

SatTrackCam Report No. 2

A Prolific, Dynamic Year (November 2006 - February 2008)

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1.1 Introduction

The period of November 2006 - February 2008 has been very prolific for station Cospar 4353. A large number of observations were conducted, and new equipment was taken into use during the last two months of this period.

February 2008 became a very hectic month, when the Dutch press turned to the station operator for backgrounds on the imminent decay of, and later successful ASAT test on, the out of control US spy satellite *USA 193*. As a result, the station operator provided expert opinion in a number of national radio and TV broadcasts, and newspaper articles. His website (<http://sattrackcam.blogspot.com>) experienced a surge in traffic as a result of this.

* 29 Jan 2008: radio interview with Dutch national Radio channel 5, TELEAC science program "*Hoe? Zo!*";
* 18 & 21 Feb 2008: item in *NRC* newspaper;
* 20 Feb 2008: appearance in 22:00 and 24:00 *TV News* by Dutch national broadcaster NOS;
* 21 Feb 2008: appearance in news backgrounds TV program *NOVA*, Dutch national TV channel 2.

1.2 New secondary outpost station 4354

In August 2007, a new secondary outpost station 4354 was established in the polder some 7 km from Cospar 4353. It is located in the open polder to the southeast of Leiden town, at the edge of a polder bird reserve called "De Wilck" in the municipality of Rijnwoude. The location has a full 360 degree view to the horizon, and a clearly darker sky than the urban location 4353 (in the zenith, a naked eye limiting magnitude of +6.5 can be reached on this location on a normal night). This new station 4354 is located at coordinates:

52.11685 N, 4.56016 E (WGS84) -2 m ASL (Cospar 4354)
Dutch RD Coordinates: 98354/459059 meter GPS determined

The site will be used occasionally for special purposes such as observing objects that stay low in the sky (e.g. the Shuttle on it's MECO orbit), and when satellite observations are combined with observations of meteor showers or bright comets. It can be reached from the station operator's house by bicycling for some 25 minutes.

1.3 New Equipment

Late December 2007, new equipment was introduced at the station. A *Meade ETX-70* telescope was obtained. This small 7cm/F5 refractor is part of a "cheap" line issued by Meade as a complement to their more expensive series of telescopes. The telescope costs about €200,-

Being a rich-field telescope (focal length 350 mm) and very compact, it has turned out to be an ideal instrument for the purpose of satellite observations. The telescope fits in a small backpack, and therefore is easily transported by bicycle to the secondary station 4354 if necessary. With a 26 mm Plössl eyepiece (magnification 13.5 times), it has a Field of View (FOV) of about 4 degrees. Even at this low magnification, the star limiting magnitude in the FOV from the urban station 4353 is usually better than mag +9.5.

Observations with the telescope are conducted visually. Position determinations are done with the aid of a stopwatch (128 lap times memory) started up on a DCF-77 clock time reference. The observations are both prepared and reduced with the help of Ted Molczan's very fine *Obsreduce* software.

With this setup, much fainter objects can be tracked than with the Canon Ixus camera previously used. Objects of mag. +7 are easily within reach now. As a result, the number of objects suitable to be tracked has expanded and now includes for example the NOSS objects.

As a result of ongoing problems with the earlier camera method (see section 2.1 of this report), focus has shifted almost completely to telescopic, visual observations as of January 2008. The visual observations obtained appear to be almost as accurate, and contain less erroneous results than the camera results.

1.4 Future developments expected

1.4.1 New Equipment

Telescopic observations with the Meade ETX-70 will probably provide the mainstay of the future observations from Cospar 4353 and 4354. Nevertheless, camera observations might come back in the picture again after he planned acquisition of a better (DSLR) camera somewhere in 2008. A new academic job in which the camera operator starts in March 2008 will mean a much better financial situation, allowing purchase of a DSLR. The eye is at the moment on a Canon D450.

1.4.2 Less observing time available

As the station operator, after a period of extended sick leave, will return into a regular job as a research scientist at one of the Dutch universities from March 2008 onwards, less time will probably be available for observing. Still, observations will be conducted (mostly in the evenings) whenever possible.

2.1 Problems experienced with the camera method

Some ongoing problems were experienced with the camera method. While most data were okay, every once in a while erratic results would surface. Some of the potential causes were already discussed in *SatTrackCam Report no. 1*, chapter/paragraph 1.2.2. basically, erroneous results are probably the result of these contributing factors:

2.1.1 Camera timing calibration

Early 2007 another detected change in timing calibration parameters underlined that (deliberate or indeliberate) changes in the camera settings change it's timing behaviour. In the early 2007 case, accessing it with other software than my usual one invoked such a change, probably because the software changed some internal setting of the camera.

2.1.2 Faint trails and camera noise

For faint trails, it turns out to be difficult to discern trail ends from interfering camera noise.

2.1.3 Noise reduction routine "eats" trail ends

I have the suspicion that the noise reduction routine employed by the camea (which can't be shut off) sometimes "eats" the trail ends.

2.2 Problem solving and future

Because of the experienced problems, I almost completely shifted my method of observation to telescopic visual observations, after obtaining a Meade ETX-70 late December 2007.

This does not mean the camera has been "mothballed" completely. It is still being used for bright objects, e.g. the Space Shuttle mission STS-122 in February 2008. Bright objects tend to suffer less from the problems outlined in paragraphs 2.1.2 and 2.1.3. The time calibration problem outlined in paragraph 2.1.1 is tackled by making regular calibration images on Iridium satellites, in order to spot any erratic shifts in the timing calibration as early as possible.

In the future, employing a new camera might solve the other problems experienced. For the near future, purchase of a Canon D450 DSLR camera is high on the agenda.

3 Data obtained

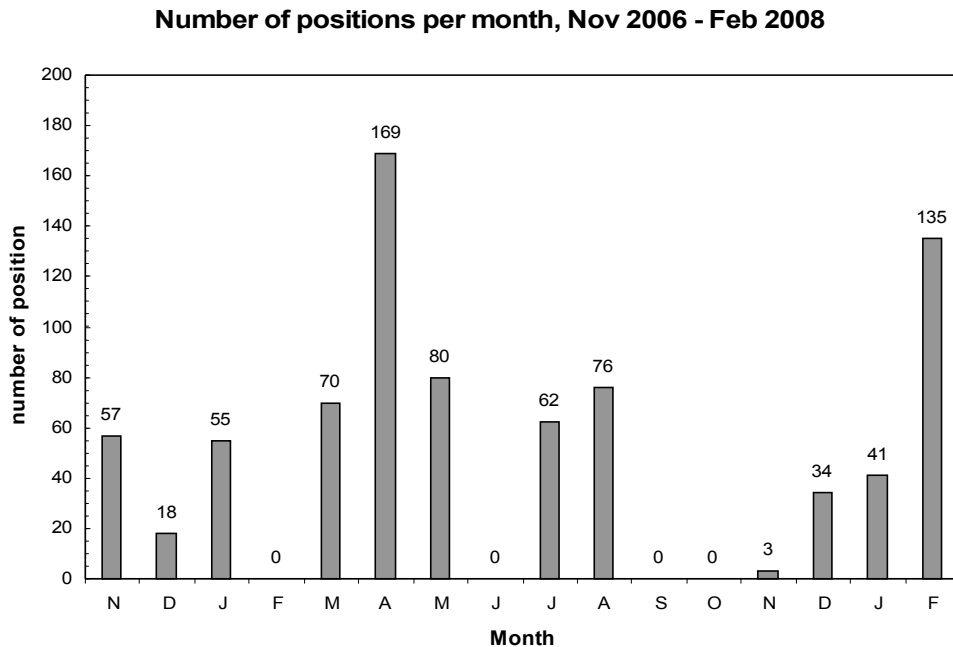


Fig 1: distribution of observations over the reported period of November 2006 - February 2008

3.1.1 Number of positions obtained

Over the period of November 2006 - February 2008, a total of 800 positions were recorded (see fig. 1). Of these, 640 were camera positions using the Canon Digital Ixus 400 camera; 160 were visual positions using the ETX-70 telescope. The latter were all obtained in January and February 2008.

April 2007 stands out, with 169 positions recorded (all camera). This was a month with extremely good weather conditions.

September and October 2007 on the other hand, were almost completely clouded out. In the early summer of 2007, observations halted for a moment due to the tragic death of someone very close to the station observer.

These 800 observations over a 16 month time span compare to 252 observations obtained during the preceding 15 months (see *SatTrackCam Report No. 1*). Clearly, this second period in *SatTrackCam Leiden's* existence has been a much more productive period, with the number of positions gathered over triple that of the previous period.

3.1.2 New objects tracked

This period also saw the addition of several "new" objects to the list of objects tracked by the station. This is mostly due to the fainter objects that can be observed with the ETX-70 telescope; plus the launch of new bright objects, the most important of which were new Japanese IGS objects, and the failed US satellite USA 193 that later became notorious when it was shot down in an American ASAT test on February 21st 2008.

Appendix I: Objects tracked

Table 1: Classified objects tracked by SatTrackCam Leiden (Cospar 4353/4354)

Name	Orig.	SCC nr	Cospar ID	Remarks / description
USA 116	USA	23728	1995-066A	Keyhole (KH-12) class optical reconnaissance sat
USA 129	USA	24680	1996-072A	Keyhole (KH-12) class optical reconnaissance sat
USA 161	USA	26934	2001-044A	Keyhole (KH-12) class optical reconnaissance sat
USA 186	USA	28888	2005-042A	Keyhole (KH-12) class optical reconnaissance sat
Lacrosse 2	USA	21147	1991-017A	Lacrosse (Onyx) class radar reconnaissance sat
Lacrosse 3	USA	25017	1997-064A	Lacrosse (Onyx) class radar reconnaissance sat
Lacrosse 4	USA	26473	2000-047A	Lacrosse (Onyx) class radar reconnaissance sat
Lacrosse 5	USA	28646	2005-016A	Lacrosse (Onyx) class radar reconnaissance sat
NOSS 6 (F)	USA	14795	1984-012F	Naval Ocean Surveillance System (NOSS) component
NOSS 2-2 (C)	USA	21799	1991-076C	Naval Ocean Surveillance System (NOSS) component
NOSS 2-2 (D)	USA	21808	1991-076D	Naval Ocean Surveillance System (NOSS) component
NOSS 2-3 (C)	USA	23908	1996-029C	Naval Ocean Surveillance System (NOSS) component
NOSS 2-3 (E)	USA	23936	1996-029E	Naval Ocean Surveillance System (NOSS) component
NOSS 3-1 (A)	USA	26905	2001-040A	Naval Ocean Surveillance System (NOSS) component
NOSS 3-1 (C)	USA	26907	2001-040C	Naval Ocean Surveillance System (NOSS) component
NOSS 3-2 (A)	USA	28095	2003-054A	Naval Ocean Surveillance System (NOSS) component
NOSS 3-2 (C)	USA	28097	2003-054C	Naval Ocean Surveillance System (NOSS) component
NOSS 3-3 (A)	USA	28537	2005-004A	Naval Ocean Surveillance System (NOSS) component
NOSS 3-3 (C)	USA	28541	2005-004C	Naval Ocean Surveillance System (NOSS) component
NOSS 3-4 (A)	USA	31701	2007-027A	Naval Ocean Surveillance System (NOSS) component
NOSS 3-4 (C)	USA	31708	2007-027C	Naval Ocean Surveillance System (NOSS) component
USA 32	USA	19460	1988-078A	Electronic Intelligence gathering sat
IGS 1A	Japan	27698	2003-009A	IGS class optical reconnaissance sat
IGS 1B	Japan	27699	2003-009B	IGS class radar reconnaissance sat
IGS 4A/R2	Japan	30586	2007-005A	IGS class radar reconnaissance sat
USA 193	USA	29651	2006-057A	Failed reconnaissance sat, shot down 21/02/08
Lacrosse 5 Rk	USA	28647	2005-016B	Rocket stage from Lacrosse 5 launch
IGS 4 r / R2r	Japan	30588	2007-005C	Rocket stage from IGS 4 launch
NOSS 3-4r	USA	31702	2007-027B	Centaur Rocket stage of NOSS 3-4 launch

Table 2: Non-classified objects tracked by SatTrackCam Leiden

Name	Orig.	SCC nr	Cospar ID	Remarks / description
Meteor 1-4 Rk	Russia	04394	1970-037B	Stray, used for accuracy test
Kosmos 624	Russia	06992	1973-104H	Stray, used for accuracy test
Kosmos 1602	Russia	15331	1984-105A	Stray, used for accuracy test
Kosmos 1689 Rk	Russia	16111	1985-090B	Stray, used for accuracy test
Kosmos 1833 Rk	Russia	17590	1987-027B	Stray, used for accuracy test
Kosmos 2082 Rk	Russia	20625	1990-064B	Stray, used for accuracy test
UARS	USA	21701	1991-063B	Stray, used for accuracy test
Kosmos 2292 Rk	Russia	23279	1994-061B	Stray, used for accuracy test
NOAA 14	USA	23455	1994-089A	Stray, used for accuracy test
RESURS 1-4 r	Russia	25400	1998-043G	Stray, used for accuracy test
ISS	INT	25544	1998-067A	test images for accuracy calibration
Okean-O rk	Russia	25861	1999-039B	Stray, used for accuracy test
METOP-A	Europe	29499	2006-044A	Stray, used for accuracy test
Progress-M58	Russia	29503	2006-045A	test images for calibration
Progress-M62	Russia	32391	2007-064A	test images for calibration
Progress-M63	Russia	32484	2008-004A	test images for calibration
Space Shuttle STS-122	USA	32486	2008-005A	test images for calibration
var. Iridium sats	USA			Flare images, used for accuracy test

Appendix II: Camera obtained positional data

Table 3: Camera obtained positional data

28646	05	016A	4353	G	20061101183301100	17	75	1457055+617690	56	S+020	10
28646	05	016A	4353	G	20061101183311800	17	75	1452127+657430	56	S+020	10
28646	05	016A	4353	G	20061101183351100	17	75	1342598+813530	56	S+015	10
28646	05	016A	4353	G	20061101183401800	17	75	1156307+851270	56	S+015	10
28646	05	016A	4353	F	20061102173836100	17	75	1439103+668020	56	S+025	10
28646	05	016A	4353	F	20061102173846800	17	75	1433190+715090	56	S+025	10
28646	05	016A	4353	F	20061102173921100	17	75	1228012+860780	56	S+020	10
28646	05	016A	4353	F	20061102173931800	17	75	0639036+868730	56	+035	10
28646	05	016A	4353	F	20061113175501100	17	75	1800470+252310	56	S+015	10
28646	05	016A	4353	F	20061113175511800	17	75	1818125+243590	56	S+015	10
28646	05	016A	4353	F	20061113175601100	17	75	1943254+176790	56	+015	10
26473	00	047A	4353	P	20061119184151100	17	75	1815456+350000	56	S+025	10
26473	00	047A	4353	P	20061119184201800	17	75	1834187+335690	56	S+025	10
25017	97	064A	4353	F	20061124041701100	17	75	1421550+638270	56	S+035	10
25017	97	064A	4353	F	20061124041711800	17	75	1421031+590420	56	S+035	10
28647	05	016B	4353	F	20061124045701100	17	75	0714346+377020	56	S+010	10
28647	05	016B	4353	F	20061124045711800	17	75	0742046+361800	56	S+010	10
28647	05	016B	4353	F	20061124045801100	17	75	0933432+244920	56	S+030	10
25544	98	067A	4353	F	20061124053626100	17	75	0739055+028520	56	S-030	10
25544	98	067A	4353	F	20061124053636800	17	75	0800382+049940	56	S-030	10
25544	98	067A	4353	F	20061124053716100	17	75	0958115+144870	56	S-030	10
25544	98	067A	4353	F	20061124053726800	17	75	1041274+168430	56	S-030	10
21147	91	017A	4353	F	20061127041816100	17	75	1304091+558660	56	S+020	10
21147	91	017A	4353	F	20061127041826800	17	75	1257485+502170	56	S+020	10
25544	98	067A	4353	F	20061127050431100	17	75	1337082+280820	56	S-015	10
25544	98	067A	4353	F	20061127050441800	17	75	1400432+253990	56	S-015	10
25017	97	064A	4353	F	20061127054326100	17	75	0658454+185250	56	S+030	10
25017	97	064A	4353	F	20061127054336800	17	75	0716103+172050	56	S+030	10
25017	97	064A	4353	F	20061127054416100	17	75	0820571+109370	56	S+035	10
25017	97	064A	4353	F	20061127054426800	17	75	0838406+089460	56	S+035	10
25017	97	064A	4353	F	20061128043236100	17	75	1000146+349100	56	S+025	10
25017	97	064A	4353	F	20061128043246800	17	75	1022389+310550	56	S+025	10
25017	97	064A	4353	F	20061128043321100	17	75	1114461+196960	56	S+030	10
25017	97	064A	4353	F	20061128043331800	17	75	1127029+165190	56	S+035	10
21147	91	017A	4353	F	20061128044326100	17	75	0859451+385200	56	S+020	10
21147	91	017A	4353	F	20061128044336800	17	75	0919518+333780	56	S+020	10
21147	91	017A	4353	F	20061128044406100	17	75	1000214+199890	56	S+020	10
21147	91	017A	4353	F	20061128044416800	17	75	1011240+156210	56	S+020	10
25544	98	067A	4353	F	20061128052351100	17	75	0913509+443400	56	S-010	10
25544	98	067A	4353	F	20061128052401800	17	75	1027118+450050	56	S-020	10
25544	98	067A	4353	F	20061128052446100	17	75	1349178+293820	56	S+000	10
25544	98	067A	4353	F	20061128052456800	17	75	1411449+255530	56	S+000	10
25017	97	064A	4353	F	20061129050111100	17	75	0743154+142120	56	S+025	10
25017	97	064A	4353	F	20061129050121800	17	75	0802144+121410	56	S+025	10
25017	97	064A	4353	F	20061129050156100	17	75	0858110+051990	56	S+025	10
25017	97	064A	4353	F	20061129050206800	17	75	0914132+030390	56	S+025	10
21147	91	017A	4353	F	20061129050836100	17	75	0723067+097260	56	S+030	10
21147	91	017A	4353	F	20061129050846800	17	75	0736588+069510	56	S+030	10
04394	70	037B	4353	F	20061129050836100	17	75	0919050+089140	56	S+025	10
04394	70	037B	4353	F	20061129050846800	17	75	0920521+143770	56	S+025	10
21701	91	063B	4353	F	20061129054211100	17	75	0817026+416920	56	S+005	10
21701	91	063B	4353	F	20061129054221800	17	75	0850041+488850	56	S+005	10
25544	98	067A	4353	F	20061129054341100	17	75	0733002+312330	56	S-030	10
25544	98	067A	4353	F	20061129054351800	17	75	0817377+335380	56	S-030	10
25544	98	067A	4353	F	20061129054431100	17	75	1142293+302110	56	S-020	10
25544	98	067A	4353	F	20061129054441800	17	75	1227511+262620	56	S-020	10
25544	98	067A	4353	F	20061129054516100	17	75	1356245+147760	56	S+000	10
28646	05	016A	4353	G	20061210051926100	17	75	0548326+586880	56	S+010	10
28646	05	016A	4353	G	20061210051936800	17	75	0552113+633890	56	S+010	10
28646	05	016A	4353	G	20061210052016100	17	75	0636086+816890	56	S+010	10
28646	05	016A	4353	G	20061210052026800	17	75	0804314+865100	56	S+010	10
28646	05	016A	4353	G	20061210052106100	17	75	1710403+747420	56	S+015	10
28646	05	016A	4353	G	20061210052116800	17	75	1718398+703600	56	S+015	10
21147	91	017A	4353	P	20061210172236100	17	75	2351206+292250	56	S+035	10
21147	91	017A	4353	P	20061210172246800	17	75	0012293+337470	56	S+035	10
21147	91	017A	4353	P	20061210172321100	17	75	0137300+460870	56	S+030	10
21147	91	017A	4353	P	20061210172331800	17	75	0208581+487440	56	S+030	10
28647	05	016B	4353	P	20061210174241100	17	75	0021470+147530	56	S+025	10

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28647	05	016B	4353	P	20061210174251800	17	75	0044475+174480	56	S+025	10
28647	05	016B	4353	P	20061210174331100	17	75	0211262+249510	56	S+020	10
28647	05	016B	4353	P	20061210174341800	17	75	0234422+262550	56	+030	10
25017	97	064A	4353	P	20061218164526100	17	75	2345142+327270	36	S+030	10
25017	97	064A	4353	P	20061218164536800	17	75	0013418+352700	36	S+030	10
28647	05	016B	4353	P	20061218170241100	17	75	1702425+804570	36	S+020	10
28647	05	016B	4353	P	20061218170251800	17	75	1551036+860450	36	S+020	10
25017	97	064A	4353	F	20070101164941100	17	75	2258300+703220	56	S+030	10
25017	97	064A	4353	F	20070101164951800	17	75	0007394+681920	56	S+030	10
25017	97	064A	4353	F	20070101165036800	17	75	0237444+489220	56	S+030	10
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25544	98	067A	4353	F	20070101170346800	17	75	2316130+018890	56	S-010	10
28646	05	016A	4353	F	20070114170706800	17	75	2317122+498950	56	+035	10
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28646	05	016A	4353	P	20070115175556800	17	75	2059108+811920	56	S+025	10
28646	05	016A	4353	G	20070120183021100	17	75	2018060+548920	56	S+015	10
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28646	05	016A	4353	G	20070120183131800	17	75	2210389+801100	56	+035	10
26473	00	047A	4353	G	20070120185301100	17	75	0313396+060240	56	M+005	10
26473	00	047A	4353	G	20070120185311800	17	75	0324163+092010	56	E+035	10
28646	05	016A	4353	G	20070121191836100	17	75	2218343+441210	56	S+025	10
28646	05	016A	4353	G	20070121191846800	17	75	2233470+457080	56	S+025	10
26473	00	047A	4353	G	20070121192931100	17	75	0023204+221750	56	+030	10
26473	00	047A	4353	G	20070121192941800	17	75	0022538+259920	56	M+000	10
28646	05	016A	4353	G	20070122182521100	17	75	0058355+725250	56	+025	10
26473	00	047A	4353	G	20070122182616100	17	75	0349247+230840	56	S+030	10
26473	00	047A	4353	G	20070122182626800	17	75	0406554+271540	56	S+030	10
26473	00	047A	4353	G	20070122182726100	17	75	0617564+453070	56	S+030	10
26473	00	047A	4353	G	20070122182736800	17	75	0645430+470600	56	S+030	10
28646	05	016A	4353	G	20070123172946100	17	75	1938382+642260	56	S+020	10
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28646	05	016A	4353	G	20070123173036100	17	75	2200588+836610	56	S+020	10
25431	98	048A	4353	G	20070123182247100	17	75	0923401+697720	56	-060	10
25431	98	048A	4353	G	20070123182257800	17	75	1004485+697980	56	+025	10
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26473	00	047A	4353	G	20070123190321800	17	75	2342590+603970	56	S+030	10
26473	00	047A	4353	G	20070123190401100	17	75	2238235+798280	56	S+030	10
26473	00	047A	4353	G	20070123190411800	17	75	2116408+839880	56	S+030	10
26473	00	047A	4353	F	20070124175841100	17	75	0324202+233600	56	S+020	10
26473	00	047A	4353	F	20070124175851800	17	75	0341593+275270	56	S+020	10
26473	00	047A	4353	F	20070124175936100	17	75	0515506+425690	56	S+025	10
26473	00	047A	4353	F	20070124175946800	17	75	0543226+451680	56	S+025	10
25432	98	048B	4353	F	20070124181637100	17	75	0858307+695130	56		
25432	98	048B	4353	F	20070124181647800	17	75	0940079+698780	56		
25017	97	064A	4353	G	20070125044921100	17	75	1359156+393550	56	S+020	10
25017	97	064A	4353	G	20070125044931800	17	75	1431334+420180	56	S+020	10
25017	97	064A	4353	G	20070125045016100	17	75	1646576+456850	56	S+020	10
25017	97	064A	4353	G	20070125045026800	17	75	1715139+451220	56	S+020	10
06992	73	104H	4353	G	20070125044921100	17	75	1210098+562340	56		
06992	73	104H	4353	G	20070125044931800	17	75	1221276+538690	56		
28646	05	016A	4353	P	20070125172231100	17	75	1936578+471240	56	I+010	10
28646	05	016A	4353	P	20070125172241800	17	75	1943386+495770	56	I+010	10
28646	05	016A	4353	P	20070125172321100	17	75	2022518+600100	56	I+015	10
26473	00	047A	4353	P	20070125183541100	17	75	2320338+567040	56	S+025	10
26473	00	047A	4353	P	20070125183551800	17	75	2313026+624140	56	S+025	10
26473	00	047A	4353	P	20070125183631100	17	75	2142298+809860	56	S+030	10
26473	00	047A	4353	P	20070125183641800	17	75	1942242+844520	56	S+030	10
25017	97	064A	4353	G	20070308192011100	17	75	0721463+740990	56	S+025	10
25017	97	064A	4353	G	20070308192021800	17	75	0827214+701870	56	S+025	10
25017	97	064A	4353	G	20070308192101100	17	75	1008168+514440	56	S+025	10
21147	91	017A	4353	G	20070308201251100	17	75	0648314+391740	56	S+025	10
21147	91	017A	4353	G	20070308201301800	17	75	0705214+449630	56	S+025	10
25017	97	064A	4353	G	20070309194931100	17	75	0617276+430780	56	S+020	10
25017	97	064A	4353	G	20070309194941800	17	75	0650002+403280	56	S+020	10
24680	96	072A	4353	G	20070309195731800	17	75	1042122+473480	56	S+030	10
24680	96	072A	4353	G	20070309195811100	17	75	1127406+623610	56	S+035	10
24680	96	072A	4353	G	20070309195821800	17	75	1147331+659060	56	S+035	10
21147	91	017A	4353	G	20070309203821100	17	75	0253420+590150	56	S+025	10

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21147	91	017A	4353	G	20070309203831800	17	75	0234214+637300	56	S+025	10
21147	91	017A	4353	G	20070309203901100	17	75	0050007+745310	56	S+025	10
24680	96	072A	4353	F	20070310202126100	17	75	0820490+573730	56	+000	10
24680	96	072A	4353	F	20070310202136800	17	75	0813283+622620	56	+020	10
25017	97	064A	4353	G	20070311190631100	17	75	0602444+457640	56	S+020	10
25017	97	064A	4353	G	20070311190641800	17	75	0636077+427580	56	S+020	10
25017	97	064A	4353	G	20070311190726100	17	75	0813562+271620	56	S+020	10
25017	97	064A	4353	G	20070311190736800	17	75	0829401+235110	56	S+020	10
21147	91	017A	4353	G	20070311194821100	17	75	0445538+618000	56	S+020	10
21147	91	017A	4353	G	20070311194831800	17	75	0453125+680760	56	S+020	10
21147	91	017A	4353	G	20070311194911100	17	75	1005425+872620	56	S+025	10
21147	91	017A	4353	G	20070311194921800	17	75	1428310+845430	56	S+025	10
24680	96	072A	4353	G	20070311204421100	17	75	0652521+302160	56	S+035	10
24680	96	072A	4353	G	20070311204431800	17	75	0642466+341680	56	S+035	10
24680	96	072A	4353	G	20070311204521100	17	75	0535528+517010	56	S+035	10
24680	96	072A	4353	G	20070311204531800	17	75	0515557+548450	56	S+035	10
24680	96	072A	4353	G	20070311204626100	17	75	0301130+645810	56	S+035	10
24680	96	072A	4353	G	20070311204636800	17	75	0231029+652000	56	S+035	10
16111	85	090B	4353	G	20070311190726100	17	75	0621211+142250	56	S+030	10
16111	85	090B	4353	G	20070311190736800	17	75	0611247+204770	56	S+030	10
25017	97	064A	4353	F	20070314185216100	17	75	0407067+206650	56	S	
25017	97	064A	4353	F	20070314185226800	17	75	0427559+188010	56	S	
21147	91	017A	4353	F	20070314192316100	17	75	0222091+562560	56	S	
21147	91	017A	4353	F	20070314192326800	17	75	0207142+613780	56	S	
21147	91	017A	4353	F	20070314192406100	17	75	2348046+769250	56	S	
21147	91	017A	4353	F	20070314192416800	17	75	2224271+787460	56	S	
28646	05	016A	4353	G	20070322202026100	17	75	0545170+586200	56	S+010	10
28646	05	016A	4353	G	20070322202036800	17	75	0610120+633700	56	S+010	10
28646	05	016A	4353	G	20070322202121100	17	75	1021163+751730	56	S+020	10
28646	05	016A	4353	G	20070322202131800	17	75	1140228+739100	56	S+020	10
24680	96	072A	4353	F	20070325194941100	17	75	1342043+674700	56	S+030	10
24680	96	072A	4353	F	20070325194951800	17	75	1410451+696560	56	S+030	10
28646	05	016A	4353	F	20070325210131100	17	75	0307336+504770	56	S+020	10
28646	05	016A	4353	F	20070325210141800	17	75	0306086+537500	56	S+020	10
28646	05	016A	4353	F	20070325210216100	17	75	0255403+656850	56	S+015	10
28646	05	016A	4353	F	20070325210226800	17	75	0248456+698200	56	S+015	10
28646	05	016A	4353	F	20070325210311100	17	75	2219192+861230	56	S+020	10
28646	05	016A	4353	F	20070325210321800	17	75	1827480+844940	56	S+020	10
24680	96	072A	4353	P	20070326201201100	17	75	1016350+530470	56	S+035	10
24680	96	072A	4353	P	20070326201211800	17	75	1017067+573520	56	S+035	10
28888	05	042A	4353	P	20070326202311100	17	75	1121178+510550	56	+035	10
28888	05	042A	4353	P	20070326202321800	17	75	1127089+559860	56	+035	10
23455	94	089A	4353	P	20070326202416800	17	75	1317058+738660	56	-010	10
23455	94	089A	4353	P	20070326202446100	17	75	1605269+804980	56	+010	10
28646	05	016A	4353	P	20070326214956800	17	75	0348180+534730	56	+030	10
28646	05	016A	4353	P	20070326215031100	17	75	0400384+642460	56	+015	10
28646	05	016A	4353	P	20070326215041800	17	75	0407199+681390	56	+015	10
24680	96	072A	4353	P	20070327203526100	17	75	0806190+473460	56	+025	10
24680	96	072A	4353	P	20070327203536800	17	75	0754134+511890	56	+025	10
24680	96	072A	4353	P	20070327203646100	17	75	0520406+703490	56	+030	10
24680	96	072A	4353	P	20070327203656800	17	75	0442533+716530	56	+030	10
28646	05	016A	4353	P	20070327205506100	17	75	0253422+508290	56	S+025	10
28646	05	016A	4353	P	20070327205516800	17	75	0253029+539380	56	S+025	10
28646	05	016A	4353	P	20070327205556100	17	75	0246190+670650	56	S+015	10
28646	05	016A	4353	P	20070327205606800	17	75	0241415+712100	56	S+015	10
28646	05	016A	4353	P	20070327205641100	17	75	0113305+851650	56	S+020	10
28646	05	016A	4353	P	20070327205651800	17	75	2010029+875010	56	S+020	10
28646	05	016A	4353	P	20070327205731100	17	75	1544497+717050	56	S+025	10
28646	05	016A	4353	P	20070327205741800	17	75	1539350+671380	56	S+025	10
28646	05	016A	4353	F	20070401194811100	17	75	0209281+602570	56	S+025	10
28646	05	016A	4353	F	20070401194821800	17	75	0211305+638590	56	S+025	10
28646	05	016A	4353	F	20070401194911100	17	75	0253269+838420	56	S+020	10
28646	05	016A	4353	F	20070401194921800	17	75	0522408+882660	56	S+020	10
28646	05	016A	4353	F	20070401213126100	17	75	0622552+416770	56	S+010	10
28646	05	016A	4353	F	20070401213136800	17	75	0645084+421430	56	S+010	10
28646	05	016A	4353	F	20070401213211100	17	75	0808482+413340	56	S+020	10
28888	05	042A	4353	F	20070401210121100	17	75	0734223+478030	56	+020	10
21147	91	017A	4353	F	20070401215801100	17	75	0311480+705110	56	S+020	10
21147	91	017A	4353	F	20070401215811800	17	75	0335353+737840	56	S+020	10
24680	96	072A	4353	G	20070403200546100	17	75	1123005+484150	56	S+035	10
24680	96	072A	4353	G	20070403200556800	17	75	1127204+528250	56	S+035	10
29651	06	057A	4353	G	20070403202241100	17	75	0632463+227250	56	S+010	10
29651	06	057A	4353	G	20070403202251800	17	75	0712082+196280	56	S+010	10
21147	91	017A	4353	G	20070403210911100	17	75	1526113+700650	56	S+025	10

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21147	91	017A	4353	G	20070403210921800	17	75	1502425+648480	56	S+030	10
28646	05	016A	4353	G	20070403194156100	17	75	0245480+610560	56	S+025	10
28646	05	016A	4353	G	20070403194206800	17	75	0258379+646320	56	S+025	10
28646	05	016A	4353	G	20070403194251100	17	75	0553286+792680	56	+030	10
28646	05	016A	4353	G	20070403194301800	17	75	0752192+802790	56	+030	10
28646	05	016A	4353	G	20070403194341100	17	75	1203554+670880	56	S+020	10
28646	05	016A	4353	G	20070403194351800	17	75	1224058+621950	56	S+020	10
28646	05	016A	4353	G	20070403212516100	17	75	0704043+256000	56	S+015	10
28646	05	016A	4353	G	20070403212526800	17	75	0722161+246000	56	S+015	10
28646	05	016A	4353	G	20070403212601100	17	75	0823130+198600	56	+015	10
28646	05	016A	4353	G	20070404203231100	17	75	1039559+250200	56	S+015	10
28646	05	016A	4353	G	20070404203241800	17	75	1056060+218250	56	S+015	10
28646	05	016A	4353	G	20070404203316100	17	75	1136144+127320	56	S+020	10
28646	05	016A	4353	G	20070404203326800	17	75	1146022+102730	56	S+020	10
21147	91	017A	4353	G	20070404213341100	17	75	0655274+627870	56	S+020	10
21147	91	017A	4353	G	20070404213351800	17	75	0741598+615680	56	S+020	10
29651	06	057A	4353	G	20070405193731100	17	75	0659545+215880	56	S+015	10
29651	06	057A	4353	G	20070405193741800	17	75	0741329+171950	56	S+015	10
28888	05	042A	4353	G	20070405205346100	17	75	0857086+426710	56	+025	10
28888	05	042A	4353	G	20070405205356800	17	75	0845362+466810	56	+030	10
28646	05	016A	4353	G	20070407192951100	17	75	0554403+483460	56	S+025	10
28646	05	016A	4353	G	20070407193001800	17	75	0626204+481090	56	S+025	10
24680	96	072A	4353	G	20070407200121100	17	75	1142250+281970	56	S+020	10
24680	96	072A	4353	G	20070407200131800	17	75	1145254+321180	56	S+020	10
24680	96	072A	4353	G	20070407200211100	17	75	1202329+477720	56	S+030	10
24680	96	072A	4353	G	20070407200221800	17	75	1209396+522660	56	S+030	10
21147	91	017A	4353	G	20070407210801100	17	75	0503372+469860	56	S+025	10
21147	91	017A	4353	G	20070407210811800	17	75	0526430+467400	56	S+025	10
27699	03	009B	4353	F	20070407213156100	17	75	0321278+798360	56		
21147	91	017A	4353	F	20070408195411100	17	75	1435226+661100	56	S+030	10
21147	91	017A	4353	F	20070408195421800	17	75	1415293+611010	56	S+025	10
28888	05	042A	4353	F	20070408202251100	17	75	1137065+198580	56	+025	10
28888	05	042A	4353	F	20070408202301800	17	75	1137377+231340	56	+030	10
24680	96	072A	4353	F	20070408202501100	17	75	1000367+378690	56	+025	10
24680	96	072A	4353	F	20070408202511800	17	75	0954451+425750	56	+030	10
24680	96	072A	4353	F	20070411195701100	17	75	1208122+183980	56	+010	10
24680	96	072A	4353	F	20070411195711800	17	75	1211283+218330	56	+020	10
24680	96	072A	4353	F	20070411195801100	17	75	1234413+402430	56	+035	10
28647	05	016B	4353	F	20070412020156100	17	75	1445029+515520	56	S+020	10
28647	05	016B	4353	F	20070412020206800	17	75	1522259+554780	56	S+020	10
21147	91	017A	4353	F	20070412195421100	17	75	0741307+340660	56	+025	10
21147	91	017A	4353	F	20070412195431800	17	75	0803401+300510	56	+025	10
21147	91	017A	4353	F	20070412195511100	17	75	0907202+148370	56	+025	10
25544	98	067A	4353	F	20070412200756100	17	75	0923161+028890	56	S-030	10
25544	98	067A	4353	F	20070412200806800	17	75	0959166+052050	56	S-030	10
28888	05	042A	4353	F	20070412201456100	17	75	1210034+129610	56	+025	10
24680	96	072A	4353	F	20070412201946100	17	75	1054386+093360	56	+025	10
24680	96	072A	4353	F	20070412201956800	17	75	1053048+125560	56	+025	10
24680	96	072A	4353	F	20070412202031100	17	75	1046307+247920	56	+025	10
24680	96	072A	4353	F	20070412202041800	17	75	1043554+292830	56	+025	10
24680	96	072A	4353	F	20070412202123100	17	75	1027444+491660	56	+025	10
24680	96	072A	4353	F	20070412202133800	17	75	1020576+546440	56	+025	10
25777	99	032A	4353	G	20070414195822100	17	75	1316274+489370	56		
25777	99	032A	4353	G	20070414195832800	17	75	1300019+441910	56		
25544	98	067A	4353	G	20070414204756100	17	75	0725298+322220	56	S-035	10
25544	98	067A	4353	G	20070414204806800	17	75	0806446+370840	56	S-035	10
25544	98	067A	4353	G	20070415193341100	17	75	0928142+274350	56	S-030	10
25544	98	067A	4353	G	20070415193351800	17	75	1025442+290520	56	S-030	10
25544	98	067A	4353	G	20070415210721100	17	75	0616067+211990	56	S-020	10
25544	98	067A	4353	G	20070415210731800	17	75	0632142+235590	56	S-020	10
28888	05	042A	4353	G	20070415194551100	17	75	1337437+236580	56	+035	10
28888	05	042A	4353	G	20070415194601800	17	75	1342211+261470	56	+035	10
24680	96	072A	4353	G	20070415195206100	17	75	1229334+059280	56	+010	10
24680	96	072A	4353	G	20070415195216800	17	75	1232264+085830	56	+010	10
24680	96	072A	4353	G	20070415195251100	17	75	1244101+182970	56	+030	10
24680	96	072A	4353	G	20070415195341100	17	75	1314185+366750	56	+035	10
24680	96	072A	4353	G	20070415195351800	17	75	1324170+411510	56	+035	10
26473	00	047A	4353	G	20070415230856100	17	75	1120454+777130	56	S+020	10
26473	00	047A	4353	G	20070415230906800	17	75	1216144+827010	56	S+020	10
26473	00	047A	4353	G	20070415230941100	17	75	2037564+802210	56	S+025	10
26473	00	047A	4353	G	20070415230951800	17	75	2105274+764860	56	S+020	10
25777	99	032A	4353	P	20070416195030100	17	75	1252142+497340	56		
25777	99	032A	4353	P	20070416195040800	17	75	1236557+446650	56		
25544	98	067A	4353	P	20070416195351100	17	75	1019214+438250	56	S-035	10
25544	98	067A	4353	P	20070416195401800	17	75	1130482+418390	56	S-035	10

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25287	98	021C	4353	G	20070417194317100	17	75	1231070+452300	56	
25544	98	067A	4353	G	20070417201341100	17	75	0919350+399740	56	S-030 10
25544	98	067A	4353	G	20070417201351800	17	75	1030050+392310	56	S-030 10
25544	98	067A	4353	G	20070417201426100	17	75	1310127+262410	56	S-030 10
28888	05	042A	4353	G	20070417203026100	17	75	1147250+282960	56	+020 10
28888	05	042A	4353	G	20070418205301100	17	75	1013146+329490	56	-015 10
28888	05	042A	4353	G	20070418205311800	17	75	1005324+367610	56	-010 10
27699	03	009B	4353	G	20070418215316100	17	75	0746151+429210	56	I+025 10
27699	03	009B	4353	G	20070418215326800	17	75	0714022+466770	56	I+035 10
26473	00	047A	4353	G	20070418213730100	17	75	1544031+398390	56	+025 10
26473	00	047A	4353	G	20070418213740800	17	75	1606396+412800	56	+020 10
24680	96	072A	4353	G	20070418210331100	17	75	0643274+339540	56	+010 10
24680	96	072A	4353	G	20070418210341800	17	75	0624598+365700	56	+025 10
25400	98	043G	4353	G	20070418205046100	17	75	1155326+343100	56	S+020 10
25400	98	043G	4353	G	20070418205056800	17	75	1152562+395130	56	S+020 10
25544	98	067A	4353	G	20070418203236100	17	75	0613322+178290	56	S-005 10
25544	98	067A	4353	G	20070418203246800	17	75	0634372+188520	56	S-005 10
25544	98	067A	4353	G	20070418203336100	17	75	0920274+203130	56	S-025 10
25544	98	067A	4353	G	20070418203346800	17	75	1009206+186140	56	S-025 10
25017	97	064A	4353	G	20070419023221100	17	75	1405290+594910	56	S+020 10
25017	97	064A	4353	G	20070419023311100	17	75	1852036+737010	56	S+020 10
25017	97	064A	4353	G	20070419023321800	17	75	2005554+718050	56	S+020 10
20642	90	050E	4353	G	20070419211521100	17	75	0807118+342340	56	+035 10
20642	90	050E	4353	G	20070419211531800	17	75	0818578+331110	56	+035 10
20691	90	050C	4353	G	20070419211521100	17	75	0828158+333220	56	+035 10
20691	90	050C	4353	G	20070419211531800	17	75	0840094+320140	56	+035 10
28888	05	042A	4353	G	20070419211521100	17	75	0856070+279900	56	+035 10
28888	05	042A	4353	G	20070419211531800	17	75	0846019+308930	56	+035 10
27699	03	009B	4353	G	20070419212921100	17	75	1157365+536470	56	I+030 10
27699	03	009B	4353	G	20070419212931800	17	75	1142562+628730	56	I+025 10
25544	98	067A	4353	G	20070419205241100	17	75	0723209+055330	56	S+000 10
25544	98	067A	4353	G	20070419205251800	17	75	0746370+044170	56	S+000 10
29499	06	044A	4353	G	20070420201211100	17	75	1233485+538270	56	-010 10
29499	06	044A	4353	G	20070420201221800	17	75	1238382+591520	56	+020 10
24680	96	072A	4353	G	20070420201121100	17	75	1206144+198530	56	S+010 10
24680	96	072A	4353	G	20070420201131800	17	75	1207485+248210	56	S+010 10
24680	96	072A	4353	G	20070420201211100	17	75	1218168+469690	56	S+025 10
24680	96	072A	4353	G	20070420201221800	17	75	1223286+538330	56	S+025 10
27699	03	009B	4353	G	20070420210551100	17	75	1548024+461960	56	+025 10
27699	03	009B	4353	G	20070420210601800	17	75	1614324+519310	56	+025 10
25544	98	067A	4353	P	20070420193836100	17	75	0847036+235360	56	S-025 10
25544	98	067A	4353	P	20070420193846800	17	75	0939077+217380	56	S-025 10
28888	05	042A	4353	G	20070421202125750	17	75	1229048+098160	56	+000 10
28888	05	042A	4353	G	20070421202136450	17	75	1229367+124580	56	+015 10
24680	96	072A	4353	G	20070421203400750	17	75	1027146+090380	56	+015 10
24680	96	072A	4353	G	20070421203411450	17	75	1020190+130970	56	+015 10
24680	96	072A	4353	G	20070421203445750	17	75	0948350+294060	56	+015 10
24680	96	072A	4353	G	20070421203456450	17	75	0934120+352540	56	+020 10
25263	98	018B	4353	G	20070422023355750	17	75	1301389+392470	56	+005 10
25263	98	018B	4353	G	20070422023406450	17	75	1316019+356210	56	+010 10
25577	98	074A	4353	G	20070421210313750	17	75	1729566+529060	56	+025 10
25577	98	074A	4353	G	20070421210324450	17	75	1709511+509300	56	+025 10
25544	98	067A	4353	P	20070421195755750	17	75	0725398+054650	56	S+000 10
25544	98	067A	4353	P	20070421195806450	17	75	0755278+039740	56	S+000 10
26473	00	047A	4353	G	20070421214610750	17	75	0932430+789510	56	+025 10
26473	00	047A	4353	G	20070421214621450	17	75	1002072+842300	56	+020 10
25431	98	048A	4353	G	20070422205710750	17	75	1726005+519630	56	
25431	98	048A	4353	G	20070422205721450	17	75	1706238+499090	56	
26473	00	047A	4353	G	20070422204147750	17	75	1356473+351390	56	
26473	00	047A	4353	G	20070422204158450	17	75	1419422+377290	56	
28888	05	042A	4353	G	20070422204430750	17	75	1115050+239710	56	-005 10
28888	05	042A	4353	G	20070422204441450	17	75	1110595+277130	56	+005 10
28888	05	042A	4353	G	20070422204525750	17	75	1046310+447720	56	+000 10
28888	05	042A	4353	G	20070422204536450	17	75	1037430+491920	56	+040 10
24792	97	020A	4353	F	20070428020618750	17	75	1207490+415560	56	-005 10
24792	97	020A	4353	F	20070428020629450	17	75	1223362+385980	56	+000 10
25577	98	074A	4353	P	20070428203025450	17	75	1614338+497670	56	
25108	97	082E	4353	P	20070428203930750	17	75	1602542+572910	56	
25108	97	082E	4353	P	20070428203941450	17	75	1540290+539660	56	
25263	98	018B	4353	G	20070429020012750	17	75	1202286+428060	56	
25263	98	018B	4353	G	20070429020023450	17	75	1218562+398510	56	
23728	95	066A	4353	G	20070429020535750	17	75	1512410+247690	56	+015 10
23728	95	066A	4353	G	20070429020546450	17	75	1502156+287940	56	+005 10
23728	95	066A	4353	G	20070429020620750	17	75	1418509+415680	56	+020 10
23728	95	066A	4353	G	20070429020631450	17	75	1401329+453580	56	+020 10

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24907	97	043E	4353	P	20070429203325750	17	75	1607463+563930	56	
24907	97	043E	4353	P	20070429203336450	17	75	1546019+531580	56	
24904	97	043B	4353	G	20070430202724800	17	75	1558005+559630	56	
24904	97	043B	4353	G	20070430202735500	17	75	1536398+525980	56	
25106	97	082C	4353	G	20070501202122800	17	75	1552502+549710	56	
25106	97	082C	4353	G	20070501202133500	17	75	1532238+515870	56	
25017	97	064A	4353	G	20070501210130800	17	75	1333353+145950	56	+020 10
25017	97	064A	4353	G	20070501210141500	17	75	1353281+167510	56	+025 10
25017	97	064A	4353	G	20070501210225800	17	75	1516127+234210	56	+025 10
30588	07	005C	4353	G	20070502003200800	17	75	1721403+601630	56	S+015 10
30588	07	005C	4353	G	20070502003211500	17	75	1734190+688010	56	S+015 10
30588	07	005C	4353	G	20070502003250800	17	75	0213216+839320	56	S+020 10
24903	97	043A	4353	P	20070502201519800	17	75	1551058+541510	56	
24903	97	043A	4353	P	20070502201530500	17	75	1531000+507860	56	
25017	97	064A	4353	G	20070502213030800	17	75	1211017+438180	56	+020 10
25017	97	064A	4353	G	20070502213041500	17	75	1244182+472680	56	+020 10
25017	97	064A	4353	G	20070502213235800	17	75	0603382+839720	56	S+025 10
25017	97	064A	4353	G	20070502213246500	17	75	0213012+861910	56	S+025 10
30588	07	005C	4353	F	20070504004800800	17	75	1339331+567690	56	S+015 10
30588	07	005C	4353	F	20070504004811500	17	75	1253470+628820	56	S+015 10
25017	97	064A	4353	F	20070504012410800	17	75	1743598+635900	56	S+025 10
25017	97	064A	4353	F	20070504012421500	17	75	1821590+589720	56	S+030 10
25400	98	043G	4353	G	20070505203940800	17	75	1423067+639840	56	S+020 10
25400	98	043G	4353	G	20070505203951500	17	75	1435372+690370	56	S+020 10
25108	97	082E	4353	P	20070505200623800	17	75	1503190+576630	56	
25108	97	082E	4353	P	20070505200634500	17	75	1442545+534130	56	
25017	97	064A	4353	G	20070505211640800	17	75	0954178+679920	56	S+025 10
25017	97	064A	4353	G	20070505211651500	17	75	1041430+728590	56	S+025 10
25017	97	064A	4353	G	20070505211730800	17	75	1624134+748490	56	S+020 10
25017	97	064A	4353	G	20070505211741500	17	75	1716199+712520	56	S+020 10
27699	03	009B	4353	G	20070505212600800	17	75	1341216+509860	56	S+020 10
27699	03	009B	4353	G	20070505212611500	17	75	1338252+603020	56	S+020 10
27699	03	009B	4353	G	20070512214720800	17	75	1114113+286030	56	S+020 10
27699	03	009B	4353	G	20070512214731500	17	75	1051122+349990	56	S+020 10
25017	97	064A	4353	G	20070512230040800	17	75	1358204+489670	56	S+025 10
25017	97	064A	4353	G	20070512230051500	17	75	1434024+460330	56	S+025 10
25017	97	064A	4353	G	20070512230130800	17	75	1609382+318220	56	S+025 10
23279	94	061B	4353	G	20070512230130800	17	75	1519161+091340	56	S+025 10
23279	94	061B	4353	G	20070512230141500	17	75	1522535+124970	56	S+025 10
26934	01	044A	4353	G	20070512235950800	17	75	1556281+250380	56	S+020 10
26934	01	044A	4353	G	20070513000001500	17	75	1549446+315130	56	S+020 10
26934	01	044A	4353	G	20070513000035800	17	75	1513518+537970	56	+015 10
26934	01	044A	4353	G	20070513000046500	17	75	1453598+605310	56	-015 10
26473	00	047A	4353	G	20070513003530800	17	75	1358283+345240	56	S+025 10
26473	00	047A	4353	G	20070513003630800	17	75	1537564+134900	56	S+025 10
26473	00	047A	4353	G	20070513003641500	17	75	1550235+100010	56	S+030 10
27699	03	009B	4353	G	20070513212340800	17	75	1434271+410720	56	+020 10
27699	03	009B	4353	G	20070513212351500	17	75	1436278+501290	56	+030 10
25017	97	064A	4353	G	20070513214825800	17	75	1627019+735770	56	S+030 10
25017	97	064A	4353	G	20070513214836500	17	75	1659439+682040	56	S+030 10
25017	97	064A	4353	G	20070513214915800	17	75	1747168+490380	56	S+025 10
24950	97	051G	4353	F	20070517205636800	17	75	1846026+615380	56	
24950	97	051G	4353	F	20070517205647500	17	75	1818019+593300	56	
27699	03	009B	4353	G	20070517212235800	17	75	1502334+453880	56	S+020 10
27699	03	009B	4353	G	20070517212246500	17	75	1507391+545510	56	S+015 10
25017	97	064A	4353	G	20070517220330800	17	75	1213590+226720	56	S+025 10
25017	97	064A	4353	G	20070517220341500	17	75	1236144+204440	56	S+025 10
26473	00	047A	4353	G	20070517223545800	17	75	1745038+767030	56	S+025 10
26473	00	047A	4353	G	20070517223556500	17	75	1744094+710320	56	S+025 10
26934	01	044A	4353	G	20070518001305800	17	75	1533161+088960	56	S+005 10
26934	01	044A	4353	G	20070518001316500	17	75	1526125+129870	56	S+035 10
30588	07	005A	4353	G	20070518010250800	17	75	1302454+331390	56	S+020 10
30588	07	005A	4353	G	20070518010301500	17	75	1237199+372950	56	S+020 10
30588	07	005C	4353	G	20070518010440800	17	75	1432278+157050	56	S+010 10
30588	07	005C	4353	G	20070518010451500	17	75	1414300+208960	56	S+010 10
30588	07	005C	4353	G	20070518010530800	17	75	1247077+389040	56	S+020 10
30588	07	005C	4353	G	20070518010541500	17	75	1217516+426610	56	S+020 10
24946	97	051C	4353	F	20070518205035800	17	75	1837074+605720	56	
24946	97	051C	4353	F	20070518205046500	17	75	1810242+582710	56	
29651	06	057A	4353	G	20070518230106500	17	75	1136305+363460	56	S+025 10
29651	06	057A	4353	G	20070518230150800	17	75	1533379+765310	56	S+020 10
29651	06	057A	4353	G	20070518230201500	17	75	1848547+760050	56	S+020 10
30588	07	005C	4353	G	20070519002605800	17	75	1853034+267340	56	S+015 10
30588	07	005C	4353	G	20070519002616500	17	75	1901190+341710	56	S+015 10

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30588	07	005C	4353	G	20070519002655800	17	75	2011108+637500	56	S+020	10
30588	07	005C	4353	G	20070519002706500	17	75	2057518+704080	56	S+020	10
30586	07	005A	4353	G	20070519003930800	17	75	1507384+626950	56	S+020	10
30586	07	005A	4353	G	20070519003941500	17	75	1414444+694490	56	S+020	10
30586	07	005A	4353	G	20070520001450800	17	75	1905098+122170	56	S+020	10
30586	07	005A	4353	G	20070520001501500	17	75	1911408+173680	56	S+020	10
30586	07	005A	4353	G	20070520001550800	17	75	2009283+474420	56	S+020	10
30586	07	005A	4353	G	20070520001601500	17	75	2034362+543170	56	S+020	10
28646	05	016A	4353	G	20070520005325800	17	75	1625002+173440	56	+030	10
28646	05	016A	4353	G	20070520005336500	17	75	1641523+201790	56	+035	10
28647	05	016B	4353	G	20070718220735800	17	75	1757511+478910	56	S+025	10
28647	05	016B	4353	G	20070718220746500	17	75	1833151+442430	56	S+025	10
25777	99	032A	4353	G	20070719000359800	17	75	1951074+152600	56		
25777	99	032A	4353	G	20070719000410500	17	75	1951216+199150	56		
30586	07	005A	4353	G	20070719001440800	17	75	2324310+293400	56	S+015	10
30586	07	005A	4353	G	20070719001451500	17	75	2336473+361290	56	S+015	10
30586	07	005A	4353	G	20070719001540800	17	75	0146029+655150	56	S+015	10
30586	07	005A	4353	G	20070719001551500	17	75	0244283+692220	56	S+015	10
25017	97	064A	4353	G	20070719001551500	17	75	0108358+547850	56	S+030	10
26473	00	047A	4353	G	20070719002630800	17	75	1836230+509090	56	S+025	10
26473	00	047A	4353	G	20070719002641500	17	75	1848108+569750	56	S+025	10
26473	00	047A	4353	G	20070719002755800	17	75	0227492+785650	56	S+020	10
26473	00	047A	4353	G	20070719002806500	17	75	0322115+755860	56	S+020	10
29651	06	057A	4353	G	20070719003805800	17	75	2316031+225770	56	S+025	10
29651	06	057A	4353	G	20070719003816500	17	75	2357593+252650	56	S+025	10
28647	05	016B	4353	G	20070720222140800	17	75	1551454+167530	56	S+025	10
28647	05	016B	4353	G	20070720222151500	17	75	1611353+149720	56	S+025	10
28647	05	016B	4353	G	20070720222225800	17	75	1712581+083130	56	S+025	10
28647	05	016B	4353	G	20070720222236500	17	75	1730341+061190	56	S+025	10
25017	97	064A	4353	G	20070720214930800	17	75	1050377+792480	56	S+030	10
25017	97	064A	4353	G	20070720214941500	17	75	0935547+836250	56	S+030	10
25017	97	064A	4353	G	20070720233156500	17	75	0019319+774180	56	S+030	10
25017	97	064A	4353	G	20070720233230800	17	75	0042367+602790	56	S+035	10
25017	97	064A	4353	G	20070720233241500	17	75	0045338+553020	56	S+035	10
25017	97	064A	4353	G	20070722224740800	17	75	1225242+702140	56	S+025	10
25017	97	064A	4353	G	20070722224751500	17	75	1228264+748430	56	S+025	10
25017	97	064A	4353	G	20070723003010800	17	75	1913468+327450	56	S+025	10
25017	97	064A	4353	G	20070723003021500	17	75	1940518+304510	56	S+025	10
26473	00	047A	4353	G	20070722233125800	17	75	1751307+564980	56	S+025	10
26473	00	047A	4353	G	20070722233136500	17	75	1804206+626090	56	S+025	10
26473	00	047A	4353	G	20070722233220800	17	75	2155156+822840	56	S+025	10
26473	00	047A	4353	G	20070722233231500	17	75	0025480+822480	56	S+025	10
30586	07	005A	4353	G	20070723001400800	17	75	2313084+095390	56	S+020	10
30586	07	005A	4353	G	20070723001411500	17	75	2318566+143660	56	S+020	10
30586	07	005A	4353	G	20070723001450800	17	75	2354043+368750	56	S+015	10
30586	07	005A	4353	G	20070723001501500	17	75	0010218+439770	56	S+015	10
29651	06	057A	4353	G	20070723002025800	17	75	1510182+331630	56	S+030	10
29651	06	057A	4353	G	20070723002036500	17	75	1503173+393000	56	S+020	10
29651	06	057A	4353	G	20070723002120800	17	75	1311046+714160	56	S+005	10
31702	07	027B	4353	P	20070730001550800	17	75	2152010+517800	56		
31702	07	027B	4353	P	20070730001601500	17	75	2218394+544370	56		
27699	03	009B	4353	F	20070730213430800	17	75	1745197+395240	56	S+015	10
27699	03	009B	4353	F	20070730213441500	17	75	1725586+478890	56	S+025	10
25017	97	064A	4353	F	20070730213735800	17	75	1729038+468650	56	S+030	10
25017	97	064A	4353	F	20070730213746500	17	75	1805146+440550	56	S+030	10
25017	97	064A	4353	F	20070730213825800	17	75	1941492+306300	56	S+020	10
25017	97	064A	4353	F	20070730213836500	17	75	2000202+267790	56	S+020	10
26473	00	047A	4353	F	20070730214135800	17	75	1658034+780860	56	S+020	10
26473	00	047A	4353	F	20070730214146500	17	75	1800274+829720	56	S+020	10
25287	98	021C	4353	F	20070730231731800	17	75	1815269+112260	56		
25287	98	021C	4353	F	20070730231742500	17	75	1811190+147390	56		
31702	07	027B	4353	F	20070730235615800	17	75	1937559+223650	56	R+020	10
31702	07	027B	4353	F	20070730235626500	17	75	1947077+254450	56	R+025	10
31702	07	027B	4353	F	20070730235715800	17	75	2047307+409870	56	R+020	10
25017	97	064A	4353	F	20070731220650800	17	75	1709487+132510	56	S+030	10
25017	97	064A	4353	F	20070731220701500	17	75	1728154+111320	56	S+030	10
25290	98	021F	4353	F	20070731231130800	17	75	1814065+119480	56		
25290	98	021F	4353	F	20070731231141500	17	75	1809588+155250	56		
31702	07	027B	4353	F	20070731233830800	17	75	1950101+267880	56	R	
31702	07	027B	4353	F	20070731233841500	17	75	2001502+300800	56	R	
31702	07	027B	4353	F	20070731233940800	17	75	2137154+477900	56	R	
31702	07	027B	4353	F	20070731233951500	17	75	2201410+503800	56	R	
27699	03	009B	4353	F	20070803213200800	17	75	1827276+384070	56	S+025	10

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27699	03	009B	4353	F	20070803213211500	17	75	1812204+473120	56	S+020	10
25345	98	032D	4353	P	20070803225627800	17	75	1800106+124640	56		
25345	98	032D	4353	P	20070803225638500	17	75	1755180+161650	56		
31702	07	027B	4353	F	20070803224245800	17	75	1825324+019960	56		
31702	07	027B	4353	F	20070803224256500	17	75	1831146+039660	56		
31702	07	027B	4353	F	20070803224330800	17	75	1852322+110490	56		
31702	07	027B	4353	F	20070803224341500	17	75	1900122+134510	56		
31702	07	027B	4353	F	20070803224415800	17	75	1930547+223610	56		
31702	07	027B	4353	F	20070803224426500	17	75	1942374+253470	56		
31702	07	027B	4353	F	20070803224505800	17	75	2036295+365120	56		
31702	07	027B	4353	F	20070803224516500	17	75	2054511+394060	56		
31702	07	027B	4353	F	20070803224610800	17	75	2249302+498230	56		
31702	07	027B	4353	F	20070803224621500	17	75	2314252+507020	56		
27699	03	009B	4353	G	20070804210810800	17	75	2207355+430310	56	S+020	10
27699	03	009B	4353	G	20070804210821500	17	75	2229110+496150	56	S+020	10
25544	98	067A	4353	G	20070804211525800	17	75	1656041-030930	56	S-025	10
25544	98	067A	4353	G	20070804211536500	17	75	1720180-012970	56	S-025	10
25544	98	067A	4353	G	20070804211610800	17	75	1859326+054030	56	S-030	10
25544	98	067A	4353	G	20070804211621500	17	75	1935377+074570	56	S-030	10
25778	99	032B	4353	G	20070804225617800	17	75	1746355+107090	56		
25778	99	032B	4353	G	20070804225628500	17	75	1741418+139950	56		
31702	07	027B	4353	G	20070804222520800	17	75	1841535+087650	56		
31702	07	027B	4353	G	20070804222531500	17	75	1849329+111120	56		
31702	07	027B	4353	G	20070804222630800	17	75	1946372+263390	56		
31702	07	027B	4353	G	20070804222641500	17	75	2000341+293530	56		
31702	07	027B	4353	G	20070804222820800	17	75	2308554+491580	56		
25544	98	067A	4353	G	20070810215610800	17	75	1532139+174180	56	S-020	10
25544	98	067A	4353	G	20070810215621500	17	75	1556470+179320	56	S-020	10
31702	07	027B	4353	G	20070810203855800	17	75	2015262+298180	56		
31702	07	027B	4353	G	20070810203906500	17	75	2031523+319100	56		
31702	07	027B	4353	G	20070810203950800	17	75	2145593+385420	56		
31702	07	027B	4353	G	20070810204001500	17	75	2204192+395760	56		
25544	98	067A	4353	G	20070811204315800	17	75	1325110+197190	56	S-015	10
25544	98	067A	4353	G	20070811204326500	17	75	1337324+217320	56	S-015	10
25544	98	067A	4353	G	20070811204440800	17	75	1739103+389540	56	S-040	10
25544	98	067A	4353	G	20070811204451500	17	75	1843377+377030	56	S-040	10
20625	90	046B	4353	F	20070811211530800	17	75	0623070+839490	56	+035	10
20625	90	046B	4353	F	20070811211541500	17	75	0356259+852720	56	+035	10
20625	90	046B	4353	F	20070811211615800	17	75	2309384+764530	56	+035	10
20625	90	046B	4353	F	20070811211626500	17	75	2249439+722170	56	+035	10
25777	99	032A	4354	F	20070811222847800	17	75	1653552+094320	56		
25777	99	032A	4354	F	20070811222858500	17	75	1647218+124470	56		
25343	98	032B	4354	F	20070811223206800	17	75	1655470+097630	56		
25343	98	032B	4354	F	20070811223217500	17	75	1649562+125380	56		
28646	05	016A	4354	F	20070811225250800	17	75	1717312+046950	56	S+020	10
28646	05	016A	4354	F	20070811225301500	17	75	1722228+064420	56	S+020	10
28646	05	016A	4354	F	20070811225345800	17	75	1748514+155240	56	S+015	10
28646	05	016A	4354	F	20070811225356500	17	75	1757202+182430	56	S+015	10
30586	07	005A	4354	F	20070812001200800	17	75	0206139+486440	56	S+020	10
30586	07	005A	4354	F	20070812001211500	17	75	0234048+547310	56	S+020	10
30586	07	005A	4354	F	20070812001250800	17	75	0525454+681410	56	S+020	10
30586	07	005A	4354	F	20070812001301500	17	75	0622271+685820	56	S+020	10
30588	07	005C	4354	F	20070812004120800	17	75	2227072+638760	56	S+020	10
30588	07	005C	4354	F	20070812004131500	17	75	2201173+722780	56	S+020	10
30588	07	005C	4354	F	20070812004205800	17	75	1417353+822070	56	+010	10
28646	05	016A	4353	P	20070813210610800	17	75	2041506+050340	56	S+015	10
28646	05	016A	4353	P	20070813210621500	17	75	2056458+068570	56	S+015	10
28646	05	016A	4353	P	20070813210655800	17	75	2145067+122650	56	S+015	10
28646	05	016A	4353	P	20070813210706500	17	75	2200293+137730	56	S+015	10
28646	05	016A	4353	G	20070819222825800	17	75	1426264+448750	56	S+025	10
28646	05	016A	4353	G	20070819222836500	17	75	1425449+478730	56	S+025	10
28646	05	016A	4353	G	20070819222915800	17	75	1418266+609630	56	S+015	10
28646	05	016A	4353	G	20070819222926500	17	75	1414233+650320	56	S+015	10
28646	05	016A	4353	G	20070819223010800	17	75	1243581+830480	56	S+015	10
28646	05	016A	4353	G	20070819223021500	17	75	0959590+862000	56	S+015	10
24680	96	072A	4353	F	20070823203320800	17	75	1403272+507590	56	S+025	10
24680	96	072A	4353	F	20070823203331500	17	75	1313281+534350	56	S+020	10
28646	05	016A	4353	F	20070823221820800	17	75	0212586+700480	56	S+025	10
28646	05	016A	4353	F	20070823221831500	17	75	0213295+653490	56	S+025	10
28646	05	016A	4353	F	20070829201400800	17	75	1220499+554290	56	S+025	10
28646	05	016A	4353	F	20070829201411500	17	75	1220146+587830	56	S+025	10
28646	05	016A	4353	F	20070829201450800	17	75	1211554+731510	56	I+020	10
28646	05	016A	4353	F	20070829201501500	17	75	1204386+774140	56	I+020	10
28646	05	016A	4353	F	20070829201535800	17	75	0234070+865450	56	I+015	10
28646	05	016A	4353	F	20070829201546500	17	75	0125396+818700	56	I+015	10

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28646	05	016A	4353	F	20071118173425800	17	75	1525084+785560	56	S+025	10
28646	05	016A	4353	F	20071118173436500	17	75	1457329+832670	56	S+025	10
28646	05	016A	4353	F	20071118173510800	17	75	0456190+808200	56	+020	10
27450	02	031A	4353	G	20071201172550800	17	75	0246026+666690	56		
27450	02	031A	4353	G	20071201172601500	17	75	0326218+689210	56		
24793	97	020B	4353	G	20071202171942800	17	75	0228482+657660	56		
24793	97	020B	4353	G	20071202171953500	17	75	0307170+683380	56		
28647	05	016B	4353	G	20071216165810800	17	75	1715588+845380	56	S+025	10
28647	05	016B	4353	G	20071216165821500	17	75	1500228+894060	56	S+025	10
28647	05	016B	4353	G	20071216165855800	17	75	0539211+749690	56	S+020	10
28647	05	016B	4353	G	20071216165906500	17	75	0538554+705840	56	S+020	10
25544	98	067A	4353	G	20071216172150800	17	75	1836588+182980	56	S-010	10
25544	98	067A	4353	G	20071216172201500	17	75	1853410+195600	56	S-010	10
25544	98	067A	4353	G	20071216172310800	17	75	2240574+234870	56	S-025	10
25544	98	067A	4353	G	20071216172321500	17	75	2330386+212610	56	S-025	10
24837	97	030B	4353	G	20071216175905800	17	75	0624502+645150	56		
24837	97	030B	4353	G	20071216175916500	17	75	0657214+649330	56		
24840	97	030E	4353	G	20071216180739500	17	75	0411238+670840	56		
28647	05	016B	4353	F	20071217170610800	17	75	0621110+754680	56	S+025	10
28647	05	016B	4353	F	20071217170621500	17	75	0608446+712110	56	S+025	10
25528	98	066B	4353	F	20071217175257800	17	75	0609588+641000	56		
25528	98	066B	4353	F	20071217175308500	17	75	0642281+647230	56		
25172	98	010D	4353	F	20071217180130800	17	75	0358377+652520	56		
25172	98	010D	4353	F	20071217180141500	17	75	0435288+680320	56		
29651	06	057A	4353	F	20071222170030800	17	75	2022314+359510	56	S+010	10
29651	06	057A	4353	F	20071222170041500	17	75	2051113+475110	56	S+010	10
29651	06	057A	4353	F	20071222170120800	17	75	0349149+688070	56	S+000	10
25017	97	064A	4353	F	20071222173325800	17	75	0041168+200990	56	S+025	10
25017	97	064A	4353	F	20071222173336500	17	75	0103461+226570	56	S+025	10
25017	97	064A	4353	F	20071222173430800	17	75	0304521+313970	56	S+025	10
25017	97	064A	4353	F	20071222173441500	17	75	0327278+321020	56	S+025	10
28647	05	016B	4353	F	20071222174205800	17	75	2315482+689450	56	S+020	10
28647	05	016B	4353	F	20071222174216500	17	75	0015334+669360	56	S+020	10
28647	05	016B	4353	F	20071222174245800	17	75	0205353+563020	56	S+010	10
28647	05	016B	4353	F	20071222174256500	17	75	0229317+516790	56	S+010	10
25861	99	039B	4353	F	20071222170120800	17	75	2227434+698890	56	+025	10
25861	99	039B	4353	F	20071222170131500	17	75	2142590+752750	56	+025	10
29651	06	057A	4353	P	20080105164846400	17	75	2239271+677540	56	I+020	10
29651	06	057A	4353	P	20080105164858100	17	75	0041137+613880	56	I+015	10
25017	97	064A	4353	G	20080106180700800	17	75	0255144+270290	56	S+025	10
25017	97	064A	4353	G	20080106180711500	17	75	0311214+234210	56	S+030	10
21147	91	017A	4353	G	20080106181621500	17	75	0125370+555260	56	S+020	10
21147	91	017A	4353	G	20080106181700800	17	75	0415290+706660	56	S+020	10
21147	91	017A	4353	G	20080106181711500	17	75	0524094+715970	56	S+020	10
25544	98	067A	4353	P	20080110052825800	17	75	1657430+274600	56	S-040	10
25544	98	067A	4353	P	20080110052836500	17	75	1720430+247810	56	S-040	10
21147	91	017A	4353	G	20080112172445800	17	75	2045259+385560	56		
21147	91	017A	4353	G	20080112172456500	17	75	2039341+432250	56		
25544	98	067A	4353	G	20080204180820800	17	75	0346393+090070	56		
25544	98	067A	4353	G	20080204180831500	17	75	0426470+111430	56		
32484	08	004A	4353	P	20080206173406500	17	75	0407062+124690	56	S+010	10
32486	08	005A	4353	G	20080208182020800	17	75	2259026+174310	56	S+005	10
32486	08	005A	4353	G	20080208182031500	17	75	2313341+201010	56	S+005	10
32486	08	005A	4353	G	20080208182110800	17	75	0117170+358220	56	S-010	10
32486	08	005A	4353	G	20080208182121500	17	75	0232487+400280	56	S-010	10
32391	07	064A	4353	G	20080208180545800	17	75	0016526+329640	56	+010	10
32391	07	064A	4353	G	20080208180556500	17	75	0056108+376000	56	M-020	10
32391	07	064A	4353	G	20080208180625800	17	75	0351048+449850	56	S+010	10
32391	07	064A	4353	G	20080208180636500	17	75	0502281+428780	56	S+010	10
32391	07	064A	4353	G	20080209182925800	17	75	0335343+332950	56	S+015	10
32391	07	064A	4353	G	20080209182936500	17	75	0434178+311590	56	S+015	10
25544	98	067A	4353	G	20080210183645800	17	75	2339043+159770	56	S-005	10
25544	98	067A	4353	G	20080210183656500	17	75	2356454+167350	56	S-005	10
25544	98	067A	4353	G	20080210183805800	17	75	0331226+157290	56	S-025	10
25544	98	067A	4353	G	20080210183816500	17	75	0415089+134640	56	S-025	10
28646	05	016A	4353	G	20080211180810800	17	75	0338312+260660	56	+020	10
24680	96	072A	4353	G	20080226201905800	17	75	0621422+360670	56	S	
24680	96	072A	4353	G	20080226201916500	17	75	0613034+402340	56	S	
26473	00	047A	4353	G	20080227184235800	17	75	0308595+412270	56	S	
26473	00	047A	4353	G	20080227184246500	17	75	0315094+469040	56	S	
24680	96	072A	4353	G	20080227203841500	17	75	0359269+462880	56		

Appendix III: Visually obtained positional data

Table 4: Visually obtained positional data

31708	07	027C	4353	G	20080106164740640	17	75	0325082+491490	26	S
31708	07	027C	4353	G	20080106183722680	17	75	2305326+148170	36	S
31708	07	027C	4353	G	20080106183726620	17	75	2309329+142380	46	S
31701	07	027A	4353	G	20080108170345100	17	75	0052153+383590	36	S
31701	07	027A	4353	G	20080108170347160	17	75	0054169+376890	66	S
31708	07	027C	4353	G	20080108170416250	17	75	0052503+385340	36	S
31708	07	027C	4353	G	20080108170419970	17	75	0057410+374300	75	S
28537	05	004A	4353	G	20080109173253930	17	75	2026079+403960	75	S
28537	05	004A	4353	G	20080109173257810	17	75	2025577+413410	55	S
28541	05	004C	4353	G	20080109173306710	17	75	2027475+420300	85	S
25017	97	064A	4353	G	20080109175215640	17	75	0000175+133420	75	S
25017	97	064A	4353	G	20080109175218280	17	75	0004230+127730	66	S
31701	07	027A	4353	G	20080109180645050	17	75	2234529+098780	56	S
31708	07	027C	4353	G	20080109180716220	17	75	2235204+101470	56	S
31701	07	027A	4353	G	20080122060337310	17	75	1850370+344540	26	S
31708	07	027C	4353	G	20080122060407760	17	75	1851129+343730	56	S
28095	03	054A	4353	G	20080122061016710	17	75	1148436+143420	26	S
28097	03	054C	4353	G	20080122061027140	17	75	1153369+139580	26	S
19460	88	078A	4353	G	20080122060326460	17	75	1848138+346270	16	S
28537	05	004A	4353	P	20080122190444050	17	75	1834336+891200	36	S
28541	05	004C	4353	P	20080122190450170	17	75	1730588+890310	16	S
11751	80	026B	4353	P	20080122190404270	17	75	2036239+896820	86	S
21799	91	076C	4353	G	20080124173905070	17	75	1154157+861990	36	S
21808	91	076D	4353	G	20080124173912270	17	75	1228256+860160	46	S
28646	05	016A	4353	G	20080124190331870	17	75	0039112+396140	26	S
28541	05	004C	4353	G	20080124192716530	17	75	0214203+666770	16	S
21799	91	076C	4353	G	20080124193326120	17	75	0406468+134780	36	S
28095	03	054A	4353	G	20080130194218400	17	75	0418274+179430	26	S
28095	03	054A	4353	G	20080130194221420	17	75	0420420+186610	26	S
28097	03	054C	4353	G	20080130194230460	17	75	0425081+190060	16	S
19460	88	078A	4353	G	20080201184802230	17	75	0159416+430110	26	S
31701	07	027A	4353	F	20080203040516810	17	75	1415115+524990	46	S
31708	07	027C	4353	F	20080203040538180	17	75	1413504+519390	46	S
19460	88	078A	4353	F	20080203044013230	17	75	1854498+368200	16	S
23908	96	029C	4353	F	20080203054203410	17	75	1015316+418550	36	S
23936	96	029E	4353	F	20080203054210210	17	75	1017136+414480	16	S
31701	07	027A	4353	F	20080203055447760	17	75	0904466+484820	66	S
31701	07	027A	4353	F	20080203055454120	17	75	0902284+498640	26	S
31708	07	027C	4353	F	20080203055517110	17	75	0903184+499830	36	S
28646	05	016A	4353	P	20080203183258070	17	75	1655598+885110	46	S
25544	98	067A	4353	G	20080204180832010	17	75	0427415+111670	26	S
21147	91	017A	4353	G	20080204184218140	17	75	0429451+834110	26	S
19460	88	078A	4353	G	20080204185211650	17	75	0036160+272560	85	S
19460	88	078A	4353	G	20080204185219090	17	75	0030093+297660	56	S
28095	03	054A	4353	G	20080204194304370	17	75	0142513+626500	95	S
28095	03	054A	4353	G	20080204194308020	17	75	0144529+638190	16	S
28097	03	054C	4353	G	20080204194313710	17	75	0148046+635830	46	S
32484	08	004A	4353	G	20080206173409830	17	75	0422527+129430	86	S
19460	88	078A	4353	G	20080206174732960	17	75	0418574+213270	26	S
21147	91	017A	4353	G	20080206175328430	17	75	0734028+318780	66	S
21147	91	017A	4353	G	20080206175331980	17	75	0732467+306090	36	S
28095	03	054A	4353	G	20080206181428710	17	75	0453542+458730	26	S
28097	03	054C	4353	G	20080206181434510	17	75	0455210+453630	26	S
28646	05	016A	4353	G	20080206191450090	17	75	0247448+540910	85	S
28646	05	016A	4353	G	20080206191452960	17	75	0258382+538510	46	S
28095	03	054A	4353	G	20080206200454700	17	75	2328217+593480	16	S
28097	03	054C	4353	G	20080206200500990	17	75	2330095+594220	85	S
32391	07	064A	4353	G	20080208180635850	17	75	0456412+432290	26	S
19460	88	078A	4353	G	20080208182435560	17	75	0032563+287040	36	S
28095	03	054A	4353	G	20080208183603570	17	75	0139512+610690	26	S
28097	03	054C	4353	G	20080208183610350	17	75	0145233+610910	26	S
21147	91	017A	4353	G	20080208184129710	17	75	0041582+273230	26	S
28646	05	016A	4353	G	20080208190918370	17	75	0424463+219450	36	S
24680	96	072A	4353	G	20080208193304060	17	75	1129596+680600	36	S
28095	03	054A	4353	G	20080209175138210	17	75	0313261+518800	16	S
28097	03	054C	4353	G	20080209175144430	17	75	0316098+515490	26	S
28646	05	016A	4353	G	20080209181320640	17	75	0026365+566140	16	S
28646	05	016A	4353	G	20080209181324890	17	75	0040566+570130	36	S

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32391	07	064A	4353	G	20080209182929930	17	75	0358288+326680	46	S
24680	96	072A	4353	G	20080209195158360	17	75	1113315+822580	36	S
28095	03	054A	4353	G	20080210185749590	17	75	2306201+588880	95	S
28097	03	054C	4353	G	20080210185756200	17	75	2308072+590930	26	S
28646	05	016A	4353	G	20080210190250840	17	75	0330124+059750	26	S
24680	96	072A	4353	G	20080210201101060	17	75	2340256+813710	26	S
24680	96	072A	4353	G	20080210201106380	17	75	2259268+809350	36	S
14795	84	012F	4353	G	20080211052153640	17	75	1022132+413100	16	S
14795	84	012F	4353	G	20080211052149530	17	75	1016539+413520	16	S
25017	97	064A	4353	G	20080211050755900	17	75	0358268+886020	26	S
25017	97	064A	4353	G	20080211050757520	17	75	0149189+886920	26	S
19460	88	078A	4353	G	20080211052529340	17	75	1012303+418080	26	S
28646	05	016A	4353	G	20080211180837060	17	75	0424431+189140	75	S
28646	05	016A	4353	G	20080211180843740	17	75	0435005+170980	16	S
28095	03	054A	4353	G	20080211181312440	17	75	0000553+568270	16	S
28097	03	054C	4353	G	20080211181318480	17	75	0003404+568820	16	S
28097	03	054C	4353	G	20080211181320330	17	75	0004059+573960	95	S
24680	96	072A	4353	G	20080211202950610	17	75	0021317+668960	36	S
19460	88	078A	4353	G	20080212175657620	17	75	0031234+295490	26	S
19460	88	078A	4353	G	20080212175659250	17	75	0030138+301050	16	S
24680	96	072A	4353	G	20080212204845040	17	75	0031468+545000	16	S
24680	96	072A	4353	G	20080212204853710	17	75	0017107+549330	26	S
28647	05	016B	4353	G	20080216183044280	17	75	0418457+177370	26	S
28647	05	016B	4353	G	20080216183047250	17	75	0425463+188820	16	S
24680	96	072A	4353	G	20080216202653370	17	75	0158598+671920	95	S
24680	96	072A	4353	G	20080216202657780	17	75	0145540+676490	26	S
24680	96	072A	4353	G	20080216202659850	17	75	0139031+678240	26	S
24680	96	072A	4353	G	20080216202714910	17	75	0051354+687350	36	S
28647	05	016B	4353	G	20080217183753180	17	75	0300576+362070	26	S
28647	05	016B	4353	G	20080217183757160	17	75	0310373+382350	26	S
24680	96	072A	4353	G	20080217190802030	17	75	1027017+406910	26	S
24680	96	072A	4353	G	20080217190805560	17	75	1030003+414950	36	S
31702	07	027B	4353	G	20080217191421570	17	75	0451013+077280	26	S
31702	07	027B	4353	G	20080217191425640	17	75	0454054+085780	26	S
24680	96	072A	4353	G	20080217204617620	17	75	0035015+565240	36	S
28647	05	016B	4353	P	20080218184520280	17	75	0200105+599860	85	S
28647	05	016B	4353	P	20080218184521480	17	75	0203217+606840	16	S
31702	07	027B	4353	P	20080218185625470	17	75	0450107+083460	26	S
31702	07	027B	4353	P	20080218185627440	17	75	0451477+087450	46	S
24680	96	072A	4353	P	20080218192738870	17	75	1111203+612610	66	S
24680	96	072A	4353	P	20080218210447240	17	75	0117259+450550	46	S
26473	00	047A	4353	G	20080226180652120	17	75	0747234+277290	66	S
26473	00	047A	4353	G	20080226180653930	17	75	0750481+281630	46	S
31702	07	027B	4353	G	20080226181753180	17	75	0029344+556400	46	S
31702	07	027B	4353	G	20080226181756610	17	75	0028585+569300	36	S
26907	01	040C	4353	G	20080226185436840	17	75	0527471+218740	26	S
26907	01	040C	4353	G	20080226185439600	17	75	0530294+225010	75	S
26905	01	040A	4353	G	20080226185442340	17	75	0529417+213480	16	S
28647	05	016B	4353	G	20080226194256510	17	75	0036293+598640	36	S
28647	05	016B	4353	G	20080226194257650	17	75	0038384+603190	16	S
28095	03	054A	4353	G	20080226200720480	17	75	0828327+598110	36	S
28095	03	054A	4353	G	20080226200724780	17	75	0833281+584870	75	S
28097	03	054C	4353	G	20080226200727000	17	75	0832196+599180	56	S
28097	03	054C	4353	G	20080226200732400	17	75	0839050+582530	26	S
24680	96	072A	4353	G	20080226201929030	17	75	0601180+451600	75	S
24680	96	072A	4353	G	20080226201930810	17	75	0559305+459040	95	S
24680	96	072A	4353	G	20080226201932860	17	75	0557351+466880	16	S
28888	05	042A	4353	G	20080226203212370	17	75	1812589+890010	36	S
28888	05	042A	4353	G	20080226203216210	17	75	1933001+879210	46	S
26907	01	040C	4353	G	20080227181155460	17	75	0749570+281900	46	S
26905	01	040A	4353	G	20080227181200500	17	75	0749559+277390	46	S
26473	00	047A	4353	G	20080227184252460	17	75	0319017+501200	85	S
26473	00	047A	4353	G	20080227184255180	17	75	0321134+516570	36	S
24680	96	072A	4353	G	20080227203847830	17	75	0349004+479070	36	S
24680	96	072A	4353	G	20080227203850610	17	75	0344219+485520	36	S
24680	96	072A	4353	G	20080227203903430	17	75	0320202+514880	36	S
24680	96	072A	4353	G	20080227203931250	17	75	0223044+560370	46	S
28888	05	042A	4353	G	20080227205014430	17	75	0403500+729040	46	S
28888	05	042A	4353	G	20080227205016800	17	75	0353095+733000	56	S
28888	05	042A	4353	G	20080227205030000	17	75	0253136+748080	36	S
28095	03	054A	4353	G	20080227211106130	17	75	0249338+372890	26	S
28095	03	054A	4353	G	20080227211108510	17	75	0252070+372350	16	S
28097	03	054C	4353	G	20080227211111180	17	75	0248156+376050	36	S
28097	03	054C	4353	G	20080227211117690	17	75	0255080+374310	36	S