SHOCKED DATA OF SILICA-RCH BRECCIAS AND X-RAY CT IMAGES OF BURIED CRATERS AT TAKAMATSU－KAGAWA DISTRICT IN JAPAN. Y.Miura, Dept. Earth Sci., Fac. Sci., Yamaguchi University, Yoshida 1677-1, Yamaguchi, 753-8512, Japan, yasmiura@yamaguchi-u.ac.jp.

Introduction. Almost all shocked quart data of impact structure are well-reserved without any change of coexisting minerals, though quartz with altered mineral (from feldspar to zeolite) is found in volcanic islands of Japan. Such crater structure of volcanic islands is Takamatsu-Kagawa buried structure originally with about 8km size, which is located in Busshozan-Cho, Takamatsu City, Kagawa Prefecture (in center site) to Kagawa-Gun, Kagawa Prefecture (in southern part) [1,2,3]. The center of the structure is Latitude 34.3° and Longitude 134.05°. The main purpose of this paper is 1) to elucidate shocked quartz with altered minerals, 2) to classify three types of shocked quartz, 3) to show Xray CT (Computer tomography) images of the samples, and 4) indicates intrusion of andesitic vein to shocked melt rock.

Location of shocked quartz: Shocked quartz with planar deformation features (PDFs) can be found in three kinds of locality: 1) granitic basement rock S2 in surface rims (south at 8km in diameter) , 2) drilled melted breccias D1 (450m to 1120m in depth) and 3) melt breccia at surface around the andesitic intrusions. Typical shocked quartz with PDFs (one to three direc tions) are found at granitic basements of the above 1) type, though there are many cracks after formation of the PDFs texture. Shocked quartz textures of the mixd with zeolitic minerals changed from feldspar grains by buried metamorphism and andesitic hydothermal solution are found at the surface and drilled samples of melt breccia which is originally melted breccia of the crater sediments.

Bulk chemical change of drilled crater sediments: Bulk XRF data of the drilled samples are largely changed from bottom to surface (for example, Al_2O_3 to SiO_2) which are completely different with magmatic crystallization trend. There is sharp change of these bulk XRF composition at 450m to 470m in depth to higher silica-rich composition, which suggest that original crater sediments are ca.470m in depth (i.e. ca.665m inde pth originally, 1125m-465m) , and that there are ca.20m thick volcanic flow from smaller andesitic intrusions, followed by transportaion of flow-out impact sediments above the ca.460m in depth to cover the crater structure finally.

Geology of the surface: There are three types rocks of impact-related breccia from the crater, buried metamorphosed breccias with zeolitic mineralsformed by later volcanic intrusion, and andesitic rocks from crack as intrusion. All granitic rocks are heavily broken by followed Seto inland-sea activity of andesitic formation. Shocked data of glasses and Fe-Ni bearing grains can be found within 8km boundary of the rim. Hydrothermal activity with andesitic intrusions changes fedspar mineral to zeolite (Fig.1).

X-ray CT images: These surface and drilled sample are checked by X-ray CT images to found Fe,Ni bearing grains inside the samples. Figure 2 shows X-ray CT image to see inside the sample. There are smaller grain inside the sample.

Summary: 1) Three types rocks in Takamarsu-Kagawa district are found as original impact rocks, melt brecciated rocks with hyrothermal alteration and volcanic rocks. 2) Three types shocked quartz with PDFs are found in this district. 3) These rocks are related by broken structure from original ca.8km in diameter as impact structure at volcanic islands of Japan.
4) Xray CT images show smaller grains indside the sample.

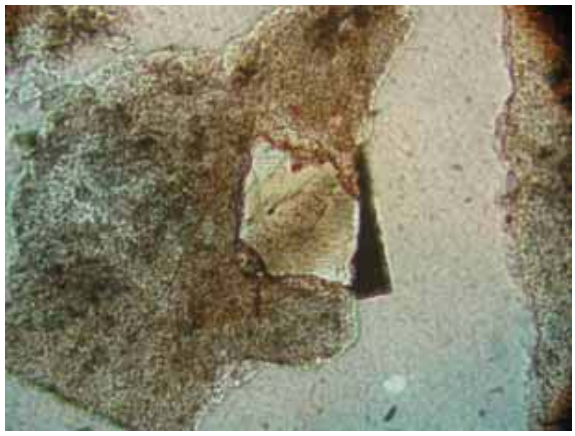

Fig.1. Microscopic photo to show shocked quartz with melt breccia at 910m in depth of Takamatsu-Kagawa district in Japan.

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References:

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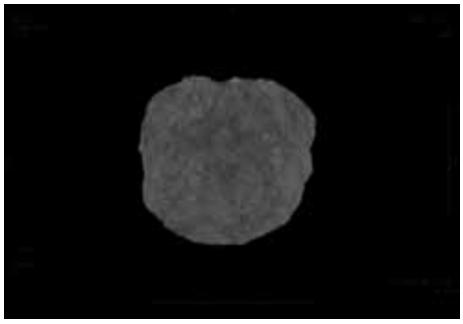

Fig.2 X-ray CT image of glassy breccia at Takamatsu-Kagawa district in Japan.