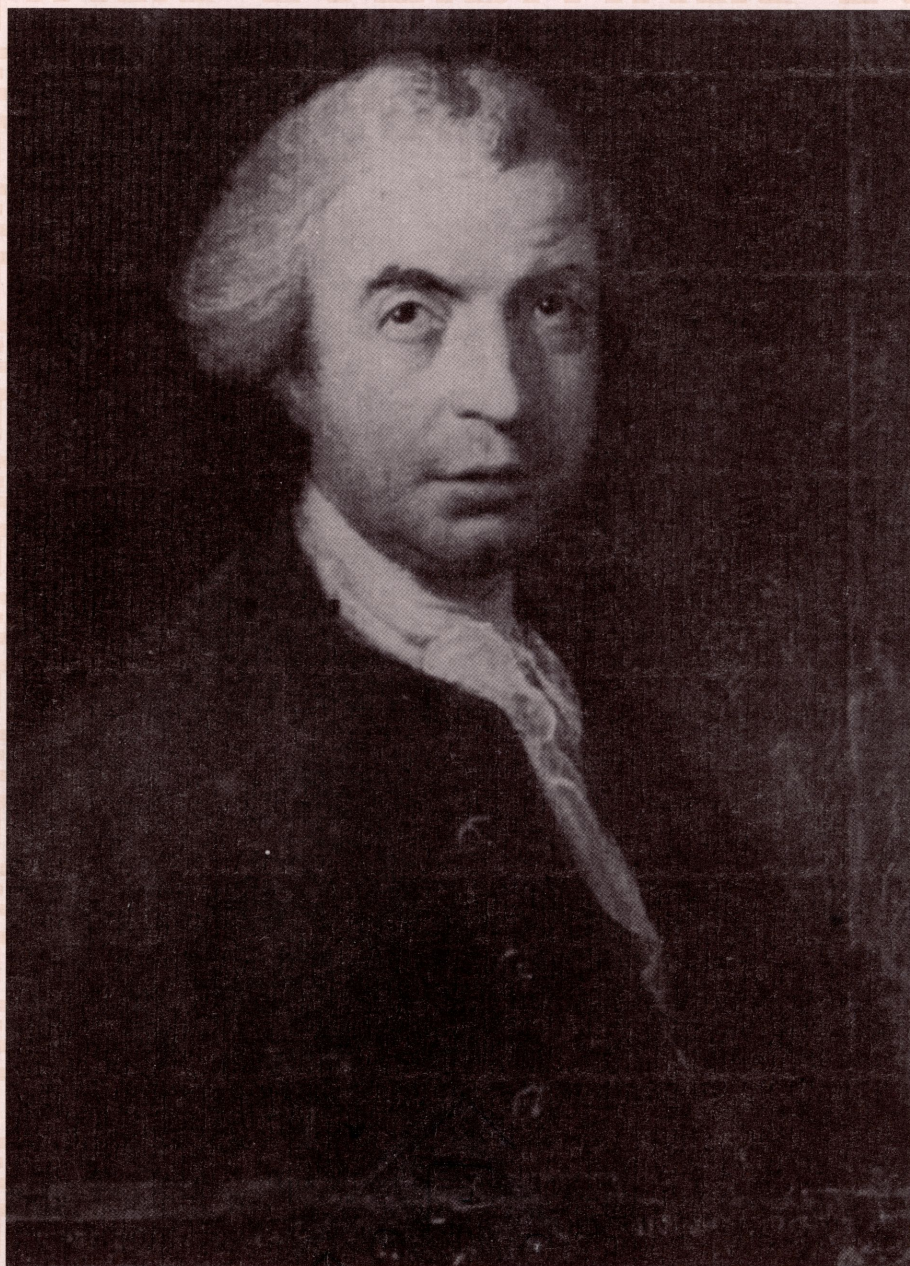


Ruder Bošković (1711–1787)



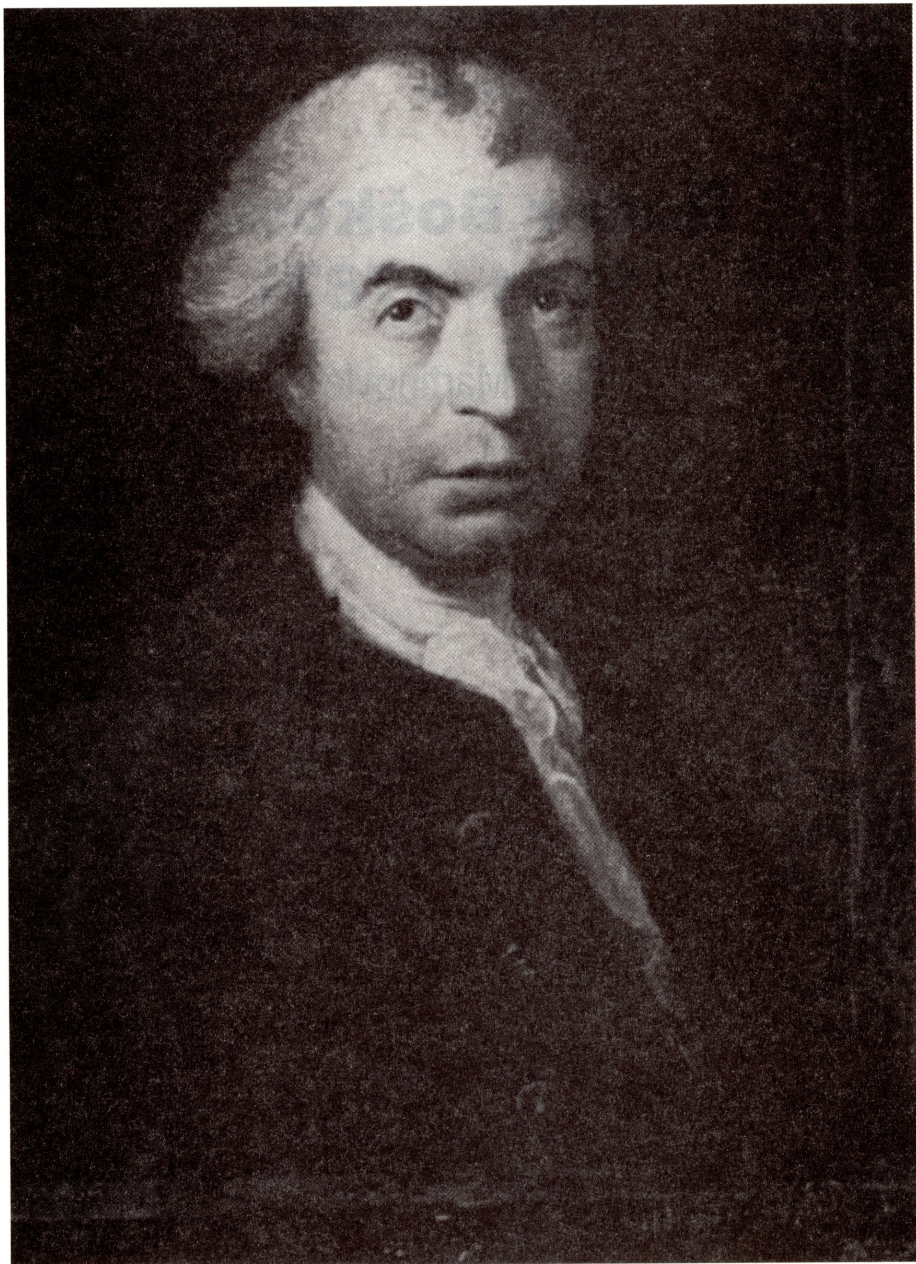
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**59th World P. E. N. Congress
Dubrovnik
Croatia**

**Ruđer Bošković
(1711–1787)**

Ivica Martinović

**Sponza Palace
Dubrovnik
April, 1993.**



Ruđer Bošković — The Life and Work

1711

Ruđer Bošković was born in Dubrovnik on 18 May, as the sixth son and eighth child in the family of Nikola Bošković (moved to Dubrovnik in about 1688 from the village of Orahov Dol — Dubrovnik, 1721) and Pavle Bettera (Dubrovnik, 1674–Dubrovnik, 1776).

1725

The young Ruđer Bošković, together with the other boarders of the Dubrovnik College, attended two outstanding church festivities in Dubrovnik: blessing the bell-tower of the Church of St. Ignatius on 20 March, and its dedication on 7 April.

The chronicler Simone Capitozzi wrote in the *Chronicon Collegii Ragusini* that on 16 September the *magistri* Giovanni Bindi and Giuseppe Stefani took away with them "Mister Ruđer Bošković, accepted for the noviciate in Rome, at an age of 14 and a half, a boy who promises much" ("il Sig. Rugiero Boscovich, accettato per il noviziato di Roma, in età d'anni 14 1/2, giovane di grandi speranze"). On 31 October Ruđer Bošković entered the Roman noviciate of St. Andrew on the Quirinal.

1727

Ruđer Bošković graduated from the noviciate with the marks: *Iudicium: bonum; Prudentia: bona; Complexio: bona; Talenta: ad studia.*

1727–1729

Ruđer Bošković studied rhetoric for two academic years at the Roman College.

1729–1732

Ruđer Bošković took a three-year course of philosophy at the Roman College: logic, physics and metaphysics. His professor of logic, physics and metaphysics was Carlo Noceti, and of mathematics Orazio Borgondio.

1732–1734

Magister Ruđer Bošković spent two school years teaching grammar in the third form of the Roman College.

1734–1736

Magister Ruđer Bošković taught grammar in the first school year and *humanitas* in the second school year at the college in Fermi.

1736–1738

Magister Ruđer Bošković taught in the lower classes of the Roman College for two school years, grammar in the first school year and *humanitas* in the second.

1738–1741

Ruđer Bošković attended a three-year course of theology at the Roman College, and at the end of his theological studies was graded as follows: *Ingenium: optimum; Iudicium: acre; Prudentia: bona; Profectus in litteris: optimus; Complexio: ignea; Talenta: ad facultates mathematicas.*

1740–1750

From the third, last year of theology until he went to measure the degrees along the Rome–Rimini meridian, Ruđer Bošković taught mathematics at the Roman College.

1742–1746

As described by Michelangelo Giacomelli, editor of the *Giornale de' Letterati*, Ruđer Bošković spent his regular holidays in Ruffinello, the country house for teachers and boarders of the Roman College, with "a hoe in his hands" (*colla zappa alla mano*) performing archaeological excavations of the Roman villa under Tusculo, a mile from Frascati.

1742–1743

From the end of November 1742 to 22 January 1743, three mathematicians, Thomas Le Seur, François Jacquier and Ruđer Bošković, at the order of Pope Benedict XIV, made two expert's reports about the cracks on the dome of the Basilica of St. Peter.

1743

Ruđer Bošković published his solution for the famous problem of the body with the greatest force of attraction in the periodical *Memorie sopra la Fisica e Istoria Naturale* (Lucca)

1744

On 15 August Ruđer Bošković took his ceremonial oaths, including the oath of obedience to the Pope.

1745

On 22 August Ruđer Bošković finished, after two weeks of hard work, the final variant of his treatise *De viribus vivis*, in which he presented the first draft of his theory of forces. On 6 September that treatise was publicly defended at the formal annual exercises at the Roman College.

1746

In the April issue of the periodical *Giornale de' Letterati* the editor Michelangelo Giacomelli presented the history of Bošković's excavations in the Roman villa in Tusculo, before Ivan Luka Zuzorić had published his already announced discourses about the same archaeological site.

At the end of the academic year the rector of the Roman College Giovanni Timoni recorded the first negative appraisals of the monk Bošković: *Prudentia: mediocris; Complexio: melancholica, et suspiciosa.*

On 1 December Ruđer Bošković became member of the *Scientiarum et Artium Institutum atque Academia*, Bologna.

The Venetian publisher Modesto Fanzo published posthumously two discourses by Bošković's student Ivan Luka Zuzorić *D'una antica villa scoperta sul dosso del Tusculo, e d'un' antico orologio a Sole tra le rovine della medesima ritrovato.*

1747

On 18 July Ruđer Bošković went from Rome to Dubrovnik, and left Dubrovnik on 13 October. This was the only stay of the Jesuit Bošković in his home city.

1748

On 4 July the *Académie des Sciences* in Paris chose Ruđer Bošković as a corresponding member, and determined its member Jean-Jacques Dortous de Mairan as his correspondent.

In the epistle sent to the archaeologist Angelo Maria Bandini on 15 August, Ruđer Bošković explained his opinion that the Augustus

Obelisk, recently unearthed on the Field of Mars, had served as the gnomon of a sundial.

On 5 September the second part of Bošković's treatise *De lumine* containing the elaboration of his theory of forces, but also the new theorem on the state of equilibrium of three points, a kind of spatial "model of the atom", was publicly defended.

1749

At the end of the academic year the rector of the Roman College Domenico Franchini graded professor Bošković as follows: *Ingenium: optimum; Iudicium: sufficiens; Prudentia: sufficiens; Experientia rerum: parva; Profectus in litteris: multus; Complexio: ignea et aliquid melancholica; Talenta: ad studia praesertim Mathematica.*

1750–1752

Ruđer Bošković and Christopher Maire spent the time from 1 October 1750 to 7 September 1752 measuring two degrees along the Rome–Rimini meridian and gathering data for drawing an exact map of the Church State.

1751

At the end of January Ruđer Bošković, together with his associate Christopher Maire, examined the damage floods of the Tiber had done to the palings of the Fiumicino, a navigable sleeve of the Tiber, and proposed measures for maintaining the navigable route.

By the end of March at the latest, Bošković designed his geodesic stands for measuring the bases of the triangulation net along the Rome–Rimini meridian.

1752–1760

Official records show that Bošković was again professor of mathematics at the Roman College, although he did not lecture after 1756 because he was absent from Rome on diplomatic and research work.

1754

Ruđer Bošković published in Rome, at the end of January, his mathematical textbook, three volumes of *Elementorum universae matheseos*, which contained two complete mathematical theories: the theory of conic sections and the theory of transformations of geometrical places.

Bošković's treatise *De continuitatis lege* was publicly defended on 7 August in the Roman College, with explanations of the law of continuity in geometry and in the set of real numbers. At the latest at the beginning of September Carlo Benvenuti, professor of metaphysics in that Academic year, published *Synopsis Physicae Generalis*, a work that extended the application of Bošković's theory of forces. It was because of that paper that those in charge decided to remove Benvenuti from Rome. Bošković opposed them openly. By 18 September Pope Benedict XIV ruled in the "caso Benvenuti" that Benvenuti was to remain in the Roman College, but as professor of liturgy. That is why at the end of the academic year the rector of the Roman College Girolamo Ridolfi evaluated Bošković's approach as: *Complexio: vehemens.*

1755

At the end of the year, after two years of preparations, the scientific report of Ruđer Bošković and Christopher Maire on measuring the Rome–Rimini meridian *De litteraria expeditione per Pontificiam ditionem*, and the map *Nuova carta geografica dello Stato Ecclesiastico* by Christopher Maire, made on the basis of data

gathered by Bošković and Maire during their scientific trip, were published.

1756

One year before the church prohibition for books claiming that the Earth moved was abolished, the Roman collection of Latin poetry *Arcadum carmina* brought Bošković's epigram *In Planetarum dispositione Terra inter Martem, & Venerem* about the heliocentric concept of the world.

On 10 August Ruđer Bošković wrote a poem in honour of Empress Maria Theresa, "the most magnanimous patron of science" ("studiorum faulrix munificentissima").

From 9 September to 17 October discussions were held in the town of Ripafratta on the river Serchio between Ruđer Bošković and the Florentine astronomer and Jesuit Leonardo Ximenes to solve the dispute on marshes along the Lago di Sesto in the border region between Lucca and Tuscany. The failure of those talks was the reason for Bošković's trip to Vienna.

1757

On 16 September the Senate of the Republic of Lucca proclaimed Bošković a noble of that republic because "he had carried out the task entrusted to him in such a scientific, excellent and laudable manner" ("Et cum ipse [Rogerius Joseph Boscovich de Ragusia] suscepti muneris partes tam doctè, egregiè, ac laudabiliter expleverit,...").

1758

The first edition of Bošković's chef-d'oeuvre, *Philosophiae naturalis theoria*, was published in Vienna in August thanks to the efforts of the Jesuit Karl Scherffer.

1759

In his epistle *De vetusto anemometro*, sent in June to Paolo Maria Paciaudi, Ruđer Bošković described the classical anemometer unearthed in the vineyard beside the Via Appia.

1759–1763

On 4 September 1759 Ruđer Bošković left Rome for his scientific trip to Paris, London, Ghent, Brussels, Leuven, Antwerp, The Hague, Nijmegen, Cologne, Bonn, Aachen, Liege, Nancy, Strasbourg, Mannheim, Heidelberg, Augsburg, Venice, Constantinople, Warsaw, Cracow, Vienna, to Venice again, to end it in November 1763 in Rome. He described part of the trip in the travels book *Giornale di un viaggio da Constantinopoli in Polonia.*

1760

On 17 January Ruđer Bošković was elected honorary member of the Imperial Academy of Science in St. Petersburg.

Writing in Paris additions to the second volume of Benedict Stay's natural–history poem *Recentioris philosophiae versibus traditae... libri X*, Ruđer Bošković presented his method for rectifying geodesic measurements and mathematically determined the geometrical shape of honeycomb cells.

In the middle of December the first edition of the natural–history poem *De Solis ac Lunae defectibus* was published in London, in which Ruđer Bošković described, besides many other contents, the foundations of astronomy and Newton's theory of light, and dedicated the poem to the *Royal Society* in London.

1761

On 15 January Ruđer Bošković was elected by secret ballot member of the *Royal Society* (London) "as well qualified by his knowledge in Astronomy & other parts of Natural Philosophy" after the first

proposal for his election, submitted on 12 June 1760, it was read at ten successive sessions as was the custom.

On 15 March Ruđer Bošković was accepted by acclamation, contrary to all rules, into the *Société Royale des Sciences et Belles-Lettres* in Nancy, the academy founded by Stanislas Leszczyński.

In September Ruđer Bošković visited the ruins of Troy facing the island of Tened and wrote a report about them *Relazione delle Rovine di Troja*.

1762

In accordance with Bošković's proposal, approved by Count Kaunitz, chancellor to the Austrian Empress, in the period from 28 September to 2 October the Austrian Jesuit Joseph Liesganig (1719–1799), for many years director of the Vienna Observatory (1752–1773), published astronomic observations in Varaždin, choosing the tower of the church of the Jesuit College (*Varasdini, templum Coll. S. J.*) as the final observation point of his triangulation of the Viennese meridian from Sobieschitz to Varaždin.

1763

In Venice, under the personal supervision of the author, the third edition of Bošković's chef-d'oeuvre *Theoria philosophiae naturalis* was published.

On 22 November, by decision of the Educational Senate in Milan, Ruđer Bošković was chosen by acclamation for professor of mathematics at the University of Pavia.

1764

From 19 January to 25 March Ruđer Bošković, accompanied by Cardinal Buonaccorsi, stayed in the Pontine Marshes to propose a plan for their drainage and evaluate the earlier project made by Gabriele Manfredi and Romualdo Bertaglia. In October, at the invitation of the consuls of Rimini, Bošković gave an expert opinion of the damage to the harbour of Rimini.

1764–1769

Ruđer Bošković was professor of mathematics at the University of Pavia (*Regia Università di Pavia*).

1765

Between March and December Ruđer Bošković planned and implemented the construction of the observatory in Brera.

Two papers on water were published by Ruđer Bošković: in Pesaro the first edition of his expert opinion on the Rimini harbour, and in Milan, as part of Lecchi's book *Idrostatica*, a scholarly letter on the principles of hydrodynamics.

1766

At the beginning of spring James Douglas, Earl of Morton, President of the Royal Society, invited Ruđer Bošković to travel to California to observe on 3 July the passage of Venus in front of the Sun.

In a letter to professor Giovanni Battista Beccari of Turin and French scientists, especially the astronomer Jérôme de La Land, Bošković proposed the famous experiment to establish the nature of light and conceived a new kind of telescope, whose tube would be filled with water, to be used for that specific purpose.

1767

On 12 May Lord Morton informed Ruđer Bošković that his trip to California was "absolutely impracticable" ("absolutement impracticabile") because of the attitude of the Spanish court towards Jesuits.

1769

Ruđer Bošković developed his own method for the verification and rectification of the quadrant in a vertical position.

1770–1773

Ruđer Bošković was professor of applied mathematics, to be more precise of optics and astronomy, at the Palatine Schools (*Scuole Palatine*) in Milan.

1770

Ruđer Bošković designed the pendulum clock and published an article about it, *Descrizione d'un nuovo pendolo a correzione* in the meteorological book *Della vera influenza degli astri, delle stagioni, e mutazioni di tempo* by the Italian physicist Giuseppe Toaldo.

1771

Ruđer Bošković inspected the damage in the harbour of Savona, and wrote a report on the causes and removal of the damage.

1772

Bošković introduced four general differential equations of spherical trigonometry into the treatise sent to the *Académie des Sciences* in Paris.

Ruđer Bošković proposed changes in the water system to restart the fountains in Perugia.

1773

Ruđer Bošković shaped the final version of his vitrometer with a changeable glass prism. The instrument was made by Domenico Selva, Venetian telescope builder, according to Bošković's instructions.

On 9 December Ruđer Bošković accepted French citizenship, paying all the taxes.

1774

On 6 March, in the French Ministry of the Navy, Ruđer Bošković was handed two brevets, the first about his appointment as director of optics in the navy, and the second about an annual pay of 4000 *livres*. King Louis XV signed both the documents on 1 January 1774.

1779

The fourth, Latin–French edition of Bošković's natural–history poem in six cantos *Les Éclipses* was published in Paris. The French translation in prose was by De Barruel.

1781

In Paris, at the latest by the beginning of April, Ruđer Bošković wrote the comments accompanying Ximenes's project of a new drainage canal Nuovo Ozzeri in the Republic of Lucca.

1782

On 1 January in Paris Ruđer Bošković signed his acceptance to become one of the first forty in the natural history academy *Società Italiana* (Verona), today the *Accademia Nazionale delle Scienze detta dei Quaranta* (Roma).

After Herschel's discovery of the new celestial body Uranus in 1781, Ruđer Bošković was one of the first who, on the basis of theoretical calculations of its path, supposed that a new planet had been discovered.

1783

On his way to Paris in 1782, on 24 April Ruđer Bošković arrived in Bassano to publish his works in optics and astronomy in Remondini's printing shop.

1785

Bošković's *Opera pertinentia ad opticam et astronomiam* in five volumes was published in Bassano. For three years the writer himself supervised preparations for the publication.

1786

On 9 November the doctors Grazio Caccini and Giambattista Valcamonica composed the first report establishing that Bošković was suffering from a mental disease ("dementia").

1787

On 13 February Ruđer Bošković died in Milan.

CATALOGUE

1. Atmosphere of prayer and poetry in the family home

1. *Bambin*

Statuette of the Child Jesus standing, polychrome plaster of Paris, height of complete statuette 61 cm, height of boy's figure 49 cm, height of base 12 cm, left hand holding a green ball into which a gold cross has been inserted, right hand raised in benediction.

SD Sigurata, Church of the Transfiguration of Our Lord in Dubrovnik, altar in the south aisle, popularly called the Bambin Altar.

2. Two lamps

Silver, height 16 cm each, total weight of both lamps 506.6 g.

SD Sigurata, Church of the Transfiguration of Our Lord in Dubrovnik, the lamps hang in front of the Bambin Altar in the south aisle.

The *Bambin* or *Holy Child* and the two silver lamps are all that remains from Ruđer Bošković's birth house. These artefacts, and some others that no longer exist, formed a little home altar in the Bošković house, and their original position in in Prijeko was described in Anica Bošković's will dated 19 June 1803, when she decided to donate the whole altar to the Convent of St. Catherine in Dubrovnik, where her sister was a nun:

"the statue of the Holy Child with its niche, with everything that is within it or in front of it as it stands now, with the silver candlestick, the two silver lamps and other adornments that are in the said niche".

From the time of Anica's death until 1808, when the French abolished all the convents in Dubrovnik, the statue was kept in the Convent of St. Catherine with the whole niche. After that it was given to the Sigurata, where it still stands on the altar in the south aisle of the Church of the Transfiguration of Our Lord. It is still a unit in this new location, as it was in its original location in the birth house of Ruđer Bošković.

The *Bambin* was a frequent object of reminiscence in the correspondence between Anica and Ruđer, but it was also poetical inspiration for Ruđer's younger sister. This can especially be seen in a letter Anica wrote "on her mother's centenary", on "Fat Thursday" (the last Thursday before Lent) of 1774:

"We have a Bambin, very famous in our city, which makes everyone happy; His heart is full of silver and gold, and everything else. I think that it would not make only your great ladies happy, but the queen herself, and she would kneel before Him. I could not resist putting Him and his mercy and help in a poem."

On that occasion Anica Bošković wrote the poem "Na čas[t] Djetešca Jezusa" ("In honour of the Child Jesus"), three stanzas of which I give here:

*"Ni bi mogla ti po sebi
Jaku staros igda imati,
Niti koje djelo u tebi
Moglo bi je dostojati,*

*Neg' je ovako dopušteno
Cijeć ljubavi neizrečene
S kom Djetešce Božanstveno
Svom dobrotom gleda mene.*

*Ma je sreća privelika,
Er se srcim i ustima
Njegova odi sveđ prilika
Časti mojijem prid očima."*

*("I could not by myself,
ever have a strong old age,
Nor could any act
be worthy of you,*

*But like this it is allowed
honouring inutterable love
with which the Divine Child
looks down on me with goodness*

*But it is too great a joy
because with heart and mouth
His holy form
is honoured before my eyes.")*

3. Map of the Dubrovnik Republic by an unknown citizen of Dubrovnik

Drawing in colour on paper, 37x114.5 cm

Gift of the priest Miho Pešić to the Congregation of Presbyters of St. Peter in Cathedra in Dubrovnik in 1746, as can be seen from the inscription:

"Hanc Legum Ragusinarum Collectionem / Venerabili Congregationi Presbyterorum / Sancti Petri in Cathedra / Michael Pessich eorundem Socius, & Consors / In perenne Sui amoris, & obsequij testimonium / Libens donavit Anno Sal:[utis] MDCXLVI"

HAD

The map was made in the period between 1718, when the Požarevac Treaty gave Venice the left bank of the Neretva right up to Klek, and 1746, when Miho Pešić donated the map, together with a collection of laws, to the congregation he himself belonged to. The bottom right-hand corner of the map has the drawing of the wind-rose, and under it an unmarked scale. Above the cartouche on the left side of the map is the figure of St. Blasius the Bishop holding the city in his left hand, his right raised in benediction. In the middle, at the bottom of the map, is the coat-of-arms of the Republic with a crown showing it acknowledged Croato-Hungarian royal sovereignty. The names of the neighbouring states are: *Primorie Veneto*, *Paesi di Gran Turco* and *Monte Nero*. There are especially many place names in the mainland border region from *Imotiza* to *Ponte d'Ostro*, but place names outside the area of the Dubrovnik Republic have also been given, especially in the area Bošković's paternal ancestors came from: *Ravno*, *Savala* and the controversial place name *Orahovo* for the village Orahov Dol in which Bošković's father Nikola was born.

4. Painting of Dubrovnik at the beginning of the 18 c

Watercolour, 40x53 cm

Independent contribution in *Liber Viridis*

HAD Leges et Institutiones XXI-1/11

This is the first work of art showing the newly-built Church of St. Ignatius with a bell tower, completed in 1725, and the building of the Dubrovnik college in which Ruđer Bošković went to school until the

summer of 1725. Thus the watercolour must be dated to 1725 at the earliest.

5. Ruđer's grandfather about the earthquake that struck Dubrovnik in 1667, "Pjesan visce Trescgne Gosp.^a Bara Bettera" ("Song about the earthquake by Gosp.^a Baro Bettera"), ff. 33v–36v.

In *Skupp Pjesnj visce Trescgne u Dubrovniku God.^a 1667* Joannis Xaverii Altesti, a collection of songs in manuscript about the destructive Dubrovnik earthquake of 1667.

8^o Ff. 1r–84r

ABSD A 19

Exhibit: the collection is open on the folios where the "Song about the earthquake" by Baro Bettera begins, ff. 33v–34r

The poem by which Baro Bettera, Ruđer's maternal grandfather, was especially well-known is an example of spiritual poetry inspired by the unexpected tragedy:

*"u nascem Dubrovniku
u opchjenom smo slu posnali"*

*("in our Dubrovnik
we knew overall evil").*

6. Patriotic elegies by Ruđer's older brother Baro Bošković Bartholomaei Boscovicki [sic!] e Societatis Jesu carmina, pp. 87–92.

In: *Caroli Rotii Florentini e Societatis Jesu carmina, et orationes.* (Patavii: Apud Josephum Cominum, 1741)

8^o Pp. 198

HAD R 255

Ex libris: BRMR Nr. 452. Sign. II. 21.

Exhibit: the book is open on the page where the elegy "To the friend at home" begins.

Roti's collection of poetry includes two elegies by Baro Bošković of pronounced patriotic inspiration: "*As Amicum in Patria commoranten*", pp. 87–90, and "*Patriae desiderium*", pp. 90–92. Both elegies were written by 1740 at the latest, because the imprimatur for Roti's collection bears the date: "*Romae. 17. Septembris 1740.*"

7. Patriae desiderium. Ex Bartholomaeo Boscovicki [sic!]. Pp. 96–98.

In: *Selecta Patrum Societatis Jesu carmina.* Editio prima in Germania Genuensi auctor et correctior.

(Augustae Vindelicorum: Sumptibus Matthaei Rieger, Bibliop., 1754)

8^o Pp. 16 [nepag.] + 208

ZKD R 102

Ex libris: Golubovich

Donation Dr. N. Lepeš

Exhibit: the book is open at the beginning of the elegy by Baro Bošković, pp. 96–97.

The anthology of eighteenth-century Jesuit poetry in Latin contains under the title "Scriptores, ex quibus carmina excerpta sunt." on p. 9 [nepag.] the notation: "BOSCOVICKI [sic!] Bartholomaeus Patavii. 1741." Only three poets are represented by elegies in the collection, one of them is Baro Bošković.

8. Christmas pastoral by Ruđer's sister Anica Bošković

[Anica Bošković], *Rasgovor pastirski varhu Porodjegna Gospo-dinova jedne djevojczice Dubrovkigne.*

(U Mlezieh: Po Francesku Storti, 1758)

8^o Pp. 6 [Preface "Pridragoj brachi, ozima Baru, i Ruggieru, Boschovich [sic!] od Druscbe Jesusove. P."]+LV, with a little baroque picture showing the Nativity beside p. 1.

NSBZ R II C–8^o–70

Exhibit: the book is open at the beginning of the preface, with a facsimile of the end of the preface.

The Christmas pastoral play, featuring the shepherdesses Ljubica and Tratorka and the shepherd Lovorko, has a very important dedication to the two brothers who decided to become Jesuits. The signature of the dedication reveals the poetess:

"Is Dubrovnika na 24 Decembra 1757

Gliubesc^{va} Sestra

Aniza Boscovich"

("From Dubrovnik on 24 December 1757

Loving Sister

Aniza Boscovich")

The dedication contains a moving message from a sister to her brothers, the Jesuits Baro and Ruđer: "Dearest brothers, who not only left me so many memories from your childhood; but also showed me... the right path for our eternal salvation", and also the plea of a writer: "So I beg all the maids of our Slav tongue (to whose benefit) this is especially aimed, when my poems come into their hands, such as they are, to set aside with a good will a little time to read them carefully."

2. Documents and diplomatic correspondence

9. Entry of the baptism of Ruđer Bošković on 26 May 1711.

Parish register of births in the parish of Grad *Liber Bapt[izatorum]* *Die Prima Maij Anno 1711 in 1729*, f. 1v.

HAD 1/R8

The complete entry is as follows:

"Anno D[omi]ni 1711. die 26. Maij

Ego Marinus Caroli curatus, et sacrista baptizavi infantem natum die 18. eiusdem, quae fuit feria 2.^a hora 7; e Nicolao Boscovich et Paula f.[ilii]a Bartholomei Bettera coniugibus; cui infanti impositum est nomen Rugerius. Patrini fuere Rugerius Bettera loco Dominici Bettera eius fratris, et Santa uxor Vincentij M[ari]a Volanti."

The Christian name "Rugeruis" was added by hand on the left margin. This was necessary for an entry to be made into the index of Christian names, which was part of this register of births. The index was bound at the beginning of the register and it gives for every letter the basic data about the persons christened in order of christening for the period 1711–1728. That is why the first entry under the letter R is "Rugerius f.[ilii]us Nicolai Boscovich".

10. Passport of Ruđer Bošković

Issued on 24 January 1761 in The Hague by Marquis Geronimo Grimaldi, Spanish Ambassador in Holland, with a note that "M.^f Boscovich" was travelling to Vienna across part of Germany.

The form is printed in Spanish, filled in and verified by the ambassador's signature, 38x24 cm

ZPZ APG VII–6

11. Passport of Ruđer Bošković

issued on 26 January 1761 in The Hague by General Louis Auguste D'Affry, French Ambassador in Holland, with a note that "Le Reverend Pere Voschovitz, [sic!] de la Compagnie de Jesus" was travelling to Prague and Vienna.

The form is printed in French, filled in and verified by two signatures, 38x24 cm
ZPZ APG VII-7

12. Letter sent by Ruđer Bošković to King Stanislav II Poniatowski of Poland, in which he begs the king to mediate with Empress Catherine II to stop the Russian fleet under Admiral Orlov from attacking Dubrovnik, Milan, 12 October 1771.

Autograph with Bošković's title *Coppia di Lettera scritta al Re di Polonia in data de' 12 Ot. 1772*, a supplement to Bošković's letter of the same date sent to the Senate of the Dubrovnik Republic about other appeals and mediation at other European courts, Italian, paper, 24x18 cm

HAD ASMM, Prepiska 18. st., F. XII, N. 1582

Published in: Giuseppe Gelcich, "Dopisi Boškovićevi u poslovih dubrovačkih/Lettere dell' Ab. R. G. Boscovich alla Repubblica di Ragusa", *Rad JAZU* 87-88-90 (1887-1888), pp. 101-246, on 165-167.

Exhibit: both the letters are open at the beginning

The most moving paragraph of Bošković's letter to the Polish king is: "That is my homeland, that is where my kin live, my mother, too, still alive and vital at 98, who is by nature and her old age filled with consternation and terror... Has she managed to live to be almost a hundred only to die under the ruins of a roof destroyed by shells? What a sad memory for me!"

("Quella è la mia Patria; ivi ho i miei, e tra questi una madre ancor viva e florida in età di 98 anni, la quale e per la naturale costituzione e per l'età oramai centenaria, è piena di costernazione e di terrore... Che fosse arivata viva fino quasi a compire un secolo, per morire sotto le rovine di un tetto fracassato da una bomba; che funesta immagine è questa per me!")

13. Transcript of letter sent by Ruđer Bošković to King Stanislav II Poniatowski of Poland, Milan, 12 October 1771.

Amor di Patria: Copia della lettera che il P. Ruggiero Boscovich diresse a Stanislavo Il Re di Polonia per liberare la sua patria da un grave sterminio che la minacciava

Lithographical print in calligraphy, Italian, 34x21 cm

ZPZ APG VII-8

Exhibit: two copies of the transcript, one showing the first page of the letter, the other open to show the most moving paragraph.

To the end of the letter its printer added "Lettera che ottenne pienamente il suo effetto". In Dubrovnik this letter became a model for effective patriotic intercession, which is why it was multiplied.

14. Document issued by King Louis XV about conferring French citizenship on Ruđer Bošković

Naturalité avec Congé de tenir Bénéfice en faveur du S. Roger Boscovich

The document is written on rectangular-shaped parchment, 50x63 cm, issued on 9 December 1773 in Versailles, with a signature, a stamp, a fee calculation on the left margin and a verification by signature that the fee of "*deux cent quarante livres*" had been duly paid on 9 December 1773.

HAD Acta et diplomata, 18. st., RB-1

In the letter the new subject is called "our dear and good friend Ruđer Bošković from the city of Dubrovnik in Dalmatia, priest of the abolished Society of Jesus, descendent of an ancient Dalmatian family and noble of the Republic of Lucca" ("notre cher et bien aimé Roger Boscovich de la ville de Raguse en Dalmatie, prêtre de la Société de Jésus abolie, issu d'une ancienne famille de Dalmatie et Noble de la République de Lucques").

15. Brevet of King Louis XV about appointment of Ruđer Bošković director of optics in the French Navy

Brevet de Directeur d'Optique au service de la Marine pour le S.^r Abbé Boscovich

The document is on rectangular-shaped parchment, 24.7x32.5 cm, issued on 1 January 1774 in Versailles, verified by the signature *Louis* of the King of France and countersigned *Bourgeois de Boynes* by his state secretary.

HAD Acta et diplomata, 18. st., RB-2

The brevet expressly instructs that Bošković is to be appointed director of optics "in the service of the navy to perfect optics, especially the theory of achromatic binoculars needed by the navy for astronomical observations and navigation". Bošković referred to this instruction in the French-Latin preface to his *Opera pertinentia ad opticam i astronomiam*, Tomus primus (Basano: Remondini, 1785), in "Praefatio Generalis pro hac collectione/Préface générale pour ce recueil", pp. XVIII-XIX.

16. Copy of brevet about the salary of 4,000 livres a year to be received by Ruđer Bošković, director of optics in the French Navy

Copie du Brevet de 4000. Livres de pension en faveur du S.^r Abbé Boscovich.

Transcription on paper, 27x19.5 cm

The *Brevet* was issued on 2 February 1774 in Versailles, verified by the signature *Louis* of the King of France and countersigned *Duc D Aiguillon* by his state secretary.

ZPZ AGP VII-13

The high salary King Louis XV of France granted Bošković for scientific work, higher than that received by Parisian academicians, brought Bošković complete existential security, but also a lot of unpleasantness in the scientific community of Paris. This unpleasantness was the real reason why Bošković asked for several years leave in Italy, where he had found a publisher for his book *Opera pertinentia ad opticam et astronomiam*.

17. Letter sent by Ruđer Bošković to the Senate of the Dubrovnik Republic

Paris, 8 February 1774, mostly concerning the circumstances that had made him request French citizenship.

Autograph, Italian, paper, 23x19 cm

HAD ASSM, Prepiska 18 st., F. XIII, N. 1670

Exhibit: the last page of the letter with expressions of patriotism and the signature.

Being appointed director of optical research in the French Navy and chosen as one of the forty immortals entailed French citizenship, which had cost Bošković "over 2500 of these *livres*". But under these new circumstances, too, Bošković shows his patriotism:

"Although I have now become a Frenchman, even a pensioner of His Most Christian Majesty and his official, I will always bear in mind my first, natural homeland."

("Quantunque ora divenuto Francese e già pensionario di S. M. Cristianissima, e destinato suo ufficiale, avrò sempre in vista la prima mia patria naturale.")

It is significant that the letter is signed with "Servitore, e Sud:[dit]^o", i. e. in the same way as Bošković signed his letters when he was truly in the formal and legal sense a subject of the Dubrovnik Republic.

18. Letter sent by Benedikt Stay to the Senate of the Dubrovnik Republic

Rome, 11 January 1774, in which he confirms that he sent the Senate's letter on to Bošković in Paris.

Autograph, Italian, paper, 27.5x20 cm

HAD ASMM, Prepiska 18. st., F. XIII, N. 1663

19. Letter sent by Benedikt Stay to the Senate of the Dubrovnik Republic

Rome, 1 March 1774, a letter accompanying Bošković's letter to the Senate.

Autograph, Italian, paper, 28x20 cm

HAD ASMM, Prepiska 18. st., F. XIII, N. 1675

These two letters show that Benedikt Stay acted as mediator between Ruđer Bošković and the Senate of the Dubrovnik Republic in the very sensitive period following Bošković's *naturalization* in France. What is more, Stay's letter of 1 March 1774 served to make sure that Bošković's letter of 8 February 1774, the letter in which he explains why he became a French citizen, reaches Dubrovnik safely.

20. Letter sent by Ruđer Bošković to the Senate of the Dubrovnik Republic

Paris, 7 March 1774, with the news that on 6 March he had received the *Brevet* about his appointment as director of optical research in the French navy.

Autograph, Italian, paper, 23x19 cm

HAD ASSM, Prepiska 18. st., F. XIII, N. 1677

Exhibit: the letter is open on ff. 1v–2r to show in the bottom right corner of the paper the signature: "Um:^{mo} Div:^{mo} Obbl:^{mo} Ser:[vito]^{fe} l'Abbate Boscovich Direttore d'Optica per la Marina di S. M. Cristianissima"

Bošković informs the Senate of the Dubrovnik Republic that after a long delay, the work of people who envied him, the minister of the navy had on 6 March 1774 handed him a cordial letter with the king's brevet about his appointment as director of optics so that "he could develop this kind of mathematics and perfect the theory and in a special way facilitate the use of achromatic binoculars that the navy needs for its observers and war ships". Another document, a brevet of the Ministry of External Affairs, establishes an annual salary to

allow Bošković to completely dedicate himself to "higher meditation and zeal for the advance of science" (*all meditazioni sublimi, e al mio zelo per l'avanzamento delle scienze*). The Ministry of the Navy engaged to give him 2,000 francs by annual contract and another 2,000 francs award, and the Ministry of External Affairs established an annual pay of 4,000 francs. This is the first letter Bošković signed as director of optics in the French navy.

21. Letter sent by Ruđer Bošković to the Senate of the Dubrovnik Republic

Paris, 7 December 1778, describing his lunch with Benjamin Franklin, ambassador of the United America in Paris.

Autograph, Italian, paper, 23x19 cm

HAD ASSM, Prepiska 18. st., F. XV, N. 1883

Exhibit; letter open on f. 1v–2r, where the whole of 2r describes the meeting with Franklin and the queen's imminent delivery.

Besides other items of news, Bošković informs the Senate of the Dubrovnik Republic that on 5 December 1774 he met, at a lunch given by Charles de Vergennes in Versailles, "the famous doctor Franklin, ambassador of the United America, whom I have known for a long time [since my stay in England in 1760]". The main topic of conversation were rumours that a French warship had been detained in the Boston harbour, which Franklin denied.

3. Expert opinion on cracks on the dome of the Basilica of St. Peter (1742–1743)

22. The opinion of three mathematicians about damage discovered on the dome of the Basilica of St. Peter at the end of 1742

Parere di tre matematici sopra i danni, che si sono trovati nella Cupola di S. Pietro sul fine dell'Anno MDCCXLII. Dato per ordine di Nostro Signore Papa Benedetto XIV.

8° Pp. XXXVI; Tav., figg. 1–2.

([Romae]: [Palearini Fratres], [1742])

HAD R 553

Ex libris: BRMR Nr. 407. Sign. C. 26.

Exhibit: the document is open on the last page of the expert opinion p. XXXVI, where the names of the three mathematicians and their posts are given:

"Tommaso Le Seur dell'Ordine de' Minimi / Professore di Matematica. Francesco Jacquier dell'Ordine de' Minimi / Professore di Matematica.

Ruggiero Giuseppe Boscovich della Comp. di Gesù / Professore di Matematica in Colleg. Rom.",

with an open table showing the ground plan of the "shortest idea of the building", 18x24 cm.

23. Reflections of the three mathematicians about the damage to and repair of the dome of St. Peter's, after the first public and covert opposition to their *Parere* and after additional inspections of the dome,

Riflessioni de' Padri Tommaso Le Seur, Francesco Jacquier dell'Ordine de' Minimi, e Ruggiero Giuseppe Boscovich della Compagnia di Gesù sopra alcune difficoltà spettanti i danni, e risarcimenti della Cupola di S. Pietro proposte nella Congregazione tenutasi nel

Quinirale a' 20. Gennaro MDCCXLIII. e sopra alcune nuove Ispezioni fatte dopo la medesima Congregazione.

8° Pp. LXIV+1 [Errori. Correzioni, nepag.]; tav. *Cupola di S. Pietro*, figg. 1–6.

([Romae]: [Palearini Fratres], [1743])

HAD R 554

Ex libris: BRMR Nr. 492. Sign. C. 27.

Exhibit: title page with open table *Cupola di S. Pietro* showing the section of the dome, the left side of the section showing the external appearance, and the right side the inner structure of the dome, 34.5x23 cm.

24. Attack of an unknown master mason on the static arguments offered by the three mathematicians

Breve discorso in difesa della Cupola di S. Pietro di N. N. Capomastro Muratore regolato circa i danni secondo la prima Scrittura de' RR. PP. Matematici.

([Romae]: [N. N.], L'Anno 1744)

8° Pp. XXVIII, nn. 1–81; tav., figg. 1–2; tav. 2–3 [nepag.], figg. 1–10.

HAD R 612, Privez 3

Ex libris: BRMR Nr. 1444. Sign. III. 190.

Exhibit: title page with open tav. [2], figg. 1–3, showing the section and ground plan of the dome of St. Peter's, and in the upper part the "Figure della Scrittura de Matematici", figg. 2–5 from the first discourse *Parere di tre Matematici*, size 41x22.5 cm. Facsimile tav. [3] showing the ribbed structure, section of the staircase and other details of the building, 41x23 cm.

25. Attack of the Jesuit Faurea on the opinion of the three mathematicians concerning the causes and repair of the damage

Sentimenti d' un filosofo sopra le Cause, e Rimedi de' danni della Cupola di San Pietro e sopra il Parere dato su tale Argomento da' tre Matematici al fine del 1742., pp. 59–184.

In: *Scritture concertenti i danni della Cupola di San Pietro di Roma e i loro rimedi.*

(Venezia: Appresso Simone Occhi, [not before 1744.])

8° Pp. 186; tav., figg. 1–5.

HAD R 394

Ex libris: BRMR Nr. 292. Sign. III. 40.

Exhibit: the book is open on the first page of the "philosopher" Faure's criticism of the statical expertise of the three mathematicians, p. 59, with an open table that has been completely taken from *Parere de tre matematici*, 31.5x22 cm.

The attack on the statical expertise of the dome of St. Peter's came, for Bošković, from an unexpected quarter: from the common-room of the Roman College. The pseudonym "un filozofa" hides the Roman Jesuit Giovan Battista Faure (1702–1779), professor of metaphysics in the Roman College, 1740–1741. The key part of the attack on the expertise of the three mathematicians is in the "Parte seconda nella quale si contengono piu riflessioni sopra il Parere dato da' tre Matematici nella controversia presente", pp. 100–184. The Venetian publication contains the first paper by the three mathematicians, but also a preface by the publisher Simon Occhi "All' erudito lettore" on pp. 49–58.

4. Genesis of the theory of forces (1745–1758)

26. First outline of the theory of forces

De viribus vivis dissertatio auctore P. Rogerio Josepho Boscovich S. J. matheseos professore in Collegio Romano.

(Romae: Sum[p]tibus Venantii Monaldini Bibliopolae in Via Cur-sus/Typis Komarek, 1745)

8° Pp. XLIX; nn. 1–67; tab., figg. 1–12.

NSBZ R II F–8°–607

Exhibit: title page with open table showing the first variants of Bošković's curve of forces in figg. 11 and 12.

27. The theory of forces combined with the foundations of mechanics [Rogerius Josephus Boscovich]

Dissertationis de lumine pars secunda publicè propugnata a Patribus Societatis Jesu in Collegio Romano.

(Romae: Ex Typographia Komarek in via Cur-sus, Anno 1748. Die 5. Septembris Hora 21)

8° Pp. 58; nn. 1–130; tab., figg. 1–14.

NSBZ R II F–8°–712, Privez 1

Exhibit: title page with open table from the end of the book showing a variant of Bošković's curve of forces from 1748.

First edition of discourse prepared for formal annual exercise in the Roman College, which it is why it does not have the name of the author.

28. Reserach on elementary particles of matter — this manuscript had the most unusual fate of all Bošković's papers on the theory of forces

"De materiae divisibilitate et principiis corporum dissertatio conscrip-ta jam ab anno 1748. & nunc primum edita auctore P. Rogerio Josepho Boscovich Soc. Jesu.", *Memorie sopra la Fisica e Istoria Naturale di diversi Valentuomini* 4 (Lucca, 1757).

8° Pp. 129–258, nn. 1–95.

NSBZ R II F–8°–1434

Exhibit: title page.

29. Treatise on the centre of gravity — a treatise that Bošković always included in his papers on the theory of forces without ever explaining why he did so

De centro gravitatis dissertatio publice propugnata in Collegio Romano Soc. Jesu auctore P. Rogerio Josepho Boscovich Societatis ejusdem. Editio altera. *Accedit disquisitio in centrum magnitudinis qua quaedam in ea dissertatione proposita, atque alia iis affinia demonstrantur.*

(Romae: Typis et sum[p]tibus Nicolai, et Marci Palearini, 1751).

8° Pp. LVI, nn. 1–108 only for the first discourse, Tab. I., figg. 1–19; Tab. II., figg. 1–21.

NSBZ R II F–8°–791

Exhibit: title page.

30. Mathematical and philosophical foundation of the law of continuity — the fundamental principle of the theory of forces

De continuitatis lege et ejus consecrariis pertinentibus ad prima materiae elementa eorumque vires dissertatio auctore P. Rogerio Josepho Boscovich Societatis Jesu publico matheseos professore in Collegio Romano.

(Romae: Ex Typographia Generosi Salomonii/Apud Venantium Monaldini bibliopolam in Via Cursus, 1754)

8^o Pp. LXXX; nn. 1–174; tab., figg. 1–26.

HAD R 610

Ex libris: Ex Libris Georgii Higgin anno D[omi]ni 1776

BRMR Nr. 1372. Sign. IV. 25.

Exhibit: title page with open table from the end of the book showing examples of continuity, especially in geometry.

31. Treatise on the curve of forces

De lege virium in natura existentium dissertatio auctore P. Rogerio Josepho Boscovich Societatis Jesu publico matheseos professore in Collegio Romano.

(Romae: Typis Joannis Generosi Salomonii, [1755])

8^o Pp. 42+1 [nepag.]; nn. 1–124; tab., fig. 1–13.

NSBZ R II F–8^o–1775

Exhibit: title page with open table on which fig. 9 shows the final form of Bošković's curve of forces

32. First edition of Bošković's synthesis written after thirteen years of meditation and explanation

Philosophiae naturalis theoria redacta ad unicam legem virium in natura existentium. Auctore P. Rogerio Josepho Boscovich Societatis Jesu publico matheseos professore in Collegio Romano.

(Prostat Viennae Austriae: In officina libraria Kaliwodiana, Anno 1758)

8^o Pp. 26 [nepag.]+322+2 [nepag.]+17 [nova pag.]; nn. 1–549+1–75; 4 tab., figg. 1–75.

NSBZ R II F–8^o–504

Exhibit: title page with open tab. III with the "model of the atom" on figg. 32–33.

33. Improved and corrected edition of Bošković's chef-d'oeuvre

Theoria philosophiae naturalis redacta ad unicam legem virium in natura existentium, auctore P. Rogerio Josepho Boscovich Societatis Jesu, nunc ab ipso perpolita, et aucta, ac a plurimis praecedentium editionum mendis expurgata. Editio Veneta prima ipso Auctore praesente, et corrigente.

(Venetiis: Ex Typographia Remondiniana, 1763)

8^o Pp. XL+311+8 [nepag.]; nn. 1–558+1–141; Tab. I–IV., figg. 1–75.

NSBZ R II F–8^o–917a

Exhibit: title page with open table I showing variants of Bošković's curve of forces on figg. 1 and 14.

34. Genesis of Bošković's curve of forces

Panel with eight drawings: six original drawings by Bošković and two reconstructions based on Bošković's texts from the period 1745–1758 when the theory of forces was developed.

Exhibit: drawings in the following order:

1. Arc of attraction that, according to Bošković, describes the effects of Newton's gravitation

Reconstruction based on *Theoria philosophiae naturalis* (1758), fig. 17

2. Curve uniting the effects of Newton's force of attraction and Bošković's force of repulsion

De viribus vivis (1745), fig. 10

3. Introduction of the CPQRT arc to explain the resistance to an external force on fluids, elastic bodies, soft bodies and threads

De viribus vivis (1745), fig. 11

4. Differentiation between zero points of the curve of forces: boundaries of cohesion D, H, M and boundaries of uncohesion F, K

Dissertationis de lumine pars secunda (1748), fig. 1

5. Effect of force at even the greatest distances in the realm of fixed stars? Rewinding of curve around axis after the gravitational arc RSZ

Reconstruction based on Bošković's works: *De viribus vivis* (1745), n. 59; *De maris aestu* (1747), n. 35; *Dissertationis de lumine pars secunda* (1748), n. 6; *Theoria philosophiae naturalis*, nn. 170 i 405.

6. Final form of Bošković's curve of forces

De lege virium in natura existentium (1755), fig. 9

7. The curve of forces in Bošković's chef-d'oeuvre

Theoria philosophiae naturalis (1758), fig. 1

8. Series of similar curves that would describe the existence of different worlds

Theoria philosophiae naturalis (1758), fig. 14

35. Model of the "atom" from 1748: four analogies in the search for the equilibrium of a system formed by three points A, B and I.

Panel with five drawings: an original drawing and four drawings that show Bošković's train of thoughts

Exhibit: drawings in the following order

1. Bošković's "model of the atom" from 1748

Dissertationis de lumine pars secunda (1748), fig. 2

2. Bošković's first analogy: states of equilibrium of the third point I of the system in the vertices of one ellipse

Drawing based on *Dissertationis de lumine pars secunda* (1748), n. 28, figg. 1 and 2.

3. Bošković's second analogy: states of equilibrium of the third point I of the system in the vertices of confocal ellipses

Drawing based on *Dissertationis de lumine pars secunda* (1748), n. 29, figg. 1 and 2.

4. Bošković's third analogy: states of equilibrium of the third point I of the system on the periphery of confocal ellipses

Drawing based on *Dissertationis de lumine pars secunda* (1748), nn. 30–31, figg. 1 and 2.

5. Bošković's fourth analogy: states of equilibrium of the third point I of the system on the surfaces of confocal spheroids

Drawing based on *Dissertationis de lumine pars secunda* (1748), n. 31, figg. 1 and 2.

5. Archaeological discoveries (1742–1746, 1748–1750, 1759, 1761)

36. Report on the excavation of the Roman villa in Tusculo near the Jesuit country-house Rufinelle [Michelangelo Giacomelli], "D'una antica Villa scoperta sul dosso del Tusculo: d'un antico Orologio a Sole, e di alcune altre rarità, che si sono trà le rovine della medesima ritrovate. Luogo di Vitruvio illustrato.", Articolo XIV. in *Giornale de'Letterati*, Aprile 1746, pp. 115–134, figg. 1–4.

HAD R 508

Ex libris: BRMR Nr. 1079. Sign. C. 29. a.

Exhibit: article open on the first page, p. 115.

Giacomelli presented the history of Bošković's excavations near Rufinello, the summer-house of the Roman College, in the period 1742–1746, and described Bošković's most important finds: a mosaic, sundial, inscriptions and figures on a mosaic that turned into dust the moment they were excavated.

37. [Michelangelo Giacomelli], "D'UNA ANTICA VILLA SCOPERTA SUL DOSSO DEL TUSCOLO: D' UN' ANTICO OROLOGIO A SOLE, e di alcune altre rarità, che si sono trà le rovine della medesima ritrovate: Luogo di VITRUVIO illustrato.", Estratto dal *Giornale de' Letterati di Roma dell'Anno 1746*, pp. 1–20, s figg. 1–4 na p. 20.

Contribution II in:

Raccolta di tutti [sic!] li Articoli spettanti al P. Ruggiero Giuseppe Boscovich della Compagnia di Gesù Professore di Matematica nel Collegio Romano contenuti nel Giornale Romano de'Letterati dal principio sino a tutto l'Anno 1753. Con in fine l'Aggiunta a penna del Problema del Corpo di massima attrazione e di due Lettere di soggetto geometrico. [Handwritten title of unknown bibliographer, which shows that the same binding used also contain three mathematical contributions by Bošković in manuscript form]

HAD R 546

Ex libris: BRMR Nr. 1259. Sign. III. 35.

Exhibit: the collection of articles is open on the last page of Giacomelli's description of the archaeological excavations beside Rufinello, with drawings of the sundial discovered.

38. Two discourses by Bošković's student Ivan Luka Zuzorić on excavations of the Roman villa under Tusculo: testimony on covert clash between student and professor

D' una antica Villa scoperta sul dosso del Tusculo, e d' un' antico Orologio a Sole tra le rovine della medesima ritrovato. Dissertazioni due composte dal Padre Gio: Luca Zuzeri della Compagnia di Gesù'. (In Venezia: Appresso Modesto Fenzo, 1746)

8^o Pp. 86; nn. 1–60+1–22; 1 tab., figg. I–VI.

HAD R 558

Exhibit: book open on pp. 24–25, where Zuzorić drew and explained the sacrificial vessel (*patera*) the antiquarian Ficoroni had donated to the gallery of the Roman College.

39. Letter containing the basic assertion that the excavated Augustus' obelisk had been used as the gnomon of a sundial *Epistola III. Rev. Pat. Rogerii Josephi Boscovich Societatis Jesu/Lettera III. del R. P. Ruggiero Giuseppe Boscovich della Compagnia di Gesù.* Pp. XIV–XXXIV. Bošković's letter ends with the date: "Dabam Romae 15. Aug. 1748./Roma 15. Agosto 1748."

In: Angelo Maria Bandini, *De obelisco Caesaris Augusti e Campi Martii ruderibus nuper eruto commentarius. Accedunt CII. Virorum epistolae atque opuscula./Dell' obelisco di Cesare Augusto scavato dalle rovine del Campo Marzo commentario. Con alcune lettere, e dissertazioni di uomini illustri.*

(Romae: Ex Typographia Palladis/Excudebant Nicolaus et Marcus Palearini, 1750)

2^o Pp. XXII+114+CX; Tab. I–III; Tab. IV, figg. I–IX. HAD R 799

Ex libris: BRMR Nr. 421. Sign. VI. 4.

Exhibit: *Obelisci Sesostridis a Caesare Augusto Romam ex Aegypto devecti in Campo Martio ad indicandas dierum noctiumque magnitudines positi et Benedicti XIV. P. O. M. munificentia e ruinis aedium proximarum effossi delineatio*, Tab. I & II are stuck together, 106x41.5 cm, with the signature "J. Stuart delin. & sculp. Romae 1749."

The bilingual Latin–Italian publication containing Bandi's basic study about the Sesostris Obelisk and the opinions of thirteen of the most illustrious contemporary names of Europe, including Leonardo Euler, Giovanni Poleni and Christiann Wolff, written after the obelisk had been excavated from the Field of Mars in Rome in 1748.

40. Epistle by the English archaeologist James Stuart with excellent drawings, prepared for print by Bošković

De obelisco Caesaris Augusti e Campo Martio nuperrime effosso epistola Jacobi Stuart Angli ad Carolum Wentworth comitem de Malton./Dell' obelisco di Cesare Augusto cavato fuori da terra ultimamente nel Campo Marzo lettera di Giacomo Stuard Inglese diretta a Sua Eccellenza Milord Carlo Wentworth conte di Malton (Romae: Ex Typographia Palladis/Excudebant Nicoalus et Marcus Palearini, 1750)

2^o Pp. XIV–XXXIV+1–33+1 [nepag.]; Tab. I–V, figg. I–IX. NBD R 14F

Exhibit: Title page of Stuart's epistle adorned with a vignette showing the position of Augustus' obelisk on the Field of Mars, with the open table *Cuspidis obelisci descriptio*, Tab. III., 41.5x55 cm, and the signature "J. Stuart del. & sculpsit".

Incomplete edition containing only the contributions in which Bošković participated: Bošković's exhaustive epistle and Stuart's epistle that, as Bošković expressly admitted in "Catalogus operum P. Rogerii Josephi Boscovich S. J.", Bošković had prepared from Stuart's notes and expanded with his explanations.

41. The Bošković Anemometre (1759)

Round marble plate, 0.553 m in diameter and 6.8 cm in height; with a hole in the middle whose upper opening is 7.1 cm in diameter and lower opening 4.3 cm in diameter, and which served for holding the staff of the flag; with a planisphere on the upper surface; with inscriptions of Greek winds in Latin transliteration on the edge surface Found in Rome in 1759 when the vineyard outside Porto Capena, besides the Via Appia, was being hoed

Museo Oliveriano, Pesaro, inv. no. 3302

Exhibit: 5 photographs in life size on a panel

1. photograph of the upper surface of the wind gauge
2. Side view of the wind gauge in the open
3. Schematic presentation of the planisphere on the upper surface
4. Section of the wind gauge
5. Schematic presentation of the inscription along the edge: names of winds

The owner of the wind gauge Paolo Maria Paciaudi (1710–1785), librarian to Cardinal Passionei, was the first to publish data on the anemoscope in his *Monumenta Peloponesiaca commentariis explicata* (1761) and he included the "lovely drawing of the famous Father Bošković", as the later owner of the wind gauge, the erudite Olivieri, founder of the archaeological museum in Pesaro, said in his will. That is why the wind gauge is called *anemoscopio c. d. Boscovich* in professional literature.

42. Report on the ruins of Troy facing the island of Tenedo

Relazione delle rovine di Troja, esistenti in faccia al Tenedo, secondo le osservazioni del Seguito di S. E. il Sig. Cav.¹ Pietro Correr, mentre nel Settembre del 1761. andava Bailo a Constantinopoli, essendosi poratto egli medesimo a riconoscerne una buona parte in persona, dell'Abate Ruggiero Giuseppe Boscovich
([Bassano]: [Remondini], [1784])

8^o Pp. 36, nn. 1–50

In: *Mescolanze raccolte da Giovanni de Bizzarro membro di molte illustri Accademie* 20, Privez 8

ZPZ KB A. d. I. 23

Ex libris Joannis de Bizzarro.

Exhibit: title page of Bošković's report

Special impression from the publication in which Remondini published Bošković's travels from Constantinople to Warsaw, report on the ruins of Troy and the leaflet for the publication in preparation of Bošković's optical and astronomical works, thus with own pagination, without data on publisher, place and year of publication.

6. Rome–Rimini research trip (1750–1752)

43. Triangulation net made to measure the Rome – Rimini meridian and two useful instruments

De litteraria expeditione per Pontificiam ditionem: Synopsis amplioris operis editi anno 1755. Impressa in Commentariis Acad.[emiae] Bon.[oniensis] Tom. IV. auctore P. Rogerio Josepho Boscovich S. J.

Special impression from:

(Bononiae: Typis Laelii a Vulpe Instituti Scientiarum Typographi, 1757)

4^o Pp. 44; tab., figg. 1–3.

HAD R 736

Ex libris: BRMR Nr. 1027. Sign. IV. 8. a.

Exhibit: title page with open table.

The table shows Bošković's triangulation of the Rome–Rimini meridian, the sector he used to determine the distance of fixed stars from the zenith, the instrument he always used for observations during his travels, and an instrument for verifying the quadrant made according to Bošković's design.

44. New map of the Church State made on the basis of Bošković's geodesic measurements

Carte l'État de l'Eglise, 40x22 cm

The map is bound between pp. xvi and 1 in:

Voyage astronomique et géographique, dans l'État de l'Eglise, entrepris par l'ordre et sous les auspices du Pape Benoit XIV, pour mesurer deux degrés du méridien, & corriger la Carte de l'État

ecclésiastique, par les PP. Maire & Boscovich de la Compagnie de Jesus, traduit du Latin, augmenté de Notes & d'extraits de nouvelles mesures de degrés faites en Italie, en Allemagne, en Hongrie & en Amérique. Avec une nouvelle Carte des Etats du Pape levée géométriquement.

(A Paris: Chez N. M. Tilliard, Libraire, Quai des Augustins, à S. Benoît, 1770)

4^o Pp. XVI+526, zemljovid Crkvene države, Pl. I, figg. 1–7; Pl. II, figg. 1–19, Pl. III figg. 1–20; Pl. IV, figg. 1–26.

NSBZ R II F–4^o–227b

Exhibit: publication with open map, 70x30 cm

The French translation of the report on measuring the Rome–Rimini meridian is supplemented with a "Note" ("Note pour la fin du N.° 303, Liv. V."), pp. 501–512, in which Ruđer Bošković showed his most important result in statistics — the method of adjusting errors, and compared his data with that of other geodesic measurements performed in the period 1755–1770. Unlike the Latin edition from 1755, the map is bound in a book and has thus been preserved in many copies. The *Advertissement* in the upper right corner of the map contains an essential point about how the map was made: "La Carte originale a été dessinée par le P. Christophe Maire d'après ses propres observations et celles du P. Roger Boscovich." The map was drawn by the hand of the Irish Jesuit Christopher Maire, whom Bošković chose to accompany him on his trip, on the basis of measurements that Maire and Bošković carried out together according to methods developed by Bošković.

45. Tabular presentation of Bošković's observations in March and December 1752

Giacomo Ricchebach, *Esame imparziale delle triangolazione del P. G. Ruggero [sic!] Boscovich.* Memoria postuma del Canonico Giacomo Ricchebach professore di matematiche nell' Università Romana

(Roma: Nella Tipografia Salviucci, 1846)

4^o Pp. 8 [nepag.] + 118, Tav.

HAD R 728

Ex libris: BRMR Nr. 897. Sign. IV. 19.

Exhibit: the book is open on p. 88 that contains a table showing the results of Bošković's observations in 1752 "Osservazioni di Boscovich sopra le distanze zenitali della stella u Orsa maggiore", with an open table at the end of the book showing Ricchebach's measurements of Bošković's Roman base.

A critical evaluation of Bošković's triangulation from 1755, whose well-founded nature and measured tone make it an exception among the evaluations of Bošković's methodology and results obtained in the first half of the nineteenth century. Ricchebach remeasured the side of Bošković's net from the dome of St. Peter's to the middle of the inscription on the tomb of Cecilia Metele.

46. Triangulation plan and the first method of adjusting errors

Voyage astronomique et géographique, dans l'État de l'Eglise,...., par les PP. Maire & Boscovich de la Compagnie de Jesus, traduit du Latin,....

(A Paris: Chez N. M. Tilliard, Libraire, Quai des Augustins, à S. Benoît, 1770)

4^o Pp. XVI+526, zemljovid, Pl. I–IV

NSBZ R II F–4^o–227a

Exhibit: title page with open table Pl. I, with signature "De Bellay Sculp."

Two mathematical supports of the methodology Bošković developed and successfully applied in geodesic measurements; the triangulation net on fig. 2 and a geometrical presentation of Bošković's method of adjusting errors on fig. 7.

47. Bošković's triangulation net drawn onto a large-scale map, which was one of the two main purposes for the research trip of 1750–1752.

Panel with key, 140x60 cm

Exhibit: superposition of the map of the Church State and a drawing of the triangulation net, two independent graphical supplements to: Boscovich et Maire, *Voyage atsronomique et géographique* (1770), after p. xvi and Pl. I, fig. 2.

End observation posts:

A top of the dome of the Basilica of St. Peter

L mouth of the river Ausa north of Rimini

Two bases of measurement:

bc Roman basis beginning in the middle of the inscription on the tomb of Cecilia Meteli,

La Rimini basis beginning at the mouth of the river Ausa

The posts that stretch the triangulation net are on the tops of eight hills or mountains:

B Januarius (Genarro)

C Sorianus (Soriano)

D Fionchus (Fionchi)

E Penninus (Pennino)

F Tesius (Tesio)

G Catria (Catria)

H Carpegna (Carpegna)

I Lurus (Luro)

The An meridian passes through the top of the dome of St. Peter's.

48. Map of the Church State, the Tuscan Duchy and their neighbouring states

Carta geografica dello Stato della Chiesa / Granducato di Toscana e de' stati adjacenti / dedicata / All' E^{mo} e R^{mo} Principe / II Sig. Cardinale / Andrea Corsini

Watercolour, with a description of the bibliographer "esemplare colorato ad acquarello", 78x58.5 cm, dated in pencil 1769, stamp on the back of the map *Coll. Ashby*.

BAV St. Georg. S. 11

Exhibit: ectachrome of the map from BAV

The title and dedication are in the bottom left corner. Each of the eight states is shown in a different colour, for example, the patrimony of St. Peter in pink, Tuscany in yellow. The map has two scales: Roman and Tuscan. The "Annotazioni" note about the making of the map, in the upper right corner, contains valuable data among which we must certainly single out that describing Bošković's influence on the unknown mapmaker:

"La carta dello Stato della Chiesa é opera dei RR. PP. Maire, e Boscovich, i quali per ordine di Clemente XIII Rezzonico ne fecero le osservazioni, e le misure. (...) per i luoghi di Confino con lo Stato Pontificio [ha fatto uso] di quelle [osservazioni] dei sudd.¹ PP. Maire, e Boscovich, (...)" The map is thus the compilation of an unknown mapmaker and certain confirmation of the influence Bošković's and Maire's map had on Italian mapmaking in the second half of the eighteenth century. Although the writer of the note unfoundedly carries favour with Clement XIII, since Bošković and Maire made the geodesic measurements at the order of Benedict XIV, he offers another reason why this map was made during the pontificate of Clement XIII.

49. Topographical map of the Metauro department

Carta topografica del dipartimento del Metauro desunta da quella del P. Boscovich delineata ed ampliata colla possibile precisione dall'ingegnere Gius.[epp]e Zani. Arcangelo Magini incisore.

Map, 64x56 cm, dated s. l., 1813.

BAV St. Geogr. S. 39

Exhibit: ectachrome from BAV

The map shows the region in which Bošković made many observations measuring the Rimini base of his triangulation and trying to determine the Adriatic shore of the Church State as precisely as possible. At the same time it directly confirms the influence Bošković's geodesic measurements had on Italian mapmaking at the beginning of the nineteenth century. The mapmaker Zani and the draughtsman Magini mention only Bošković, i. e. they pass over Maire's contribution to the results of Bošković's research trip.

7. Instruments

50. Instrument for drawing Cartesian ovals (1748)

Constructed by Giambattista Suardi, theoretical explanation by Ruđer Bošković

"Lettera 16. Marzo 1748. scrittami dal Chiariss. P. Ruggiero Boscovich della Compagnia di Gesù in proposito delle *Ovali Cartesiane*.", pp. 62–76 and

"Altra Lettera 27. Aprile 1748. scrittami dal Medesimo sullo stesso soggetto.", pp. 77–79

In: *Nuovi istromenti per la descrizione di diverse curve antiche e moderne e di molte altre, che servir possono alla speculazione de' Geometri, ed all' uso de' Pratici. Col progetto di due nuove macchine per la nautica ed una per la meccanica, e con alcune Osservazioni sopra de' Poligoni rettilinei regolari del Conte Giambattista Suardi Bresciano.*

4^o Pp. VIII+283; Tav. I–XXXVIII.

HAD R 727

Ex libris: BRMR Nr. 594. Sign. IV. 12.

Exhibit: the book is open at the beginning of Bošković's letter to Suardi dated 16 March 1748, p. 62, with open Tav. VIII., figg. 1–9, showing the instrument for drawing Cartesian ovals.

51. Geodesic stands (1750)

De litteraria expeditione per Pontificiam ditionem ad dimetiendos duos meridiani gradus et corrigendam mappam geographicam. Suscepta a Patribus Societ.[atis] Jesu Christophoro Maire et Rogerio Josepho Boscovich.

Romae: In Typographia Palladis excudebant Nicolaus, et Marcus Palearini: 1755)

4^o Pp. XXII+516+3 [Errata, nepag.]; nn. 215+60+25+488+335; Tab. I., figg. 1–6; Tab. II., figg. 1–18; Tab. III., figg. 1–20; Tab. IV., figg. 1–26.

ZKJH R 6010

Ex libris: Bibliothecae Res.[identiae] Rag.[usinae] S. I.

Exhibit: title page with open Tab. III., on which fig. 17 shows three geodesic stands at the same level.

Bošković made, and used in his geodesic measurements, tripods whose measuring rods could be in the air without touching, and could be placed at different heights in the case of uneven ground. This was a novelty in geodesy.

52. Objective micrometer (1757)

Theoria micrometri objectivi. Carolo Benvenuti Soc. Jesu. Rogerius Josephus Boscovich ejusd.[em] Soc[ietatis], pp. 143–144. Bošković's letter to Carlo Benvenuti dated "Dabam Viennae 1. Aug. 1757." and "De micrometro objectivo", pp. 145–150, tab. XII, figg. 1–2.

Auctarium in: De la Caille, *Lectiones elementares opticae ex editione Parisina Anni MDCCLVI in Latinum tractatae a C.[arl] S.[cherffer] e S. J. quibus Auctarii loco accessit Brevis theoria micrometri objectivi a R. P. Rogerio Josepho Boscovich, e S. J. in Collegio Romano matheseos professore concinnata*. Editio altera.

(Vindobonae: Typis Joannis Thomae nob. de Trattnern, Caes. Reg. Aulae typographi et bibliopolae, 1766)

8^o Pp. 8 [nepag.] + 150; Tab. I.–XII., figg. 1–96; Tab. XIII., figg. 1–2
NBD R 2696

Exhibit: the edition is open at the beginning of Bošković's contribution on p. 143, with open Tab. XIII., figg. 1–2, showing the objective micrometer.

53. First vitrometer with changeable water prism (1763) – Bologna version

"De recentibus compertis pertinentibus ad perficiendam Dioptricam.", pp. 169–235, nn. 1–218, especially paragraph VII. "Vitrometri constructio, & usus.", pp. 230–234, nn. 205–217.

Published in: *De Bononiensi scientiarum et artium Instituto atque Academia Commentarii*. Tomus quintus.

(Bononiae: Typis Laelii a Vulpe Instituti Scientiarum Typographi, 1767)

Bound in: *Opuscula Rogerii Josephi Boscovich [sic!] Soc. Jesu*. HAD R 713

Ex libris: BRMR Nr. 1279. Sign. IV. 24.

Exhibit: the collection is open at the beginning of the section on the vitrometer, p. 230, with open table "T. V. P. I. Tab. II. p. 234" showing Bošković's first vitrometer on fig. 25.

54. First vitrometer with changeable water prism (1763) – Vienna version

Dissertationes quinque ad dioptricam pertinentes P. Rogerii Josephi Boscovich S. J. publ. matheseos professoris in Regia Ticinensi Academia.

(Vindobonae: Typis Joannis Thomae nob. de Trattnern, Sac. Caes. Reg. aulae typogr. et bibl., 1767)

8^o Pp. 6 [Lectori benevolo, nepag.] + 290 + 1 [Errata, nepag.]; nn. 218 + 190 + 123 + 86 + 55; Tab. I. pro Dissert. I., figg. 1–17; Tab. II. pro Dissert. I., figg. 18–26; Tab. pro Dissert. II., figg. 1–11; Tab. pro Dissert. III., figg. 1–8. NSBZ R II F–8^o–964a

Exhibit: title page with open "tab. II. pro Dissert. I." showing the design of Bošković's vitrometer on fig. 25.

55. Proposal for the famous experiment that was to reveal the nature of light (1766):

Theory and design of a new kind of telescope whose tube would be filled with water

"De modo determinandi discrimen velocitatis, quam habet lumen, dum percurrit diversa media, per duo telescopia dioptica, alterum commune, alterum novi cujusdam generis.", pp. 248–314, Tab. VII,

Figg. 1–9, especially "Theoria, & constructio novi telescopii propositi.", pp. 265–286, nn. 31–62, and figg. 4 and 6.

Opusculum III. in:

Rogerius Josephus Boscovich, *Opera pertinentia ad opticam, et astronomiam maxima ex parte nova, & omnia hucusque inedita, in quinque Tomos distributa*. Tomus secundus.

(Bassani: Apud Remondini, 1785)

4^o Pp. VIII + 549, Tab. I–X

HAD R 718/2

Ex libris: BRMR Nr. 1076. Sign. IV. 10. a.

Exhibit: beginning of Bošković's treatise on p. 248 with open table "Tom. II. Opusc. III. Tab. VII" showing, on figg. 4 and 6, the new kind of telescope he had proposed for the *experimentum crucis* he never made.

56. Quadrant, congruent with Bošković's method of instrument verification and rectification (1769)

"De examine plani quadrantis.", pp. 16–38, Tab. I., figg. 1–12, on figg. 1 i 3.

Opusculum II. in:

Rogerius Josephus Boscovich, *Opera pertinentia ad opticam, et astronomiam maxima ex parte nova, & omnia hucusque inedita, in quinque Tomos distributa*. Tomus quartus.

(Bassani: Apud Remondini, 1785)

4^o Pp. VIII + 520, Tab. I–XIII

NBD R II–8–4

Ex libris: *Ex dono Excell.^{mi} Senatus*, manuscript. Copy sent by Ruđer Bošković to his family. Following the dispositions of Anica Bošković's will, the Senate received the books that had been kept in the Bošković family and determined to keep them in the library of the Dubrovnik college. The same is true of signatures NBD R II–8–1 and NBD R II–8–5.

Exhibit: first page of treatise on pp. 16–17, with open table "Tom. IV. Opusc. II. Tab. I." showing the wedge micrometer on fig. 1 and the method for examining the quadrant surface in a vertical position on fig. 3.

57. Pendulum clock (1770)

"Descrizione d'un nuovo pendolo a correzione del P. Ruggiero Giuseppe Boscovich D. C. di G. P. Professor di Matematica nell'Università di Pavia, ec.", pp. 216–222; tab, figg. 1–8.

In: *Della vera influenza degli astri, delle stagioni, e mutazioni di tempo, Saggio meteorologico fondato sopra lunghe osservazioni, ed applicato agli usi dell' agricoltura, medicina, nautica, ec. di Giuseppe Toaldo... Pubblico Professore di Astronomia, Geografia, e Meteore nell'Università di Padova*.

(Padova: Nella Stamperia del Seminario. Appresso Gio. Manfrè, 1770)

8^o Pp. 18 [nepag.] + 222; Tav. I–V; tav. [nepag.]

HAD R 602

Ex libris: MRBR Nr. 1069. Sign. III. 40. a.

Exhibit: Bošković's contribution open on pp. 216–217, with open table showing the design of Bošković's pendulum clock and its composite parts, 19.2x11 cm.

58. Altazimuth (1772)

whose construction was approved in 1772 for the Brera observatory, but which was never built

"De collocacione, et verificatione ingentis quadrantis verticalis mobilis circa axem verticalem cum alidada, quae in ingenti circulo horizontali notet azimutha.", pp. 87–117, Tab. V., figg. 1–9, especially fig. 1.

Opusculum VI. in:

Rogierus Josephus Boscovich, *Opera pertinentia ad opticam, et astronomiam maxima ex parte nova, & omnia hucusque inedita, in quinque Tomos distributa*. Tomus quartus.

(Bassani: Apud Remondini, 1785)

4^o Pp. VIII+520, Tab. I–XIII

HAD R 718/4

Exhibit: the beginning of Bošković's treatise on p. 87 with open table "Tom. IV. Opusc. VI. Tab. IV." showing the design of the altazimuth on fig. 1.

59. Final vitrometer with changeable glass prism (1773), made according to Bošković's instructions by the Venetian telescope-builder Domenico Selva

"De constructione, et usu novi instrumenti maxime idonei ad determinandas vires refractivas, et distractivas substantiarum diaphanarum.", pp. 1–168, Tab. II., fig. 9.

Opusculum I. in:

Rogierus Josephus Boscovich, *Opera pertinentia ad opticam, et astronomiam maxima ex parte nova, & omnia hucusque inedita, in quinque Tomos distributa*. Tomus primus.

(Bassani: Apud Remondini, 1785)

4^o Pp. XXXVI+430, Tab. I–XI

NBD R II–8–1

Exhibit: beginning of Bošković's treatise on the vitrometer on p. 1, with open table "Tom. I. Opusc. I. Tab. II", figg. 9–13, showing the design of the final vitrometer on fig. 9.

60. During his holiday in the Venetian countryside, for want of other more suitable instruments, Bošković made a gnomon for the accurate determination of the height of the pole (1773)

"Methodus determinandi accuratissime altitudinem poli ope gnomonis supplendo instrumenta ad id opportuna, ubi desint.", pp. 338–362, Tab. VIII., figg. 1–7.

Opusculum V. in:

Rogierus Josephus Boscovich, *Opera pertinentia ad opticam, et astronomiam maxima ex parte nova, & omnia hucusque inedita, in quinque Tomos distributa*. Tomus quintus.

(Bassani: Apud Remondini, 1785)

4^o Pp. VIII+489, Tab. I–X

NBD R II–8–5

Exhibit: beginning of Bošković's short work on the gnomon on pp. 338–339, with open table "Tom. V. Opusc. V. Tab. VIII.", showing the method on fig. 1 and with the use of the wedge micrometer on fig. 7.

61. Second pendulum (1785), geophysical device composed of a metal ball suspended on two silk threads.

"De determinatione longitudinis penduli oscillantis ad singula secunda temporis medii.", pp. 179–169, especially the supplement "Instructio practica" on pp. 261–269, Tab. V., figg. 1–10.

Opusculum III. in:

Rogierus Josephus Boscovich, *Opera pertinentia ad opticam, et astronomiam maxima ex parte nova, & omnia hucusque inedita, in quinque Tomos distributa*. Tomus quintus.

(Bassani: Apud Remondini, 1785)

4^o Pp. VIII+489, Tab. I–X

HAD R 718/5

Exhibit: beginning of Bošković's geophysical treatise on p. 179, with open table "Tom. V. Opusc. III. Tab. V.", especially fig. 7.

8. Hydrotechnical expertise

62. Bošković's proposal for draining the Pontine Marshes and regulating the Terracina harbour (1764)

"Esame del Progetto de'Sigg. Manfredi, e Bertaglia in riguardo alle Paludi Pontine, e Porto di Terracina del Sig. Abate Ruggiero Giuseppe Boscovich, allora Professore di Matematica nell'Università di Roma de'PP. Gesuiti", pp. 75–115.

In: *Raccolta delle perizie ed opuscoli idraulici del Signor Abate Leonardo Ximenes... alla quale si aggiungono le perizie di altri Professori che anno scritto sulle stesse materie*, Tomo I.

(Firenze: Nella Stamperia di Pietro Allegrini alla Croce Rossa, 1785)

4^o Pp. XX+472; tav. I–III.

HAD R 709/1

Ex libris: BRMR Nr. 1053. Sign. IV. 15. a.

Exhibit: Publication open on title page of Bošković's expertise, p. 75, with open topographical map used by Bošković to draw his conclusions *Pianta Topografica delle Paludi Pontine ricavata da quella del Meyer, e del Sani*, marked "Paduli Pontine Tavola I.", 20.7x34 cm, with the signature "A. Gio. Canocchi Incise".

The "Nota del Sig. Abate Ximenes alla pagina 89. nell'Esame del Sig. Abate Boscovich", pp. 115–116, has been added to the publication.

63. The most exhaustive harbour expertise (1764)

Del porto di Rimini memorie del Padre Ruggiero Giuseppe Boscovich della Compagnia di Gesù.

(In Pesaro: Presso Donnino Ricci, 1765)

8^o Pp. 4 [nepag.] + 71

ZPZ KB A. c. I. 27

Ex libris Joannis de Bizzarro

Exhibit: title page

The most detailed of all examples of Bošković's harbour expertise is the one on Rimini harbour. In it Bošković combined measurements and observations in the harbour and in the nearby coastal belt with written sources about the harbour, especially those containing data from earlier measurements, to make a comparative analysis.

64. Scholarly letter about the principles of hydrodynamics (1765)

"Lettera del P. Boscovich sulli principi, su' quali si possano appoggiare le Regole pratiche per la misura dell'acque, ch' escono dalle aperture, e corrono per gli alvei.", pp. 319–345.

In: Antonio Lecchi, *Idrostatica esaminata ne' suoi principj e stabilita nelle sue regole della misura dell' acque correnti* (Milano: Nella Stamperia di Giuseppe Marelli, 1765)

8^o Pp. 8 [nepag.] + 459

HAD R 622

Ex libris: BRMR Nr. 994. Sign. IV. 9.

Exhibit: Bošković's letter open on pp. 320–321 with drawings illustrating the problem of determining the mean speed of liquid.

65. Comments on Ximenes's project of the new Nuovo Ozzeri drainage canal in Lucca (1781)

"Riflessioni sulla relazione del Sig. Abate Ximenes appartenente al Progetto di un nuovo Ozzeri nello Stato Lucchese del Signore Abate Ruggiero Giuseppe Boscovich", pp. 173–205, nn. 1–64. Sadržī and "Copia di Lettera di Parigi in data del dì 8 Aprile 1781 del Sig. Abate Boscovich scritta al Sig. Gio. Attilio Arnolfini, da servire per Appendice alle sue Riflessioni sopra il Nuovo Ozzeri", pp. 202–205.

In: *Piano di Operazioni Idrauliche per ottenere la massima depressione del Lago di Sesto o sia di Bientina*

(Lucca: Presso Francesco Bonsignori, 1782)

4^o Pp. 317 + 1 [Correzioni e aggiunte, nepag.], Tav. I–V.

HAD R 704

Ex libris: BRMR Nr. 391. Sign. IV. 11.

Exhibit: Publication open on the first page of Bošković's appraisal of Ximenes's project, with open map *Mappa delle Campagne, Laghi, Paludi Lucchesi, e Toscane dall Arno presso Montecchio, e S. Giovanni alla Vena fino al Littorale di Viareggio, coll indicazione della Linea d'un Nuovo Canale, da nominarsi il Nuovo Ozzori*, Tav. I., 42.5x55 cm, signed "Mich. Xav. Flosi del."

66. Ximenes's editorial summary of Bošković's views on the new drainage canal in Lucca, at the same time his reply to Bošković's comments

"Ristretto delle Riflessioni del Sig. Abate Ruggiero Giuseppe Boscovich e delle Risposte contenute nelle mia informazione pubblicata nell'edizione di Lucca l'Anno 1782.", pp. 95–114.

In: *Raccolta delle perizie ed opuscoli idraulici del Signor Abate Leonardo Ximenes...* Tomo II.

(Firenze: Nella Stamperia di Pietro Allegrini alla Croce Rossa, 1786)

4^o Pp. 454, Tav. I–IV

HAD R 709/2

Ex libris: BRMR Nr. 1053. Sign. IV. 15. a.

Exhibit: Publication open on the first page of Ximenes's concise response to Bošković's comments, p. 95, with open topographical map *Cartone rappresentante l'ultimo Ramo dell'Ozzeri ed il corso del Serchio fino al Mulino delle Carte*, with the mark "Tomo II. Acque Lucchesi Tavola IV.", 21.5x41 cm, signed "Gio. Canocchi fece".

67. Two articles by Bošković in the Bologna collection of articles on hydraulics in the 19th century

Opere idrauliche di Eustachio Zanotti ed alcuni opuscoli di Ruggiero Boscovich, e Leonardo Ximenes [a cura di Francesco Cardinali, according to dedication with the date "Bologna 22 Luglio 1823"]

In: *Raccolta d'autori Italiani che trattano del moto dell'acque*. Edizione quarta arricchita di molte cose inedite, e d'alcuni schiarimenti. Tomo VII.

(Bologna: Dalla Tipografia di Jacopo Marsigli, 1823)

4^o Pp. 550, Tav. I–II.

HAD R 701

Ex libris: BRMR Nr. 1031. Sign. IV. 11. a.

Exhibit: title page of the publication

The volume contains two articles on hydraulics by Bošković "Riflessioni sulla relazione del Sig. Abate Ximenes appartenente al Progetto di un nuovo Ozzeri nello Stato Lucchese del Signore Abate Ruggiero Giuseppe Boscovich" (1781), pp. 199–226, nn. 1–64, and the third edition of the most famous harbour expertize "Del porto di Rimini memorie del Padre Ruggiero Giuseppe Boscovich" (1765), pp. 345–408.

9. Mathematical results

68. The first contribution in mathematics (1737)

Trigonometriae sphaericae constructio. Demonstranda a PP. Societatis Jesu in Collegio Romano. Die [] Septembris Anno D. M. DCC. XXXVII.

(Romae: Typis Komarek, in Via Cursûs prope Plateam Sciarrae, 1737)

8^o Pp. I–VIII, figg. 1–8

HAD R 550

Ex libris: BRMR Nr. 538. Sign. C. 29.

Purchased in the bookshop: R. Friedländer & Sohn, Berlin, N. W., Karlstrasse 11

Exhibit: title page with open table

In six theses Bošković condensed the solution of the basic problems of spherical trigonometry using graphical constructions in the plane, and applied his simplified method in spherical astronomy.

69. Inaugural treatise of the professor of mathematics at the Roman College, with a Newtonian inspiration (1740)

De circulis osculatoribus dissertatio habenda à PP. Societatis Jesu in Collegio Romano Anno MDCCXL. Augusti. Die 3. Hora []

(Romae: Ex Typographia Komarek in Viâ Cursûs, 1740)

8^o Pp. I–XII, figg. 1–8

HAD R 552

Ex libris: BRMR Nr. 539. Sign. C. 24.

Purchased in the bokshop: R. Friedländer & Sohn, Berlin, N. W., Karlstrasse 11

Exhibit: title page with open table

70. The famous problem of the body that acts on a point on its axis with the greatest force of attraction: Ruđer Bošković's solution using the geometrical and infinitesimal method (1740–1743)

"Problema mechanicum de solido maximae attractionis solum a' P. Rogerio Josepho Boscovich Soc. Jesu Publico Professore Mathe-seos in Colleg. Romano.", *Memorie sopra la Fisica e Istoria Naturale di diversi Valentuomini*. Tomo primo; pp. 63–88, table tied beside p. 86 and marked "Tomo I. P. 86.", figg. 1–11.

(In Lucca: Per li Salani, e Giuntini./Si vendono da Giuseppe Maria Antonetti Librajo., 1743)

8^o Pp. xxxviii + 322 + xix

HAD R 52/1

Ex libris: BRMR Nr. 713. Sign. II. 28.

Exhibit: issue of periodical open on p. 86, to which is tied a table showing on fig. 11 the construction Bošković used to solve the problem posed.

The problem was placed before Bošković by the Parisian Academic Etienne Migout de Montigni during his visit to Rome in 1740, and Bošković solved it by devising a series of supplementary tasks and using both the geometrical and the infinitesimal method. The genesis and importance of Bošković's article is shown in the editorial introduction to the first volume "Agli amatori della fisica, e istoria naturale. collettori.", p. xix.

71. First publication in a mathematical textbook (1745)

"De cycloide et logistica auctore P. Rogerio Josepho Boscovich Soc. Jesu Publico Matheseos Professore in Collegio Rom.[ano]", pp. 173–226, Tabula I. constans 5. pag. [nepag.], Tabula II. constans 16. pag. [nepag.], tab. in two parts: "Cyclois", figg. 1–8; "Logistica", figg. 1–13.

In: *Andreae Tacquet Societatis Jesu Trigonometria plana nec non Trigonometria sphaerica Rogerii Boscovich ejusdem Societatis Jesu, et Sectiones conicae Guidonis Grandi cum amplissimis Annotationibus, & Additamentis Octaviani Cameti*. Tomus secundus. (Romae: Sum[p]tibus Venantii Monaldini Bibliopolae in Via Cursus/ Typis Hieronymi Mainardi in Platea Agonali, 1745)

HAD R 203/2

Ex libris: BRMR Nr. 1045. Sign. II. 31.

Exhibit: textbook open on the first page of Bošković's article, p. 173, with open table to show the part treating the cycloid and logistics. A special feature of this edition of Tacquet's textbook is that it contains two contributions by Bošković: the first on spherical trigonometry "Trigonometria sphaerica auctore P. Rogerio Josepho Boscovich Soc. Jesu Matheseos Professore in Collegio Rom.[ano]", pp. 39–59, which is mentioned on the title page, and another about the cycloid and logistics, not mentioned on the title page.

72. Mathematical textbook in three volumes (1752–1754) with original treatise on the foundations of conic sections and transformations of geometric curves in the third volume

Elementorum universae matheseos auctore P. Rogerio Josepho Boscovich Societatis Jesu publico matheseos professore

Tomus I. continens geometriam planam, arithmeti- cam vulgarem, geometriam solidorum, trigonometriam planam, et sphaericam.

8^o Pp. 324; Geom. Tab. I., figg. 1–31; Geom. Tab. II., figg. 32–57; Geom. Tab. III., figg. 58–66; Elem. Solid., figg. 1–27; Trigonometria, figg. 1–13.

Iprimatur: "Dat. die 20. Decembris 1751 *Benedictus Stay*"

Tomus II. continens algebrae finitae.

8^o Pp. 324, nn. 1–606, no figures.

Tomus III. continens sectionum conicarum elementa nova quadam methodo concinnata et dissertationem de transformatione locorum geometricorum ubi de Continuitatis lege, ac de quibusdam Infinitiis Mysteriis.

8^o Pp. XXVIII+468, nn. 1–886, Tab. I–VII, figg. 1–277, "Cajetanus de Rossi sculp."

(Romae: Prostant apud Faustum Amidei bibliopolam in Via Cursus. Et in Typographia Generosi Salomoni, 1754)

NSBZ R II F–8^o–660 1–3

Exhibit: title page of the first volume with open table "Trigonometria"; title page of second volume; title page of third volume with open table VII about the transformation of geometrical places

73. First presentation of method for rectifying incongruent geodesic observations: an unavoidable contribution to the early development of statistics

"De recentissimis graduum dimensionibus, et figura, ac magnitudine Terrae inde derivanda", pp. 406–426; nn. 351–404; "To. II. Tab. II.", fig. 44.

Supplementum §. 5. ad librum quintum in

Philosophiae recentioris a Benedicto Stay... versibus traditae libri X cum adnotationibus, et supplementis P. Rogerii Josephi Boscovich S. J. Tomus II.

(Romae: Typis, et sumptibus Nicolai et Marci Plearini, 1760)

8^o Pp. XII+504+4 [Catalogus librorum in Typographia Palladis Romae prostantium anno 1760., nepag.], Tab. I–III, figg. 1–70

ZPZ KB, A. c. I. 33/2

Ex libris Joannis Bizzarro

Exhibit: book open at the beginning of Bošković's supplement on the newest measurements of the meridian, with open table "To. II. Tab. II." on which fig. 44 gives a geometrical presentation of Bošković's method for rectifying errors

74. Determining the geometry of honeycomb cells:

the problem of finding the smallest area for a given volume (1760) "De apium cellulis", pp. 498–504, nn. 656–680, figg. 67–70.

Supplementum §. 6. ad librum sextum in:

Philosophiae recentioris a Benedicto Stay... versibus traditae libri X cum adnotationibus, et supplementis P. Rogerii Josephi Boscovich S. J. Tomus II.

(Romae: Typis, et sumptibus Nicolai et Marci Plearini, 1760)

8^o Pp. XII+504+4 [Catalogus librorum in Typographia Palladis Romae prostantium anno 1760., nepag.], Tab. I–III, figg. 1–70

NBD R 38/2

Ex libris: Bibliot. [hecae] Collegij Ragusini Scholar[um] Piar[um]

Exhibit: the book is open at the beginning of Bošković's supplement on honeycomb cells, with open table "To. II. Tab. III." on which fig. 70 shows a cell of honeycomb.

75. Four main differential equations of spherical trigonometry "De formulis differentialibus trigonometriae/Des formules differentielles de trigonométrie", pp. 315–329

Opusculum XV. in

Rogerius Josephus Boscovich, *Opera pertinentia ad opticam, et astronomiam maxima ex parte nova, & omnia hucusque inedita, in quinque Tomos distributa*. Tomus quartus.

(Bassani: Apud Remondini, 1785)

4^o Pp. VIII+520, Tab. I–XIII

NSBZ R II F–4^o–194–4

Exhibit: Bošković's treatise open on p. 322, n. 15, where his four main differential equations are given

Bošković derived his differential equations in 1770, sent them to the Académie des Sciences in Paris in 1772, withdrew them after

disputes with Laplace and Rochon in 1776–1777 although they had been accepted for print, and did not publish them until 1785.

76. Ruđer Bošković's spherical trigonometry – textbook contribution with most editions in Latin and Italian

"Trigonometria spherica del Padre Ruggero [sic!] Giuseppe Boscovich.", pp. 441–472, nn. 1–63, Tav. XII, figg. 143–149.

Appendice in: *Elementi di matematiche pure secondo il metodo del Chiarissimo Signor Abbate de la Caille*. Accresciuta del Trattato della Trigonometria spherica del Padre Ruggero Giuseppe Boscovich.

(In Venezia: Presso Tommaso Bettinelli, 1775)

8° Pp. viii+472; Tav. I–XII.

NBD R 65

Ex libris: Nicolai Mathei de Pozza 27 Giugno A. D. 1789

Exhibit: de la Caille's textbook open on the first page of Bošković's contribution, p. 441, with open Tav. XII, figg. 143–149, which refer to Bošković's article on spherical trigonometry.

10. Literary work

77. Eclogue in Roman Arcady

P. Rogerii Josephi Boscovichii S. J. inter Arcades Numenni Anigraei Ecloga recitata in publico Arcadum consessu primo ludorum Olympicorum die [] quo die Mich. Joseph Moreius generalis Arcadiae custos illustrium Poetarum Arcadum effigies formandas jaculorum ludo substituerat.

(Romae: Ex Typographia Generosi Salomonj, in Foro Sancti Ignatii; 1753)

8° Pp. 16, cum notis.

NSBZ R II–F–8°–1650

Exhibit: Title page

78. Eclogue, apotheosis and epigrams: selection from the poet's workroom

Rogierius Josephus Boschovichius [sic!] Ragusinus Soc. Jesu inter Arcades Numerius Anigraeus, [*Carmina*], pp. 195–216.

In: *Arcadum carmina pars altera*. Ad Eminent.^{mum} & Reverend.^{mum} Principem Georgium S. R. E. Cardinalem ab Auria.

(Romae: Ex Typographia Josephi & Philippi de Rubeis apud Pantheon in via Seminarii Romani, 1756)

KMB 3–VIII–2

Exhibit: collection open on pp. 214–215 with the epigram "In Planetarum dispositione Terra inter Martem, & Venerem."

Ruđer Bošković is represented by three literary types in the collection published by the Roman Academy *degli Arcadi*:

(1) Ecloga recitata in publico Arcadum consessu Anno 1753., pp. 195–204;

(2) Stanislai I. Poloniae Regis Lotharingiae, ac Barri Ducis inter Arcades Accl. Euthymii Aliphiraei, dum ejus effigies in publico Arcadum coetu erigeretur, ΑΠΟΘΕΟΣΙΣ., pp. 204–213;

(3) four epigrams, of which that about the heliocentric organization of the world is of first-class scientific importance.

79. Occasional poem in honour of the Empress Maria Theresa

Rogierius Josephus Boscovich Soc. Iesu, "Maria Theresia augustissima Romanorum Imperatrix[,] Hungariae, et Boemiae, Regina, studiorum faultrix munificentissima. Carmen", pp. 17–22.

In: *Musae Francisco et Mariae Theresiae augustis congratulantur ob scientias, bonasque artes eorum iussu et munificentia Vindobonae restitutas*

(Vindobonae: Typis Ioannis Thomae Trattner, Caes. Reg. Maiest. Aulae Typographi et Bibliopola, 1756)

4° Pp. 12 [nepag.] + 216

NSBZ 79. 738

Ex libris: Colleg. Linciens. S. J.

Exhibit: Publication open at the beginning of Bošković's poem, with inserted photograph of p. 22 with the name of the poet and the date "Romae 10. August. 1756.

ROGERIUS IOSEPHUS BOSCOVICH

SOC. IESU.

In Colleg. Rom. publ. Mathes. Prof."

The Croats who contributed to this collection were: Ruđer Bošković with the poem, Rajmund Kunić with a poetic epistle and Benedikt Stay with an ode.

80. Nuptial poem

In nuptiis Joannis Corarii et Andrianae Pisauriae e nobilissimis Venetae Reipublicae senatoriis familiis carmen P. Rogerii Josephi Boscovich S. J. publici in Collegio Romano matheseos professoris.

(Romae: Ex Typographia Palladis/Excudebant Nicolaus, et Marcus Palearini, 1758)

4° PP. XXX, cum notis.

NSBZ R II F–4°–174

Exhibit: Title page

Instruction about how a telescope works in a nuptial poem on pp. XI–XII.

81. First edition of the didactical poem on the eclipses of the Sun and Moon, dedicated to the Royal Society in London

De Solis ac Lunae defectibus libri V. P. Rogerii Iosephi Boscovich, Societatis Jesu, ad Regiam Societatem Londinensem. Ibidem autem et *Astronomiae Synopsis*, et *Theoria Luminis Newtoniana*, et alia multa ad *Physicam* pertinentia, versibus pertractantur; cum ejusdem Auctoris adnotationibus.

(Londini: Apud Andream Millar, in *The Strand*; et R. et J. Dodsleios, in *Pall-mall*; 1760)

4° Pp. 250

NSBZ R II F–4°–286

Exhibit: the book, with a pink bookmark, is open on the title page

82. Second, improved, edition of the didactical poem

De Solis ac Lunae defectibus libri V. P. Rogerii Iosephi Boscovich, Societatis Jesu, ad Regiam Societatem Londinensem. Cum ejusdem Auctoris adnotationibus. Editio Veneta prima ex exemplari editionis Londinensis anni 1760. *Correcto, et perpolitato ab ipso Auctore.*

(Venetiis: Typis Antonii Zatta, 1761)

8° Pp. LXIII+1 [nepag.] + 343, vv. 985+78+1426+1035+960+1024+62

NSBZ R II F-8^o-40b

Exhibit: title page

The publication includes two special supplements: "Catalogus operum P. Rogerii Josephi Boscovich S. J. impressorum usque ad initium anni 1761.", pp. XI-XXVI, and "Editoris monitum.", pp. 341-343, vv. 1-62, and includes Bošković's verses that had been a hand-written addition to the London copy after which this Venetian edition was prepared. These additional verses were written "in laudem Ageni praestantissimi viri Reipub. Genuensis ad Aulam Londinensem Legati", i. e. in honour of Bošković's host in London in whose flat he wrote all the notes accompanying *De Solis ac Lunae defectibus*.

83. Third edition of the natural-history poem

De Solis ac Lunae defectibus libri V.

P. Rogerii Jos. Boscovich Societatis Jesu.

(Graecii: Typis Haeredum Widmanstadii, 1765)

8^o Pp. 12 [nepag.] + XLIII + 343

ZPZ KB, A. d. II. 30.

Ex libris: G. Bizzarro

Exhibit: title page

The beginning of the publication, on unpaginated pages, is the *Assertiones ex universa philosophia, ... ex praelectionibus... Leopoldi Biwald, ... Francisci Grueber, ... Francisci Pachner*, and the theses *Ex Philosophia* by the professor of philosophy Leopold Biwald contain the basic assumptions of Bošković's theory of forces, nn. XI-XIX, pp. [5-6].

84. Two poems in the anthology of Jesuit poetry in Latin in the 18th century

Rogerii Josephi Boscovichii e Societate Jesu carmina, pp. 132-161

In: *Carmina recentiorum poetarum VII. e Societate Jesu idest Julii Caesaris Cordarae, Raymundi Cunichii, Bernardi Zamagnae, Alphonsi Nicolai, Rogerii Boscovichii, Bartholomaei Boscovichii, & Joannis Baptistae Roberti.*

(Cremonae: Ex Typographia Ricchiniana, 1772)

8^o Pp. 189

NBD R 100

Ex libris: Getaldi-Atems

Exhibit: book open on pp. 132-133 on which Bošković's poetic cycle begins.

Two poems were included in the anthology of modern Jesuit poetry:

(1) *De nuptiis Joannis Corarii, et Andriannae Pisauriae*, pp. 133-151, cum notis, pp. 151-156;

(2) *De Maria Theresia augustissima Romanorum Imperatrice Hungariae, et Bohemiae Regina studiorum faultrice munificentissima.*, pp. 157-161.

85. Sample of scholarly epistolography, including a cycle of epigrams and distichs written during the Venetian holiday of 1772

[Antonio Meneghelli], *Lettere del P. Boscovich pubblicate per le nozze Olivieri-Balbi*

(In Venezia: Co' tipi di Gio: Pietro Pinelli, 1811)

8^o Pp. 95

HAD R 211

Ex libris: BRMR Nr. 380 Sign. II. 30.

Exhibit: publication open on p. 83.

The editor of the booklet Antonio Meneghelli published the valuable scientific correspondence Bošković-Valisnieri in August 1772, but also a long letter by Bošković to Girolamo Durazzo, Mestre, 1 October 1772, containing the holiday cycle of epigrams and distichs written during the holiday in the Giacomo Durazzo summer-house. Thus p. 83 contains the distich about Rousseau and Voltaire, and a gallant distich about the shine of a lady's eyes.

86. Travels with a map by a German publisher

Des Abt Joseph Boscovich [sic!] Reise von Constantinopel, durch Romanien, Bulgarien, und die Moldau nach Lemberg in Pohlen. Aus dem Französischen übersetzt und mit einigen Zusätzen begleitet, nebst einer Karte.

(Leipzig: bey Johann Gottlob Immanuel Breitkopf, 1779)

8^o Pp. 12 [Vorerinnerung des deutschen Herausgebers, nepag.] + 156, map of Bošković's travels.

HAD R 211

Ex libris: BRMR Nr. 380. Sign. II. 30.

Exhibit: title page with open map *Reise Charte von Constantinopel durch Romanien Bulgarien und die Moldau nach Lemberg*, 33x20 cm, with a scale in German miles. State borders are marked in different colours, and Bošković's itinerary from Pera di Constantinopoli to Warsaw is shown with a red line.

Of the three publications of Bošković's travels: the French translation (Lausanne, 1772), the German translation (Leipzig, 1779) and the Italian original (Milan, 1784), only the German edition has a precise map. What is more, the editor added a geographical supplement to the travels book and the map "Anhang, welcher eine Erläuterung der Reisekarte des Abts Boscovich enthält", pp. 141-156.

87. Fourth, Latin-French edition of the natural-history poem

Les Éclipses, poëme en six chants, dédié a Sa Majesté par M. L'Abbé Boscovich; traduit en François par M. L'Abbé De Barruel

(A Paris: Chez Valade, Imprimeur-Libraire; Laporte, Libraire, 1779)

The complete edition of the Latin original and the French translation in prose, in uncut sheets, i. e. in the form in which Bošković used to send his new editions to Dubrovnik

4^o Pp. XXXII + 540

HAD AVG 16

Exhibit: several sheets showing the special features of the publication. Added to this publication is a dedication in verse "Ad potentissimum Galliae regem Ludovicum XVI epistola dedicatoria", pp. I-XXVII, which is at the end of the book supplemented with the note "Précis des ouvrages mentionnés et compris dans l'Épître Dédicatoire.", pp. 532-540.

11. A variety of interests

88. Draft of textbook in astronomy (1742)

Disquisitio in universam astronomiam Publicae Disputationi proposita in Collegio Romano Societatis Jesu sub auspiciis Eminentis., ac Reverendis. Principis D. Alexandri Albani S. R. E. Cardinalis a Nicolao Riccio Romano Collegii Neophytorum de Urbe Alumno (Romae: Ex Typographia Komarek in Viâ Cursûs, Anno 1742. Mense Decembri Die 16)

8° Pp. 23; nn. 1–59; tab., figg. 1–5.

Contribution VII in a manuscript collection entitled: *Dissertationes auctore P. Rogerio Josepho Boscovich Societatis Jesu in Collegio Romano matheseos professore*

Vol. I. complectens eas omnes, quae ab anno 1736 ad annum 1742. Typis Komarek Romae pervulgatae sunt.

HAD R 547/1

Ex libris: BRMR Nr. 1244. Sign. III. 31.

Exhibit: treatise open on title page, with open table

89. Far-reaching objection to Euler (1743)

De motu corporis attracti in centrum immobile viribus decrescentibus in ratione distantiarum reciproca duplicata in spatiis non resistentibus Dissertatio habita in Collegio Romano a Patribus Societatis Jesu Anno 1743., Mense Septembri die []

(Romae: Typis Komarek, in Via Cursûs, 1743)

8° Pp. XXX, nn. 1–87, tab. figg. 1–11

Contribution I in the manuscript collection entitled:

Dissertationes auctore P. Rogerio Josepho Boscovich Societatis Jesu in Collegio Romano matheseos professore

Vol. III. complectens eas omnes, quae ab anno 1743 ad annum 1746 Latino sermone Romae pervulgatae sunt.

HAD R 547/3

Ex libris: F. N. Ridolfi M. S. P. Ap.

BRMR Nr. 1252. Sign. III. 33.

Exhibit: title page of treatise with open table on which fig. 10 shows the geometry of a point approaching the centre of gravitational force with a speed increasing to infinity.

In *Mechanica* Euler considered that the point, after reaching the centre of gravitational force, must return to its initial position. Bošković maintained that in that case the point oscillates around a centre. This stand he later incorporated in his theory of forces in the treatise *De lege virium innatura existentium* (1755) and in the fourth supplement to his synthesis *Theoria philosophiae naturalis* (1758, 1763).

90. Appraisal of Dominis's explanation of the rainbow in notes accompanying the poem by Bošković's professor of physics Carlo Noceti (1747)

[Rogerius Josephus Boscovich], "Notae in Iridem", pp. 19–48, nn. 1–40, Tab. I., figg. 1–16.

In: *Caroli Noceti e Societate Jesu/De iride et aurora boreali carmina... cum notis Josephi [sic!] Rogerii Boscovich ex eadem Societate.*

(Romae: Ex Typographia Palladis/Excudebant Nicoalvus et Marcus Palearini, 1747)

8° Pp. 127; Tab. I. pag. 48, figg. 1–16; Tab 2. pag. 228 [= 128]

HAD R 559a

Ex libris: BRMR Nr. 379. Sign. III. 37.

Exhibit: title page, with open Tab. I. in which fig. 10 is a copy of the drawing showing the origin of the rainbow in Newton's *Opticks*, and fig. 16 a copy of the drawing showing the origin of the rainbow in Dominis's optical treatise *De radiis visus et lucis in vitris perspectivis et iride.*

91. Meteorological treatise (1749)

Sopra il Turbine che la notte tra gli XI, e XII Giugno del MDCCXLIX daneggiò una gran parte di Roma dissertazione del P. Ruggiero Giuseppe Boschovich [sic!] della Compagnia di Gesù.

Dedicata a Sua Eminenza Il Signor Cardinale Silvio Valenti Segretario di Stato, e Camerlengo di Santa Chiesa.

(In Roma: Appresso Nicolò, e Marco Pagliarini, 1749)

8° Pp. 224, nn. 1–42, 1–64, 1–124; +6 [Appendice sopra più Iridi contigue vedute lo stesso giorno dall' Autore., nepag.]

HAD R 374

Ex libris: BRMR Nr. 260. Sign. III. 41.

Exhibit: book open at the beginning of the third part "Della Natura dal Turbine, sue cagioni e modo di produrre gli effetti."

92. Paper on the perturbations of Saturn and Jupiter, registered for the competition organized by the Académie des Sciences in Paris in 1752, for the third time on the same subject

De inaequalitatibus quas Saturnus et Jupiter sibi mutuo videntur inducere praesertim circa tempus conjunctionis. Opusculum ad Parisiensem Academiam transmissum et nunc primum editum auctore P. Rogerio Josepho Boscovich Societatis Jesu.

(Romae: Ex Typographia Generosi Salomoni, 1756)

8° Pp. XXIV+187, nn. 1–372, Tab. I.–IV., figg. 1–43.

ZPZ KB, A. c. I. 38.

Exhibit: book open on title page with open table III

As Bošković noted in the preface "Ad lectorem", of all the works sent to the competition of the Parisian Academy only two had any greater value: Euler's that won the award and Bošković's that was evaluated *Accessit (Came close to)*. Although Secretary de Fouchy informed Bošković that the Academy intended to publish both treatises, this had still not happened five years later so Bošković decided to publish his treatise himself.

93. Proposal that the university authorities obtain mathematical publications, at his inauguration to the cathedra of mathematics at the University of Pavia

De Libris, qui desiderantur pro classe Mathematica Universitatis Ticinensis, ff. 1r–2r.

Facsimile of manuscript from ASM

BIM 1992053101

Exhibit: first page open at the beginning of Bošković's list, the second placed to show the signature

"Rogerius Josephus Boscovich Soc. Jesu Professor Matheseos".

The paper *pro instruenda Bibliotheca* was written in 1764, at the same time as *Piano scientifico*, Bošković's plan about how to reform the instruction of mathematics and physics at the University of Pavia. It shows Bošković's first-class selection of writers and books. The list includes many celebrated names: Euler, Huygens, d'Alembert, Newton, Maclaurin, Cramer, Descartes, Galilei, Toricelli, Cavalieri, Kopernik i Kepler. Many fields of science are represented: mathematics, physics, astronomy, hydrodynamics, hydraulics, navigation, the history of mathematics, the history of astronomy, architecture, military construction and geography. He also proposed that the following be obtained: the *Dictionarium Encyclopedicum*, the most important European scientific periodicals, and basic astronomical instruments.

94. Two photographs of the wooden model of the observatory in Brera based on Ruđer Bošković's design from 1764, on the left side the southern facade and on the right side the northern facade

Insert with protective sheets between pp. 4 and 5 in:

G. V. Schiaparelli, "Sull'attività del Boscovich quale astronomo in Milano", *Pubblicazioni del R. Osservatorio astronomico di Milano-Merate* 16 (Milano, 1938), pp. 1–19.

NBD R II–23

Exhibit: book open between pp. 4 and 5.

The model shown on the photographs is today kept in the Museo Nazionale della Scienza e della Tecnica "Leonardo da Vinci" in Milan, and it was restored with great care on the bicentenary of Bošković's death in 1987 by Orazio Curti and Salvatore Sutura. The dimensions of the base are: 109x85 cm and its height is 105 cm. All the wooden and metal parts were made by hand. "Della Compagnia di Gesù" has been written on the inside of a piece of wood that can be removed.

95. Memorial medal issued when the historical archives of Brera Observatory, which has a collection of Bošković's letters from the period 1756–1769, were being reorganized, and on the occasion of the bicentenary of Bošković's death in Milan

Cast medal with two sides; bronze; round; Ø 60 mm

Obverse: Bošković's model of Brera Observatory in the centre of the field.

Inscription along edge: OSSERVATORIO DI BRERA. SECONDO IL PROGETTO BOSCOVICH.

Reverse: Inscription along edge: BICENTENARIO DI BOSCOVICH. Ω 13–2–1787. Entry in centre of field: RISTRUTTURAZIONE DELL' ARCHIVIO DELL'OSSERVATORIO IN COLLABORAZIONE CON LA SEZIONE DI STORIA DELLA FISICA UNIVERSITÀ DI MILANO. Along the edge at the bottom: SETTEMBRE 1987.

No sign.

BIM 1987091801

Gift to participants of the international convention "Duecento anni di stelle: Boscovich 1787–1987" held in Brera, 15–18 September 1987

96. Papers on dioptrical binoculars (1771)

Memorie sulli canocchiali diottrici del Padre Ruggiero Giuseppe Boscovich della Compagnia di Gesù

(In Milano: Nella Stamperia di Giuseppe Marelli, 1771)

8^o Pp. 104, nn. 1–135; Aggiunta I., pp. 105–110; Aggiunta II., pp. 110–114; tab. figg. 1–4.

ZPZ KB, A. d. II. 19.

Ex libris: Di Giuseppe Toaldo, dono del chiarissimo Autore.

Exhibit: book open on title page with open table

In Bošković's opinion in "Avviso dell'Autore", the book is a *breve trattatino* in which his intention had been to explain the nature and main characteristics of binoculars to readers who have a very slight knowledge of geometry. This copy is the gift of Ruđer Bošković to the Italian physicist Giuseppe Toaldi who published Bošković's article on the construction of a new pendulum clock in his meteorological discourse. See catalogue unit 57.

97. Summary of astronomical manual for sailors

German translation (1787)

Roger Joseph Boscovich, *Abriß der Astronomie, mit Rücksicht auf ihre Verbindung mit der Schifffahrt*. Aus dem Französischen [H. E. W. Eschenbach]

(Leipzig: Bei Paul Gotthelf Kummer, 1787)

8^o Pp. 6 [Vorrede des Uebersetzers, nepag.] + 93; tab. 2

NSBZ II F–8^o–1175, Privez 1

Exhibit: book open on the first page of the text "Abriß der Astronomie", with open table "Vorstellung des Sonnensystems: Die Sonne und die Hauptplaneten"

The manual was written in 1775 and was primarily intended to teach the Duke of Chartres the foundations of astronomy needed for navigation before he took over command in the French navy. It was first published in the French original in 1785 in the fifth volume of Bošković's *Opera pertinentia ad opticam et astronomiam*. The editor of the German translation added an extensive index "Kurze Uebersicht der in diesem Abriß vorgetragenen Materien", pp. 78–93, and tables of the Solar System showing that he recognized Bošković's stands as heliocentric. Bošković's 1756 epigram about Copernic's system and the short manual for sailors from 1775 reject the idea that Bošković would have maintained the idea of geocentrism to the end of his life, however deeply that idea is rooted in literature about him.

12. Bošković and his contemporaries in works of art

98. I. Moyreau

LOUIS XV Roy de France et de Navarre, né à Versailles / le 15. Fevr. 1710. à succede à LOUIS XIV. le 1.^r Sept. 1715. sacré / à Rheims le 25. Oct. 1722. Epousa à Fontainebleau le 5. Sept. 1725 / MARIE FELICITÉ EUSEBIE de LECZIŃSKI, fille de / Stanislas I.^r Roy de Pologne. née le / 23. luin 1703.

Portrait of the young French royal couple Louis XV and Marie Leszczyńska

plate 20.7x14 cm; scene 20x13 cm; sheet 28.5x22.8 cm

Signature: 1726

Vanloo pinxit I. Moyreau delin. et sculp.

Pont S.^r Michel au Chat d'Espagne

BZ G–3646

In the last year of his life Louis XV conferred French citizenship on and named him director of optical reserach in the French navy with an unusually high salary.

99. Frans von Stampart (1675–1750) (?)

Portrait of Maria Theresa Habsburg (1717–1780), fiancée of Francis Lotringen

Oil on canvas, 87x66 cm

Vienna, the portrait was painted at the time the future empress got engaged, in about 1736, and is considered to be the work of Franz von Stampart (1675–1750), court painter at the Viennese court after 1698.

HPM, inv. no. PMH 2428

Exhibit: portrait, accompanied by the verses of Bošković's poem "Maria Theresa... the most magnanimous patron of science"; on one facsimile the title and first verses of the poem on p. 17, and on another the final verses of the poem, the date "Romae 10. August. 1756." and data about the poet:

"ROGERIUS IOSEPHUS BOSCOVICH

Soc. Iesu.

In Colleg. Rom. publ. Mathes. Prof.", on p. 22.

100. Unknown artist

P. ROGERIVS BOSCOVICH S. I. IN COLLEGIO ROM. MAT. PROFES. / NATUS RAGVSII XV. KAL. JVNII. MDCCXI. AETATIS ANNO XLV

[inscription at the bottom of the portrait]

Portrait of Ruđer Bošković, member of the Society of Jesus, professor of mathematics at the Roman College, aged 45

Oil on canvas, 96x71.5 cm

Rome or Lucca, 1756.

MIP

This is the only existing original portrait showing Bošković at the end of his Roman period at the peak of his creative powers, immediately before he moulded thirty years of study into his chef-d'oeuvre *Theoria philosophiae naturalis*. Bošković is sitting, his left hand resting on an armillary sphere, his right holding a pair of compasses. The first instrument symbolizes astronomy, the second geometry, the two fields of science whose foundations he lectured on as *publicus matheseos professor in Collegio Romano*. Against a dark background light falls only on his face and right hand, as if the portrait painter had wanted to draw attention to Bošković as a thinker and writer. In the background, to Bošković's left, stands a bookcase, the most important part of the portrait from the aspect of the history of culture. Twelve books stand on two shelves, and their titles can be read with some difficulty on their backs. The shelf holds the following books by Bošković:

1. *De litteraria expeditione per Pontificiam ditionem* (1755), the main work in geodesy;
2. a book whose title cannot be discerned, probably "Notae in iridem" and "Notae in auroram borealem" (1747) to accompany *De iride et aurora boreali* by Bošković's professor Carlo Noceti;
3. *Dissertationum variarum Tomus I.*;
4. *Dissertationum variarum Tomus II.*;
5. *Dissertationum variarum Tomus III.*;
6. *De lege virium in natura existentium* (1755), treatise about Bošković's curve of forces;
7. "Adnotationes", in Benedictus Stay, *Philosophiae recentioris... versibus traditae libri X*, Tomus I. (1755), articles on chosen problems of Newton's natural philosophy;
8. *Sopra il Turbine* (1749), meteorological discourse;
9. *Elementorum universae matheseos tomus I.* (1754);
10. *Elementorum universae matheseos tomus II.* (1754);
11. *Elementorum universae matheseos tomus III.* (1754), third volume of mathematical textbook with original contributions about conic sections and the transformation of geometric places;
12. *De eclipsibus carmen* (1735), the first title of Ruđer Bošković's most ambitious poetical project, which in 1760 grew into the poem *De Solis ac Lunae defectibus*.

Most of the books shown on the shelf were published in the period 1754–1755, and the disciplines represented are geodesy, optics, astronomy, natural philosophy, meteorology, mathematics and poetry. Discourses on various subjects (*Dissertationes variae*), prepared by Bošković every year for the formal annual exercises at the end of the academic year in the period from 1740–1756, fill three large volumes. That fact, surely the most intriguing, could only have been told to the portrait painter by the author of the discourses. The bookshelf does not contain a single book by Bošković published in 1756 or later,

from which we can conclude that the portrait was painted in 1756, certainly before 14 August 1756, the date on the imprimature of Bošković's discourse *De inaequalitatibus quas Saturnus et Jupiter videntur sibi mutuo inducere* (1756).

101. Petit

STANISLAS I.^{er} ROY DE POLOGNE DUC DE LORRAINE ET DE BAR.

Portrait of Stanislas I Leszczyński, former King of Poland and Duke of Lorraine

incomplete plate 21x14.5 cm; scene 20.5x13.5 cm; on the base a quatrain in French

Signature: *Gravé par ordre de M.^f l'Abbé de B.*

Petit Sculp. 1761.

BZ G–5058

In 1753, when a statue of Stanislas I Leszczyński, member of the academy *degli Arcadi*, was being erected, Bošković wrote *Apotheosis*. On his travels through Nancy in 1761, Bošković was accepted into the Société Royale des Sciences et Belles-Lettres founded by the former King of Poland.

102. M de Baciarelli

Stanislaus Augustus Poloniae Rex.

Nat: 17 Jan: 1732 Elect: 7. Sept: 1764.

Portrait of Stanislas Augustus I Poniatowski, King of Poland

plate 16x11 cm; scene 14.7x9.6 cm;

sheet 21x15 cm

Signature: *M^{de} Baciarelli effi: pinx.*

BZ G–3194

Stanislas Augustus II Poniatowski was the king to whom Bošković sent on 12 October 1771 his letter asking him to mediate with Empress Catherine II to prevent the Russian fleet from attacking Dubrovnik. Bošković's letter, the original and transcription, catalogue units 14 and 15, and the portraits of the King of Poland and the Empress of Russia, catalogue units 104 and 105, make up one exhibitional unit.

103. Anton. Pazzi

WENZESLAUS ANTONIUS / PRINCEPS A KAUNITZ COMES A RITTBERG / AUGUSTORUM A SECRETIORIBUS CONSILIIIS / AUGUSTAE DOMUS, ORDINISQUE MILITARIS AUSTRIACI CANCELLARIUS / AUSTRIACARUM DITIONUM IN GERMANIA, BELGIO ET ITALIA, ADMINISTER / REBUS CUM EXTERIS GERENDIS PRAEFECTUS. & A. CI>I>CCLXV.

Portrait of Prince Kaunitz, for many years chancellor to Empress Maria Theresa

plate 58.5x41 cm; scene 55x39 cm;

sheet 60x42.5 cm

Signature: *P. Anton. Pazzi fecit.*

BZ G–5657

Prince Kaunitz: readily accepted Bošković's proposal to make geodesic measurements along the Vienna and Petrovaradin meridian (1758), resented Bošković for not undertaking astronomical observations in Brera Observatory (1771) and cunningly implemented the decision to remove Ruđer Bošković from the position of director of Brera Observatory (1772).

104. Jacob Adam

ANDREAS COMES HADIK. AUSTRIAE. SUPR. BELLI DUX. CONSILII BELLICI IMPER. PRAESES.

Portrait of Austrian General Hadika
plate 16.5x10.5 cm; scene 14x8.5 cm;
sheet 18.5x12.5 cm

Signature: *Vinazer fec.*

Jacob Adam sc. 1781.

Viennae apud Artaria Societ.

BZ G–2864

Through his short occupation of Berlin in 1757 the Austrian General Hadik drew forth from Bošković the cry "Long live Hadik and our Croats!" ("Eviva Haddich e i nostri Croati!") in a letter to his brother Baro on 24 October 1757.

105. Caroline Watson

CATHERINE II. EMPRESS OF RUSSIA.

From the Original Picture in the Collection of his Excellency Le Comte Woronzow / Ambassador from the Empress of Russia.

Published Sept. [emb]r 1.st 1787 by John & Josiah Boydell No. 90 Cheapside London

Aquatint; incomplete plate 34x28.5 cm;
oval scene 24x20 cm

Signature: *Painted at S.¹ Petersbourg by Rosselin*

John & Josiah Boydell excudit 1787

Engraved by Caroline Watson Engraver to her Majesty BZ G–4099

Catherine II, Empress of Russia, threatened Dubrovnik with her fleet commanded by Admiral Orlov, and the news of that threat moved Bošković to write an inspired patriotic letter to the King of Poland, Stanislas II Poniatowski, on 12 October 1771.

106. Unknown artist

RUGGIERO GIUSEPPE BOSCOVICH, inscription in the upper part of the circular band

Drawing of memorial bust of the old, bald Ruđer Bošković in profile
square plate 8x8.5 cm;

round scene Ø 7.7 cm

Printed on the title page of:

[Francesco Ricca], *Elogio storico dell'Abate Ruggiero Giuseppe Boscovich.*

(Milano: Nella Stamperia di Giuseppe Marelli, 1789)

4^o Pp. 159

ZKD R II–18

Donation of Dr. N. Lepeš

Exhibit: title page with portrait of Ruđer Bošković

Ceremonial edition with framed text and different page breaks from those of the other edition published at the same time, 116 pages. The edition has a printed dedication to the Rector and councillors of the Dubrovnik Republic with the date "15 Novembre 1788 Milano".

107. A literary work inspired by the wig Bošković wore during his stay in England in 1760

Capitoli dell' Abate Giulio Cesare Cordara sulla parrucca del Padre Ruggiero Boschovik [sic!]. Raimundi Cunichii Ragusini versio., pp. 1–45.

In: *Capitoli sulla parrucca del P. Ruggiero Boschovik e due egloghe militari dell'Abate Giulio Cesare Cordara di Calamandrana.*

(Osimo: Preso Domenicantonio Quercetti Stampator Vescovile, e Publico, 1792)

8^o Pp. VI+2 [nepag.] +81

NSBZ 62. 815

Exhibit: first page of verses about Bošković's wig, p. 1

Cordara's tercets are structured in thee *articola*, and Kunić's distichs in three elegies. Cordara's original and Kunić's recast version are printed side by side.

108. E. Desrochers

Nicolas Copernic / Célèbre Astronome, Mathématicien, / Philosophe et Médecin, né à Thorn Ville de / la Prusse Royale, mort en 1543. agé de 70 ans

plate 14.3x10.3 cm; scene 13.8x9.7 cm;

sheet 27.5x21 cm

Signature: *Se vend à Paris chez E Desrochers rue du foin*

BZ G–3988

Bošković described Copernic's system in verse in the epigram "In Planetarum dispositione Terra inter Martem, & Venerem." one year before the church prohibition was raised. See catalogue unit 78.

109. John Chapman

LEONARD EULER. [inscription at the bottom of the plate]

plate 16.3x11 cm; oval scene 12x9.3 cm; rectangular scene below oval 2.9x4.7 cm; sheet, damaged on the right, 21x13.4 cm

Signature: *J. Chapman sculp. [sic]t*

London, Published as the Act directs, Oct.^r 13th 1804, by J. Wilkes
BZ G–5798

Leonard Euler, the greatest eighteenth-century mathematician. Bošković disputed Euler's solution to two problems: how a body reaches the centre of the gravitational force (1743) and the division of broken functions (1749). They both participated in the competition of the Parisian Academy on the perturbations of Jupier and Saturn (1752).

110. William Skelton

ARCHBISHOP OF SPALATRO. [sic!]

Portrait of Markantun de Dominis

Etching; plate 51x35 cm; scene 25x18 cm;

sheet 59x43 cm.

Signature: TINTORET PINXIT.

W. SKELTON SCULPSIT.

LONDON, PUBLISHED BY WILLIAM MILLER, MDCCCX.

BZ G–5879

Markantun de Dominis, Archbishop of Split and *primas Croatiae*, author of an optical treatise that Bogišić criticized in 1747. See catalogue unit 90.

111. Unknown artist

Portrait of Benedict Stay, copy of portrait by the Palermo master Carmelo Reggio

Oil on canvas, 67x55 cm

Dubrovnik, beginning 19 c

KMB

Benedikt Stay: great literary and natural-history project *Recentioris philosophiae... versibus traditae libri X* on Newton's and Bošković's natural philosophy, regular church censor of Bošković's publications in the Roman period and secret diplomatic channel between Bošković and the Dubrovnik Republic immediately after Bošković received French citizenship.

112. Pier-Francesco Martecchini

Ruggiero Giuseppe Boscovich [caligraphic title under drawing]

Portrait of Ruđer Bošković in cap and gown

Drawing in pencil, 31x23 cm

Signature: *Martecchini dis.*

Dubrovnik, before 1841

DM, inv. no. 105/G

The drawing was a preparatory study for the gallery of famous people of Dubrovnik published by Martecchini in 1841, modelled on a portrait by an unknown artist from 1756. When he printed the folder, Martecchini rejected this study and printed another one instead, a portrait of Ruđer Bošković in civilian clothes with a wig, as he dressed during his stay in Protestant England in 1760 and as he had been painted by the English artist Robert Edge Pine.

113. Pier-Francesco Martecchini

Benedetto Stay [caligraphic title under the drawing]
Portrait of Benedikt Stay, professor of rhetorics in the Roman archgymnasium
Drawing in pencil, 31x23 cm
Signature: *P. F. Martecchini dis.*
Dubrovnik, before 1841
DM, inv. no. 118/G

The drawing was a preparatory study for Martecchini's gallery of famous people of Dubrovnik, and unlike Bošković's portrait, it did not undergo any changes when it was printed for Martecchini's folder.

114. Pier-Francesco Martecchini

Portrait of Ruđer Bošković in civilian clothes, after Pine Lithographical print, 35x22.5 cm
Signature: A. Nardello lit.
P. Lit. Deye in Venezia
Portrait accompanied by article: G. Cantù, "Ruggero [sic!] Bos-covich", in *Galleria di Ragusei illustri* (Ragusa: Pier-Francesco Martecchini, editore tipografo e libraio, 1841), pp. I-XII.
ZKJH 7115
Exhibit: Martecchini's folder open at Bošković's portrait

115. Theodor Mayerhofer

Rugjer Josip Bošković. [inscription under scene]
Portrait of Ruđer Bošković, very close to Martecchini's conception
Signature: Th. Mayerhofer
Portrait published before article:
"Rugjer Josip Bošković. (R. 1711. ! 1787)", in Ivan Kukuljević Sakcinski, *Glasoviti Hrvati prošlih vjekova. Niz životopisâ* (Zagreb: Naklada "Matice hrvatske", 1886), pp. 225–252, on separate sheet in front of p. 225
NSBZ

116. Celestin Medović

Portrait of Ruđer Bošković, done after portrait from 1756
Oil on canvas
Zagreb, 1887.
HAZU

117. Toma Rosandić

Memorial bust of Ruđer Bošković
Zagreb, 1911.
Glijptoteka HAZU

118. Vlaho Bukovac

Sketch for "Razvoj hrvatske kulture" ("The Development of Croatian Culture"), preparation for a decorative lunette three times bigger in the great reading room of the University Library in Zagreb
Oil on canvas, 111x275 cm.
Prague, 1912.
ZPZ, inv. no. 81
Bukovac presented his motif in an original manner: the greats of Croatian culture up to the beginning of the seventeenth century are going down the left-hand side of a staircase, a fairy is crowning Gundulić in front of Athena, the Croatian members of the National

Revival are going up the right-hand side of the staircase, and only Bošković is standing in the middle of the terrace leaning on a sphere. Should he leave or stay? There is hardly anything to criticise in Bukovac's choice of scientists from Dubrovnik, besides Bošković he included Getaldić and Baglivi. Here, we suppose, he did not have the difficulties he had with the literary and political part of the cast. It is not yet known which great men he had to remove from the painting, only that he had to make some changes in the choice of personalities. Art critics considered the composition monotonous, justifying this by the given shape of the lunette, but they did not assess the basic conception of the composition: the passage of time that always gives new great men, the relationship between Gundulić and Bošković, and the culturological meaning of the title of the composition before the Croatian name "descended into the genitive form".

119. Ivan Meštrović

Statue of Ruđer Bošković
Bronze
Zagreb, 1991
MGC

After 1902 Ivan Meštrović considered the idea of making a bust of Ruđer Bošković as can be seen from the letter he sent to Dr Ernest Katić on 24 January 1937:

"Concerning Ruđer and his greatness, there is nothing for you to caution me about in this, because 15 years ago already I said that I had been thinking about it for 20 years and that I will realize it, God willing. (...) The Croatian people will raise a monument to Ruđer Bošković, I will make it for free, and the people will give the little that will be necessary to make it in permanent material. Therefore, the Croatian people will raise it to their great son in his city."

At the exhibition in Zagreb in May 1940, Ivan Meštrović exhibited a plaster-cast model of his monument to Ruđer Bošković, showing Bošković in a sitting position, deep in thought and leaning on a globe. According to an earlier agreement with the representatives of the city of Dubrovnik in February 1940, he intended to donate it to the city of Dubrovnik to be placed at the top of the baroque staircase in front of the Church of St. Ignatius and the Dubrovnik College, while the money for the pedestal of Jablanica granite would be donated by the Croats of Dubrovnik and the Catholics of Hercegovina where Bošković's father had come from. The first cast in bronze was exhibited in the open in the Ruđer Bošković Institute in Zagreb after the Second World War, and the second, the cast exhibited here, was obtained through the the Museum Gallery Centre and will be placed in front of the Brera Observatory in Milan.

120. Frano Šimunović

Portrait of Ruđer Bošković, copy after Pine
Oil on canvas, 62.5x49.5 cm
Dubrovnik, 1940.
DM, inv. no. 177/S

121. Frano Šimunović

Portrait of Ruđer Bošković, copy after portrait from 1756
Oil on canvas, 96x72.5 cm
Dubrovnik, 1940
RDI

122. Ivo Dulčić

Portrait of Ruđer Bošković in civilian clothes, a faithful and very good copy of the portrait by the English artist Pine
Oil on canvas, 62.8x51 cm
Dubrovnik, purchased from the artist on 26 September 1953
MDP, inv. no. 232

13. Curiosa

Dissertatio de viribus vivis auctore R. P. Josepho Rogerio [sic!] Boscovich, e Soc. Jesu, honoribus perillustris Domini Caroli de Reuttern, dedicata, dum in antiquissima, ac celeberrima Universitate Viennensi promotore R. P. Francisco Gindhör, e Soc. Jesu, AA. LL. & Philosophiae Doctore, ejusdemque Professore Emerito, nec non p. t. Inclytae Facultatis Philosophicae Seniore, & Consistoriali. Suprema AA. LL. & Philosophiae Laurea insigniretur.

([Vindobonae]: Ex Typographia Kaliwodiana, Anno Salutis M. DCC. LII. Mense Junio, die 22)

8^o Pp. 52; nn. 1–67; tab., figg. 1–12. NSBZ R II F–8^o–1501

Ex libris: Collegij Zagrab. Societis Jesu.

Exhibit: title page with *ex libris*

The only work showing the course of development of Bošković's theory of forces that used to be kept in the library of the Zagreb College.

"Here I leave Newton and prepare the ground for my theory which I had already expounded in several treatise when our writer [Stay] wrote this, the first time in 1745 in the treatise *De Viribus vivis*, then in 1748 in a treatise printed several [= nine] years later in the Lucca collection of scientific work *Memorie sopra la Fisica e Istoria Naturale di Diversi Valentuomini*, in the fourth contribution, entitled *De materiae divisibilitate, & principiis corporum*, and in the treatise *De Lumine* printed that same 1748. In 1754 I added the treatise *De Lege Continuitatis*, and in 1755 *De Lege virium in Natura existentium*. All this I finally prepared and put into better order in a rather extensive work entitled *Philosophia Naturalis redacta ad unicam legem virium in Natura existentium* [sic!], printed in Vienna in 1758, reprinted in Venice in 1763".

Libraries, archives, museums, churches and scholarly institutions: owners of the exhibits

- ABSD** Archives of the Bishopric Seminary in Dubrovnik, Poljana Ruđera Boškovića 2, Dubrovnik
- AM** Archivio di Stato, Milan
- APZ** Pozza–Gradi Archives, in the HAZU Institute for History, Dubrovnik
- ASMM** Acta Sanctae Mariae Maioris, diplomatic correspondence of the Dubrovnik Republic in the Historical Archives in Dubrovnik
- AVG** Vernazza–Gozze Archives, in the Historical Archives in Dubrovnik
- BAV** Biblioteca Apostolica Vaticana
- BIM** Boscovichiana of Ivica Martinović
- BRMR** Bibliotheca Rhacusina Milan Rešetar, donation, part of the Historical Archives in Dubrovnik
- BZ** Bogišić Collection, Rector's Palace, Cavtat
- DM** Dubrovnik Museum, Rector's Palace, Dubrovnik
- HAD** Dubrovnik Historical Archives, Između vrata of Ploča 1, Dubrovnik
- HPM** Croatian History Museum, Matoševa 9, Zagreb
- KB** Bizzaro Library, part of the HAZU Institute for History, Dubrovnik
- KBM** Minorite Library, Minorite Monastery, Placa 2, Dubrovnik
- MDP** Museum of Dubrovnik Seafaring, Tvrdava Sv. Ivana, Dubrovnik
- MIP** Museum of Icons and Portraits, Od Puča 2, Dubrovnik
- NSBZ** National and University Library, Marulićev trg 21, Zagreb
- RDI** Residence of the Society of Jesus, Poljana Ruđera Boškovića 2, Dubrovnik
- SD** Sigurata, Convent of the School Sisters of St. Francis, Ulica od Sigurate 13, Dubrovnik
- ZKD** Scholarly Library, Dživa Natali 11, Dubrovnik
- ZPZ** HAZU Institute for History, Lapadska obala 6, Dubrovnik
- ZPZN** HAZU Institute for History, Ante Kovačića 5, Zagreb

Ivica Martinović. Ruder Bošković (1711–1787).
Publishers: Croatian PEN Centre & Most/The
Bridge, Trg bana Jelačića 7, Zagreb, Croatia, fax:
(+38 41) 439–790 in collaboration with Matica
hrvatska; **Editor:** Mirko Kratošić; **Advisory board:**
Vlaho Bogišić, Vera Čičin–Šain, Zeljka Čorak,
Dražen Katunarić, Tonko Maroević, Slobodan
Prosperov Novak, Nikica Petrak, Zdravko Zima;
Art director: Luka Gusić; **Typeset by** Tadić
Bros., Zagreb; **Printed by** Tiskara Puljko, Zagreb
1993.

Exhibitions

1.
**Dubrovnik and the New World
(Americas)**
2.
**Jewelry in Dubrovnik (from
the 15th to the 19th Century)**
3.
**Sedan Chairs and Clothes in
the Museum Collection of the
Rector's Palace**
4.
**Clocks from the Dubrovnik
Museum**
5.
**Portraits of Famous People of
Dubrovnik**
6.
**Domus Christi Pharmacy of
Dubrovnik**
7.
**The Old Pharmacy of the
Dubrovnik Fratres Minores**
8.
**Gold and Silver Work and
Writing Utensils in the
Rector's Palace**
9.
Jews in Dubrovnik
10.
What Držić (1508–1567) Read
11.
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Bukovac to Dučić**
12.
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13.
**Architectural Drawings of
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14.
**The Works of Dubrovnik
Writers Printed in Europe from
15th to 18th Century**
15.
Đuro Pulić's Studio
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**Ivo Grbić — Exhibition in a
Burnt House**
17.
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18.
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22.
**Dubrovnik Libraries and
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Ruder Bošković (1711–1787)