Steam propulsion was known in Greece before 400 BC.

- Hero engine in 100 BC
• True rockets have internally stored propellants and energy

• Chinese started with true gunpowder rockets in 13th Century
  – Wan Hu tried manned flight (Unsuccessfully)
“The Earth is the cradle of mankind, but one cannot live in the cradle forever.”

Konstantin Tsiolkovsky
A Wildlife Refuge
The International Space Station
## Size Comparison of Mir and International Space Station

<table>
<thead>
<tr>
<th></th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mir</td>
<td>108 ft</td>
<td>98 ft</td>
<td>89 ft</td>
<td>90 metric tons</td>
</tr>
<tr>
<td>ISS</td>
<td>290 ft</td>
<td>358 ft</td>
<td>131 ft</td>
<td>406 metric tons</td>
</tr>
</tbody>
</table>
Space Station Mobile Servicing System

Mobil Transporter
8A Mission

Mobil Base System
UF-2 Mission

Arm
Remote Manipulator System
6A Mission

Canadian technology... it's out of this world.

Special Purpose Dexterous Manipulator UF-4 Mission

CSA