

Appendix

A1. ITRF2008 tie and space geodesy discrepancies

A2. ITRF2008 Article

Altamimi Z, Collilieux X, Métivier L (2011) ITRF2008: an improved solution of the international terrestrial reference frame, *Journal of Geodesy*, 85 (8) (457-473), DOI: 10.1007/s00190-011-0444-4, DOI: 10.1007/s00190-011-0444-4.

A3. Description of Technique Center solutions

- IVS solution description (auth. S. Bckmann, A. Nothnagel)
- ILRS solution description (auth. E. Pavlis, V. Luceri, C. Sciarretta, R. Kelm)
- IGS solution description (auth. R. Ferland)
- IDS solution description (auth. J.J. Valette, F. Lemoine)

ITRF2008 tie and space geodesy discrepancies

ITRF2008 tie discrepancies at tie epochs in (E)ast, (N)orth, (U)p and (D)istance : Residuals = Space Geodesy - Terrestrial Tie (in mm). Each tie vector component is flagged by '-' if the residual is less than 5 mm and by '*' otherwise. (Sol)ution number that identifies the reference coordinates.

Code	DOMES #	Sol	Code	DOMES #	Sol	E	N	U	D	Epoch	ENU	Tech	D
YELL	40127M003	3	7285	40127M001	1	-3.9	-3.9	-1.0	-2.2	1:285	---	VLBI	
WTZZ	14201M014	1	7224	14201S004	1	-1.4	-4.1	-0.3	-1.6	2:266	---	VLBI	
SYOG	66006S002	1	7342	66006S004	1	0.8	3.8	0.6	2.8	0: 1	---	VLBI	
HOB2	50116M004	1	7242	50116S002	1	4.7	-3.0	-2.0	1.4	2: 81	---	VLBI	
TSKB	21730S005	3	7345	21730S007	1	-2.9	-0.8	-3.0	-0.5	8: 16	---	VLBI	
CROI	43201M001	2	7615	43201S001	1	-1.5	2.2	1.6	-1.9	94: 16	---	VLBI	
HRAO	30302M004	1	7232	30302S001	1	-1.6	3.2	2.0	2.3	3:214	---	VLBI	
STJO	40101M001	5	7625	40101M003	1	0.3	0.1	1.6	-0.3	99:269	---	VLBI	
FORT	41602M001	1	7297	41602S001	1	-0.6	-4.0	2.3	3.9	93:264	---	VLBI	
MKEA	40477M001	1	7617	40477S001	1	-3.7	-1.1	0.8	-3.7	96:221	---	VLBI	
DRAO	40105M002	2	7283	40105M001	1	-0.7	-0.7	-0.5	-0.7	89:234	---	VLBI	
PIE1	40456M001	1	7234	40456S001	1	-3.1	-2.8	-0.3	3.7	92:336	---	VLBI	
NYA1	10317M003	2	7331	10317S003	1	2.9	-2.7	1.2	3.9	3:228	---	VLBI	
TIDB	50103M108	2	1545	50103S010	1	-0.5	0.6	9.2	1.1	95:263	--*	VLBI	
WES2	40440S020	2	7209	40440S003	1	0.6	-3.7	10.2	2.6	96:278	--*	VLBI	
MEDI	12711M003	2	7230	12711S001	2	-2.4	-2.7	6.3	-1.2	7:241	--*	VLBI	
YEBE	13420M001	1	7333	13420S001	1	-3.6	-1.1	-6.0	2.7	99:322	--*	VLBI	
NLIB	40465M001	1	7612	40465S001	1	-3.4	-2.0	-5.2	-3.8	93: 64	--*	VLBI	
VNDP	40420M007	6	7223	40420M002	1	2.3	-1.3	-7.0	1.7	91:335	--*	VLBI	
CONZ	41719M002	1	7640	41719S001	1	1.4	-4.2	7.8	-4.3	3: 80	--*	VLBI	
ALGO	40104M002	5	7282	40104S001	1	-2.9	-4.0	9.0	5.7	99: 1	--*	VLBI	*
OHI2	66008M005	1	7245	66008S001	1	-0.8	8.4	3.4	-1.4	2: 43	--*	VLBI	
SHAO	21605M002	2	7227	21605S009	1	-2.1	-10.1	-4.9	7.1	3:332	--*	VLBI	*
FAIR	40408M001	2	7225	40408S002	1	-2.3	-8.2	2.1	-5.7	1:274	--*	VLBI	*
MDO1	40442M012	1	7613	40442S017	1	-0.2	-7.6	16.5	3.6	93: 76	--*	VLBI	
WTZZ	14201M014	1	7593	14201S100	1	-1.7	-5.6	7.8	-0.7	2:266	--*	VLBI	
KSMV	21701S007	1	1856	21701S001	1	-1.3	11.0	99.2	0.1	99:292	--*	VLBI	
YELL	40127M003	3	7296	40127M004	1	-3.1	-6.6	-8.3	0.4	1:285	--*	VLBI	
MDO1	40442M012	1	7216	40442S003	1	2.0	-9.8	7.3	7.1	93: 76	--*	VLBI	*
WES2	40440S020	2	7205	40440S002	1	9.0	-0.7	-2.8	2.5	96:278	*--	VLBI	
MADR	13407S012	8	1565	13407S010	1	-9.1	-1.0	1.0	6.0	99: 1	*--	VLBI	*
SANT	41705M003	2	1404	41705S006	1	16.1	4.9	9.4	-1.6	92:192	*--	VLBI	
ZECK	12351M001	2	7381	12351S001	1	-25.5	-3.5	13.9	2.2	5: 1	*--	VLBI	
ONSA	10402M004	2	7213	10402S002	1	5.4	-0.6	-5.2	2.1	2:193	*--	VLBI	
NOT1	12717M004	1	7547	12717S001	1	-9.1	-3.4	7.2	8.9	5:264	*--	VLBI	*
MATE	12734M008	4	7243	12734S005	1	-6.9	-6.8	-2.0	-0.9	4:300	*--	VLBI	
KOKB	40424M004	4	1311	40424S001	1	17.4	38.2	1.8	-10.4	2:319	*--	VLBI	*
KOKB	40424M004	4	7298	40424S007	1	18.1	36.6	3.3	26.6	2:319	*--	VLBI	*
SVTL	12350M001	2	7380	12350S001	1	-5.6	-10.7	-10.2	2.3	5: 1	***	VLBI	
BRFT	41602M002	1	7297	41602S001	1	-5.7	-5.1	12.1	7.8	6: 78	***	VLBI	*
ZIMM	14001M004	1	7810	14001S001	1	0.5	-1.3	0.9	-1.6	96: 95	---	SLR	
GRAS	10002M006	1	7845	10002S002	1	-1.1	-1.2	-0.6	-0.9	99:284	---	SLR	
STR1	50119M002	3	7849	50119S001	1	4.1	0.1	4.0	-0.8	1:209	---	SLR	
HERS	13212M007	5	7840	13212S001	1	-1.2	-3.1	-2.4	-0.6	8:177	---	SLR	
MATE	12734M008	4	7941	12734S008	1	-3.7	-4.7	-1.6	3.6	4:300	---	SLR	
BOR1	12205M002	1	7811	12205S001	2	0.5	1.7	-2.9	0.6	94: 10	---	SLR	
MAUI	40445S008	1	7120	40445M002	1	0.6	-1.0	-3.9	-0.5	6:260	---	SLR	
HRAO	30302M004	1	7501	30302M003	1	-2.2	2.6	3.5	2.9	3:214	---	SLR	
GODE	40451M123	2	7105	40451M105	1	-3.2	1.2	-6.1	0.4	8: 1	--*	SLR	
CAGL	12725M003	1	7545	12725M002	1	2.1	3.0	6.7	-3.0	95:161	--*	SLR	
MAUI	40445S008	1	7210	40445M001	3	2.8	-0.7	-8.7	1.8	6:260	--*	SLR	
MAUI	40445S008	1	7119	40445M004	1	0.0	-1.4	-6.7	2.9	6:260	--*	SLR	
MDO1	40442M012	1	7850	40442M008	1	2.1	0.8	21.5	-2.8	93: 76	--*	SLR	
AREQ	42202M005	5	7403	42202M003	6	1.3	-0.3	-6.6	-0.6	7:123	--*	SLR	
GRAZ	11001M002	1	7839	11001S002	1	1.4	-0.6	-5.9	-2.2	92:319	--*	SLR	
ALGO	40104M002	5	7410	40104M003	1	1.6	-4.5	7.1	2.3	99: 1	--*	SLR	

YAR1	50107M004	3	7090	50107M001	1	3.3	-1.9	14.4	-3.7	3:305	--*	SLR	
MONP	40497M004	2	7110	40497M001	1	3.2	-2.5	5.7	-1.6	99:280	--*	SLR	
THTI	92201M009	2	7124	92201M007	1	3.0	0.8	9.9	1.6	7:278	--*	SLR	
ZIMM	14001M004	1	7810	14001S007	1	-1.9	-2.2	-5.2	0.1	96:95	--*	SLR	
POTS	14106M003	1	7836	14106S009	1	2.7	-0.2	6.8	-2.7	94:221	--*	SLR	
GRAS	10002M006	1	7835	10002S001	1	1.3	-3.6	-5.6	1.3	99:284	--*	SLR	
WTZZ	14201M014	1	8834	14201S018	2	-1.4	-4.2	7.6	-0.2	2:266	--*	SLR	
BJFS	21601M001	1	7249	21601S004	1	0.6	2.2	5.9	-2.5	3:171	--*	SLR	
METS	10503S011	1	7806	10503S014	1	-2.3	-3.2	-10.8	7.3	0:299	--*	SLR	*
CONZ	41719M002	1	7405	41719M001	1	1.4	-4.6	6.9	-5.2	3:80	--*	SLR	*
EISL	41703M003	1	7097	41703M002	1	-2.1	-21.1	-3.0	-17.1	1:46	-*-	SLR	*
AREQ	42202M005	1	7403	42202M003	1	3.9	-6.9	9.8	3.0	95:1	--*	SLR	
MDO1	40442M012	1	7080	40442M006	2	4.4	-8.3	17.5	4.0	93:76	--*	SLR	
KGNI	21704S005	1	7308	21704S002	1	-1.9	-6.0	34.8	-0.4	99:285	--*	SLR	
SHAO	21605M002	2	7837	21605S001	2	4.5	-5.0	-20.3	-3.1	3:332	--*	SLR	
KSMV	21701S007	1	1857	21701S004	1	-2.2	18.5	72.5	9.4	99:292	--*	SLR	*
KSMV	21701S007	1	7335	21701M002	1	4.6	8.6	70.3	14.1	99:292	--*	SLR	*
AJAC	10077M005	1	7848	10077M002	1	-6.1	-3.8	14.5	-4.0	0:1	*--	SLR	
SUTH	30314M002	1	7502	30314M001	1	12.6	3.6	7.6	-12.5	97:340	*--	SLR	*
POTS	14106M003	1	7841	14106S011	1	-20.0	-1.4	-8.7	11.3	94:221	*--	SLR	*
URUM	21612M001	1	7355	21612M002	1	-18.2	-3.3	24.6	-18.4	99:1	*--	SLR	*
STR1	50119M002	3	7825	50119S003	1	6.5	-5.4	1.0	3.9	1:209	**--	SLR	
METS	10503S011	1	7805	10503S001	1	23.2	57.8	0.6	-41.7	0:299	**--	SLR	*
WUHN	21602M001	2	7231	21602S004	1	-8.6	-31.8	36.0	-4.0	3:342	***	SLR	
TIDB	50103M108	2	7843	50103S007	1	9.2	10.7	10.8	-11.6	95:263	***	SLR	*
KGNI	21704S005	1	7328	21704M001	1	-5.5	-8.2	67.4	-16.0	99:285	***	SLR	*
SFER	13402M004	6	7824	13402S007	1	7.1	-10.0	-16.5	-9.6	9:192	***	SLR	*
LHAS	21613M001	2	7356	21613M003	1	11.5	13.8	-35.5	-15.5	0:56	***	SLR	*
QUIN	40433M004	2	7109	40433M002	1	-9.6	5.2	24.7	9.0	85:247	***	SLR	*
REUN	97401M003	1	REUB	97401S002	1	0.4	2.5	-1.0	-2.4	3:335	---	DORIS	
TLSE	10003M009	2	TLSA	10003S001	1	-1.2	0.7	2.3	-0.8	4:34	---	DORIS	
NYA1	10317M003	2	SPJB	10317S005	1	-1.9	-0.8	-0.9	-1.3	3:228	---	DORIS	
YSSK	12329M003	2	SAKA	12329S001	4	-0.4	-2.3	-2.9	1.3	4:231	---	DORIS	
DIOA	12602S011	1	DIOB	12602S012	1	-0.1	0.8	-0.2	0.8	6:136	---	DORIS	
NKLG	32809M002	1	LIBB	32809S003	1	2.9	0.2	2.7	0.6	99:36	---	DORIS	
DJIA	39901S002	1	DJIB	39901S003	1	0.0	0.2	-0.1	-0.2	0:183	---	DORIS	
THTI	92201M009	2	PAPB	92201S007	1	-1.3	1.7	4.4	1.3	7:278	---	DORIS	
DUM1	91501M001	2	ADFB	91501S003	1	-5.0	-3.0	3.3	1.3	8:39	---	DORIS	
DUM1	91501M001	2	ADEB	91501S002	1	-0.2	-0.2	1.3	0.1	8:39	---	DORIS	
DJIA	39901S002	1	DJIB	39901S003	1	-0.1	0.3	0.0	-0.2	6:178	---	DORIS	
GOMA	40405S005	1	GOMB	40405S037	1	2.1	0.1	-2.8	-2.8	96:244	---	DORIS	
MONP	40497M004	5	MONB	40497S008	1	3.1	-4.7	-0.8	4.0	5:335	---	DORIS	
AMSA	91401S001	1	AMTB	91401S003	1	-1.2	2.3	3.4	-2.5	3:326	---	DORIS	
CROB	91301S001	1	CRPB	91301S002	1	-1.2	1.1	0.4	0.4	7:96	---	DORIS	
GLPS	42005M002	1	SCRB	42005S001	1	-2.8	-1.0	-1.1	1.4	5:92	---	DORIS	
CHAT	50207M001	1	CHAB	50207S001	1	0.1	0.6	-3.3	-0.6	99:56	---	DORIS	
KERG	91201M002	2	KERB	91201S003	1	-3.2	-2.2	2.0	-2.9	7:101	---	DORIS	
BELB	66018S001	1	BEMB	66018S002	1	-0.3	0.3	-5.0	-0.3	5:42	---	DORIS	
ROTA	66007S001	1	ROTB	66007S002	1	1.1	0.9	0.2	-1.3	5:54	---	DORIS	
DIOA	12602S011	1	7515	12602M002	1	3.5	-4.7	1.8	-5.5	6:136	---	DORIS	*
SYOG	66006S002	1	SYOB	66006S001	1	-3.4	0.4	-47.5	3.1	0:1	--*	DORIS	
NYA1	10317M003	2	SPIA	10317S002	1	-3.7	-1.8	-7.2	-2.3	3:228	--*	DORIS	
NOUM	92701M003	3	NOUA	92701S001	1	-0.9	0.2	6.0	0.1	5:236	--*	DORIS	
METS	10503S011	1	META	10503S013	1	4.3	0.1	-11.0	-0.7	0:299	--*	DORIS	
METS	10503S011	1	METB	10503S015	1	-3.1	2.6	-7.8	3.3	0:299	--*	DORIS	
TLSE	10003M009	2	TLHA	10003S003	1	-2.5	-1.6	-8.0	0.9	4:34	--*	DORIS	
THTI	92201M009	2	PATB	92201S010	1	-3.2	0.2	6.4	-1.4	7:278	--*	DORIS	
AOML	49914S001	1	MIAB	49914S003	1	4.5	-3.5	-11.1	2.0	5:36	--*	DORIS	
AMTB	91401S003	1	AMUB	91401S004	1	-0.5	-4.6	-7.9	-7.8	7:108	--*	DORIS	*
THTI	92201M009	2	PAQB	92201S008	1	1.6	4.9	10.1	5.6	7:278	--*	DORIS	*
SEY1	39801M001	3	MAHB	39801S005	1	-2.3	-1.2	-94.1	7.2	1:152	--*	DORIS	*
NYA1	10317M003	2	SPIB	10317S004	1	-1.2	5.7	2.2	-3.6	3:228	--*	DORIS	
YSSK	12329M003	2	SAKB	12329S002	2	2.3	-5.0	-2.3	5.0	4:231	-*-	DORIS	
REYK	10202M001	4	REZB	10202S003	1	2.9	-6.2	1.0	0.7	4:248	-*-	DORIS	

NOUM	92701M003	3	NOUB	92701S002	1	0.5	5.8	2.2	0.1	5:236	**	DORIS	*
KIT3	12334M001	1	KIUB	12334S006	1	1.1	7.7	-2.6	-6.0	1:115	**	DORIS	*
MANA	22006S001	1	MANB	22006S002	1	4.7	-11.7	0.7	-7.1	3: 54	**	DORIS	*
RIOG	41507M004	2	RIPB	41507S005	1	3.3	-7.0	3.9	7.4	1: 15	**	DORIS	*
HRAO	30302M004	1	HBKA	30302S202	1	2.5	-15.6	-7.9	-0.6	3:214	**	DORIS	*
RIOG	41507M004	2	RIOB	41507S004	1	-4.4	11.0	-6.0	-4.4	1: 15	**	DORIS	*
STR1	50119M002	3	MSPB	50119S004	1	-4.3	5.3	6.8	-4.3	1:209	**	DORIS	*
STJO	40101M001	5	STJB	40101S002	1	3.0	14.2	7.6	2.5	99:269	**	DORIS	*
RIOG	41507M004	2	RIOA	41507S003	1	0.1	5.5	18.7	-2.8	1: 15	**	DORIS	*
YAR1	50107M004	3	YARB	50107S010	1	0.9	15.6	13.4	9.2	3:305	**	DORIS	*
YAR1	50107M004	3	YASB	50107S011	1	-2.8	10.0	6.7	10.5	3:305	**	DORIS	*
RIDA	40499S016	1	7295	40499M002	1	2.4	-9.5	-41.5	9.8	93: 4	**	DORIS	*
MONP	40497M004	5	MOOB	40497S009	1	-2.4	-12.3	-11.4	11.6	5:335	**	DORIS	*
AREQ	42202M005	1	AREA	42202S005	1	1.2	-15.2	40.8	13.4	95: 1	**	DORIS	*
TRIA	30604S001	2	TRIB	30604S002	1	4.0	-15.3	-22.2	16.5	2: 23	**	DORIS	*
BADA	12338S001	1	BADB	12338S002	1	2.5	-5.5	-8.2	-8.1	4:224	**	DORIS	*
STR1	50119M002	3	MSOB	50119S002	3	-1.7	8.3	5.1	-7.7	1:209	**	DORIS	*
MARA	30313S001	1	MATB	30313S003	1	-7.9	2.3	0.6	0.8	4:241	**	DORIS	*
HRAO	30302M004	1	HBKB	30302S006	1	5.4	-1.0	-4.2	4.9	3:214	**	DORIS	*
YELL	40127M003	3	YEMB	40127S009	1	9.6	-1.6	1.6	7.9	1:285	**	DORIS	*
YELL	40127M003	3	YELB	40127S008	1	9.1	-1.1	-4.3	7.5	1:285	**	DORIS	*
SYOG	66006S002	1	SYPB	66006S003	1	9.9	1.7	-2.4	-5.3	0: 1	**	DORIS	*
BAKO	23101M002	4	CIBB	23101S001	1	10.8	-1.8	49.9	-0.3	0:350	**	DORIS	*
SANT	41705M003	2	SANA	41705S007	1	9.8	2.2	-22.6	2.0	96:339	**	DORIS	*
REUN	97401M003	1	REUA	97401S001	1	5.7	4.0	-10.7	-4.3	3:335	**	DORIS	*
SANT	41705M003	2	SAOB	41705S008	1	14.6	0.8	29.4	0.0	96:339	**	DORIS	*
NKLG	32809M002	1	LIBA	32809S002	1	15.7	-2.6	22.3	1.0	99: 36	**	DORIS	*
KERG	91201M002	2	KESB	91201S004	1	6.3	1.2	7.3	-1.7	7:101	**	DORIS	*
GUAM	50501M002	1	GUAB	50501S001	1	14.6	-0.5	24.2	10.4	93:346	**	DORIS	*
THU3	43001M002	1	THUB	43001S005	1	26.1	1.2	-7.6	16.0	2:257	**	DORIS	*
FAIR	40408M001	2	FAIB	40408S005	1	14.6	-4.9	-16.5	-9.2	1:274	**	DORIS	*
BAKO	23101M002	4	CICB	23101S002	1	-9.4	1.2	43.3	6.0	0:350	**	DORIS	*
SANT	41705M003	2	SANB	41705S009	1	-8.7	4.9	38.6	6.5	96:339	**	DORIS	*
ASC1	30602M001	1	ASDB	30602S004	1	29.1	3.7	-17.0	28.3	3:350	**	DORIS	*
MARA	30313S001	1	MARB	30313S002	1	-19.8	7.8	3.7	4.7	4:241	**	DORIS	*
REYK	10202M001	4	REYA	10202S001	1	-10.7	-10.7	3.1	2.6	4:248	**	DORIS	*
REYK	10202M001	4	REYB	10202S002	1	14.5	-9.4	1.6	-17.3	4:248	**	DORIS	*
PDEL	31906M004	1	PDLB	31906S001	1	16.1	9.7	3.6	-18.0	1: 79	**	DORIS	*
EISL	41703M003	1	EASB	41703S009	1	18.6	7.0	-4.4	-6.2	1: 46	**	DORIS	*
KIT3	12334M001	1	KITB	12334S005	1	-5.2	10.3	-1.5	-7.6	1:115	**	DORIS	*
DUM1	91501M001	2	ADEA	91501S001	1	-8.8	-10.1	4.9	-9.3	8: 39	**	DORIS	*
AREQ	42202M005	5	ARFB	42202S007	1	-28.8	28.4	-4.6	-5.1	7:123	**	DORIS	*
ADEA	91501S001	1	ADEB	91501S002	1	8.5	9.5	-1.7	-8.7	2:104	**	DORIS	*
KOKB	40424M004	4	KOKA	40424S008	1	12.6	10.9	0.1	-12.4	2:319	**	DORIS	*
WUHN	21602M001	2	JIUB	21602S005	1	-6.6	-30.5	51.9	-2.2	3:342	**	DORIS	*
KSTU	12349M002	1	KRAB	12349S001	1	7.7	9.1	10.1	-4.9	0: 1	**	DORIS	*
KIT3	12334M001	1	KITA	12334S004	1	-11.6	7.7	-7.2	-3.1	1:115	**	DORIS	*
HRAO	30302M004	1	HBLA	30302S005	1	5.3	-6.2	-13.3	3.3	3:214	**	DORIS	*
TIDB	50103M108	2	ORRB	50103S202	1	-26.3	-33.6	-32.1	36.1	95:263	**	DORIS	*
TIDB	50103M108	2	ORRA	50103S201	1	-30.1	-39.0	-29.4	42.1	95:263	**	DORIS	*
MALD	22901S001	1	MALB	22901S002	1	-9.6	13.8	18.1	9.4	5: 14	**	DORIS	*
RIDA	40499S016	1	7219	40499S001	1	10.3	-26.3	-60.7	28.0	93: 4	**	DORIS	*
NOUM	92701M003	3	NOWB	92701S003	1	6.3	19.3	26.9	15.5	5:236	**	DORIS	*
CHPI	41609M003	1	CACB	41609S001	1	20.6	-8.8	-48.5	-20.9	4: 85	**	DORIS	*
CHPI	41609M003	1	CADB	41609S002	1	-6.5	9.6	-76.7	11.1	4: 85	**	DORIS	*
PDEL	31906M004	1	PDMB	31906S002	1	10.9	8.2	-12.3	-11.4	1: 79	**	DORIS	*
EISL	41703M003	1	EASA	41703S008	1	-11.7	10.5	-17.6	13.8	1: 46	**	DORIS	*
MORA	51001S001	1	MORB	51001S002	1	-7.6	15.4	15.3	9.9	2: 79	**	DORIS	*
KERG	91201M002	2	KETB	91201S005	1	6.7	8.6	8.9	-8.9	7:101	**	DORIS	*
KOKB	40424M004	4	KOLB	40424S009	1	9.1	15.6	-12.4	-16.8	2:319	**	DORIS	*
GODE	40451M123	2	GREB	40451S176	1	9.9	-17.0	-11.6	10.4	8: 1	**	DORIS	*
HELA	30606S002	1	HELB	30606S003	1	19.1	25.2	-11.5	-14.8	3: 80	**	DORIS	*
HELA	30606S002	1	HEMB	30606S004	1	10.5	41.0	-16.2	-32.0	3: 80	**	DORIS	*