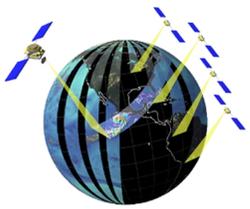




GPM Reference Interfaces

David Everett
May 30, 2001





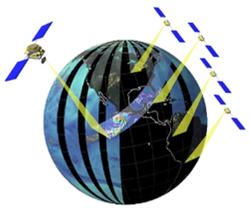
GPM

Overview

GPM Reference Interfaces

- *Launch Interfaces*
- *Reference Core Spacecraft*
 - *Launch Configuration*
 - *Operational Configuration*
 - *Reference Payload*
- *Payload Data Interface Options*

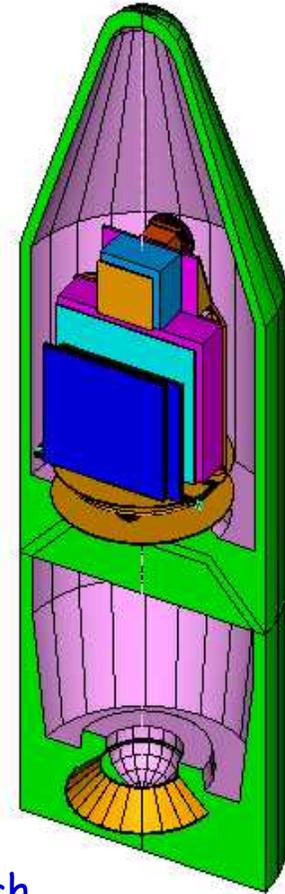




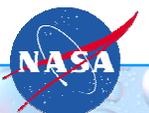
GPM

Launch Interfaces

- *Core Spacecraft*
 - *Launch vehicle: shared H2A-202*
 - *Orbit: 400 km \pm 5 km circular, 65° inclination*
 - *Launch date: February 1, 2007*
- *Constellation Spacecraft*
 - *Two on a Taurus*
 - *Orbit: 600 km circular, inclination TBD (sun-synch)*
 - *Launch date: 2007*

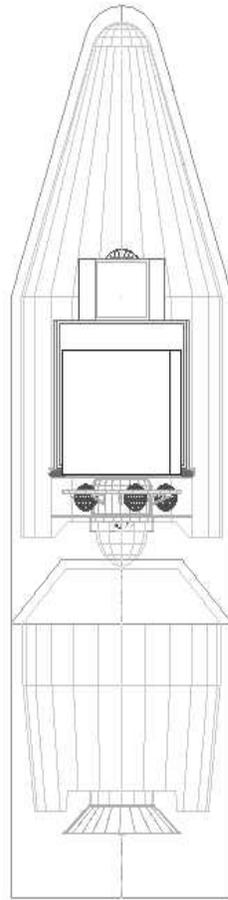
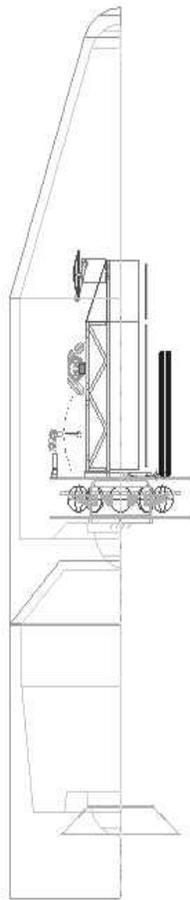


H2-A
Dual Launch
Configuration

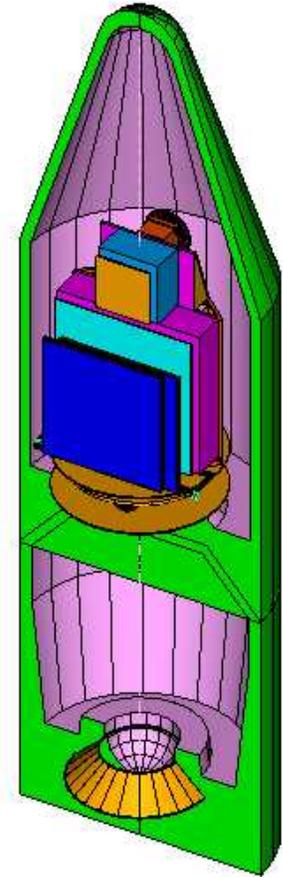




Reference Core Spacecraft

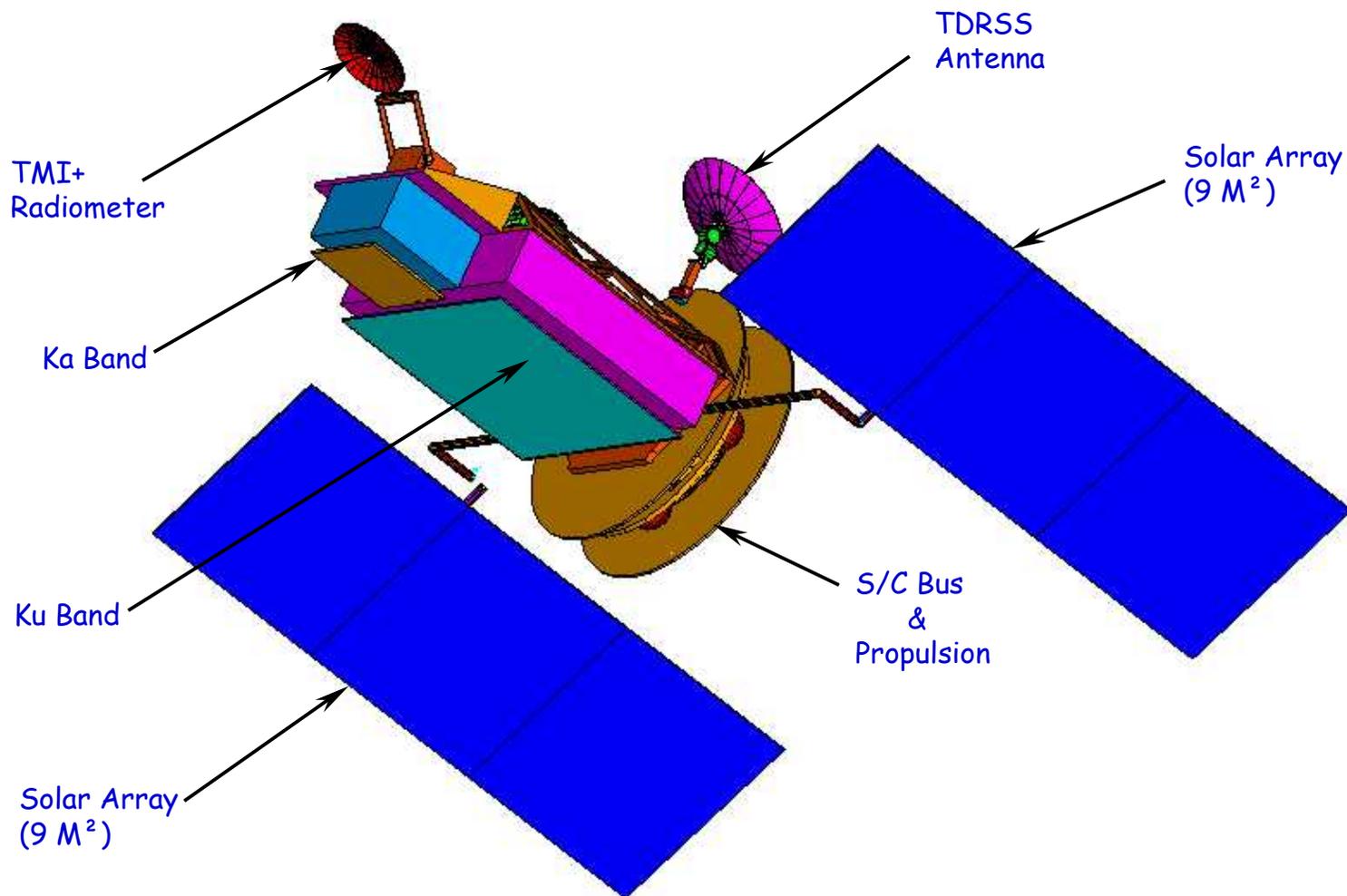


H2-A
Dual launch
Configuration



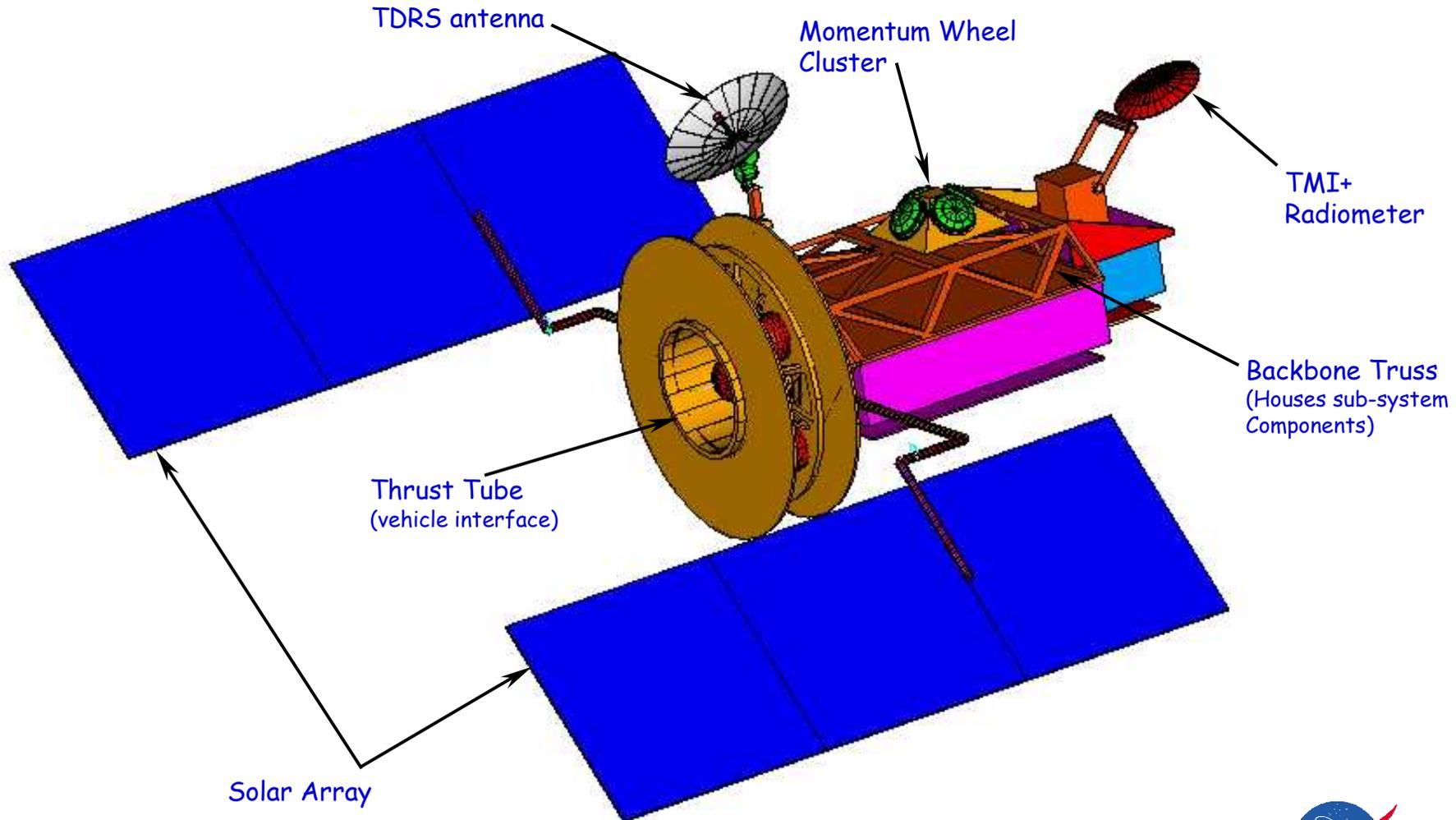


Reference Core Spacecraft





Reference Core Spacecraft

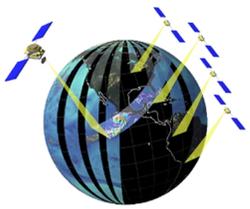




Reference Payload on Core

Instrument	Mass (kg)	Power (W)	Data Rate (kbps)	Dimensions (m)
PR-U	370	320	95	2.4 x 2.4 x 0.5
PR-A	290	250	95	1.0 x 1.0 x 0.5
Conical Radiometer	70	81	9	1.0 dia x 0.7 with 1.0 m aperture
Nadir-looking Radiometer	40	25	25	TBD
Auxiliary Payloads	100	100	TBD	TBD





GPM

Payload Data Interface Options

- *MIL-STD-1553 or 1773*
 - *Same data interface as TRMM*
 - *Limited to about 250 kbps*
- *Spacewire Interface*
 - *Developed for the SWIFT mission, launch in 2003*
 - *Simple transfer of data into a FIFO, hardware handles data exchange*
 - *Up to 32 Mbps*





Payload Data Interface Options (continued)

- *SpaceLAN*
 - *Space flight interface under development*
 - *Provides standard local area network connection*
 - *Extra burden on instrument software, but commercial standards available*
 - *1 Mbps or more easily supported*
 - *Easy interface tests, inexpensive ground support equipment*
 - *Supports IP transfers from instrument all the way to final destination*
- *Universal Serial Bus (USB)*
 - *Space flight interface under development*
 - *Less software overhead for instrument*
 - *10 Mbps or more easily supported*
 - *Easy interface tests, inexpensive ground support equipment*

