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Mobius[z_] := I  $\frac{1+z}{1-z}$ ;
ReIm := {Re[#], Im[#]} &
ComPolar[{z_, f_}] := {Re[z], Im[z], f}
Torus[{a_, b_,  $\phi$ _}] := {(1+a) Sin[ $\phi$ ], (1+a) Cos[ $\phi$ ], b}
 $\tau$ Arg := Mod[Arg[#], 2  $\pi$ ] &
Rot[ $\Omega$ ] := RotationTransform[ $\Omega$ , {0, 0, 1}]
Unwrap[z_] := {Abs[z] - 3,  $\tau$ Arg[z]}
ComPolar2[{a_, b_, f_}] := {a, b, f};

ParametricPlot3D[Table[{r Cos[ $\theta - \pi / (2 p)$ ], r Sin[ $\theta - \pi / (2 p)$ ],
  Abs[r Exp[I  $\theta$ ]]4 f2[ $\tau$ Arg[r Exp[I  $\theta$ ]]] + 2  $\pi n / q$ }, {n, 0, q}],
  {r, 0, 1}, { $\theta$ , 0, 2  $\pi$ }, Mesh  $\rightarrow$  None, PlotRange  $\rightarrow$  All, Exclusions  $\rightarrow$  True,
  PlotPoints  $\rightarrow$  20, PerformanceGoal  $\rightarrow$  "Speed"]

outside =
  Table[Torus@Rot[0]@ComPolar2[{Unwrap@(r Exp[I ( $\theta - \pi / (2 p)$ )]), Abs[r Exp[I  $\theta$ ]]4 f2[
     $\tau$ Arg[r Exp[I  $\theta$ ]]] + 2  $\pi n / q$ }], {n, 0, 1}] // ComplexExpand // Simplify;

Show[
  ParametricPlot3D[outside, {r, 0, 1}, { $\theta$ , 0, 2  $\pi$ }, Mesh  $\rightarrow$  None,
  PlotPoints  $\rightarrow$  30, PerformanceGoal  $\rightarrow$  "Quality", PlotRange  $\rightarrow$  All], knot
]

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