

Impressions from *Sidereus Nuncius*, the historical books and instruments

Motion

Conventional view (Galileo's original view)

“all natural motion, whether upward or downward, is the result of the essential heaviness or lightness of the moving body...”

“the same body moves more swiftly in a rarer than denser medium... the cause of speed/slowness is density of medium”

“Natural” motion exhibits a uniform speed that depends on the body's heaviness/lightness.

Non-natural motions (a thrown ball) result from an impressed force applied from outside the object, which drains away after the object is released, while the ‘natural motion’ takes over.

Objections to the earth's motion included: if the earth moved that fast, there would be a great wind; a dropped object would not land below its release, etc.

Examples of motion:

Observe some motions. Can you tell if the conventional claims about motion are borne out?

How ambiguous is your observation – how much space for doubt?

What changes might you make in doing/observing the motions, that could clarify more of what is going on?

Where/what comes up in your observing that moves you to considering motion differently from the above claims?

You might consider ways of comparing different motions while observing them.

Discussing what you tried, this time; last time

Exploring with lenses, mirrors

Outside Observing at the Great Court

Assignment for SES #7

Write from your activities and observing in class and outside of class.

Watch for the sky and the moon.

Observe everyday motions around you.

Consider your impressions of things moving and coming to a stop.

Consider analogies between motions you see and those that Galileo explored and described.

Under Galileo Motion

“Galileo's Experimental Research”, by Thomas Settle, read esp p 5-7; 13-16; 20-22; 27-28; 48-49

Reflect on the diversity of motions and properties that engages Galileo; the changes in understanding, apparatus, conjectures; the multi-leveled story of his physical explorations and learning.

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EC.050 Recreate Experiments from History: Inform the Future from the Past: Galileo
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