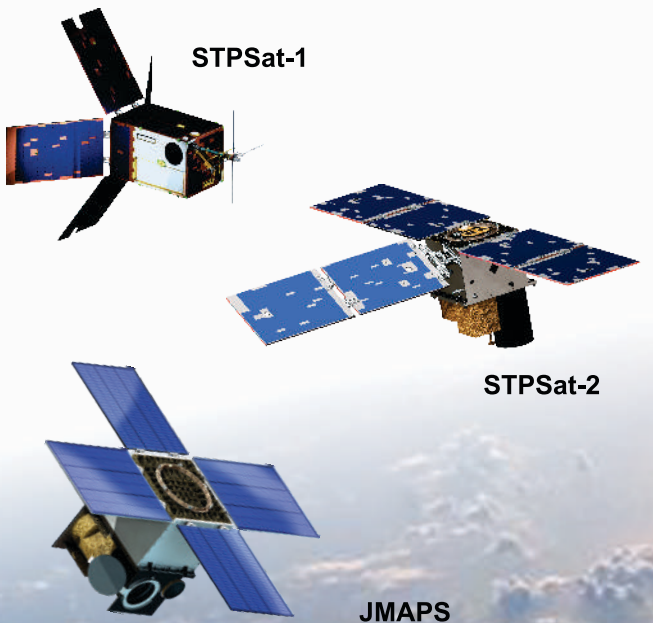


## Astro 200 Series

Comtech AeroAstro's Astro 200 bus series (Astro 200 and Astro 200AS) accommodates a variety of mission configurations in the ~200 kg total mass range. This versatile spacecraft fits within the launch envelope of a variety of launch vehicles including Minotaur I, Minotaur IV, Pegasus, Falcon 1e, Atlas V and Delta IV ESPA. The series is designed to operate in a variety of LEO orbits with a full range of altitudes and inclinations.

Astro 200 features a standard interface for multiple payloads. Without modification, it can accommodate a variety of payloads up to 85 kg in mass and 100W in power.

Astro 200AS is an enhanced-performance version of the Astro 200, providing outstanding performance in the area of attitude knowledge / control, jitter, added X-Band downlink capability, improved timing accuracy and longer mission life.



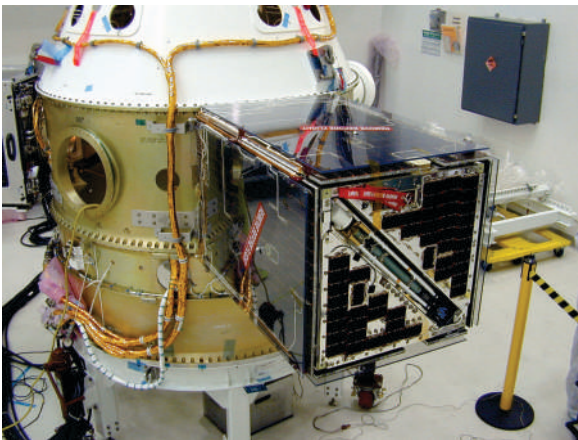
Comtech AeroAstro has developed two spacecraft based on the Astro 200 core design. STPSat-1 was successfully launched in March of 2007 and STPSat-2 in November 2010.

The Astro 200AS was initially developed for the U.S. Navy's Joint Milli-Arcsecond Pathfinder Survey (JMAPS) mission to perform an extensive and highly accurate update of current star position catalogs.

## Astro 200 Performance

## Astro 200AS Performance

Mission Lifetime:	1 year minimum	3 year minimum
Mission Reliability:	Single string	Single string & selected redundancy
Orbit Altitude:	400 to 1,000 km	400 to 1,000 km
Orbit Inclination:	40 to 98.8°	40 to 98.8°
LV Compatibility:	ESPA / Minotaur I / Pegasus / Falcon 1e	Minotaur I & IV / Pegasus / Falcon 1e
SV Mass:	180 kg	230 kg
SV Power:	185W (OAP)	234W (OAP)
Attitude Control Approach:	3-axis stabilized, Nadir pointing	3-axis stabilized & low jitter, high performance IRU, star tracker & reaction wheel assembly
Pointing Control:	0.1° performance	15 arcsecond performance
Payload Mass:	<85 kg	<100 kg
Payload Power:	100W (OAP)	185W (OAP)
SV Voltage:	28±6V	28±6V
Onboard Storage:	5.8 GB	1.0 GB (expandable)
Timing / Navigation:	GPS	GPS
SV Downlink:	2.2 Mbps (S-Band)	100 Mbps (X-Band) + 2.2 Mbps (S-Band)
Propulsion:	Optional	Optional



Astro 200 is ESPA Compatible



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