

## ILRS WEB SITE UPDATE

# Using the ILRS Web Site to Monitor Performance

**NASA Goddard Space Flight Center** Greenbelt, MD 20771, USA

Current Station Classification (2008 Q2)

Last modified date: Tuesday, 01-Jul-2008 09:31:57 ED Author: Carey Noll

HEO passes from July 1, 2007 through June 30, 2008

LAGEOS 1 and 2

LEO passes from July 1, 2007 through June 30, 2008

LEO normal points from July 1, 2007 through June 30, 2008

minutes of data from July 1, 2007 through June 30, 2008

calibration RMS

from April 1, 2008 through June 30, 2008

18734901 8/07/25 22:39 L1

18734901 8/07/27 23:33 L1

from April 1, 2008 through June 30, 2008

LAGEOS RMS from April 1, 2008 through June 30, 2008

LAGEOS 1 and 2 normal points from July 1, 2007 through June 30, 2008

HEO normal points from July 1, 2007 through June 30, 2008

total normal points from July 1, 2007 through June 30, 2008

HEO

LAGEOS 1 and 2 LEO

LAGEOS 1 and 2 passes from July 1, 2007 through June 30, 2008

**Associate Stations** 

FTLRS (Burnie

Tanegashima

Home → Stations → Current Station Classification

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#### **Abstract**

2004 4th

Quarter

Quarter

Quarter

Quarter

Quarter

Quarter

Quarter

2000 4th quart

2000 1st quarte

1999 4th quarte

1999 1st quarte

1998 4th quarte

1998 1st quarte

1997 4th quarte

quarter...

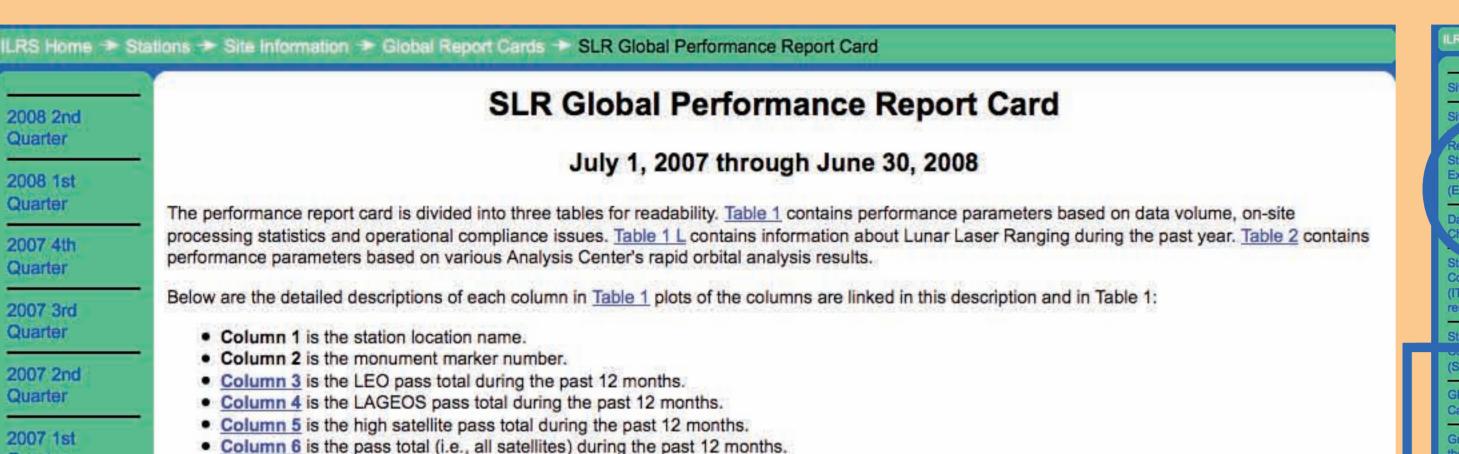
The ILRS Web site, http://ilrs.gsfc.nasa.gov, is the central source of information for all aspects of the service. The Web site provides information on the organization and operation of ILRS and descriptions of ILRS components, data, and products. Furthermore, the Web site and provides an entry point to the archive of these data and products available through the data centers. Links are provided to extensive information on the ILRS network stations including performance assessments and data quality evaluations. Descriptions of supported sately lite missions (current, future, and past) are provided to aid in station acquisition and data analysis. This poster will detail recent improvements made in several areas of the ILRS Web site including specific examples of key sections and webpages.

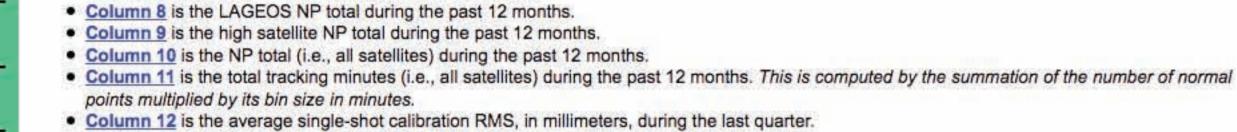
The ILRS Central Bureau staff has developed various reports and data plots to monitor network performance. The CB would like to encourage station operators, analysts, and other ILRS groups to peruse these reports and plots on a regular basis to monitor station performance as well as how the overall network is supporting our mission customers. All plots and reports can be accessed through the station pages on the ILRS Web site at URL http://ilrs.gsfc.nasa.gov/stations.

#### Station Performance Report Cards

The ILRS performance "report cards" are issued quarterly by the ILRS Central Bureau (CB). These reports tabulate the previous 12 months of data quality, quantity, and operational compliance by station. The CB uses these report cards to maintain lists of the operational and associate stations. The statistics are presented in two tables (one for artificial satellites and a second for lunar reflectors) by station and sorted by total passes in descending order. Plots of data volume (passes, normal points, minutes of data) and RMS (LAGEOS, Starlette, calibration) are created from this information and available on the report card Web site. A third table summarizes the orbital analysis of the data performed by five AC/AACs (DGFI, Hitotsubashi University, JCET, MCC, and the Shanghai Astronomical Observatory).

A recent version of the report card (2<sup>nd</sup> quarter 2008, 01-Jul-2007 through 30-Jun-2008) is show in the web page figure below.





 Column 13 is the average single-shot Starlette RMS, in millimeters, during the last quarter. Column 14 is the average single-shot LAGEOS RMS, in millimeters, during the last quarte

Column 7 is the LEO NP total during the past 12 months.

me first entry in each table is for the performance baseline goal. These performance goals are used to determine Operational and Associate stations (following ILRS station qualification criteria). Note: There are no baseline goals for NP data quantities, single shot RMS's. Additional Notes: Blanks in any columns implies either that there was no data or that there was insufficient data. Only stations that have supplied data

Site Information					Da				Dat	ality			
Column 1	2	3	4	5	6	ita Volum	8	9	10	11	12	13	
4.5	200	LEO pass		223	Total								
Location	Number	lot			200000	CONTRACTOR OF THE PERSON NAMED IN	NP Total	Hi h NP Total	Total NP	Minutes of Data	Cal. RMS	Star RMS	RMS
Baseline	W	1000	400	100	1500	IOIai	er i vidi	JOIGI	The state of the s	Data	IXWIO	IMMO	TXIVIC
Yarragauee	7000	0630	4000	10/3	12999	204021	25377	12731	242129	166320	4.7	8.9	9.4
San_Juan	7406	5255	1082	1303	7640	84520	13173	8659	106352	92649	13.1	13.9	15.2
Mount_Stromlo_2	7825	5297	1274	484	7055	70033	12860	3586	86479	66201	3.1	4.2	5,8
Graz	7839	4651	740	519	5910	92498	8291	4272	105061	61353	1.9	3.4	5.2
Wettzell	8834	4094	1033	411	5538	43417	7905	1727	53049	38825	4.6	12.1	19.1
Herstmoncex	7840	3881	888	374	5143	61069	10396	1582	73047	44178	7.3	12.1	15.4
Changchun	7237	3954	593	570	5117	44205	4953	2970	52128	37099	13.0	13.8	16.7
Riyadh	7832	3482	885	561	4928	42767	7089	3206	53062	43794	10.4	12.4	15.9
Zimmerwald_423 Zimmerwald_532	7810	3276 999	703 189	377 115	4356 1303	51628 18228	8376 2290	2352 739		42284 12837	5.6	8.7	11.8
Zimmerwald_846	9810	3276	710	351	4337	52869	9664	2049	64582	43837			- 110
San_Fernando	7824	2982	471	78	3531	44032	3589	373	47994	22813	6.4	11.5	15.3
Concepcion_847 Concepcion_423	7405	1877 18	1009	207	3093 21	23829 164	13070 11	1504	38403 175	42820 94	5.2	14.2	16.5
Matera_MLRO	7941	2081	645	119	2845	28146	6907	958	36011	28143	1.4	3.6	4.
Beijing	7249	1850	296	194	2340	27806	2836	1489	32131	21875	7.0	14.4	25.9
Greenbelt	7105	1917	283	114	2314	44384	2893	682	47959	20616	4.8	7.9	8.
Haleakala	7119	1785	431		2216	29051	4954		34005	18573	5.0	10.6	10.4
McDonald	7080	1280	392	221	1893	14571	3710	913	19194	16275	9.4	12.7	12.
Potsdam_3	7841	1573	281		1854	29898	3230		33128	13945	13.8	15.4	19.3
Monument_Peak	7110	1437	289	78	1804	26749	3068	539	30356	16114	5.0	13.4	15.
Arequipa	7403	1600	176		1776	19768	1164		20932	8406	5.5	9.2	5.7
Katzively	1893	1198	261	106	1565	19193	2186	643	22022	13606	45.3	72.8	40.7
Hartebeesthoek	7501	1194	240	30	1464	14034	1849	175	16058	8974	5.6	8.5	9.8
Koganei	7308	672	215	66	953	9773	1987	830	12590	11601	9.4	14.0	15.2
Simeiz	1873	614	181	79	874	8244	1636	1287	11167	8370		53.2	54.7
Shanghai_2	7821	693	46	2	741	8755	474	7	9236	3745	11.8	15.3	20.0
Burnie Tafe	7370	589	6		595	8207	25		8232	2785	5.3	11.1	13.0
Maidanak 1	1864	315	154	97	566	3953	1279	396	5628	5391			
Tanegashim	7358	310	61	92	463	5145	651	664		6143	5.2	5.5	5.
Kunming	7820	324	26		350	4671	171	27.0	4842	1939	19.8	18.1	19.
Riga	1884	259	54		313	5290	629		5919		8.6	12.7	16.
Kiev	1824	186	1		187	2023	3		2026	651		59.8	
Lviv	1831	90	18		108	1593			1763				
Borowiec	7811	79	17.00		101	1133			1347			18.1	26.
201011100		,3			101	1100	-2.57		1041	703	10.0	10-1	

## Below are the detailed descriptions of each column in Table 1 L:

Papeete

- the first column, L1, is the station location name. the second column, L2, is the monument marker number.
- the third column, L3, is the number of nights during the past 12 months in which there were Lunar ranging measurements • the fourth column, L4, is the number of Lunar Laser Ranging normal points during the past 12 months • the fifth column, L5, is the number of Lunar Laser Ranging normal points during the past 3 months
- the sixth column, L6, is the average Lunar Laser Ranging normal points rms 3 months in mm

## Table 1 L

71

350 4.5 7.6 8.1

91 12.4 18.0 20.9

Site Infor	mation	Data Information									
Column L1	L2	L3	L4	L5	L6						
Location	Station Number	num nights tracking last 12 mon	num npt last 12 mon	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ave npt rms last 3 mon						
McDonald	7080	40	84	18	59.2						

## Below are the detailed descriptions of each column in Table 2:

- the first column is the station location name. the second column is the monument marker number.
- following columns are in grouped by analysis center with four columns for each
  - o the first AC column is the average LAGEOS normal point RMS, in millimeters, during the last quarter the second AC column is the measure of short term bias stability, in millimeters, during the last quarter. The short term stability is computed
  - as the standard deviation about the mean of the pass-by-pass range biases (minimum number of passes in quarter is 10) the third AC column is the measure of long term bias stability, in millimeter, during the past year. The long term stability is the standard deviation of the monthly range bias estimates. A station must have tracked LAGEOS (1,2) in at least 8 of the last 12 months in order to compute this metric.

#### the fourth AC column is the percentage of LAGEOS normal points that were accepted in the analysis. The first entry in each table is for the performance baseline goal.

Additional Notes: Blanks in any columns implies either that there was no data or that there was insufficient data. Only stations that have supplied data within the last year are included in the table. The table is sorted in descending order by total data volume.

\* n.b. JCET does not yet have a year of results from which long term biases may be calculated.

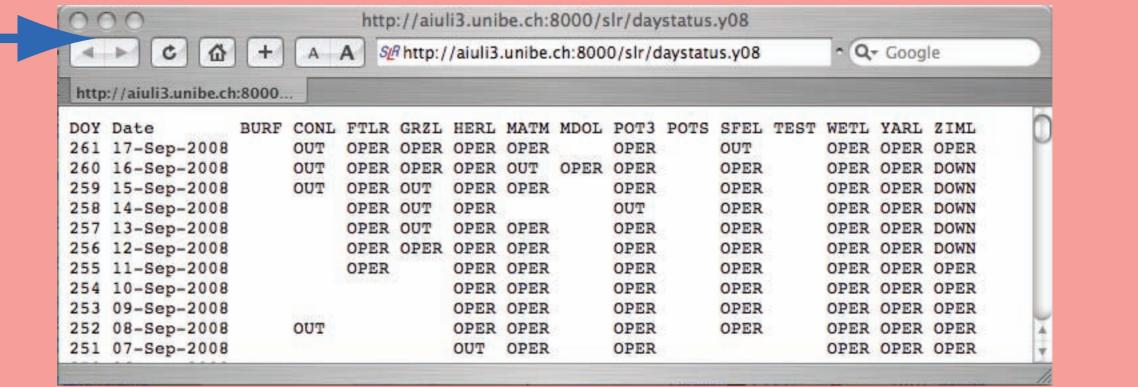
									Table	2											
Site Informat	tion	DGF	Orbit	al Ana	alysis	2 2 2 2	otsuba rbital /			Or	Facility on the Parket	ET Analys	sis .	MCC	Orbita	al Ana	lysis	2	SHAO Anal	Orbita ysis	
Station Location	Station Number	LAG NP RMS (mm)	short term (mm)	term	good LAG.	RMS	short term (mm)	long term (mm)	LAG.	RMS		V 100	good LAG. NP	RMS	short term (mm)	long term (mm)	good LAG. NP	LAG NP RMS (mm)	short term (mm)	term	% good LAG. NP
Baseline		10.0	20.0	20.0	95	10.0	20.0	20.0	95	10.0	20.0	20.0	95	10.0	20.0	20.0	95	10.0	20.0	20.0	95
Yarragadee	7090	2.8	23.8	3.6	100.0	1.7	8.4	2.1	100.0	3.1	18.1	3.6	99.8	2.1	10.7	1.8	98.6	2.1	12.7	1.5	95.6
San_Juan	7406	6.3	34.3	5.5	99.4	4.6	22.7	10.4	99.2	5.4	18.5		94.3	6.3	19.3	10.9	96.5	5.1	26.2	3.4	94.2
Mount_Stromlo_2	7825	2.9	20.2	5.5	99.2	2.8	8.8	5.6	99.7	3.6	16.6	3.0	99.3	3.2	14.7	4.5	96.0	2.5	13.0	2.7	96.0
Graz	7839	1.7	13.4	4.1	100.0	1.1	6.8	2.3	100.0	2.1	15.1	4.0	99.5	2.2	6.5	3.2	98.9	1.2	11.5	2.5	96.1
Wettzell	8834	3.2	24.2	16.0	99.9	3.1	13.4	8.8	99.8	3.6	17.4	4.4	97.5	3.1	13.2	1.9	97.0	2.4	21.5	4.7	95.6
Herstmoncex	7840	2.9	22.2	7.3	100.0	2.1	8.4	2.5	100.0	3.1	15.3	4.4	99.4	2.8	8.4	1.7	98.1	2.0	13.9	1.8	94.6
Changchun	7237	7.2	28.5	9.6	100.0	7.0	22.2	17.3	100.0	6.4	22.2	6.0	97.6	7.6	22.0	6.4	94.0	5.9	28.1	9.6	98.4
Riyadh	7832	2.8	23.4	7.0	100.0	2.3	10.1	11.2	100.0	4.5	16.0	4.6	98.1	2.9	17.7	6.1	96.1	2.8	22.0	6.2	96.8
Zimmerwald_423 Zimmerwald_846	7810	2.5	19.8	7.3	99.9	1.7	11.1	3.3	99.9	3.1	21.5		93.4	2.3	8.4	8.0	98.3	1.8	13.6	9.9	95.4
San_Fernando	7824	3.2	34.7	15.6	99.9	2.7	18.9	10.8	100.0	4.5	22.1	17.0	00.2	3.5	inks	to	ful	l re	por	ts -	05.7
Concepcion_423 Concepcion_847	7405	3.4	34.3	4.3	99.9	2.4	20.1	6.6	100.0	4.1	16.1	4.4	95.0				98.5	12.00.10.	34.3		
Matera_MLRO	7941	2.3	25.5	12.5	100.0	1.8	10.4	8.9	100.0	3.3	22.0		99.8	2.4	9.3	8.0	98.9				
Beijing	7249					12.4	18.7	16.7	90.5	5.7	16.2	8.6	82.4	8.8	20.7	13.0	94.0	5.8	19.4	6.2	92.9
Greenbelt	7105	3.0	21.7	7.4	100.0	2.0	9.0	2.8	100.0	3.3	14.5	2.7	99.6	2.2	16.3	8.6	99.1	2.0	14.0	3.1	94.4
Haleakala	7119	3.6	27.2	5.7	99.9	1.9	14.7	3.6	99.9	3.5	17.2		99.8	3.5	20.7	12.4	99.4	3.8	23.7	11.3	95.4
McDonald	7080	2.5	24.3	11.0	100.0	2.5	10.6	7.3	99.9	4.7	17.1	2.4	98.4	3.0	12.6	6.4	97.0	2.6	16.2	6.7	95.5
Potsdam_3	7841	5.5	23.0	6.5	99.3	3.2	11.9	8.7	99.8	3.9	19.1	5.1	87.3	3.3	9.5	3.7	92.7				
Monument_Peak	7110	2.8	24.6	9.1	100.0	2.5	11.6	5.5	100.0	4.3	19.0	7.2	99.2	2.7	13.2	3.9	97.0	2.6	12.3	3.5	93.1
Arequipa	7403	2.7	31.7	26.4	100.0	4.1	60.1		100.0	5.5	30.9		65.8								
Katzively	1893	9.5	30.9	18.9	99.4			į						9.6	25.5	16.9	90.1	10.6	21.5	18.6	95.2
Hartebeesthoek	7501	1.9	25.0	12.4	100.0	2.7	10.8	9.2	100.0	4.1	28.5		98.5	2.5	16.8	7.7	98.6	1.7	23.0	9.1	95.0
Simeiz	1873	27.7	45.1	43.8	73.0	76.9	45.4	25.5	98.5	6.2	31.9	12.7	26.9	61.4	45.9	13.5	82.7	38.1	30.1	17.2	57.1
Shanghai_2	7821													7.7	36.8		99.6				
Tanegashim	7358	5.1	30.3	33.8	100.0	1.6	10.2		100.0									1.4	15.3		99.2
Kunming	7820				, i		1	į										7.7	37.2		87.8
Riga	1884			_										8.5	24.9		90.9	5.8	33.0		89.6
Borowiec	7811	11.2	32.2		99.5	9.4	16.7		99.4	6.9	13.7		87.9	8.1	17.6		89.4				

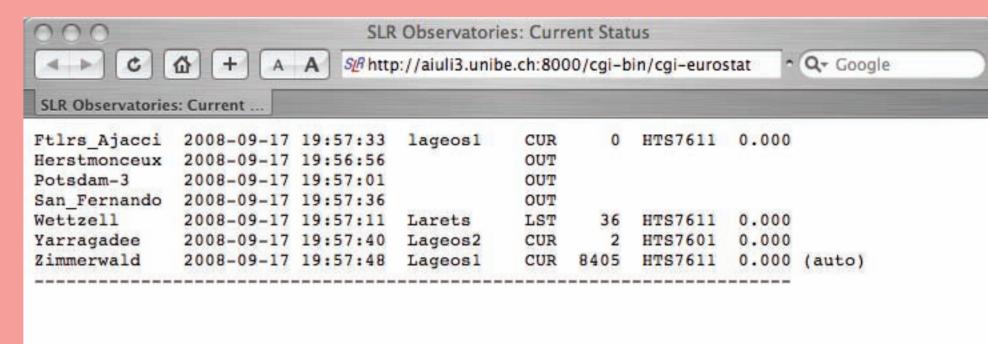
Responsible Government Official: Carey Noll NASA's Privacy Policy and Important Notices Send us your comments Last modified date: Friday, July 11, 2008 Author: Mark Torrence

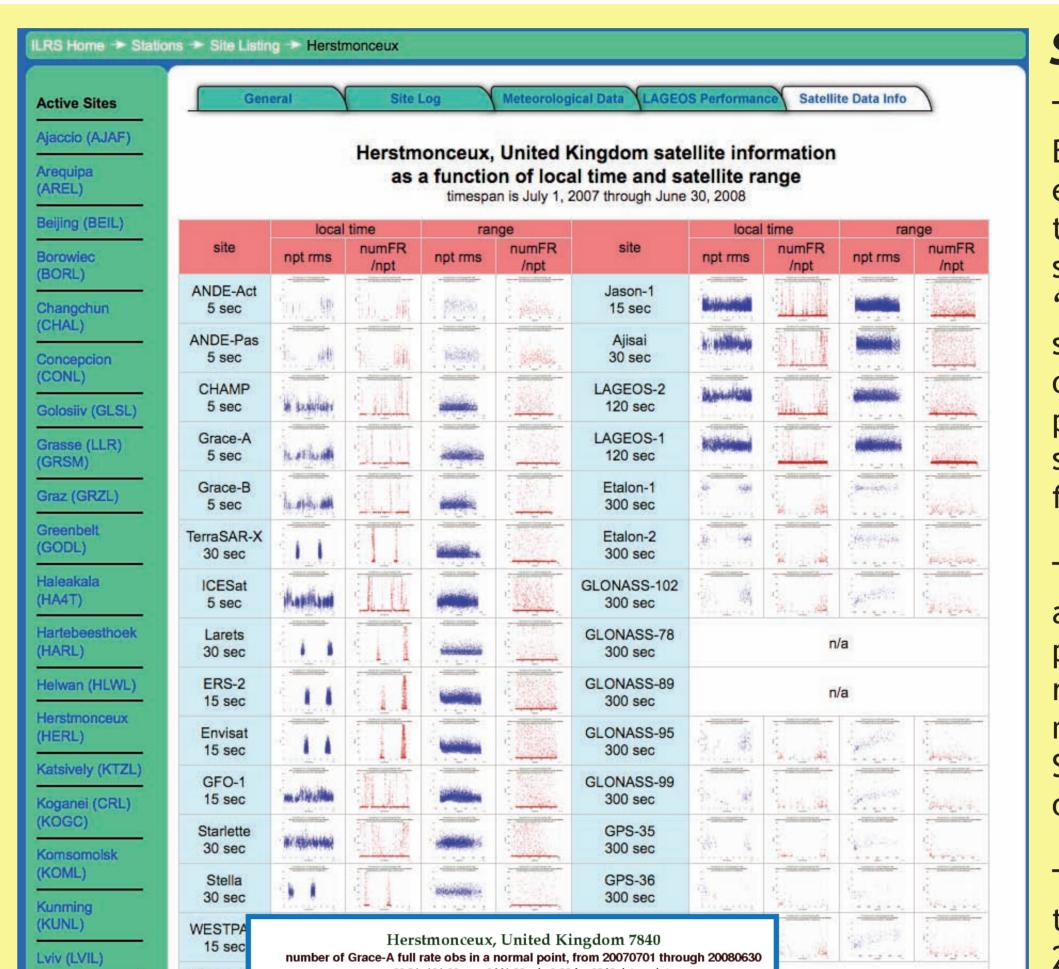
Maintained by: Carey Noll

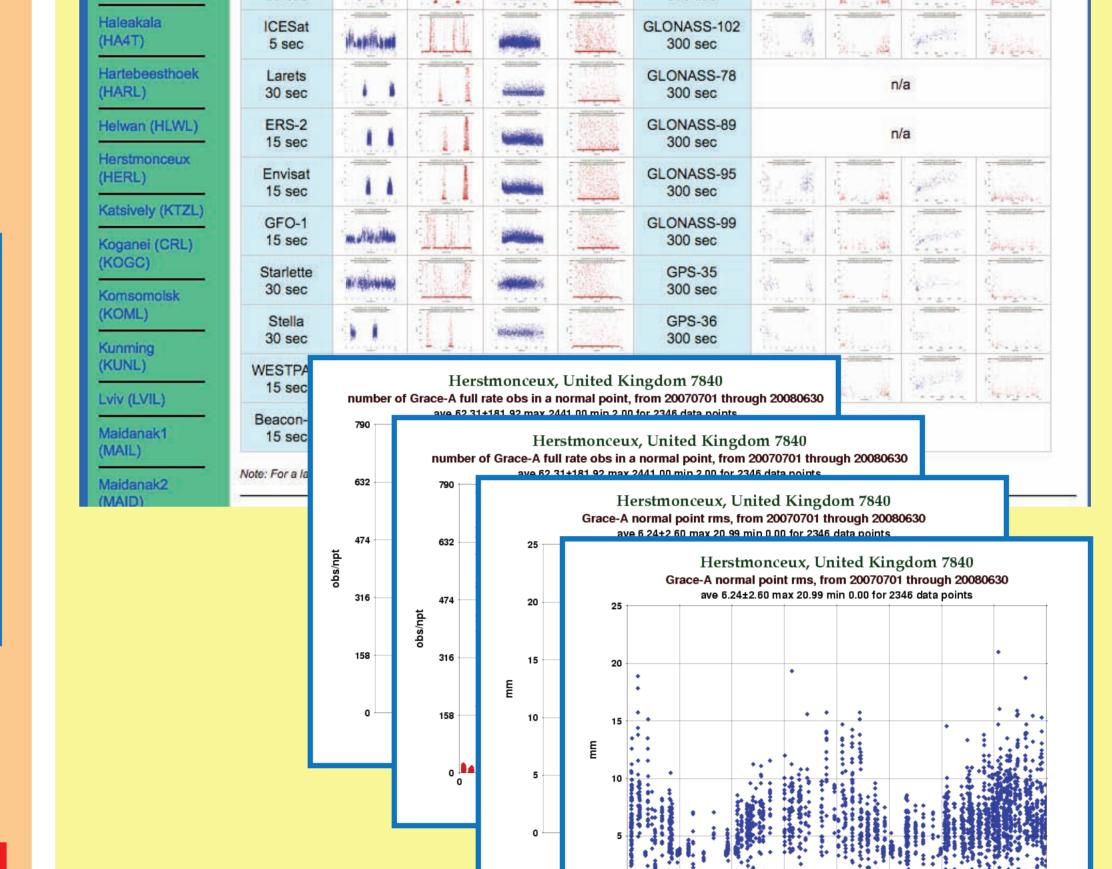
### Real-Time and Daily Station Status Reports

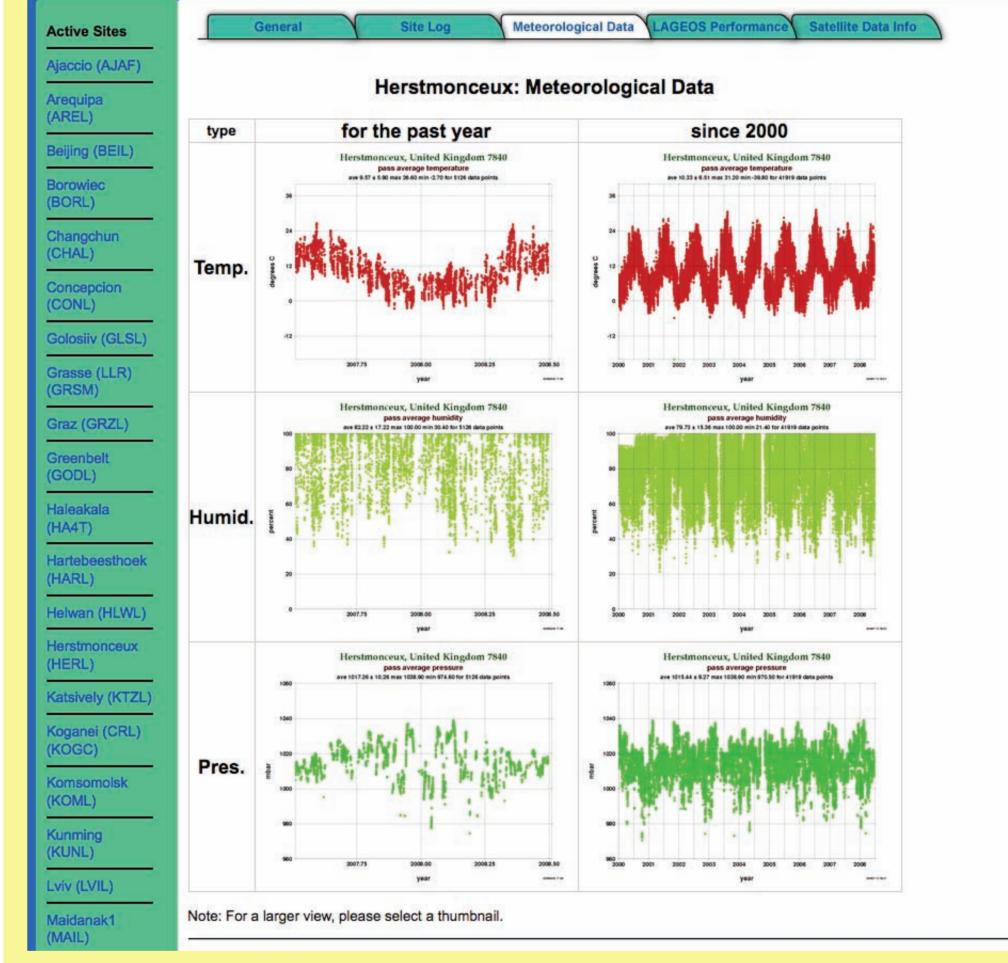
Station status information is available on a daily and near-real time basis through the EUROSTAT utility. These reports allow the ILRS community to quickly view the status of the tracking network. ILRS stations can automatically upload status information to EUROSTAT that is then used to generate an overview of the current activities of the tracking stations. The real-time report shows actual station operations at that point in time. The daily report provides a one-line entry per day showing if stations are currently staffed, operational, off-shift, off-line because of system problems, etc. We encourage all stations in the network to participate in the daily and, if possible, real-time exchange of status information.











S Home → Stations → Site Listing → Herstmonceux

#### Station-Specific Performance Charts To further aid analysis by station operators and users, the ILRS Central

Bureau generates data plots summarizing station performance and environmental parameters. These plots, created for each active station in the network, are accessible through the Stations section of the ILRS Web site. After selecting a station, the user is presented with several tabs. The "LAGEOS Performance" tab will yield several plots created to summarize station performance on LAGEOS: RMS, calibration RMS, system delay, observations per normal point, and full-rate observations per pass. For each parameter, two plots are generated, one covering the last year and a second showing the information from 2000 to the present. Examples of these plots for selected stations in the network are shown below.

The "Satellite Data Info" tab will show a table of plots providing statistics on all currently-tracked satellites as a function of time; full-rate observations per normal point and normal point rms are also computed as a function of range and time. Examples of these satellite plots for selected stations in the network are shown at left. These plots are also accessible through the Satellite Missions section of the ILRS Web site (organized by mission, matrix of all stations tracking mission).

The "Meteorological Data" tab presents plots of environmental parameters: temperature, humidity, and pressure; plots spanning the last year and since 2000 are also created for this category. Examples of these met data plots are shown in the lower left.



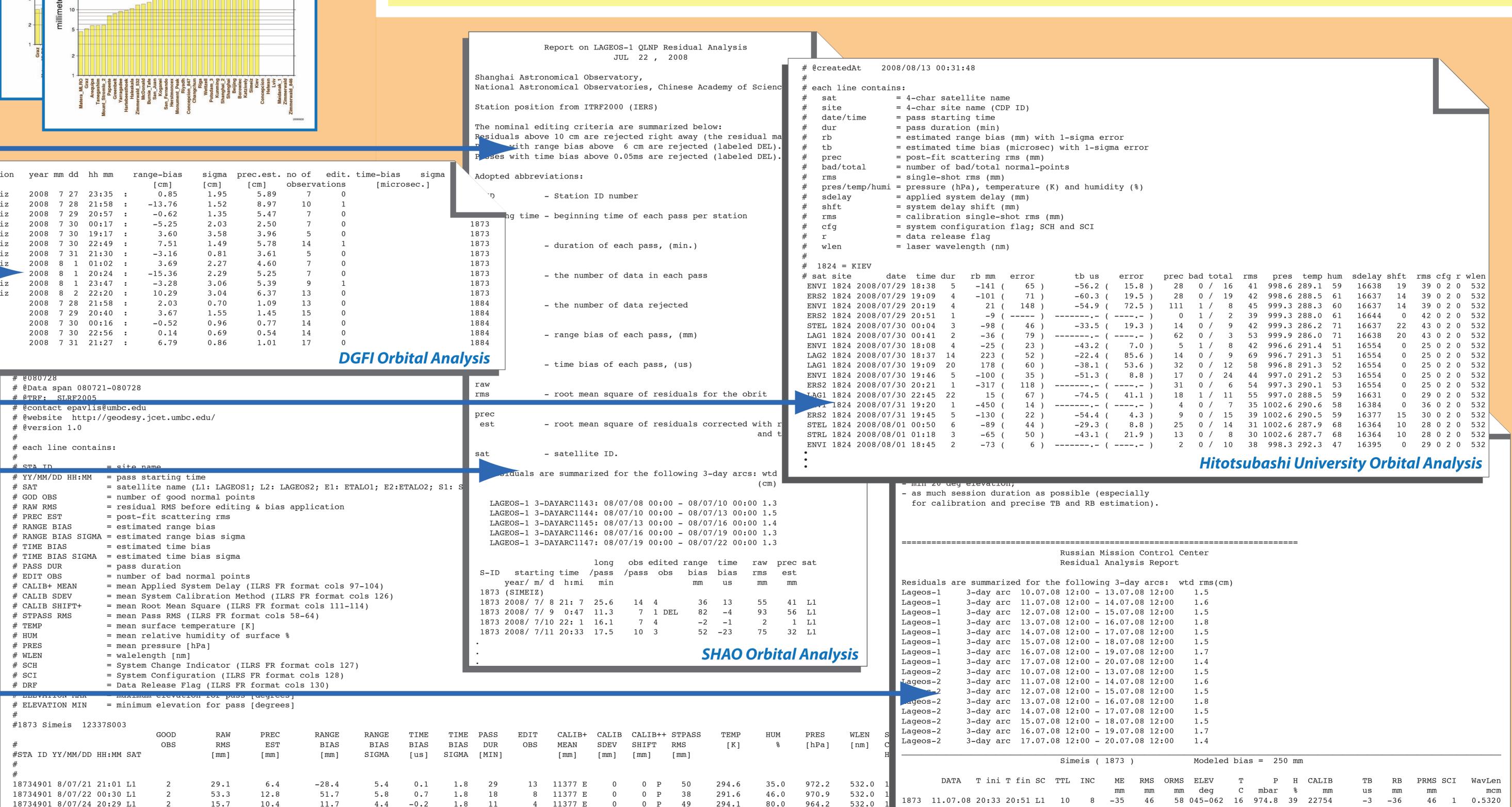
1873 11.07.08 23:58 00:16 L1 9 6 60 119 134 028-056 15 974.8 46 22754

1873 12.07.08 22:51 23:12 L1 12 12 91 152 178 037-074 18 974.2 39 22754

1873 14.07.08 20:00 20:26 L1 12 12 54 80 96 032-053 21 974.8 33 22754

23 46 76 1 0.5320

**MCC Orbital Analysis** 



295.9

36.0

964.2

**JCET Orbital Analysis** 

532.0

4 11377 E 0 0 P 51

5 11377 E 0 0 P 55

6.3 2.5 1.7 10