

## Ματιές στα βουνά της Κρήτης – Views over the Cretan mountains

Ρέθυμνο, 3-4 Οκτώβριου 2017

### ΠΕΡΙΛΗΨΕΙΣ ΔΙΑΛΕΞΕΩΝ / ABSTRACTS

**Dr. Gianluca Cantoro** (GeoSat ReSeArch Lab - IMS-FORTH, Rethymno - Greece)

#### **Historical aerial photography as unique documents: international panorama on applications in flat and mountainous landscapes**

Aerial archaeology is an old discipline consisting in examining past and modern landscape through the view-from-above. In particular, the archaeology from the sky takes advantage of historical aerial photographs (dating back to WWI and WWII) and targeted aerial survey to identify areas of interest, potential archaeological sites or to put in relation one site with its surroundings or multiple sites between them. This unique approach is largely based on self-training (as it was during the WWII for other purpose) and it allows to “read” subtle traces and chromatic variation of landscapes that can be reconducted to areas of archaeological interest.

Despite the large use of this approach in certain European country as accepted archaeological survey method, aerial archaeology in Greece is still an exceptional and uncommon practice. Archaeological or historical projects making use of historical or modern aerial photographs can be counted in half dozen so far.

A recently funded small-scale project, entitled “HIGH-ABOVE-THE-MOUNTAINS. Fossil Built Landscapes on Mountainous Uplands from the Sky”, brings prominently the bird eye view in the complex and pluri-stratified Cretan archaeological and historical context by employing it as primary research tool for the identification and mapping of abandon and forgotten historical and modern artefacts on mountainous landscapes of the major Greek island.

HIGH-ABOVE-THE-MOUNTAINS originates from the consideration that the space which surrounds us and with which we continuously interact, is not a static entity. It

is the result of the complex relations and influences of humans (and their cultures), animals and landscapes. Material and tangible results of such interactions (which often involve many more variables than the above outlined) are normally reshaped, repurposed, obliterated, damaged or endangered in view of the “development” of certain areas. However, sometimes, past standing structures become iconic elements of the landscape of which they are part, in a certain spontaneous monumentalisation process, as almost fossil or fossilized built landscapes. Their embodiment in the surrounding landscape is such that their presence is often underestimated, misinterpreted or simply ignored.

The main goal of the project is therefore to “tag” (with modern terminology) abandoned and collapsing artifact with archaeological and historical facts, promoting at once the involvement of local communities and (oftentimes) contemporary users of such artefacts (or what remains of them) with a dedicated web-portal, an originally presented photographic exhibition and a workshop for young researchers.

The paper, after an introduction to the discipline and its potential and an international panorama of applications, will present case studies from the Cretan mountainous landscape through historical and modern aerial photography, the difficulties of working in such a challenging context and the ongoing activities for community engagement in an attractive and expanding touristic destination.

**Dr. Charalampos Fassoulas** (Head of Geodiversity dep., Natural History Museum of Crete, University of Crete - Greece)

**Recent vertical and horizontal displacements in Crete and their implication to the Cretan landscape**

Crete was formed during the Alpine orogenesis which started in late Mesozoic times in western Europe, but is still active in the eastern Mediterranean. Land appeared for first time in late Oligocene (23 ma) as part of an extended landmass called Aegiis, that was covering mainland Greece and Aegean. The island is geotectonically controlled by the subduction of the African oceanic crust below

Aegean at a rate of about 1 cm/y and the westwards motion of the Anatolian plate towards the Aegean with rates of 2,5 cm/y. In addition, the southern Greece, ie. Peloponnese, Crete, and Rhodes is displaced southwards in respect to northern Greece at about 3 cm/year. Due to these motions Crete is extended horizontally for more than 12 ma giving rise to the numerous tectonic basins of the island. Surprisingly, even under this extensional tectonic regime, since Pleistocene (~2ma) its rocks are simultaneously uplifted in respect to the sea at a rate of about 1,2 mm/y. These recent vertical displacements created the abundant gorges of the island, as well as the very deep caves found at its mountains.

**Dr. Athanasios Argyriou** (GeoSat ReSeArch Lab, FORTH, Rethymno – Greece)

**Geoinformatic approaches to assess the landform characteristics of Minoan settlements and characterize the water management/land-use planning in ancient era in Crete.**

The Earth's surface consists of various physical properties which influence the local topography and indirectly the human behavior in terms of habitation patterns. The determination of geomorphology plays an important role in archaeological landscape research. Several landform types can be distinguished by characteristic geomorphic attributes that portray the surrounding landscape of a settlement and evaluate its geographical importance in terms of its ability to sustain a population.

In recent years because of improvements in computing capabilities and software functionality, the geoinformatic approaches can provide useful tools for decision makers managing natural, human and archaeo-heritage resources. In this research, Geographical Information Systems (GIS) techniques are acknowledged in order to determine the landform types and the geomorphometric characteristics surrounding each archaeological settlement, as extracted from the digital elevation model of TanDEM-X (12m spatial resolution), through various algorithms incorporated into free open source GIS software's. The locations of the archaeological settlements and the characterization of the dominant surrounding landscape geomorphometrics can reveal insights into the development of the settlements through the years and provide

a better understanding of human behaviour with regard the landscape characteristics over time, such as the water management and land-use.

Since the Bronze Age period, advanced water management techniques were practiced in several settlements around Crete. Various water resources, such as springs, cisterns and aqueducts were supplying the settlements and arable land according to local conditions in terms of geomorphology. The Minoans were forced by nature to develop advanced hydraulic systems for transporting water, due to the mountainous terrain, especially in regions with water scarcity due to the dry climate and the cities distance from major water bodies. Finding the routes through where the water resources were reaching and supplying the major settlements and the arable land is a challenging aspect with GIS being a powerful tool in this direction.

This study aims at the analysis of best routes for water resources to reach the major settlements and their surrounding arable land, by using integrated Multi-Criteria Decision Analysis (MCDA) and Least-Cost Path Analysis (LCPA) approaches in GIS. The outcome from the MCDA analysis provides the cost surface in order to plan the most suitable route for water resources by using LCPA and considering several criteria (such as springs, wells, aqueducts etc). The MCDA and LCPA approach prove to be valuable tools for the archaeologists in order to determine and evaluate the water management/land-use in ancient periods, by assessing the landscape impact to past human occupation and exploration of water resources routes.

**Dr. Jennifer Moody & Dr. Lucia Nixon** (University of Texas - USA & University of Oxford - UK)

**350,000 years of Landscape History in the High White Mountains, Sphakia: Middle Pleistocene to the Early Iron Age**

We know surprisingly little about the landscape history of two significant altitudinal zones in Crete: the Middle Slopes (400-800m above sea level), and the High Mountains (1200-2000m). Most archaeological surveys have focused on lower altitudes, believing these regions were the most important for human history or the most accessible.

The fieldwork of the Sphakia Survey in the Middle Slopes and High Mountains, however, reveals these altitudes to be rich landscapes with diverse histories impacted by climate, weather, plants, animals, and people. In this paper we will briefly discuss how these factors affected the Middle Slopes of Sphakia (the mountain plains associated with the villages of Ag. Ioannis, Anopolis). But our focus will be on the High Mountains, especially the high mountain pastures (madháres) of the central White Mountains.

We hope that the positive results of the Sphakia Survey's work in the Middle Slopes and High Mountains will encourage more, and detailed, research at these altitudes.

**Prof. Krzysztof Nowicki** (Institute of Archaeology and Ethnology, Polish Academy of Sciences, Warsaw - Poland)

**Archaeology in the Cretan Mountains: The Role of Archaeological Reconnaissance and Landscape Studies in the Reconstruction of Human Activity in the Mountainous Environment.**

This paper will address some problems related to prehistoric and early historic human presence/activity and its archaeological identification in the mountainous regions of Crete. The first concerns the methods used in searching for such a presence in the type of landscape which requires somewhat different strategy and procedures than those used by most of intensive surveys carried on the island in the past. Among the most important elements to be considered before the survey area is chosen and its borders drawn, is a preliminary study which should include a thorough archaeological and landscape reconnaissance, complemented with a general ethnographic overview. The basic environmental factors, which determined human permanent or seasonal existence or even occasional use, should be recognized first, before the exact borders of surveys are drawn and the tactics of surveying is chosen. Another problem concerns the general approach of modern surveys to the long-term relationship between a man and a land occupied/used by him. Environmental factors are not the only ones which influenced settlement patterns, and that remark concerns

especially the mountainous areas. One of the most underestimated surveying tools in the process of identification of human activity in the mountains is an archaeological reconnaissance. This, however, if carried systematically (and not randomly/occasionally), can help to built up a framework for the general history of the researched area, which was not determined only by environmental factors, but also by the character of interactions (friendly, neutral, hostile) between different groups of people, and by symbolic nature of the mountains. That is why the mountains, in our case the Cretan mountains, have such an important place in the identification of difficult/unstable periods in the Aegean history, which have not been well identified by intensive surveys carried out in Crete. My arguments in favour of archaeological reconnaissance and landscape research will be supported by several case studies, including those undertaken in the areas covered by surveys.

**Dr. Philippe Monbrun** (CRISES - Centre de Recherches Interdisciplinaires en Sciences humaines et Sociales, Université Paul-Valéry Montpellier 3, France)

**A childhood in the highlands of Crete. Zeus, the Idaion Antron and its endemic fauna and flora.**

Just above the Nida Plateau, at an altitude of 1538 meters, there is one of the very famous cretan caves: the Idaion Antron. The cave itself is in the middle of a landscape with a very strong natural and cultural identity. Here, on the northern slope of the Psiloritis, newborn Zeus was supposed to have been protected by the Kouretes, young men of the Ida mountain forests, and nurtured with honey and milk, Golden Age's foods given by endemic animals of mountainous Crete. Firstly, the bees and not any bees: the cretan bees (*Apis mellifera Adami*), who disappeared in the late 1980's, are now recognized as a true species. According to ancient authors and beekeepers of today, they were renowned for their aggressiveness and productivity and were also very well adapted to the windy weather, the cold and the snow of the Mount Ida/Psiloritis. Secondly, the goat and not any goat: the cretan wild goat or agrimi (*Capra aegagrus cretica*) was the pride of the mountain fauna. Its horns and sinews were used for the making of cretan bows and its bow hunting into mountainous and

difficult grounds played an important part in the initiation and military training of young Cretans. Like bee honey, its milk is a true digest of the cretan flora's virtues and traditional pharmacopoeia feeds on numerous goat's by-products. Lastly, there was also a tree at the entrance of the cave where offerings to Zeus were hanged. It's very possible that this tree was the cretan zelkova ambelitsia (*Zelkova abelicea*), the island's only endemic tree and an important species in its relict mountain flora. On all these subjects, the connection between the data of Antiquity and the information given today by zoologists, botanists and biologists is very fruitful: it puts interesting light on the Idaion Antron of Zeus, the highest of the cretan cave-sanctuaries, in a place where the inhabitants were not turning towards the sea but were strictly highlanders, involved in pastoral activities and living from the various wealths of the mountain. It was true in the past as evidenced by the nearby archeological site bearing the prehellenic name of Zominthos which was occupied from minoan till roman times, and even venetian. It's still about the same today: the close villages of Anoghia and Zoniana, with their shepherds and their culture of meat, are predominantly pastoral communities where some villagers talk about the birth of Zeus on Mount Ida as though it was an historical fact.

**Δρ. Στεφανία Μιχαλοπούλου** (ερευνήτρια Κ.Ε.Α.Ε. – Αθήνα)

**Η κτηνοτροφία των ορεινών τόπων διαχρονικά: το παράδειγμα της Κρήτης μέσα από τα δεδομένα της αρχαιολογίας, των ιστορικών μαρτυριών και της εθνογραφίας.**

Σκοπός της ανακοίνωσης είναι μια περιεκτική αλλά σχετικά πλήρης εισαγωγή στους τρόπους και τις μεθόδους ανίχνευσης και κατανόησης της κτηνοτροφικής δραστηριότητας στους ημιορεινούς και ορεινούς τόπους, και ειδικότερα στο νησί της Κρήτης, που χαρακτηρίζεται από το ανάλογο τοπίο και την κτηνοτροφική παράδοση.

Η ανακοίνωση θα περιλαμβάνει δύο σκέλη. Στο πρώτο θα γίνει μια θεωρητική/μεθοδολογική προσέγγιση όσον αφορά στους τρόπους διάκρισης και κατανόησης του φαινομένου. Συγκεκριμένα, θα γίνει αναφορά στις μεθόδους και τις δυνατότητες της επιστήμης της αρχαιολογίας και ειδικότερα σε τομείς όπως η

ζωορχαιολογία, τα αρχιτεκτονικά κατάλοιπα, οι χημικές αναλύσεις, οι αναλύσεις οργανικών καταλοίπων σε κεραμικά και η μελέτη συγκεκριμένων τεχνέργων. Εφόσον, μέρος της γνώσης μας για την εκμετάλλευση των ορεινών όγκων και των δραστηριοτήτων που λάμβαναν χώρα σε αυτούς κατά το παρελθόν προέρχεται σε σημαντικό βαθμό από την ιστορική και την εθνογραφική έρευνα, θα γίνει αναφορά στην αξιοποίηση ανάλογων πηγών και ερευνών, ενώ θα τονιστεί ιδιαίτερα ο κριτικός τρόπος με τον οποίο πρέπει να αντιμετωπίζονται τα δεδομένα που προκύπτουν από την εθνογραφική μελέτη. Αυτό γίνεται επειδή, σε ορισμένες περιστάσεις, η εθνογραφική παρατήρηση αντί να αντιμετωπίζεται ως πρώτη ύλη για πειραματισμό και προβληματισμό πάνω στις αρχαιότερες τεχνικές και συμπεριφορές, εκλαμβάνεται ως αναλλοίωτη και ανεπηρέαστη (από ιστορικούς, κοινωνικούς, περιβαλλοντικούς, εξελικτικούς κ.ο.κ. παράγοντες) στον χρόνο πρακτική/επιβίωση.

Στο δεύτερο σκέλος θα υπάρξει παράθεση, εκτίμηση και σύνθεση των όσων γνωρίζουμε για την κτηνοτροφία στα ορεινά της Κρήτης διαχρονικά, όπως αυτά προκύπτουν μέσα από την αρχαιολογική, την ιστορική και την εθνογραφική έρευνα.

**Δρ. Δήμητρα Μυλωνά (ΙΝΣΤΑΠ – Κέντρο Μελέτης Ανατολικής Κρήτης)**

**Κτηνοτροφικές πρακτικές του κρητικού ορεινού χώρου κατά την Ελληνιστική και Ρωμαϊκή περίοδο. Ζωο-αρχαιολογική ανάλυση των οστών αιγοπροβάτων από την Ελεύθερνα (Τομέας II – Κεντρικός).**

Η αρχαιολογική προσέγγιση των κτηνοτροφικών πρακτικών του παρελθόντος είναι μια σύνθετη διαδικασία, που αξιοποιεί ποικίλες πηγές και μεθοδολογίες. Η ζωο-αρχαιολογική ανάλυση οστών ζώων, ειδικότερα των αιγοπροβάτων, βρίσκεται στο κέντρο μιας τέτοιας προσπάθειας, καθώς παρέχει δεδομένα που αντανακλούν πρακτικές σε συγκεκριμένο τόπο και χρόνο. Στην παρούσα εργασία παρουσιάζονται τα ζωικά κατάλοιπα που αποκαλύφθηκαν κατά τις πανεπιστημιακές ανασκαφές στην Ελεύθερνα (Τομέας II – Κεντρικός). Εξετάζονται επιμέρους χαρακτηριστικά του οστεο-αρχαιολογικού συνόλου, τα οποία σχετίζονται με τις πρακτικές διαχείρισης των κοπαδιών και αξιοποιούνται ιστορικά και περιβαλλοντικά δεδομένα για να



ερμηνευτούν. Εξετάζεται η ιστορική συνέχεια/ασυνέχεια αυτών των πρακτικών από την Ελληνιστική ως τη Ρωμαϊκή εποχή.

**Assoc. Prof. Aris Tsantiropoulos** (Dep. Of Philosophy and Social Sciences, University of Crete)

**Transhumance as an aspect of pastoralism in modern Crete (Greece): Mapping the main routes of a social and cultural network**

In this paper I will firstly present an image of pastoralism (sheep and goats) in contemporary Crete, focusing on transhumance. According to official statistical censuses, compared to other pastoral societies in Greece, the transhumance pastoralism still persists in Crete until today (403 family corporations of stockbreeders in 2013). In particular, I will present the main routes and directions of this flock management practice pinpointing the local economical, ecological and social factors which have effects on the formation of a specific transhumance network. On the other hand, Greek State and European Union's Agricultural Policies have influenced this network in new directions and transformations in modern Crete. Last there will be a summary on the present data and the research methods for collecting, organizing and analyzing them.

**Επικ. Καθ. Χριστίνα Τσιγωνάκη** (Τμήμα Ιστορίας και Αρχαιολογίας, Πανεπιστήμιο Κρήτης και Ινστιτούτο Μεσογειακών Σπουδών/I.T.E.)

**Οχυρωμένοι τόποι στα κρητικά βουνά την εποχή της κρίσης (7ος – 8ος αι. μ.Χ.)**

Η άμυνα της Κρήτης κατά τη διάρκεια των κρίσιμων χρόνων των αραβικών επιδρομών (7ος-8ος αι. μ. Χ.) ενισχύθηκε με την κατασκευή ισχυρών οχυρώσεων στην πρωτεύουσα Γόρτυνα, στις σημαντικές πόλεις των ακτών και της ενδοχώρας, αλλά και σε μικρότερους οικισμούς λόγω της στρατηγικής τους σημασίας. Εξάλλου οι βυζαντινές γραπτές πηγές μιλούν για κάστρα και οχυρώματα σε δυσπρόσιτους τόπους, στα οποία οι κάτοικοι της υπαίθρου κατέφευγαν για να προστατευτούν μεταφέροντας εκεί και τα κοπάδια τους. Στην ανακοίνωση αυτή θα εστιάσουμε σε

δυσπρόσιτες οχυρωμένες θέσεις στα ορεινά της Κρήτης. Οχυρωματικοί περίβολοι, πύργοι και δεξαμενές νερού αποτελούν συνήθως τα πιο διακριτά, και πολλές φορές εντυπωσιακά, κατάλοιπα της αρχιτεκτονικής της ανασφάλειας. Η χρήση νέων μεθόδων στην υπηρεσία της αρχαιολογίας και η τηλεπισκόπηση επιτρέπουν την καλύτερη τεκμηρίωση αυτών των αρχιτεκτονικών κατασκευών, αλλά και τη διεξαγωγή χωρικών αναλύσεων στην κατεύθυνση της ένταξής τους σε έναν ευρύτερο αμυντικό σχεδιασμό.

**Επικ. Καθ. Ελευθερία Ζέη** (Τμήμα Ιστορίας και Αρχαιολογίας, Πανεπιστήμιο Κρήτης)

### **Ορεινός χώρος και επαναστατική παράδοση: η περίπτωση της Κρήτης.**

Ανάμεσα στα 1970 περίπου και το 2009 δημοσιεύονται στην Κρήτη μια αρκετά πλούσια σειρά από μαρτυρίες για την περίοδο της γερμανικής κατοχής και αντίστασης και την περίοδο του κρητικού «εμφυλίου», οι οποίες εμφανίζουν δύο κοινά σημεία:

α. η δράση φέρεται να επιστρέφει και να χρησιμοποιεί τον ορεινό ή ημιορεινό γεωγραφικό χώρο με την ίδια ακριβώς σήμανση και τις ίδιες λειτουργίες που είχε αυτός κατά τις επαναστατικές κινητοποιήσεις του 1821 και του 1866

β. η σύνθεση και η οργάνωση της επαναστατικής ανθρωπογεωγραφίας του κρητικού ορεινού χώρου μέχρι τα τέλη του 19ου αιώνα, παραπέμπει σε παμπάλαιες οικογενειακές δομές κυριαρχίας και οικιστικής οργάνωσης του χώρου.

Μια προσπάθεια προσέγγισης των παραπάνω συνεχειών θα μας βοηθήσουν να φωτίσουμε και να απομυθοποιήσουμε τους μηχανισμούς συγκρότησης της περίφημης επαναστατικής παράδοσης της Κρήτης, όπως συγκροτείται τον 19ο αιώνα, και των σχέσεων της με τον ορεινό χώρο και τις οικονομικό-κοινωνικές δομές του.