

# Fermionic Condensation Explains the Formation of Subcontinents and Small Volcanic Islands around Them - General Geophysical Rules

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**Abstract** Understanding black hole eruptions, how they are the cradle of stars and planets is essential to go forward in understanding the Fermionic condensation of superfast (relativistic) neutrons in the just-born mantle of planets from nearby nascent stars in these black hole eruptions, and how these Fermionic condensates (in the black hole eruption in which the Earth, the Sun and the rest of our solar system was formed i.e. the “Big Bang”) have for instance produced Italy, Great Britain, Japan and many other areas of low natural radioactivity, nearby depressions from the mantle rebound post impact, and this explains as well for instance the surprisingly perfect triangular organization of the Olympus Mons and of the volcanoes nearby on Mars. Other strange phenomena, for instance the periodicity of volcanism of the Stromboli and of the Sakurajima can also be understood thanks to that.

**Keywords:** *geophysics, Bose-Einstein condensation, Fermionic condensation, continental set-up, primitive Earth, tectonics, volcanism*

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## 1. Introduction

Travelling around the narrow valleys created by erosion in the south of the Mercantour shows the many vertical channels of grey lava petrified in the middle of yellower rocks, with a degree of bending that shows the lateral pressure from the deep underground. Some very impressive levels of conservation of the original matter, actinid-rich, are seen across these “channels” on the very top of some of these mountains (for instance south of Roya, near St-Etienne de Tinée, where tiny amounts of uranium were found in the 1950s). These channels do not exhibit the typicality of eruptive chimneys. Fermionic condensation of relativistic neutrons in the explanation.

The black hole eruption origin of all stars, planets, moons has to be understood before going further in this paper (read [1] in particular for the definitive explanation of the formation of stars and planets, see [2] for some more description of black hole eruptions). The Big Bang solely is our ex-post perception of the black hole eruption in which the Earth, the Sun and our solar system were made. Black holes are compressors of matter, in them actinides are produced thanks to that pressure, sometimes a neutron, inside, manages to very slowly escape the pressure, triggering a chain reaction that is the energy of the eruption. The erupted objects satellize around the black hole forming a “crown”-like ring of stars, the Pleiads are an example, the

event that led to the ring of star figure used on a number of flags and by the Catholic Church for the Virgin Mary another one (the precise case of the “ring of stars above the head of the Virgin Mary” is discussed precisely in [1]).

As the objects that escape, made from actinides and other super-heavy atoms, take with them (except if they are too small) a tiny part of the black hole, they immediately swing back around it, closing down to form spheres, the implosion producing a chain reaction, which (if the object is heavy enough) is sustained leading to a star (if not sustained, a planet ; but there is always a fission and fusion component in the tremendous implosion, the light elements from fusion accumulate in the outer layers, gas giants showing the densest non-critical configurations).

Fermionic condensation was discussed in [3] and happens here with the combination of underground pressures and radioactive decay from the actinides underground producing Bose-Einstein condensation of the relativistic neutrons that enter Fermionic condensation through their dive-in underground, until pressure (from their own entrant energy) disappears. The basics on relativistic neutrons were presented in [1].

To better understand how relativistic neutrons can carve their way through fertile actinides such as U238 and fission several of them straightforward, reading [4] is extremely useful.

Lastly, it is essential to understand that in the erupted products of a black hole which are the basic bricks of stars and planets, the content obviously incorporates vast

amounts of superheavy actinides, much heavier than uranium, many simply decay very rapidly to less exotic weights, but the fission of such superheavy atoms can still produce, as fission products, atoms that due to their weight remain fissile (when the immediately erupted atoms formed in the black hole have an atomic mass above 500 u, in spite of half-lives expected to be of less than a minute, this in the case described below is enough to achieve fission products themselves fissile because the nature of the phenomenon presented in this article is that it happens immediately after the black hole eruption, in the minutes after).

## 2. The Way Relativistic Neutrons and Fermionic Condensation Lead to the Profiling of Narrow Subcontinents

In the immediacy of the aftermath of the black hole eruption, the criticities of the objects heavy enough to become stars have happened just near the subcritical objects (the planets), that are bound to receive some released neutrons from the criticities, the criticities will create very limited amounts of relativistic neutrons (in comparison with supernovas or neutron star collisions) but as the events happen just near the planets the planets are bound to receive some relativistic neutrons from these fair events; the planets coldening slowly and having accumulates of alpha particles and beta particles staggering near the surface from the tremendous amounts of actinides they carry, the relativistic neutrons, as they descend progressively, condensate.

Secondly, due to the relative position of planets and critical objects (stars being born) during the black hole eruption in the rotating crown, there is a limited number of points from which relativistic neutrons can descend onto the surface of the born planets.

Since the closure event (the implosion that concludes set-up of each sphere, from the swabs of the expelled eruptate reaching back around the tiny carried piece of the black hole - when implosion power is low because total mass limited, a ridge remains, Iapetus is a good example) always happens on the side that faces the black hole from which the object was expelled (be it subcritical - hence formation of the giant basalt plateau, e.g. the Pacific ocean for the Earth - or critical, hence beginning of the natural nuclear reactor that is a star) this area where the closure event happened cannot receive such "lightning bolts" of condensated relativistic neutrons from nearby criticities. Likewise the very opposite part that faces opposite of the mother black hole cannot, as well, receive bolts of condensated relativistic neutrons from the events in the rotating crown (but parts near that very opposite can).

Due to the gravitational attraction of the mother black hole, relativistic neutrons from the birth of stars tend to polarize, nevertheless in the direction of the areas of the planet that face the mother black hole i.e. along the sides of the giant primitive oceans - there is a "drag effect" from the mother black hole on the relativistic neutrons. This is why most of the subcontinents created through the way described below are found close to the giant primitive ocean of each planet. Due to the influence of the mother

black hole, *in these locations* there is a supplementary tension on the relativistic neutrons that creates more elongated patterns and less scattering of the neutrons after decondensation at the end of their path. In other locations, however, the movements of the relativistic neutrons are easier to discern ex-post allowing for a clarification of the entire process (On Earth the Kerguelen-McDonald plateau is an intermediate, Italy and the Great Britain & Ireland area the clearest locations).

The initial fission events on the upper crust with relativistic neutrons eliminate almost all of the uranium and other fertile actinides (in the natural post-black hole eruption ratio) in the impact area, where instead a magma of fission products of a symmetrical nature is layered down under a big valley (from the passing of the relativistic neutrons) quickly filled by lighter ternary fission products from other areas of the globe (sedimentation of the cloud from the implosion event that formed the giant primitive ocean). This explains for instance the extremely low natural radioactivity of Northern Italy in the Pô valley and of south-eastern England, in particular, where expelled matter from the implosion cloud fell down in huge amounts (whereas the other events happened too close from the implosion area and the cloud had still too much energy to fall down, traveled much farther away before cool-down).

The impact areas commonly show the progressive Fermionic condensation with the very beginning of the advance of the relativistic neutrons, brought progressively together by the compression of alpha and beta - particles together in the lower levels of the atmosphere and in the upper layers of the crust, so several "valleys" of entry converge into a single axis, where fission levels are maximal and remaining levels of actinides minimized - this is particularly obvious with Hokkaido, with the North Island of New Zealand but also very clear in Northern Italy and in all the other cases even though later subduction erased partially the radial pattern.

The relativistic neutrons rapidly descend into the crust, whereas the fission products from the initial events are pushed on the two sides of the "rail", condensated thanks to the copresence of alpha and beta- particles [3] in magma pockets that are nevertheless lighter than the surrounding actinides (which escaped the passing of the relativistic neutrons), these magma pockets hence rise progressively above the actinides. The initial fission products that condensate to form these magma pockets include of course many actinides (as explained at the end of the introduction).

Good examples of these areas are Corsica, Ireland and the group of soils of quite high natural radioactivity of the regions of Primorje-Gorski Kotar, Karlovac and Lika-Senj in Croatia (see [5]) where the reemerging pocket of fission products is rising into the continent.

On the other side of the United Kingdom the pocket symmetrical to Ireland has obviously staggered under the seabed, sublevating it and explaining the shallowness of that entire sea, as well as the production of hydrocarbons due to the direct pressure of that rising pocket of thick products under the seabed producing fusion of sediments, esp. organic residues (ternary fission products - see [1]) from the initial implosion cloud. The absence of deep origins and so lack of possibility for ternary fission

product merger (due to lack of pressures) explains the small size of the hydrocarbons resources in these areas.

As relativistic neutrons advance deeper and slow down they progressively lose ability to fission fertile actinides, the chain reactions in their trail are less sustained, less fission products pushed on the sides and even though there still is a very good availability of alpha particles, the reduction in fission levels means less beta- particles are available, reducing the intensity of the Fermionic condensation of fission products from earlier stages of the fission, leading to the emergence of smaller and more scattered islets that are nevertheless very radioactive (as they also come from deeper parts of the mantle, rich in actinides of a heavier weight), making these small resulting islets very volcanic when they surface. Fission products from each “stage of fission” (to modelize the process in series of steps) find, next to them (in the central channel) less beta- particles to condensate [3] because fission levels in that central channel have slowed down together with neutron speeds (since of course relativistic neutrons can fission much more isotopes than thermal neutrons, beyond the fertile atoms of the decay chains of Th232 and U238 (and obviously their *parents* of much heavier weights), relativistic neutrons also can fission atoms of lower weights including heavy non-radioactive atoms such as lead and tungsten [1]<sup>1</sup>). At the beginning, with just-liberated atoms of much heavier weights than uranium (and very short half lives, but this does not matter in the small timeframe of the impacts of relativistic neutrons just post-black hole eruption) the expected instability of these atoms obviously means, as well, that the energy cost for the neutrons to break them (as described in [4] Figure 1) is obviously extremely limited, allowing for *fission chains* (as opposed to “chain reaction”) that explain the exceptional length of the phenomena described in this article.

For Italy the islets are the Archipelago Toscano, the Croatian islands south of Split, the Aeolian Islands, and in general this explains the complexity of the seabed of the Tyrrhenian Sea. For the British Islands Arran, Islay, Jura, Mull, Coll, Rùm... etc. For New Zealand Chatham Island and the small underground rises in Tasman Sea (for instance around -42,4 / 163,25) as well as south of Chatham Island (up to -49,78 / -176,59) are also such consequences of relativistic neutrons.

As concerns Japan and Korea, two streams (“rails”) of relativistic neutrons have hit in the South, one condensating northward to form Korea, another condensating north-eastward to form the southern part of Japan, as a smaller group hit in the Penjina region north of Kamchatka, descending and meeting the second group in the area of Nagano where “snooker-like” dynamics are involved, with the energy of both groups of relativistic neutrons converging in the axis given by the neutrons coming from the North, leading to termination of the movement in the direction of the Marianna islands. For Korea the cluster of bulges including Ulleung island and the underwater rises north of that island are the main clusters of fission products - on the Chinese side the seabed is shallow and it is expected the clusters are staggered under it, as

happened as well east of Great Britain (where limited hydrocarbons deposits have also been thoroughly extracted - these deposits come from marginal fusion under pressure of ternary fission products pushed outside by the masses of the heavier condensated materials). The Liancourt rocks come, as well, from the cluster of neutrons that formed southern Japan. The cluster that formed Korea scattered to the North and the resulting magma at the point of slowdown explains the peculiarity of Mount Paektu in an area with otherwise very limited subduction.

In Kamchatka one very small group of relativistic neutrons after the impact escaped and descended southward on a separate trail of Fermionic condensation, explaining the small peninsula south-east of Apuka and the continued underground rise south of that peninsula underwater, the rest of the neutrons went to the South-West, forming the Kamchatka peninsula of low natural radioactivity.

A separate small group of neutrons explains Sakhalin Island, hitting to the North (explaining the flatness of the northern part of Sakhalin), losing power progressively (hence the more mountainous nature of the Southern part of Sakhalin) before progressive scattering except for the part that merged in the area of Hokkaido with the group of neutrons coming from Kamchatka.

In a study on Italian magmatism it is noted by the authors that “The exotic component has extremely unradiogenic Pb, and low alkali contents relative to the voluminous high-potassium magmas of central-southern Italy, and is interpreted to be derived from recycled lower continental crust material that had lost U in an ancient event” [6]. This is another confirmation.

### 3. Echo processes

The first “echo process” is the partial “re-ejection” of the relativistic neutrons, as due to the pressure underground the end of their path is upward together with limited regain of speed, in addition to the significant contribution of the delayed neutrons liberated by the fission products of extremely short half-lives that were carried into the Fermionic condensation stream with the relativistic neutrons that produced them. This allows more fission of the actinides later on the path of the relativistic neutrons, and production of somehow bigger packages of fission products (yet smaller than the initial ejectives of course) after the “valley of faintness” that also, thanks to the more abundant beta minus particles from these more abundant fission processes, can undergo Fermionic condensation more significantly. The bulge of Sicily and the high natural radioactivity in south Albania are explained by this phenomenon. Likewise, in Kamchatka, the reduction in light-density rising materials (in the Severo-Kourilsk) is followed by a reacceleration as the neutrons reach Hokkaido (with a part of the delayed neutrons kicked out to the South-East). In Sakhalin too, the neutrons have descended progressively, re-emerge north of Hokkaido, meeting the former group, the two groups undergoing another Fermionic condensation and descending to form the northern part of Honshu island and its plains that show the entry of additional neutrons (i.e.

<sup>1</sup> Osmium seems to be the heaviest atom relativistic neutrons cannot fission.

the combination of the “Sakhalin” neutrons and of a part of the “Kamchatka” neutrons made possible an increase in fission rates leading to the formation of the North Honshu plains).

In the last part of their movement the neutrons have reached thermal speeds, the fertile actinides do not undergo fission anymore ; Calabrian granites alternate with the valleys that have been created by these last processes of thermal nuclear fission ; in the Kerguelen-McDonald plateau the bulges of the southern part, from magmatism just temporarily activated by the slowed down neutrons, alternate with descending underwater valleys.

Another echo process is related to the slow natural feedback of the formation process, as the deep mantle progressively gives back the impact energy, with for instance the Italian subcontinent meeting the northern continent and slowly forming the Alps. The direction of the echo process is the opposite of the direction of the relativistic neutrons that formed each subcontinent. Likewise as concerns Kamchatka the feedback to the North explains development of a progressive mountainousness in the northern part of the isthmus, with nevertheless clear valleys (up to Slautnoe) around as the soils pressing in the direction of the North-East have undergone an intense nuclear fission event that reduced soil density strongly; the axis of pressure is seen with the main mountainous range delineating a peakline that starts inbetween Bukhti Natalii and Bukhti Anastasii, through the Ledyakaya to Slautnoe ; this is opposed to the nature of the soils of North Korea, solely ploughed by decelerating neutrons coming from the South, hence quasi-absence of large valleys, an area dominated by a thick mountainous pattern. The event that formed the Sakhalin island started near the Russian mainland with rebound forces producing a chain of mountains between Dzhana and Kekra.

The scattering of the neutrons, at the very end, as they

decondensate, leads sometimes to neutron impacts on packs of fission products nearby, hence contributing to volcanism activation in these clusters, this explains typically the volcanism in the Aeolian Islands and of the Etna. Small underwater bulges scattered north-west of Scotland suggest the possibility of nascent volcanism under the seabed. The volcanism to the south of Honshu in the axis of slowdown of the aggregated neutrons is also accelerating progressively (on the island of Nishinoshima). This volcanism combines with the later processes of subduction that have led sometimes to reactivation under the low-radioactivity flats created in the areas of maximal fission (for instance the very active volcanoes of the North Island in New Zealand, and similarly in Hokkaido). Some neutrons (in this particular case where two Fermionic condensates of relativistic neutrons collide) have escaped the snooker-like dynamics as they crossed the line of the center of Honshu, descended to the Southern part of the Japanese archipelago and activated the Sakurajima area to give it a volcanic dynamism intermediate in nature between the Etna and the Stromboli. These “activations” differ from the random magma processes related to subduction and to later impacts of relativistic neutrons from far away supernovas, neutron star collisions etc., they are lateral (horizontal, not vertical) and hence also allow formation of water channels from the nearby sea/ocean into the magma pockets because of the laterality of these peculiar neutron impacts, explaining the persistence of a *periodicity* of the volcanism on the Stromboli and on the Sakurajima in particular. The permanent lateral entry of water allowed by the channel leftover by the side neutron impacts of that primitive period fuels a permanent subcritical reactor which itself pumps in more water (through that leftover channel) with each tiny volcanic eruption (this can be compared in an allegorical way with [7]).

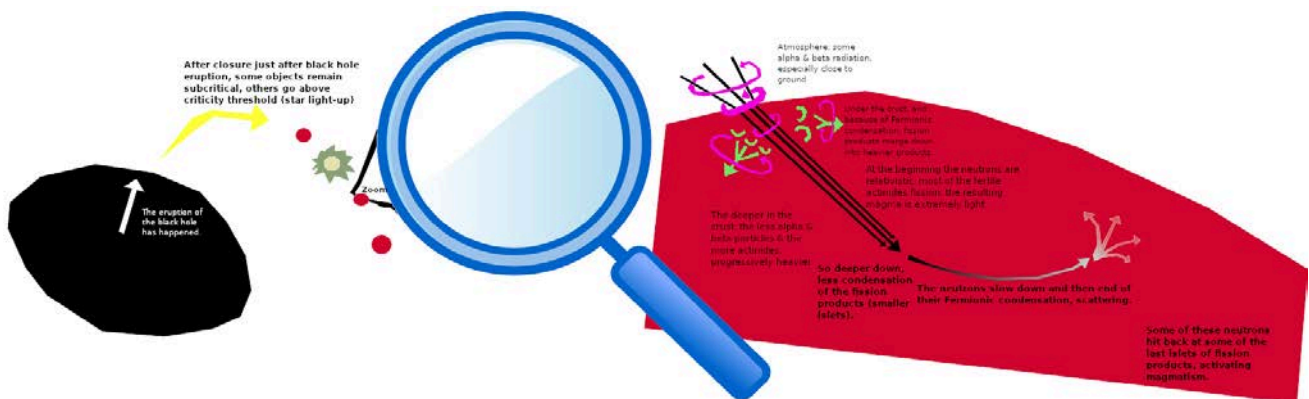


Figure 1. The processes are only partly figured to foster visual clarity

There always is a small rise from the rebound forces behind the area of impact. The small chain north of Palma de Mallorca shows an event of Fermionic condensation that formed the valley of the Ebre, and decondensated in the Navarra area, this event crossed into the magma leftover by another event coming from the North-East and descending to the South-West, expanding that magma significantly (the lateral “slushing” of that magma is particularly obvious in the rectangle around Lodosa, Logrono and Haro) and also stomping on some of the neutrons of the first Fermionic condensate, breaking it into

several smaller condensates that each took a different path, the combination of both streams formed much of what is today known as Spain except for the Castilla y Leon meseta that shows the crust in its virgin shape (and is the most naturally radioactive area in the country) ; the energy of the echo from the second event forms the Pyrénées chain of mountains. In the first of these two events, the swinging of the fission products from relativistic neutrons described precisely in [4] (Figure 1, “kick-out” effect) leads to their Fermionic condensation directing them behind the area of impact, with those fission products



from the inner sides of the first impact area merging back directly behind impact area, thus forming the three main islands of the Balears in their actual structure. Another such impact happened south of what is today France, to form the Camargue flat, aiming to the North, the rebound formed the Alpilles and part of the fission products of the initial event merged behind which is why, as for the Balears three main subparts of the delta are visible, one near Le Grau du Roi, the central one near Stes Maries de la Mer and the last one near Port-Saint-Louis-du-Rhône. Then the next clusters of fission products have condensed on both sides of that northern axis of rise (with a progressive descent of the neutron beam that makes its effects less evident between Montélimar and Valence, before later resurfacing and final scattering) to form the hot springs of Gréoux-les-Bains and of St-Clément (west of Nîmes, north of Montpellier), the small, semi-isolated bulge south of Privas (between Mirabel, Rochemaure, St-Vincent de Barrès, with an extinct volcano standing out (“mountain of Andance”), St-Lager-Bressac, Alissas, Privas and Darbres), the isolated Ventoux volcano and the later rise of the Vercors plateau; lastly as slowing down neutrons of this beam scattered this explains the particular angle of the Giers valley between Lyon and St-Etienne inbetween areas of very high natural radioactivity (a peak on the Pilat of circa 0,6 uSv/h was described in [8]); pull effect from rebound forces opened the rifts filled with water now known as the Dombes.

#### 4. On Mars

As in the cases above, with the giant primitive ocean (from Amazonis Planitia to Elysium Planitia) siding in front of our mother black hole, impacts of relativistic neutrons are more likely around it ; at impact where they have clustered the moltening is particularly intense ; the moltened magma resurfaces vertically, hence formation of a super-shield volcano. Pockets of fission products laterally ejected also rise vertically, producing smaller shield volcanoes.

The purity of Mars allows to see the perfection of the lateral spreading of the fission products clusters, symmetrically.

The cluster of relativistic neutrons hitting between Lycus Sulci and Olympus Rupes, heading South-East, produced with the area of most significant fission levels near impact area a vertical liberation of that molten-down material explaining the wide shield structure of the Olympus Mons; then as neutrons descended further Pavonis Mons and the two volcanoes formed by the condensation of fission products on each side (Arsia Mons and Ascraeus Mons), with the neutrons eventually ending up around Syria Planum. The echo forces are obvious, Lycus Sulci and the mountains behind Acheron Fossae show the post-rebound rise, Noctis Labyrinthus shows the area of withdrawal and collapse, the trenches of Gordii Dorsum and the Aganippe Fossae also show the “rebound” effect.

For the other case on the other side of Mars there is a supplementary level of discussion needed. The south-west of Phlegra Montes show impact area of a typical cluster of relativistic neutrons and their continued Fermionic condensation as they penetrated into the mantle, causing a

big meltdown that led to the formation of the Elysium Mons, well surrounded by Hecatus Tholus and Albor Tholus ; the neutrons delved deeper, and rose back later to form (with fission products rising vertically) Tyrrhenus Mons, after which the drenching (around Dao Vallis and Harmakhis Vallis) demonstrates that the thermalized neutrons ended up melting down an area that became, after their impact, the basaltic Hellas Planitia. The echo process (deep mantle progressively giving back energy of relativistic neutron impact) led to the formation of the Phlegra Montes. Nevertheless the structure of Hellas Planitia requires more discussion.

#### 5. Why Australia is symmetrical to the Black Sea - A discussion on Mars' Hellas Planitia

Just after the black hole eruption that gave birth to Earth, the Sun and nearby planets and satellites including the Moon, during the closure event in which the exterior parts of each “patch” of extremely heavy transuranics (that erupted from the mother black hole together with a small piece of that mother black hole) swung around that small piece of the mother black hole to explosively meet in a giant thermonuclear implosion event forming the giant primitive ocean (with a ridge remaining when the event is very unpowerful, or with the satellization of a ring of matter around the planet when on the opposite the event is very powerful, just not powerful enough to light up the piece of matter as star because the total mass of the piece was just below what is needed for a critical state), the thermonuclear event produced, on its side, in the mantle, because of the energy of the blast, a pressure effect on inner layers near that blast (but not undergoing fission) that pushed them outwards, in the still very ductile, very hot mantle of the first instants of the life of the Earth.

This is the explanation for the high natural radioactivity and wealth in heavy metals found on Australia. Bose-Einstein and limited levels of Fermionic condensation, because of the highly radioactive nature of the early mantle, explains the gathering of the excited materials in a single pool, with some of the Bose-Einstein condensation, near the surface of the mantle, gathering matter on the edges of the rise to carve conical shapes as a result of the progressive coldening of that matter and of the escape of the alpha and beta - particles, that can find a short way to direct encounter, hence progressively releasing matter behind.

As there is this outward pressure and rise producing (on Earth) Australia, the gravitons [1] that are part of the matter of the Australian “rise” call for a loss of antigravitons (i.e. small instantaneous eruption of the core black hole due to pull effect outside of it, in the direction of Australia) immediately compensated through “vacuum call” effect in the symmetrically opposed side of that core black hole, identically, i.e. what is taken from the black hole by the outward pressure, and which for balance required loss of some matter by the black hole in that direction, is immediately compensated by aspiration in the opposite direction inside the black hole. This leads to the exact frame that was “pushed out” by the thermonuclear

explosion (to form Australia), to reappear in negative form diametrically opposite, in the west of Eurasia. Tasmania corresponds to the Bosphorus sea, Odessa to the area north of Brisbane, Darwin to the area near Mariupol, etc. There is a perfect transfer of the shape because of the general fluidity of the mantle in that early moment in the life of the planet.

Similar phenomena can be seen on other planets, the smaller sizes nevertheless mean less movement in the immediate aftermath of the black hole eruption (vis-à-vis the Earth) and the conclusions are less obvious to definitively draw. On Mars the Tempe Terra is the clear equivalent of Australia but the “vacuum call” seems to have been divided in two, between Argyre Planitia and Hellas Planitia. The “star pattern” of Argyre Planitia is an obvious result of internal suck-in but Hellas Planitia seems as well to have been formed due to the same vacuum-call, before receiving the slowed-down neutrons from the above-mentioned condensed beam that caused bubbling up in the center of that basin. It is also *possible* (but not obvious) that, to some degree, Arabia Terra and the north of Terra Sabaea were also sublevated in the way Tempe Terra was ; in that case both Argyre Planitia and Hellas Planitia would have received a shared contribution of the two “vacuum calls”. Nevertheless, the fact that Hellas Planitia was sucked in before the neutrons from the slowed-down beam came (there is no debate on this) explain the “cage-like” pattern with bubble-up from the fission with slow neutrons inside and obviousness of the later withdrawal forces with the Peneus Palus, the Hellas Basin and its record -8180 meters, and the particular sharpness of Dao and Harmakhis Vallis.

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