

### MITOCW | Investigation 2, Part 3

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**PROFESSOR:** And then I want them to explain why. Why did our result come out this way? Who would like to take a shot at it? Who'd like to take a positive risk?

Steve? OK, come on up. So first tell us about your prediction, and then tell us how it was different.

**AUDIENCE:** After [INAUDIBLE] it would be red and do not have a difference in flux according to position. It should be the same flux everywhere. I predict that this space where the red lights in the spectrum lets the light spectrum that creates all that. So you got a spectrum, you're going to move this, but it's still there, so this [INAUDIBLE] in this light spectrum.

**PROFESSOR:** OK, so Steve's prediction is similar to a lot of our predictions. Some people said that the whole thing would be red and it would be the same flux. It would be the same amount of light that was getting through. Some people said that the red would be a high flux, but then as we went to the other colors they'd still be red but they would maybe be a lower flux because the filter was going to block some of that light.

Asith, were you volunteering for something? You want to explain your model, or your prediction, and then what actually happened?

**AUDIENCE:** My predication was that just like the exit sign over there that red will sink through. But as the color went on I thought some of the colors will sink out, so they'd be a bit lighter here. But when I saw this, the whole thing was just black, but it had a bit of lighter color here. That's the only difference between my prediction.

**PROFESSOR:** OK, so how would you create an explanation for why we do see this, because I think a lot of people had the same idea. Why is it that we're seeing this? Why are we only seeing the red band go through?

**AUDIENCE:** If you, for example, if you guys take the red filter again and look at the exit sign and take another blue filter and look at the exit sign, you wouldn't see the red color sink through the blue filter, but you'll see it sink through the red filter. Same way here. Since the color red is here, it wouldn't let the blue color sink through. It's the exact opposite of what the blue filter did when we looked at the exit sign.

**PROFESSOR:** OK, I like that. I like what Asith did. He connected what we saw with the exit sign. The red filter let through the red light from the exit sign, but not anything else. Remember when we looked at the green and the blue paper, it had low flux. There wasn't a whole lot of light coming through.