

## **Circumstantial Evidence of Possible Hot Spot Activity Outside Rhodes, Eastern Mediterranean Sea.**

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### **Abstract:**

Mantle hotspots appear to announce lingering diapiric activity at lithospheric triple junctions which results in the breaking of continents, the motion of plates and the formation of new oceans. They are long-lived phenomena, with average durations extending to 100 Ma (SEARS 2004). Africa is a continent on the eve of its dispersal. Major hotspots are hosted by Africa and many African continental fragments have accreted onto Europe during the formation of the Tethys oceans. The eastern half of this continent is presently in the break-up stage (East African Rift, Afar triple junction and the opening of Red Sea). The Red Sea event was initiated in early Miocene. Today at the height of the Gulf of Aqaba a triple junction has been formed, its eastern branch continuing as the Dead Sea fault. This fault joins to the north with the EAF fault and the Bilitis-Zagros suture zone. It is a consensus in the literature that the western branch of the Y (Suez branch) dies-out shortly upon entering the Mediterranean Sea. However, accumulating circumstantial evidence indicates that this may not be the case. Manifestation of Excess Mass (EM) and Excess Mass Stress (EMS) has been interpreted by TASSO (1998) as mantle upwelling and diapism in the northeastern Aegean, based on geophysical data. Processing of remote sensing data by our group, indicates a thermal anomaly just outside the island of Rhodes of geometry very similar to that of the thermal anomalies present in the Red Sea. Continuation of the Suez branch up into the northeastern Aegean agrees also with the estimated splitting dates of the Aegean region given by DERMITZAKIS (1990) and ANASTASAKIS and DERMITZAKIS (1990) and may explain the Rhodes thermal anomaly, as well as, the chemical and isotopic insignia of Miocene-Early Pliocene volcanism in eastern Aegean and western Anatolia.