

**FOR IMMEDIATE RELEASE**

## **The Vatican Apostolic Library installs a Selene Photometric Stereo System**



The Selene Photometric Stereo System © Factum Foundation

**VATICAN CITY, 15 October 2025** – The Association of the Patrons of the Vatican Apostolic Library, the Colnaghi Foundation and the Factum Foundation for Digital Technology in Preservation, together with the Apostolic Library, are pleased to announce that a **Selene Photometric Stereo System**, developed by Factum Foundation, has been installed on September 17 2025 at the Vatican Apostolic Library, thanks to the generosity of the Patrons.

Inspired by recent experiments at the Bodleian Library in Oxford, which has been using the Selene System for over 3 years through the [ARCHiOx research initiative](#), the Vatican Apostolic Library will now explore high-resolution recording of both surface and colour of manuscripts, books, printing plates, maps and other objects from one of the world's great resources of knowledge.

Over the next 10 months, the Selene will operate experimentally within the Vatican Library, primarily starting with the **Bartolini Collection**, the archive of works by 20th-century engraver **Sigfrido Bartolini** (1932-2007). Through Factum Foundation's state-of-the-art photometric stereo technology, 231 matrices in various materials (wood, zinc, linoleum, plaster and marble) will be recorded in unprecedented detail in 3D and colour. In light of the results of this experimental phase, the system may later be applied to other documents as well.

Although the Apostolic Library is renowned for its historical collection, this collaboration will highlight the significance of its contemporary heritage through the promotion and enhancement of the works of Bartolini, one of the most distinguished Italian engravers.

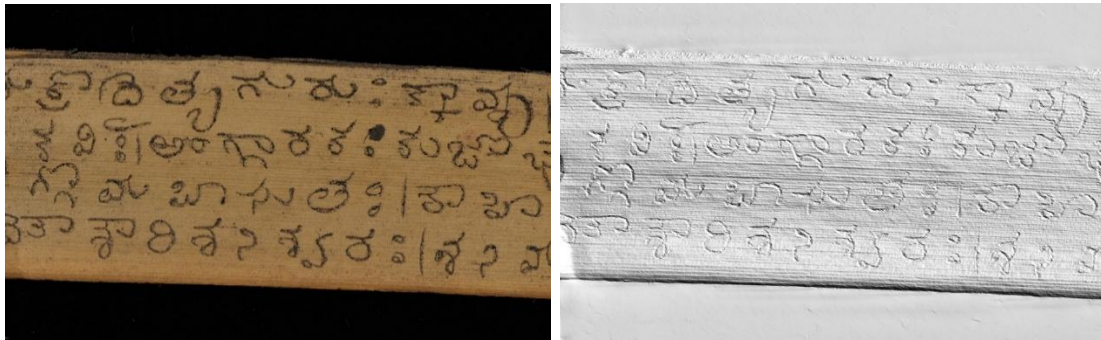
Since autumn 2024, the Vatican Library has also undertaken an important research project in collaboration with the **University of Rome Tor Vergata**. The project aims to analyse Bartolini's 88 zinc plates (in some cases combined with linoleum) and their corresponding prints through technical, archival, historical, and bibliographical investigations, as well as to produce in-depth

content on the materials, tools, and techniques used, and on aspects closely tied to the artist's identity.

Meanwhile, the Library's Photography Laboratory is acquiring images of the 297 prints of the Collection and experimenting with photographing a small selection of matrices using RTI (Reflectance Transformation Imaging) technology.

## What is the Selene Photometric Stereo System?

Print making is one of the great examples of the 3D recording, of materiality in objects. The way the prints blocks transfer ink to paper is dependent on relief. Factum Foundation's **Selene Photometric Stereo System** is the result of over 20 years of dedicated research and development in the recording of flat and semi-flat surfaces. Conceived by **Jorge Cano, Head of Factum Foundation's R&D Department**, the Selene was developed to record the subtle textures and production techniques that traditional photography cannot capture.



Colour and shaded render of a rare palm-leaf manuscript from MS. Sansk. Collection. The fragile material makes these manuscripts difficult to access and study, but with high-resolution recording using the Selene Photometric Stereo System, ARCHiOx has been able to create digital editions which can be analysed virtually in great detail without endangering the original manuscripts © ARCHiOx

The system employs non-invasive **photometric stereo technique**, recording objects under multiple directional lighting conditions. It extracts ultra-high-resolution 3D surface information down to a pixel size of 25 microns, revealing surface details invisible to the human eye on materials such as paper, vellum, paintings, wood, ceramic, clay, stone, copper, fabric, embroidered material, palm leaves, and other organic and inorganic surfaces.

Since the Selene's debut installation at the Bodleian Libraries in Oxford in 2021, supported by The Helen Hamlyn Trust, it has already yielded groundbreaking results on etching plates, manuscripts and maps. In 2022, [a nun's name was discovered on an 8<sup>th</sup>-century manuscript](#), invisible to the naked eye but revealed through the Selene; in 2024, [William Blake's potentially first etchings as an apprentice engraver](#) were discovered on the back of plates by James Basire, starting a research project on other plates by Basire. A new recording the Gough Map with the Selene has supported new research on the origins of this mid-14th-century map, revealing more information about the pouncing marks, creases and historic repairs of what was formerly and mistakenly regarded as the earliest road map of the British Isles.

This pilot project also marks the Vatican Apostolic Library's entry into the **Selene Circle**, a worldwide network of cultural institutions united in advancing heritage preservation through cutting-edge recording technology.

The Selene Circle now includes the British Museum in London, the Princeton University Library, the John Rylands Research Institute and Library at Manchester University, the Georgia Museum of Art at the University of Georgia (US) and the Instituto Valencia de Don Juan in Madrid, with more institutions currently finalising agreements.



William Blake, *Richard II and Queen Anne*, verso showing tiny face. Gough copperplate d. 109. ARCHiOx  
© Bodleian Libraries, University of Oxford



Details of the Gough map: albedo and shaded renders of the surface © ARCHiOx



Colour and shaded render recording of the Geneve Bible (Bodleian Library Douce Bib. Eng. 1583 b.1). The shaded render clearly shows the intricacy of the embroidery and the different textures in the binding. (Bottom) Materialisation of the embroidered binding's surface printed with elevated printing at Factum Foundation

© ARCHiOx

## The Bartolini Collection

The Bartolini Collection comprises an exceptional number of works by engraver **Sigfrido Bartolini** (1932-2007), one of Italy's most distinguished 20th-century printmakers and multidisciplinary artists. His innovative approach to printmaking techniques and versatility as an artist spanned woodcuts, etchings, lithographs, watercolours, and oil paintings.

In addition to his work as an art critic and co-founder of “Totalità”, Bartolini illustrated works by Bernardo di Chiaravalle, António Vieira, Policarpo Petrocchi, Paolo Eleuteri Serpieri, Alberto Savinio, and Alfredo Cattabiani as well as the *Gospel* for the Jubilee of 2000. Among his most celebrated works is the lavishly illustrated 1983 edition of *Pinocchio* for the Carlo Collodi National Foundation's centenary celebration of the work's publication—with more than three hundred black-and-white and colour woodcuts.

The Vatican Library's collection represents an extraordinary donation from Bartolini's family of hundreds of his most significant graphic works, making it a vital contribution to the Library's contemporary art holdings that has yet to be digitised in 3D.

The recording through the Selene Photometric Stereo System will not only contribute to the preservation of Bartolini's collection of matrices, but will also create opportunities for new research, discoveries and in-depth studies of 20th-century graphic art techniques through a state-of-the-art technology that has already contributed to outstanding scholarly results within several archives and museums around the world.

## Colnaghi UK and the Patrons

The 10-month recording of the Bartolini Collection is supported by the **Patrons of the Vatican Apostolic Library**, a UK-registered charity, chaired by Candida Lodovica de Angelis Corvi Chi, whose purpose is the protection and valorisation of the heritage of the Vatican Apostolic Library.

The Association and the Colnaghi Foundation, a charity whose mission is the preservation of old masters' knowledge and their transmission to the next generation, are honoured and grateful to have been entrusted by the Vatican Apostolic Library with a cultural endeavour aimed at strengthening the continued cultural preservation efforts of the Library's heritage and universal knowledge.

**Statement from the President of the Association:** *“The initiative aligns with the Association's vision of establishing an active inspiration for a collective sense of preservation and care, intelligence and affection, commitment and awareness of our collective memory.”*

Their inaugural contribution—funding the installation of Factum Foundation's cutting-edge Selene Photometric Stereo System—demonstrates their commitment to supporting innovative preservation technologies that will benefit scholars and the global public for generations to come.

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## For information:

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## Notes to the Editors

- Selection of images: [Immagini](#)
- About the Selene Photometric Stereo System: [Booklet](#)
- Selection of high-resolution viewers made from Selene PSS data: [Digital Bodleian](#) | [Sketchfab](#)

## About the institutions

**Factum Foundation for Digital Technology in Preservation** is a not-for-profit founded by Adam Lowe in Madrid, in 2009. It works alongside sister company Factum Arte, a multidisciplinary workshop dedicated to digital mediation, producing works for contemporary artists as well as facsimiles for preservation purposes. Factum Foundation demonstrates the importance of documenting, monitoring, studying, re-creating and disseminating the world's cultural heritage through the rigorous development of high-resolution recording and re-materialisation techniques. They have initiated and been part of numerous exhibitions, studies, conservation training programmes, and unprecedented joint projects involving major artworks and monuments from around the world.

**Website:** <https://factumfoundation.org/>

**Instagram:** @factum\_foundation | **Facebook:** @factumfoundation | **LinkedIn:** Factum Foundation

The **Vatican Apostolic Library** is an ancient institution — a place of preservation and research belonging to the Pope and closely connected with the governance and ministry of the Apostolic See. From the *Scrinium* attested as early as the 4th century, the modern history of the Vatican Library begins with Nicholas V, who around the mid-15th century decided to open the papal book collections to learned men (*pro communi doctorum virorum commodo*, Brief of April 30, 1451), and with Sixtus IV, who gave the Library a more stable organization through the Bull *Ad decorem militantis ecclesiae* of June 15, 1475.

Its vast collections—comprising manuscripts, archival materials, printed books both ancient and modern, coins and medals, prints and drawings, as well as cartographic and photographic materials—have always been open to qualified scholars from all over the world, without distinction

of race, religion, origin, or culture. The Library specializes in philological and historical disciplines and, retrospectively, also in theology, law, and the sciences.

Website: <https://www.vaticanlibrary.va/>

Instagram: @bibliotecaapostolicavaticana | X (Twitter): @vaticanlibrary, @bibliovaticana

## **Acknowledgments**

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The project operates under the Patrons of the Vatican Apostolic Library, with special thanks to the Association's President, Dr Candida Lodovica de Angelis Corvi Chi, for her vision and curatorial work, and to Jorge Coll, Principal of Colnaghi UK, whose support was crucial. We also thank all Association members, including those who prefer anonymity, for their generosity, and the Vatican Library staff primarily involved in this project — namely, Dr Simona De Crescenzo (Head of the Prints Cabinet) in charge of the Bartolini Collection, Dr Andreina Rita (Director of the Prints Department), Dr Luigina Orlandi (former Head of Institutional Advancement), Dr Irma Schuler (former Head of the Photographic Laboratory), Mr Emanuele Angelini (current Head of the Photographic Laboratory), Dr Paola Manoni (Head of IT Services Coordination), and Dr Claudia Roma, collaborator of the Prints Cabinet.

The Factum Foundation project team includes Adam Lowe, Director of Factum Arte and Founder of Factum Foundation, James Macmillan Scott, President of Factum Foundation, Sol Costales Doulton, Director for Projects in Italy, Jorge Cano, Head of Factum Foundation's R&D Department and Director of the Selene Research Initiative, and Andrea Antonelli as Factum's Selene operator.