Attributions

**Overview of Remote Sensing**

* **Grand Teton National Park**

<http://landsat.gsfc.nasa.gov/images/archive/f0010.html>

Accessed f0010.jpg on Jan 26, 2013 renamed image GrandTetonNationalPark.jpg from **"Landsat imagery courtesy of NASA Goddard Space Flight Center and U.S. Geological Survey"**

* **Belcher Islands**

<http://en.wikipedia.org/wiki/File:Belcherislands.jpg>, Author: NASA, Public Domain

Accessed on Jan 26, 2013

* **AL KHUFRAH OASIS, AGR., ROADS** - **ISS010-E-5266.jpg**

Recommended Citation: Image Science and Analysis Laboratory, NASA-Johnson Space Center. "The Gateway to Astronaut Photography of Earth." <http://earth.jsc.nasa.gov/sseop/EFS/printinfo.pl?PHOTO=ISS010-E-5266>01/26/2013 15:01:24

Accessed Jan 26, 2013

* **Hyperspectral Cube**

<http://en.wikipedia.org/wiki/File:HyperspectralCube.jpg>, Author: Dr. Nicholas M. Short, Public Domain

Accessed Jan 26, 2013

* **Spaceborne Imaging Radar Image**

<http://photojournal.jpl.nasa.gov/catalog/PIA01349> 115px-Death-valley-sar.jpg, Courtesy NASA/JPL

Accessed Jan 26, 2013

* **Landsat 7 orbit image**

<http://landsat.gsfc.nasa.gov/images/lg_jpg/landsat7_orbit2.jpg>, Courtesy NASA/JPL-Caltech

Accessed on Feb 18, 2013

* **Earth Image**

<http://upload.wikimedia.org/wikipedia/commons/thumb/2/22/Earth_Western_Hemisphere_transparent_background.png/480px-Earth_Western_Hemisphere_transparent_background.png>

Accessed on Feb 3, 2013

* **CropScape**

<http://adl.brs.gov.au/data/warehouse/9aac/9aacm/rsfcmd9abcm004201209/TR_12.3_IntgrtCrpFrcst_v.1.0.0.pdf>.

Accessed on Feb 3, 2013. Content in this document is licensed under the Creative Commons 3.0 license. (<http://nassgeodata.gmu.edu/CropScape/> - Slide screenshot of the CropScape website showing an area centered on Sacramento, CA showing 2012 crop types. See FAQ link in the upper right of the website for additional citation information. The data is public domain. Accessed Feb 3, 2013.)

* **Rodeo Fires, AZ, US Forest Service, Landsat 7 image**

<http://www.fs.fed.us/eng/rsac/>

Accessed on Feb 3, 2013

* **UAV Image for USGS Surface Mining Proof-of-Concept Mission and Surface mine image**

<http://rmgsc.cr.usgs.gov/UAS/images/mineSurveysWV/2012/flt6_surfacemine3_ponds_000789021_350.jpg>

<http://rmgsc.cr.usgs.gov/UAS/images/mineSurveysWV/2012/flt6_surfacemine3_ponds_000789021_350.jpg> (Image 10 from the upper right slide show - IMG\_059\_350.jpg

Accessed on Feb 3, 2013

* **Alaska Wetlands derived from JERS RADAR Satellite**

Screenshot shown in slide presentation.

<http://wetlands.jpl.nasa.gov/products/alaska_wetland.html>

Accessed on Feb 3, 2013

* **Mississippi Flood 1993**

<http://www.earthobservatory.nasa.gov/IOTD/view.php?id=5422>

Accessed Feb 3, 2013. NASA. Public domain.

* **Ice monitoring**

<http://polynya.gsfc.nasa.gov/seaice_amsr_south.html>

Accessed Feb 3, 2013

* **Feature Based mapping**

<http://letters-sal.blogspot.com/search/label/eCognition>

Creative Commons reference, <http://creativecommons.org/licenses/by-sa/2.5/>: <http://letters-sal.blogspot.com/2012/12/basic-feature-extraction-tutorial.html>

Accessed on Feb 10, 2013

<http://letters-sal.blogspot.com/search/label/automated%20feature%20extraction>

Accessed on Feb 10, 2013

* **NADAR and Balloon Photograph**

<http://en.wikipedia.org/wiki/File:Brooklyn_Museum_-_Nadar_%C3%89levant_la_Photographie_%C3%A0_la_Hauteur_de_l%27Art_-_Honor%C3%A9_Daumier.jpg>

Accessed on Jan 29, 2013

* **San Francisco Earthquake from a Kite mounted camera**

<http://en.wikipedia.org/wiki/File:San_Francisco_in_ruin_edit2.jpg>

Accessed on Jan 29, 2013

* **Pigeon mounted camera**

<http://upload.wikimedia.org/wikipedia/commons/thumb/8/83/Kronberger-burg-museum010.jpg/361px-Kronberger-burg-museum010.jpg>

Accessed on Jan 29, 2013

* **Pigeon mounted camera photograph**

<http://commons.wikimedia.org/wiki/File:Pigeonimg.jpg>, Julius Neubronner (1852–1932). Original uploader was [Jennavecia](http://en.wikipedia.org/wiki/User:Jennavecia" \o "en:User:Jennavecia) at [en.wikipedia](http://en.wikipedia.org/), Public Domain.

Accessed on Jan 29, 2013

* **German trenches in France, 1916**

<http://commons.wikimedia.org/wiki/File:Schwaben_Redoubt_aerial_photograph_10-05-1916_IWM_HU_91107.jpg>, Public Domain

Accesssed on Feb 3, 2013

* **QuickBird Example**

<http://gdsc.nlr.nl/gdsc/en/information/earth_observation/sensor_examples/multispectral>

Accessed on Feb 3, 2013

* **Landsat 7 Image, July 28, 2001**

<http://atlas.ca.gov/imagerySearch.html>

Accessed on Feb 3, 2013. Author created this overview image for this slide from the source imagery. This image can be used as part of the Creative Commons license: <http://creativecommons.org/licenses/by/3.0/>.

* **LiDAR example**

Created by the author using public domain LiDAR data collected in 2004. Nathan Jennings is the primary contact for this image and it is public domain as part of the Creative Commons license: <http://creativecommons.org/licenses/by/3.0/>.

* **High Resolution Air Photo Example**

Created by the author using public domain high-resolution aerial photography collected in 2009, Nathan Jennings is the primary contact for this image and it is public domain as part of the Creative Commons license: <http://creativecommons.org/licenses/by/3.0/>.

* **Quad Copter**

<http://www.dolookdown.org/>, all content [CC BY-NC-SA](http://creativecommons.org/licenses/by-nc-sa/3.0/us/) unless otherwise specified.

Accessed on Feb 9, 2013

* **Balloon Mapping**

<http://publiclaboratory.org/tool/balloon-mapping>. This work is licensed under a [Creative Commons Attribution-ShareAlike 3.0 Unported License.](http://creativecommons.org/licenses/by-sa/3.0/)

Accessed Feb 9, 2013

* **Fixed Wing Drones**

<http://diydrones.com/photo/the-fleet-2>; Author: Drone Savant

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Accessed on Feb 10, 2013

* **Kite mounted remote sensor**

<http://upload.wikimedia.org/wikipedia/commons/thumb/7/7c/Picavet_cross.jpg/292px-Picavet_cross.jpg>

Accessed on Feb 10, 2013

* **Screen shots of ArcGIS**

Created by author, Nathan Jennings. Creative Commons CC BY 3.0 license applies: <http://creativecommons.org/licenses/by/3.0/>.

* **Screen shots of ArcGIS**

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**Physical Foundations**

* **Remote Sensing Energy Interaction**

<http://upload.wikimedia.org/wikipedia/commons/thumb/f/ff/Remote_Sensing_Energy_Interaction_Schematic.svg/1000px-Remote_Sensing_Energy_Interaction_Schematic.svg.png>

* **Photon Wavelength** - [Creative Commons](http://en.wikipedia.org/wiki/en:Creative_Commons) [Attribution 3.0 Unported](http://creativecommons.org/licenses/by/3.0/deed.en)

<http://commons.wikimedia.org/wiki/File:500px-Photon_wavelength.svg.png>

Accessed January 27, 2013

* **Electromagnetic Spectrum**

Nathan Jennings’ own work. Creative Commons CC BY 3.0 license applies: <http://creativecommons.org/licenses/by/3.0/>.

* **Atmospheric Opacity**

<http://en.wikipedia.org/wiki/File:Atmospheric_electromagnetic_opacity.svg>

Accessed Feb 18, 2013

* **Spectral Curve**

Viewing1.jpg

<http://erdas.wordpress.com/2007/12/30/2-viewing-and-investigating-features/#more-6>

Accessed on Feb 3, 2013

* **Non infested vs. Infested fir trees spectral response**

<http://www.hindawi.com/journals/ijfr/2010/498189/>

<http://www.hindawi.com/journals/ijfr/2010/498189/fig1/>

Stephen P. Cook, Karen S. Humes, Ryan Hruska, Grant Fraley, and Christopher J. Williams, “Identifying Subalpine Fir (Abies lasiocarpa) Attacked by the Balsam Woolly Adelgid (Adelges piceae) Using Spectral Measurements of the Foliage,” International Journal of Forestry Research, vol. 2010, Article ID 498189, 8 pages, 2010. doi:10.1155/2010/498189 (Copyright © 2010 Stephen P. Cook et al. This is an open access article distributed under the [Creative Commons Attribution 3.0 Unported License](http://creativecommons.org/licenses/by/3.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Accessed on Feb 18, 2013

* **Active v. Passive Remote Sensors**

<http://ls7pm3.gsfc.nasa.gov/whatsRM/measureem.html>  
Accessed Feb 10, 2013. NASA: Public Domain.

**Sensor Platforms and Image Processing Basics**

* **High Resolution Air Photo Example**

Created by the author using public domain high-resolution aerial photography collected in 2009, Nathan Jennings is the primary contact for this image and it is public domain as part of the Creative Commons CC BY 3.0 license: <http://creativecommons.org/licenses/by/3.0/>.

* High resolutions images from the City of Sacramento. The right image is from a 2011 collection. The image on the right is from a 2009 image collection. All image data is public domain and be accessed by contacting the author, Nathan Jennings at the City of Sacramento, or through the USGS National Map Viewer. A Creative Commons CC BY 3.0 license applies: <http://creativecommons.org/licenses/by/3.0/>.
* **Landsat 7 Image, July 28, 2001**

<http://atlas.ca.gov/imagerySearch.html>

Accessed on Feb 3, 2013. Author created this overview image for this slide from the source imagery. This image can be used as part of the Creative Commons CC BY 3.0 license: <http://creativecommons.org/licenses/by/3.0/>.

* **QuickBird Example**

<http://gdsc.nlr.nl/gdsc/en/information/earth_observation/sensor_examples/multispectral>

Accessed on Feb 3, 2013

* **San Francisco Bay 2007 oil spill**

<http://visibleearth.nasa.gov/view.php?id=36104>

RADARSAT sample accessed from the Visible Earth website from NASA.

Accessed on Feb 3, 2013.

* **Shuttle Imaging RADAR sample**

<http://southport.jpl.nasa.gov/>

<http://southport.jpl.nasa.gov/pio/srl2/sirc/srl2-wadik.html>

Image for slide was created by the author based on imagery ordered from NASA JPL. This imagery is public domain as per NASA release. See website for more details. Website accessed Feb 3, 2013.

* **LiDAR example**

Created by the author using public domain LiDAR data collected in 2004. Nathan Jennings is the primary contact for this image and it is public domain as part of the Creative Commons CC BY 3.0 license: <http://creativecommons.org/licenses/by/3.0/>.

* **Lidar Operation**

<http://lidar.cr.usgs.gov/eaarl/>

Accessed Feb 18, 2013

* **LiDAR examples**

Images derived from raw LiDAR data by the author, Nathan Jennings. These screenshots are provided as part of the Creative Commons CC BY 3.0 license: <http://creativecommons.org/licenses/by/3.0/>.

* **AVIRIS Hypercube Example of Moffett Field**

<http://www.ltid.inpe.br/html/pub/docs/html/imcube.htm>

Accessed Feb 3, 2013

* **Hyperion sample image**

<http://eo1.gsfc.nasa.gov/new/general/imagery/Imagery/Aspen_Fire-Hyp-fullHyperAspen.jpg>

Accessed on Feb 3, 2013.

* **Spectral Curve**

Viewing1.jpg

<http://erdas.wordpress.com/2007/12/30/2-viewing-and-investigating-features/#more-6>

Accessed on Feb 3, 2013

All other images are created by the author, Nathan Jennings. Satellite imagery is from public domain sources. CalAtlas, Landsat 7 Image, July 28, 2001.

<http://atlas.ca.gov/imagerySearch.html>

* Screen shots of ArcGIS interface for Image Analysis Window, ArcToolbox Raster Calculator, ModelBuilder, and Python scripting IDLE interface. All of the images are available under the Creative Commons CC BY 3.0 license: <http://creativecommons.org/licenses/by/3.0/>.
* **Polar and geosynchronous orbits** (two different images)

<http://spaceplace.nasa.gov/geo-orbits/>

Accessed Feb 24, 2013

* Lesson 3 – Section, Using Software to Process Remotely Sensed Imagery, All images are created by the author, Nathan Jennings. Satellite imagery is from public domain sources. CalAtlas, Landsat 7 Image, July 28, 2001. <http://atlas.ca.gov/imagerySearch.html>

Screen shots of ArcGIS interface for Image Analysis Window. All of the images are available under the Creative Commons 3.0 license.

* Lesson 3 – Section, Band Ratios and Transformations, All images are created by the author, Nathan Jennings. Satellite imagery is from public domain sources. CalAtlas, Landsat 7 Image, July 28, 2001.

<http://atlas.ca.gov/imagerySearch.html>

* Screen shots of ArcGIS interface for Image Analysis Window, ArcToolbox Raster Calculator, ModelBuilder, and Python scripting IDLE interface. All of the images are available under the Creative Commons CC BY 3.0 license: <http://creativecommons.org/licenses/by/3.0/>.

**Photogrammetry**

* All air photo examples come from the City of Sacramento 2009 and 2011 aerial image collections. These are all public domain sets. Contact the author, Nathan Jennings, who works for the City of Sacramento regarding original sources of image data. The images have the Creative Commons CC BY 3.0 license applied to them: <http://creativecommons.org/licenses/by/3.0/>.

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* **LiDAR Example**

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* **LiDAR Operation**, <http://lidar.cr.usgs.gov/eaarl/>, Accessed Feb 18, 2013
* **LiDAR Examples**

Additional LiDAR elevation and surface examples provided by the author, Nathan Jennings. These images are provided with the Creative Commons 3.0 license: <http://creativecommons.org/licenses/by/3.0/>.

* **Contours Overlaid on Aerial Imagery**

Screenshot of contours overlaying aerial imagery. Created by the author, Nathan Jennings. These images are provided with the Creative Commons 3.0 license: <http://creativecommons.org/licenses/by/3.0/>

**Accuracy Assessment**

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