Title: "Buscando la Luz (Searching for Light)" *for Madrid Deep Space Communication Complex's* ***Día de la Familia (Family Day)***

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Summary:
As part of the celebration of the International year of Light 2015, this talk invites general audiences to expand their understanding of light. First, by using the ridges on an ordinary CD to break light into the colors of the rainbow, we show that light has a spectrum of wavelengths which we experience as colors.
There are "colors" beyond what humans can see. In order to demonstrate this, we use an infrared camera as a live demonstration of how special instruments can see what is invisible to the human eye including seeing through an opaque plastic sheet.
At the other end of the rainbow, we show how some creatures, such as bees, can see ultraviolet.
X-rays which we know from medical applications are yet another "color".

How does this help astronomers? The different "colors" (wavelengths) allow scientists to see different processes in stars and galaxies. The example of the Galaxy Centaurus A highlights how visible light and radio light reveal entirely different parts of the galaxy.
Astronomers use radio because it is not absorbed by the Earth's atmosphere thus making it an ideal "color" of light to use for communicating with spacecraft.
Lastly, we survey modern space missions which observe using a variety of different "colors" from X-ray to visible, to infrared to radio.

Educational goals:
1. Audience members should gain an appreciation that there are "colors" of light beyond what we as humans see.
2. Audience members will learn that different invisible "colors" are useful for seeing more than can be seen with visible light.
3 Audience members should learn why radio light is a good choice for communicating through the Earth's atmosphere
4. Audience members should learn that modern space missions use a wide range of "colors" both visible and invisible to make scientific investigations.