Subject: Re: ROT is ROTTEN (a solution)
Posted by Paul van Delst on Wed, 21 Nov 2001 15:19:56 GMT
View Forum Message <> Reply to Message

Martin Downing wrote:
>
> Hi All,
>
> This was an interesting problem - I certainly hadn't noticed it before. The
> reason for the behaviour is precision error in the arithmatic which works
> out the poly2d coefficients. It can be corrected effectively by modifying
> line 128 of rot.pro:
>
> from:
>
> theta = -angle/!radeg ;angle in degrees CLOCKWISE.
>
> to:
>
> theta = (-angle MOD 360) *acos(0.0d)/90 ;angle in degrees CLOCKWISE. (mod
> MRD 21/11/2001 to correct for precision error)
>
> This does two things, firstly (-angle MOD 360) ensures that a precision
> error does not propagate due to large angles which contain multiple 360
> degree rotations,
> for instance that 390.45 degree rotation is treated exactly the same as
> 30.45 degrees [i.e. n*360+theta = = theta].
>
> Secondly, substituting (acos(0.0d)/90) for !radeg gives a full DOUBLE
> precision representation of theta in radians.
>
> This fixes it completely as far as I can see:

Great job!

paulv

--
Paul van Delst   Religious and cultural
CIMSS @ NOAA/NCEP   purity is a fundamentalist
Ph: (301)763-8000 x7274   fantasy
Fax:(301)763-8545   V.S.Naipaul