

# An Advance Sea Ice Advisory to 35<sup>th</sup> Indian Scientific Expedition to Antarctica (2015-2016)

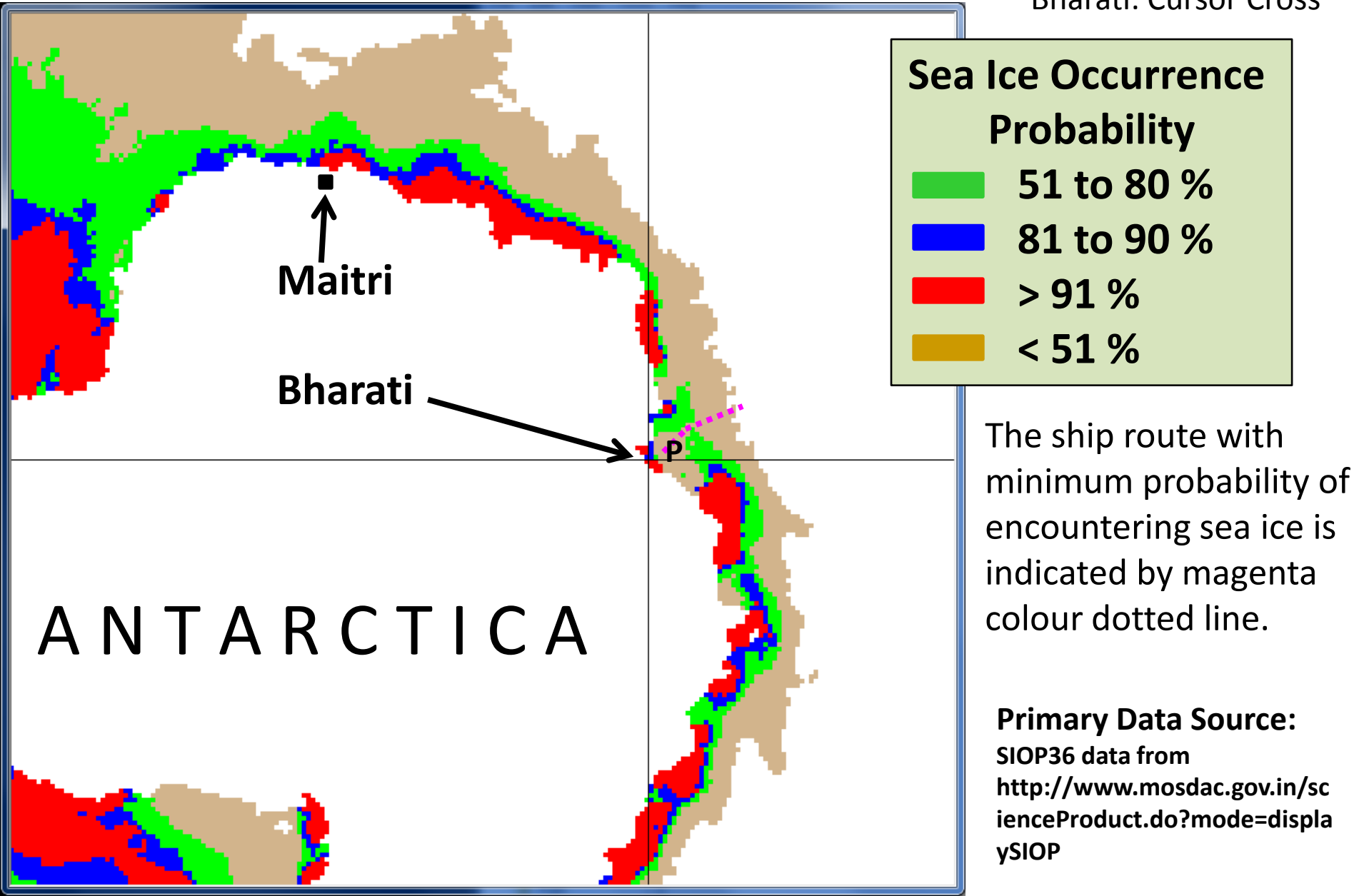
## Highlight

1. The analysis of previous 36 years of satellite based sea ice concentration data shows that there is high probability of encountering sea ice floe with varied sea ice concentration between 65° and 67° South latitude during first week of January.
2. A large polynya forms over the Antarctic coast near Bharati Research Station (Indicated by letter 'P' in the following slides). Current year's satellite data shows that this year also a well developed polynya is formed (shown on Dec 22, 2015 image).
3. Multi year satellite data analysis shows that the current year's fast ice extent near the Antarctic coast is more than the extents observed during the same duration in 2014 and 2013.
4. The major source of data used in this analysis is Sea Ice Occurrence Probability data available at ISRO's MOSDAC site ([www.mosdac.gov.in](http://www.mosdac.gov.in)) and MODIS LANCE mosaic images over the Antarctic.

# Spatial Distribution of Probability of Encountering Sea Ice

January 1st

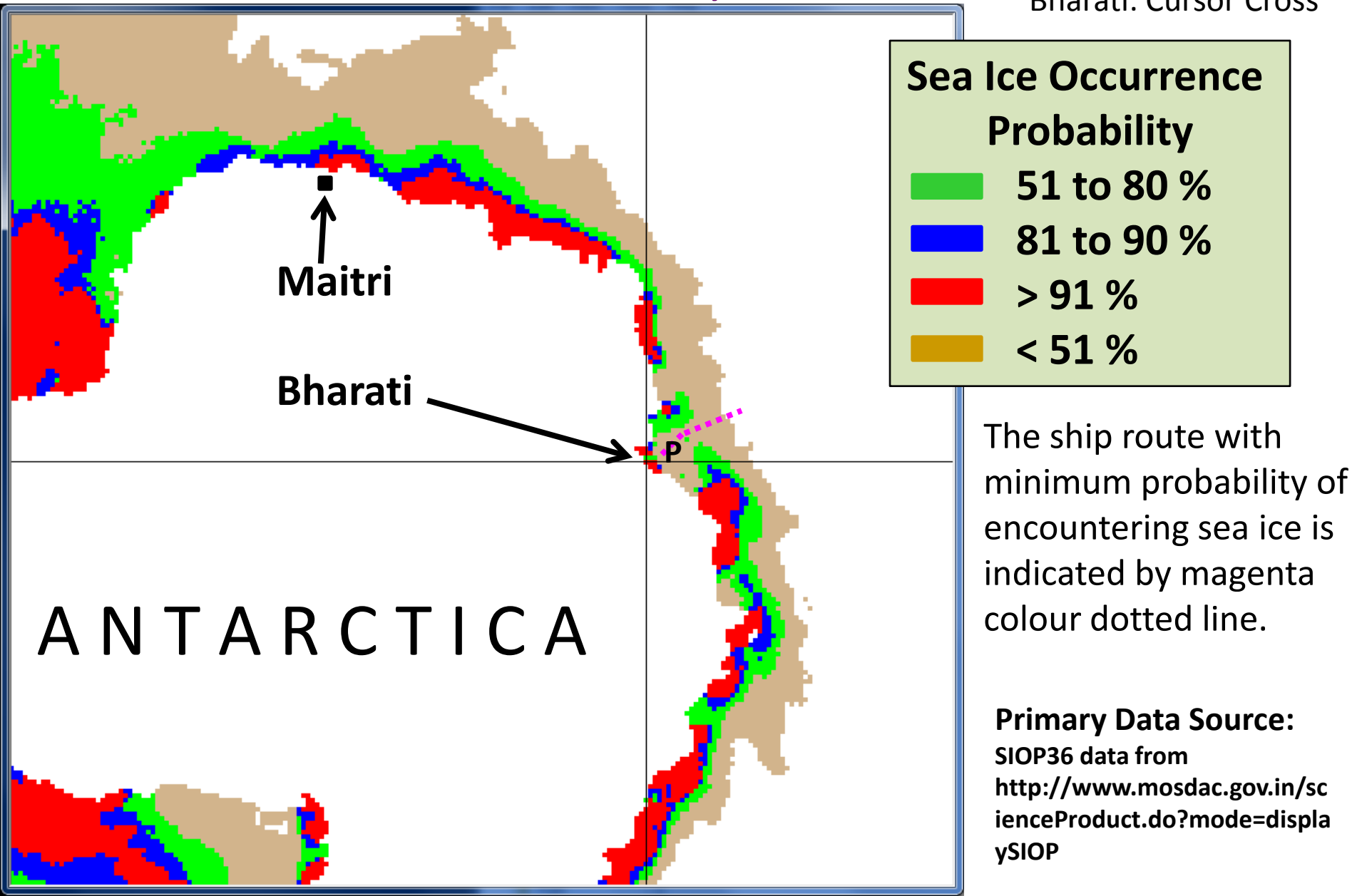
Bharati: Cursor Cross



# Spatial Distribution of Probability of Encountering Sea Ice

January 2<sup>nd</sup>

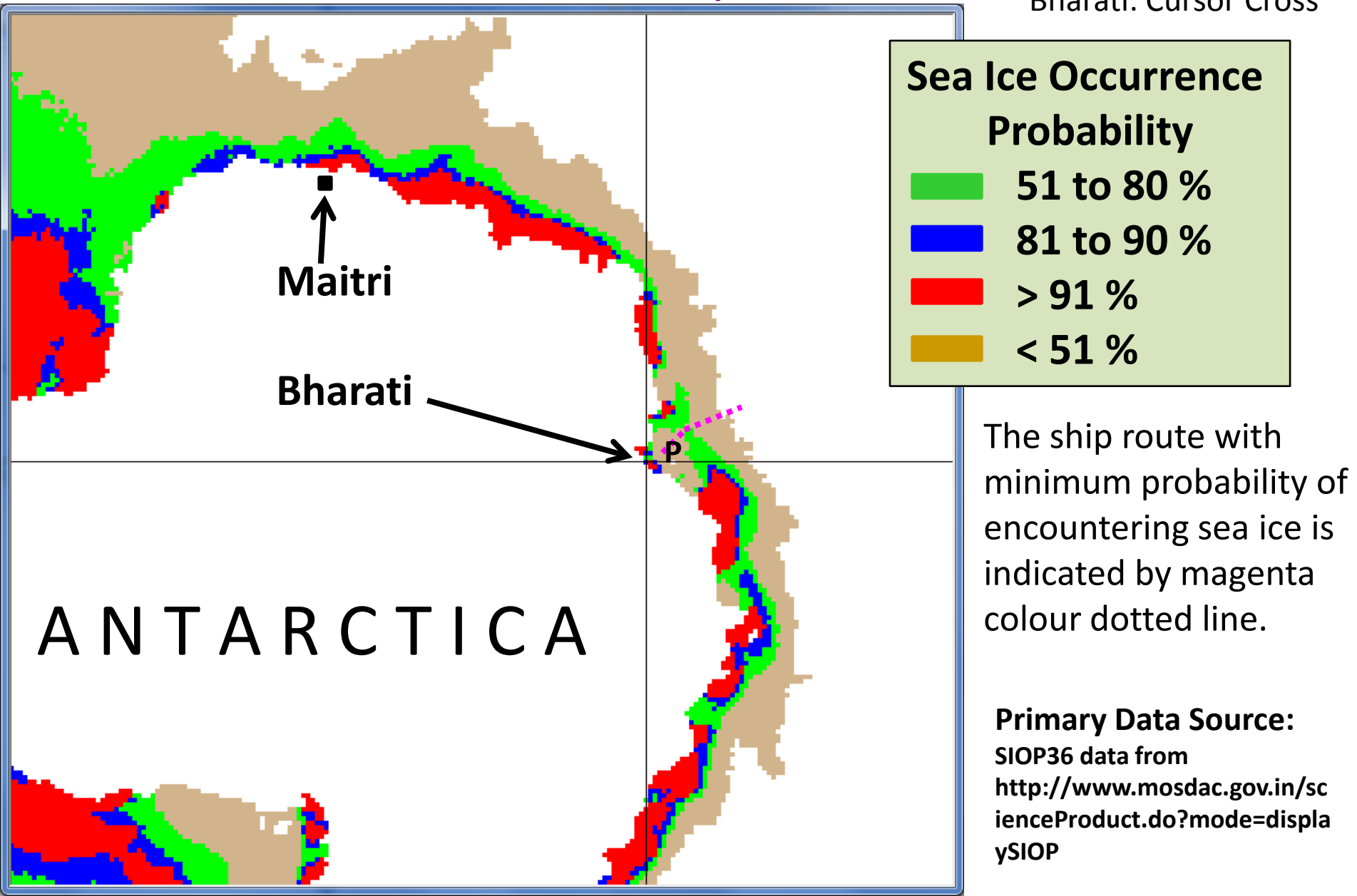
Bharati: Cursor Cross



# Spatial Distribution of Probability of Encountering Sea Ice

January 3<sup>rd</sup>

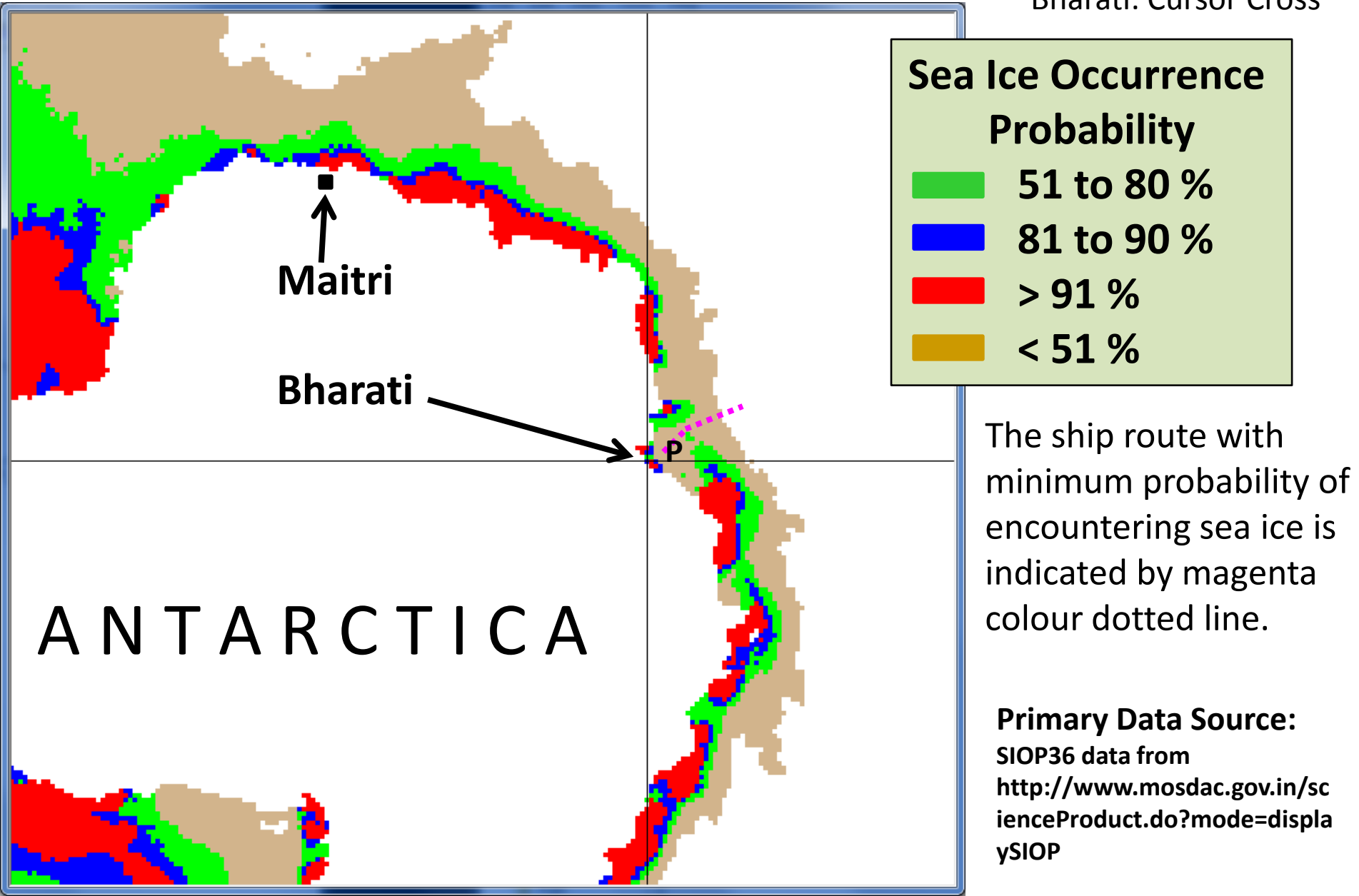
Bharati: Cursor Cross



# Spatial Distribution of Probability of Encountering Sea Ice

January 4<sup>th</sup>

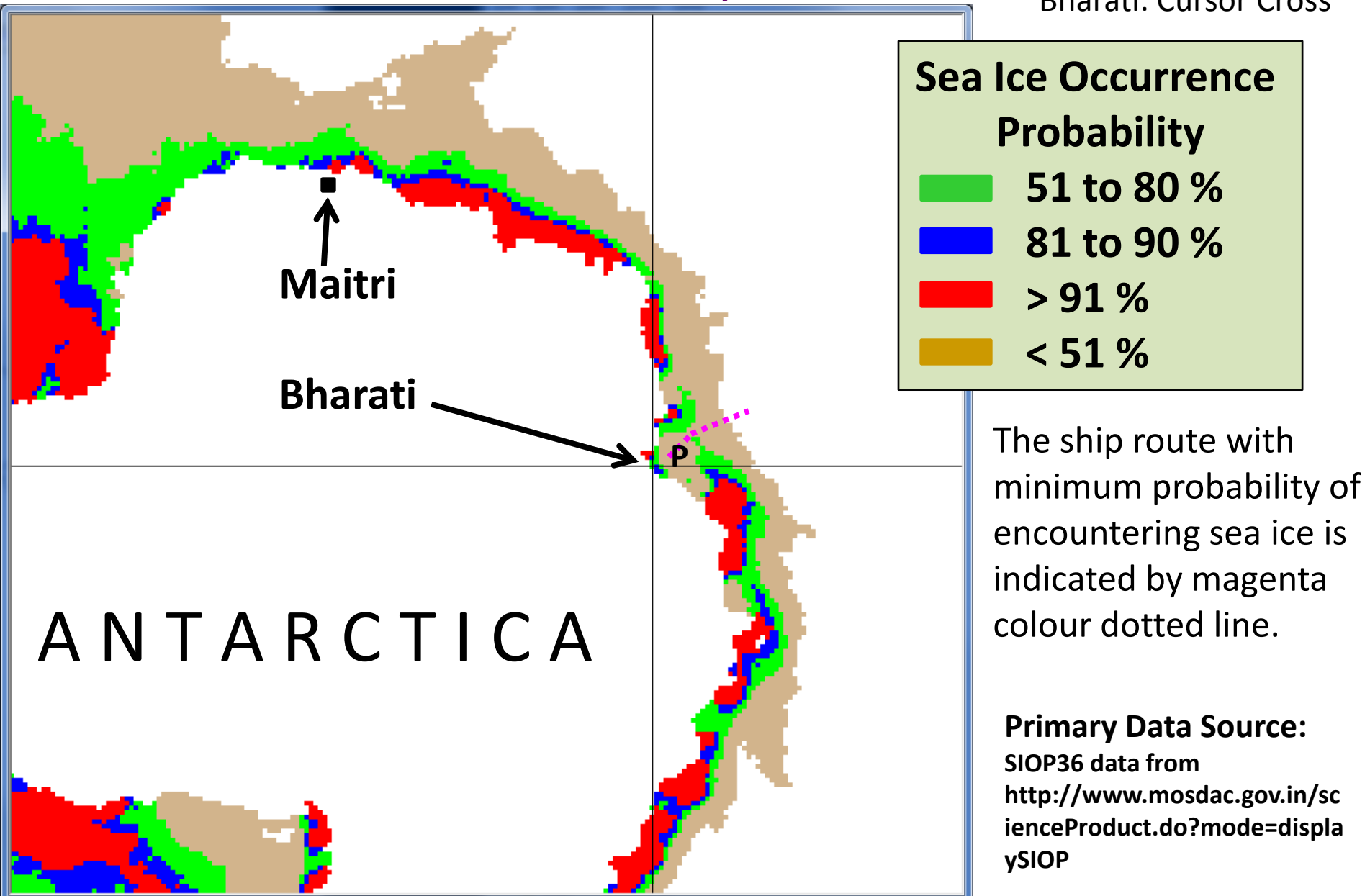
Bharati: Cursor Cross



# Spatial Distribution of Probability of Encountering Sea Ice

January 5<sup>th</sup>

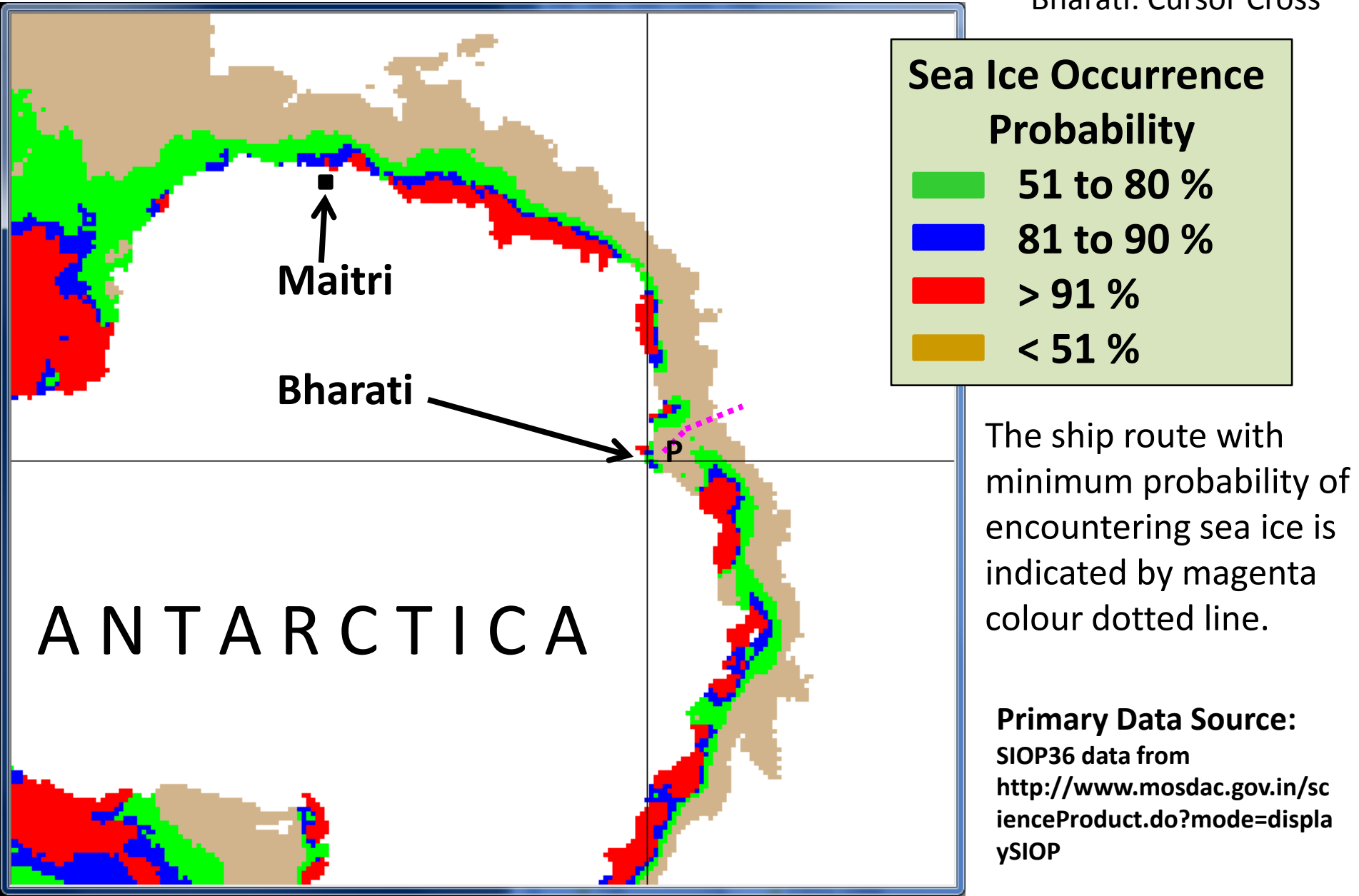
Bharati: Cursor Cross



# Spatial Distribution of Probability of Encountering Sea Ice

January 6<sup>th</sup>

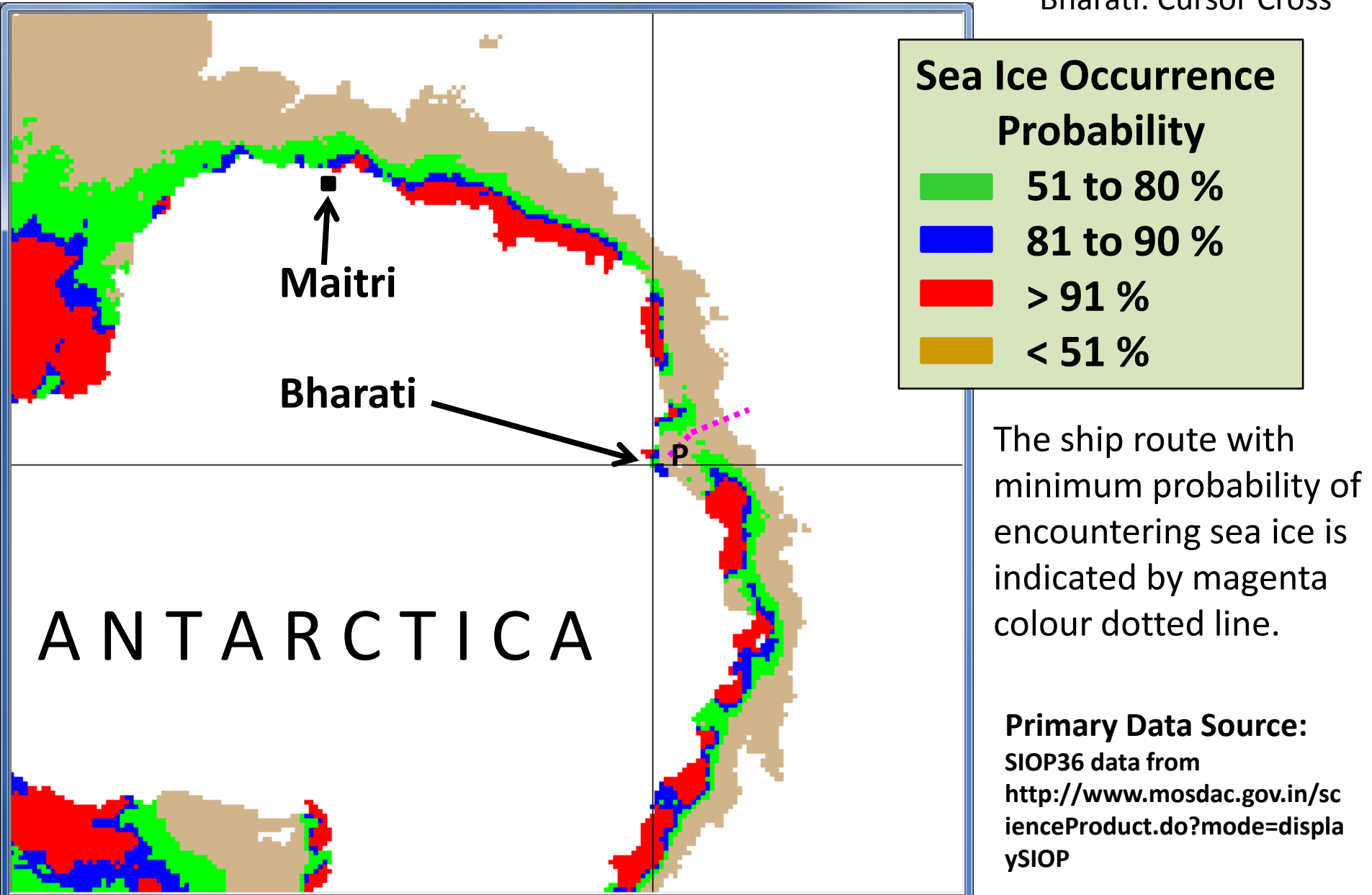
Bharati: Cursor Cross



# Spatial Distribution of Probability of Encountering Sea Ice

January 7<sup>th</sup>

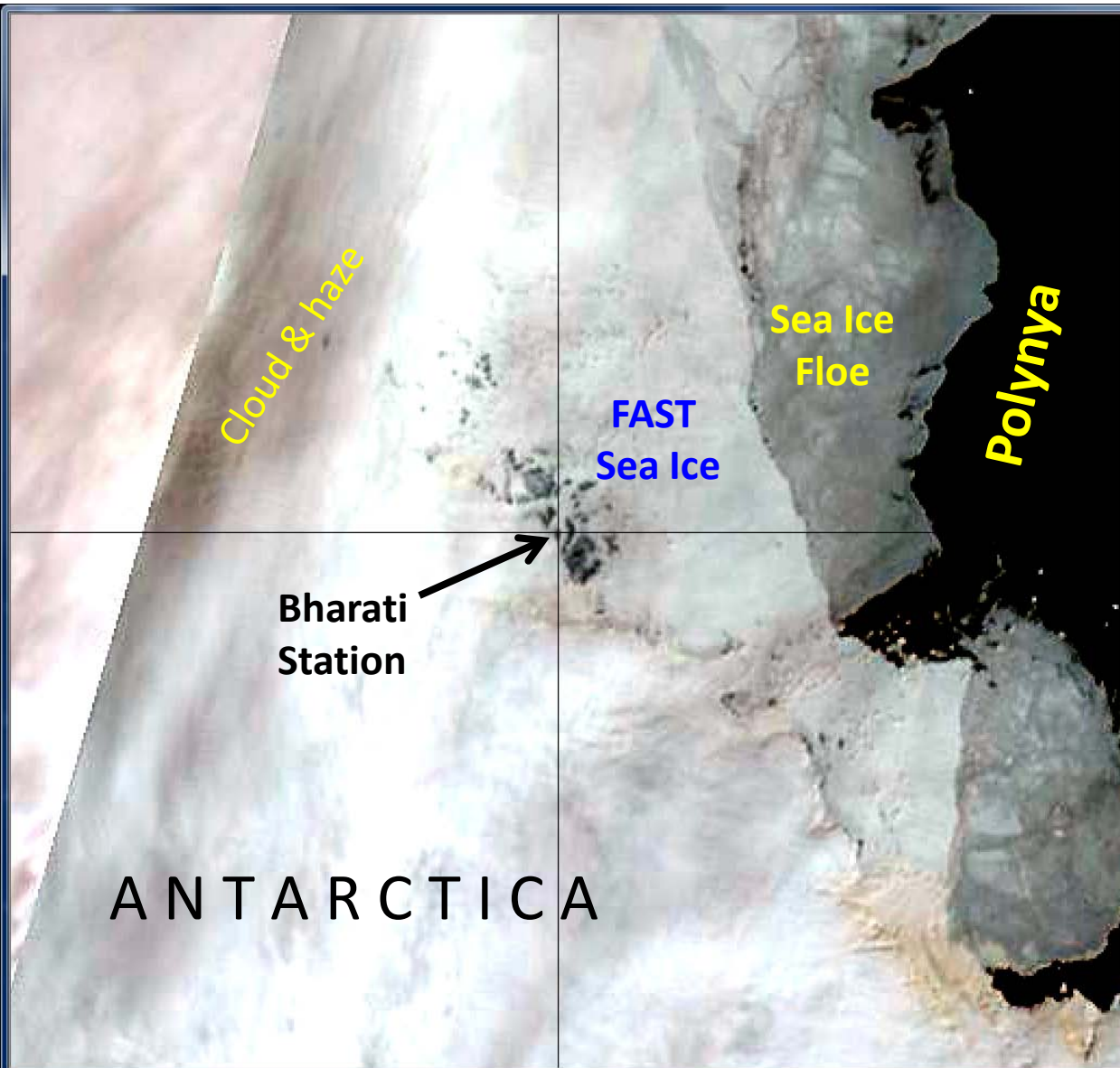
Bharati: Cursor Cross





# MODIS Mosaic Near Bharati

Dec 22, 2015

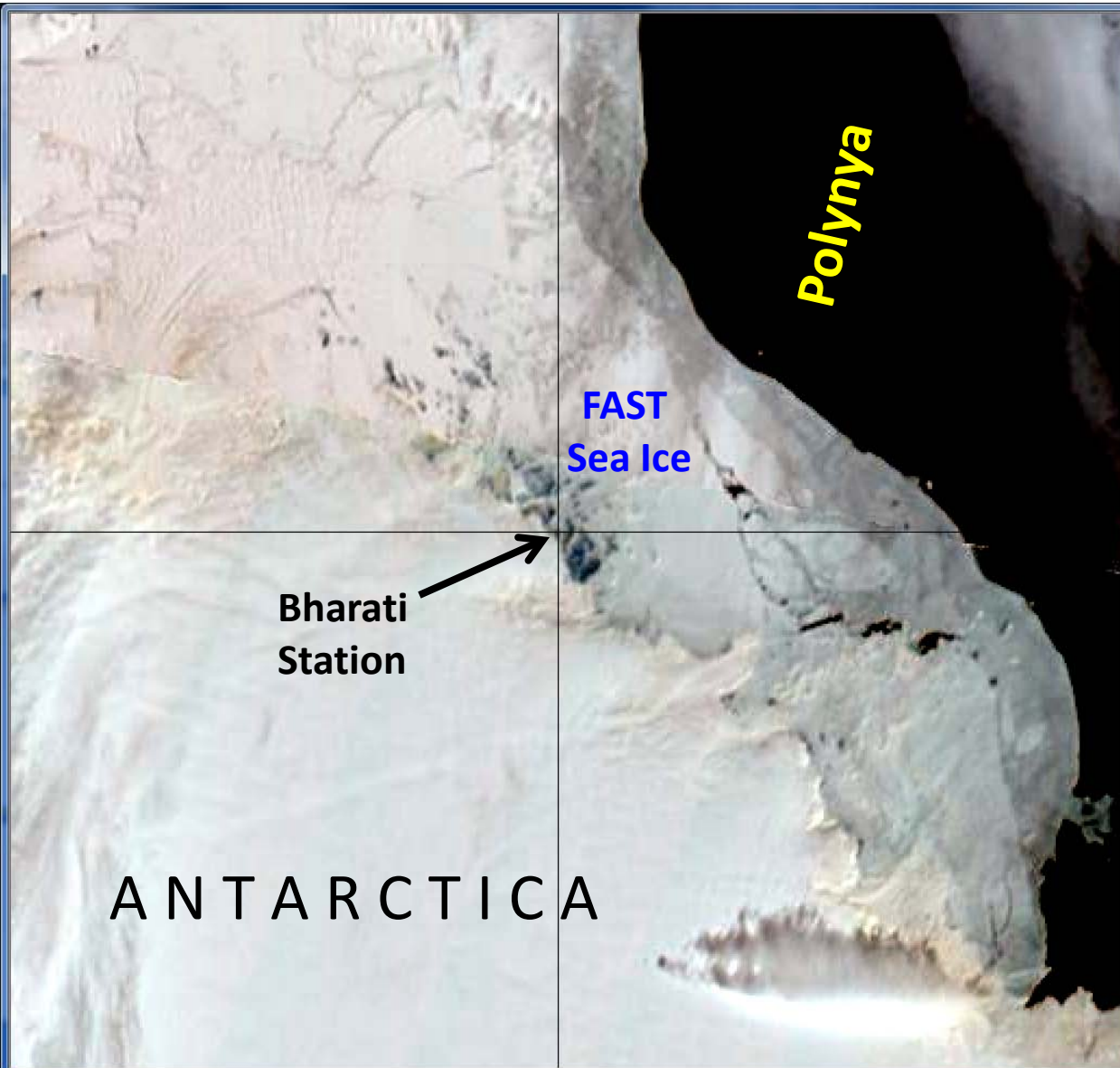


The current status of sea ice floe layer and fast sea ice over the Antarctic coast near Bharati Research Station (at cursor cross section) is shown in this image. Analysis of temporal satellite data shows that the fast ice extent is reducing with time. The current extent of sea ice floe beyond fast ice is more than that was observed during the same period in 2014 and 2013.

The current fast ice extent (25km) is almost 5km more than the corresponding extent during last year i.e. December 2014.

# MODIS Mosaic Near Bharati

Dec 23, 2014

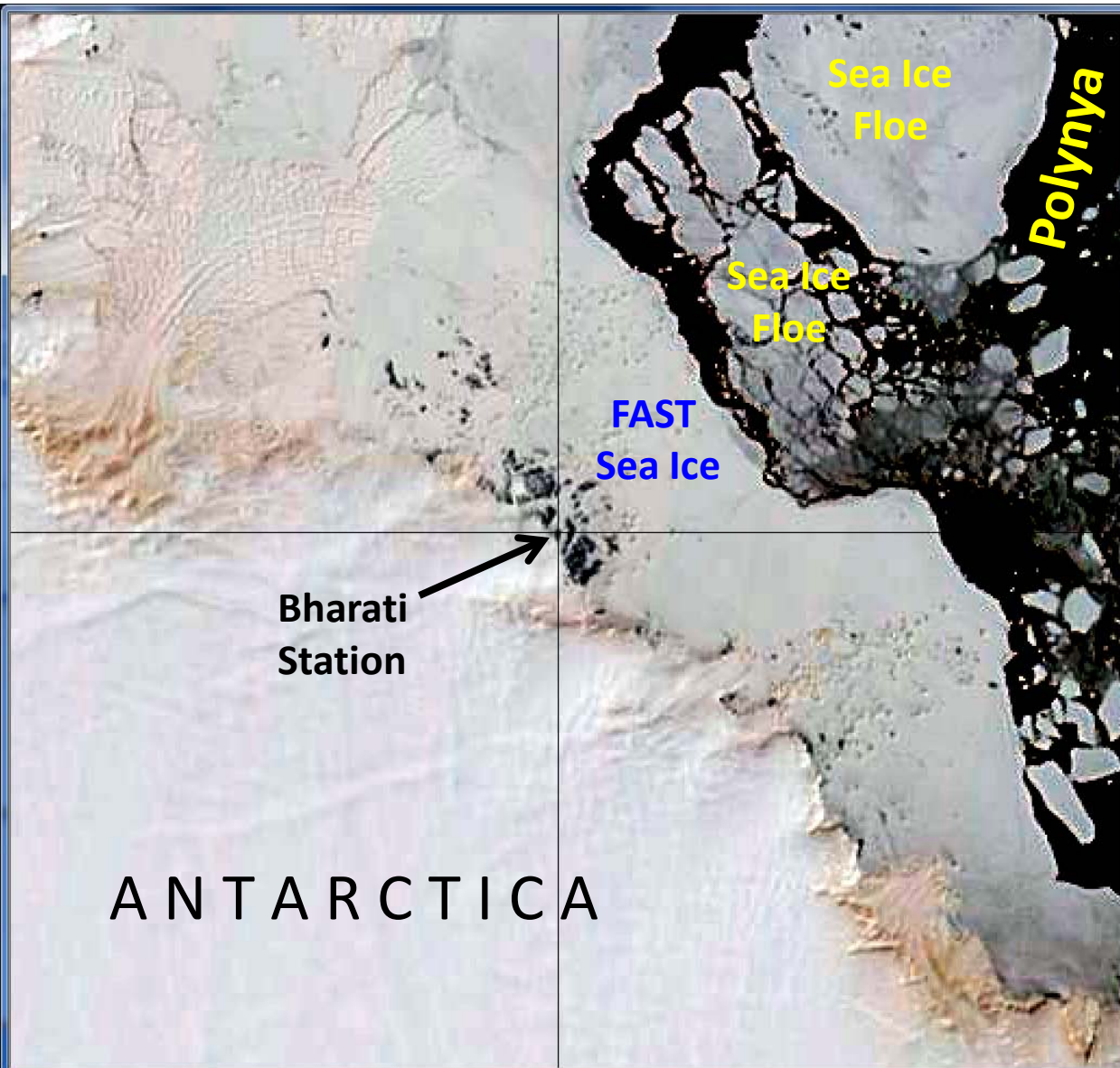


The status of sea ice floe (thin layer between fast sea ice and polynya) over the Antarctic coast near Bharati Research Station (at cursor cross section) during December 23, 2014 is shown in this image. The 2015 extent of sea ice floe beyond fast ice (previous slide) is more than the sea ice extent shown in this image of 2014.

The fast ice extent during 2014 was almost 5km less than the corresponding extent during this year i.e. December 2015.

# MODIS Mosaic Near Bharati

Dec 21, 2013



The status of sea ice floe (floating beyond fast sea ice) over the Antarctic coast near Bharati Research Station (at cursor cross section) during December 21, 2013 is shown in this image. There is a sea ice floe layer adjacent to fast ice layer during 2015 (shown earlier).

The fast ice extent during 2013 was almost 2km less than the corresponding extent during this year i.e. December 2015.