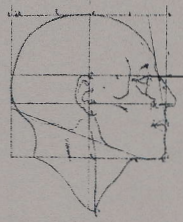
The Rolex Awards for Enterprise



Spirit of Enterprise: **The 1996 Rolex Awards**

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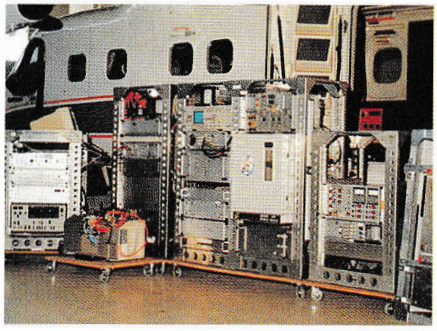
EBERHARD ZANGGER
Switzerland
(PROJECT) Use aerospace technology to survey the site of Bronze Age Troy



The Hissarlik mound, south of the Dardanelles in the Anatolia region of Turkey, and its surrounding plain have been the subject of historical and archaeological controversy since 1871, when Heinrich Schliemann began his excavations to find the lost city of Troy. Schliemann's unshakable faith in the accuracy of Homer's writing convinced him that the Hissarlik mound was the site of the Trojan Wars. Since that time scientists have constantly been reinterpreting the literature in an attempt to match historic descriptions with excavations.

A new look at historical writings led Eberhard Zangger, a German living in Switzerland, to revise his view of Troy and its surroundings. A doctoral student in geography at the University of Heidelberg, Zangger also consults on a number of archaeological projects.

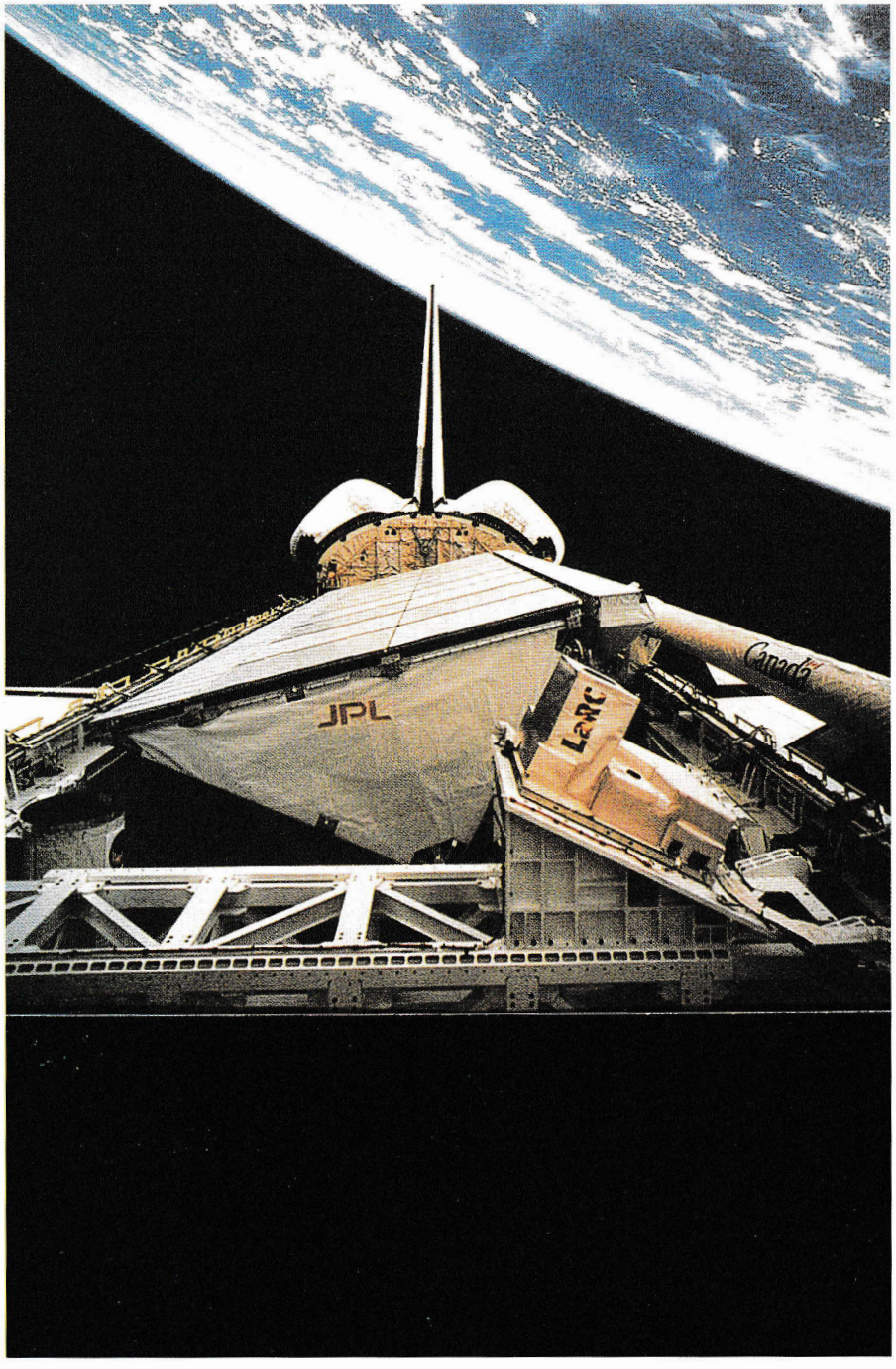
Zangger's book, *The Flood from Heaven*, published in 1992 suggested that Troy and Atlantis were one and the same city, and this theory stirred up considerable controversy. His latest book, *Ein neuer Kampf um Troja* (A New Battle around Troy), begins with a reference to Plato's *Critias* which describes the lost civilisation of Troy. "Plato's account is based on a garbled Egyptian recollection of the former port city of Troy, located at the gateway between the Mediterranean and the Black Seas," asserts Zangger.

Zangger succeeded in gleaning three new facts about Troy from Plato's work. First, it was substantially larger than was previously believed. Second, it was surrounded by concentric man-made ditches. Third, it contained extensive artificial waterways and port basins. Following recent excavations which uncovered a large ditch, now filled in, 340 metres south of the citadel and the remains of a lower town, archaeologists now agree that Troy resembled a medieval European city.

"Troy was important for access to the Black Sea and hence for commerce in the region," according to Zangger, and thus a survey of the plain separating it from the Aegean should reveal traces of ancient canals and inland ports. His project sets out to prove that Troy extended over an area wider than previously thought and was linked to the sea by these canals. For this, he wants to use the latest aerial sensing techniques rather than conventional excavation methods.

Zangger will undertake an extensive survey of an area some seven by 12 kilometres of the Trojan plain, using ground penetrating radar and magnetometer devices. The geographer already has radar images of the region taken from the Space Shuttle, as well as 10 pictures taken from the ERS-1 satellite. For deeper ground inspection, he wants to use a German Aerospace Research Centre aircraft equipped with a synthetic

Adopting aerospace technology to survey the site of Bronze Age Troy in Turkey will enable Zangger to detect the city's underground structures without having to excavate. He predicts satellite technology will revolutionise archaeology.



aperture radar device and a helicopter from the Federal Institute of Geoscience Resources. Electromagnetometry, magnetometry and scintillometry instruments on board these two aircraft, which require flying at an altitude of less than 100 metres, will be used to analyse the ground to a depth of several metres.

Once this remote sensing survey has been carried out, a team of researchers on the ground will go to the most promising locations with additional instruments capable of detecting ancient structures buried there. Zangger is planning to work with three German scientific institutes and researchers from Canada and the United States. The work should take ten months to complete and leave the land practically undisturbed. No excavations will take place, only some drilling.

Zangger is confident that his project will establish new standards for the study of archaeological landscapes. Compared to large-scale excavations, his techniques cover a much greater area and require a much smaller amount of time and money. "Space technology has the potential to do for archaeology what oceanography did for earth sciences in the 1970s, namely, revolutionise many of its paradigms," he suggests. Certainly, if the findings confirm Zangger's hypothesis, a new step will have been made toward our understanding of the early Bronze Age civilisation in Asia Minor.