

THE LAWS OF THE UNIVERSE IN EARTHLY AND HEAVENLY LIFE !



CHAPTER XXVI

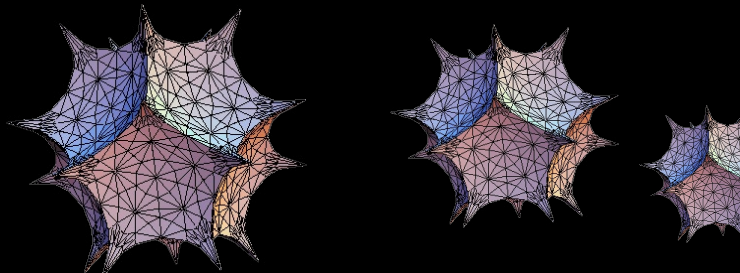
The Constant Background Field Experiment

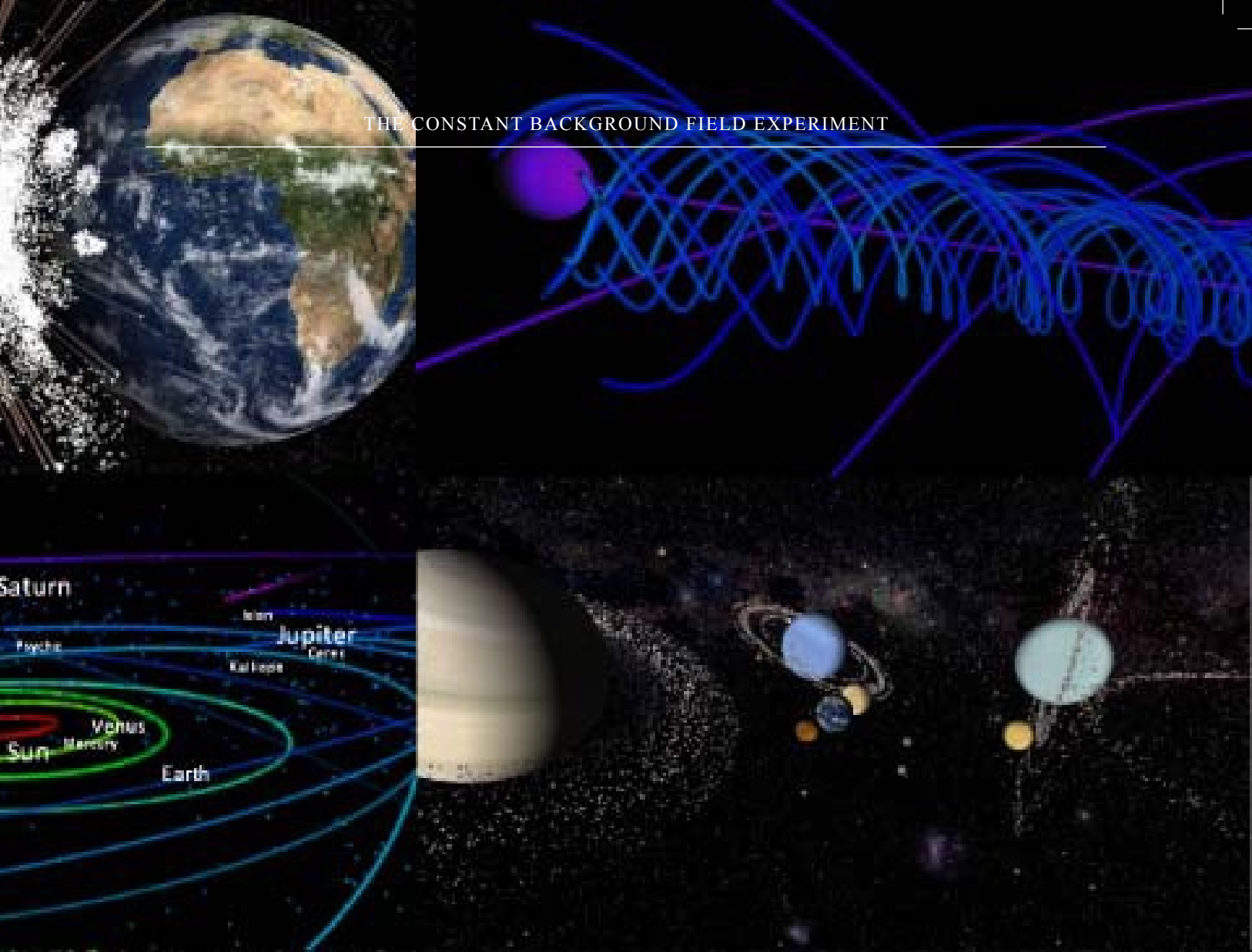


A. A. Michelson



E. W. Morley



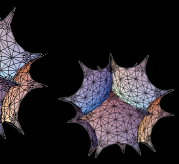


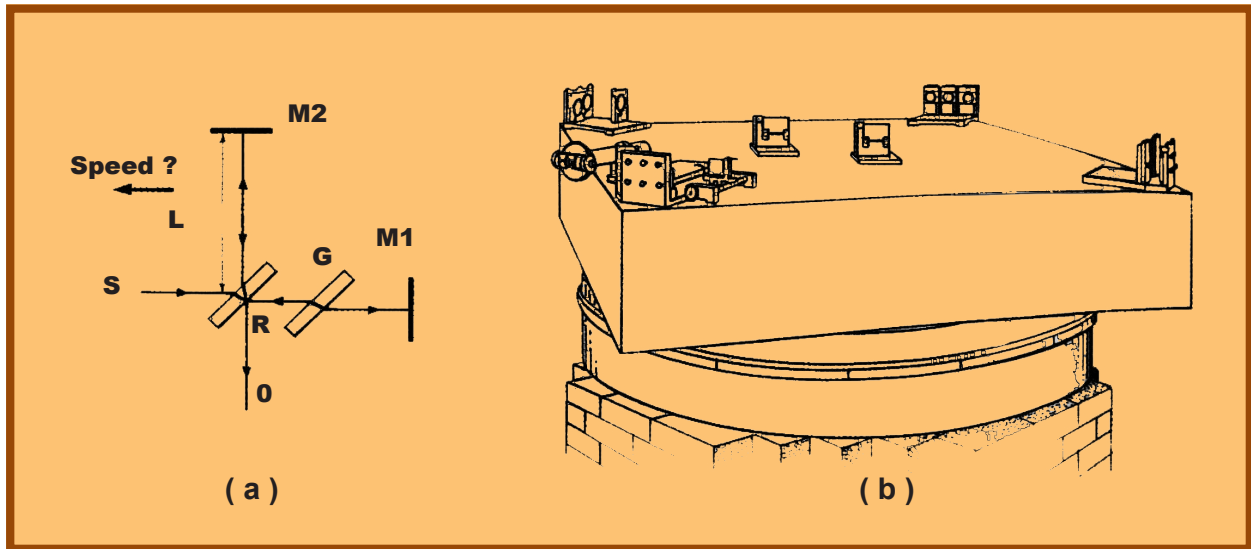
The Michelson-Morley experiment originates from Albert Michelson's profound concern to penetrate the unknown mechanisms on the basis of which the universe operates. The determination of the absolute velocity of the Earth, that is to say, the velocity of its motion in relation to the immobile Ether led him to the initial experimental calculations of the velocity at which light travels.

Michelson thought that as the Earth travels elliptically around the sun, it travels at a particular velocity V and in an ocean of Ether. This motion is equivalent to an "Ether current" with velocity V , that is to say, an opposite direction in relation to the Earth, which we regard as immobile.

A light beam, which, at that time, they believed was a wave of the Ether which would be transmitted from the Earth, would have a velocity $c-v$ in relation to the course of the orbital motion of the Earth around the sun and $c+v$ if the transmission had an opposite direction. The difference $(c+v)-(c-v) = 2v$ in velocity between the optical beam towards and opposite the current of the Ether respectively is equal to double the velocity of the Earth in relation to the Ether.

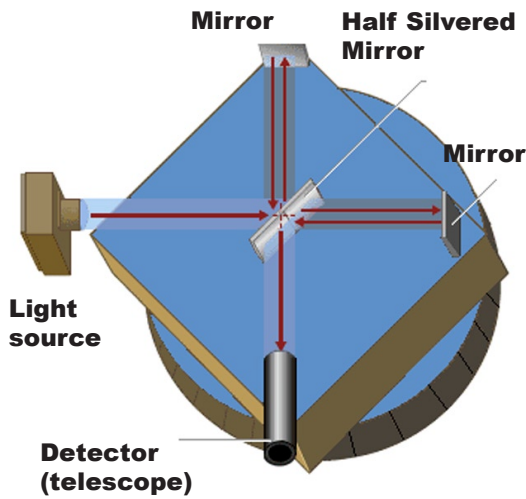
This difference between the velocities of an optical beam which is transmitted in correlation with the course, and one in the opposite direction of the course of the Earth, towards the Ether, Michelson tried to verify experimentally.





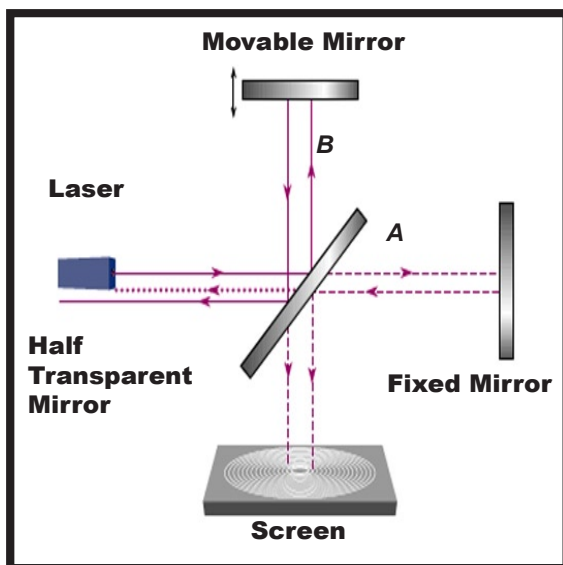
Michelson - Morley Equipment

Schematic diagram of A. Michelson's symbolometer. The light source is at S point, the observer at O, while at points M1 και M2 mirrors are placed.



In the year 1887 Michelson and the chemist Edward Morley created their own experimental environment in order to complete their investigations.

The method they followed was the following: From a source a light beam s is emitted which is separated into two waves by a lightly silver-plated plaque. The one body is directed towards the mirror M_2 , while the other proceeds regularly towards Mirror M_1 where glass plate G intervenes, with the result that both optical beams follow the same path through the crystal.

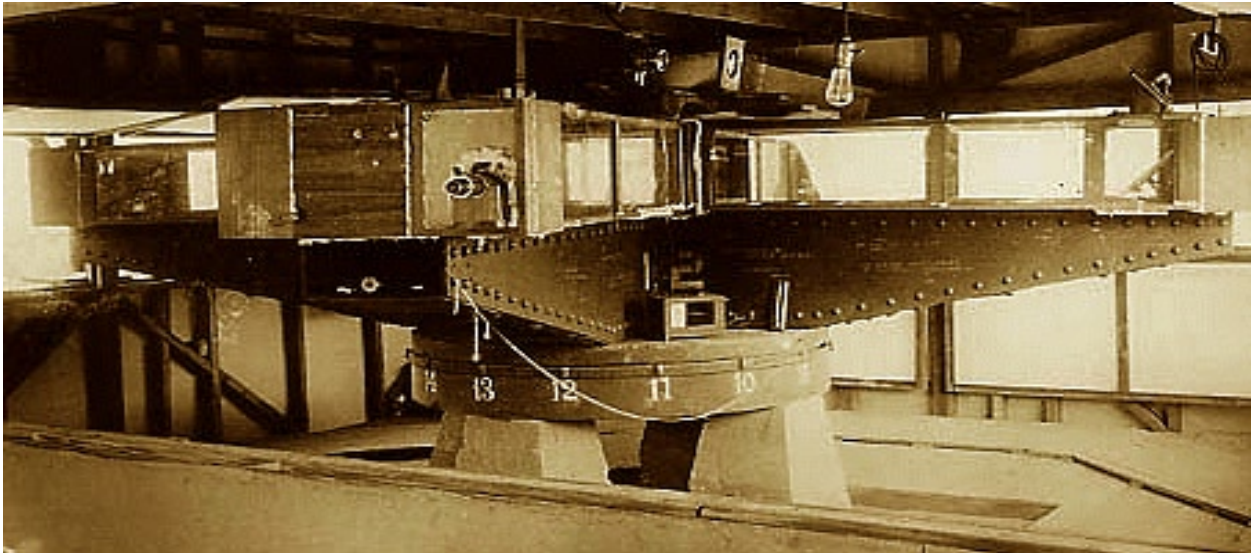


At point O where the observer is located a part of the intensity of light reflected by Mirror M_2 returns and passes into the silver-plated plaque and a part reflected by mirror M_1 and is reflected in the silver-plated plaque.

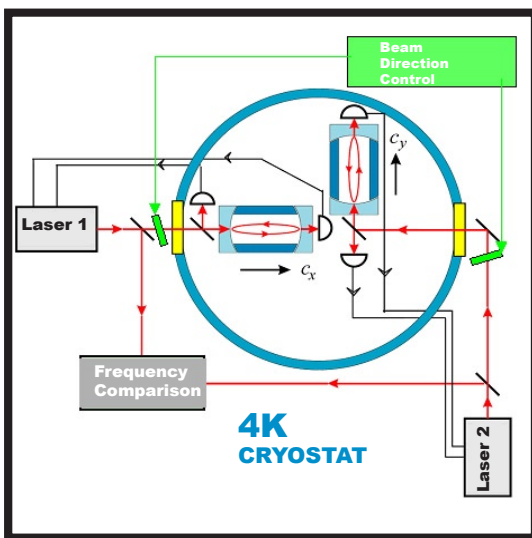
The two reflected beams create between them the phenomenon of contribution.

If, to simplify the observation, mirrors M_1 and M_2 are at equal distances from point R , and the experimental pattern is found to be, in relation to the Ether, in absolute calm, the two waves that return to the observation position will be

found to be in phase, and by means of contribution will mutually reinforce each other with the result that they will produce a brilliant light spot.



The symbolometer that Dayton Miller used on Albert Michelson's behalf during the conduction of their experiments at mount Wilson.



If, however, the experimental apparatus moves with the Earth by means of the Ether for example to the left of the diagram, the light from mirror M_1 along the linear length of its corridor and in relation to the light of mirror M_2 , a slight delay will be noted, with the result that, when the two waves meet at point O , they will be out of phase. This will result in creating fringes of contribution or the central spot will appear less bright.

Michelson and Morley rotated by 90 degrees the entire system of the experimental device in order to confirm whether there appeared some change in

the intensity of the central spot that would result from the change of orientation of the path of optical rays, in relation to the direction of motion of the Ether. However, the two researchers could not confirm any change in the intensity of the light spot, despite the fact that they repeated the experiment in a different season of the year when the Earth changed direction in its revolution around the sun.

The slight difference of the phenomenon that the two researchers tried to detect with their supersensitive device never showed. Michelson claimed that the negative result was due to the fact that during the Earth's motion around the sun, part of the Ether near the Earth drifted with it. Inasmuch as in the experimental environment the zone of the Ether that accompanies the motion of the Earth coexisted with it, it was not possible to observe any relative motion.

The answer to the question comes immediately from Aristotle's definition of the dual nature of the Ether: the Mobile and Immobile. The Earth, the surrounding space and light itself are "structures" of the Ether with the result that the maximum speed of 300,000 kilometers per second that light travels, in relation to the Constant Background Field, is again the Ether, which constitutes Absolute Time - the identification, in other words, of its Mobile and Immobile nature.