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********************  AGILE Public Data Release Note v4.0 ********************

User's README
AGILE Data Center (ADC), October 6, 2010

The proprietary period for the AGILE Cycle-2 Observation Blocks (OB) (from OB 6500 to OB 8200) has currently expired,
and the data are public and available from the ASDC Multimission Archive webpage http://www.asdc.asi.it/mmia/ for the AGILE Mission.

This reprocessed archive for public Cycle-1 and Cycle-2 OB is homogeneous with reprocessed proprietary data delivered on
October 6, 2009 (v3.0) to successful proponents of the AGILE Guest Observer Program.

Data were processed with the AGILE  "Standard Analysis" OB pipeline, which cleans the archive
by eliminating data corresponding to repointing slews and occasional losses of fine-pointing attitude.
The OB pipeline software version used is: 3_18_17_16.
A new complete data reprocessing with the latest available software is on-going and we plan to make a new public
delivery on December 22, 2010, at the end of proprietary period of all the AGILE Cycle-2 OB.

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** NEWS **
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A new interactive tool has been developed to allow ASDC Web users to preview the AGILE
public data fields and to perform an interactive preliminary analysis around a chosen sky position.
Warning: use only as a preview of the AGILE gamma-ray field.
To perform your own scientific analysis, please download data and use the official public AGILE software.

To access the preview tool click on "On-line Analysis" in the query output table, under the "GRID Interactive Archive"
column. The interactive ASDC tool uses the XIMAGE software package for multi-mission X-ray astronomy (v4.5.1),
adapted to gamma-ray image display and data analysis.

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****** Delivered Data ******
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AGILE Cycle-1 observations were already public and they were
structured as a series of 29 OBs, each corresponding to a unique
identifing number. The schedule can be found at:
http://agile.asdc.asi.it/current_pointing.html
(click on the red text: "Click here to show previous pointings").

The set of (v3.0) public GRID data corresponds to all Cycle-1 AGILE
observations, following the first year AGILE Baseline Pointing Plan
and including 7 Target of Opportunities (ToO) and 1 Partial Repointing:

   | OB # | OB Name            | RA_PNT     | DEC_PNT     | OB start date    | OB end date      | Mean OB Exp.| Notes |
 1 | 4900 | Cygnus Field 1     | 20 26 47.9 | +53 17 59.9 | 2007-12-01 12:00 | 2007-12-05 09:00 | 7863569     | Baseline |
 2 | 4910 | Cygnus Field 1 b<0 | 21 53 59.9 | +38 00 00.0 | 2007-12-05 09:00 | 2007-12-15 12:00 | 17534267    | Partial Rep.|
 3 | 4920 | Cygnus Field 1 Ext | 22 15 35.9 | +37 53 59.9 | 2007-12-15 12:00 | 2007-12-16 12:00 | 1818760     | ToO |
 4 | 5010 | Virgo Field 1      | 11 58 00.0 | -00 24 00.0 | 2007-12-16 12:00 | 2008-01-08 12:00 | 26087354    | Baseline |
 5 | 5100 | Vela Field         | 10 45 12.0 | -63 47 59.9 | 2008-01-08 12:00 | 2008-02-01 12:00 | 33770516    | Baseline |
 6 | 5200 | South Gal Pole     | 04 06 23.9 | -38 06 00.0 | 2008-02-01 12:00 | 2008-02-09 09:00 | 12842897    | Baseline |
 7 | 5210 | ToO MKN 421        | 16 48 47.9 | +50 30 00.0 | 2008-02-09 09:00 | 2008-02-12 12:00 | 6068356     | ToO |
 8 | 5220 | South Gal Pole Res | 04 27 11.9 | -35 47 59.9 | 2008-02-12 12:00 | 2008-02-14 12:00 | 3550767     | Baseline |
 9 | 5300 | Musca Field        | 13 51 36.0 | -73 54 00.0 | 2008-02-14 12:00 | 2008-03-01 12:00 | 33480692    | Baseline |
10 | 5400 | Gal. Cent. I OB    | 17 04 47.9 | -51 23 59.9 | 2008-03-01 12:00 | 2008-03-16 12:00 | 25219658    | Baseline |
11 | 5450 | Gal. Cent. II OB   | 18 14 00.0 | -28 36 00.0 | 2008-03-16 12:00 | 2008-03-30 12:00 | 18890136    | Baseline |
12 | 5500 | Anti-Center        | 07 00 00.0 | +21 41 59.9 | 2008-03-30 12:00 | 2008-04-05 12:00 | 9156017     | Baseline |
13 | 5510 | SA Raster Scan 23d | 07 19 59.9 | +28 36 00.0 | 2008-04-05 12:00 | 2008-04-07 12:00 | 3433405     | Baseline |
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14	5520	SA Raster Scan 28d	07 30 23.9	+35 42 00.0	2008-04-07 12:00	2008-04-08 12:00	624562	Baseline
15	5530	Anti Center Res.	07 28 23.9	+20 48 00.0	2008-04-08 12:00	2008-04-10 12:00	3495799	Baseline
16	5600	Vulpecula Field	19 36 24.0	+20 36 00.0	2008-04-10 12:00	2008-04-30 12:00	32487373	Baseline
17	5700	North Gal Pole	16 53 36.0	+71 00 00.0	2008-04-30 12:00	2008-05-10 12:00	20943837	Baseline
18	5800	Cygnus Field 2	21 11 12.0	+35 12 00.0	2008-05-10 12:00	2008-06-09 18:00	46349986	Baseline
19	5810	ToO WComae ON +231	12 23 12.0	+29 48 00.0	2008-06-09 18:00	2008-06-15 12:00	9974044	ToO
20	5820	Cygnus Field 2 Res	22 06 47.9	+50 00 00.0	2008-06-15 12:00	2008-06-30 12:00	28796719	Baseline
21	5900	Antlia Field	11 50 47.9	-48 36 00.0	2008-06-30 12:00	2008-07-25 18:00	76999062	Baseline
22	5910	ToO 3C454.3	01 33 12.0	+38 12 00.0	2008-07-25 18:00	2008-07-31 12:00	18507796	ToO
23	5920	ToO 3C454.31 Ext	02 22 48.0	+39 00 00.0	2008-07-31 12:00	2008-08-15 12:00	50065481	ToO
24	6010	Musca Field 2 Post	12 52 00.0	-77 05 59.9	2008-08-15 12:00	2008-08-31 12:00	32538600	Baseline
25	6110	ToO SGR 0501+4516	04 34 48.0	+44 17 59.9	2008-08-31 12:00	2008-09-10 12:00	32846816	ToO
26	6200	Gal. center 3	18 08 47.9	-28 36 00.0	2008-09-10 12:00	2008-10-10 12:00	91172040	Baseline
27	6210	ToO PKS 0537-441	06 43 11.9	-46 36 00.0	2008-10-10 12:00	2008-10-17 12:00	22294784	ToO
28	6310	Aquila Field Post	19 48 24.0	+10 00 00.0	2008-10-17 12:00	2008-10-31 12:00	37164472	Baseline
29	6400	Cygnus Field 3	20 07 12.0	+34 00 00.0	2008-10-31 12:00	2008-11-30 12:00	83470966	Baseline

AGILE Cycle-2 observations were structured as a series of
24 OBs, each corresponding to a unique identifing number.
The schedule can be found at:
http://agile.asdc.asi.it/current_pointing.html
(click on the red text: "Click here to show previous pointings").

The set of (v3.0) GRID data which become public today corresponds to
the first 22 AGILE observations of Cycle-2, from 2008-11-30 to 2009-09-30,
following the second year AGILE Baseline Pointing Plan and including
2 Target of Opportunities (ToO) and 1 Partial Repointing:

30	6500	Cygnus Field 4	22 02 48.0	+35 12 00.0	2008-11-30 12:00	2008-12-20 12:00	54434163	Baseline
31	6600	Cygnus Field 5	23 13 12.0	+44 17 60.0	2008-12-20 12:00	2009-01-12 18:00	70389796	Baseline
32	6610	ToO Carina	11 07 60.0	-60 17 60.0	2009-01-12 18:00	2009-01-19 18:00	24357157	ToO
33	6710	Cygnus Field 6	23 31 36.0	+73 05 60.0	2009-01-19 18:00	2009-02-28 12:00	121269290	Baseline
34	6800	Gal. Center 4	17 31 12.0	-29 18 00.0	2009-02-28 12:00	2009-03-25 12:00	79351215	Baseline
35	6810	Gal. Center prol	18 37 60.0	-29 18 00.0	2009-03-25 12:00	2009-03-31 12:00	18985924	Partial Rep
36	6910	Crab Field 1 post	07 09 36.0	+31 36 00.0	2009-03-31 12:00	2009-04-07 12:00	22634242	Baseline
37	7010	Aquila Field 1 post	19 33 60.0	-19 18 00.0	2009-04-07 12:00	2009-04-15 12:00	25463004	Baseline
38	7100	Aquila Field 2	19 48 48.0	+16 00 00.0	2009-04-15 12:00	2009-04-30 12:00	40659296	Baseline
39	7200	Cygnus Field 7	20 21 12.0	+29 23 60.0	2009-04-30 12:00	2009-05-15 12:00	46628762	Baseline
40	7300	Vela Field 2	09 33 36.0	-36 00 00.0	2009-05-15 12:00	2009-05-25 18:00	29700936	Baseline
41	7310	3rd ToO 3C454.3	22 03 36.0	+10 48 00.0	2009-05-25 18:00	2009-05-29 12:00	9751998	ToO
42	7320	Vela Field 2 Resum	09 18 24.0	-40 30 00.0	2009-05-29 12:00	2009-06-04 12:00	19212995	Baseline
43	7410	Virgo Field 2 post	11 33 60.0	+10 41 60.0	2009-06-04 12:00	2009-06-15 12:00	34634675	Baseline
44	7500	Cygnus Field 8	22 22 48.0	+43 00 00.0	2009-06-15 12:00	2009-06-25 12:00	32989242	Baseline
45	7600	Cygnus Field 9	23 43 12.0	+38 00 00.0	2009-06-25 12:00	2009-07-15 12:00	62235955	Baseline
46	7700	Cygnus Field 10	23 16 24.0	+66 35 60.0	2009-07-15 12:00	2009-08-12 12:00	94926497	Baseline
47	7800	Vela Field 3	14 30 00.0	-63 30 00.0	2009-08-12 12:00	2009-08-31 12:00	64198325	Baseline
48	7900	Norma Field	16 40 24.0	-35 36 00.0	2009-08-31 12:00	2009-09-10 12:00	32808480	Baseline
49	8000	SA Crab (15,6.3)	05 21 12.0	+06 24 00.0	2009-09-10 12:00	2009-09-13 12:00	7357784	Baseline
50	8100	SA Crab (25,3.5)	05 33 36.0	-03 06 00.0	2009-09-13 12:00	2009-09-16 12:00	9945973	Baseline
51	8200	Galactic Center 5	18 05 12.0	-23 30 00.0	2009-09-16 12:00	2009-09-30 12:00	42668912	Baseline

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****** Data Retrieval ******
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The query for the AGILE Mission data in the ASDC Multi Mission Interactive Archive http://www.asdc.asi.it/mmia/
produces an interactive table showing all OBs selected according to the chosen option:

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- either the observation mean pointing position (RA_PNT, DEC_PNT) lies within 50 degrees from the source position
- or the observation lies in the specified  time-range.
- or the observation has the selected parameters (OB number values).

A query with "Search Type" by "Time", with default Start Date and End Date values
results in a complete table of all public AGILE OB available to date.

The Mean OB Exposure column (in cm2 s) in the interactive table
corresponds to the effective area associated to the FM filtered events.

The "Public access" link makes it possible to download the following
v2.0 files for each OB:

- the spacecraft auxiliary (LOG) files (ag-<TSTART>.LOG__GO.gz)
  needed for the data analysis and covering approximately one-day of
  observation within each OB, are grouped under the directory LOG__GO:

    * LOG__GO
        ag-<TSTART1>.LOG__GO
        ag-<TSTART2>.LOG__GO
        .....
        .....
        ag-<TSTARTn>.LOG__GO
  and a single general LOG index file with suffix: LOG__GO-<TSTART1>.index

WARNING: LOG files have a very accurate time resolution of 100 msec and need several GB of available disk space.

- two event files including all gamma-ray events in the GRID Field of View (FoV) using AGILE event filters:

      the standard OB event file with suffix: EVT__GO_FM and its index file with suffix: EVT__GO_FM.index
      the additional OB event file with suffix: EVT__GO_FT3AB and its index file with suffix: EVT__GO_FT3AB.index

WARNING: data analysis with event files obtained with FT3AB filter may be more efficient in detecting sources with a
soft energy spectrum, but there may be noisy residual artifacts at the border of the Field of View
(off-axis angle> 40 deg).

- three maps, count, exposure and diffuse background, centered on the
  mean OB pointing position, with suffix:
  COUNTS__GO_FM     EXP__GO_FM    GAS__GO_FM

These maps were automatically generated with the FM filter with the following parameters:

mdim=80.0       index=-2.1        earth_tol=3.0
mres=0.25       fovrad=80         keepmono=NO
lonpole=180     albrad=80         phasecode=18
emin=100        y_tol=0.5         projection=ARC
emax=50000      roll_tol=360.0    step=4

To produce your own maps and run likelihood tasks please download and
install the public AGILE software available at:
http://agile.asdc.asi.it/public/
and follow the Software User Manual included.

- a GIF file showing the images of both the OB (FM) exposure and count maps.
  For illustrative purpose only, the count map image includes automatic
  candidate detections in the FoV obtained with XIMAGE software.
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NOTE: if you choose to download data files with the default option "Automatically unpack the data using a Java applet"
then each file name in the corresponding .index file must be changed removing the .gz suffix before running map generator tasks.

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*** Note on AGILE Filters ***
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The standard AGILE event filter is the FM filter, optimized up to 60 deg off-axis.
The AGILE Team recommmends the use of v3.0 EVT files produced with the FM filter for
gamma-ray source standard likelihood analysis.

EVT files produced with the FT3AB filter are also published, but they are delivered with a warning (see above).

Each filter is associated with its own calibration and diffuse model files.
Be careful always to use the calibration and diffuse model files appropriate to the chosen EVT filter type.
Calibration and diffuse model files are delivered with the
public software release under the directory $ADC/scientific analysis/data.

* FM filter: if you use the FM-filtered event file with suffix: EVT__GO_FM
  you should always use as an input to scientific software tasks:

- effective area files of type *FM*.sar.gz
- energy dispersion files of type *FM*.edp.gz
- point spread funcion files of type *FM*.psd.gz
- flux correction files of type *FM*.expcorr.gz
- diffuse model files of type *FM*.conv.sky.gz

* FT3AB filter: if you use the FT3AB-filtered event file with suffix: EVT__GO_FT3AB
  you should always use as an input to scientific software tasks:

- effective area files of type *FT3AB*.sar.gz
- energy dispersion files of type *FT3AB*.edp.gz
- point spread funcion files of type *FT3AB*.psd.gz
- flux correction files of type *FT3AB*.expcorr.gz
- diffuse model files of type *FT3AB*.conv.sky.gz

* Old F4 filter: this filter is not included in the new data delivery.
If you want to use old F4-filtered event files of previous public
data delivery v1.0 with suffix: EVT__GO
you should always use as an input of scientific software tasks:

- effective area files of type *F4*.sar.gz
- energy dispersion files of type *F4*.edp.gz
- point spread funcion files of type *F4*.psd.gz
- flux correction files of type *F4*.expcorr.gz
- diffuse model files of type *F4*.conv.sky.gz

For further details please follow the instructions given in
the Software User Manual.

Enjoy!