

# DR. WU AND THE LEFT-HANDED UNIVERSE

CHien-SHIUNG  
WU, 1912-1997

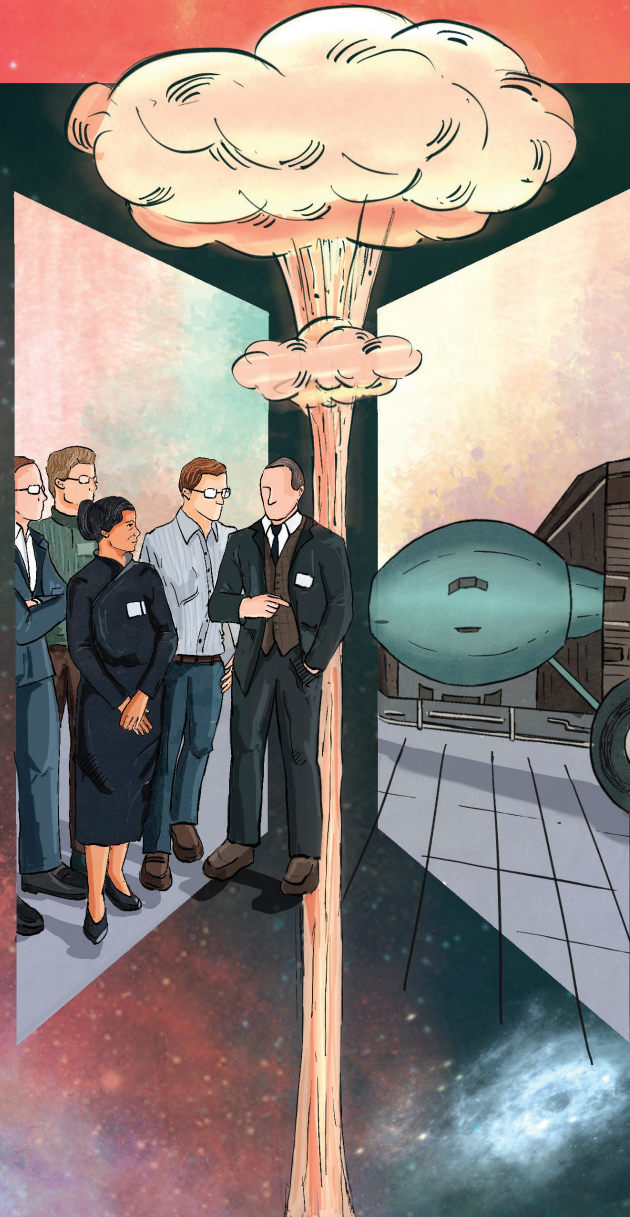
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BIG HISTORY PROJECT

CHIENT-SHIUNG WU WAS BORN IN CHINA IN 1912. GIRLS WERE NOT EXPECTED TO BECOME SCIENTISTS. BUT HER PARENTS ENCOURAGED HER TO PURSUE HER PASSION: PHYSICS.



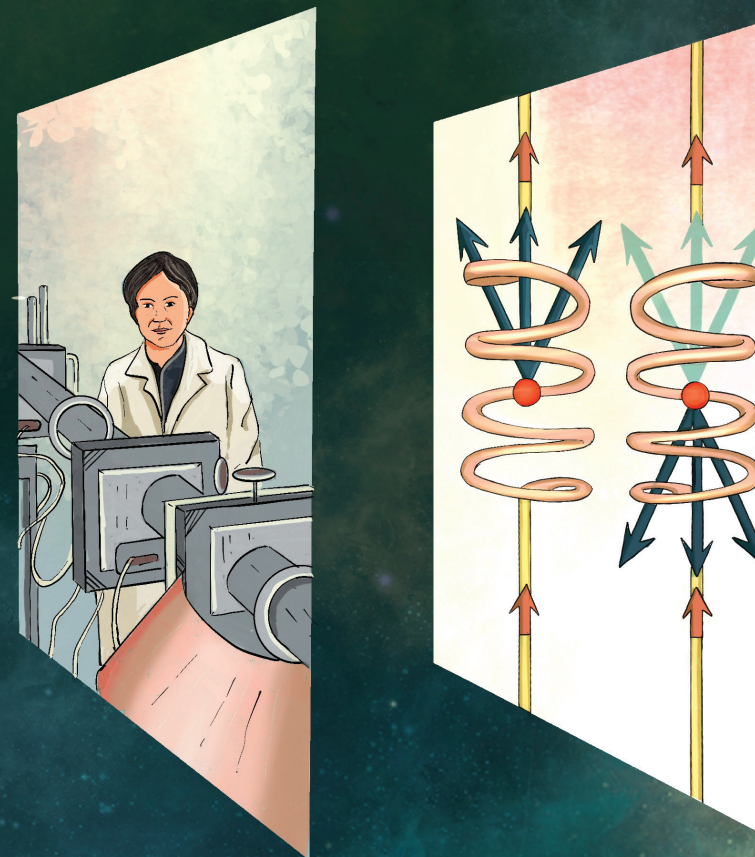
IN 1936, SHE BOARDED A STEAM SHIP TO AMERICA TO PURSUE HER PHD. IT WAS THE LAST TIME SHE WOULD SEE HER PARENTS ALIVE. IN 1937, JAPAN INVADED CHINA. AFTER THE WAR, THE COMMUNIST REVOLUTION PREVENTED HER RETURN.

IN AMERICA, WOMEN AND ASIAN IMMIGRANTS WERE NOT GENERALLY WELCOMED IN THE SCIENTIFIC COMMUNITY. HOWEVER, DR. WU ESTABLISHED HERSELF AS ONE OF THE COUNTRY'S MOST RESPECTED NUCLEAR PHYSICISTS.



HER BRILLIANCE EARNED HER AN INVITATION TO WORK ON THE MANHATTAN PROJECT, WHERE SHE HELPED ENRICH URANIUM AND BUILD THE FIRST NUCLEAR FISSION REACTOR.

IN 1956, DR. WU DISPROVED ONE OF THE LAWS OF PHYSICS: PARITY. ACCORDING TO THIS LAW, THE MIRROR IMAGE OF ANY PHENOMENON SHOULD REMAIN THE SAME. IF YOU LOOK IN A MIRROR AND DROP AN APPLE, IT FALLS IN THE SAME DIRECTION. THE UNIVERSE IS NOT SUPPOSED TO DISTINGUISH BETWEEN "LEFT AND RIGHT" OR "UP AND DOWN".



DR. WU DESIGNED AN EXPERIMENT THAT PROVED THIS WAS NOT TRUE AT SMALLER, SUBATOMIC SCALES. HER WORK SUGGESTED THAT THE UNIVERSE HAS A SENSE OF DIRECTION. THE UNIVERSE, IT SEEMS, IS LEFT-HANDED.

WU'S EXPERIMENT MIGHT HELP EXPLAIN WHY WE ALL EXIST. ACCORDING TO THE LAW OF PARITY, DURING THE BIG BANG, MATTER AND ANTIMATTER SHOULD HAVE CANCELLED EACH OTHER OUT—LEAVING AN EMPTY UNIVERSE. WU'S DISCOVERY OF A VIOLATION OF PARITY HELPED LATER PHYSICISTS UNDERSTAND HOW OTHER VIOLATIONS MIGHT EXPLAIN...



...why a tiny bit more matter escaped the Big Bang, giving us a Universe filled stars, planets, **AND YOU.**

DR. WU'S MALE COLLEAGUES WON THE NOBEL PRIZE IN PHYSICS. SHE WAS NOT INCLUDED. STILL, HER CAREER WAS FILLED WITH AWARDS AND HONORS. SHE CAMPAIGNED TIRELESSLY TO ENCOURAGE MORE WOMEN TO BECOME SCIENTISTS.