

BREAKING THE SUPER-SPECTRAL IMAGING BARRIER WITH WORLDVIEW-3

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ABSTRACT:

The DigitalGlobe constellation of very high resolution (VHR) EO satellites sets the standards for quality in accuracy, currency, completeness and consistency. We have been the industry innovators for over a decade. Significant milestones along our roadmap have included the introduction of sub-meter imagery and direct tasking (Ikonos, 1999-2000), the first satellite imagery used in a web portal (Google Maps, 2005), the introduction of high agility control moment gyroscopes (WorldView-1, 2007) and first 8-band VHR multispectral imagery (WorldView-2, 2009). Our long history makes us the content leader, with EO archives that contain 5 billions square kilometers of high resolution imagery. Our growing constellation capacity ensures that we can refresh 80% of the land mass of the earth monthly and we can revisit collection target as often as every 12 hours.

We continue to maintain our leadership in spatial and spectral resolution with WorldView-3, the first and only 30cm super-spectral satellite, launched on August 13, 2014. WorldView-3 is the first multi-payload VHR commercial satellite with three sensors capable of collecting panchromatic plus 8 VNIR bands, 8 SWIR bands and 12 atmospheric compensation bands. With respect to the now defunct ASTER SWIR capabilities, WorldView-3 represents a 8-fold improvement in resolution and almost a 2-fold improvement in number of bands.

In addition to providing the highest commercial resolution available today from space, WorldView-3 unlocks new commercial applications that leverage the chemistry-based absorption features of SWIR. Examples are superior differentiation of surface materials, including soils, alteration minerals and man-made targets, more powerful vegetative analyses and smoke penetration. The new entrant in our constellation complements our ability to inventory natural resources, meet defense and intelligence requirements, support humanitarian efforts, monitor critical infrastructures and track changes in human geography.