CLAIMS:

1. A deployment system for pivotably deploying a first plurality of panel elements between a stowed configuration and a deployed configuration, wherein adjacent pairs of the panel elements are pivotably mounted to one another about a respective panel element pair pivot axis, the deployment system comprising a second plurality of actuators, an actuation cable and a drive unit, wherein:

at least one said actuator is associated with each respective pair of said panel elements, each said actuator comprising a first bracket, a second bracket and a linear motion to rotary motion converter, the first bracket being configured for being fixedly mounted to one panel element of the pair, the second bracket being configured for being fixedly mounted to another panel element of the pair, the respective first bracket and the respective second bracket being pivotably mounted with respect to one another about an actuator pivot axis co-axial with the respective panel element pair pivot axis, and wherein the linear motion to rotary motion converter is configured for pivoting the respective first bracket with respect to the respective second bracket responsive to a predetermined datum linear displacement being applied to the linear motion to rotary motion converter;

the actuation cable being serially coupled to each said actuator of said second plurality of actuators, the actuation cable configured for being displaced linearly with respect to the plurality of actuators at least between a first cable position, corresponding to the stowed configuration, and a second cable position, corresponding to the deployed configuration, responsive to operation of the drive unit, such as to apply at least a corresponding said datum linear displacement to the respective linear motion to rotary motion converter of each said actuator;

the drive unit being configured for selectively displacing the actuation cable at least between the first cable position and the second cable position.

2. The deployment system according to claim 1, wherein each respective said linear motion to rotary motion converter comprises a linearly movable shaft element, coupled to the actuation cable.

3. The deployment system according to claim 2, wherein each respective said linear motion to rotary motion converter comprises a respective rotary element operatively coupled to the shaft element such that the rotary element pivots the respective first bracket with respect to the respective second bracket responsive to a respective said datum linear displacement being applied to the shaft element.

4. The deployment system according to claim 3, wherein the rotary element comprises an outer cylinder co-axial with and overlying at least part of the shaft element, the outer cylinder fixedly mounted with respect to the first bracket, the outer cylinder comprising a cam groove having at least one helical portion, and wherein the shaft element is movably mounted with respect to said second bracket, the shaft element being constrained for axial movement with respect to the second bracket and prevented from relative rotary movement with respect to the second bracket, wherein the shaft element comprises a cam follower coupled to the cam groove, and wherein application of a first axial displacement of the shaft element relative to the second bracket causes the cam follower to follow at least a portion of said at least one helical portion, causing the cylinder together with the first bracket to pivot about a corresponding pivot angle about the respective pivot axis, wherein said first displacement corresponds to said datum linear displacement.

5. The deployment system according to claim 4, wherein the cam groove comprises at least one linear portion, and wherein application of a second axial displacement of the shaft element relative to the second bracket causes the cam follower to follow at least a portion of said linear portion, preventing the cylinder together with the first bracket from pivoting about the respective pivot axis.

6. The deployment system according to claim 5, wherein the cam groove comprises at least one tapering portion smoothly connecting one said linear portion with one end of one said helical portion.

7. The deployment system according to claim 3, including one of the following:

- wherein each respective said linear motion to rotary motion converter is in the form of a rack and pinion arrangement;
- wherein each respective said linear motion to rotary motion converter is in the form of a slider crank arrangement.

8. The deployment system according to any one of claims 1 to 7, including one of the following:

- wherein all said actuators of said second plurality of actuators are configured for pivoting simultaneously responsive to a predetermined said datum linear displacement being applied to all the respective linear motion to rotary motion converters;
- wherein all said actuators of said second plurality of actuators are configured for pivoting at the same pivoting rate responsive to a predetermined datum linear displacement rate being applied to all the respective linear motion to rotary motion converters

9. The deployment system according to any one of claims 1 to 7, including one of the following:

- wherein said actuators of said second plurality of actuators are configured for pivoting non-simultaneously with respect to one another, responsive to a predetermined said datum linear displacement being applied simultaneously to all the respective linear motion to rotary motion converters;
- wherein at least some said actuators of said second plurality of actuators are configured for pivoting at respective pivoting rates that are different with respect to one another, responsive to a predetermined datum linear displacement rate being applied simultaneously to all the respective linear motion to rotary motion converters;
- wherein said actuators of said second plurality of actuators are configured for pivoting in a synchronized manner with respect to one another responsive to operation of the drive unit and the actuation cable;

- wherein the actuation cable is enclosed within an envelope comprising a second plurality of windows, the envelope configured for maintaining a predetermined tension in the actuation cable.

10. The deployment system according to any one of claims 1 to 9, wherein the actuation cable is enclosed within an envelope comprising a second plurality of windows, the envelope configured for maintaining a predetermined tension in the actuation cable, and including one of the following:

- wherein said envelope is provided by a sheath;
- wherein said envelope is in the form of an incompressible sheath having a lumen that allows relative axial movement between the actuation cable and the sheath.

11. The deployment system according to any one of claims 1 to 10, wherein the actuation cable is enclosed within an envelope comprising a second plurality of windows, the envelope configured for maintaining a predetermined tension in the actuation cable, and, wherein the envelope is in the form of a Bowden cable.

12. The deployment system according to any one of claims 1 to 9, wherein the actuation cable is enclosed within an envelope comprising a second plurality of windows, the envelope configured for maintaining a predetermined tension in the actuation cable, and, wherein said envelope is provided by channels provided in the panel elements.

13. The deployment system according to any one of claims 1 to 12, wherein the actuation cable is enclosed within an envelope comprising a second plurality of windows, the envelope configured for maintaining a predetermined tension in the actuation cable, and, wherein each said actuator is operatively coupled to the actuation cable at a respective said window.

14. The deployment system according to any one of claims 1 to 13, further comprising a locking arrangement, coupled to the actuation cable, wherein the locking

arrangement is configured for maintaining the plurality of panels elements locked in the stowed configuration at least until the drive unit is activated.

15. A panel system comprising a first plurality of panel elements and a deployment system for pivotably deploying the first plurality of panel elements between a stowed configuration and a deployed configuration, wherein adjacent pairs of the panel elements are pivotably mounted to one another about a respective pivot axis, the deployment system being as defined in any one of claims 1 to 14.

16. The panel system according to claim 15, including one of the following:

- wherein said panel elements are in the form of solar panels;
- wherein at least one said panel element is configured for being pivotably mounted to a structure;
- wherein said panel elements are in the form of solar panels, and, wherein at least one said panel element is configured for being pivotably mounted to a structure;
- wherein at least one said panel element is configured for being pivotably mounted to a structure, and, wherein said structure is a space vehicle;
- wherein said panel elements are in the form of solar panels, and, wherein at least one said panel element is configured for being pivotably mounted to a structure, and, wherein said structure is a space vehicle.

17. A space vehicle comprising a panel system as defined in any one of claims 15 to 16.

18. An actuator for a deployment system, said actuator comprising a first bracket, a second bracket and a linear motion to rotary motion converter, the first bracket being configured for being fixedly mounted to a panel element, the second bracket being configured for being fixedly mounted to another panel element, the respective first bracket and the respective second bracket being pivotably mounted with respect to one another about an actuator pivot axis co-axial with the respective panel element pair pivot axis, and wherein the linear motion to rotary motion converter is configured for pivoting the respective first bracket with respect to the respective second bracket

responsive to a predetermined datum linear displacement being applied to the linear motion to rotary motion converter, and wherein the linear motion to rotary motion converter is configured for being coupled to an actuation cable.

19. The actuator according to claim 18, including one of the following:

- wherein each respective said linear motion to rotary motion converter comprises a linearly movable shaft element, configured for being coupled to the actuation cable;
- wherein each respective said linear motion to rotary motion converter comprises a linearly movable shaft element, configured for being coupled to the actuation cable, and, wherein each respective said linear motion to rotary motion converter comprises a respective rotary element operatively coupled to the shaft element such that the rotary element pivots the respective first bracket with respect to the respective second bracket responsive to a respective said datum linear displacement being applied to the shaft element;
- wherein each respective said linear motion to rotary motion converter comprises a linearly movable shaft element, configured for being coupled to the actuation cable, and, wherein each respective said linear motion to rotary motion converter comprises a respective rotary element operatively coupled to the shaft element such that the rotary element pivots the respective first bracket with respect to the respective second bracket responsive to a respective said datum linear displacement being applied to the shaft element, and, wherein the rotary element comprises an outer cylinder co-axial with and overlying at least part of the shaft element, the outer cylinder fixedly mounted with respect to the first bracket, the outer cylinder comprising a cam groove having at least one helical portion, and wherein the shaft element is movably mounted with respect to said second bracket, the shaft element being constrained for axial movement with respect to the second bracket and prevented from relative rotary movement with respect to the second bracket, wherein the shaft element comprises a cam follower coupled to the cam groove, and wherein application of a first axial displacement of the shaft element relative to the second bracket causes the cam follower to follow at least a portion of said at least one helical portion, causing the cylinder together with the first bracket to pivot about a corresponding pivot

angle about the respective pivot axis, wherein said first displacement corresponds to said datum linear displacement;

- wherein each respective said linear motion to rotary motion converter comprises a linearly movable shaft element, configured for being coupled to the actuation cable, and, wherein each respective said linear motion to rotary motion converter comprises a respective rotary element operatively coupled to the shaft element such that the rotary element pivots the respective first bracket with respect to the respective second bracket responsive to a respective said datum linear displacement being applied to the shaft element, and, wherein the rotary element comprises an outer cylinder co-axial with and overlying at least part of the shaft element, the outer cylinder fixedly mounted with respect to the first bracket, the outer cylinder comprising a cam groove having at least one helical portion, and wherein the shaft element is movably mounted with respect to said second bracket, the shaft element being constrained for axial movement with respect to the second bracket and prevented from relative rotary movement with respect to the second bracket, wherein the shaft element comprises a cam follower coupled to the cam groove, and wherein application of a first axial displacement of the shaft element relative to the second bracket causes the cam follower to follow at least a portion of said at least one helical portion, causing the cylinder together with the first bracket to pivot about a corresponding pivot angle about the respective pivot axis, wherein said first displacement corresponds to said datum linear displacement, and, wherein the cam groove comprises at least one linear portion, and wherein application of a second axial displacement of the shaft element relative to the second bracket causes the cam follower to follow at least a portion of said linear portion, preventing the cylinder together with the first bracket from pivoting about the respective pivot axis;
- wherein each respective said linear motion to rotary motion converter comprises a linearly movable shaft element, configured for being coupled to the actuation cable, and, wherein each respective said linear motion to rotary motion converter comprises a respective rotary element operatively coupled to the shaft element such that the rotary element pivots the respective first bracket with

respect to the respective second bracket responsive to a respective said datum linear displacement being applied to the shaft element, and, wherein the rotary element comprises an outer cylinder co-axial with and overlying at least part of the shaft element, the outer cylinder fixedly mounted with respect to the first bracket, the outer cylinder comprising a cam groove having at least one helical portion, and wherein the shaft element is movably mounted with respect to said second bracket, the shaft element being constrained for axial movement with respect to the second bracket and prevented from relative rotary movement with respect to the second bracket, wherein the shaft element comprises a cam follower coupled to the cam groove, and wherein application of a first axial displacement of the shaft element relative to the second bracket causes the cam follower to follow at least a portion of said at least one helical portion, causing the cylinder together with the first bracket to pivot about a corresponding pivot angle about the respective pivot axis, wherein said first displacement corresponds to said datum linear displacement, and, wherein the cam groove comprises at least one linear portion, and wherein application of a second axial displacement of the shaft element relative to the second bracket causes the cam follower to follow at least a portion of said linear portion, preventing the cylinder together with the first bracket from pivoting about the respective pivot axis, and, wherein the cam groove comprises at least one tapering portion smoothly connecting one said linear portion with one end of one said helical portion.

20. A method for deploying a panel system comprising:

providing a first plurality of panel elements and a deployment system for pivotably deploying the first plurality of panel elements between a stowed configuration and a deployed configuration, wherein adjacent pairs of the panel elements are pivotably mounted to one another about a respective pivot axis, the deployment system being as defined in any one of claims 1 to 14;

operating the deployment system to cause the panel system to transition the first plurality of panel elements between the stowed configuration and the deployed configuration.

21. The method according to claim 20, including one of the following:

- wherein said panel elements are in the form of solar panels;
- wherein at least one said panel element is pivotably mounted to a structure;
- wherein said panel elements are in the form of solar panels, and, wherein at least one said panel element is pivotably mounted to a structure;
- wherein at least one said panel element is pivotably mounted to a structure, and. wherein said structure is a space vehicle;
- wherein said panel elements are in the form of solar panels, and, wherein at least one said panel element is pivotably mounted to a structure, and, wherein said structure is a space vehicle.