Within traditional Islamic geometric design, there is a small but distinct subset of patterns which incorporate notions of self-similarity. Such patterns typically use exactly two levels of self-similarity, overlaid upon one another, with each level comprising similar motifs at two different, related scales. Recently I have constructed a large number of fractal Islamic patterns that pursue a different notion of self-similarity, simultaneously incorporating motifs at multiple often, infinites scales within a single pattern. I will first highlight the ways in which these patterns are distinct in nature from related work, both traditional and contemporary. Then, I will explain the details of the technique I have devised for using patterns of n/2 stars as a basis for discovering and constructing a wide variety of new fractal Islamic patterns.