



## Press Release

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### **INTERNATIONAL SCIENTIFIC FEAT ON MT. EVEREST: THE HIGHEST AUTOMATIC WEATHER STATION IN THE WORLD INSTALLED ON SOUTH COL. REAL TIME DATA FROM 8,000 m (26,247 ft) MADE PUBLIC**

**May 22, LOBUCHE, Nepal – May 15, 2008 will go down in history as an unforgettable day for research and mountain climbing. Undaunted by a snowstorm, Italian mountaineers Silvio “Gnaro” Mondinelli, Marco Confortola and Michele Enzo and Nepali climbers Dawa Tshering Sherpa, Pema Chhosang Sherpa and Thsiri Sherpa of Khumjung, Phura Sherpa of Namche and Phura Sherpa of Walung, installed the world’s highest automatic weather station (AWS) on Everest’s South Col at 8,000 m (26,247 ft.) a.s.l., without using supplemental oxygen. The station is now continuously sending unique, valuable data on the roof of the world’s weather conditions to scientists in Italy in near real time.**

This unprecedented accomplishment was part of the mountaineering/scientific expedition “SHARE-Everest 2008”, led by Agostino Da Polenza, President of the Ev-K2-CNR Committee, an Italian association dedicated to research and sustainable development in mountain regions. The SHARE-Everest AWS is sending hourly meteorological parameters from 8,000 m (26,247 ft.) on the Nepali side of Mt. Everest which will be used to analyze, among other things, climate change.

"I'm really proud of this achievement," says Da Polenza. "Gnaro, Marco and Michele have accomplished a nearly impossible scientific feat: installation of the highest automatic weather station in the world, without using oxygen and in critical weather conditions, strong wind and freezing temperatures. This station will be integrated in the environment monitoring network of our program SHARE (Stations at High Altitude for Research on the Environment), providing a unique contribution to the international scientific community, given the altitude at which the data is collected. In particular, the international monitoring projects coordinated by UN EP and WMO in which we participate will benefit from this new knowledge."

The first data sent from the station at 4:00 pm, Nepali time, on May 15 looked like this: air temperature -17 °C, relative humidity 41,3 %, atmospheric pressure 382,1 hPa, wind direction 262,8°, wind speed 12,8 m/s, global solar radiation 711,9 W/m<sup>2</sup>, solar UVA radiation 30,4 w/m<sup>2</sup>. "This is the first time that air pressure is measured at 8,000 m (26,247 ft.) from a ground station and not by a weather balloon," asserts Giampietro Verza, Technical Manager of the Ev-K2-CNR monitoring stations. Verza led the climbers step by step in instrument and data transmission system installation procedures from his base at the Ev-K2-CNR/NAST Pyramid Laboratory-Observatory at 5,050 m (16,568 ft.), a half-day's walk from Everest Base Camp.

The SHARE-Everest 2008 climbing team left Camp 2: 6,400 m (20,997 ft.) a.s.l. at 3 :00 am, Nepali time on May 15 with about 50 kg of technical material in tow. After 8 hours they reached South Col and identified the best location for the station. In one and half hours the team, which had been prepped in Italy and had practiced mounting the sensors at Base Camp, completed the installation in spite of a snowstorm and winds of 50 km/h.

"It was a tough job, but we did it," says Mondinelli. "It was freezing, but we set up all the equipment quickly, even if the storm made moving and breathing more difficult than it already was without supplemental oxygen. We didn't want to give up just because of the storm and we were rewarded



when we sent the first data to the Pyramid. It's a great satisfaction."

Verza explained the transmission system, "There is a radio connection from South Col to a repeater station about 10 km away on Kala Patthar at 5,600 m (18,372 ft.) a.s.l. The data are then radio-transmitted to the Pyramid atmospheric monitoring station at 5,079 m (16,663 ft.) and from there to a computer in the Pyramid Laboratory-Observatory which downloads them hourly. The Pyramid server then transmits the data to Ev-K2-CNR headquarters in Italy, where it is sent to scientists for elaboration and streamed 'live' on the [www.evk2cnr.org](http://www.evk2cnr.org) and [www.share-everest.org](http://www.share-everest.org) websites." A dedicated page demonstrating a graphic visualization of the data, updated hourly, will also soon be available on the same sites.

Paolo Bonasoni, an Italian National Council researcher affiliated with Ev-K2-CNR, who is in charge of the Pyramid atmospheric monitoring station (real time data available at <http://evk2.isac.cnr.it>), commented on the scientific significance of the installation. "The South Col station is an important achievement for mountaineering and for science. It is an exceptional point of weather observation, which provides important and unique meteorological data. Integrated within the SHARE network in the Khumbu Valley, comprised of seven stations between 2,660 m (8,727 ft.) and 5,079 m (16,663 ft.), it will surely improve our studies of atmospheric circulation, particularly regarding the exchange of air masses between the troposphere and stratosphere and the thermal gradient. The Meteorological Forecasting Division of Nepal's Department of Hydrology and Meteorology could also use this priceless information to improve weather forecasting services for the Himalayan mountaineering expeditions."

The complex, technologically advanced AWS instrumentation was designed by the Italian manufacturer LSI-Lastem. The sensors were customized to measure temperature, humidity, atmospheric pressure, wind speed and direction, global and UVA solar radiation at 8,000 m (26,247 ft.) in extreme environmental conditions like very low temperatures and reduced atmospheric pressure. "To ensure functioning of the station even during severe winter months," Verza explains, "there are three independent power supply systems connected to the station, so that if any of them fails, regular functioning of the station will not be compromised."

As the climbing team prepares for their summit attempt in the coming days, they have to take into account more work planned at the South Col station, where they will install the spare solar panels and batteries and make a few technical adjustments required following this first week's test run. This strong group of climbers will most surely make it to the 8,850 m (29,035 ft.) peak, but perhaps their most important "summit" has already been reached.

The Ev-K2-CNR Committee for High Altitude Scientific and Technological Research is a non-profit association for the promotion and advancement of science and sustainable development in mountain areas. The organization is based in Bergamo, Italy and has offices in Kathmandu, Nepal and in Skardu and Gilgit, Pakistan. Together with the Nepal Academy of Science and Technology, they run the Pyramid International Laboratory-Observatory at 5,050 m (16,568 ft.) a.s.l. near Lobuche in Nepal's Khumbu Valley. Their program SHARE (Stations at High Altitude for Research on the Environment) comprises a network of 12 stations distributed across the Himalaya, Karakorum, Ruwenzori, Alps and Apennine mountain regions.

#### **ATTACH**

##### **The first data from South Col's station**

[http://www.evk2cnr.org/shareftp/Data\\_southcol\\_15may2008.xls](http://www.evk2cnr.org/shareftp/Data_southcol_15may2008.xls)

##### **Videos:**

Gian Pietro Verza explains how does the station works (high definition)

<http://www.evk2cnr.org/shareftp/seminario.wmv>

Everest, mountaineers assemble South Col's station



<http://www.evk2cnr.org/shareftp/12may8-BC-HQ.wmv>

Everest's landscape and the climate station of Kala Patthar

<http://www.evk2cnr.org/shareftp/Kalapattar/KPaws.mpg>

Everest's landscape

[http://www.evk2cnr.org/shareftp/everest\\_campo3.mpg](http://www.evk2cnr.org/shareftp/everest_campo3.mpg)

**Pictures:**

Camp2

<http://www.evk2cnr.org/shareftp/foto/gnaro30ap08/campo2.jpg>

Base camp

<http://www.evk2cnr.org/shareftp/foto/gnaro30ap08/everest247.jpg>

Mountaineers

<http://www.evk2cnr.org/shareftp/foto/gnaro30ap08/fenomeni.jpg>

Everest

[http://www.evk2cnr.org/shareftp/everest\\_campo3.mpg](http://www.evk2cnr.org/shareftp/everest_campo3.mpg)

La stazione di Kala Patthar

<http://www.evk2cnr.org/shareftp/Kalapattar/IMG2409.JPG>

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***For more information, [www.share-everest.org](http://www.share-everest.org)***