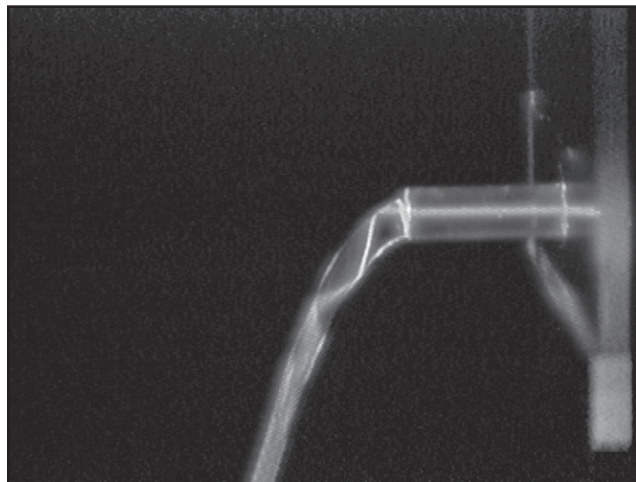


## Demo 59-10

## Laser Waterfall

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A laser beam is directed through a tank of water and into the nipple out of which the water flows. The laser beam undergoes total internal reflection in the water jet, following the water down into the collection tank and illuminating that tank, as shown in *Figure 1*.<sup>†</sup>



*Figure 1*

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<sup>†</sup> Sutton, *Demonstration Experiments in Physics*, Demonstration L-36, Illuminated Fountain.

We now demonstrate total internal reflection of laser light in a water jet.

A laser is aligned such that its light passes through a water tank and into a tube at the bottom of the tank.

Powdered coffee cream has been added to the water to make the laser beam more visible.

When the stopper is removed, water squirts out of the tank into the container below. The laser beam is reflected internally and follows the water jet into the tank.

In this closeup view we can see the internal reflections of the laser beam in the water jet.

***Equipment***

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1. A clear water tank with a stoppered outlet near the bottom opposite an optically flat wall.
2. Supply of water mixed with a small quantity of powdered coffee creamer.
3. Catch tank.
4. Laser.
5. AC power.