

Gaia Parameter Database

<http://www.rssd.esa.int/gaia/paramdb>

J. de Bruijne, U. Lammers, M. Perryman

[Access to the database requires a login & password. Contact gaialib@rssd.esa.int for the relevant info.]

Gaia Parameter Database: Purpose

- The Gaia parameter database is a controlled, up-to-date repository of all parameters relevant to Gaia.
- The database contains satellite design, mathematical, physical & astronomical constants and parameters (scalar & multi-dimensional).
- Harmonise the parameters used in work performed by >10 industrial contractors, >20 working groups,....
- To be used by scientific, technical & industrial communities (GDAAS, GASS already implementing it).

Gaia Parameter Database: Features I

- Actively maintained at ESTEC
- Reflects the most up-to-date & scientifically accurate status of Gaia parameters (~1300 entries)
- Contains fundamental & derived parameters, categorized as:
 - Ground Segment, Satellite, Mission, Astro, Spectro, Nature
- Contains scalar & multi-dimensional data sets
- Approved by Gaia Science Team and relevant Working groups

Gaia Parameter Database: Features II

- Web-based interface
- Requires login/password [Contact gaialib@rssd.esa.int for the relevant info.]
- Access on-line (browser) or off-line (eg wget)
- Search or browse access (live version only)
- Choice of output formats:
 - html
 - xml
 - Fortran-77, -90
 - ANSI-C
 - C++
 - Java
 - CSV (comma separated values)
 - Latex, pdf

esa

Gaia Parameter Database: www interface

Joint meeting of the Classification, Science Alerts and Variable Stars Working Groups
15-16 April 2004

Gaia Parameter Database

Versions
live

[ChangeLog](#)

Access

- [Search \(live\)](#)
- [Browse \(live\)](#)

Documentation

- [Basics](#)
- [Concepts](#)
- [User Manual](#)
- [Glossary](#)

Parameter search in live version

Hierarchical parameter classification

? Level-1 is: -Any- More

? and Level-2 is: -Any- More

? and Level-3 is: -Any- More

? and Level-4 is: -Any- More

? and Class name matches: *

? and Kind is: -Any- More

? and Direction is: -Any- More

? and Case is: -Any- More

? and Status is: -Any- More

? and Parameter is: all basic derived

? and Parameter is: all scalar multidimensional

? and Description matches: *

? and Source matches: *

Render output as: HTML

Search Reset

Gaia Karen O'Flaherty European Space Agency

esa

Gaia Parameter Database: sample query

Joint meeting of the Classification, Science Alerts and Variable Stars Working Groups
15-16 April 2004

- Simple query for demonstration purposes:
- How many CCDs in the AF field?
 - Choose: Level 1 = “Astro”
 - Choose: Level 2 = “AF”
 - Choose: Kind = “number”
 - Choose: Status = “confirmed”

The latter two options serve to refine the query but are not mandatory.

Gaia Karen O'Flaherty European Space Agency

esa

Gaia Parameter Database: Results

Parameter name Status: confirmed, TBC, TBD

Long description

Parameter search results (DB Version: -live-:2004-04-13T22:54:31)

Name	Value	Unit	Basic	Scalar	Status	Description	Source	Expression	LaTeX label	Last modified
:Astro:AF:OCD_Number_AL	110		true	true	CONF	Number of CCDs in AF in the along-scan direction (i.e., number of CCD strips in AF)	Astrom, 15 January 2004, 'Astro focal plane assembly: requirements specification, compliance matrix, and verification matrix', Gaia/FPA SP_00147 T.ASTR, issue 3, revision 1, Requirement FPA12D			2004-03-01T09:00:00
:Astro:AF:OCD_Number	110		false	true	CONF	Number of CCDs in AF		OCD_Number_AL * :Astro:OCD_Number_AC		2004-03-01T09:00:00

Basic or derived parameter Source of the value Expression: if it is a derived parameter

Gaia Karen O'Flaherty European Space Agency

esa

Gaia Parameter Database: multi-dimensional data

•Simple query for demonstration:What is the QE for the Astro CCDs?
Choose Level 1 = "Astro", Kind = "QE"

Name	Value	Unit	Basic	Scalar	Status	Description	Source	Expression	LaTeX label	Last modified
:Astro:OCD_QE_160K			true	false	CONF	CCD quantum efficiency (QE), as modeled by e2v technologies, for T = 160 K. First column: wavelength λ (in nm, from 200.0 to 1100.0). Second column: QE, at T = 160 K. Note that the QE for $\lambda = 350, 360, 370, 380, \text{ and } 390 \text{ nm}$ has been changed from 0.081, 0.080, 0.084, 0.096, and 0.105 (original) to 0.010, 0.030, 0.050, 0.070, and 0.090 (present). This change, although leading to somewhat conservative QE estimates, removes the discontinuity around $\lambda = 400 \text{ nm}$ that is present in the original e2v-modeled data.	T. Eaton and D. Morris (e2v technologies), 16 April 2003, 'Astro/AF & Spectro/MBP CCDs performance assessment report', Gaia-e2v-IP-006, issue 3, Appendix 4.2, p. 21 (device total thickness $t = 16 \text{ micrometer}$ and AR coating centered on 650 nm). See also A. Short, J.H.J. de Bruijne, 26 September 2003, 'OCD QE and MTF', Gaia-AS-002	QE (λ)		2004-03-01T09:00:00

Download the data in FITS format

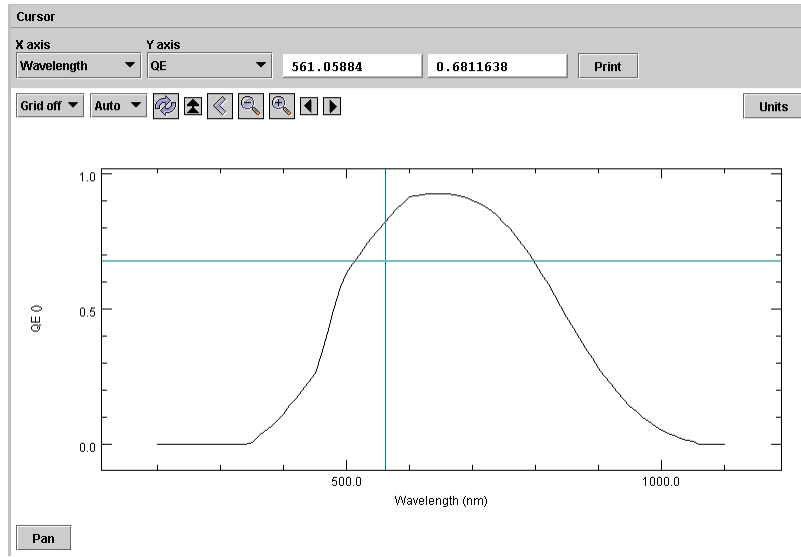
Download

Plot

Plot the data for a quick view

Gaia Karen O'Flaherty European Space Agency

Gaia Parameter Database: Plot of multi-dimensional data



Gaia Parameter Database: www interface

Gaia Parameter Database

Versions

live

[ChangeLog](#)

Access

- [Search \(live\)](#)
- [Browse \(live\)](#)

Documentation

- [Basics](#)
- [Concepts](#)
- [User Manual](#)
- [Glossary](#)

Parameter search in live version

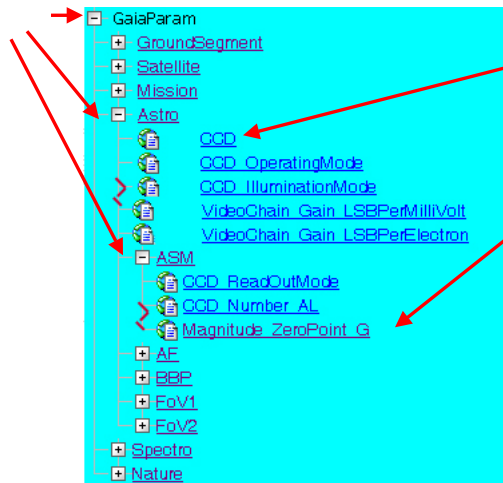
Level-1 is:	-Any-	More
and Level-2 is:	-Any-	More
and Level-3 is:	-Any-	More
and Level-4 is:	-Any-	More
and Class name matches:	*	
and Kind is:	-Any-	More
and Direction is:	-Any-	More
and Case is:	-Any-	More
and Status is:	-Any-	More
and Parameter is:	<input checked="" type="radio"/> all <input type="radio"/> basic <input type="radio"/> derived	
and Parameter is:	<input checked="" type="radio"/> all <input type="radio"/> scalar <input type="radio"/> multidimensional	
and Description matches:	*	
and Source matches:	*	

Render output as: HTML

Search Reset

Gaia Parameter Database: Access/Browse

Expandable nodes provide access through parameter hierarchy



Click on parameter name to access full info – data returned as for search

Browse the parameter database

Joint meeting of the Classification, Science Alerts and Variable Stars Working Groups
 15-16 April 2004

Gaia Parameter Database: Versions

Gaia Parameter Database

Versions

live
live
V1-0

[ChangeLog](#)

Access

- [Search \(live\)](#)
- [Browse \(live\)](#)

Documentation

- [Basics](#)
- [Concepts](#)
- [User Manual](#)
- [Glossary](#)

Parameter search in live version

?	Level-1 is:	-Any-	More
?	and Level-2 is:	-Any-	More
?	and Level-3 is:	-Any-	More
?	and Level-4 is:	-Any-	More
?	and Class name matches:	*	
?	and Kind is:	-Any-	More
?	and Direction is:	-Any-	More
?	and Case is:	-Any-	More
?	and Status is:	-Any-	More
?	and Parameter is:	<input checked="" type="radio"/> all <input type="radio"/> basic <input type="radio"/> derived	
?	and Parameter is:	<input checked="" type="radio"/> all <input type="radio"/> scalar <input type="radio"/> multi dimensional	
?	and Description matches:	*	
?	and Source matches:	*	

Render output as: HTML

Search Reset

Joint meeting of the Classification, Science Alerts and Variable Stars Working Groups
 15-16 April 2004

Gaia Parameter Database: Versions

- “Live” gives the latest value of all parameters – suitable for interactive use.
- For software applications use a controlled release of the database (currently V1-0).
- New versions released infrequently ~ 2/3 per year.

Gaia Parameter Database: Documents

- The Gaia Parameter Database – Technical users manual
 [Author: U. Lammers; Livelink (GAIA-UL-001)]
- A proposal for a Gaia parameter database
 [Authors: J. de Bruijne, U. Lammers, M.A.C. Perryman; Livelink (GAIA-JDB-007)]

These documents are also available directly from the parameter database web pages.

Gaia Parameter Database: Feedback

- Feedback on content and use is welcomed
- Proposals for new parameters welcomed
- Questions about the database should be directed to:

gaialib@rssd.esa.int

Joint meeting of the Classification,
 Science Alerts and Variable Stars Working Groups
 15-16 April 2004

www.rssd.esa.int/gaia

The screenshot shows the Gaia website interface with the following elements:

- Navigation Bar:** Includes 'ESA Home', 'Research & Science Home', 'Sci-Tech Portal', and 'Gaia Portal'. The main menu features 'Astrophysics', 'Planetary Exploration', 'Solar Terrestrial Science', 'Fundamental Physics', 'Science Operations', and 'Research'.
- Left Sidebar:** A vertical menu with categories like 'Gaia Information', 'Gaia Resources', 'Gaia Opportunities', 'Gaia Visual Material', 'Gaia Outreach', 'Gaia Services', and 'Restricted Access'. The 'Tools, data & software' item is circled in red.
- Main Content Area:**
 - Welcome Message:** 'Welcome to ESA's web site for the Gaia scientific community. For more about this and other Gaia web sites follow the 'More about Gaia' link.'
 - News from Gaia:**
 - 2004-03-31 Final presentation of the RVS instrument study:** The first phase of the RVS instrument design has come to an end with the final presentation of the work performed to date by the RVS Consortium. This scientific consortium comprising Mullard Space Science Laboratory, Observatoire de Paris-Meudon, Brunel University, University of Leicester, Osservatorio di Asiago, and University of Ljubljana, and led by Professor Mark Cropper (MSSL), worked with ESA and the industrial System Level Technical Assistance contractors under the direction of ESA Study Manager Oscar Pace. The consortium has refined all aspects of the instrument design (optics, detector, mechanical, thermal, and on-board processing) providing a baseline design for Gaia's radial velocity spectrograph. This will be refined further during the Definition Study phase, extending to mid-2005.
 - 2004-03-03 Gaia proceeds to Phase B1:** On 2-3 March, separate presentations were made by Alcatel/Alenia and EADS-Astrium to ESA representatives (from the Gaia project and outside) and the Gaia Science Team. Extensive presentations summarised the activities which have been carried out under the parallel System Level Technical Assistance Contracts which have been running with these industrial teams for the past two years. As a result, authorisation has been given for Gaia to enter Phase B1, the detailed definition phase, which is expected to start in April 2004, and which will extend for 1 year. Gaia therefore continues to remain on schedule for a launch in 2010.
 - 2004-02-23 Gaia in 2003 - status report now available**
- Right Sidebar:**
 - Gaia Symposium: The Three Dimensional Universe with Gaia** (13-April-2004 14:50:51)
 - Registration for the Symposium is now open**
 - Picture of the week**
 - The Gaia supercomputer**
 - Gaia people** (Adriaan Blaauw)
 - Spotlight on ...** (Geneva-Copenhagen survey of the Solar neighbourhood)

Joint meeting of the Classification,
 Science Alerts and Variable Stars Working Groups
 15-16 April 2004