Topic 1: TDAS thm_load_spin versus thm_load_state
Topic 2: Coordinate system used for THEMIS GMAG data - HDZ (GMAG) Coordinate System

Topic 1: TDAS thm_load_spin versus thm_load_state
Tip: use thm_load_state,/get_support_data rather than thm_load_spin
Some early releases of TDAS used a L1 "SPIN" CDF data type, to hold the spin model information that is used to transform between coordinate systems that spin with the spacecraft, and inertial (non-rotating) coordinate systems. A "thm_load_spin" routine loaded this L1 CDF type and made the data accessible to thm_cotrans and other routines that needed it. From time to time, you may see references to thm_load_spin in older versions of crib sheets and coding examples.
The thm_load_spin routine still exists in the TDAS distribution, and we still continue to make L1 SPIN CDFs, for backward compatibility with older TDAS releases. But this data is now available from the L1 STATE CDFs, which should be considered the definitive source.
thm_load_spin and the L1 SPIN CDFs are considered obsolete, and should no longer be used. Rather, any call like thm_load_spin,probe=prb should be replaced with: thm_load_state,probe=prb,/get_support_data
This ensures that the most up-to-date spin model data and algorithms are being used for coordinate transformations out of and into coordinate systems that spin with the spacecraft.

Topic 2: Coordinate system used for THEMIS GMAG data - HDZ (GMAG) Coordinate System
HDZ (GMAG) Coordinate System
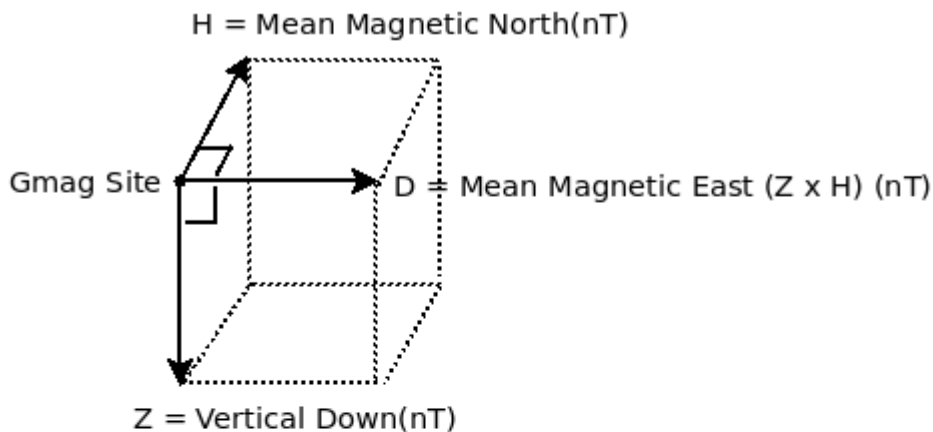
H-Axis points towards the approximate mean magnetic
  north as measured from installation site during quiet time.
D-Axis completes the right handed system. Note that
  D is NOT measured as an angle.
Z-Axis points downward from installation site.

Some gmags have installation errors and gmag orientation
  can drift over time. It is important to verify true coordinate
  system by comparing mean measured field to expected field.