

9
Inner City sky

7
Suburban/urban
transition

5
Suburban sky

3
Rural sky

1
Excellent dark
sky site

5-planetes
↳ wanderers

Altair

Rasalhague

IC 33

IC 4665

Cebalrai

Jupiter

Nunki

NGC 653

Sabik

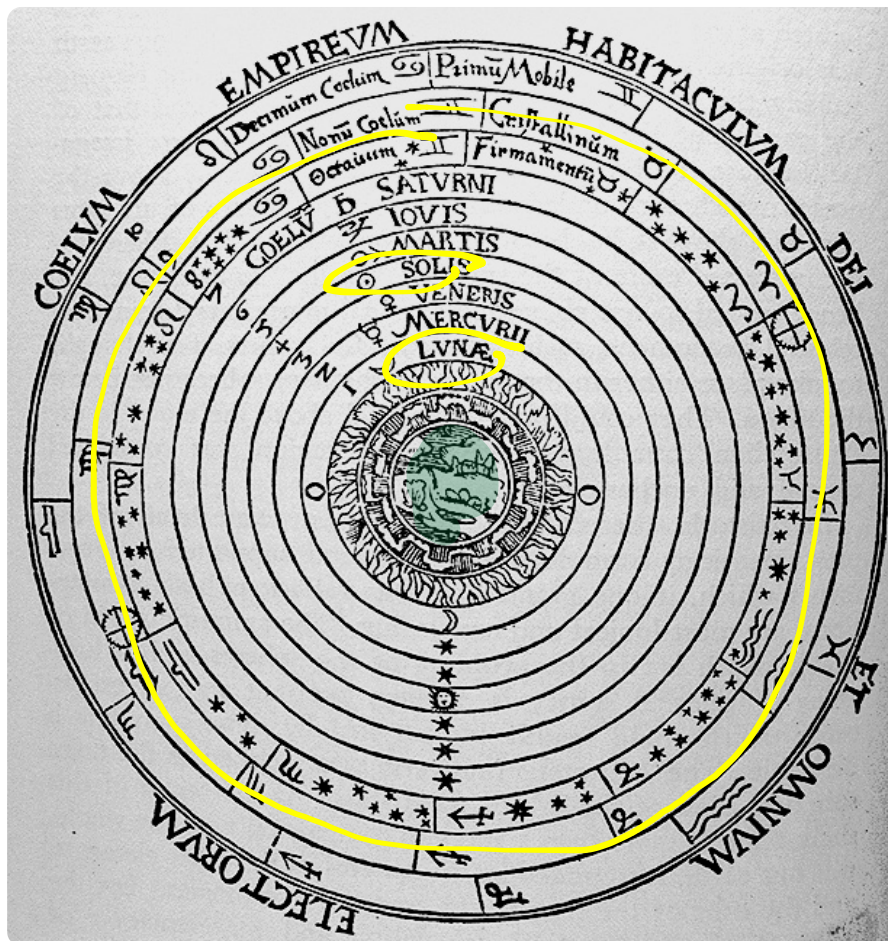
Earth, York, 13m

FOV 60°

27.8 FPS

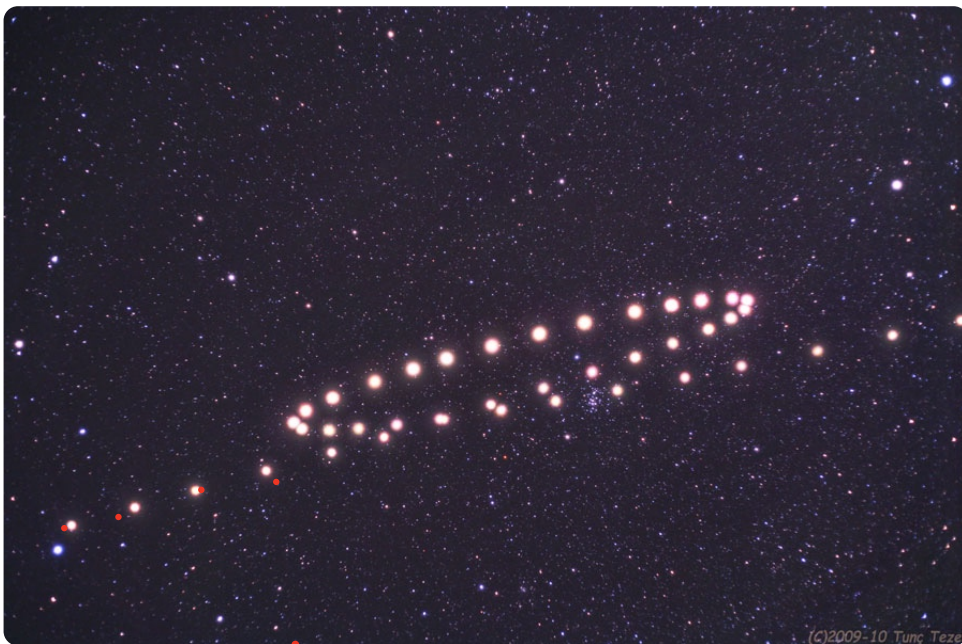
2008-09-24 20:20:54

- makes the first geocentric model.

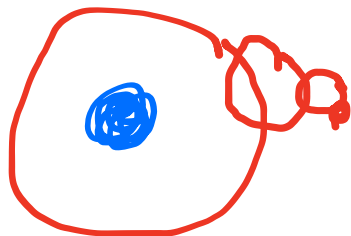


If Mars orbited around
the Earth, we'd see it
go like

4/20 4/21 4/22 4/23 4/24 4/25

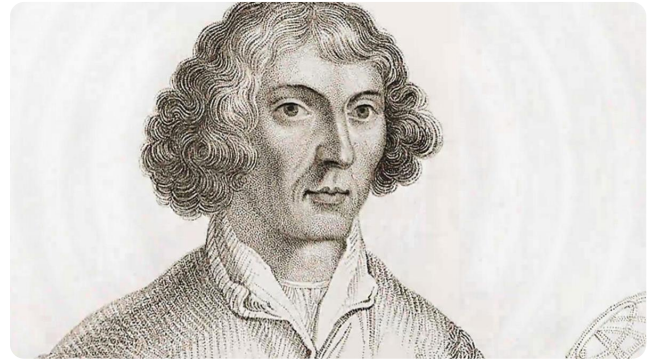


Ptolemy's adherents added
epicycles to orbits.



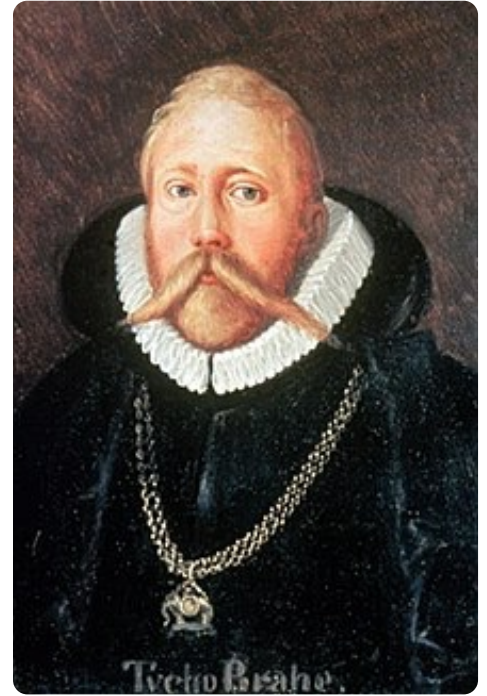
Nicholaus Copernicus- (1473-1543)

- First mathematical
heliocentric model
sun centered
- Based on perfect
circles.



Tycho Brahe- 1546-1601

- the best observational astronomer ever!
- he's gifted the island of Hven to build Uraniborg
- hires Kepler



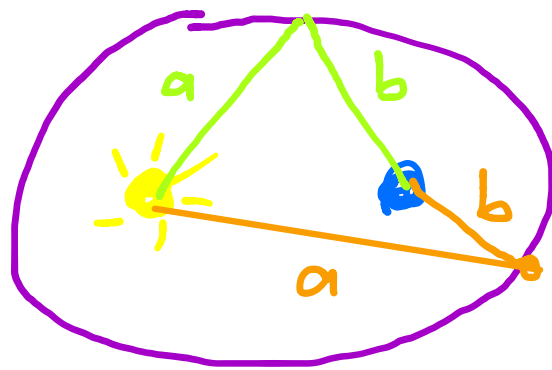
Johannes Kepler- 1571-1630

- formulates Kepler's Laws



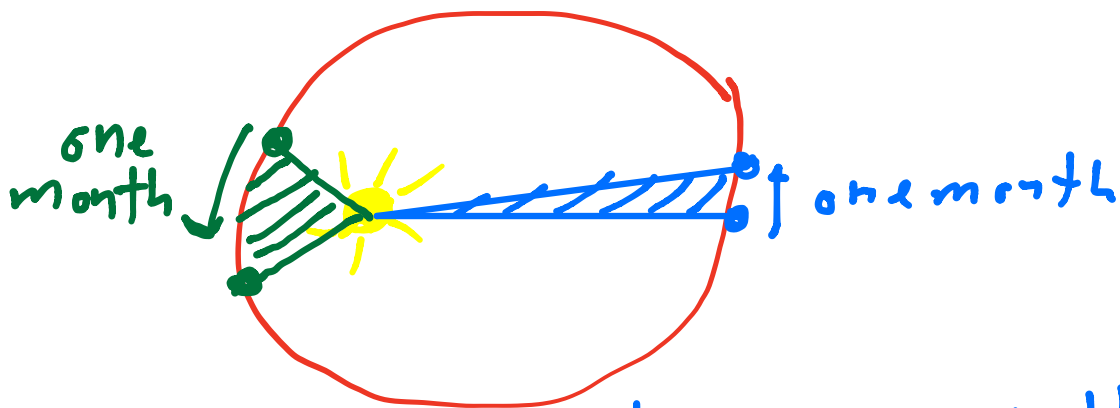
Kepler's Laws of Planetary Motion

1. Planets orbit the sun in elliptical orbits with the sun at one focal point.



$a+b = \text{constant}$

2. Planets sweep out equal areas in equal times.

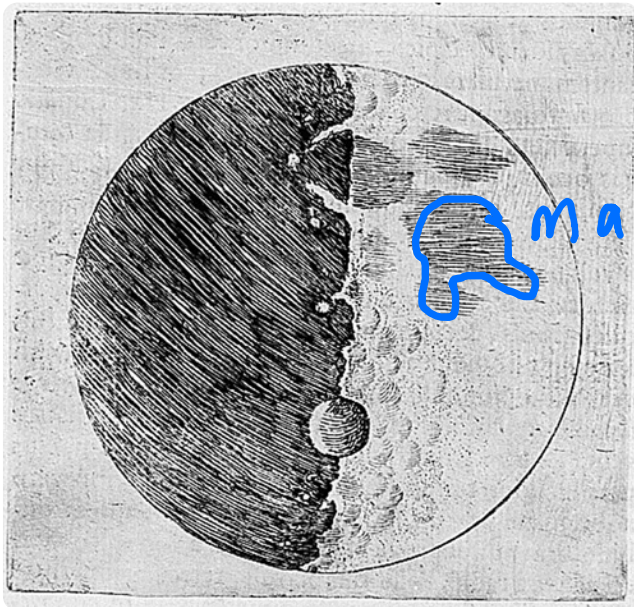


Planets speed up near the Sun.

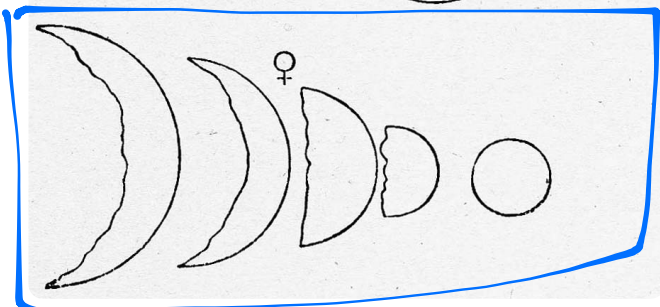
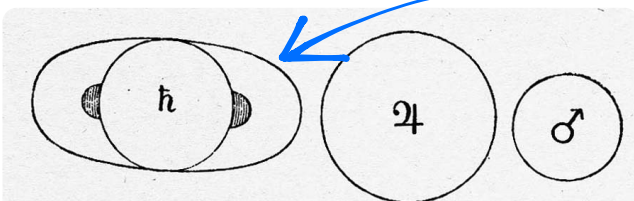
3. There is a constant $k = \frac{T^2}{R^3}$ for every system. $k = \frac{4\pi^2}{Gm}$

Galileo Galilei- 1564-1642

- invents a
telescope



"Ears"



Observations Jupiter				
20. Jovis.				
max H. 12	○	*	*	
30. max	*	*	○	*
2. Jovis.	○	*	*	*
3. max	○	*	*	
3. Ho. 5.	*	○		*
7. max	*	○		*
6. max	*	*	○	*
8. max H. 13.	*	*	*	○
10. max	*	*	*	○
11.	*	*	○	*
12. H. 4. max	*		○	*
13. max	*	*	○	*
14. max	*	*	○	*

Discovers
4 moons
around
Jupiter.