

The Triangular Apertura Of The Volcanic Vent Is The Main Causation Of The Prolonged Effluence Of Gas By The Miyake Island

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The effluence of gas by the eruption on Miyake Island has been lasting for a long time. This must have an activity different from the former ones (as the eruption in 1983). I thought that the activity was in the tectonism involving the series of earthquakes from the evening of the 26th to the morning of the 27th of June, and analyzed the tectonism of this duration.

Please see Figure. In order to see the fluctuation in the island, from the data(Geographical Survey Institute, 2001), the figure shows the shifts of each survey point based on the survey point 1(from the 10th to the 24th and the 28th of June). It is supposed that there are the fault-CD parallel with the volcanic front and the fault-AE extending northwestward from the vicinity of the crest which is regarded to have caused dextral slippage this time as well. Also the decrease of magnetism in the area from the crest to the Pond Tairoike(TAR)convicted with the series of earthquakes (Sasai, 2000). This may suggest that a gap was generated, which enabled the demagnetizing pillar (such as magma and hot water)gain altitude in this place.

There is no big difference between the survey point 3 and 4, however, the shift of the survey point 5 was large and slipped southwestward about 53cm compared with the survey point 4. The northeastern end of the area of the survey point 5 separated by the fault has been also slipped from the intersecting point A of the fault and moved to the intersecting point B so that the gap of A and B was generated.

Meanwhile,if the fault-CD was inflected from the vicinity of the point A to AD' as the shift of the survey point 2 was large, it is fathomable that the triangular apertura of the volcanic vent ABF was arisen on the south of the intersecting point A of the fault. This is the supposable approach of the effluence of gas(Here I won't dissert the gas evolution). And also this triangular apertura may be considered as the above-mentioned approach of the demagnetizing pillar.

In addition, the reason that there was no spout of lava although the volcanic vent had the triangular apertura may be explained as below.

First I suppose that the volcanic vent stretches from the vicinity of the crest southwestward to the magma chamber and the underneath volcanic vent stretches northwestward. In the up-and-down shift the survey point 4 has sagged about 53cm compared with the survey point 5. This may suggest that the underneath volcanic vent has been broken down and was unable to deliver magma, so that no spout of lava occurred.

Afterward the depression of the crest and the reduction of the whole island have been lasting. The triangular apertura may also have been narrowing. But it is not easy and will take a long time to close completely. During the time gas can be effused, and I drop a suggestion that this is the main causation of the prolonged effluence of gas.

In conventional fissure eruption, it should have been closed completely and had not prolonged.

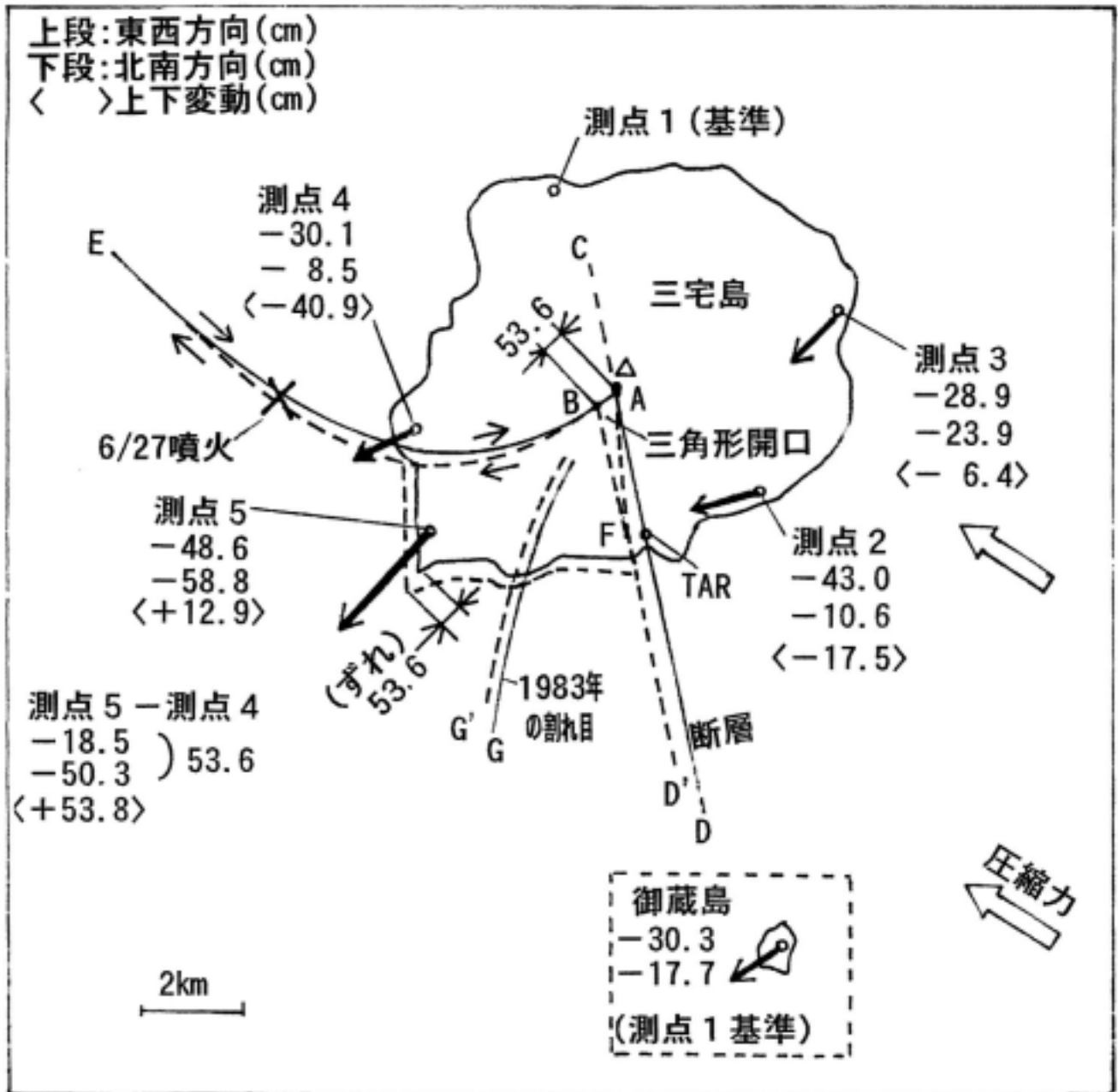


図. 三宅島島内の地殻変動及び測点 5 域のずれ
 期間は6/10-24から6/28まで. 変動は測点1を基準