



1. Minutes of the GGP Business Meeting, ETS2008, Jena, Germany – September 2, 2008	2
1.1 Future of GGP and GGOS connections	2
1.2 Station review.....	2
1.2 Other station news	6
1.3 User Agreements	9
1.4 New station + instrument seismic noise tests	9
1.5 Report from GFZ	10
1.6 Report from ICET to GGP	10
1.7 Next Meeting	10
2. Resolutions affecting GGP adopted at ETS2008	10
3. Minutes of the GGP Business Meeting, EGU Vienna, Austria, April 22, 2009.....	11
3.1 Station review.....	11
3.2 Other station news	12
3.3 ICET Report	13
3.4 News from GFZ concerning GGP database	13
3.5 Proposed improvements to the GGP database	13
3.6 GGP – IAG relationship.....	13
3.7 Next GGP Meeting	13
4. Miscellaneous Items	14
4.1 Online Versions of Papers.....	14
4.2 GGP Email List.....	14
5 Action Items.....	14
5.1 Questionnaire on GGP as an IAG Service.....	14
5.2 Station Questionnaire on parameters for sites (GFZ)	14
5.3 Seismic Noise Test for Site + Instrument.....	14
5.4 New Site Information and Data Authorization	14
5.5 GGP File Format, Final Changes	14
Questionnaire on GGP as an IAG Service.....	15

1. Minutes of the GGP Business Meeting, ETS2008, Jena, Germany – September 2, 2008

In Attendance: B. Ducarme, H.-P. Sun, H. Schuh, M. Poutanen, H. Virtanen, V. Palinkas, J.-P. Barriot, G. Jentzsch, T. Jahr, C. Kroner, W. Zürn, W. Clark, T. Sato, S. Rosat, H. Ruotsalainen, R. Warburton, Y. Imanishi, B. Ritschel, J. Neumeyer, A. Brzezinski, L. Longuevergne, T. Klügel, M. Westerhaus, B. Meurers, J.-P. Boy, U. Riccardi, J. Gomez-Gonzalez, C. Lopez, O. Omang, H. Wilmes, H. Wziontek, Y. Tamura, K. Shibuya, J. Liard, H. Virtanen, D. Crossley, J. Hinderer

D. Crossley opened the meeting and welcomed the participants; J. Hinderer took minutes. To accommodate discussion, it was decided to deal first with the status of GGP.

1.1 Future of GGP and GGOS connections

The first point which was discussed is the link between GGP and GGOS. The status and activities of GGOS were presented by H. Schuh who also strongly recommended that GGP becomes a future service of GGOS. D. Crossley asked about the value of GGP data for GGOS and H. Schuh explained that the time-varying ground gravity GGP data are valuable data in the general context of linking physical and geometrical data for the Earth's system. The potential use of ground gravity to validate space gravity missions was also acknowledged.

B. Ducarme noted that to be an IAG Service means the timely provision of Products and that GGP is usually late in providing gravity data. C. Kroner who represented GGP at a recent GGOS meeting in Italy confirmed the sentiment among several IAG officers that GGP should move to a GGOS (or IAG) service. The appropriate time to complete such a transition would be the next IUGG meeting in Australia in 2011.

It was agreed that a questionnaire would be circulated within GGP asking the general opinion of such a move. This questionnaire is attached to this Newsletter.

1.2 Station review

Different reports for the following GGP stations were then given as follows.

BKG stations (BH, WE, MC, TC) by H. Wilmes

Bad Homburg (BH):

- SG30, dual sphere, restarted Jan 2008 after upgrade to compact Dewar, Sumitomo cooling system
- SG44 operates since February 2007
- GWR registration system for both gravimeters

Wettzell (Fundamental Station WE):

- SG29, dual sphere, GWR registration system
- Hydrological investigations on the station
- Planned construction of VLBI Twin Telescope
- new gravimeter house under construction
- Plans to move SG44 to Wettzell

Medicina (MC, Italy):

- SG23 since 1996

GWR registration system

Concepcion (TC, Chile) (TIGO fundamental station):

SG38 Dec 2002 – June 2008, now at GWR for upgrade to Sumitomo cooling system and new Dewar

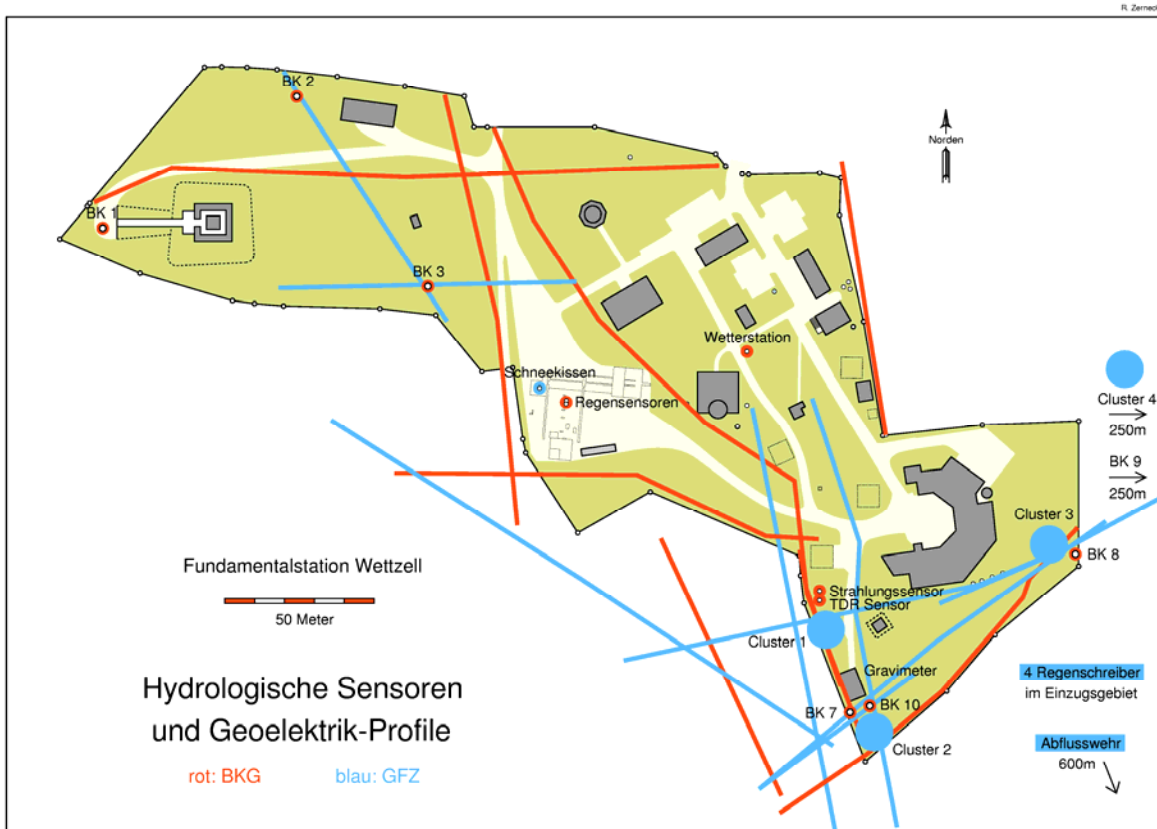
Repeated Absolute Gravity Measurements

- Bad Homburg: ~ monthly AG
- Two AG measurements per year in Wettzell, Medicina and Moxa (Univ. Jena)
- Concepcion, Chile (TIGO): May 2006 to October 2007 weekly AG measurements

Position information

- GPS permanent: Wettzell, Bad Homburg, Medicina (Italy), Concepcion (Chile), Moxa (Univ. Jena)
- VLBI: Wettzell, Medicina (Italy), Concepcion (Chile)
- SLR: Wettzell, Concepcion (Chile)

A major hydrology effort is underway at WE, with an anticipated change of location of the SG due to noise from a new telescope site. Installation of lysimeters are to weigh the water content of the soil. This is being done by cooperation between GFZ Potsdam and BKG. Involved are B. Creutzfeldt and A. Güntner (GFZ), and Th. Klügel (BKG). A plan of the new



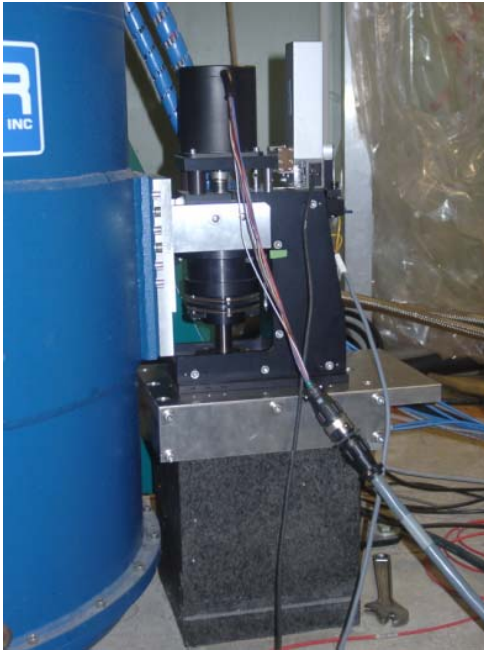
site is shown.

This is a lysimeter installation:



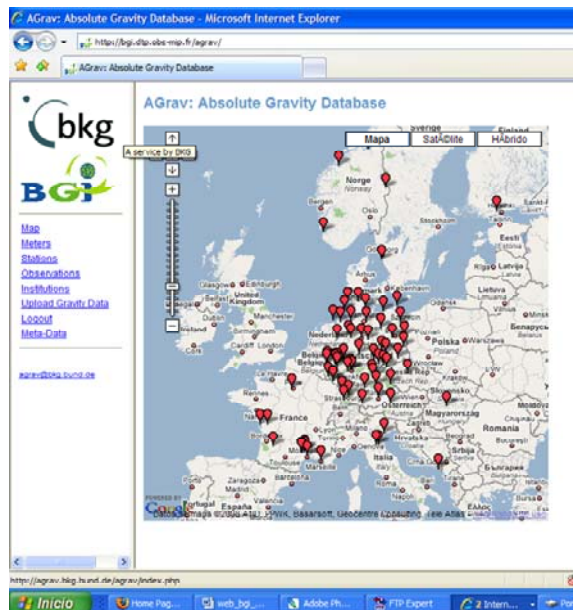
Bad Homburg Calibration:

- Calibration experiments with SG30 and SG44 for instrument transfer function
- SG44 installation of calibration platform
- Calibration platform induces artificial vertical accelerations
- Motor replaces automatic leveller



Agrav Initiative

BKG launched a project last year to collect AG data at SG sites, and elsewhere, to provide an AG database comparable in usefulness to the GGP database. This has now successfully been accomplished and the older BGI gravity database will be merged with the Agrav database at BKG. Show is an interface map of stations in Europe.



Cantley CA - J. Liard

The Cantley station is operational, and data are uploaded. J. Liard wanted to record the passing of Dick Flint, a person who had devoted much time and energy to keeping the Canadian SG going over the last decade.

Japanese stations (ES, CB, NY, KA, SY, MA, KY, BA) by Y. Tamura, K. Shibuya

Esashi (ES): From 2004 – 2008 May, there is poor data quality, followed by exchange of gravboard in May, after which quality recovered. Has the scale factor changed? Planned to move the SG to Mizusawa campus. Target of the new location: global → local, regional study, collocation with VLBI, GPS, and groundwater changes.

Canberra (CB): Very good quality data, drift: 1-2 microgal/year. Ownership changed to RSES/ANU from April 2008; data distribution policy is same as before

Ny-Alesdund (NY): Good, clock problem from 2007. New data acquisition system will be install this September (2008).

Kamioka (KA): Good, clock drift: March-May, 2008. Drift rate: 25 micro gal/year, decreasing. There is a large annual change caused by ground water change

Syowa (SY): Status of Syowa SG after replacement from TT70#016 to CT#043.

Here follows the Report by K. Shibuya, NIPR:

- Replacement was done in April 18, 2003.
- Parallel observation with TT70#016 was done till the end of 2003.
- Calibration by FG5#210 and #203 was done in January 2004.
- Until now (September 2008), observation is continuing without big troubles.
- However, the sensor drift was found to be unexpectedly large, up to 200 μ Gal/yr.
- Re-centering of the sphere was done at the beginning of every year, as a maintenance training of winter-over members.
- Data until 2005 were uploaded to the Japan GGP center at Mizusawa (as reported by Y. Tamura).
- Replacement to a new CT of less drift rate is planned at the end of 2009, together with the calibration by FG5.

Matsushiro (MA): Funding uncertainty from April 2009?

Kyoto (KY): Stopped observation in Kyoto.

Cibinong, Indonesia: New station, from this month! [see report later], replacing the failed instrument in Bandung (BA).

Membach MB - M. Van Camp

- The data are still successfully sent "live" to IRIS. The data files and Metadata were tested by a seismologist accustomed with IRIS, it works fine.
- A paper "Connecting a Quanterra data logger to the C021 Superconducting gravimeter" has been accepted by Seismological Research Letters.
- End 2007-early 2008 the SG C021 suffered from several power outages. The Royal Observatory made a big effort to install a much improved UPS system that ensures a 72 h power supply to the SG control unit and the Quanterra data logger. This should prevent a lot of steps, which appeared after each power outage.
- New hydrogeological investigations are being performed to further improve our local hydrological model.

Metsahovi ME - H. Virtanen

The data are good, but there has been problems with the cooling system.

MunGyung MG - J. W. Kim

The cooling system failed and the instrument was temporarily shut down. The lack of manpower means uncertainty as to when the station will restart. There is a proposal pending for two instruments in Canada, one over the Cascadia subduction zone, and one in the Alberta tar sands.

Moxa MO - T. Jahr

The instrument is running well. C. Kroner has moved to GFZ so there is a lack of manpower. A new data acquisition system was installed in 2006.

Pecny PE- V. Palinkas

Installation was 02/07. In general the data are good in tidal band and long periods but higher noise in seismic band. FG5 measurements and IGS available. Hydrology has been studied in detail at the site.

Wuhan WU - H.-P. Sun

WU meter is OK. A new instrument was installed about 1 km from the old one (see comments elsewhere). A new meter is planned for installation in Tibet.

Sutherland SU - C. Kroner

On July 31/08 the SU meter was shut down and instrument sent to GWR. A new calibration will be done in 2009. A hydrology experiment has been done at the site.

Vienna VI, CO - B. Meurers

VI no longer is operating (since December 2006), but the instrument has been moved to the Conrad Observatory, some 50 km SW of Vienna. Operations started October 2007, data will be uploaded after a calibration by the Luxembourg FG5.

We have no recorded reports at this meeting for stations HS (Hsinchu) and WA (Walferdange).

1.2 Other station news

Different participants informed the GGP community that new projects involving SGs are under development.

- C. Wilson mentioned a ‘transportable’ SG is used in hydrology (aquifer) monitoring in Texas. It has been installed and operating in Austin since September 07. The station has been temporarily designated TX (Texas).
- W. Zurn reported that BFO (Germany) expects the delivery of a SG with 2 spheres with different weights in 2009
- H.-G. Scherneck noted that Goteborg (Sweden) will also be equipped with a SG in 2009
- D. Smith sent information that Station BO (TMGO, Boulder) will restart in 2009 with a strong commitment by NOAA to upgrade the station and refurbish the data acquisition system. Operations should be underway again in the summer of 2009.
- We are informed that the IGN team from Spain plans to buy several SGs, the first of them to be installed in Jebes close to Madrid.
- R. Warburton confirms that a second instrument will be delivered to India in 2009.

We provide more information below on some of these developments. The sites are included in Table 1 at the end of this section. There are 8 new stations, 4 of them requiring SGs in 2009, and 6 of which are scheduled to be operational in 2009, according to GWR Instruments. Roughly in order of start-up they are:

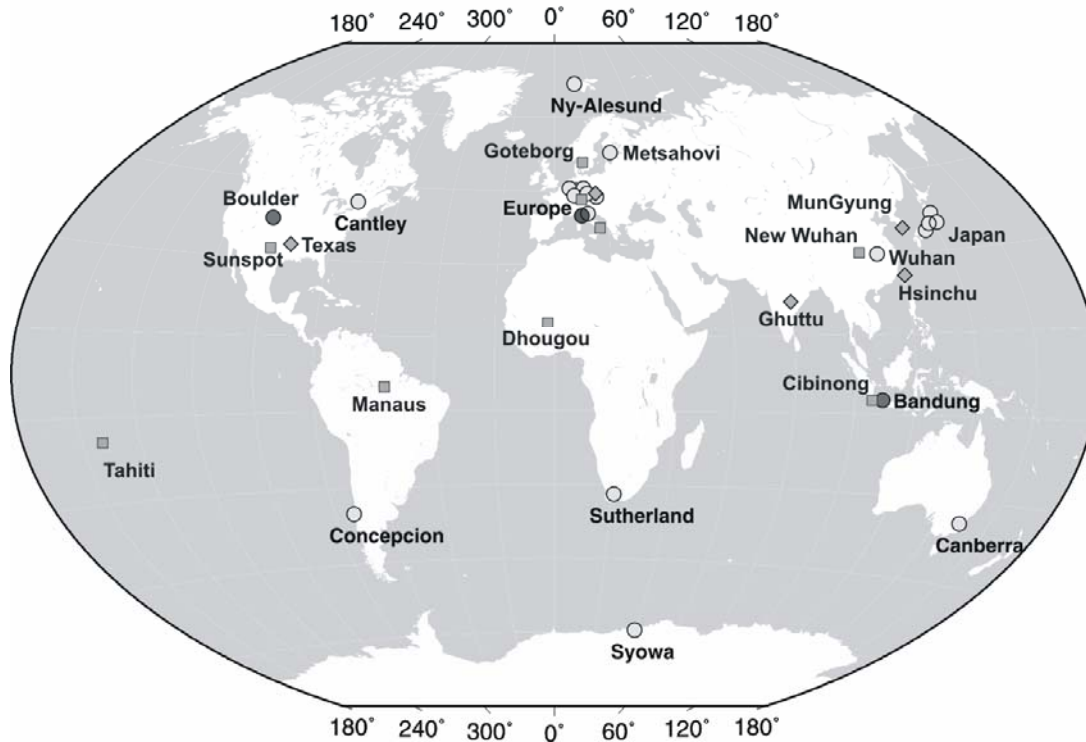
- (1) Cibinong, Indonesia, is a new installation successfully completed in 2008 by Y. Fukuda and colleagues. It has been operational since November 2008, and seems to be

working OK. This is very good news after the problem with the previous SG in Bandung. Indonesia is one of the most tectonically active areas in the world, and this SG site is the only one that would have been within useful distance of the large Sumatra-Andaman event of 2004.

- (2) Apache Point, (New Mexico, USA) is the site of the high precision Lunar Laser Ranging facility at Apache Point Observatory (labeled Sunspot in Figure 1). The purpose of installing an SG is to provide precise vertical ground control for the very accurate lunar laser ranging (LLR), currently at the 1-3 cm. With the introduction of an SG in 2009, it is hoped that (together with existing GPS), the precision can be improved to the mm level to enable progress in a number of experiments in fundamental physics (Murphy et al, 2008).
- (3) Goteborg, Sweden is the site of the Onsala Space Observatory with a VLBI antenna. The instrument has been delivered, and work is being done on construction of the piers and building. The responsible scientist, H.-G. Scherneck, made extensive inquiries within the GGP community about site construction, particularly on coupling the instrument to bedrock. The site is above ground and will not have the problem encountered by stations located underground, where there is inevitably a soil moisture layer above the instrument's sensor. The SG will be used to provide continuous monitoring of the station with co-located AG measurements and nearby tide gauge observations. This fiducial station serves a number of different scientific goals, including the monitoring of glacial isostatic adjustment (GIA) and sea level changes. A full report by H.-G. Scherneck is attached to this Newsletter.
- (4) Manaus (Brazil), in the Amazon basin, is to be the site of the dual-sphere instrument previously at Sutherland (S. Africa). This location became well known in the Amazon as a very high rainfall site that became one of the initial targets of the GRACE project (Wahr et al., 1998). We have no details yet of the site, but permanent GPS, water table, soil moisture, and precipitation measurements are planned.
- (5) Schiltach (Germany) is a high quality seismic installation at the Black Forest Observatory (BFO). BFO is a very quiet site with excellent seismometers and has one of the best Lacoste spring gravimeters for recording normal modes. The SG is expected to be delivered in the second half of 2009 and will be used by seismologists for several studies, including normal modes of the Earth.
- (6) Djougou, Benin is one of the stations of the GHYRAF (gravity and hydrology in Africa) project, where an SG is to be installed at this very high rainfall area that catches the West Africa monsoon (Hinderer et al., 2009). The project will study the gravity and vertical displacements that occur seasonally due to meteorology and hydrology along a N-S transect from the desert environment of Tamanrasset in the Sahara, to Djougou in the south. With ancillary measurements from GPS and AGs (both the FG5 and A10 models), and also a portable Scintrex gravimeter, it should be possible to perform a surface averaging of ground gravity for comparisons with GRACE satellite data. The SG will operate for at least 2 years.

Most of the new installations have the potential to produce high quality data as they will be under the direction of experienced geoscientists. In addition, Table 1 shows two other sites that have been in the planning stages for several years: Matera, in Southern Italy, and Tahiti.

Superconducting Gravimeters GGP Stations - Current and Planned



At present they are still under consideration. The installation of these new SGs in interesting geophysical and geological environments continues the tradition of the early SG pioneers. The instruments are being deployed for purposes far removed from the tidal gravity (and normal mode detection) purposes of the past. GGP will continue to tie together the growing SG community and help its scientists realize the best use of the instruments.

Table 1. Details of the current and planned GGP stations, 2009/3/7.

	Code	Location	Country	Started	Latitude	Longitude	Responsible	Institute	Other*
1	BH	Bad Homburg	Germany	Feb-01	50.2285	8.6113	H. Wilmes	BKG Frankfurt	
2	CA	Cantley	Canada	Nov-89	45.5850	284.1929	J. Liard	GSC Ottawa	SP
3	CB	Canberra	Australia	Jan-97	-35.3206	149.0077	Y. Tamura	NAO Mizusawa	S,D
4	CO	Conrad?	Austria	Nov-07	47.9288	15.8609	B. Meurers	U. Vienna	
5	ES	Esashi	Japan	Feb-88	39.1511	141.3318	Y. Tamura	NAO Mizusawa	tilt
6	HS	Hsinchu	Taiwan	Apr-06	24.7890	120.9710	C. Hwang	Nat. Chiao Tung U.	
7	KA	Kamioka	Japan	Oct-04	36.4250	137.3100	Y. Tamura	NAO Mizusawa	
8	MA	Matsushiro	Japan	Dec-95	36.5439	138.2032	Y. Imanishi	U. Tokyo	-
9	MB	Membach	Belgium	Aug-95	50.6093	6.0066	M. van Camp	ROB Brussels	
10	MC	Medicina	Italy	Jul-96	44.5219	11.6450	H. Wilmes	BKG Frankfurt	V,S
11	ME	Metsahovi	Finland	Jan-97	60.2172	24.3958	H. Virtanen	FGI Masala	V,S,D
12	MG	MunGyung	S. Korea	Mar-05	36.6402	128.2147	J.-W. Kim	U. Calgary	
13	MO	Moxa	Germany	Dec-99	50.6447	11.6156	G. Jentzsch	FSU Jena	
14	NY	Ny-Alesund	Norway	Sep-99	78.9306	11.8672	O. Omang	Norwegian MA	V,D
15	PE	Pecny	Czech Rep.	Apr-07	49.9138	14.7856	V. Palinkas	VUGTK Pecny	
16	ST	Strasbourg	France	Jul-96	48.6217	7.6838	J. Hinderer	EOST Strasbourg	
17	SU	Sutherland	S. Africa	Feb-00	-32.3814	20.8109	C. Kroner	GFZ Potsdam	G
18	SY	Syowa	Antarctica	Mar-93	-69.0067	39.5857	K. Shibuya	NIPR Tokyo	V
19	TC	Concepcion	Chile	Nov-02	-36.8437	286.9745	H. Wilmes	BKG Frankfurt	V,S
20	TX	Texas	USA	Jun-05	30.2900	-97.7400	C. Wilson	U. Austin	
21	WA	Walferdange	Luxembourg	Jan-04	49.6650	6.1530	O. Francis	U. Luxembourg	
22	WE	Wetzell	Germany	Jun-96	49.1440	12.8780	H. Wilmes	BKG Frankfurt	V,S,L,D
23	WG	Ghuttu	India	Apr-07	30.3170	78.0660	B. Arora	WIHG Dehradun	
24	WU	Wuhan	China	Dec-97	30.5159	114.4898	H.-P. Sun	IGG Wuhan	S
New and Planned Stations									
25	GE?	Wuhan	China	Oct-08	NA	NA	L. Hui	GETOC, Wuhan	
26	CI?	Cibinong	Indonesia	Nov-08	-6.2300	106.7300	Y. Fukuda	U. Kyoto	
27	SS?	Sunspot	USA	Feb-09	32.7660	-105.8200	T. Murphy	UCSD California	L,D
28	BG	Gujarat	India	Mar-09	23.4748	70.5709	A. Gupta	ISR Gujarat	
29	GO?	Goteborg	Sweden	Mar-09	57.3958	11.9267	H. Scherneck	Onsala Space O.	V,G
30	BO	Boulder	USA	Jul-09	40.1308	-105.2328	D. Smith	NOAA, UC Boulder	
31		Schiltach	Germany	Jul-09	48.3306	8.3294	W. Zurn	U. Karlsruhe	
32		Djougou	Benin	Sep-09	9.3500	2.6200	J. Hinderer	EOST Strasbourg	
33		Lhasa	China	Sep-09	21.6800	91.1667	H.-P. Sun	IGG Wuhan	
34		Yebes	Spain	May-10	40.517	-3.083	J. Gomez	IGN, Madrid	V,G
35		Manaus	Brazil	NA	-3.0100	-60.0000	C. Kroner	GFZ Potsdam	
36		Matera	Italy	NA	40.6486	16.7046	G. Bianco	ASI Matera	V,S,P
37		Tahiti	France	NA	-17.5769	-149.6063	J.-P. Barriot	U. Fr. Polynesia	V,D

*V=VLBI, S=SLR, D=Doris, L=LLR, P=PRARE, G=GGOS, SP=SPOT Satellite

1.3 User Agreements

D. Crossley suggested that the user agreement will be sent to the new GGP users and addressed then the question of the new ICET structure which moved from Brussels (after former director B. Ducarme retired) to Tahiti (present dir. J.-P. Barriot).

1.4 New station + instrument seismic noise tests

D. Crossley suggested that all the GGP station operators perform the seismic noise amplitude test which is based on 5 quiet days. This is especially important for the new stations that have not been tested in this respect. A summary of the scientific aspects of the tests are given in Rosat et al. (2004). Details are given in the Appendix to this Newsletter.

Rosat, S., J. Hinderer, D. Crossley, and J.-P. Boy, 2004. Performance of superconducting gravimeters from long-period seismology to tides, *J. Geodyn.* **38**, 461–476.

1.5 Report from GFZ

B. Ritschel finally presented a talk on the status of the GGP data base. Unfortunately it is too long to be included in this Newsletter, but it did outline a more sophisticated database concept than the existing one. As has become clear in the past year, the support for geodetic database services at GFZ has apparently weakened, and until GFZ reorganizes it will be difficult to move forward with enhancing the ISDC database.

1.6 Report from ICET to GGP

The last semester 2007 / first semester 2008 represent a transition period from the “old” ICET in Brussels to the “new” ICET in Tahiti. The highlights of this transition period are (JP Barriot, 04/19/08):

1. December 07: transfer of the ICET offline database (collection of files) from Brussels to Tahiti, during a one week visit of J.P. Barriot to the Royal Observatory of Belgium); another visit was done in June 08
2. February 08: transfer of the ICET portal to <http://www.upf.pf/ICET/>
3. March 08: definition of the tables / fields of the future online ICET database in close collaboration with the former ICET director B. Ducarme. The database is able to hold any « historical » records (including spring gravimeters, extensometers, horizontal pendulums...), a well as cryogenic gravimeter series (GGP), or even tide gauge / piezometer series. See the poster at Jena meeting, database prototype is running
4. March / July 08: study of a filtering algorithm to replace the old way of identification of outliers / jumps by “hand” (TSoft software with monitoring operator) in GGP / tidal series. Oral presentation at Jena
5. April 08: a grant application has been sent to the French National Institute of the Sciences of the Universe (INSU) for funding of a cryogenic gravimeter (USD 700,000, rejected August 08)
6. August 08: purchase of a gPhone gravimeter

There was some discussion on point #4, following an earlier presentation of the method proposed for producing corrected 1 minute data.

1.7 Next Meeting

The next GGP meeting will be held in Vienna during the EGU 2009 general assembly.

2. Resolutions affecting GGP adopted at ETS2008

GGP sponsored 3 resolutions for the ETS2008 Resolutions Committee, and the final form of these is shown below.

Resolution #5: **Noting** that GGP is an integral component of the IAG GGOS program, and relies on the successful operation of the GFZ/ISDC database in Potsdam for the exchange of SG data, and **recognising** that GFZ Potsdam has an ongoing contract to provide services to the International Center of Earth Tides, the ETS2008 **recommends** that the President of the Earth Tides Sub-Commission convey in writing to GFZ that difficulties with the funding of the GGP/ISDC database need to be resolved with some urgency to permit the GGP database to operate without interruption.

[Resolution #5 was implemented by G. Jentzsch, but problems arose in getting the message to the influential people at GFZ. It is to be hoped that the issues can be quickly resolved so that Bernd Ritschel and colleagues can be given appropriate support to pursue development of the GGP database.]

Resolution #6: Noting that remarks have been expressed at this ETS2008 Symposium concerning the possible transition of the GGP from an Inter-Commission project to an IAG Service, the ETS2008 **recommends** that GGP and ICET engage in further discussion of the full implications of this suggestion, with a view to resolving the question for a decision on this issue at the 2011 General Assembly of the IUGG.

[Resolution #6 is the subject of a Questionnaire in the Appendix to this Newsletter]

Resolution #7: Noting that a new management of ICET has, since 1 January 2008, undertaken the task of running the GGP database from the University of French Polynesia and **recognising** the sincere appreciation of the GGP community to J.-P. Barriot, the new ICET Director, for assuming this responsibility, the ETS2008 **recommends** that ICET perform the following tasks for the benefit of the GGP database and community of users:

- a) standardize the structure of the GGP 1-minute files for all existing and future data,
- b) provide a calibration history of each SG in the GGP network, that will be accessible to all users,
- c) provide verification to the data provider that files have been received in readable format consistent with GGP standards, and
- d) implement a procedure for providing corrected 1-minute data and the results of tidal analysis of such data, to all users of the GGP database.

[Resolution #7 is dealt with in part by the ICET report in the next section]

3. Minutes of the GGP Business Meeting, EGU Vienna, Austria, April 22, 2009

In Attendance: M. Poutanen, H.-G. Scherneck, J. Bogusz, H. Virtanen, V. Palinkas, C. Kroner, A. Weise, N. Naujoks, J. Mäkinen, B. Ritschel, B. Meurers, H. Wziontek, H. Virtanen, C. Hwang, D. Crossley, J. Hinderer

DC opened the meeting and welcomed the participants. He apologized for the delay in sending out the minutes from the last GGP business meeting held in Jena, 2008. This joint Newsletter therefore contains Minutes of both the Jena and Vienna GGP meetings.

3.1 Station review

Follows then the classical station review (detailed notes were not kept, comments are from memory):

- Conrad Observatory near Vienna (Austria) by B. Meurers. This is an impressive installation with top quality equipment and infrastructure. They are awaiting an FG5 calibration before uploading data.



- Pecny station in Czech Republic by V. Palinkas. There were some initial problems with the data that have now been resolved.
- BKG stations (BH, WE, MC, TC) by H. Wzontiek. A detailed presentation was given, following from the previous one at ETS2008; we do not have the information at hand.
- Swedish station near Onsala by H.-G. Scherneck (planned May 2009). Hans Georg indicated almost everything was ready; his previous detailed report is attached here.
- Taiwanese stations by C. Hwang. Cheinway mentioned they were going to start uploading the HS data. Preparations are underway to establish a second SG base station high in the Taiwan Mountains to determine uplift rate and do other studies. The site is being prepared for their 2nd SG that came back from Service from GWR and had been running in parallel with the original SG at HS. The new site will be close to one of the AG sites on the ATGIA transect across south-central Taiwan.
- ME station by H. Virtanen. Everything appears as usual for the ME site, but the instrument is now quite old (as is for Cantley, a TT70).
- MO and SU stations by C. Kroner. At Moxa, the intensive gravity subnetwork around the station (using Lacoste-Romberg relative meters) has now been discontinued and they feel they have an adequate hydrology model to predict local gravity variations from rainfall. At SU there has been a change of instrument, and some hydrological studies have been done.

3.2 Other station news

Some news items were given (or received by email) concerning the status of planned stations:

- the planned experiment in Manaus (Brazil) by GFZ is presently frozen because of the lack of final decision.
- the old instrument at Sutherland (SU) was refurbished by GWR, as mentioned by C. Kroner.
- a second SG was installed in Wuhan (China) in the Fall of 2008 and belongs to the China Earthquake Administration, Division of Gravity and Earth Tides, Institute of

Seismology, Wuhan. The responsible scientist is Li Hui; we are getting station information.

- a second Indian instrument was installed successfully in Gujarat Province; like the Ghuttu instrument it will primarily be used for detecting seismic precursors

3.3 ICET Report

At the Business Meeting we had no news from ICET concerning the processing of GGP data. Subsequently we received the following from Jean-Pierre Barriot:

This is a very short report, prepared for the EGU Business Meeting: [added by DC]

1. I devised validation software that responds to the criticisms raised during the ETS2008 meeting in Jena, by re-adding the "noise" to the GGP filtered data. Tests look promising. I hope to be able to routinely treat raw GGP data by September [2009].
2. The server that will host the ICET database as been bought (6000 euro) by the University Central Bureau on Information technologies and Networks (RENATER). The ICET database will be online by December [2009] on a test basis.
3. BIMS issues 144 and 145 [with the Proceedings of the Jena Earth Tides Symposium] will be on line soon (mid-May, [2009]). I am waiting for the ISBN number.
4. The gPhone of the ICET center has been received late December and is now in operation in Tahiti-Pamatai. We observed on April 16 a 6.6 Earthquake in the South Sandwich Islands.
5. The GGP header software is also under completion.
6. I will present a complete report about ICET activities in Buenos Aires IAG meeting.

[J.-P. Barriot, Director, ICET; UFP Tahiti]

3.4 News from GFZ concerning GGP database

B. Ritschel presented the latest news on the GGP data base at GFZ. He indicated that there is no clear sign to know if this duty will still be a priority of GFZ in the future. DC stated that the data upload is far behind the GGP rules and he commented that the GGP community still misses a person like B. Ducarme, former ICET director, who was regularly requesting data in due time from the GGP members. The new GGP members are also more isolated than before and hence all the required information concerning the station or the data system is often missing.

3.5 Proposed improvements to the GGP database

C. Kroner suggested that the information concerning the GGP stations needs to be updated. She constructed a questionnaire that should be completed as precisely as possible. Also she is asking for pictures of your station to be sent to GGP. Both this questionnaire and pictures should be sent directly to her (Corinna Kroner) at corinna.kroner@uni-jena.de.

3.6 GGP – IAG relationship

Finally the question of Service/Project for the GGP has been discussed again. D. Crossley will contact IAG officials (M. Rothacher, R. Forsberg, and S. Kenyon) to have more information on the procedure to become a GGOS service. A questionnaire is being circulated with this Newsletter.

3.7 Next GGP Meeting

There being no obvious other meeting suggested for GGP in 2010, it was decided to pursue a special session for the EGU Meeting in Vienna. This session would be tuned to ground-based

gravity measurements, and include an opportunity for the discussion of SG issues that have been recently cut short at the 1-hour Business Meetings. C. Kroner and the GGP secretariat have prepared a session proposal that has been forwarded to M. Poutanen.

4. Miscellaneous Items

4.1 Online Versions of Papers

The written GGP publication list is badly out of date, and needs some work. In addition, it is possible to put online a number of GGP related papers, in pdf format. There is a copyright question that needs to be considered. Nevertheless, if authors wish to make their papers available on the GGP Website, we are willing to add them. To start the process, some papers have been put in this directory, including 3 submitted from S. Shiomi (who suggested this option). The directory is linked to the GGP home page under Publications / [Online](http://www.eas.slu.edu/GGP/fullpapers/)
<http://www.eas.slu.edu/GGP/fullpapers/>

4.2 GGP Email List

Several names have been added to the electronic mailing list. It is available through a link on the GGP home page: Mailing Address / [Email List](http://www.eas.slu.edu/GGP/email_list.html)
http://www.eas.slu.edu/GGP/email_list.html

5 Action Items

The first item requires input from the GGP community.

5.1 Questionnaire on GGP as an IAG Service

ALL GGP members on mailing list – return to D. Crossley (crossleydj@gmail.com) or J. Hinderer (Jacques.Hinderer@east.u-strasbg.fr).

The other items (5.2 to 5.5) are listed here for general information. GGP Station Managers will receive a Supplemental Newsletter with further details on how to respond.

5.2 Station Questionnaire on parameters for sites (GFZ)

This is to update certain station parameters at the request of the ISDC at GFZ Potsdam.

5.3 Seismic Noise Test for Site + Instrument

This should be done (or re-done) to establish noise levels at all sites for the combination of instrument performance and site noise level.

5.4 New Site Information and Data Authorization

These are necessary to establish the willingness of each SG site to provide data and participate in GGP and GGOS activities.

5.5 GGP File Format, Final Changes

After extended discussion between B. Ducarme, J.-P. Barriot, and B. Ritschel after the ETS2008, it was decided to standardize the GGP data headers. Most changes were circulated October 2008, but some final tweaking was done early in 2009. Unfortunately the latter was not circulated at that time, but has to be done now. No further modifications are anticipated. Changes should be implemented before the next data upload. Existing headers will be changed by ICET retroactively.

Questionnaire on GGP as an IAG Service

As discussed at the Business Meetings, it has been proposed that GGP change from being an Inter-Association Project of IAG to an IAG Service. For a current list of Services, see http://www.iag-aig.org/index.php?tpl=text&id_c=1&id_t=102

Current Situation

GGP is identified within IAG as an Inter-Commission Project 3.1, with representations to Commission 3 (Earth Rotation and Geodynamics) and Commission 2 (Gravity Field). Projects have an indefinite lifetime, and do not need to be ratified every 4 years ; they can, however be terminated at any time. Reports are written by the GGP Secretariat (Crossley, Hinderer) for inclusion in IAG Commission Reports.

Proposed Situation

GGP will become a Service to IAG, with the purpose of providing a continuing set of SG data for the realization of GGOS goals from all stations of the GGP Network. For example, ICET is one of the IGFS Centers and provides gravity Earth Tide data to the community through the ICET database (currently installed at UFP, Tahiti). As a Service, GGP will have a Board of Directors, appointed by the IAG that is responsible for guiding the GGP operation.

In almost all respects, the operations of GGP will be unaffected by the change. We will continue to have the ICET/GFZ database, linked in future to GGOS, for the archiving of continuous SG data. The GGP database will also be tied to Agrav, the new AG database hosted jointly by BKG and BGI, Frankfurt.

The main advantage of the proposed new status will be to secure a mechanism for permanent future operations of GGP. This will elevate GGP to an entity that is fully integrated into IAG structure. GGP Chair and Secretary positions will be appointed and maintained by the GGP Board of Directors, as will the operations of the GGP database. Finally, GGP will have more influence in discussions and opinions on standards, reductions and products in gravity, and the level of acceptance of GGP in the general community will be enhanced.

We believe that this change is positive, and will help GGP. It will also require that SG data be sent in a more timely manner to the GGP database than is frequently the case at present. For example, stations need to renew their commitment to send monthly data to ICET, but with the same conditions for distribution as at present (i.e. 6 month limited access to GGP groups, and 1 year full access to the general scientific community).

DO YOU SUPPORT THE PROPOSED CHANGE OF GGP TO AN IAG SERVICE?

Please indicate YES, or NO, with a comment if you wish. Otherwise you will be deemed NEUTRAL. Deadline: June 15, 2009.

YES _____ NO _____

Comment:

Institute: _____

Stations represented: _____

Signature (electronic) _____ Date: _____