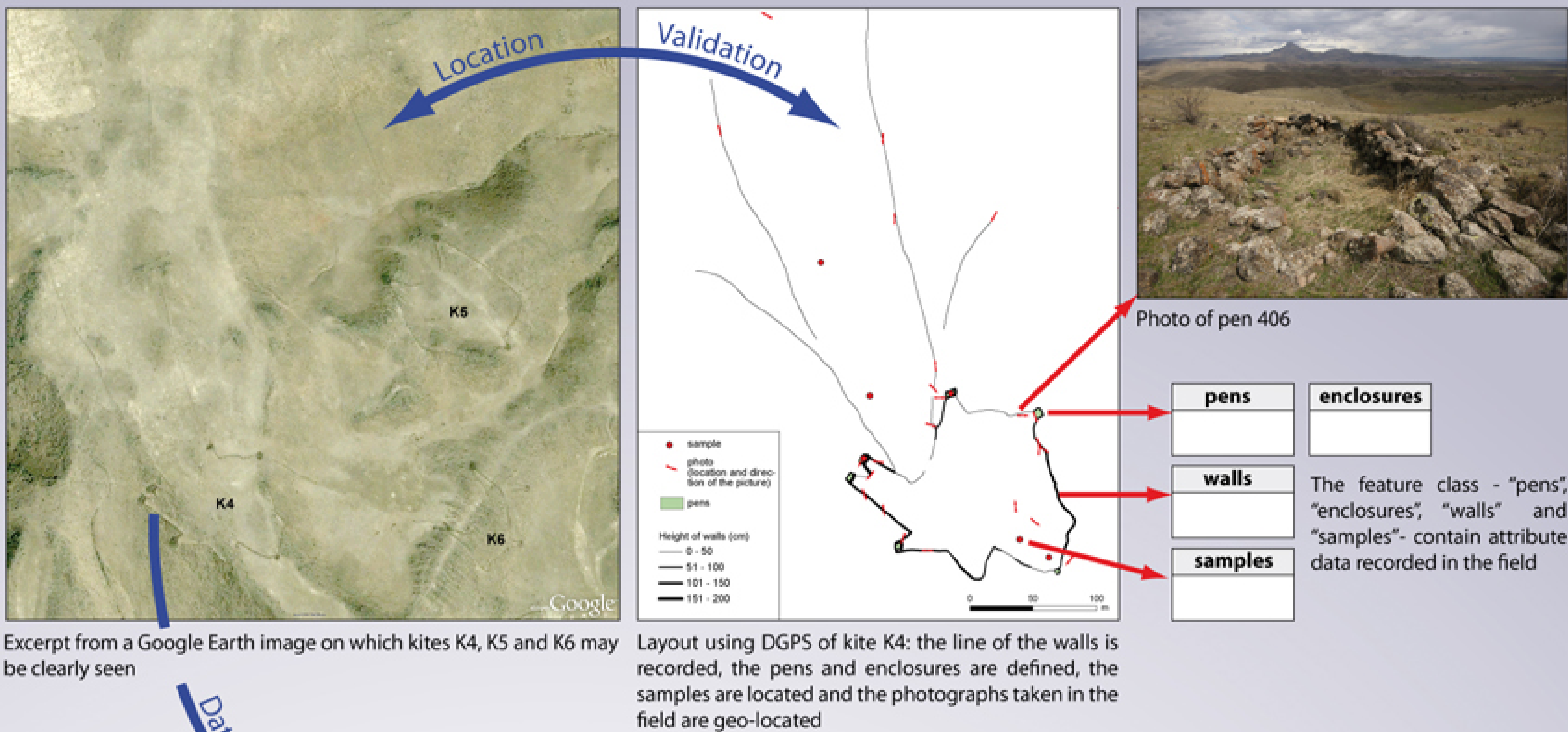


# Visible from space, understood during the fieldwork

## the example of "desert kites" in Armenia

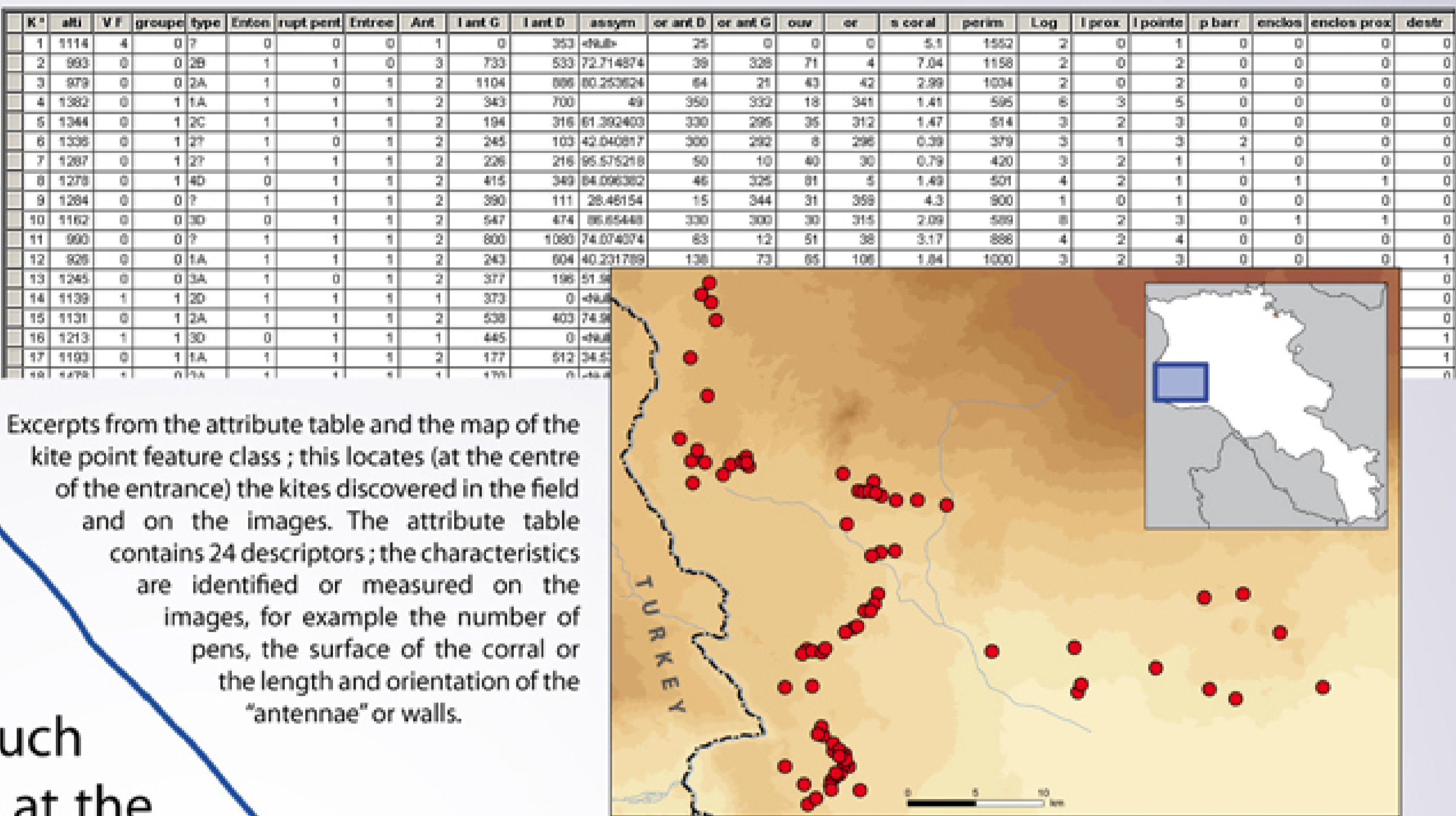
### A spatial database

The size of "desert kites" often renders them clearly visible in high-resolution satellite images. The use of Google Earth has proved to be very effective when coupled with visits on the ground to verify the presence of the kites. The study in the field of the shape of the constructions, their architectural particularities, their state of preservation and their layout has enabled identification of 78 kites on satellite images, thus enabling new investigations on the ground.

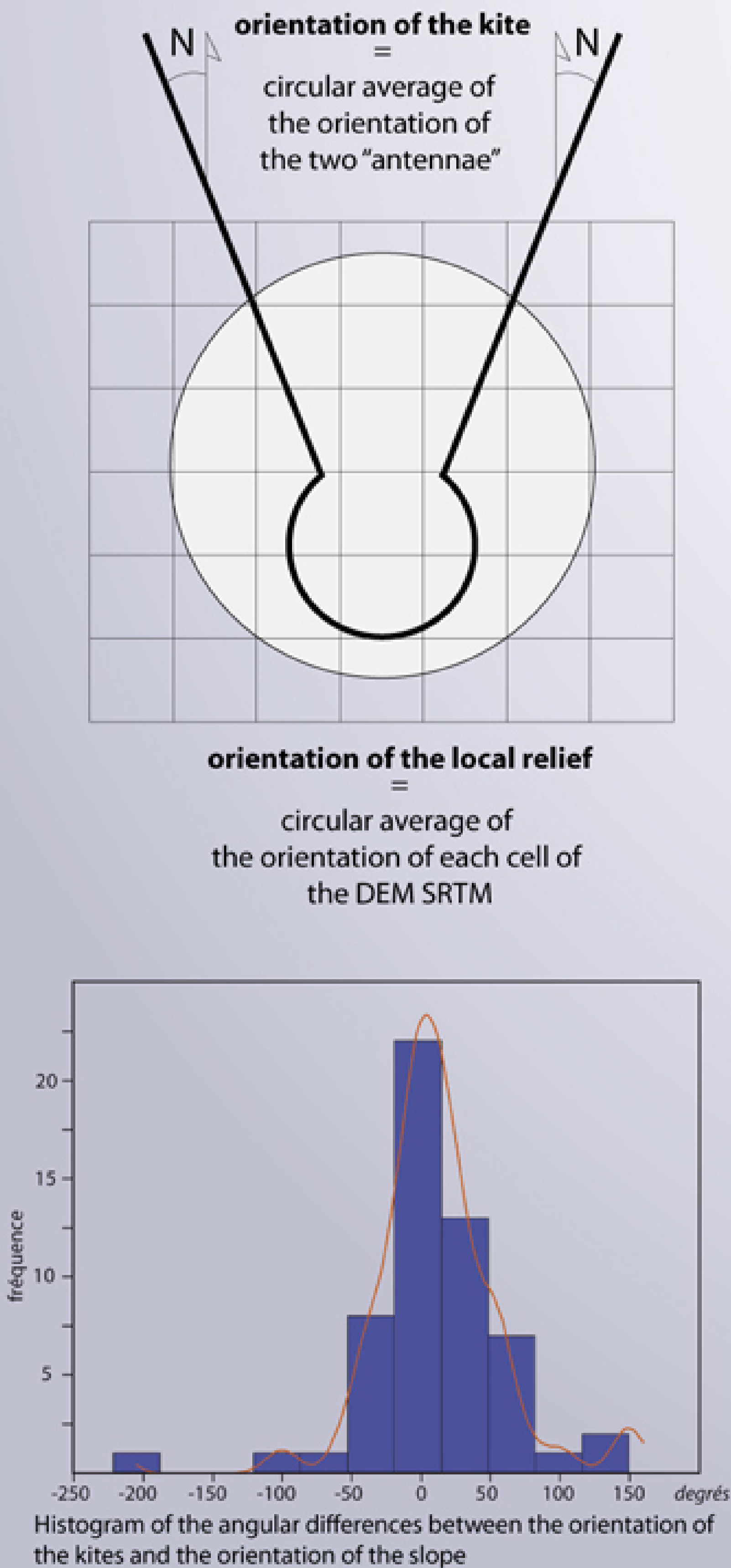


First identified in the Near East, the area of distribution in which "desert kites" are reported continues to grow. In particular, a group of kites has just been discovered and studied\* in Armenia. Questions of function and of dating, often controversial, cannot yet be settled at this stage of study, which will continue next year.

Nevertheless, the ground survey and the acquisition of much data owe a great deal to the use of Google Earth (opposite, at the right). This work already enables affirmation that the Armenian kites are very similar to those in the Near East but that certain characteristics such as their orientation (below at the left) are specifically regional.



This iterative approach using satellite images and investigations on the ground has enabled the creation of a spatial database that functions on two scales that fit together : the scale of the kite, in which the field data are recorded, and the scale of the region, in which each kite is characterised by some twenty descriptors identified or measured on the images.



The orientation of the two "antennae" or walls of each kite is one of the data acquired thanks to Google Earth. The orientation of the kites is easily calculated by the circular average of the two values.

A calculation of the orientation or aspect of the slopes using DEM SRTM provides an average value for the orientation of the local relief in a buffer zone, 400 meters in diameter, centred on the entrance to the kite.

**"Desert kites" are oriented according to the orientation or aspect of the slopes**

The circular correlation (graph opposite) between the orientation of the kites and the local average orientation of the slope is quite strong and highly significant.



Olivier BARGE  
Archéorient, CNRS UMR 5133, FRANCE  
olivier.barge@mom.fr

Jacques Elie BROCHIER  
LAMPEA, CNRS UMR 6636, FRANCE  
jacques.brochier@univ-provence.fr

