CLAIMS:

1. A prosthetic heart valve, comprising:

an annular frame including a plurality of angled strut members, the frame being radially collapsible to a collapsed configuration and radially expandable to an expanded configuration;

a leaflet structure situated at least partially within the frame, the leaflet structure comprising a plurality of leaflets, each leaflet comprising opposing commissure tab portions on opposite sides of the leaflet, each commissure tab portion being paired with an adjacent commissure tab portion of an adjacent leaflet to form one or more commissures; and

a plurality of commissure support elements, a commissure support element being positioned at each of the one or more commissures, each of the commissure support elements comprising a first member and a second member, the first and second members being separable from each other and configured to receive leaflets therebetween;

wherein the first and second members of the commissure support elements are detached from the frame, and spaced radially inwardly from the frame such that the first and second members contact the leaflets radially inward from the frame and limit movement of the leaflets so that the leaflets articulate at a location that is spaced radially inwardly from the frame during valve operation.

2. The prosthetic valve of claim 1, wherein the first member of each commissure support element is secured to one of the adjacent commissure tab portions, and the second member of each commissure support element is secured to the other of the adjacent commissure tab portions.

3. The prosthetic valve of claim 1 or claim 2, wherein the commissure tab portions of each commissure are folded around the first and second members of an adjacent commissure support element.

4. The prosthetic valve of any of claims 1-3, wherein:

the first and second members of each commissure support element are spaced apart from each other; and

the prosthetic valve further comprises an attachment member secured to and extending between the commissure tab portions of the leaflets of each commissure.

5. The prosthetic valve of claim 4, wherein:

each commissure further comprises an outer support member including a main body portion positioned within the frame and an extension portion extending over an outflow end of the frame and situated on the outside of the frame; and

the attachment member of each commissure is situated around the extension portion of the outer support member such that the commissure is supported within the frame.

6. The prosthetic valve of any of claims 1-5, wherein the first and second members of each commissure support element at least partially define a commissure window through which the commissure tab portions of the leaflets extend.

7. The prosthetic valve of claim 6, wherein the first and second members of each commissure support element are secured to each other with sutures.

8. The prosthetic valve of any of claims 1-7, wherein the commissure tab portions of each leaflet are folded to form four layers, and the first and second members are situated between second and third layers of the respective commissure tab portions.

9. The prosthetic valve of claim 8, wherein the second layers of the folded commissure tab portions extend radially inwardly of the commissure support elements such that the leaflets articulate about edge portions of the second layers.

10. The prosthetic valve of any of claims 1-3, wherein the first and second members of each commissure support element mechanically interlock with each other to form a commissure window.

11. The prosthetic valve of claim 10, wherein the first member of each commissure support element defines openings configured to receive corresponding projections on the second members.