Subject: IDLanROI::ContainsPoints when TYPE = 0 (points)
Posted by btt on Wed, 14 Feb 2007 16:36:03 GMT
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Hi All,

This is just a little FYI for anyone that uses IDLanROI::ContainsPoints.

I'm not sure if I am pleased or confused by what I would call a documentation bug for IDLanROI::ContainsPoints. My impression from the documentation for the method (see below) is that when the ROI is a set of points OR an open path that any [X,Y,Z] points you want to test will always come back exterior. I hate to admit that I really did read the directions long ago and have, ever since, been jumping through hoops to get something similar to ContainsPoints for ROI types 0 and 1. See the last line of the documentation below.

```
;Syntax
;Result = Obj->[IDLanROI::]ContainsPoints( X [, Y [, Z]] )
;Return Value
;The return value is a vector of values, one per provided point,
indicating whether
;that point is contained. Valid values within this return vector include:
;    0 = Exterior. The point lies strictly out of bounds of the ROI
;    1 = Interior. The point lies strictly inside the bounds of the ROI
;    2 = On edge. The point lies on an edge of the ROI boundary
;    3 = On vertex. The point matches a vertex of the ROI
;A point is considered to be exterior if:
;    The point falls within the boundary of an interior region (hole)
;    The point does not lie in the plane of the region
;    The region TYPE property is set to 0 (points) or 1 (path)
```

Alas, this last statement doesn't seem to be the case for version...
{ ppc darwin unix Mac OS X 6.3 Mar 23 2006 32 64}

It appears that IDL really works for at least ROI type = 0 (points). I would guess that a convex hull is drawn around the points and that is used for testing. So, I am pleased I can use IDLanROI::ContainsPoints for type = 0, but chagrined that I never tried it after reading the online help (until today when I forgot the manual says it doesn't do that!)

Thank goodness I forgot to take my memory medicine this morning!

```
x = [[0,0], [0,2], [1,3], [2,2], [2,0]]
o = obj_new('idlanroi', x, type = 0)
print, o->ContainsPoints(1,1)
;       1   ----> interior
```

```
print, o->ContainsPoints(0,0)
;       3  ----> on vertex
print, o->ContainsPoints(0,1)
;       2  -----> on edge
print, o->ContainsPoints(-1,-1)
;       0 ------> exterior
print, o->ContainsPoints(1,2.5)
;       1 ------>interior
print, o->ContainsPoints(0.2,2.5)
;       0 ------> exterior
o->GetProperty, type = t
print, t
;      0 ------> it really is a TYPE 0 ROI!
```

I haven't tried this for a path ROI (type = 1). I would prefer this to be a documentation bug rather than a code bug.

Cheers,
Ben
