

**ISECS  
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16th International Congress for Eighteenth-Century Studies  
Antiquity and the Shaping of the Future in the Age of Enlightenment  
Rome, 3-7 July 2023

Panel 110

**Syncretic Scientific Approach  
in Sacred Architecture  
during the 18th century**

**Dr. Angela Lombardi, Ph.D.  
Dr. Iacopo Benincampi, Ph.D.**

Friday, 7 July 2023  
11,15 AM - 12,30 AM / 2,00 PM - 3,45 PM  
Faculty of Literature, "Aula Odeion"  
University of Rome "Sapienza"  
Rome, Piazzale Aldo Moro, 5

## SCIENTIFIC PANEL CHAIRS

### **Angela Lombardi, Ph.D.**

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Angela Lombardi, Ph.D., is associate professor and coordinator of the graduate program of Historic Preservation at University of Texas at San Antonio. Her research is in the field of historic preservation with a focus on management of built heritage and archaeology in international context, urban regeneration and on materials' conservation. She has 20 years of experience in documentation standards applied to cultural heritage, traditional construction techniques, stone conservation, and on earthen material conservation. Since 2009 she has been researching Latin American urban heritage and cultural landscape conservation issues, with an advanced study of San Antonio Spanish Colonial cultural landscape within the broader cultural continuum of the Camino Real de los Tejas, applying advanced documentation technologies such as GIS, photogrammetry, 3D reconstructions at the scale of the building, of the city, and of the territory.

### **Iacopo Benincampi, Ph.D**

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Graduated in Architecture at the University of Rome "Sapienza", Iacopo Benincampi completed there his PhD program in history of architecture (2018). He was fellow at the University of Parma (fall 2018), visiting professor at the University of Texas at San Antonio (fall 2019), research fellow at the Catholic University Center of Rome (spring 2020) and research fellow at "Sapienza" (2021) studying the spread of Roman Baroque out of Rome during the 18th century. He is currently serving as adjunct professor in "History of architecture" (University of Roma Tre). He publishes scientific papers in academic journals and joins national and international conferences.

## PANEL TOPIC

This panel aims to welcome proposals that provide original contributions on the adoption of archaeoastronomy in the development of sacred architecture and settlements, reflecting a syncretic approach towards Antiquity and other diverse cultures. Astronomical knowledge was a relevant design tool in Classical times: Vitruvius developed the book IX on astronomy, both for practical and symbolic reasons. It was utilized to identify wind, equinoctial and solstitial directions as well as the quality of lights in interior spaces. Sun was also associated to sacred power.

We welcome papers with an interdisciplinary approach on the application of archaeoastronomical practices in relation to the new evangelization requirements promoted by the Catholic Church during 18th century. Of particular interest will be cases in which a scientific syncretic approach informs the architecture, shaped intentionally by the overlapping of local cultures, earlier traditions, and eventually other diverse influences.

Examples of syncretism are identifiable both in Europe and in the new world, thanks to the commitment of religious orders. Similar phenomena are visible in Rome as well as in California and Texan Franciscan missions: the churches and their placement on the site were designed applying updated astronomical mathematics. The sunlight spotlights specific areas on predetermined days and times, synchronizing diurnal rhythms to the principal feast days of the liturgical year and following seasonal changes. In this way, the European catholic believer and the indigenous catechumen could experience a divinized world, coinciding both with a classical inheritance and the aboriginal calendrical systems.

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## **PANEL PROGRAM AND SCHEDULE**

**11,15 AM / 11,30 AM**

Welcome to the panel

**11,30 AM / 11,45 AM**

Dr. Angela Lombardi, Ph.D.

*Introduction*

**11,45 AM / 12,30 AM**

Dr. Giulio Magli, Ph.D.

*The light in the temples: Archaeoastronomy as a key to sacred architecture*

**12,45 AM / 2,00 PM** : Lunch break

**2,00 PM / 2,20 PM**

Dr. Manuel Eduardo Valiente Quevedo, Ph.D.

*Religious syncretism and architecture. The open-air churches in Mexico*

**2,20 PM / 2,40 PM**

Dr. Maria Esther Vallejo Gavonel, Ph.D.

*Jesuit churches in South America's urban school complexes: between indigenous syncretism and inter-European dialogue*

**2,40 PM / 3,00 PM**

Dr. Emanuele Gambuti, Ph.D.

*Symbolic light in the work of Francesco Borromini*

**3,00 PM / 3,45 PM**

Dr. Rubén G. Mendoza, Ph.D.

*HIEROPHANIES OF LIGHT. Syncretic Architecture and Solar Eucharistic Worship in the 18th and early 19th Century Missions of Las Californias*

**3,45 PM / 4,00 PM**

Dr. Angela Lombardi, Ph.D. / Dr. Iacopo Benincampi, Ph.D.

*Discussion & Conclusions*

**Dr. Giulio Magli, Ph.D.**

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Giulio Magli (Rome 1964) is a Physicist (Ph.D. University of Milan 1992), currently Chair Professor at the Politecnico of Milan and Dean of the Department of Mathematics. Academic career: Research Associate (Como Faculty 1993-2000) / Associate Professor (Faculty of Civil, Environmental and Landscape Engineering 2000-2005) / Chair (Faculty of Civil Architecture 2005-present). Starting from the academic year 2007-2008 he has been teaching the unique official course on Archaeoastronomy ever established in an Italian University, devoted to the II level M.A. degree students in Civil Architecture.

## **The light in the temples: Archaeoastronomy as a key to sacred architecture**

Modern Archaeoastronomy is “the science of stars and stones”: its aim is to investigate existence and meaning of relationships between ancient architecture and the heavens. Already from this definition, the prominent inter-disciplinary nature of Archaeoastronomy is apparent. In fact, to investigate the connections of ancient monuments with the celestial cycles means searching for astronomical alignments - axes or other elements of the original architectural projects which point (or pointed) to specific, recurring astronomical events, such as the rising or the setting of the Sun or of other stars - but to understand their meaning, a strict collaboration with Archaeology and History is needed. If used with due caution, the archaeo-astronomical analysis of a site can lead to new information about cognitive processes lying behind its construction.

This is particularly true in the case of the temples of classical antiquity: the Greek temples, the temples of Sicily and Magna Grecia, and some important Roman temples such as the Pantheon. Together with these key examples, some hints about the way in which astronomical connections in architecture have been passed on through the Renaissance and up to modern times will be discussed.

**Dr. Manuel Eduardo Valiente Quevedo, Ph.D.**

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The author, born in Mexico, studied architecture at the Instituto Tecnológico y de Estudios Superiores de Monterrey (Querétaro campus). In 2011 he concluded the master in "Progettazione Architettonica per il Recupero dell'Edilizia storica e degli Spazi pubblici" and in 2018 the Ph.D in "History, Representation and Restoration of Architecture" at the Sapienza Università di Roma, with the thesis "La arquitectura franciscana en México (1523-1570). Investigación sobre las obras atribuidas a Juan de Alameda. El caso del convento de San Martín Caballero en Huaquechula, Puebla". He represents in Italy the Universidad Autónoma del Estado de México.

## Religious syncretism and architecture. The open-air churches in Mexico

The first open-air church was San José de los Naturales. His conception is the most innovative contribution to religious architecture in Mexico. Conceived by the Franciscan Pedro de Gante (c.1479-1572), it represents the result of religious syncretism between the Spanish and the Mexican populations. Its design is based on the way in which the indigenous people celebrated their religious rituals: outdoors and in large squares. According to Diego Valadés (1533-1582), a disciple of Pedro de Gante, this great space was multifunctional: the Catholic faith, various European arts and crafts were taught; various religious rituals were celebrated, such as masses, processions, and baptisms. This space was made up of a quadrangular courtyard, with a wooden cross in the center, surrounded by a wall and a processional path lined with trees. In the corners were the *capillas posas*, which were used to place the sacrament during the processions – which normally took place in an anti-clockwise direction – and to indoctrinate the indigenous people. Lastly, there was the open chapel – which served as a presbytery – placed on the axis of the wooden cross. Such spatial and functional solution was widely adopted by the Dominicans and the Augustinians.

This paper intends to discuss the development of open-air churches in Mexico, from the arrival of the Spaniards until the disappearance of San José de los Naturales, presumably in the second half of the 18th century.

**Dr. Maria Esther Vallejo Gavonel, Ph.D. candidate**

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Graduated in architecture at the University Ricardo Palma (Lima - Perú). She studied at the Specialisation School of Architectural and Landscape Heritage in Rome becoming a specialist in "Restoration of Monuments and Landscape Protection" (University of Rome "Sapienza", Faculty of architecture). She is currently preparing her Ph.D. thesis at the Department of History, Design and Restoration of Architecture of the University of Rome "Sapienza" in collaboration with the Doctoral School in Church Cultural Heritage at Pontifical Gregorian University in Rome.

## **Jesuit churches in South America's urban school complexes: between indigenous syncretism and inter-European dialogue**

The Jesuits arrived in the “New World” to take care of overseas souls, pursuing two main objectives: the missionary one, focused on the conversion of indigenous people, and the educational objective, supporting the education of local elite, both Spanish and autochthonous. The development of these activities required a widespread geographical distribution, which was rapidly achieved thanks to a comprehensive centralized control system, headquartered in Rome. It especially aimed at ensuring the suitability of proposed architectural projects through a specifically appointed local personnel. Such equipes included also scientific, technical, and administrative (both Roman and local) experts, who would integrate technical knowledge with religious principles and functional guidelines of the Jesuit Order.

Unlike Indian *reducciones*' churches, devoted to convert vernacular population, the churches of urban colleges were open to a diverse population, with the two-fold purpose of strengthening the religiosity of neophytes and intertwining the culture and religious cult of Hispanic American cities to a more European dimension. Therefore, the architectural, decorative and iconographic languages of urban churches show syncretic features, embodied in indigenous and mestizo participation to construction processes and through the interracial use of buildings. Syncretism is on the other side performed through involvement of architects, builders, and artists of European origin – mostly Italian, Spanish, and German – in the construction sites of the most representative Jesuit buildings, these ones mostly used by population of Spanish origin. Thus, if the syncretic and indigenous dimensions are definitively strongly featured in the churches of *Reducciones*, in the urban churches syncretism coexists with the search of a more 'canonical' architectural language, still result of a synergic intersectionality between vernacular and European cultures, integrating their specific sensitivity, knowledge and expertise.

**Dr. Emanuele Gambuti, Ph.D.**

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Emanuele Gambuti is an Architect, graduated in 2015 at Sapienza University of Rome, and holds a Ph.D. in History of Architecture from the Department of History, Representation and Restoration of Architecture at Sapienza University of Rome, completed in 2019. His expertise focuses on Church architecture in Rome between 16th and 17th century, in particular on the existing relationship between liturgy and architecture of early modern and Baroque spaces. He is currently Research Fellow at Sapienza University of Rome, and Lecturer at the Scuola di Arte e Teologia, Pontificia Facoltà Teologica dell'Italia Meridionale, Naples.

## Symbolic light in the work of Francesco Borromini

Examining Francesco Borromini's sacred architecture, the connection between the use of light and its symbolic dimension appears to be an element of great relevance in the architect's poetics.

Inside the church of San Carlo alle Quattro Fontane in Rome, light defines the ascending pathway; also in Sant'Ivo alla Sapienza light becomes a medium to represent the Divine Grace, and it is closely interrelated with the iconography used for the plaster decoration.

This study links Borromini's works with some theological and exegetical analysis of the Christian Temple. Inside the architect's 17th century masterpieces, echoes of early Christian and Medieval writings on the symbolism of Christian buildings can be identified, such as the theology of light of Dionysus the Areopagite with its connection with the Saint-Denis of Abbot Suger, the biblical commentaries of Bede the Venerable and the liturgical work of Durandus of Mende.

The symbolical representations of the Heavenly Jerusalem are therefore deeply connected with these theological interpretation of church buildings and the symbolical use of light, as shown in San Giovanni in Laterano.

**Dr. Rubén G. Mendoza, Ph.D.**

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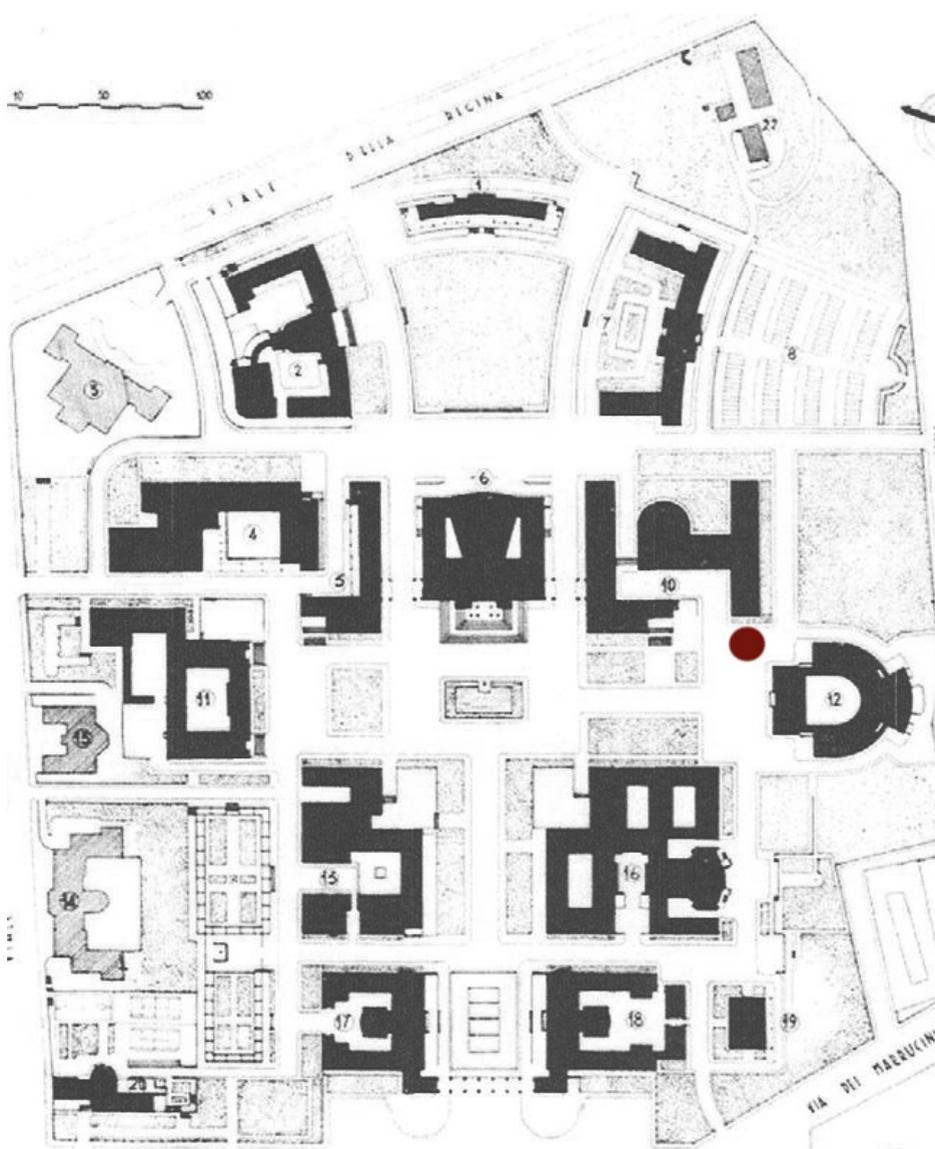
Dr. Rubén G. Mendoza is an archaeologist, writer, photographer, founding faculty, and former Division Chair at the California State University, Monterey Bay. He has directed major archaeological and ethnohistorical investigations on the Colorado Front Range, Guanajuato, Mexico, and the Spanish missions of San Juan Bautista, San Carlos Borromeo, San Miguel Arcángel, Nuestra Señora de la Soledad, the Royal Presidio of Monterey, and the 16th century Ex-Convento de la Concepción in Puebla, Mexico.

## **HIEROPHANIES OF LIGHT.**

### **Syncretic Architecture and Solar Eucharistic Worship in the 18th and early 19th Century Missions of Las Californias**

The Spanish conquest of the Amerindian empires and kingdoms of the Americas unleashed a frenzied evangelization that sought both converts and fomented the creation of a sacred geography in the American hemisphere predicated on Roman Catholic doctrine and the cosmologies of the day. In addition to fomenting the greatest building campaign the world has ever known, with some 70,000 churches and 500 monasteries reared skyward in the period from 1550 through 1700, the evangelical strides of the Franciscans, Jesuits, Dominicans, and Augustinians were predicated on reconciling indigenous cosmologies and millenarian eschatologies with Church doctrine and the liturgy. From this amalgam of intersecting New World cosmologies arose a pattern of syncretic accommodations that bolstered the primacy of the Cristo Helios or Solar Christ, and thereby, solar eucharistic worship in both precept and practice. By the advent of the 18th century, sacred and solar geometries were established in the Old and New Worlds for the expressed purposes of reifying the sacred nature of liturgical spaces, integrating heliometric, aka: chronometric, devices for calibrating the moveable feasts of the Catholic church, and ultimately, promulgating the liturgy in such a fashion as to inspire awe and syncretic identification with the alien traditions of the Church as seen and experienced through the eyes and senses of its native converts. For Las Californias, the period spanning 1684 through 1834 for Baja California, and 1769 through 1824 for Nueva or Alta California, were met with a messianic zeal that introduced a panoply of building designs, styles, arts, technologies, and traditions.

Not the least of these included the integration of liturgically and astronomically-defined solar geometries identified with the illumination of key liturgical objects, relics, and furnishings, including mirror dates and kinematic liturgical iconographies of light and shadow. This paper will review the solar geometries and heterophonies of light identified with the ecclesiastical architecture of The Enlightenment in Las California.



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