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Forced basaltic effusions in the Moon – Earth system as a response to slowing down rotations of its bodies

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Most powerful basaltic outpourings on planetary surfaces are known at Venus what happened about a half billion years ago if an impact dating is correct. Most probably this event is correlated with a sharp slowing down of rotation rate of Venus' solid body sharing its angular momentum with rapidly growing massive atmosphere. Somewhat similar occurred at the Earth-Moon system. Loosing due to slowing down rotation of its bodies angular momentum was kept constant by the double system by its increasing dimensions (increasing radius of rotation of the system around its center) or simply by removing Moon. But in limits of each body of the double system rather significant loss of rotating speed (in Paleozoic the length of day- LOD – at Earth was shorter about 2 hours or so) was compensated by periodical effusions of dense basalts on to crustal levels. This planetary wide process has started very earlier. Archean green-schist belts with thick sequences of komatiites (magnesian on high standing continents -Africa, and ferruginous on low lying ones – Australia) are widespread. The Moon basaltic magmatism $\sim$ 4.2-3.0 (2.5) mlrd years old was less feldspathic (means denser) in lowlands and more feldspathic –KREEP (means lighter) on highlands. The Moon, much less massive than Earth, exhausted its possibilities to produce significant volumes of basalts and send them up much earlier than massive Earth. Its igneous activity most probably stopped long ago but some indications of outgassing in craters and mare contacts still exist. Much more energetic Earth continues periodically send basalts to its surface. Some scientists believe that process of "oceanization" of the Earth's crust increases. In any case, in Paleozoic, Mezozoic and Cenozoic large trap fields were formed on continents, vast oceanic floors were covered with tholeiites and some long-living volcanoes (and some segments of the East-Pacific underwater ridge) spill lavas even today. At the same time Earth contin-

ues to slow down with some interruptions its rotation. One more parallel between the Moon's and Earth's basaltic magmatism should be mentioned. Both bodies changed chemistry of their basalts with time (the Moon earlier and Earth later). At Moon and Earth the earlier magmatism was more magnesian, and the later one more ferruginous [Bogatikov & Scharkov, 2006]. It means that with time effusing masses became denser what helped more effectively to fulfill task of keeping angular momentum at later stages when melting basalts in cooling mantle is more restricted. In lunar geology and petrology one of the first importance has to be applied to understanding of petrology and chemistry of the South Pole-Aitken basin. Why it is relatively poor in Fe? Magnesian silicates prevail in basins of far highland hemisphere of the satellite? This deepest hollow on the lunar surface certainly has very characteristic peculiarities of its composition that cannot be adequately resolved only by remote sensing. Thus, a lander mission with moving scientific platform will be highly appreciated.