Ask an Astronomer

Question: "Why is Spitzer painted black?"
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Infrared instruments need to be very cold to operate properly, so it may surprise you that an infrared telescope is painted black.

Actually, NASA's infrared Great Observatory, the Spitzer Space Telescope, is painted two colors. The side that faces the Sun is painted a reflective silver, while the side that faces away from the Sun is painted black.

The reflective side reflects the Sun's heat, allowing the telescope cool itself down to almost absolute zero. This allows us to see the infrared sky without any interference.

But if you've ever been in a black car on a hot day, then you know that black objects absorb more heat than white objects. So why paint half of the observatory black?

Well, in addition to being a good absorber of heat, black is also a good radiator of heat. That means that black objects don't store heat as well as their white counterparts. They give off their heat more easily to the surrounding space.

By painting the side that faces away from the Sun black, it allows the telescope to radiate away any heat that it generates or absorbs. So the black side is actually helping the telescope cool down.

For "Ask an Astronomer," I'm Dr. Michelle Thaller of the SIRTF Science Center.