Overview

"Remote sensing," in its most basic definition, has existed in archaeology for as long as practicing archaeologists have lived, as it can be defined as a means to observe the surrounding landscape. Many ancient cultures used mountain peaks or desert cliffs to survey their landscapes prior to choosing the most advantageous positions for their temples, tombs, settlements, or other building projects. These early architects, priests/priestesses, and leaders did what most satellite remote sensing specialists do: Using landscapes as computer screens, they focused on the natural relationship of landscape features to potential places for living, burial, or worship. Each landscape had its own intrinsic layered meaning to past peoples, as their "multispectral" approach involved seeing these palimpsests as a unified whole. The field of remote sensing, as more narrowly defined, has only existed for the past 100 years, with the field of satellite archaeology appearing in the early 1970s. While all landscapes of archaeological interest are imbued with these layers of interest, satellite and other remote sensing specialists see what the naked eye cannot, in the hopes that such analysis will allow a glimpse into the true hidden nature of past places. Memory and meaning in landscapes are intangible yet not unobtainable if one adopts a holistic approach to seeing otherwise invisible features.

Such holistic approaches require all above-ground remote sensing specialists to use all appropriate sources of data, including balloons, kites, aerial photographs, and satellite imagery in their work. Aerial photography, to which the field of satellite archaeology owes much, has merited a number of books devoted to its usage, as described in Chapter 1. These books, written by career aerial archaeology specialists, discuss the history of aerial archaeology, and general techniques for interpreting this imagery in a wide number of contexts, shown in Figure 2.1. This discussion will not be repeated in detail here, where the focus will be on the archaeological uses of satellites over the past 30 years. However, a general historical background of aerial archaeology allows for the evaluation of the full trajectory of satellite remote sensing and its uses in archaeology. This includes how the field developed in relationship to satellite endeavors in remote sensing, NASA's space program, anthropology, and geography. A generalized history of archaeology is also not appropriate: The field of remote sensing has developed independently of archaeology, while the usage of satellites in archaeology cannot outwardly be associated with any particular theoretical movement, although earlier technical developments seem to be connected to
the "New Archaeology" scientific movement of the late 1960s-early 1970s (Renfrew et al. 1966). Remote sensing in archaeology is more closely connected with generalized developments of the field of remote sensing rather than archaeological trends over the past 35 years.

1900s–1930s

A desire to view archaeological sites from the air, occurring just prior to and during World War I, essentially started the scientific field of remote sensing. Some of the earliest remote sensing in archaeology took place in the UK and Italy. The title of the "pioneer" of aerial archaeology belongs to UK army Lieutenant P.H. Sharpe, who took photographs of Salisbury Plain over Stonehenge in 1906, seen in Figure 2.2. Like many developments in archaeology, this was an accident: Winds had blown Lt. Sharpe off-course during an army exercise. The photographs, described by Colonel J.E. Clapper in Archaeologia, clearly show the stones in relationship to their surrounding earthworks (Capper 1907). Additional early aerial photos exist, taken from a balloon over the Tiber River, with images of Ostia Antiqua, and Venice from 1908, and of Pompeii in 1910 attributed to archaeologist Giacomo Boni (pers. comm., S. Campana and M. Forte, December 2006). Early photography taken for military purposes during World War I by Belgian pilots can even contribute to archaeology today (Stichelbaut 2006).