Updates for SOFA Release 14 : 2017 December 4

Summary of Changes

The changes fall into the following categories:

- 1. Change in the copyright status of the DAT routine.
- 2. Implementation of two new categories of routines, viz:
 - a) There are three routines for the horizon/equatorial plane coordinates.
 - b) There are six routines dealing with gnomonic (tangent plane) projections.
- 3. Due to introducing these new routines, The Astrometry Tools Cookbook, the test program and other supporting files have also been updated.
- 4. Other minor documentation/typographical corrections to various files.

FORTRAN Library

Code now classified as "user-replaceable support 1 iau_DAT.for routine". Thus the terms & conditions at the end are also modified.

sofa_ts_f.pdf Updated Cookbook to include information about the change in status.

2a iau_AE2HD (azimuth, altitude) to (hour angle, declination) iau_HD2AE (hour angle, declination) to (azimuth, altitude) iau_HD2PA parallactic angle

2b iau_TPORS solve for tangent point, spherical iau_TPORV iau_TPSTS solve for tangent point, vector project tangent plane to celestial, spherical project tangent plane to celestial, vector iau_TPSTV iau_TPXES project celestial to tangent plane, spherical project celestial to tangent plane, vector

t_sofa_f.for Validation program. sofa_ast_f.pdf Astrometry Tools Cookbook, with added information 3 on the new routines

board.lis copyr.lis intro.lis sofa_lib.lis title.lis

The following routines/files have had very minor documentation changes, mostly typographical

iau_ATIOQ iau_EECT00 iau_EQEQ94 iau_FK52H iau_FK5HIP iau_GMST82 iau_H2FK5 iau_PLAN94 sofa_pn_f.pdf

ANSI C Library

```
iauDat.c
                  Code now classified as "user-replaceable support
                  routine". Thus the terms & conditions at the end
                  are also modified.
                  Updated Cookbook to include information about the
    sofa_ts_c.pdf
                  change in status.
    iauAe2hd
                   (azimuth, altitude) to (hour angle, declination)
    iauHd2ae
                  (hour angle, declination) to (azimuth, altitude)
    iauHd2pa
                  parallactic angle
2b
    iauTpors
                  solve for tangent point, spherical
                  solve for tangent point, vector
    iauTporv
    iauTpsts
                  project tangent plane to celestial, spherical
    iauTpstv
                  project tangent plane to celestial, vector
    iauTpxes
                  project celestial to tangent plane, spherical
    iauTpxev
                  project celestial to tangent plane, vector
    sofa.h
                  The include file updated with the new routines
    sofa_ast_c.pdf Astrometry Tools Cookbook, with added information
                  on the new routines
    t_sofa_c.c
                  Validation program.
    board.lis
    copyr.lis
    intro.lis
    sofa_lib.lis
    title.lis
4. The following routines/files have had minor documentation changes,
  mostly typographical
  iauEect00
  iauEqeq94
  iauFk52h
  iauFk5hip
  iauGmst82
  iauH2fk5
  iauPlan94
  sofa_pn_c.pdf
+ End of Updates
+ 2017 December 4
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