# Article information:

Light interacts with its past self in twist on double-slit experiment | New Scientist
<https://www.newscientist.com/article/2367388-light-interacts-with-its-past-self-in-twist-on-double-slit-experiment/>

# Article summary:

1. Researchers at Imperial College London have performed a double-slit experiment using "slits in time" instead of slits separated in space, demonstrating that light can interact with its past self.

2. The experiment involved using a material called indium tin oxide that can change from being transparent to reflective with extraordinary speed to create the "slits in time".

3. The quick transition time observed in the experiment could be useful for making time crystals and have applications in telecommunications.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The New Scientist article reports on a new twist to the famous double-slit experiment, which demonstrated that light is both a wave and a particle. The researchers at Imperial College London performed a similar experiment where the obstacles to the light’s propagation were separated in time, creating “slits in time”. The article explains that this technique could be used to manipulate light in new ways and create strange materials called time crystals.

The article provides a clear explanation of the original double-slit experiment and how it was performed using two slits separated in space. It then goes on to explain how the researchers at Imperial College London performed their version of the experiment using slits separated in time. The article also explains the challenges involved in performing such experiments with light and how the researchers overcame these challenges using a material called indium tin oxide.

The article reports that when they measured the light that bounced back, the researchers found similar interference patterns to those seen in the classic version of the experiment, but this time in the frequency of the light rather than its brightness. The article also notes that this was as theoretical calculations predicted, but that the light’s frequency oscillated much more than expected due to the material's quick transition from transparent to reflective.

While there are no obvious biases or one-sided reporting in this article, there are some missing points of consideration and evidence for claims made. For example, while it is noted that this technique could be used to create time crystals and have applications in telecommunications, there is no further explanation or evidence provided for these claims. Additionally, while it is noted that there are challenges involved in performing such experiments with light, there is no discussion of any potential risks or limitations associated with this technique.

Overall, this article provides an interesting overview of a new twist on a classic experiment and its potential applications. However, further research would be needed to fully understand its implications and limitations.

# Topics for further research:

* Time crystals and their properties
* Applications of time crystals in technology
* Risks and limitations of manipulating light in this way
* Indium tin oxide and its properties
* Interference patterns in the frequency of light
* Theoretical calculations predicting the behavior of light in this experiment

# Report location:

<https://www.fullpicture.app/item/87cd82e62c7e05f409f1f963f7ef6832>