Geology of the Hawaiian Islands
Class 5
27 January 2004

Big Island Field Trip Deposit
Due Thursday

Any Questions?

Homework #2
Due Thursday

Hawaiian Volcanic Activity
(Chapter 2)

Hawaiian Lavas
Two Kinds:
Pahoehoe
`A`a

Hawaiian Lavas
Pahoehoe
Smooth Surface
Ropey character
Hawaiian Lavas

`A`a

Rough, rubbly surface

Cross-section of an `a`a flow

Rubble at top
Solid interior
Rubble at base
The rubble at the top and base of an `a`a flow is called **clinker**.

<table>
<thead>
<tr>
<th>Pahoehoe vs. <code>A</code>a</th>
<th>Pillow Lava</th>
<th>Lava Tubes</th>
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</thead>
<tbody>
<tr>
<td>No real difference in chemical composition. Viscosity is the main difference: <code>A</code>a comes from more viscous lava.</td>
<td>When lava flows into the water, its surface cools very rapidly, but the interior is still very hot and fluid. So the lava flows out in small tubes. The cooled remnants look like pillows.</td>
<td>Formed when upper surface of a lava river solidifies, but interior is still hot and molten.</td>
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</tbody>
</table>

Pahoehoe → `A`a when the lava cools quickly. When high volume of lava is produced, lava flows down channels and cools rapidly, viscosity increases, and lava turns to `a`a.

Pahoehoe often changes to `a`a. We don’t find evidence for `a`a changing to pahoehoe.
Thursday we will take a short field trip to look at some volcanic features around the campus.

We will leave here at about 9:15 a.m. - *don’t be late!*

**For Tuesday**
Read Chapter 5