

World Test Ban Barrier Discussed

A foolproof system of detecting violations is the major scientific barrier to a worldwide nuclear test ban, a member of the University of Arizona's Institute of Atmospheric Physics said here last night.

While Russian scientists claim nuclear explosions can be detected completely through seismology, American scientists aren't so sure, Dr. James E. McDonald told persons at a meeting sponsored by the Tucson Peace Center.

McDONALD, a physicist and professor of meteorology, said the United States must be able to detect, locate and then identify the source of a test ban violation.

Large clusters of seismometers, possibly including some on the ocean floor, might be able to sort out the 170 suspicious earth tremors from the estimated 3,000 tremors which occur each year, he said.

And, he continued, if scientists could determine the depth of each earth tremor, they could further reduce the number of suspicious tremors each year.

ANY TREMOR occurring 10 miles below the earth's surface or lower could automatically be regarded as a natural movement of the earth, he said, because neither the United States nor Russia would dig a 10-mile hole to test weapons.

McDonald said seismologists now believe they can pinpoint the epicenter, or point on the earth's surface above a tremor, within a radius of about 48 miles.

Scientists thought originally they could calculate the spot within 16 miles, but this margin of error has been increased because of more experience with earth movements, he explained.