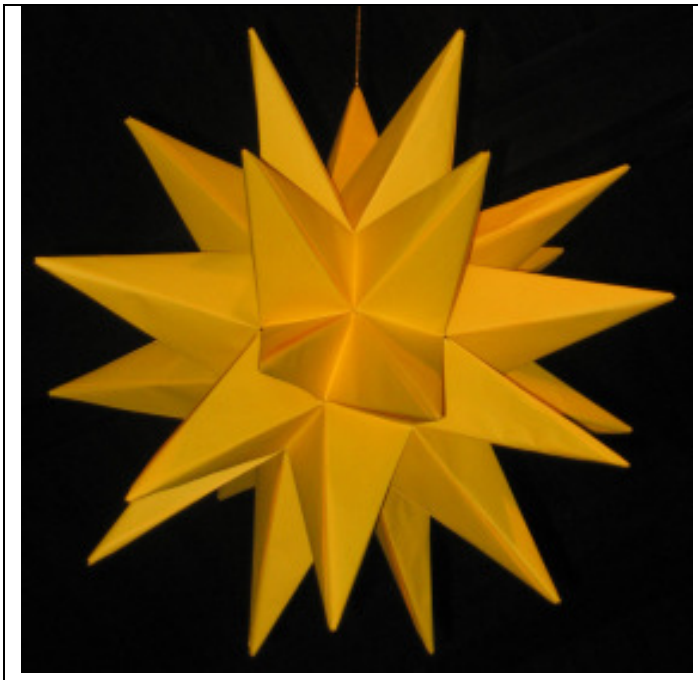
It’s done! The Herrnhuter Star as Origami-Model



Dear Origami-friends,

I guess everyone knows the famous „Herrnhuter Star“ from childhood times and there is an inseparable connection to Christmas, because this star – in the illuminated form – decorates many churches during Christmas time.

For a long time I had the „instruction for the assembly of the paper star“, which is published on the Internet, printed at my home and it was my deep wish to make a real Origami-model (without a pair of scissors or glue) of this - traditionally glued - star that is often made in schools.

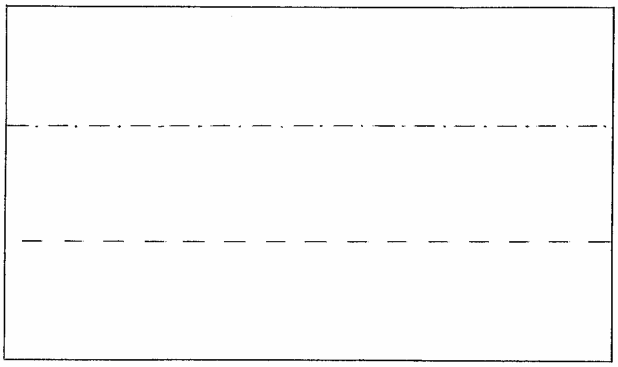
Based on the „Super Simple Isosceles Triangle Unit“ developed by M. Mukhopadhyay here comes:

My Solution (found on 2005-10-22/23)

The Star consists of 48 equal units, has the traditional 26 tips, 18 four edged and 8 three edged.

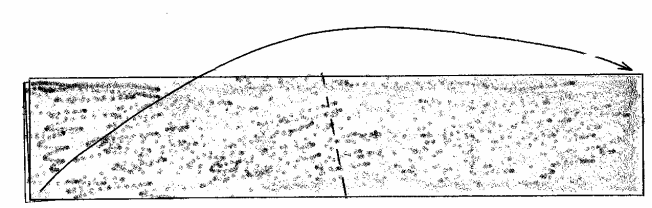
Base form for the unit is a sheet of paper by a 5 : 3-format. I can recommend a totally coloured A4-printing paper (f. e. in a warm yellow colour), that is cut into a 29.5 cm : 17.7 cm format. The finished star will then have a diameter of about 43 cm.

But it’s of course possible to make the star from one side-coloured paper or in smaller or bigger sizes.



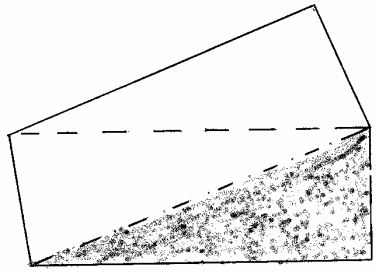
1

white site up,
divide it in thirds by valley and mountain fold



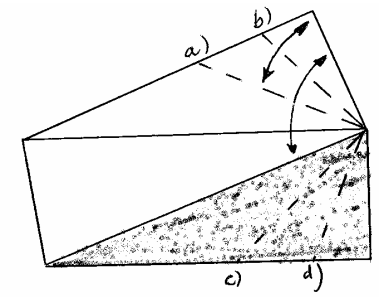
2

fold corner to corner



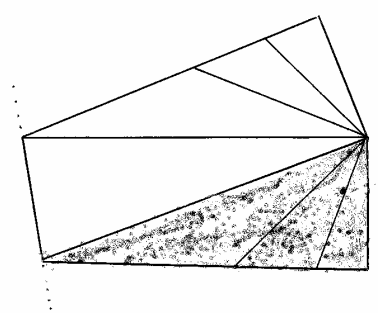
3

valley and mountain fold, fold and unfold



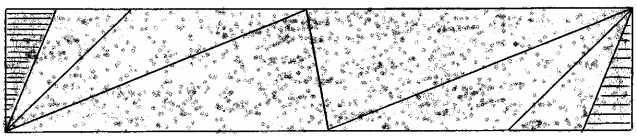
4

a) divide the angle in half (fold and unfold)
b) divide the angle in fourth (fold and unfold)
c) as shown in a) divide the angle in half (fold and unfold)
d) as shown in b) divide the angle in fourth (fold and unfold)



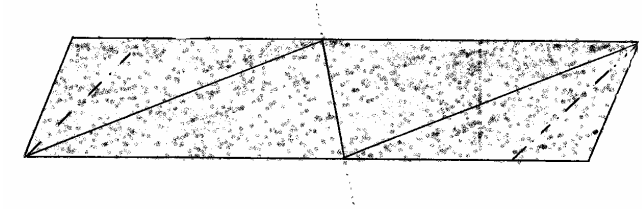
5

unfold step 2



6

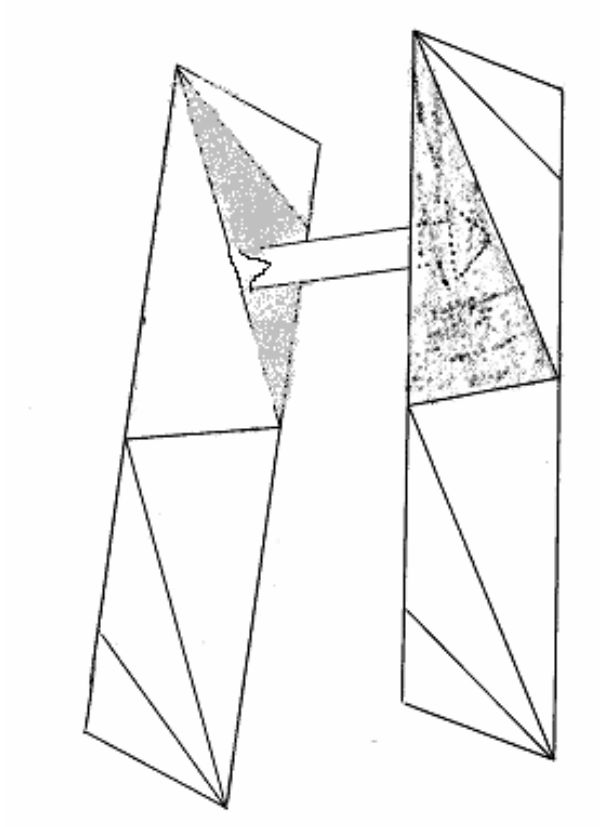
open the upper layer a bit and fold the marked area on the right side (all three layers) with an inside reverse fold inwards and close the unit, repeat on the left side



7

make the existing creases (mountain folds) sharp, stand the right part of the unit up in an angle of 90^0 -at the existing crease of step 2 - unit is finished

Assembly of a tip made out of 4 units



Push the left unit under the upper layer of the right unit (mind the marked areas) und make the existing creases in this region sharp.

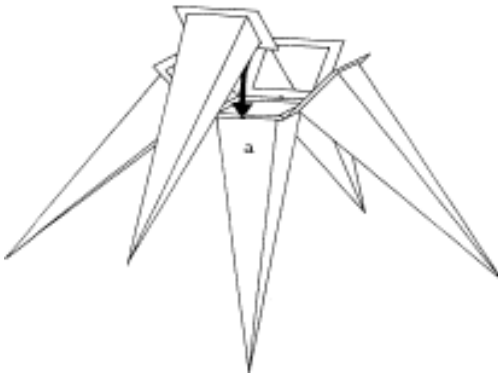
Join 2 more units from the left side and close the tip.

From the outside you can see now only 4 isosceles triangles. For better holding together of the units lay the finished tip flat in each direction, then make it 3-D again und fix the tip temporarily with a simple elastic band.

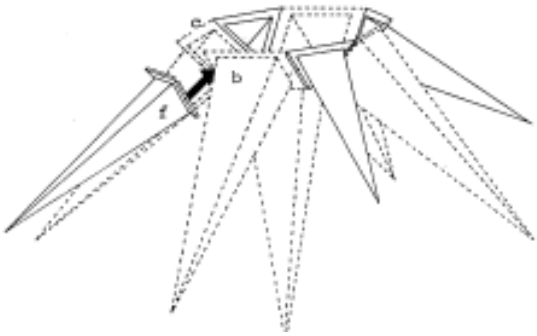
Assembly of a tip made out of 3 units

The assembly is the same as the assembly of the tip made out of 4 units, the only difference is that here there are only 3 units necessary. Therefore the assembly will unfortunately require some more dexterity and patience. The last step „for better holding together...“ which is described for the four edged tip , is only partially possible, but should be done as far as possible. The temporary fixing with elastic band should be done as described.

Assembly of the whole Star

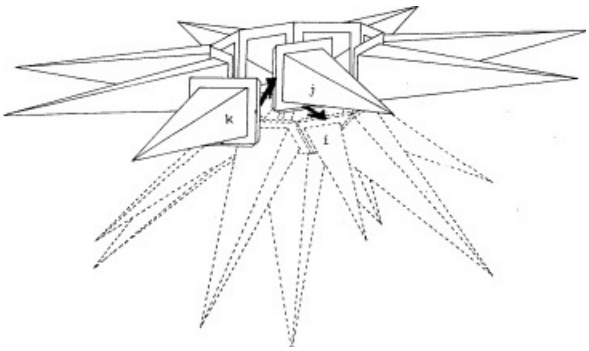


The first tip shows down as shown in the picture (only schematic figure without remaining flaps) then 4 more 4-edged tips are joined, one at each remaining flap, don't forget the temporary fixing with elastic band.



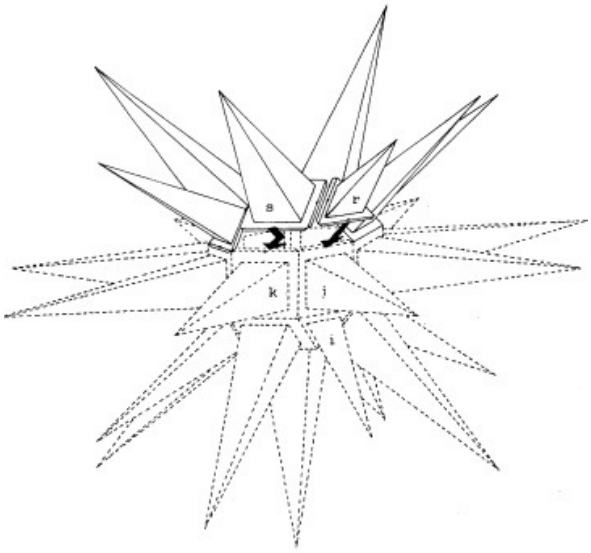
Then put the tip in the middle (this tip is showing downwards) in a vase or a drinking glass (without water, please!!), so that the 4 remaining tips will hang free (this makes the rest of the assembly much easier, because you can work on the star now like using a potter's wheel).

Now join - as shown on the picture - (only schematic figure) 4 three-edged tips, notice that 2 of the 3 needed units are still there by the assembly of the first 5 tips and only one more unit has to be put in - don't forget the temporary fixing with elastic band.



Now join a ring of 8 4-edged tips (temporary fixing as above). Here some of the needed units are still there by the previous assembly.

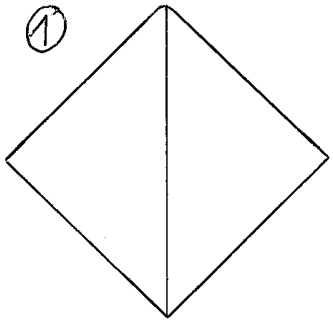
Then to the upper part do the same in reverse order: First put in the 4 4-edged tips and then the 4 3-edged tips (temporary fixing as above).



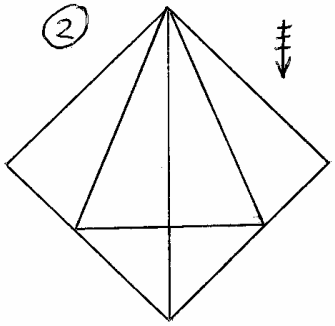
The 4 units for the top tip are already there and have only to be closed.

It's possible to integrate a suspension in the top tip just before closing the tip. For units in the shown size you can use a square by 21 cm x 21 cm (cut off an A4-sheet). The folding works as follows:
Base form is the preliminary base, the open tip points downwards.

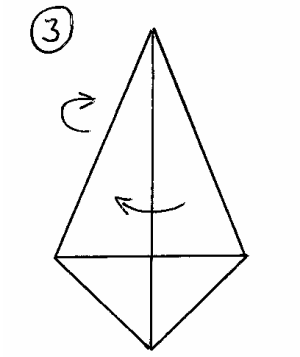
Squash fold at one flap



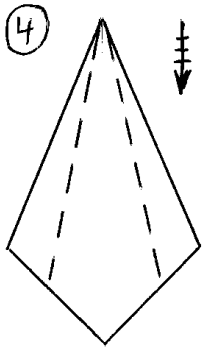
Repeat 3-times



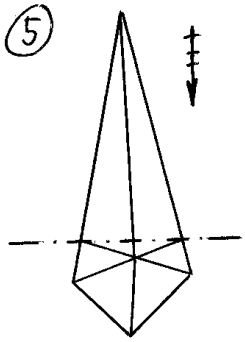
Fold the upper flap and the flap behind only



Valley crease to centre line, repeat 3-times



Fold the tip inwards with a mountain fold, repeat 3-times



Finished ! Put a thread through the tip and fix it by a thick knot inside. Then place the whole suspension in the top tip and close this tip.

To finish the star replace the elastic bands carefully and here is the **finished star**

This is my first Origami-model, I dedicate it to

- at one part my beloved Marlene, who often tolerates my sometimes very extreme passion for origami with great patience
- at the other part to Paulo Mulatinho, the founder and chairman of Origami Deutschland for many years for the foundation of the society and his nearly never ending work for Origami and the society, because without Origami Deutschland I would have never got the numerous contacts and the origami skills that I have now.

Have fun with this model, a nice and contemplative advent season and merry X-mas

Matthias Eichel