

Volcanic activity of Mount Guntur over the 22 last year

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Mt Guntur is an active strato volcano which located in West Java Province, Indonesia (60 km to the south of Bandung). Mt Guntur with elevation about 2,249 m above sea level has several cones at summit which form one large group named Mt Guntur. Base on historical records of Mt Guntur, the first eruption was in 1690 and the last was in 1847 which produced lava flow and pyroclastic material. During such periode eruption there was at least 3 main eruption which occured with repose time between main eruption about 60 - 100 years. It has been 162 years since the last eruption of Mt Guntur, the volcanic activity data of Mt Guntur show a slow increase in seismic and deformation activity at least in the period 1990-2009. For instance, during 1990-1997 the seismic activity data showed an increase average number of daily volcanic quakes from 20 quakes/day (the maximum number was about 40) to become 40 quakes/day (the maximum number was about 60 quakes). The number of quakes again increased from the average number of 40 to become 60 (the maximum number was about 160 quakes). At the same period, especially during 1996-2000, the increase of volcanic quake activity was accompanied with 2 mm of inflation deformation (based on leveling data) and occurrences of tremor in 1997. Estimate of volume change of pressure source based on Mogi model was about 1.5×10^6 m³. In the meantime during 1997-2006, the volume change of pressure source obtained from interpretation result of episodic and continuous GPS measurements was about 2.75×10^5 m³, and tremor in 2006. In the period 2010-2012 the average number of daily volcanic quakes had relatively decreased compared to the number of daily quakes in the period 1990-2009, namely, about < 20 quakes/day. Short tremor was recorded in September 2011 and followed with a slight variation of the distance (several millimeters) from January to December 2012, it is between three GPS continuous stations around the crater and a GPS base station at Mt Guntur observatory.