Glaciers

12.001 – 26 November 2012
Glaciation changes drainage networks
Ice spreading centers: North America

W. W. Norton. After Flint, 1971

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Pleistocene Pluvial Lakes and Megafloods
Megatherium (giant ground sloth)

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NORTEAMÉRICA HASTA HACE 10,000 AÑOS

Sergio de la Rosa Martínez
Cirque glacier

Courtesy of Jürg Alean, from swissseduc.ch Glaciers online website. Used with permission.
Valley glacier

Franz Josef Glacier, NZ

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East Antarctic Ice Sheet

Courtesy of NASA. Figures in the public domain.
Franz Josef Glacier, NZ

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## Measured glacier velocities

<table>
<thead>
<tr>
<th>Site</th>
<th>Surface velocity (m/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Cascades</td>
<td>20</td>
</tr>
<tr>
<td>Antarctica</td>
<td>32</td>
</tr>
<tr>
<td>Greenland</td>
<td>50</td>
</tr>
<tr>
<td>Alps</td>
<td>100</td>
</tr>
<tr>
<td>Saskatchewan, Canadian Rockies</td>
<td>120</td>
</tr>
<tr>
<td>SE Alaska</td>
<td>500</td>
</tr>
<tr>
<td>Anstedalsbreen, Norway (icefall)</td>
<td>2000</td>
</tr>
</tbody>
</table>
Ice spreading centers: North America

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Uspallata Valley
Glen Coe
(Lindy Elkins-Tanton)

Courtesy of Lindy Elkins-Tanton. Used with permission.
Valle de Ordesa
"Glacial buzzsaw" hypothesis

Broecker & Denton (1990)

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Terminal moraines in the eastern U.S.
Drumlins

Photograph of farm country with drumlins, Dodge County, Wisconsin removed due to copyright restrictions. View the photograph here.
Kame Hill

geology.wisc.edu
Kettle Lakes, Siberia

Landsat 7 image

Courtesy of USGS & NASA. Image in the public domain.
Esker in NW Territory, Canada
Striations & “chatter marks”

Courtesy of Stephen Marshak. Used with permission.
Cirque (with cirque glacier)
Roche moutonnée
12.001 Introduction to Geology
Fall 2013

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