Ariadne and Phaedra

Designed by David Mitchell

The Ariadne module is made by applying the metamorphosis 1 distortion to the Sonobe module.

The Ariadne module can be used to make a distorted version of any design which can be made from standard Sonobe modules. Such designs are, of course, both surface and method analogues of the originals.

It is also possible to apply the same distortion to the Corner-pocket Sonobe module, arranged slit outwards, with similar effect.

Phaedra is a basic, but attractive, decorative variation of the Corner-pocket Sonobe module version of Ariadne which I found when revisiting the Ariadne design in 2011. I imagine that many other decorative variations may be possible although I have not looked for them. Phaedra is easier to assemble than Ariadne but slightly less robust as a result.

I first found the final clean form of the metamorphosis 1 distortion in 1990, which owes much to the earlier work of Iris Walker, Ricky Wong and Wayne Brown, when working on my Metamorphosis design. The modules for this design are distorted versions of the modules for Paul Jacksons 's Cube but it was obvious from the first that the same distortion could be applied to the modules for many other designs that also feature cube corners. Some of the resulting designs are, of course, much more successful than others.
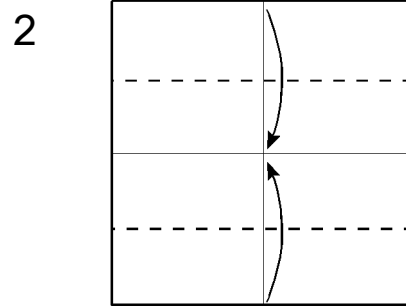
Diagrams for Metamorphosis can be found in the second edition of my book Building with Butterflies.

Ariadne

Ariadne modules are folded from squares. If you are using irogami begin with your paper arranged white side up.
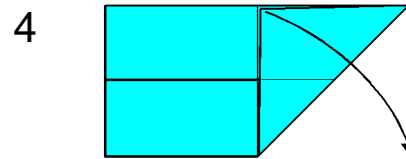
1
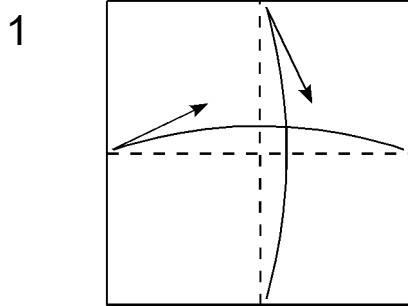
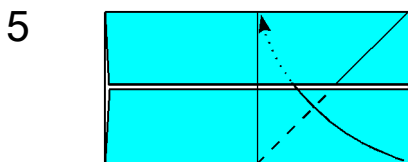1. Fold in half edge to edge, then unfold, in both directions.

2

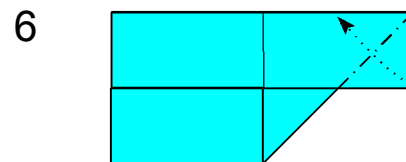2. Fold the top and bottom edges on to the horizontal centre crease.
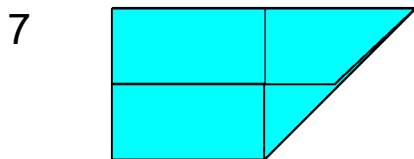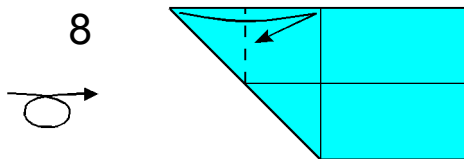
3

3. Fold the bottom right corner inwards as shown.

4

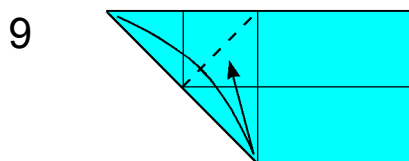4. Unfold.

5

5. Remake fold 3 underneath the top front flap.

6

6. Fold the small triangular flap at the right side of the paper backwards in between the other layers by reversing the crease made in step 3.
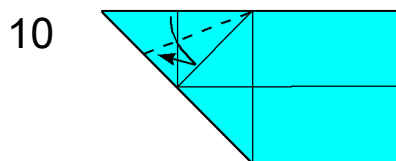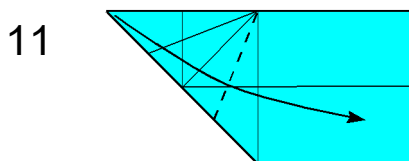
David Mitchell / Ariadne and Phaedra

7

7. Turn over sideways.

8

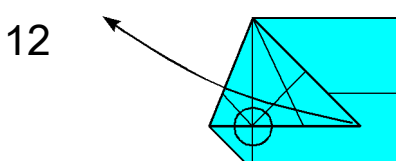8. Fold the top left corner inwards like this, then unfold.

9

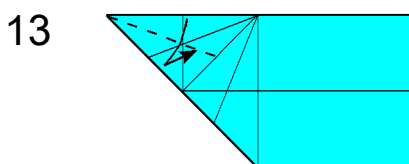9. Fold the top left corner diagonally downwards like this, then unfold.

10

10. Fold the left half of the top edge onto the crease made in step 9, then unfold.
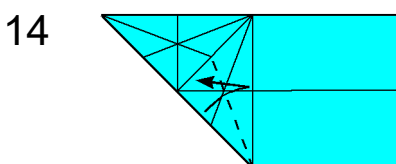
11

11. Fold the top left corner inwards so that the diagonal crease made in step 9 lied on top of the vertical crease.

12

12. The result should look like this. Unfold.

13

13. Fold the top edge onto the left sloping edge but only flatten the fold to make a new crease along the portion of the axis of the fold marked by the dashed line, then unfold.
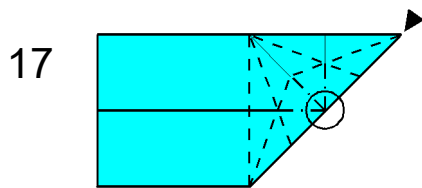
14

14. Fold the left sloping edge onto the vertical crease but only flatten the fold to make a new crease along the portion of the axis of the fold marked by the dashed line, then unfold.
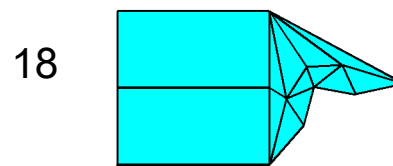
15
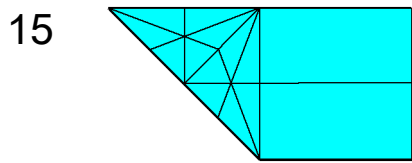
15. Check that you have made all the creases shown here then turn over sideways.
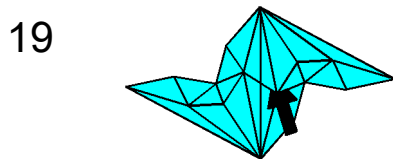
16
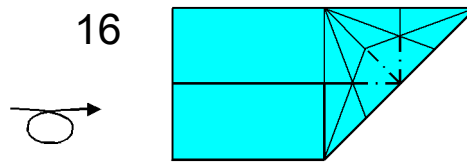
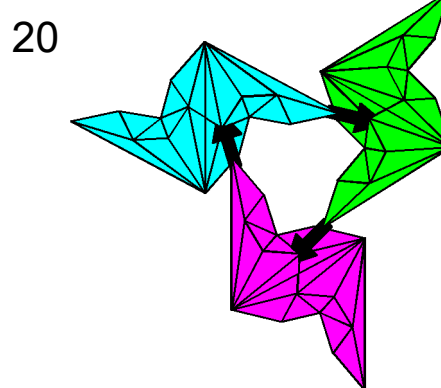16. Change the direction of these three sections of crease so that they become mountainfolds.

17

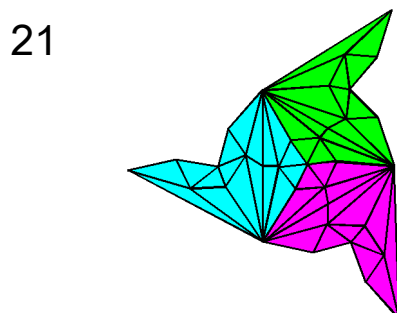17. Collapse into shape like this.

18

18. Repeat all folds on the other half of the paper.

19

19. The finished module should look like this. The arrow show the location of the pocket.

20

20. Three modules go together like this to create the first distorted cube corner.

21

21. Other cube corners can be created in a similar way. Any design that can be made from standard Sonobe modules, such as the 3-part hexahedron, the 6-part cube and the 12 and 30-part Stubby Stars can be made from Ariadne modules.

Phaedra

Begin by following steps 1 through 4 of the instructions for Ariadne.

Phaedra modules are folded from squares.

These instructions show you how to fold the module and how to assemble a distorted cube corner using three modules folded from three different coloured squares of paper but Phaedra also looks good when folded from paper of just a single colour.
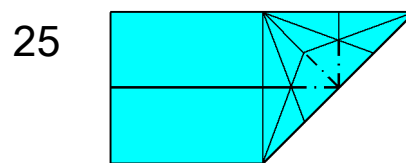

22
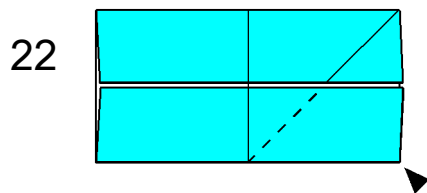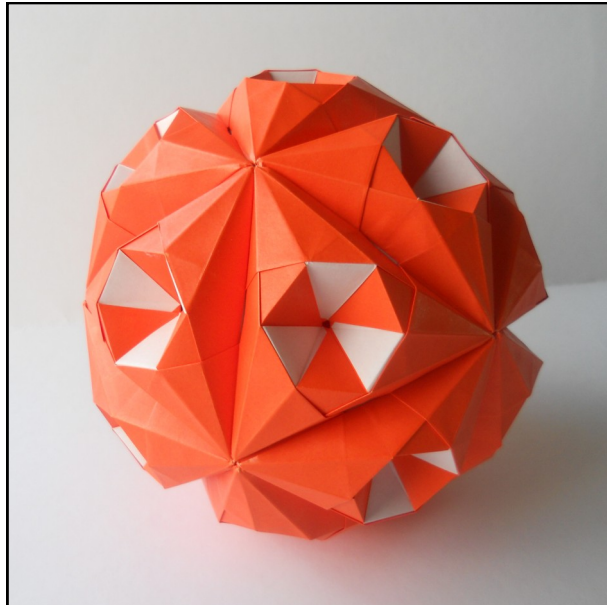
22. Turn the bottom right corner inside out in between the other layers using the creases made in step 3.

23
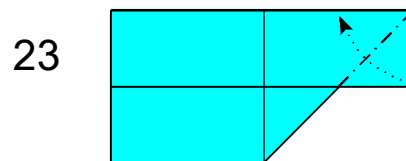
23. Fold the small triangular flap at the right side of the paper backwards in between the other layers by reversing the crease made in step 3.
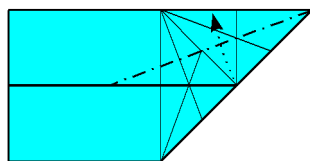
24
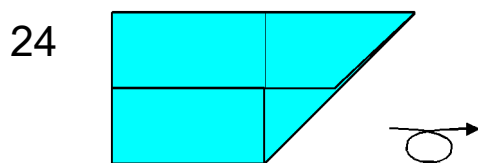
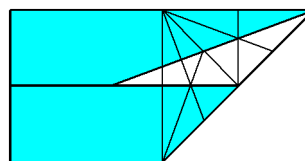24. This is the result. Turn over sideways then follow steps 8 to 15 of the instructions for Ariadne.

25

26. Change the direction of these three sections of crease so that they become mountainfolds.
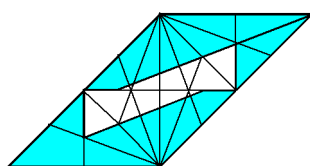
26

26. Fold the bottom right corner of the top front flap backwards in between the other layers using, and extending, the crease made in step 13.
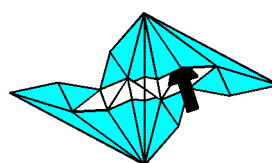
27

27. This is the result. Repeat all the folds on the other half of the paper.
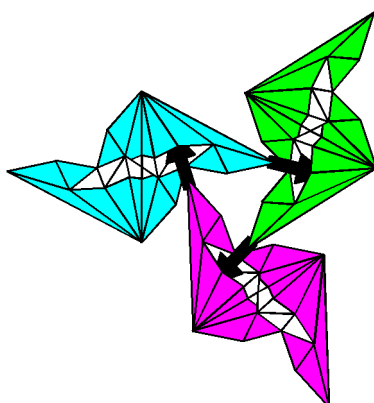
28

28. Collapse both halves of the module into shape in the way shown in step 17.
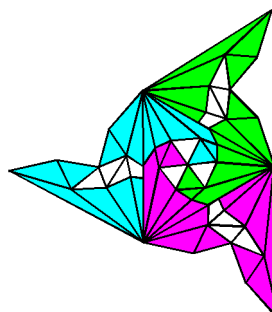
29

29. The result should look like this. The arrow indicates the location of one of the pockets.

30

30. Three modules go together like this to create the first distorted cube corner.

31

31. Other cube corners can be created in a similar way. Any design that can be made from standard Sonobe modules, such as the 3-part hexahedron, the 6-part cube and the 12 and 30-part Stubby Stars can be made from Phaedra modules.

Copyright David Mitchell 2016

www.origamiheaven.com

David Mitchell / Ariadne and Phaedra