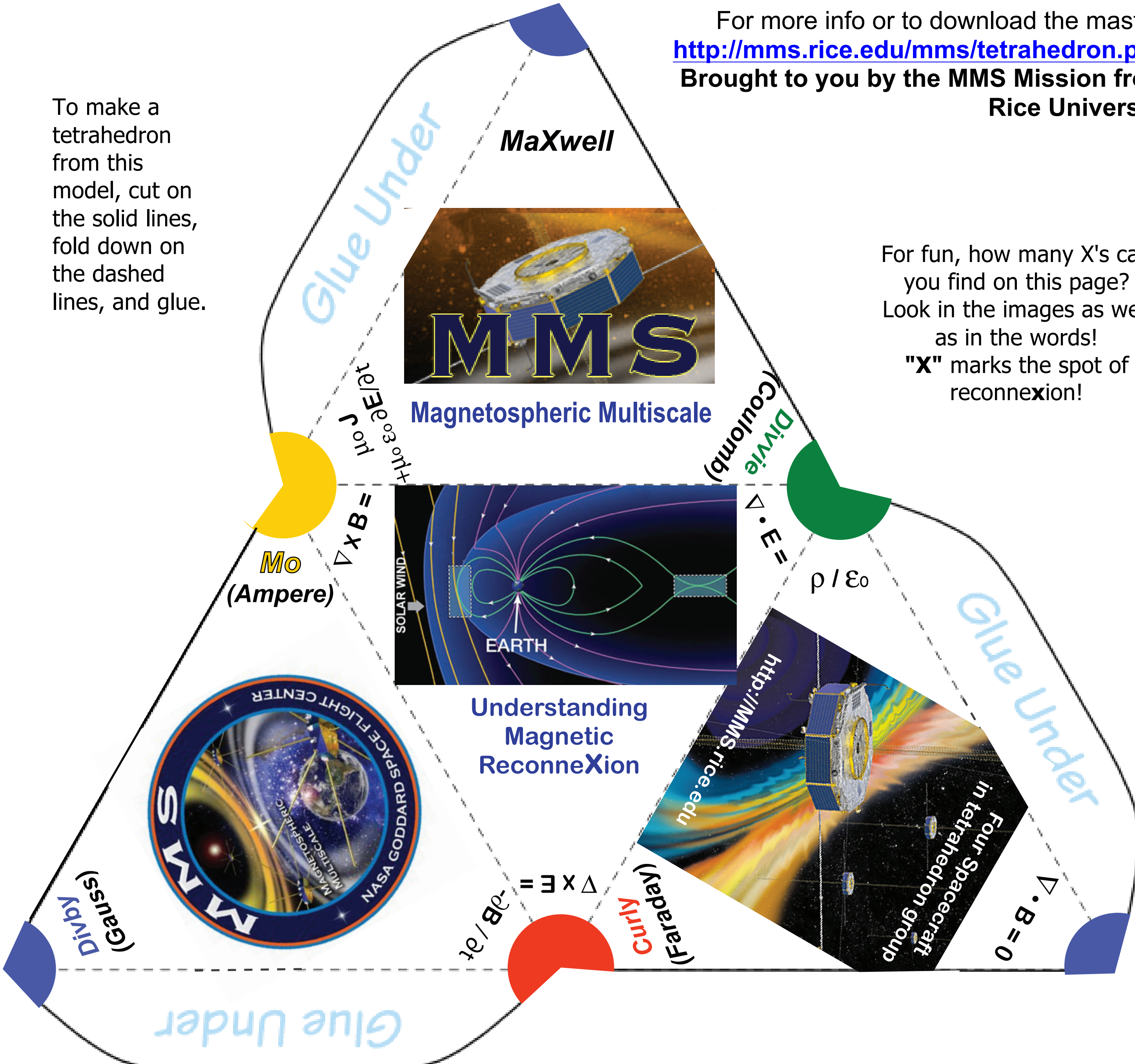
The MMS MaXwell Tetrahedron

A Tetrahedron is a regular solid (pyramid), with four vertices and four faces. Each face is an equilateral triangle. The MMS Tetrahedron has four vertices, one for each of the four spacecraft (shown here as blue, red, gold, and green). The spacecraft fly in a tetrahedral formation, so that they can best measure the time and space changes of the fields and particles the group flies through.

For more info or to download the master:
http://mms.rice.edu/mms/tetrahedron.php
Brought to you by the MMS Mission from Rice University

To make a tetrahedron from this model, cut on the solid lines, fold down on the dashed lines, and glue.

For fun, how many X's can you find on this page? Look in the images as well as in the words! **"X"** marks the spot of reconne**x**ion!



There are also four Maxwell's Equations, and it takes four spacecraft to solve those equations in space. We have labeled each vertex with one of the equations, plus a silly name to help you remember it:

"Divvie"(Coulomb's law*): $\nabla \bullet \mathbf{E} = \rho / \varepsilon_o$ ("$\nabla \bullet$" is the "Del-dot" operator, and is pronounced Div-**E**)
"Divby" (Gauss's law): $\nabla \bullet \mathbf{B} = 0$ (so this is then Del-dot **B** or Div **B** equals zero)
"Curly" (Faraday's law): $\nabla \times \mathbf{E} = -\partial \mathbf{B}/\partial t$ ("∇x" is the "Curl", so this is Curl **E** = - time change of **B**)
"**Mo**" (Ampere's law): $\nabla \times \mathbf{B} = \mu_o \mathbf{J} + \mu_o\varepsilon_o \partial \mathbf{E}/\partial t$ (Curl **B** = Mu-naught times **J**, the current), plus $\mu_o\varepsilon_o$ times the time change of **E**) (We call it Mo to help us remember μ_o, which is "mo" in Greek).

Together, Maxwell's equations are **the** fundamental laws of electricity and magnetism.

* OK, technically Divvie is Gauss's law and Divby is Gauss's Law for Magnetism, but Divvie is derived from Coulomb's Law.