



SOCIETY FOR CULTURAL ASTRONOMY
IN THE AMERICAN SOUTHWEST, INC.
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SCAAS 2017 Workshop

Spatial Technologies for Cultural Astronomy

November 10 – 12, 2017

Arizona State University, Tempe

School of Earth and Space Exploration



The Society for Cultural Astronomy in the American Southwest, Inc. is convening a workshop for those who wish to learn about open source computing technology used to evaluate spatial relationships; including archaeological sites in a land and skyscape context. This workshop was motivated by lively conversation at our 2016 conference. Only a small number of papers were presented on new computing technology but the questions and comments afterward revealed a great interest in learning more about these technologies. Participants will bring their own

laptop computers pre-loaded with a selection of free or open source software products. Instructions for these software application downloads will be made available in advance of the meeting. No special knowledge is necessary other than a familiarity with loading and working with applications on your own equipment and a willingness to explore and participate. The technologies presented in this workshop are applicable to cultural resource management at any archaeological site and are becoming the standard for documentation to be completed by site stewards and volunteers.

The workshop will provide field and lab experience with photogrammetry, GIS processes and placing your captured or calculated landscape into a computer based planetarium program. We will begin with a field exercise at South Mountain Park where participants will document a petroglyph site with digital cameras. Lab experience will then use these photographs to create a 3D model of the site. Saturday is dedicated to GIS software and processes. We will be using an open source product called QGIS. A facilitator will walk participants through the process of locating and managing spatial data and how to do important site calculations and evaluations. By the end of the day, we will have learned how to make line of site and landscape view shed calculations and place our 3D site model into a landscape context. To conclude, we will be exploring the use of free astronomy programs such as *Stellarium* and *Cartes du Ciel* where we can simulate solar light and shadow effects on your 3D site model.



We are using laboratory facilities at the School of Earth and Space Exploration to accomplish the goals of this workshop. We are limiting participation to about 36 individuals. Participants should expect to bring their own laptop, be able to download software in advance and bring moderate computer skills and interest in spatial modeling. This should not be considered a meeting where one observes and listens to presentations, we are intending to make this an experiential workshop with several guest speakers.

Workshop Schedule

Thursday November 9, 2017

5:00 – 7:00 pm

Registration and reception at the Moxy Hotel

Friday November 10, 2017 Photogrammetry Day

Fieldwork and Imaging Session

8:30 am – 12:00 pm (optional)

We are planning a field trip to a petroglyph site in the South Mountains Park where we will learn practical imaging and fieldwork techniques. We will collect images and data that will be used throughout the workshop. Our goal is to make this a practical, real world exercise to give you the tools to do this work on your own in the future. *Note: This activity is optional for late arriving registrants. Transportation will be organized to share personal vehicles Data will be provided to participants who do not wish to attend the field trip.*

Lunch on your own

12:00 – 1:00 pm

Workshop Session I

1:00 – 5:00 pm

Workshop registration

Introduction

3D model building

Theory and techniques in 3D computer model building

Refining 3D models, exporting, and troubleshooting

Ric Alling

Chris Dombrowski

Guest Speaker

Chris Dombrowski

Dinner on your own

6:00 pm

Saturday November 11, 2017 GIS Day

Lunch provided

Workshop Session II -- 8:45 am to 5:00 pm

Introduction to GIS Software and Geospatial Data Matthew Toro
Fieldwork-GIS Integration Techniques
Geospatial Data Processing and Analysis Techniques
Mapping, Visualization, and 3D Modeling

Workshop dinner

7:00 – 9:00 pm

James Turrell Skyspace: Air Apparent – Catered buffet with dietary options.
Event program – SCAAS *Visioning the Future* project and guest speaker.

Sunday November 12, 2017 Astronomical Modeling Day

Lunch provided

Workshop Session III

9:00 am – 3:00 pm

Introductory comments Ric Alling
Computer tools available for Astronomy
GIS modeling in an astronomical context
Future of these technologies in cultural astronomy research

Guest Speakers

Dr. Emily Fiocoprile is an early career researcher with a passion for landscapes. She is enthusiastic about mapping and heritage, and her research focuses on how prehistoric people used the landscapes around them to forge their identities. In 2016 Emily completed her PhD on later prehistoric East Yorkshire at the University of Bradford in the UK. She is currently a Postdoctoral Research Associate with ASU's Center for Archaeology and Society, where her project, “Prehistoric social landscapes of the Phoenix Basin,” attempts to understand the rock art at Deer Valley Petroglyph Preserve within its wider landscape context. She is also an Honorary Visiting Researcher at the University of Bradford.

Matthew Toro is the Director of the Map and Geospatial Hub. He is responsible for setting the vision, mission, and programmatic goals for the Hub while overseeing its daily operations to ensure those goals are met. Matt holds a Master of Arts degree in Geography from the University of Miami and a Bachelor of Arts in Geography & International Relations from Florida International University.

Matt Peeples is an archaeologist whose work focuses on regional synthesis and the application of network science methods and models to archaeological data, primarily in the U.S. Southwest and Mexican Northwest. He joined ASU and the School of Human Evolution and Social Change in 2015. He also serves as Research Director for the ASU Center for Archaeology and Society and is a frequent collaborator and Research Associate with the non-profit archaeological preservation organization Archaeology Southwest in Tucson, Arizona.

Registration

Registration fees for members of the Society are \$55.00 for the workshop and opened on September 1, 2017 and continues through November 9, 2017 or until the workshop is sold out. Members must be logged in to their account to receive the discounted rate. We will maintain a waiting list if necessary. Nonmembers can begin registering on September 21, 2017. The registration fee for nonmembers is \$70.00. Registration fees include daily refreshments and lunch on Saturday and Sunday. The space available in the laboratory is small so we are restricting registration to about 36 participants. At this time we only have about 15 – 20 spaces left available. We would encourage you to register as soon as possible to guarantee your space. Members receive a discount to the event and an advanced registration period which ends on September 21, 2017. To become a member of SCAAS, please visit our website at www.scaas.org/join . You must pay for your membership and the event registration separately. You can register for the workshop at <http://www.scaas.org/page-1827416> . We use PayPal to process payments. You do not need a PayPal account, just click on the “Use debit/credit card” link below the PayPal login to pay by credit card. A mail-in registration form is also available for download on the workshop registration page if you want to pay by check.

Workshop Dinner

SCAAS will be hosting a catered buffet dinner with dietary options and a cash bar at 6:00 pm on Saturday November 11, 2017 at the Arizona State University James Turrell Skyspace: Air Apparent installation (<https://skyspace.asu.edu/>). This is an event to support the Society in its *Visioning the Future* project. The cost of the dinner is \$35.00. You must register and pay for the dinner event separately when you visit our registration page.

Workshop Accommodations



The official hotel for this workshop is the [Moxy](#) (1333 South Rural Road, Tempe AZ 85281). Their discounted rate is \$129.00 + Tax with full hot breakfast. Register with this [link](#) or call 888-236-2427 or 480-968-3451 to make reservations. If you call, be sure to mention the ASU School of Earth and Space Exploration Event. The discounted rate is available through October 19, 2017. The workshop venue is in walking distance from the hotel, but parking for the workshop will be available in the covered garage next to the School for \$9 per day.

Additional accommodations within driving distance are:

Holiday Inn Express & Suites	1031 E Apache Blvd, Tempe, AZ	(480) 966-7202
University Inn & Suites	902 S Mill Ave, Tempe, AZ	(480) 966-7221
Quality Inn	1375 E University Dr, Tempe, AZ	(480) 774-2500
Motel 6 Phoenix/Tempe	513 W Broadway Rd, Tempe, AZ	(480) 967-8696
Motel 6 ASU/Tempe	1915 E Apache Blvd, Tempe, AZ	(480) 736-1700
Super 8	1020 E Apache Blvd, Tempe, AZ	(480) 887-4703
Rodeway Inn	2101 E Apache Blvd, Tempe, AZ	(480) 393-3090