

### **IERS Technical Note No 3. IERS Standards (1989).**

There are some major differences between of the IERS Standards(1989) and the Project MERIT Standards. The biggest changes have been the elimination of all references to optical observations and deletion of all information for artificial Earth satellites other than Lageos. These changes were made because these observations are no longer used operationally by the IERS. Included for the first time is a chapter on the tropospheric model.

Minor changes have also been made to many of the chapters. The following is a brief list of the modifications by chapter.

#### **CHAPTER 1**

- equatorial radius of the Earth
- dynamical form factor of the Earth
- geocentric constant of gravitation
- constant of gravitation
- mass of the Earth-Moon system
- mass of Saturn
- geopotential - use of GEM-T1
- change in radii for penumbra model
- change in relativistic corrections
- slight change in empirical force parameter for Lageos
- slight change in lunar secular acceleration
- plate motion model added

**CHAPTER 2** - celestial reference frame is based on ICRF

**CHAPTER 3** - conventional terrestrial reference frame is based on ITRF

**CHAPTER 4** - same

**CHAPTER 5** - same

**CHAPTER 6** - addition of rotational deformation due to polar motion

**CHAPTER 7** - same

**CHAPTER 8** - addition of some horizontal site displacement  
addition of site displacement due to atmospheric loading

**CHAPTER 9** - same as Update #1

**CHAPTER 10** - new

**CHAPTER 11** - same  
fixed errors in MERIT Standards in  $l'$ ,  $\omega$ , and 386-day tide

**CHAPTER 12** - rewritten

**CHAPTER 13** - rewritten  
uses GEM-T1  
lists GEM-T1 coefficients by table

**CHAPTER 14** - same

**CHAPTER 15** - rewritten  
now includes relativistic corrections used in SLR

**CHAPTER 16** - rewritten  
now includes multiple models for relativistic corrections in VLBI