GRACE Science Data System Monthly Report
October 2004

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Highlights:

- CSR and GFZ have provided new satellite-only (GGM02S, EIGEN-GRACE02S) and combination (GGM02C, EIGEN-CG01C) gravity fields.

Satellite Science Relevant Events:

- Since October 3 the 11 and 22 sec spikes observed since launch in USO-4 (Main) on GRACE-2 disappeared (reason not yet clear). Preliminary data analysis shows improvement in the K-band SNR and a very small KBR high frequency noise decrease in the 0.01 to 0.1 Hz frequency range. The improvement for gravity data processing is expected to be minor. Further analysis is ongoing.
- The GRACE-1 Brouwer mean orbital elements on November 01, 2004 00:00:00 are as follows:

  A [m] = 469592.3
  E [-] = 0.001755
  I [º] = 89.029566

  The satellites separation was 192 km on October 31 with a rate of +0.76 km/d. The next orbit maintenance maneuver will be needed in about 3 months.

Level-0 raw data dump reception statistics at DLR ground stations Weilheim and Neustrelitz:

GRACE-1 Housekeeping:	100.0 %
GRACE-1 Science:	100.0 %
GRACE-2 Housekeeping:	99.5 %
GRACE-2 Science:	100.0 %

Level-1 Data Processing:

- Level-1B instrument data have been processed at JPL and archived at GRACE-ISDC and JPL PO.DAAC.

The following table gives provides statistical information on the available KBR1B products. The columns in the table are:

A) KBR1B product name
B) Total arc length with data (hours)
C) Number of observations used in residual calculation
D) KBR-GPS range residual RMS (cm)
E) minimum KBR-GPS range residual (cm)
F) maximum KBR-GPS range residual (cm)
G) number of continuous segments in the KBR product

Notes:
Days 2004-09-26, 2004-10-01 and 2004-10-06 more than usual KBR1B data points are missing due to multiple IPU reboots within the day
Day 2004-09-29 has a high KBR-GPS residual due to the orbit maintenance maneuver

A	B	C	D	E	F	G
KBR1B_2004-09-18_X_00.dat	24.0	17260	1.44	-5.6	3.4	1
KBR1B_2004-09-19_X_00.dat	24.0	17280	1.65	-4.7	4.5	1
KBR1B_2004-09-20_X_00.dat	23.8	17125	1.70	-4.3	4.0	2
KBR1B_2004-09-21_X_00.dat	23.8	17125	1.89	-4.9	4.3	2
KBR1B_2004-09-22_X_00.dat	24.0	17280	1.76	-4.5	4.7	1
KBR1B_2004-09-23_X_00.dat	24.0	17260	1.77	-4.8	6.2	1

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KBR1B_2004-09-24_X_00.dat  24.0  17260  1.50    -3.4    4.2  1
KBR1B_2004-09-25_X_00.dat  24.0  17280  1.58    -4.1    4.4  1
KBR1B_2004-09-26_X_00.dat  23.6  16963  1.69    -5.0    4.4  3
KBR1B_2004-09-27_X_00.dat  24.0  17252  1.68    -5.0    4.7  3
KBR1B_2004-09-28_X_00.dat  24.0  17261  1.88    -4.5    4.0  1
KBR1B_2004-09-29_X_00.dat  24.0  17280 10.23   -42.3  131.0  1
KBR1B_2004-09-30_X_00.dat  24.0  17261  1.70    -6.0    3.3  1
KBR1B_2004-10-01_X_00.dat  23.7  17050  1.54    -4.2    4.3  3
KBR1B_2004-10-02_X_00.dat  24.0  17260  1.50    -4.2    4.5  1
KBR1B_2004-10-03_X_00.dat  24.0  17280  1.60    -4.2    4.1  1
KBR1B_2004-10-04_X_00.dat  24.0  17260  1.51    -4.3    4.8  1
KBR1B_2004-10-05_X_00.dat  24.0  17280  1.86    -5.0    4.6  1
KBR1B_2004-10-06_X_00.dat  23.6  16981  1.87    -5.0    5.2  5
KBR1B_2004-10-07_X_00.dat  24.0  17280  1.56    -5.5    3.6  1
KBR1B_2004-10-08_X_00.dat  24.0  17280  1.60    -3.5    4.5  1
KBR1B_2004-10-09_X_00.dat  24.0  17280  1.56    -5.1    4.0  1
KBR1B_2004-10-10_X_00.dat  23.8  17145  1.67    -5.6    4.6  2
KBR1B_2004-10-11_X_00.dat  24.0  17261  1.59    -5.2    4.8  1
KBR1B_2004-10-12_X_00.dat  23.9  17205  1.52    -3.6    3.8  2
KBR1B_2004-10-13_X_00.dat  24.0  17280  1.60    -4.7    4.0  1
KBR1B_2004-10-14_X_00.dat  23.8  17139  1.85    -5.8    6.3  2
KBR1B_2004-10-15_X_00.dat  24.0  17280  2.02    -5.4    6.2  1
KBR1B_2004-10-16_X_00.dat   --- not yet processed ---
   …
KBR1B_2004-10-31_X_00.dat   --- not yet processed ---
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Additionally all level-1B barotropic sea level products (OCN1B) and de-aliasing products (AOD1B) until October 30 were calculated by GFZ and archived at GRACE-ISDC.

Level-2 Data Processing:

- All 3 L2 centers at CSR, JPL and GFZ concentrated on improvements in the gravity model product quality and catching up on the remaining monthly fields data processing.

GRACE Product Distribution:

- CSR and GFZ have provided new satellite-only (GGM02S, EIGEN-GRACE02S) and combination (GGM02C, EIGEN-CG01C) gravity fields.

Miscellaneous:

- Next SDS workshop will take place on Thursday, December 16 2004, at the San Francisco Marriott hotel (meeting room 4th floor).
- Selected and reviewed presentations from the July 2004 Joint CHAMP/GRACE Science Meeting will be published in a special issue of EGU´s ´Advances of Geosciences´.
- The GRACE Science Team members who acquire GRACE products at PO.DAAC should re-visit the public GRACE data website and double check that they have all products. For the present, the password protected site is not being updated with new products, only the public site is.GRACE-ISDC does not distinguish between ST members and other users. Therefore double checking is not necessary.
- Science data users are encouraged to submit citations of their own and other works related with GRACE to the bibliography web page implemented at PO.DAAC: http://podaac.jpl.nasa.gov/grace/bibliography.html.