

Evidence supporting Kevin Mansfield's Earth Formation Hypothesis.

The Hypothesis:

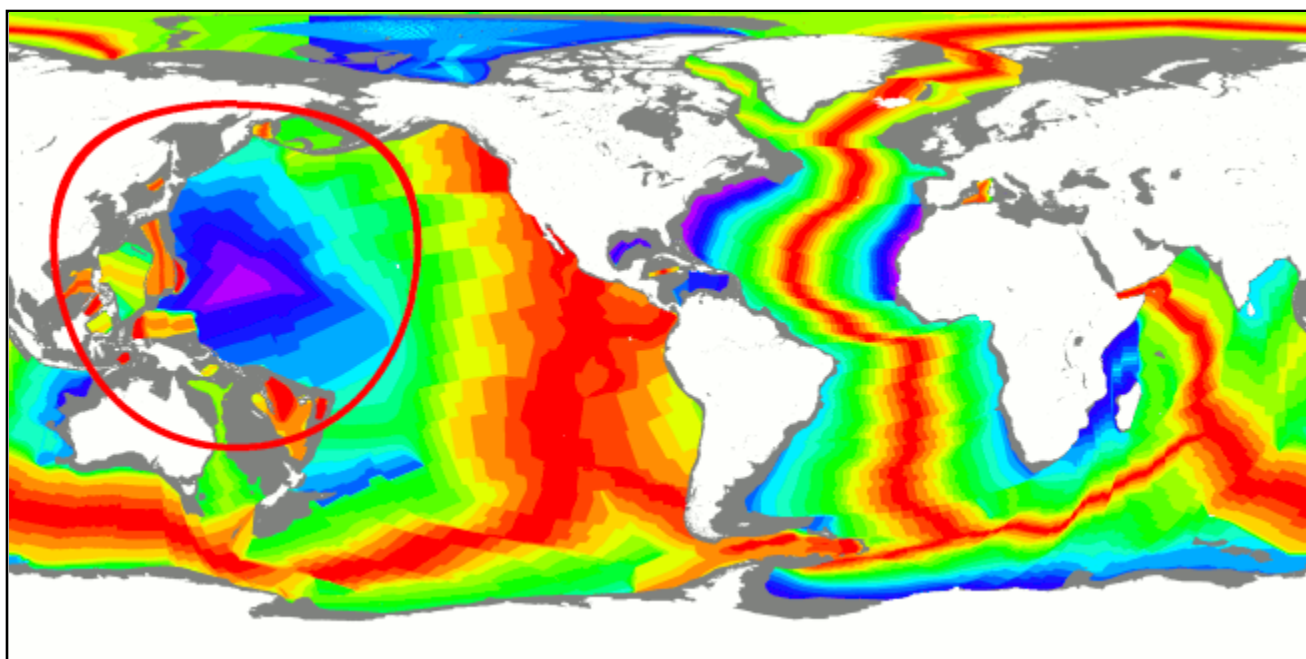
Earth, as we now know it, formed from the collision of two similarly sized planets, called PreEarth and TheOldMoon. These two, once comprised a double planet system. TheOldMoon orbited PreEarth, and they both orbited the Sun (just like the Earth and Moon today, except that TheOldMoon, with a radius some ninety percent that of PreEarth, was some thirty-five times larger than today's Moon). In the collision, the two planets, became one.

Like a bullet rips through the skin of an apple, leaving most of the skin unscathed, TheOldMoon crashed through the crust of PreEarth, taking most of its energy into the interior, while leaving the non-impacted crust relatively unscathed. Now, imagine that the masses of the apple and bullet are so large that the bullet cannot escape their combined gravity. Then you have the hypothesised situation. Of course, as PreEarth swallowed TheOldMoon, it greatly expanded in size. This expansion, caused the non-impacted crust to break into large pieces, called continents. These continents then expanded apart.

The Evidence:

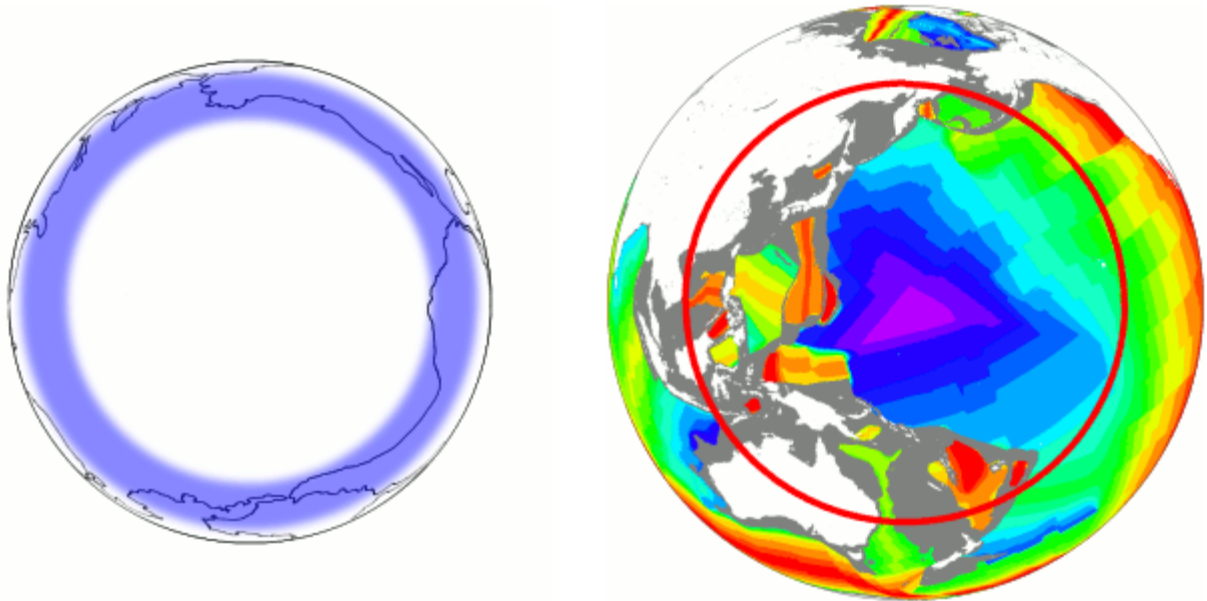
1) The hole in the north west Pacific where TheOldMoon entered.

TheOldMoon impacted PreEarth in what is now the north west Pacific. As the map of the age of the sea-floor, below, shows, the impact area is very different from all other regions of sea-floor. This difference is to be expected, as this area was the result of an impact, whereas, all other areas of ocean basin, including the southern and eastern Pacific, are the result of expansion. As expected, this region has no spreading ridges. The expansion and west to east spin of TheOldMoon, ripped America away from the edge of the impact zone and Europe/Africa/Asia from America, creating new sea-floor in between. This same spin dragged molten material from under the eastern edge of the continent of Asia, and even the edge of Asia itself, over the western impact area, covering about a third of the area.



The map, above, shows the hypothesised impact zone outlined in red. Australia can be seen toward the bottom of the impact zone. The Australian plate was dragged over the impact region by TheOldMoon's west to east spin.

The maps below show the impact zone viewed from space. On the left, it is viewed just after the impact, with little expansion, as yet (and showing the initial position of the ring of impact mountains). On the right, it is viewed after the expansion.



2) The impact mountains around the Pacific Ocean, i.e., the ring of fire.

The impact mountains must have initially formed a complete circle. This was broken up by the expansion and distorted by the spin, giving us the ring of fire as we know it today. Starting with the mountainous islands of the Philippines and Japan, the impact mountains then traverse Kamchatka, gap to Alaska, from where they stretch right to the bottom of South America before continuing as the Antarctic Peninsula and Transantarctic mountain ranges. Their exact whereabouts from there is unclear, as the region has been extensively rearranged by the impact, however, they probably continue from the Transantarctic mountains, to the Southern Alps of New Zealand, the (submerged) Colville and Kermadec ridges and then gap back to the Philippines, completing the circle. The map on the left, above, shows, in blue, the initial positions of the, above named, impact mountains on a reconstructed PreEarth.

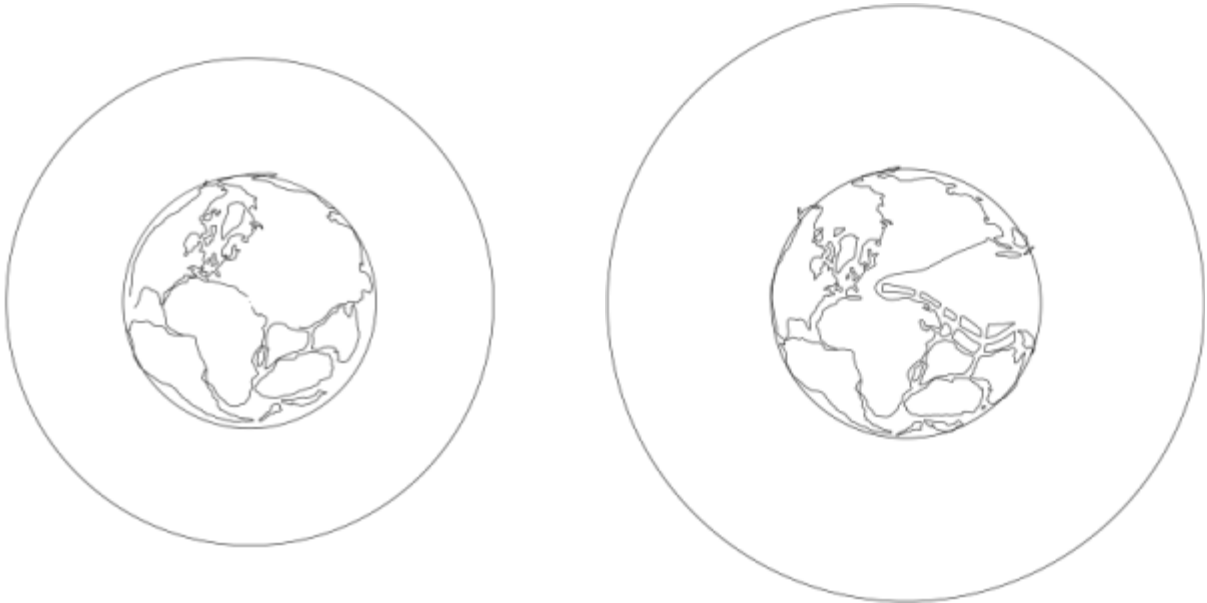
3) Western impact mountains ripped off continental block.

The west to east spin of TheOldMoon ripped sections of the impact mountains off the Asian continental block, which were then expanded hundreds of kilometres away, leaving seas in between. Japan and the Philippines are examples of this. Australia and New Zealand have also been dragged eastward with New Zealand having been ripped off the Australian block.

4) The impact caused continental drift.

The impact destroyed a circular region of the PreEarth's crust (a spherical cap) about half the size of the hemisphere it hit. The crust within this cap was smashed into the interior. Although the crust outside this cap remained relatively unscathed, the expansion below it, caused it to crack into huge pieces that we now call continents. Further expansion, expanded these continents thousands of kilometres apart, to the positions they now occupy. The movement of these continents is called continental drift.

Using an azimuthal equidistant projection, we can map PreEarth to a circular flat map. If we choose the origin of the projection to be the antipode of the centre of the impacted region, then we get the map on the left, below (imagine putting a small hole in the centre of the impact region and then stretching the planet's skin to a flat disc). The impacted region is mapped into the outer ring and the non-impacted region into the circular region within that ring. We will call the region enclosed by the inner circle, i.e., the non-impacted region, PreEarth-Pangaea. It is the crust in this region that we are particularly interested in.



5) The theory predicts a single circular continent with splits, i.e., Pangaea.

The expansion cracked PreEarth's non-impacted crust into large pieces that became today's continents. These massive pieces of crust largely retained their shape throughout the expansion, although their curvature changed considerably. Since these pieces of crust had previously comprised the region, PreEarth-Pangaea, it is clear that Earth's continents should be able to be shuffled about Earth's surface and be reassembled as an area resembling PreEarth-Pangaea. Of course, it will not be possible to recreate PreEarth-Pangaea, exactly, because of the continents change in curvature.

Alfred Wegener was the first to notice this and reassemble all of Earth's continents (although, many had previously noted that two, sometimes three, or four, continents appeared to have once been joined and had since moved apart). Wegener patched all of the continents into a single landmass, which he called Pangaea (Earth-Pangaea). He claimed that Pangaea existed for millions of years, until, for some unknown reason, it broke into smaller continents, which then drifted, by some unknown process, to their current positions.

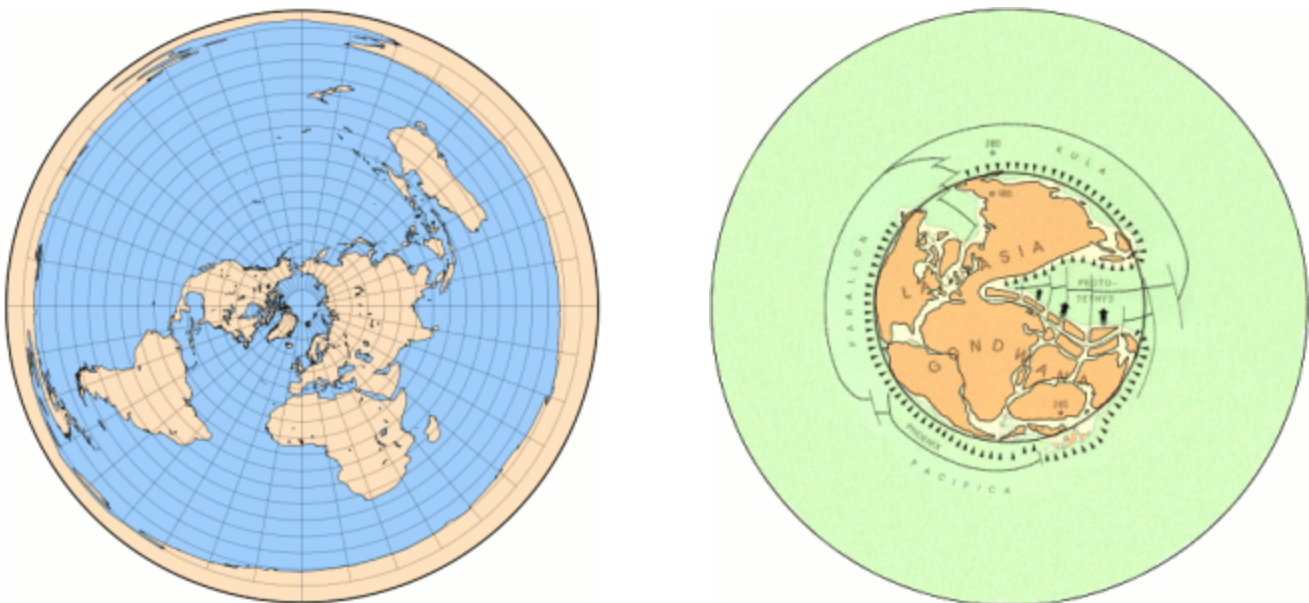
Above, on the right, is a map of the Earth showing Earth-Pangaea (the land area enclosed by the inner circle). The azimuthal equidistant projection has been used to create this map which is from the America Association of Petroleum Geologists, and is, reportedly, the most accurate available. For those who know this map, note that its creators trimmed (as uninteresting) a large area of ocean from it. I have extended the outermost ring to add this area of ocean and complete the map of the Earth (as imagined by geologists) when Pangaea existed.

If one took the crust from the PreEarth-Pangaea region and imposed Earth's curvature upon it, by say, placing it above the Earth and physically forcing it down until it lay on the Earth's surface, then the crust would necessarily split in one or two places and at least one of these splits would extend to the centre of the region. This is exactly what we see in Wegener's Pangaea (Earth-Pangaea). The

splits being the polar sea and the large triangular shaped Tethys Ocean, which extends right to the centre of the region.

Of course, Pangaea never existed as a continent. It was never surrounded by ocean and the Tethys Ocean and polar sea never existed at all. These are understandable fictions, forced upon scientists because they reassembled Earth's continents on Earth, rather than on PreEarth, from whence the continents actually originated. However, even though these are fictional, they are all fictions predicted by the hypothesis.

To give you a better feel for the map projection used above, here is the azimuthal equidistant projection of Earth, with origin being the north pole (i.e., the antipode of the south pole). The distortion at the south pole is maximal. The map on the right is the AAGP map of Pangaea (from above) with a few more features.



6) The theory predicts oceanic crust very different from continental crust.

Earth's continental crust is original PreEarth crust, whereas, oceanic crust is a mixture of material from both PreEarth and TheOldMoon. Thus, one would expect oceanic crust to be noticeably different from continental crust. This is, indeed the case. Continental crust is composed of granitic rock (65% silica and 2.7 g/cm³), whereas, oceanic crust is composed of basaltic rock (45% silica and heavier at 3.3 g/cm³). Continental crust is up to 4 billion years old, whereas, oceanic crust is less than 200 million years. Oceanic crust averages about 8 kms in thickness, whereas, continental crust averages about 40 kms, etc, etc.

So, here is a theory that explains the genesis of Earth's continental crust, why its chemical composition is so different to oceanic crust, why it dates much older and why they are of such different thicknesses. No current theory explains how continental crust came to be, let alone why it is so different from oceanic crust.

7) Warren Carey's evidence, is also evidence for this hypothesis.

Right till the end of his life, in 2002, the renowned Australian geologist S. Warren Carey insisted that the geological evidence clearly demonstrated that the Earth had expanded. Carey considered many explanations for this expansion, but never considered the possibility of a large impact (probably because he believed the splitting of Pangaea took place over millions of years). Over his career, Carey collected a large body of evidence for his "expanding Earth theory." Since, Mansfield's theory is an expanding Earth theory, most of Carey's evidence is also evidence for his theory.

8) Apparent sea-floor ages explained as geochemical gradient due to mixing.

Suppose, TheOldMoon was involved in a previous catastrophic collision, in which the entire silicate rock layer was exploded away from the planet. Then, the impact would have melted and scattered its silicate rock, causing it to lose most of its Argon 40 (Ar40) to space. As the rump iron core of TheOldMoon reconstituted its mantle by gathering these Ar40 depleted rocks in further collisions, even more argon would be lost and TheOldMoon's new mantle would have almost no Ar40, while PreEarth's mantle would still have its full complement. So, when TheOldMoon impacted PreEarth, we would expect to find argon gradients depending on the degree of mixing of their mantles. The more mixed the mantles, the more diluted the Ar40, and the younger the apparent age.

Thus, in the expansion of the oceans, we would expect that the oceanic crust of the continental margins would be mainly from PreEarth's mantle, as only partial mixing of the mantles would have occurred at this stage. Consequently, the continental margins would be richer in Ar40 and have a greater apparent age. As we proceed further from the continents the material forming the oceanic crust will have a progressively larger percentage of TheOldMoon's mantle mixed in, and thus, date progressively younger. Similarly, one expects the material that closed over the impact area, to be almost entirely PreEarth's mantle, and thus date oldest.

So, the argon 40 gradient used to date the sea-floor, can be interpreted as a geochemical gradient, one which can be explained by the mixing of materials with different initial argon concentrations. Anyway, if the Atlantic opened in a matter of hours, then clearly the accepted ages of the sea floor, are well off the mark.

9) The theory predicts Earth's core is rotating faster than the rest of the planet.

When the planets collided, obviously their outer layers impacted first. Thus, the outer layers sustained a large change in angular momentum as their spins clashed. However, this change was not transmitted, in full, to the core, as there was slippage at the core-mantle boundary, due to the formation of a liquid iron layer. So, in the first moments of the collision, the mantles would have been slowed relative to the cores. The fusion of the cores would not change this, and thus, the Earth acquired a core that rotated faster than the rest of the planet. This prediction of the theory, has been known to be true since 1996, when Richards and Song found that the solid core spins about 20 kms/yr further than the material above it (this was revised down to about 8 kms/yr in 2005). Only the collision hypothesis explains why the Earth's inner core spins faster than the rest of the planet. One suspects that this extra spin of the core is the source of Earth's relatively strong magnetic field.

10) The theory predicts Earth's magnetic field is rapidly decreasing.

Even though the inner core is spinning in the liquid of the outer core, friction will gradually slow it until it spins at the same rate as the mantle. If the extra spin of the core is really the source of Earth's magnetic field, then this would imply that the magnetic field is decaying. Apparently, this is the case. The Earth's magnetic field has been measured to be decaying at about five percent per century. Since this cannot be denied, the problem of the magnetic field decaying to zero, is largely ignored, or brushed off, with the claim that on becoming weak the field will reverse and recover its strength, just like it has many times before.

11) The theory predicts/explains magnetic reversals.

As the two metallic cores fused, their combined magnetic field must have been in a state of extreme flux. The planetary fusion probably took less than a day and many reversals of magnetic polarity must have been experienced within this period. These reversals were recorded in the basalt of the expanding sea floors, as distinctive striped patterns of magnetism. It is a fact, that this magnetic signature is mainly from the top 400 metres of the basalt (and exactly how the deeper rock lost its magnetic anomaly, has never been explained). For this 400 metre layer to have recorded the swiftly changing magnetic field, it must have cooled to below the Curie temperature, very rapidly. This rapid cooling was due to the new lava being immersed in the water of the oceans. This cooling, was not just a surface effect, as cracks and faults allowed the water to percolate to great depths.

12) The theory allows the force of gravity to have been smaller in the past.

There is a large amount of indirect evidence that the Earth's gravity is now greater than it once was. For example, pterosaurs, such as *Hatzegopteryx*, had wingspans of over thirteen metres and large, solidly constructed heads, making it a great puzzle as to how they flew, or even if they flew. Similarly, it is not known why the larger dinosaurs such as *Argentinosaurus*, did not collapse under their own weight. It is also unknown, how the gigantic bird, *Argentavis magnificens*, with a mass of seventy kilograms and a wingspan of seven metres, managed to fly, when an albatross, with a mass of only nine kilograms and a wingspan of three metres, finds it difficult to get off the ground. Of course, if gravity was once significantly less, then all this can be explained.

13) The Global Clay Layer.

The world has been covered in layer of very fine particles (less than two micrometres) called clay. Clays result when granite is ground into powder and weathered. When TheOldMoon struck PreEarth, billions of tonnes of continental crust, that is, granite, was blown into orbit. The finest particles precipitated from the atmosphere last, forming the clay layer. This explains the global distribution of clay and why there is generally a clay layer on, or close to, the surface.

14) The Ice Sheets.

The ice-caps of the ice age, contained a massive volume of water. As the ice-caps formed, sea-levels dropped by some 200 metres. The evaporation of such a quantity of water, would have required an immense amount of heat. In certain regions, temperatures needed to be sufficiently hot to supply the necessary evaporation, yet at the poles, they needed to be sufficiently cold to enable a buildup of ice. And, of course, this temperature differential had to be maintained in the face of masses of warm moist air being transported to the colder region. All currently accepted theories fail to provide a plausible mechanism by which this temperature differential can be maintained. The impact hypothesis, however, has such a mechanism, built in.

With large areas of the oceans being heated from below, huge volumes of water entered the atmosphere. Strong weather systems carried the warm humid air towards the polar regions, where cooler temperatures precipitated snow. In this way, large ice sheets were built up. While the ocean and atmosphere over the mid-oceanic ridges were hot, the polar continental regions remained cold, as the flow of heat from the mantle to the surface was much lower, than the flow of heat from the continental surfaces into space (as continental crust is a very good insulator of heat). Also, the immense quantities of dust blown into the upper atmosphere, by the impact, kept the whole planet cooler than it would have otherwise been.

15) Animations of the expansion plus drift can be produced.

Animations have been produced (see my websites) that trace the movement of the continents from the PreEarth-Pangaea region to today's arrangement. Each step of the animation preserves continental areas. This is strong evidence that one is on the right track.

16) Provides a new theory regarding the formation of the Moon.

Suppose, a catastrophic collision between TheOldMoon and a large object, blasted TheOldMoon's entire silicate rock layer into an extensive debris field, leaving its iron core as the largest remnant. Further collisions with the debris would lead to the rump iron core gathering a new mantle and cascading ever closer to PreEarth. The debris field beyond TheOldMoon's reach, would also accumulate, creating a new satellite of low density, poor in volatiles, and lacking an iron core, namely, the Moon as we know it today. Among other things, this scenario would explain why the oxygen-17/oxygen-18 ratio of the lunar samples is indistinguishable from the terrestrial ratio. However, it would not explain the age of the lunar rocks.

17) No evolution in India while a separate continent.

Amber deposits, in India, have yielded thousands of fossil arthropods (insects, spiders, etc) from a period (52 million years ago) when India had supposedly been a separate continent for a hundred million years, yet none of these arthropods were unique to India. All have been found in other parts of the world. So, why hasn't India's long isolation led to many new species, in the same way, that the isolation of the Galapagos Islands led to many new species?

India supposedly became an island 150 million years ago and remained that way until it collided with Asia, some 35 million years ago. Arthropods started appearing about 110 million years ago (i.e., after India had become an island). So, how is it, that all of these arthropods found in isolated India, have evolved almost identical copies in places thousands of kilometres away? These difficulties for plate-tectonics are easily explained by the collision theory, as India was never an island separated from the rest of the world.

18) It explains the genesis of the Gamburtsev mountains.

The Gamburtsev mountains are located in the centre of the Antarctic continent. They extend for more than 1,200 kilometres and rise to about 3,400 metres. Although, similar in size to the European Alps, they are totally hidden below hundreds of metres of ice and snow. Their genesis is shrouded in mystery, as there is absolutely no evidence of plate collision in central Antarctica, and the shape of the Antarctic plate has barely changed over hundreds of millions of years. Thus, the mountains must be hundreds of millions of years old. However, the mountains appear young, with sharply chiselled river valleys, rather than the rounded features of an ancient eroded landscape. These difficulties, for plate-tectonics, are easily explained by the collision theory. The Gamburtsev mountains are simply an example of far-field compression, resulting from the impact.

19) It explains why the severity of volcanism has decreased.

In the past, huge outpourings of lava have created enormous igneous provinces. The most massive being the Ontong-Java Plateau in which 100 million km³ of lava spilled onto the Earth's surface. Others, include the area around Iceland (6.6 million km³) the Siberian Traps (4 million km³) an area in the Caribbean (4 million km³) the Karoo-Ferrar area (2.5 million km³) and the Parana-Etendeka traps (2.3 million km³). The largest continental outpouring of lava (in terms of area) is the

Central Atlantic Magmatic Province, which covers about 11 million km². Volcanic activity on this scale no longer occurs. Current theories have problems explaining why these enormous quantities of lava should pour from the Earth in intense spurts, usually lasting less than a millions years, then stop, only to start much later at some distant location. It seems more likely that these igneous provinces all formed at around the same time. Namely, the time of the impact.

20) The theory provides a decent power source for continental drift.

The power source, that moves continents thousands of kilometres and raises the Himalayas to great heights, is a very diffuse heat, coming from radioactive decay and the cooling of the Earth. In fact, a segment of the Earth stretching 6371 kilometres from a point at the centre, to a one metre square at the surface, delivers only 0.08 watts of heat. This is less than one ten thousandth the power of sunlight on a bright day. It is true, that if you accumulate this heat for a few hundred million years, it adds up to a lot of energy. But clearly, you would accumulate much more energy, if you let sunshine, shine for a few hundred million years, yet sunshine has never built mountains, or raised the Himalayas. To use this, widely distributed, extremely dilute power, you have to first, stop it from escaping, then, concentrate it where the work will be done. We are told that the Earth and mantle currents can do this, but some doubt it.

A brief history of the ideas.

Many of the ideas above were first presented in a public lecture, on November 2, 2008, at the Alexandra Park Raceway, Auckland, New Zealand. They were subsequently written up and published, on April 20, 2010, in the form of a 26 page paper. The preprint server arxiv.org refused to distribute this paper (the task of releasing preprints to the scientific community should be taken from those at arxiv.org and given to some responsible party). Consequently, toward the end of May, the website www.preearth.net was established to publicise the paper.

This article was completed on July 29, 2010 and revised on March 19, 2011.

About Dr. Kevin Mansfield.

Dr. Kevin Mansfield has a BSc(Hons) [mathematics and chemistry] from the University of Auckland and a PhD [mathematics] from the University of New South Wales (Sydney, Australia). His mathematical research involves the study of certain algebraic structures with normed topologies (these being of interest as a framework, in which both relativity and quantum theory, may eventually find a compatible home).

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