



## WorldView-1

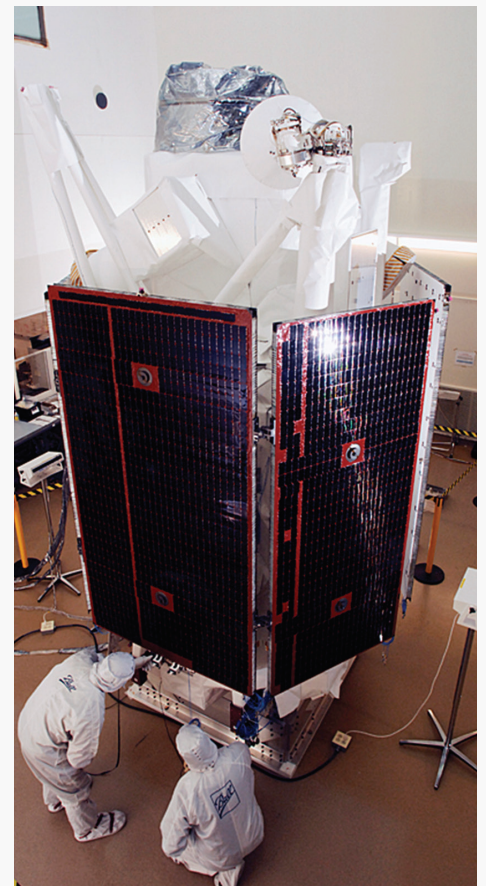
WorldView-1, launched September 2007, is the first of our next-generation satellites—the most agile satellites ever flown commercially. The high-capacity, panchromatic imaging system features half-meter resolution imagery. Operating at an altitude of 496 km, WorldView-1 has an average revisit time of 1.7 days and is capable of collecting over one million km<sup>2</sup> per day of half-meter imagery. The satellite is also equipped with state-of-the-art geolocation accuracy capabilities and exhibits stunning agility with rapid targeting and efficient in-track stereo collection. WorldView-1 is currently on the move. Over the course of two years the orbit will be adjusted to achieve a descending node of 1:30pm.

### Features

- » Very high resolution
- » Industry-leading geolocation accuracy
  - Ultra-stable platform, high-precision attitude sensors and GPS
- » Highest capacity over a broad range of collection types (wider than any competitor)
- » Bi-directional scanning
- » Rapid retargeting using Control Moment Gyros (>2x faster than any competitor)
- » Direct downlink to customer sites available
- » World-class telescope
  - High contrast (MTF) and signal-to-noise ratio
  - Selectable Time Delay Integration (TDI) levels
- » Frequent revisits at high resolution

### Benefits

- » Provides highly detailed imagery for precise map creation, change detection, and in-depth image analysis
  - (Note: imagery must be re-sampled to 50 cm for non-US government customers)
- » Geolocate features to less than 5 m to create maps in remote areas, maximizing the utility of available resources.
- » Collects, stores, and downlinks a greater supply of frequently updated global imagery products than competitive systems
- » Stereoscopic collection on a single pass, ensures image continuity and consistency of quality
- » Extends the range of suitable imaging collection targets and enhances image interpretability
- » Enhanced change detection applications and accurate map updates in 8-band multispectral imagery



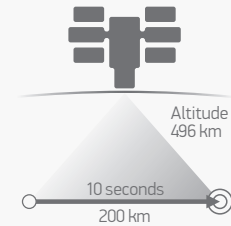
WorldView-1 clean room pre-launch preparations. The second of DigitalGlobe's state-of-the-art high-resolution commercial imagery satellites.

**DIGITALGLOBE CONSTELLATION » WORLDVIEW-1**

## Design and specifications

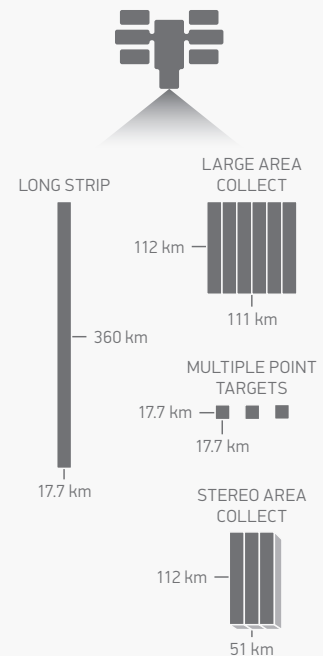
<b>Launch Information</b>	Date: September 18, 2007 Launch Vehicle: Delta 7920 (9 strap-ons) Launch Site: Vandenberg Air Force Base, California	
<b>Orbit</b>	Altitude: 496 km Type: Sun synchronous, 10:30 am descending node Period: 95 min.	Altitude: 496 km Type: 1:30 pm descending node Period: 95 min.
<b>Mission Life</b>	10-12 years, including all consumables and degradables (e.g. propellant)	
<b>Spacecraft Size, Mass and Power</b>	3.6 m (12 ft) tall x 2.5 m (8 ft) across 7.1 m (23 ft) across the deployed solar arrays 2290 kg (5038 lbs) 3.2 kW solar array, 100 Ahr battery	
<b>Sensor Bands</b>	Panchromatic: 400 - 900 nm	
<b>Sensor Resolution</b>	50 cm Ground Sample Distance (GSD) at nadir 55 cm GSD at 20° off-nadir	
<b>Dynamic Range</b>	11-bits per pixel	
<b>Swath Width</b>	17.7 km at nadir	
<b>Attitude Determination and Control</b>	3-axis stabilized Actuators: Control Moment Gyros (CMGs) Sensors: Star trackers, solid state IRU, GPS	
<b>Pointing Accuracy and Knowledge</b>	Accuracy: <500 m at image start and stop Knowledge: Supports geolocation accuracy below	
<b>Retargeting Agility</b>	Time to Slew 200 km: 10 sec	
<b>Onboard Storage</b>	2199 Gb solid state with EDAC	
<b>Communications</b>	Image and Ancillary Data: 800 Mbps X-band Housekeeping: 4, 16 or 32 kbps real-time, 524 kbps stored, X-band Command: 2 or 64 kbps S-band	
<b>Max Contiguous Area Collected in a Single Pass (30° off-nadir angle)</b>	Mono: 111 x 112 km (6 strips) Stereo: 51 x 112 km (3 pairs)	
<b>Revisit Frequency (at 40°N Latitude)</b>	1.7 days at 1 m GSD or less 5.4 days at 20° off-nadir or less (0.55 m GSD)	
<b>Geolocation Accuracy (CE90)</b>	Demonstrated <4.0 m CE90 without ground control	

## Altitude and slew time



## Collection scenarios

(30° off-nadir angle)



## Sensor band

 Panchromatic