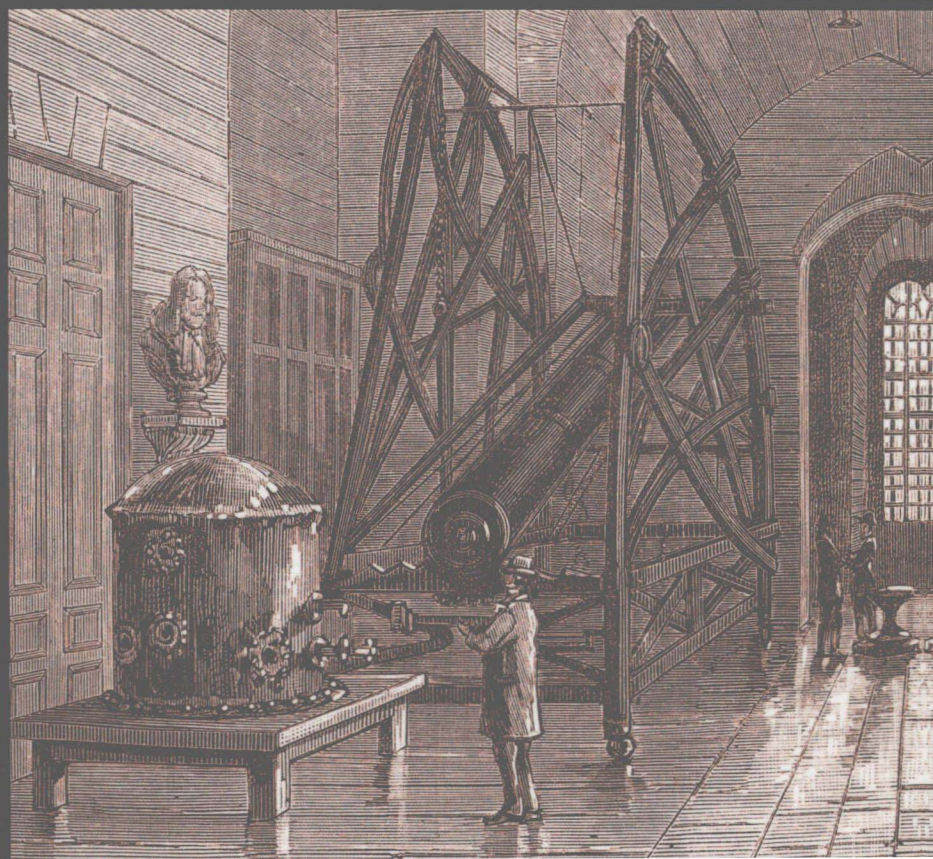


Scientific Instruments on Display

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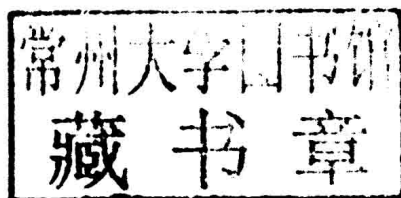
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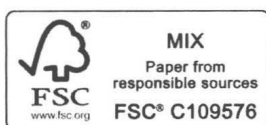
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Scientific Instruments on Display

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Scientific Instruments and Collections

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is, since 2001, director of the library and collections at the Paris Observatory. She co-edited with James Lequeux *L'Observatoire de Paris: 350 ans de science* (Paris, 2012) and curated several exhibitions including *Léon Foucault, le miroir et le pendule* (2002), *François Arago et l'Observatoire de Paris* (2003), *"c" à Paris* (2005), *Le Verrier: à la découverte de Neptune* (2011), *Hommage à Jean-Dominique Cassini: l'Astronome du roi et le satellite* (2012).

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Fausto Casi

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Suzanne Débarbat

spent her career entirely at the Paris Observatory, beginning in 1953. From 1955 she was an *assistant, aide-astronome, astronome adjoint* and *astronome titulaire*, and since 1997 *astronome titulaire honoraire*. She is *Docteur d'Etat* and from 1985 to 1992 directed a CNRS research group "Systèmes de référence spatio-temporels", and from 1987 to 1992 directed the Département d'Astronomie Fondamentale of the Paris Observatory (now named *Systèmes de Référence Temps-Espace*—SYRTE, to which she has been attached since 1997). She is a member of the International Astronomical Union (IAU), Commission 41 (History of Astronomy), of the Bureau des Longitudes, and the Académie Internationale d'Histoire des Sciences. From 1975 she has

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Richard Dunn

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Ingrid Jendrzewski

is an independent scholar interested in the intersections between science and theatre. After receiving degrees in English Literature and Creative Writing from the University of Evansville, Indiana, she took a BSc and MSc in Natural Science (Physics) from the University of Cambridge. She has staged many plays including Ben Jonson's *The Alchemist*, Sir Patrick Moore's *Galileo*, Michael Frayn's *Copenhagen*, Carl Djerassi and Roald Hoffmann's *Oxygen* and Carl Djerassi's *Calculus*.

Peggy Aldrich Kidwell

historian of science, is Curator of Mathematics at the Smithsonian's National Museum of American History, Washington, D.C. Her publications concern historical aspects of astrophysics, mathematical instruments, mathematics education, and computing. Topics of her exhibits range from arithmetic teaching to computer bugs. Her present research concerns the history of

mathematical recreations. She is now working with others to display Smithsonian mathematical instruments in an online encyclopedia.

Richard L. Kremer

teaches history of science at Dartmouth College and curates that university's collection of historic scientific instruments. Each year he teaches a seminar on the material culture of science in which his students create an exhibit from that collection. With David Pantalony and Francis Manasek he authored *Study, Measure, Experiment: Stories of Scientific Instruments at Dartmouth College* (Norwich, 2005). He has also published numerous articles on nineteenth-century physics pedagogy, high-speed cinematography, and early modern astronomy and its material culture.

Mara Miniati

was Vice-Director of the Istituto e Museo di Storia della Scienza in Florence and presently is Curator Emeritus of the Museo Galileo. She served as Editor-in-Chief of *Nuncius* and has authored more than 150 publications. In collaboration with the Istituto Centrale per il Catalogo e la Documentazione (ICCD) of the Italian Ministry for Cultural Heritage, she developed the STS cataloguing format for scientific instruments of historical interest. In March 1993, she received the Paul Bunge Prize. Currently she is President of the Museums Committee of the Regione Toscana.

Richard A. Paselk

Professor of Chemistry at Humboldt State University (HSU), earned a PhD in Biochemistry at the University of Southern California. He is founder and curator of the HSU Scientific Instrument Museum, and curator and webmaster for the HSU Natural History Museum. From 1988 to 1995 he was a principal investigator in chemical education in a large project supported by the National Science Foundation, state and corporate sources. He has more than fifty scholarly and educational publications or presentations and has curated more than thirty small museum exhibits including web exhibits. Current interests include informal education and museums.

Donatella Randazzo

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Steven C. Turner

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Introduction

'Scientific instruments on display' can mean many things for many people—display for sale in shop windows or in trade catalogues; display to compete for attention and prizes at Great Exhibitions and trade fairs; display in private collections to save from destruction, to understand or to show off; display in museums and galleries to explain, to teach and to enlighten; display in public spaces or in manuscripts and books to signal the authority or credibility of science; display on stage and in film to provide a context and to (literally) set the scene. Scientific instruments, that is, have long been shown in spaces quite different from their 'working homes' of the laboratory, the classroom, or the observatory.

There are many reasons to display and many spaces where the display can happen. Displays change according to times, contexts and cultures. Different stakeholders—be it producers, owners, curators or members of the public, to name but a few—have different ideas and ideals. They can prefer a didactical approach or stress the aesthetic value of the instruments; they can focus on multimedia or see historic instruments as the core of an exhibition; they can favour recent scientific achievements over those of the past; they can choose to juxtapose the responses different cultures found to the same questions. Changing displays can thus reflect changing attitudes towards instruments, science and technology, and medial and museological spaces in different societies.

Not much has been published on many of these topics. John R. Millburn and Paolo Brenni have examined the display of instruments in printed trade catalogues, David J. Bryden and Michael A. Crawforth the advertisements on ephemeral imprints like trade cards or broadsides. Jim Bennett and Brenni have reviewed the presentation of scientific instruments at several of the 'universal expositions' held in the nineteenth century. Recently published histories of the Whipple Museum of the History of Science, the Science Museum in London, the Deutsches Museum in Munich, or the Smithsonian Institution in Washington have mentioned the changing presentation of scientific instruments in their galleries. And curators and other scholars have written programmatic suggestions for how museums, more generally, might think about displaying instruments. But no general frameworks have been proposed for thinking about the cultural, technical or scientific significance of how scientific instruments have been displayed in venues other than those for which they were originally made.¹ We hope that the essays in this volume will provide some foundations upon which such frameworks may be erected.

1 Cf. John R. Millburn, *Retailer of the Sciences: Benjamin Martin's Scientific Instrument Catalogues, 1756–1782*, London, 1986; Paolo Brenni, "19th Century Scientific Instrument

The decision to choose ‘Displaying Scientific Instruments’ as the topic for the 29th Symposium of the Scientific Instrument Commission (SIC) of the International Union for History and Philosophy of Science (IUHPS), held in Florence in 2010, was a reflection of intense discussions within the Commission, prompted by the newly opened Museo Galileo.² This museum had just reorganized its displays, both thematically and technically. Arrangement based on context (e.g., research, pedagogy, spectacle) replaced the classical subdivision of the natural philosophical disciplines (e.g., mechanics, heat, optics) and digital displays and applications supplemented the usual museum labels. Since such large-scale reinstallations occur infrequently in major museums, it seemed timely to consider the topic of display for the SIC Symposium meeting in Florence.

There were no restrictions with respect to time, place, culture or context. A wide range of papers was presented on wildly diverse topics. Alas, only a small selection could be published at the end and the editors are fully aware of the lacunae. Nevertheless, we hope that the papers published here will enable the reader to get an overview of the breadth and depth of the discussions in Florence.

In his intentionally double-length opening contribution, Marco Beretta sets the scene both of the conference and of the volume. He focusses on the instrumental role of Andrea Corsini, whose determination and tenacity from the opening years of the twentieth century to conserve the scientific-historical

Advertising”, *Nuncius* 17 (2002), pp. 497–513; David J. Bryden, “Early Printed Ephemera of London instrument Makers: Trade Catalogues”, *Bulletin of the Scientific Instrument Society* 64 (2000), pp. 13–16; Bryden, “Evidence from Advertising for Mathematical Instrument Making in London, 1556–1714”, *Annals of Science* 49 (1992), pp. 263–285; Michael A. Crawforth, “Evidence from Trade Cards for the Scientific Instrument Industry”, *Annals of Science* 42 (1985), pp. 453–554; Jim Bennett, *Science at the Great Exhibition*, Cambridge, 1983; Paolo Brenni, “La science française au Crystal Palace”, in Patrice Bret (ed.), *Les techniques et la technologie entre France et Grande-Bretagne, XVII^e–XIX^e siècles*, Paris, 2010, pp. 255–265; Liba Taub, Frances Willmoth (eds.), *The Whipple Museum of the History of Science: Instruments and Interpretations to Celebrate the 60th Anniversary of R.W. Whipple’s Gift to the University of Cambridge*, Cambridge, 2006; Peter J.T. Morris, *Science for the Nation: Perspectives on the History of the Science Museum*, London, 2010; Helmuth Trischler, Wilhelm Füssl (eds.), *Geschichte des Deutschen Museums: Akteure, Artefakte, Ausstellungen*, Munich, 2003; Pamela M. Henson, “‘Objects of Curious Research’: The History of Science and Technology at the Smithsonian”, *Isis* 90 (1999), pp. 249–269; Christoph Lüthy, “Museum Spaces and Spaces of Science: Reflections on the Explanatory Possibilities of History of Science Collections”, *Nuncius* 20 (2005), pp. 415–429.

2 Filippo Camerota (ed.), *Displaying Scientific Instruments: From the Medici Wardrobe to the Museo Galileo*, Milan, 2012.

heritage of his city and his country finally led to the inauguration in 1930 of the Museo di Storia della Scienza (since 2010: Museo Galileo). Beretta paints a vivid picture of the discussions amongst, and the alliances between, the various stakeholders. It was Corsini himself, as the Museo's first director, who was to shape the displays and the rationale behind new acquisitions for over twenty years.

One might be tempted to assume that three national museums in the same capital city might apply similar criteria regarding the display of scientific instruments. That this is not necessarily the case, rather that the changing attitudes towards these displays can be very closely linked with the changing identities of these major institutions, is exemplified by the second group of papers in this volume. The title 'Science Museum' seems to have first been used in 1877 for the non-art collections of the South Kensington Museum in west London, but an independent entity only came into being in 1909. Alison Boyle discusses, with reference to Florence, the specific challenges that were (and are) posed by having to display collections that lack the visual appeal of art objects. Richard Dunn tells a rather different story, discussing the other part of the Kensington Collections or the Victoria & Albert Museum as it was officially called since 1899, by examining instruments considered as applied art. Silke Ackermann concludes this section by charting the rapidly changing role of instruments in displays at the British Museum, probably best known for its focus on cultural history, over the course of 260 years.

But how do 'old' instruments and potential audiences keen to visit them fare in working institutions, whose main duty is night-sky observation rather than daytime displays? To give one (of many possible) answers to this question Laurence Bobis and Suzanne Débarbat chart how these challenges were met at the Paris Observatory from its founding in the late 1660s to almost the present day.

That instruments already took their place amongst many other products on display at the first "Universal exhibition" of 1851 in London has been studied in detail. However, Richard L. Kremer takes a different viewpoint, namely that of various groups who 'saw' those instruments on display at the first world's fair held in America, the Philadelphia Centennial Exhibition of 1876. Ten million visitors, more than ever before anywhere, saw scientific instruments offered by hundreds of exhibitors. What do their reports tell us about the cultural meaning of science?

The United States are also the focus of Steven Turner's and Richard A. Paselk's papers, highlighting yet another arena of display that poses quite distinct challenges: that of university museums, exemplified by the Science Teaching Museum at the University of Chicago (Turner) and the Robert A.

Paselk Scientific Instrument Museum at Humboldt State University (Paselk). How to put the university at the centre of the museum and the museum at the centre of the university? And how to manage displays and public as well as academic/teaching expectations when the museum is basically a private undertaking and a one-man-show as is the case at Humboldt State University?

Whilst the preceding papers all discuss different institutional challenges as well as changing attitudes that reflect a dynamic evolution of the institutional identity, Peggy Aldrich Kidwell and Amy Ackenberg-Hastings boldly take on an instrument that was for most of its life a work tool rather than an esthetically pleasing object designed for show as much as use: the humble slide-rule, displayed in the United States between 1840 and 2010. Why do these objects (or specific object groups in general, one might ask) merit our attention?

On quite a different stage (literally!) moves Ingrid Jendrzewski with her discussion of how seventeenth-century English theatre responded to Galileo and the telescope following the publication of the *Sidereus Nuncius* in 1610. A different set is explored by Ileana Chinnici, Donatella Randazzo and Fausto Casi who investigate the role of (original) instruments on film-sets, focussing mainly, but not exclusively, on Visconti's *Il Gattopardo*, produced in the early 1960s.

Befitting for a book on instrument display, Inga Elmqvist-Söderlund rounds off the discussion by exploring the role of instruments displayed in books or more precisely in seventeenth-century frontispieces. The frontispieces and illustrated title pages contributed to shaping the identity of astronomy by suggesting that astronomical instruments were an appropriate attribute for a person who wanted to be associated with the field.

This volume includes only a dozen papers, a small selection of those presented at the 2010 conference; but nevertheless a colourful, multifaceted image emerges that shows that there can be no such thing as 'THE display', the quint-essential answer to every prayer. Rather, displays of instruments are shaped by many different considerations that, nonetheless, all have one thing in common: the attempt to respond to constantly changing demands posed by the objects and their 'users', by the public and academic audiences, and by the evolving cultural, social and economic contexts in which the instruments, over time, have stood.

Silke Ackermann

Richard L. Kremer

Mara Miniati

Colour Plates





PLATE 1 *The globe room located on the first floor of the Palazzo Castellani, in a photograph taken in 1948*
(PHOTOGRAPHIC LABORATORY AND ARCHIVE, MUSEO GALILEO, FLORENCE).



PLATE 2 *The 1964 Chemistry Galleries featured a reconstruction of the Government Chemist's Laboratory of 1895*
(© SCIENCE MUSEUM / SCIENCE & SOCIETY PICTURE LIBRARY).