= Edward Condon =

Edward Uhler Condon (March 2 , 1902 ? March 26 , 1974) was a distinguished American nuclear physicist , a pioneer in quantum mechanics , and a participant in the development of radar and nuclear weapons during World War II as part of the Manhattan Project . The Franck ? Condon principle and the Slater ? Condon rules are co @-@ named after him .

He was the director of the National Bureau of Standards (now NIST) from 1945 to 1951 . In 1946 , Condon was president of the American Physical Society , and in 1953 was president of the American Association for the Advancement of Science .

During the McCarthy period , when efforts were being made to root out communist sympathizers in the United States , Edward Condon was a target of the House Un @-@ American Activities Committee on the grounds that he was a ' follower ' of a ' new revolutionary movement ' , quantum mechanics ; Condon defended himself with a famous commitment to physics and science .

Condon became widely known in 1968 as principal author of the Condon Report , an official review funded by the United States Air Force that concluded that unidentified flying objects (UFOs) have prosaic explanations . The lunar crater Condon is named for him .

= = Early life and education = =

Edward Condon was born on March 2 , 1902 , in Alamogordo , New Mexico to William Edward Condon and Carolyn Uhler Condon . His father was supervising the construction of a narrow @-@ gauge railroad , many of which were built in the area by logging companies . After graduating from high school in Oakland , California in 1918 , he worked as a journalist for three years at the Oakland Inquirer and other papers .

He then attended the University of California , Berkeley , initially joining the College of Chemistry ; when he learned that his high school physics teacher had joined the faculty , he switched majors to take classes in theoretical physics . Condon earned his bachelor 's degree in three years and his doctorate in two . His Ph.D. thesis combined work by Raymond Thayer Birge on measuring and analyzing band spectral intensities and a suggestion by James Franck .

Thanks to a National Research Council fellowship , Condon studied at Göttingen under Max Born and at Munich under Arnold Sommerfeld . Under the latter , Condon rewrote his Ph.D. thesis using quantum mechanics , creating the Franck ? Condon principle . After seeing an ad in Physical Review , Condon worked in public relations at Bell Telephone Laboratories in fall 1927 , in particular promoting their discovery of electron diffraction .

= = Early career = =

Condon taught briefly at Columbia University and was associate professor of physics at Princeton University from 1928 to 1937 , except for a year at the University of Minnesota . With Philip M. Morse , he wrote Quantum Mechanics , the first English @-@ language text on the subject in 1929 . With G.H. Shortley , he wrote the Theory of Atomic Spectra , " a bible on the subject from the moment of its 1935 publication " .

He was associate director of research at the Westinghouse Electric Company in Pittsburgh , beginning in 1937 , where he established research programs in nuclear physics , solid @-@ state physics , and mass spectroscopy . He then headed the company 's research on microwave radar development . He also worked on the equipment used to isolate uranium for use in atomic bombs . He served as a consultant to the National Defense Research Committee during World War II and helped organize MIT 's Radiation Laboratory .

In 1943 , Condon joined the Manhattan Project . Within six weeks , he resigned as a result of conflicts about security with General Leslie R. Groves , the project 's military leader . General Groves had objected when Condon 's superior J. Robert Oppenheimer held a discussion with the director of the project 's Metallurgical Lab at the University of Chicago . In his resignation letter , he explained :

The thing which upsets me the most is the extraordinary close security policy .... I do not feel qualified to question the wisdom of this since I am totally unaware of the extent of enemy espionage and sabotage activities . I only want to say that in my case I found that the extreme concern with security was morbidly depressing--especially the discussion about censoring mail and telephone calls .

From August 1943 to February 1945 , Condon worked as a part @-@ time consultant at Berkeley on the separation of U @-@ 235 and U @-@ 238 . Condon was elected to the National Academy of Sciences in 1944 . Following the war , Condon played a leading role in organizing scientists to lobby for civilian control of atomic energy rather than military control under strict security . He worked as science adviser to Senator Brien McMahon , chairman of the Senate Special Committee on Atomic Energy , which wrote the McMahon @-@ Douglas Act , enacted in August 1946 , that created the Atomic Energy Commission , placing atomic energy under civilian control . Adopting an internationalist viewpoint , Condon favored international scientific cooperation and joined the American @-@ Soviet Science Society .

= = Director of NIST = =

President Harry S. Truman nominated Condon to be director of the National Bureau of Standards (now known as NIST) in 1945 . He was confirmed by the Senate without opposition and served until 1951 . He was also president of the American Physical Society in 1946 . On May 29 , 1946 , FBI Director J. Edgar Hoover wrote a letter intended for President Truman that named several senior government officials as part of a Soviet network . It described Condon as " nothing more or less than an espionage agent in disguise . " Decades later Senator Daniel Patrick Moynihan called it " baseless corridor talk " . The Truman administration ignored Hoover 's charges .

Over the next decade , Condon 's security clearance status was repeatedly questioned , reviewed , and re @-@ established . Congressman J. Parnell Thomas , head of the House Un @-@ American Activities Committee (HUAC) , furnished information to the Washington Times @-@ Herald that denigrated his loyalty in two articles published in March 1947 . Thomas had several reasons to make a prominent case of Condon . He had no sympathy for the scientific community 's international spirit in the first place and could use the ongoing controversy to argue for an increase in his committee 's appropriation , to bolster opposition to the Condon @-@ supported McMahon Act , and to attract favorable coverage during election season . The Department of Commerce cleared Condon of disloyalty charges on February 24 , 1948 . A HUAC report dated March 2 , 1948 said that " It appears that Dr. Condon is one of the weakest links in our atomic security " . Condon responded : " If it is true that I am one of the weakest links in atomic security that is very gratifying and the country can feel absolutely safe for I am completely reliable , loyal , conscientious and devoted to the interests of my country , as my whole life and career clearly reveal " .

Those who defended him included Albert Einstein and Harold Urey . The entire physics department of Harvard and numerous professional organizations wrote Truman on Condon 's behalf . The Emergency Committee of Atomic Scientists held a dinner on April 12 , 1948 , to demonstrate support , with nine Nobel Prize winners among the sponsors . The National Academy of Sciences , by contrast , considered only a statement criticizing HUAC 's procedures rather than defending Condon . Despite widespread support among its members (275 to 35) , the National Academy of Sciences ' leadership did not release a statement , and instead opted to speak privately with Rep. Thomas . On July 15 , 1948 , the Atomic Energy Commission granted Condon a security clearance , allowing him to access classified information at NIST .

In September 1948 , at the Annual Meeting of the American Association for the Advancement of Science (AAAS) , President Truman , with Condon sitting nearby on the dais , denounced Rep. Thomas and HUAC on the grounds that vital scientific research " may be made impossible by the creation of an atmosphere in which no man feels safe against the public airing of unfounded rumors , gossip and vilification " . He called HUAC 's activities " the most un @-@ American thing we have to contend with today . It is the climate of a totalitarian country " .

Condon opposed any cooperation with Congressional attempts to identify security risks within the

scientific community . In June 1949 , in a sharply critical letter to Oppenheimer , who had provided information to HUAC about a colleague , he wrote : " I have lost a good deal of sleep trying to figure out how you could have talked this way about a man whom you have known for so long , and of whom you know so well what a good physicist and good citizen he is . " In July 1949 , he testified before a Senate subcommittee that was considering rules governing the operation of Senate committees . He criticized Thomas and the HUAC for holding closed hearings and then leaking information that denigrated his loyalty and that of other scientists . He said that the committee denied his and his colleagues ' requests for public hearings so they could respond .

= = Continued attacks = =

With his record finally cleared in 1951 , Condon left government to become head of research and development for the Corning Glass Works . He said his $ 14 @,@ 000 annual government salary was his reason for the move . President Truman issued a statement of praise : " You have served in a most critical position with continued and loyal attention to your duties as director , and by reason of your standing among scientists and the supervision you have given to the bureau 's activities , you have made of it a more important agency than it has ever been before " . Two Republican Congressmen asserted that Condon was being investigated as a security risk and was leaving " under fire " , a charge the Secretary of Commerce Charles Sawyer denied .

On December 27 , 1951 , Condon was elected to head the AAAS in 1953 . In September 1952 , Condon , in testimony before a Congressional committee , had his first opportunity to deny under oath all charges of disloyalty that had been made against him . The HUAC concluded in its annual report for 1952 that Condon was unsuited for a security clearance because of his " propensity for associating with persons disloyal or of questionable loyalty and his contempt for necessary security regulations " . On December 30 , 1952 , Condon assumed the presidency of the AAAS at its annual meeting , where , according to the Bulletin of the Atomic Scientists , " The tremendous ovation by his fellow members accompanying his induction was a further affirmation of their faith in his loyalty and integrity " .

Five months later Condon 's clearance was revoked as was standard when someone left government service . He was granted a security clearance once more on July 12 , 1954 . It was announced on October 19 and then suspended by Secretary of the Navy Charles S. Thomas on October 21 . Vice President Nixon took credit for the suspension , and the Atomic Scientists of Chicago charged " political abuse of the national security system " , though Secretary Thomas denied Nixon had played a role . Condon withdrew his application for clearance and in December resigned from Corning because the company was seeking government research contracts and he lacked the clearance necessary for participating in military research . After citing the security reviews he had passed over the years , he said : " I am unwilling to continue a potentially indefinite series of reviews and re @-@ reviews " . Corning had paid Condon 's clearance @-@ related legal expenses while he worked there .

In 1958 , Condon wrote that his decision reflected his belief that the Eisenhower administration " was committed by policy to the persecution of scientists , or , at the very least , to a callous indifference toward what others were doing to attack and discredit them . I decided the situation was hopeless , and that I had done all that could be reasonably expected of me in having resisted these forces for seven long years " .

Years later , Carl Sagan reported how Condon described one encounter with a loyalty review board . A board member stated his concern : " Dr. Condon , it says here that you have been at the forefront of a revolutionary movement in physics called ... quantum mechanics . It strikes this hearing that if you could be at the forefront of one revolutionary movement ... you could be at the forefront of another " . Condon said he replied : " I believe in Archimedes ' Principle , formulated in the third century B.C. I believe in Kepler 's laws of planetary motion , discovered in the seventeenth century . I believe in Newton 's laws .... " and continued with a catalog of scientists from earlier centuries , including the Bernoulli , Fourier , Ampère , Boltzmann , and Maxwell . He once said privately : " I join every organization that seems to have noble goals . I don 't ask whether it contains

Communists " .

= = Later career = =

Condon was professor of physics at Washington University in St. Louis from 1956 to 1963 and then at the University of Colorado Boulder from 1963 , where he was also a fellow of the Joint Institute for Laboratory Astrophysics , until retiring in 1970 .

From 1966 to 1968 , Condon directed Boulder 's UFO Project , known as the Condon Committee . He was chosen for his eminence and his lack of any stated position on UFOs . He later wrote that he agreed to head the project " on the basis of appeals to duty to do a needed public service " on the part of the U.S. Air Force Office of Scientific Research . Its final report concluded that unidentified flying objects had prosaic explanations . It has been cited as a key factor in the generally low levels of interest in UFOs among mainstream scientists and academics .

Condon was also president of the American Institute of Physics and the American Association of Physics Teachers in 1964 . He was president of the Society for Social Responsibility in Science (1968 ? 69) and was co @-@ chairman of the National Committee for a Sane Nuclear Policy (1970) . He co @-@ edited the Handbook of Physics with Hugh Odishaw of the University of Arizona . He received the Frederic Ives Medal awarded by the Optical Society in 1968 . On his retirement , his colleagues honored him with the publication of a Festschrift .

Condon died on March 26 , 1974 , in Boulder Colorado Community Hospital . Atomic Structure , which Condon wrote with Halis Odaba?? , appeared several years later in 1980 . The National Institute of Standards and Technology (NIST) gives an annual award named for Condon . The Condon Award recognizes distinguished achievements in written exposition in science and technology at NIST . The award was initiated in 1974 . The crater Condon on the Moon is named in his honor .

= = Personal = =

Condon married Emilie Honzik . They had two sons and a daughter . The son , Joseph Henry Condon (15 February 1935 ? 2 January 2012) was a physicist (Ph.D. , Northwestern University) and engineer , who worked at Bell Labs on digital telephone switches and co @-@ invented the Belle chess computer .