Subject: Re: UTM Map Projection Produces Incorrect Results
Posted by Fabzou on Mon, 31 Oct 2011 18:06:55 GMT
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THIS IS INCREDIBLE.

The ELLIPSOID keyword may be not documented because the IDL people doesn't want us to use it, and use ENVI for more complicated transformations (datum shifts, etc).

Now I am terribly confused by this information...

I made the test with the WALBECK (not WALBACK) projection and I have the same results as you, David. Fortunately, our applications doesn't require such a precision but the damage in some (already published) data is done... :(

And what about all the other projections? Do I have to check all IDL results against the ESRI engine from now on? I hope not!!!

Fab

On 10/31/2011 06:42 PM, David Fanning wrote:
> Ed Hyer writes:
>
>> I am still confused. The first line of code in your article uses a
>> keyword to MAP_PROJ_INIT, "ELLIPSOID='wgs84'", which I can find
>> nowhere in the documentation of MAP_PROJ_INIT. I see a DATUM keyword
>> (that doesn't solve the problem described-- map parameters are still
>> spherical when I specify DATUM=8). Was this ELLIPSOID keyword
>> introduced in a recent version?
>
> I don't know. It works in both IDL 7.1 and IDL 8.1. I guess I have
> been using it for awhile.
>
>> Anyway, perusing the group archive, I see that Andrew Cool in 2004
>> said "I suspect that there is an inherent problem in IDL's mapping
>> routines in the way they handle Transverse Mercator and rotation."
>>
>> Might be worth updating this page with new information:
>> http://www.idlcoyote.com/map_tips/utm_to_ll.html
>
> Yeah. I just received acknowledgment from the support folks
> at (whatever the company is named now, can't remember) that the
> WGS84 ellipsoid is broken. They suggest using the WALBACK
> ellipsoid, which is nearly identical. In some tests I have
> just conducted, the error is less than a meter using this

> ellipsoid. (I'll update my article in just a couple of minutes.)
>
> There are still some things about the UTM projection I don't
> understand, but this seems to get around the major problem
> I was having with it. They tell me the WGS84 ellipsoid problem
> is fixed in the next version of IDL. (The semi-major axis and
> eccentricity values in the map structure that is returned from
> Map_Proj_Init for a UTM projection also contains the values
> 6370997.0 and 0.000, respectively. These are clearly values
> for a sphere. So, be careful if you use map structure values
> directly.)
>
>> proj.4 is nice any everything, but one of the strongest points
>> remaining in IDL's favor is that it does not use external libraries
>> and thus does not have dependency troubles that plague other
>> solutions. In the short-term, they should just fix the bug-- I
>> seriously doubt that there was ever a version of the GCTP software
>> that couldn't handle UTM.
>
> Well, I would think. :-)
>
> Cheers,
>
> David
>
> P.S. Is it just my imagination, or does the name of this
> company change more than the name of the latest "new"
> graphics system?
>
>
