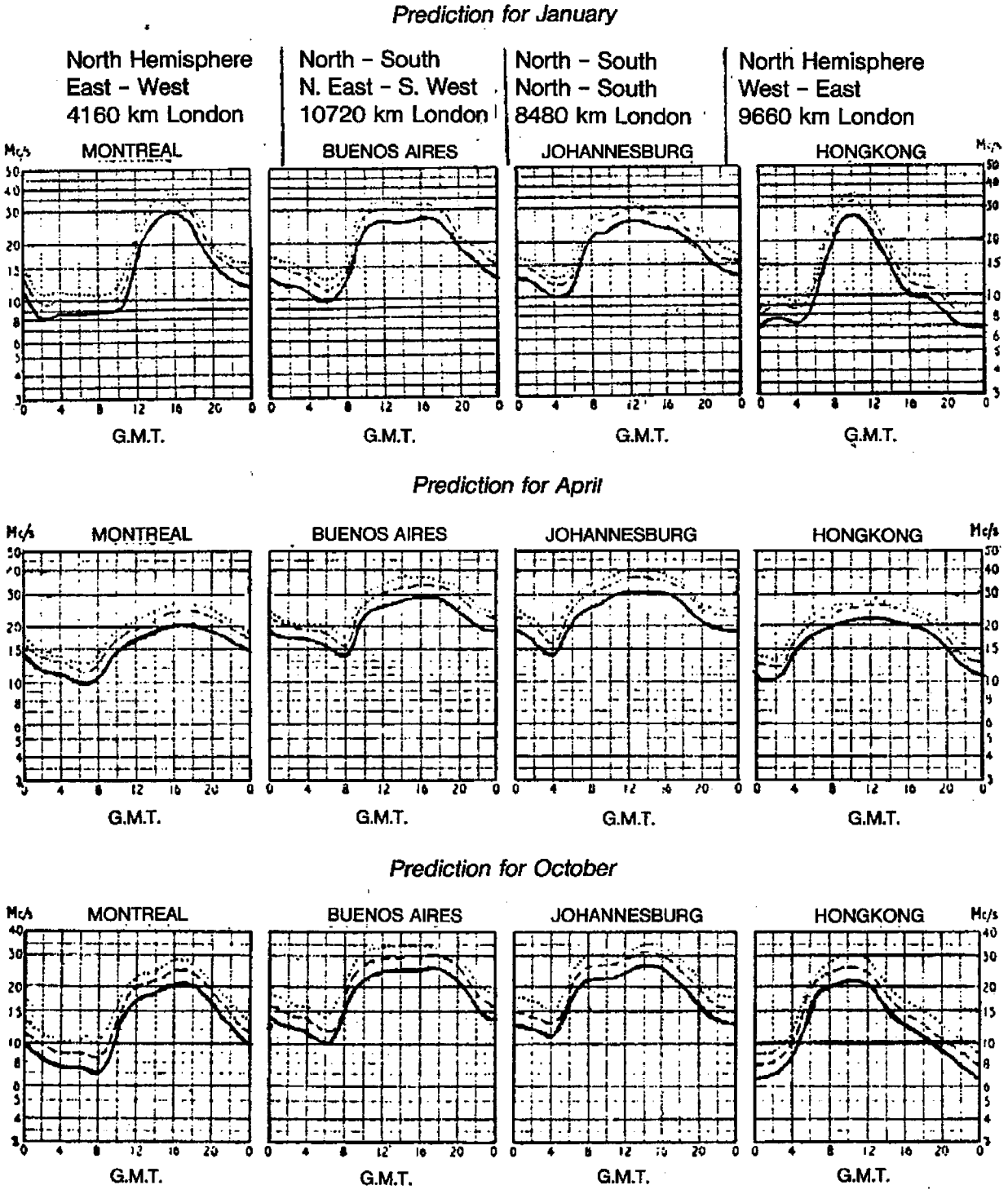


Figure 4Q. Radio transmission fading

graphs shows that Montreal and Hong Kong, which are in the same northern hemisphere as London, have a shorter period of possible high frequency transmission than London / Buenos Aires, or Johannesburg, which are transmissions across the equator. One can visualise the picture of the Earth with its thin skins of gas layers, and a 'warm' circular patch extending effectively a little more than half way to the poles, its northern edge just crosses the London / Montreal line. This long unstable heating / cooling edge lengthens the period of lower frequency required to avoid fading reception, when receiving and transmitting stations were equidistant across the equator. The Montreal and Hong Kong graphs also show a little longer 'heating cycle' in October, and significantly longer in April than in January as the Earth tilts to expose the northern hemisphere to a longer period of Sun.

Magnetic disturbances from the Sun disturb the hydrogen layer, which obviously affects the helium / hydrogen transition layer which is used in the longest distance transmissions. About a day after a sunspot disturbance some energy is received by the Earth from the Sun, which produces aurora in the neon layer,



The full-line curves indicate the highest frequencies likely to be usable at any time of the day or night for reliable communications over four long distance paths from this country during October.

Broken-line curves give the highest frequencies that will sustain a partial service throughout the same period.

..... FREQUENCY BELOW WHICH COMMUNICATION SHOULD BE POSSIBLE FOR 25% OF THE TOTAL TIME

— — — PREDICTED MEDIAN STANDARD MAXIMUM USABLE FREQUENCY

_____ FREQUENCY BELOW WHICH COMMUNICATION SHOULD BE POSSIBLE ON ALL UNDISTURBED DAYS

Figure 4R. Short Wave Conditions, by T.W. Bennington

affecting both the helium / neon and neon / nitrogen divisions, both of which refract long distance radio. Thus the Sun's magnetic storms produce everything from crackling interference, to fading and even blackouts in radio communication.

Even without magnetic storms, the Sun's magnetic influence on the hydrogen and oxygen layers is a continuously rotating distortion which is a daily effect with respect to a point on Earth, therefore there is a distortion of the magnetic field regularly each day. Flammarion and others have reported that in Paris it oscillates daily in direction by some nine seconds of arc at 8 am and then swings west the same amount by 1 pm returning eastwards a smaller amount by 8 pm then westward again a small amount up to 11 pm, from where it swings east to maximise at 8 am again. This regular daily variation is only about one or two arc seconds at the equator, with most swing towards the poles. To reinforce the theory, the effect in the northern hemisphere is weaker in winter and stronger in summer.

Summary

The paramagnetic shell of oxygen round the Earth weakly assisted by the surrounding doughnut of diamagnetic hydrogen in the Sun's magnetic field, puts magnetic lines of force through the weakly magnetic molten iron core of the Earth. This is the reason for the Earth's magnetic poles not being identical with the geographic poles, and why there is an apparent annual drift, and why, when the Sun reverses its polarity, so does the Earth, yet to the same magnetic strength as before.

5

SPLITS IN THE EARTH'S CRUST

It was seen in the last section that an aluminum–magnesium–silicon–oxygen crust liquified and later solidified from very hot gases, forming a hard smooth ball. This is somewhat of a generality as there are obvious impurities, say, up to one or two percent, and even local contaminations of up to 10 or 20%. While there are vast amounts of magnesium chloride, magnesium / calcium / potassium sulphates and sodium chloride, they are still only contaminants in the Al/Mg/Si/O crust.

When it first cooled, the Earth's crust was about 7'000 km in diameter. Over eons of time the outer gas layers settled according to density, and the crust cooled below 400 K. The original major constituents of the Earth's atmosphere three and a half billion years ago were nitrogen and carbon dioxide. Two billion years ago plant life started to convert the carbon dioxide to oxygen, which process is complete to maintain plant life. The liquid water covered the Earth to an *even* depth (ignoring the tides and small contraction wrinkles in the crust). Consequently when electric storms acting through nitrogen, carbon dioxide, and traces of methane, ammonia and neon etc, formed protein and later single cells, a thousand million years had elapsed.

It has been shown by Miller elsewhere, that this method of forming protein is quite possible, given enough time. It is a *fact* that it took half a billion years to produce something as simple as bacteria, and that the only vestiges of life until nearly three billion years after crust formation, were traces of algae with perhaps some indication of extremely simple marine life by the end of this period. BUT, the presence of this marine life is another proof of a water covered planet.

The Earth's crust solidified about 3.6 billion years ago, and up to 700 million years ago it had a relatively smooth granite crust, one or two tens of kilometres thick completely covered with water. Liquifaction of the outer layer of basalt underneath the granite skin increased the pressure, split the skin of granite, and expanding noticeably, oozed into the gap. The diameter of the Earth increased, as the liquid basalt flowed into the split, which (a) formed a spherical continuation of the burst skin so that it became a new diameter ball (about 8'500 km., figure 5A), (b) the release in the Earth's internal pressure allowed the supercooled – excess pressure – gaseous basalt to liquify, forcing more volume of liquid into the gap, and (c) the liquid basalt in the split gap solidified almost immediately after boiling off huge quantities of water.

The reason for this is that the *gaseous* basalt was at many atmospheres pressure under the granite crust and the basalt *liquified*, creating more internal pressure! A

gas at normal standard temperature and pressure (STP) is about 1/1000th of the density of its liquid, which is in the same order as its solid density. If a gas is compressed to 1/1000th of its volume, it will be of the same density as a liquid. If however, while it is a very hot gas, it may be compressed to half its volume again, – that is to 1/2000th of its Earth surface volume. Liquifaction will try to double its volume, as a liquid is *incompressible* relative to a gas. It is therefore possible to get expansion when liquifaction occurs.

The actual ratio of compression is not known but the 7'000 km diameter ball – now 12'756 km – split its crust initially in the North Sea and west Greenland, etc. This split filled with granite and remained entirely covered with water.

The first non granitic split in the Earth's crust was the firt major split, and gave us the Mediterranean Sea, the shallowest large basalt basin some 2.5 km deep, and all the great lakes across Asia and Canada including the Okhotsk Sea the shallowest large basalt basin some 2'000 m deep.

There have been some five major splits in the Earth's crust causing violent orogenies with world wide effects, thankfully many millions of years apart. These five orogenies are of the same process as the quiet sea floor spreading, but very much more violent than earthquakes.

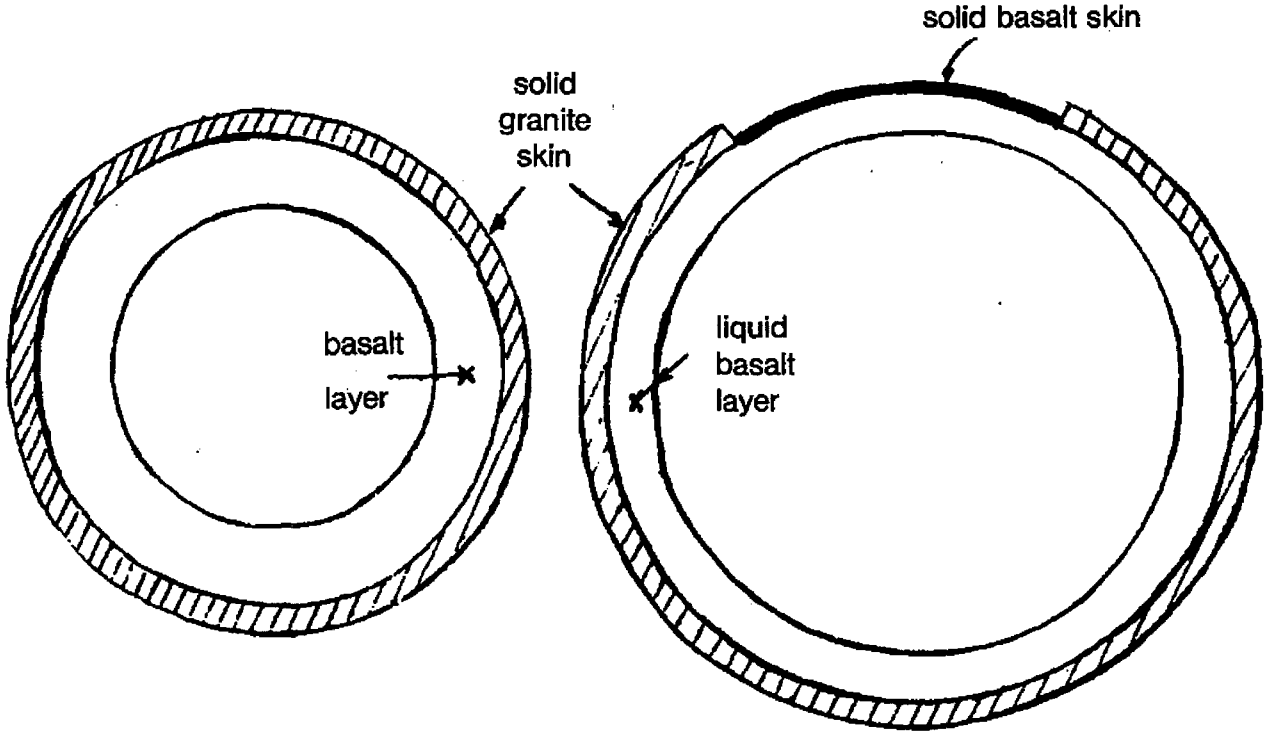


Figure 5A. (a) Original Earth (b) First Expanded Earth

The granite skin of the original Earth can be seen in the Ocean bottom maps, figures 5B to 5E where all the seas are dry and about 3 km high cliffs can be seen at the edge of the continental shelves. The expanding Earth split its skin several

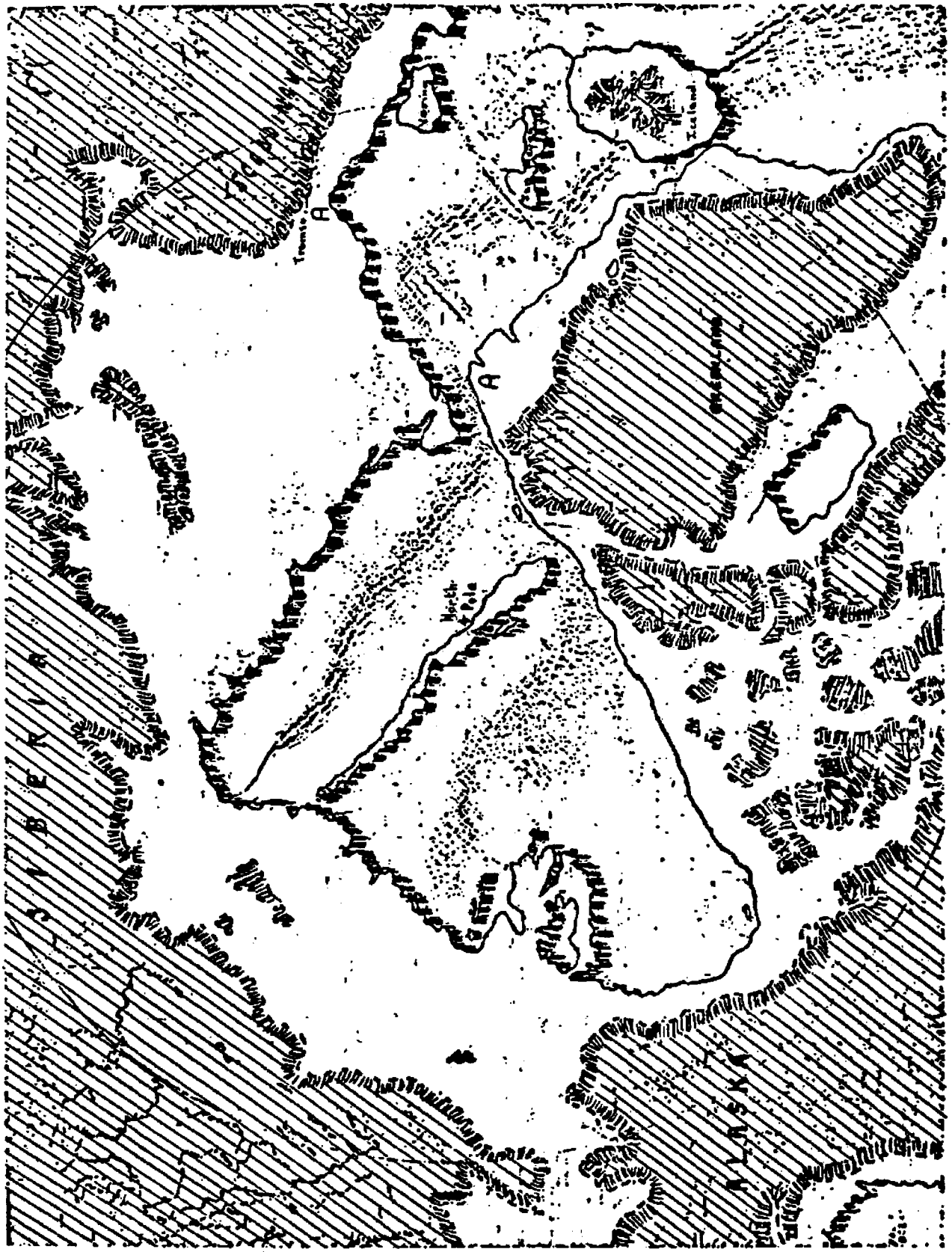


Figure 5B. Arctic Ocean floor

Figure 5C. Atlantic Ocean floor

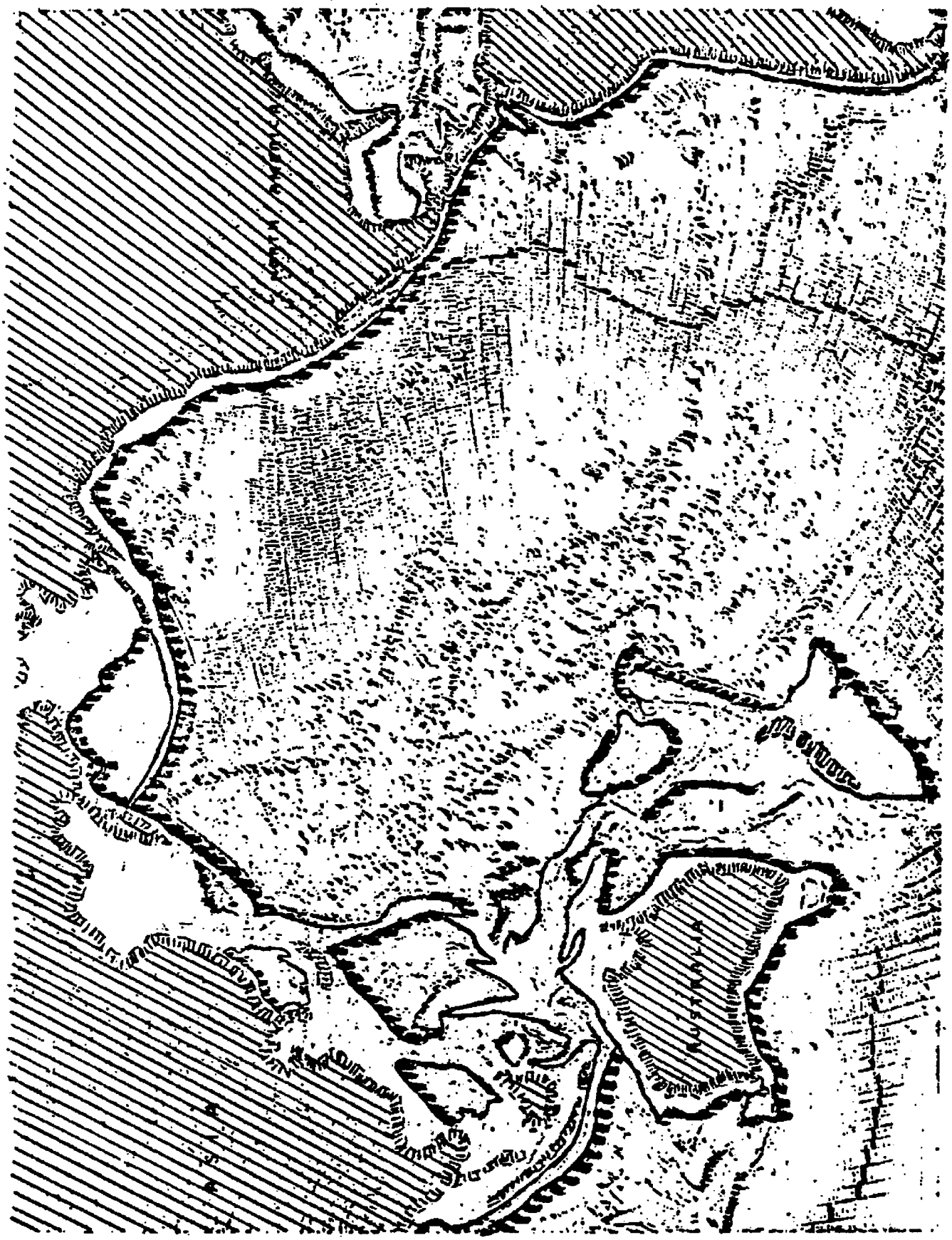


Figure 5D. Pacific Ocean floor

Figure 5E. Indian Ocean floor

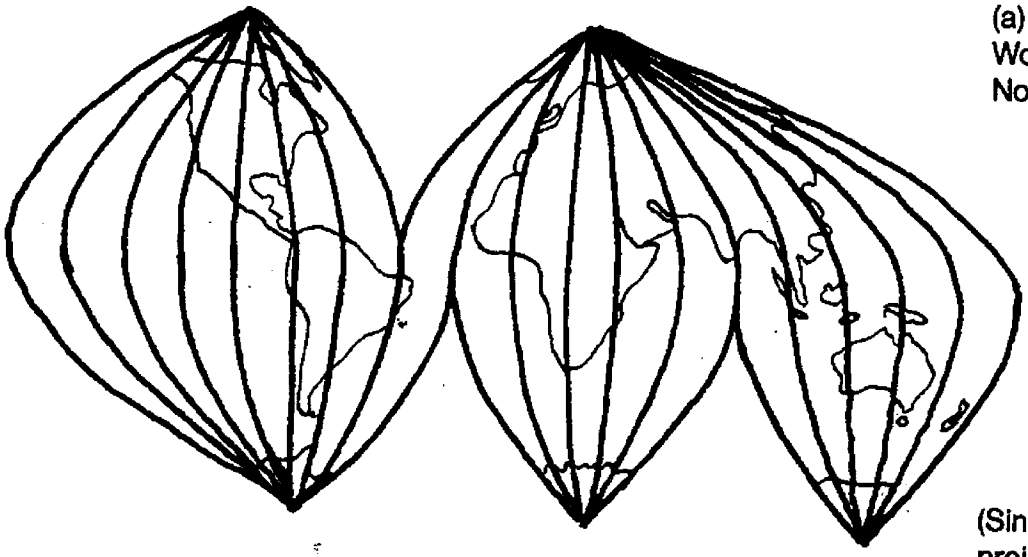
times, with millions of years in between, and we now have the original granite skin split into many shapes (see today's global maps) and the gaps filled between with basalt. The latter constitute the real ocean floors, which have been punctured by many underwater stillborn volcanoes called seamounts. They are often edged by trenches, which are faults in the crust, going down to plastic depths to allow 'easy' adjustment of basalt plane levels against granite plane levels.

Figure 2A plots the Earth's density versus depth, but also includes chemical constituents bands, with their P and S wave velocities. The P wave causes an S wave at right angles in solids and to some extent in thick liquids, but not in gases. The three layers down to the main iron core, are plastic because they show S waves derived from the P waves, but the liquid iron does not have an S wave component. Also, the upper and lower basalt layers, the mantle, and core, have different densities, and therefore different P and S wave speeds. Under the intense internal pressures any gas behaves like a liquid, and it will not produce an S wave.

The forces powerful enough to split and expand the spherical Earth, arise in the following manner. Each of the five layers of consistent material – light basalt, heavy basalt, iron / magnesium mantle, iron core and iron / sulphur inner core, were all originally gaseous under the granite skin. They eventually cooled enough to liquify, although these events were many millions of years apart. Originally upon formation, the Earth was a spherical ball with a granite skin, coated with a deep layer of water and no land breaking the surface. There were one or two small upheavals due to some internal surface condensation but molten / plastic granite underneath filled the splits in the skin, and nothing showed above water. These 'healed' splits do not stand out, but may be granite cliffs, perhaps some 700 m high, produced some two billion years ago, such as the Skagerrak of Norway and the Voring Plateau further north, with a second granite split level of 1.5 km deep some 1.2 billion years ago, such as the inlet west of Greenland.

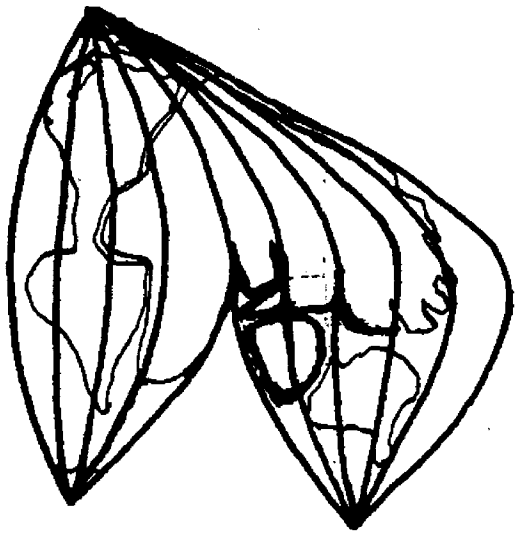
However, figure 5Fa shows the present world surface, and if the Atlantic and most of the Pacific Oceans are removed we are left with half the present world surface, (5Fb). The sinusoidal projection is much clearer than a distorted Mercator projection. Removal of the rest of the water by fitting the continents together gives us the original one third surface, (5Fc), whose diameter is 0.6 of the present diameter. Figure 5G shows a Mercator projection of a spherical ball with future splits indicated. Figure 5H shows spot and average depths of the present oceans, which are useful in understanding the following discussion.

The Earth originally must have been about 7'200 km diam. against the present 12'756 km. It was therefore revolving in 7.7h instead of the present 24 hours. The Sun's temperature of about 6'800 K, when life first started on this planet, gave average temperatures of as much as 30° higher than now. For brief periods, opaque clouds obstructed the Sun's heat, and the Ice Ages gave us average temperatures 20° lower than now so temperatures swung wildly, archaeologically speaking. We therefore have had tropical life, all over the world (including the

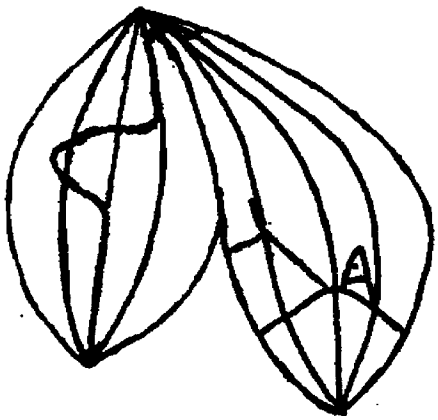


(a)
World
Now

(Sinusoidal
projection)



(b)
Half
present
world
area



(c)
Original
world
surface
area =
⅓ present
area. Same
land no sea

Figure 5F. World Surfaces with and without sea area

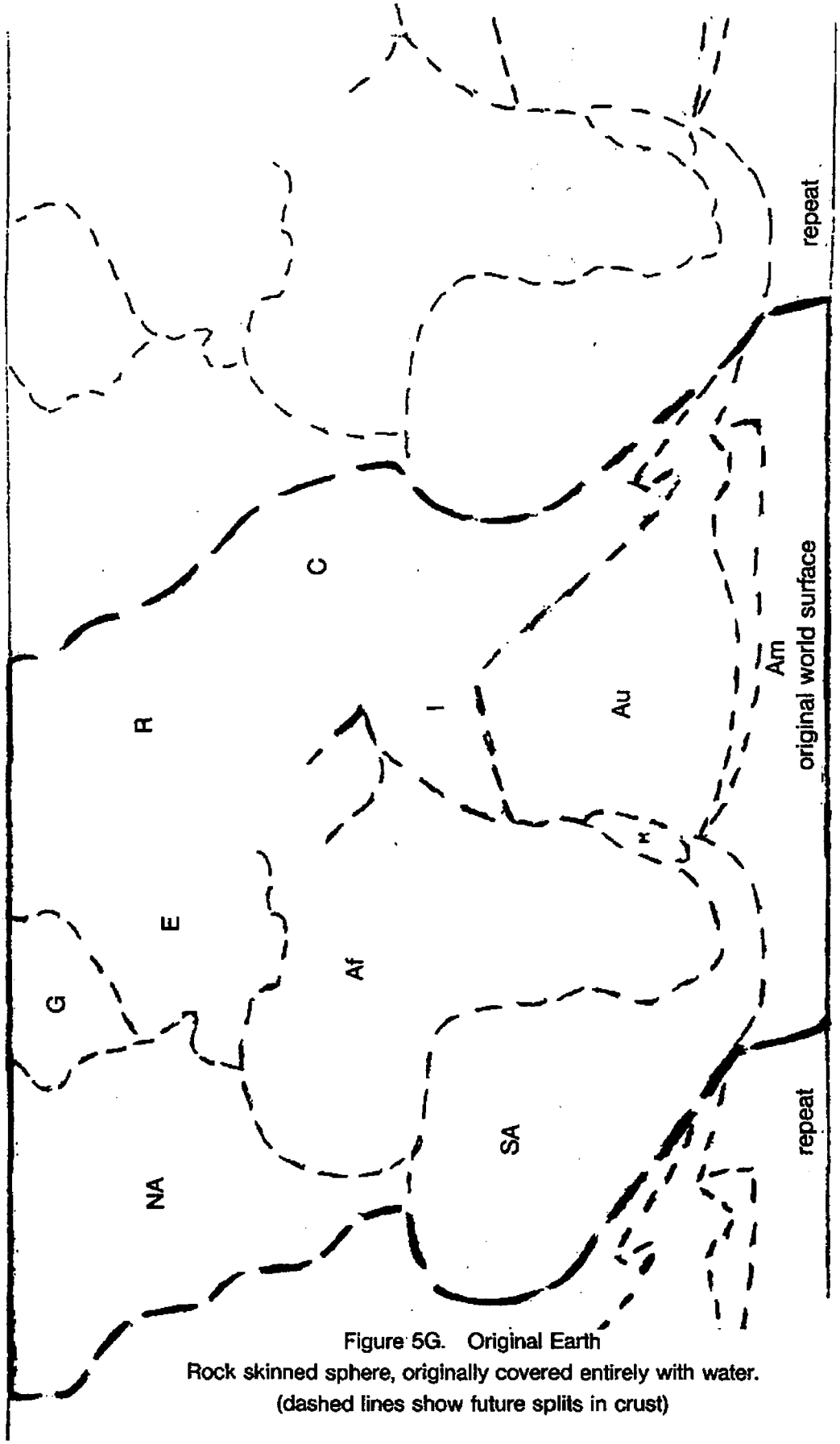


Figure 5G. Original Earth
Rock skinned sphere, originally covered entirely with water.
(dashed lines show future splits in crust)

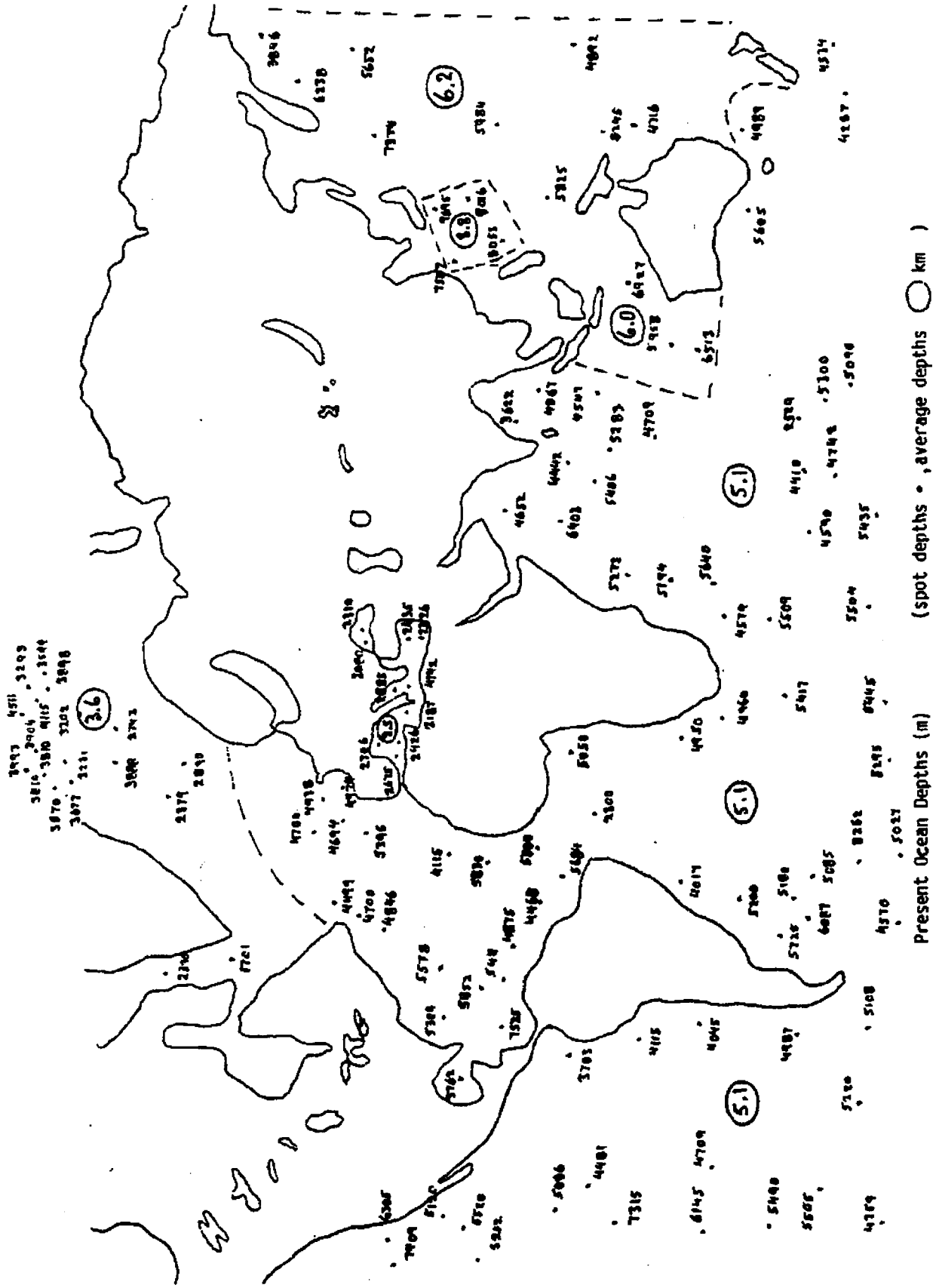


Figure 5H. Ocean depths

poles), and at other times ice over most of the world, though not of course during adjacent seasons.

The first expansion produced a burst in the skin, and the extra release of pressure greatly extended the liquifaction at that time, producing an orogeny. This repeated five times, (as plotted in figure 5I, ignoring the two granite upheavals shown at 2 and 1.2 billion years ago which remained under water), and resulted in the following 'a' to 'e':

a. *The first orogeny 700 million years ago* :
was the result of the condensing of the light basalt layer (40 to 400 km deep) causing the first major split. Its '16% volume' (figure 2A) produced the Mediterranean Sea, Red Sea, and Persian Gulf, with the following 'stretch marks' eastwards, the Black Sea, Caspian Sea, Aral Sea, Lake Balkhash, Lake Baykal, Sea of Okhotsk; also westward in the Canadian Great Lakes, Lake Winnipeg, Reindeer Lake, Lake Athabasca, Great Slave Lake, and Great Bear Lake.

The level to which the basalt filler rose was the highest sea bottom, averaging some 2.5 km deep. Elsewhere, it just split the surface in places (forming the huge lakes) which were not connected to the molten basalt layer by fissures. Note that the Pacific, Atlantic, Indian, and Antarctic Oceans had not formed at this time. This was the first time that land had remained above the water, and for the first time sediment formation was possible.

b. *The second orogeny 390 million years ago* ;
was the result of the heavy basalt condensing (400 to 1'000 km deep). Its '24% volume' (figure 2A) produced the Arctic Ocean and Norwegian Sea, averaging a depth of 3.6 km. Both filled up with basalt, and the seas subsequently filled the splits, deeper than over the rest of the world. This second burst relieved much of the stressing in the crust, boiled off lots of water into the atmosphere, and the basalt surface solidified. When the last of the water recondensed back to earth, more of the original crust protruded above its surface, being partly dry, partly swampy with seas thousands of metres deep where the cracks were, and 'shallow' seas over the rest. This allowed the first formation of land plants, whereas only marine life was possible before.

c. *The third orogeny 200 million years ago* :
was the result of condensation of the main mantle (1'000 to 2'800 km deep). Its '36% volume' (figure 2A) produced the Atlantic Ocean, north and south, the eastern two thirds of the Pacific Ocean, the western two thirds of Indian Ocean, and the Antarctic all together.

This much greater volume, lower pressure, and thinner crust produced an average depth of 5.1 km and was the largest orogeny. It was the one which separated the New and Old World monkeys which came from the same ancestral form but have developed somewhat differently.

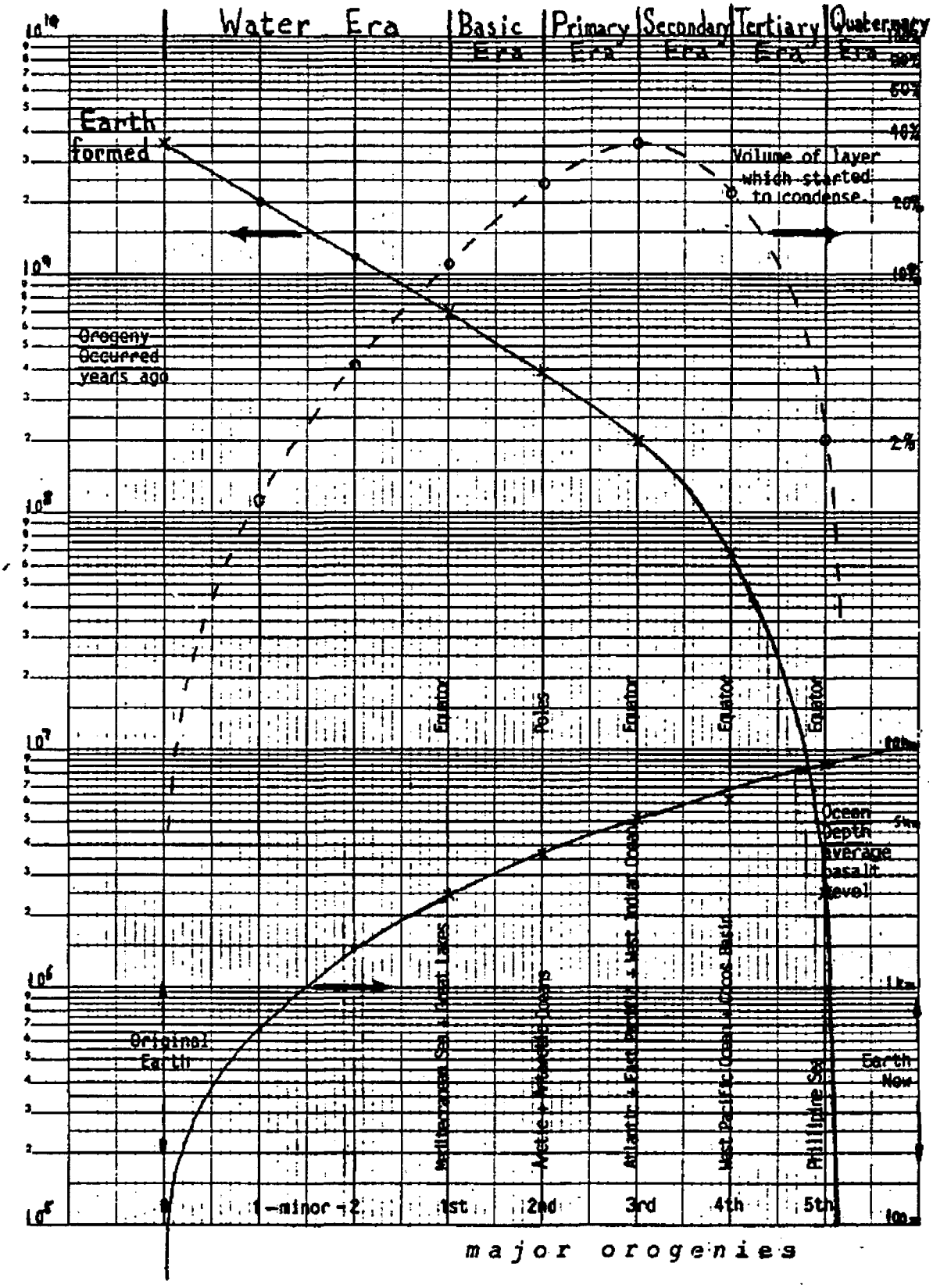


Figure 5l. Orogeny times and areas

d. *The fourth orogeny 65 million years ago* :
was the result of the condensing of the main iron core (2'800 to 5'000 km deep). Its '22% volume' produced the west Pacific Ocean and east Indian Ocean (Cocos Basin) to the west of Australia.

These averaged 6.1 km deep but it appears that the Pacific, including most of the area which is now Australia, was formed a little before the Cocos Basin. The latter expansion pushed Australia eastwards bending the Phillipines and Indonesia, into a 'curled finger'. This orogeny was next to the youngest because the basalt surface was relatively thin when it solidified, which can be concluded from the myriads of sea mounts (blind volcanoes) covering the whole area – quite different from the earlier eastern Pacific, and especially the Mediterranean and Baffin Bay, which have almost none, because of the basalt thickness. This orogeny was the one which killed off all the dinosaurs and left most other life, with mammals supreme.

e. *The fifth orogeny two and a half million years ago* :
was the result of the iron-sulphur inner core condensing (below 5000 km deep). Its '2% volume' produced the Phillipine Sea.

This last orogeny took place underwater and its average depth of 8.8 km means that when it was formed the basalt floor was very thin. It has many seamounts but is specially surrounded by deep trenches. The Phillipine Sea trenches incidentally have the deepest point in the world at 10'915 m deep. Mount Everest is 8'848 m high.

Reiterating the foregoing events in their actual chronological order, – note how the average ocean depth increases as the time increases towards the present :

Table 51 Major Earth Splits in Chronological Order

1.	Mediterranean Sea All Asian and Canadian Great Lakes, Labrador Sea, and Sea of Okhotsk.	2.5 km deep average – 700 Ma ago
2.	Arctic Ocean, and Norwegian Sea	3.6 km deep average – 390 Ma ago
3.	Atlantic, East Pacific, West Indian Ocean, Antarctic / Australian Ocean	5.1 km deep average – 200 Ma ago
4.	West Pacific Ocean and East Indian Ocean (Cocos)	6.1 Km deep average – 65 Ma ago
5.	Phillipine Sea	8.8 Km deep average – 2.5 Ma ago

This data is presented in figure 5I showing the regularity of the orogenies from the original formation of the Earth to the present day, where the last major condensation has taken place and the crust is now just thick enough to resist any more orogenies. In the future there will 'only' be earthquakes and volcanic violence.

All of the original solidified crust is with us today in the shape of the continents, accounting for about one third of the present world's surface. If we postulate that any layer of gas under terrific pressure is an order of magnitude greater volume when liquified, we may list the effect on the Earth of each layer condensing. That is, we list the present volumes of each layer in a table and successively reduce the volume of each layer to one-tenth at each split. We can estimate the data backwards because we know the proportions of land (plus continental shelves) and water is 32 : 68 now, but originally the '32' was 100% Earth surface. The following table shows this operation, with the addition that though each 'Earth' has the same mass, the smaller ones have greater gravity forces on each layer so the gaseous sulphur core must also be contracted by one percent of its original volume (see table 52) at each stage of contraction.

These figures in table 52 show that the present Earth radius is 1.8 times the original Earth radius, which was also determined from land and sea areas, and gives an original rotation time of some 7.7 hours (also given in a companion book on the Solar System)

Table 52. Volumes of Earth Layers Now, (5th burst), and Previously (see figure 2A)

Burst Number Years Ago (millions)	5th at 2.5 M	4th at 65 M	3rd at 200 M	2nd at 390 M	1st at 700 M	original 3650 M
Basalt outer layer	8.0	8.0	8.0	8.0	4	2
Basalt inner layer	12.0	12.0	12.0	3.0	3	3
Main mantle of Iron –Magnesium	18.0	18.0	2	2	2	2
Main Iron core	11.0	1.2	1.2	1.1	1.1	1.1
Inner core of Iron –Sulphur	1.0	0.99	0.98	0.97	0.96	0.95
Total Volume Ratio	50.0	40.09	24.18	15.07	11.06	9.05
RATIOS						
Volume / Original	5.52	4.6	2.76	1.7	1.22	1.0
Surface Area/Original	3.13	2.76	1.87	1.42	1.14	1.0
Radius / Original	1.8	1.66	1.4	1.2	1.07	1.0
Actual Earth dia(km)	12'756	11'700	9'800	8'500	7'720	7'220
Approx Rotation Time	24h	20.2h	14.3h	10.9h	8.7h	7.7h
'Days' per year	365.24	434	613	804	1007	1140

volume 2 change

The age of the Earth and its radius at each orogeny has been plotted on figure 5J. The graph due to my researches is a step function which could be smoothed somewhat by a small unknown slope between the steps. Other researchers from other considerations have also plotted estimates. The pauses described above may account for the world not being larger than it is, and causes the sloping parts on my graph of Earth expansion, figure 5J, to have slight slopes between orogenies. By reducing the orogeny intensity the sloped, stepped graph agrees more closely with the estimates of other scientists. (agreement could hardly be closer without duplication)

The Pacific and Atlantic Oceans are spreading at the rate of some 7 cm total per year. This is at the tectonic ridge but is not necessarily even over the length of the crack and not necessarily at the equator or the poles, but always at the unknown weakest spot. The 7 cm is of the order of 2 cm on the diameter per year. Though the mass is the same it probably loses something of the order of 10^{-4} seconds per month (a second per 1'000 years) in rotational speed, which only atomic clocks can detect, and they may not distinguish it from the infinitesimal drag of space vacuum of one atom per mL outside the Van Allen Belts. 2 cm per year may not seem much, and it certainly does not affect anyones lifetime, but even ONE cm per year is a million cm in a million years which is 10^4m or 10 km. It is 200 million years since the Atlantic orogeny and as the expansion is an average from measuring the sea floor ridges, continuous liquifaction would produce 2000 km at 1 cm per year. Evidently the expansion rate does not apply during all the time between orogenies. Fortunately the expanding layer ran out of material which curtailed the time of expansion (but one can see the adequacy of the explanation, and the reason for adding small slopes to the graph 5J).

The other main point about this splitting event was that the vast amounts of water boiled off by the large areas of lava, rose into the upper atmosphere, condensed and absorbed all the Sun's rays or reflected them, so that little reached the Earth for warmth. Now, the Earth supplies only one thirtieth of the Earth's surface heat, so that on cooling much water recondensed, and cooled below freezing. This caused an ice age with most of the world covered in snow. When the last opaque cloud condensed, the Earth was again enveloped by transparent gases (H_2, He_2, Ne_1, N_2, O_2). It then warmed up and the gases above the crust also warmed slowly.

The process would repeat once or twice, but generally after a few ice ages, enough energy input had raised average temperatures to liquify the snow and reduce the opaque clouds enough to let more heat through. Eventually, a balance of cloud and earth temperatures was achieved. Ice ages have occurred when huge volcanic islands formed (Iceland, Kerguellen, etc.) giving rise to several ice ages. However the Earth itself splitting was a much greater holocaust, which would indicate more repetitions.

The area of first sediments is important because until the first major split there was no land above the water, therefore no rivers or streams and the clouds only rained back onto water. When the first land protruded above water, the first

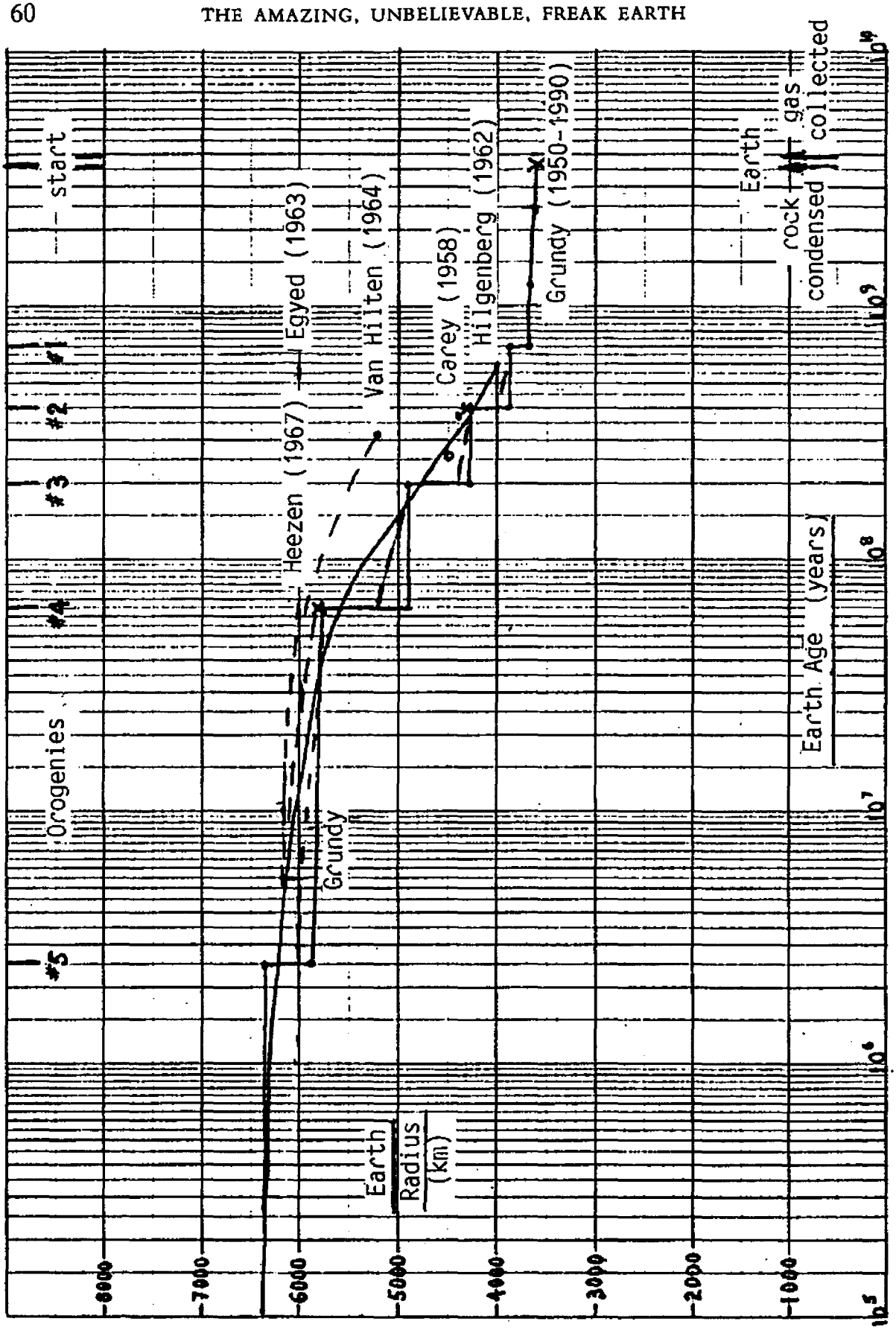


Figure 5J. Earth radius - Age

sediments could form. The sediment which went into the crust splits, which widened again subsequently, are lost trace of for ever, but that on land is traceable. However, we can sketch the areas of first sediments and the areas which never had any sediments (which were never water covered again).

After the second orogeny we can find areas of paleozoic dry land, sedimentary water areas, and shallow seas. Coal swamps formed in this period, between 90 and 150 million years after the split (orogeny). It may be noted that the vegetation which produced the oil, and later the coal, started just *off* the dry land, generally at its periphery. (figure 5K). The swelled, split ball that was the Earth, mechanically and automatically balanced itself as it spun, but its larger diameter and constant mass made its periphery at the equator slower than the original eight hours. This new sized ball was probably about 8,500 km diameter (table 52) and this huge split filled up with plastic basalt from inside. The basalt which filled the split was slightly denser than the original granite coating (which was why the basalt was underneath). The split did not fill to the top of the granite, but stopped several thousand metres average, below granite level. Just before the third orogeny when Madagascar was sandwiched between Africa and the Great Australian Bight (Australia was turned nearly at right angles) the split between New Guinea and New Zealand widened, probably forming the Lord Howe rise, and pushed the pointed Earth crust north of New Zealand, into the straight west side of South America forming and broadening the Andes mountains at this point. Remember North and South America were lying along eastern Asia, Indonesia and Antartica at the time.

It was almost 200 million years since the second orogeny, and also some 200 million years ago that a third burst occurred, (Figures 5 C, D, and E). This time the upper iron-magnesium mantle inside the Earth condensed to a liquid from a gas, again from about 1/10'000th of its volume at that temperature. The original splits widened again and increased the land area above water. The first dry areas of the future South and North Americas, Africa, Australia, India, Asia and Scandinavia, were expanded. The new land was soggy, warm and flanked by no-vegetation dry land, deep and 'shallow' seas but some millions of years later many swamps grew up with prolific vegetation. Marine and swamp life now developed, through vegetation, to animals, and eventually to dinosaurs. This time there had been a further 30% increase in the area of the Earth's surface, so that its diameter had increased to about 9'800 km (see table 52)

The catastrophic events have both been 'explosive' and 'slow' in human time, but all have been instantaneous archaeologically speaking. This is because, as the outside of the internal gaseous layer liquifies and the layer is about condensing temperature, the latent heat of fusion is passed on, part externally but part internally, delaying further condensation. Thus the process of liquifaction is slowed and is not instantaneous throughout the several hundred kilometre thick layer. Most of the event will occur at one time, but different parts of the gas / liquid surface, and even slightly different chemical combinations may cause 'delayed' condensation and therefore small mountain building or even land raising may occur

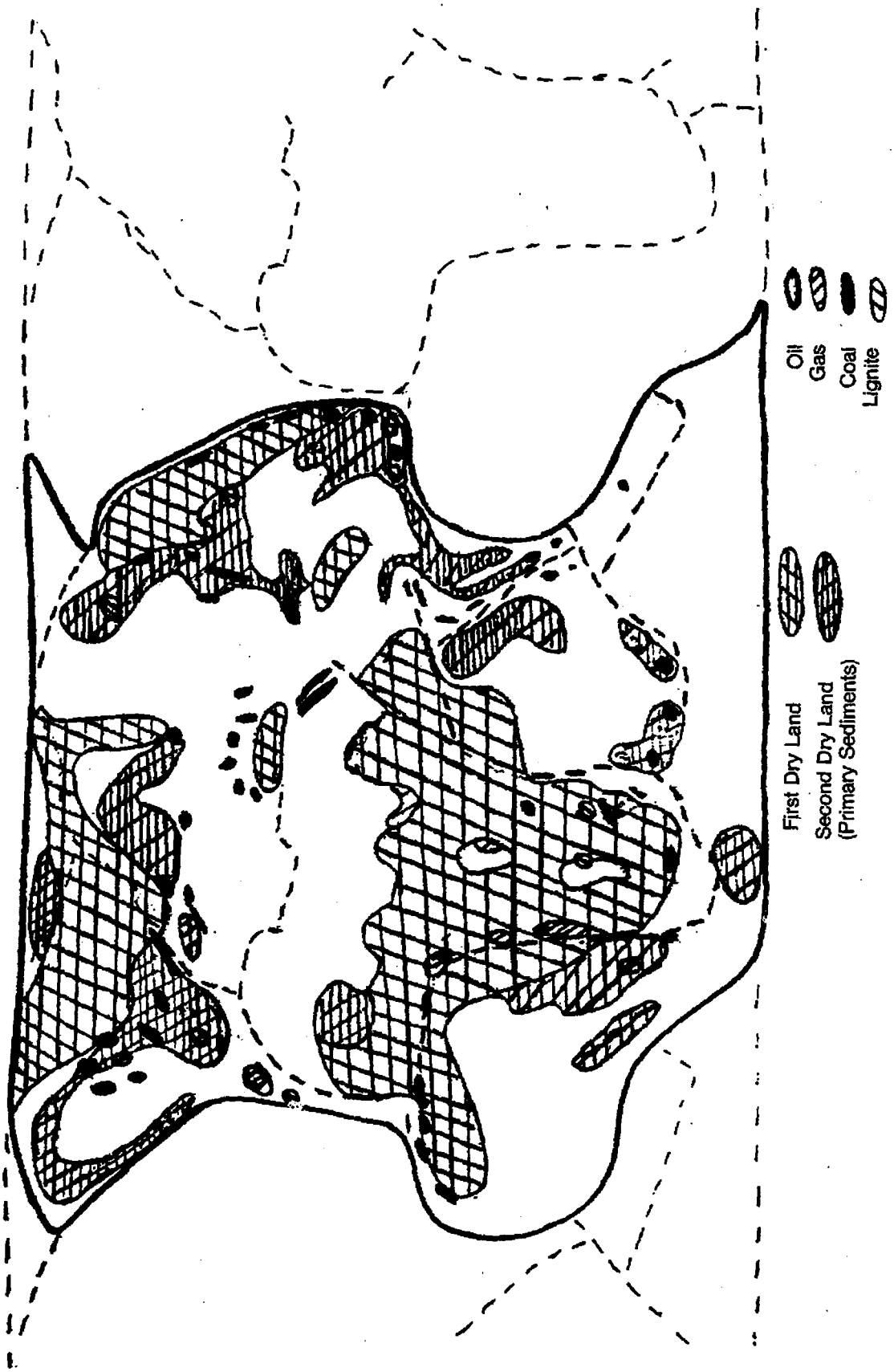


Figure 5K. First and Second dry land

between catastrophies.

The Canadian / American Rockies or Cascade Mountains originated at the third burst, and when the Earth crust parted, the weak 'Pacific Ocean' bed gave way first and lifted a whole separate 'strip' of crust down the west coast of the North Americas, 800 km wide. The vast patch of faster moving crust from a smaller Earth, slid eastwards over the 'present' area of western North America, which was part of the expanding, slowing, rotating, Earth. Moving over the Earth's surface at the differential speed 'greased' by molten balsalt and almost floating this 2 km thick overlap would take a day or two to come to rest (further proof of this is offered later). This superposition of 'Pacific' land on top of Western America produced the main part of the Rockies and especially formed the Grand Canyon.

As previously explained, a piece of land 600 to 1'200 km wide on the western edge of northern America slid eastwards over the original dry land mass. It now constitutes all the western mountains, and a physical map shows that its eastern edge is the edge of British Columbia, which is also in line with the eastern edge of Mexico. Between these, is a fairly straight line across the western United States. All this land mass averages about 2 km thick, and must therefore be about the thickness of the solid crust of the Paleocene period, with the plastic underside rubbed off. C. H. Clapp sketched a section of the crust slide in Montana, indicating the crust overriding from the west and the Lewis overthrust line divides the deformed cretaceous strata in the Glacier National Park.

This sliding of one piece of crust over another is the reason for the area round the Grand Canyon being apparently flat for kilometres yet it is approximately two and a half km above sea level and the Grand Canyon itself appears cut *down* into the Earth, over a kilometre deep. In actual fact, the bottom of the Grand Canyon is well above sea level, and below the obviously stratified rock of the Canyon, must be a similar (but not identical) set of sedimentary rocks. These will of course be below the Precambrian rocks of the Basic period belonging to the Canyon. The Black Hills of South Dakota originally formed part of the vast patch of crust which is now the Rocky Mountains. When it slid over the dip of the San Joaquin Valley, it was perturbed. As a consequence, when the rest of the crust ground to a halt, this part, in the centre of Wyoming, rolled further on by one and a quarter turns. This lost most of the hills' surface material and left the original basic rocks exposed on top of the plains, with what is left of the hills' surface material on the eastern side. This also is why the Black Hills have an escarpment all round them and why there is a large valley in central Wyoming.

The Earth now had some dry land, huge swamp areas and huge seas. Rain and wind, after the ice ages worked on soggy land (soaked for millions of years), and washed much material into the seas of that time. Over more millions of years, thick layers and even different layers of sediments formed (as different chemical combinations of silicates, or contaminations were uncovered, or local earth movements changed water flows, etc). Some of these sediments were to appear at the next upheaval (orogeny) and others appeared later.

The fourth main orogeny slowed the rotation of the world a fourth time. The split occurred in two stages. First Australia parted from Africa leaving a primitive Cocos basin averaging 6.0 km deep, and then it increased the Pacific Ocean to one third of its present size, an average of 6.2 km deep. The greatest Old World movement was achieved by Australia which parted from between India / East Africa and Antartica, sweeping some 3'000 km south and 6'000 km east before coming to rest. New Zealand floated a few hundred kilometres further on and the Malaya–Borneo–Phillipine peninsula was pushed 'round the corner' into the China Seas. Australia, including New Guinea, breaking away from Africa 'unpeeled' itself from Indonesia and in so doing rotated some 70°, pushing the New Zealand crust mass in front of it. Figures 5D and E show maps of the expanded results of the fourth burst.

Some 65 million years ago this fourth burst occurred when the main iron core was under great pressure which must have been in the order of thousands of atmospheres. The condensation into liquid made it increase its volume until the Earth totalled nearly twice (1.8 times) its original diameter. The plastic basalt again flowed into the previously-formed cracks of the west Pacific and east Indian Oceans.

Finally the iron-sulphur core, started to liquify, producing the fifth orogeny which gave us the Phillipine Sea.

The solidifications from liquid in the future, will probably cause only minor Earth movements and earthquakes, as pressure and density changes will occur, rather than volume changes, the iron-sulphur core being the last to condense.

The Ocean Floor maps show that the Earth's skin has 3 km plus, high cliffs, down to the basalt level. (Incidentally it would be strange if all the seas dried up and one were to go to the edge of *any* continental shelf, one would look down a 3 km cliff with the only way down via the largest river beds.)

It is possible that the cracks in the Earth's skin which produced the Oceans (at the five orogenies) were large but not vast, say some tens of kilometres wide and thousands of kilometres long. When a layer starts to liquify at its outer surface, nothing happens on the Earth surface until enough pressure has been built up to tear the kilometres thick rock apart for quite some length. This pressure build up somewhat compensates for the lowering of temperature and so tends to delay actual liquifaction, but when the Earth does split releasing the pressure, the supercooling allows extra gaseous material to liquify.

There is therefore plenty of material to fill the gap, and a fairly large gap is made at the time. The material from then on cools and expands more regularly for millions of years until the complete layer is liquified and then there is a pause in expansion until the next layer surface starts to liquify and build up pressure. This pause has allowed the central crack of the latest orogeny to cool enough to 'heal' and solidify, which requires an extra pressure build up, making a huge initial gap for each orogeny.

The above are the reasons why there is an orogeny at each surface between

significant layers, and extra liquifaction ; a 'short' pause before the central crack is slowly expanded for millions of years until the layer is complete ; other millions of years while the crack welds up and the next layer starts to liquify and build up pressure ; a second orogeny (in a different place) with extra liquifaction ; a 'short' pause before the crack is slowly expanded for millions of years until this next layer is complete ; other millions of years while the crack welds up and the next layer starts to liquify and build up pressure. . . . The foregoing is a summary of the Earth's violent history. Having established the main course of events, they will be treated in a little more detail.

Measurements by the Glomar Challenger of dated cores, brought up from many sea floor positions, has produced a map (figure 5L) which indicates the number of millions of years ago that sections of sea bed were formed. It can be seen that starting from the present crack to 10 million years ago, a section of sea bed was formed on each side of the crack. A similar section of sea bed, 10 million to 20 million years ago was formed previously, further away from the crack. This clearly indicates spreading of the ocean floor, and dates up to 80 million years ago have been measured and plotted.

This indicates two separate things. Firstly the Atlantic Ocean for instance, (others are similar) has no date over 80 million years old, though near the edges it could have over 100 million year old sections. Even if it had a 120 million year old section, it actually burst at 200 million. This indicates that the initial condensation of the mantle made a wide crack many kilometres wide and thousands of kilometres long. However as great pressure was released by the crack more mantle condensed, and the snowball effect produced a fairly wide gap. This pressure release arrested the condensation for many millions of years, perhaps until 80 million years ago, when the pressure build up was enough to force the crack apart again. Further condensation has been feeding it ever since.

It is also estimated from Glomar Challenger's measurements that the Atlantic crack is spreading at the rate of 3 cm per year which, as far as ship or plane travel time or effort is negligible. However, in 80 million years if the rate is constant, the crack, and therefore the Atlantic Ocean, has widened $80 \times 10^6 \times 3$ cm $= 2400$ km. That means half of the Atlantic has formed during the last 80 million years. But, it was not passable even before then except by the tiniest wind blown seed since 200 million years ago.

Secondly, the Atlantic Ocean only has a major crack, it has NO trenches. Therefore the Atlantic has widened consistently over the last 80 million or more years, from Antartica to the Arctic Ocean. It is useless to say that the sea floor has been subducted into the trenches because not only is it not possible physically, but the Pacific Ocean has also expanded up to at least 80 million years ago, which means that there has been a considerable increase in the world's circumference during that time.

Thirdly as these measurements are in 10 million year sections we can indicate approximately what the world map was like 10 million years ago by deleting all the zero to 10 million year sections in the present map. The result of doing this to

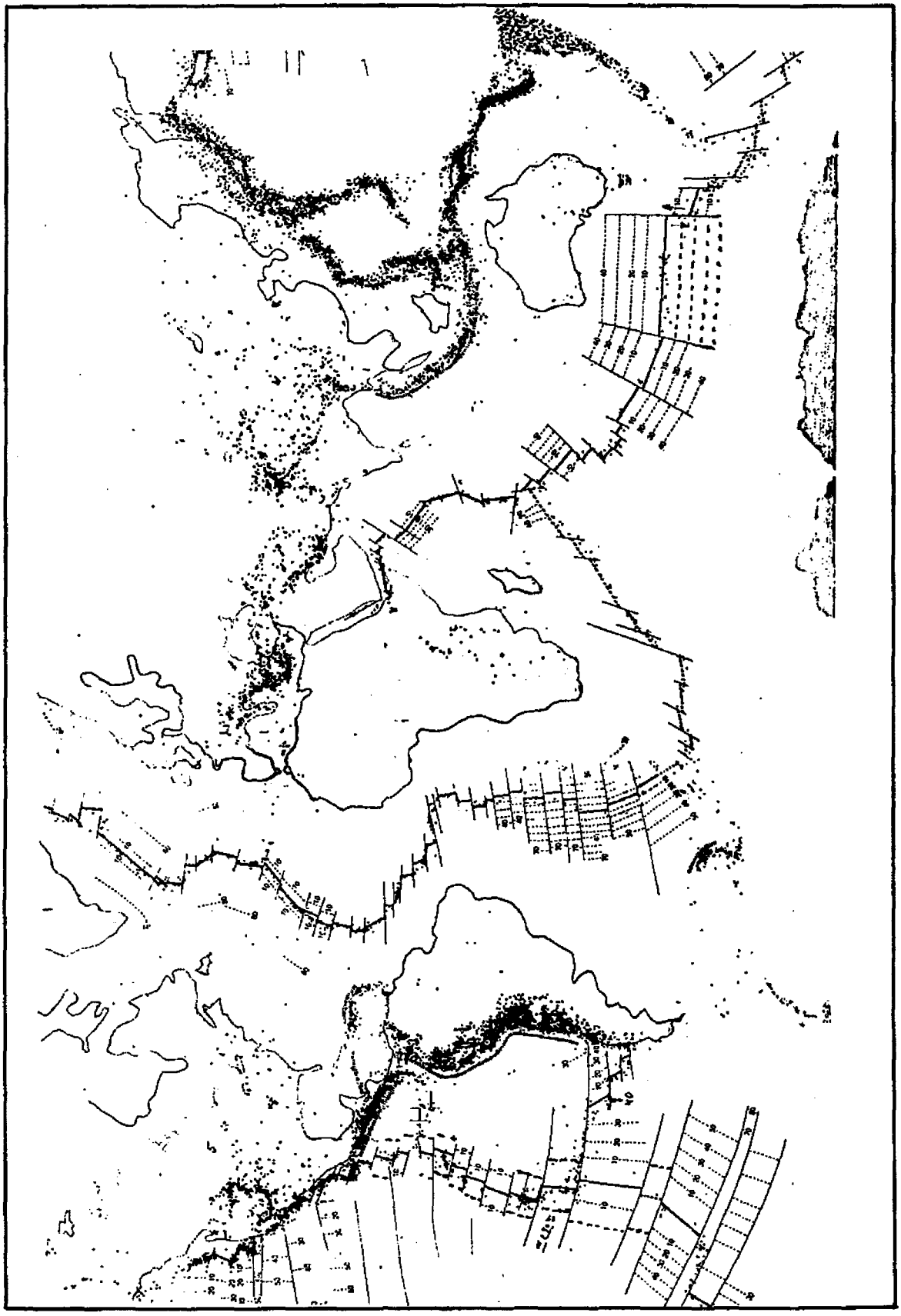


Figure 5L. Ocean Bottom Ages, Now (1980 AD.)
(the *original* composite)

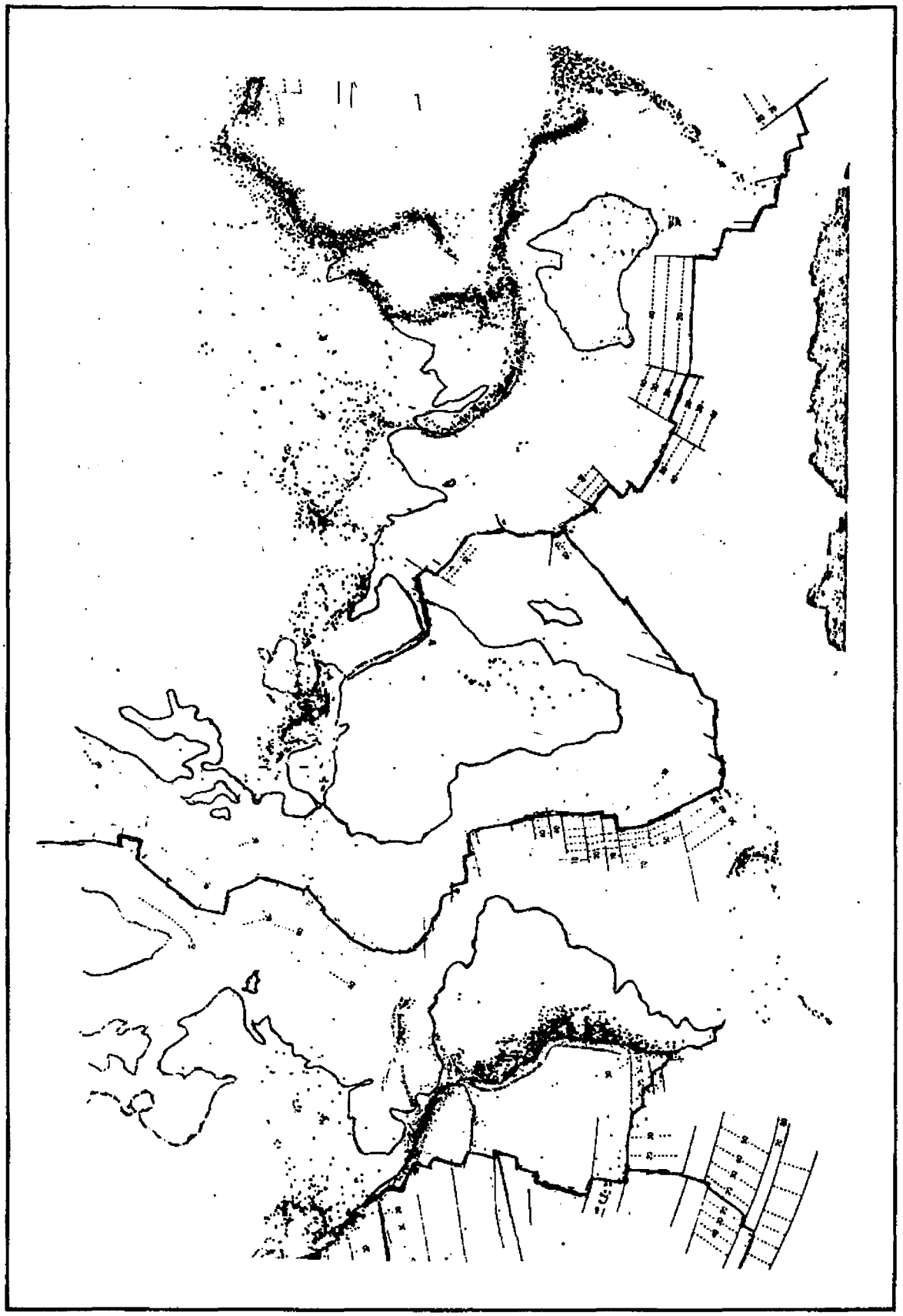


Figure 5M. Ocean Bottom Ages, 10 Million Years Ago.
(the *original* composite)

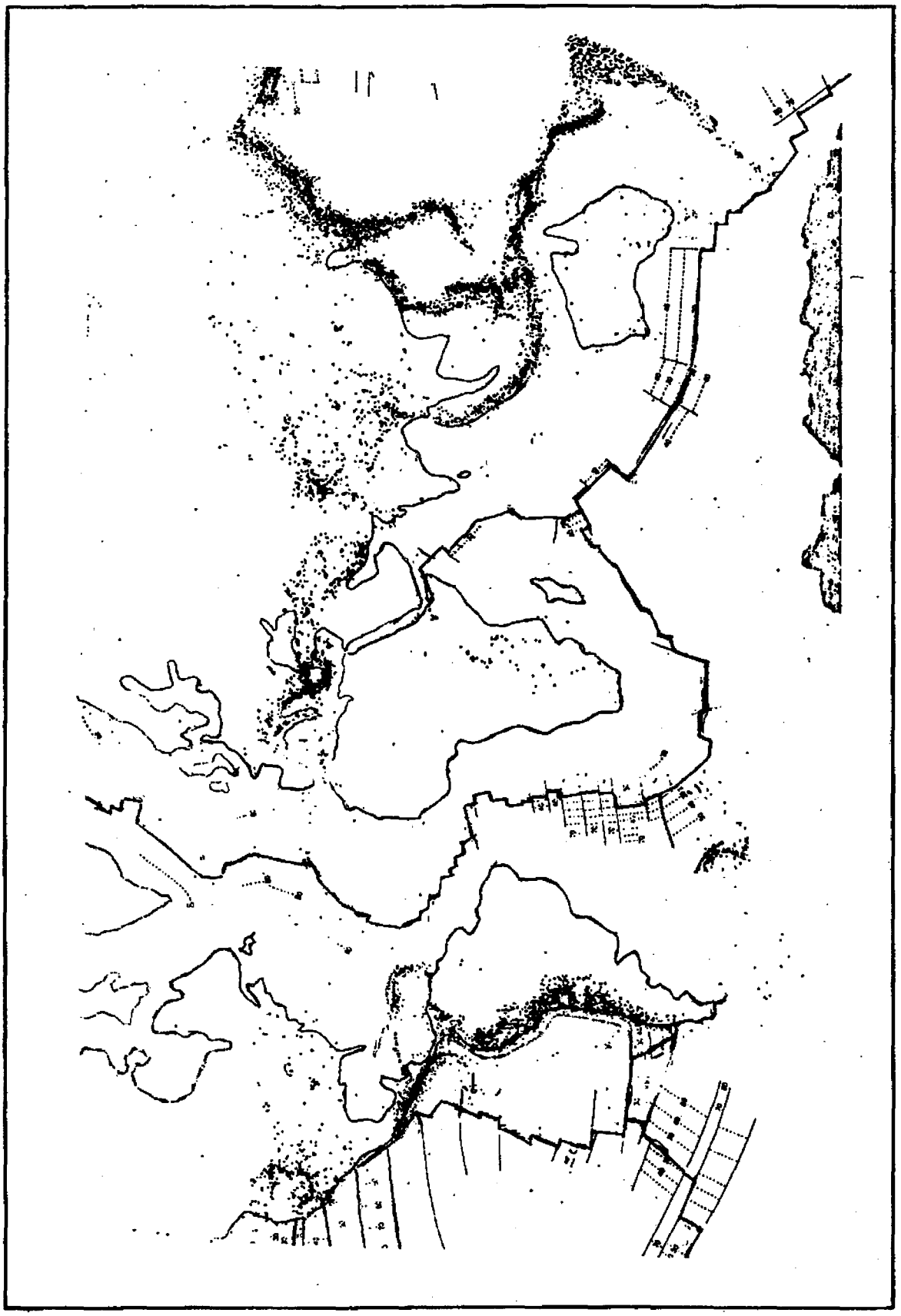


Figure 5N. Ocean Bottom Ages,20 Million Years Ago.
(the *original* composite)

figure 5L, is shown in figure 5M, and a repeat to 20 million years ago is shown in figure 5N. The Earth map has grown smaller and there is no reason to pull up material from the trenches – which would not help if one did. For example there is a 30 million year marker near the south end of South America close to a trench. It has not changed or moved in any of the three maps.

Though the north polar splits were not the first, they are the key to where the continental shelves separated. From figure 5B we can see that the northeast corner of Greenland (noted 'A") fits to the northwest 'hump' of Norway near Tromso and the Lofoten Islands. Figure 5C of the Atlantic Ocean, shows clearly that the split between Greenland and Scandinavia / Britain running along the ocean floor nearer Greenland, has been pierced later by a huge volcanic seamount, part of which is called Iceland. It can also be seen that Rockall, the Faeroes, and Jan Meyen were formed like Iceland but at an earlier date. This is shown because obviously Iceland formed last, so that the split could part Greenland from Rockall / Faeroes / Jan Meyen, and, as the edge of the Greenland shelf fits the Norway / North Sea / British Isles shelf edge, they must have parted when Rockall etc formed. The above makes it clear where Greenland fitted, and that the southern tip ended at the European continental shelf, just southwest of Ireland. This makes it obvious that the Grand Banks off Newfoundland fitted to the Bay of Biscay, and Portugal fitted to Nova Scotia off Sable Island. Figure 5.O shows the Arctic area.

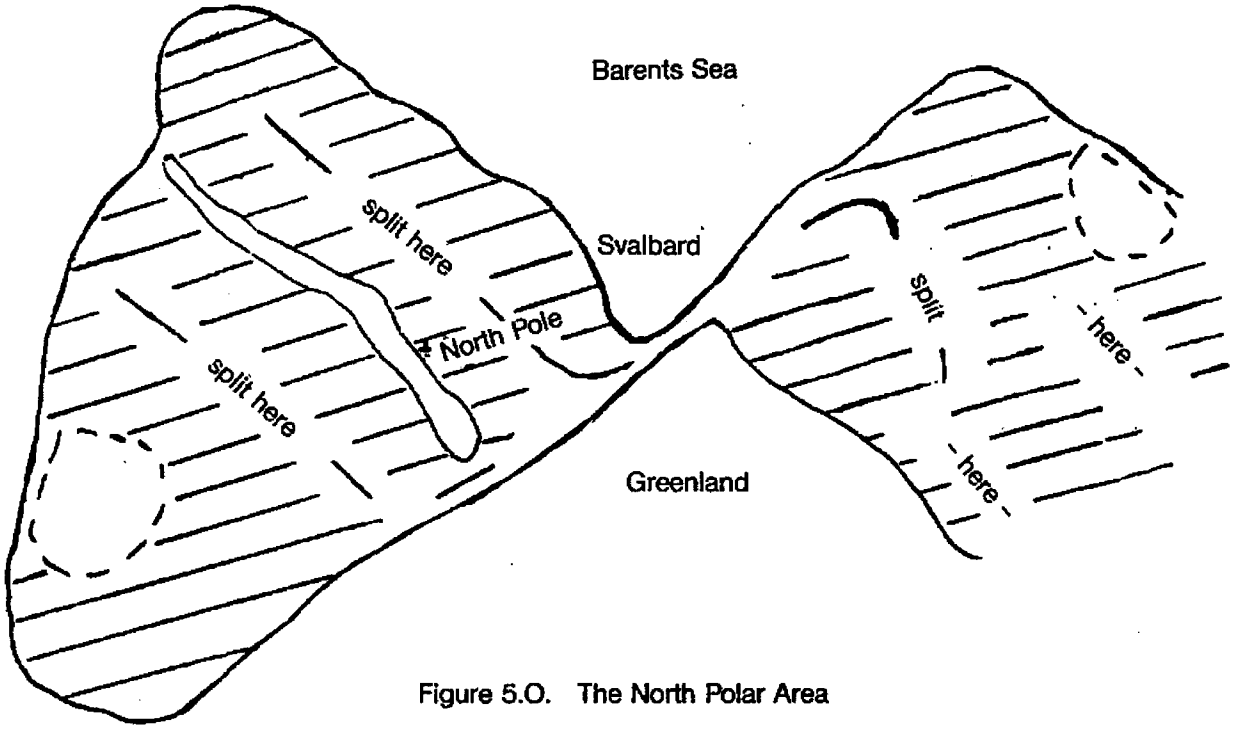


Figure 5.O. The North Polar Area

A few sketches have been made showing the original close fits and crust movements brought about during the orogenies which burst the Earth's crust. (Figure 5G shows most of the cracks between continents and lands of the original

Earth's crust. It indicates how they fitted before the skin crust was torn). Figure 5P. is a more detailed sketch of how northern Canada, Greenland, northern Russia and Scandinavia fitted together and the original rock 'shield' is shaded-in, showing material continuity as well as edge fitting. This split was in the original granite crust, underwater at the time, the 'small' cracks first refilling with granite, but some splitting again later, filled with basalt.

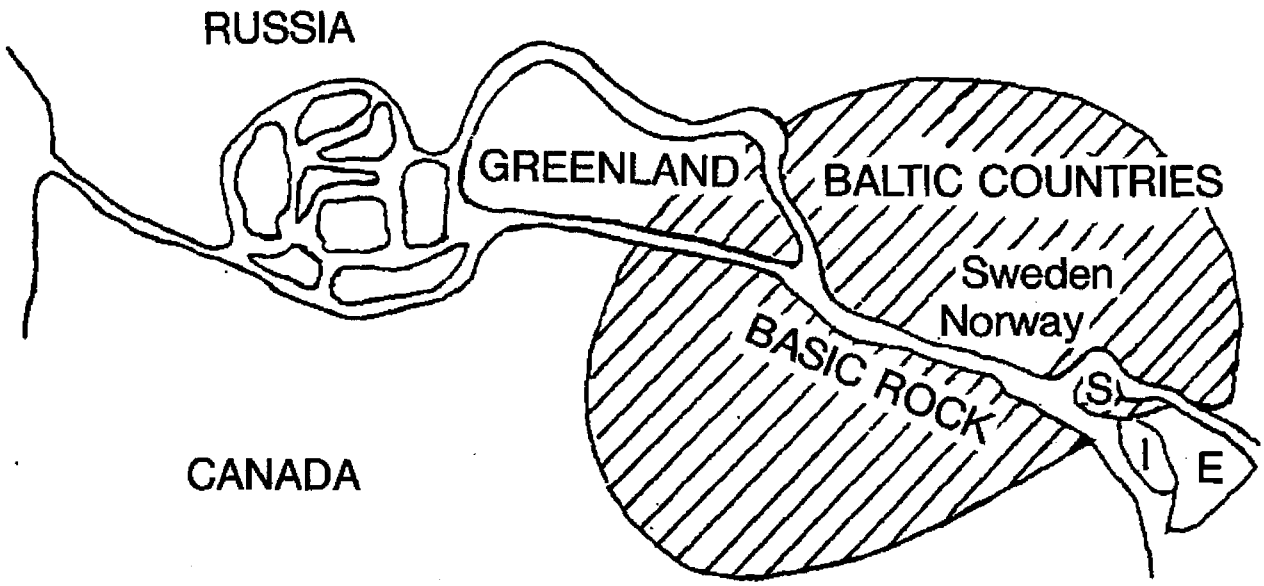


Figure 5P. Before the Arctic Ocean and Norwegian Sea formed.

Another more famous congruence is the South America-Africa plus the less quoted North America-Europe fitting. Figure 5Q shows the very close fitting which has been determined to be closest at the 500 m depth below sea level, and figure 5.O confirms where one end of the fit registers the two sides of the Atlantic Ocean. A particularly convincing piece of evidence which has been published is that there are two types of fossil trilobites which have been found along the coast of each continent, and figure 5Q shows where the preponderance of each type occur, separated by the dashed line. In several areas the coastline of one country had trilobites of the same type in the areas which fit together. Whilst the types change back and forth along the length of the split, the types on opposing sides of the split are the same in four different areas.

Figures 5R and 5S show the actual lines on a world map where continuous spreading is occurring (5R) and where the several kilometre deep cracks called trenches occur (5S). The trenches are not just one or two metres high ditches but one or two *kilometre* high cliffs facing one another. How one immense rock cliff can be imagined to creep under the other, is beyond belief. The trenches however do have a mechanical purpose in that they are arranged almost all round the Pacific Ocean, making the Pacific into a 'diaphram' that can bulge or cave in slightly to equalise internal/external pressure changes not enough to be orogenic.

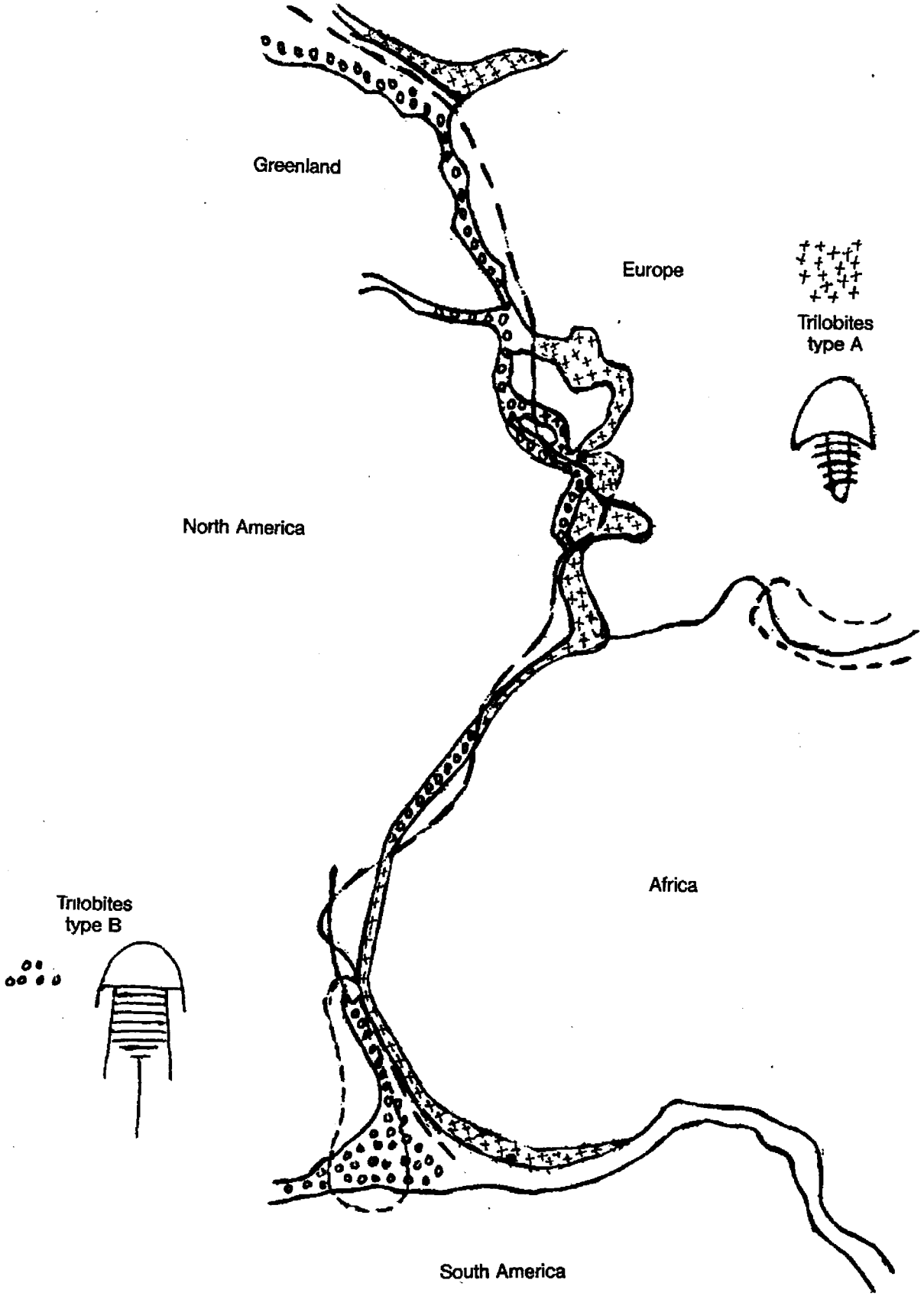


Figure 5Q. How the Americas fitted Eur/Africa.

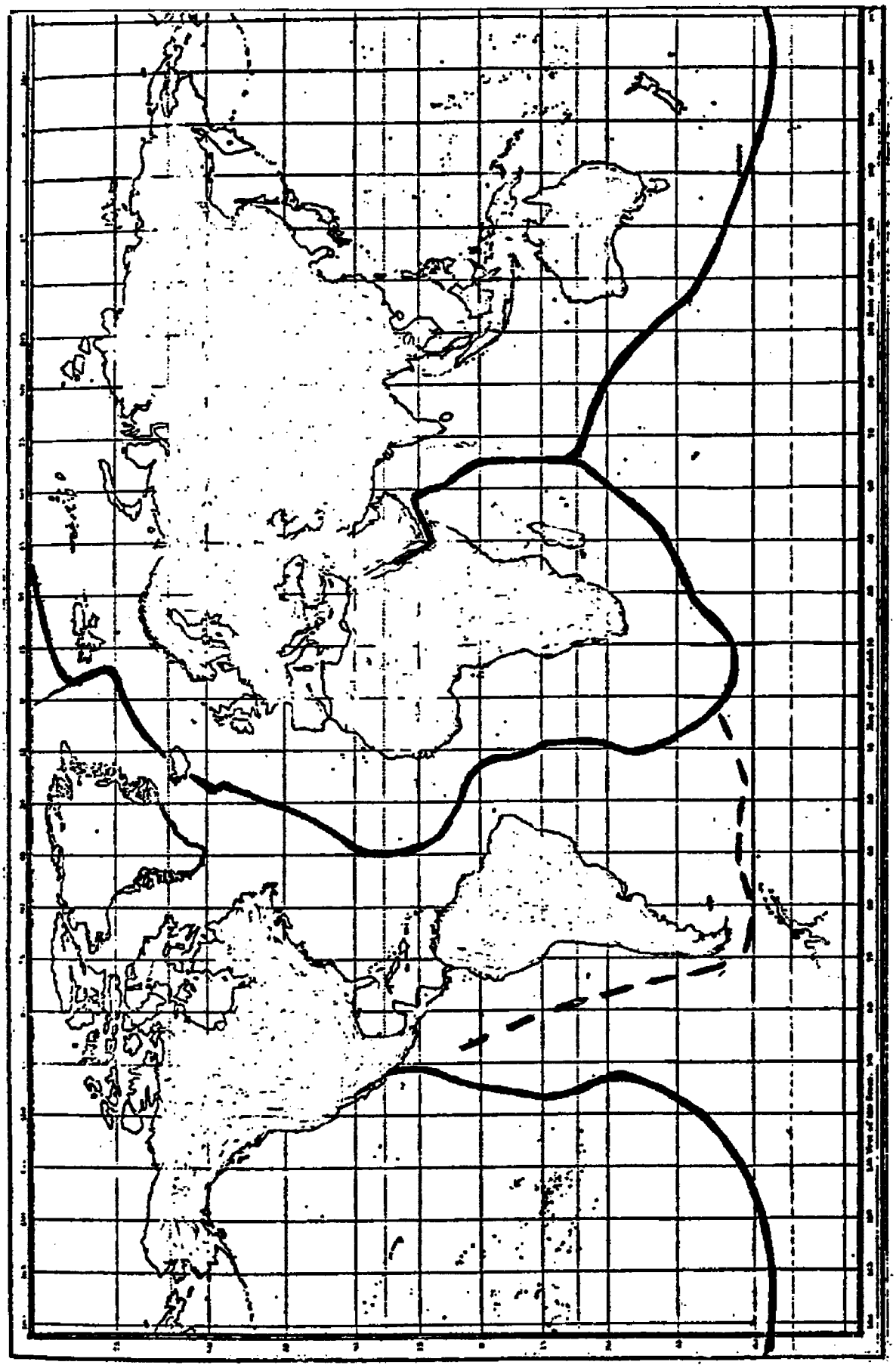


Figure 5R. Ocean expansion ridges.

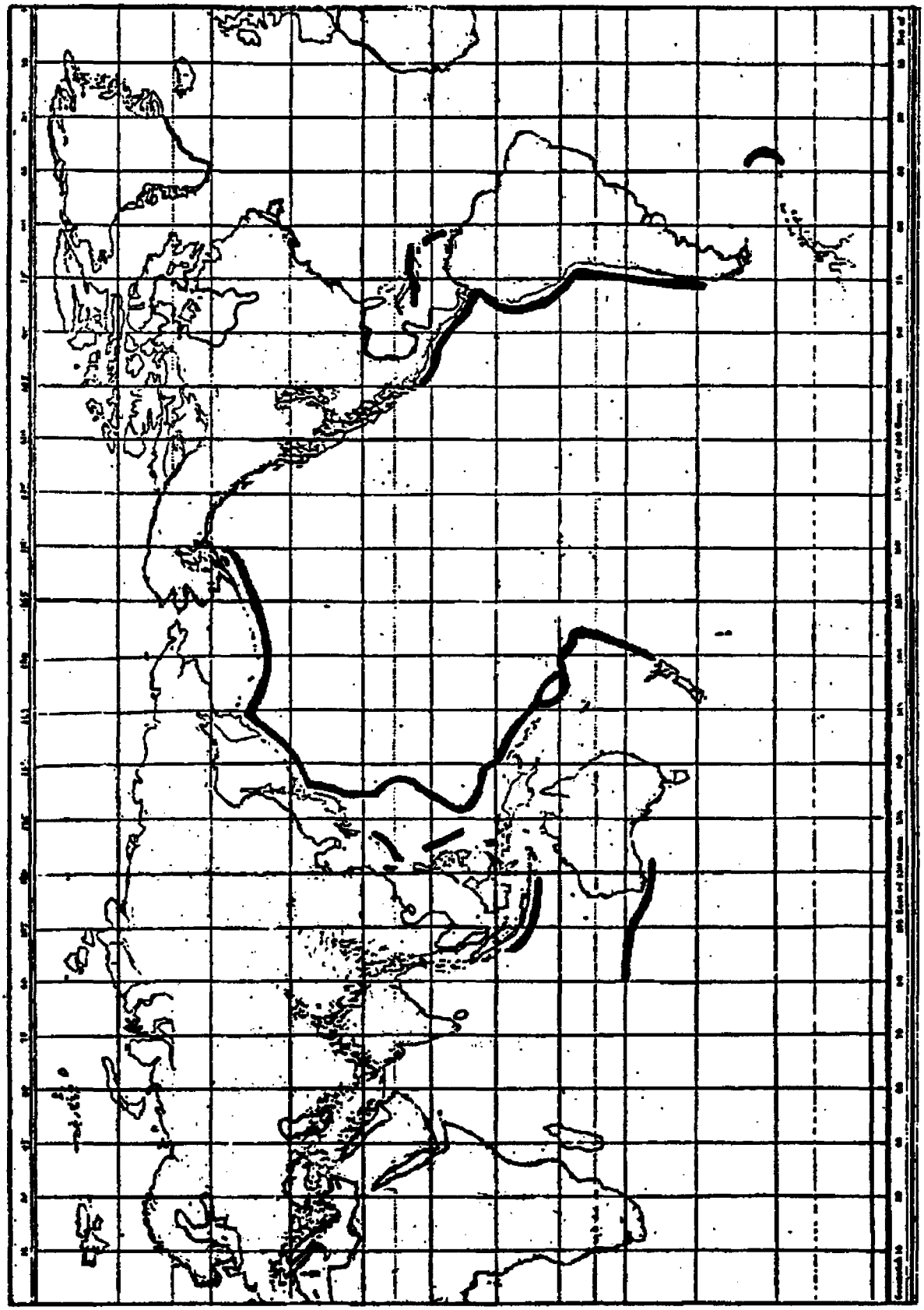


Figure 5S. Ocean adjustment trenches.

The trenches probably do not even have to rub faces but just allow bending, although it is a possible source of earthquakes.

The Phillipine Sea for instance makes no sense of the tectonic plate theory of expansion in the middle of the sea and subduction at the edges into the trenches. The Sea is roughly diamond shape but all round the four edges is a trench, whilst across the centre, parallel to two of the sides is an expanding ridge. This seems to be acceptable to the plate theory as far as the parallel trenches are concerned, but the trenches across the ends of the expansion have no function. It does however behave as a minature (one and a half million square kilometre) diaphram for internal pressure equalisation.

With regard to the expansion ridges of figure 5R they occur both north and south of the Pacific Ocean in a roughly east/west direction. This means that both north and especially south pole caps are expanding away from the equator with no subduction trenches to absorb anything at all. Further, particularly above 60° north latitude there are no trenches but there is an expansion ridge; therefore the northern cap surface must be expanding on its own. The Atlantic Ocean also has no trenches but it is expanding.

In conclusion there is no question that the Earth has expanded and still is slightly expanding at the present time. There is also a powerful physical force as a reason for this. The Plate Tectonic idea of subduction zones where huge rock cliffs meet face to face and one goes under the other in an effort to keep the Earth at one fixed size, is not an acceptable explanation. (It is also not acceptable to draw them wedge shaped because on Earth the trench sides are nearly vertical.) Also to suggest that hot spot convection inside the Earth core is expanding the ridges is both an inadequate ridge separating force and an extremely weak possibility of an erratic hot convection flow. There is absolutely no reason for an off centre hot spot and certainly not a hundred kilometre long linear hot spot, needed for a ridge.

The plate tectonics theory that the ocean floor which is spreading from the ridges down the middle of the oceans is being consumed down the trenches at the opposing edges, is unfortunately quite false.

The Expanding Earth theory is no longer a theory, but a fact.

6

BIOLOGICAL PROOF OF SPLITS IN THE EARTH'S CRUST

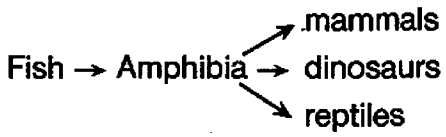
Today, botanists tabulate their subject into kingdoms, phyla, classes, then orders, families, genuses, and lastly species. There are about 28 different phyla known and the most primitive are single layer celled types, whilst the most 'effective' are three layered cell types. Some of these are listed in the following table :

Table 61. Early, Basic Life

1 layered cell	2 layered cell	2 & 3 layered cell	3 layered cell
Protozoa	Porifera Coelenterata Ctenophora	Platyhelminthes Rotifera Nemalthemines Mollusca Annelida Arthropodia	Echinodermata Chordata

The last development, the Chordata, are life forms with a gristle or bone-chord running most of the length of the form. The first to appear in the world was the fish, which developed into amphibia as the next table shows.

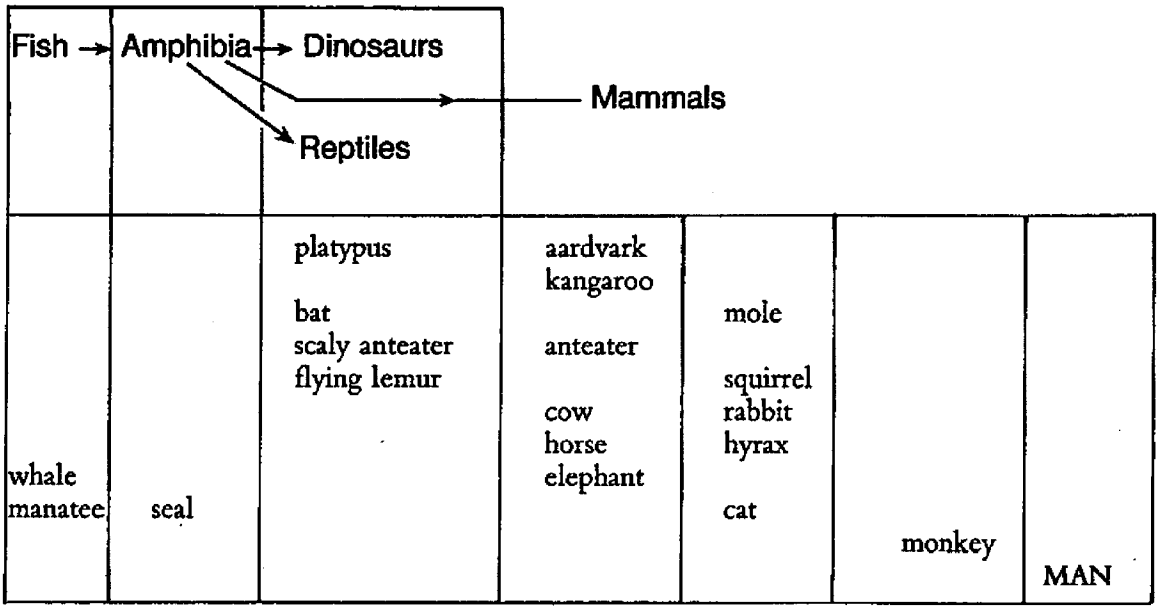
Table 62 CHORDATA



If we list the types of mammals under the headings of the above classes, we can see which changed little, which developed towards earlier types, and which found a new direction. All the animals in the table 63 are mammals, but they could also appear to belong to other classes.

The progress of the Earth's life history is shown in table 64, and it can be seen that though there were microscopic forms of life after the first billion years, virtually no life was in evidence for the first 2.5 billion years and it has only really developed in the last half billion years. Generally it is only the first appearance – but sometimes its last appearance – of a species or order of life which is listed. We can therefore see that the sea environment developed first, followed by land plants, followed by animals. Each of these kingdoms has a plethora of representatives today, but the sequence of species has varied greatly.

Table 63 MAMMALS



If we select a particular genus, we can, in a few cases, determine the date of existence of its similar but distinct ancestors. For instance, the horse of today had an ancestor which was just different enough to be given another name, ie. Pliohippus. This Pliohippus lived 7 million years ago. Its ancestor was the Merychippus of 14 million years ago. In turn, the Parahippus lived 24 million years ago, and the Mesohippus 35 million years ago. The Anchitherium at 40, the Hyracotherium at 55, and the Phenadocus at 70 million years, ends the known sequence. The latter was only about the size of a big dog and the greatest change in form was between this and the Mesohippus, which incidentally, was 35 million years. The present day elephant's ancestors can be traced through the Mastodon, Stegadon, Grampotherium, etc., up to 50 million years ago and they are plotted on table 65 with the horses. Dinosaurs are another documented sequence of species, but they died out 65 million years ago. However, for comparison of time between species, we may end the list of the dinosaurs at the bottom of the column comparing them to 'recent', and work backwards from there in order to compare changes.

The third orogeny which wiped out the dinosaurs, crushed the Tyrannosaurus, the Triceratops, the Ankylosaurs and the Trachodon. Each of these were a distinct species, but had common ancestors, which again had a common ancestor. They may even be traced back through amphibians to fish, and they are so listed in table 65. Please note that while the items in each column are chronologically in sequence, there is no chronological relation between columns of items.

A similar step may be taken for marine life, treating the first fish as the starting point of 'recent' date and tracing its ancestry back through clams, sponges and jelly fish to trilobites and simple worms.

All these facts plotted on table 65 show that generally, although development rate depends on the time between generations (a year for plants, to 15 to 20 years for man), on the average there is a noticeable change in the species in about 25

EARTH SURFACE CONDITION	SEA	LAND	ANIMAL	
shell cooled		rocks hardened		3650
AZOIC	water condensed			2000
ARCHAEOZOIC	Eozoon Canadense			
	traces of algae			1200
PROTEROZOIC	seaweed first water worms			
	first trilobites			700
PRECAMBRIAN	traces of invertebrates			
CAMBRIAN	jelly fish, anthropods			
ORDOVICIAN	sponges, brachiopods clams, corals, cephalopods			390
SILURIAN	sea			
DEVONIAN	first FISH, scorpions	mosses, ferns; first swamp plants		
CARBONIFEROUS	last trilobites, sharks	coal swamps; large fern trees	first amphibians, first first reptiles, insects last amphibians	200
PERMIAN				
TRIASSIC			first dinosaurs, first first carnivores, birds	
JURASSIC			first modern insects	
CRETACEOUS			archaic mammals	
	first ammonites		last dinosaurs	65
PALAEOGENE		first seeding plants; grasses	first titanotheres	
EOCENE			modern mammals, monkeys marsupials,	
			anthropoids	
OLIGOCENE				30
		modern plants		
				20
				YEARS
MIOCENE				AGO
				10
				(millions)
PLIOCENE				
			AUSTRALOPITHECINES	
			last titanotheres	3
				2
PLEISTOCENE			HOMO ERECTUS	1

Table 64 Earth's Life History – Environments compared

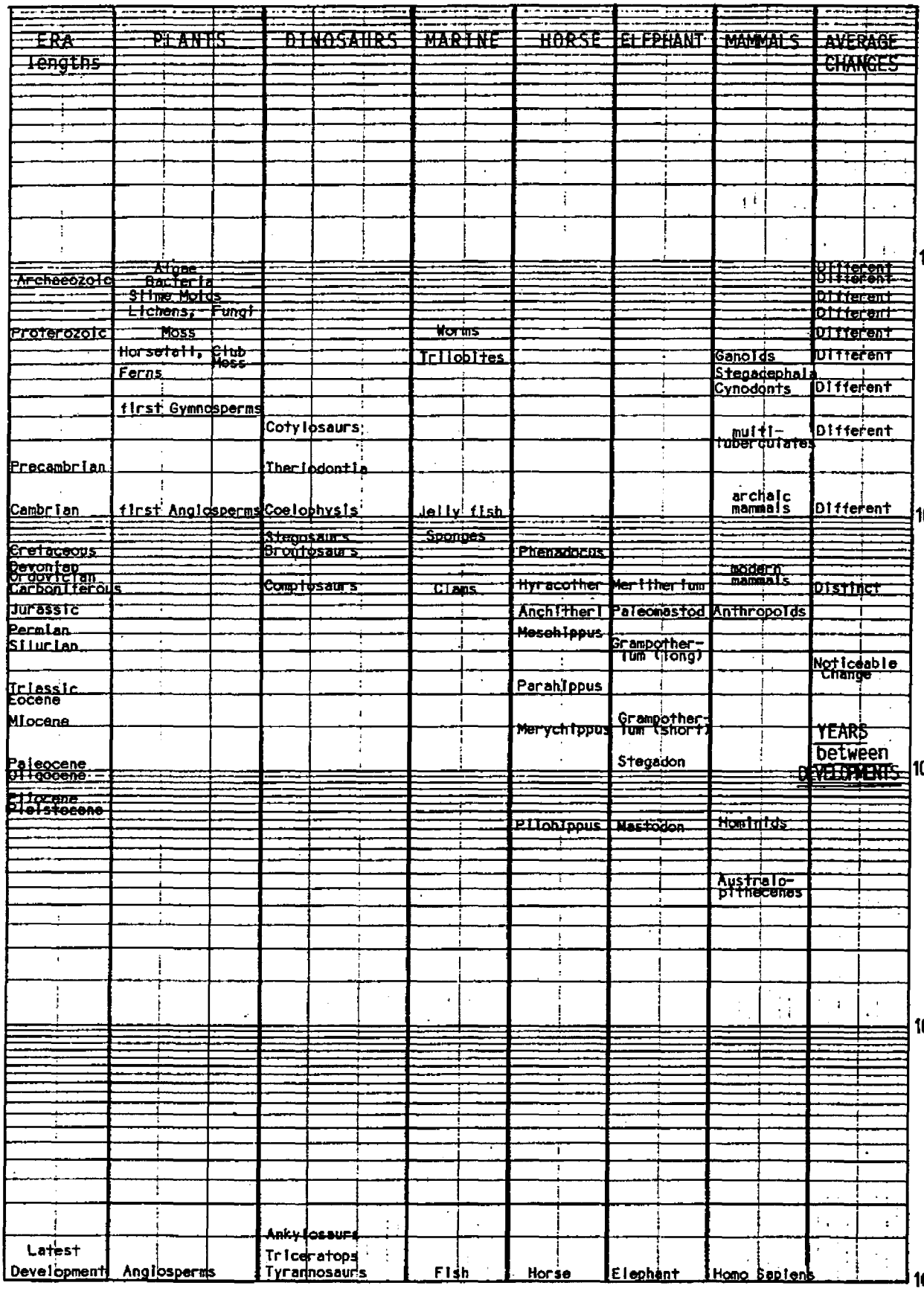


Table 65 Time between Species

million years, a distinct difference by 50 million years though still recognizable as related, and quite different from about 100 – 150 million years. This average situation is obtained from table 65 which indicates 100 million generations for plants (= 100 million years), 20 million generations for trees, (= 100 million years) 10 million generations for animals, (= 50 million years) 5 million generations for mammals, (= 20 million years) and 2 million generations for man.

Choice exercised by individuals, speeds up the acceptance or rejection of mutations. A linked, but not modifying statistic, is that 10 million years produces one new order of life, averaging ten families, which average five species each.

These are the rates at which life multiplies, and are not the complete sequence of species, though it can be seen that life developments require millions of years. Taking rough averages it appears that intelligence speeds up the development, in that in the days of the arthropoda their rate of development was about three times that of plants or low animals, but early homo sapiens developed about ten times as fast.

Every species launched because of a successful mutation, must fill a separate niche in a natural ecology. The length of time, often in millions of years, which that species can continue in that niche, depends solely on its ability to remain the most powerful in that niche, providing that it has the ability to adapt as natural conditions change.

Having shown that life on Earth has had a series of mutations, punctuating the development of myriads of species of life, generally in order of complexity, table 64 of Earth's Life History, compiled from other scientist's painstaking work shows that species occupy a specific chronological space. Their ability to travel and the time at which they developed, can determine the proximity of land masses at that time in the Earth's history. For instance tree shrews were once our mammalian ancestors from which monkeys and later apes, developed. All monkeys therefore had a common ancestor, and fossils of monkeys have been found up to 40 or 50 millions years old. However, African and Asian monkeys are of the same family and all have 32 teeth (like apes and man) whereas the South American monkeys have 36 teeth. Therefore the common ancestor must have been in Africa *and* South America well before 50 to 60 million years ago and therefore South America and Africa were parted by the Atlantic well before then. In fact their possible common ancestor, the parapithecus, lived 100 million years ago, yet the Atlantic Ocean appeared before this. BUT, a common ancestor WAS on both continents which were therefore at least within sight of each other at that time.

The Earth's shell first solidified 3.6 billion years ago and evidence of an organic / inorganic 'fossil' (Eozoon Canadense) has been dated half a billion years later, with traces of bacteria another billion years later still (Barghoon of Harvard). From this period, the first traces of algae and unicellular marine life have been identified as being about two billion years old.

Table 64 may be consulted for relationships between the following events in the Earth's development :

The Basic Era of the world ended 390 million years ago, and as much as 300 million years previously, simple marine worms existed. These were followed by trilobites, brachiopods and sponges up to this Second Basalt Orogeny of 390 million years ago. After the Basic Era ended, the Primary Era added foraminifera, coral, cystoids, nautiloids, etc. Up to this point only *marine life* had appeared.

The European Silurian period, which coincides with the start of the Primary Era, added more marine life, also mosses, and some primitive land plants. Thus, land must have appeared above water after the first orogeny 700 million years ago so that erosion could break up the surface and form sedimentary layers. Thus, after this second orogeny, which started the Primary Era, sea plants were deposited on eroded land and in swamps on sediment, the first chance for water plants to gain a foothold on land. It is claimed that the seas became salty at this time, which would agree with the splits in the Earth's crust uncovering salt deposits for the first time.

For the first 30 million years of this Primary Era, there were still only 'invertebrates', but then fish began to develop, and a few million years later ferns began to develop on land. About 300 million years ago, fern trees and hardy lichens were added, and the Carboniferous period was to lay the foundations of the coal beds in 'pockets' all over the world. Some 260 to 280 million years ago, saw the peak of the amphibian life on Earth, but the crinoids and blastoids disappeared. The 250 million mark saw the development of sphagnum moss which was to produce coal (or oil?) beds, with more life forms and insects. By 220 million years ago the amphibians had declined and the reptiles had developed.

Some 200 million years ago the Third Basalt Orogeny occured, ending the Primary Era, and starting the Mesozoic or Secondary Era. Many swamp growing plants were lost, but the air became dry and some salt beds were redeposited. Forests of cycads (palms) appeared and aquatic reptiles and dinosaurs developed. This third Earth split destroyed much vegetation, and all animals up to this time were herbivorous, but some types now became carnivores to stay alive.

Thirty or 40 million years after the third orogeny, the first vestiges of modern life began. Reptile-like birds such as the archaeopteryx, and modern type insects such as bees, moths and flies have been traced. Forests of ginkgoes and conifers developed along with the cycads.

In the next 175 to 140 million years primitive mammals, reptilian and dinosaurian birds appeared. The European Cretaceous period, which followed the one in which modern life started, saw the deposition of great beds of chalk and marl in the seas of the time. Because there were reasonable physical relationships, the North American-European–Asian dinosaurs are related closely, and so are the South American-African-Australian dinosaurs though there are some disparities between the two types of dinosaurs. This means that there was land for walking, or at least a shallow swamp connection between related areas, so there *was* a link between the lands. Therefore the EuroAfrica /America split

did not form to be of any consequence after the second burst.

While Australia was still close to India and Africa, it had dinosaurs (see Figure 6A). The areas where their bones have been found are marked on the primary sediment map, and it can be seen that they only appear on the land of the period, yet the areas were determined from two different investigation sources. The development of grasses, seed bearing plants, marsupials, carnivores and grazing animals began 65 million years ago when the fourth orogeny expansion took place. The huge ocean bed formations which pushed up many mountains also boiled much of the seas. However, enough remained at a reasonable temperature, which saved fish life. The terrible glaciation which followed after the ocean beds cooled again, helped wipe out the dinosaurs. The major deciding factor, however, of which animals were to survive, was the method of transferring life between generations. The dinosaurs failed actually because they relied upon hard shelled eggs, laid on the ground. Marsupials and mammals, carry their young permanently protected until they are born, and seeds are pliable and profuse, whereas shell coated eggs laid on the ground, with a long unattended incubation period are particularly vulnerable. Thus, plants and the more adaptable mammals etc, survived the holocaust. Mammoths, horses and anthropoid apes developed in the period following the upheaval and so did modern plant life. This era is known as the Cenozoic or Tertiary Era.

Australia was torn from Africa and Antartica, and swept into the southwestern Pacific Ocean, (Figure 5D). This effectively isolated it completely, so that its fauna and animal life were at the same stage of development as the rest of the world at 65 million years ago, and then isolated to develop on their own. It had been semi isolated at the previous orogeny 200 million years ago, probably being closest to Antartica, but now it was isolated completely as far as old world animals and plants are concerned, to evolve on its own.

Foraminifera and Permian Brachiopods were sea creatures which were somewhat temperature sensitive, in that their analysis indicates temperatures at which they were formed. That is, there is a detectable difference between those from different temperature zones, ie., sub-tropical, and tropical types. For instance the precise ratio of oxygen 18 to oxygen 16 isotopes, in calcium carbonate shells of marine organisms shows the temperature region in which it was formed. Plotting the location of similar formations, shows rings round the present poles, which means that the pole positions relative to the continents have not changed more than a small percentage over the last 65 million years, (whereas magnetic remanence in the earth's crust has shown that *previously* there were wild movements in the position of the earth's poles *relative* to the land, – although not to the Sun –.

The smaller, faster rotating Earth, prior to the burst 65 million years ago, tended to equalize temperatures all over the world. Also the temperatures would be ten or twenty degrees higher, due to a hotter Sun (6'600 K instead of 6'000 K now), Earth's internal temperatures, and the thinner crust. This means that we would have tropical temperatures all over the world, even at the poles, when

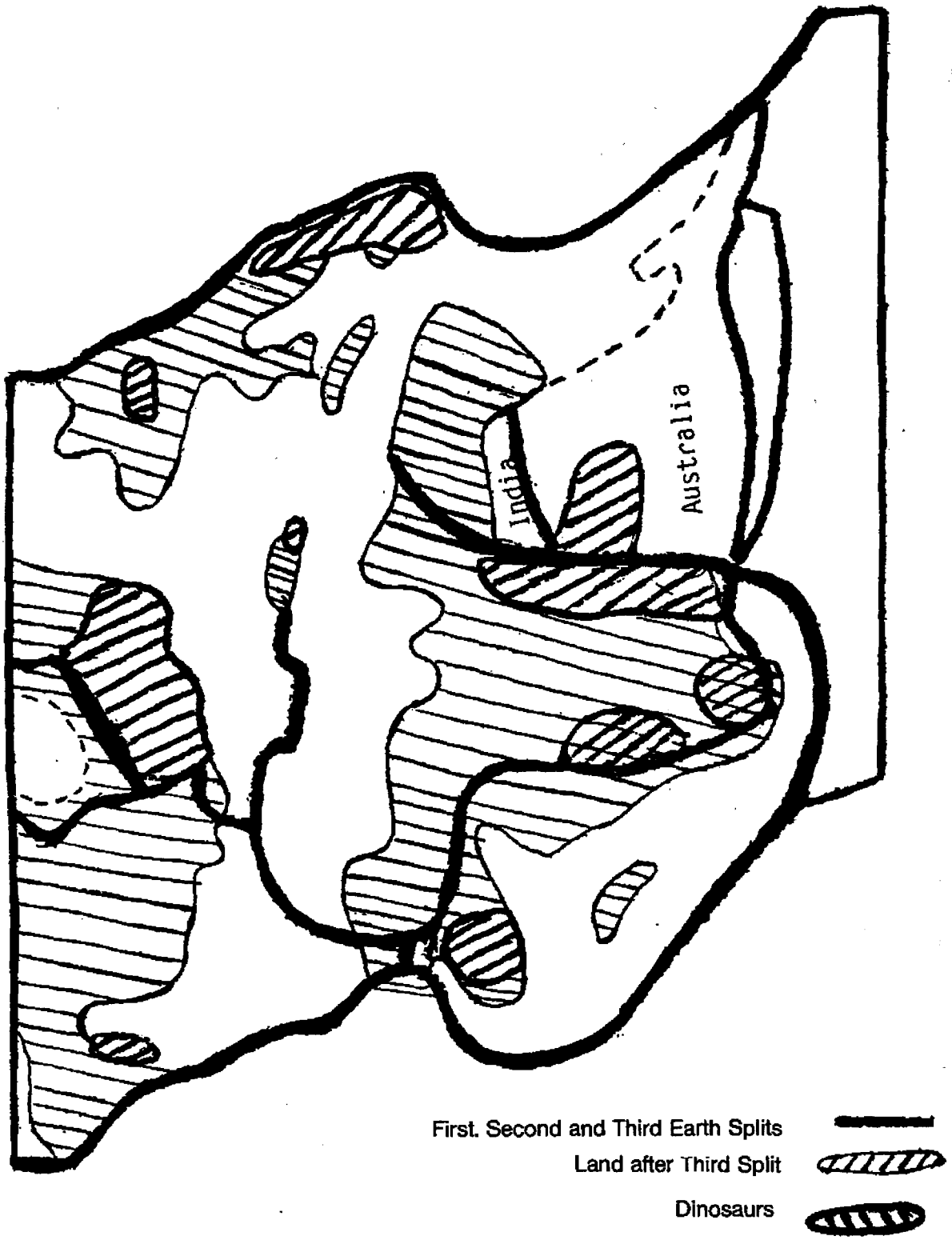


Figure 6A Land after the third split.
exposed archaean rocks extended by primary sediments

marine life was all that existed. This is borne out by coral deposits close to the poles. Conversely the exclusion of the sun by evaporated oceans, caused glaciation over much of the world, so that some glacial deposits have been found towards the equator.

Figure 6B shows the distribution of some definite animal types throughout the world. There are temperature reasons why woolly rhinos and woolly elephants are in modern temperate zones, while camels and monkeys are in tropical zones; but why similar types should occur in isolation thousands of kilometres across oceans, is apparently inexplicable. To pretend land bridges thousands of kilometres long, – which have disappeared from ocean bed maps – is *really* grasping at straws. However, if we put the original granite crust back into place, as in Figure 6C we see that all the same animal types, are within walking distance, and they have chosen their favourite climate and vegetation conditions.

At the fifth orogeny, the oceans boiled again, and on condensing, left dry land much as we now see it, a little swamp, and the present ocean beds, with their heat cracked basalt and central fissures (see Figures 5C, 5D, and 5E, maps of Atlantic, Pacific, and Indian Ocean beds). The fourth selection of life types was made again on a luck / adaptability basis, wiping out the titanothere supremacy and installing man as lord of the world. The ice ages of the Pliestocene epoch caught the last escapees of the titanotheres.

This fifth orogeny 2.5 million years ago ended the Tertiary period and brought on the Donau ice ages. Big volcanic island formation brought on the other three ice ages. These ice age periods, followed by the ten thousand year Recent-Holocene period, constitute the Quaternary Era. The development of the first hominids occurred about five million years ago, and Man's close ancestors evolved in Africa.

SUMMARY

Life did not start on the Earth until some two billion years after it solidified, and even then it was microscopic, taking nearly another billion years to become significant.

Protein – DNA – one celled – multi celled – algae, is the well known chain of progress of life, and it was all marine life until the first orogeny split the earth. This produced land above water, which produced sediments so that the next orogeny uplifted some sediment and the sea organisms (algae/seaweed) were left upon wet sediment and thereby gained a foothold on land. The sea life which produced fish eventually developed into amphibians, then reptiles, then dinosaurs, then mammals.

Many new animal species mutated or became extinct but the five orogenies of the earth made significant changes in the pattern of life. The separation several

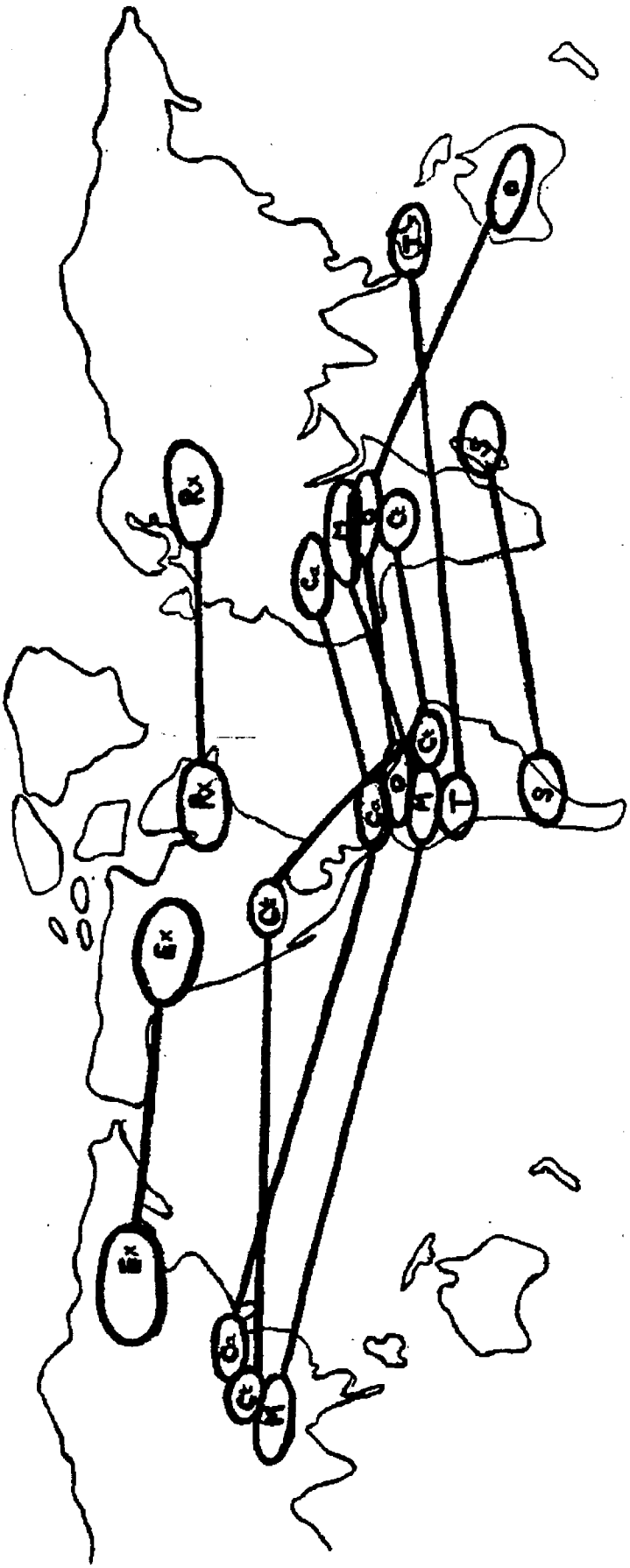


Figure 6B
Animal Distribution
NOW

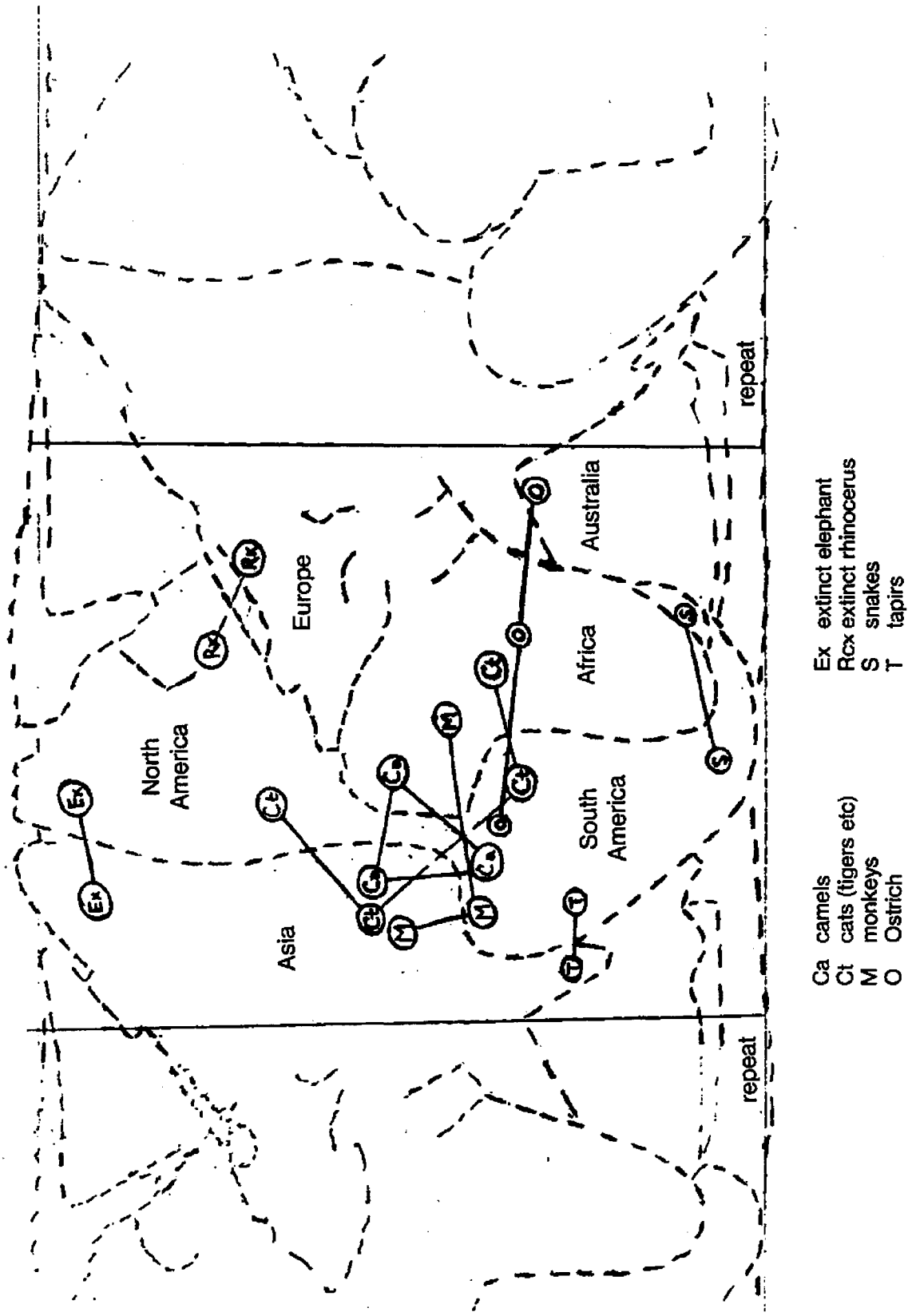


Figure 6C Animal Distribution (no oceans.)

times, of different land masses isolated similar animals on each side of the barrier, which then evolved by mutation quite independently producing different species. (eg. Old and New World monkeys). This accounts for the apparently impossible world separation of identical fossil species, proving the splits in the Earth's crust.

Table 64 is a logarithmic portrayal of the times, durations and events of the rock formations, swamps, plants, trees, insects, fish, animals, and ice ages. Their births and extinctions are noted also. It may be noted that for half a billion years the Earth was lifeless, for the next billion years was microscopic, then algae and unicellular marine life started. Not until 700 million years ago plants, then fish, then amphibians, then insects and reptiles developed. After the third split, the dinosaurs started and the first mammals, birds and modern insects developed. After the fourth burst, marsupials, mammals, and titanotheres developed. After the fifth burst, the present, modern world was created, some 2.5 million years ago.

7

SEDIMENT FORMATION

According to Zumberge the volume of all sedimentary rocks on the Earth is only one tenth of the crust volume, but they cover three-quarters of the land surface. To obtain sediment, the receiving area must be below water, whether salt or fresh, and the providing area must be above water. Thus, although originally on cooling, the Earth was an almost perfect sphere, eventual condensation of all the water vapour, provided an even depth of some three kilometres of pure water on the Earth. Events had to happen, to raise some of the crust above the surface, before sediments could form. This process is described elsewhere, but this quarter of the Earth's surface must have appeared above water at the first major split and stayed above, or it would have had sedimentary rocks on it at some stage.

This one-tenth of the crust volume which has been eroded, has been redeposited again in places. It may have a different texture or even chemical combination, but it is generally the same chemical and always the same elements as the original crust. Local raising or sinking of the land in 'small areas', maybe even hundreds of square kilometres, has occurred in the past between major events and is usually indicated by batholiths, sills, or lava intrusions or extrusions, but the five major earth orogenies are the reference cornerstones. All significant events are caused by these major and attendant minor condensations of layers in the Earth. The intrusions of lower plastic materials and the unconformable layer divisions, or erosion lines show the periods of activity or quiescence in the Earth.

As explained in another section the Earth's magnesium–aluminum–silicate shell, which was granite outside and basalt inside, solidified first, containing and insulating the high temperature core (over 5'000 K). When the granite skin cooled below 400 K the water in the gaseous shroud condensed and covered the skin. As the skin was originally a perfectly balanced spinning gas, it therefore became a very smooth ball at first, covered in water.

The first dry areas are shown in Figure 7A, an original world map. They are the stable areas and are the first plains or hills, (or swamps) from which the first sediments were obtained. Different types of sediment came when different layers of land eroded, and fed the 'sea' beds. The layers from the protruding land were relayered on the bottom of the seas, or lakes, in the reverse order to the land formation. The thickness would depend on the area they were spread over, the amount of rain, the speed of rivers, and flooding, so they would not represent the original land thickness. Subsequent folding of the Earth's crust also confuses the

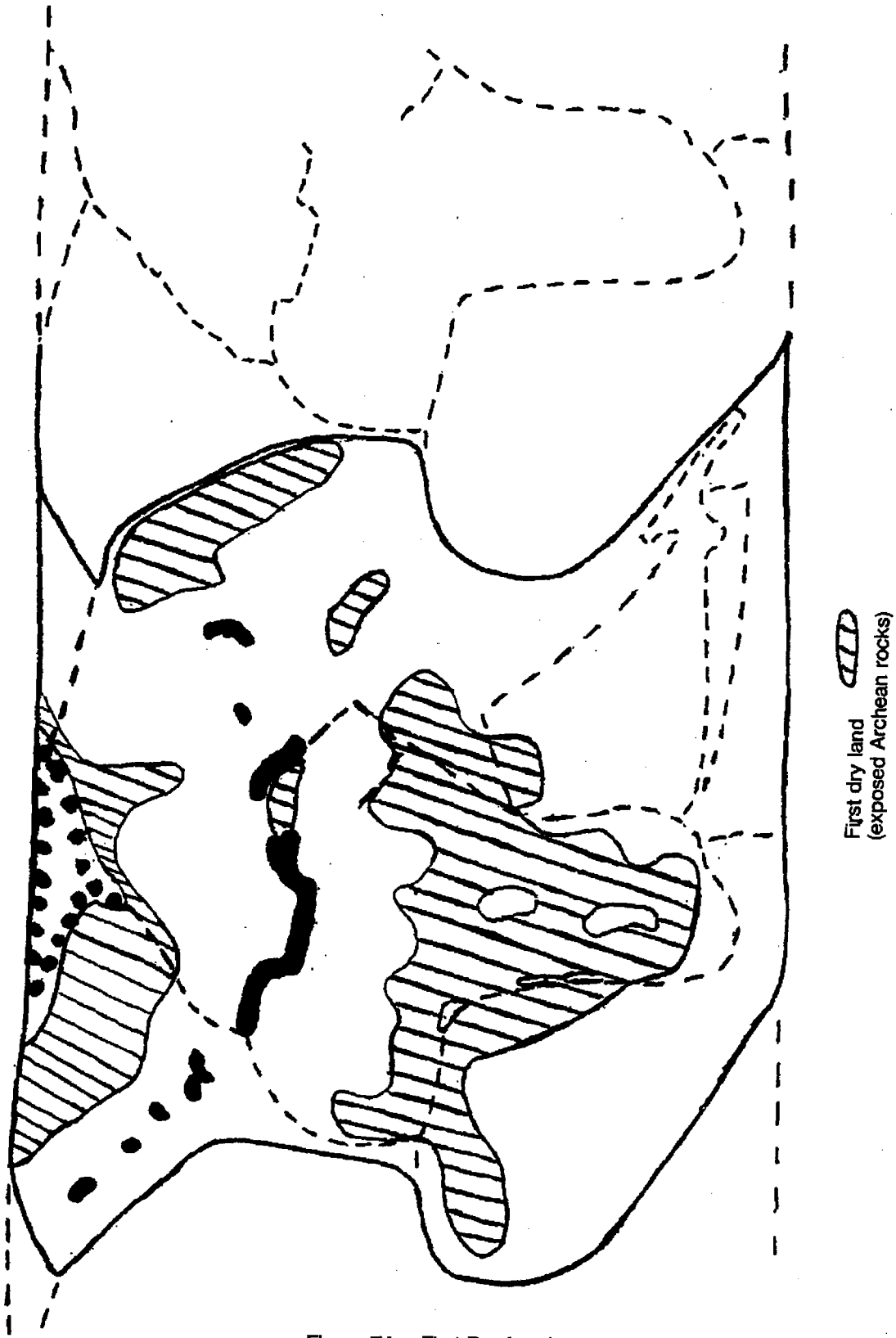


Figure 7A. First Dry Land

issue sometimes. Embedding of fossils, however both dates and compares levels of sedimentation all over the world and has often been the means of linking contemporary sediments.

The swampy areas formed the first vegetation areas which later gave rise to the coal, gas, and oil beds shown in figure 7B. All oil, gas and tar deposits have been formed from plant life, so that they must be either on, or relatively near the surface, in the sense that they must be in or under *Sedimentary*, not Archean rock (which is some 50 kilometres thick).

The main sediments are (a) quartz/sandstone, (b) shale/mudstone/conglomerates and (c) limestone, with secondary ones of salt (sodium chloride) and gypsum (calcium sulphate). The quartz/sandstone is a natural silicate deposit, shale/mudstone is very finely divided complex of silicates, and limestone/dolomite is calcium carbonate, or calcium and magnesium carbonates, or organically deposited calcium carbonate.

There are also impurities of ore deposits mechanically or chemically transported or converted. The secondary sediments may also be regarded as 'ore deposits' although they are usually considered sources of chemicals rather than sources of metals. Sodium chloride, calcium sulphate and iron oxide deposits are all salts of metals, but are generally regarded as sources of table salt, gypsum building plaster and iron metal respectively.

It should be mentioned that while sandstone, mudstone, conglomerates and limestone are the basic sediments, they may take many different forms, being different colours, textures, percentage composition, etc. For instance, sandstones are all shades from light yellow to brown or red and limestones may be pure calcium carbonate, or compounded with magnesium carbonate for dolomite rock. It all depends on proximity of other chemicals, method of abrasion or even widespread organic action such as foraminifera converting gypsum (calcium sulphate + molecular water), or anhydrate (calcium sulphate) to limestone (calcium carbonate). However, there are only two or three main sediments, two secondary sediments, and some ore bodies in multifarious forms originating in the original crust.

Until the Earth's crust first split significantly, about 700 million years ago, all the Earth's surface was below water (marine life only) and therefore no sediment could form. The first swamp plants developed about 400 million years ago when what is known as the Silurian period started. This was after the second orogeny which elevated much of the shallow sediment layered lakes and seas where deposited seaweed could get a foothold for growing, unlike the first orogeny land, of plain rock surface. Nevertheless it took some 50 million years for swamp plants to really establish themselves, and 100 million before trees began to grow.

The next period of 60 million years, – the carboniferous period – has been split into Mississippian, and Pennsylvanian. This was the time the coal beds were laid down, and perhaps the oil deposits. The coal beds formed when the third orogeny – 200 million years ago – sank some of these swamp areas of lichens and mosses,

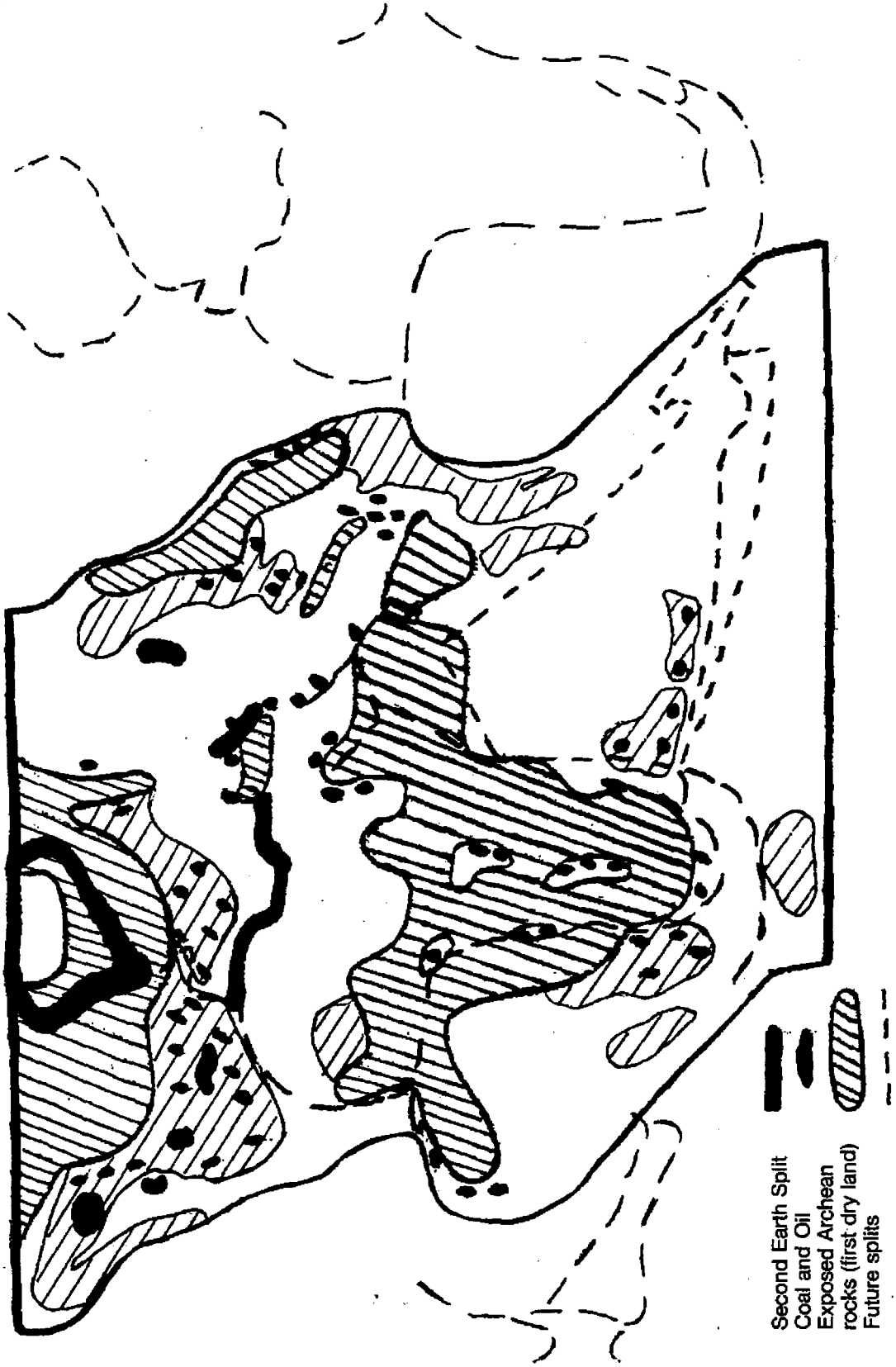


Figure 7B. Land, after Second Earth split.

below water, and they became covered with sediment. But coal only formed in those areas which *rose* again at the end of the Basic Era (390M years ago), then *sank* at the end of the Primary Era (200M), in order to cover the plant life with more sedimentary layers, and rose again at the end of the Secondary Era (65M) or Tertiary Era (2.5M). It is therefore clear that if the *original* Earth's crust is showing at the surface it is useless to drill for oil or coal, as *they* must always be covered by some sediment. This is also why there are some coal beds under the sea, but only on continental shelves. There can not be any coal in the basalt ocean floors which only formed during Earth splits.

Sediments are only formed in areas of water near dry land or swamps. The sediment comes from the land locally, and is only observable when the water beds are thrust up to become dry land. The non-sedimentary areas are the only ones which, after originally protruding above the water level, never sank again below it. These are the areas on which *may* be detected meteoric dust, (eg.tektites), which was deposited on the Earth while it was travelling through space for up to 700 million years, but more probably in the 12'000 years since the last ice age. While its depth is small in all areas of the world, its distribution will be even. The Earth's vegetation mixing with the silicate crust to form soil, plus the addition of windborne dust, plus rain action, will have irrevocably dispersed this dust on Earth, although not on Mars or the Moon. The astronauts walking on the Moon found an inch or two of meteoric dust, but though the Earth received a similar order of quantity, it is indistinguishable. There is in fact, an insignificant amount of cosmic dust for planets or stars to 'sweep up' or tunnel, which defeats some cosmic theories.

The Earth's crust is a record of the order of condensation temperatures, densities and pressure of simple chemical compounds. The more dense higher melting point basalt lava is on the inside of the crust and not fully solidified yet. The basalt is an aluminum / silicon oxide with a calcium or sodium component. Outside the basalt, generally solidified, by this time in the Earth's life, is granite, which is similar to basalt, except that potassium or even nothing replaces the sodium or calcium component. It is slightly lighter and lower melting point than basalt, hence its position. The higher melting point compounds, such as calcium sulphate, carbonate, sodium chloride, iron oxide and all the K/Na/Ca/Al/Mg/Fe/ silicates were first to crystallize and therefore were on the outside of the crust as it condensed from a gas. The densest parts of a magma issuing from the molten inside of the Earth are the magnesium-iron-silicates and the record of the external chemicals show that iron does not form a stable combination with aluminum, but it does with magnesium. This is why the aluminum is in the crustal silicates and the magnesium-iron combination forms the mantle of the Earth, under the basalt.

8

A REVISED BASIS FOR GEOLOGY

As the Earth was originally under three kilometres of water, the original surface of water is of little interest to geologists. The Earth's granite skin did in fact burst twice when the granite skin was some hundreds of metres thick, but these minor spits 'healed' with more granite, and so can only be distinguished by an underwater cliff. The Earth was still totally underwater for nearly three billion years. There were no fossils in the original rocks, because for the first two billion years on Earth there was no land, little noticeable life at all, and for the next 800 million years there was only marine life. However the first vestiges of life are no basis at all for geology.

After the first burst or orogeny of consequence, basic rocks were exposed, concluding the Water Era, and allowing the first major sediments to form in the seas. From this event 700 million years ago, the sediments were deposited sequentially until the second orogeny, 390 million years ago. This means that except for local pockets of change, marine life left fossils 'evenly' throughout bottom sedimentary layers of the underwater world of that time. There were of course some modifications as to temperature, or isolated inland freshwater.

This second orogeny elevated more land and lowered the water level by filling most of the new gap in the Earth's skin with water. This not only enlarged the land area of the earth, but produced a second series of sediments and the sedimentary areas from the first orogeny provided a wet, finely divided, material for seaweed etc. to become land supported. It took another 50 million years or so before a sea creature became an amphibian, and another 50 million more before reptiles and insects appeared. Thus it was only 350 million years ago that the first animal fossils could appear on land.

This period of development ended 200 million years ago when the third orogeny brought more land and more sediment and a bigger Earth. Land fossils, plant or animal, only occurred at the edges of water in their correct period, or they lay on top of the land on which they existed. The water's edge would give thin edges of sedimentary layers and only marine fossils occur in the thick main parts. Fossils lying on top of the land would only be preserved by local freaks, such as the animal drowning in an asphalt lake (eg. LaBrea tar pits), which preserved the bones, or by drowning in the local lake. This latter, drying up subsequently, may have put the bones in their correct period, or maybe the later period, if sediment is thin, or the lake shallow.

The third orogeny started a third series of sediments. These included their own contemporary fossils, of fish, animals and plants of the Mesozoic or Secondary

Era. Local wrinkling of the crust at any period (eg. Germany's Triassic layer) makes the next layer lie unconformably, but in North America, the layers of that *time* are conformable. In many other places and at many other times, geological periods can only be distinguished by their fossils.

It is therefore recommended that geological eras and periods or ages, be dated, reckoned and related to the major event ushering in the Era. For instance the original cooling of the Earth to a crust with water on it, is termed the Water Era. The first major split after the granite sial solidified and put part of the Basic rocks above water some 700 million years ago, starts the Basic Era.

This First Basalt orogeny with Basic rocks visible, started the first sediments forming and generally deposited sediment, for some 300 million years.

The Second Basalt orogeny also laid bare new Primary rocks as well as Basic rocks, at 390 million years ago. This started land plants on the uplifted sedimentary areas but no animals came out of the water for another 50 million years. This second orogeny produced mountain folding such as the Appalachians.

The Third Basalt orogeny laid bare Secondary sedimentary rocks some 200 million years ago producing another series of sediments, with new land and mountain folding again.

The Fourth Basalt orogeny raised more bare land of Tertiary rocks from tertiary sediments produced after the third orogeny. This fourth orogeny wiped out all the dinosaur animal life some 65 million years ago. Lastly, the Fifth Basalt orogeny produced quaternary sediments on land newly above the water, some 2.5 million years ago.

Geological maps do not now need to refer to fossils for their age determination. Fossils can of course help to date the deposition period, as can radio carbon, etc, but sediments can now be referred to their previous orogeny and a date. Local conditions and even country-wide conditions can be referred to their orogeny, and intrusions or extrusions may be included. An example of this referencing can be seen in the table 83 on Events of the BASIC ERA following. It should be noted that present geological terminology is retained as much as possible and though it may be argued that there is no change, the change is basic, as it does not depend at all upon life, which the original scheme does. Because of this reliance on paleobotany, the earliest era was divided at the Cambrian epoch, as being the division between fossils and no fossils, life or no life. This method of relating events to orogenies also explains why a Triassic period is found in Germany and not in America.

Sediments would be understood more readily if their generic names were used more, with qualifying adjectives as required. Perhaps it is a 'world-wide conspiracy' to cover up the fact that we are only dealing with five substances : silicates (or sandstones), limestones (+dolomite), mud (or shale), magmas and chemical deposits. Also, they may occur as clastics, conglomerates, or fine textured. Whilst the above is somewhat of a sweeping generalization, at present geology 'hangs on' to paleobotany 'for dear life'. It is time it stood on its own feet with area maps, times and dates, accurate generic material names and physical

conditions (not dependent on the percentage of modern molluscan fossils for differentiation between rocks!

The six different sizes of the Earth are the major dividing lines in geology / paleobotany / paleontology, etc., with glaciation from eruptions secondary. The local movements and local sediment formation, whilst occurring at the same time, are not uniform all over the world, though erosion periods (quiescent periods) may be.

Generally, the fossils of paleobotany show :

a. connections at the same time all over the world, irrespective of the precise terrain (only climate and conditions matter),
b. the progress of life from marine to swamp, to dry lands,
c. the development of prehistoric plants to modern ones,
d. marine life to swamp life, to amphibians, to reptiles to land animals (and birds),
e. first egg layers, then marsupials, then gestatory mammals.

The eras passed through by the Earth are listed on the following pages, together with their geological events, paleobotanic events, time, and what events started and closed the eras.

Table 81

Water Era	3'650	million years ago to 700 million years ago underwater
Basic Era	700	million years ago to 390 million years ago first land
Primary Era	390	million years ago to 200 million years ago
Secondary Era	200	million years ago to 65 million years ago
Tertiary Era	65	million years ago to 2.5 million years ago
Quaternary Era	2.5	million years ago to present day
(Holocene Era	12	thousand years ago to present day.)

Table 82

WATER ERA

(The start)

Started 3'650 million years ago by forming the *Silicate Crust*
Lasted 2'950 million years, *Condensed Water Covered the Surface*

Earth

7'200 km diameter ; water all over surface about 2.7 km deep. Year time same as now ; rotation time 7.7 hours, (1'140 'days' per year).
(Old Periods : Azoic, Archeozoic, Proterozoic).

Physical Conditions and Events

Year (only measured in millions during the Water Era)

0.W. The first skin of hot, solid, crust (metamorphic rocks) formed on the Earth. The Earth formed a purely spherical shape with a plastic rock skin 7'200 km diameter at a temperature between 1'000 and 2'000 K, with an atmosphere of water, nitrogen, methane, carbon dioxide, and a few light gases.
(The Azoic period started).

900.W Rocks, defined as Banded Iron Formation formed, with no atmospheric oxygen.

The Earth surface had cooled below 400 K and though much of the water was still in vapour form, it was transparent to light and heat. Result : Lightning discharges in the atmosphere of the time gradually provided amino acids resulting in protein and eventually one celled organisms. Microfossils of these minute organisms have been detected in rock shavings. Bacteria and single celled life without a nucleus, were formed.

1600.W The Laurentian granite batholith, records the first minor earth expansion, a granite intrusion under limestone. This minor expansion took place under water, and ended the Azoic period and started the Archaeozoic period. Cold water fossils in Italy (Stromatolites) and an ash layer in North America have been dated as two billion years old. The temperature of the water lowered enough for multi-celled

organisms without nuclei to form. Result : algae developed living on nitrogen and carbon dioxide and started producing oxygen by photosynthesis from the carbon dioxide.

The basic crust of the Earth has been studied in the Keewatin area rocks of North America and are described as folded volcanoes, with interlayered local condensation of conglomerates, clastics, slate, and main oxides.

2400.W This minor expansion ended the Archaeozoic period and started the Proterozoic period. The Algoman granitic batholith, an intrusion under sandstone and the Killarney intruded granite batholith, with ore bodies in magma, mark the second minor expansion. In this, and the first expansion, underwater cliffs some 100 m high were formed in places. Single celled organisms (Eucaryota) which have a nucleus, reproduce asexually by division of the nucleus.

2800.W Multi-cellular organisms developed with nuclei and asexual reproduction such as worms.

2950.W The Charnian intruded granite was the last granite magma, and was a minor event. The Water Era ended.

Table 83

BASIC ERA

First Land
Rock showing above water.

Started 700 million years ago by the *First, Basic Orogeny*
Lasted 310 million years.

Earth

7'720 km diameter ; the first land above water. Year time same as now ; rotation time about 8.7 hours, (about 1'000 'days' per year) ; Earth temperatures about 35° warmer than now. This orogeny formed the Mediterranean Sea, averaging 2.5 km deep now, plus the series of lakes northwest across Canada and the small seas and lakes easterly across Asia.
(Old Periods : Precambrian, Cambrian, Ordovician.)

Physical Conditions and Events

Years (only measured in millions during the Basic Era.)

0.B. The first major orogeny produced the first land, the 2.5 km deep Mediterranean Sea, and the great Asian lakes from the Black Sea to the Okhotsk Sea, including Lake Baykal nearly 3 km deep (with mid depth near sea level), and the Canadian St Lawrence river, Great Lakes, etc. northwest across Canada to the Great Bear Lake. This ended the Proterozoic period and started the Precambrian period.

100.B Brachiopods, trilobites, gastropods, developed, ending the Precambrian and starting the Cambrian period. Later sponges developed, and the earliest evident fossils occurred.

200.B Foraminifera, coral, graptolites, crystoids, arachnids, nautiloids, clams, and cephalopods developed.

250.B The Temiskaming rocks are not sedimentary but are original deposits of limestone. Vishnu shists, and Huronian deposits of limestone, sandstone, slate, and conglomerates (plus iron oxides) are original deposits. Top layers in some areas are 'Cambrian', 'Burgess' shale, 'Ordovician' limestone, 'Queenstone' shale, conformable with Cambrian in N. America, unconformable in Wales.

310.B The second major basalt orogeny ended the Basic Era.

Table 84

PRIMARY ERA

The Swamp Era

First Sediments

Started 390 million years ago by the *Second, Basalt Orogeny*
Lasted 190 million years.

Earth

8'500 km diameter ; a quarter of the present world surface exposed, the rest of the surface water. Year time same as now ; rotation time about 10.9 hours (about 800 days per year) ; Sun temperature about 6'800 K at the end of the period so Earth temperatures about 30° warmer than now. The Arctic Ocean and Norwegian Sea opened, averaging 3.6 km deep at this second orogeny.
(Old Periods : Silurian (Gotlandian), Devonian, Mississipian-Carboniferous, Pennysylvanian-Carboniferous, Permian).

Physical Conditions and Events

Years (only measured in millions during the Primary Era.)

0.P. The second major basalt orogeny started the Primary Era which produced the Arctic Ocean and Norwegian Sea averaging 3.6 km deep now. Sediments of sandstone, shale, limestone, salt, gypsum, and dolomite were exposed during the orogeny. The first salty seas were formed.

10.P Marine invertebrates, corals, byozoans, crinoids, eolinoids and lamellibranches developed. The first mosses and primitive swamp plants, ferns and lichens (cool), developed.

40.P The Devonian minor upheaval made a noticeable change in the sedimentary rocks. Old red sandstone, conformable, in North America, but unconformable with the Silurian sediments in Britain and Africa. Fossils link the strata. Acadian magma intrusions. Fully oxidised beds of Red Sandstone were formed. The first amphibians appeared, whilst the graptolites and cystoid numbers decreased.

90.P The Carboniferous (Mississippian) minor upheaval caused coal beds, limestone, and sandstone layers. The two latitudinal rings of conifers are traceable with one linking N. America, Europe, and Asia, whilst the

other type links S. America, Africa, Madagascar, India, Australia, and New Zealand. This indicates that all the continents were still contiguous with a subtropical zone separating the two types of conifer.

100.P The amphibians increased whilst the crinoids and blastoids became extinct.

110.P The Carboniferous (Pennsylvanian) minor upheaval caused alternate layers of coal, sandstone, shale, or conglomerates.

140.P The first reptiles appeared.

150.P The Permian minor upheaval noted in Russia, Europe, and America produced evaporites, shale, and limestone layers. The trilobites became extinct but the amphibians and insects increased.

190.P The Brachiosaurus and Barosaurus fossils have been found in southwest N. America, both sides of Gibraltar, and Tanzania in southeast Africa, which must therefore have been alive while the areas were connected. Similarly Laplatosaurus, and Titanosaurus fossils were both found in southern S. America, S. Africa, Madagascar and India ; and the Arctosaurus was in S. America and India showing their connection at this time. The third major orogeny occurred 200 million years ago ending the Permian period, and most amphibians and swamp plants became extinct.

Table 85

SECONDARY (MESOZOIC) ERA

The Dinosaur Era

Second Sediments

Started 200 million years ago by the *Third, Iron/Magnesium Orogeny*
Lasted 135 million years.

Earth

9'800 km diameter ; half of present surface area newly exposed; rest of surface sea water. Year time same as now ; rotation time about 14.3 hours (about 613 days per year) ; Sun temperature about 6'600 K, dropping to about 6'400 K at the end of the period, so Earth temperatures about 20° warmer than now. This split was the greatest, opening up the basic Atlantic, Indian, and eastern Pacific Oceans. (basic means that oceans tripled in width in the last 100 million years). Average depth of the new ocean is 5.1 km.
(Old Periods : Triassic, Jurassic, Cretaceous).

Physical Conditions and Events

Year (only measured in millions during the Secondary period)

0.S. The third major orogeny opened up about one third of all the major oceans so that the Americas, Eurasia / Africa, Australia, and Antartica were no longer contiguous. The orogeny pushed India northeast into Asia and formed the Himalayas with the highest mountain in the world, pushed and isolated Australia part way eastward, and isolated Antartica to the South Pole. The western half of the Pacific Ocean did not open at this time, but New Zealand's northern land mass was pushed into the west side of S. America to form the Andes 'kink' before South America moved away. Triassic sandstone, mudstone and conglomerates were formed. Cycad forests developed and the first carnivores evolved. Formal links between Australia and Indian Ocean lands appeared at this time.

20.S First gymnosperms, flowering plants, deciduous trees and now huge conifers.

25.S The Jurassic upheaval is indicated by lava intrusions and an erosion line. Sandstones (Navaho and Morrison), shale and conglomerates formed.

40.S The first modern birds, insects, bees, moths, and flies developed.

50.S Primitive mammals

60.S The Cretaceous upheaval caused by magma intrusions (with copper, zinc, silver and gold intrusions).

Cretaceous chalk = organic limestone was laid down in vast quantities, some having coal inclusions. Eastern N. America has no Triassic or Jurassic sediments and therefore had no large water coverage at these times.

135.S The fourth orogeny occurred, and all dinosaurs became extinct.

Table 86

TERTIARY (CENOZOIC) ERA

Titanothere Era

Third Sediments

Started 65 million years ago by the *Fourth, Iron Orogeny*
Lasted 62.5 million years.

Earth

11'700 km diameter ; one third of surface is land ; ⅔ of surface is water. Year time is the same as now ; rotation time about 20.2 hours, (434 days per year). (foraminifera count indicates that a year's growth was about 400 days). Sun temperature about 6'400 K, dropping to about 6'000 K at the end of the period, so average Earth temperature was about 10° warmer than now. This split formed the western half of the Pacific Ocean being roughly diamond shaped, with Australia being slid eastward over the lower part turning some 70° anticlockwise and forcing the Malay peninsula to curl up like a finger. The average depth of the new ocean halves is 6.1 km.
(Old Periods ; Paloecene, Eocene, Oligocene, Miocene, and Pliocene, divisions originally based on percentages of fossil modern molluscs).

Physical Conditions and Events

Years (only measured in millions during the Tertiary period)

0.T. The fourth major orogeny, – next to the greatest orogeny – was partly responsible for the Himalayan Mountains, the Rocky Mountains, and the start of the Alps. S. America was just isolated from N. America. All continents, except Europe / Asia (with Africa just touching) are now well apart. All land animals now evolved separately on their separate continents. Various shallow seas at the Africa-Asia border dried up. Modern plant life with seed bearing plants and grasses developed.

0-10T First marsupials, grazing animals, modern mammals and primitive horses developed.

20-40T First Titanotheres, (mammoths etc)

25-35T Volcanic activity in western N. America

30.T Anthropoid Apes

55.T First furry animals

62.5T Mammoths and primitive tigers became extinct at the 5th and last orogeny.

Table 87

QUATERNARY ERA

Ice Age Era

Fourth Sediments

Started 2.5 million years ago by the *Fifth, Iron/Sulphur Orogeny*

Earth

12'756 km diameter, 29+3% surface is land, 71-3% surface is water, an average of 5 km deep. Year time is the same as now, 365.24 days per year; rotation time 24 hours. Virtually the total expansion was the Philippine Sea, averaging 8.8 km deep.
(Old Periods ; Pleistocene.)

Physical Conditions and Events

Years (only measured in thousands during the Quaternary period)

0.Q. The fifth major orogeny was the smallest but deepest, and gave the Earth its present size. The Hawaiian group of islands (see table 88) started to appear just before and just after the orogeny. Several other islands formed after the event, as is shown by faunal evolution in that a significant percentage (about 30% of the fauna) is unique to the islands having developed there and nowhere else.

0-5.Q The Donau / Eburon Ice Age, followed this 5th orogeny which sparked the volcanic formation of several large islands. Hawaii, Java, and the Galapagos, were particularly responsible. On recovery of the environment Australopithecus Africanus mutated to A. Boiseii.

100-1800Q Waal / Antian intermediate cool age.

300 Q Australopithecus Afarensis mutated to Homo Habilis.

1000 Q Australopithecus Boiseii / Homo Habilis mutated to Homo Erectus.

1800-2000Q Nebraskan / Gunz Ice Age. Probably caused by Japan and Mascarene Islands' volcanoes, as islands have some 20% unique fauna.

2000 Q	Homo Erectus mutated to Homo Neanderthal	
2000-2200Q	Cromer / Aftonian cool Age	
2200-2300Q	Kansan / Mindel / Elster / Oka / Hoxne Ice Age. Kerguellen, Crozet, Tristan da Cuna, Cape Verde islands, and the Canaries, all have one or two unique species of fauna each, and their 'sky clouding efforts' probably brought about this ice age.	
2300-2440Q	Yarmouth / Holstein cool age	
2440-2450,Q	Illinois / Riss / Saale Ice Age. Fiji, the Marquesas, and Madeira islands have no unique fauna native to them, so their volcanoes probably brought about this ice age. Homo Neanderthal mutated to Homo Sapiens.	
2450-2480,Q	Sangamon / Ehm cool age.	
2480-2500,Q	Wisconsin / Wurm / Weichsel Ice Age.	
2500,Q	End of Ice Ages.	
2509,Q	(10'00BC / 650BC)	Primitive Realism. Physical Religion
	(650 / 350BC	Age of reason
	(350BC / 1500AD)	Dark Ages. Authoritarianism. Mental Religion.
	(1500 / 1900AD)	Scientific Age.
	(1900 /1990)	Philosophy of Relativism
	(1990. . . . . .)	Philosophy of Consistency in Perspective = Apt consistency
2512,Q	NOW. ! (more 'accurately' 2511.989 (= 1989 AD)	

GLACIAL PERIODS ON THE EARTH

When volcanoes burst up through the seas, they form volcanic islands, and in so doing, vapourise sea water. A recent example is the island of Surtsey which has appeared to the south of Iceland. The amount of water vapourised depends on the size of the island formed, and the split in the Earth's crust below the sea. Very large cracks, tens, or even thousands of kilometres long, vapourise enough water to make steam / water vapour, rise into the upper atmosphere. There it condenses, as the upper layers of gas over the Earth, are well below freezing. When there are large parts of the Earth red hot, a vast amount of water is fed into the upper atmosphere and on condensing, shuts off the sun for years. (Note : Surtsey a 2 square kilometre volcanic island formed over three years, did not significantly affect the weather, and neither did the eruption of Mount St. Helens, except very locally.)

As the sun provides 95% of the Earth's surface temperature, the cold becomes intense, until *all* the water clouds are precipitated and the sun's heat can penetrate again. Consequently each of the four splits in the Earth's crust was followed by a short hot period and then years of glacial periods. Huge islands, like Madeira, Tahiti, and the Azores, etc, were large enough to vapourize sufficient sun-blocking water to cause glacial extension of the polar areas at the least, (these islands were responsible for various Ice Ages over the last half million years).

Further ice ages are dependent on volcanic island formation and with the Earth's crust thickening, its possibility gets less and less.

A list of islands probably linked with ice ages is shown in table 88.

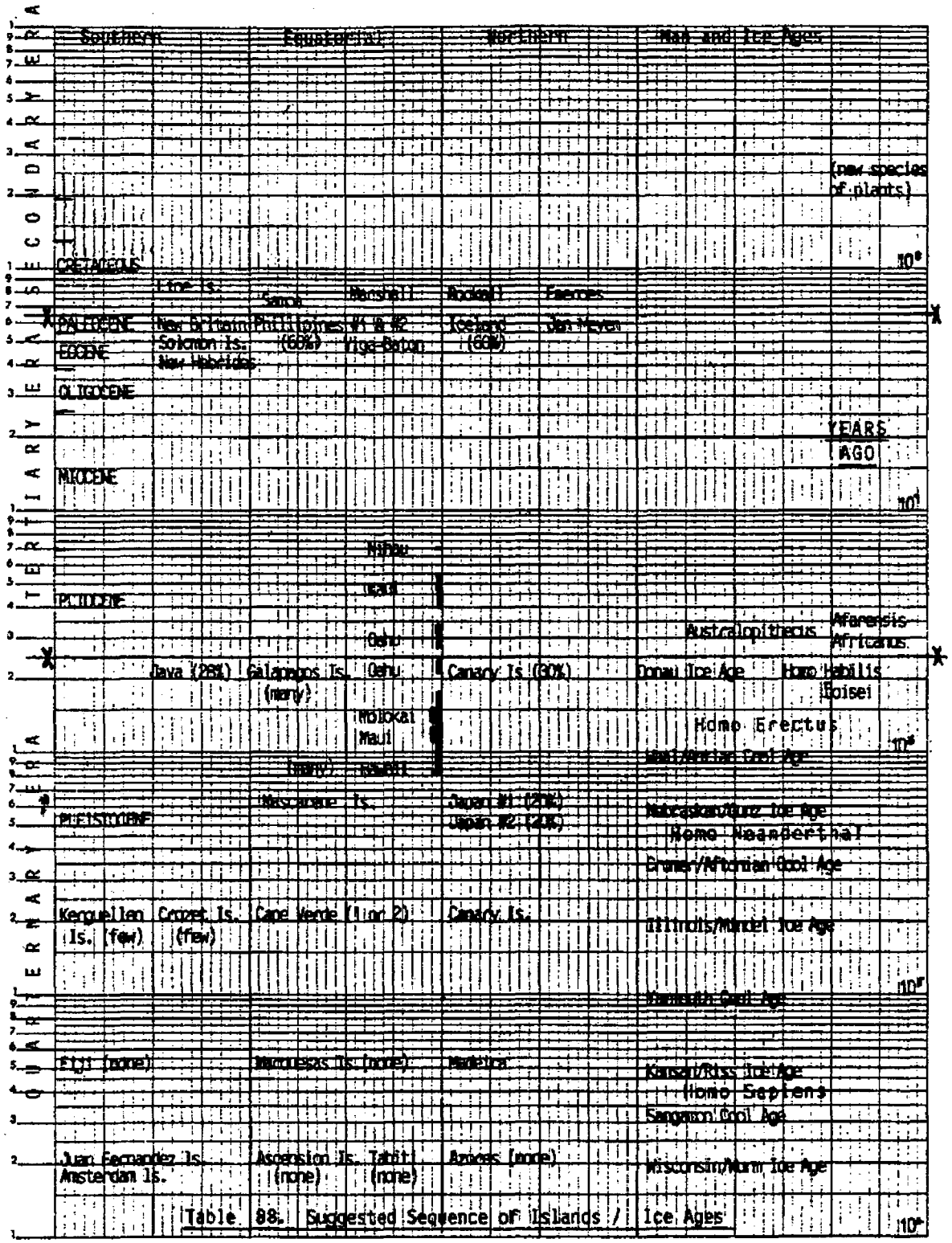


Table 88. Suggested Sequence of Islands / Ice Ages

9

PROOF THAT THE EARTH IS A FREAK

(generally based on conclusions from the book
'Our Solar System' by the same author)

Collision of the Asters.

It has been shown in the above mentioned book that the Sun is a normal average single star, and that its internal nuclear processes produce higher element gaseous blobs of hot gases from hydrogen, violently ejected from its surface. The blobs which were ejected into a disc surrounding the Sun's equator took up orbits and coagulated into sets of twin planets. The sets of planets were at sequential distance doubling for each set. The planets themselves on coagulating created internal temperatures and pressures to cause similar internal explosions and ejections like the Sun, providing their rocky core size was over 20'000 km diameter. The planet's natural moons were formed in this way in equatorial discs round the planet, again as sets of twins, with the sets at sequential distance doubling for each set.

Figure 9A shows the masses of the satellites of Saturn, Jupiter, and the Sun, in the sequence that they developed. (from right to left). There is no regularity shown by the graphs. Figure 9B however has had missing satellites added and transferred ones removed in line with the proofs in the above mentioned book. It can be seen that satellite production is quite regular. The steep left side of the humped graph ends at the Moon. If this were continued down to meet the next left unit line it would indicate the correct size for the Earth, about one tenth Moon size. However the graph shows the Earth to be 80 times the Moon mass, making it 800 times as large as it should be !

The over 90% material difference was made up from the collision of the Aster twin planets over three billion years ago.

Without the Aster twins collision the Earth would be like one of Jupiter's moons. That is the first reason to be a freak.

It would also have no atmosphere, no water, no life of any kind, rotate in an 83 hour day, – a little brother to our Moon.

The Anoxic atmosphere of the original Earth

The twin planets, Astermajor and Asterminor, had atmospheres of nitrogen, carbon dioxide and water. Their collision produced the asteroids, and 5% of them

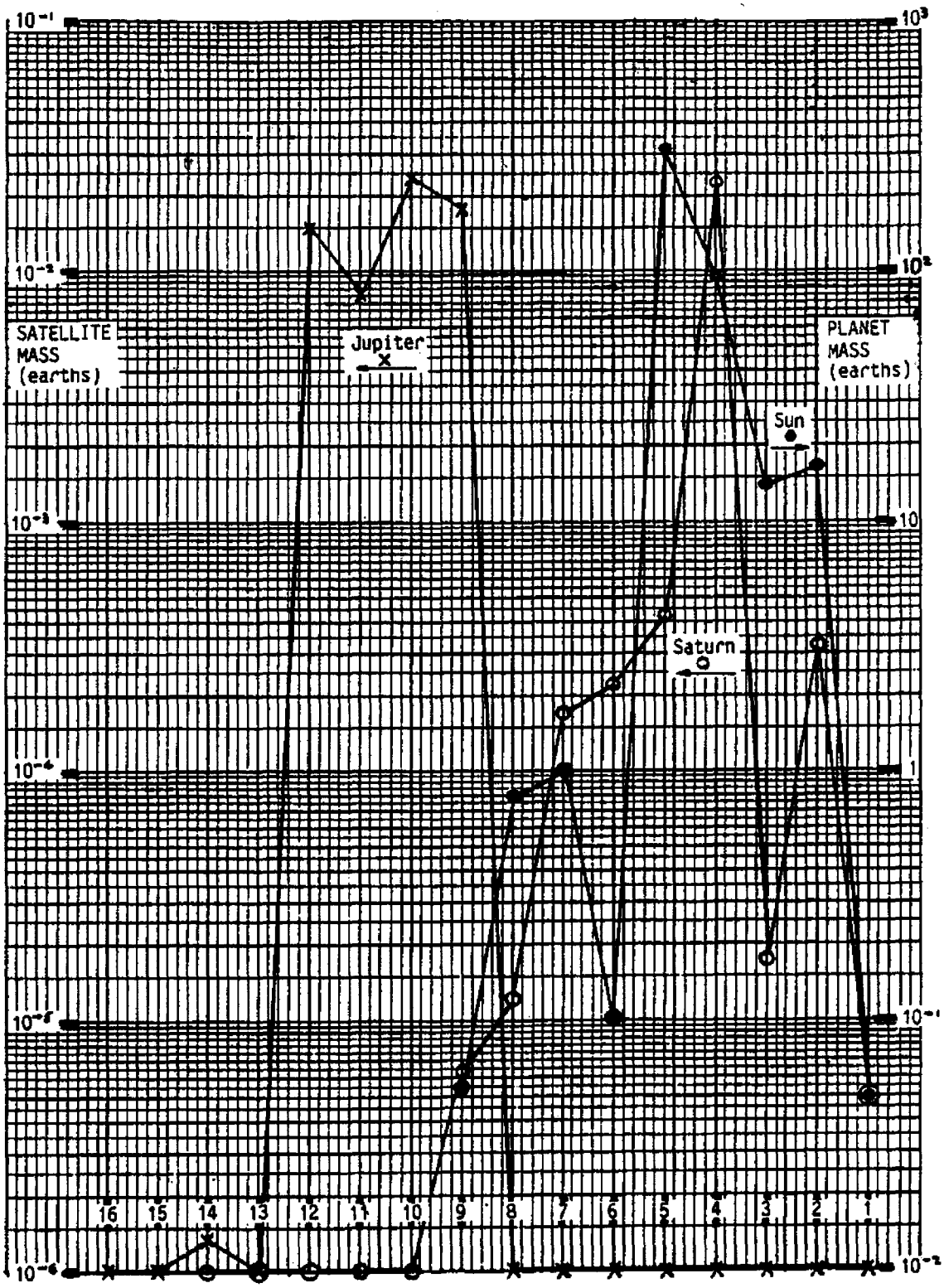


Figure 9A. Planet/Satellites (moons) as Measured.

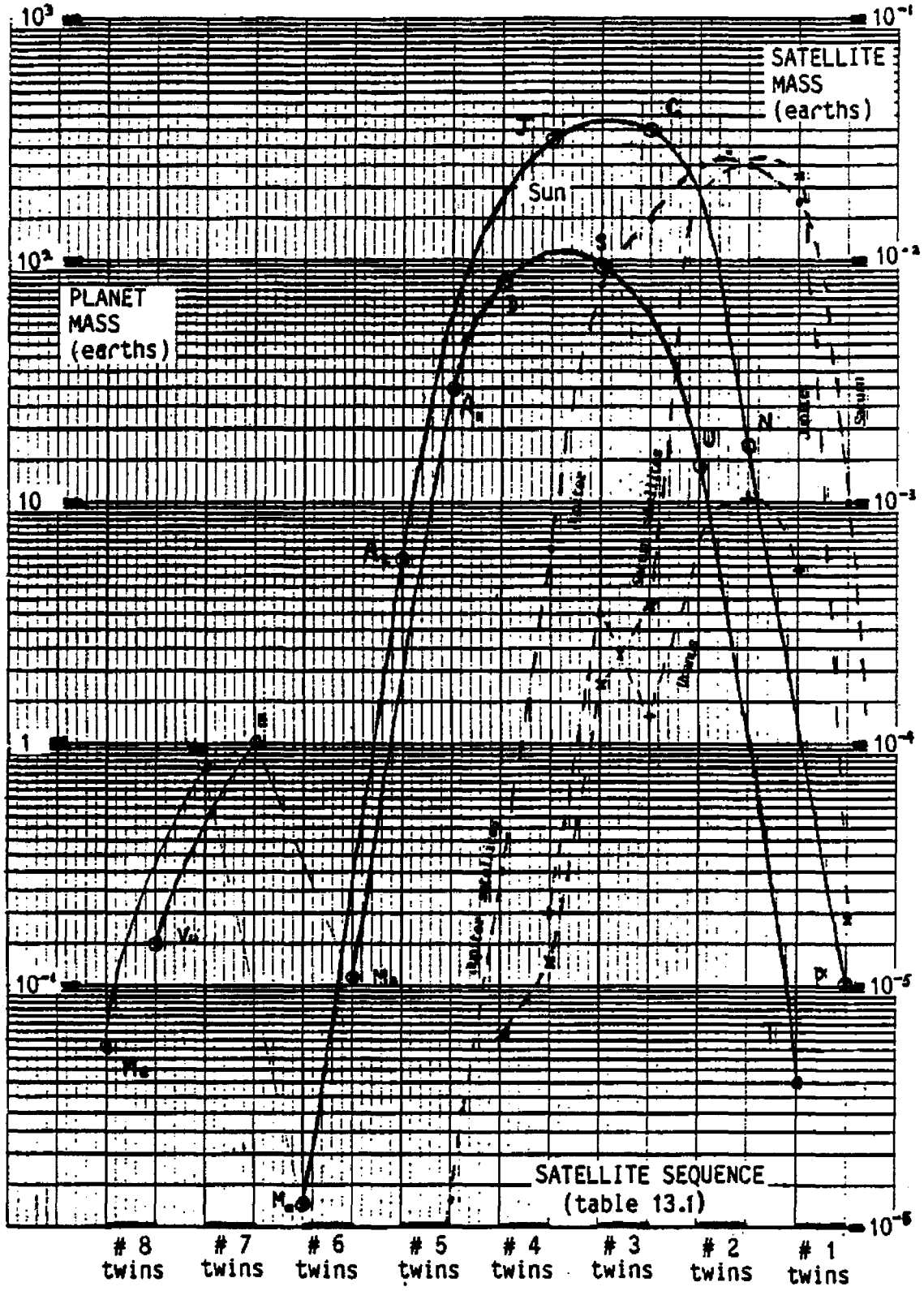


Figure 9B. Planets and Satellites, with missing Items Replaced.

added over 90% of the material which now makes up the Earth and Venus. The Aster's combined atmospheres were divided between Earth and Venus, the latter receiving 96% carbon dioxide and 4% nitrogen, while Earth received some 70% nitrogen and 30% carbon dioxide, and all the water. (traces of other gases have been ignored as about 1%).

It is true that oxygen was present when the Asters were still gaseous in the order of 10'000 K, but it all combined to produce water, sili*cates*, carbon*ates*, nit*rates*, or sulph*ates*, so there was none left for the atmospheres of Earth and Venus.

The originally augmented Earth had no free oxygen in the atmosphere.

1. Proof that the fully formed Asters had only atmospheres of carbon dioxide and nitrogen is that both the ferric and ferrous minerals were supplied to the Earth's augmentation, and ferrous materials easily oxidise to ferric. Thus there could not have been any free oxygen left on the Asters for the Earth.
2. The well known Banded Iron Formations are originally from the collision of the twin Asters. They consist of ferrous oxide (FeO) and ferric oxide (Fe_2O_3), eroded into sedimentary layers from original rock crust with facies of magnetite (Fe_3O_4). The original rock of 3.6 billion years ago (when elevated above water some 700 million years ago) eroded into sediment but did not oxidise when transported as there was no free oxygen until about 1.9 billion years ago.
3. Detrital grains of sediment such as readily oxidisable pyrites deposited over 1.9 billion years ago (pre-paleozoic) amongst conglomerates and sandstones in places such as the Witwatersrand in South Africa or Blind River in Ontario, were not oxidised when eroded.
4. Carbonate rocks older than two billion years are uncommon as the carbon is generally uncombined graphite or Kerogen. This again indicates that the last vestiges of oxygen were used to form carbon dioxide, the remaining carbon being left unconverted.
5. Experiments show that an electric arc in a mixture of gases such as carbon dioxide, carbon monoxide, ammonia, and water, can produce amino acids, the building blocks of protein and life. These large organic molecules of protein and nucleic acids do not form if free oxygen is present, as they oxidise. Life would never have started if our original atmosphere had contained free oxygen !

The foregoing fits well with the table 64 which indicates that water covered the world for 2000 million years before the first basic plant appeared, 1600 million years ago. Then the carbon dioxide–ingesting plants had 1200 million years to convert most of the carbon dioxide to oxygen, preparing for humans and other animals.

Swelling of the Earth

Measurement of the distances of identically magnetised basalt either side of the ocean bed ridges indicates that the Atlantic Ocean is spreading some 4 cm per year and the Pacific Ocean is spreading some 3 cm per year average. This appears

insignificant but it has averaged this over some 80 million years, but may stop any time.

This has separated the continents by several thousand kilometres, and there are several strips of latitude, and longitude, where there are no trenches or 'subduction zones'. Therefore the Earth's spherical circumference has enlarged.

The present theorists' efforts to keep the Earth a constant size and move the continents over its surface looks plausible the way it is drawn. The total picture however where the isothermal surfaces are spherical inside the Earth give no cause for 'hot spots'. Drawn in elevation it seems possible that a convection current from the centre could indicate a separating stream of liquid aimed at the ridge. However it would have all the force of a 2 km per hour breeze blowing on the corner of a 60 km high mountain of rock to blow the ridge apart. Secondly, if drawn isometrically (in 3D) the hot spot near the Earth centre would have to spread out on rising, into a line like a fan with its top edge over 10'000 km long ! Also the edge would have to zig zag all over the place to suit the continents. Ludicrous isn't it.

The many kilometre thick crust edges at the trenches or at the continents butting head on, but sliding under one another was certainly never imagined by an engineer. Tectonic Plate theory sounds impressive but it has an impossible source of force which even if it worked is ludicrously inadequate, and it works against an immovable object.

Dinosaur Eggs

The dinosaurs developed after the *third* orogeny some 390 million years ago, and so did early mammals. The dinosaurs developed into huge powerful beasts and remained dominant over the mammals for some 140 million years. A very long time. However 65 million years ago the *fourth* orogeny, with the usual lightning, fire, tidal waves, and vast flooding followed by short ice ages wiped out all large beasts (either directly or starved). All the brittle shelled dinosaur eggs laid in the sand were eliminated by the holocaust. Thus the dinosaurs were *selectively* ended.

Crocodiles etc which lay eggs with leathery skins survived. Birds who could fly to safety could choose better conditions and lay again next year in shockproof trees. Mammals were the best equipped for survival – the young ran away inside their mothers.

Only the dinosaurs were selectively wiped out because they were large, needing lots of food, generally slow to get away from danger, but most of all relied on brittle shell eggs laid on or in the Earth, to reproduce. That is why mammals (humans) are now supreme.

In Appendix B I have shown that the Earth has existed for 3.65 billion years, and in chapter 5, that up to 0.7 billion years ago it was covered 3 km deep in water ALL OVER! – The WATER Planet. – But for the 5 orogenies, we and everything about us would not be here. – Earth really is a FREAK. –

10

EPILOGUE

Almost all processes described in this book deal with the increase in entropy of the universe, that is, all energy appears to 'deteriorate' into heat (the lowest energy form) and disorder. One parameter almost made the universe into an ecology, a closed system :

Gravity

The following conclusions from my other book 'Our Solar System', puts the view of 'Our Earth' in perspective. Gravity forms the galactic core which re-mixes old, heavier-element cold-stars into brand new, over 90% new hydrogen stars, which wipes out a great deal of the entropy of the stars. It then reheats it back to more than white hot and magnetically aligns all the hydrogen dipoles into a magnetic sphere which reduces its total entropy to almost nothing. As the star's random meanderings allow it eventually by chance to escape down the galactic core's magnetic tube, it is all set to spend 10 billion years 'winding down' and accumulating entropy.

Any matter which surpasses the present nebulous edges of the universe is gradually returned, because as previously explained there is literally *nothing* on all sides of it, except a universe in one direction. This means that the matter will eventually return to the universe. Radiolectric energy which travels with the speed of light in light gases, behaves similarly, even in virtual vacua. Therefore, at the vast edges of the universe, the mismatch *totally* reflects it.

We therefore have a totally enclosed universe whose total American football shape is only limited by the fact as to whether there is, or is not, any matter further on. However, although matter-energy (even light) is trapped, the inexorable combination of hydrogen atoms into uranium and a percentage of 'lesser' elements, will only stop when there is insufficient hydrogen in the new born stars to support the present processes. A star's life is in the order of 20 billion years and stars are still being born with well over 90% hydrogen, so it is likely to continue for some billions of billions of years, which in our book, is as near 'forever', as infinity in finite things can get.

It has been calculated that if the Earth's time since formation was compressed proportionately into one year, Man's first humanoid ancestor was born after 6 pm on December 31st!! Homo Erectus, who linked two of mankind's ancestral bloodlines, was only born about 8 pm on December 31st, but modern Man's whole existence would only be the last two hours of the year! The whole Roman Empire lasted five seconds and the time we have known about radio communication

would be less than half a second. Our chances of existing at the same time as any other life in the cosmos is just about nil, and chances of communication at a time when they also can communicate are really nil (we have had half a second in the whole 'year' of Earth's existence).

It has been shown that there are no possibilities of life in the solar system except on Earth. If mankind wishes to become immortal, it must find a way to provide itself with an adequate personal energy supply, and an acceptable personal environment.

Appendix A

Minor Evolution Laws

A corollary to Chambers-Wallace-Darwin laws of evolution, and survival of the fittest :
All life has evolved from hydrogen, via the Daltonian elements, compounds, algae, plants, fish amphibia, animals, and mammals, to Man himself.

All evolution depends on some DNA combination or development happening by chance conditions (normally a mutation generally by cosmic rays altering the genes of an individual).

Change / mutation is dependent on the change *actually happening* and never because 'it could be better that way'.

The best, or most adaptable is more likely to survive a change in conditions.

Survival of *any* species in the chain of development depends only on it being adequate for the physical conditions of its environment and not that it is the best that could be adapted to the conditions. A proviso on this statement is that no other species tries to occupy the same ecological niche in the same geographical location. (Only high intelligence and moral sense can eliminate this last provision).

Appendix B

(excerpt from 'Our Solar System'
The Age of the Sun and Planets – by the same author)

The Age of the Earth

The Sun, having a fairly strong magnetic field, may have sunspots at the poles which we cannot see. They would be caused by the lines of force leaving an axial 'escape tube' down which a 'leak' of small gaseous ejecta probably passes. This is just like the galaxy core with its magnetic escape tube, producing a similar effect,

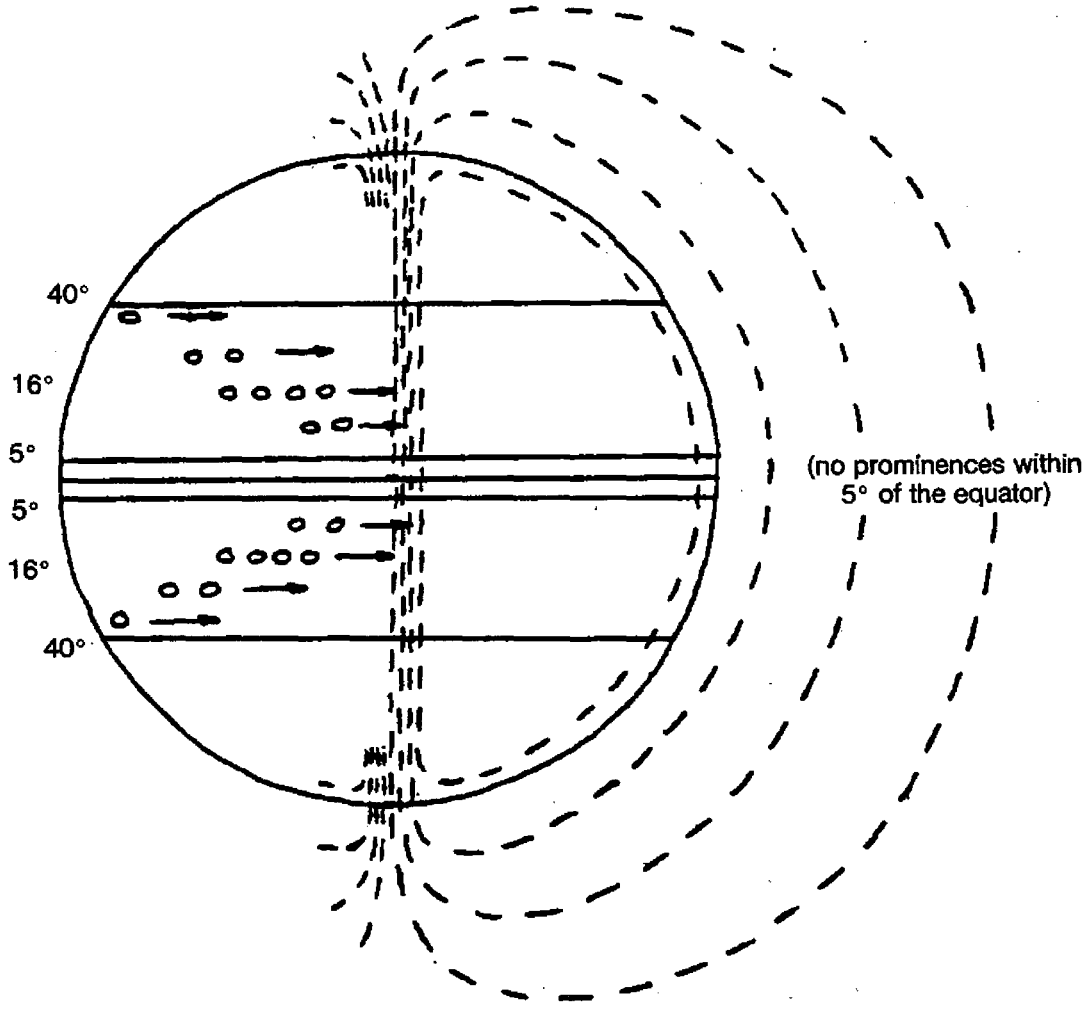


Table 12A. Sun magnetic lines of force and sunspot band.

in that this small stream of cool material will be deflected slightly as it leaves the magnetic tube, and its reaction will tilt the Sun's magnetic field. This tilt may be connected with the fact that the Sun has turned 16° in its 8 billion year life. (It is also possibly initiating the very occasional reversal of the Sun's magnetic field – perhaps a significant ejecta leaving the pole every so many million years as it is only necessary to reverse gaseous molecular orientation).

It can be shown to have tilted the 16° because of the different tilts of the axes of the planets. Figures 12B and 12C show that as measured from the Earth, Neptune rotates at 29° angle to its orbit, Saturn 27°, Mars 24°, and Earth 23.5°. As the gradual increase in tilt of the Sun's disc is a turning motion, it must have some proportionality to time or period (i.e. sequence of planet formation) which will give us a new method of checking the ages of the planets. As the process of formation of the solar system is one system, all the angles of the planets originally started from one point, with changes between the angles in proportion to time. This plotting of angles is shown in figure 12D. If the Earth's age is 3.7 billion years, then it must be 8 billion years since the Sun left the galaxy core, and so follow all the other ages on a continuous line. The planet's axial tilts as displayed on figure 12D are also a record of the Sun's own tilt, at the time each planet was formed. Thus the Sun angle 8 billion years ago was 32.4° (to Earth-Sun now) and was the Sun angle when it first spun a disc. As this angle (figure 12C) gives the original disc diameter of 24 billion km, Pluto's disc was originally just under 12 billion km diameter.

If one observes the Sun from the Earth, its axis appears to be at 4° to the ecliptic, and the graph indicates it is 4° from a right angle to the Earth / Sun line. The odd one out of this regular arrangement is Pluto. It will be remembered that Daedalus, spiralling away from the Sun, attracted Neptune into a larger orbit and retarded it slightly to suit its new position. Triton, attracted inwards by Daedalus, was captured by Neptune. Pluto was much more affected in that Daedalus even pulled it inwards a little, increased its speed slightly, but mostly deflected its orbit some 17° out of the ecliptic plane.

The graphs indicate that the Sun has tilted some 16°, (32°-16° = 16°) since it left the edge of the galaxy core and spun a disc 8 billion years ago.

Using the theory of twin formation at 50 and 52% orbit ratio, figure 12E can be plotted. The following relationships must be considered, in conjunction with figure 12E to obtain figure 12F, and dates must fit the following facts :

(a) The planets were formed whilst the Sun's disc shrank from 24,000 million km to 100 million km diameter.

(b) They were formed at some regular rate, whether arithmetic, or geometric time periods. (probably approximately geometric).

(c) They formed whilst the Sun's *sphere* cooled to 25'000 K but the Sun's *Disc*

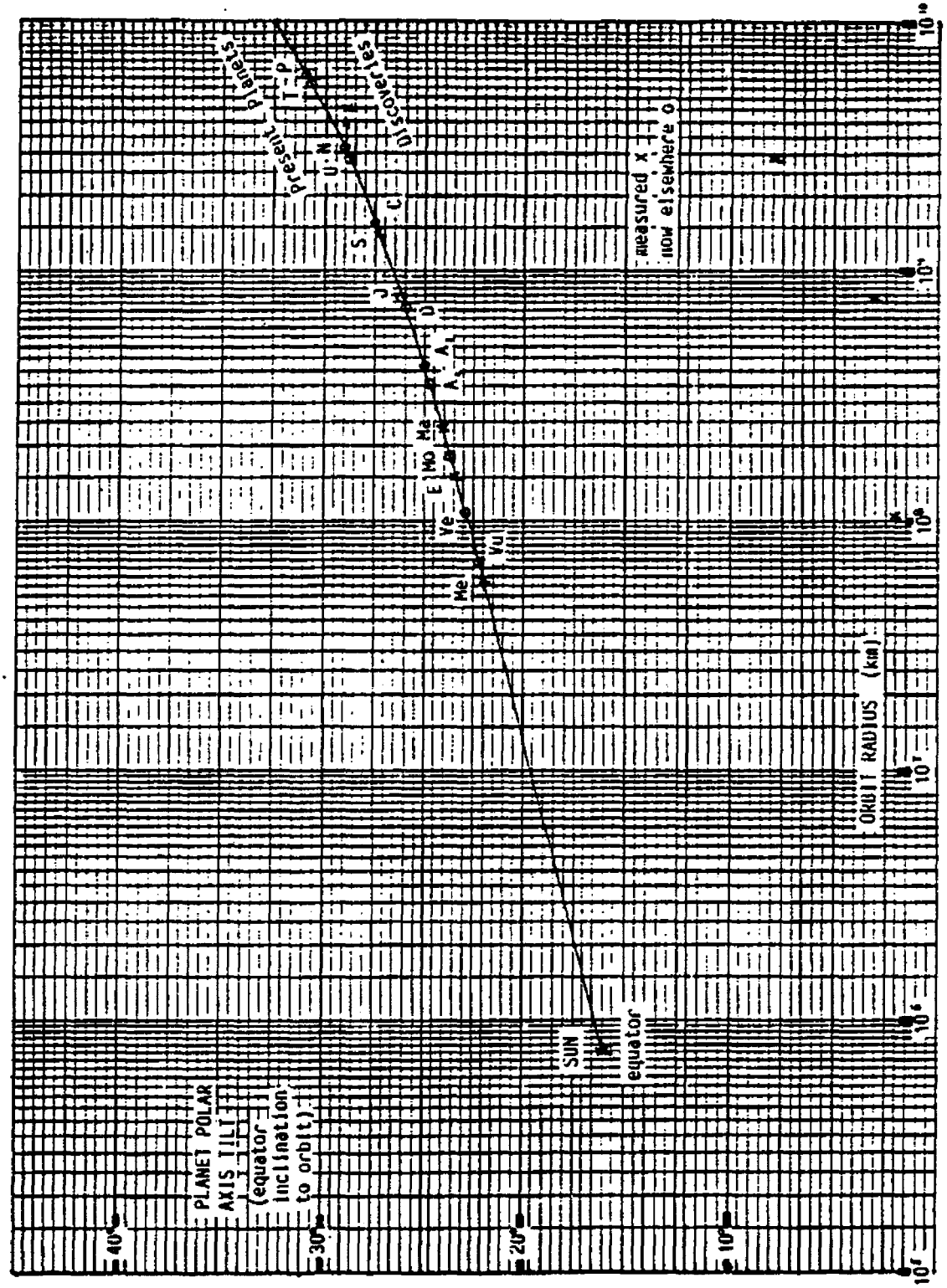


Figure 12B. Regularity of the Planets Polar Axis Tilt

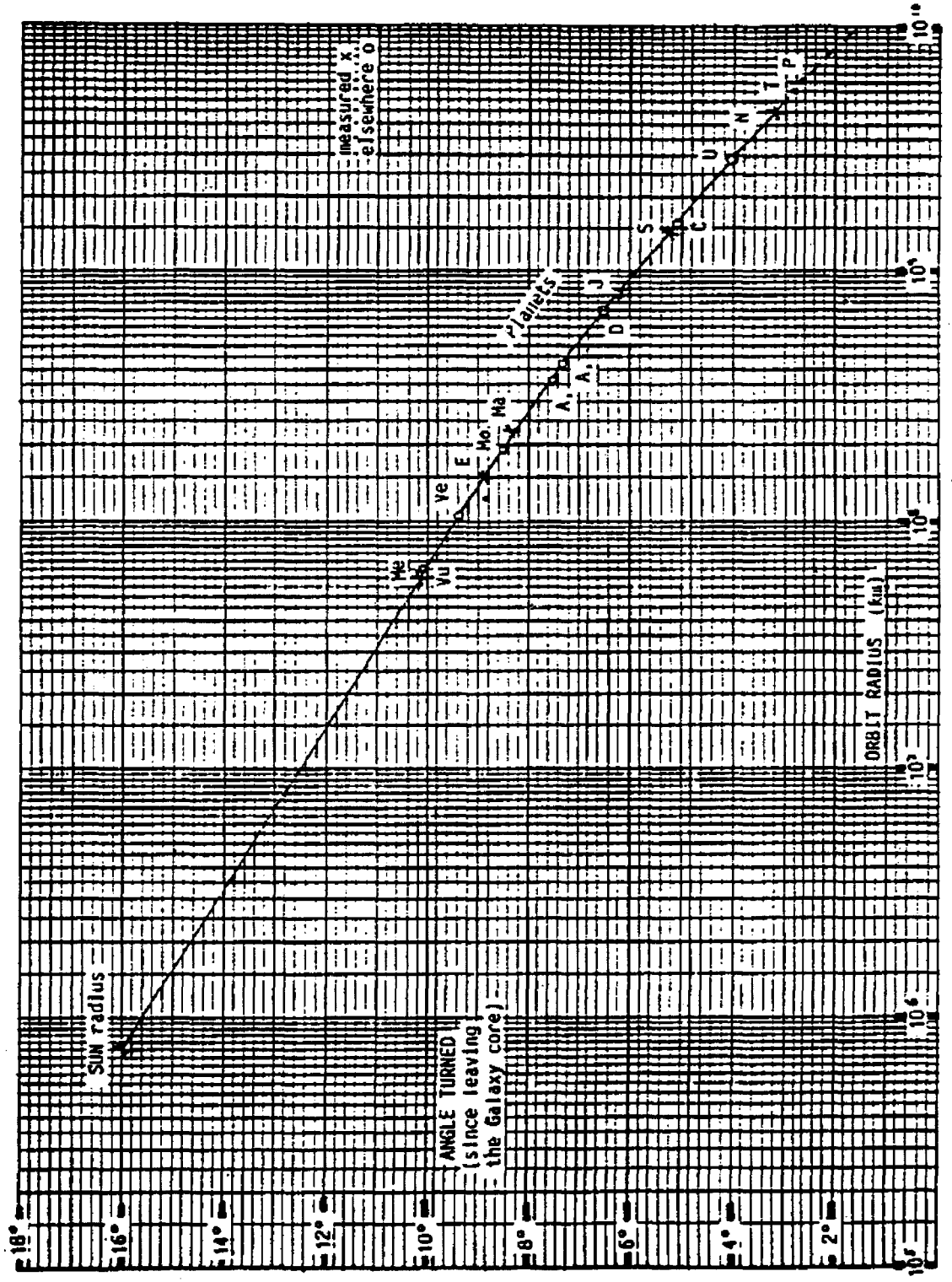


Figure 12C. Angle turned by the Sun Disc during birth of the Planets

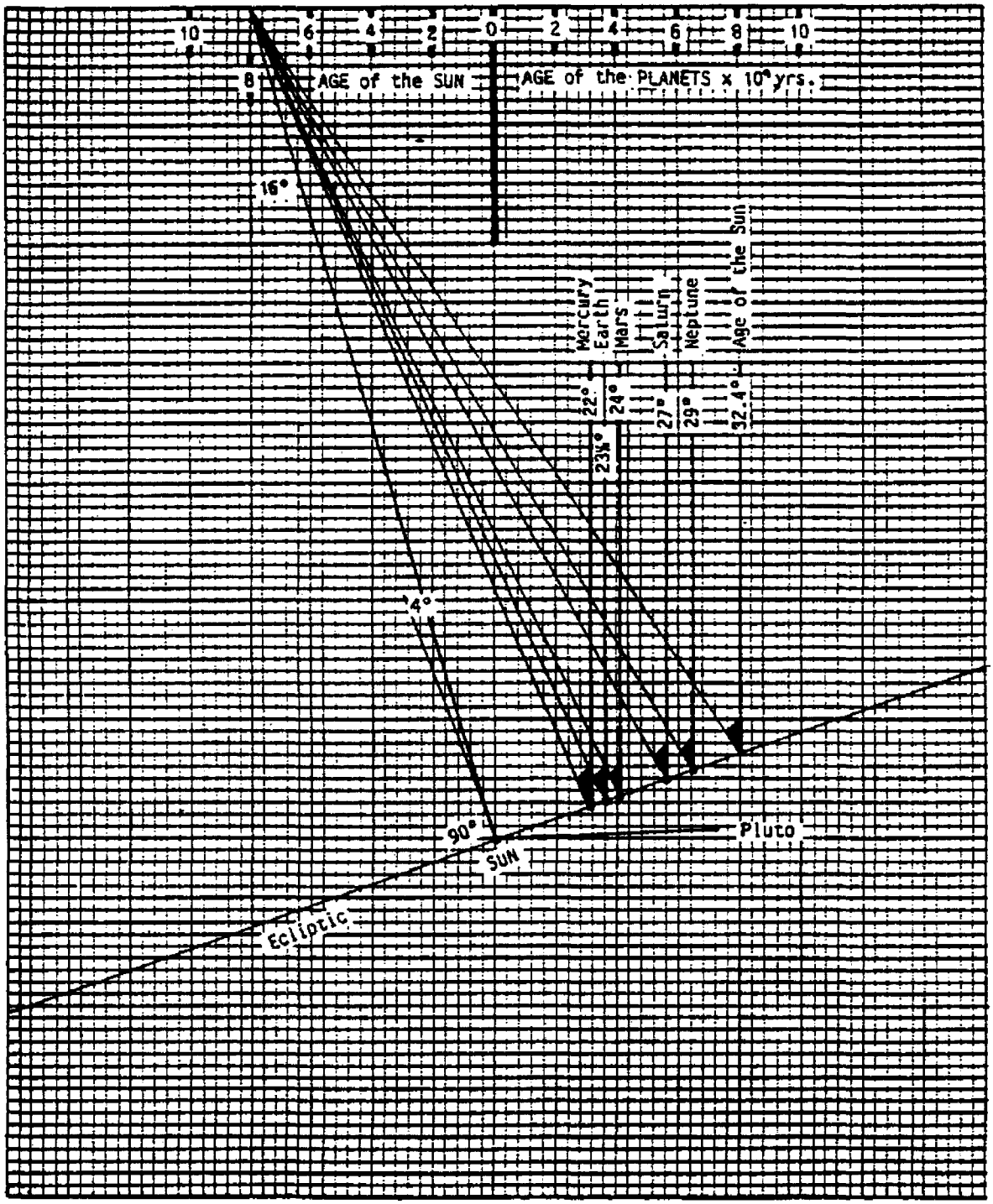


Figure 12D. Ages of the Sun and Planets from Polar Axis Tilt

Table 12.1 Orbit Radius of the Planets

Sun's Disc maximum diameter 24'000 × 10^6 km)

(a) Planets with 0.52 ratio Orbits

0.52 ratio Orbit km.	Planet	Orbit Measured	Movement from origin
5500	***Triton	5500	–
2860	Neptune	4496.6	36% = 1600×10^6
1488	*Cronus	(1488)	–
778.3	Jupiter	778.3	0
405	**Astermajor	413	2% = 9×10^6
210	Mars	227.9	7% = 16×10^6
HOLOCAUST			
109×1.22=133	Earth	149.6	12.5% = 17×10^6
56×1.22=68.3	*Vulcan	68.	–

* Planets pulled into the Sun by another planet nearer the Sun
** Planets collided
*** Planet captured by another planet

Orbit Ratio × 1.22, due to Aster HOLOCAUST
(Neptune pulled out 36% by Daedalus spiralling out)
(Earth pulled out 12.5% by Moon coming inwards)

(b) Planets with 0.50 ratio Orbit

0.50 ratio Radius km.	Planet	Orbit Measured	Movement from origin
5710	Pluto	5900	3% = 190×10^6
2854	Uranus	2869	0.6% = 16×10^6
1427	Saturn	1427	*0*
714	°Daedalus	(714)	–
357	**Asterminor	357	–
175	***Moon	(175)	–
HOLOCAUST			
89×1.22=108.6	Venus	108.2	0
45×1.22=54.9	Mercury	57.9	5.5% = 3 × 10^6

* Planets pulled into the Sun by another planet nearer the Sun
** Planets collided
*** Planet captured by another planet
° Planet spiralled away from the Sun
Orbit Ratio × 1.22, due to Aster HOLOCAUST

was between 10 and 15'000 K, its periphery speeding up from a few kilometres per second, to 350 kilometres per second.

(d) The Sun's disc, as returned to the sphere which is now 6'000K, rotates at 1.9 km/sec. at the equator.

(e) The Asters were formed about (4.5 ± 0.3) billion years ago, as measured in meteorites.

(f) The Earth was formed 3.7 ± 0.5 billion years ago, as measured in some rocks, (a fossil has been claimed to be two billion years old), and Earth orbits at 149 million km radius from the Sun.

(g) The difference in time of formation between Venus and Earth is either 50/100 or 150/200, or about 400 million years. (From the bursting dates), assuming the Earth's twin to have similar materials. (circumstances favour the 100.)

(h) The Sun now has a diameter of 1'392'000 km.

(j) The Moon, born a little earlier than the Earth, is measured at 3.95×10^9 yrs old. (Rock *dug* off the Moon not meteoric breccia *on* the Moon).

(k) The Asters, major and minor, are measured at 4.45 and 4.55×10^9 years old. (Meteorites on Earth plus Meteoric dust and debris, particularly the oldest pieces *picked up* on the Moon, ignoring the Moon's volcanic or reheated material

Plotted logarithmically this data lies on a straight line, as is shown in figure 12E which allows figure 12F to be plotted. This indicates the following: The Sun, spun round by the galactic magnetic lines, formed a disc 8×10^9 years ago. Its disc began to shrink forming Pluto at 7.2 billion, Triton 7.1 billion, Neptune 6.4, Uranus 6.35, Saturn 5.65, Jupiter 5.1, (Asters 4.55 & 4.45), Mars 4.1, Moon 3.95, Earth 3.65, Venus 3.6, and Mercury 3.15×10^9 years ago.

The above times are for hot gas separation from the Sun, but though they are at 10/12'000 K when they separate into a temperature insulating vacuum, they cool *relatively* quickly, because of their 'small' size. This means an 'extra rapid' shrinking on separation, and an early crust formation. It also means that the solidifying of the rocks on the planet's surface, – which is our definition of the planet's birth – form soon after separation from the Sun Disc. Thus, rock ages are reasonably close to the planets' formation time.

Cosmic dust is not too significant, – even the Asters' meteoric dust is only a few inches thick, as can be seen in the tracks of the astronauts on the Moon, after four

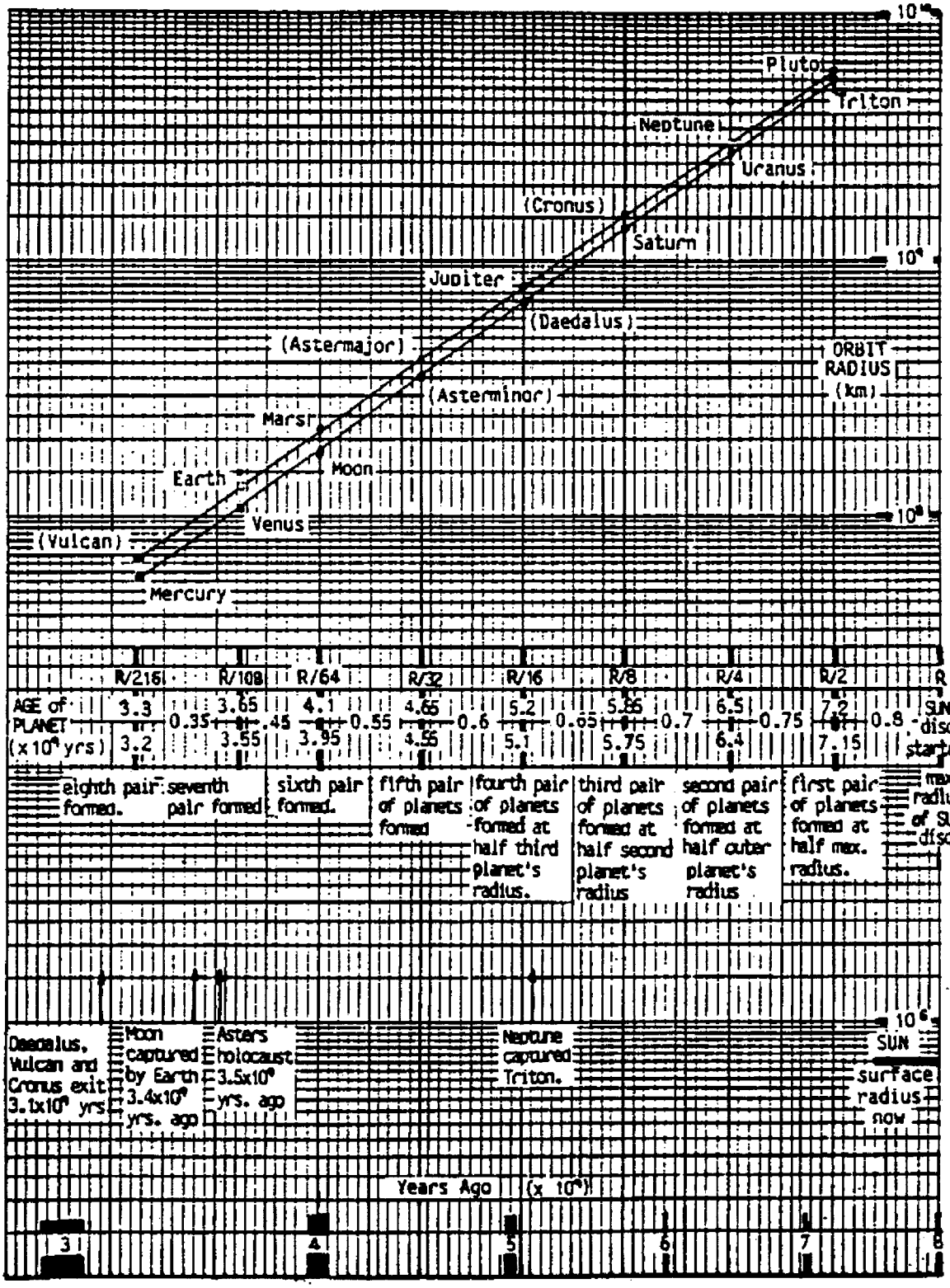


Figure 12E. Planet formation Orbit, Timing, and Major Events.
(including Disc shrinking time between planets)

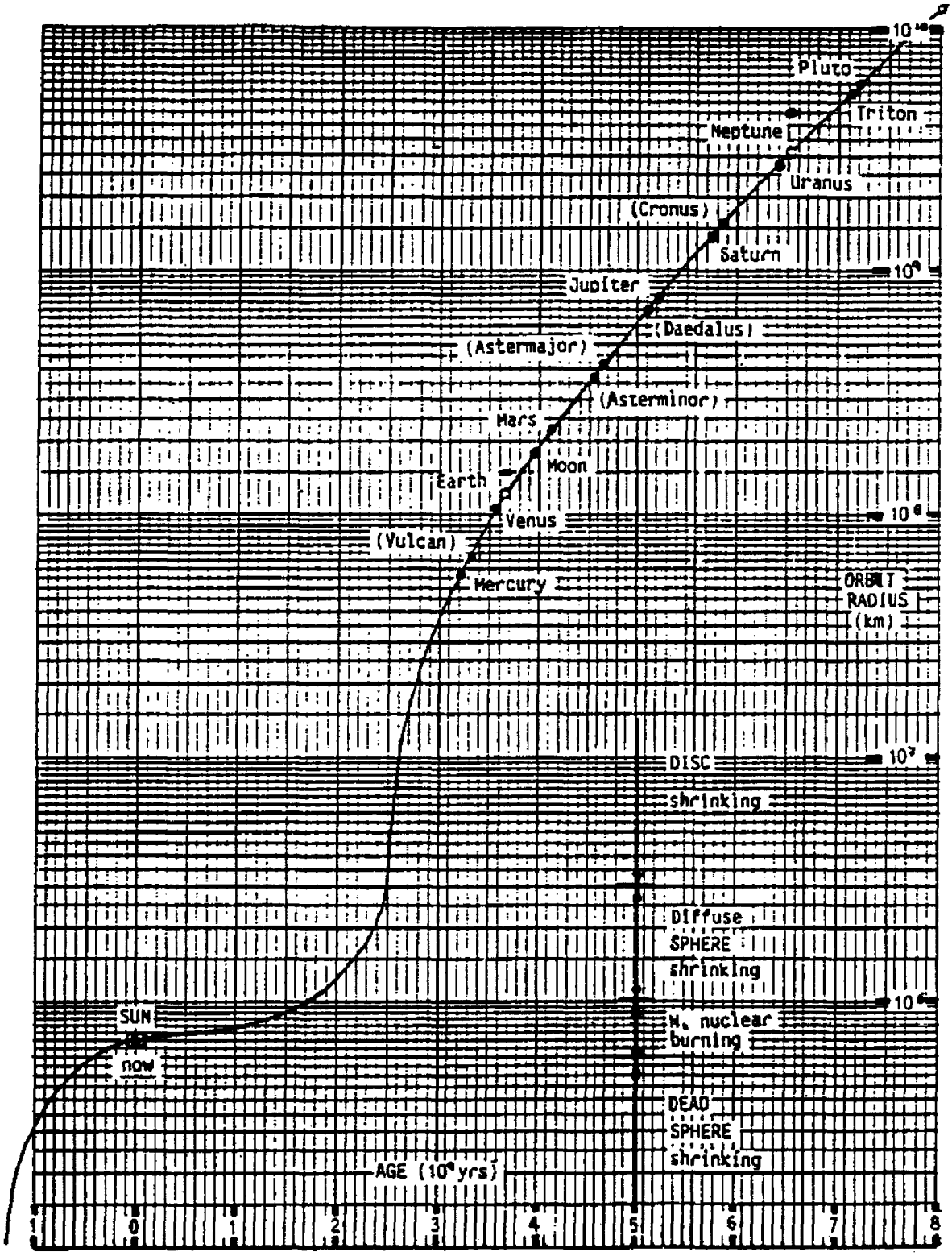


Figure 12F. The Sun's Lifetime Events

billion years –. There is no weather or liquid on the Moon, which would agglomerate the collecting dust into rock, so the astronaut's tracks show the total collection. Mars has been found to be in a similar condition.

Galactic sequences are really so orderly and space so vast, that rogue stars are insignificant in number. It should also be remembered that if the Sun was 'burning' its 'fuel' chemically, its calculated life would have been a thousand years or so. Fortunately, it uses nuclear fuel, which multiplies the chemical life by a factor of about 10^7 which would give it a 'life' as a star, of 10^{10} or 10^{11} years).

This augmented Earth was a very flattened spherical cloud of material beginning to glow nearly white hot from the gravitational pressure of all the collected material. This somewhat pie shaped glowing body started to overtake the orbiting Moon and attracted it almost backwards across the arc of the orbit circle. The Moon came inwards most of the way but the Earth moved out somewhat to meet it and that is why the Moon swung round the inside of the Earth to take up a progressive orbit. The Earth 'pie' of material was at this time some one million kilometres in diameter, and the Moon ploughing through the outer gases experienced some friction which slowed its orbit speed to its present speed, and slowed its rotation to that of the Earth material enveloping it. That is why the Moon's surface has been remelted with numerous bursted bubbles on its surface, and why the Moon always presents the same face to the Earth.

My choice of 3.4×10^9 years ago for the capture of the Moon by the Earth is reasoned as follows :

(1) the Earth and Venus were about a tenth of the mass of the Moon when first formed at 3.65 and 3.55×10^9 years ago, and therefore could not attract the Moon.

(2) after the Aster holocaust at 3.5×10^9 years ago, the Earth (and Venus) collected enough material to become over 80 times more massive than the Moon. The collection of material from all round the Sun's disc took some millions of years, and when the Earth had shrunk to only a million kilometer diameter disc, it was massive and dense enough to attract the Moon.

(3) the Earth attracted the Moon, and vice versa when overtaking in orbit from some 60° angle apart, when the more massive Earth moved out a third of the difference between them and the lighter Moon moved two thirds inwards to form a waltzing couple – and once started, the Sun increased its inwards attraction of the Moon.

The Earth and Moon settled down to reasonably circular orbits with the Moon just inside the intensely hot gases forming the shrinking Earth. The event is therefore rated at 3.4×10^9 years ago.

In many ways, the EARTH is a FREAK.