

The *HPSLAB* NUNCIUS

Volume I, Issue I

7/9/2008

Special points of interest:

- **The 2008 Galileo Colloquium** A report from the HPSlab director, Paolo Palmieri
- **The HPSlab at the 2008 HSS:** A presentation of the HPSlab activities at the annual meeting of the *Society for the History of Science*

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The 2008 Galileo Colloquium

by Paolo Palmieri

On April 19, 2008, the [2008 Galileo Colloquium](#) was held at the University of Pittsburgh. The informal, one-day event was intended to give four invited scholars of international renown the opportunity to come to Pittsburgh and talk about the historical and philosophical significance of Galileo's epoch making experiments. The four invitees were Tom Settle, Peter Dear, Maurice Finocchiaro and Jochen Buettner. The morning was devoted to the speakers' presentations. In the afternoon, the Colloquium moved to the HPSlab where a demonstration of the activities carried out in our lab was offered. Maurice Finocchiaro started the series of

presentations focusing on Galileo's experiment of a ball let fall from the top of ship's mast while the ship is in motion. Peter Dear presented an analysis of the significance of experiment in Galileo's *Two new sciences* by looking at Galileo's accidental discovery of a relation between spatial representation of sound and pitch. Next, Jochen Buettner reported on his project on Galileo's experiments and manuscripts at the Max Planck Institute for the History of Science in Berlin. Finally, Tom Settle



Participants at the 2008 Galileo Colloquium, held in Pittsburgh, April 19, in the Center for Philosophy of Science

wrapped up the morning session by giving an overview of the experimental work done by Galileo over many years and by placing it in the context of Renaissance Florentine culture. Lively discussions followed each presentation. Thanks to all for a great event!

The HPSlab at the 2008 HSS Annual Meeting (Joint Meeting with PSA) 6-9 November, Pittsburgh, PA

Comparative study of experimentation in c17-18 will be the title of the presentation of the HPSlab activities at the HSS Annual Meeting Meeting. The project aims at casting light on the emergence of controlled

experimentation as a reliable means of investigation, especially in the physical sciences. We wish to understand how controlled experiment underpins early modern scientific knowledge. By focusing on how experi-

ments succeed or fail, and on how success and failure are understood by historical actors, we hope to cast light on the emergence of controlled experimentation as a basis for early modern scientific knowledge.

The 2008 Galileo Colloquium: *Defending Copernicus and Galileo: The Ship's Mast Experiment* by Maurice A. Finocchiaro

Although recent works on Galileo's trial have reached new heights of erudition, documentation, and sophistication, they typically exhibit over-inflated complexities; neglect 400 years of historiography; and make little effort to learn from Galileo. I am working on a book aiming to avoid these lacunae. I argue that the Copernican Revolution required that the earth's motion be not only constructively supported with new reasons and evidence, but also critically defended from numerous old and new objections. This defense in turn required not only the destructive refutation but also the appreciative understanding of those objections in all their strength. A ma-

major Galilean accomplishment was to elaborate such a reasoned, critical, and fair-minded defense of Copernicanism. Galileo's trial (1613-1633) can be interpreted as a series of ecclesiastic attempts to stop him from defending Copernicus. And an essential thread of the controversy (from 1633 to our own day) about Galileo's trial is the emergence of numerous arguments claiming that his condemnation was right, as well as



Maurice Finocchiaro inaugurating the morning session of the Colloquium.

the defense of Galileo from such criticisms. My general thesis is that

Defending Copernicus and Galileo: The Ship's Mast Experiment (continues)

the defense of Galileo can and should have the reasoned, critical, and fair-minded character which his own defense of Copernicus had. After a

“A major Galilean accomplishment was to elaborate such a reasoned, critical, and fair-minded defense of Copernicanism”

summary of this general project, I illustrate it with an account of selected aspects of the his-

tory and the logic of the anti-Copernican argument based on the experiment of dropping a rock from the top of the mast of a ship.

Galileo's overlooked pendulum plane experiment and its conceptual background in the theory of accelerated motion before 1604, presented by Jochen Buettner

Jochen Buettner presented an analysis of some folios from Galileo's manuscripts containing fascinating indications about experiments with pendulums. Jochen

Buettner argued that there is one experiment in particular that has been neglected by scholars but which can be reconstructed on the basis of the fragmentary evidence

afforded by the folios. When seen in the light of Buettner's interpretative framework the Galilean folios become highly significant. Buettner is working on a book project

(continues)

in which he will discuss in detail the findings of his research. Buettner furnished a convincing reconstruction of the intricate details of Galileo's forgotten plane pendulum

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experiment. In the course of doing so Buettner also conclusively showed how previous scholars, specifically David Hill, have been mis-

led in their interpretation of the relevant folios, and thus led to erroneous reconstruction of Galileo's experimental activities. Finally, Buettner presented a fascinating series of slides in which he shows how Galileo's manuscripts can afford historians and philosophers of science with surprising items of information when properly investigated in the context of Galileo's conception of science.



Jochen Buettner from the Max Planck Institute for the History of Science in Berlin

Peter Dear, *Mechanics, Motion, and Matter: The First New Science*

Peter Dear offered an intriguing discussion of the significance of the so-called first new science. The science of motion, which Galileo presents in his masterpiece, *Two new sciences*, is the best known of Galileo's achievements. But the first science, about mechanics and the theory of resistance to fracture is equally important both historically and philosophically. In the first part of *Two*

new sciences, Galileo takes up issues concerning matter and the atomic structure of materials. In addition, he talks about certain experiments, one of which caught Dear's attention. It is a simple experiment in which Galileo discovers spatial patterns of marks left by a chisel scratching a brass surface. This experiment allowed Dear to expand on thought-provoking issues

of time and perception in Galileo.



Peter Dear at the 2008 Galileo Colloquium



Tom Settle at the 2008 Galileo Colloquium

Tom Settle: Experimenting with Experiments

"What do we learn by making machines or repeating experiments?"

This morning I would like to proceed at two levels, on the

one hand examining several proposed "repetitions" of Galileo's investigations, and on the other, with the aid of one non-Galilean case, illustrating both what we might better mean by "repeating" and what sort of "experimenting" we

might want to investigate by repeating...". Settle went on to offer an overview of Galileo's experimental activities highlighting the importance of the Florentine culture of the late Renaissance in which Galileo grew. Thanks to Tom for his insights into the reconstruction of experiments!

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Reenacting Galileo's Experiments: Rediscovering the Techniques of Seventeenth-Century Science, by Paolo Palmieri

"No one has examined in such detail and with such patience how Galileo arrived at his results. Palmieri extends our understanding of what Galileo wanted to achieve and how he went about getting his pioneering results, and his book will be welcomed by everyone interested in the genesis of the Scientific Revolution of the seventeenth-century." – William R. Shea, Galileo Professor of History of Science, University of Padua, Italy

"A particular strength of this book is the way that it places Galileo in his intellectual context. It is rare to find such detailed study of Galileo's contemporaries or recent predecessors, either those working in similar problems to Galileo or those defending Scholastic views. Such work is of considerable importance." – Prof. Andrew Gregory, Senior Lecturer, History of Science, University College, London, UK

"Paolo Palmieri has written a quite remarkable and very important book. Over the last few years he has been establishing himself as perhaps the most innovative and learned of a new generation of Galileo scholars. He has a quite extraordinary and remarkable range of talents which make him perfectly fitted to write on his subject. He reads Latin (and naturally Italian) with ease, and can follow the most subtle and abstruse of scholastic arguments. He is an able mathematician and engineer, and understands the most complex mathematical and physical problems. And he has a remarkable ability to present long-established problems in a completely new guise. This has enabled him to rethink what history of science ought to be in terms of reenactment: the mental reenactment of long-dead arguments -- this is conventional history; the dialogic recreation of long-dead debates -- this is something new; and

"Scholars go astray if they interpret Galileo's writings in the light of remembered elementary lessons in physics. Palmieri would have us enter the experimental scene in its complexity, by actual experiment if feasible or by computer simulation where the factors are multiple and numerical integration with variation of parameters is needed to discover what they portend." – Prof. Curtis Wilson, St. John's College, Emeritus



REENACTING GALILEO'S EXPERIMENTS
REDISCOVERING THE TECHNIQUES
OF SEVENTEENTH-CENTURY SCIENCE
PAOLO PALMIERI

[Reenacting Galileo's Experiments: Rediscovering the Techniques of Seventeenth-Century Science](#). Foreword by William R. Shea, Galileo Professor of the History of Science, University of Padua. The Mellen Press, ISBN10: 0-7734-5018- ISBN13: 978-0-7734-5018-9 Pages: 304 Year: 2008

the reconstruction (both in the real world and in computer simulations) of the experiments of long-dead scientists -- this is an absolutely crucial contribution to the history of science. So, with an extraordinary portfolio of skills, and with new intellectual and literary devices, Palmieri has written his first, pathbreaking book -- there will certainly be others to follow." Prof. David Wootton, Anniversary Professor of History, Department of History, University of York, UK