
Subject: Re: Working with 2 partially overlapping images of different array sizes
Posted by [Craig Markwardt](#) on Sat, 12 Jan 2002 03:08:31 GMT
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aqueous0123@yahoo.com (aqueous) writes:

> Sorry, I'm new to this image processing stuff.

>

> I have 2 images of different sizes and different, but overlapping,
> locations on the globe. E.g., 2 satellite images from different
> sensors.

>

>

> ||||| <- IMAGE_1 = bytarr(532,532)

> |

> |

> | ' | '

> | ' | '

> | ' | '

> | ' | '

> | ' | '

> ||||| ' <- IMAGE_2 = bytarr(250,200)

> |

>

... [deletions] ...

> What I wish to do is create a new array IMAGE_3 that is the same array
> size (532,532) as IMAGE_1 AND also has the same physical location as
> IMAGE_1, but with IMAGE_2's data where IMAGE_1 and IMAGE_2 overlap
> (the 2's in the graphic below). Where they do not overlap, I'll just
> fill IMAGE_3 with nearest neighbor of IMAGE_2 (the 0's in the graphic
> below).

>

... [deletions] ...

What you are asking for is 100% what the function INTERPOLATE() will
do for you. The only trick is to make the X and Y arrays for the
interpolation. You are trying to interpolate IMAGE2 onto the grid for
IMAGE1, so what you want is an array of X values and Y values that
express the IMAGE1 grid in the coordinate system of IMAGE2.

```
;; Length of image 2 in the X and Y directions
```

```
lenx2 = max(lons2)-min(lons2) & leny2 = max(lats2)-min(lats2)
```

```
;; Pixel sizes of each image
```

```
dx2 = lenx2/n_elements(lons2) & dy2 = leny2/n_elements(lats2)
```

```
x1 = (lons1-lons2(0))/dx2
```

```
y1 = (lats1-lats2(0))/dy2
```

```
image3 = interpolate(image2, x1, y1, /grid)
```

Based on what you said, you definitely don't want to use MISSING,
because you want nearest neighbor on the outskirts where IMAGE2 is not
defined. [If you really wanted to set to zero then you would say,
MISSING=0.]

Good luck,
Craig

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