

MICHELSON MORLEY VIDEO NOTES

(Find video by searching for Episode 41 The Michelson Morley Experiment)

Name: _____

Period: _____

1. What was the Michelson-Morley experiment designed to do?
2. What was the luminiferous ether?
3. The Michelson Morley experiment occurred:
 - (A) in Philadelphia in the 18th century
 - (B) at Cal Tech in the 20th century
 - (C) in London in the 17th century
 - (D) in Cleveland in the 19th century
4. What does the speed of a wave depend on?
5. If planets move through "stiff, incompressible ether" what should the planets do over time?
6. How does an interferometer measure the speed of light?
7. For the Michelson interferometer, the difference in time for two paths of light was about 1 part in
 - (A) 10^8
 - (B) 10^{-8}
 - (C) 10^4
 - (D) 10^{-4}
8. What sort of problems did Michelson have with his first interferometer?
 - (A) It was sensitive to movements of people/horses moving outside the lab building.
 - (B) It took a day for a single measurement.
 - (C) It ended up not being sensitive enough to measure the expected interference of light.
 - (D) All of the above
9. What improvements were made to Michelson's second interferometer?
10. What was the surprising outcome of the Michelson-Morley experiment?
11. The Michelson-Morley experiment lead to a new principle of relativity? What does this mean about the speed of light, and space and time?