

Asian Consortium of Volcanology The 5th Field Camp



March 13th – 16th, 2023
Izu-Oshima volcano, Japan

ACV member organizations



EARTH
OBSERVATORY
OF SINGAPORE

Earth Observatory of Singapore,
Nanyang Technological University, Singapore



Centre for Volcanology and Geological
Hazard Mitigation, Indonesia



Department of Science and Technology
PHIVOLCS
Philippine Institute of Volcanology and Seismology

Philippine Institute of Volcanology and
Seismology, Philippine



China Earthquake Administration, China



Taiwan Volcano Observatory-Tatun, Taiwan



香港大學
THE UNIVERSITY OF HONG KONG

The University of Hong Kong, Hong Kong



Volcano Specialized Research Center,
South Korea



防災科研

National Research Institute for Earth Science
and Disaster Resilience, Japan

Program

ACV-FC5 Program

12/03 (Sun), 2023: Arrival at Tokyo via Haneda / Narita airport

13/03 (Mon), 2023: DAY1

07:45 Meet at Tokyo Takeshiba Terminal (Port)

08:35 Departure from Takeshiba (Jetfoil)

10:40 Arrival at Izu-Oshima (Okada / Motomachi Port)

11:00 Check-in at Oshima Onsen Hotel

11:30 Opening ceremony

12:00 Lunch

13:00 Lecture 1: Outline of Izu-Oshima volcano (Eisuke)

14:00 Lecture 2: Izu-Oshima eruption: Observations and Models (Tomo)

15:00 Poster session

17:00 end

14/03 (Tue), 2023: DAY2

10:30 Lecture 3: Petrology (Takahiro)

12:00 Lunch

13:00 Lecture 4: Dynamics of dike intrusion (Yosuke)

14:00 Lecture 5: Seismic analysis (Takashi)

15:00 Poster Session

17:00 end

15/03 (Wed), 2023: DAY3

08:15-17:30 Field trip

16/03 (Thu), 2023: DAY4

09:00 Lecture 6: Hazard & Counter measures (Susanna & Christina)

11:30 Closing ceremony

12:00 Lunch

13:30 Moving to Port

15:10 Departure from Izu-Oshima (Okada / Motomachi Port; by Jetfoil)

17:35 Arrival at Tokyo (Takeshiba)

Hotel in Tokyo

17/03 (Fri), 2023: Departure from Haneda / Narita

Field trip (March 15th)

8:15 Departure at Oshima Onsen hotel [1]

8:30 Gojinkajaya [2]

Field trip around Summit crater and caldera
(Stop 1-3)

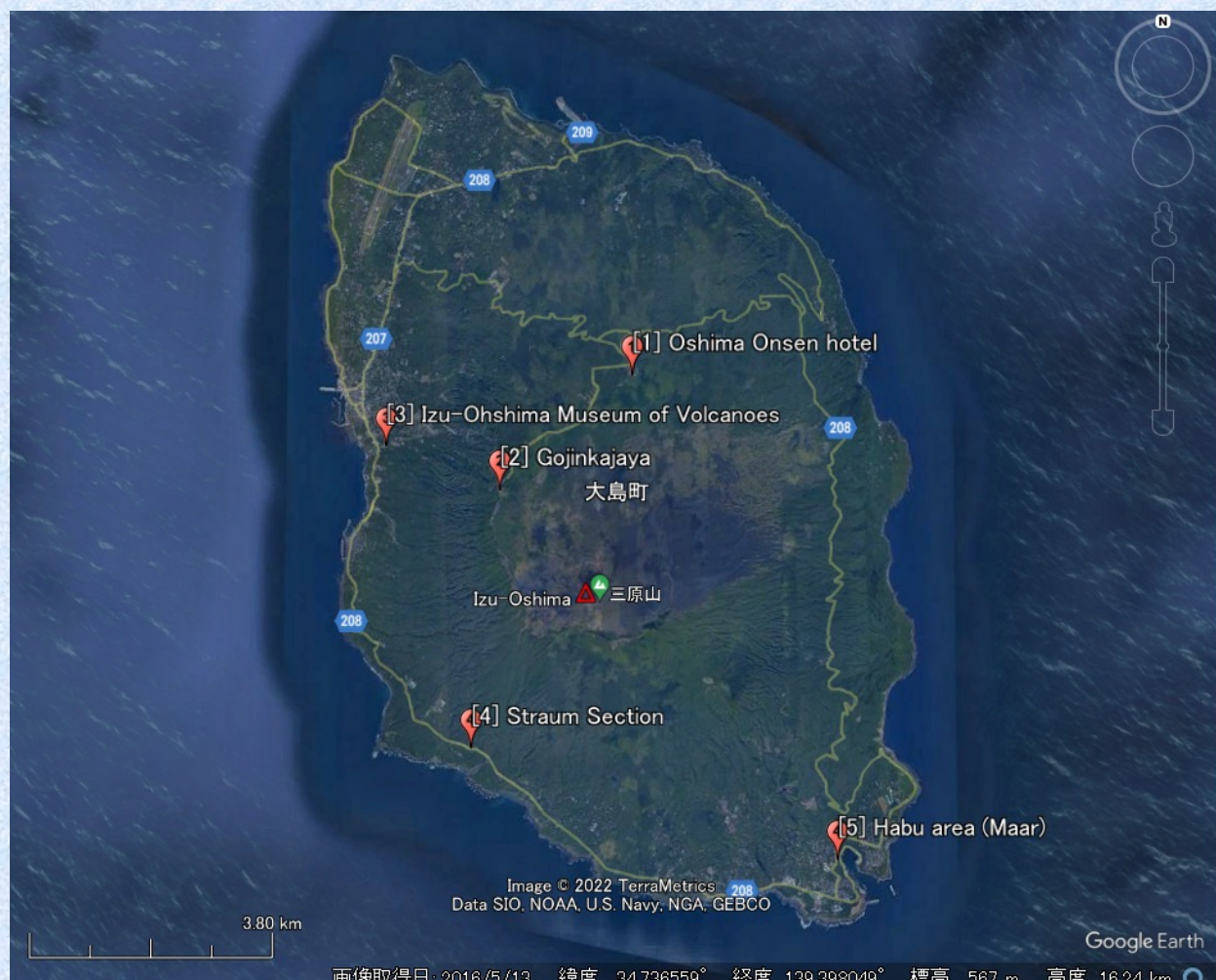
14:00 Gojinkajaya

14:30-15:30 Izu-Oshima Museum of Volcanoes [3]
(Stop 4)

15:40-16:00 Stratum Section [4] (Stop 5)

16:20-16:50 Habu area (Maar) [5] (Stop 6)

17:30 Arrival at Oshima Onsen hotel



Field guide of Izu Oshima volcano for ACV-FC5

Yoshihisa Kawanabe (GSJ)

Stop 1 View of the caldera from the Oshima Onsen Hotel and fall-out deposits of the Younger Oshima Group

We can see the summit caldera and the central cone, Miharayama and several lava flows such as 1986 B lava flows (LB-I, -II, -III). In the car parking, tephra layers of the Younger Oshima Group can be seen. Thin white rhyolite ash layer, belongs to N₃ unit of the Younger Oshima Group, is an exotic ash from southwestern Tenjosan volcano in Kozushima island erupted in 9th century.

Stop 2 Gojinka-jaya

Gojinka-jaya is a lookout on the NW rim of the caldera of the Izu-Oshima volcano. Miharayama, a central cone, lies just in front of us beyond the caldera floor and 1950-51 and 1986 lava flows spilled out from the Miharayama summit crater are seen. A ridge to the left of the cone is the spatter rampart along the B fissure of the 1986 eruption. The hummocky low mounds in the foreground of the B fissure are the vent area of the 1777-1778 lava flow.

Stop 3 Field trip around Summit crater and caldera

Along the new trail climbing up to the Miharayama, we can see many dribbles of the cone forming eruption in 1777-1778. The ejecta is divided into three units based on plagioclase phenocryst volume and grain size, two of which can be observed (Ikenaga et al., 2018). At the last sharp bend of the trail, we can see the successions of the erupted materials after 1778. The surge deposits cover the dribbles, and then thin layers of scoria and Pele's hair, which is the earliest ejecta of the 1986 eruption, cover them and 1986 A lava flow and 1986 B scoria overlie them.

The trail ends at the viewing site near the pit crater of the Miharayama. Diameter of the pit is about 350 m and the depth is about 100-150 m. The same sized pit had been existed before the 1986 eruption, and it filled up by the lava from 1986 A vent and formed lava lake. On Nov. 16, 1987, a large explosion happened with a rapid withdrawal of magmas back to the conduit, and the pit crater was regenerated.

From the path circling the crater of Miharayama, we can see other Izu volcanic islands, the Izu Peninsula, and Mt. Fuji volcano. To the east of Miharayama is a black "desert" with almost no vegetation. Large craters of the 1986 B fissure is located on the outer side of the northern margin of Miharayama crater and the B lava flows from the 1986 B fissure can be seen.

Stop 4 Izu-Oshima Museum of Volcanoes

The Izu-Oshima Museum of Volcanoes opened in 1990 exhibits the details of the 1986 eruption and growth history of Izu-Oshima volcano together with much information about volcanoes. The museum is currently considering renewal in order to update the exhibits and make it a center for Geopark activities.

Stop 5 "The Great Road Cut" of the fallout deposits of the Izu-Oshima volcano

We can see the spectacular exposure of the many alterations of air-fall scoria and ash, divided by weathered ash, and several lava flows between the fallout deposits. Each sequence of scoria, ash and weathered ash correspond to the one eruptive period. The thick scoria deposit (O₉₅) fell about 16000-17000 years ago (Suzuki and Usui, 2022). There are some unconformities where the upper strata obliquely truncate the lower strata. At the uppermost area of the outcrop, we can see the S₂ flow deposit and bomb sag which were generated by the large phreatic eruption occurred at the summit about 1700 years ago.

Stop 6 Habu-minato crater

The Habu-minato crater is an explosion crater. The explosion breccia and surge deposit distribute around the crater. This breccia belongs to N₃ unit of the Younger Oshima Group and intercalates adventitious white rhyolite ash from southwestern rhyolite volcanoes erupted in 9th century. The crater is 400 m in diameter. In 1703, large tsunami broke the southern rim of the Habu-minato crater and connected to the sea. After that, residents have been used as a fishing port by dredging the waterway.

Participants

Name	Affiliation	Nation
Susanna JENKINS	EOS	Singapore
Christina WIDIWIJAYANTI	EOS	Singapore
Yizhou LUO	EOS	Singapore
Eleanor Mary TENNANT	EOS	Singapore
Andika Bayu AJI	EOS	Singapore
Oktory PRAMBADA	CVGHM	Indonesia
Ahmad BASUKI	CVGHM	Indonesia
Valerie Shayne Vargas OLFINDO	PHIVOLCS	Philippine
James Noli Villarete NOBORA	PHIVOLCS	Philippine
Jude Lorica MALLORCA	PHIVOLCS	Philippine
Wen-Jian YANG	CEA	China
Lili YAN	CEA	China
Ya-Chuan LAI	TVO	Taiwan
Yu-jen CHANG	Yangmingshan N.P.	Taiwan
Huai-yu TANG	Taiwan U.	Taiwan
Sung-Hyo YUN	Pusan U.	South Korea
Cheolwoo CHANG	Pusan U.	South Korea
Jeongheon JU	Pusan U.	South Korea
Eunjeong YANG	Pusan U.	South Korea
Eisuke FUJITA	NIED	Japan
Tomofumi KOZONO	NIED	Japan
Takahiro MIWA	NIED	Japan
Takashi HIROSE	NIED	Japan
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