

Young's double slit experiment

Young took two narrow slits S_1 , S_2 in a plane at a small separation and put another slit S behind these two slit at equal separation from sources behind the slit S ($SS_1 = SS_2$), complete interference pattern, consisting of dark and bright bands of equal thickness are obtained on the screen. According to Huygen's

principle, the cylindrical wave front starting from the slit S , touches the slit S_1 and S_2 at the same instant. So, there can be two monochromatic sources (secondary sources) be considered, one at the center of slit S_1 and another at the center of slit S_2 . The wavelets starting from these secondary sources propagate in every possible direction. So at every point on screen there are two wavelets, one received from S_1 and other from S_2 . These two wavelets interfere and produce interference pattern.

