

MAKING A SALAD SPINNER ZOETROPE

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Abstract: This poster demonstrates how a zoetrope-like device can be made from an inexpensive salad spinner and an old Digistar calendar.

A zoetrope is a spinning device that demonstrates how a series of individual pictures, glimpsed by the eye, are perceived as a fluid motion picture.

To make a salad spinner zoetrope, place electrical tape over the slits of a salad spinner bowl, leaving every third slit open. Around the inside of the bowl affix a series of images that will yield a fluid scene when put in motion. For this conference prototype, I cut out moon phases from an old Digistar calendar (thank you, Evans & Sutherland). Another suitable series could have been taken from the monthly Nimbus-7 satellite images of global ozone levels, except I did not want to trash a good NASA Goddard poster.

Secure the bottom of the bowl to the inverted lid of the spinner. A big wad of tape on the bottom of the bowl works well during the trial-and-error stage of zoetrope design if the bowl is centered well. Later you can screw the bowl to the spinner.

To use the zoetrope, grip the salad spinner lid in your left hand. With your right hand rotate the handle so that the bowl spins counterclockwise. Hold the zoetrope level, or slightly tilted to the right, to prevent the screws from clicking underneath. As you spin the bowl, look through the slits into the bowl to view the moon rapidly go through its phases.

Sturdy versions of a zoetrope can be seen at the Great Lakes Science Center in Cleveland. The following description accompanies their zoetrope display (written with permission):

Each picture frame, called a still, is flashed into the eye one at a time. The spaces between the slits act as shutters, which keep the individual frames separate. We only see the image for a fraction of a second, but our eyes and brain hold the image in the visual cortex, "the seeing center of the brain," for a brief period longer.

When a changing series of images are seen progressively at a rate faster than the cortex releases the information, the images blend together and appear to be moving.

Students and teachers alike can design their own series of drawings to show other phenomena in motion. Of course, an activity that makes zoetrope inserts can complement lesson plans in many other disciplines as well. A sequence of pictures used for a flip book can also be adapted to a zoetrope. For ideas on astronomy-related drawings that can be affixed to the inside wall of the bowl, refer to the book *Dynamic Astronomy* by Don Dixon.

One of the most valuable aspects of a GLPA conference is the exchange of ideas between members. Therefore, I introduce this less-than-polished salad spinner zoetrope as a starting point for a planetarium activity and encourage GLPA members to take it and run!