WHAT IS CLAIMED IS:

~~1. A display system comprising:~~

~~a screen having a concave screen surface positioned so as to be visible to a user of the system;~~

~~said screen comprising a plurality of screen elements supported adjacent one another so as to form said concave screen surface, each of the screen elements comprising~~

~~a respective faceplate comprising optical fibers extending adjacent each other so as to transmit light therethrough between two opposing faceplate surfaces;~~

~~one of said faceplate surfaces being a concave display image output surface; and~~

~~the other of said faceplate surfaces being an image input surface; and~~

~~a respective light engine having a respective field of pixels each transmitting light corresponding to imagery comprising serial images of said light engine; and~~

~~the fibers of the associated faceplate receiving the light of the pixels of the light engine and together transmitting said light from the light engine coherently to the image output surface thereof so that the images of the light engine are displayed on the image output surface; and~~

~~said faceplates abutting each other along adjacent edges thereof with the image output surfaces of said faceplates together forming a substantially smooth and continuous curved portion of the screen surface so that the imagery displayed on the screen surface through said faceplates from the associated light engines is continuous between said faceplates; and~~

~~wherein some of the screen elements are kite-shaped having two short sides and two long sides, and being configured so that the screen elements together form a hexagonal or pentagonal portion of the concave screen surface.~~

~~2. The display system of claim 1, wherein the input surfaces of the faceplates of the kite-shaped screen elements are substantially planar and kite-shaped, and the images from the light engines are kite-shaped and substantially the same size as the input surface of the associated faceplate.~~

~~3. The display system of claim 2, wherein the faceplates are supported in a hexagonal or polygonal frame supported on a support structure surrounding the screen.~~

~~4.~~1. A display system comprising:

a screen having a concave screen surface positioned so as to be visible to a user of the system;

said screen comprising a plurality of screen elements supported adjacent one another so as to form said concave screen surface, each of the screen elements comprising:

a respective faceplate comprising optical fibers extending adjacent each other so as to transmit light therethrough between two opposing faceplate surfaces;

one of said faceplate surfaces being a concave display image output surface; and

the other of said faceplate surfaces being an image input surface; and

a respective light engine having a field of pixels each transmitting light corresponding to imagery comprising serial images of said light engine; and

the fibers of the associated faceplate receiving the light of the pixels of the light engine and together transmitting said light from the light engine coherently to the image output surface thereof so that the images of the light engine are displayed on the image output surface; and

said faceplates abutting each other along adjacent edges thereof with the image output surfaces of said faceplates together forming a substantially smooth and continuous curved portion of the screen surface so that the

imagery displayed on the screen surface through said faceplates from the associated light engines is continuous between said faceplates;

wherein some of the screen elements are kite-shaped;

wherein the input surfaces of the faceplates of the kite-shaped screen elements are substantially planar and kite-shaped, and the images from the light engines are kite-shaped and substantially the same size as the input surface of the associated faceplate; ~~and~~

wherein the kite-shaped faceplates each have four planar side walls that are perpendicular to the planar image input surfaces thereof,

wherein the kite-shaped screen elements have two connected short sides and two connected long sides, and are configured so that the screen elements together form a polygonal portion of the concave screen surface, and

wherein the planar side walls of the kite-shaped faceplates are fixedly secured to support structures that hold said faceplates in position such that the faceplates together provide said concave screen surface as a continuous and smooth spherical display surface.

2. The display system of claim 1, wherein the kite-shaped screen elements are configured so that the screen elements together form a hexagonal or pentagonal portion of the concave screen surface.

3. The display system of claim 2, wherein the faceplates are supported in a hexagonal or polygonal frame supported on a support structure surrounding the screen.

~~5. The display system of claim 4, wherein the planar side walls are fixedly secured to support structures that hold said faceplates in position such that the faceplates provide a continuous and smooth spherical display surface.~~

~~6.~~4. The display system of claim 14, wherein the faceplates have planar surfaces outward of the concave display image output surfaces thereof that are normal to the image output surfaces and angled with respect to the planar side walls.

~~7.~~5. The display system of claim ~~4~~6, wherein the planar surfaces of adjacent faceplates abut each other so that the image output surfaces thereof form a substantially smooth and continuous portion of a display surface.

~~8.~~6. The display system of claim 1, wherein the optical fibers of the faceplate are all affixed together and extending in a straight path normal to the image input surface to the concave image output surface.

~~9.~~7. The display system of claim 6~~8~~, wherein the optical fibers have ends in the image output surface, and said ends are configured to transmit light from the optical fiber in an omnidirectional or scattered light pattern.

~~10.~~8. The display system of claim 7~~9~~, wherein the system includes an image generator generating imagery to be displayed on the surface, said image generator compensating for distortion in the faceplate between a center portion of the faceplate and a portion closer to an edge thereof.

~~11.~~9. The display system of claim 1 wherein the screen is a spherical screen and the curved surface is at least a portion of a sphere that surrounds a user station configured to receive a human user, said user station configured such that the user when received thereby is positioned such that the user's eye is in a region of a centerpoint of the sphere.

~~12.~~10. The display system of claim 9~~11~~, wherein the curved surface constitutes at least a hemisphere of display screen surrounding the user 360 degrees in at least one plane passing through the centerpoint of the sphere.

~~13.~~11. The display system of claim 1~~2~~, wherein the light engines are each an image panel display that forms images thereon using a pixel field of LEDs.

~~14.~~12. The display system of claim 11~~13~~, wherein the LEDs are OLEDs.

~~15.~~13. The display system of claim 1~~2~~, wherein the light engines are each an image panel display that forms images thereon using a pixel field of LCDs and a backlight.

~~16.~~14. The display system of claim 1~~2~~, wherein at least one of the light engines is a projector.

~~17.~~15. The display system of claim 1~~2~~, wherein the light engine generates only infrared light that can be seen by a user wearing night-vision goggles.

~~18.~~16. The display system of claim 1, wherein the concave screen surface is spherical and constitutes at least a portion of a sphere.

~~19.~~17. The display system of claim 1, wherein some of the screen elements are asymmetrical quadrilateral shaped, and five of the kite-shaped elements are supported in a pentagonal arrangement, and five additional kite shaped elements and at least five asymmetrical quadrilateral elements together form a pentagonal perimeter area around the pentagonal arrangement.

~~20.~~18. A component for a display system, said component ~~further~~ comprising:

a faceplate comprising a number of optical fibers secured therein, each of said fibers having a first end supported in a planar surface of the faceplate and a second end opposite to the first end supported in a concave spherical display surface of the faceplate;

the first end being configured so as to receive light from an image engine associated with the faceplate; and

the second end being configured so as to transmit the light from the first end in a diffused pattern;

said fibers being organized in a coherent arrangement so as to transmit an image from the image engine coherently to the concave spherical display surface of the faceplate,

wherein the image is displayed over the entire concave spherical display surface of the faceplate;

the faceplate having a symmetrical kite shape with two connected short edges and two long edges, said long edges meeting at an acute angle;

the short edges of the faceplate extending along respective geodesic portions of the concave spherical display surface, and said faceplate having

planar side walls along each edge thereof extending normally away from the concave spherical display surface;

the acute angle and kite shape being such that the faceplate can be combined with a number of other kite-shaped faceplates so as to form a regular polygon having five or six peripheral sides of equal length forming a polygonal portion of a concave screen surface, and

wherein the faceplate has four planar side walls; and wherein the planar side walls are fixedly secured to support structures that hold said faceplate in position such that the faceplate with other faceplates together provide said concave screen surface as a continuous and smooth spherical display surface.

~~21.~~19. The component of claim 18~~20~~, wherein the entire concave spherical surface of the faceplate is made up of the second ends of the optical fibers and the planar surface of the faceplate has a kite-shaped input field entirely made up of the first ends of the fibers, said fibers being organized so as to coherently transmit light of an image applied to the input field to the entire concave spherical display surface thereof.

~~22.~~20. The component of claim 19~~21~~, wherein the fibers extend parallel to each other and the fibers extend normal to the planar surface of the faceplate.

~~23.~~21. The component of claim 19~~21~~, wherein the fibers taper so that the light of the image is transmitted to the concave spherical display surface substantially without distortion or variation in intensity.

~~24.~~22. The component of claim 19~~21~~, ~~and~~ further comprising a light-transmitting image source supported so as to transmit light of images to all of the fibers in the input field, said image source comprising an LED or LCD screen having a kite shape corresponding to the kite shape of the faceplate and supported adjacent thereto, or a projector projecting a kite-shaped image onto the input field.

23. ~~25.~~The display system of claim 1, wherein the screen elements are configured to form a pentagonal portion of the screen.

~~26.~~ 24. The display system of claim 1, wherein the screen elements are configured to form a hexagonal portion of the screen.

25. The display system of claim 1, wherein the planar and kite-shaped input surfaces are angled relative to each other.