

2^d Jan^r 1776

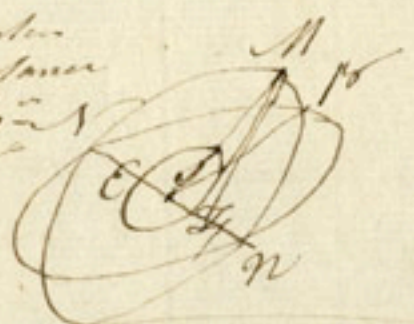
When the orbits of the planets
in the plane of the ecliptic
the figure of their orbits would
be distinct as in the last
lecture - Nodes so called
the admitting of them -
Ascending Node - Descending so
called with respect to our si-
tuation - To find the place of the
Nodes - I as before the earth
as seen from the sun - Nodes are
found diametrically opposite - Line
joining the nodes passes thro' the

sun
position of the Nodes in 1750

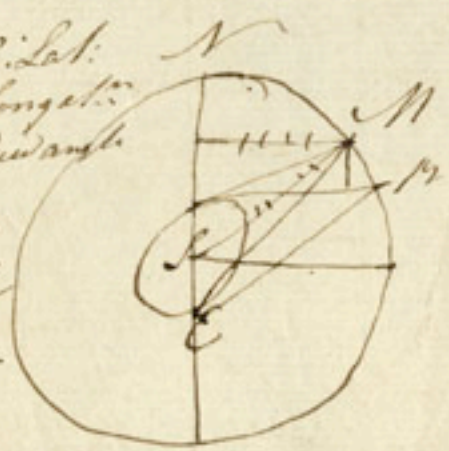
M. 1 ^h 15 ^m 21 ^s 15 ^u	} by Mayor and Lande
V. 2 ^h 14 ^m 26 ^s 18 ^u	
Ma. 1 ^h 17 ^m 36 ^s 30 ^u	
J. 3 ^h 8 ^m 16 ^s -- ^u	
S. 3 ^h 21 ^m 31 ^s 17 ^u	

The posⁿ of the nodes changes
 - To find the inclination of the
 planes of the orbit - of ϕ Pallas Sat.
 is the measure of the planets orbit
 inclination from the sun -

SN - real Dist.
 SP - Earth Distance
 MS - Inclination
 was operation
 M - sun



MEP = ϕ Lat.
 MES = Elongat.
 PEG = vertical angle
 PE = PM
 P = ϕ Lat



S, Elongⁿ of ϕ Lat. P = ϕ Inclination

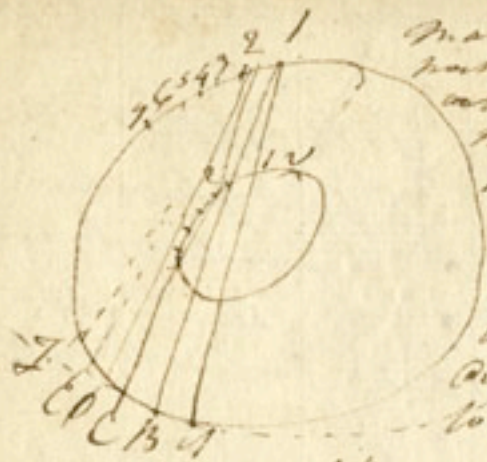
Inclination of Pallas Jan^r 1750

M	7 ^o -	} 1 ^o line of the Node 2 ^o line of the orbit point of Maxis Eccentricities Inclination of the orbit
V	3 ^o 20	
Jove	5 ^o -	
Mars	1 ^o 30	
Jup	1 ^o 20	
Sat	2 ^o 20	

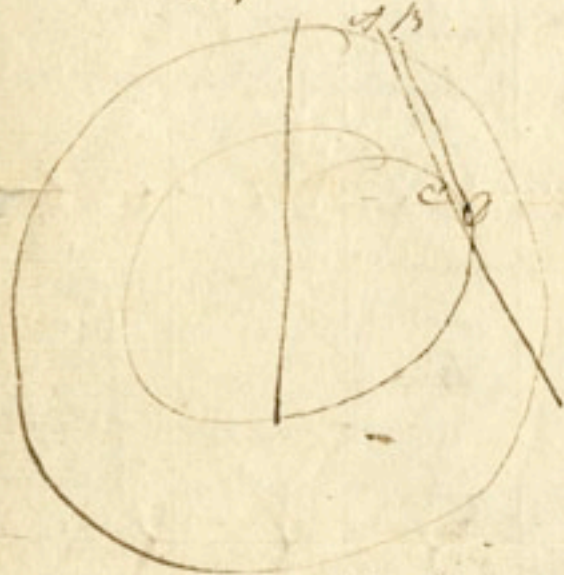
In what manner the real M^s of
 the planets produce the irregular
 motion
 Superior planets
 - Venus



NEC = Elongⁿ
 of the EC to the
 the orbit of Venus
 Venus in the upper
 part of the orbit
 as seen from Earth
 is in the orbit at
 largest



Mark out some
 portion both in the
 orbit of Venus and
 the Earth by
 this means we
 get the ellipse
 greater than
 when a tangent
 drawn from Earth
 to Venus

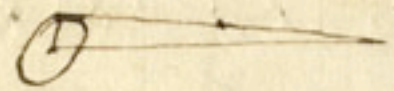


3 Jan⁴

Gall: 7 Jan⁴ 1710 observe
 stars about Jupiter

Jan 10	+	+	0	+
Jan 11	0	+	+	+
Jan 12		+	+	0
Jan 13				
Jan 14	+	0	+	+
Jan 15				
Jan 16				
Jan 17				
Jan 18				
Jan 19				
Jan 20				
Jan 21				
Jan 22				
Jan 23				
Jan 24				
Jan 25				
Jan 26				
Jan 27				
Jan 28				
Jan 29				
Jan 30				
Jan 31				

To find the dimensions of the
 orbits -



To find the time of revolution
 by Jupiter's place -
 or by the eclipses of Jupiter's
 moons a $\frac{1}{2}$ product revolution
 by a n. of the

Lunar Motions of importance
to navigation - to the Philos?

Note made the first accurate
observation - Col. N. is noting
when the new moon happens on
the first day of Jan^r.

235/14⁹ + 7⁴ # 12 44 3 11 S. Rec^d
9.29. 12.44 3 11 S. Rec^d
27. 7. 43. 2 P. Rec^d

The G^r shows the n^o of years since
the new moon happened on the
first of Jan

but subject to changes -

37 1/2 or app^r 21. July 1/4 whole
29 1/2 Less app^r 21. Dec

the form of the moon varied
between at the center.

1/2 for changes - Larger in
winter than in summer the
reason why

3272-11 42 N^o of the days

There appears the impossibility
of representing on any machine
either the prop^l May^r or Outlines

- Planetary diameters -

Support the Earth	1 Inch & 1/2
Then the Sun ..	9 Feet
Mercury - - - -	.42 Inches
Venus - - - -	.7 Inch
Mars - - - -	.5
Jupiter - - - -	10 Inches
Saturn - - - -	7.2 Inches

Distances

Mercury	357
Venus	733
Earth	1000 feet
Mars	1523
Jup ^r	5207 5207
Saturn	9540
	10000 feet or

1.5 Mile since the circumference
of Saturns orbit would be ^{above}
11 miles near 11 1/2 miles

Can this be the true system
of the world? Do the Planets
all move round the sun? can
such a large unweildy body
as this earth move? are not
appearances contrary to this
supposition? - That the Planets
move round the sun we are
certain - we see their motion &c
- Does the earth move - This
celebrated question has been agi-
tated ever since the revival of the
true system -

There is one class of men who
believe this doctrine because it
is fashionable - another that
pursue by duty it - that it
is contrary to the principles both
of common sense and of Religion
on account of both these I &c

a Roman Priest would visit
a crucifix and all the time so
long temporary of superstition
for three months three points
of stars a day by way of admi-
ration - All this happened in
1621 -

What a wretched figure do
Le Sen & Jacquin - make
- Disparition -

Strange that a funny insect
crawls on the surface of this
globe should attempt to walk
by ten degrees the laws of the
Solar System - or to force
our assent to propositions
which reason demonstrates
to be false - The pre born

nothing can only be con-
futed by Argument - She sit
down beyond the reach of calumny
by irony and laughs at every
attempt to enslave her -

Persuasion in this instance
produced its usual effect - The
great Discoverer of God's Jew
like light night Mrs. Emory
Every one was eager to what
it was that had drawn down
upon his aged head the dis-
grace of the church - ~~They~~
His arguments carried conviction
to the soul - The true system was
soon established on a foundation
which the combats of dispute
and suspicion will never be
able to shake

- I. Remove the objections
- II. Direct proof

1. We see the earth at rest
and the heavenly bodies move
- This must be the case
from the nature of vision -
- familiar examples - Cabin
- chair window - hole in the
bottom - turn round -
- ship approaching each other
- of the whole move, no motion
discernible ~~at~~ among the stars
- Distance of eyes -

2. Men would fall off
3. Buildings would tumble

4. Stone would fall 1 mile
in 2 seconds to the westward
— though of the like nature —
All these arise from a mis-
conception of the laws of motion.
Ship — Chariot — Boat —