

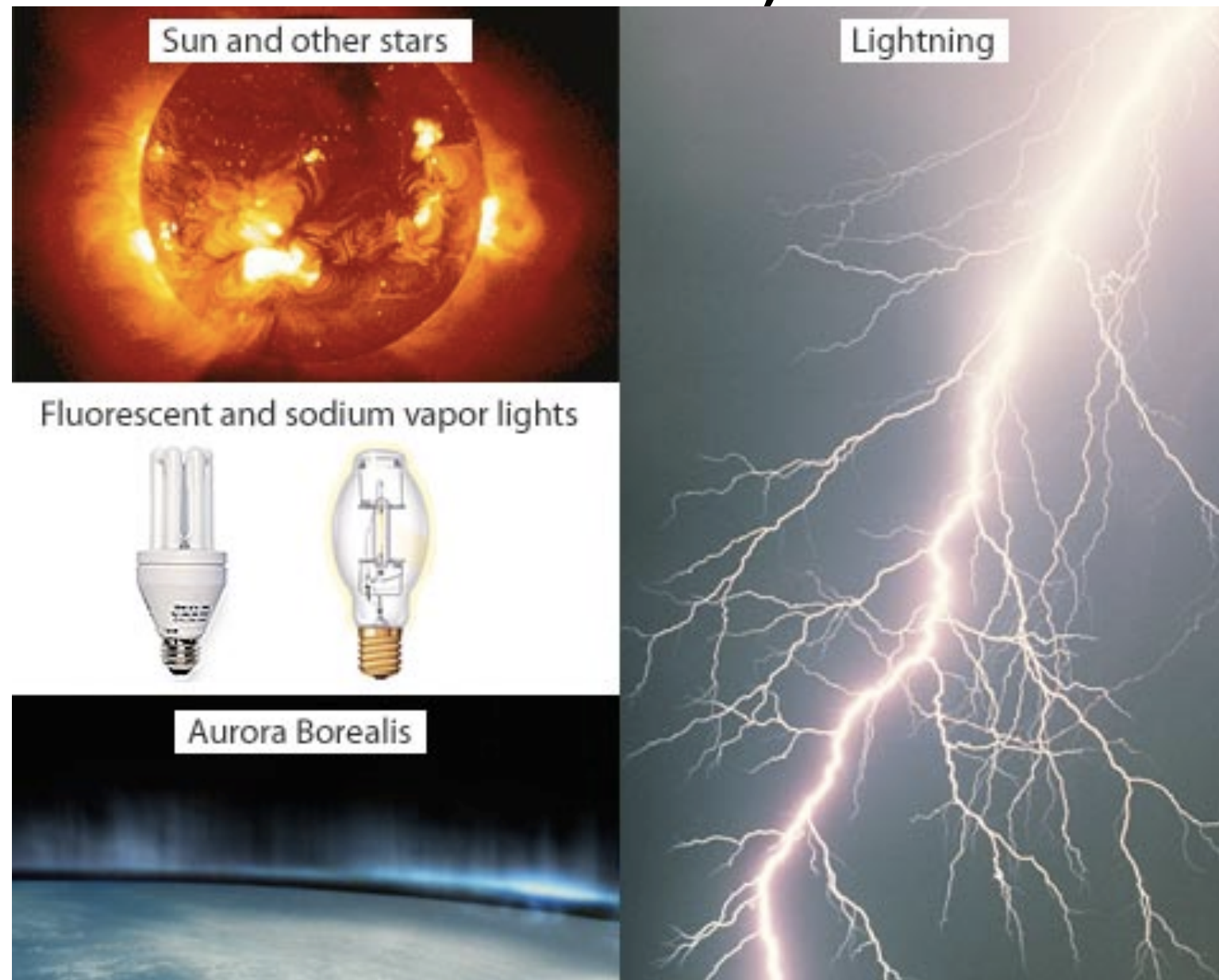
# States of Matter

state of matter	volume	Shape	Particles
<b>Gas</b>	indefinite	indefinite	<ul style="list-style-type: none"> <li>• particles move randomly and fast</li> <li>• low attraction of particles</li> <li>• fill container completely</li> </ul>
<b>Liquid</b>	definite	indefinite	<ul style="list-style-type: none"> <li>• particles can flow past each other</li> <li>• medium attraction and speed</li> <li>• take shape of container</li> </ul>
<b>Solid</b>	definite	definite	<ul style="list-style-type: none"> <li>• particles tightly bonded together, high attraction</li> <li>• very slow vibrations</li> </ul>

\*definite = defined      \*indefinite = can change

# Plasma

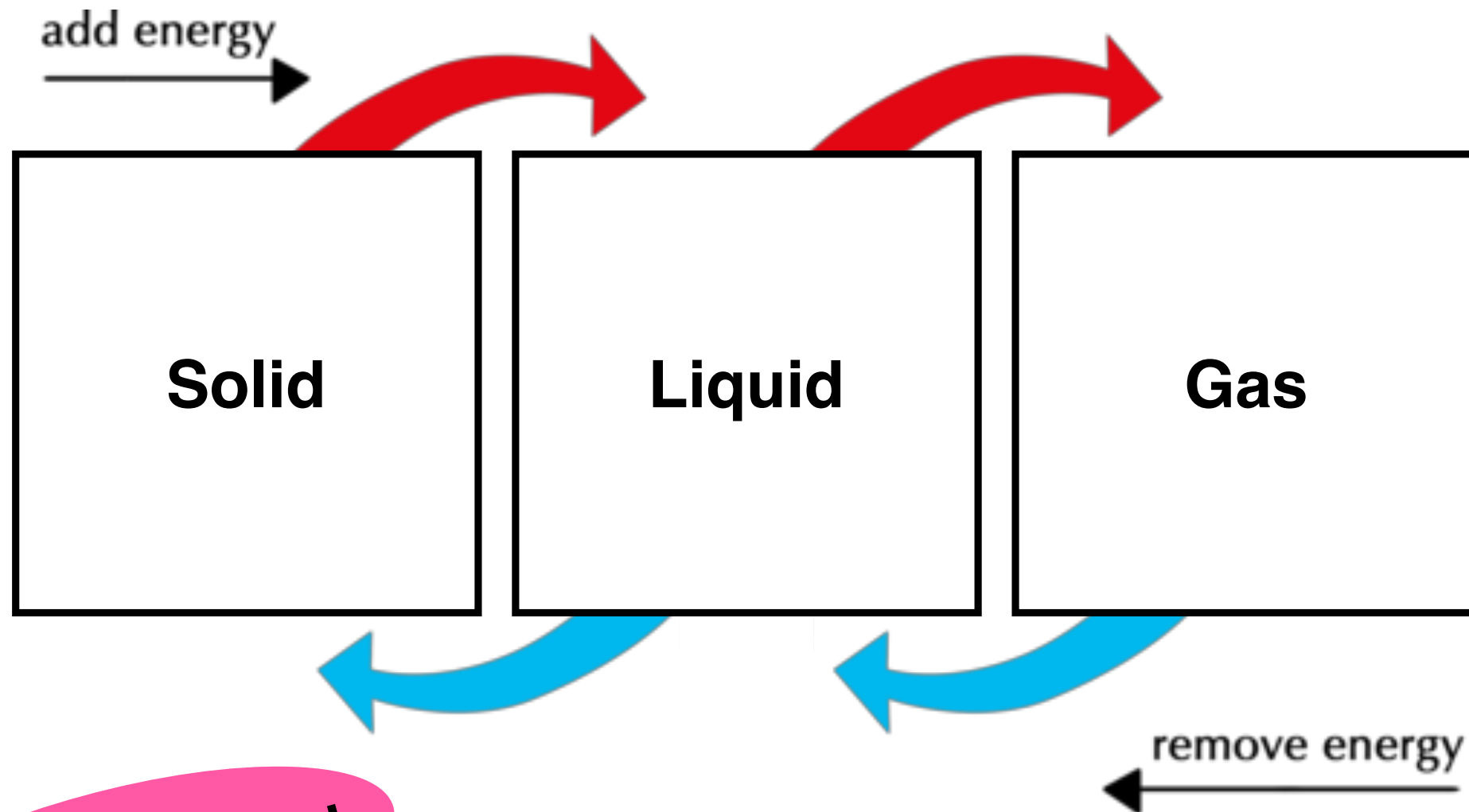
Plasma is another state of matter where a high energy gas has atoms that have lost their structure (rare on earth, common in the stars)



# Energy and Changes in Matter

- Energy: The ability to do work
- Work: Force x Distance
- Energy is always involved in any physical or chemical change, often in the form of heat loss or gain

Endothermic reactions:  
Heat is absorbed



**Draw this diagram!**

Exothermic reactions:  
Heat is released