Miocene Caldera expected from Gravity Anomaly over the Mikata District, Western Japan - M5.4 Hyougo-ken-seibu Earthquake in 2001

Yoshiteru Kono[1], Ryo Honda[2], Yoshihiro Hiramatsu[3]

[1] Earth Science, Graduate Schl.Nat.Sci.Tech., Kanazawa Univ., [2] Life and Earth Sci., Kanazawa Univ., [3] Natural Sci., Kanazawa Univ.

In 12 Jun. 2001, an earthquake of M5.4 was occurred at the northwestern part of Hyougo prefecture, Japan.

Gravity anomalies over the area indicate circular shaped low anomalies. A decrease of the anomaly from surrounding areas is about 15 mgal and size of the low gravity anomalies is 15 to 20 km. These data suggest an existence of a caldera beneath this region. Geologic data around the area indicate that the "caldera" was formed at Miocene period. Center of the low gravity anomaly pattern is about 35.5N and 134.5E.

The present earthquakes including aftershocks are occurring in the center of the low gravity anomaly area. This suggests the present earthquakes presumably related to volcanic activities.