GRACE Science Data System Monthly Report
May 2006

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Highlights:

- May 10: The complete mission data is now available to the public. The portals at ISDC and PODAAC have been updated with new data usage guidelines and a list of available and updated project documents. All users are strongly urged to read these, even if they are familiar with all data products. Henceforth, the Level-2 products and the accompanying Level-1B products will be made available at the archives within 60 days.
- May 22: The Operational Phase has been started with the activation of permanent radio occultation measurements on GRACE-1 at 00:10. Users of occultation data should monitor ISDC and JPL/GENESIS for the distribution of products.
- A new GRACE Data Analysis Website is available at the University of Colordo: http://geoid.colorado.edu/grace/grace.php. This website allows users to interactively compute maps and time series of terrestrial water storage using the current releases (CSR RL01, GFZ RL03, and JPL RL02) of GRACE monthly gravity fields.

Satellite Science Relevant Events:

- Nominal operation in Science Mode throughout the month
- The GRACE-1 Brouwer mean orbital elements on June 01, 2006 00:00:00 are as follows:

  A [m] = 6842562.55

  E [-] = 0.001914

  I [°] = 89.024186

  The satellites separation was 253 km on June 1, 2006 with a rate of 0.21 km/d. Next maintenance maneuver is needed in about 2 months.

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

GRACE-1 Housekeeping:	99.8 %
GRACE-1 Science:	100.0 %
GRACE-2 Housekeeping:	99.6 %
GRACE-2 Science:	100.0 %

Level-1 Data Processing:

- Level-1B Release 01 instrument data have been processed at JPL and archived at GRACE-ISDC and JPL PO.DAAC.
- Notes:
  - On 2006-04-23 GRACE-A lost 29 minutes of KBR1A data from 7:34 till 8:03 followed by an anomalous IPU reboot. After the reboot not enough GPS tracking data was available for a clock solution until the next IPU reboot at 8:50. In total 1.5 hours of KBR1B data was lost.
  - On 2006-05-09 the formal clock error cutoff was raised from 10 to 15 cm for GRACE-A. This recovered about 50 minutes of KBR1B data

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

A	B	C	D	E	F	G
KBR1B_2006-04-21_X_01.dat	24.0	17280	1.22	-3.4	3.4	1
KBR1B_2006-04-22_X_01.dat	24.0	17280	1.30	-2.7	3.6	1
KBR1B_2006-04-23_X_01.dat	22.3	16065	1.16	-3.4	3.2	3
KBR1B_2006-04-24_X_01.dat	23.9	17237	1.31	-3.7	4.1	4
KBR1B_2006-04-25_X_01.dat	24.0	17256	1.33	-4.7	4.0	2
KBR1B_2006-04-26_X_01.dat	24.0	17280	1.23	-5.0	3.9	1
KBR1B_2006-04-27_X_01.dat	24.0	17266	1.32	-3.6	3.0	2

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KBR1B_2006-04-28_X_01.dat  23.9  17191  1.30    -3.2    3.2  3
KBR1B_2006-04-29_X_01.dat  23.8  17145  1.41    -4.1    3.4  2
KBR1B_2006-04-30_X_01.dat  24.0  17266  1.43    -4.1    4.8  2
KBR1B_2006-05-01_X_01.dat  23.7  17079  1.46    -3.8    4.0  2
KBR1B_2006-05-02_X_01.dat  24.0  17266  1.43    -3.8    4.3  2
KBR1B_2006-05-03_X_01.dat  23.7  17084  1.14    -3.1    2.9  5
KBR1B_2006-05-04_X_01.dat  24.0  17280  1.32    -4.0    3.6  1
KBR1B_2006-05-05_X_01.dat  24.0  17280  1.18    -3.5    2.6  1
KBR1B_2006-05-06_X_01.dat  24.0  17280  1.39    -3.4    3.5  1
KBR1B_2006-05-07_X_01.dat  24.0  17280  1.24    -3.1    4.0  1
KBR1B_2006-05-08_X_01.dat  23.8  17145  1.34    -3.4    4.6  2
KBR1B_2006-05-09_X_01.dat  23.9  17187  1.22    -3.5    4.6  3
KBR1B_2006-05-10_X_01.dat  24.0  17256  1.12    -3.1    3.4  2
KBR1B_2006-05-11_X_01.dat  23.9  17237  1.50    -4.6    4.8  4
KBR1B_2006-05-12_X_01.dat  24.0  17258  1.35    -3.6    3.9  2
KBR1B_2006-05-13_X_01.dat  24.0  17280  1.17    -3.1    3.5  1
KBR1B_2006-05-14_X_01.dat  23.8  17145  1.61    -3.6    3.9  2
KBR1B_2006-05-15_X_01.dat  23.8  17145  1.56    -4.4    6.4  2
KBR1B_2006-05-16_X_01.dat  24.0  17280  1.54    -4.1    4.2  1
KBR1B_2006-05-17_X_01.dat  24.0  17266  1.32    -3.1    3.6  2
KBR1B_2006-05-18_X_01.dat  24.0  17256  1.41    -3.0    3.5  2
KBR1B_2006-05-19_X_01.dat  not yet distributed
…
KBR1B_2006-05-31_X_01.dat  not yet distributed
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- Release 01 Level-1B barotropic sea level products (OCN1B) and de-aliasing products (AOD1B) were calculated by GFZ until May 31, 2006 and archived at GRACE-ISDC.
- Release 03 Level 1B de-aliasing products (AOD1B) based on OMCT (Ocean Model for Circulation and Tides) baroclinic ocean model for April 2006 generated and archived at GRACE-ISDC, processing of May 2006 will be started soon.

Level-2 Data Processing:

- All 3 L2 centers at CSR, JPL and GFZ continued processing of release 01 (CSR), release 02 (JPL) and release 03 (GFZ) products.
- Spurious slopes over land, which are due to the non-mass-conserving OMCT model output in

AOD1B RL03 (used in JPL RL02 and GFZ RL03 L2 products), can and have to be corrected by re-adding the GAB product over land. A technical note TN04 was prepared and is available since May 10, 2006.

GRACE Product Distribution:

- Since May 10 GFZ RL03 L2 products are available for February 2003 until April 2006. Missing months are June 2003 and January 2004. July 2004 until October 2004 are also available as constrained solutions (*GK2-*). Corresponding background GAA, GAB and GAC products and calibrated errors (GSM*.txt) have been provided too. Details are listed in the GFZ L2 Release Notes.
- Since May 10 42 RL01 unconstrained GSM solutions along with the GAC background model files and calibrated errors (GSM*.txt) are available for the period August 2002 – March 2006 (only June 2003 is missing due to accelerometer data problems). Details are listed in the CSR L2 Release Notes.
- Since May 10 JPL RL02 L2 products along with the GAB and GAC background model files and calibrated errors (GSM*.txt) are available for February 2003 until November 2005 except for June 2003 and August to October 2004. Details are listed in the JPL L2 Release Notes.

Miscellaneous:

- Next GRACE Science Team Meeting will be held in San Francisco at the Holiday Inn Golden Gateway on December 8/9, 2006.
- Last GRACE Science Team Meeting (GSTM) proceedings (October 2005) are available online (http://www.csr.utexas.edu/grace/GSTM).
- 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.