List of Changes for the 10th release of SOFA as of 2013 November 19.

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FORTRAN Files
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Date e-mailed   File            Short Reason

2012 Sep  5     epv00.for       Comment - minor.
2013 Aug 31     eqeq94.for      Comment - minor.
2012 Sep  5     fk5hz.for       Comment - minor.
2012 Sep  5     hfk5z.for       Comment - minor.
2012 Sep  5     nutm80.for      Comment - minor.
2012 Sep  5     plan94.for      Comment - minor.
2012 Sep  5     pnm80.for       Comment - minor.
2013 Apr 16     ut1utc.for      Comment - minor.
2013 May 14     xys06a.for      Comment - corrected to IAU 2006/2000A.
2013 May 29     dat.for         Minor.
2013 Jul 26     dtf2d.for       Corrected due to bug with TAI->UTC 1960-1972.
2013 Jul 26     d2dtf.for       Corrected due to bug with TAI->UTC 1960-1972.
2013 Jul 26     utctai.for      Corrected due to bug with TAI->UTC 1960-1972
2013 Aug 07     epb.for         Comment - minor.
2013 Aug 12     utcut1.for      Comment - correction.
2013 Aug 21     bp00.for        Minor - support argument re-use.
2013 Aug 21     bp06.for        Minor - support argument re-use.
2013 Aug 24     c2tcio.for      Comment - '(radians)' inserted.
2013 Aug 24     c2teqx.for      Comment - '(radians)' inserted.
2013 Sep 01     gc2gd.for       Minor - if error, ELONG now set to -1D9.
2013 Sep 02     fw2xy.for       Comment - minor.
2013 Sep 12     taiutc.for      Corrected due to bug with TAI->UTC 1960-1972
2013 Oct 04     t_sofa_f.for    Updated.
2013 Nov 14     pn06.for        Comment - correction.
2013 Nov 19     prec76.for      Minor - consistency.


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ANSI C Files
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Date e-mailed   File            Short Reason

2013 Jun 18     *.c             Inclusion of sofam.h was replaced with sofa.h
                                which now includes sofam.h (all except ee00.c,
                                ee00a.c, ee00b.c, ee06a.c & gst94.c).
2013 Jun 18     gmst82.c        Comment - typographical.
2013 Jun 18     starpm.c        Comment - typographical.
2013 Jun 18     ut1utc.c        Comment - correction.
2013 Jun 18     xys06a.c        Comment - corrected to IAU 2006/2000A.
2013 Jun 18     c2i06a.c        Comment - typographical.
2013 Jun 18     eo06a.c         Comment - typographical.
2013 Jun 18     s00a.c          Comment - typographical.
2013 Jun 18     s00b.c          Comment - typographical.
2013 Jun 18     c2i06a.c        Comment - typographical.
2013 Jul 26     dtf2d.c         Corrected due to bug with TAI->UTC 1960-1972.
2013 Jul 26     d2dtf.c         Corrected due to bug with TAI->UTC 1960-1972.
2013 Jul 31     a2tf.c          Comment - typographical.
2013 Aug 07     cal2jd.c        Trivial.
2013 Aug 13     epb2jd.c        Trivial.
2013 Aug 07     epj2jd.c        Trivial.
2013 Aug 07     epj.c           Comment - typographical.
2013 Aug 07     jd2cal.c        Trivial.
2013 Aug 07     pm.c            Trivial.
2013 Aug 07     sxpv.c          Comment - correction.
2013 Aug 12     utcut1.c        Comment - corrections.
2013 Aug 21     dat.c           Minor.
2013 Aug 21     bp00.c          Trivial - white space.
2013 Aug 21     bp06.c          Minor - support argument re-use.
2013 Aug 21     epb.c           Trivial.
2013 Aug 24     c2tcio.c        Comment - '(radians)' inserted.
2013 Aug 24     c2teqx.c        Comment - '(radians)' inserted.
2013 Aug 31     eqeq94.c        Comment - routine missing from 'Called' list.
2013 Aug 21     xy06.c          Trivial.
2013 Aug 22     sofa.h          Updated and also now #includes sofam.h.
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2013 Aug 27    sofam.h        Updated.
2013 Sep 1     gc2gd.c        Minor - elong now set to -1e9 on error.
2013 Sep 2     fw2xy.c        Comment - correction.
2013 Jul 26    utctai.c       Corrected due to bug with TAI->UTC 1960-1972.
2013 Sep 12    taiutc.c       Corrected due to bug with TAI->UTC 1960-1972.
2013 Oct 04    t_sofa_c.c     Updated.
2013 Nov 14    pn00a.c        Comment - correction.
2014 Nov 14    pn00b.c        Comment - correction.
2014 Nov 14    pn06a.c        Comment - correction.
2014 Nov 14    pn06.c         Comment - correction.
2013 Nov 19    prec76.c       Minor - consistency.


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Documentation Files
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2012 Jul 20    sofa_pn.tex    Add note that in the example numerical values for
2012 Jul 20    sofa_pn.pdf    polar motion and UT1-UTC are for illustration
                              only.

2013 Feb 12    sofa_ts.tex    Units information added since:
                              1) In the equation for TCG in terms of TT in Sect.
                                 3.6.4, TCG and TT are in JD or MJD form, though
                                 that is not stated.
                              2) In the equation for TDB in terms of TCB in
                                 Sect. 3.6.5 (which is taken straight from the
                                 IAU resolution) TDB and TCB are in seconds, and
                                 that also is not stated.
2013 Aug 23    sofa_ts.tex    Page 23 of the c version; the xyz array should be
               sofa_ts_c.pdf  dimensioned to 3.
               sofa_ts_f.pdf

2013 Apr 30    board.lis      George Hobbs, retired and Scott Ransom joined.
               copyr.lis      Cosmetic change.
               intro.lis      Changes to deal with adding new section.
               sofa_lib.lis   Changes to deal with adding new section.

n.b. Tex source files are not distributed.


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NEW FILES
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   33 x 2 .c & .f files + 3 pdf files

   Astrometry
     AB         apply stellar aberration
     APCG       prepare for ICRS <-> GCRS, geocentric, special
     APCG13     prepare for ICRS <-> GCRS, geocentric
     APCI       prepare for ICRS <-> CIRS, terrestrial, special
     APCI13     prepare for ICRS <-> CIRS, terrestrial
     APCO       prepare for ICRS <-> observed, terrestrial, special
     APCO13     prepare for ICRS <-> observed, terrestrial
     APCS       prepare for ICRS <-> CIRS, space, special
     APCS13     prepare for ICRS <-> CIRS, space
     APER       insert ERA into context
     APER13     update context for Earth rotation
     APIO       prepare for CIRS <-> observed, terrestrial, special
     APIO13     prepare for CIRS <-> observed, terrestrial
     ATCI13     catalog -> CIRS
     ATCIQ      quick ICRS -> CIRS
     ATCIQN     quick ICRS -> CIRS, multiple deflections
     ATCIQZ     quick astrometric ICRS -> CIRS
     ATCO13     ICRS -> observed
     ATIC13     CIRS -> ICRS
     ATICQ      quick CIRS -> ICRS
     ATICQN     quick CIRS -> ICRS, multiple deflections
     ATIO13     CIRS -> observed
     ATIOQ      quick CIRS -> observed
     ATOC13     observed -> astrometric ICRS
     ATOI13     observed -> CIRS
     ATOIQ      quick observed -> CIRS
     LD         light deflection by a single solar-system body
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    LDN          light deflection by multiple solar-system bodies
    LDSUN        light deflection by the Sun
    PMPX         apply proper motion and parallax
    PVTOB        observatory position and velocity
    REFCO        refraction constants

  Star catalog conversions
    PMSAFE       apply proper motion, with zero-parallax precautions

CookBooks/Documentation
    sofa_ast_f.pdf          SOFA Astrometry Tools, Fortran
    sofa_ast_c.pdf          SOFA Astrometry Tools, ANSI C
    sofa_ast_summary.pdf    2-page summary of Astrometry Tools

CYH/SAB - 2013 November 20th.



PLEASE NOTE: There is no first minor release of the 10th release of SOFA for
ANSI C. The first minor release included changes relevant to the Fortran version
of the SOFA library only.



List of Changes for the second minor release of the 10th release of
SOFA as of 2014 February 17.

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FORTRAN & ANSI C Files
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Date emailed    File          Reason

2013 Dec 05    apco13         Documentation error.  Given argument THETA
                              Earth rotation angle (radians) included
                              incorrectly in the information list.

2013 Dec 05    atioq          Documentation error.  Returned argument DOB, which
                              is the observed declination (CIO-based, radians),
                              was described incorrectly and the argument ROB,
                              observed right ascension (CIO-based, radians), was
                              missing from the information list.

2014 Feb 15    d2dtf          Error.  The routine truncated rather than rounded
                              in the (uncommon) case of a time in the second half
                              of a leap second and a precision of 1 second.  In
                              addition, the rounding behavior during leap seconds
                              has been changed so that for a precision of 10
                              seconds or coarser the beginning of the next day is
                              used in preference to the start of the leap second.


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Documentation Files
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2013 Dec 31   sofa_ts_f.pdf  Two errors in the example program in Section
              sofa_ts_c.pdf  4.4: "A comprehensive example: transform UTC into
                             other times"
                             (1) +0.5 is required to be added to the UT
                                 variable (page 23 C version, page 24 Fortran)
                                 as time is measured from midnight;
                             (2) On page 24, in the routine DTDB the units for
                                 the variables, U and V (i.e. the last two
                                 arguments) are required in kilometers and not
                                 in meters as calculated.
                             This results, on page 25, in a small difference
                             in the TDB and TCB times reported.

2013 Dec 31    sofa_ts.tex  Changes as described above.  File not distributed.



List of Changes for the third minor release of the 10th release of
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SOFA as of 2014 September 08.

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FORTRAN Files
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2014 Sep 01    ldsun          Revised comments.


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ANSI C Files
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Date emailed    File           Reason

2014 Jul 01    pmsafe         An operator precedence bug meant that under some
                              circumstances the wrong error status could be
                              returned.

2014 Apr 22    dat            Suppress an array bounds warning produced by
                              recent gcc versions.

2014 Sep 01    ldsun          Revised comments.

2014 Jul 29    sofa.h         Editing to make the arguments consistent with
                              those in the routines.


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Documentation Files
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2014 Aug 28   sofa_ast_f.pdf  All changes in the Cookbooks are correcting
              sofa_ast_c.pdf  comments in the example code.

2014 Aug 28   sofa_pn.pdf     All changes in the Cookbooks are correcting
                              comments in the example code.

2014 Aug 28   sofa_ast.tex    Changes as described above. File not
                              distributed.
              sofa_pn.tex     Changes as described above. File not
                              distributed.


CYH/SAB – 2014 September 8th.
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