

## EXCURSION PROGRAM

### 1. Volcanoes Gorelyi and Mutnovsky (auto-foot trip)

Departure to the district of Gorelyi (1829 m) and Mutnovsky (2323 m) active volcanoes.

The trip to the volcanoes' foot takes about 2.5 hours. The excursion program will depend on the weather and the route condition.

The substantial part of the excursion will be at the attitudes of about 1700 m. The length of the walking part is 6-7 km, gaining the height of about 400-500 m. On the way there will be met taluses, stony areas, steep ascents, and firns. Possible is the visit to the Mutnovskaya geothermal power station.

Duration of the excursion is a full day.

Cost of the excursion for a participant – 3000 rubles (including dry ration).

**Gorelyi volcano** is an active volcano (1829 m) situated at 65 km to the south-west of Petropavlovsk-Kamchatsky. Three strato-cones of the volcano form a range located in the middle of the 10 km caldera of the Pleistocene age. The peak is crowned with 11 craters superposed on each other. Some of them are filled with acidic lakes turquoise in color. Composition of the lavas, composing the volcano edifice, varies from basalts to andesites. The first historic record of the eruptive activity of Gorelyi volcano dates back to the XIX century. Explosive eruptions were observed in 1828, 1832, 1855, and 1869. In the XX century the eruptions took place in 1929, 1930, 1931, 1947, 1961, 1980-1981, 1984-1986, and 2010-2013.



View of Gorelyi volcano. Photo by D. Mel'nikov.

The eruption of 1980-1981 supplied onto the day surface about 60 thousands tons of eruptive material that covered the area of 500 km<sup>2</sup>. During the eruption of 1984-1986 gas-ash clouds reached the height of 600 m above the crater. Then more than 1.5 mln tons of ash were erupted.

**Mutnovsky volcano** is an active volcano (2323 m) located at 70 km to the south-west of Petropavlovsk-Kamchatsky, not far from Gorelyi volcano. It is one of the most beautiful and complicated in structure volcanoes of South Kamchatka. It is composed of four adjacent strato-volcanoes with similar history of development. On reaching certain critical height and volume, each cone stopped its activity. Then the position of the feeding center was displaced, and a new cycle started forming a new cone. In the XX century the explosive eruptions happened in 1904, 1916-1917, 1927-1929, 1939-1940, 1960, 2000, 2007, and 2013. The temperature of fumaroles in Active funnel reaches 600°C.



View of Mutnovsky volcano. Photo by I. Romanova.



In the Mutnovsky Volcano crater. Photo by A. Maksimov.



## 2. Valley of Geysers (helicopter)

**Valley of Geysers** is a pearl of Kamchatka – last of the great geographic discoveries of the XX century.

During the flight (one-way is 1 hour 15 minutes) you can admire the active (Karymsky and Malyi Semyachik) and extinct volcanoes, the caldera lake of Academy of Sciences volcano with Tokarev crater of the under-water eruption in 1996, mountain ridges and forest scopes, the autumn many-colored Kamchatskaya tundra on the volcano plateaus, and abundant rivers and lakes.



View of the Valley of Geysers. Photo by I. Romanova.

The Valley of Geysers represents a canyon (flume) about 4 km wide, 400 m deep, and 8 km long, along which the Geysernaya River is running. Here, over a length of 6 km from the river mouth more than 40 geysers and numeral thermal springs are concentrated.

The excursion ecological path goes on the central part of the Valley of Geysers. Here one can observe all known modern forms of hydrothermal activity, including currently acting and pulsating boiling springs, hot lakes, geysers, mud pots, mud small volcanoes, vapor jets, heated areas compactly neighbored on a small space.



Stained-glass window. Photo by Shpilenok.

In the Valley of Geysers a foot excursion (about 2 to 3 hours) is waiting for you with sightseeing of geysers, mud pots, and thermal areas, accompanied by a guide – a worker of the Institute of Volcanology and Seismology of FEB of RAS, as well as a dinner-picnic at the tourist shelter of the Valley or at the field base near Karymsky volcano.

A total duration of the excursion is 6 to 8 hours. Cost of the excursion will be defined more precisely. It will depend on the cost of the helicopter 1 hour by the time of the Meeting and additional financing. The base cost is 19000 rubles.



Geysers. Photo by I.Romanova.

### 3. Sea trip on cutter about the Avachinskaya Bay

The excursion will be on cutter with approach to rocks “Three brothers” and island of “Old Men” with sea fishing and dinner on board. On island of “Old Men” you’ll see abundant bird colonies. Near the sea coasts one can see the sea mammals – kalans, seals, and even swallows.

Duration of the excursion is about 6 to 7 hours. Approximate cost is 3000 rubles for a participant. It includes meal (dinner: fish soup, tea) and fishing tackles.



Rocks “Three Brothers”.



On board the pleasure cutter.



On island of “Old Men”.

Photo by A. Maksimov



**4. Short excursions in the area of Petropavlovsk-Kamchatsky are possible** (to the Pacific Ocean coast, about the historic places of Petropavlovsk-Kamchatsky, to Avachinsky volcano) according to the claims during the Meeting.



Monument "Here Russia begins". In the background – Koryaksky volcano.



View of the monument to Saint Apostles Peter and Pavel. In the background – Vilyuchinsky volcano and fumarole of Gorelyi volcano.

## **Requirement to the equipment**

**Field excursions:** damp-wind proof jacket, sweater, gloves, cap, tourist footwear (track boots for simple marches are recommended), and goggles.

**Sea trip:** damp-wind proof jacket, sweater, cap or another head-dress.

Photo and video apparatus is welcome.

It is necessary to have passport with you!.

You may ask Muravyev Yaroslav Dmitrievic hall questions on the excursions (the Institute of Volcanology and Seismology, FEB of RAS). E-mail: [murjd@kscnet.ru](mailto:murjd@kscnet.ru), [ya.muravyev@bk.ru](mailto:ya.muravyev@bk.ru)