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Njörður, the first major central volcano identified on the Reykjanes ridge and first direct evidence for shallow magma chambers at the ridge axis.

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Detailed bathymetry of the part of Reykjanes ridge between 62°N and the Icelandic shelf show numerous volcanic ridges sitting in an enechelon formation along the ridge axis. At the edges of the rift axis several tuya like mountains from single eruptive vents where observed, flat topped rising 300 to 500 meters above its surrounding. At 62°52′and 25°05′ there is an unusual mountainous region of volcanic material around the ridge axis. Detailed bathymetry shows existence of several ring fractures in the summit area, fractures that extend into the rifting axis. This area was named Njörður. The Njörður central volcano was among the most astonishing volcanic formations observed during this mission. IODP drilling in the area show the existence of evolved basalts on the flanks outer flanks of the volcano, with a SiO_2 composition of up to 55 wt%. The ring fractures indicate that there has been a caldera collapse in the area, thus a shallow magma chamber must have existed. The volcano rises up from about 1600 m depth on the seafloor to about 400 m. The volcano is about 50 km in diameter with at least 2 calderas in the summit region. Since the last caldera formed (max 300 ka and min 150 ka ago) the rift of the Reykjanes ridge has continued through it, much in the same manner as is observed at Krafla and Askja volcanoes in north Iceland. These are the first observations of calderas and a central volcanic edifice reported from the Reykjanes Ridge. In this lecture we shall discuss its appearance and possible meaning for the evolution of the Reykjanes ridge and its propagating v-shaped ridges.