



Explosive Eruptions of Kamchatkan Volcanoes in 2010

Olga Girina, Alexander Manevich, Sergey Ushakov, Anton Nuzhdaev, Dmitry Melnikov, Olga Konovalova, and Yury Demyanchuk

Institute of Volcanology and Seismology FEB RAS, KVERT, Petropavlovsk-Kamchatsky, Russian Federation
(girina@kscnet.ru; Fax: (7) 41522 97890)

There are 30 active volcanoes in Kamchatka and 4 of them continuously active. In 2010 five strong explosive eruptions of Kamchatkan volcanoes Klyuchevskoy, Sheveluch, Bezymianny, Kizimen and Karymsky took place. In addition, higher fumarolic activity of Gorely volcano was observed.

Klyuchevskoy volcano is the highest active volcano in Eurasia and one of the most productive volcanoes of the world. Last explosive-effusive eruption of the volcano began in middle August 2009 and was continuing till November 2010. Paroxysmal phase of eruption was noting on October 22-25 and 27, 2010: ash plumes rose up to 8-9 km ASL and extended > 2300 km mainly to the east from the volcano. Five lava flows effused from the terminal crater down different flanks of the volcano during this eruption.

The eruptive activity of Sheveluch Volcano began since 1980 (growth of the lava dome) and is continuing at present. Strong paroxysmal explosive eruption of the volcano occurred on October 27, 2010. Ash plumes rose up to 12 km ASL and extended about 2500 km to the east from the volcano. The thickness of ash layer was about 1 cm at Ust-Kamchatsk. An area of pyroclastic flow deposits was about 20 km².

The eruptive activity of Bezymianny volcano began since 1955, and is continuing at present as growth of the lava dome. Paroxysmal phase of the eruption occurred on May 31, 2010: ash plumes rose up to 8-10 km ASL and extended about 250 km to the west, and later 160 km to the north-east and > 600 km to the south from the volcano. Kizimen volcano woke up after repose in beginning November 2010 (previous eruption was 1928-1929). Strong explosive events began to registering from middle December 2010. On December 12 and 31, 2010, ash plumes rose up to 10 km ASL and extended > 500 km from the volcano. Ash falls were noted on December 31, in the different areas of Petropavlovsk-Kamchatsky, Yelizovo, Paratunka and the others. A thickness of ash deposits was about one millimeter at Petropavlovsk-Kamchatsky. Eruption of the volcano continues in January 2011.

Karymsky volcano has been in a state of explosive eruption since 1996. The very strong explosive events were registered at the volcano on June 11, 2010: ash plumes extended about 196 km to the east from the volcano. Strong fumarolic activity of Gorely volcano began to noting from June 2010. A new vent on the wall of Gorely active crater was discovered on June 17. Magmatic gas with temperature of 800-9000C is emitting with strong rate from this vent.