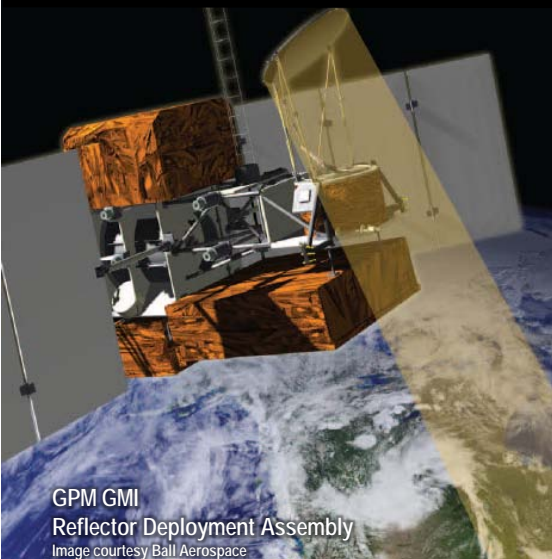
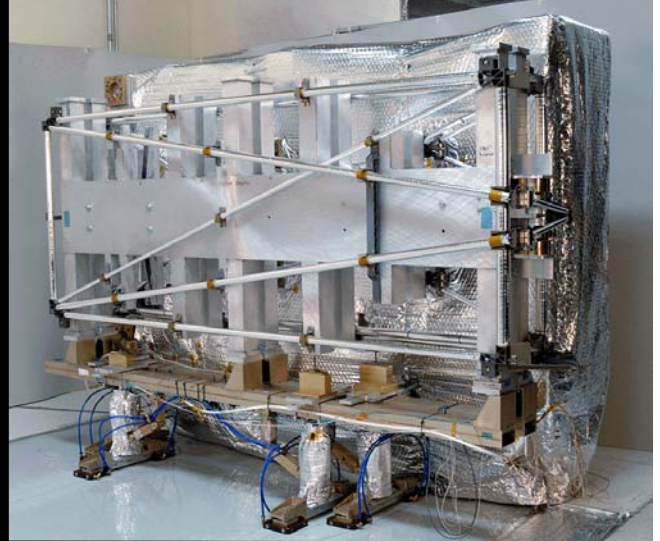


# Extendible Support Structures



Robust, precise deployment for large payloads

Benchmark performance with extensive success heritage

## Performance Features

- Linear, preloaded structures
- Sub-millimeter deployment precision and stability
- Active or passive fully-controlled deployments
- Predictable, deterministic structures
- Passive compensation of satellite or bus distortion

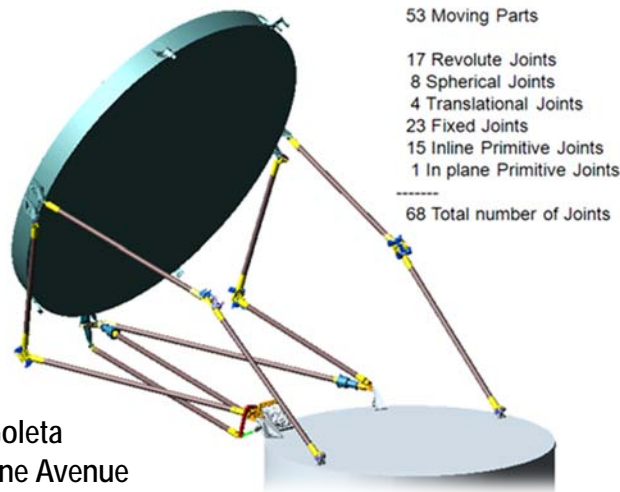
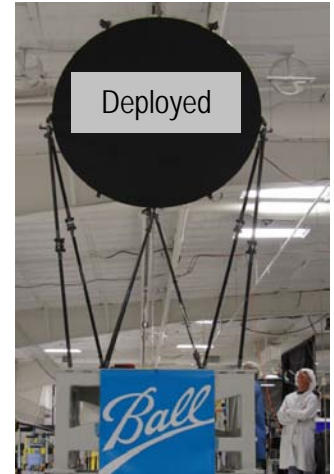
## Application Benefits

- Ideal for 1 m<sup>2</sup> to 100 m<sup>2</sup> structures
- Motor or spring driven deployment
- On-orbit retraction capability
- Performance validated at subscale level

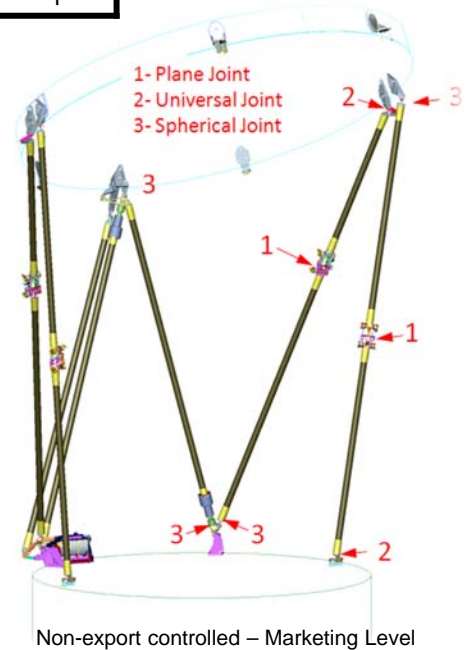


# Extendible Support Structures

Parameter	Demonstrated value RADARSAT-2	Demonstrated value GMI RDA	Design features
Mass	57 kg/wing	5.1 kg	Constructed from lightweight, high strength materials—simple, optimized mechanisms
Deployed natural frequency	4.5 Hz (SAR panel mass 400 kg/wing)	12 Hz (Antenna mass = 8.6 kg)	Statically determinate truss structure for maximum structural efficiency
Thermo-elastic distortion	0.69 mm peak-to-peak	0.25 mm peak-to-peak 18 arcsec each axis	CTE optimized carbon fiber composite tubular truss elements with thermal control tape
Deployment position repeatability	0.03 mm peak to peak (measured over 10 deployments)	0.02 mm peak to peak (measured over 10 deployments)	Mechanisms remove deadband from all active hinge joints in the deployed truss
Cable harness drag overcome	20 N*m per hinge (2 hinges)	n/a	Redundant brushless DC gearmotor provides required deployment power until latchup



- 53 Moving Parts
- 17 Revolute Joints
- 8 Spherical Joints
- 4 Translational Joints
- 23 Fixed Joints
- 15 Inline Primitive Joints
- 1 In plane Primitive Joints
- 
- 68 Total number of Joints



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