

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	egeq94.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	utlutc.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	starp.m.c	Comment - typographical.
2013 Jun 18	utlutc.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	sxp.v.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	egeq94.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.

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

2012 Jul 20	sofa_pn.tex	Add note that in the example numerical values for polar motion and UT1-UTC are for illustration only.
2012 Jul 20	sofa_pn.pdf	
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 sofa_ts_c.pdf sofa_ts_f.pdf	Page 23 of the c version; the xyz array should be dimensioned to 3.
2013 Apr 30	board.lis copyr.lis intro.lis sofa_lib.lis	George Hobbs, retired and Scott Ransom joined. Cosmetic change. Changes to deal with adding new section. Changes to deal with adding new section.

n.b. Tex source files are not distributed.

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NEW FILES

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

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.

List of Changes for the first minor release of the 10th release of SOFA as of 2013 December 03.

2013 Dec 02	atioq.for	Bug fix to correctly render negative azimuths in the range 0 to 360 degrees.
2013 Dec 02	eect00.for taiutc.for xy06.for	Removal of unused constants.
2013 Dec 02	af2a.for tf2a.for tf2d.for	Change of character declaration.

CYH/SAB - 2013 December 3rd.

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	apcol3	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 sofa_ts_c.pdf	Two errors in the example program in Section 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;
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(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 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 sofa_ast_c.pdf	All changes in the Cookbooks are correcting 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 sofa_pn.tex	Changes as described above. File not distributed. Changes as described above. File not distributed.

CYH/SAB - 2014 September 8th.

List of Changes for the fourth minor release of the 10th release of SOFA as of 2014 October 07.

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Documentation Files

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2014 Oct 01	sofa_ast_f.pdf sofa_ast_c.pdf	Correct page references for iau_ATCIQN to iau_ATICQN on page 52 in sofa_ast_f.pdf and similarly for iauAtciqn to iauAticqn on page 52 in sofa_ast_c.pdf. Also remove pages 52/53 in both versions to replace comments for the appropriate routine.
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CYH/SAB - 2014 October 7th.