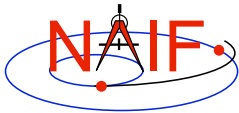


Mission Kernel

(A concept)

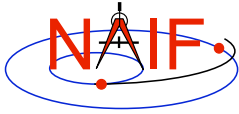
March 2006



What is a Mission Kernel?

- **“Mission kernel” (MK) is the name given to a text kernel used to store certain data unique to a mission and not stored in another SPICE kernel**
 - The intent of a mission kernel is to record this mission specific information in an easy-to-use, easy-to-access format
- **MK contents may include, but are not limited to:**
 - Mission specific phase name to time mapping.
 - An MK might also contain a `KERNELS_TO_LOAD` assignment to emulate a “data library.”
 - » See the `Intro_to_Kernels` tutorial and/or the `FURNISH` routine for more information.
- **A Mission Kernel can be a stand alone kernel file or it could exist within (as an extension to) a Frames Kernel.**

Note: JPL's NAIF Group has not yet used the MK in support of a flight project.

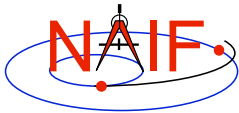


“Mission Phase” Mappings (1)

Navigation and Ancillary Information Facility

- **Specify one or more mission phase to time bounds mappings in an MK:**

```
CASSINI_MISSION_PHASE_NAMES = ( 'LAUNCH',  
                                'CRUISE1',  
                                'EARTH_FLYBY' )  
  
CASSINI_MISSION_PHASE_BOUNDS = ( @1997-NOV-1, @1997-NOV-3,  
                                  @1997-NOV-3, @1999-JUL-15,  
                                  @1999-JUL-15, @1999-AUG-15)
```



“Mission Phase” Mappings (2)

Navigation and Ancillary Information Facility

- **The current SPICE system does not include a dedicated interface to the use of these phase name mappings.**
 - Until such time as a specific interface is added to SPICE, use the low-level kernel pool reader modules to retrieve this information:
 - » GCPOOL, GDPOOL, GIPOOL
 - » An example (IDL):

```
PHASE = 'CASSINI_MISSION_PHASE_'  
cspice_gcpool, PHASE + 'NAMES', 0, n_names, 33, names, found  
cspice_gdpool, PHASE + 'BOUNDS', 0, n_names*2, bounds, found
```