

Release Notes for GFZ GRACE Level-2 Products - version RL06

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General Remarks:

- A GFZ RL06 time series has been reprocessed and is currently available at the two GRACE archives GFZ/ISDC (Information System and Data Centre) and JPL/PO.DAAC (Physical Oceanography Distributed Active Archive Center) for the period of April 2002 until August 2016.
- GFZ RL06 substitutes GFZ RL05a (RL05a will not be produced anymore).
- Details on modifications w.r.t. GFZ RL05a can be found in the GFZ Level-2 Processing Standards Document For Level-2 Product Release 06 [1] which is also available at the GRACE archives.
- One notable difference when comparing RL06 with previous releases is the Level-2 filename format. This has been altered to ensure conformity with future GRACE-FO product releases (see Level-2 Gravity Field Product User Handbook [2]).
- Another notable difference in RL06 is the use of a linear mean pole that negates the need for the correction of the C_{21} and S_{21} coefficients recommended by Wahr et al. [3], which was applicable for RL05 solutions.
- While for GFZ RL05a monthly solutions up to degree/order 90 have been provided, the following two versions of GFZ RL06 monthly solutions are provided: (1) up to degree/order 60 and (2) up to degree/order 96 (if satellite ground track coverage is sufficient).
- The uncertainties of the spherical harmonic coefficients provided with the GFZ RL06 gravity field solutions have not been calibrated and represent the formal errors.

Products:

There are usually 6 Level-2 product files available for each month where **YYYY** corresponds to a 4-digit year and **DDD** corresponds to a 3-digit day of year (for details regarding the product names see the Level-2 Gravity Field Product User Handbook [2]):

GSM-2_YYYYDDD-YYYYDDD_GRAC_GFZOP_BA01_0600

Unconstrained monthly gravity field solution estimated up to degree/order 60.

GSM-2_YYYYDDD-YYYYDDD_GRAC_GFZOP_BB01_0600

Unconstrained monthly gravity field solution estimated up to degree/order 96.

Note that for months with short-period repeat orbits, this solution might not always be published.

GAA-2_YYYYDDD-YYYYDDD_GRAC_GFZOP_BC01_0600

The average of the “atm” coefficients from the AOD1B RL06 product up to degree/order 180 over the same time span as the GSM products.

GAB-2_YYYYDDD-YYYYDDD_GRAC_GFZOP_BC01_0600

The average of the “ocn” coefficients from the AOD1B RL06 product up to degree/order 180 over the same time span as the GSM products.

GAC-2_YYYYDDD-YYYYDDD_GRAC_GFZOP_BC01_0600

The average of the “glo” coefficients from the AOD1B RL06 product up to degree/order 180 over the same time span as the GSM products; these harmonic coefficients are used as background model during Level-2 processing.

GAD-2_YYYYDDD-YYYYDDD_GRAC_GFZOP_BC01_0600

The average of the “oba” coefficients from the AOD1B RL06 product up to degree/order 180 over the same time span as the GSM products.

Note that the GAA/GAB/GAC/GAD products contain coefficients for degree 0 and 1; however, these coefficients are not used in the GFZ Level-2 processing.

Also note that the averaging of the GAA/GAB/GAC/GAD products is computed over entire days, regardless of whether the full day (as opposed to a partial day) was included in Level-2 processing.

For further details about AOD1B see the Product Description Document for AOD1B Release 06 [4].

Citation:

The GFZ RL06 Level-2 products are published as data publication via GFZ Data Services and should be cited as follows:

GSM-Products:

Dahle, Christoph; Flechtner, Frank; Murböck, Michael; Michalak, Grzegorz; Neumayer, Hans; Abrykosov, Oleh; Reinhold, Anton; König, Rolf (2018): GRACE Geopotential GSM Coefficients GFZ RL06. V. 6.0. GFZ Data Services. http://doi.org/10.5880/GFZ.GRACE_06_GSM

GAA-Products:

Dobslaw, Henryk; Dill, Robert; Dahle, Christoph (2018): GRACE Geopotential GAA Coefficients GFZ RL06. V. 6.0. GFZ Data Services. http://doi.org/10.5880/GFZ.GRACE_06_GAA

GAB-Products:

Dobslaw, Henryk; Dill, Robert; Dahle, Christoph (2018): GRACE Geopotential GAB Coefficients GFZ RL06. V. 6.0. GFZ Data Services. http://doi.org/10.5880/GFZ.GRACE_06_GAB

GAC-Products:

Dobslaw, Henryk; Dill, Robert; Dahle, Christoph (2018): GRACE Geopotential GAC Coefficients GFZ RL06. V. 6.0. GFZ Data Services. http://doi.org/10.5880/GFZ.GRACE_06_GAC

GAD-Products:

Dobslaw, Henryk; Dill, Robert; Dahle, Christoph (2018): GRACE Geopotential GAD Coefficients GFZ RL06. V. 6.0. GFZ Data Services. http://doi.org/10.5880/GFZ.GRACE_06_GAD

Overview of available solutions:

The following table shows the currently available monthly Level-2 GFZ RL06 products, where

- **Release Date** is chronologically starting from first provision of GFZ RL06 data till today.
- **Product Name** is in agreement with the Level-2 Gravity Field Product User Handbook [2].
- **Month** is the calendar month the Level-2 products are assigned to (usually one complete month of data is used, exact start and end epochs are provided in the Level-2 product headers).
- **Reference epoch** is the proper mean epoch of the Level-2 products taking into account complete or partial days between start and end epoch which were not used during the generation of the Level-2 products; the reference epoch is given in civilian date and UTC time (rounded to minutes).
- **Arcs & Days** are the number of orbital arcs used for the generation of the Level-2 products and the accumulated number of actual days over these orbital arcs (i.e. the amount of days where GRACE data has been incorporated in the Level-2 processing).
- **Max. d/o** is the maximum degree and order for the corresponding Level-2 product.
- **GAx** is yes, if the corresponding GAA, GAB, GAC and GAD products are available, too (nominal case).
- **Comments**, which are explained in detail further below, are provided in case of exceptional occurrences.

Release Date	Product Name	Month	Reference epoch	Arcs & Days	Max. d/o	GAx	Comments
22.03.2019	GSM-2_2002335-2002365_GRAC_GFZOP_BA01_0600 GSM-2_2002335-2002365_GRAC_GFZOP_BB01_0600	2002-12	02-12-17 T07:37	60 20.72	60x60 96x96	Yes	
22.03.2019	GSM-2_2002305-2002334_GRAC_GFZOP_BA01_0600 GSM-2_2002305-2002334_GRAC_GFZOP_BB01_0600	2002-11	02-11-15 T15:36	47 24.49	60x60 96x96	Yes	
22.03.2019	GSM-2_2002274-2002304_GRAC_GFZOP_BA01_0600 GSM-2_2002274-2002304_GRAC_GFZOP_BB01_0600	2002-10	02-10-16 T06:24	48 29.22	60x60 96x96	Yes	
22.03.2019	GSM-2_2002244-2002273_GRAC_GFZOP_BA01_0600 GSM-2_2002244-2002273_GRAC_GFZOP_BB01_0600	2002-09	02-09-15 T10:48	49 26.39	60x60 96x96	Yes	
22.03.2019	GSM-2_2002213-2002243_GRAC_GFZOP_BA01_0600 GSM-2_2002213-2002243_GRAC_GFZOP_BB01_0600	2002-08	02-08-15 T09:53	44 28.08	60x60 96x96	Yes	
22.03.2019	GSM-2_2002122-2002137_GRAC_GFZOP_BA01_0600 GSM-2_2002122-2002137_GRAC_GFZOP_BB01_0600	2002-05	02-05-09 T14:24	18 12.77	60x60 96x96	Yes	
22.03.2019	GSM-2_2002095-2002120_GRAC_GFZOP_BA01_0600 GSM-2_2002095-2002120_GRAC_GFZOP_BB01_0600	2002-04	02-04-17 T17:28	30 15.44	60x60 96x96	Yes	
19.12.2018	GSM-2_2016221-2016247_GRAC_GFZOP_BA01_0600 GSM-2_2016221-2016247_GRAC_GFZOP_BB01_0600	2016-08	16-08-21 T13:28	28 24.95	60x60 96x96	Yes	
19.12.2018	GSM-2_2016183-2016211_GRAC_GFZOP_BA01_0600 GSM-2_2016183-2016211_GRAC_GFZOP_BB01_0600	2016-07	16-07-15 T14:44	31 28.23	60x60 96x96	Yes	
19.12.2018	GSM-2_2016153-2016182_GRAC_GFZOP_BA01_0600 GSM-2_2016153-2016182_GRAC_GFZOP_BB01_0600	2016-06	16-06-15 T05:12	35 29.70	60x60 96x96	Yes	
19.12.2018	GSM-2_2016129-2016152_GRAC_GFZOP_BA01_0600 GSM-2_2016129-2016152_GRAC_GFZOP_BB01_0600	2016-05	16-05-19 T22:16	26 22.87	60x60 96x96	Yes	
19.12.2018	GSM-2_2016061-2016091_GRAC_GFZOP_BA01_0600 GSM-2_2016061-2016091_GRAC_GFZOP_BB01_0600	2016-03	16-03-17 T06:11	34 29.87	60x60 96x96	Yes	
19.12.2018	GSM-2_2016029-2016060_GRAC_GFZOP_BA01_0600 GSM-2_2016029-2016060_GRAC_GFZOP_BB01_0600	2016-02	16-02-13 T10:57	36 31.78	60x60 96x96	Yes	
19.12.2018	GSM-2_2016004-2016028_GRAC_GFZOP_BA01_0600 GSM-2_2016004-2016028_GRAC_GFZOP_BB01_0600	2016-01	16-01-16 T11:46	26 24.22	60x60 96x96	Yes	

Release Date	Product Name	Month	Reference epoch	Arcs & Days	Max. d/o	GAX	Comments
19.12.2018	GSM-2_2015346-2016003_GRAC_GFZOP_BA01_0600 GSM-2_2015346-2016003_GRAC_GFZOP_BB01_0600	2015-12	15-12-23 T02:33	26 22.52	60x60 96x96	Yes	
19.12.2018	GSM-2_2015244-2015270_GRAC_GFZOP_BA01_0600 GSM-2_2015244-2015270_GRAC_GFZOP_BB01_0600	2015-09	15-09-14 T03:46	30 26.41	60x60 96x96	Yes	
19.12.2018	GSM-2_2015213-2015243_GRAC_GFZOP_BA01_0600 GSM-2_2015213-2015243_GRAC_GFZOP_BB01_0600	2015-08	15-08-16 T00:20	34 30.60	60x60 96x96	Yes	
19.12.2018	GSM-2_2015180-2015212_GRAC_GFZOP_BA01_0600 GSM-2_2015180-2015212_GRAC_GFZOP_BB01_0600	2015-07	15-07-16 T23:00	28 25.17	60x60 96x96	Yes	
19.12.2018	GSM-2_2015102-2015131_GRAC_GFZOP_BA01_0600 GSM-2_2015102-2015131_GRAC_GFZOP_BB01_0600	2015-05	15-04-27 T11:15	33 29.04	60x60 96x96	Yes	
19.12.2018	GSM-2_2015091-2015120_GRAC_GFZOP_BA01_0600 GSM-2_2015091-2015120_GRAC_GFZOP_BB01_0600	2015-04	15-04-16 T16:41	33 29.86	60x60 96x96	Yes	
19.12.2018	GSM-2_2015060-2015090_GRAC_GFZOP_BA01_0600 GSM-2_2015060-2015090_GRAC_GFZOP_BB01_0600	2015-03	15-03-16 T16:29	37 30.44	60x60 96x96	Yes	
19.12.2018	GSM-2_2015032-2015059_GRAC_GFZOP_BA01_0600 GSM-2_2015032-2015059_GRAC_GFZOP_BB01_0600	2015-02	15-02-15 T13:45	35 27.12	60x60 96x96	Yes	4)
19.12.2018	GSM-2_2015013-2015031_GRAC_GFZOP_BA01_0600 GSM-2_2015013-2015031_GRAC_GFZOP_BB01_0600	2015-01	15-01-21 T20:13	21 18.55	60x60 96x96	Yes	4)
13.11.2018	GSM-2_2003335-2003365_GRAC_GFZOP_BA01_0600 GSM-2_2003335-2003365_GRAC_GFZOP_BB01_0600	2003-12	03-12-16 T08:56	41 29.25	60x60 96x96	Yes	
13.11.2018	GSM-2_2003305-2003334_GRAC_GFZOP_BA01_0600 GSM-2_2003305-2003334_GRAC_GFZOP_BB01_0600	2003-11	03-11-16 T23:45	44 27.88	60x60 96x96	Yes	
13.11.2018	GSM-2_2003274-2003304_GRAC_GFZOP_BA01_0600 GSM-2_2003274-2003304_GRAC_GFZOP_BB01_0600	2003-10	03-10-16 T20:41	38 30.30	60x60 96x96	Yes	
13.11.2018	GSM-2_2003244-2003273_GRAC_GFZOP_BA01_0600 GSM-2_2003244-2003273_GRAC_GFZOP_BB01_0600	2003-09	03-09-16 T22:40	40 29.34	60x60 96x96	Yes	
13.11.2018	GSM-2_2003213-2003243_GRAC_GFZOP_BA01_0600 GSM-2_2003213-2003243_GRAC_GFZOP_BB01_0600	2003-08	03-08-15 T17:28	39 28.61	60x60 96x96	Yes	
13.11.2018	GSM-2_2003182-2003212_GRAC_GFZOP_BA01_0600 GSM-2_2003182-2003212_GRAC_GFZOP_BB01_0600	2003-07	03-07-15 T11:37	42 30.10	60x60 96x96	Yes	
13.11.2018	GSM-2_2003121-2003141_GRAC_GFZOP_BA01_0600 GSM-2_2003121-2003141_GRAC_GFZOP_BB01_0600	2003-05	03-05-10 T22:25	29 19.62	60x60 96x96	Yes	
13.11.2018	GSM-2_2003091-2003120_GRAC_GFZOP_BA01_0600 GSM-2_2003091-2003120_GRAC_GFZOP_BB01_0600	2003-04	03-04-16 T00:01	43 28.54	60x60 96x96	Yes	
13.11.2018	GSM-2_2003060-2003090_GRAC_GFZOP_BA01_0600 GSM-2_2003060-2003090_GRAC_GFZOP_BB01_0600	2003-03	03-03-15 T15:38	52 26.84	60x60 96x96	Yes	
13.11.2018	GSM-2_2003032-2003059_GRAC_GFZOP_BA01_0600 GSM-2_2003032-2003059_GRAC_GFZOP_BB01_0600	2003-02	03-02-14 T19:30	61 22.97	60x60 96x96	Yes	
13.11.2018	GSM-2_2003001-2003031_GRAC_GFZOP_BA01_0600 GSM-2_2003001-2003031_GRAC_GFZOP_BB01_0600	2003-01	03-01-15 T02:59	61 18.15	60x60 96x96	Yes	
08.10.2018	GSM-2_2014305-2014334_GRAC_GFZOP_BA01_0600 GSM-2_2014305-2014334_GRAC_GFZOP_BB01_0600	2014-11	14-11-16 T08:46	37 29.82	60x60 96x96	Yes	
08.10.2018	GSM-2_2014274-2014304_GRAC_GFZOP_BA01_0600 GSM-2_2014274-2014304_GRAC_GFZOP_BB01_0600	2014-10	14-10-14 T07:18	37 30.76	60x60 96x96	Yes	
08.10.2018	GSM-2_2014244-2014273_GRAC_GFZOP_BA01_0600 GSM-2_2014244-2014273_GRAC_GFZOP_BB01_0600	2014-09	14-09-17 T13:37	49 28.31	60x60 96x96	Yes	
08.10.2018	GSM-2_2014213-2014243_GRAC_GFZOP_BA01_0600 GSM-2_2014213-2014243_GRAC_GFZOP_BB01_0600	2014-08	14-08-15 T19:38	40 30.09	60x60 96x96	Yes	
08.10.2018	GSM-2_2014152-2014175_GRAC_GFZOP_BA01_0600 GSM-2_2014152-2014175_GRAC_GFZOP_BB01_0600	2014-06	14-06-13 T07:42	28 23.52	60x60 96x96	Yes	
08.10.2018	GSM-2_2014121-2014151_GRAC_GFZOP_BA01_0600 GSM-2_2014121-2014151_GRAC_GFZOP_BB01_0600	2014-05	14-05-16 T18:22	34 30.67	60x60 96x96	Yes	
08.10.2018	GSM-2_2014091-2014120_GRAC_GFZOP_BA01_0600 GSM-2_2014091-2014120_GRAC_GFZOP_BB01_0600	2014-04	14-04-15 T21:39	36 28.15	60x60 96x96	Yes	

Release Date	Product Name	Month	Reference epoch	Arcs & Days	Max. d/o	GAX	Comments
08.10.2018	GSM-2_2014060-2014090_GRAC_GFZOP_BA01_0600 GSM-2_2014060-2014090_GRAC_GFZOP_BB01_0600	2014-03	14-03-17 T02:21	36 30.08	60x60 96x96	Yes	
08.10.2018	GSM-2_2014001-2014017_GRAC_GFZOP_BA01_0600 GSM-2_2014001-2014017_GRAC_GFZOP_BB01_0600	2014-01	14-01-09 T20:04	19 16.14	60x60 96x96	Yes	3)
08.10.2018	GSM-2_2013335-2013365_GRAC_GFZOP_BA01_0600 GSM-2_2013335-2013365_GRAC_GFZOP_BB01_0600	2013-12	13-12-14 T12:23	31 27.02	60x60 96x96	Yes	3)
08.10.2018	GSM-2_2013305-2013334_GRAC_GFZOP_BA01_0600 GSM-2_2013305-2013334_GRAC_GFZOP_BB01_0600	2013-11	13-11-16 T02:09	38 29.15	60x60 96x96	Yes	
08.10.2018	GSM-2_2013274-2013304_GRAC_GFZOP_BA01_0600 GSM-2_2013274-2013304_GRAC_GFZOP_BB01_0600	2013-10	13-10-17 T01:16	38 30.33	60x60 96x96	Yes	
08.10.2018	GSM-2_2013182-2013212_GRAC_GFZOP_BA01_0600 GSM-2_2013182-2013212_GRAC_GFZOP_BB01_0600	2013-07	13-07-16 T18:47	32 30.99	60x60 96x96	Yes	
08.10.2018	GSM-2_2013152-2013181_GRAC_GFZOP_BA01_0600 GSM-2_2013152-2013181_GRAC_GFZOP_BB01_0600	2013-06	13-06-16 T18:40	36 28.60	60x60 96x96	Yes	
08.10.2018	GSM-2_2013121-2013151_GRAC_GFZOP_BA01_0600 GSM-2_2013121-2013151_GRAC_GFZOP_BB01_0600	2013-05	13-05-16 T07:38	33 30.67	60x60 96x96	Yes	
08.10.2018	GSM-2_2013101-2013120_GRAC_GFZOP_BA01_0600 GSM-2_2013101-2013120_GRAC_GFZOP_BB01_0600	2013-04	13-04-21 T00:20	20 19.45	60x60 96x96	Yes	
08.10.2018	GSM-2_2013032-2013057_GRAC_GFZOP_BA01_0600 GSM-2_2013032-2013057_GRAC_GFZOP_BB01_0600	2013-02	13-02-13 T14:04	29 25.34	60x60 96x96	Yes	
08.10.2018	GSM-2_2013001-2013031_GRAC_GFZOP_BA01_0600 GSM-2_2013001-2013031_GRAC_GFZOP_BB01_0600	2013-01	13-01-15 T17:49	33 30.50	60x60 96x96	Yes	
08.10.2018	GSM-2_2012336-2012366_GRAC_GFZOP_BA01_0600 GSM-2_2012336-2012366_GRAC_GFZOP_BB01_0600	2012-12	12-12-16 T20:08	35 28.33	60x60 96x96	Yes	
08.10.2018	GSM-2_2012311-2012335_GRAC_GFZOP_BA01_0600 GSM-2_2012311-2012335_GRAC_GFZOP_BB01_0600	2012-11	12-11-18 T14:17	29 24.39	60x60 96x96	Yes	
08.10.2018	GSM-2_2012245-2012269_GRAC_GFZOP_BA01_0600 GSM-2_2012245-2012269_GRAC_GFZOP_BB01_0600	2012-09	12-09-13 T11:46	26 24.13	60x60 96x96	Yes	
08.10.2018	GSM-2_2012214-2012244_GRAC_GFZOP_BA01_0600 GSM-2_2012214-2012244_GRAC_GFZOP_BB01_0600	2012-08	12-08-16 T05:41	37 30.72	60x60 96x96	Yes	
08.10.2018	GSM-2_2012183-2012213_GRAC_GFZOP_BA01_0600 GSM-2_2012183-2012213_GRAC_GFZOP_BB01_0600	2012-07	12-07-16 T16:59	36 29.89	60x60 96x96	Yes	
08.10.2018	GSM-2_2012153-2012182_GRAC_GFZOP_BA01_0600 GSM-2_2012153-2012182_GRAC_GFZOP_BB01_0600	2012-06	12-06-16 T09:30	31 29.94	60x60 96x96	Yes	2)
08.10.2018	GSM-2_2012080-2012109_GRAC_GFZOP_BA01_0600 GSM-2_2012080-2012109_GRAC_GFZOP_BB01_0600	2012-04	12-04-03 T12:02	37 29.87	60x60 96x96	Yes	2)
08.10.2018	GSM-2_2012061-2012091_GRAC_GFZOP_BA01_0600 GSM-2_2012061-2012091_GRAC_GFZOP_BB01_0600	2012-03	12-03-17 T10:47	39 30.59	60x60 96x96	Yes	
08.10.2018	GSM-2_2012032-2012060_GRAC_GFZOP_BA01_0600 GSM-2_2012032-2012060_GRAC_GFZOP_BB01_0600	2012-02	12-02-16 T00:40	37 27.89	60x60 96x96	Yes	
08.10.2018	GSM-2_2012001-2012031_GRAC_GFZOP_BA01_0600 GSM-2_2012001-2012031_GRAC_GFZOP_BB01_0600	2012-01	12-01-17 T08:05	37 30.76	60x60 96x96	Yes	
08.10.2018	GSM-2_2011347-2012011_GRAC_GFZOP_BA01_0600 GSM-2_2011347-2012011_GRAC_GFZOP_BB01_0600	2011-12	11-12-29 T05:33	29 26.93	60x60 96x96	Yes	
08.10.2018	GSM-2_2011289-2011319_GRAC_GFZOP_BA01_0600 GSM-2_2011289-2011319_GRAC_GFZOP_BB01_0600	2011-11	11-10-31 T16:35	34 30.57	60x60 96x96	Yes	
08.10.2018	GSM-2_2011274-2011304_GRAC_GFZOP_BA01_0600 GSM-2_2011274-2011304_GRAC_GFZOP_BB01_0600	2011-10	11-10-16 T19:35	32 30.58	60x60 96x96	Yes	
08.10.2018	GSM-2_2011244-2011273_GRAC_GFZOP_BA01_0600 GSM-2_2011244-2011273_GRAC_GFZOP_BB01_0600	2011-09	11-09-15 T23:52	38 29.15	60x60 96x96	Yes	
08.10.2018	GSM-2_2011213-2011243_GRAC_GFZOP_BA01_0600 GSM-2_2011213-2011243_GRAC_GFZOP_BB01_0600	2011-08	11-08-17 T12:53	40 30.59	60x60 96x96	Yes	
08.10.2018	GSM-2_2011186-2011212_GRAC_GFZOP_BA01_0600 GSM-2_2011186-2011212_GRAC_GFZOP_BB01_0600	2011-07	11-07-18 T00:20	29 26.76	60x60 96x96	Yes	

Release Date	Product Name	Month	Reference epoch	Arcs & Days	Max. d/o	GAX	Comments
08.10.2018	GSM-2_2011121-2011151_GRAC_GFZOP_BA01_0600 GSM-2_2011121-2011151_GRAC_GFZOP_BB01_0600	2011-05	11-05-16 T00:45	49 28.85	60x60 96x96	Yes	
08.10.2018	GSM-2_2011091-2011120_GRAC_GFZOP_BA01_0600 GSM-2_2011091-2011120_GRAC_GFZOP_BB01_0600	2011-04	11-04-15 T11:25	38 27.82	60x60 96x96	Yes	
08.10.2018	GSM-2_2011060-2011090_GRAC_GFZOP_BA01_0600 GSM-2_2011060-2011090_GRAC_GFZOP_BB01_0600	2011-03	11-03-16 T05:18	52 27.17	60x60 96x96	Yes	
08.10.2018	GSM-2_2011039-2011059_GRAC_GFZOP_BA01_0600 GSM-2_2011039-2011059_GRAC_GFZOP_BB01_0600	2011-02	11-02-18 T11:47	23 20.72	60x60 96x96	Yes	
03.08.2018	GSM-2_2010335-2010361_GRAC_GFZOP_BA01_0600 GSM-2_2010335-2010361_GRAC_GFZOP_BB01_0600	2010-12	10-12-14 T13:44	30 26.91	60x60 96x96	Yes	
03.08.2018	GSM-2_2010305-2010334_GRAC_GFZOP_BA01_0600 GSM-2_2010305-2010334_GRAC_GFZOP_BB01_0600	2010-11	10-11-15 T14:13	31 29.52	60x60 96x96	Yes	
03.08.2018	GSM-2_2010274-2010304_GRAC_GFZOP_BA01_0600 GSM-2_2010274-2010304_GRAC_GFZOP_BB01_0600	2010-10	10-10-16 T10:00	37 30.08	60x60 96x96	Yes	
03.08.2018	GSM-2_2010244-2010273_GRAC_GFZOP_BA01_0600 GSM-2_2010244-2010273_GRAC_GFZOP_BB01_0600	2010-09	10-09-15 T16:28	35 29.68	60x60 96x96	Yes	
03.08.2018	GSM-2_2010213-2010243_GRAC_GFZOP_BA01_0600 GSM-2_2010213-2010243_GRAC_GFZOP_BB01_0600	2010-08	10-08-16 T07:46	36 30.51	60x60 96x96	Yes	
03.08.2018	GSM-2_2010182-2010212_GRAC_GFZOP_BA01_0600 GSM-2_2010182-2010212_GRAC_GFZOP_BB01_0600	2010-07	10-07-16 T11:17	35 30.81	60x60 96x96	Yes	
03.08.2018	GSM-2_2010152-2010181_GRAC_GFZOP_BA01_0600 GSM-2_2010152-2010181_GRAC_GFZOP_BB01_0600	2010-06	10-06-15 T21:30	33 28.88	60x60 96x96	Yes	
03.08.2018	GSM-2_2010121-2010151_GRAC_GFZOP_BA01_0600 GSM-2_2010121-2010151_GRAC_GFZOP_BB01_0600	2010-05	10-05-16 T16:31	36 30.29	60x60 96x96	Yes	
03.08.2018	GSM-2_2010091-2010120_GRAC_GFZOP_BA01_0600 GSM-2_2010091-2010120_GRAC_GFZOP_BB01_0600	2010-04	10-04-15 T23:56	30 29.85	60x60 96x96	Yes	
03.08.2018	GSM-2_2010060-2010090_GRAC_GFZOP_BA01_0600 GSM-2_2010060-2010090_GRAC_GFZOP_BB01_0600	2010-03	10-03-16 T18:47	33 29.47	60x60 96x96	Yes	
03.08.2018	GSM-2_2010032-2010059_GRAC_GFZOP_BA01_0600 GSM-2_2010032-2010059_GRAC_GFZOP_BB01_0600	2010-02	10-02-14 T04:32	31 27.87	60x60 96x96	Yes	
03.08.2018	GSM-2_2010001-2010031_GRAC_GFZOP_BA01_0600 GSM-2_2010001-2010031_GRAC_GFZOP_BB01_0600	2010-01	10-01-16 T14:08	33 30.96	60x60 96x96	Yes	
03.08.2018	GSM-2_2009335-2009365_GRAC_GFZOP_BA01_0600 GSM-2_2009335-2009365_GRAC_GFZOP_BB01_0600	2009-12	09-12-16 T17:10	36 30.46	60x60 96x96	Yes	
03.08.2018	GSM-2_2009305-2009334_GRAC_GFZOP_BA01_0600 GSM-2_2009305-2009334_GRAC_GFZOP_BB01_0600	2009-11	09-11-16 T04:22	31 29.98	60x60 96x96	Yes	
03.08.2018	GSM-2_2009274-2009304_GRAC_GFZOP_BA01_0600 GSM-2_2009274-2009304_GRAC_GFZOP_BB01_0600	2009-10	09-10-16 T16:34	37 30.75	60x60 96x96	Yes	
03.08.2018	GSM-2_2009244-2009273_GRAC_GFZOP_BA01_0600 GSM-2_2009244-2009273_GRAC_GFZOP_BB01_0600	2009-09	09-09-15 T18:52	32 29.85	60x60 96x96	Yes	
03.08.2018	GSM-2_2009213-2009243_GRAC_GFZOP_BA01_0600 GSM-2_2009213-2009243_GRAC_GFZOP_BB01_0600	2009-08	09-08-16 T08:27	36 30.35	60x60 96x96	Yes	
03.08.2018	GSM-2_2009182-2009212_GRAC_GFZOP_BA01_0600 GSM-2_2009182-2009212_GRAC_GFZOP_BB01_0600	2009-07	09-07-17 T17:36	38 30.20	60x60 96x96	Yes	
03.08.2018	GSM-2_2009152-2009181_GRAC_GFZOP_BA01_0600 GSM-2_2009152-2009181_GRAC_GFZOP_BB01_0600	2009-06	09-06-15 T09:29	34 29.18	60x60 96x96	Yes	
03.08.2018	GSM-2_2009121-2009151_GRAC_GFZOP_BA01_0600 GSM-2_2009121-2009151_GRAC_GFZOP_BB01_0600	2009-05	09-05-16 T03:46	32 30.98	60x60 96x96	Yes	
03.08.2018	GSM-2_2009091-2009120_GRAC_GFZOP_BA01_0600 GSM-2_2009091-2009120_GRAC_GFZOP_BB01_0600	2009-04	09-04-15 T23:13	35 29.54	60x60 96x96	Yes	
03.08.2018	GSM-2_2009060-2009090_GRAC_GFZOP_BA01_0600 GSM-2_2009060-2009090_GRAC_GFZOP_BB01_0600	2009-03	09-03-15 T15:39	37 29.45	60x60 96x96	Yes	
03.08.2018	GSM-2_2009032-2009059_GRAC_GFZOP_BA01_0600 GSM-2_2009032-2009059_GRAC_GFZOP_BB01_0600	2009-02	09-02-15 T01:17	33 27.90	60x60 96x96	Yes	

Release Date	Product Name	Month	Reference epoch	Arcs & Days	Max. d/o	GAX	Comments
03.08.2018	GSM-2_2009001-2009031_GRAC_GFZOP_BA01_0600 GSM-2_2009001-2009031_GRAC_GFZOP_BB01_0600	2009-01	09-01-15 T21:01	33 30.61	60x60 96x96	Yes	
03.08.2018	GSM-2_2008336-2008366_GRAC_GFZOP_BA01_0600 GSM-2_2008336-2008366_GRAC_GFZOP_BB01_0600	2008-12	08-12-16 T13:59	35 30.81	60x60 96x96	Yes	
03.08.2018	GSM-2_2008306-2008335_GRAC_GFZOP_BA01_0600 GSM-2_2008306-2008335_GRAC_GFZOP_BB01_0600	2008-11	08-11-15 T13:13	33 29.18	60x60 96x96	Yes	
03.08.2018	GSM-2_2008275-2008305_GRAC_GFZOP_BA01_0600 GSM-2_2008275-2008305_GRAC_GFZOP_BB01_0600	2008-10	08-10-16 T21:16	35 30.87	60x60 96x96	Yes	
03.08.2018	GSM-2_2008245-2008274_GRAC_GFZOP_BA01_0600 GSM-2_2008245-2008274_GRAC_GFZOP_BB01_0600	2008-09	08-09-14 T10:38	36 29.27	60x60 96x96	Yes	
03.08.2018	GSM-2_2008214-2008244_GRAC_GFZOP_BA01_0600 GSM-2_2008214-2008244_GRAC_GFZOP_BB01_0600	2008-08	08-08-16 T02:57	33 30.77	60x60 96x96	Yes	
03.08.2018	GSM-2_2008183-2008213_GRAC_GFZOP_BA01_0600 GSM-2_2008183-2008213_GRAC_GFZOP_BB01_0600	2008-07	08-07-16 T09:16	37 30.04	60x60 96x96	Yes	
03.08.2018	GSM-2_2008153-2008182_GRAC_GFZOP_BA01_0600 GSM-2_2008153-2008182_GRAC_GFZOP_BB01_0600	2008-06	08-06-17 T01:16	36 29.87	60x60 96x96	Yes	
03.08.2018	GSM-2_2008122-2008152_GRAC_GFZOP_BA01_0600 GSM-2_2008122-2008152_GRAC_GFZOP_BB01_0600	2008-05	08-05-15 T15:20	35 30.71	60x60 96x96	Yes	
03.08.2018	GSM-2_2008092-2008121_GRAC_GFZOP_BA01_0600 GSM-2_2008092-2008121_GRAC_GFZOP_BB01_0600	2008-04	08-04-15 T13:58	31 27.90	60x60 96x96	Yes	
03.08.2018	GSM-2_2008061-2008091_GRAC_GFZOP_BA01_0600 GSM-2_2008061-2008091_GRAC_GFZOP_BB01_0600	2008-03	08-03-16 T08:56	36 30.57	60x60 96x96	Yes	
03.08.2018	GSM-2_2008032-2008060_GRAC_GFZOP_BA01_0600 GSM-2_2008032-2008060_GRAC_GFZOP_BB01_0600	2008-02	08-02-15 T23:16	31 28.31	60x60 96x96	Yes	
03.08.2018	GSM-2_2008001-2008031_GRAC_GFZOP_BA01_0600 GSM-2_2008001-2008031_GRAC_GFZOP_BB01_0600	2008-01	08-01-16 T18:21	33 30.94	60x60 96x96	Yes	
03.08.2018	GSM-2_2007335-2007365_GRAC_GFZOP_BA01_0600 GSM-2_2007335-2007365_GRAC_GFZOP_BB01_0600	2007-12	07-12-15 T01:49	39 30.76	60x60 96x96	Yes	
03.08.2018	GSM-2_2007305-2007334_GRAC_GFZOP_BA01_0600 GSM-2_2007305-2007334_GRAC_GFZOP_BB01_0600	2007-11	07-11-15 T03:13	30 26.29	60x60 96x96	Yes	
03.08.2018	GSM-2_2007274-2007304_GRAC_GFZOP_BA01_0600 GSM-2_2007274-2007304_GRAC_GFZOP_BB01_0600	2007-10	07-10-16 T06:39	37 28.56	60x60 96x96	Yes	
03.08.2018	GSM-2_2007244-2007273_GRAC_GFZOP_BA01_0600 GSM-2_2007244-2007273_GRAC_GFZOP_BB01_0600	2007-09	07-09-16 T08:17	35 29.62	60x60 96x96	Yes	
03.08.2018	GSM-2_2007213-2007243_GRAC_GFZOP_BA01_0600 GSM-2_2007213-2007243_GRAC_GFZOP_BB01_0600	2007-08	07-08-16 T07:46	35 30.82	60x60 96x96	Yes	
03.08.2018	GSM-2_2007182-2007212_GRAC_GFZOP_BA01_0600 GSM-2_2007182-2007212_GRAC_GFZOP_BB01_0600	2007-07	07-07-16 T21:33	32 30.89	60x60 96x96	Yes	
03.08.2018	GSM-2_2007152-2007181_GRAC_GFZOP_BA01_0600 GSM-2_2007152-2007181_GRAC_GFZOP_BB01_0600	2007-06	07-06-16 T15:51	37 28.36	60x60 96x96	Yes	
03.08.2018	GSM-2_2007121-2007151_GRAC_GFZOP_BA01_0600 GSM-2_2007121-2007151_GRAC_GFZOP_BB01_0600	2007-05	07-05-16 T01:34	41 30.08	60x60 96x96	Yes	
03.08.2018	GSM-2_2007091-2007120_GRAC_GFZOP_BA01_0600 GSM-2_2007091-2007120_GRAC_GFZOP_BB01_0600	2007-04	07-04-14 T11:36	41 28.58	60x60 96x96	Yes	
03.08.2018	GSM-2_2007060-2007090_GRAC_GFZOP_BA01_0600 GSM-2_2007060-2007090_GRAC_GFZOP_BB01_0600	2007-03	07-03-15 T03:49	40 30.64	60x60 96x96	Yes	
03.08.2018	GSM-2_2007032-2007059_GRAC_GFZOP_BA01_0600 GSM-2_2007032-2007059_GRAC_GFZOP_BB01_0600	2007-02	07-02-15 T18:10	35 26.67	60x60 96x96	Yes	
03.08.2018	GSM-2_2007001-2007031_GRAC_GFZOP_BA01_0600 GSM-2_2007001-2007031_GRAC_GFZOP_BB01_0600	2007-01	07-01-15 T22:32	30 27.05	60x60 96x96	Yes	
03.08.2018	GSM-2_2006335-2006365_GRAC_GFZOP_BA01_0600 GSM-2_2006335-2006365_GRAC_GFZOP_BB01_0600	2006-12	06-12-15 T12:56	28 27.82	60x60 96x96	Yes	
03.08.2018	GSM-2_2006305-2006334_GRAC_GFZOP_BA01_0600 GSM-2_2006305-2006334_GRAC_GFZOP_BB01_0600	2006-11	06-11-16 T15:05	32 29.96	60x60 96x96	Yes	

Release Date	Product Name	Month	Reference epoch	Arcs & Days	Max. d/o	GAX	Comments
03.08.2018	GSM-2_2006274-2006304_GRAC_GFZOP_BA01_0600 GSM-2_2006274-2006304_GRAC_GFZOP_BB01_0600	2006-10	06-10-15 T02:42	37 28.90	60x60 96x96	Yes	
03.08.2018	GSM-2_2006244-2006273_GRAC_GFZOP_BA01_0600 GSM-2_2006244-2006273_GRAC_GFZOP_BB01_0600	2006-09	06-09-16 T00:34	38 27.12	60x60 96x96	Yes	
03.08.2018	GSM-2_2006213-2006243_GRAC_GFZOP_BA01_0600 GSM-2_2006213-2006243_GRAC_GFZOP_BB01_0600	2006-08	06-08-16 T15:45	43 30.46	60x60 96x96	Yes	
03.08.2018	GSM-2_2006182-2006212_GRAC_GFZOP_BA01_0600 GSM-2_2006182-2006212_GRAC_GFZOP_BB01_0600	2006-07	06-07-16 T07:38	40 30.33	60x60 96x96	Yes	
03.08.2018	GSM-2_2006152-2006181_GRAC_GFZOP_BA01_0600 GSM-2_2006152-2006181_GRAC_GFZOP_BB01_0600	2006-06	06-06-15 T22:22	38 26.15	60x60 96x96	Yes	
03.08.2018	GSM-2_2006121-2006151_GRAC_GFZOP_BA01_0600 GSM-2_2006121-2006151_GRAC_GFZOP_BB01_0600	2006-05	06-05-16 T20:30	44 30.44	60x60 96x96	Yes	
03.08.2018	GSM-2_2006091-2006120_GRAC_GFZOP_BA01_0600 GSM-2_2006091-2006120_GRAC_GFZOP_BB01_0600	2006-04	06-04-15 T07:34	39 29.40	60x60 96x96	Yes	
03.08.2018	GSM-2_2006060-2006090_GRAC_GFZOP_BA01_0600 GSM-2_2006060-2006090_GRAC_GFZOP_BB01_0600	2006-03	06-03-15 T22:31	38 28.95	60x60 96x96	Yes	
03.08.2018	GSM-2_2006032-2006059_GRAC_GFZOP_BA01_0600 GSM-2_2006032-2006059_GRAC_GFZOP_BB01_0600	2006-02	06-02-14 T06:21	37 26.71	60x60 96x96	Yes	
03.08.2018	GSM-2_2006001-2006031_GRAC_GFZOP_BA01_0600 GSM-2_2006001-2006031_GRAC_GFZOP_BB01_0600	2006-01	06-01-17 T13:42	42 29.75	60x60 96x96	Yes	
03.08.2018	GSM-2_2005335-2005365_GRAC_GFZOP_BA01_0600 GSM-2_2005335-2005365_GRAC_GFZOP_BB01_0600	2005-12	05-12-17 T10:47	36 25.70	60x60 96x96	Yes	
03.08.2018	GSM-2_2005305-2005334_GRAC_GFZOP_BA01_0600 GSM-2_2005305-2005334_GRAC_GFZOP_BB01_0600	2005-11	05-11-16 T04:19	40 28.99	60x60 96x96	Yes	
03.08.2018	GSM-2_2005274-2005304_GRAC_GFZOP_BA01_0600 GSM-2_2005274-2005304_GRAC_GFZOP_BB01_0600	2005-10	05-10-16 T01:27	39 29.60	60x60 96x96	Yes	
03.08.2018	GSM-2_2005244-2005273_GRAC_GFZOP_BA01_0600 GSM-2_2005244-2005273_GRAC_GFZOP_BB01_0600	2005-09	05-09-16 T06:32	36 28.50	60x60 96x96	Yes	
03.08.2018	GSM-2_2005213-2005243_GRAC_GFZOP_BA01_0600 GSM-2_2005213-2005243_GRAC_GFZOP_BB01_0600	2005-08	05-08-16 T17:05	41 30.44	60x60 96x96	Yes	
03.08.2018	GSM-2_2005182-2005212_GRAC_GFZOP_BA01_0600 GSM-2_2005182-2005212_GRAC_GFZOP_BB01_0600	2005-07	05-07-16 T14:25	39 30.53	60x60 96x96	Yes	
03.08.2018	GSM-2_2005152-2005181_GRAC_GFZOP_BA01_0600 GSM-2_2005152-2005181_GRAC_GFZOP_BB01_0600	2005-06	05-06-15 T08:59	41 29.50	60x60 96x96	Yes	
03.08.2018	GSM-2_2005121-2005151_GRAC_GFZOP_BA01_0600 GSM-2_2005121-2005151_GRAC_GFZOP_BB01_0600	2005-05	05-05-16 T20:53	39 30.14	60x60 96x96	Yes	
03.08.2018	GSM-2_2005091-2005120_GRAC_GFZOP_BA01_0600 GSM-2_2005091-2005120_GRAC_GFZOP_BB01_0600	2005-04	05-04-16 T06:39	40 29.33	60x60 96x96	Yes	
03.08.2018	GSM-2_2005061-2005090_GRAC_GFZOP_BA01_0600 GSM-2_2005061-2005090_GRAC_GFZOP_BB01_0600	2005-03	05-03-17 T15:57	36 25.69	60x60 96x96	Yes	
03.08.2018	GSM-2_2005032-2005059_GRAC_GFZOP_BA01_0600 GSM-2_2005032-2005059_GRAC_GFZOP_BB01_0600	2005-02	05-02-13 T01:24	37 22.88	60x60 96x96	Yes	
03.08.2018	GSM-2_2005001-2005031_GRAC_GFZOP_BA01_0600 GSM-2_2005001-2005031_GRAC_GFZOP_BB01_0600	2005-01	05-01-16 T21:39	41 30.59	60x60 96x96	Yes	
03.08.2018	GSM-2_2004336-2004366_GRAC_GFZOP_BA01_0600 GSM-2_2004336-2004366_GRAC_GFZOP_BB01_0600	2004-12	04-12-15 T20:12	41 26.99	60x60 96x96	Yes	
03.08.2018	GSM-2_2004306-2004335_GRAC_GFZOP_BA01_0600 GSM-2_2004306-2004335_GRAC_GFZOP_BB01_0600	2004-11	04-11-15 T07:06	44 28.45	60x60 96x96	Yes	
03.08.2018	GSM-2_2004275-2004305_GRAC_GFZOP_BA01_0600 GSM-2_2004275-2004305_GRAC_GFZOP_BB01_0600	2004-10	04-10-15 T23:27	44 29.98	60x60 96x96	Yes	1)
03.08.2018	GSM-2_2004245-2004274_GRAC_GFZOP_BA01_0600 GSM-2_2004245-2004274_GRAC_GFZOP_BB01_0600	2004-09	04-09-16 T05:47	40 29.20	60x60 96x96	Yes	1)
03.08.2018	GSM-2_2004214-2004244_GRAC_GFZOP_BA01_0600 GSM-2_2004214-2004244_GRAC_GFZOP_BB01_0600	2004-08	04-08-15 T03:47	48 29.87	60x60 96x96	Yes	1)

Release Date	Product Name	Month	Reference epoch	Arcs & Days	Max. d/o	GAX	Comments
03.08.2018	GSM-2_2004183-2004213_GRAC_GFZOP_BA01_0600 GSM-2_2004183-2004213_GRAC_GFZOP_BB01_0600	2004-07	04-07-16 T10:54	38 30.54	60x60 96x96	Yes	
03.08.2018	GSM-2_2004153-2004182_GRAC_GFZOP_BA01_0600 GSM-2_2004153-2004182_GRAC_GFZOP_BB01_0600	2004-06	04-06-15 T20:04	36 29.48	60x60 96x96	Yes	
03.08.2018	GSM-2_2004122-2004152_GRAC_GFZOP_BA01_0600 GSM-2_2004122-2004152_GRAC_GFZOP_BB01_0600	2004-05	04-05-17 T01:57	38 22.53	60x60 96x96	Yes	
03.08.2018	GSM-2_2004092-2004121_GRAC_GFZOP_BA01_0600 GSM-2_2004092-2004121_GRAC_GFZOP_BB01_0600	2004-04	04-04-16 T01:58	36 28.34	60x60 96x96	Yes	
03.08.2018	GSM-2_2004061-2004091_GRAC_GFZOP_BA01_0600 GSM-2_2004061-2004091_GRAC_GFZOP_BB01_0600	2004-03	04-03-16 T11:40	38 29.73	60x60 96x96	Yes	
03.08.2018	GSM-2_2004035-2004060_GRAC_GFZOP_BA01_0600 GSM-2_2004035-2004060_GRAC_GFZOP_BB01_0600	2004-02	04-02-17 T12:28	33 25.06	60x60 96x96	Yes	
03.08.2018	GSM-2_2004001-2004013_GRAC_GFZOP_BA01_0600 GSM-2_2004001-2004013_GRAC_GFZOP_BB01_0600	2004-01	04-01-07 T14:34	17 11.98	60x60 96x96	Yes	

Comments:

- 1) The GRACE satellites are passing through a 61/4 [rev./day] repeat orbit which peaks in September 2004. Due to this the observability of the spherical harmonic coefficients is reduced and more aggressive than usual post-processing techniques might be required.
- 2) The GRACE satellites are passing through a 46/3 [rev./day] repeat orbit which peaks in May 2012. Due to this the observability of the spherical harmonic coefficients is reduced and more aggressive than usual post-processing techniques might be required.
- 3) The GRACE satellites are passing through a 77/5 [rev./day] repeat orbit which peaks in December 2013. Due to this the observability of the spherical harmonic coefficients is reduced and more aggressive than usual post-processing techniques might be required.
- 4) The GRACE satellites are passing through a 31/2 [rev./day] repeat orbit which peaks in February 2015. Due to this the observability of the spherical harmonic coefficients is reduced and more aggressive than usual post-processing techniques might be required.

References:

- [1] Dahle, C.; Flechtner, F.; Murböck, M.; Michalak, G.; Neumayer, H.; Abrykosov, O.; Reinhold, A.; König, R. (2018): *GRACE 327-743 (Gravity Recovery and Climate Experiment), GFZ Level-2 Processing Standards Document for Level-2 Product Release 06 (Rev. 1.0, October 26, 2018), (Scientific Technical Report STR - Data; 18/04)*, Potsdam: GFZ German Research Centre for Geosciences. DOI: <http://doi.org/10.2312/GFZ.b103-18048>
- [2] Bettadpur, S.: *Level-2 Gravity Field Product User Handbook (v. 4.0)*. Center for Space Research, The University of Texas, April 2018. GRACE 327-734
- [3] Wahr, J.; Nerem, R. S.; Bettadpur, S. V. (2015): *The pole tide and its effect on GRACE time-variable gravity measurements: Implications for estimates of surface mass variations*. Journal of Geophysical Research: Solid Earth 120, 6, 4597-4615. DOI: <http://doi.org/10.1002/2015JB011986>

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