How to make a eyepiece for telescope

by **hvegar** on August 3, 2009

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Good to improve, not so good to create, or being creative

Intro: How to make a eyepiece for telescope

Here are the instructions to make a eyepiece with recycled parts, is easy and cheap to make and gives good quality images. this can be useful to people given courses on astronomy specially those where you make your own telescope.

Step 1: Get the parts

The first things is to get the lens from an old cd-rom or dvd, you will remove the lens, use a non working unit.

I use one from a dvd-rom, the lens was mounted on a square plastic this made easier to handle the piece, be careful, not no damage or scratch the glass

The cd-rom and dvd-rom are similar but they have different focus distance, keep this on mind, you can make two if you can dismantle one of each.

The lens can be mounted on a tube the size of the telescope barrel, searching for parts, i found one that i liked because the size was right, and need little work, the plastic bottle for35 mm film

The other main part is a small metal plate,

You will need 3 little fasteners and 3 little plastic washers.

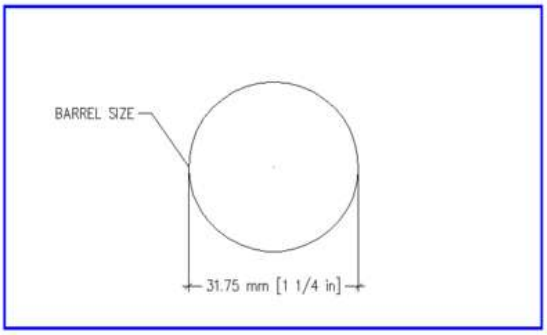
Step 2: Metal Plate design

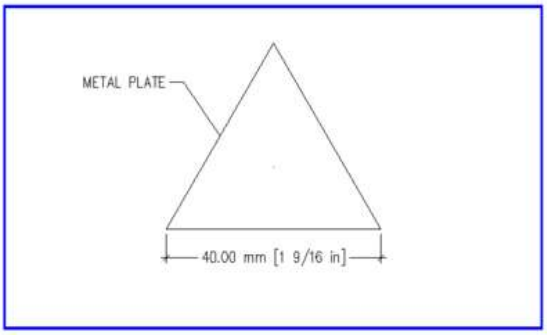
Here I will explain the process to make the metal plate to fix the lens.

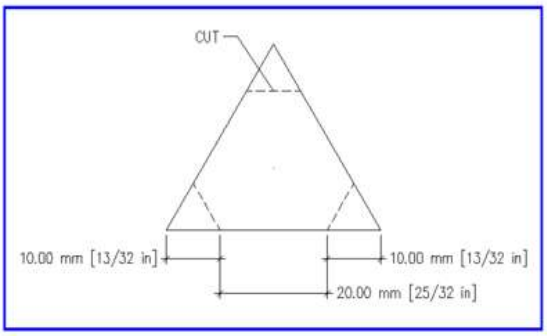
This was a solution, based on the fact that is important to center and level the lens on the base, so i think on a 3 point base and later modify this to center the lens more easily it worked on the first trial, since i didn't want to dismantle the piece after the effort to center this on the base I made some drawings to explain the process.

At the end I give the center a square shape to fit the lens base, that already have this shape, but compared with other optical units each have a different shape, you can modify this or just make a round hole related to the shape of the glass.

Use sand paper and a file to finish the part take special care no to cut yourself with the edges.



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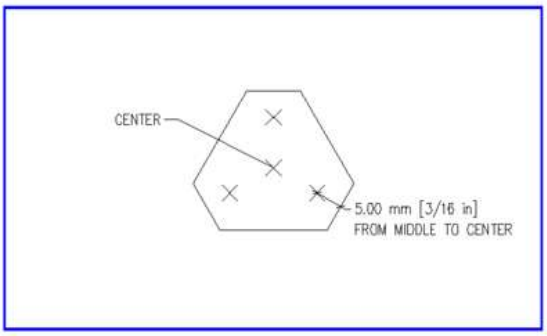
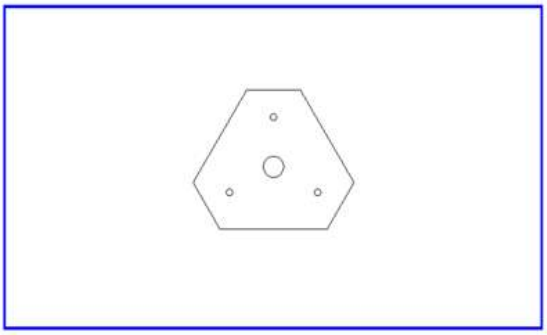
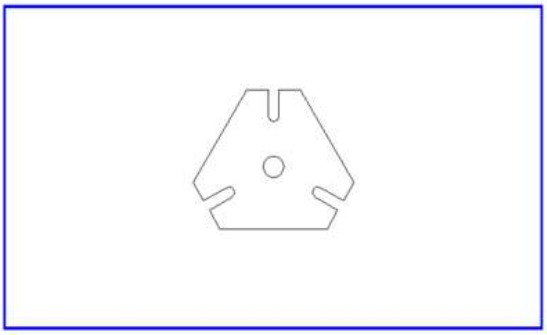
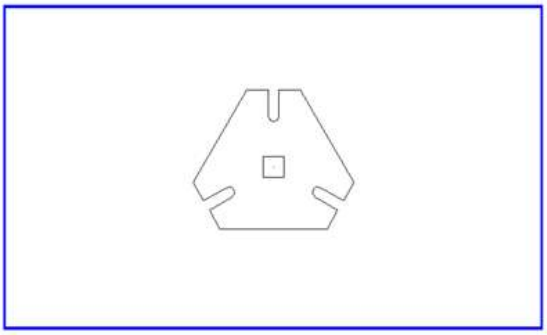
10.00 mm [13/32 in]
20.00 mm [25/32 in]


CENTER
5.00 mm [3/16 in]
FROM MIDDLE TO CENTER







Step 3: Base preparation

This was very simple just make a hole on the base of the bottle for the lens, and then 3 for the fasteners, just keep in mind the size of the holes.

The other thing was to cut the end on the bottle that holds the cap, i use a small saw, then use a 600 sandpaper and clean the part.

Step 4: Glue the lens

Once the small metal plate is ready and clean, glue the lens using regular glue, keep in mind that the side you will use to see is the opposite to the one closer to the cd or dvd.

Once the glue is dry fix the plate to the plastic bottle and fit this on the telescope.

I recommend center and level the lens at day looking at a distant wall.

The sight on the moon was great but the weather didn't allow me to try this on other objects.

Please send any comment,

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Comments

5 comments **Add Comment**

wareneutron says: Nov 23, 2010. 11:48 PM **REPLY**
i have not learned

lowercase says: Aug 5, 2009. 10:38 AM **REPLY**
Amazing!!!!!! What focal length does this tiny lens has? It's always great to have a cheap eyepiece.

Lftndbt says: Aug 3, 2009. 10:40 PM **REPLY**
WoW!! That's a small / high powered magnyfication. It must be hard to view through. I'll try this out. Thanks

rimar2000 says: Aug 3, 2009. 9:42 AM **REPLY**
What a good idea to use that tiny lens!

hvegar says: Aug 3, 2009. 2:02 PM **REPLY**
Tanks, tomorrow I will add more pictures, I finish late at night, to try use this aiming at Jupiter, and was a little bit of problem to take the pictures