

PROF. SEE DECLARES EINSTEIN IN ERROR

Naval Astronomer Says Eclipse
Observations Fully Confirm
Newton's Gravitation Theory.

SAYS GERMAN BEGAN WRONG

A Mistake in Mathematics Is
Charged, With "Curved Space"
Idea to Hide It.

SAN FRANCISCO, Oct. 13.—In a public address to the California Academy of Sciences, proclaiming the "complete triumph of the Newtonian theory of universal gravitation over the Einstein theory of relativity for explaining the deflection of starlight passing near the sun at the time of solar eclipses," as observed by the British expedition to Brazil on May 29, 1919, and the Crocker expedition of Lick Observatory to Australia on Sept. 20, 1922, Captain T. J. J. See, Professor of Mathematics of the navy and Government astronomer at Mare Island, yesterday explained the process of calculation by which, he says, this "wonderful discovery" was made after Einstein, Eddington, Richardson, Weyl, Freundlich and a great number of other European mathematicians "had utterly failed to straighten out one of the most perplexing scientific problems of the age."

"It seemed to me very strange," said Professor See, "that the Newtonian theory of gravitation had explained all the observed motions of comets, satellites, planets, and double stars, for three centuries—amounting in all to some 800,000 determinations—and yet could account for only half of the observed deflection of starlight passing near the sun at the time of total eclipses."

"On account of this historical inconsistency, there seemed to be an anomaly, and the impression arose in many minds that an error of calculation might have been made by the mathematicians. Yet as Einstein's followers had proclaimed that not over a dozen mathematicians in the world understood the theory of relativity, and I apparently was not classed as one of these twelve elect modern apostles of the new truth of the universe, I venture to think it required some energy to find the error of the relativists. By persistence, however, I finally succeeded in Einstein's own special field; so that he and the other relativists are now required to learn correct physical mathematics from an old-fashioned disciple of Newton."

Professor See, triumphant, said of his discovery:

"It was calculated by von Soldner of Munich, 1801, that in traveling from an infinite distance up to the sun a ray of light just grazing the solar surface would be bent toward the sun's centre by .84 of a second arc. Writing forty years before the discovery of photography, Soldner did not expect that this deflection could be measured by eclipse observers, and thus he did not double his calculated value, making it 1.68 for a ray passing the sun to be observed by an astronomer on the earth."

"In 1911 Einstein first calculated the deflection of light by a slightly different process from that used in 1801, getting exactly Soldner's formula and numerical value, .84 seconds of arc. In 1916 Einstein doubled his value, making it 1.68, or 1.7 seconds, for rays observed upon the earth; yet he could not explain only half of this amount by the Newtonian theory of gravitation, for he made an error of calculation by which, when the ray had passed the sun to the earth, he still got only .84 seconds of arc, as Soldner had done in 1801, for a ray just coming up to the sun from infinity, but not passing by to be observed upon the earth. The other half of the observed deflection, .84 second of arc, Einstein explained by the doctrine of the 'Curvature of Space,' which is now shown to be erroneous."

"Einstein began his calculation by an erroneous differential equation for the bending of the path of the light. By careless geometry he omitted a multiplier, 2 for the angle, and hence when he integrated the expression to finish his calculation of the bending of the ray he got only half of the value required by correct physical mathematics."

"This error of Einstein was so securely hidden that it escaped all the mathematicians of Europe for the past thirteen years, and as a great mass of literature on relativity now exists a very competent authority has assured me that the error might have escaped notice for another century but for the peculiar circumstances which made the discovery possible at Mare Island, Cal., on Sept. 12, 1924."

"I set about constructing geometrically the bending of the wave-front imagined in the theory of relativity, and when I had made a suitable and accurate figure I was able to show by simple geometry the error in Einstein's original equation of 1911, which has since continued to be repeated by Richardson, Eddington and the other authorities on relativity, not one of them suspecting that all their work was vitiated by an error which a high school student can now understand."

"As an outcome of this discovery we now have a correct method of calculating the bending of the light, by the sun's gravitational attraction. We find that by the correct mathematical theory of Newton the ray should be deflected 1.74 seconds of arc, while the Lick photographs taken by Dr. W. W. Campbell of the Crocker eclipse expedition to Australia, Sept. 20, 1922, gave the observed value as 1.75 seconds of arc. Thus the value calculated by the correct Newtonian theory of gravitation is accurate to six-thousandths of a second of arc, or one part in 300 of the whole quantity involved."

"Newton's theory now perfectly explains all the phenomena of the heavens. Einstein questioned the Newtonian explanation of the motion of Mercury's perihelion, the bending of the starlight at eclipses, and the supposed shift of the spectral lines toward the red, by two one-millionths of the wave length; but by correcting his errors I have now shown the theory of relativity to be worthless and misleading. The present triumph of Newton is absolutely complete and hereafter will be forever memorable in the annals of science."

"In many ways the theory of relativity has done positive harm by a series of errors much spread about by Einstein and other misguided followers. For example, they emphasized the doctrine of the supposed curvature of space, because, with wrong geometry in their fundamental equations, they had to resort to the fiction of the 'curvature of space' in order to counteract their own errors of calculation."

"They likewise have dwelt on the 'radius of world curvature,' when no such thing exists. The doctrine of the 'curvature of Space' was begun by the invalid Riemann, 1854, but, as I have found by careful search, was given no support by Gauss, who was Riemann's teacher and the greatest mathematician of his age. Gauss treated profoundly of the curvature of surfaces in space, but never once so much as mentions the 'curvature of space.'"