

Einstein's Miraculous Year: Five Papers That Changed the Face of Physics was published in 1998. It is edited and introduced by John Stachel. The paper entitled, "On the Electrodynamics of Moving Bodies," contains the theory that has become known as Special Relativity. The paper is 37 pages in length. It is filled with equations that employ partial differentiation, second derivatives, integration, trigonometric functions and other mathematical terminology.

I have read the first 10 pages several times, and the explanation for the relativity of simultaneity is tricky and clever, but also it is forced. It is so forced that I believe it is incorrect. The thought experiment requires that the observers only use light beams to synchronize their clocks. It also requires that they use only one particular equation to synchronize their clocks.

The paper contains other troubling aspects. In section A3 an equation is introduced that describes the time it takes for a light beam to travel from point A to point B and back to point A in a moving frame of reference. Unfortunately, in section A2 the same equation was determined to be an incorrect description of the time it takes a light beam to travel from point A to point B and back to point A in a moving frame of reference.

This incorrect equation is then elaborated on in a very questionable manner. Point B is a point some distance away from point A. It is also the point from which the light beam is reflected back to point A. It is on the X-axis so it is referred to as x' . Then Einstein states that x' should be allowed to become infinitesimally small, and so it is transformed into the number one. A distance that becomes infinitesimally small would seem to become zero.

The movie, *Contact*, deals with the reflection light beams in a dramatic way. Hitler's speech given to mark the opening of the 1936 Olympics is broadcast by German television. Because the broadcast is powerful, it travels far into outer space. Eventually, it

reaches the Vega star system 26 light years away. An advanced civilization returns the broadcast to earth with many additional features encoded in the broadcast. If the advanced civilization returned the broadcast as soon as they received it, how long would it take to reach the earth? Would it take 26 years to reach the Vega star system and then 26 years to return to Earth for a total of 52 years? That would mean the broadcast would return in 1988. In the movie the broadcast returns at some time in the Clinton administration, which officially began in 1991.

It doesn't seem likely *Contact* is making a comment on the velocities of the Earth and the Vega star system. Instead, the most likely explanation is that President Clinton was willing to appear in the movie as the President.