

Foreword

From September 9th to 11th, 1999, the Bavarian Conservation Office and the European Geophysical Society (EGS) are jointly holding the international conference "Archaeologische Prospektion" in Munich. More than 150 scholars and scientists from all over the world are attending this conference to discuss archaeological prospecting and new approaches – their significance for scientific evaluation and archaeological conservation practice.

Particularly the last few years have seen tremendous technological progress in archaeological prospecting. New devices, geophysical methods and evaluation possibilities have rendered field work much faster and more sophisticated. New ways of presenting results to the public have also become available, among them modern computer software to demonstrate the whole wide range of research being done aided by field models and 3D animation, which make even tiniest traces invisible to the naked eye visible.

Prospecting archaeological sites looks back on a proud tradition of more than 100 years. Air photography, geophysical methods and remote sensing have proven to be most successful. The conference will therefore center mainly around them.

Air photography has been employed widely in archaeology for quite some time and is now finding intensive use in the former East Block countries. Magnetometry, first successfully applied by Martin Aitken in 1957, has established itself as the most effective geophysical method. Measuring methods have improved substantially since Erwin Scollar first introduced computers in field work and in the evaluation of measured data in the 1960s and 1970s. Especially, the use of caesium magnetometers in archaeological prospecting has made great strides.

Fundamental research in different applications of caesium magnetometers was conducted at the Bavarian State Conservation Office, notably, by Helmut Becker and Jörg Fassbinder who, i.a., using other device configurations to make numerous

reference measurements at home and abroad, kept improving measuring procedures. Continuous study of the theoretical principles contributed enormously to furthering the understanding of the methods. The examination of the magnetic properties of archeological sites and the discovery of magnetic soil bacteria, in particular, drew worldwide attention and can be regarded as the essential pioneer work in magnetometer prospecting. The first measuring car bearing a caesium magnetometer developed at the Bavarian State Conservation Office is now already on exhibition in the Bonn branch of the "Deutsche Museum für Forschung und Technik in Deutschland nach 1945" (see Fig.).

The development of accelerated data processing in the field opened new dimensions for its application. Today even quite large archaeological sites can be measured within a reasonable amount of time; for instance Cicah in Siberia, Troy, Hellenic Palmyra and the Ramsessidean city of Qantir in Egypt, where the geophysicists of the Bavarian State Conservation Office, who are frequently invited to participate in excavations, have worked to great all round satisfaction, show how precise images of ancient settlement structures can be obtained. Moreover, successful prospecting forms an ideal basis for archaeological research, because it reduces to a minimum the time-consuming search for the important centers of excavations. Accurate maps permit exact calculation, pinpoint plotting of sections and sieving out areas in which important results may be anticipated.

Thus at the end of the 20th century, a time when so many archaeological sites all over the world are threatened with destruction, improved prospecting methods in conjunction with scientific scholarship offer archaeological conservation new perspectives.

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