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Staring at the Sun, Despite Mom's Advice

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Of all the words of advice dispensed by worried mothers, few are as sage as "Never look directly at the sun." This advice holds true even during solar eclipses: when the sun is obscured by the moon, it can still damage a retina.

Yan Cornil saw a money-making opportunity in this sad fact. Mr. Cornil, president of Light Tec Optical Instruments of Hyères, France, noted the demand for special glasses that could be used to view a total eclipse of the sun in 1999. He estimated that 30 million such glasses were sold in France alone.

These glasses, made of cardboard with aluminized Mylar eyepieces and costing just a few francs, were largely discarded once the sun re-emerged.

Mr. Cornil and his partners wondered whether amateur astronomers would pay more for a more sophisticated viewing apparatus, one that could be saved not just for future eclipses but for everyday observation of sunspots, too. That device, developed by Light Tec over a three-year period, is the Solarscope.

LIGHT TEC OPTICAL INSTRUMENTS

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The Solarscope was inspired by a classic do-it-yourself means of observing the sun: using a pinhole camera to project a solar image onto a sheet of white paper. In the case of the Solarscope, the sun is aligned with an orange tube that resembles a flashlight. The solar light then filters into a chamber where it bounces off a lens, creating a spherical image on a white screen.

Dark imperfections on the image indicate the presence of sunspots, which are cooler regions on the sun's surface caused by magnetic disturbances. The observer's eyes, meanwhile, are safely shielded behind the screen.

Since it was created to compete with homemade cameras and throwaway glasses, keeping the Solarscope's price low was a design priority for Light Tec. Mr. Cornil and his team, working with the Côte d'Azur Observatory in France, eventually settled on a cardboard frame that is folded into shape. The user then screws the tube and the reflecting lens into precut holes.

Light Tec scrambled to introduce the Solarscope ahead of a cosmic event: the transit of Venus on June 8, 2004, during which Venus briefly skittered in front of the sun. An early version of the Solarscope was released in Europe in 2003, but a quick redesign was commissioned to expand the screen area and fix other shortcomings.

The revamped Solarscope made it into European hobby stores just ahead of the transit, and Light Tec has since sold around 50,000 units in Europe, Mr. Cornil said. An American subsidiary was created last year, and about 1,800 Solarscopes have been sold in the United States since then.

Those are respectable sales for a product that seems most useful on an exceedingly rare number of occasions. "There are only two eclipses per year," said Mr. Cornil, adding that each is visible in only part of the world.

Rather than depend on sales spikes whenever an eclipse occurs - the next one is Oct. 3, and it will be visible in Europe, Africa and the Middle East - Light Tec hopes Solarscopes will become fixtures in classrooms, where they can be used to teach children how to measure latitude or the duration of the day.

THE company now sells an $89 "education version" of the Solarscope, which has a screen big enough for several people to see at once. (The personal-sized version costs $59; a more rugged wooden version that can be left outdoors permanently is $359.)

If teachers don't warm to the idea of showing their students sunspots, however, Light Tec still has a fallback strategy available, albeit one that demands patience: the next transit of Venus will occur on June 5, 2012.

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