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Local Jesuits cited on scientific work

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BAGUIO — A recent observation and suggestion of two scientists here for the correction of the value of the speed of light as obtained by optical methods now in use has come to the notice of the world of science.

This was revealed yesterday by Father James J. Hennessey, S. J., director of the Manila Observatory at the Mirador Hill, this city.

Fr. Richard A. Miller, S.J., head of the solar division of the Manila Observatory, and Fr. Adolf Lopez, S.J., physicist of Bellarmine College of this city, have reported on their calculations in the September, 1959 Journal of the Optical Society of America.

A resume of this is printed in the Science New Letter of November 10, 1959.

Fr. Hennessey said attempts to attain the greatest accuracy for the value of the speed of light have been made by more than one method. Experiments using the radio frequency (microwave) method have arrived at the value of 299,792.5km. sec.

Optical method experiments, using reflecting mirrors report on an approximate value of 299,778 km/sec.

It would seem Fr. Hennessey observed, that the 14 km/sec. or greater discrepancy between those values is possibly due to faulty conclusions from measurements in the optical system and could come from overlooking the time lost by reflection.

It is recalled that reflection from mirror surfaces cannot be instantaneous, such as from mathematical surfaces. Each reflecting surface used in an experiment causes a slowing of the velocity of the beam of light.

Pease and Person's apparatus, between the time of departure from and return to the rotating mirrors for the light beam, interposes thirteen reflecting surfaces into the path of the beam, Their light velocity value comes 19 km. short of the presently accepted approximate value of 299,793 km/sec.

Attention is called to the fact that when light changes its direction, especially when it turns back on itself, its tremendous speed is reduced to zero. This takes time. To start again from zero and reach the original light speed in the opposite direction also takes times.

This is time lost, and should be recognized in the final value arrives at in the experiment, Fr. Hennessey further observed.

In the calculations at the Manila Observatory, Dr. Miller estimated the delay of visible light reflected from a silver mirror and found that it could account for the difference between the early optical and the relent microwave determination of