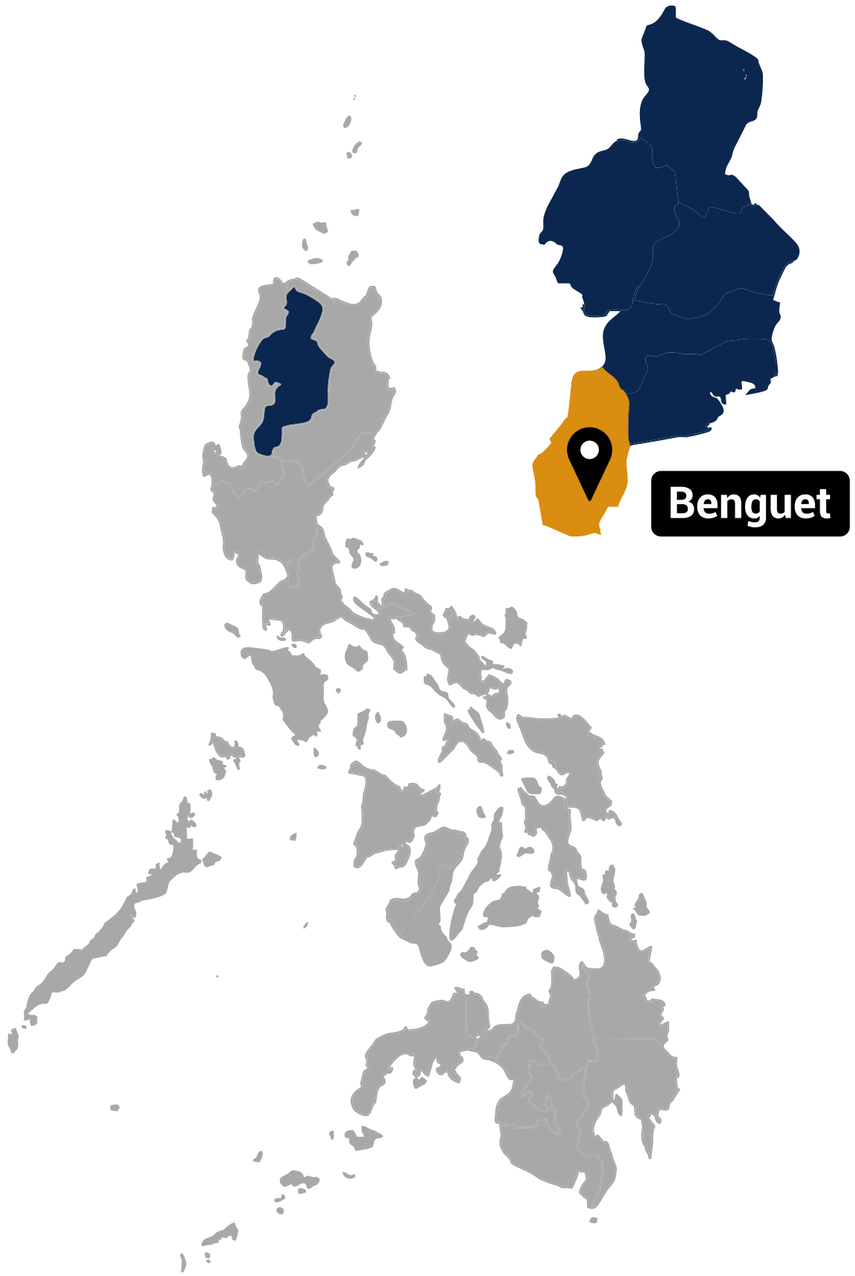
Panagbenga Medallion

Joisel Awards 2023
Abstract - Technical Award Entry

Concept



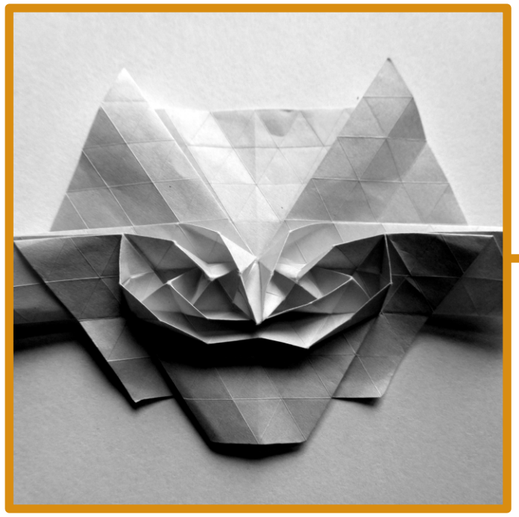
The **Panagbenga Medallion** is named after one of the world-renowned festivals in the Philippines. The **Panagbenga**, which literally translates to **"season of blooming,"** is an annual flower festival held throughout February in **Baguio City, Benguet**. The overall composition of the medallion intends to symbolize the attractive display of flowers during the said festival.

Artistic Composition

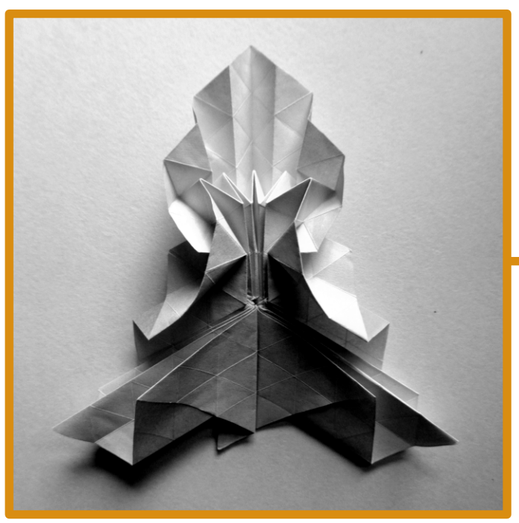
The **flower** has a lot of opened layers which indicates that it is in a **state of full bloom**, thereby symbolizing the main **essence** of the Panagbenga Festival.

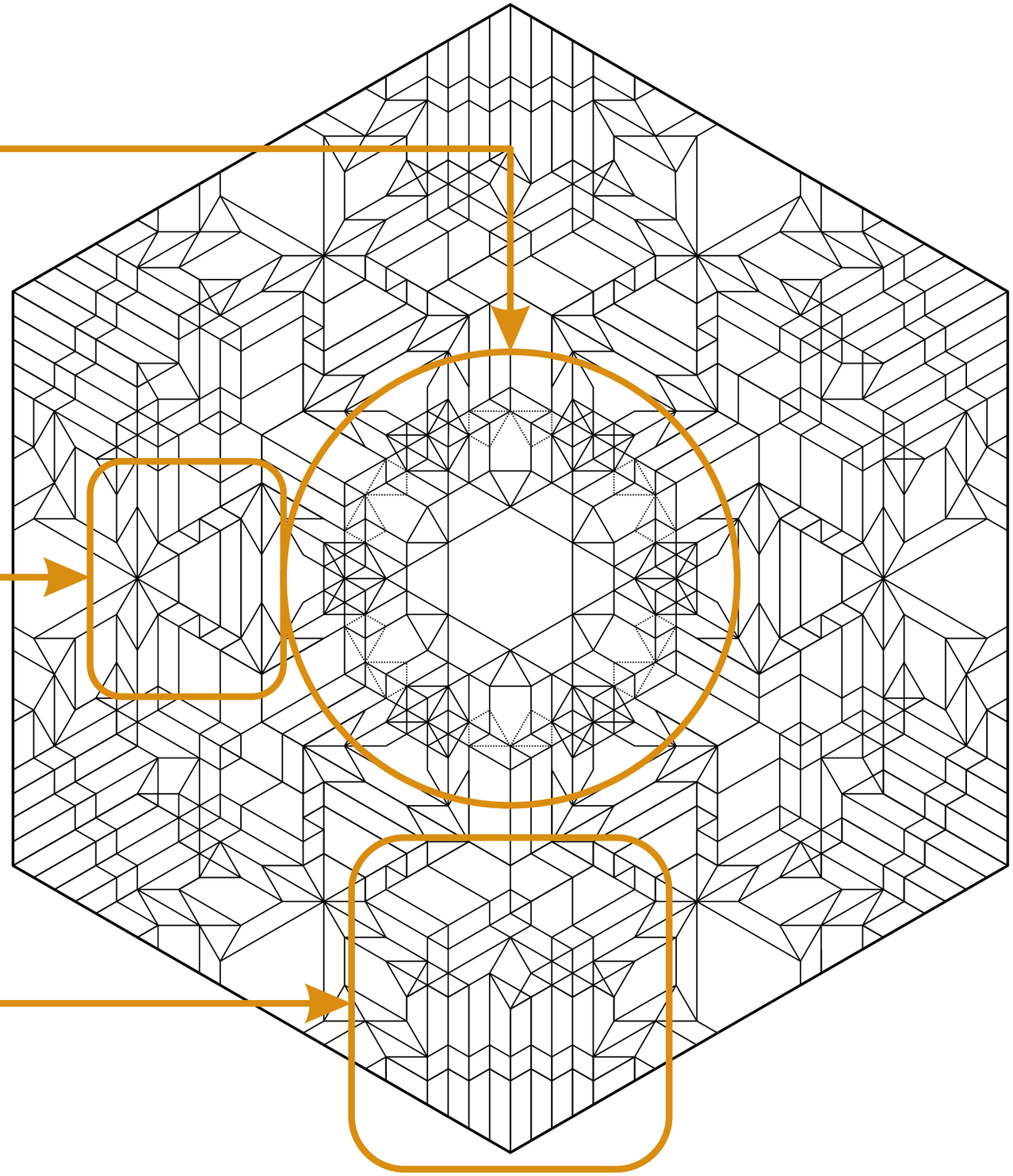
Six **pairs of petals** surround the flower and enhance the three-dimensional aesthetics of the medallion.

They also look like **butterfly wings** and can resemble the butterflies raised in a sanctuary at Baguio City.

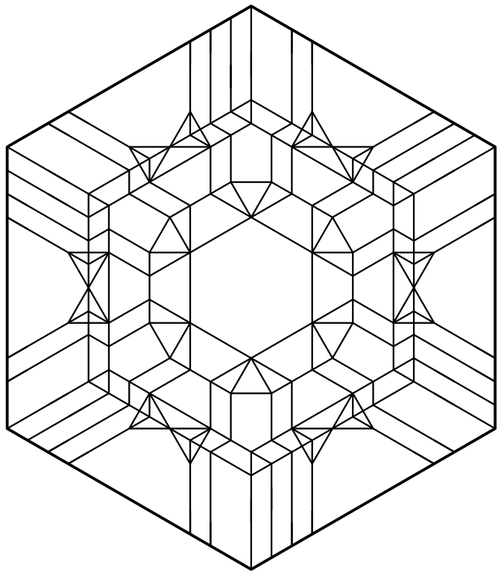


The corners of the medallion also feature **leaves** that somewhat resemble abstract ***pamaypays*** or traditional handmade fans used as decorations in Philippine festivals.

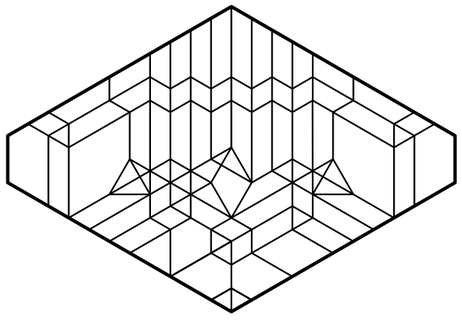




Technical Composition

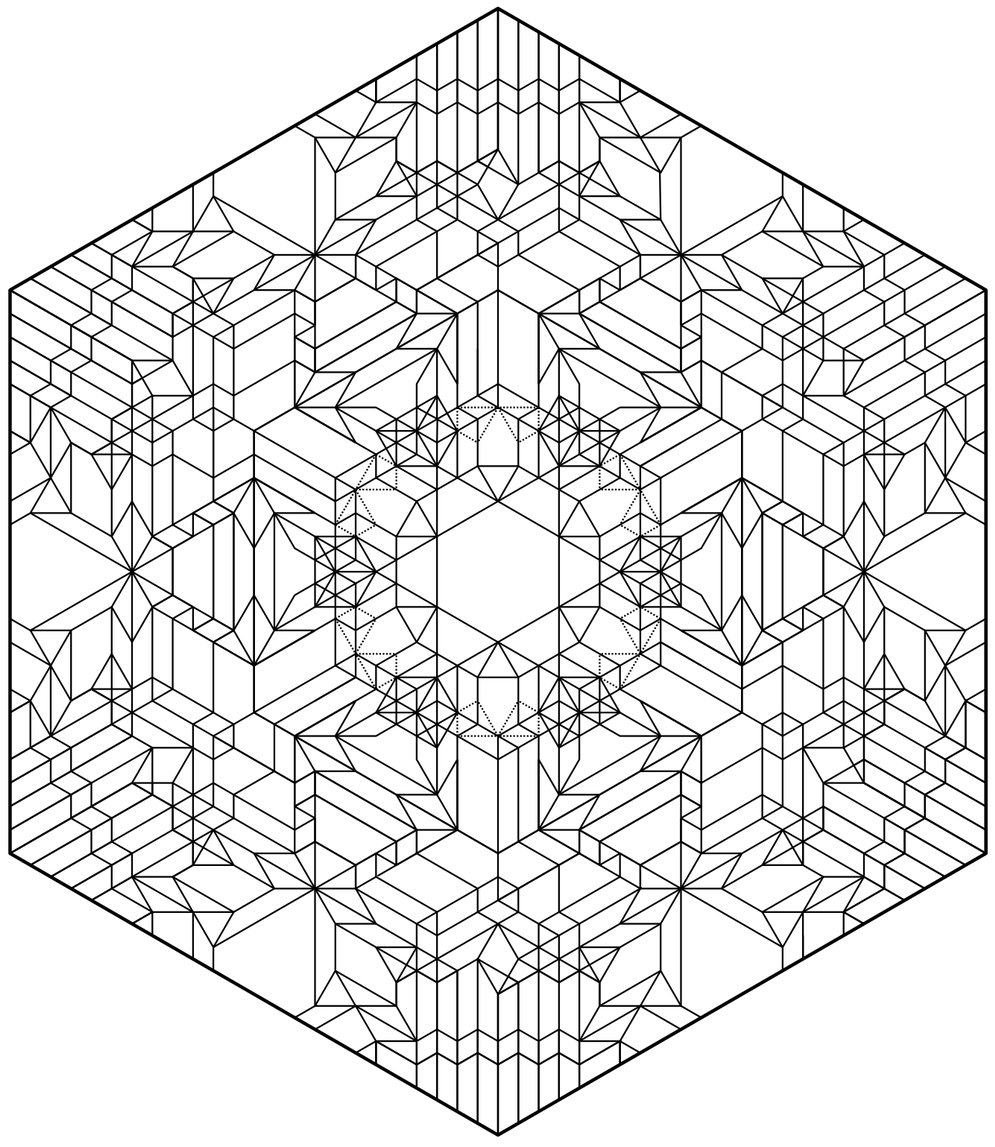


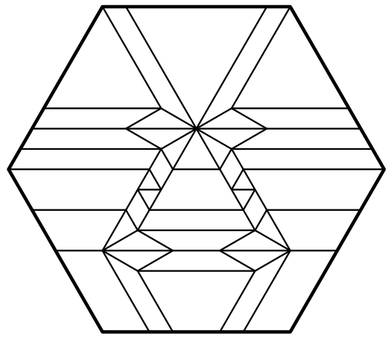
The base of the **flower** at the center of the medallion is folded using basic techniques in folding tessellations.Despite its simplicity, the base has a **unique arrangement of layers** that can be opened, re-collapsed, and shaped with extra detail folds to give the flower a **highly aesthetic appearance**.



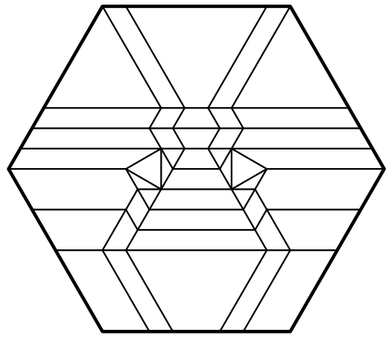
Incorporating **sink folds** on a **complex hex-pleat structure** allows the formation of **fan-like pleats** that can be further corrugated using the **miura-ori technique**.

The medallion is made using an **assortment of simple and sophisticated techniques in two-and three-dimensional origami tessellations as well as in origami corrugations and hex pleating**. With further consideration on combining all design elements in a compact arrangement, it became possible to design a highly detailed medallion from a relatively small grid - a technical breakthrough in the field of abstract origami.





Non-flat-foldable crease pattern of a pair of outer petals

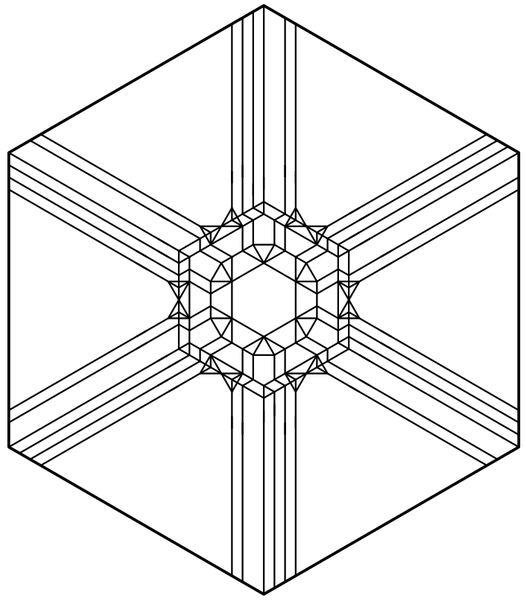


Flat-foldable version of above crease pattern

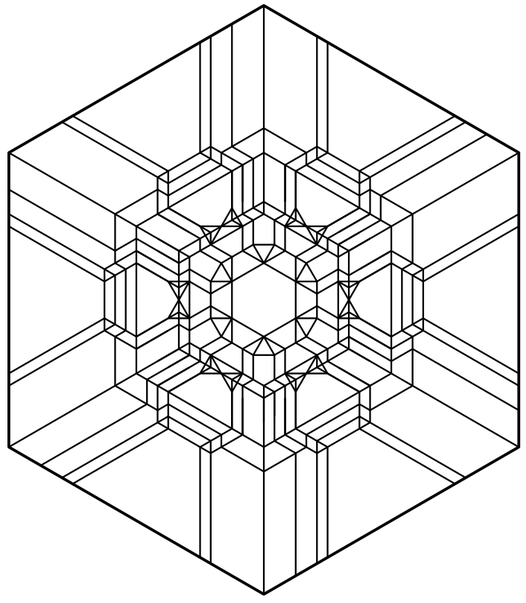
The non-flat-foldable CP of a pair of **outer petals** was originally designed by **Timur Menyalshchikov**. This element originated from a pair of simple rhombus twists with a **strip graft** in between them to yield layers that enhance the aesthetic 3-D appearance of the petals.

Timur's CP implies a simultaneous collapse of all layers which takes more time to fold. Fortunately, an **easier technique** was discovered for this model, which mostly involve **simple pleat intersections**, in order for the layers of the outer petals to fold **flat** and be collapsed **one at a time** (See collapse sequence on next page).

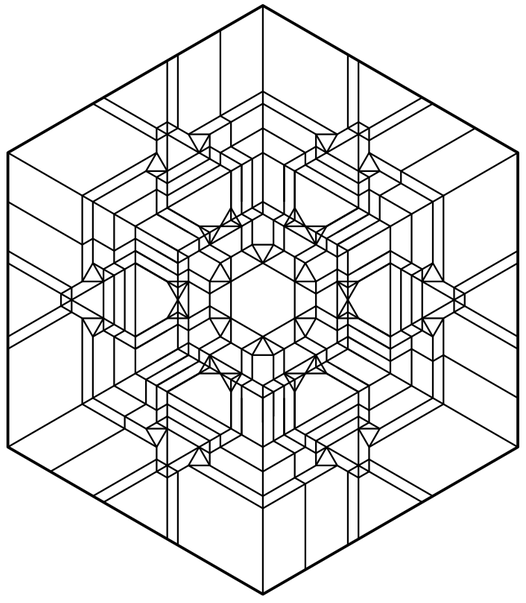
Crease Pattern Collapse Sequence



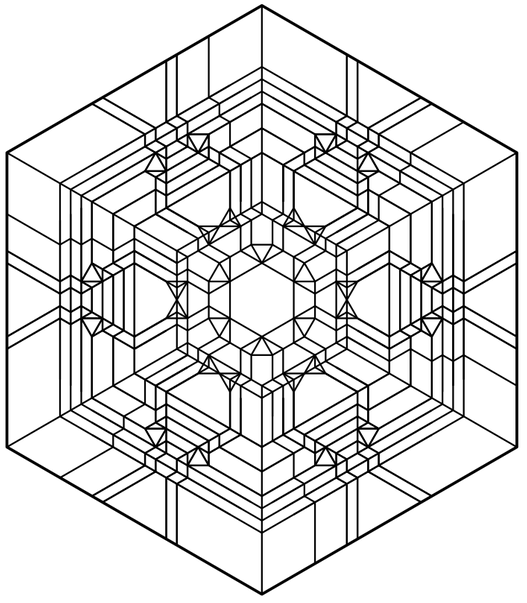
1. Collapse the **base** of the **main flower**.



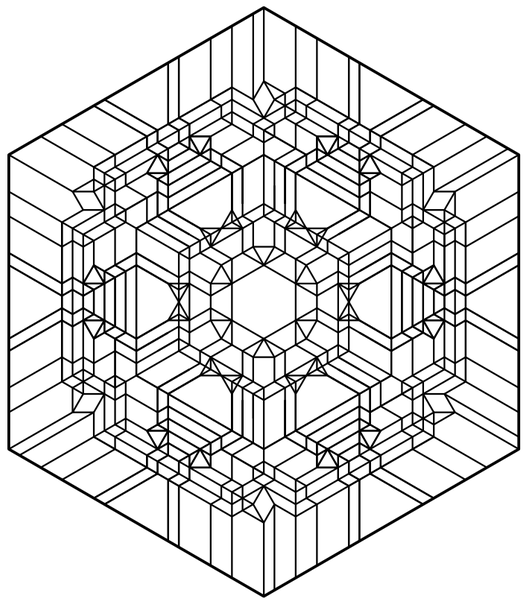
2. Collapse the **first set of layers** of the **outer petals**.



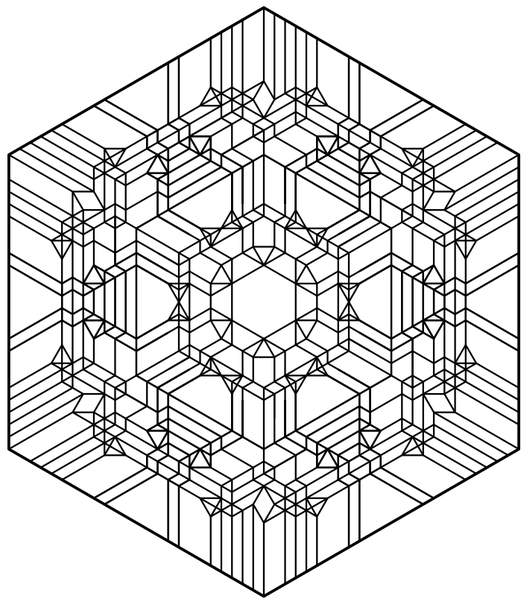
3. Collapse the **second set of layers** of the **outer petals**.



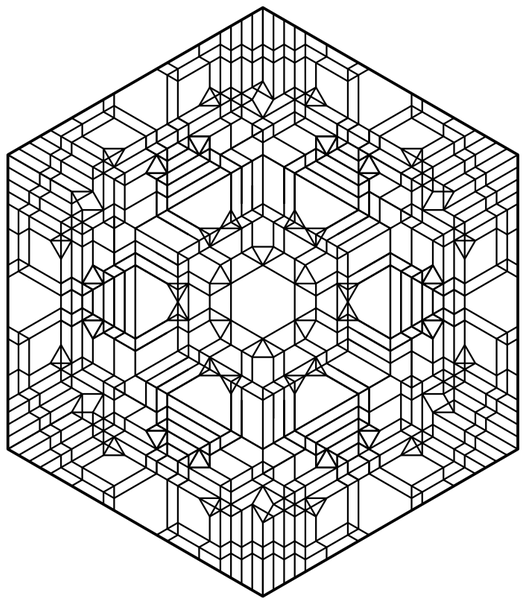
4. Collapse the **third set of layers** of the **outer petals**.



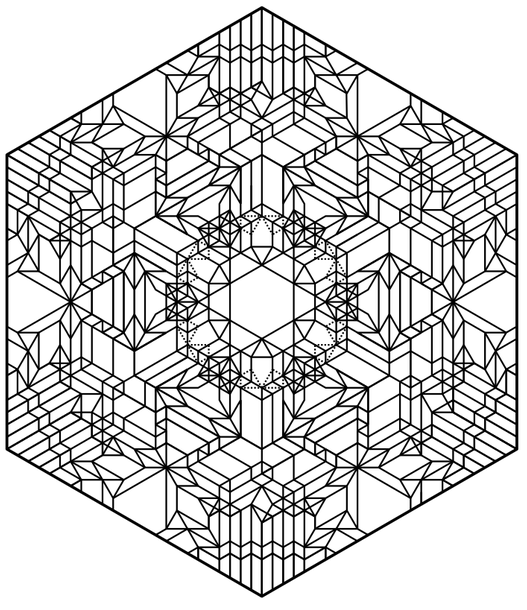
5. Change the direction of the pleats of the outer petals by collapsing **complex hex-pleat structures**



6. Add **sink folds** to turn the corner flaps into **fan-like pleats**. **This is the CP of the medallion's base**.

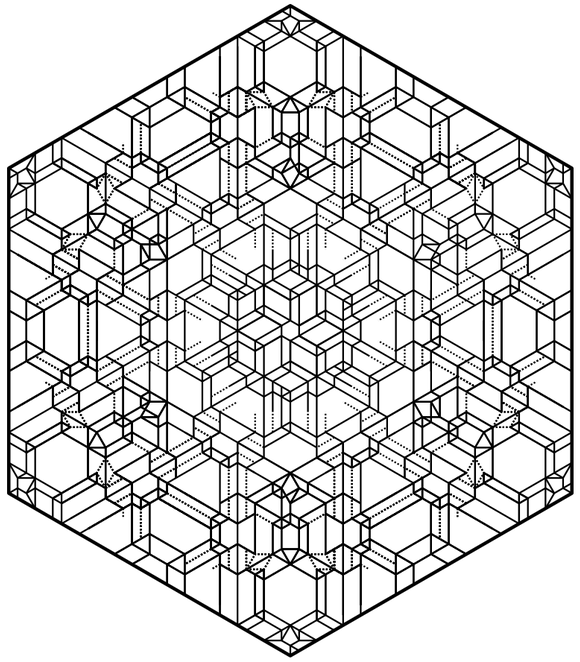


7. Collapse **corrugations** (**miura-ori folds**) on the corner flaps.



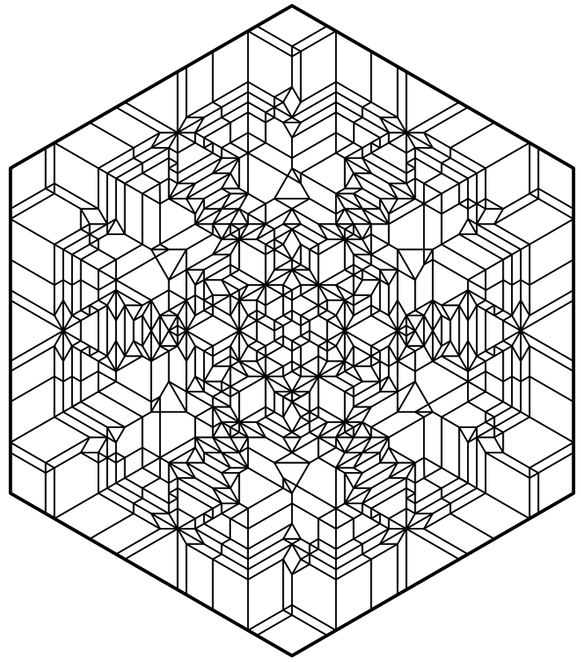
8. Open the **layers** of the base to shape the **details** of the main flower, outer petals, and abstract *pamaypays*.

Comparison with Other Medallion Designs



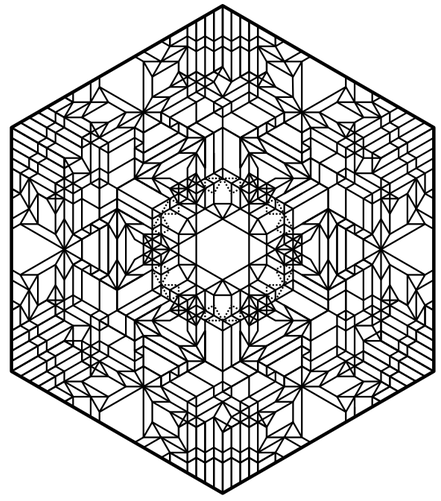
- **64x64x64** triangle grid
- Center element is **flat and geometric**.
- Corner flaps are **not fully utilized** for creating additional 3-D details.

Rosette Medallion
by Joel Cooper (2018)



- **64x64x64** triangle grid
- Center flower is **3-D but simple**.
- Corner flaps are **not fully utilized** for creating additional 3-D details.

Flower Fantasy
by Timur Menyalshchikov (2020)



- **48x48x48** triangle grid (smaller).
- Center flower is **highly detailed** and **elegant**.
- Corner flaps are **fully utilized** for creating additional 3-D details.
- **More details** are **compact within a small area of paper**, which makes the medallion to be considered as a **highly efficient design**.

Panagbenga Medallion
(2023)