Observation of the crater glow at Aso volcano - Is volcanic gas burning? -

Satoshi Sakai[1], Takeshi Saito[2], Eriko Suda[3], Kazuhiro Umetani[4], Katsuya Kaneko[5], Takahiro Ohkura[6], Yoshitsugu Furukawa[7]

[1] Earth Sci. IHS,Kyoto Univ, [2] Div of Studies in Environmental Networks,HES,Kyoto-Univ, [3] Ministry of the Environment, [4] Earth Dynamics ,Human and Environment ,Kyoto Univ, [5] Earth Sci., IHS, Kyoto Univ., [6] AVL, Kyoto Univ., [7] Aso Volcano. Lab., Kyoto Univ.

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[Introduction]

Scince November 2000, some glowing spots have been observed in Aso volcano crator. In November 2001, we measured the temperature of the glowing spots and revealed that the temperature is about 500 degree. Next year, November 2002, we measured the temperature in the same way and precise observation using an astronomical telescope.

[Observation]

Observation was carried out in November 5 and 6 mainly after sunset because temperature measurement by near infrared ray is disturbed by the sun light. In this observation, we attached infrared filter on the video camera which cuts visible light and enables observatoin in the shade.This equipment was calibrated against the temperature in a laboratory. Another videocamera was used to record topographical feature in visible light.

A astronomical telescope (MEAD LX50) with aperture of 250mm and focal length or 2500mm was used for precise observation. A infrared camera (WAT-100N) was used to record the image.

[Result]

The water level of the crater lake was lowered this year comparing that in last year. Two large patch of crater glow, which were not observed last year, was observed. In this area, many stones of several cm to several tens cm were layed on the ground and the ground under them were heated at high temperature. The temperature was measured at 800 degree. No water vapor was observed shedding from glowing spot while large amount of vapor spouts from some cold holes located between glowing spot and the crater lake.

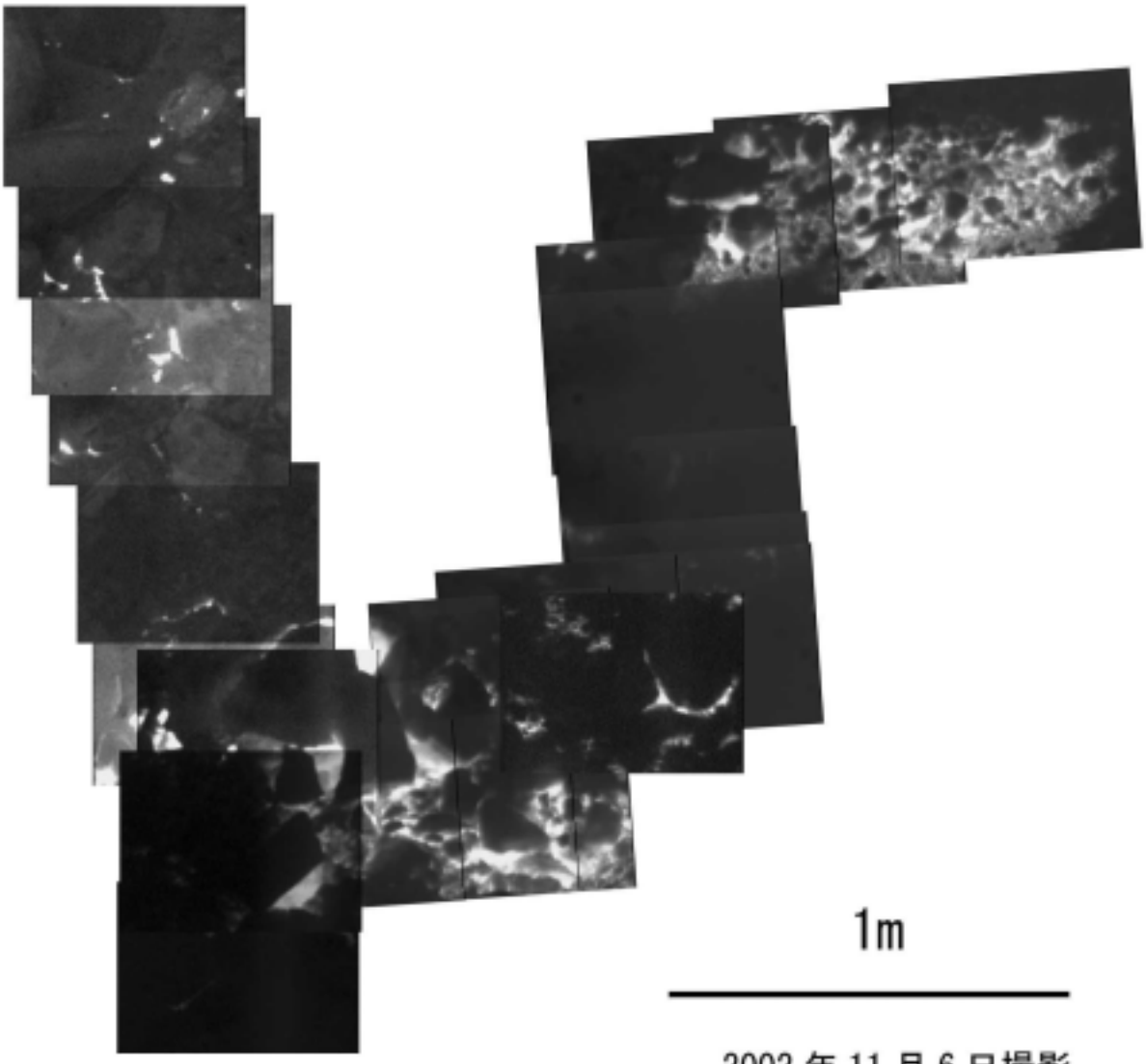
[Disscussion]

Considering the temperature of magma is about 1000 dgree, the observed temperature of 800 degree is unbelevably high. Because Aso volcano is not so active now, magma is beleved to locate deep earth. Considering adiabatic expansion, pressure of the volcanic gass at the degas depth must be lower than 2 atm. However, this low pressure conflict with the existance of the crater lake whose depth is about 50m.

If we assume that some combustible gas is burning in the earth, these problem s are resolved.

阿蘇中岳第一火口南壁の赤熱部

天体望遠鏡（MEAD LX50）と赤外線カメラ（WAT-100N）による合成画像



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