The goal of this family of burr puzzles, collectively called *Quintessence*, is to assemble collections of ribs into self-supporting structures. The ribs are shown immediately to the right.

The ribs are divided into three sets: Meteor, Pulsar, and Inflation. These are shown below-right, in order and are also described in the table at the bottom of this page. The sets may be purchased from Shapeways.

<div align="center">

http://shpws.me/nv5G
http://shpws.me/nv5Q
http://shpws.me/nv5F

</div>

Each rib is made from four, five, or six dodecahedral cells (D) in the cell-centered projection (c) of the spherical 120–cell to three-space. A puzzle receives the designation DcN where N counts the number of cells. Twelve of the many possible burr puzzles are pictured on the following pages.

In every case, assembling the puzzle relies on the ribs being slightly flexible. For some puzzles a very small amount of pressure may be needed to place the final rib. The ribs can be washed in hot water to clean them; this will also reset the shapes of ribs that have become loose. We now list the sets and the ribs they contain. Note that the two equators are mirror images, and are not interchangeable.
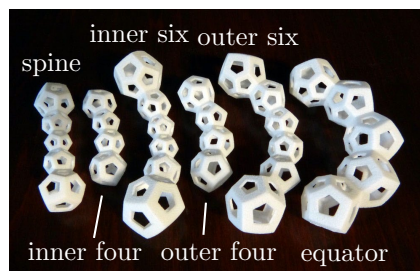
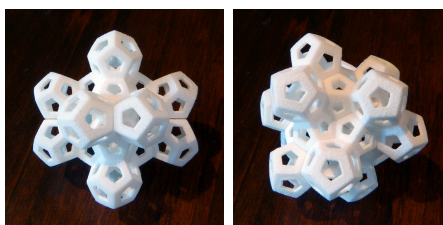| Set\rib name	inner four	outer four	inner six	outer six	spine	equator a	equator b
Meteor	6	6	0	0	1	0	0
Pulsar	0	0	0	6	0	0	0
Inflation	0	0	6	0	1	1	1

On the following pages we show several of the many possible puzzles. Please share with us any new ones that you find!
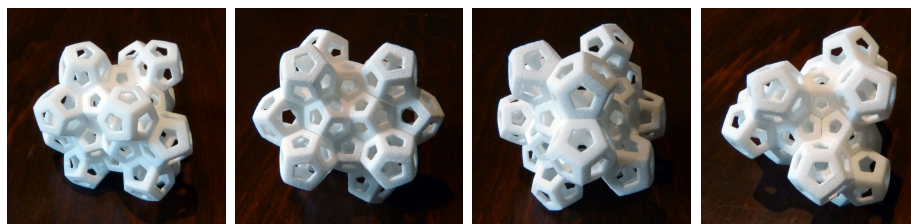
Dc24 Star

6 × inner four

Up to three ribs
can be replaced
by inner sixs.

Dc24 Pulsar

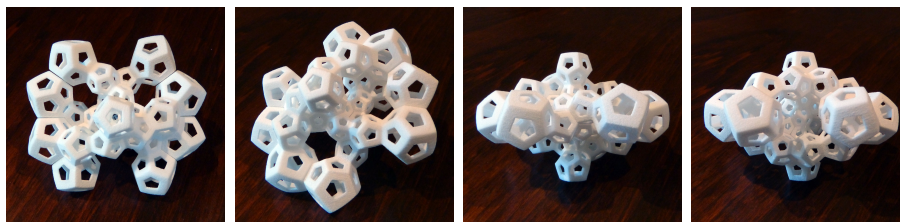6 × inner four

Any number of ribs
can be replaced by
inner sixs.

Dc29 Space Invader

2 × inner six
2 × outer six
1 × spine

Can add 2 × equator.
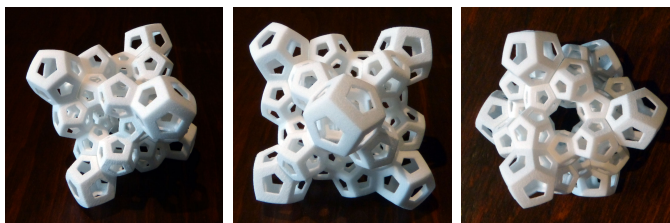

Dc30 Star

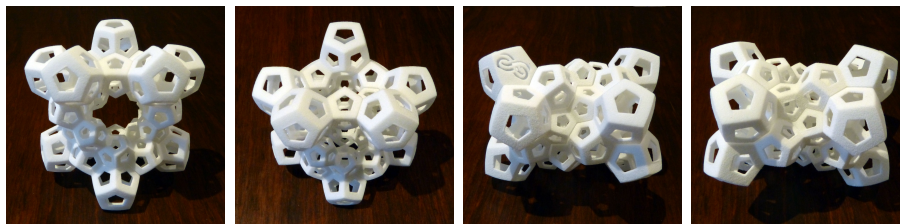3 × outer four
3 × outer six

Dc30 Ring

5 × outer six

Replace all ribs with
inner sixs to get the
Inner Ring.

Dc30 Comet

5 × outer six

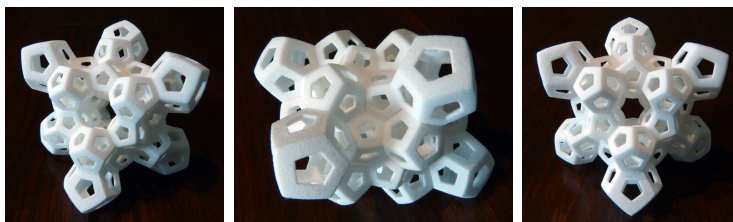Add a spine and one
inner four to make the
Comet more rigid.

Dc36 Alien

3 × inner six

3 × outer six

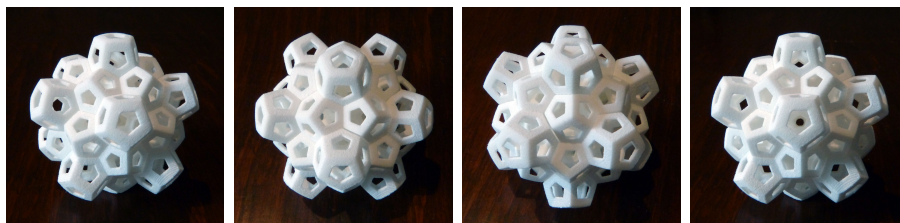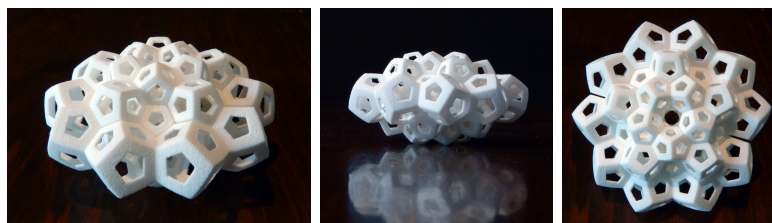Either set of 6s can
be replaced by 4s.

Dc36 Pulsar

6 × outer six

Up to three ribs
can be replaced
by outer fours.

Dc42 Alien

6 × outer four

3 × inner six

Dc45 Meteor

5 × inner four

5 × outer four

1 × spine

There are six ways
to build this.

Dc50 Galaxy

5 × inner four

5 × outer four

2 × equator

Dc75 Meteor

5 × inner six

5 × outer six

1 × spine

2 × equator