In-Class Exercise - Paleomagnetism

Objective: By completion of this assignment you should understand how the orientation of magnetic minerals in rocks can be used to retrace a continent's paleolatitude (the continent’s ‘ancient’ latitudes throughout geologic time.

Note: You must bring a protractor to class in order to complete this exercise!

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1. Use a protractor to determine the magnetic dip (acute angle between the arrow line and the horizon line) of each of the following samples. Be sure to note whether each sample formed in the Northern Hemisphere or the Southern Hemisphere (arrow pointing 'up' = southern hemisphere; arrow pointing 'down' = northern hemisphere). Record the magnetic angle of dip for each sample in the table:

<table>
<thead>
<tr>
<th>Rock Sample</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Age</td>
<td>225 my</td>
<td>200 my</td>
<td>90 my</td>
<td>60 my</td>
<td>20 my</td>
<td>Present</td>
</tr>
<tr>
<td>Magnetic Dip</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paleolatitude</td>
<td></td>
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</tr>
</tbody>
</table>

2. Use the following graph and your answers to question #1 to determine the geographic latitude of each sample at the time it formed (paleolatitude). Record each sample’s paleolatitude in the table.
3. Plot the paleolatitude of each sample on the following map. Be sure to plot southern hemisphere samples below 0° latitude, and northern hemisphere samples above 0° latitude. Assume all samples formed at longitude 80°. The map will show the motion of the India over the past 225 million years.