

Title: Curiosity: How Science Became Interested in Everything

Date: Dec 05, 2012 07:00 PM

URL: <http://pirsa.org/12120004>

Abstract:



# Curiosity



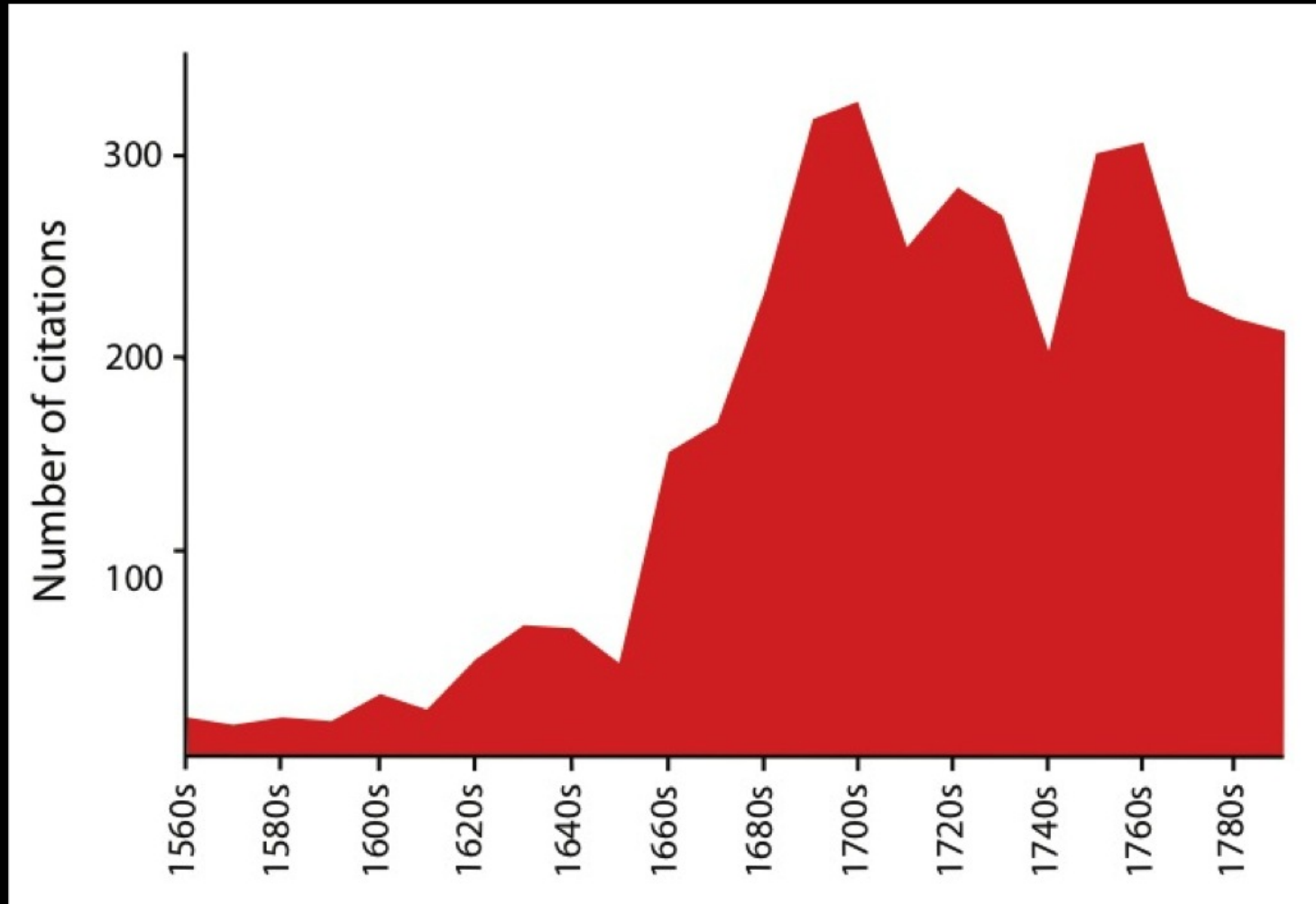




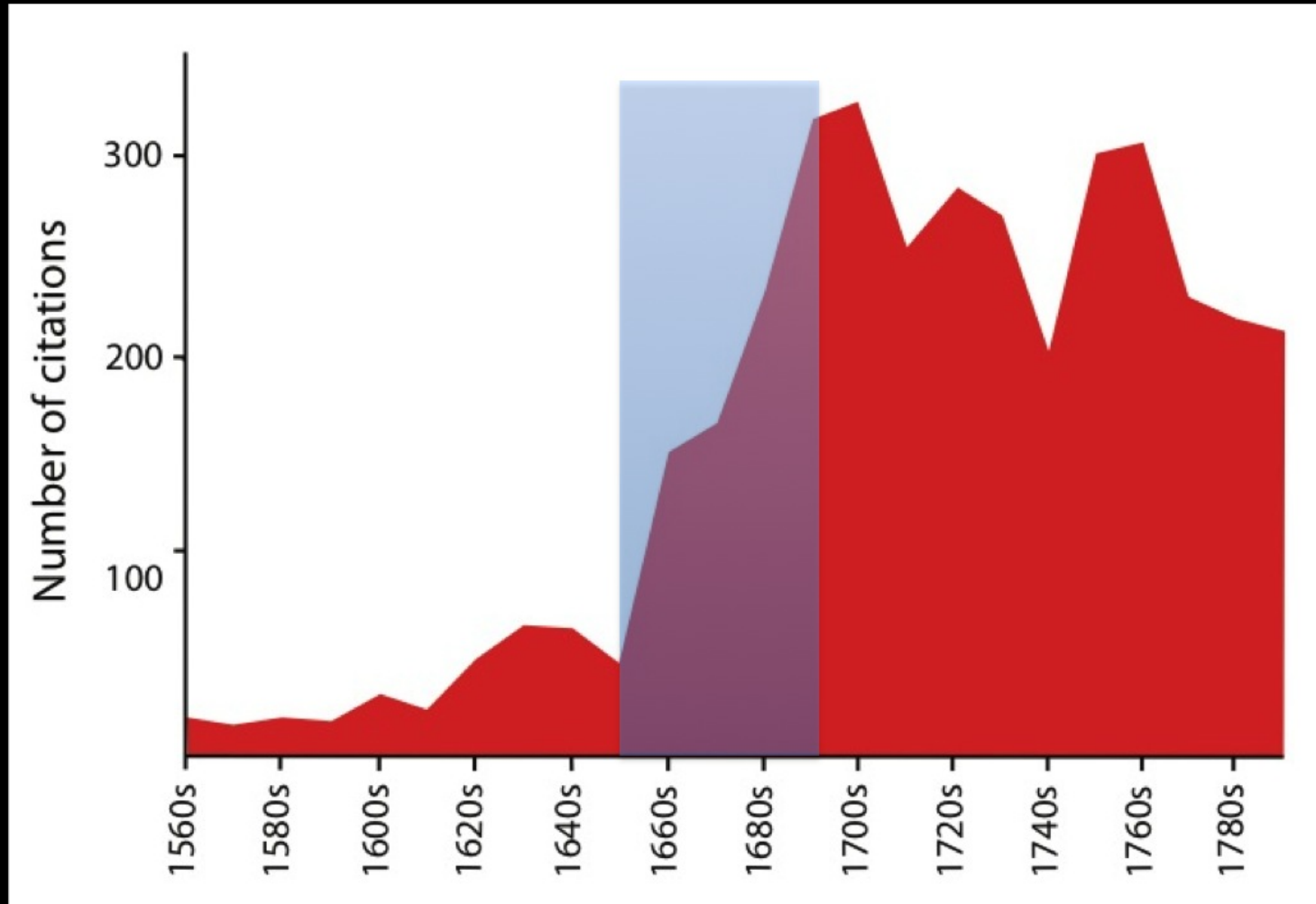
“The LHC is a discovery machine. Its research program has the potential to change our view of the universe profoundly, continuing a tradition of human curiosity that’s as old as mankind itself.”

Robert Aymar, former Director General of CERN

## The rise of “curiosity”



## The rise of “curiosity”









... be not curious in unnecessary matters, for more things are shewed unto thee than men understand.

Ecclesiastes

3:23



... be not curious in unnecessary matters, for more things are shewed unto thee than men understand.

Ecclesiastes

3:23

Curiosity “is in divine language called the lust of the eyes”

St Augustine

## Relying on experience



**Bernardino Telesio (1509-1588)**



**Girolamo Cardano (1501-1576)**

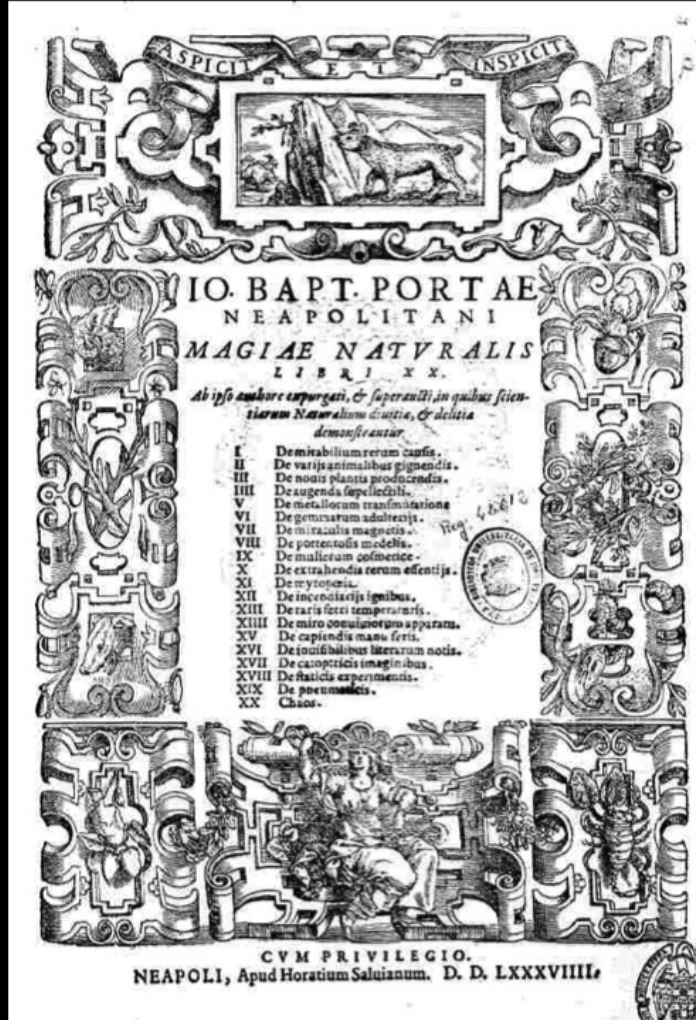
# Natural magic



Giambattista della Porta  
(c.1535-1615)

# Natural magic

“Magic is nothing else but the knowledge of the whole course of nature”



Giambattista della Porta  
(c.1535-1615)

ISTORIA  
E DIMOSTRAZIONI

INTORNO ALLE MACCHIE SOLARI  
E LORO ACCIDENTI

COMPRESSE IN TRE LETTERE SCRITTE  
ALL' ILLVSTRISSIMO SIGNOR

MARCO VELSERI LINCEO  
DVVMVIRO D'AVGVSTA

CONSIGLIERO DI SVA MAESTA CESAREA

DAL SIGNOR

GALILEO GALILEI LINCEO

*Nobil Fiorentino, Filosofo, e Matematico Primario del Serenifs.  
D. COSIMO II. GRAN DVCA DI TOSCANA.*



IN ROMA, Appresso Giacomo Mascardi. MDCXIII.

CON LICENZA DE' SVPERIORI.



ISTORIA  
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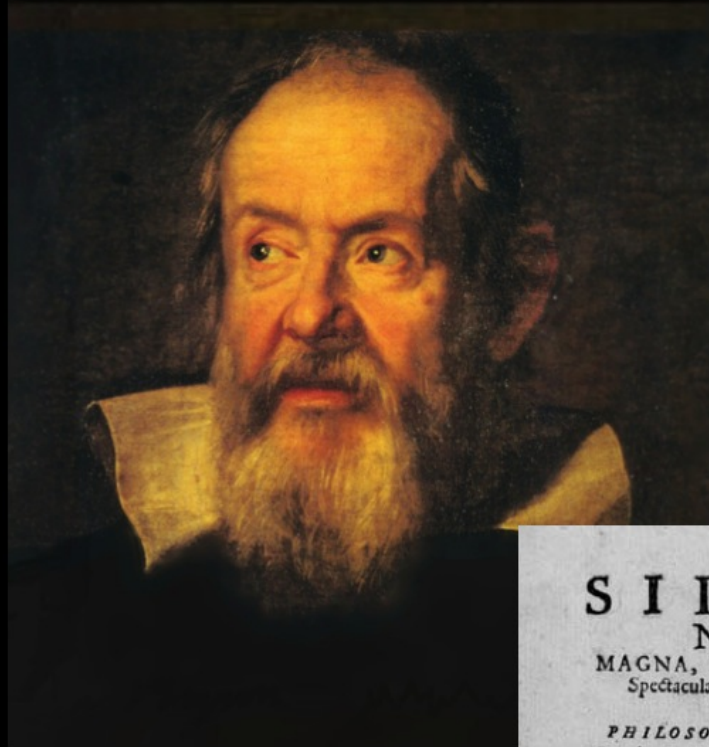
GALILEO GALILEI LINCEO

*Nobil Fiorentino, Filosofo, e Matematico Primario del Sereniss.  
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SIDEREVS  
NVNCIVS

MAGNA, LONGEQVE ADMIRABILIA  
Spectacula pandens, suspiciendaque proponens  
vnicuique, praefertim vero

PHILOSOPHIS, atq; ASTRONOMIS, qua à  
GALILEO GALILEO  
PATRITIO FLORENTINO

Patauini Gymnasij Publico Mathematico

PERSPICILLI

Nuper à se reperti beneficio sunt obseruata in LVNÆ FACIE, FIXIS IN-  
NUMERIS, LACTEO CIRCVLO, STELLIS NEBVLOSIS,

Apprime vero in

QVATVOR PLANETIS

Circa IOVIS Stellam disparibus intervallis, atque periodis, celeritate mirabili circumuolutis; quos, nemini in haec vsque diem cognitos, nouissimè Author deprehendit primus; atque

MEDICEA SIDERA  
NVNCVPANDOS DECREVIT.



VENETIIS, Apud Thomam Baglionum, Page 15243.

Superiorum Permissu, & Privilegio.

# ISTORIA E DIMOSTRAZIONI

INTORNO ALLE MACCHIE SOLARI  
E LORO ACCIDENTI

COMPRESSE IN TRE LETTERE SCRITTE  
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MARCO VELSERI LINCEO  
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DAL SIGNOR

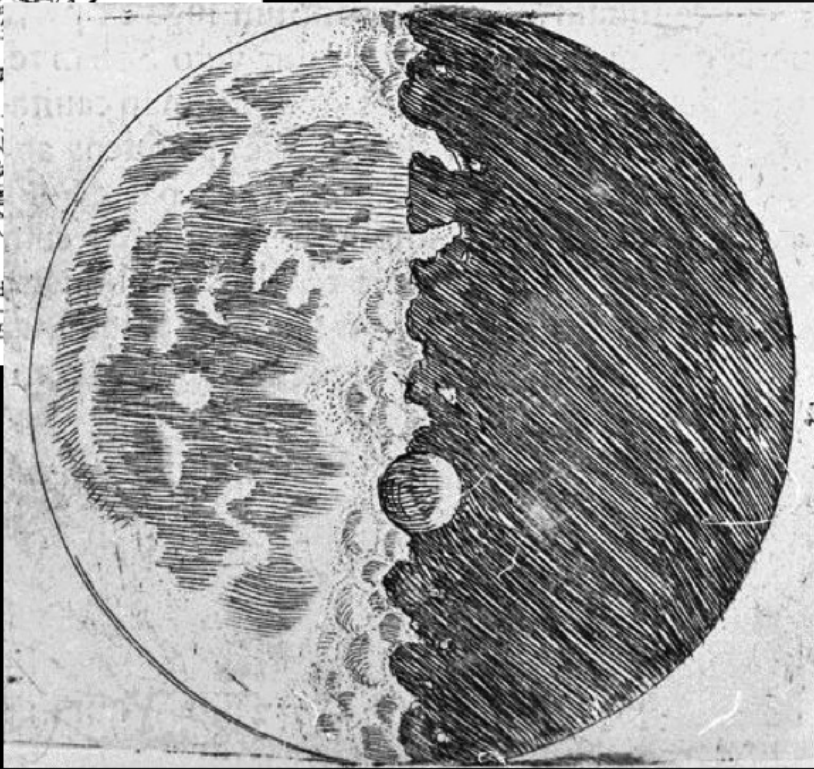
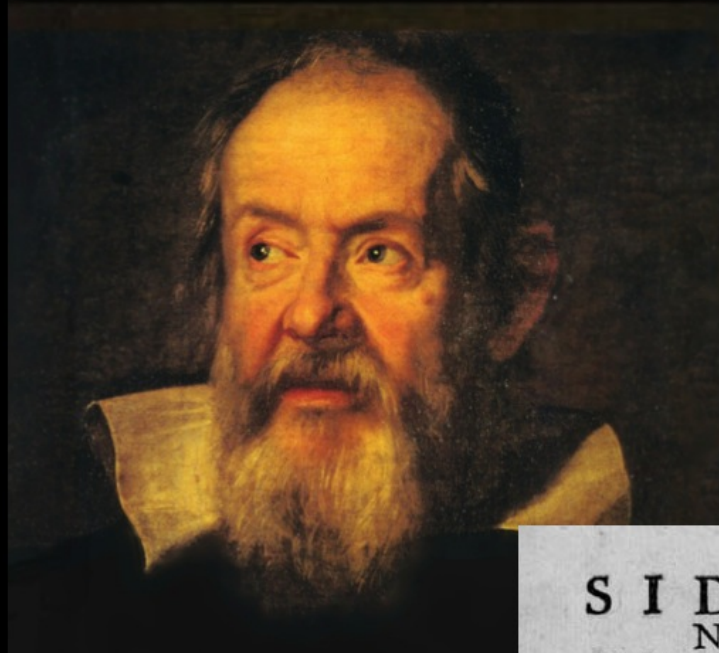
## GALILEO GALILEI LINCEO

*Nobil Fiorentino, Filosofo, e Matematico Primario del Serenifs.  
D. COSIMO II. GRAN DVCA DI TOSCANA.*



IN ROMA, Appresso Giacomo Mascard

CON LICENZA DE' SVPERIORI



# SIDEREVS NVNCIVS

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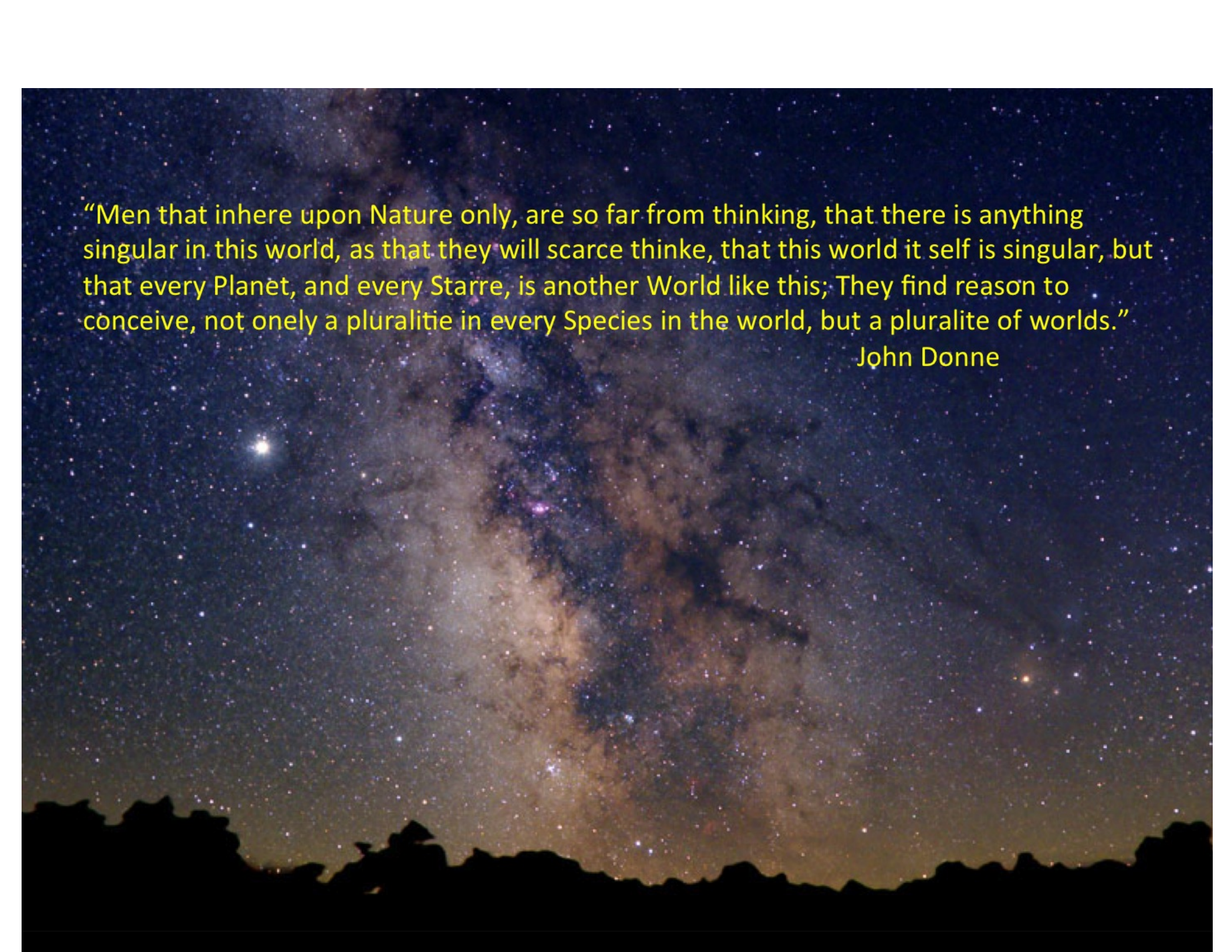
## MEDICEA SIDERA NVNCVPANDOS DECREVIT.



VENETIIS, Apud Thomam Baglionum Page 16243.  
Superiorum Permissu, & Privilegio.

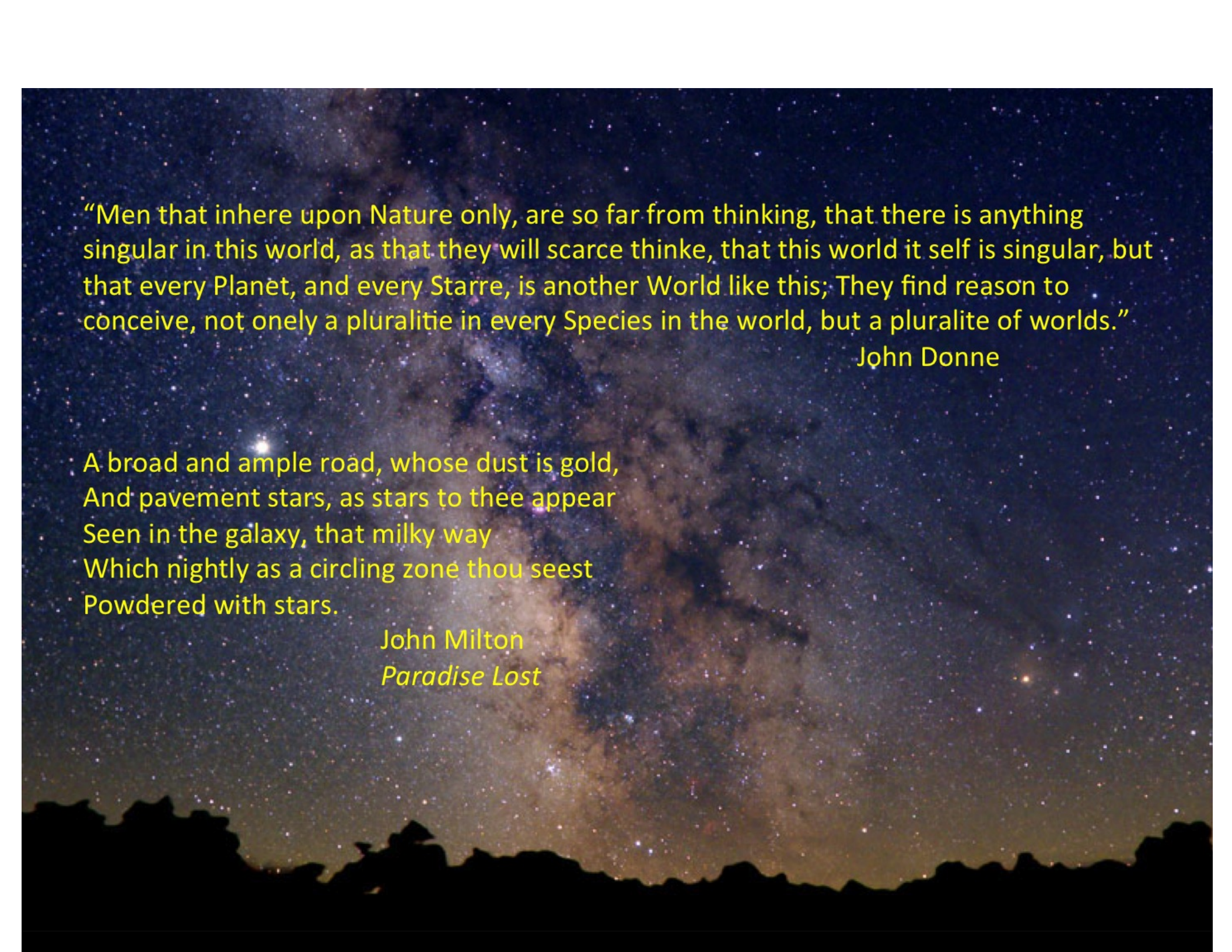






“Men that inhere upon Nature only, are so far from thinking, that there is anything singular in this world, as that they will scarce thinke, that this world it self is singular, but that every Planet, and every Starre, is another World like this; They find reason to conceive, not onely a pluralitie in every Species in the world, but a pluralite of worlds.”

John Donne



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John Donne

A broad and ample road, whose dust is gold,  
And pavement stars, as stars to thee appear  
Seen in the galaxy, that milky way  
Which nightly as a circling zone thou seest  
Powdered with stars.

John Milton  
*Paradise Lost*

*Dunston Hall*

A  
DISCOVERY  
OF A  
New World.  
OR,

A DISCOURSE Tending  
to prove, that 'tis Probable there  
may be another Habitable WORLD  
in the MOON.

With a Discourse concerning the Proba-  
bility of a Passage thither. Unto which  
is Added, A Discourse concerning a  
*New Planet*, Tending to Prove, That  
'tis Probable Our Earth is one of the  
*Planets*.

*In Two Parts.*

*By John Wilkins, late Lord Bishop of  
Chester.*

*The Fifth Edition Corrected and Amended.*

LONDON,

Printed by *J. Rawlins* for *John Gellibrand*,  
at the *Golden-Ball* in *St. Pauls Church-*  
*Yard*. MDCLXXXIV. 3

## Seventeenth-century voyages to the Moon

# Seventeenth-century voyages to the Moon

*Draußen Kaljen*

## A DISCOVERY OF A New World. OR,

A DISCOURSE Tending to prove, that 'tis Probable there may be another Habitable WORLD in the MOON.

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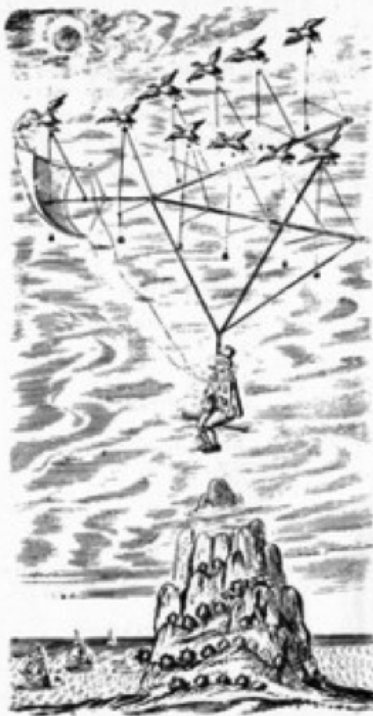
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*GODWIN, Francis, Author*

## THE MAN IN THE MOONE:

OR  
A DISCOURSE OF A  
Voyage thither  
BY

DOMINGO GONSALES

*The Steady Messenger.*



LONDON,  
Printed by JOHN NORTON, for  
*Joseph Kites, and Thomas Warton, 1698.*

# Seventeenth-century voyages to the Moon

*Danjon's Voyage*

## A DISCOVERY OF A New World.

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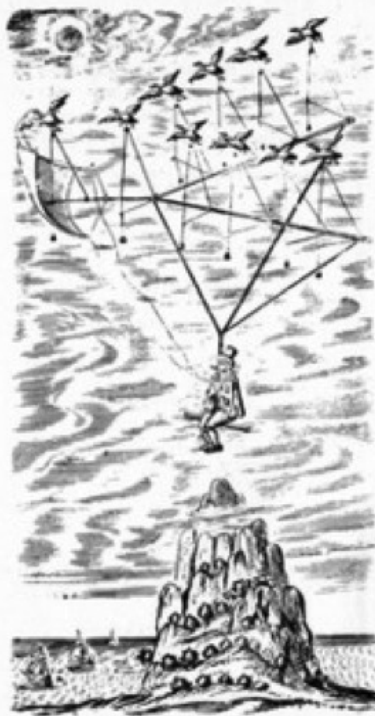
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*Godwin, Francis, Author*

## THE MAN IN THE MOONE: OR A DISCOURSE OF A Voyage thither

BY  
DOMINGO GONSALES

*The Steady Messenger.*



LONDON,  
Printed by JOHN NORTON, for  
Isaac Kirt, and Thomas Widdowes, 1691.

# HISTOIRE COMIQUE.

PAR MONSIEUR  
DE  
CYRANO BERGERAC.

CONTENANT LES ESTATS  
& Empires de la Lune.



A LYON,  
Chez CHRISTOPHE FOVRMY, rue  
Merciere, à l'enseigne de l'Occasion.

Page 22/43

M. DC. LXII.

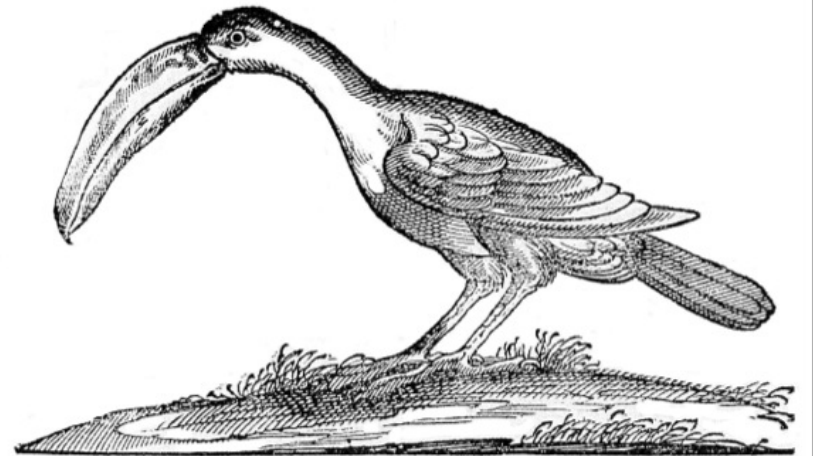
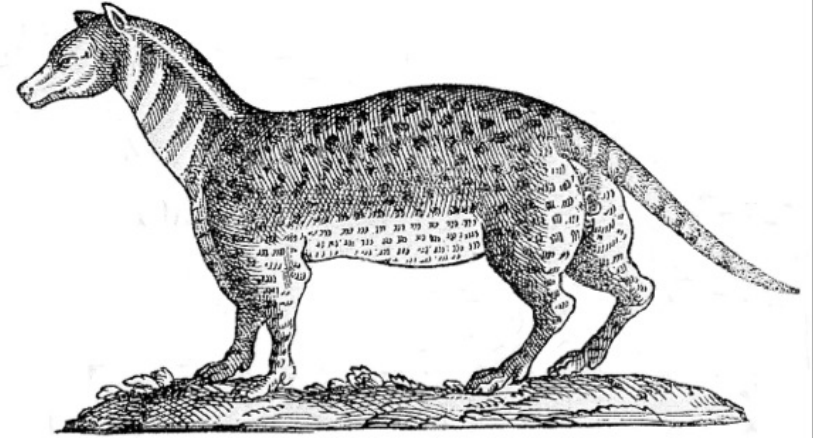
AVEC PERMISSION.



New worlds



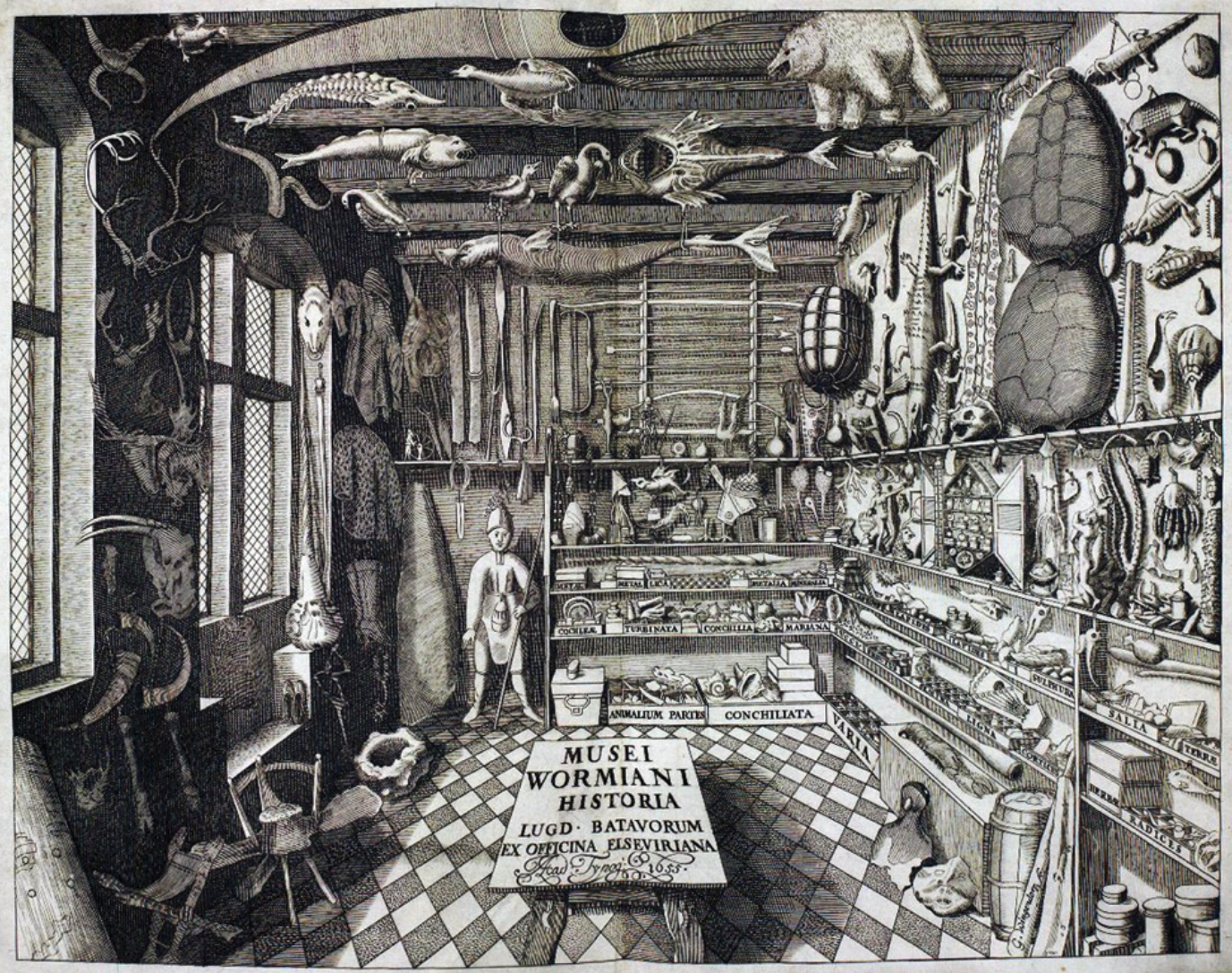
## New worlds



From Hernández, *Nova plantarum et mineralium mexicanorum historia*



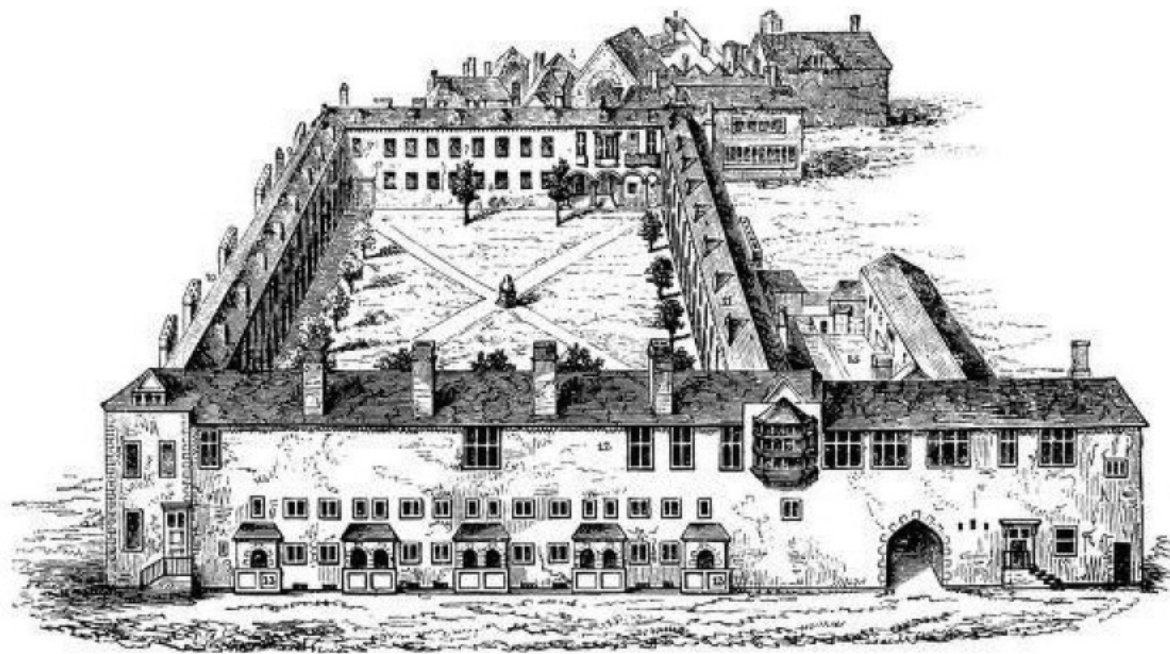
Cabinets of Curiosities:  
“theatres of knowledge”





John Tradescant the Elder (c.1570s-1638)

## From Gresham College to the Royal Society



OLD GRESHAM COLLEGE

From Gresham College to  
the Royal Society

(1)

Numb. 1.


PHILOSOPHICAL  
TRANSACTIONS.

Munday, March 6. 1664.

The Contents.

*An Introduction to this Tract. An Account of the Improvement of Optick Glasses at Rome. Of the Observation made in England, of a Spot in one of the Belts of the Planet Jupiter. Of the motion of the late Comet predicted. The Heads of many New Observations and Experiments, in order to an Experimental History of Cold; together with some Thermometrical Discourses and Experiments. A Relation of a very odd Monstrous Calf. Of a peculiar Lead-Ore in Germany, very useful for Essays. Of an Hungarian Bolus, of the same effect with the Bolus Armenus. Of the New American Whale-fishing about the Bermudas. A Narrative concerning the success of the Pendulum-watches at Sea for the Longitudes; and the Grant of a Patent thereupon. A Catalogue of the Philosophical Books published by Monsieur de Fermat, Counsellour at Tholouse, lately dead.*

*The Introduction.*

 Hereas there is nothing more necessary for promoting the improvement of Philosophical Matters, than the communicating to such, as apply their Studies and Endeavours that way, such things as are discovered or put in practise by others; it is therefore thought fit to employ the *Press*, as the most proper way to gratifie those, whose engagement in such Studies, and delight in the advancement of Learning and profitable Discoveries doth entitle them to the knowledge of what this Kingdom, or other parts of the World, do. from time to time. afford, as well



The Hon. Rob. Boyle  
Ob. in Dec. 1691.

# Robert Boyle's lists

22

R. Moses's Serpent, and the Transmut'd water.

R. Insects, and other Creatures that lye as it were dead in the winter.

R. the habitude of Parts to one another; and the Active.

R. that Beauty do's not make the Parts, but result from them as do also Health, Harmony, Symmetry.

That Internal Forms may be but Lasting Dispositions to be wrought upon by External Objects.

R. that the Restitution of Bodies may be from the structure of them and the surrounding Agents, and that violence is aff'd to Motion, but by the mind, as in Suction, sustentation of liquors, &c.

R. that the ignorance of true and particular causes made Superstitious Philosophers fancy Souls in Plants, as the Chinese did in Watches, and that in particular Bodies the soul supplies the place of Nature as in Watches Terellas the Spring &c. do's.

R. the Seal'd weather glass &c. and the consequences of such thing.

R. Monsters, and the Longings and frights of teeming Women.

R. the works of God, and the Embroidery &c.

R. the subordinate Causes of Nature in Springs Pumps &c.

R. the unskillfull Restitution in Springs made by hammering &c. [The use being so manifest and apposite, and so worthy of a master-like Agent, why should we not think he designed it, especially since to his goodness & knowledge, no Exigency or application of things, could be unforeseen.]

R. that not only a Watch a Spring, a Withy, but a Rocket a Spind a Stack of wet Hay &c. has as well an internal principle of Motion as a Caterpillar or a Butterfly, consider there also - the motion of lightning.

225

Remember ye mercuryall Gase without airc.

R. Contrivance fastned to cover to shake downe Sulphur

R. yo' airc watch ought to have a foxed end.

R. yo' stopping on yo' glass Stoppers with Vitrum Saturni.

R. to measure ye dilatation of Air by airc & by heat w<sup>ch</sup> may be tryed by a mercuryall Thermometre.

R. Monarch's Receipt of a'le to do so.

R. to make ye pieces of a'le to do so.

R. a Barometre where no airc may be more or less rarified

R. to breake a glass bubble in a Barometre

R. yo' airc w<sup>ch</sup> a Barometre finding in a bubble at ye top of a hill

R. to produce by ye Rot of a Valve of Wood if not so to a Spring of a peculiar Shape as well as thickness of plates

R. yo' airc to be prolonged by a weight of Marble

R. yo' falling of Leadstone as on a certain node in ye Air

R. yo' Suspension of a Loadstone over a certain node in ye Air

R. yo' Cap of magnetizing & Compression of airc in yo' inch Cylinder according to yo' Spring a merceniall bar by a solid weight

R. yo' machine of hands in yo' Receiver it being plac'd in it self may make good a Mechanical Contrivance.

R. an experiment which fill'd a hinde in hart dungs, in yo' Air

R. to draw up a cleagge Syringe by yo' airc Spring.

R. yo' Curlew's w<sup>ch</sup> a'le affixed to a Spring.

And yo' same contrivance account'd for in a small stopcock

in a small glass stopcock

R. yo' airc to be rarefied by a weight of Marble

R. yo' exhaustion of stopcock blint heads by a'le

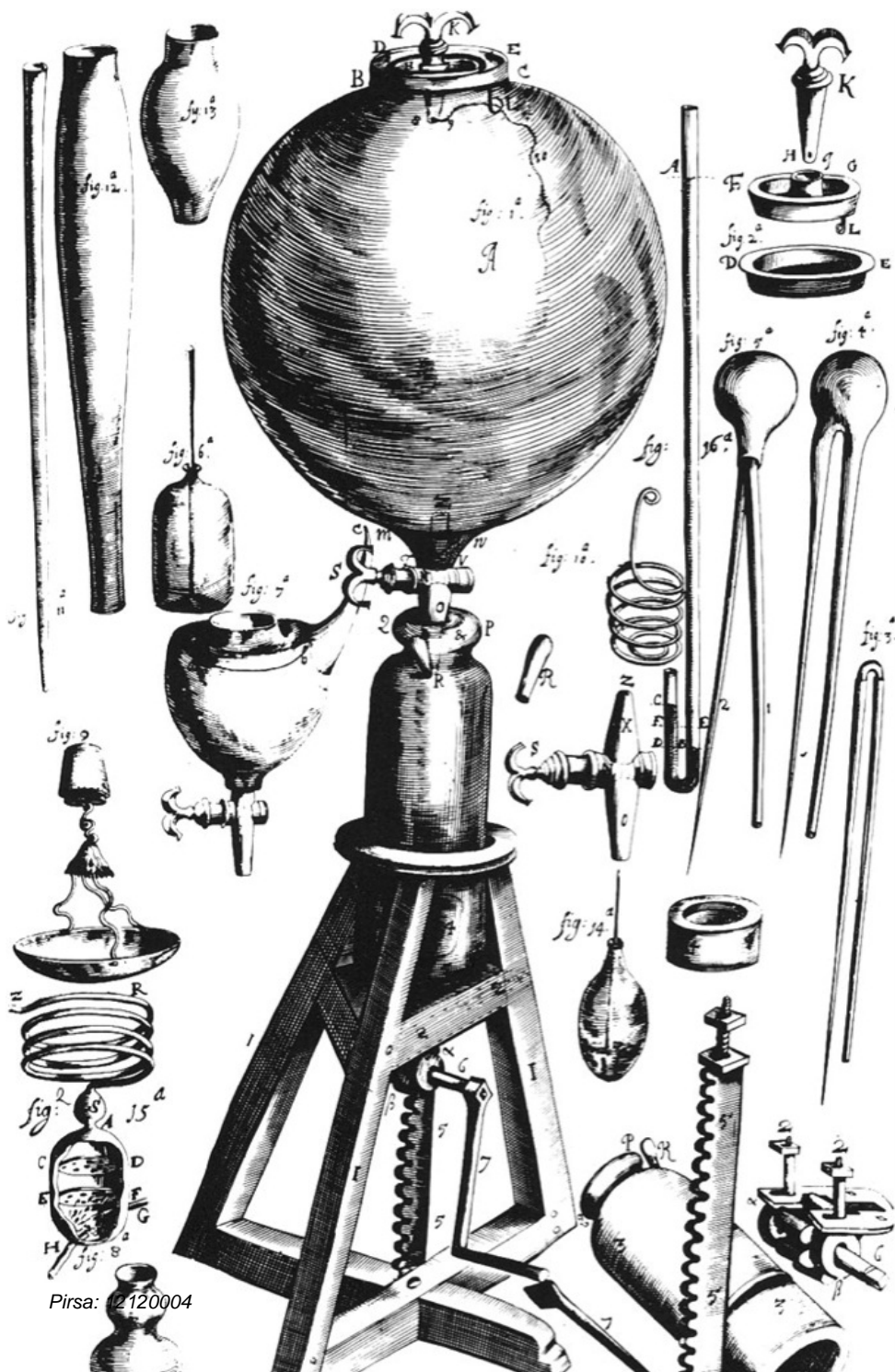
R. yo' airc to be rarefied by a weight of Marble

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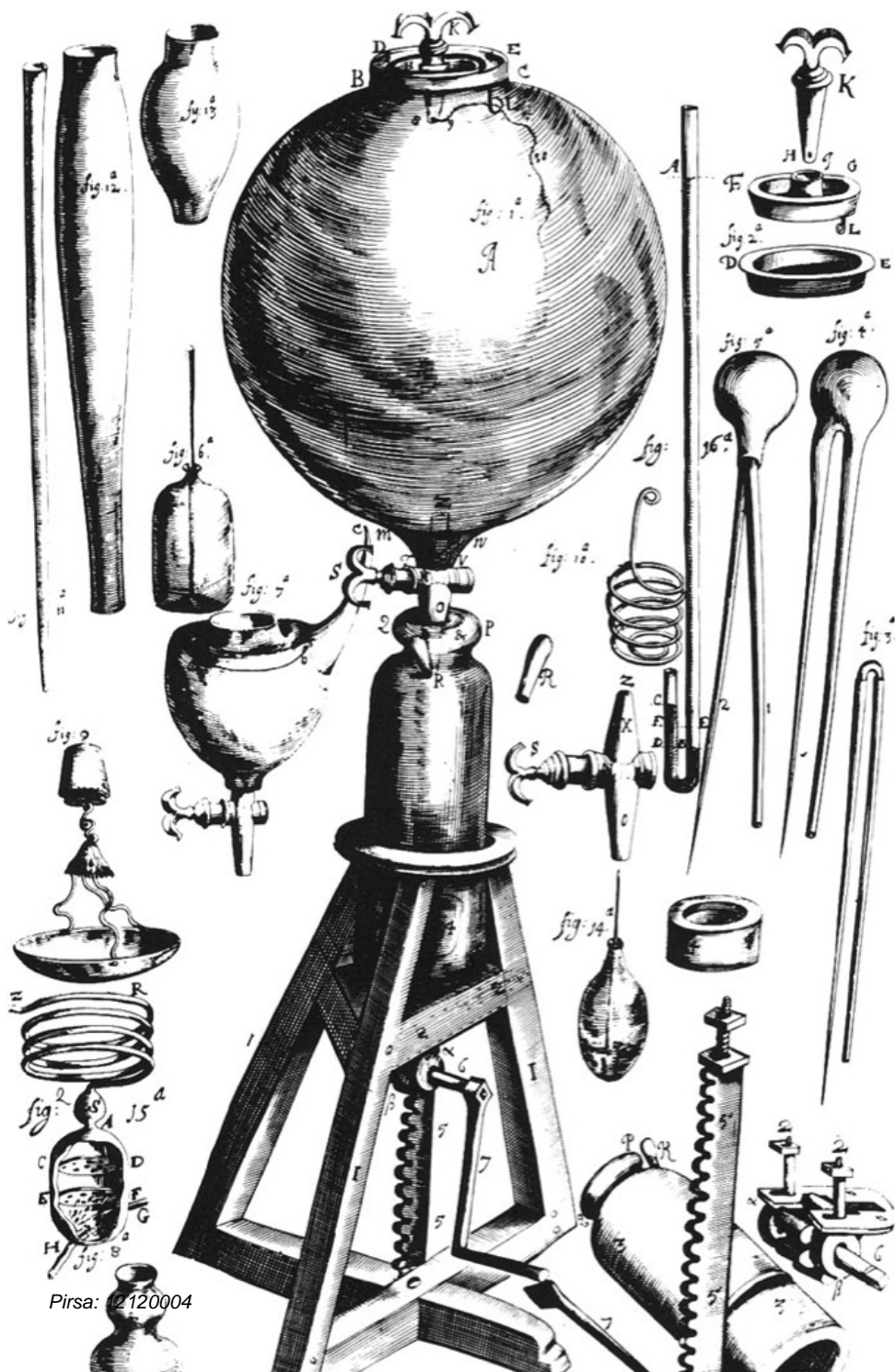
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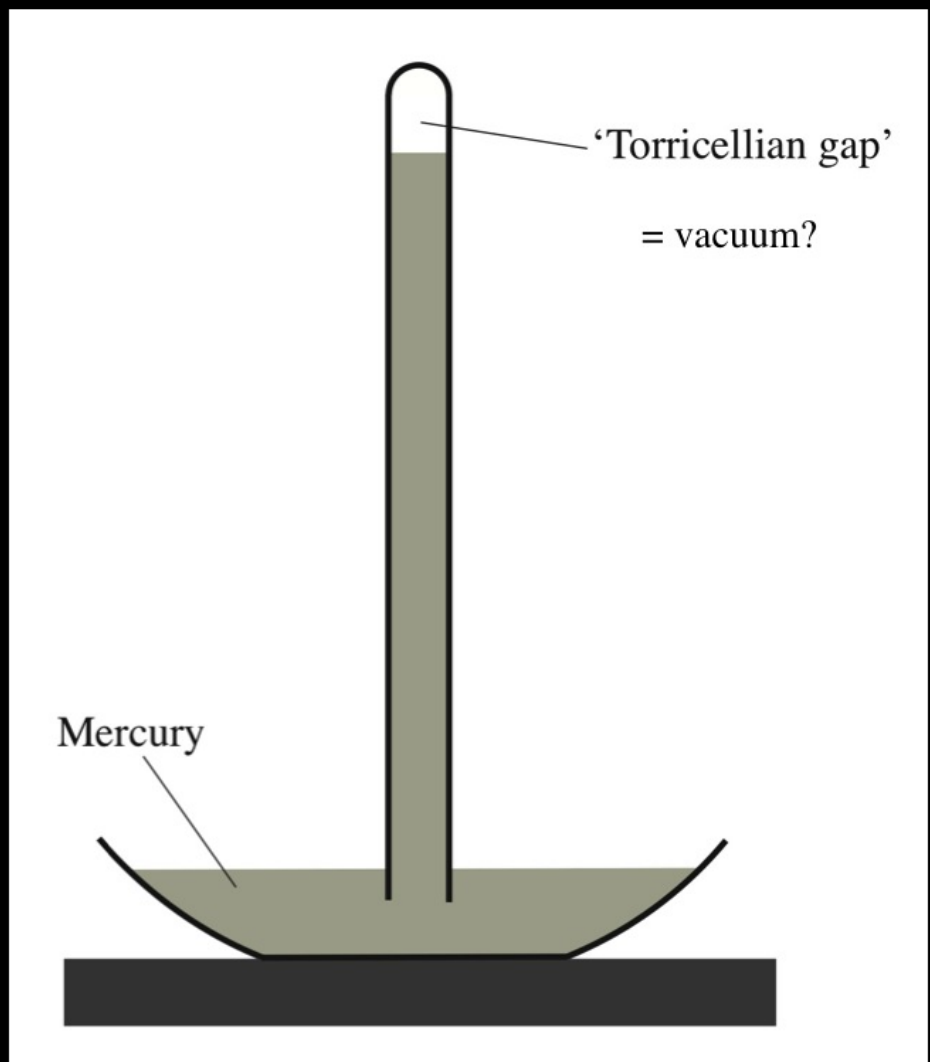


# The air-pump



Pirsa: 120004

# The air-pump





Joseph Wright of Derby, *An Experiment on a Bird in the Air Pump* (1768)







fig. 2-10-02

**MICROGRAPHIA:**  
OR SOME  
*Physiological Descriptions*  
OF  
**MINUTE BODIES**  
MADE BY  
MAGNIFYING GLASSES.  
WITH  
OBSERVATIONS and INQUIRIES thereupon.  
*R. J. Dale. 1722.*  
By R. HOOKE, Fellow of the ROYAL SOCIETY.

*Non passis oculo quantum considerare Lincolns,  
Non tam cito siccirco contentosque Lippus innogit. Horat. Ep. Lib. 1.*

LONDON, Printed for James Allestry, Printer to the ROYAL SOCIETY, and are to be sold at his Shop, at the *Rose and Crown* in *Duck-Lane*. MDCCLXVII.

Page 34/43

By the Council of the ROYAL SOCIETY  
of London for Improving of Natural  
Knowledge.

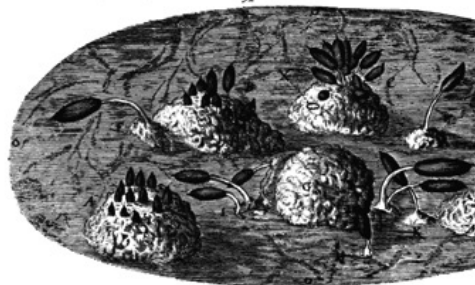
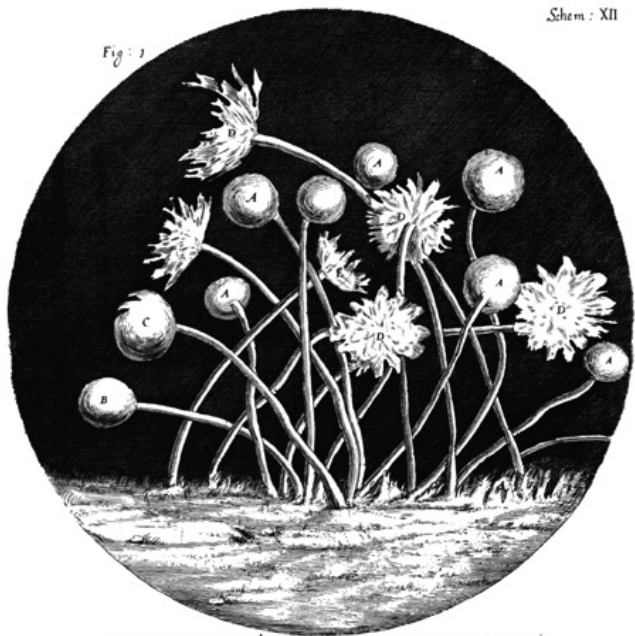
Ordered, That the Book written by Robert Hooke, M. A. Fellow of this  
Society, Entituled, Micrographia, or some Physiological Descriptions of  
Minute Bodies, made by Magnifying Glasses, with Observations and  
Inquiries thereupon, Be Printed by John Martyn, and James Allestry,  
Printers to the said Society.

Novem. 23.  
1664.

BROUNCKER. P. R. S.

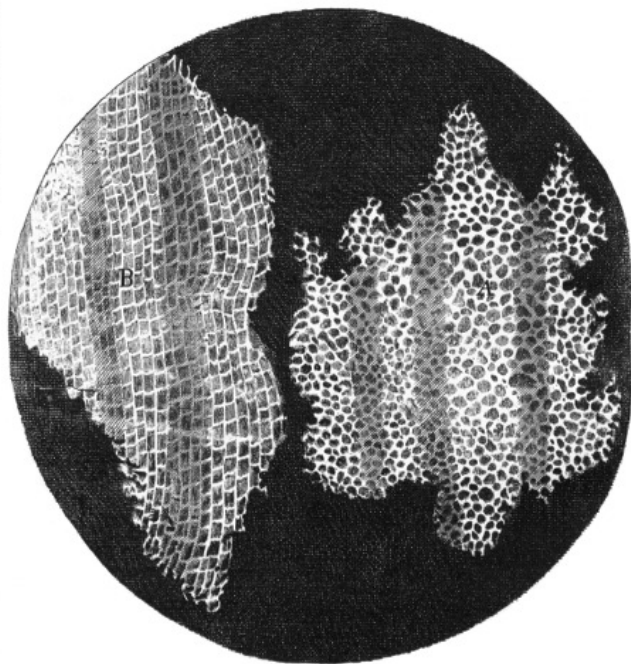
Schem : XII

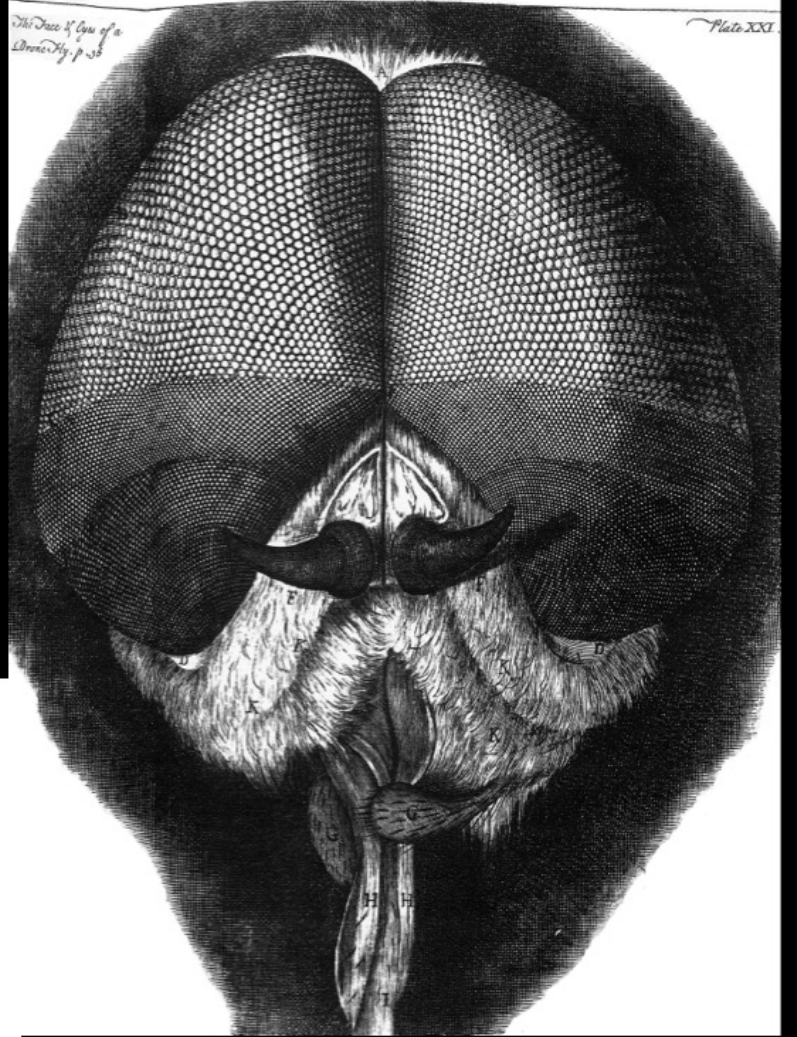
Fig: 1



*Layers of Cork in two different Sections .p. 26.*

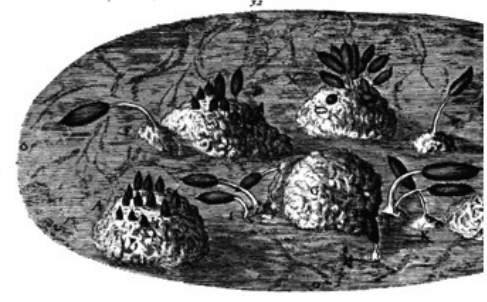
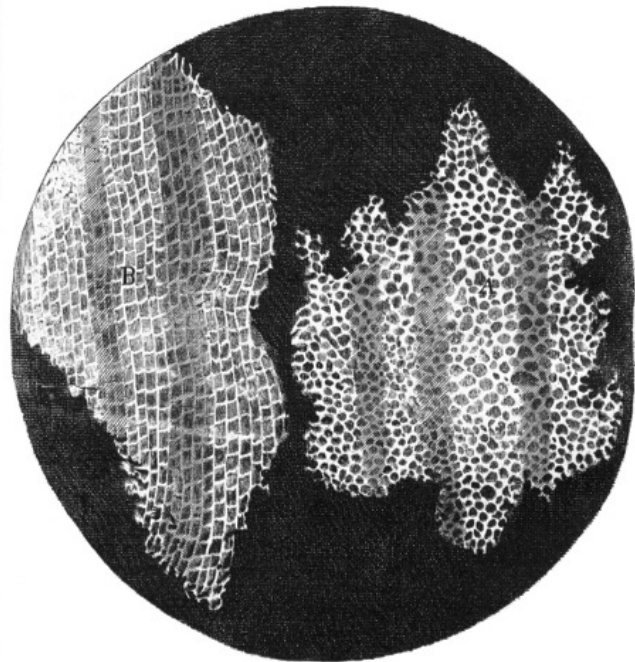
Fig: 1.





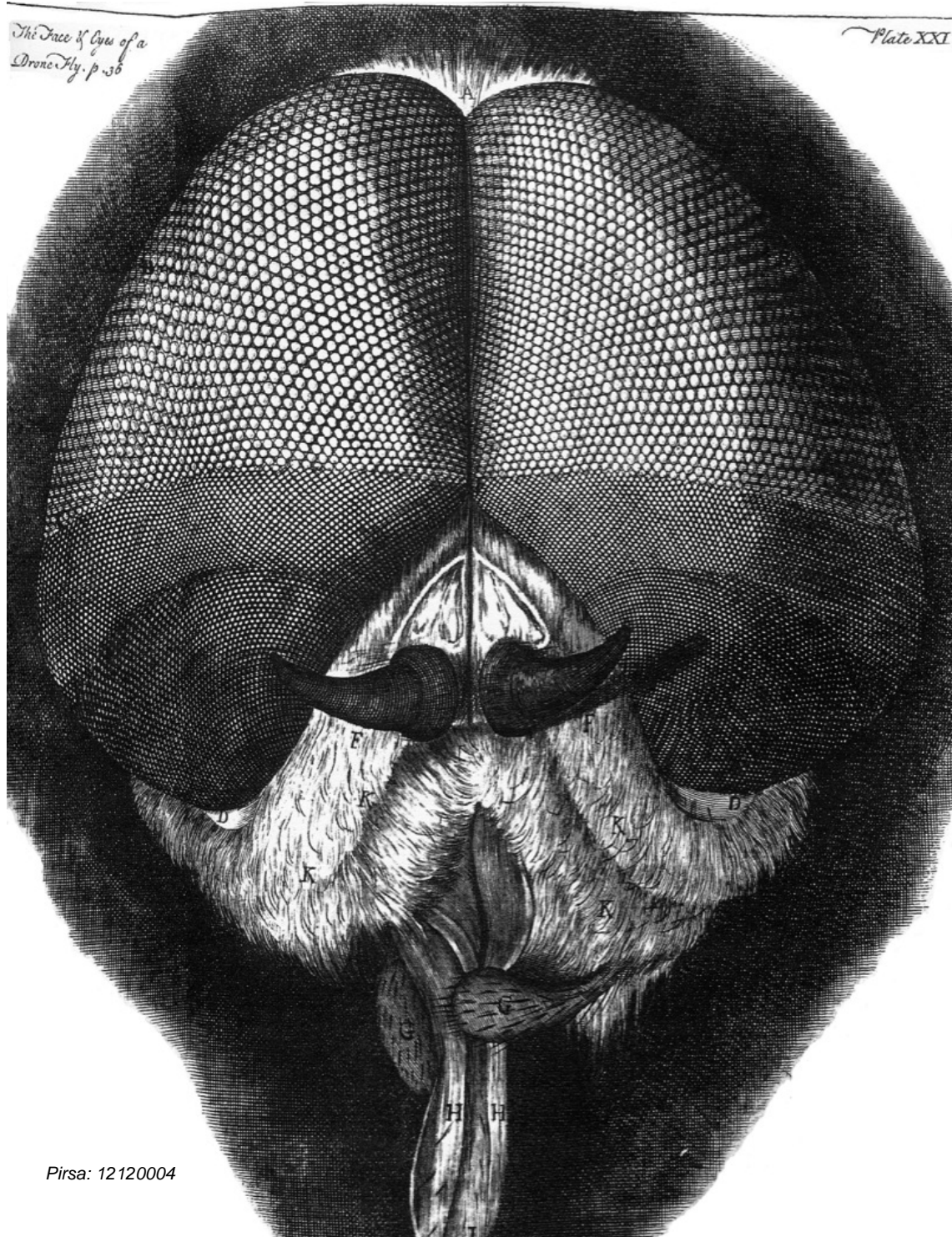
*Layers of Cork in two different Sections, p. 38.*

Fig. 1.



The Face of Eyes of a  
Drone Fly. p. 36

Plate XXI.



“there may be as much curiosity of contrivance in every one of these Pearls, as in the eye of a Whale or Elephant, and the almighty’s *Fiat* could as easily cause the existence of the one as the other; and as one day and a thousand years are the same with him, so may one eye and ten thousand.”

Robert Hooke  
*Micrographia*



Magnetically levitated frog:  
Andre Geim and Michael Berry,  
Ig Nobel prize for Physics, 2000

# NASA's Mars rover *Curiosity*

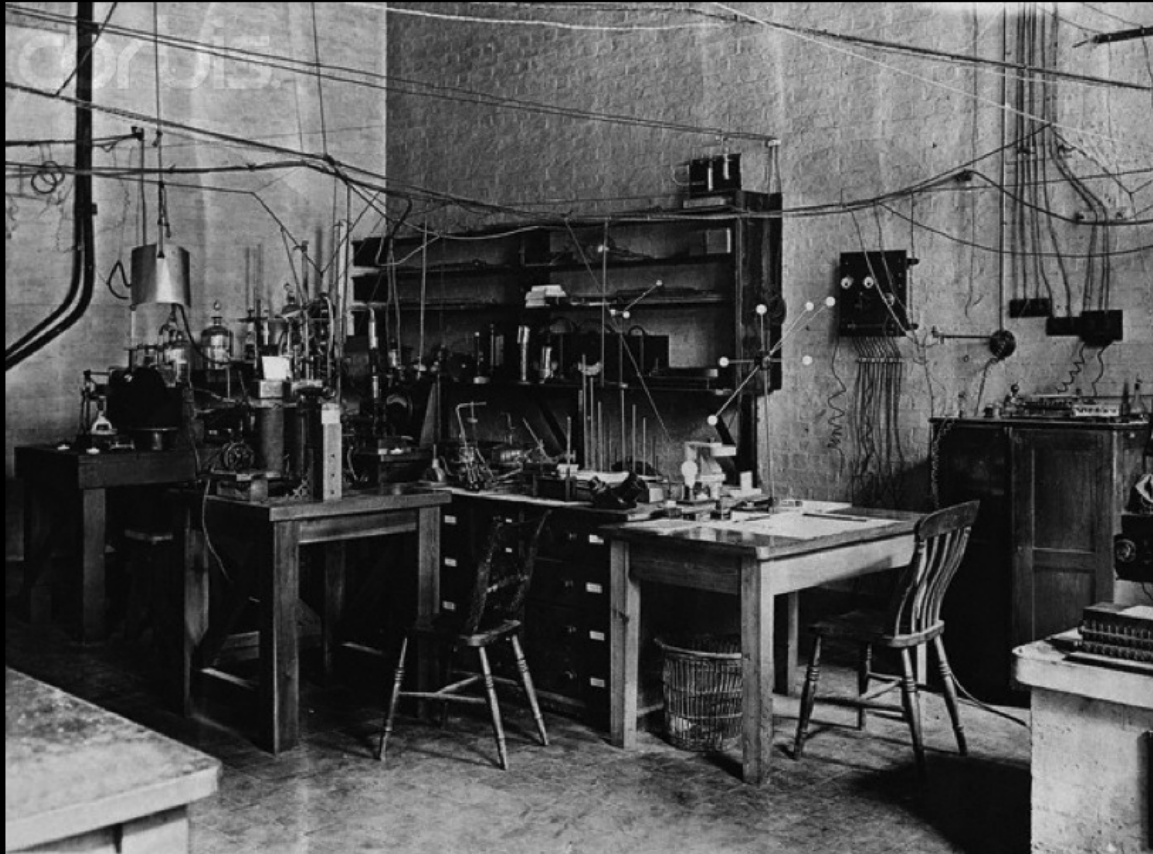




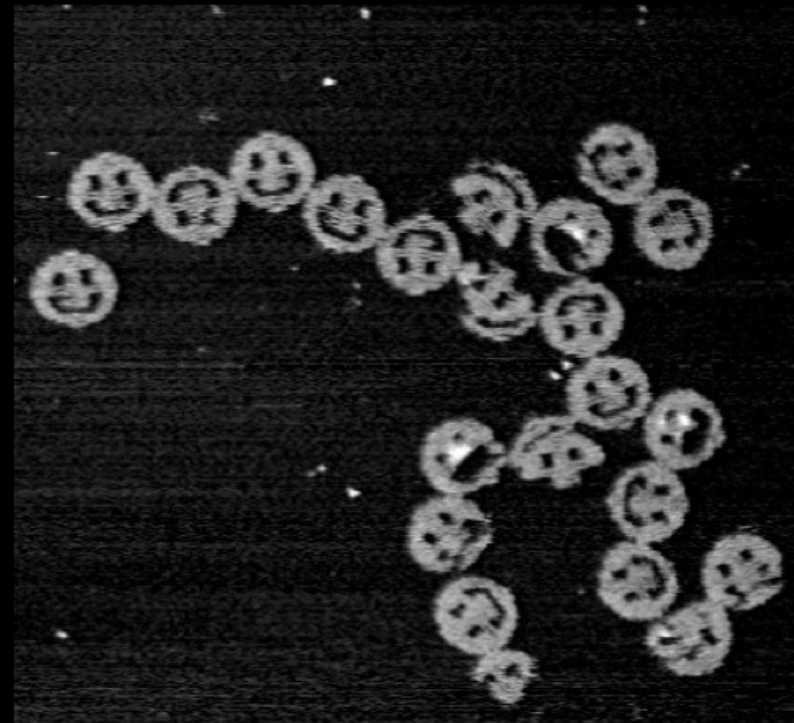
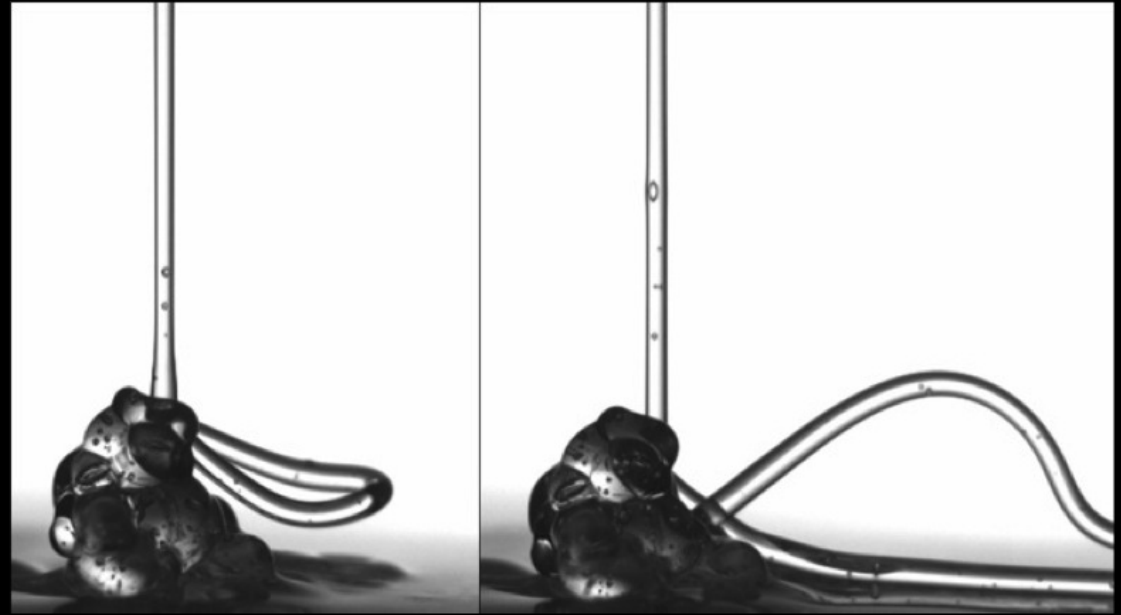
“Astronomical Sublime”



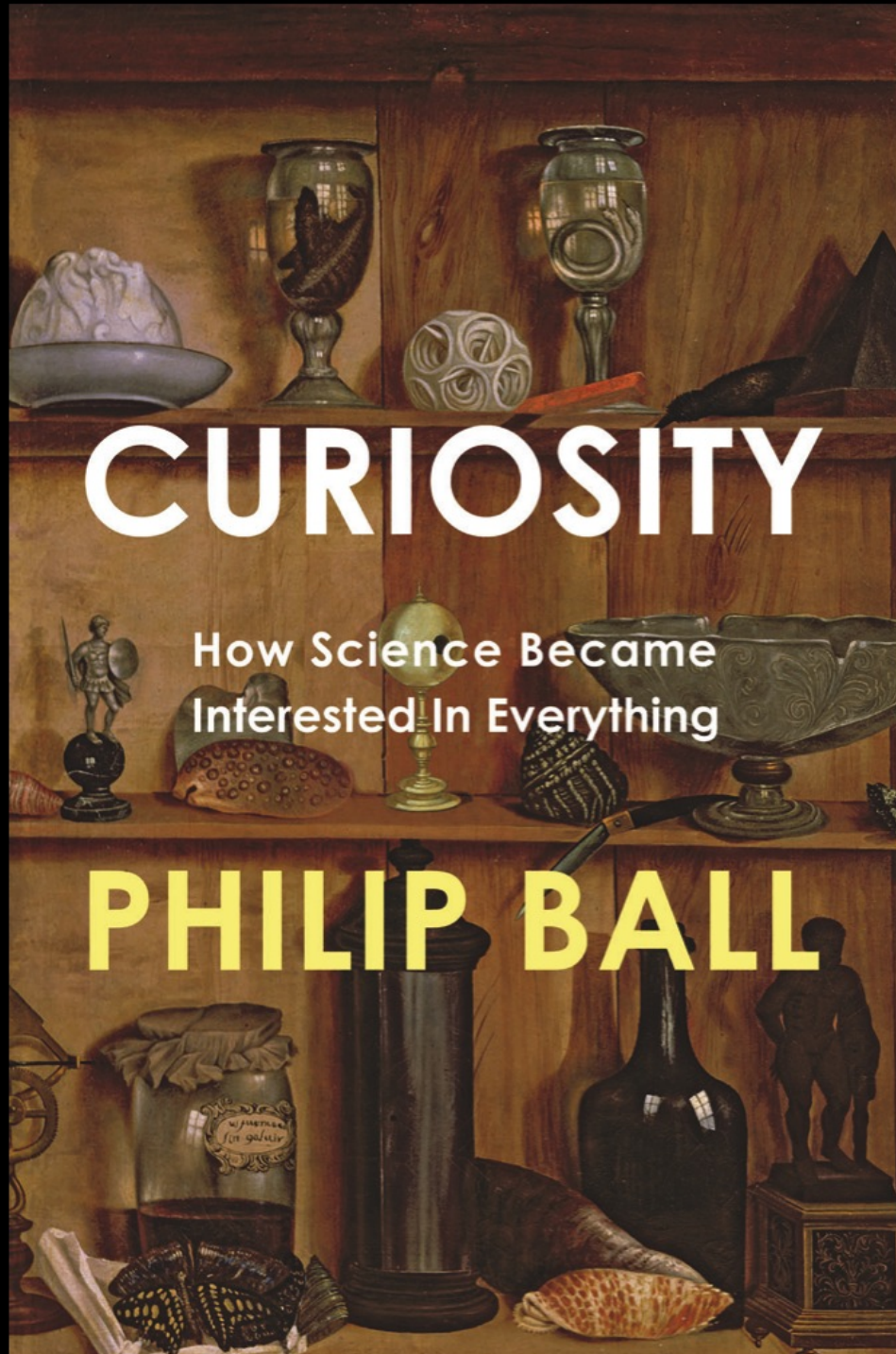




**Ernest Rutherford's laboratory  
at Cambridge, 1926**



The curiosity of  
Small Science



# CURIOSITY

How Science Became  
Interested In Everything

PHILIP BALL