

*The same as before, but with no detector in the right slit. (If the detector goes off, a photon went through the left slit. If something appears on Wall B but the detector didn't go off, the photon passed through the right slit.)*

You once again see the particle pattern with no interference bands.

According to the orthodox interpretation this is just like the previous experiment. By putting a detector in either slit, you measure which slit the photon is in. This forces the photon to have a particular position, and there is once again no interference.

But this result has fascinating implications. With detectors in both slits, you might argue that the detectors disrupted the photons and thus destroyed the interference pattern. But in this case half the photons go through without setting off a detector, and many of those photons still hit the places that used to be dark bands before you put the detector in. Somehow the detector in Slit 1 enables a photon to pass through Slit 2 and hit those spots. This reinforces the idea that it is the *act of measurement itself*, not the mechanics of the measuring device, that fundamentally alters the system.