

## **Eruption model of bromo volcano, east java, indonesia, in the 2011 eruption**

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Bromo volcano is one of six volcanic cones inside the Sand Sea Caldera of Tengger volcanic complex. It is one of the most active volcanoes in Indonesia since four decades ago. The eruption gap time is between several months up to 16 years with duration in several days until several months. The eruption of 2011 was six years dormant after the phreatic eruption of June 8, 2004, and it took place about eight months as the longest period of eruption in historical time record. In this eruption period at least there were three times of new injected magma recognized as long as in one year before triggering the eruption. The first eruption occurred in late of November 2010 until the middle of December 2010 by mild phreatic eruptions and then followed by phreatomagmatic eruptions for the next step. The phreatomagmatic eruption ejected continually of the fine materials dominated and deposited in surrounding area up to 40 km from the crater, but the worst area that covered by thick ash deposit is only 10 km in radius with 50 cm thick. The eruption was reflected by mixture of lithic and juvenile fragments together in the ejected materials of the eruption as the fragmentation of magma due to contacted with ground water beneath. The eruption sequence was the main eruption step of 2011 Bromo eruption. A big eruption on February 5, 2011 is as the end of the phreatomagmatic eruption that was reflected by destroying of a lava plug. The fragments of lava plug of 50 cm in diameter were landed around 1,200 m from the crater. Due to damaging of lava plug in the conduit finally movement of magma from beneath is undisturbed and on February 8, 2011 was shown a fire sparkles like a big fire fox on the Bromo crater. It is the beginning of the strombolian eruptions until the end of the Bromo eruption in July 2011.