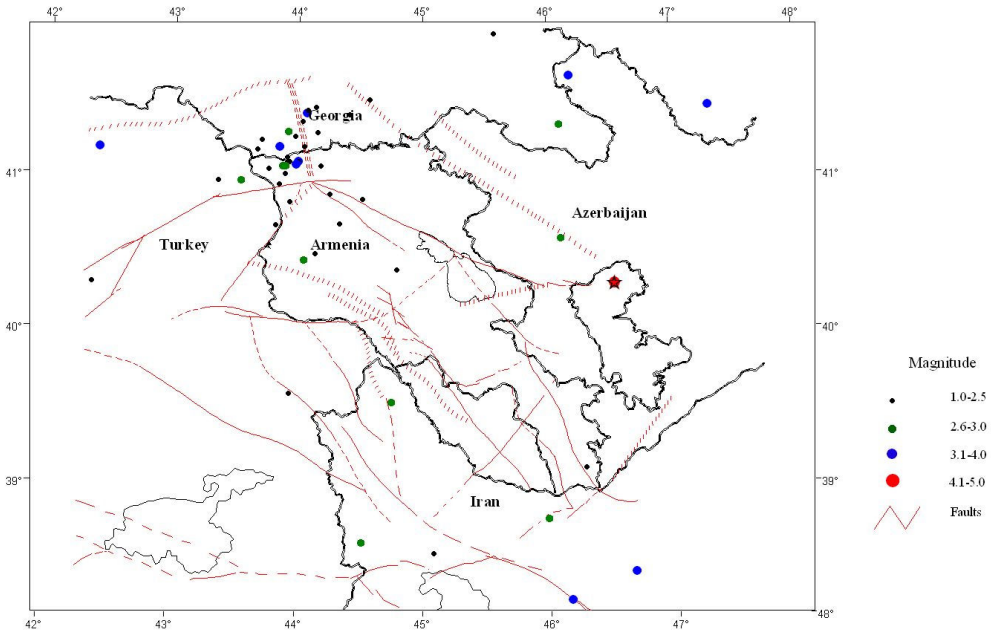
ABOUT MARTAKERT EARTHQUAKE

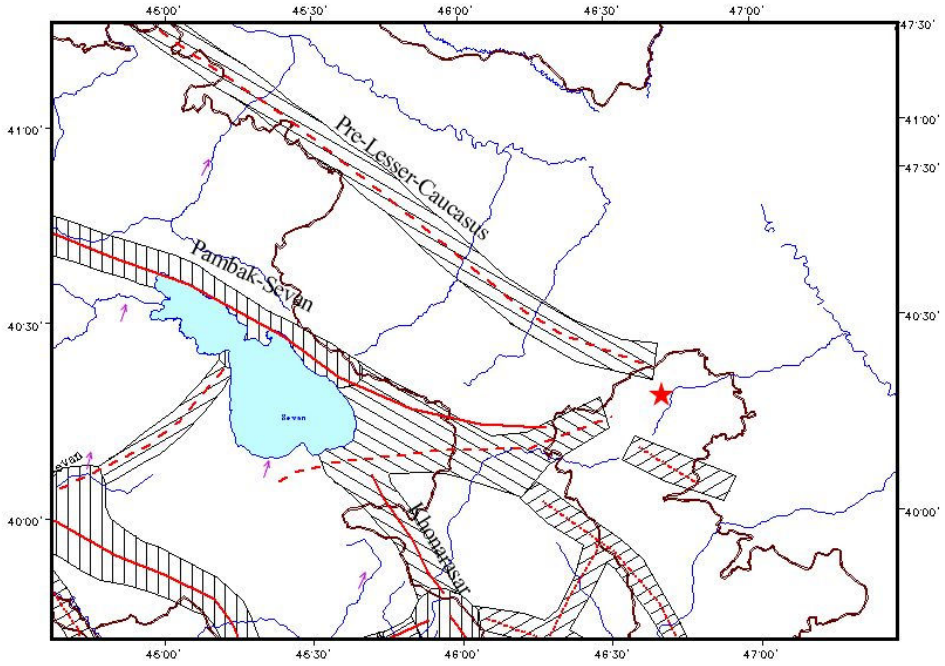
On September 19, 2007 at 20:57local time (Greenwich time 16:57) the seismic stations of the Armenian National Survey for Seismic Protection (NSSP) registered 4.1M earthquake according to the Richter scale. Its epicenter (marked with asterisk in the picture 1.) is located 13km to southwest from Martakert city, Nagorno Kharabakh Republic (NKR). According to the preliminary data the depth of the hypocenter was 10km and the intensity in the epicenter zone was 5 value on Intensity scale.



Picture 1. The schematic map of the earthquake epicenters in the region from the beginning of the year to October 20. The asterisk indicates the epicenter of September 19 earthquake in Martakert.

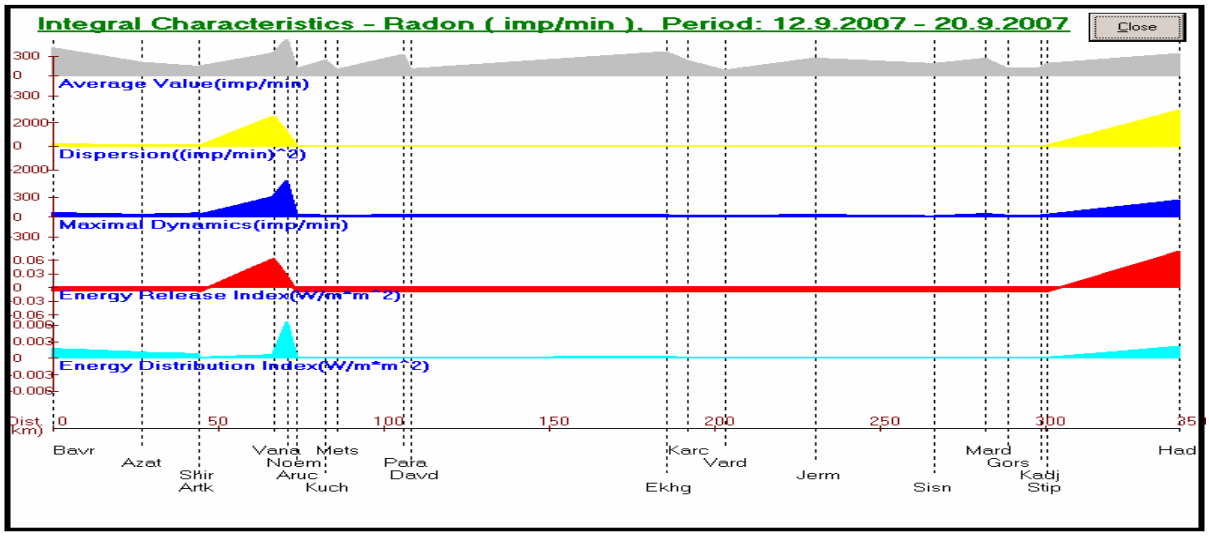
According to the preliminary data the earthquake felt across the whole territory of NKR, in Martakert city and Drmbon, Vaghuhas, Getavan and other villages to the most extent. The earthquake has been accompanied with a crash. People have left their homes in panic. Many phone calls have been registered at the Western Survey (Yerevan) and the Eastern Survey (Stepanakert) of NSSP. From the point of damage of the buildings, the only complaint was received from republican Blood transfusion center where the old small extension and the equipment washing device had shifted away from the main wall.

Nowadays, as well as in our historical past, many earthquakes happen in NKR and the adjacent regions including the strong ones. Among them are known Gandzak earthquakes /in 1122, 5.5M, in 1139, 7.0M, in 1235, 5.5M/ and Shushi-Zurnabad earthquake /in 1868, 6.5M/ resulted in deaths and damages. According to the seismic-tectonics the epicenter of Martakert earthquake is located at the remote fault zone of ante Minor Caucasus and Sotk (Picture 2.). Most probably the earthquake is connected with ante Minor Caucasus fault, as the later has displayed some seismic activity during the recent quarter.

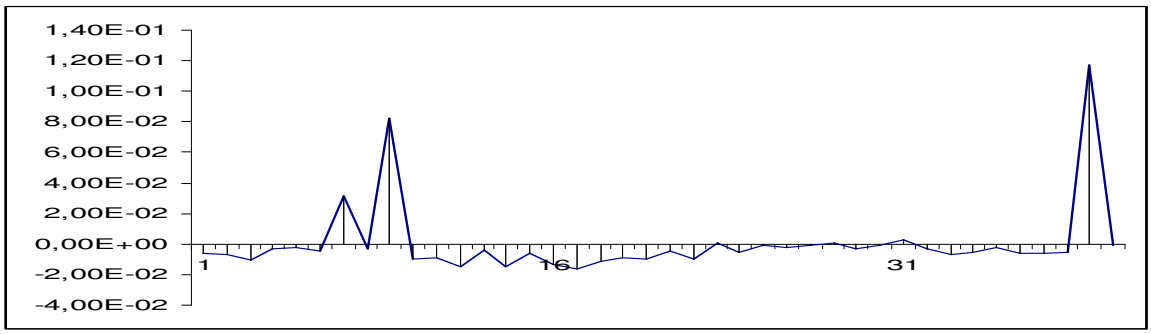


Picture 2. A part of the regional seismic-tectonic model schematic map. The earthquake epicenter is marked with an asterisk.

A number of anomaly changes in some parameters of seismic monitoring are registered in the NSSP observation stations that preceded the earthquake. Particularly, changes in underground water level in Ashotsk, Shirakamut and Noyemberyan stations, subsoil radon composition in Aruch and Shirakamut, the geomagnetic field in Djermuk, electromagnetic field in Kadjaran, as well as the changes in the mineralized water chemical composition in Kadjaran and Akhurik have been registered. According to computation with "Dynamic fields" software developed in the NSSP more eminent anomaly of subsoil radon composition are featured in Noyemberyan and HKR Hadrut observation stations located in ante Minor Caucasus fault zone. It is observed in time series integral characteristics of subsoil radon composition (Pictures 3, 4).



Picture 3. Integral characteristics computed with "Dynamic fields" software for the time series of subsoil radon composition of all the stations.



Picture 4. Energy release characteristic computed with "Dynamic fields" software for the time series of subsoil radon composition of Noyemberyan station.

On the whole, seismic activity in the region is within the background and the intensity of the earthquake occurred is typical to ante Minor Caucasus fault zone. The seismic shake described above is considered to be a weak earthquake according to the both international classification and the RA Law "On Seismic Protection". The accumulated tension in the earth's crust is discharged through such earthquakes. The seismic energy aggravation in the lithosphere may lead to major earthquake in future if it is not discharged gradually.
Everyday activities on current seismic hazard assessment in the territory of RA are carried out in the Armenian NSSP.

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