

UPDATED

**Testimony of Dr. Sarah Parcak
On Behalf of the Society for American Archaeology
Before the Cultural Property Advisory Committee
Regarding the Request by the Government of Egypt
For a Bilateral Agreement for Import Restrictions
Under the Cultural Property Implementation Act**

May 13th, 2014

My name is Sarah Parcak and I am testifying in support of the request by the Government of Egypt to enter into a bilateral agreement with the United States that would restrict the illegal importation of Egyptian antiquities into this country.

I am an Associate Professor of Anthropology at the University of Alabama at Birmingham, Founding Director of UAB's Laboratory for Global Observation, a Fellow at National Geographic and the Society of Antiquaries, a TED Senior Fellow, a member of the Society for American Archaeology, and Science Advisor for The Antiquities Coalition. I wrote one of the first books on satellite archaeology, called *Satellite Remote Sensing for Archaeology*, as well as multiple peer-reviewed articles and book chapters on the use of satellite imagery, and I have a talk on TED.com about my work. My work is supported by the National Geographic, the National Science Foundation, and NASA, in addition to the University of Alabama at Birmingham, The Center for Information Assurance and Joint Forensics Research, SpectralGlobe Technologies, and the Capitol Archaeological Institute at the George Washington University/The Antiquities Coalition.

SAA is an international organization that, since its founding in 1934, has been dedicated to the research about and interpretation and protection of the archaeological heritage of the Americas. With more than 7,000 members, SAA represents professional archaeologists in colleges and universities, museums, government agencies, and the private sector. SAA has members in all 50 states as well as many other nations around the world.

Section 303(A)(1) of the CPIA sets forth four conditions that must be met in order for import restrictions to be imposed. Today, I will focus my remarks on the first and second such conditions—that the cultural patrimony of Egypt is in jeopardy of pillage, and that Egypt is taking measures to protect its cultural resources.

For the past 13 years, I have developed methods to map previously unknown archaeological sites in Egypt using many satellite datasets, including NASA and high resolution sensors. I have worked in Egypt since 1999, where I am the co-Director of the Survey and Excavation Projects with my husband, Dr. Greg Mumford. I am the first person to map the entirety of Egypt using satellite imagery.

Prior to January 2011, I processed imagery to find archaeological sites and features in Egypt, following up with excavation or survey. After the looting of the Cairo Museum, I heard rumors of pillaging at archaeological sites near Cairo. With support from the National Geographic, I obtained new satellite images from mid-February 2011, and compared them to images from 2009 and 2010. I found over 200 new looting pits near Saqqara and Abusir. This began my looting research.

How do we map looting pits? With 15 years of excavation and survey experience in Egypt, I have visited hundreds of archaeological sites, and worked at sites in the Delta, Sinai, Middle Egypt, and Western Desert, and found over 3,000 previously unknown sites. I am familiar with every site type in Egypt. I have a database of high resolution imagery for most of Egypt's well-known sites, taken from 2007-2014. I also visited many of Egypt's sites in Oct-Nov of 2010 as part of a BBC program on my work, so I know what the ground looked like 2 months prior to the start of the recent looting.

There is a clear visual difference between excavation units and looting pits. Excavations are done in square or rectangular 5mx5m or 10mx10m units. Egyptian law requires backfilling excavation areas at the end of each season, if the features are not being conserved for tourism. Looting pits are circular or oval. They usually have a dark square center (often an exposed tomb), surrounded by a donut of earth. They are quite easy to identify using "before" and "after" satellite imagery.

Looting has a long history in Egypt, but has worsened since January 2011. We are now conducting a project to map the entirety of looting activity across Egypt. We have examined every known site, and many previously unknown ones, using high-resolution and open source data. We zoom in and compare before and after imagery, and draw each individual looting pit, to obtain a number count and a total area, as well as the total area of a site destroyed by encroachment. To date, we have found evidence of looting at many dozens of sites, both well-known and otherwise, and mapped tens of thousands of looting pits that date to the post-January 2011 period. To date, we have found over a 1000% increase in archaeological looting since that time. Our work is ongoing, and every day we map hundreds to thousands of additional pits.

I visited Egypt in both March 2011 (as part of the BBC program) and May 2011, at the invitation of the Ministry of Antiquities, to verify the satellite data. There was a 100% correlation between the satellite imagery with ground survey findings at Abusir and Saqqara, thus confirming our methodology. Many major tourist sites have experienced intensified looting, including Saqqara, Dashur, Lisht, Abusir, and others. Sites from every era in Egyptian history period have been affected. Some pits are tiny, while the largest pits can be as large as 5mx5m. Rural and urban sites seem to be equally affected by looting. Of the seven world heritage sites in Egypt, we have satellite data for intensified looting or encroachment at three of them (Cairo, Memphis, and Thebes), post-January 2011.

How many tombs and other features have survived intact, based on the satellite imagery analysis? We can use the preservation of the 64 known tombs in the Valley of the Kings as a comparative dataset. Only 7% of the tombs there were found undisturbed (Tutankhamen Yuya/Thuya, Maiherpi, and a 22nd Dynasty tomb). The others usually had some objects remaining but were heavily looted. So, it is likely that a minimum of just 7% of the thousands of sites affected by the recent pillaging are mainly intact, while the others will be, at best, only partially intact. This is why we are seeing a spike in objects recovered in Egypt, why we are seeing Egyptian antiquities flooding foreign markets, and why this MOU is crucial.

How does this fit in with Egyptian efforts to stop pillage? The Minister of Antiquities, Dr. Ibrahim, said in a March 2014 press conference at the Egyptian Embassy here in Washington that his nation needed a satellite imagery tracking system in place to locate and quantify looting across Egypt. We are nearly done with this mapping, and hope to replicate the methodology elsewhere, as well as train

Egyptians in ground surveying methods for affected sites. The proposed MOU is vital if these steps are to be harmonized and to realize their full effectiveness. Egypt appears poised to address these issues---if they continue their policy of welcoming foreign expeditions and encouraging them to lead field schools, it will prepare other young Egyptian archaeologists to protect sites. They face many challenges, but the will and intent to protect sites appear to be in place. I am certainly ready to share my database and satellite imagery of affected sites with the Egyptian minister when it is complete.

Thank you for your time and consideration of this crucial matter.