

The Poisson Obstruction

Cast:

Augustin Jean Fresnel – competitor, supports wave theory
Dominique François Jean Arago – Judge, supports wave theory
Joseph L. Gay-Lussac – Judge, unknown opinion of wave theory
Pierre Simon de Laplace – Judge, critic of wave theory
Jean-Baptiste Biot – Judge, critic of wave theory
Simeon D. Poisson – Judge, ardent critic of wave theory

Setting:

The year is 1818. Mary Shelley's *Frankenstein* is being published. A short persistent French general has finally been banished to St. Helena (for the 2nd time). Jane Austin has died while Henry David Thoreau and Karl Marx have been born. The Erie Canal linking Buffalo and Albany has just been started and Rossini has composed "Barbiere di Siviglia" for (a future) Sir B. Bunny. More importantly than all of this is that Fresnel has entered a competition sponsored by the French Academy. The winner receives money and prestige.

Fresnel: Voila – moi solution. [Aside to Arago] C'est Magnifique! (It's magnificent!)

Biot: Fresnel, you are assuming light is a wave... [shakes head]

Poisson: Something is fishy here. Look Fresnel's solution implies that in the shadow of a sphere there will be a bright spot. C'est impossible! (It's impossible!)

Laplace: Poisson is correct. Fresnel's solution is meaningless.

Arago: Perhaps we should do the experiment...

Gay-Lussac: Arago is correct, let us do the experiment and test this wave theory of light.

[Grudging acceptance to do the experiment. Everyone gets to help...]

Arago: Ah ha! It is true. So it looks like Poisson is the only fish here!
[Aside to Fresnel] Perhaps we should call this "Poisson's Spot" [Both laugh]