



## TÉLÉ-AUBAINES

Free...or low-cost  
remote sensing /geomatics data

The difficulty of accessing remote sensing data, its cost, and the restrictions that apply to copying have always been considered obstacles to the development of general audience remote sensing applications. Fortunately, the last few years have seen an easing of such restrictions and a corresponding increase in the number of new remote sensing/geomatics applications.

In the last few years, free or very low cost geomatics data have become available, primarily on the Web. One problem with using this data is finding it. The search is often time-consuming, and the proliferation of sites and "construction" work involved in building them sometimes creates twists and turns along the road for users searching for data.



In the *Télé-aubaines* section, the reader will find a number of routes to track down useful, free or low-cost remote sensing (or geomatics) data. Our aim is to turn

this page into a "bargain shop." Do you know a reliable source of useful remote sensing data on Quebec, Canada or the world? Tell your colleagues about it through the *Télé-aubaines* section of *Nouvelles de l'ATQ*. Your input could also include your own assessment of the data, its ease of access, cost, restrictions on its use and what you are doing with it.

**Free Landsat 7 ortho-images offer  
pan-Canadian coverage**  
A collaboration by Christian Prévost (CCRS)

### Summary

**Data type:** Landsat 7 orthoimages, full resolution, high geometric quality

**Coverage:** Pan-Canadian, available at [www.geobase.ca](http://www.geobase.ca)

**Format:** Mainly GeoTIFF

**Price:** Free

**Access:** Download

Around 1999, in the wake of the launch of Landsat 7, the Canadian government set up a comprehensive project to produce Landsat 7 orthoimages of high geometric accuracy for all of Canada. The Centre for Topographic Information – Sherbrooke, Natural Resources Canada, manages the project. In September 2004, after five years of image acquisition and processing, the last of the 768 images needed to cover all of Canada was acquired. The Landsat 7 images were selected according to very rigorous criteria in terms of cloud cover, seasonal window in relation to latitude, and the presence of snow or ice. In addition, a major program of control point acquisition was established to ensure high quality geometric rectification. This database of 30,000 control points is available free of charge and can be used to georeferenced other types of data. [www.geobase.ca](http://www.geobase.ca) - Control Points for Landsat 7 Imagery, Canada, Level 1 (CPLIC1).

As a result of this work, the geometric quality of Landsat 7 orthoimages produced by Canada is very high. Ninety-eight percent of scenes have an accuracy of 30 metres or better, at a 90 percent level of confidence. Images are as cloud- and ice-free as possible (generally <10%) and were acquired on dates that enabled optimum thematic analysis.

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www.geobase.ca

Downloading Landsat 7 images is a very simple process. Simply go to the GeoBase site (www.geobase.ca) and click on Landsat 7 Orthorectified Imagery & Control Points. Then select Landsat 7 Orthorectified Imagery over Canada, Level 1 (LDSAT7). Click on the "Find Data" icon at the top of the page. Coverage is based on the rows and orbits of the Landsat 7 satellite. Click on the small green map to select the image you are interested in. Once the row/orbit is selected and the choice confirmed, a window opens enabling the user to select projection, format, type of compression and spectral bands (the default colour composite, derived from bands 7,4,3, or individual bands). Once the form is completed, a download of the image is received. By September 2004, an estimated 50,000 images had been downloaded.



Click on the green map or select the row/orbit to identify the orthoimage



Form for selecting orthoimage characteristics

Experienced users should note that the GeoBase Landsat 7 orthoimages are the same as those previously available on the GeoGratis site: Download Directory/Landsat\_7/ortho.

The following are a few of the by-products of orthoimages available free of charge or at low cost:

-On the NRCan Centre for Topographic Information site, click the Toporama tab to access a complete set of generalized version, GIF format, true colour orthoimages. The collection conforms to National Topographic System divisions. [http://toporama.cits.nrcan.gc.ca/toporama\\_en.html](http://toporama.cits.nrcan.gc.ca/toporama_en.html)

-On the same site, click the CanImage tab to purchase full resolution versions of orthoimages (\$25/file) in a combination of spectral bands specified by the customer. Here again, the collection conforms to National Topographic System divisions [http://www.cits.nrcan.gc.ca/achats/servlet/Achat?site\\_id=11&sessionid=null&page\\_id=1-001-201](http://www.cits.nrcan.gc.ca/achats/servlet/Achat?site_id=11&sessionid=null&page_id=1-001-201)



CanImage form for selecting bands, enhancement, format, etc.

The air photo library of the Quebec Department of Natural Resources, Wildlife and Parks (MRNFP) sells the *Spatiocarte*, a colour product derived from refined Landsat 7 orthoimages. Each *Spatiocarte* is sold at a cost of \$40 each and conform to the divisions of the 1:100,000 NTS map sheets.



Example of a Landsat-7 Spatiocarte sold by the MRNFP air photo library (depicting the Sherbrooke-Mégantic sector)

These products provide natural resource managers and stakeholders as well as technicians with one more tool that is all the more attractive because it is not only free (or almost), but also of high quality.