

School of Basic and Applied Sciences

Course Code : MSCP6001

Course Name: ELECTRODYNAMICS

Electrodynamics

Topic Covered

- The Michelson-Morley Experiment
- References

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Name of the Faculty: Dr. ASHUTOSH KUMAR

Program Name: M.Sc. Physics

The Michelson-Morley Experiment

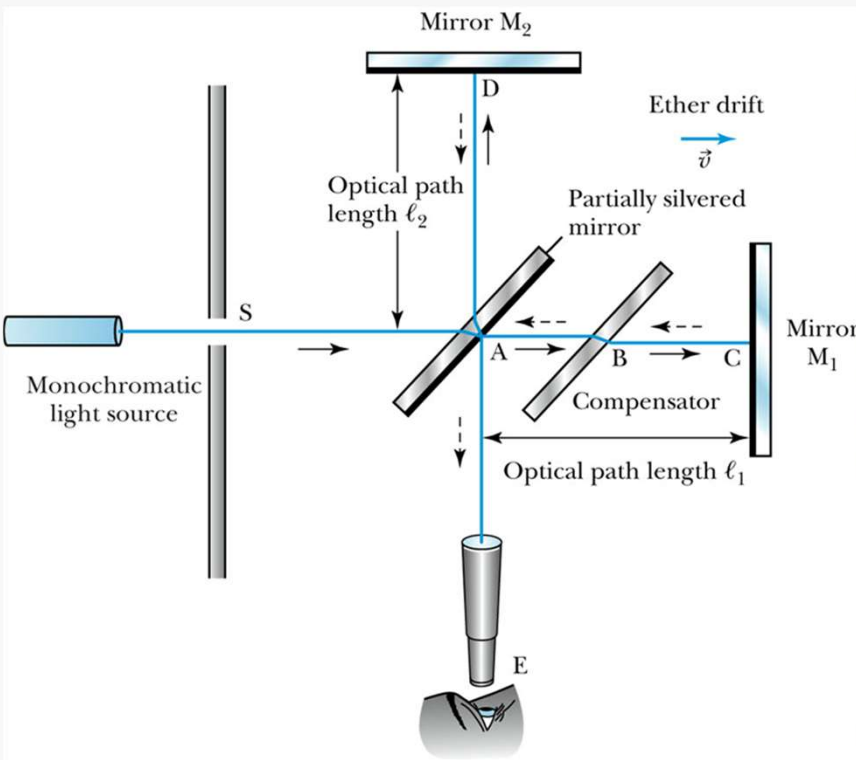
- Albert Michelson (1852–1931) was the first U.S. citizen to receive the Nobel Prize for Physics (1907), and built an extremely precise device called an *interferometer* to measure the minute phase difference between two light waves traveling in mutually orthogonal directions.

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The Michelson Interferometer

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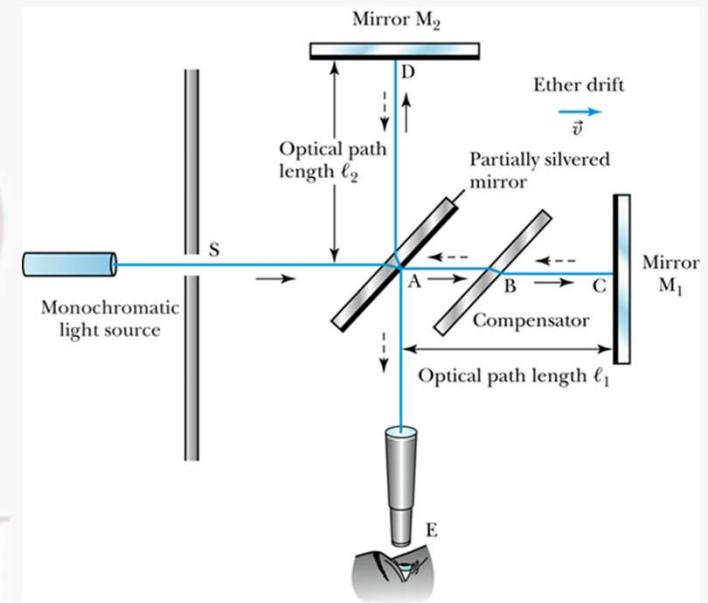
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The Michelson Interferometer

1. AC is parallel to the motion of the Earth inducing an “ether wind”

2. Light from source S is split by mirror A and travels to mirrors C and D in mutually perpendicular directions

3. After reflection the beams recombine at A slightly out of phase due to the “ether wind” as viewed by telescope E.



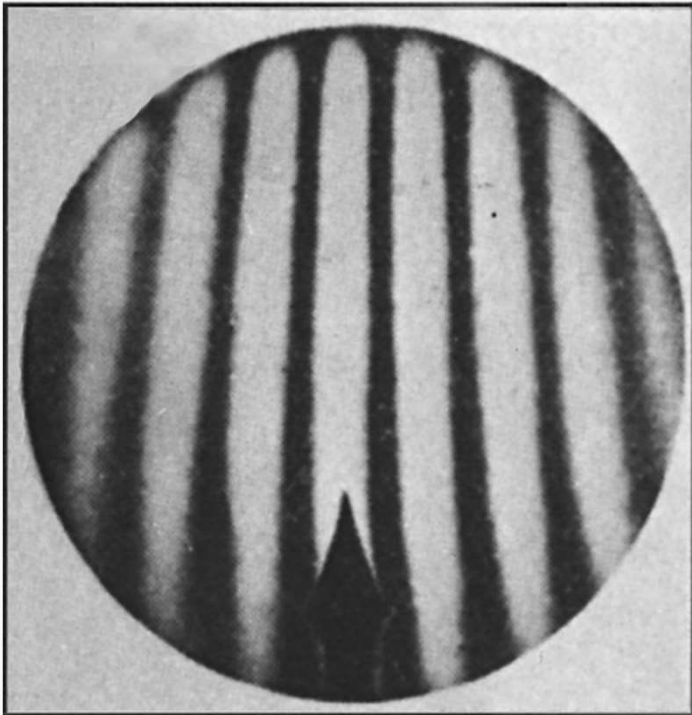
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The Michelson Interferometer



Fringe pattern expected when the system is rotated by 90°

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References

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