

TUNA KALAYCI

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<https://scholar.google.com/citations?user=OsPNQ5YAAAAJ&hl>

EDUCATION

2013 Ph.D. Anthropology, University of Arkansas, Fayetteville, USA
2006 M.Sc. Settlement Archaeology, Middle East Technical University, Turkey
2003 B.Sc. Statistics, Middle East Technical University, Turkey

ACADEMIC APPOINTMENTS

2019-present Marie Skłodowska-Curie Individual European Fellow
(CNR-IBAM & Durham University, Department of Geography)
2017-present Field School Instructor, the Kerkenes Project
2013-2019 Postdoctoral Scholar, Institute for Mediterranean Studies, Greece
2013-2014 GIS and Remote Sensing Instructor, University of Delaware Architectural
and Site Conservation Program Iraqi Institute for the Conservation of
Antiquities and Heritage (IICAH), Erbil, Iraq
2010-2013 Research Assistant, Settlement Systems and Environmental Change in the
Northern Fertile Crescent,” Center for Advanced Spatial Technologies
(CAST), University of Arkansas
2008-2010 Research Assistant, “CORONA Digital Atlas of the Middle East Project,”
Center for Advanced Spatial Technologies (CAST), University of Arkansas
2007-2008 Teaching Assistant, “Introduction to Cultural Anthropology,” Department
of Anthropology, University of Arkansas
2004-2007 Project Assistant, “Kerkenes Project,” Middle East Technical University,
Ankara, Turkey

ACTIVE RESEARCH PROJECTS

- Geospatial Practices for Ancient Movement Praxis (GeoMOP), Marie Skłodowska-Curie Individual Fellowship Project
- Assistant Director, Zincirli Hoyuk – University of Chicago & Tubingen
- Assistant Director, the Kerkenes Dag Project – University of Central Florida

PUBLICATIONS

Refereed Journal Articles

in review R.M.Seifried and T.Kalayci, The Sanctity of Space: Assessing the Spatial Organization of the Churches in the Southern Mani Peninsula, Contracted for Topical Issue on Unlocking Sacred Landscapes: Digital Humanities and Ritual Space, *Open Archaeology*
2019 Kalayci, T., R.Lasaponara, J.Wainwright, N.Masini Multispectral Contrast of Archaeological Features: A Quantitative Evaluation, *Remote Sensing* 11: 913

- 2019 Erb-Satullo, N.L., D. Jachvliani, T. Kalayci, M. Puturidze and K. Simon, Investigating the Spatial Organization of Fortress Complexes in the South Caucuses using Multiple Survey Techniques. *Antiquity* 93: 368
- 2017 Kalayci, T., F.-X. Simon and A. Sarris, A Manifold Approach for the Investigation of Early and Middle Neolithic Settlements in Thessaly, Greece. *Geosciences*: 7(3), 79
- 2017 Donati, J.C., A. Sarris, N. Papadopoulos, T. Kalayci, F.-X. Simon, M. Manataki, I. Moffat and C. Cuenca-Garcia, A Regional Approach to Ancient Urban Studies in Greece through Multi-Settlement Geophysical Survey. *Journal of Field Archaeology* 42: 1-18
- 2016 Kalayci, T., Settlement Sizes and Agricultural Production Territories: A Remote Sensing Case Study for the Early Bronze Age in Upper Mesopotamia. *Science and Technology in Archaeological Research*. 2(2): 217-234
- 2016 Kalayci, T. and A. Sarris, Multi-Sensor Geomagnetic Prospection: A Case Study from Neolithic Thessaly, Greece. *Remote Sensing: Special Issue on "Archaeological Prospecting and Remote Sensing."*8(11), 966
- 2015 Kalayci, T., A Remote Sensing Approach for Exploring Ancient Traffic. *International Journal Heritage in the Digital Era* 4(3):257–274.
- 2015 Agapiou, A., D. Alexakis, F.-X. Simon, T. Kalayci, J. Donati, N. Papadopoulos, A. Sarris, and D. Hadjimitsis, Extraction of Archaeological Information using High Resolution FormoSAT-2 Data. *International Journal Heritage in the Digital Era* 4(3): 241–255.
- 2015 Simon, F.-X., T. Kalayci, J. C. Donati, C. C. Garcia, M. Manataki, and A. Sarris, How efficient is an integrative approach in archaeological geophysics? Comparative case studies from Neolithic settlements in Thessaly (Central Greece). *Near Surface Geophysics* 13(6): 633-643
- 2012 Casana, J., J. Cothren, and T. Kalayci, Swords into Ploughshares: Archaeological Applications of CORONA Satellite Imagery in the Near East. *Internet Archaeology* 32.

Edited Books

- 2018 Sarris, A., E. Kalogiropoulou, T. Kalayci, and L. Karimali, “Communities, Landscapes, and Interaction in Neolithic Greece”, Berghahn Books: New York
- contracted T. Kalayci, “The Archaeologies of Roads”, The Digital Press at the University of North Dakota, Grand Forks, USA

Book Chapters

- contracted T. Kalayci and J. Wainwright A Geospatial Model for Herding Practices in the Ancient Near East. In *Fierce lions, angry mice and fat-tailed sheep: Animal encounters in the ancient Near East* edited by L. Recht. The McDonald Institute Monographs Series
- in review Branting, S., J. Lehner, S.B. Tirpan, D. Langis-Barsetti S., T. Kalayci, S. R. Graff, L. Proctor, N. Yoney, B. Asiliskender, C. Cakirlar J. M. Marston, *The Kerkenes Project 2017-2018. Steadman, Sharon R. and Gregory McMahon, eds. The Archaeology of Anatolia: Recent Discoveries* Cambridge: Cambridge Scholars Publishing.
- in press Kalayci, T., Analysis of Satellite Remote Sensing Data. In *Archaeological*

Spatial Analysis: A Methodological Guide, edited by Gary Lock, Mark Gillings, and Piraye Haciguzeller. Taylor & Francis.

- 2018 Kalayci, T., Arkeolojide Mekansal Teknolojiler (Geospatial Technologies in Archaeology). In *Arkeolojide Temel Yontemler*, edited by S. Unlusoy, C. Cakirlar, and C. Cilingiroglu. Ege Yayinlari, İstanbul
- 2017 Sarris, A., T. Kalayci, and I. Moffat, An Introduction to Geophysical and Geochemical Methods in Digital Archaeology. In *Digital Geoarchaeology – New Technologies for Interdisciplinary Human-Environmental Research*, edited by C. Siart, M. Forbiger, and O. Bubenzer, pp. 215-236. Springer Series on Natural Sciences in Archaeology.
- 2017 Branting, S., J. Lehner, S.B.Tirpan, S. R. Graff, J. M. Marston, T. Kalayci, Y. Ozarslan, D. Langis-Barsetti, L. Proctor and P. Paulsen The Kerkenes Project 2015- 2016. Steadman, Sharon R. and Gregory McMahon, eds. *The Archaeology of Anatolia: Recent Discoveries (Volume 2)*, Cambridge: Cambridge Scholars Publishing.
- 2015 Kalayci, T., Remote Sensor Data Integration: Methods and Obstacles. In *Best Practices of Geoinformatic Technologies for the Mapping of Archaeolandscapes*, edited by. A Sarris, pp. 71–84. Archaeopress, Oxford.
- 2015 Armstrong, K. and T.Kalayci, Images of the Past: Magnetic Prospection in Archaeology. In *Best Practices of Geoinformatic Technologies for the Mapping of Archaeolandscapes*, edited by. A Sarris, pp. 1–12. Archaeopress, Oxford.
- 2015 Manataki, M., A. Sarris, J. C. Donati, C. C. Garcia, and T. Kalayci, GPR: Theory and Practice in Archaeological Prospection. In *Best Practices of Geoinformatic Technologies for the Mapping of Archaeolandscapes*, edited by A. Sarris, pp. 13–25. Archaeopress, Oxford.
- 2015 Sarris, A., C. C. Garcia, T.Kalayci, F.-X. Simon, G. Cantoro, J. Donati, J. Manataki, K. Vouzaxakis, V. Rondiri, P. Arachoviti, K. Almatzi, D. Efstathiou, and E. Stamelou Magoula Visviki from a Geophysical Prospection Perspective. In *Visviki–Magoula /Velestino Die Neolithischen Befunde und Funde*, edited by E. Alram-Stern and A. Dousougli-Zachos, pp. 573–578. Dr. Rudolf Habelt, Bonn.

Refereed Conference Proceedings

- 2018 Sarris, A., T. Kalayci, F.-X. Simon, J. Donati, C. C. García, M. Manataki, G. Cantoro, I. Moffat, E. Kalogiropoulou, G. Karampatsou, K. Armstrong, N. Argyriou, S. Dederix, C. Manzetti, N. Nikas, K. Vouzaxakis, V. Rondiri, P. Arachoviti, K. Almatzi, D. Efstathiou, and E. Stamelou, Opening a New Frontier in the Study of Neolithic Settlement Patterns of Eastern Thessaly, Greece. In *Communities, Landscapes, and Interaction in Neolithic Greece*. Berghahn Books: New York
- 2015 Kalayci, T., A Review on the Potential Use of CORONA Images of Greece. In *Proceedings of the Computer Applications in Archaeology Conference(CAA-GR) Rethymno, Crete, 7–8 March 2014* edited by Papadopoulos, C., Paliou, E., Chrysanthi, A., Kotoula, E., and A. Sarris, pp. 55-63. Institute for Mediterranean Studies-FORTH
- 2009 Kalayci, T., Predictive Modeling of Settlement Mounds in the Lake District Region and its Immediate Environs. In *Proceedings of the XI Symposium on Mediterranean Archaeology (SOMA), Istanbul Technical University, 24 and 29 April 2007*, edited by C.O. Aygun, pp. 171–178. Archaeopress.

Articles in Newsletters and Non-Refereed Scholarly Publications

- in press* D. Schloen, V. Herrmann, and T. Kalayci, Zincirli Hoyuk Kazilari. *Kazi Sonuclari Toplantisi* 2018, Gaziantep.
- 2018 S.Branting, S. Baltali Tirpan, J.Lehner, D. Langis-Barsetti, T. Kalayci, Y.Ozarlan, N. Yoney, B. Asiliskender, S.R.Graff, L. Proctor, P.Paulsen Kerkenes 2017. *Kazi Sonuclari Toplantisi* 3. Cilt 07–11 Mayıs 2018, Canakkale, 333–350.
- 2015 Cantoro, G., N. Papadopoulos, N. Argyriou, K. Armstrong, C. C. Garcia, J. C. Donati, T. Kalayci, I. Moffat, A. Sarris, and F.-X. Simon, A Satellite, Aerial and Low-Altitude Approach for Ancient Greek Cities. *ISAP News* (42):3–6.
- 2013 Sarris, A., T. Kalayci, and N. Papadopoulos, Geophysical Prospection on the Volcanic Environs of Therasia Island, Cyclades, Greece. *ISAP News* (37):2–4.
- 2008 D. B. Erciyas, E. Sokmen, and T. Kalayci, Tokat İli Komana Antik Kenti Yuzey Arastirmasi 2006. *Kazi Sonuclari Toplantisi* 2. Cilt 28 Mayıs–1 Haziran 2007, Kocaeli, 197–212.

Published Book Reviews

- 2014 Kalayci, T., High Resolution Optical Satellite Imagery. *Photogrammetric Engineering and Remote Sensing* 80(3):213.
- 2009 Kalayci, T., Manual of Geographic Information Systems. *American Society of Photogrammetry and Remote Sensing (ASPRS)*. Bethesda, MD. ASPRS Members.

ACADEMIC PRESENTATIONS

- 2018 Kalayci, T. “Remote Sensing and Agent-Based Models for Archaeological Applications” The Space4Culture Conference, October 15-16, 2018, Matera, Italy.
- 2018 Kalayci, T. “Archaeology and the Military Complex” European Association of Archaeologists (EAA) Conference, September 5-8, 2018, Barcelona, Spain.
- 2018 Kalayci, T., D. Langis-Barsetti, and S. Branting “Connecting Iron Age Neighborhoods: An Urban Case study from Kerkenes” Computer Applications and Quantitative Methods in Archeology (CAA) Conference, March 19–23, 2018, Tübingen, Germany.
- 2017 Kalayci, T., “Modelling the Volume of Ancient Movement: A Satellite Remote Sensing Approach.” Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA), March 14–16, 2017, Atlanta, GA.
- 2017 Kalayci, T., M. Manataki, and A. Sarris “The More the Merrier? Two Conflicting Stances on Multi-Array Sensors.” Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA), March 14–16, 2017, Atlanta, GA.
- 2017 Kalayci, T., “A Satellite Remote Sensing Model for the Ancient Traffic in Upper Mesopotamia.” Society for American Archaeology (SAA): 82nd Annual Meeting March 29–April 2, 2017, Vancouver, BC.
- 2016 Kalayci, T., “Putting Production Landscapes into Context: A Multi-Faceted Case Study from Upper Mesopotamia during the Early Bronze Age.” 44th Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA), Oslo, Norway.

- 2016 Kalayci, T. and A. Sarris. "Picking Needles from a Magnet: Obstacles and (Hidden) Opportunities of Magnetic Prospection in Challenging Environments." 44th Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA), Oslo, Norway.
- 2016 Branting, S. and T. Kalayci. "Kerkenes Dag: Materializing an Imaginary City." 44th Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA), Oslo, Norway.
- 2015 Kalayci, T., "A Cross-Comparative Study for the use CORONA Satellite Imagery in Diverse Archaeological Landscapes." European Space Agency, EARSel Workshop on Advances in Remote Sensing for Cultural Heritage: From Site Detection to Documentation and Risk Monitoring, 12–13 November, Frascati (Rome), Italy.
- 2015 Kalayci, T., "Paleoprecipitation Reconstruction from Oxygen Isotope Data: A Case Study from Upper Mesopotamia." International Open Workshop, Socio-Environmental Dynamics over the Last 12,000 Years: The Creation of Landscapes IV, March 24–27, Kiel University, Kiel.
- 2015 Kalayci, T., "Archaeological Sites and Site Territories: A Remote Sensing Approach for Modelling Production Landscapes." 43rd Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA) – Sienna, Italy.
- 2015 Kalayci, T. and A. Sarris "Sensor Data Integration: Concepts and Methods." 43rd Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA) – Sienna, Italy.
- 2014 Kalayci, T., "A Re-evaluation of the Early Bronze Age Collapse in Upper Mesopotamia." Computer Applications and Quantitative Methods in Archeology (CAA) April 22–25, Paris, France.
- 2014 Kalayci, T., "A Review on the Potential Use of CORONA Images of Greece." Computer Applications and Quantitative Methods in Archeology (CAA) – Greek Chapter, March 6–8, Rethymnon, Greece.
- 2014 Kalayci, T., "Agricultural Surplus, Climate Change and the 'Collapse' of an Urban System: A Remote Sensing Approach." REMote Sensing Technologies in Cultural Heritage Workshop (REStECH I), Laboratory of Geophysical-Satellite Remote Sensing & Archaeoenvironment, Rethymnon, Greece.
- 2013 Kalayci, T., "Demographic Incentives of Early Bronze Age Agricultural Production in Upper Mesopotamia: A Reevaluation." American Schools of Oriental Research (ASOR), November 20–23, Baltimore, MD.
- 2012 Casana, J., J. Cothren, and T. Kalayci. "Settlement Systems of the Northern Fertile Crescent: Results from the Corona Imagery Atlas Project." Society for American Archaeology 77th Annual Meeting, Memphis, TN.
- 2012 Kalayci, T., "Agricultural Sustainability of the Early Bronze Age Settlement Systems in the Syrian Jazira." Association of American Geographers (AAG) Annual Meeting, New York, NY.
- 2011 Kalayci, T., "CORONA Archaeological Atlas of the Middle East: An Early Bronze Age Case Study from the Atlas." Association of American Geographers (AAG) Annual Meeting, Seattle, WA.
- 2010 Kalayci, T., "CORONA Imagery Archaeological Atlas of the Middle East." Invited talk at the Cotsen Institute, UCLA, Los Angeles, CA.
- 2010 Kalayci, T., "Spectral Mixture Analysis of Ancient Sherd Scatters." Poster presentation at the American Society of Photogrammetry and Remote Sensing (ASPRS) Annual Meeting, San Diego, CA.

- 2009 Kalayci, T., J. Cothren, A. Barnes, J. Casana. “Accuracy of DEM Generation from CORONA Stereo Pair Images.” 37th Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA) - Making History Interactive, Williamsburg, VA.
- 2007 Kalayci, T., “Predictive Modeling of Settlement Mounds (9000-5500 B.C.) in the Lake District Region and its Immediate Environs.” Symposium in Mediterranean Archaeology (SOMA) 2007, Istanbul, Turkey.

ARCHAEOLOGICAL / GEOPHYSICAL FIELDWORK

- Zincirli Project (Turkey), 2015-2019
- Kerkenes Dag Project (Turkey), 2002-2008, 2015-2019
- Thessaly (Greece), 2015-2016
- Bekes (Hungary), 2016
- Haliartos Archaeological Project, (Greece), 2016
- Marathonas-Vranas (Greece), 2016
- Salamina – The Finnish Institute at Athens Project (Greece), 2016-2017
- Lechion – American School of Classical Studies at Athens Project (Greece), 2016
- Argos – University of Geneva Project (Greece), 2016
- Mtsvane Gora/Kavakh Tepe Project (Georgia), 2016
- Amorium Archaeological Project, (Turkey), 2015
- Pagalochori (Greece), 2015
- Thessaly (Greece), 2013–2015
- Mantenia – Elis (Greece), 2014
- Therasia Island (Greece), 2013–2014
- Trapeza Aigiou (Greece), 2013
- Hirbemerdon Tepe (Turkey), 2011
- Glen Canyon (USA), 2010
- Tell Hamoukar (Syria), 2010
- Tell Qarqur (Syria), 2008, 2010
- Kinet Hoyuk (Turkey), 2008
- Domuztepe (Turkey), 2008
- Komana Pontika (Turkey), 2005–2006
- Yalincak-Kocumbeli (Turkey), 2006
- Catalhoyuk (Turkey), 2005
- Hakemi Use (Turkey), 2005

DIGITAL ARCHAEOLOGY PROJECT PARTICIPATIONS

- HORIZON 2020, Safeguarding Cultural Heritage through Technical and Organizational Resources Management (STORM)
- GSRT 2015-2017, Monitoring and Modeling of Natural Environment and Resources: The Case of Crete
- NSRF-Thalis 2012-2014, Island Cultures in a Diachronic Perspective: The Case of Therasia
- Archaeo-FORMOSAT: Investigating the Potential of FORMOSAT 2 Imagery in Archaeological Research
- ARISTEIA (EXCELLENCE) II-Ancient City: The Application of Novel Geo-Information Technologies in Ancient Greek Urban Studies, Operational Programme «Education and Life Long Learning»
- "Amorium Urban Archaeology Project" , the Stavros Niarchos Foundation

- KRIPIS – POLITEIA: Culture-Technology: New technologies in research, study, documentation and accessibility in the information of items and monuments of cultural heritage, Operational Programme
- ARISTEIA (EXCELLENCE) I -Innovative Geophysical Approaches for the Study of Early Agricultural Villages of Neolithic Thessaly - IGEAN, Operational Programme «Education and Life Long Learning»
- CORONA Digital Atlas of the Middle East Project – Supported by the National Endowment for the Humanities (NEH)
- Settlement Systems for Environmental Change in the Northern Fertile Crescent, supported by the National Aeronautics and Space Administration (NASA)

TEACHING EXPERIENCE

- 2017-2019 Field School Instructor, University of Central Florida, The Kerkenes Project
- 2014 Workshop Instructor, REMote Sensing Technologies in Cultural Heritage Workshop (REStECH I), GeoSatResearchLab, Greece
- 2013–2014 GIS and Remote Sensing Instructor, University of Delaware Architectural and Site Conservation Program Iraqi Institute for the Conservation of Antiquities and Heritage, Iraq
- 2012 Workshop Instructor, “Using Declassified CORONA Satellite Imagery in Archaeological Investigations,” Society for American Archaeology 77th Annual Meeting, Memphis, TN
- 2010 Lab Assistant, “Landscape Archaeology,” University of Arkansas
- 2007 Teaching Assistant, “Introduction to Cultural Anthropology,” University of Arkansas

GRANTS & AWARDS

- 2017-2019 Marie Skłodowska-Curie (MSC) Individual Fellowship
- 2018 European Space Agency (ESA) - WorldView-3 Imagery Grant
- 2018 European Space Agency (ESA) - BlackBridge RapidEye Imagery Grant
- 2018 German Aerospace Center (DLR) TanDEM-X Imagery Grant
- 2010 Alaska Satellite Facility (ASF), SAR Data Center Imagery Grant
- 2008–2012 University of Arkansas, Graduate School Travel Grants
- 2008 University of Arkansas, Center for Middle East Graduate Research Award

PROFESSIONAL ACTIVITIES & SERVICES

Committee Participation

- Computer Applications & Quantitative Methods in Archaeology (CAA): Scientific Committee Member, 2016–2018
- CAA-Greek Chapter (CAA-GR): Treasurer and Board Member, 2015–2019

Organizations

- “The Archaeologies of Roads” – 7-8 November 2019, Florence, Italy: Conference Organizer
- “Pre-modern cities and complexity,” 47th Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA) – Krakow, Poland, 2019: Session Co-Organizer
- “The “Geospatial Turn”: Critical Approaches to Geospatial Technologies in Archaeological Research” European Association of Archaeologists (EAA) Conference, September 5-8, 2018, Barcelona, Spain: Session Co-Organizer
- Communities, Landscapes, and Interaction in Neolithic Greece – IGEAN

International Conference 29–30 May 2015, Crete, Greece: Conference Co-Organizer

- REMote Sensing Technologies in Cultural Heritage Workshop 2014 (RESTeCH I), 2014 Laboratory of Geophysical-Satellite Remote Sensing & Archaeoenvironment, Rethymnon, Greece: Workshop Co-Organizer
- “Approaches for Sensor Data Integration for the Investigation of Archaeological Landscapes,” 43rd Annual International Conference on Computer Applications and Quantitative Methods in Archeology (CAA) – Sienna, Italy, 2015: Session Co-Organizer
- “Using Declassified CORONA Satellite Imagery in Archaeological Investigations,” Society for American Archaeology 77th Annual Meeting, Memphis, TN, 2012: Workshop Co-Organizer

Refereeing

Remote Sensing, Sensors, Sustainability, Geosciences, Water, Journal of Archaeological Science: Reports, International Journal Heritage in the Digital Era, Archaeological Prospection.

COMPUTING & SURVEYING SKILLS

Computer Languages and Libraries

- Python
- MATLAB
- R

Geographical Information Systems(GIS) and Remote Sensing

- ESRI-ArcMap, ArcPRO
- QGIS
- Golden Software-Surfer
- ERDAS IMAGINE
- PCI Geomatica

Global Positioning Systems (GPS)

- Trimble 5700
- GeoXM Series
- Leica GS09 Instruments
- Triumph Javad 1,2

Photogrammetry

- Leica Photogrammetry Suite (LPS)
- Visual SFM
- Photoscan

Geophysics Software

- Geoplot 3.0
- Archaeofusion
- Snuffler
- GPR-Slice

Geophysics Instrumentation

- Geoscan RM15-85 & FM256
- Bartington G601Field Systems
- MALA GPR Imaging Radar Array (MIRA)
- Noggin GPR System (250 MHz Antenna)
- SENSYS Compact MX Multi-Sensor Gradiometer System
- Geopex GEM-2