



Finding Fake Photos

Actually, they weren't caught together at all—their images were *put* together with software. The shadows cast by the stars' faces give it away: The sun is coming from two different directions on the same beach! More elaborate digital doctoring is detected with mathematics. Calculus, linear algebra, and statistics are especially useful in determining when a portion of one image has been copied to another or when part of an image has been replaced.



The *Mathematical Moments* program promotes appreciation and understanding of the role mathematics plays in science, nature, technology, and human culture.

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