

Cosmic Ray Division (CRD) of Yerevan Physics Institute Developing the Armenian Network for Geophysical Monitoring and Forecasting

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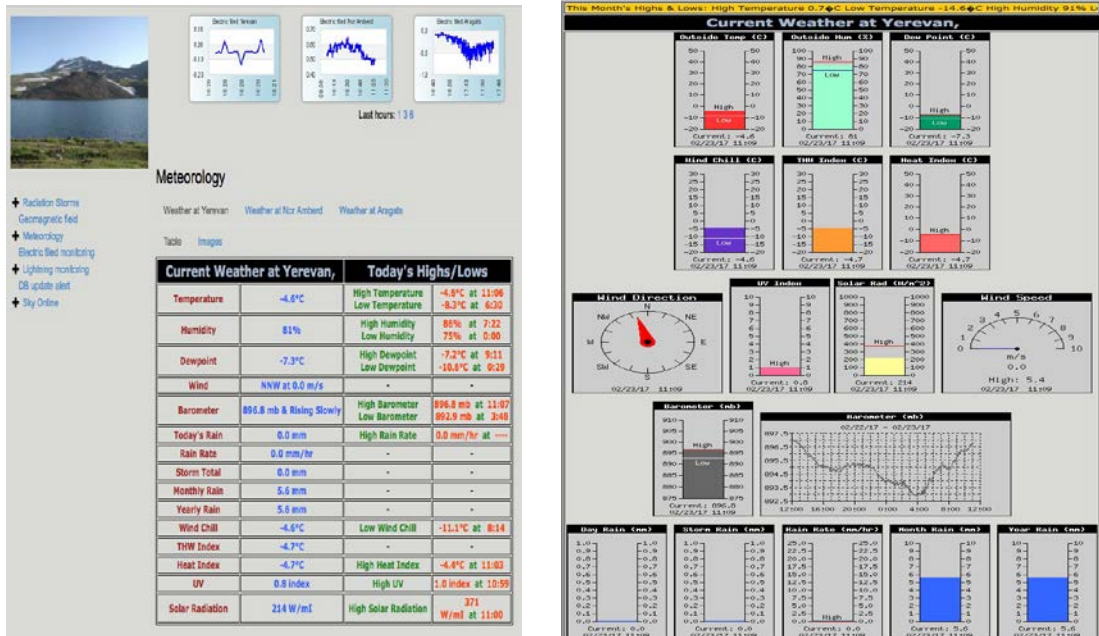


Table and display of the various important meteorological parameters, updated each minute

The comprehensive monitoring and prediction of potentially dangerous processes in the magnetosphere, atmosphere and ecosystem of the Earth are important for evaluating various risks in nature and economy. In particular, monitoring and forecasting geophysical phenomena is important to ensure the safety of existing and emerging complicated technological facilities, including nuclear, the destruction of which will have a catastrophic and lasting impact on the environment and life.

Without developing new reliable methods for ground-based monitoring, the level of forecasting and early detection of hazardous atmospheric and extra-atmospheric phenomena will decline. Addressing these issues requires the state support and ensuring global standard of fundamental and applied research in the environmental sciences and geophysics.

Strengthening of positions of Armenian scientists in the field of geophysics research will strengthen the scientific and technological potential of Armenia, will support the priority of Armenian scientists and will lay the grounds for awareness and readiness to respond to the unprecedented challenges of the 21 century. These objectives cannot be achieved without special measures aimed at training highly qualified specialists in the field of new methods of geophysical research. Therefore, the establishment of geophysics monitoring centers in Armenia and worldwide based on various sensors is an important and urgent task.

In 2016 CRD of YerPhi started a project called "Armenian Network for Geophysical Monitoring and Forecasting" with its main goal "to expand and upgrade an

integrated network of particle detectors, add field meters and lightning detectors in strategic locations for wider geophysical research, establish forecasting services about the dangerous consequences of space weather and thunderstorms, and assure continuous operation of the outstretched networks of detectors for the early recognition of various anomalous phenomena in the earth's atmosphere and in near-earth space.”

The project will be implemented via the following major tasks:

- ✓ Develop and design the network, create network sites in Armenia and abroad, equip them with modern facilities.
- ✓ Create Internet-portal and organize remote data storing and archiving, as well as user-friendly access to the measurements.,
- ✓ Organize classes and train the site hosts and students.
- ✓ Present the results at international conferences, publish articles in peer-reviewed journals, organize and conduct thematic conferences and seminars.

The proposed network for space and geophysical research, equipped with advanced unique instruments will provide information necessary for comprehensive investigation of various geophysical processes and early recognition of anomalous phenomena in the Earth’s atmosphere and near-Earth space.

The first results of the project implementation are already seen on the CRD WEB site (http://crd.yerphi.am/Meteorology#weather_at_yerevan_img), Sixteen 16 different main meteorological parameters are measured on the slopes of Mt. Aragats (at Aragats and Nor Amberd research stations 3200 and 2000 m above sea level, and at the Yerevan headquarters of CRD (1000 m). The results are posted on-line giving possibility not only to the scientists, but also to Armenian population, to be aware of current and upcoming geophysical phenomena, not just simply weather.

The measurements and displays include important geophysical parameters such as the strength of the near-surface electric field, the level of the ionization radiation and others. Several alerts and forewarnings on the possible violent space and terrestrial storms are posted as well. In 2017 we also plan establish network nodes in the towns of Sevan, Dilijan, and Stepanakert as well as adding new sensors to monitor water and air purity.