

DR. ESTELLE GLANCY IS ONLY WOMAN LENS DESIGNER IN U.S.

Editor's Note: The following article on Dr. Glancy appeared in the *Worcester Sunday Telegram* for Dec. 5, 1948, and was written by Ivan Sandrof. To both Mr. Sandrof and the *Telegram*, the NEWS wishes to express its thanks for being allowed to reprint portions of it.

From planets to eyeballs is quite a jump – but at the American Optical Company in Southbridge there's a soft-spoken woman with a profession who left astronomy for optics.

Miss A. Estelle Glancy, Ph.D., a research scientist, is believed to be the only woman lens designer in the United States. This year marks her 30th with the concern.

Well Known To Scientists

She's known wherever learned men doodle on scratch pads in optical jargon of millimeters, focal lengths, and limits of visibility. Pure science owes her a debt for many contributions. She has done much to bring modern eyeglasses to their present state and has designed lenses for cameras, telescopes, eyes-examining and military optical instruments.

Her work awes most people – it's so different from most of the jobs we know about. Out of the 5,000 employees at the American Optical Company, probably not more than six understand what she does ... She does what she wants to do – she's that important.

The theory behind her work is the bringing of light rays to a focus, or point of concentration. It's all done with mathematics ...

Her Work Is On Paper

Dr. Glancy doesn't work with glass or machinery. But such is the magic of mathematics that she can assume a lens on paper, determine what it will do, plot the errors, and from a final graph pick the best form of lens for a prescription.

In her office, a large safe is stuffed with volumes of her computations. The books are about three inches thick. They hold ruled sheets, each 8 by 11 inches, containing five columns of figures to a page.

One of her projects – an improved lens developed by Dr. Glancy's chief-in-research, Dr. E. E. Tillyer – filled four volumes. It took more than 10 years! But the result was the Tillyer corrected ophthalmic lens, a boon to better eyesight. These glasses yield a much wider field of vision than was possible before ...

Her Career

Dr. Glancy was graduated from Wellesley with an A. B. degree in 1905. She majored in mathematics.

Around the turn of the century, women in professions were looked upon with suspicion. It took her a year to find what she wanted. There was an opening as an instructor in the Berkeley Astronomical Department of the University of California. Part of her salary was in trade for a chance to study for her Ph.D. in astronomy. She took her doctorate in 1913 ...

In 1913, Dr. Glancy took a position as assistant astronomer with the Argentine National Observatory in Cordoba, Argentina. It was quite a change from Massachusetts or California.

Her work was mainly observations of the heavens, keeping track of comets, the impressive juggling of light years in mathematical form that star-gazers indulge in.

Five years later World War I broke out. Dr. Glancy promptly returned to the United States to offer her services where needed.

The American Optical Company began filling war orders that required complex mathematical computations. Dr. Glancy came to Southbridge and stayed on, to everyone's satisfaction.

Her Discoveries

She has it is estimated, computed formulas from which over a million lenses have been made ...

Her research work gave her 13 patents between 1929 and 1945. In 1946, she published a paper on "Practical Methods of Computing Finite Throw Schmidt Systems."

That doesn't mean anything to most people – but you can take the opinion of television experts that it makes possible the largest size television screens now in use.

There is her fundamental discovery of the "effects of a deep curved meniscus of nearly zero power in correcting higher orders of spherical aberration, permitting larger aperture ratio lenses to be made with smaller aberrations."

One of the results of this discovery means that faster and more powerful camera lenses are possible.

She recently designed a lens, had it ground in four parts according to her formula, and tried it out in her own camera. If you think that's easy, try it sometime!

"To get what I wanted took about 200 pages of computations," she said. In time, the new lens will appear on some American-made camera as standard equipment.