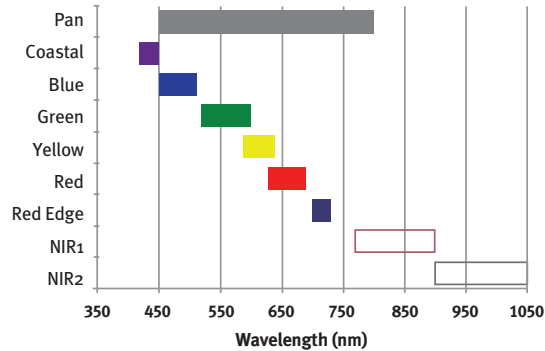


The 8 spectral bands of WorldView-2



## Bathymetry

Launching in Sept/Oct 2009, WorldView-2 will be the first high resolution satellite to provide half-meter panchromatic resolution and 1.8 meter multispectral resolution across 8 spectral bands. With unprecedented agility and a collection capacity of 975,000 km<sup>2</sup> per day, WorldView-2 will double the DigitalGlobe collection capacity and provide worldwide intra-day revisit capabilities.



WorldView-2 is the first high-resolution multispectral satellite to provide a Coastal Blue detector (400-450nm) enabling it to see further into the water and support bathymetric studies around the globe. With unsurpassed accuracy, agility and collection capacity, WorldView-2 is delivering comprehensive new solutions for the marine community.

Remote sensing of the shallow ocean floor will now become much clearer, thanks to the addition of the Coastal Blue band. Analysts will be able to discriminate features more accurately and increase the scope of remote sensing applications. And, thanks to WorldView-2's ability to collect large volumes of stereo imagery, new photogrammetric techniques for calculating ocean depth are finally possible. Current, accurate depth measurements will provide increased navigational security, and support detailed mapping and modeling applications.

### APPLICATIONS

#### Updating navigational hazards

Current and accurate nautical charts are critical to the safety of marine navigation. With global coverage and continuous collections, the opportunity to create and update charts rapidly is a dramatic improvement over current capabilities.

#### Coastal modeling

Predicting the effects of storm surge and tsunamis requires a detailed understanding of the near-shore environment. With photogrammetric techniques, the entire coastline can be mapped simultaneously above and below the water, providing unprecedented continuity and critical insights.

#### Marine habitat monitoring

Government agencies monitor coastal areas to document changes to protected habitats. The ability to map large under water areas, and classify marine habitats with great detail enables more efficient responses and a better understanding of the environment.

### BENEFITS

- Provide navigational charts for remote places that do not have accurate surveys
- Frequently update dynamic areas, such as river deltas and barrier islands
- Locate debris deposited by storms, to efficiently direct cleanup operations
- Map properties and infrastructure that are at risk due to coastal inundation
- Model the effects of storm surge to create better emergency response plans
- Rapidly conduct change analyses, in order to test and refine existing models
- Rapidly identify changes that can indicate the early effects of pollution
- Develop accurate models of reef recovery with bathymetric studies after catastrophic events
- Monitor the impact from coastal development such as offshore wind farms and shallow water oil platforms

We expect to see WorldView-2 derived bathymetric measurements to propagate quickly around the globe, improving the safety of marine navigation, and providing much needed insight into the ever-changing marine environment.

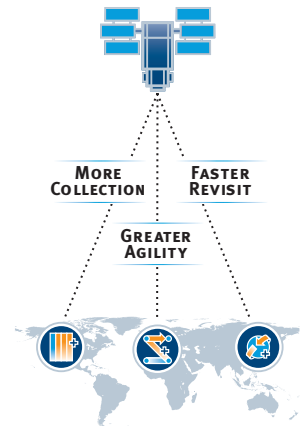




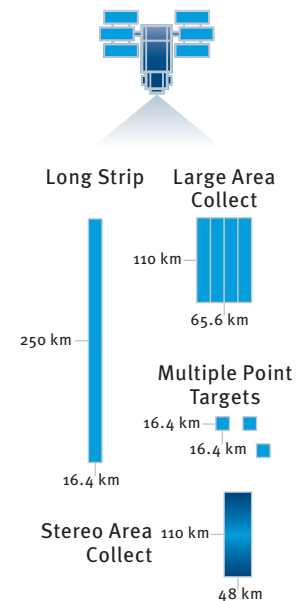
# Bathymetry

## DESIGN AND SPECIFICATIONS

<b>Launch Information</b>	Date: Anticipated Sep/Oct 2009 Launch Vehicle: Delta 7920 (9 strap-ons) Launch Site: Vandenberg Air Force Base
<b>Orbit</b>	Altitude: 770 kilometers Type: Sun synchronous, 10:30 am descending node Period: 100 minutes
<b>Mission Life</b>	7.25 years, including all consumables and degradables (e.g. propellant)
<b>Spacecraft Size, Mass and Power</b>	4.3 meters (14 feet) tall x 2.5 meters (8 feet) across 7.1 meters (23 feet) across the deployed solar arrays 2800 kilograms (6200 pounds) 3.2 kW solar array, 100 Ahr battery
<b>Sensor Bands</b>	Panchromatic + 8 Multispectral: 4 standard colors: red, blue, green, near-IR 4 new colors: red edge, coastal, yellow and near-IR2
<b>Sensor Resolution</b>	Panchromatic: 0.46 meters GSD at nadir, 0.52 meters GSD at 20° off-nadir Multispectral: 1.84 meters GSD at nadir, 2.08 meters GSD at 20° off-nadir
<b>Dynamic Range</b>	11-bits per pixel
<b>Swath Width</b>	16.4 kilometers 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 meters at image start and stop Knowledge: Supports geolocation accuracy below
<b>Retargeting Agility</b>	Acceleration: 1.5 deg/s/s Rate: 3.5 deg/s Time to Slew 300 kilometers: 9 seconds
<b>Onboard Storage</b>	2199 gigabits 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 Viewing Angle / Accessible Ground Swath</b>	Nominally +/-45° off-nadir = 1355 km wide swath Higher angles selectively available
<b>Per Orbit Collection</b>	524 gigabits
<b>Max Contiguous Area Collected in a Single Pass</b>	96 x 110 km mono 48 x 110 km stereo
<b>Revisit Frequency</b>	1.1 days at 1 meter GSD or less 3.7 days at 20° off-nadir or less (0.52 meter GSD)
<b>Geolocation Accuracy (CE90%)</b>	Specification of 6.5m CE90, with predicted performance in the range of 4.6 to 10.7 meters (15 to 35 feet) CE90, excluding terrain and off-nadir effects With registration to GCPs in image: 2.0 meters (6.6 feet)



## COLLECTION SCENARIOS



## SENSOR BANDS

-  Panchromatic
-  Multispectral
-  4 Additional Bands

**DIGITALGLOBE®**

[WWW.DIGITALGLOBE.COM](http://WWW.DIGITALGLOBE.COM)