How to find, edit, and position a core image to pull-up from the sea floor in Google Earth:
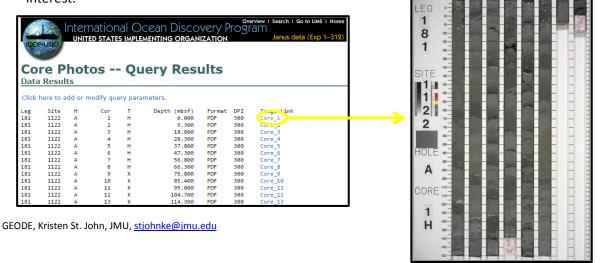
How to Find Core Images (Option 1)

1. Digital images of the archive halves of all IODP, ODP and DSDP cores can be accessed by going to: http://iodp.tamu.edu/database/coreimages.html. Select "**Janus database Core Photo query**" (or go directly to: http://iodp.tamu.edu/janusweb/imaging/photo.shtml). This brings up a Core Photo Data Request Form like below:

   You do not need to fill out every field of this form to access the core photos, but it gives you options for searching. It is a good idea to already know either a site or region (lat-long) that you want to view. For example, if you already know the site and hole that is sufficient to bring up a list of core section images available for that location. In the example above, the Expedition (=Leg), Site, and Hole were entered. Then click on "Submit Request".
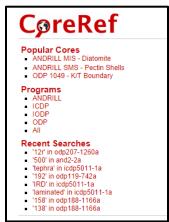
   Note: The nomenclature of the form and how it relates to coring can be found at: http://joidesresolution.org/sites/default/files/WhatIsACore.pdf (see handout).

2. This brings up a list of available core section images that fit your query. Click on the Image link to download a pdf of that image to your computer, or use the snipping tool to select and save only the core interval of interest.
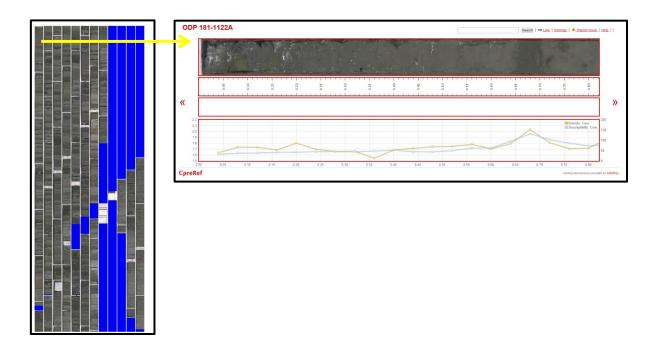

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How to Find Core Images (Option 2)

1. Core images for IODP, ODP, ANDRILL, and ICDP cores can be accessed via **CoreRef**: http://coreref.org/. Use the left menu to select the drilling program for your location of interest, then scroll thru the results to and select the hole of interest.

2. This will bring up a **Hole Overview** image, as show below (left). Click on that image to bring up the core section or depth of interest. Note it will also bring up some physical property data as shown below (right). Then use the snipping tool to capture the core image of interest and save it to your computer.

Tips on Editing Core Images

In most cases the image you saved needs some editing or annotations so that it shows the information you want (and only the information you want) when you add it as a feature in Google Earth. Some tips:

1. It is worth the effort to use Adobe Illustrator (or another drawing program) to trim the core image so that it includes only the interval of core that you are interested in showing.
2. Since Google Earth displays the surface of the Earth (including the surface of the seafloor), it is important to indicate what the sub-seafloor depth range is for your core interval. Annotate your core image with the top and bottom depths. If the top of your core interval is NOT the modern seafloor (0 meters below sea floor, mbsf), then add a box above your core image (see right) so viewers don't mistakenly think that interval represents the modern seafloor at that location. You may also wish to include the core width.
3. Make sure that the artboard around your core image is either transparent or is the same dimension as your core image. In AI go to Object→Artboards→Fit to Artwork Bounds.
4. Save the file in the .ai format for any later editing, and also export the file in the .png format to import into Google Earth.

How to Position a Core Image in Google Earth

This is analogous to generating and positioning a cross-section model in Google Earth, therefore we can generally follow the GEODE **Cross Section Generator** online tool. The instructions below have been tailored to adding core images using this tool:
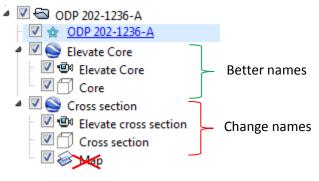
1. Go to http://geode.net:3000/cs/generator (or to http://geode.net/ and locate the Cross Section Generator tool). The Cross Section Generator will open an online interactive program that has four main steps. Use the following tips to work though Steps 1-4:

   a. Step 1 tips: use the latitude and longitude of your core location. Make sure it is in decimal degrees.
   b. Step 2 tips: When you see the word texture, think "core image". For side A texture upload the .png file you exported earlier from Adobe Illustrator. There is no need for side B or ground overlay textures. Once you have chosen your file, then scroll down and **click "upload"**.
   c. Step 3 tips: Skip this step because it is only for ground (lateral) overlays, not vertical sections like core images.
   d. Step 4 tips: You want to **maintain the aspect ratio** of your image file. **Skip length**, because by maintaining the aspect ratio, this will fill in automatically. The larger the number for height, the bigger the core image will be in Google Earth. Start with a **large number for height** (e.g., 100000);

you may want to play with different height numbers and compare results. Because the core image is to be pulled up from the sea floor, make sure the **altitude is the negative value of the height** (e.g., -100000). The maximum altitude should be set to zero. Skip trend, roll, and tilt. Then scroll up and **click "Generate kmz"**. Rename the kmz file something meaningful to you. Open it in Google Earth, if it doesn't do so automatically.

2. There is some clean-up that needs to happen now in Google Earth. Find the new "cross section" in Google Earth→temporary places. Expand this folder, and rename anything that is called "cross section" with something meaningful to you and the fact that these are not cross section but core photos (e.g., elevate core in the example below). Delete the map layer. Access the cross section (= core) properties by right clicking on the box symbol, and selecting **Properties**. Select the **Altitude** tab and change the altitude to "**relative to sea floor**"; click on "**OK**".

3. Pull the core up from the seafloor by clicking on the animation symbol (= video camera symbol).