

# **The computer-based practical stereo measurements training course in the aerospace education for the students of geographical specialities**

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### **3 main ways of three-dimensional information obtaining**

- Stereophotogrammetric method, based on stereo photo survey
- Radar interferometry
- Laser scanning

#### **Digital photogrammetric systems**

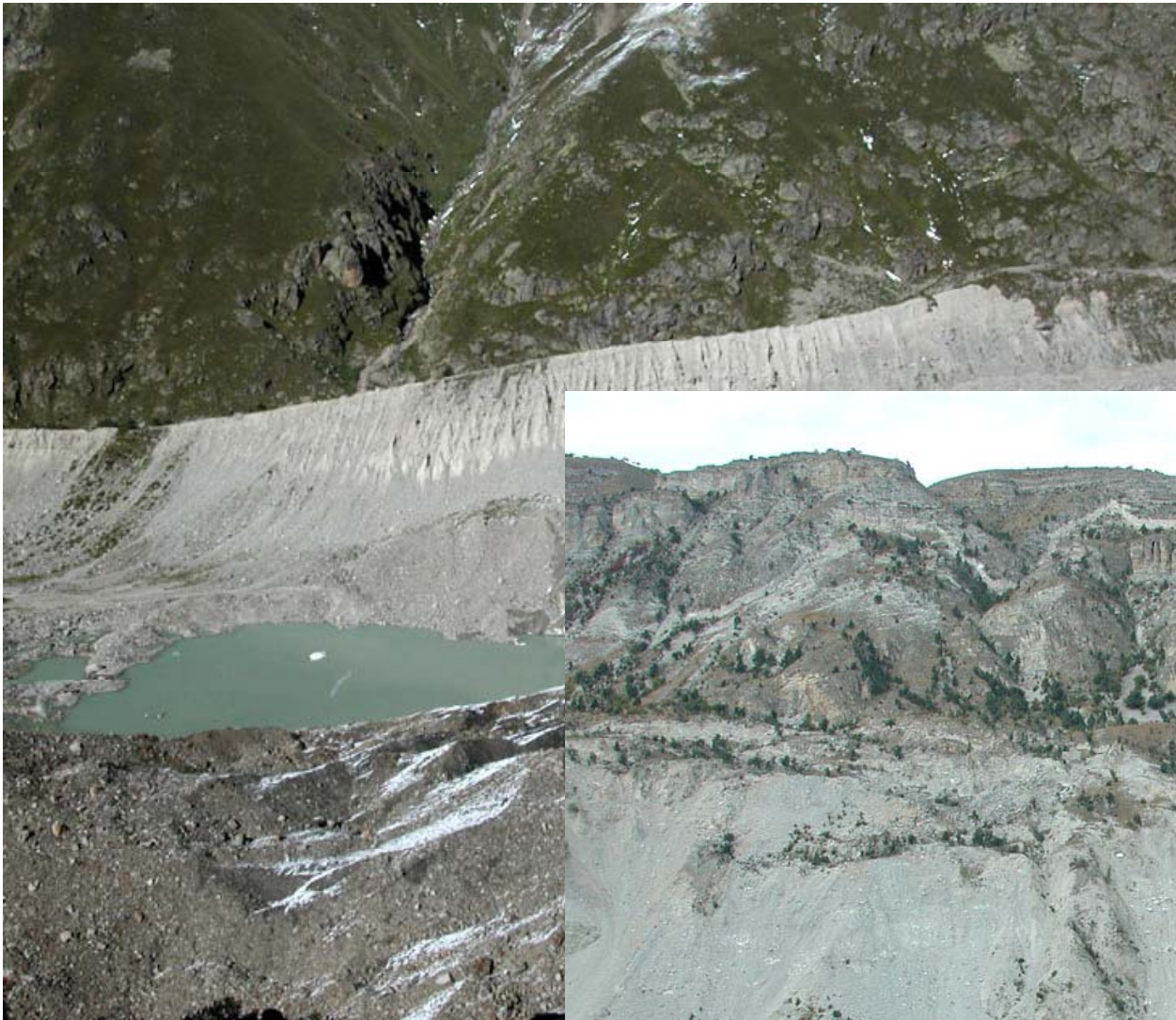
- \* PHOTOMOD (Racurs, Russia)
- \* Image station (Intergraph) and
- \* other universal systems provide the technology for compilation and update of topographical maps with the use of aerial and satellite images.



Digital camera strengthened to theodolite is used in practical work of geographers for stereo shooting when studying natural objects



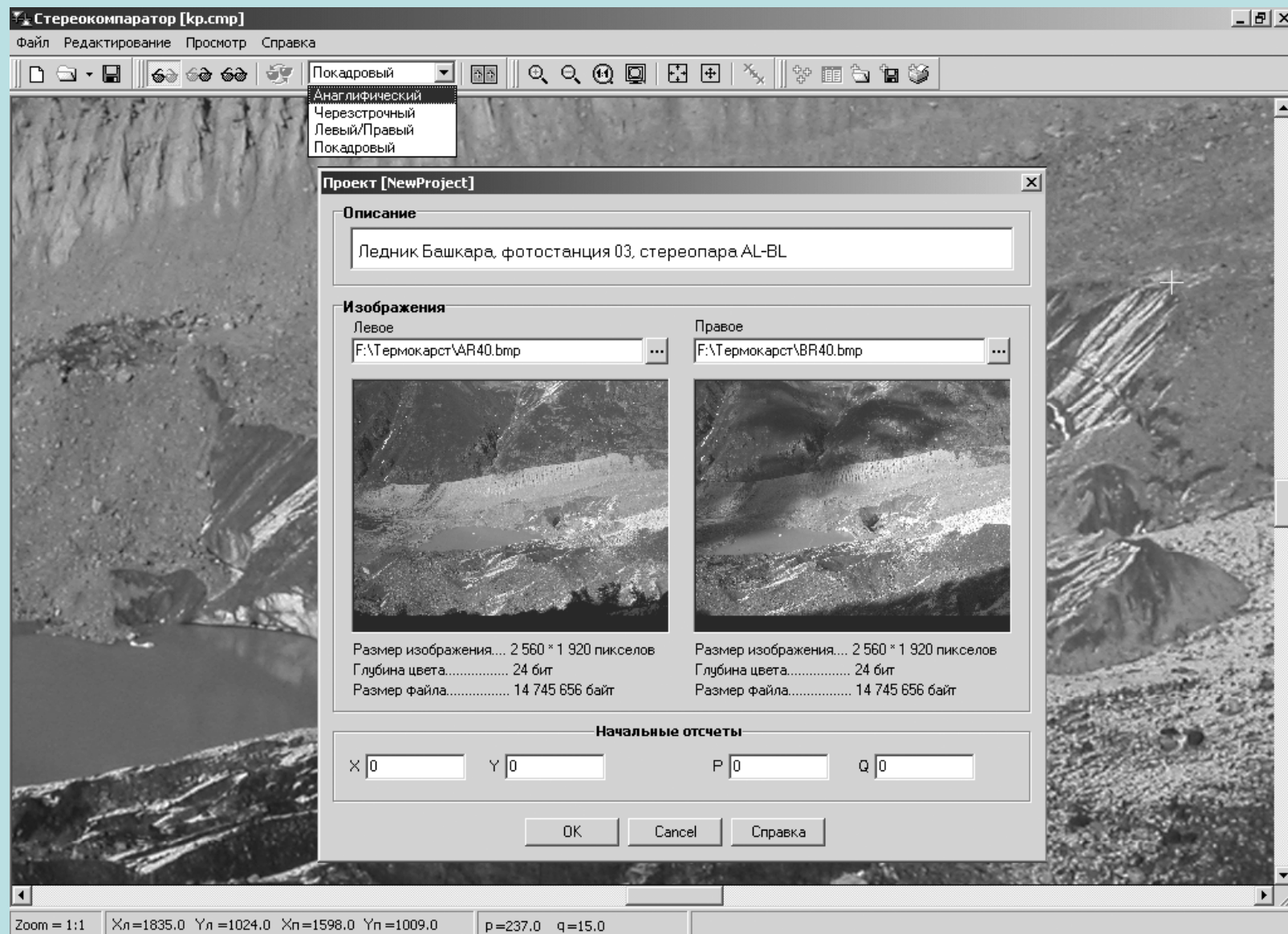
Baskara glacier at  
Central Caucasus with  
lakes of melted water  
and thermokarst crater  
are the objects of study  
natural hazards



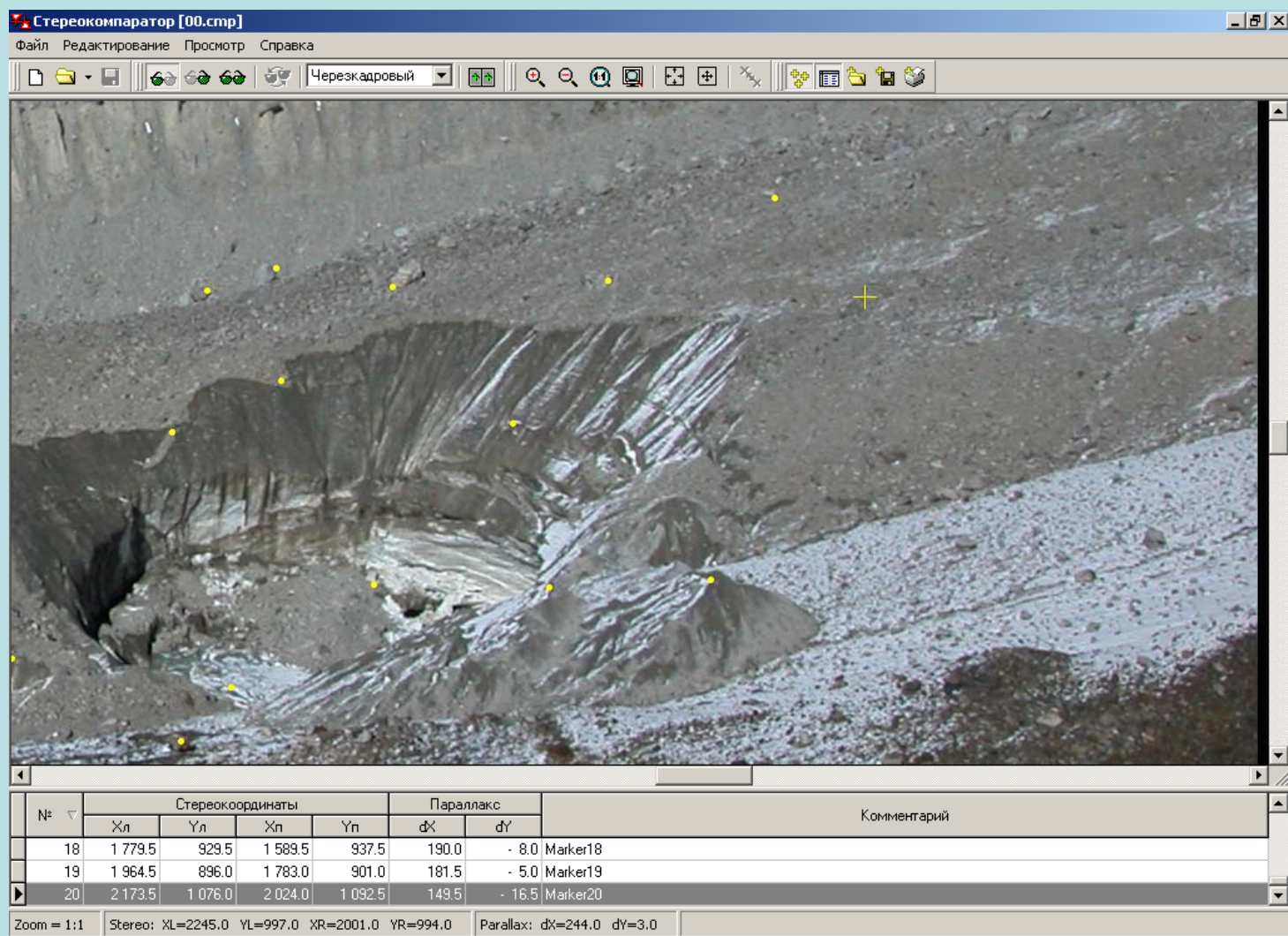
Landslide above  
the lake







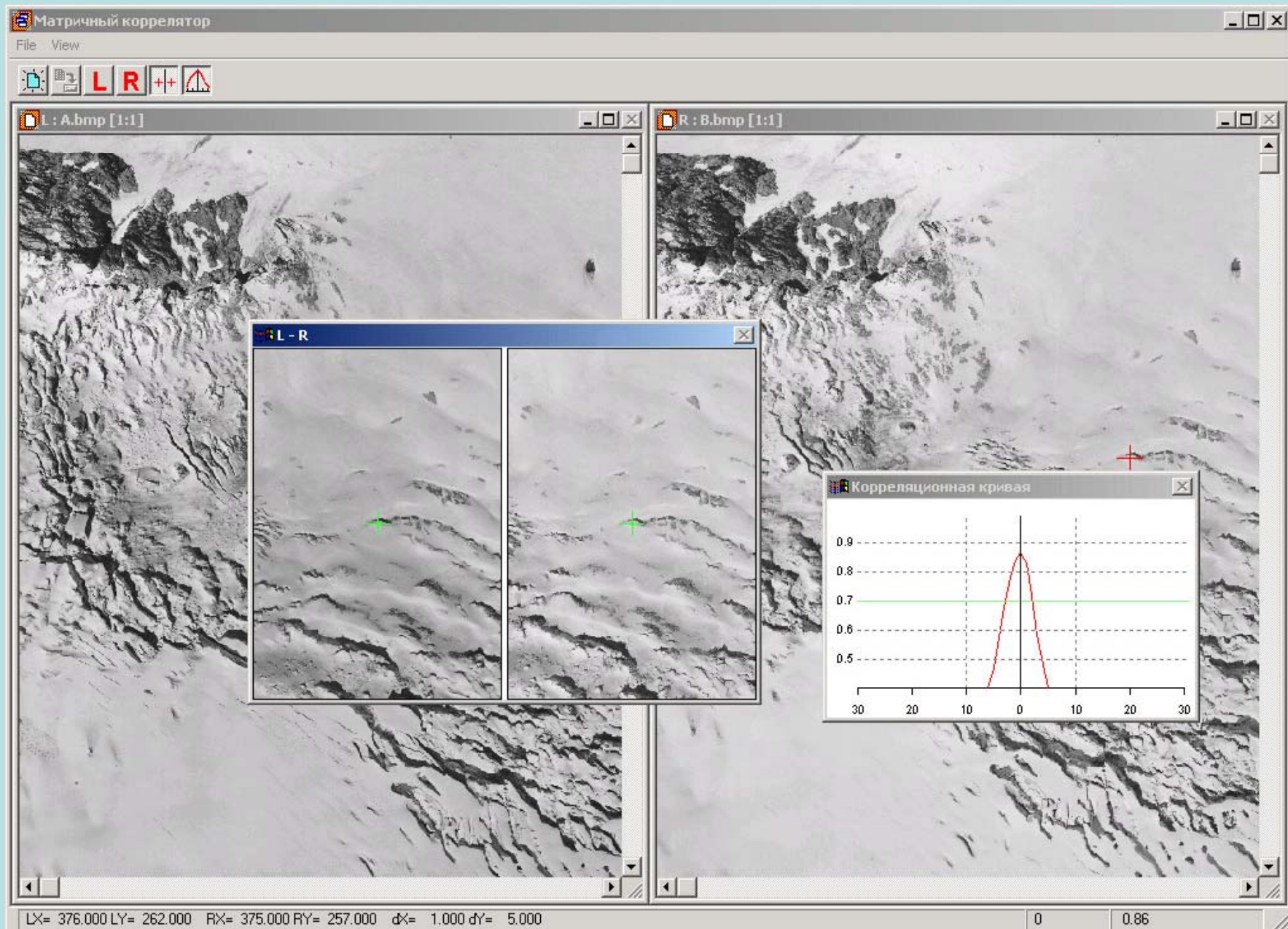
Project view of computer based stereo  
comparator program



The example of practical task, made by students:  
Measurements of 3D coordinates of objects for  
volume of thermokarst crater determination

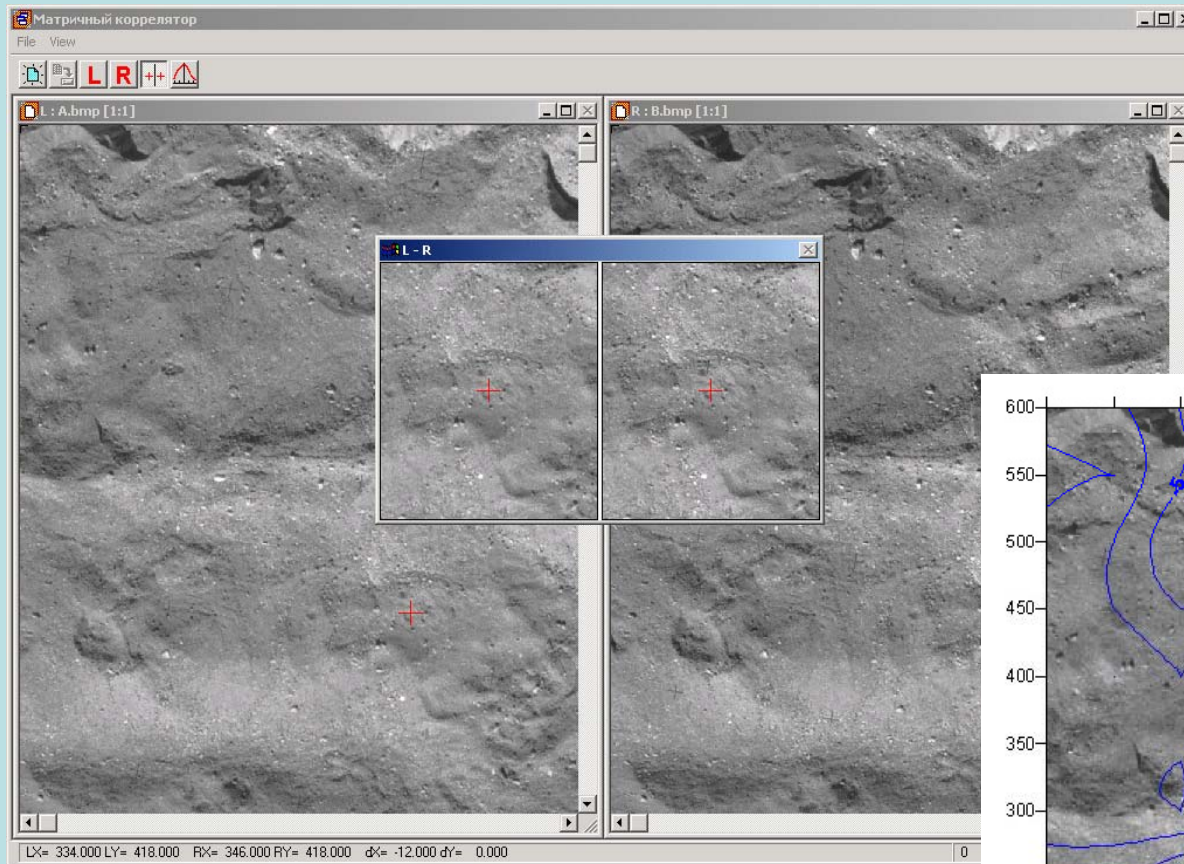


# Stereocorrelation demonstration utility

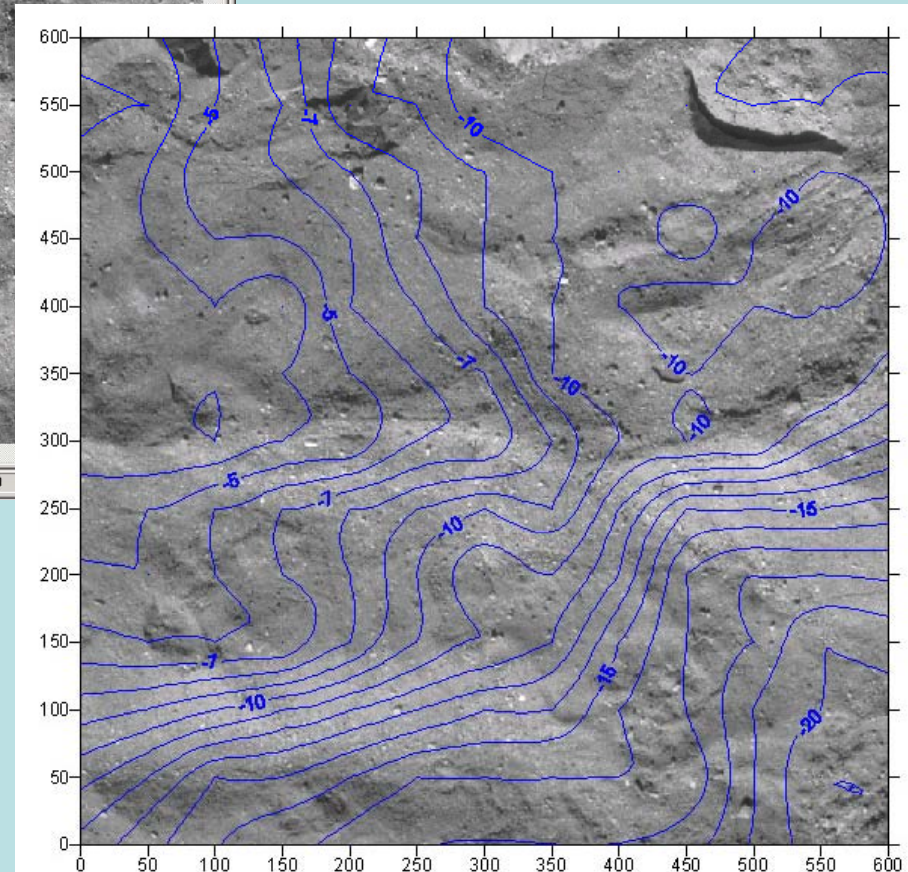




# The example of practical task, made by students: Automatic stereo measurements and visualization of results

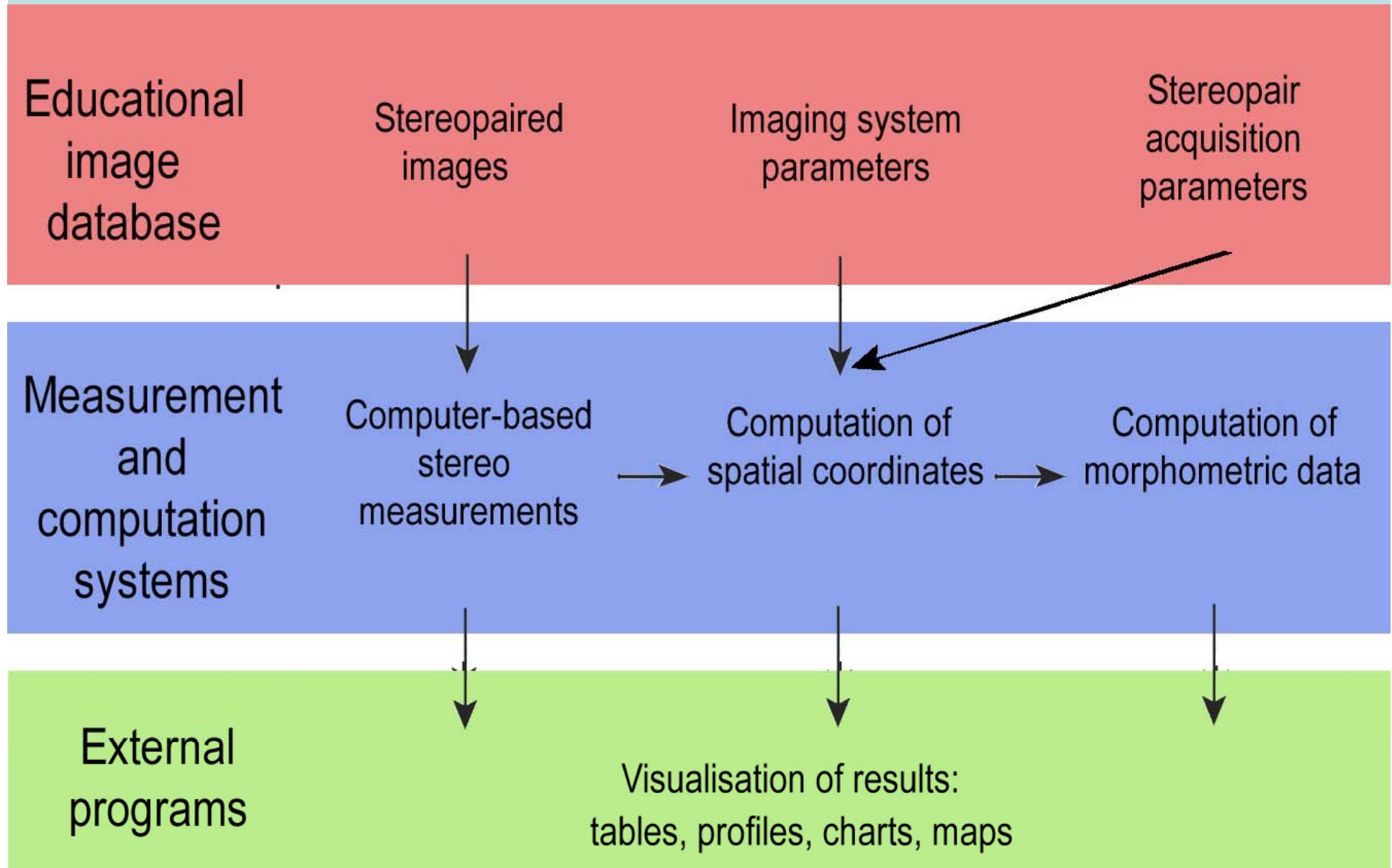


Simple comparing of perceived stereo model of terrain and its visualization as a topography map helps to students to comprehend the difference





# Functional diagram of 3D information obtaining from stereo pair images, used during the training course



# Stereopair of students group was made during the practical exercise

