

THE

BUFFALO ASTRONOMICAL ASSOCIATION INC.
BUFFALO MUSEUM OF SCIENCE
HUMBOLDT PARKWAY
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SPECTRUM

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NOTICE : Due to the resignation of Richard Zygmunt as Publisher of The Spectrum, we are in the process of expanding it and of re-organizing its production. We hope that Bruce Cook, who has very capably served as Editor over the past several years, will continue in a similar capacity, fortified by a staff of willing workers yet to be recruited. Until we have ironed out all the particulars (hopefully before December), yours truly will be in charge of assembling and publishing the material. We NEED all sorts of printable material, from full-length articles to news items, rumors, and other information. We also NEED stamp-glueers, paper-folders, etc. HELP!

Ernst E. Both

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SEPTEMBER MEETING: As usual, summer passed much too quickly and a new meeting season is upon us. We have planned a very exciting series of programs for the coming year - to start things properly, our first meeting features WALTER SEMERAU: "THE SUN IN ACTION." Remember our first meeting is Friday, September 8, at 8 pm (EDT) at the Museum.

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WALTER SEMERAU - FELLOW, BUFFALO ASTRONOMICAL ASSOCIATION. A PROFILE
by Edith Geiger.

Walter Semerau is a most unusual man. He has won high respect from friends, neighbors, associates, amateurs, professionals, and business and industry. His talents seem endless and his abilities boundless. He does with ease what many do with difficulty. His creative power and his inborn know-how set him apart as a very special human being.

The von Semerau's fatherland was Germany, Walter's father coming from Westphalia and his mother from Alsace-Lorraine. After their marriage in this country they settled in Hermantown, Pennsylvania, and their life was blessed by the arrival of a fine son, whom they named Walter. Layland, West Virginia was the next abode of the Semeraus, where Walter's father worked as a contractor in a coal mine. The family then moved on to the mining town of Eccles, West Virginia, where Walter spent the carefree, fun-loving hours of a wonderful boyhood. Eccles remained home to Walter through the sixth grade in school. His mother, who had become a widow when Walter was four, moved her young family of two girls and three boys to Ethel, West Virginia, where she supported them by running a boarding house for employees of the

Cleveland Cliff Iron Company.

When Walter was in the ninth grade, his mother lost her job, so it became necessary for Walter to assume a man's role and go out and earn the family's bread and butter. Into the dirt and dust of the coal mines he went, working fervently until he was seventeen years old.

Washing away the blackness of the mines, Walter decided to try his hand at something different and set out for sunny California. He made two trips lasting from one and a half to two years. In California he worked at anything he could find to earn a dollar. Thus he became an electrical contractor, wiring cabins and a school building; a night watchman in a school; a life guard... after repairing a surf rider's board, he became very much interested in surfing and in a pile of lumber he found a board that was just right, so he made himself a fine surf board. During the next year and a half he could be seen riding swiftly on the Huntington Beach surf, whenever he was free.

Then came the day Roosevelt closed the banks. Hitchhiking on a train, Walter headed back to "West Virginny" with fourteen dollars in his pocket. He returned as an electrician to the darkness of the coal mines for the next four years. In 1936 he found work in his home town as an electrician with the Electro-Metallurgical Company, which is a subdivision of Union Carbide, and is connected with this company to this very day.

When did Walter realize that he had mechanical talent? Well, one day while he was driving a taxi for a lady, he saw the richest boy in town spinning a padlock. As a result, Walter was to embark on an unusual side line, and also make a discovery about his mechanical ability. He figured a way to have the boy give the padlock to him, as Walter couldn't contain himself until he found out about the workings of that lock. With that knowledge, maybe he could make keys for locks!

He took the lock home, pulled it apart, and from then on he found a way to make keys for any lock, anywhere, using a five dollar key filing jig. He could make the best possible key for a quarter, and proved to be a sensation as people gathered to watch him make keys. He was continually called upon to re-make lost car keys, and various other keys people have a habit of losing. He even had a contract with the school to make keys. Yes, Walter was the original key-maker, and a real safe "slicker" who could open any lock, given the time. He was offered fifty dollars if he could open the combination lock on the school safe in a week. The combination was in the safe. With Walter's unfailing know-how, the school safe was opened. Walter always notified the police when he was called upon to crack a safe so he would always be cleared of any felony. Anyone have a lock he'd like opened, or a replacement for a missing key?

The money Walter earned as a safe cracker and key maker was used for courtin' money when sweet Becky came on the scene. After a couple years, Becky and Walter were married to live happily ever after. They were, eventually to have three children - Walter Jr., George, and a very artistic Penny.

While Walter was at the Electro-Metallurgical Company, he made a vamera which played a tremendous part in shaping his career. He wanted a camera that

had all the best qualities of the best cameras on the market, and quite naturally, he just up and made one. Now this camera wasn't any ordinary camera. It had all the adjustments, a rotating back and a built in couple range finder. It was all handmade except for the lens and bellows, and is a beautiful piece of workmanship as is everything that Walter makes.

During the war the Agfa Corporation in Binghamton had published a notice that it couldn't help the amateur at that time but would when the war was over. When Walter saw this, he sent the company a snapshot of his camera. They were very impressed and asked Walter to bring his camera to the company. They would pay his wages while he was there. The company appreciated Walter's fine workmanship, and took out a patent on the range finder in his name.

While Walter was in Binghamton, life became very exciting. During the war, Agfa-Ansco was the headquarters for German spies in this country. Walter was completely unaware of this activity. Suddenly the FBI was investigating Walter and reading all his mail. Yes, they thought Walter was a German spy. He was finally exonerated because his neighbor, who was head of the company, knew Walter's camera story from the beginning and was able to explain his business with the company to the satisfaction of the FBI.

The old company changed its name, so there was an old and new company and both companies wanted Walter. He decided to stay with the Electro-Metallurgical Company. A battle ensued with the two companies over the camera, and finally when it all ended, Walter got his camera back with promises that he would never change the shape of that camera.

The General Analine Film Corporation finally bought out Walter's patent rights. The company offered Walter the title of Optical Engineer if he would stay with the company, but he decided to stay with the metallurgical company. Then one day in 1948, the metallurgical company held a company-wide fair. One could enter anything one cared to enter, so Walter entered his camera and a telescope. Becky had made some tools which were so fine that they were placed in the men's competition. Walter won the competition with its forty dollar prize. What did he do with the prize money? He bought more tools. It so happened that there was a company official in town that day and he was staying at a hotel across from the fair. He strolled over and had a look at the entries. He liked what he saw in that fine camera of Walter's and said "that fellow deserves a break!" He sent a delegate to ask Walter if he'd consider leaving town to work someplace else, and Walter, who had deep roots in West Virginia, said "no." But Becky urged him to say "yes" if he was approached again, just to see what the company had in mind. Lo and behold, a second fellow came and asked him the same question again. This time Walter said "yes." The general manager then called him into the office and told him he deserved a break, and sent him to work at the Linde Division of Union Carbide in the Town of Tonawanda in 1948. He was hired as an instrument maker. In 1956 the company made Walter an engineer, complete with an official diploma.

At Linde Walter designs and makes all kinds of instruments. He also builds equipment that other people use in their research. He designs machinery used in work for the biological laboratory, environmental space systems, deep sea diving systems, brain wave studies using rats, and works in the gas separation department where oxygen is taken out of the air and salt out of sea water.

Dr. O'Brien, who was a professor at the University of Rochester, was a consultant for Linde. He was the gentleman who invented Todd-A-O, familiar to movie goers. Linde sent Walter to the university to study high speed photography with Dr. O'Brien. It was he who recommended that Walter make the first schlieren mirror for Linde. O'Brien designed a high speed rotating mirror camera and Walter made it. It was used to photograph exploding wires, but was finally used as a thermometer to measure temperatures of high speed. Walter made two of these rotating mirror cameras. He also made a Raman spectrograph which was shipped to Forest Hills. He learned about the Ebert spectrograph from O'Brien. Walter made two spectrographs which are at Linde, and he took the best features of these and used them in his own Ebert-type solar spectrograph.

How did Walter become interested in astronomy? When Walter's eldest son, Walter Jr., was a young lad of seven in 1943, he became intensely interested in the sky. He was always looking to the heavens. Walter bought him the book "A Dipper Full of Stars," which they read and enjoyed. Then Walter decided to make his son a telescope. As years went on, young Walter's interest in the sky waned and Walter senior's interest increased. Telescope building and celestial photography became a hobby and the sky a great love.

In 1954 the bright lights of the newly built Sheridan Plaza caused Walter to give up his night observations. Not wishing to give up astronomy, he switched from the night sky to the day sky, concentrating on the Sun. Walter enjoys the challenge that solar astronomy offers in instrument making. His solar observatory is one of the most outstanding privately owned facility of its kind in the world. His heliostat, which picks up the Sun's image is mounted on a metal tripod fourteen feet high at the back of his house. The Sun's image is piped into the basement where Walter can conduct all of his observations in comfort, without worrying about the temperatures outside.

Another outstanding piece of equipment which Walter has made is a spectroheliometer-spectroheliograph combination, worth many thousands of dollars. This instrument separates the Sun's light into a spectrum, into many shades of basic colors, each representing radiation from some element. By tuning it, Walter can select any given color and scan the Sun in the light of that color, either visually or photographically. He has also built a quartz monochromator which uses the red light of the hydrogen atom to reveal solar prominences at the Sun's limb. With an automatic time-lapse camera attached to this filter, Walter has taken many outstanding movies of the Sun in action.

But Walter does not keep his astronomical talents to himself. During the last two years he has donated his time and talents to build a solar spectrograph and spectroheliometer for the new solar observatory at the Buffalo Museum of Science. He became a Research Associate of the Kellogg Observatory and was elected a Benefactor of the Buffalo Society of Natural Sciences in recognition of his generosity.

In Walter's basement he has a complete machine shop and also a lens-making shop and he makes all his precision instruments with war surplus parts and scrap metal. He has built or re-built numerous hand tools, a drill press, a

lathe, a diamond saw, a vacuum chamber for aluminizing his mirrors, vertical grinding spindles and a machine that measures the flatness of a surface to a millionth of an inch.

Walter's work in astronomy is held in high esteem by the astronomical profession. He wrote a chapter for the book "Amateur Scientist" by C. L. Stone, and has pictures and comments in "Celestial Objects for the Common Telescope" by T. W. Webb, "Outer Space Photography" by Henry E. Paul, and pictures of his camera in "Mini-Cam Photography," and the "Complete Photographer" which is an encyclopedia of photography. The High Altitude Observatory at Boulder, Colorado, honored Walter by using his solar observations during the last sunspot maximum. Walter was also offered the position of Technical Director of the new planetarium in Rochester, to work there for the rest of his life, but Linde didn't want Walter to leave. Never idle, he spends his lunch hour at Linde writing or reading (or, if the Sun is active, he dashes home to take some pictures).

Articles on Walter's spectroheliograph and monochromator have appeared in Sky and Telescope, and his observations and instrument making techniques have been seen in Scientific American. Sky and Telescope has now approached Walter about a color shot for the cover of the magazine of the fourteen foot tower housing his heliostat, accompanied by a story in the inside pages. William E. Shawcross, who is an officer of the Astronomical League and also managing editor of Sky and Telescope, saw Walter's equipment while at the Astronomical League's convention in Buffalo in May, and agreed that it is the most unusual piece of equipment he has ever seen, and suggested that a thirty minute movie be made of it and of the remarkable pictures Walter has taken, and all to be narrated by a professional narrator. This is a distinct honor for Walter, and a fine tribute to his excellent work.

In his latest venture he is working with Dr. Seville Chapman on an ellipsometer (or something similar) which will demonstrate Kepler's Laws. This instrument has been designed by Dr. Chapman and is being given the Semerau touch.

Not only is Walter filled with an extraordinary creative power, he is filled with warmth and kindness for his fellow-man. Nothing is ever too much for Walter to do for his friends, nor time too precious, but what he finds some left to give to others.

What manner of man is this? A genius and a great man among men, unique in our time.

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SPY AND TELL: Stellafane this year had a good BAA representation (August 5): Mr. and Mrs. Ed Lindberg, Eugene and Lawrence Hazel, Walt Whyman and family, John Riggs, Dale Hankin, and Darwin Christy. Ed Lindberg was one of the judges in the instrument competition. * * * Two well-known Lunar Observers seen playing piano duets late one night when they should have been observing the Moon. * * * The Walt Whyman's visited Leslie C. Peltier, famed discoverer of comets, at Delphos, Ohio, July 17. ***** Fred Price spent some time in London, England, visiting British amateurs (and pubs?). * * * We have always suspected the charming wife of one of our most distinguished members to be the one who made his tools and instruments - now we know!

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THE SPECTRUM, September 1967.

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September Meeting 1

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COMING SOON: What happens to Energy in Space (Walt Whyman); Astronomical
Magnitudes (Ed Lindberg); The Sunspot Cycle (Ron Clippinger); Hilltop
Observatory (Richard Zygmunt); Life in a Globular Cluster (Darwin Christy);
NEXT ISSUE WILL FEATURE: My Early Telescopic Observations of the Moon, by
Fred W. Price.



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