Subject: Image Overlays on Google Earth with KML Files
Posted by David Fanning on Tue, 30 Oct 2012 22:36:40 GMT
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Folks,

I don't get really excited about IDL too much these days. Except, of course, when a new release comes out, but those moments are fleeting and almost immediately followed by disappointment, so maybe they don't count.

I'm excited today, though.

Someone asked a week or so ago about creating KML files from IDL, so that they could display them on Goggle Earth. When I read the request I immediately realized how such a capability would be valuable for the work I am doing, too. So, I have been thinking about it ever since.

KML files are hierarchtical, so I immediately thought about an object hierarchy approach. Over the weekend, I started to put some of this object framework together. There is a LOT more work to do, but I built just enough to be able to create ground overlays from images in IDL. Such images are draped onto the terrain map in Google Earth.

The exciting thing to me (as always!) is how nicely the Coyote Graphics routines just lend themselves to doing the next, new thing. It's like magic sometimes. But small tweaks to the Coyote map routines to return map boundaries in Goggle Earth preferred formats, and a new routine to warp images in other map projections to the Google Earth map projection (otherwise images won't align with Google Earth continental boundaries, etc.) was almost too easy.

I also wrote a cgImage2KML program so those of you terrified of objects can just ignore the darn things. Who cares what's going on under the hood! :-)

The cgImage2KML program can use image variables, etc. But, most of my images are in GeoTiff files, so the routine is written to gather information from the GeoTiff file directly. If you want to try this out, you can use the AVHRR NDVI image from my web page. You can find it here:

http://www.idlcoyote.com/data/AF03sep15b.n16-VIg.tif

Here is how you create a KML file with it. I'm using
a color table and displaying the image with 50%
transparency. The KML file will be named avhrr_ndvi.kml.

```
cgImage2KML, GeoTiff='AF03sep15b.n16-VIg.tif', Min_Value=0, $
  CTIndex=11, /Brewer, /Reverse, Transparent=50, $
  Filename='avhrr_ndvi.kml', $
  Description='AVHRR NDVI Data from Africa'
```

Once the file is created, simply start Google Earth and open
the file. I haven't implemented a "goto" capability yet,
so you will have to rotate the Earth to see Africa, probably.
But, I'll have this fixed by tomorrow, no doubt.

Did you ever see anything more beautiful!? And perfectly aligned!
Wow! Blows me away.

You will need new files:

http://www.idlcoyote.com/programs/zip_files/coyoteprograms.z ip

I have LOTS of ideas for more functionality. If you have ideas of your
own, let me know. Check back often because I am sure there are bugs
and I know there will be many, many changes as I start to use these
programs at work.

Documentation for all these routines is available on-line:

http://www.idlcoyote.com/idldoc/cg/index.html

Cheers,

David
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David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thue. ("Perhaps thos speakest truth.")
