SeaWiFS images of the SOIREE bloom

This directory contains images of the SOIREE bloom, as described in
Abraham, E.R., Law, C.S., Boyd, P.W., Lavender, S.J., Maldonado, M.T.,
and Bowie, A.R. (2000) Importance of stirring in the development of
an iron-fertilized bloom. Nature 407, 727-730.

The SeaWiFS data were provided by the NASA/DAAC GSFC and are copyright
of Orbital Imaging Corps and the NASA SeaWiFS project. The data was
processed at CCMS-PML by Samatha Lavender.

The images are in PNG format. Chlorophyll values can be extracted
from the imagery by applying the conversion equation:

$\log_{10}(chl) = ((Pixel\ value)*slope) + \log_{10}(intercept)$

where slope = 0.015 and intercept = 0.01.

The images are in a non-standard Mercator projection and the following
formulae may be used to convert latitude/longitude (lat/lon) positions
to x/y pixel co-ordinates or vica-versa.

Given lat and lon
Calculate x position:
  FractX = (lon - minlon) / (maxlon - minlon)
  x = cols * FractX

Calculate y position:
  Ymin=logn(tan(DEGTORAD*(45.0+(lat/2.0))))
  Ymax=logn(tan(DEGTORAD*(45.0+(maxlat/2.0))))
  y=(cols *(Ymax-Ymin))/(DEGTORAD*(maxlon-minlon))

Given x and y
Calculate Longitude:
  Fractx=(x-1)/(cols-1)
  lon=Fractx*(maxlon-minlon)+minlon

Calculate Latitude:
  Ymax=logn(tan(DEGTORAD*(45.0+(maxlat/2.0))));
  Ymin=Ymax-(y-1)*DEGTORAD*(maxlon-minlon)/(cols-1);
  lat= 2*(atan(exp(Ymin))/DEGTORAD - 45);

Where rows = 431 cols = 445 minlon =137.0 maxlon = 145.0 maxlat =
  -59.001762
DEGTORAD - conversion from degrees to radians (PI/180.0)

Queries and permission to use the images should be addressed to
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  19. Jan 00