

Re: parabolic / sperical mirror : How to tell

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- *From:* c a l a n d e <r86calande@xxxxxxxxxxxxxx>
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Bob May wrote:

Depends upon the focal length of the mirror. You said that the image of the sun was about a dime in size so it musn't be that much. A parabolic mirror iwll make a more accurately focuse imag eof the sun. The problem with using the sun is the reflected image will be so bright that you can't look at it. Better to take it out at night and set it up on a stick so you can put an eyepiece (a 10x eyeloupe will do fine for this) and look at a distant light or a star. If the image iw well focused (it will probably have a blur in one direction as you aren't on the axis of the paraboloid) then you probably have a paraboloid. A spherical mirror at a short focal length will have a very soft focus with a distant object. Another test is to take a LED and put it behind a straight edge (hopefully of a thin metal) and put it at the radius of curvature of the mirror and see what the shadows look like when you start blocking the light (your basic Foucault test). You will be wanting to hold the mirror in a stand so it doesn't move and then have the LED/KE on another stand so things don't move aobut a lot. Look up the Foucault test in google to see what is happening. The test isn't hard to do even with even primitive wood equipment for the parts.

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Why do penguins walk so far to get to their nesting grounds?

What I should have said is that the light from the sun focused into a point that had the diameter of a dime. Not the image of the sun. I was convinced that a parabolic mirror would not provide such a small sharp shape for the focal point.

Now I'm reading just the opposite. It's the parabolic that provides the better focusing. And I must admit, I'm still having a problem wrapping my mind around this concept.

Re: parabolic / spherical mirror : How to tell

A perfect spherical mirror should provide a single point of focus in 3d space. What's the shape of the focus [volume] from a parabolic? It can't be a single point, so it doesn't seem to be better. But if you tell me that the shape of the focus volume is more of a flattened ellipse and that this provides for better focusing over a larger area, then maybe I'm a believer.