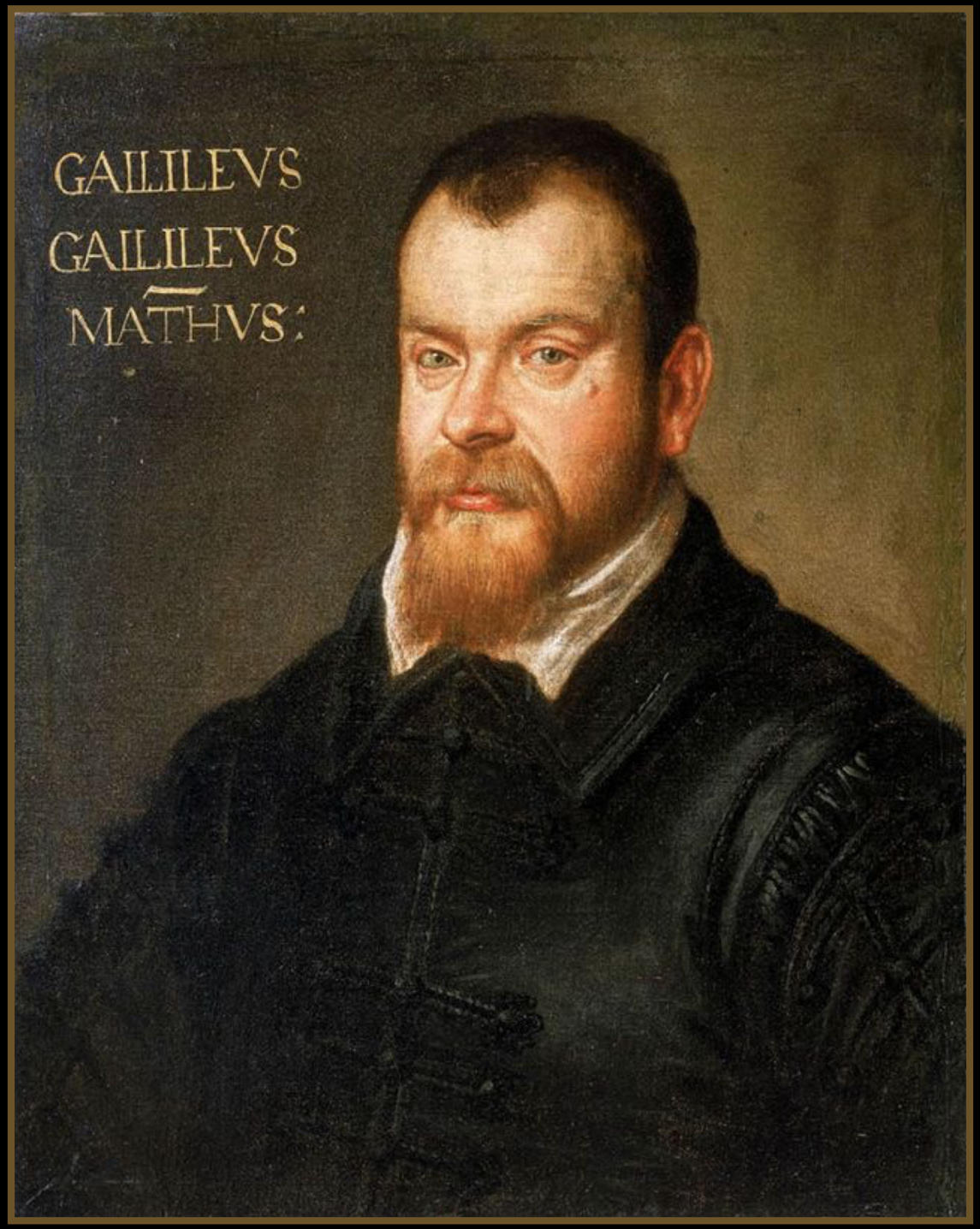
This file contains the slides from Alyssa Goodman's talk on why Galileo is her "hero," presented to the Harvard COUR 30 April 2016.



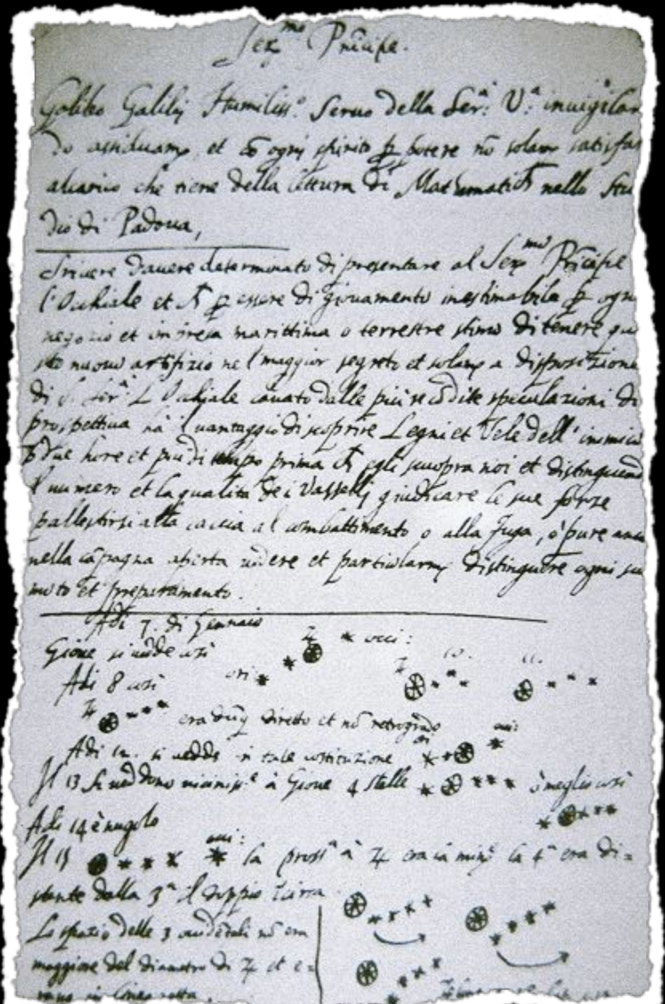
1607

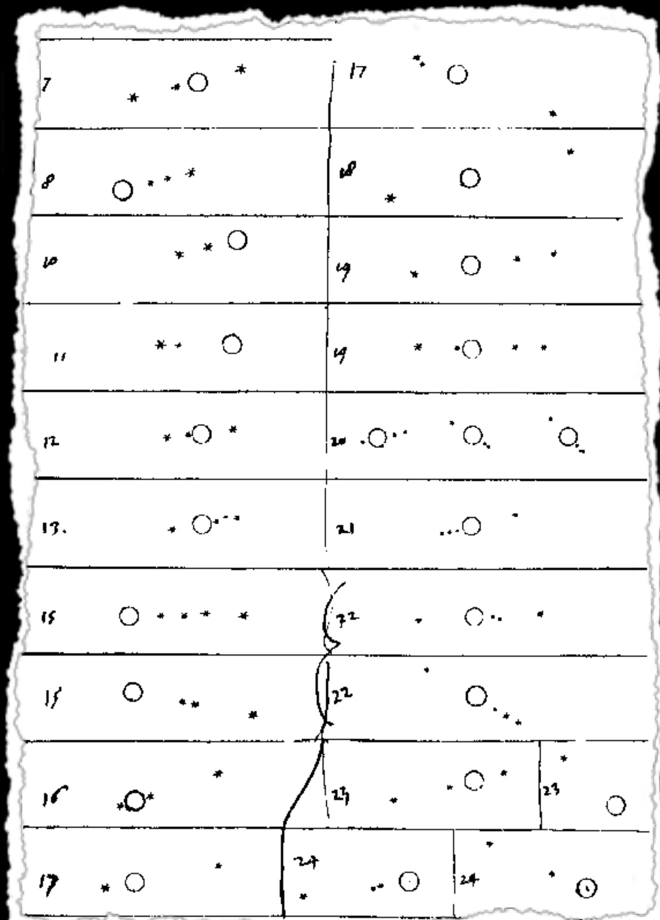

DIALOGO
di
GALILEO GALILEI LINCEO
AL SER.mo FERD. II. GRAN. DVCA DI
TOSCANA
Aristotle
Ptolemy
Copernicus

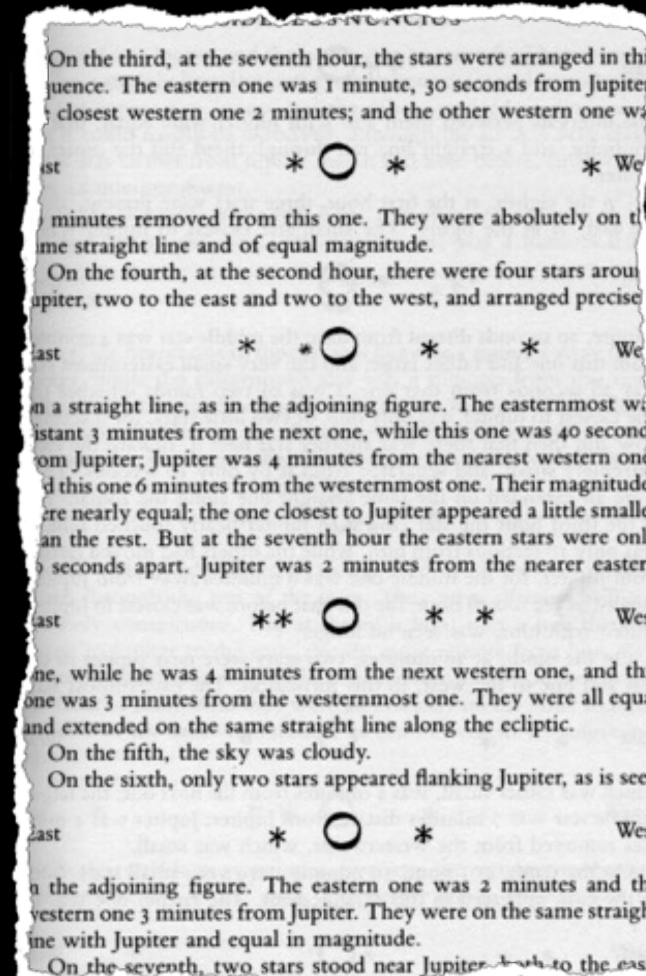
1632

THE GALILEAN MOONS

aka “the Medicean Planets”






On the third, at the seventh hour, the stars were arranged in thi
quence. The eastern one was 1 minute, 30 seconds from Jupiter
closest western one 2 minutes; and the other western one wa

minutes removed from this one. They were absolutely on t
me straight line and of equal magnitude.

On the fourth, at the second hour, there were four stars arou
upiter, two to the east and two to the west, and arranged precise

n a straight line, as in the adjoining figure. The easternmost w
istant 3 minutes from the next one, while this one was 40 second
om Jupiter; Jupiter was 4 minutes from the nearest western one
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an the rest. But at the seventh hour the eastern stars were onl
seconds apart. Jupiter was 2 minutes from the nearer easter

ne, while he was 4 minutes from the next western one, and thi
one was 3 minutes from the westernmost one. They were all equal
and extended on the same straight line along the ecliptic.

On the fifth, the sky was cloudy.

On the sixth, only two stars appeared flanking Jupiter, as is seen

n the adjoining figure. The eastern one was 2 minutes and the
western one 3 minutes from Jupiter. They were on the same straigh
ine with Jupiter and equal in magnitude.

On the seventh, two stars stood near Jupiter, both to the east

Notes for & re-productions of Siderius Nuncius

1610

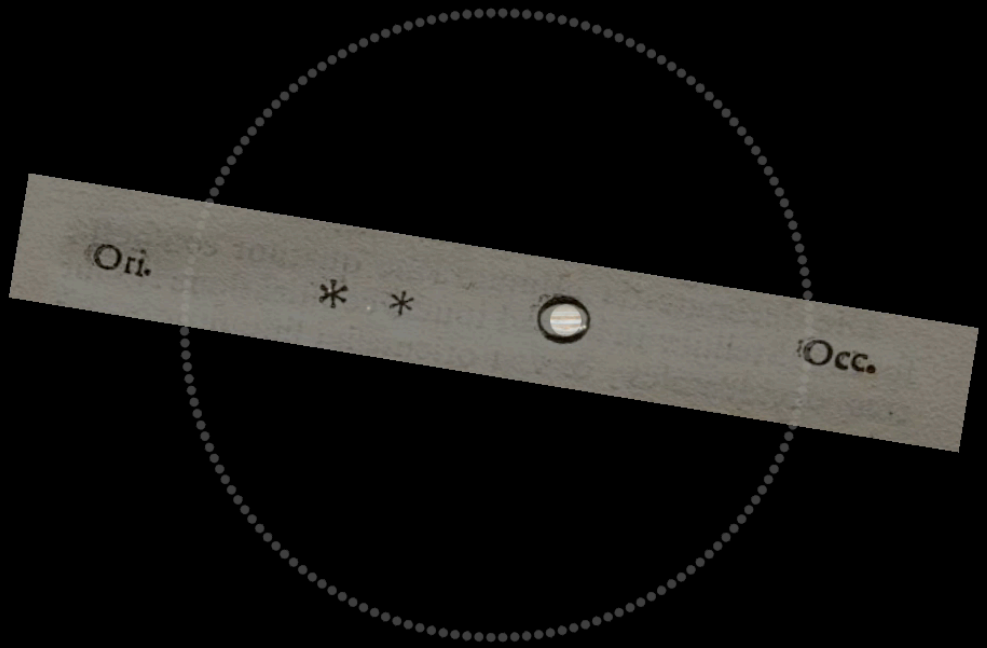
GALILEO'S "NEW ORDER"

Created by Alyssa Goodman, Curtis Wong and Pat Udomprasert,
with advice from Owen Gingerich and David Malin

Galileo's New Order, A WorldWide Telescope Tour by Goodman, Wong & Udomprasert 2010
Microsoft Research WWT Software (~now "OpenWWT"): Wong (inventor), Fay (architect), et al.

1610

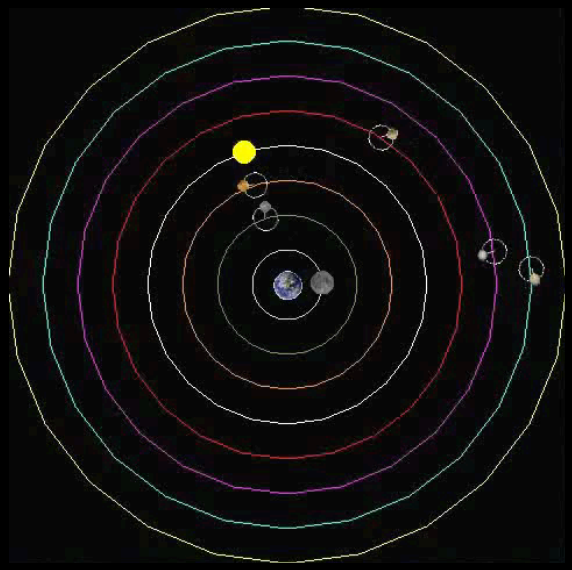
January 11, 1610



Galileo's New Order, A WorldWide Telescope Tour by Goodman, Wong & Udomprasert 2010
Microsoft Research WWT Software (~now "OpenWWT"): Wong (inventor), Fay (architect), et al.

Ptolemaic

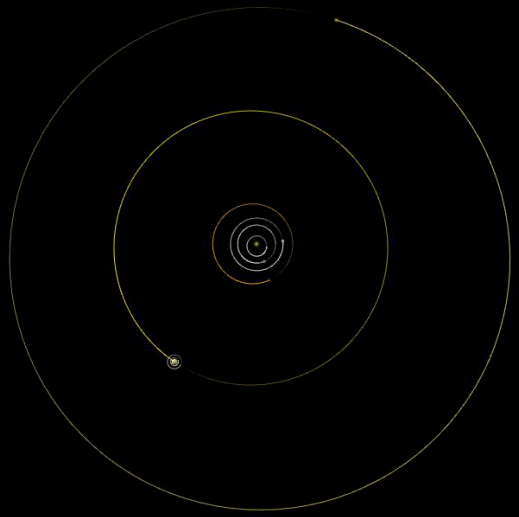
Geocentric,
with Epicycles



150 A.D.

Copernican

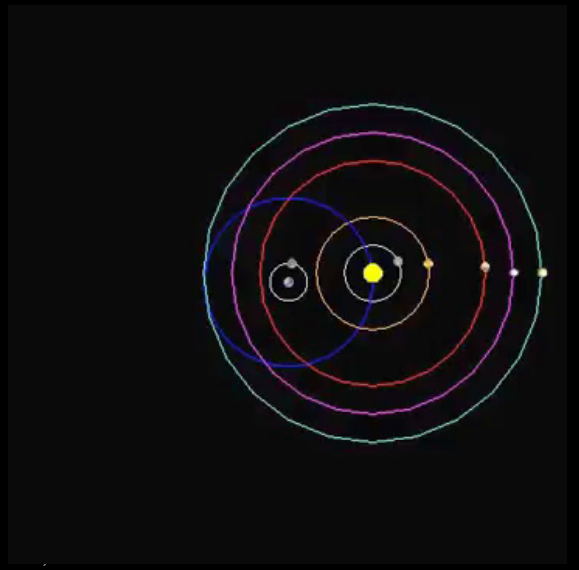
Heliocentric
(correct)



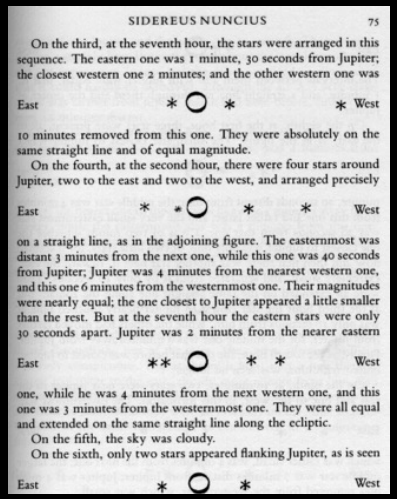
1543

Tychonic

Geoheliocentric
hybrid



1587



SIDEREUS NUNCIUS 75

On the third, at the seventh hour, the stars were arranged in this sequence. The eastern one was 1 minute, 30 seconds from Jupiter; the closest western one 2 minutes; and the other western one was

East * ○ * * West

10 minutes removed from this one. They were absolutely on the same straight line and of equal magnitude.

On the fourth, at the second hour, there were four stars around Jupiter, two to the east and two to the west, and arranged precisely

East * * ○ * * West

on a straight line, as in the adjoining figure. The easternmost was distant 3 minutes from the next one, while this one was 40 seconds from Jupiter; Jupiter was 4 minutes from the nearest western one, and this one 6 minutes from the westernmost one. Their magnitudes were nearly equal; the one closest to Jupiter appeared a little smaller than the rest. But at the seventh hour the eastern stars were only 30 seconds apart. Jupiter was 2 minutes from the nearer eastern

East ** ○ * * West

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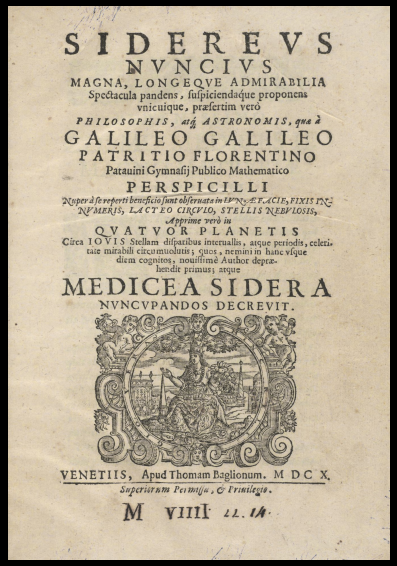
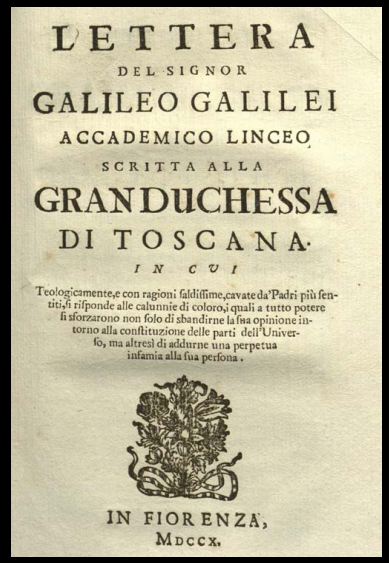
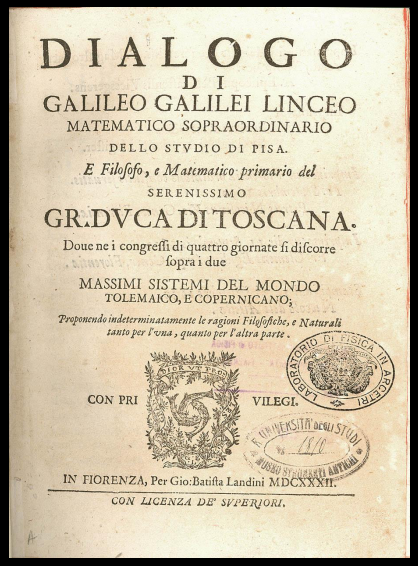
East * ○ * West



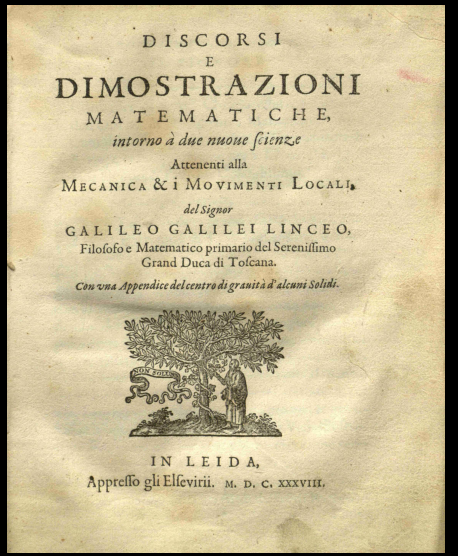
SIDEREVS
NVNCIVS
MAGNA, LONGEQVE ADMIRABILIA
Spectacula pandens, suspiciendaque proponens
vnicuique, præsertim verò
PHILOSOPHIS, atq; ASTRONOMIS, quæ à
GALILEO GALILEO
PATRITIO FLORENTINO
Patauini Gymnasij Publico Mathematico
PERSPICILLI
Nuper à se reperti beneficio sunt obseruata in IVNAE FACIE, FIXIS IN-
NVMERIS, LACTEO CIRCVLO, STELLIS NEBVLOSIS,
apprime verò in
QVATVOR PLANETIS
Circa IOVIS Stellam disparibus interuallis, atque periodis, celeri-
tate mirabili circumvolutis; quos, nemini in hanc vsque
diem cognitos, nouissimè Author depre-
hendit primus; atque
MEDICEA SIDERA
NVNCVPANDOS DECREVIT.
VENETIIS, Apud Thomam Baglionum. M D C X.
Superiorum Permissu, & Priuilegio.
M VIIII 22. 1A



LETTERA
DEL SIGNOR
GALILEO GALILEI
ACCADEMICO LINCEO
SCRITTA ALLA
GRANDUCHESSA
DI TOSCANA.
IN CVI
Teologicamente, e con ragioni saldissime, cavate da' Padri più sen-
titi, si risponde alle calunnie di coloro, i quali a tutto potere
si sforzarono non solo di sbandirne la sua opinione in-
torno alla constituzione delle parti dell'Univer-
so, ma altresì di addurne una perpetua
infamia alla sua persona.
IN FIORENZA,
MDCCX.



DIALOGO
DI
GALILEO GALILEI LINCEO
MATEMATICO SOPRAORDINARIO
DELLO STVDIO DI PISA.
E Filosofo, e Matematico primario del
SERENISSIMO
GR. DVCA DI TOSCANA.
Doue ne i congressi di quattro giornate si discorre
sopra i due
MASSIMI SISTEMI DEL MONDO
TOLEMAICO, E COPERNICANO;
Proponendo indeterminatamente le ragioni Filosofiche, e Naturali
tanto per l'vna, quanto per l'altra parte.
CON PRI VILEGI.
IN FIORENZA, Per Gio: Batista Landini MDCXXXII.
CON LICENZA DE' SVPERIORI.



DISCORSI
E
DIMOSTRAZIONI
MATEMATICHE,
intorno à due nuoue scienze
Attenenti alla
MECANICA & i MOVIMENTI LOCALI,
del Signor
GALILEO GALILEI LINCEO,
Filosofo e Matematico primario del Serenissimo
Grand Duca di Toscana.
Con vna Appendice del centro di gravità d'alcuni Solidi.
IN LEIDA,
Appresso gli Elsevirii. M. D. C. XXXVIII.

1610 1615 1632 1638

“Galileo...
is the father of modern physics—indeed of modern science.”

— Stephen Hawking quoting Albert Einstein

History of experiments

From Wikipedia, the free encyclopedia

The history of experimental research is long and varied. Indeed, the definition of an experiment itself has changed in responses to changing norms and practices within particular fields of study. This article documents the history and development of experimental research from its origins in Galileo's study of gravity into the diversely applied method in use today.

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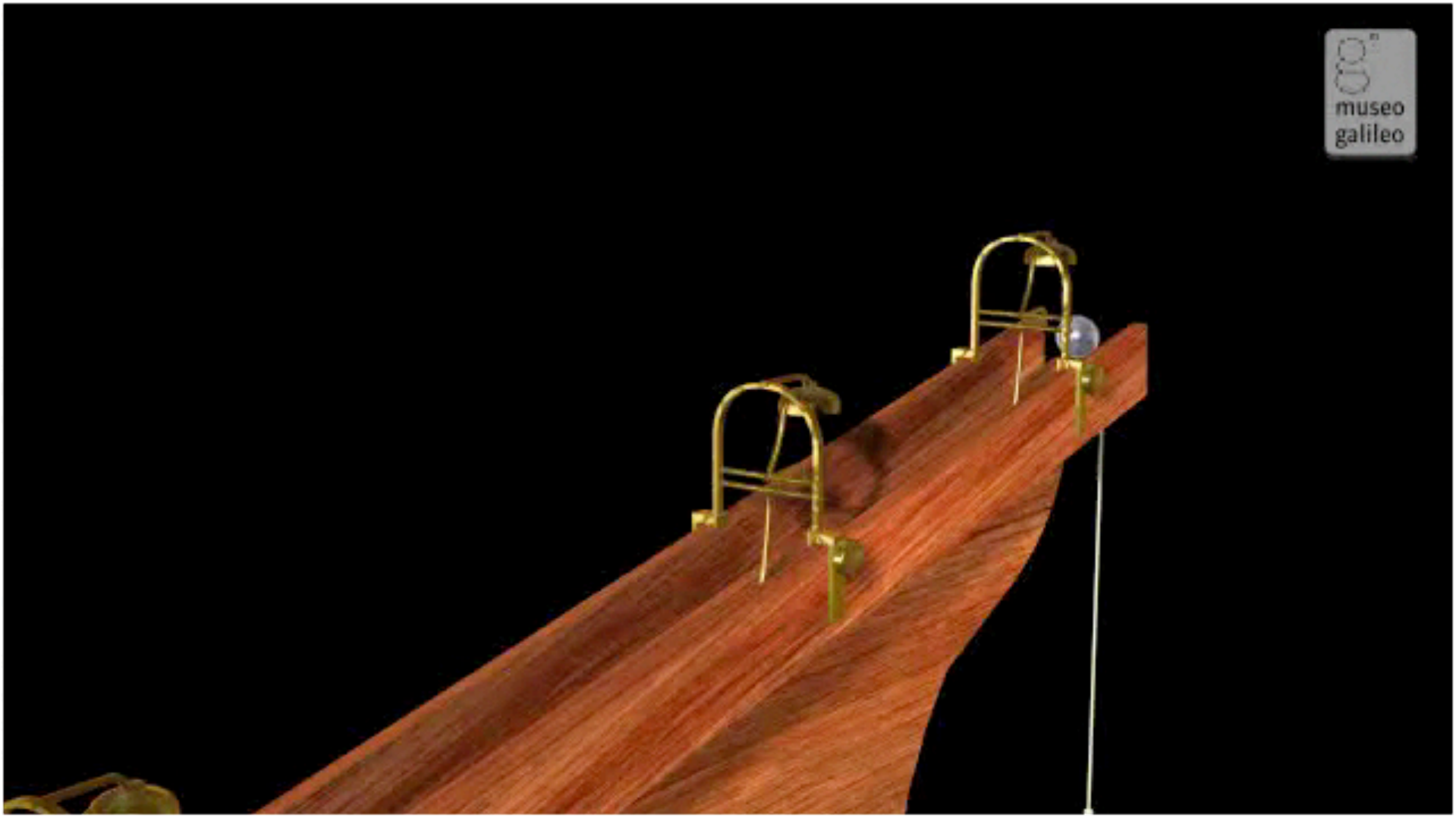
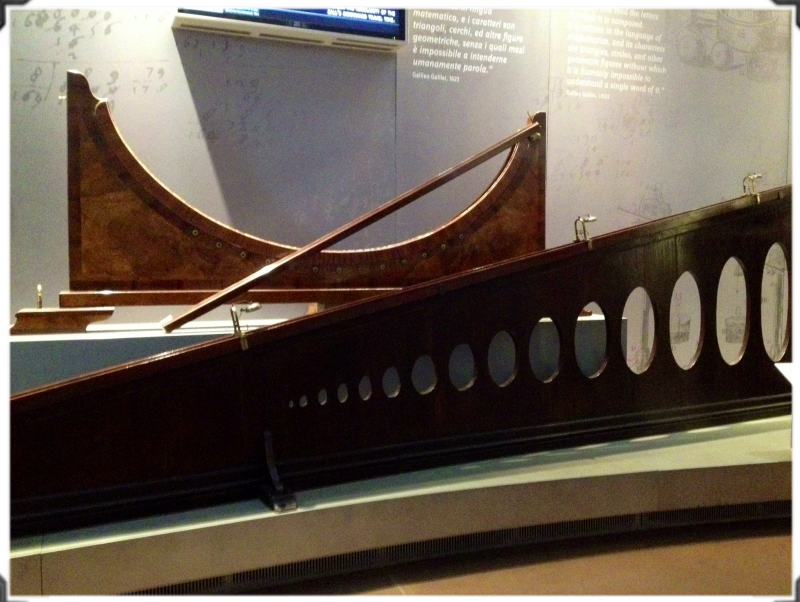


Distance *d* traveled by an object falling for time *t* where *g* is gravitational acceleration (~ 9.8 m/s^2):

$$d = \frac{1}{2}gt^2$$

These results supported Galileo's hypothesis that objects of different weights, when measured at the same point in their fall, are falling at the same speed because they experience the same gravitational acceleration.

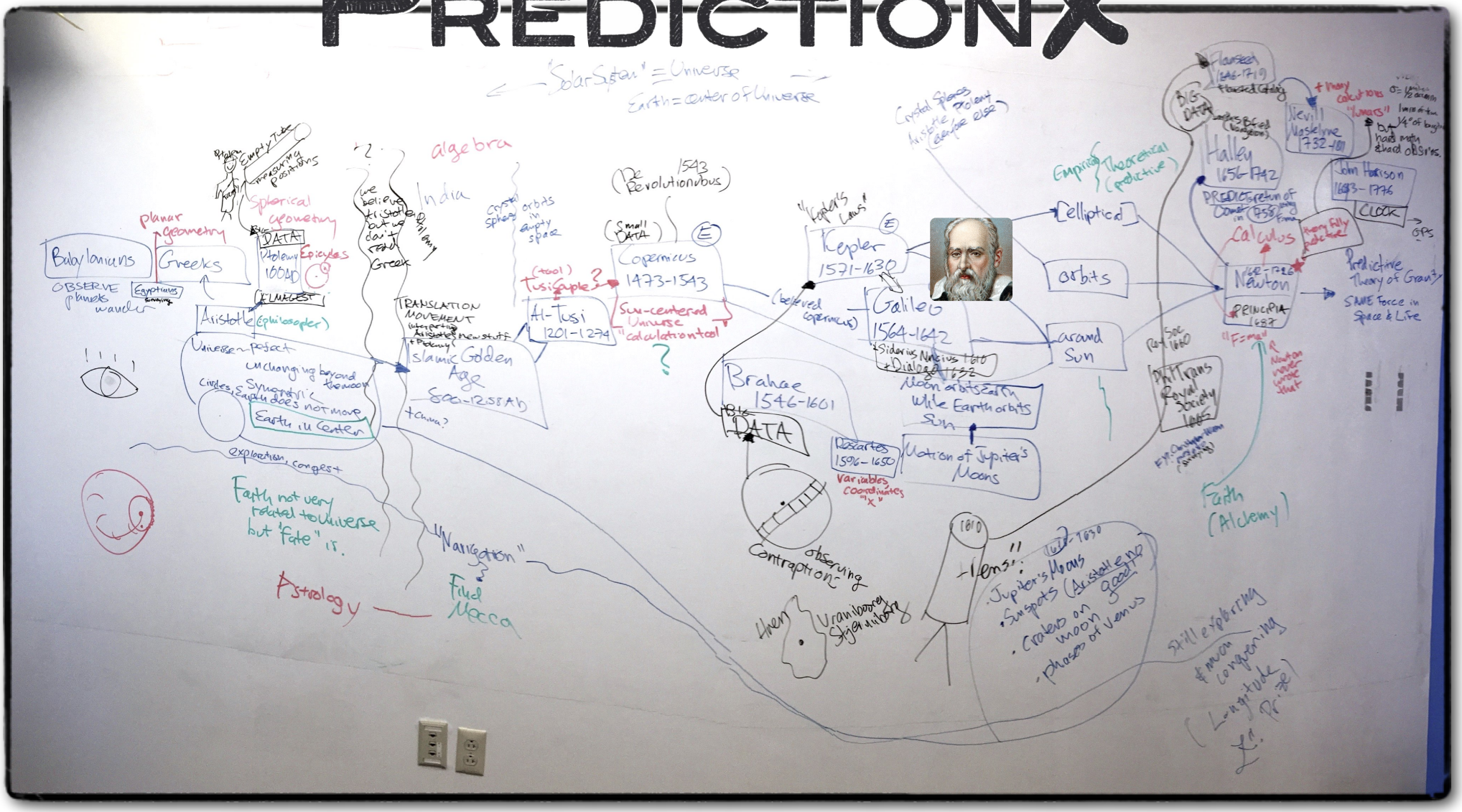

2013




museo
galileo
Palazzo Castellani
Palazzo Castellani è uno dei più antichi edifici della città, conosciuto nell' XI secolo come Castello d'Altafronte, dal nome della famiglia che ne fu proprietaria fino al 1180. I recenti lavori di restauro del piano seminterrato hanno riportato alla luce i quattro poderosi archi di fondazione in pietra del Castello. Nel corso dei secoli è appartenuto a varie famiglie: gli Uberti, i Bardi, i Buoninsegni e i Castellani. Passato ai Giudici di Ruota nel 1574, come ricordano ancora oggi gli stemmi di due magistrati murati nell'ingresso dell'edificio, il palazzo ha ospitato tra '800 e '900 la Biblioteca Nazionale l'Accademia della Crusca e la Deputazione di Storia Patria per la Toscana. Dal 1930 e vede dell'Istituto e Museo di Storia della Scienza, l'attuale Museo Galileo.
Palazzo Castellani is one of the oldest buildings in the city It was known in the 11th century as Castle d'Altafronte from the name of the family who owned it until 1180. Recent restoration work in the basement has brought to light the four massive stone foundation arches of the ancient Castle. Over the centuries it was owned by various families: the Uberti, the Bardi, the Buonnisegni and the Castellani. In 1574 it became the seat of the Giudici di Ruota (justice court), as attested by the coats-of-arms of two of the magistrates still walled in the entrance of the Palazzo. During the 19th and 20th centuries it housed the Biblioteca Nazionale, the Accademia della Crusca, and the Deputazione di Storia Patria per la Toscana. The Istituto e Museo di Storia della Scienza - today's Museo Galileo - has been on these premises since 1930.

2013

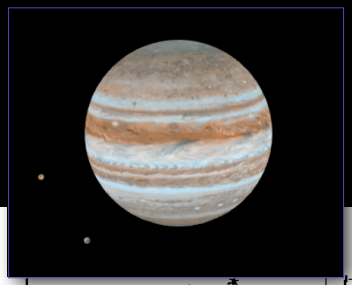
PredictionX

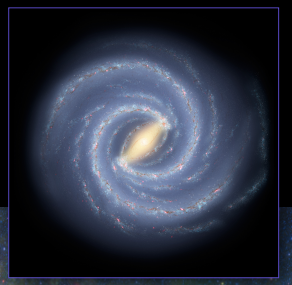


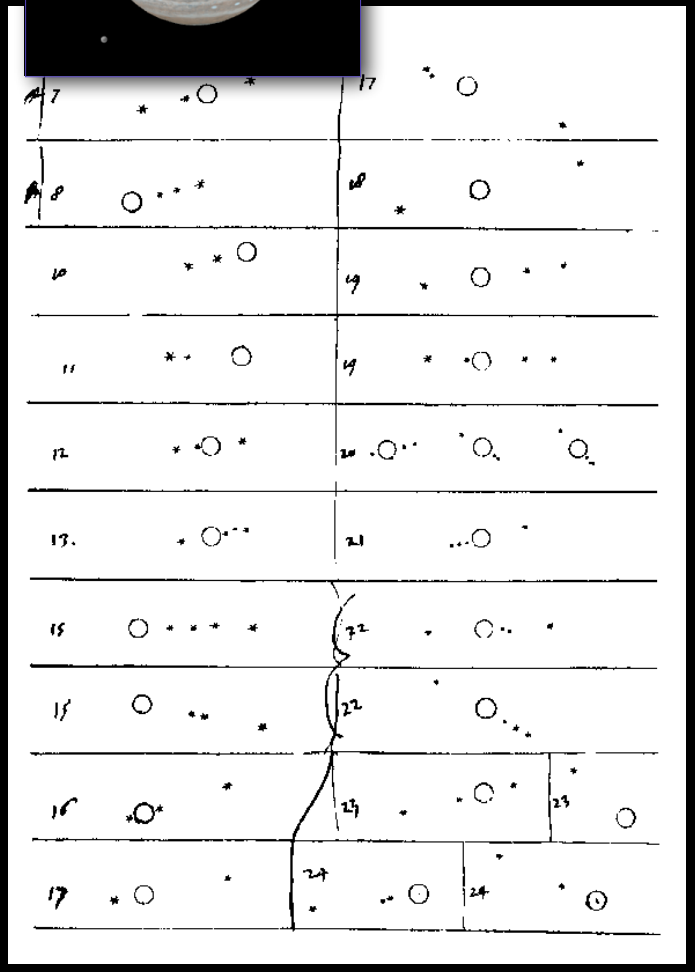
2016

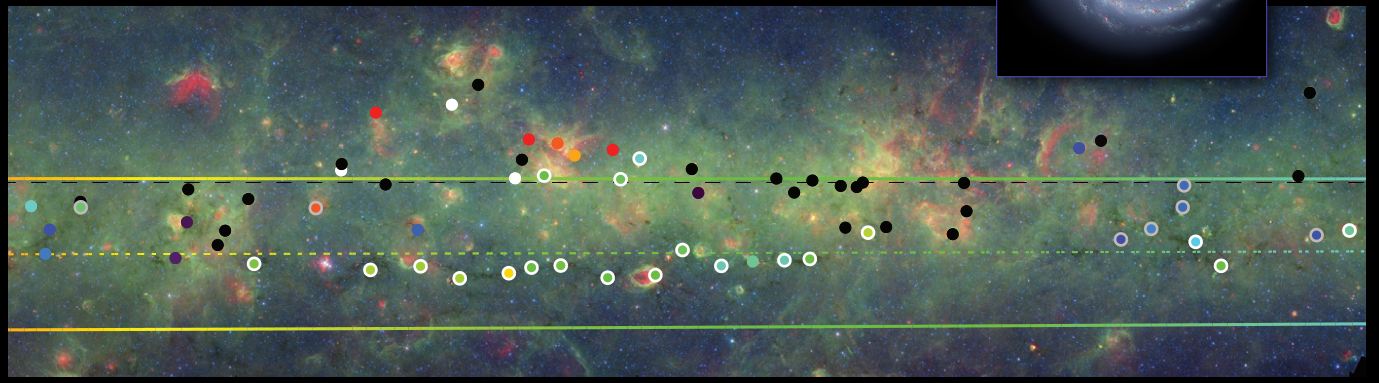
Galileo saw beauty in a world of patterns.

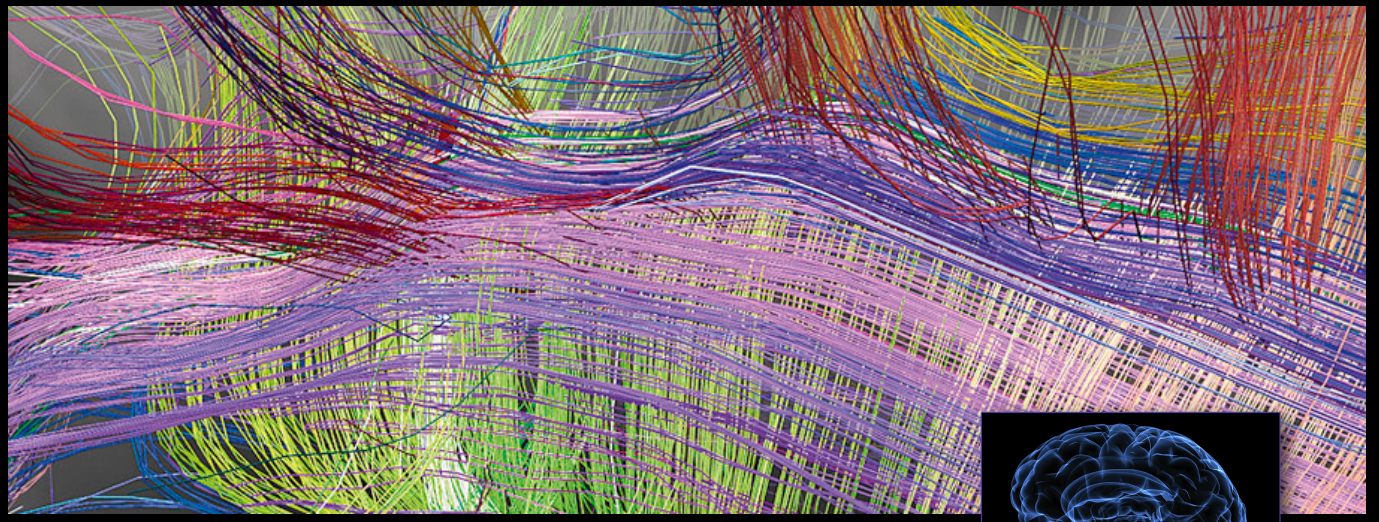
So do I.

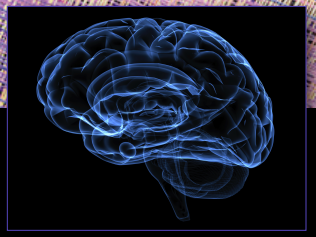












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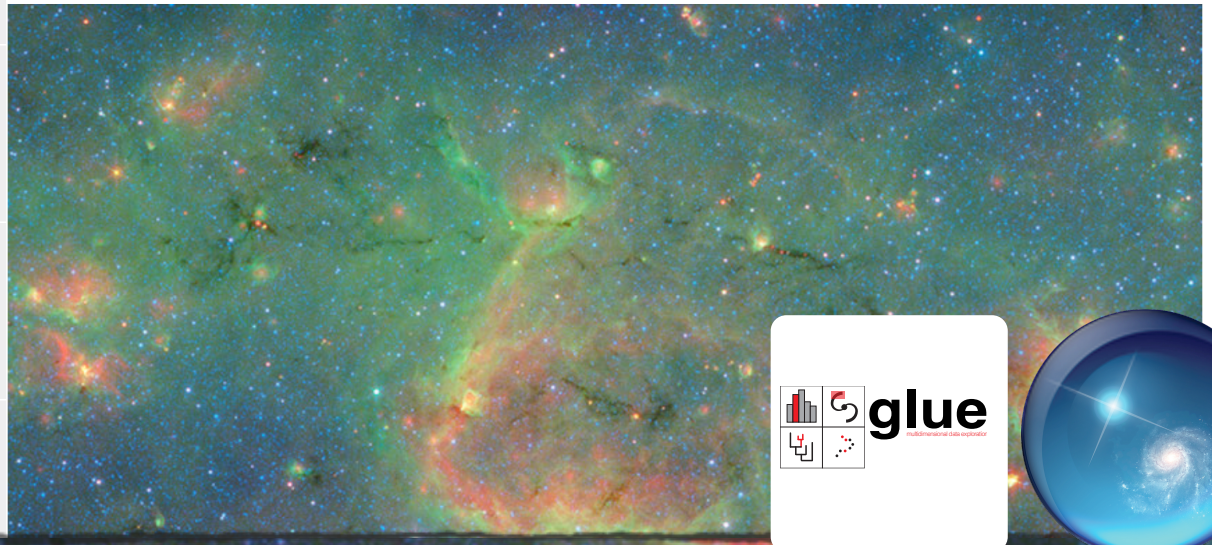
BY CHRISTOPHER CROCKETT 3:07PM, DECEMBER 30, 2015



glue

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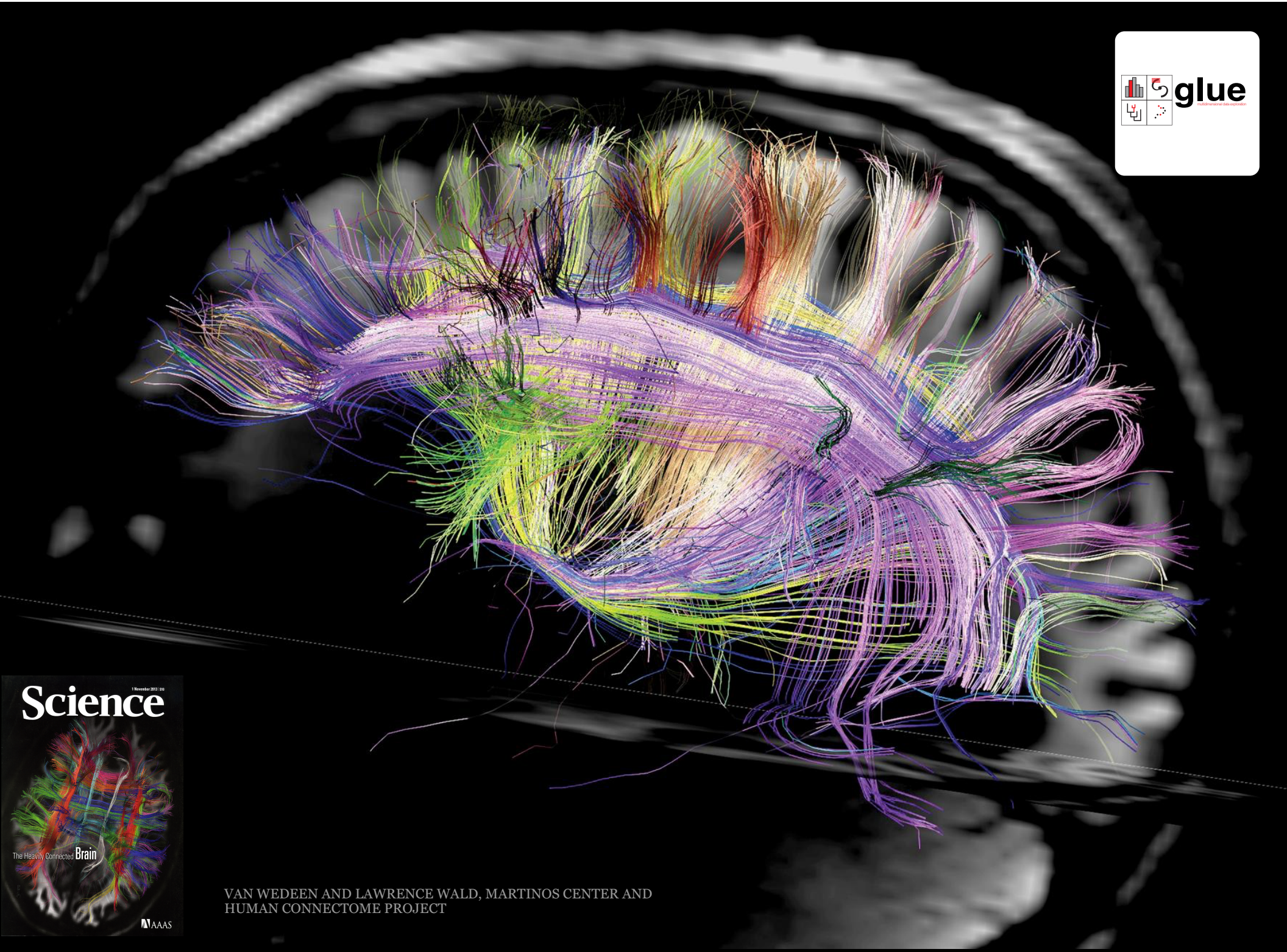
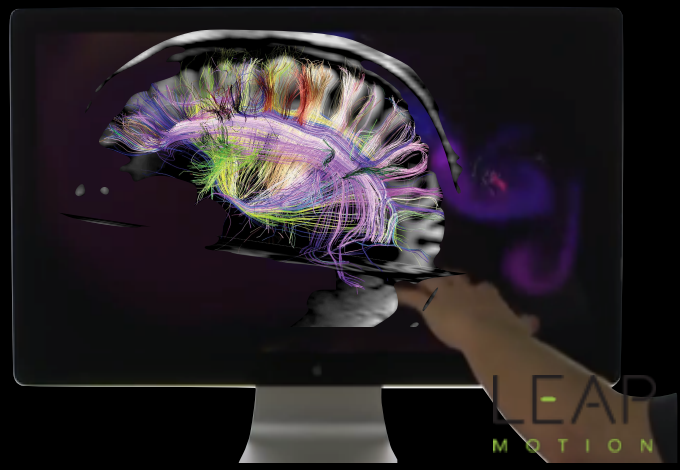


VAN WEDEEN AND LAWRENCE WALD, MARTINOS CENTER AND
HUMAN CONNECTOME PROJECT

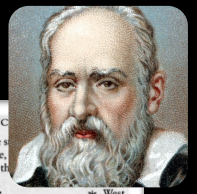
REPURPOSING TOOLS



Microsoft
HoloLens

LITERATURE

1610



SIDEREUS NUNC

On the third, at the seventh hour, the s
sequence. The eastern one was 1 minute,
the closest western one 2 minutes; and th

East * ○ * * West

10 minutes removed from this one. They were absolutely on the
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East * *○ * * West

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from Jupiter; Jupiter was 4 minutes from the nearest western one,
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were nearly equal; the one closest to Jupiter appeared a little smaller
than the rest. But at the seventh hour the eastern s
30 seconds apart. Jupiter was 2 minutes from the

East ** ○ * *

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and extended on the same straight line along the ec

On the fifth, the sky was cloudy.

On the sixth, only two stars appeared flanking Ju

East * ○ *

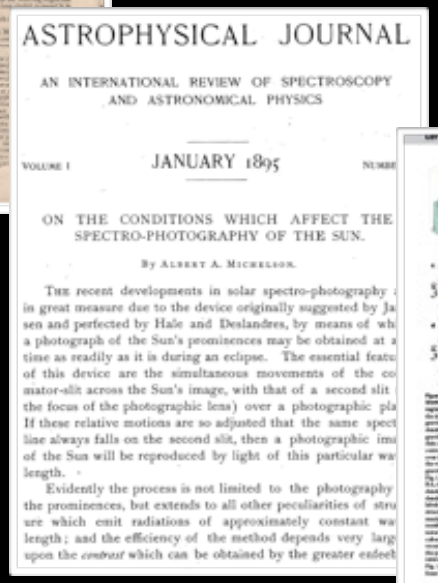
in the adjoining figure. The eastern one was 2 mi
western one 3 minutes from Jupiter. They were on th
line with Jupiter and equal in magnitude.

On the seventh, two stars stood near Jupiter, bo
arranged in this manner.

1665

PHILOSOPHICAL
TRANSACTIONS

1895



ASTROPHYSICAL JOURNAL

AN INTERNATIONAL REVIEW OF SPECTROSCOPY
AND ASTRONOMICAL PHYSICS

VOLUME I JANUARY 1895 NUMBE

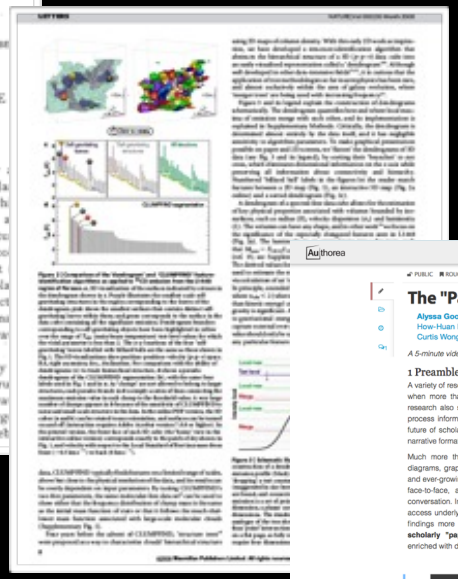
ON THE CONDITIONS WHICH AFFECT THE
SPECTRO-PHOTOGRAPHY OF THE SUN.

By Albert A. Michelson.

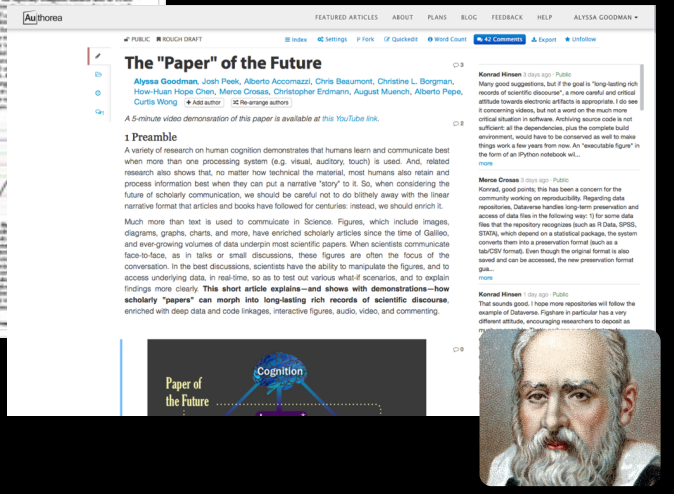
The recent developments in solar spectro-photography
in great measure due to the device originally suggested by Ja
sen and perfected by Hale and Deslandres, by means of wh
a photograph of the Sun's prominences may be obtained at a
time as readily as it is during an eclipse. The essential featu
of this device are the simultaneous movements of the co
mator-slit across the Sun's image, with that of a second slit
the focus of the photographic lens) over a photographic pla
If these relative motions are so adjusted that the same spect
line always falls on the second slit, then a photographic ima
of the Sun will be reproduced by light of this particular wa
length.

Evidently the process is not limited to the photography
the prominences, but extends to all other peculiarities of stru
ure which emit radiations of approximately constant wa
length; and the efficiency of the method depends very larg
upon the *contrast* which can be obtained by the greater endeet

2009

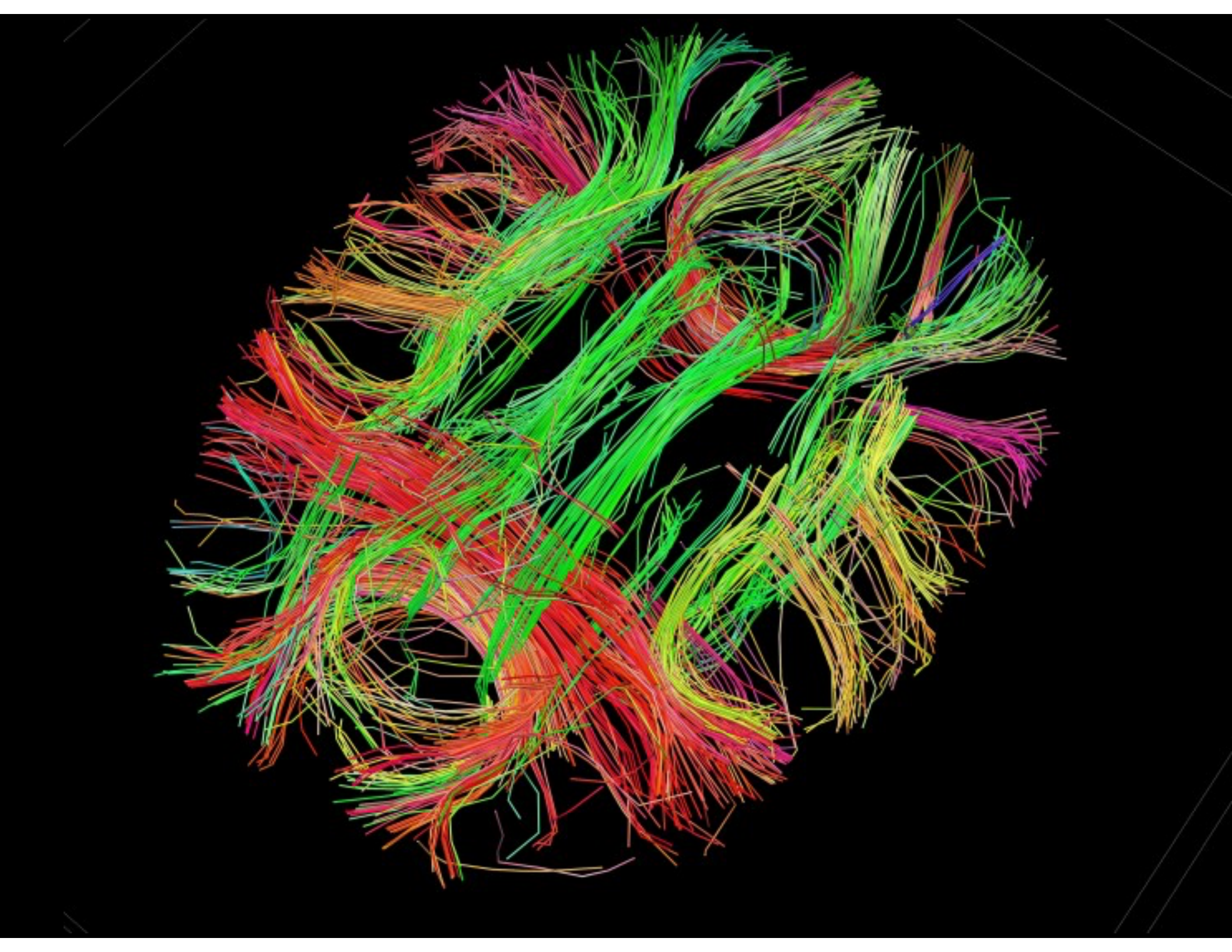


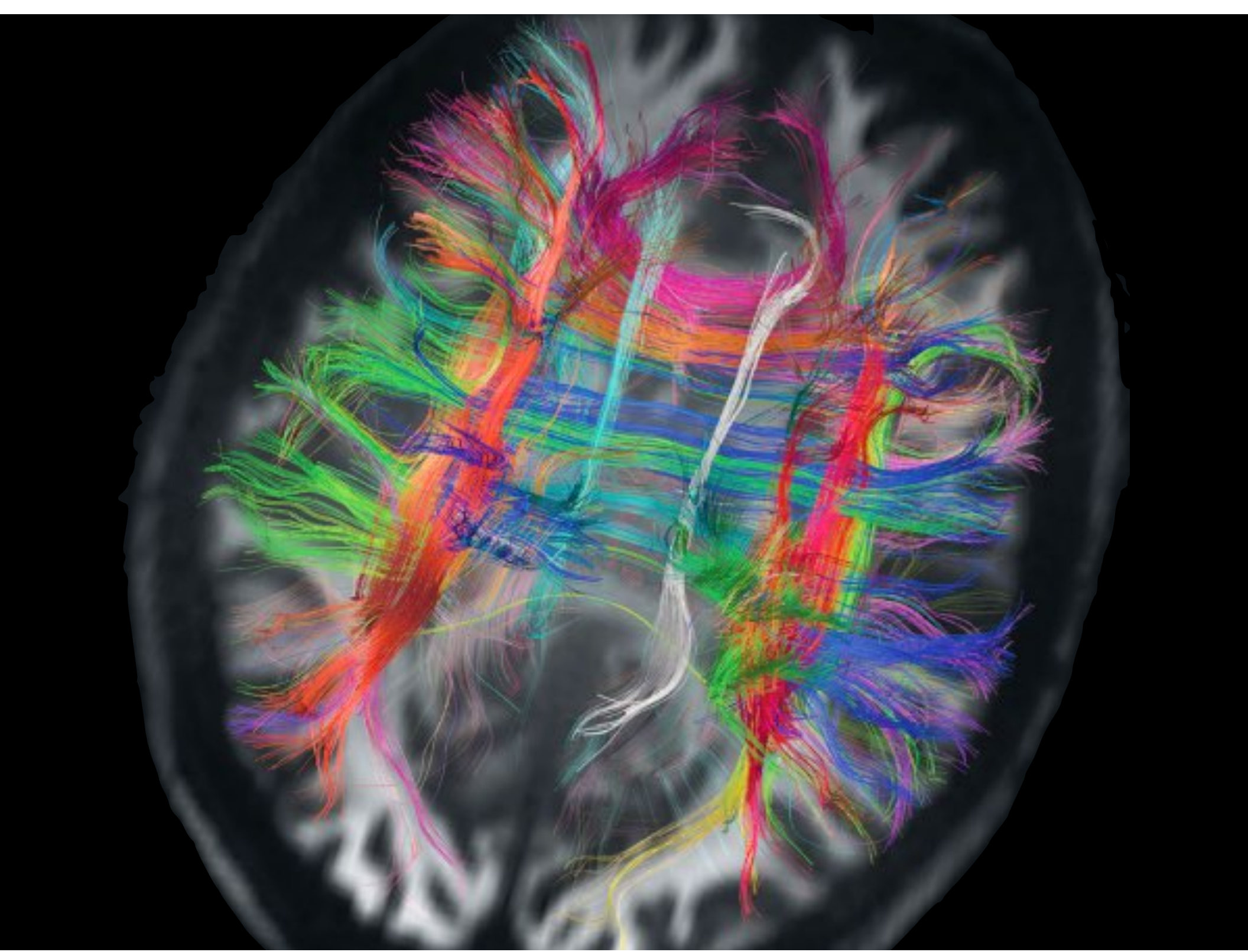
2015



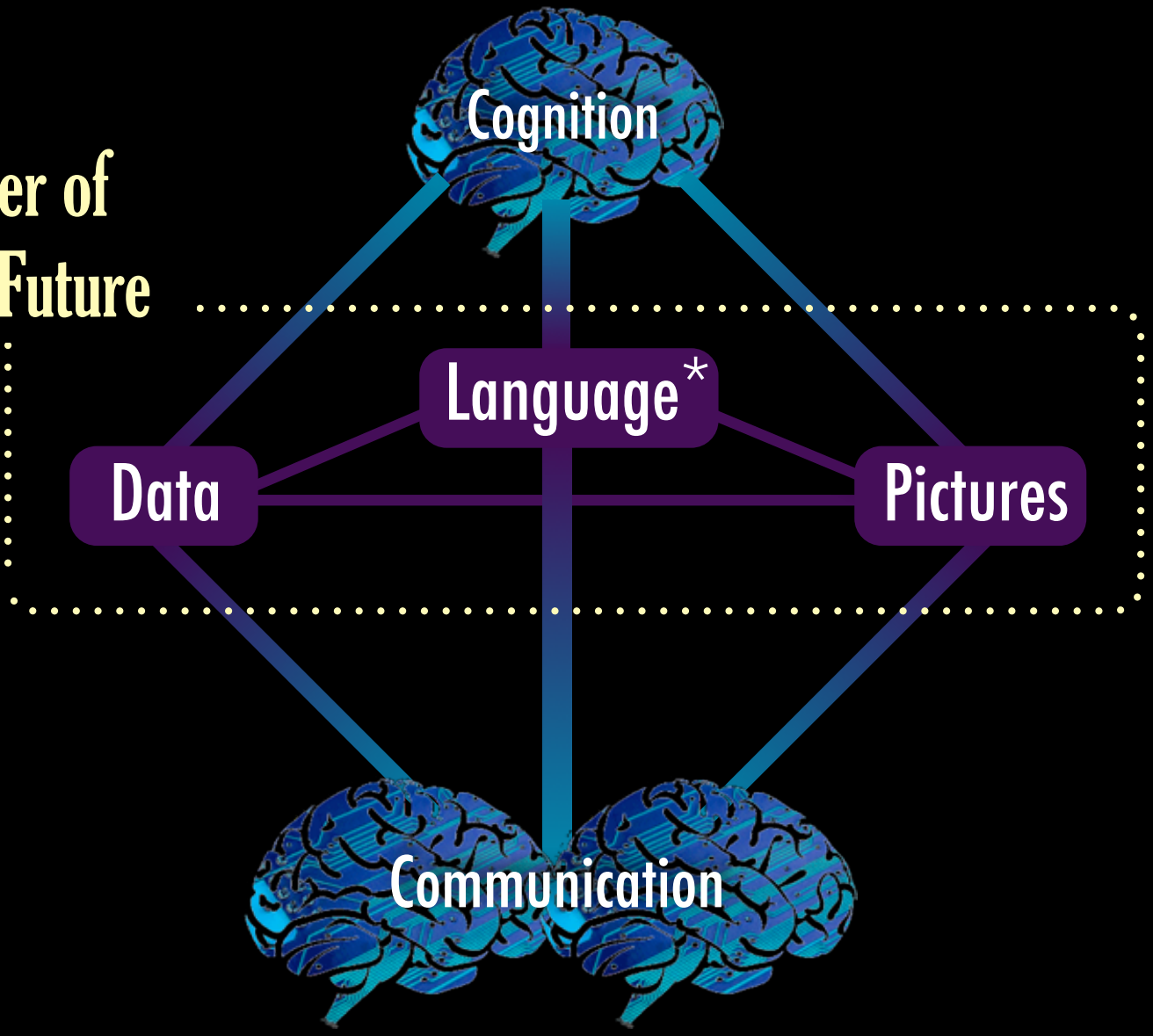

big.bright.bold.
COUR Annual Symposium and Campaign Leaders Forum

extra slides





Paper of the Future



*"Language" includes words & math