

Memo: Inertial Pointing on IBEX

May 16, 2014

Nathan Schwadron, Ken Fairchild and Chelle Reno
ISOC

The inertial pointing file listed below is derived from an orbit ephemeris that is updated after each maneuver by the Flight Dynamics Group. The ephemeris data developed by FDG utilizes information from a number of sources including the star tracker. The results have been spot-checked by the ISOC throughout the mission, [using star tracker information for time periods when the ACS was fully functional](#), and found to be accurate to <0.1 deg. Note that the “plan” values correspond to maneuver targets whereas the “act” values ([given in right ascension and declination](#)) correspond to actual pointing achieved, [which is relevant for the scientific analysis](#).

http://ibex.unh.edu/ibexhome/ops/config/idsup/inertial_pointing

```
[nathanas@ena idsup]$ more inertial_pointing
/usr/local/ibex/ops/config/idsup
```

```
#
# $Id: inertial_pointing 10956 2014-03-20 23:48:19Z ibexops $
#
# This file contains a record of inertial pointing maneuvers by orbit.
# This file is automatically updated by scr_inert.sh but is not yet
# invoked automatically.
#
# M == 0 can be updated automatically
# M == 1 is a manual correction to preserve
#
#orb M r.a.-plan dec.-plan PlannedManeuverTime offset r.a.-act dec.-act
#
0006 0 +236.445172 -19.878739 2008/11:17:07:36:30 511456 +234.900191 -18.427864
0007 1 +244.475295 -21.380901 2008/11:24:12:01:00 0 +244.475295 -21.380901
0008 0 +252.655037 -22.494465 2008/12:01:23:38:14 372560 +252.475821 -21.707403
0009 0 +261.108458 -23.200307 2008/12:09:05:28:00 644007 +260.737700 -22.405803
0010 0 +269.656313 -23.451576 2008/12:17:07:13:00 395334 +269.580029 -22.699719
0011 0 +274.846956 -23.381534 2008/12:25:00:28:56 367349 +274.476346 -22.782473
0012 0 +286.692522 -22.562359 2009/01:01:21:04:31 395401 +286.450606 -21.871246
0013 0 +291.596559 -21.973574 2009/01:09:05:43:22 433429 +291.102787 -21.367197
0014 0 +299.593268 -20.674892 2009/01:16:16:19:22 119007 +299.404019 -20.017607
0015 0 +307.387173 -19.026599 2009/01:24:01:09:17 632920 +307.069846 -18.350546
0016 0 +315.430811 -16.941849 2009/01:31:19:03:10 195437 +315.073052 -16.298293
0017 1 +323.276824 -14.553456 2009/02:08:18:58:19 608787 +322.958089 -13.939680
0018 0 +330.836038 -11.949827 2009/02:16:06:05:00 41391 +330.487746 -11.300038
0019 0 +338.088143 -9.209914 2009/02:23:22:31:13 344223 +337.728164 -8.553142
0020 0 +345.175410 -6.349732 2009/03:03:10:18:47 409326 +344.833097 -5.705288
0021 0 +351.775200 -3.565800 2009/03:11:14:04:00 600296 +350.493561 -2.988141
0022 0 +359.282225 -0.331687 2009/03:18:13:33:23 283422 +358.979073 +0.324319
0023 0 +6.420267 +2.757163 2009/03:26:14:11:16 62121 +6.121439 +3.364464
0024 0 +13.390289 +5.714927 2009/04:03:06:09:25 346769 +13.017742 +6.322965
0025 0 +20.378543 +8.566662 2009/04:10:23:09:05 517404 +20.034690 +9.164747
0026 0 +27.389318 +11.261373 2009/04:18:13:27:32 114415 +27.040765 +11.889274
0027 0 +34.590189 +13.809082 2009/04:26:03:38:13 165210 +34.193093 +14.448216
0028 0 +41.917351 +16.134840 2009/05:03:18:06:05 57890 +41.567104 +16.824743
0029 0 +49.511697 +18.231024 2009/05:11:09:44:53 456228 +49.278559 +18.888168
0030 0 +57.085103 +19.984436 2009/05:19:08:25:22 482938 +56.834545 +20.647427
0031 0 +64.570338 +21.367712 2009/05:26:17:58:33 281804 +64.299993 +22.033612
0032 0 +72.151118 +22.410270 2009/06:03:05:01:18 541620 +71.998282 +23.063786
```

0033	0	+79.912758	+23.100724	2009/06:10:14:21:19	501436	+79.778227	+23.731854
0034	0	+87.897626	+23.411479	2009/06:18:16:28:00	355671	+87.783853	+24.088816
0035	0	+95.885686	+23.315301	2009/06:25:23:08:40	278062	+95.847524	+23.971335
0036	0	+103.835752	+22.816275	2009/07:03:15:39:10	273825	+103.691966	+23.583105
0037	0	+111.536871	+21.951368	2009/07:11:08:05:41	648640	+111.537345	+22.599647
0038	0	+119.073408	+20.741089	2009/07:18:18:10:51	197469	+119.071090	+21.444088
0039	0	+126.489850	+19.204773	2009/07:26:06:39:42	78320	+126.495717	+19.959622
0040	1	+134.006911	+17.309014	2009/08:02:17:18:06	0	+134.006911	+17.309014
0041	0	+141.422545	+15.121409	2009/08:12:07:08:00	-72378	+141.462324	+15.761260
0042	0	+148.623754	+12.713664	2009/08:18:08:26:36	313807	+148.722336	+13.434430
0043	0	+155.696533	+10.110744	2009/08:26:01:42:43	295765	+155.853225	+10.816423
0044	0	+162.599262	+7.382004	2009/09:02:17:05:44	482266	+162.705512	+8.088185
0045	0	+169.476745	+4.522440	2009/09:10:07:16:17	174447	+169.608153	+5.184741
0046	0	+176.336378	+1.582104	2009/09:17:23:47:21	279073	+176.521004	+2.200160
0047	0	+183.343726	-1.451903	2009/09:25:14:38:11	304807	+183.528104	-0.708785
0048	0	+189.960500	-4.290200	2009/10:04:02:25:00	274052	+189.535521	-2.872148
0049	0	+197.190750	-7.300470	2009/10:11:01:22:13	136350	+197.414162	-6.716317
0050	0	+204.181622	-10.069170	2009/10:18:14:27:54	270112	+204.360376	-9.464436
0051	0	+211.329295	-12.701474	2009/10:26:01:18:21	455302	+211.392948	-11.998218
0052	0	+218.200700	-15.010100	2009/11:03:01:38:00	116743	+217.662890	-13.757669
0053	0	+226.464994	-17.445142	2009/11:10:08:17:12	386985	+226.679939	-16.805472
0054	0	+234.373425	-19.409345	2009/11:18:00:04:39	344870	+234.373539	-18.763075
0055	0	+242.284624	-20.992267	2009/11:25:16:49:22	496572	+242.261109	-20.318894
0056	0	+250.243315	-22.191709	2009/12:03:01:16:31	370409	+250.162865	-21.513918
0057	0	+258.351055	-23.002057	2009/12:10:11:58:13	455215	+258.305285	-22.360112
0058	0	+266.742036	-23.398630	2009/12:17:20:55:54	544114	+266.546634	-22.656013
0059	0	+275.340087	-23.338703	2009/12:25:16:00:38	611539	+275.156407	-22.686375
0060	0	+283.830445	-22.820443	2010/01:02:08:06:34	468899	+283.645135	-22.258575
0061	0	+292.228645	-21.857334	2010/01:10:00:49:47	484153	+292.026830	-21.285856
0062	1	+300.390483	-20.494350	2010/01:17:16:05:46	0	+300.390483	-20.494350
0063	1	+308.260000	-18.790000	2010/01:26:02:29:00	178147	+307.228651	-18.067566
0064	1	+316.251388	-16.677829	2010/02:01:21:23:43	481218	+316.054080	-16.016905
0065	0	+324.032148	-14.273966	2010/02:09:11:37:57	213239	+323.774335	-13.826512
0066	0	+331.630436	-11.624474	2010/02:17:10:21:30	650357	+331.320110	-11.107050
0067	0	+338.894708	-8.857219	2010/02:25:00:13:42	692433	+338.371791	-8.387428
0068	0	+346.011521	-5.967381	2010/03:04:16:37:56	247521	+345.545526	-5.384379
0069	0	+353.003986	-3.006934	2010/03:12:06:39:12	381870	+352.512777	-2.417017
0070	0	+0.028134	+0.028588	2010/03:19:21:25:33	501369	+359.589345	+0.573946
0071	0	+7.019249	+3.048521	2010/03:27:14:49:17	502621	+6.658361	+3.620311
0072	0	+14.058567	+6.027872	2010/04:04:06:57:27	257896	+13.637272	+6.540130
0073	0	+20.993915	+8.845761	2010/04:12:02:19:39	140092	+20.499259	+9.433347
0074	0	+27.840800	+11.462742	2010/04:19:10:53:34	165861	+27.507311	+11.998424
0075	0	+34.770602	+13.903632	2010/04:26:21:10:29	555365	+34.876174	+14.436830
0076	0	+41.937756	+16.175738	2010/05:04:05:22:17	441628	+41.573192	+16.735197
0077	0	+49.429718	+18.246300	2010/05:11:21:48:57	238056	+49.050094	+18.856390
0078	0	+57.020235	+20.003408	2010/05:19:09:39:32	368565	+56.673451	+20.636457
0079	0	+64.261700	+21.345600	2010/05:27:16:10:28	578764	+63.151737	+22.146884
0080	0	+72.424157	+22.473154	2010/06:03:16:35:36	264518	+72.146299	+23.206094
0081	0	+80.214241	+23.151833	2010/06:11:04:09:47	243688	+79.984523	+23.849460
0082	0	+88.059168	+23.444371	2010/06:18:18:18:08	125402	+87.922704	+24.063758
0083	0	+95.445800	+23.358400	2010/06:26:20:49:36	554571	+94.383940	+24.288142
0084	0	+104.138492	+22.822858	2010/07:04:05:50:54	496741	+104.111018	+23.538360
0085	0	+111.939864	+21.927730	2010/07:11:20:14:36	353030	+111.844536	+22.697084
0086	0	+119.625073	+20.670400	2010/07:19:12:12:41	42692	+119.646747	+21.368487
0087	0	+127.142598	+19.085734	2010/07:27:10:36:22	398082	+127.131324	+19.718925
0088	0	+134.609527	+17.174223	2010/08:03:17:20:27	425008	+134.613574	+17.856257
0089	0	+141.940221	+14.985251	2010/08:11:10:43:32	353234	+141.954623	+15.722111
0090	0	+149.196011	+12.539737	2010/08:19:03:05:08	351354	+149.202788	+13.295903
0091	0	+156.251344	+9.925475	2010/08:27:00:45:04	351592	+156.283117	+10.643335
0092	0	+163.004886	+7.243625	2010/09:03:10:33:39	431993	+163.107696	+7.791628
0093	0	+169.699328	+4.454229	2010/09:10:22:12:24	375444	+169.777724	+5.091189
0094	0	+176.442151	+1.562885	2010/09:18:07:31:54	369301	+176.530531	+2.218088
0095	0	+183.353211	-1.430204	2010/09:25:23:57:31	521624	+183.429042	-0.798689
0096	0	+190.299867	-4.410629	2010/10:03:16:18:36	287717	+190.314510	-3.725760
0097	0	+197.338041	-7.339749	2010/10:11:09:03:33	280486	+197.301931	-6.496524
0098	0	+204.347530	-10.112574	2010/10:19:00:34:15	371199	+204.360268	-9.321015
0099	0	+211.455125	-12.726489	2010/10:26:10:54:26	334522	+211.513795	-11.926808

0100	0	+218.740870	-15.158745	2010/11:02:23:10:30	370149	+218.774203	-14.488095
0101	0	+226.437850	-17.419813	2010/11:10:09:53:49	436682	+226.362250	-16.592276
0102	0	+234.468466	-19.413494	2010/11:18:08:58:43	275385	+234.438438	-18.808508
0103	0	+242.529740	-21.020163	2010/11:26:00:04:44	301276	+242.411294	-20.287132
0104	0	+250.767760	-22.241963	2010/12:03:16:31:02	357122	+250.619768	-21.570125
0105	0	+259.067266	-23.038721	2010/12:11:06:31:50	105137	+258.872938	-22.348513
0106	0	+267.542276	-23.400037	2010/12:18:20:55:29	470444	+267.311157	-22.715997
0107	0	+276.057072	-23.302985	2010/12:26:13:36:49	369165	+275.823009	-22.710252
0108	0	+284.701068	-22.732207	2011/01:03:05:23:13	152349	+284.449938	-22.171713
0109	0	+293.126413	-21.721226	2011/01:11:04:53:18	354880	+292.690562	-21.109732
0110	0	+300.757600	-20.417100	2011/01:19:05:45:30	200163	+299.613424	-19.645030
0111	0	+309.037082	-18.595751	2011/01:26:04:28:23	383126	+308.710650	-17.937965
0112	0	+316.797085	-16.516451	2011/02:02:15:05:46	656470	+316.710715	-15.931168
0113	0	+324.521246	-14.110201	2011/02:10:07:37:18	494225	+324.223669	-13.590105
0114	0	+331.578000	-11.644200	2011/02:18:15:01:43	44624	+324.028805	-13.405385
0115	0	+339.426293	-8.650078	2011/02:25:18:19:59	625579	+339.225265	-8.129068
0116	0	+346.488916	-5.773298	2011/03:05:11:29:58	296810	+346.237949	-5.229429
0117	0	+353.371542	-2.855338	2011/03:12:21:24:03	142896	+352.890445	-2.300216
0118	0	+359.859700	-0.049400	2011/03:20:22:47:00	560088	+358.579426	+0.425663
0119	0	+7.189748	+3.112029	2011/03:27:18:59:22	455195	+7.032032	+3.652678
0120	0	+14.279638	+6.108185	2011/04:04:16:40:36	315226	+13.786104	+6.653123
0121	0	+21.351688	+8.973523	2011/04:12:09:04:45	447217	+20.799314	+9.588581
0122	0	+28.480707	+11.684586	2011/04:20:02:40:31	399566	+28.128693	+12.229490
0123	0	+35.605892	+14.169437	2011/04:27:17:36:23	122285	+35.146149	+14.723111
0124	0	+42.884300	+16.440613	2011/05:05:06:46:57	516490	+42.490836	+17.038678
0125	0	+50.300658	+18.449572	2011/05:12:22:00:31	211640	+50.015765	+19.075947
0126	0	+58.107896	+20.208495	2011/05:20:12:10:04	30231	+57.662215	+20.863780
0127	0	+65.950778	+21.596265	2011/05:28:13:01:12	346500	+65.596728	+22.211188
0128	0	+73.781305	+22.597645	2011/06:05:03:18:22	0	+0.000000	+0.000000
0130	0	+91.874001	+22.725031	2011/06:25:14:59:00	62894	+87.255207	+23.340097
0130a	1	+86.621174	+23.076128	2011/06:22:14:43:00	161472	+87.254194	+23.334718
0130b	0	+91.874001	+22.725031	2011/06:25:14:59:00	367169	+91.539813	+23.317597
0131	0	+96.485023	+22.569022	2011/06:30:09:08:56	450593	+100.675215	+23.046305
0131a	0	+96.485023	+22.569022	2011/06:30:09:08:56	76646	+96.122340	+23.164694
0131b	0	+101.097989	+22.340995	2011/07:04:13:48:10	320264	+100.673939	+23.038188
0132	0	+110.258028	+21.423023	2011/07:13:13:20:11	314887	+109.783090	+22.155194
0132a	0	+105.764001	+21.907002	2011/07:09:10:58:24	63646	+105.441115	+22.515426
0132b	0	+110.258028	+21.423023	2011/07:13:13:20:11	116427	+109.951078	+22.077617
0133	0	+114.759026	+20.741973	2011/07:18:08:33:40	0	+0.000000	+0.000000
0133a	0	+114.759026	+20.741973	2011/07:18:08:33:40	162216	+114.528734	+21.352054
0133b	0	+119.140986	+20.022987	2011/07:22:09:40:36	192485	+118.868911	+20.672343
0134	0	+127.989007	+18.138020	2011/07:31:09:21:43	0	+0.000000	+0.000000
0134a	0	+123.596011	+19.100971	2011/07:27:00:45:56	224883	+123.375889	+19.774117
0134b	0	+127.989007	+18.138020	2011/07:31:09:21:43	159600	+127.709044	+18.899123
0135	0	+132.429003	+16.981032	2011/08:05:02:19:06	655899	+132.222802	+17.736226
0135a	0	+132.429003	+16.981032	2011/08:05:02:19:06	156216	+132.222366	+17.728610
0135b	0	+136.642006	+15.838988	2011/08:09:09:02:05	73196	+136.459531	+16.598346
0136	0	+143.132200	+14.572300	2011/08:13:23:46:21	0	+0.000000	+0.000000
0136a	0	+143.132300	+14.572200	2011/08:13:23:46:21	240954	+142.388126	+15.594751
0136b	0	+145.029989	+13.208014	2011/08:18:06:55:12	205869	+144.981684	+13.915746
0137	0	+149.260006	+11.711982	2011/08:22:23:26:38	767488	+153.306606	+10.850687
0137a	0	+149.260006	+11.711982	2011/08:22:23:26:38	302208	+149.156982	+12.375790
0137b	0	+153.414015	+10.224001	2011/08:27:09:01:36	213551	+153.313581	+10.859026
0138	0	+157.638006	+8.574022	2011/09:01:03:15:26	0	+0.000000	+0.000000
0138a	0	+157.638006	+8.574022	2011/09:01:03:15:26	213133	+157.509167	+9.284421
0138b	0	+161.639021	+7.013027	2011/09:05:10:25:26	46817	+161.555289	+7.678576
0139	0	+165.726978	+5.303996	2011/09:10:02:27:32	785416	+169.679113	+4.296253
0139a	0	+165.726978	+5.303996	2011/09:10:02:27:32	352103	+165.551962	+6.056282
0139b	0	+169.731998	+3.651007	2011/09:14:10:37:49	77204	+169.686078	+4.300377
0140	0	+173.875028	+1.847020	2011/09:19:05:04:02	795576	+177.857427	+0.733870
0140a	0	+173.875028	+1.847020	2011/09:19:05:04:02	230288	+173.796479	+2.524395
0140b	0	+177.967002	+0.108977	2011/09:23:15:31:09	234038	+177.864023	+0.739097
0141	0	+182.179981	-1.746016	2011/09:28:11:30:49	0	+0.000000	+0.000000
0141a	0	+182.179981	-1.746016	2011/09:28:11:30:49	244611	+182.045679	-1.037430
0141b	0	+186.201018	-3.451982	2011/10:02:19:13:21	165878	+186.124635	-2.773930
0142	0	+190.355991	-5.255029	2011/10:07:12:51:24	0	+0.000000	+0.000000
0142a	0	+190.355991	-5.255029	2011/10:07:12:51:24	53730	+190.246159	-4.629842

0142b	0	+194.475010	-6.952012	2011/10:11:21:29:46	12593	+194.301168	-6.208484
0143	0	+198.768007	-8.732994	2011/10:16:17:29:43	0	+0.000000	+0.000000
0143a	0	+198.768007	-8.732994	2011/10:16:17:29:43	214028	+198.710958	-8.059588
0143b	0	+203.074002	-10.404998	2011/10:21:04:03:05	24284	+202.980450	-9.777507
0144	0	+207.529972	-12.117016	2011/10:26:01:37:02	0	+0.000000	+0.000000
0144a	0	+207.529972	-12.117016	2011/10:26:01:37:02	170162	+207.415166	-11.451336
0144b	0	+211.857985	-13.642029	2011/10:30:09:16:17	269916	+211.714898	-12.968401
0145	0	+216.320005	-15.176004	2011/11:04:04:04:57	744524	+220.634103	-15.850078
0145a	0	+216.320005	-15.176004	2011/11:04:04:04:57	344429	+216.191311	-14.508857
0145b	0	+220.813005	-16.562971	2011/11:08:12:07:32	159154	+220.639812	-15.842391
0146	0	+225.451004	-17.933997	2011/11:13:08:39:33	537828	+230.059636	-18.490799
0146a	0	+225.451004	-17.933997	2011/11:13:08:39:33	207200	+225.288831	-17.258257
0146b	0	+230.217984	-19.159016	2011/11:17:18:41:40	215588	+230.062489	-18.493939
0147	0	+235.076999	-20.322004	2011/11:22:16:49:54	607417	+239.575473	-20.572696
0147a	0	+235.076999	-20.322004	2011/11:22:16:49:54	114603	+234.784304	-19.620323
0147b	0	+239.894982	-21.280992	2011/11:27:00:10:34	243715	+239.576554	-20.576366
0148	0	+244.744999	-22.154975	2011/12:01:18:55:09	0	+0.000000	+0.000000
0148a	0	+244.744999	-22.154975	2011/12:01:18:55:09	160195	+244.496357	-21.471799
0148b	0	+252.374800	-22.479900	2011/12:06:12:34:59	221982	+251.436449	-21.588103
0149	0	+257.326000	-22.925900	2011/12:10:22:02:31	0	+0.000000	+0.000000
0149a	0	+257.325900	-22.925900	2011/12:10:22:02:31	318020	+256.144883	-21.988881
0149b	0	+259.875016	-23.822023	2011/12:15:08:14:02	291877	+259.551086	-23.102069
0150	0	+265.000028	-24.094012	2011/12:20:05:22:22	0	+0.000000	+0.000000
0150a	0	+265.000028	-24.094012	2011/12:20:05:22:22	305622	+264.671032	-23.509094
0150b	0	+270.140021	-24.145997	2011/12:24:13:11:25	110867	+269.793132	-23.582078
0151	0	+275.132971	-24.088979	2011/12:29:10:16:53	0	+0.000000	+0.000000
0151a	0	+275.132971	-24.088979	2011/12:29:10:16:53	259331	+274.680891	-23.457506
0151b	0	+280.258023	-23.812997	2012/01:02:14:40:19	222580	+279.751916	-23.211296
0152	0	+285.216987	-23.440031	2012/01:07:13:21:10	0	+0.000000	+0.000000
0152a	0	+285.216987	-23.440031	2012/01:07:13:21:10	264584	+284.828459	-22.905785
0152b	0	+290.400994	-22.829985	2012/01:11:18:57:35	208017	+289.887235	-22.280083
0153	0	+295.368004	-22.137029	2012/01:16:20:17:47	736492	+299.992098	-20.775416
0153a	0	+295.368004	-22.137029	2012/01:16:20:17:47	291049	+294.896494	-21.592260
0153b	0	+300.336034	-21.238010	2012/01:20:22:47:34	115543	+299.991261	-20.763526
0154	0	+305.054982	-20.293972	2012/01:25:15:23:54	0	+0.000000	+0.000000
0154a	0	+305.054982	-20.293972	2012/01:25:15:23:54	99887	+304.504599	-19.822508
0154b	0	+309.867995	-19.139004	2012/01:30:03:53:51	120712	+309.532176	-18.689523
0155	0	+314.460002	-17.958989	2012/02:03:16:03:17	82945	+323.567397	-13.473002
0155a	0	+314.460002	-17.958989	2012/02:03:16:03:17	751731	+323.560176	-13.474875
0155b	0	+321.375000	-15.176400	2012/02:08:12:13:36	202627	+323.568995	-13.471983
0156	0	+323.764017	-15.148992	2012/02:12:21:07:22	71796	+323.968406	-14.471849
0156a	0	+323.764017	-15.148992	2012/02:12:21:07:22	196714	+323.899889	-14.535784
0156b	0	+330.337400	-12.143400	2012/02:17:14:39:54	154620	+329.009735	-11.848842
0157	0	+332.572978	-12.077995	2012/02:21:20:40:30	80024	+332.128349	-11.597412
0157a	0	+332.572978	-12.077995	2012/02:21:20:40:30	214000	+332.076365	-11.610331
0157b	0	+338.933600	-8.892100	2012/02:26:13:53:11	276649	+337.375249	-8.641829
0158	0	+347.441200	-5.421100	2012/03:06:15:48:14	0	+0.000000	+0.000000
0158a	0	+341.149005	-8.767022	2012/03:01:20:25:37	177151	+340.575803	-8.249162
0158b	0	+347.441200	-5.421100	2012/03:06:15:48:14	22555	+346.108222	-5.138446
0159	0	+349.698030	-5.232011	2012/03:11:00:15:05	47100	+349.270232	-4.754139
0159a	0	+349.698030	-5.232011	2012/03:11:00:15:05	243743	+349.266244	-4.760757
0159b	0	+355.773800	-1.865700	2012/03:15:16:49:41	8233	+354.372495	-1.636050
0160a	0	+357.905992	-1.706979	2012/03:19:22:29:24	183087	+357.425213	-1.254492
0160b	0	+2.028010	+0.101987	2012/03:24:04:58:58	108536	+1.406583	+0.509236
0161	0	+6.077007	+1.829995	2012/03:28:21:38:41	0	+0.000000	+0.000000
0161a	0	+6.077007	+1.829995	2012/03:28:21:38:41	249620	+5.491479	+2.229575
0161b	0	+10.272999	+3.644003	2012/04:02:06:10:07	58449	+9.701675	+4.070556
0162	0	+16.045700	+6.832000	2012/04:07:00:30:19	0	+0.000000	+0.000000
0162a	0	+16.045700	+6.832000	2012/04:07:00:30:19	257843	+14.929770	+7.277127
0162b	0	+18.491965	+7.057015	2012/04:11:09:16:25	38445	+17.922187	+7.614691
0163	0	+22.554990	+8.653006	2012/04:15:21:59:36	0	+0.000000	+0.000000
0163a	0	+22.554990	+8.653006	2012/04:15:21:59:36	300545	+21.932378	+9.087353
0163b	0	+26.708010	+10.260967	2012/04:20:04:04:21	205862	+26.105390	+10.731737
0164	0	+30.881001	+11.765003	2012/04:24:21:21:35	728214	+34.502657	+13.672251
0164a	0	+30.881001	+11.765003	2012/04:24:21:21:35	200254	+30.232251	+12.212208
0164b	0	+35.190010	+13.271989	2012/04:29:05:22:38	198822	+34.665967	+13.728072
0165	0	+41.290900	+15.965100	2012/05:04:00:04:39	0	+0.000000	+0.000000

0165a	0	+41.290900	+15.965100	2012/05:04:00:04:39	264831	+39.846166	+16.356674
0165b	0	+45.929700	+17.267000	2012/05:08:15:41:41	164193	+44.599389	+17.834768
0166	0	+48.110975	+17.127012	2012/05:12:22:08:11	0	+0.000000	+0.000000
0166a	0	+48.110975	+17.127012	2012/05:12:22:08:11	206963	+47.585744	+17.785227
0166b	0	+52.505004	+18.247006	2012/05:17:04:31:01	145461	+51.938280	+18.741094
0167	0	+56.989979	+19.229022	2012/05:21:22:52:56	779289	+60.793909	+20.639480
0167a	0	+56.989979	+19.229022	2012/05:21:22:52:56	136829	+56.420153	+19.748847
0167b	0	+61.573991	+20.142980	2012/05:26:07:16:34	129821	+60.971693	+20.677763
0168	0	+66.215986	+20.896988	2012/05:31:02:50:30	772225	+70.080768	+22.019708
0168a	0	+66.215986	+20.896988	2012/05:31:02:50:30	262283	+65.721707	+21.442095
0168b	0	+70.767963	+21.541010	2012/06:04:09:20:18	124194	+70.211766	+22.116944
0169	0	+75.404031	+22.023999	2012/06:09:03:09:30	0	+0.000000	+0.000000
0169a	0	+75.404031	+22.023999	2012/06:09:03:09:30	138888	+74.849050	+22.629677
0169b	0	+80.033023	+22.405994	2012/06:13:10:14:12	229479	+79.572154	+22.985777
0170	0	+84.780013	+22.618986	2012/06:18:06:16:56	156060	+84.316593	+23.235914
0170a	0	+84.780013	+22.618986	2012/06:18:06:16:56	283819	+84.314570	+23.233575
0170b	0	+89.545978	+22.723986	2012/06:22:15:18:04	209329	+89.062068	+23.376206
0171	0	+94.381002	+22.643995	2012/06:27:14:05:14	681310	+98.533996	+23.011593
0171a	0	+94.381002	+22.643995	2012/06:27:14:05:14	273204	+94.247082	+23.206685
0171b	0	+99.020014	+22.463022	2012/07:01:19:48:30	117167	+98.704366	+23.039522
0172	0	+103.743023	+22.102027	2012/07:06:17:25:37	0	+0.000000	+0.000000
0172a	0	+103.743023	+22.102027	2012/07:06:17:25:37	136225	+103.434229	+22.729735
0172b	0	+108.357015	+21.645999	2012/07:10:22:58:51	35952	+108.113228	+22.261359
0173	0	+113.073977	+21.004974	2012/07:15:22:26:52	736825	+117.436028	+20.937649
0173a	0	+113.073977	+21.004974	2012/07:15:22:26:52	163792	+112.795120	+21.620877
0173b	0	+117.721034	+20.268016	2012/07:20:05:59:56	141634	+117.443773	+20.940110
0174	0	+122.438022	+19.347997	2012/07:25:08:07:01	0	+0.000000	+0.000000
0174a	0	+122.438022	+19.347997	2012/07:25:08:07:01	266611	+122.170211	+20.077636
0174b	0	+126.873967	+18.389004	2012/07:29:12:29:17	224257	+126.673651	+19.049955
0175	0	+131.392002	+17.259028	2012/08:03:12:53:36	0	+0.000000	+0.000000
0175a	0	+131.392002	+17.259028	2012/08:03:12:53:36	268805	+131.154878	+17.962565
0175b	0	+135.731010	+16.090010	2012/08:07:16:44:34	138588	+135.512935	+16.774601
0176	0	+140.173962	+14.750004	2012/08:12:12:22:40	0	+0.000000	+0.000000
0176a	0	+140.173962	+14.750004	2012/08:12:12:22:40	297378	+140.035781	+15.341462
0176b	0	+144.509998	+13.369033	2012/08:17:00:07:11	171052	+144.260536	+14.123286
0177	0	+148.942988	+11.828977	2012/08:21:21:48:11	610470	+148.851677	+12.547648
0177a	0	+148.942988	+11.828977	2012/08:21:21:48:11	213360	+148.860501	+12.539595
0177b	0	+153.084026	+10.337025	2012/08:26:06:49:28	184870	+152.929422	+11.102091
0178	0	+159.573300	+8.605000	2012/08:31:01:28:55	709458	+158.692546	+9.785399
0178a	0	+159.573400	+8.604900	2012/08:31:01:28:55	79601	+158.688563	+9.788368
0178b	0	+161.383011	+7.104994	2012/09:04:10:09:05	376858	+161.372099	+7.789583
0179	0	+165.573988	+5.372991	2012/09:09:05:09:09	0	+0.000000	+0.000000
0179a	0	+165.573988	+5.372991	2012/09:09:05:09:09	222549	+165.437730	+6.128508
0179b	0	+169.679014	+3.660997	2012/09:13:15:46:21	39920	+169.617966	+4.281446
0180	0	+173.922006	+1.832002	2012/09:18:12:52:06	723621	+177.825311	+0.844510
0180a	0	+173.922006	+1.832002	2012/09:18:12:52:06	220594	+173.801298	+2.507094
0180b	0	+177.919013	+0.119977	2012/09:22:20:30:45	254225	+177.833951	+0.845142
0181	0	+182.038974	-1.679982	2012/09:27:14:11:26	768865	+185.871118	-2.701315
0181a	0	+182.038974	-1.679982	2012/09:27:14:11:26	135308	+181.961444	-0.987978
0181b	0	+186.032989	-3.391026	2012/10:01:21:04:45	22348	+185.878443	-2.683653
0182	0	+190.177991	-5.172983	2012/10:06:14:52:17	740333	+194.143310	-6.140892
0182a	0	+190.177991	-5.172983	2012/10:06:14:52:17	256322	+190.109336	-4.481941
0182b	0	+194.312976	-6.896027	2012/10:10:23:34:23	222710	+194.150491	-6.150280
0183	0	+198.597018	-8.657986	2012/10:15:19:17:36	758915	+202.592892	-9.549325
0183a	0	+198.597018	-8.657986	2012/10:15:19:17:36	242536	+198.494095	-7.923647
0183b	0	+202.717991	-10.275998	2012/10:20:00:57:37	245919	+202.596374	-9.534783
0184	0	+206.958972	-11.898994	2012/10:24:17:14:05	0	+0.000000	+0.000000
0184a	0	+206.958972	-11.898994	2012/10:24:17:14:05	338568	+206.828789	-11.149280
0184b	0	+211.175983	-13.412026	2012/10:28:22:22:19	180837	+211.000805	-12.669740
0185a	0	+215.522011	-14.909027	2012/11:02:14:53:40	204510	+215.665547	-14.324076
0185b	0	+219.965004	-16.313980	2012/11:06:21:49:10	164298	+219.821401	-15.675796
0186	0	+224.506987	-17.663974	2012/11:11:15:55:47	0	+0.000000	+0.000000
0186a	0	+224.506987	-17.663974	2012/11:11:15:55:47	170539	+224.267925	-16.954856
0186b	0	+229.010023	-18.862979	2012/11:15:20:20:59	193529	+228.681402	-18.121694
0187	0	+233.561978	-19.977987	2012/11:20:11:34:54	79990	+233.772303	-19.418210
0187a	0	+233.561978	-19.977987	2012/11:20:11:34:54	136053	+233.698981	-19.426797
0187b	0	+240.869900	-20.774700	2012/11:25:02:12:34	268090	+239.991786	-19.857422

0188	0	+245.545000	-21.531800	2012/11:29:08:09:11	0	+0.000000	+0.000000
0188a	0	+245.545000	-21.531800	2012/11:29:08:09:11	257625	+244.519630	-20.529818
0188b	0	+247.815991	-22.597993	2012/12:03:14:48:49	243921	+247.624316	-21.967111
0189	0	+252.681970	-23.218022	2012/12:08:10:03:36	504412	+252.317007	-22.703126
0189a	0	+252.681970	-23.218022	2012/12:08:10:03:36	222887	+252.338830	-22.554809
0189b	0	+257.614975	-23.668982	2012/12:12:13:02:29	260170	+257.433042	-23.094822
0190	0	+262.462023	-23.986986	2012/12:17:07:49:00	0	+0.000000	+0.000000
0190a	0	+262.462023	-23.986986	2012/12:17:07:49:00	184133	+262.040367	-23.360692
0190b	0	+267.497008	-24.134998	2012/12:21:10:08:57	173935	+266.976998	-23.436359
0191	0	+274.330999	-23.939011	2012/12:26:02:49:22	0	+0.000000	+0.000000
0191a	0	+274.330999	-23.939011	2012/12:26:02:49:22	350111	+273.932136	-23.337522
0191b	0	+281.212013	-23.624004	2012/12:30:11:02:53	259645	+280.834508	-22.984368
0192	0	+288.130990	-22.969006	2013/01:04:05:04:04	0	+0.000000	+0.000000
0192a	0	+288.130990	-22.969006	2013/01:04:05:04:04	294732	+287.620800	-22.328063
0192b	0	+292.444005	-22.420998	2013/01:08:11:48:55	167917	+291.888729	-21.872613
0193	0	+297.913001	-21.544999	2013/01:13:04:25:24	488251	+301.517072	-20.239324
0193a	0	+297.913001	-21.544999	2013/01:13:04:25:24	317172	+297.512579	-21.019794
0193b	0	+302.171009	-20.743981	2013/01:17:12:19:53	281358	+301.520156	-20.237807
0194	0	+307.584989	-19.551011	2013/01:22:06:58:25	0	+0.000000	+0.000000
0194a	0	+307.584989	-19.551011	2013/01:22:06:58:25	216944	+306.974620	-19.171303
0194b	0	+309.542700	-18.520600	2013/01:27:03:24:02	276133	+308.480017	-18.320994
0195	0	+317.170008	-17.022001	2013/01:31:13:39:07	0	+0.000000	+0.000000
0195a	0	+317.170008	-17.022001	2013/01:31:13:39:07	102163	+316.756776	-16.428716
0195b	0	+318.956000	-15.925400	2013/02:05:08:16:31	179595	+317.839625	-15.818817
0196	0	+326.319011	-14.128009	2013/02:09:17:04:46	0	+0.000000	+0.000000
0196a	0	+326.319011	-14.128009	2013/02:09:17:04:46	213271	+326.067462	-13.567459
0196b	0	+328.065200	-12.951400	2013/02:14:12:31:07	110485	+327.051557	-12.880656
0197	0	+335.300003	-10.883993	2013/02:18:23:22:49	289162	+334.970588	-10.316424
0197a	0	+335.300003	-10.883993	2013/02:18:23:22:49	72910	+334.966249	-10.313577
0197b	0	+337.088100	-9.616900	2013/02:23:21:07:22	251412	+335.927209	-9.639301
0198	0	+342.325012	-8.092004	2013/02:28:09:57:05	0	+0.000000	+0.000000
0198a	0	+342.325012	-8.092004	2013/02:28:09:57:05	319363	+342.074274	-7.628942
0198b	0	+345.258990	-6.924999	2013/03:04:11:11:12	276950	+344.589190	-6.515422
0199	0	+348.108011	-5.731973	2013/03:09:10:14:28	0	+0.000000	+0.000000
0199a	0	+348.108011	-5.731973	2013/03:09:10:14:28	107108	+347.484344	-5.369485
0199b	0	+352.449992	-3.882008	2013/03:14:01:13:39	64973	+352.296074	-3.472035
0200	0	+356.661022	-2.073988	2013/03:18:17:08:40	782215	+0.455846	+0.238645
0200a	0	+356.661022	-2.073988	2013/03:18:17:08:40	322303	+355.975300	-1.714558
0200b	0	+1.043992	-0.172002	2013/03:23:10:27:56	162796	+0.441398	+0.183160
0201	0	+5.303025	+1.667027	2013/03:28:04:26:46	0	+0.000000	+0.000000
0201a	0	+5.303025	+1.667027	2013/03:28:04:26:46	216065	+4.950211	+2.189963
0201b	0	+9.548991	+3.491015	2013/04:01:18:49:03	291870	+8.894112	+3.762089
0202	0	+13.704011	+5.240013	2013/04:06:09:34:19	753394	+13.179852	+5.662370
0202a	0	+13.704011	+5.240013	2013/04:06:09:34:19	347985	+13.178521	+5.652557
0202b	0	+17.945000	+6.989992	2013/04:10:23:30:28	109850	+17.199672	+7.433023
0203	0	+22.140982	+8.660020	2013/04:15:14:11:38	0	+0.000000	+0.000000
0203a	0	+22.140982	+8.660020	2013/04:15:14:11:38	258107	+21.636129	+9.108332
0203b	0	+26.493008	+10.333005	2013/04:20:05:59:46	332413	+25.875752	+10.622728
0204	0	+32.419900	+13.087200	2013/04:24:22:38:05	114423	+27.418049	+0.447003
0204a	0	+32.419900	+13.087200	2013/04:24:22:38:05	311355	+31.292488	+13.469045
0204b	0	+37.246700	+14.667500	2013/04:29:21:33:03	84784	+36.257891	+15.215773
0205	0	+39.421006	+14.787989	2013/05:04:00:48:28	0	+0.000000	+0.000000
0205a	0	+39.421006	+14.787989	2013/05:04:00:48:28	231417	+38.952552	+15.292905
0205b	0	+43.742004	+16.090000	2013/05:08:12:06:23	184472	+43.086998	+16.603450
0206	0	+48.113016	+17.291008	2013/05:13:02:26:08	0	+0.000000	+0.000000
0206a	0	+48.113016	+17.291008	2013/05:13:02:26:08	193025	+47.481282	+17.830639
0206b	0	+52.590986	+18.410992	2013/05:17:13:50:56	113877	+52.143849	+18.931598
0207	0	+57.139030	+19.419977	2013/05:22:07:17:56	506841	+60.933014	+20.828729
0207a	0	+57.139030	+19.419977	2013/05:22:07:17:56	240255	+56.506517	+19.949833
0207b	0	+61.583984	+20.290006	2013/05:26:14:49:30	270767	+61.061297	+20.849413
0208	0	+66.092990	+21.037003	2013/05:31:06:38:51	0	+0.000000	+0.000000
0208a	0	+66.092990	+21.037003	2013/05:31:06:38:51	276059	+65.836208	+21.543918
0208b	0	+70.555981	+21.659007	2013/06:04:11:27:47	166447	+69.955640	+22.218290
0209	0	+75.126026	+22.153985	2013/06:09:03:52:03	709409	+79.625106	+23.028655
0209a	0	+75.126026	+22.153985	2013/06:09:03:52:03	134804	+75.016269	+22.708411
0209b	0	+79.711997	+22.528000	2013/06:13:09:27:46	163511	+79.628343	+23.033958
0210	0	+84.402981	+22.761010	2013/06:18:04:27:06	0	+0.000000	+0.000000

0210a	0	+84.402981	+22.761010	2013/06:18:04:27:06	52011	+84.207193	+23.247552
0210b	0	+88.904997	+22.862005	2013/06:22:07:04:05	206068	+88.420850	+23.485585
0211	0	+93.511005	+22.822031	2013/06:26:16:11:34	0	+0.000000	+0.000000
0211a	0	+93.511005	+22.822031	2013/06:26:16:11:34	358546	+93.341800	+23.377015
0211b	0	+97.991032	+22.662002	2013/07:01:02:15:51	185836	+97.533591	+23.273448
0212	0	+102.594975	+22.354000	2013/07:05:11:43:17	0	+0.000000	+0.000000
0212a	0	+102.594975	+22.354000	2013/07:05:11:43:17	123883	+102.324638	+23.048634
0212b	0	+107.121025	+21.927990	2013/07:09:23:52:57	364586	+106.988483	+22.522835
0213	0	+111.745994	+21.349994	2013/07:14:11:05:46	0	+0.000000	+0.000000
0213a	0	+111.745994	+21.349994	2013/07:14:11:05:46	359450	+111.389694	+22.033212
0213b	0	+116.118983	+20.687025	2013/07:18:21:24:28	106564	+115.858240	+21.330711
0214	0	+120.601967	+19.874008	2013/07:23:18:46:51	0	+0.000000	+0.000000
0214a	0	+120.601967	+19.874008	2013/07:23:18:46:51	183010	+120.371102	+20.527840
0214b	0	+124.914973	+18.981020	2013/07:27:18:08:44	225458	+124.753793	+19.583353
0215	0	+129.359029	+17.936997	2013/08:01:05:08:56	714184	+133.438299	+17.481057
0215a	0	+129.359029	+17.936997	2013/08:01:05:08:56	219051	+129.361969	+18.442366
0215b	0	+133.675971	+16.811986	2013/08:05:18:38:40	286849	+133.444478	+17.486281
0216	0	+138.095999	+15.546012	2013/08:10:07:28:56	716845	+142.077084	+14.935879
0216a	0	+138.095999	+15.546012	2013/08:10:07:28:56	227417	+138.228229	+16.085845
0216b	0	+142.242980	+14.261989	2013/08:14:19:07:32	101269	+142.082540	+14.941890
0217	0	+146.515003	+12.841992	2013/08:19:06:44:43	0	+0.000000	+0.000000
0217a	0	+146.515003	+12.841992	2013/08:19:06:44:43	165412	+146.380846	+13.479118
0217b	0	+150.622013	+11.394013	2013/08:23:19:32:14	48805	+150.498720	+12.058543
0218	0	+154.888997	+9.809978	2013/08:28:09:12:52	585454	+158.918828	+8.884308
0218a	0	+154.888997	+9.809978	2013/08:28:09:12:52	149844	+154.926782	+10.450857
0218b	0	+159.035008	+8.196996	2013/09:02:00:50:04	213115	+158.921139	+8.885995
0219	0	+163.316011	+6.473983	2013/09:06:16:26:37	751091	+167.206449	+5.465188
0219a	0	+163.316011	+6.473983	2013/09:06:16:26:37	218746	+163.214898	+7.154364
0219b	0	+167.345022	+4.800985	2013/09:11:05:59:43	79788	+167.211575	+5.477732
0220	0	+171.528986	+3.030985	2013/09:15:20:09:20	719734	+175.667569	+1.781084
0220a	0	+171.528986	+3.030985	2013/09:15:20:09:20	323576	+171.639282	+3.687418
0220b	0	+175.576007	+1.288978	2013/09:20:10:29:16	222663	+175.673137	+1.785646
0221	0	+179.810972	-0.542026	2013/09:25:02:27:03	0	+0.000000	+0.000000
0221a	0	+179.810972	-0.542026	2013/09:25:02:27:03	165068	+179.720466	+0.165194
0221b	0	+183.988008	-2.353971	2013/09:29:19:29:50	150697	+184.242519	-1.779656
0222	0	+188.329973	-4.214983	2013/10:04:13:32:25	758231	+192.622326	-5.544810
0222a	0	+188.329973	-4.214983	2013/10:04:13:32:25	197535	+188.416752	-3.697323
0222b	0	+192.476001	-5.975030	2013/10:09:04:04:09	180838	+192.629510	-5.541069
0223	0	+196.784987	-7.753015	2013/10:13:19:50:57	0	+0.000000	+0.000000
0223a	0	+196.784987	-7.753015	2013/10:13:19:50:57	364327	+196.811723	-7.217112
0223b	0	+201.028979	-9.461975	2013/10:18:10:25:23	55908	+200.799689	-8.696571
0224	0	+205.438016	-11.159977	2013/10:23:02:50:48	0	+0.000000	+0.000000
0224a	0	+205.438016	-11.159977	2013/10:23:02:50:48	301262	+205.299572	-10.372557
0224b	0	+209.908011	-12.811015	2013/10:27:19:43:33	102335	+209.946156	-12.128718
0225	0	+214.518991	-14.406985	2013/11:01:14:15:03	0	+0.000000	+0.000000
0225a	0	+214.518991	-14.406985	2013/11:01:14:15:03	314326	+214.371745	-13.772692
0225b	0	+219.045983	-15.879023	2013/11:06:04:25:20	30800	+219.186310	-15.319796
0226	0	+223.645977	-17.253984	2013/11:10:19:24:00	217971	+223.450790	-16.746038
0226a	0	+223.645977	-17.253984	2013/11:10:19:24:00	378892	+223.484033	-16.625689
0226b	0	+228.313004	-18.535004	2013/11:15:09:05:03	122823	+228.390769	-17.948107
0227	0	+233.024983	-19.690982	2013/11:19:23:34:56	636346	+232.723687	-19.159835
0227a	0	+233.024983	-19.690982	2013/11:19:23:34:56	238066	+232.808277	-19.025429
0227b	0	+237.947981	-20.764026	2013/11:24:15:19:32	133992	+237.668019	-20.098206
0228	0	+242.880975	-21.681025	2013/11:29:07:44:27	0	+0.000000	+0.000000
0228a	0	+242.880975	-21.681025	2013/11:29:07:44:27	270839	+242.612345	-21.032683
0228b	0	+247.856015	-22.458992	2013/12:03:21:01:54	140818	+247.493944	-21.766977
0229	0	+252.729030	-23.064984	2013/12:08:09:28:32	295340	+252.390153	-22.416771
0229a	0	+252.729030	-23.064984	2013/12:08:09:28:32	181289	+252.382216	-22.409974
0229b	0	+260.389400	-23.177400	2013/12:13:07:41:13	289436	+259.365078	-22.389441
0230	0	+264.967700	-23.352600	2013/12:17:09:10:33	0	+0.000000	+0.000000
0230a	0	+264.967700	-23.352600	2013/12:17:09:10:33	338986	+264.249273	-22.631719
0230b	0	+267.823005	-23.998020	2013/12:21:23:03:06	276270	+267.479578	-23.341243
0231	0	+272.828023	-23.984980	2013/12:26:12:21:50	0	+0.000000	+0.000000
0231a	0	+272.828023	-23.984980	2013/12:26:12:21:50	191819	+272.377274	-23.366804
0231b	0	+279.865995	-23.713029	2013/12:31:00:05:47	312276	+279.507174	-23.127723
0232	0	+286.938990	-28.075981	2014/01:04:10:26:37	0	+0.000000	+0.000000
0232a	0	+286.938990	-28.075981	2014/01:04:10:26:37	371484	+287.072435	-27.290176

0232b	0	+291.764985	-27.524006	2014/01:08:21:07:23	56870	+291.228184	-27.027332
0233	0	+297.389004	-26.661985	2014/01:13:06:55:55	424803	+301.095961	-25.415157
0233a	0	+297.389004	-26.661985	2014/01:13:06:55:55	370712	+296.866337	-26.160519
0233b	0	+301.739997	-25.896016	2014/01:17:19:13:31	108692	+301.096773	-25.412603
0234	0	+307.278982	-24.715005	2014/01:22:06:51:11	0	+0.000000	+0.000000
0234a	0	+307.278982	-24.715005	2014/01:22:06:51:11	154417	+307.240791	-24.217606
0234b	0	+309.277300	-18.585800	2014/01:27:03:12:40	38000	+308.432349	-18.763185
0235	0	+316.267000	-22.442980	2014/01:31:02:51:03	413964	+316.318524	-21.732838
0235a	0	+316.267000	-22.442980	2014/01:31:02:51:03	179704	+316.290042	-21.793046
0235b	0	+318.323600	-16.115400	2014/02:04:23:01:41	281442	+317.412984	-16.597744
0236	0	+325.360000	-19.681982	2014/02:08:22:56:53	422969	+325.219053	-18.868613
0236a	0	+325.360000	-19.681982	2014/02:08:22:56:53	180629	+325.306813	-18.974171
0236b	0	+327.191300	-13.255000	2014/02:13:20:59:22	195795	+326.217651	-13.625421