

Finanziato dall'Unione europea NextGenerationEU







WP4 DMs, Ingestion and Services Updates Giacomo Coran

Spoke 3 II Technical Workshop, Bologna Dec 17 - 19, 2024

ICSC Italian Research Center on High-Performance Computing, Big Data and Quantum Computing

Missione 4 • Istruzione e Ricerca









Fermi Use Case

- -Logical Data Model based on ObsCoreDM
- Physical Data Model as rappresentation of the archiving tabular structure described in two tables
- -One table for the scientific data products
- -One table for the instrumental data

| | | photon |
|---|--|--|
| id | mediumint(9) | NOT NULL AUTO INCREMENT PK |
| did_rse | varchar(255) | DEFAULT NULL |
| did_scope | varchar(255) | DEFAULT NULL |
| did_name | varchar(255) | DEFAULT NULL |
| checksum | varchar(32) | DEFAULT NULL |
| file_version | smallint(5) | NOT NULL |
| file_name | varchar(255) | NOT NULL |
| file_extension | varchar(255) | NOT NULL |
| NAXIS_HDU0 | smallint(6) | DEFAULT NULL |
| EXTEND | tinyint(1) | DEFAULT NULL |
| CHECKSUM_HDU0 | varchar(32) | DEFAULT NULL |
| TELESCOP | varchar(8) | DEFAULT NULL |
| INSTRUME | varchar(8) | DEFAULT NULL |
| EQUINOX | float | DEFAULT NULL |
| RADECSYS | varchar(8) | DEFAULT NULL |
| DATE | timestamp | DEFAULT NULL DEFAULT NULL |
| DATE_OBS DATE_END | timestamp | |
| TSTART | timestamp float | DEFAULT NULL DEFAULT NULL |
| | | |
| TSTOP | float | DEFAULT NULL |
| TIMEUNIT | varchar(8) float | DEFAULT NULL |
| TIMEZERO | | DEFAULT NULL |
| TIMESTS | varchar(8) | DEFAULT NULL DEFAULT NULL |
| CLOCKAPP | varchar(8) tinyint(1) | DEFAULT NULL |
| GPS OUT | tinyint(1) | DEFAULT NULL |
| MIDREFI | float | DEFAULT NULL |
| MIDREFF | float | DEFAULT NULL |
| OBSERVER | varchar(255) | DEFAULT NULL |
| FILENAME | varchar(255) | DEFAULT NULL |
| ORIGIN | varchar(32) | DEFAULT NULL |
| CREATOR | varchar(255) | DEFAULT NULL |
| VERSION | varchar(8) | DEFAULT NULL |
| PROC VER | smallint(6) | DEFAULT NULL |
| DATASUM HDU0 | varchar(32) | DEFAULT NULL |
| NAXIS HDU1 | smallint(6) | DEFAULT NULL |
| NAXISI HDU1 | smallint(6) | DEFAULT NULL |
| NAXIS2 HDU1 | smallint(6) | DEFAULT NULL |
| PCOUNT_HDU1 | smallint(6) | DEFAULT NULL |
| GCOUNT_HDU1 | smallint(6) | DEFAULT NULL |
| CHECKSUM HDU1 | varchar(32) | DEFAULT NULL |
| DATASUM HDU1 | varchar(32) | DEFAULT NULL |
| EXTNAME HDU1 | varchar(32) | DEFAULT NULL |
| HDUCLASS HDU1 | varchar(32) | DEFAULT NULL |
| HDUCLASSI HDU1 | varchar(32) | DEFAULT NULL |
| HDUCLASS2_HDU1 | varchar(32) | DEFAULT NULL |
| PASS VER | varchar(255) | DEFAULT NULL |
| NDIFRSP | smallint(6) | DEFAULT NULL |
| DIFRSP0_HDU1 | varchar(32) | DEFAULT NULL |
| DIFRSP1 HDU1 | varchar(32) | DEFAULT NULL |
| DIFRSP2_HDU1 | varchar(32) | DEFAULT NULL |
| DIFRSP3 HDU1 | varchar(32) | DEFAULT NULL |
| DIFRSP4 HDU1 | varchar(32) | DEFAULT NULL |
| DSTYP1_HDU1 | varchar(32) | DEFAULT NULL |
| DSUNI1_HDU1 | varchar(16) | DEFAULT NULL |
| DSVAL1_HDU1 | | DEFAOLI NOLL |
| | varchar(32) | DEFAULT NULL |
| DSREF1_HDU1 | varchar(32) varchar(32) | DEFAULT NULL DEFAULT NULL |
| DSREF1_HDU1 DSTYP2_HDU1 | varchar(32) varchar(32) varchar(32) | DEFAULT NULL DEFAULT NULL DEFAULT NULL |
| DSREF1_HDU1 DSTYP2_HDU1 DSUNI2_HDU1 | varchar(32) varchar(32) varchar(32) varchar(16) | DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL |
| DSREF1_HDU1 DSTYP2_HDU1 DSUNI2_HDU1 DSVAL2_HDU1 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(32) | DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL |
| DSREF1_HDU1 DSTYP2_HDU1 DSUNI2_HDU1 DSVAL2_HDU1 NDSKEYS | varchar(32) varchar(32) varchar(32) varchar(16) varchar(32) smallint(6) | DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL |
| DSREF1_HDU1 DSTYP2_HDU1 DSUNI2_HDU1 DSVAL2_HDU1 NDSKEYS NAXIS_HDU2 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(32) smallint(6) smallint(6) | DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL |
| DSREF1_HDU1 DSTYP2_HDU1 DSUNI2_HDU1 DSVAL2_HDU1 NDSKEYS NAXIS_HDU2 NAXIS1_HDU2 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(32) smallint(6) smallint(6) smallint(6) | DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL DEFAULT NULL |
| DSREF1_HDU1 DSTYP2_HDU1 DSUNI2_HDU1 DSVAL2_HDU1 NDSKEYS NAXIS_HDU2 NAXIS1_HDU2 NAXIS1_HDU2 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(32) smallint(6) smallint(6) smallint(6) smallint(6) | DEFAUT NULL |
| DSREF1 HDU1 DSTYP2-HDU1 DSUNI2-HDU1 DSVAL2-HDU1 NDSKEYS NAXIS HDU2 NAXIS1-HDU2 NAXIS2-HDU2 | varchar(32) varchar(32) varchar(32) varchar(32) smallint(6) smallint(6) smallint(6) smallint(6) | DEFAUT NULL DEFAUT |
| DSREF1 HDU1 DSTYP2 HDU1 DSUN2 HDU1 DSUAL2 HDU1 NDSKEY5 NAXIS HDU2 NAXIS1 HDU2 NAXIS1 HDU2 NAXIS2 HDU2 PCOUNT HDU2 GCOUNT HDU2 | varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) smallint(6) smallint(6) smallint(6) smallint(6) smallint(6) | DEFAUT NULL |
| DSREF1 HDU1 DSTYP2 HDU1 DSTYP2 HDU1 DSVAL2 HDU1 NDSREY5 NAXIS HDU2 NAXIS1 HDU2 NAXIS1 HDU2 NAXIS2 HDU2 PCOUNT HDU2 GCOUNT HDU2 GCOUNT HDU2 | varchar(32) varchar(32) varchar(32) varchar(32) smallint(6) smallint(6) smallint(6) smallint(6) smallint(6) smallint(6) varchar(32) | DEFAUT NULL DEFAUT |
| DSREF1 HDU1 DSTYP2 HDU1 DSTYP2 HDU1 DSVAL2 HDU1 NDSKEY5 NAXIS1 HDU2 NAXIS1 HDU2 NAXIS2 HDU2 PCOUNT HDU2 GCOUNT HDU2 CHECKSUM HDU2 DATASUM HDU2 | varchar(32) varchar(32) varchar(32) varchar(32) smallint(6) smallint(6) smallint(6) smallint(6) smallint(6) smallint(6) varchar(32) varchar(32) | DEFAULT NULL |
| DSREF1 HDU1 DSTYP2 HDU1 DSUN2 HDU1 DSUN2 HDU1 DSVAL2 HDU1 NDSKEYS NAXIS HDU2 NAXIS1 HDU2 PCOUNT HDU2 GCOUNT HDU2 GCOUNT HDU2 DATASUM HDU2 EXTNAME HDU2 | varchar(32) varchar(32) varchar(32) varchar(32) smailint(6) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) | DEFAUT NULL DEFAUT |
| DSREF1 HDU1 DSTYP2 HDU1 DSUN2 HDU1 DSUN2 HDU1 DSUN2 HDU1 NDSKEYS NAXIS1 HDU2 NAXIS1 HDU2 NAXIS2 HDU2 PCOUNT HDU2 GCOUNT HDU2 CHECKSUM HDU2 DATASUM HDU2 EXTNAME HDU2 HDUCLASS HDU2 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(16) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) varchar(32) | DEFAUT NULL DEFAUT |
| DSREF1 HDU1 DSTYP2 HDU1 DSUN2 HDU1 DSUN2 HDU1 DSVAL2 HDU1 NDSKEYS NAXIS HDU2 NAXIS HDU2 NAXIS HDU2 GCOUNT HDU2 GCOUNT HDU2 GCOUNT HDU2 GCOUNT HDU2 DATASUM HDU2 D | varchar(32) varchar(32) varchar(32) varchar(16) varchar(16) smailint(6) smailint(6) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) varchar(32) varchar(32) | DEFAUT NULL DEFAUT |
| DSREF1 HDU1 DSTVP2 HDU1 DSUN2 HDU1 DSUN2 HDU1 DSVAL2 HDU1 NDSKEYS NAXIS HDU2 NAXIS HDU2 NAXIS HDU2 RCOURT HDU2 CHECKSUM HDU2 CHECKSUM HDU2 EXTNAME HDU2 EXTNAME HDU2 HDUCLASS HDU2 HDUCLASS HDU2 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(16) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) varchar(32) varchar(32) | DEFAUT NULL DEFAUT |
| DSREF1 HDU1 DSTYP2 HDU1 DSUN2 HDU1 DSUN2 HDU1 DSVAL2 HDU1 NDSKPS NAXIS HDU2 NAXIS HDU2 RC0URT HDU2 GC0URT HDU2 GC0URT HDU2 GC0URT HDU2 DATASUM HDU3 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(16) smailint(6) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) | DEFAULT NULL |
| DSREF1 HDU1 DSTYP2 HDU1 DSUN2 HDU1 DSUN2 HDU1 DSVAL2 HDU1 NDSKEYS NAXIS HDU2 NAXIS HDU2 NAXIS HDU2 NAXIS HDU2 RCOURT HDU2 CHECKSUM HDU2 CHECKSUM HDU2 EXTNAME HDU2 HDUCLASS HDU2 HDUCLASS HDU2 HDUCLASS HDU2 ONTIME HDUCLASS | varchar(32) varchar(32) varchar(32) varchar(16) varchar(16) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) fioat | DEFAULT NULL |
| DSREF1 HDU1 DSTYP2 HDU1 DSUN2 HDU1 DSUN2 HDU1 DSVA2 HDU1 NDSKPS NAXIS HDU2 NAXIS HDU2 NAXIS HDU2 COUNT HDU2 CCOUNT HDU2 CCOUNT HDU2 DATASUM HDU2 DAT | varchar(32) varchar(32) varchar(32) varchar(32) varchar(36) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) smailint(6) | DEFAUT NULL DEFAUT |
| DSREF1_HOU1 DSTVP2_HOU1 DSUR2_HOU1 DSVAL2_HOU1 DDSKP5 LAXIS_HOU2 LAXIS_HOU2 LAXIS_HOU2 COUNT_HOU2 COUNT_HOU2 COUNT_HOU2 COUNT_HOU2 COUNT_HOU2 COUNT_HOU2 COUNT_HOU2 DY THOU2 COUNT_HOU2 DI CLASS_HOU2 DI CLASS_HOU2 | varchar(32) varchar(32) varchar(32) varchar(16) varchar(16) smailint(6) smailint(6) smailint(6) smailint(6) varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) varchar(32) fioat | DEFAULT NULL |

| spacecraft | | | | | | |
|----------------|--------------|----------------------------------|--|--|--|--|
| id | mediumint(9) | NOT NULL AUTO INCREMENT | PK | | | |
| did rse | varchar(255) | DEFAULT NULL | | | | |
| did scope | varchar(255) | DEFAULT NULL | | | | |
| did name | varchar(255) | DEFAULT NULL | | | | |
| checksum | varchar(32) | DEFAULT NULL | | | | |
| file version | smallint(5) | NOT NULL | | | | |
| file name | varchar(255) | NOT NULL | | | | |
| file extension | varchar(255) | NOT NULL | | | | |
| NAXIS HDU0 | smallint(6) | DEFAULT NULL | | | | |
| EXTEND | tinyint(1) | DEFAULT NULL | | | | |
| CHECKSUM HDU0 | varchar(32) | DEFAULT NULL | | | | |
| DATASUM HDUO | varchar(32) | DEFAULT NULL | | | | |
| TELESCOP | varchar(8) | DEFAULT NULL | | | | |
| INSTRUME | varchar(8) | DEFAULT NULL | | | | |
| EQUINOX | float | DEFAULT NULL | | | | |
| RADECSYS | varchar(8) | DEFAULT NULL | | | | |
| DATE | timestamp | DEFAULT NULL | | | | |
| DATE OBS | timestamp | DEFAULT NULL | | | | |
| DATE END | timestamp | DEFAULT NULL | | | | |
| TSTART | float | DEFAULT NULL | | | | |
| TSTOP | float | DEFAULT NULL | | | | |
| TIMESYS | varchar(8) | DEFAULT NULL | | | | |
| TIMEUNIT | varchar(8) | DEFAULT NULL | | | | |
| GPS OUT | tinvint(1) | DEFAULT NULL | | | | |
| MIDREFI | float | DEFAULT NULL | | | | |
| MIDREFF | float | DEFAULT NULL | | | | |
| OBSERVER | varchar(255) | DEFAULT NULL | | | | |
| FILENAME | varchar(255) | DEFAULT NULL | | | | |
| ORIGIN | varchar(32) | DEFAULT NULL | | | | |
| CREATOR | varchar(255) | DEFAULT NULL | | | | |
| VERSION | varchar(8) | DEFAULT NULL | | | | |
| PROC VER | smallint(6) | DEFAULT NULL | | | | |
| NAXIS HDU1 | smallint(6) | DEFAULT NULL | | | | |
| NAXISI HDU1 | smallint(6) | DEFAULT NULL | | | | |
| NAXIS2 HDU1 | smallint(6) | DEFAULT NULL | | | | |
| PCOUNT HDU1 | smallint(6) | DEFAULT NULL | | | | |
| GCOUNT HDU1 | smallint(6) | DEFAULT NULL | | | | |
| CHECKSUM HDU1 | varchar(32) | DEFAULT NULL | | | | |
| DATASUM HDU1 | varchar(32) | DEFAULT NULL | | | | |
| EXTNAME HDU1 | varchar(32) | DEFAULT NULL | | | | |
| TIMEZERO | float | DEFAULT NULL | | | | |
| TIMEREF | varchar(8) | DEFAULT NULL | | | | |
| TASSIGN | varchar(16) | DEFAULT NULL | | | | |
| CLOCKAPP | tinyint(1) | DEFAULT NULL | | | | |
| EXTVER | smallint(6) | DEFAULT NULL | | | | |
| WEEK | smallint(3) | NOT NULL | | | | |
| update time | timestamp | NOT NULL DEFAULT CURRENT TIMESTA | MD | | | |
| upuate_time | unestamp | NOT NOLE DEFAULT CORRENT_TIMESTA | in the second se | | | |









Gaia Use Case

- Physical archive structure divided into three tables
- -One table for the observed sources
- -One table for the observed transits
- -One table to link them all
- -Minor adjustments on the transits table to provide better search capabilities

| CompleteSource | | | | | |
|---------------------------|--------------|------------------------------------|----|--|--|
| id | bigint(9) | NOT NULL AUTO INCREMENT | PK | | |
| did rse | varchar(255) | DEFAULT NULL | | | |
| did scope | varchar(255) | DEFAULT NULL | | | |
| did name | varchar(255) | DEFAULT NULL | | | |
| checksum | varchar(32) | DEFAULT NULL | | | |
| file version | smallint(5) | NOT NULL | | | |
| file name | varchar(255) | NOT NULL | | | |
| file extension | varchar(255) | NOT NULL | | | |
| SOURCE ID | bigint(19) | NOT NULL | | | |
| ALPHA | float | DEFAULT NULL | | | |
| ALPHA_STAR_ERROR | float | DEFAULT NULL | | | |
| DELTA | float | DEFAULT NULL | | | |
| DELTA_STAR_ERROR | float | DEFAULT NULL | | | |
| MU ALPHA STAR | float | DEFAULT NULL | | | |
| MU_ALPHA_STAR_ERROR | float | DEFAULT NULL | | | |
| MU DELTA | float | DEFAULT NULL | | | |
| MU_DELTA_ERROR | float | DEFAULT NULL | | | |
| NU EFF USED IN ASTROMETRY | float | DEFAULT NULL | | | |
| RADIAL VELOCITY | float | DEFAULT NULL | | | |
| RADIAL VELOCITY ERROR | float | DEFAULT NULL | | | |
| VARPI | float | DEFAULT NULL | | | |
| VARPI_ERROR | float | DEFAULT NULL | | | |
| update_time | timestamp | NOT NULL DEFAULT CURRENT_TIMESTAMP | | | |
| key_name | varchar(255) | DEFAULT NULL | | | |
| GMEAN_FLUX_MEAN | float | DEFAULT NULL | | | |
| GMEAN_FLUX_ERROR | float | DEFAULT NULL | | | |
| | | | | | |
| | | | | | |

AstroElementary NOT NULL AUTO INCREMENT

DEFAULT NULL

DEFAULT NULI

DEEAULT NULL

DEFAULT NUL

DEFAILT NULL

DEFAULT NULL

DEFAULT NULL

DEFAILT NULL

DEFAULT NULL

DEFAULT NUL

NOT NULL DEFAULT CURRENT TIMESTAME

NOT NUL

NOT NUL

NOT NULI

PK

higint(9

varchar(25

archar(3

smallint(

archar(2

varchar(2

bigint(19

timestam

varchar(25

smallint(3

smallint(4

smallint(3

bigint(9)

json timestarr

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did rse

id scope

hecksum

file version

file name

file extensio

AC WIN COORI

OBSERVING TIM

update time

ev name

LASS

TRANSIT_ID

| | | CrossMatch | |
|----------------|--------------|------------------------------------|---|
| id | bigint(9) | NOT NULL AUTO INCREMENT | Р |
| did rse | varchar(255) | DEFAULT NULL | |
| did scope | varchar(255) | DEFAULT NULL | |
| did name | varchar(255) | DEFAULT NULL | |
| checksum | varchar(32) | DEFAULT NULL | |
| file version | smallint(5) | NOT NULL | |
| file name | varchar(255) | NOT NULL | |
| file extension | varchar(255) | NOT NULL | |
| SOURCE ID | bigint(19) | NOT NULL | |
| TRANSIT ID | bigint(19) | NOT NULL | |
| SOLUTION ID | bigint(19) | NOT NULL | |
| DISTANCE | smallint(5) | DEFAULT NULL | |
| FLAGS | smallint(4) | DEFAULT NULL | |
| HEAL PIX FOV | bigint(9) | DEFAULT NULL | |
| update time | timestamp | NOT NULL DEFAULT CURRENT TIMESTAMP | |
| key name | varchar(255) | DEFAULT NULL | |









Data Ingestion

- Minor adjustment to the extracting method to mirror the changes on the file structure and the consequent changes on the archiving structure
- Data ingestion completed for the provided Gaia datasets
- -More than 800k entries in the Gaia Database
- -Data ingestion mostly completed also for Fermi

| id did_rse alpha dial_velocity radial | did_scope alpha_star_error l_velocity_error va | did_name delta delta_error arpi varpi_error | | hecksum file_v mu_alpha_star_error key_name | | file_extension ta_error nu_eff_used_i _flux_error | source_id n_astrometry |
|---|---|---|--|--|--|---|---|
| 811486436281131 0.5 164836 TEST_USERDISK 1.6262927234476942 673666617906817 0.13 164837 TEST_USERDISK 1.6261458275575598 | 0.344148387062902 0.3 9536560136485103 0.622366 test completeSour 415.9469111340154 0.3 30642358925354847 0.73361 test completeSour 0.168490806251154 0.3 | ce_test_830_CompleteSource_13800 380739720455390 0.7793564854712 0806938371 0.68154046001351 0.8071214245081225 306 801354050 97727528140 0.7203772478028843 (c.test_030_CompleteSource_13800 08088213497359227 0.815495164555 097925223107 0.22165473155780 | 556 0.8539829078310515 2024-11-19 12:25:06.9673 7.0000.h5 bade2aadd703 9883 0.8425218160216086 2024-11-19 12:25:06.9673 7.0000.h5 bade2aadd703 9248 0.3517431273119491 | 0.41940808054244764 1. 75 CompleteSourceImpl_@ 157c33998b7a593ba62 157c33998b7a593ba62 157c33998b7a593ba62 0.0224773253039997987 -4 | 0.8112446969615548 0.558 0 CompleteSource_1300 0.3053569992589864 0.7548 0 CompleteSource_1300 .032774160830083 0.0164442 | 18.199965053 0.7640 264022968026 97_0000 .h5 906649172167 97_0000 .h5 91840813438 0.9085 | 3376960745635102 258437240164 3376960749930167 395901754755 0 33376960814354268 885216563555 |
| id did_rse | did_scope ac_win_coord | did_name u observing_time | pdate_time | | e_version file_na s gmag object_type hea | | n transit_i transit_time |
| | , 4403, 7080, 21872, 6479, 3 | tary_test_030_AstroElementary_13 2899, 31460, 25763] 2024-11- 6, 7830575635916762565, -68566103 | 20 15:53:52.552184 Astr | oElementaryImpl_6696 | | 327212741 [-1451003674715 | 710443468779 470010, 31698135 85-05 15:26:31.6 |

| id did_tse did_scope d checksum_hdu@ telescop (kapp gsc.ut mjdrefi pcount_hdul gcount_hdul d fragh_hdul dstypl_hdul dsun checksum_hdu2 datasum_hdu2 | instrume equinox radecs; mjdreff observer hecksum_hdu1 datasum_hdu1 i1_hdu1 dsval1_hdu1 dsref1 | /s date ' filename extname_hdu1 hduclass_hdu1 hdu1 dstyp2_hdu1 2 hduclass1_hdu2 hduclass3 | 1 hduclass1_hdu1 hducla dsun12_hdu1 2_hdu2 ontime | creator version ss2_hdu1 pass_ver nd: dsval2_hdu1 ndskeys telapse extver_hdu2 | ifrsp difrsp@_hdu1 naxis_hdu2 naxis1_ week update | timeunit tim m_hdu@ naxis_hdu difrsp1_hdu1 c hdu2 naxis2_hdu2 _time | 1 naxis1_hdu1 lifrsp2_hdu1 d 2 pcount_hdu2 | timeref c naxis2_hdu1 ifrsp3_hdu1 gcount_hdu2 |
|--|--|--|---|---|---|--|--|--|
| 0 1 1 NE 1 7 15 5 MGDT19MTMGTHPMT 13756833768 16 1 1 7 TEST_USEDISK 16 exit 1< | BP7423783783783787 Peter Miche Auklassiukuizu, joszyssikka v. Auklassiukuizu, joszyssikka v. Joszysika v. Joszysikka | 2022-01-19 12:07:48 200 [2015 21-07:48 200 [2015 21-07:48 200 [2015 21-07:48 200 [2015 2 | Be-08-04 15:43:36 22 2985_940.1151 FSSC 1 EVENTS ALL 1 1208_940.1151 FSSC 1 148971_26519963 35143349750041551 4555 2614334057500474eb298/c6146 58 9899 23 28.08-07 03:33:43.9999 12 24 24 28.08-07 3:33:43.9999 12 24 24 24 29.08-001.11t5 FSSC EVENTS 24 <td>00.06.07 00.01 00.01 11 2 1 12 202352 1 100660 0 1 000601 0 1 000605 0 1 </td> <td> 395 5 NONE 9 2024-12-15 20 142_photon_weekly_w01 239772945 2463685 5 NONE 2 18 2624-12-15 20 18 2624-12-15 20 18 2624-12-15 20 18 t_photon_weekly_w01 240366861 24997042 365 NONE</td> <td>9 s NONE N N NONE N N N N N N N N N </td> <td>0 TT 2 98 0NME N 0 TT 2 98 0 TT 2 98 0 TT 2 98 0 TT 2 98 0 TT 0 TT</td> <td>NNE 0 1 1 0 1 587025 DNE 1 1 0 1 1 0 1 1 0 1 10CAL 1 1071 0 1 572718 DNE </td> | 00.06.07 00.01 00.01 11 2 1 12 202352 1 100660 0 1 000601 0 1 000605 0 1 | 395 5 NONE 9 2024-12-15 20 142_photon_weekly_w01 239772945 2463685 5 NONE 2 18 2624-12-15 20 18 2624-12-15 20 18 2624-12-15 20 18 t_photon_weekly_w01 240366861 24997042 365 NONE | 9 s NONE N N NONE N N N N N N N N N | 0 TT 2 98 0NME N 0 TT 2 98 0 TT 2 98 0 TT 2 98 0 TT 2 98 0 TT 0 TT | NNE 0 1 1 0 1 587025 DNE 1 1 0 1 1 0 1 1 0 1 10CAL 1 1071 0 1 572718 DNE |
| id did_tse did_scope hdu@ extend checksum_hdu@ sys timeunit gps_out ejd ul pcount_hdul | datasum_hdu0 telescop efi mjdreff | observer | filename | date_obs origin crea | date_end tor version | file_name tstar proc_ver naxi | | tension nax top t hdul naxis2 |
| 26 0 1 4 TEST_USERDISK test 0 t LCALNAAKLAAKLAA 5 f 5] 5 TEST_USERDISK test 0 t NEAJ0930HEAG993 5 f 5] | 910 0.00074287037037037037 Pc 7MacAlac9JacAJac 241209705 Spacecraft_test_02_0_alacsp K 0 GLAST 910 0.00074287037037037 Pc jcabl2T2ja2bjY2Z 127373883 Spacecraft_test_02_0_lat_sp | LAT 2000 FK5 ter Michelson lat_spacecraft) Sc_DATA 0 acecraft_weekly_w011_p310_00 LAT 2000 FK5 ter Michelson lat_spacecraft 6 SC_DATA 0 acecraft_weekly_w013_p310_v00: LAT 2000 FK5 ter Michelson lat_spacecraft | 2022-02-28 17:19:41 21 t_meekly_m012_p310_v001.fi LOCAL SATELLITE f f1ts 8bb2446ce523e3264 2022-02-28 17:19:41 22 t_meekly_m01_p310_v001.fi LOCAL SATELLITE f 1.fits 805cace8d7bbb04e94 2022-02-28 17:19:41 21 | N08-08-21 00:13:52.9922 ts FSTC FermiDatase 1 12 12 362079fc2be87ee 908-08-14 01:07:40.9819 ts FSSC FermiDatase 1 1 1 11 988-08-14 01:07:40.9819 1 11 1 1 1 11 1 988-08-28 00:55:38.9926 538.9926 926 1 155 FermiDatase 15 1 11 11 11 11 11 908-08-28 00:55:38.9926 S58.9926 S8.9926 1 15 FSC FermiDatase | rver-7.0.0 0 2024-12-15 20:33:40 0 lat_spacecra: 2008-08-21 00:13:40 rver-7.0.0 0 2024-12-15 20:33:40 0 lat_spacecra: 2008-09-04 00:48:44 rver-7.0.0 0 | 0843 240970433. 310 066857 't_weekly_w011_p31: 0847 240368861.' 310 065413 't_weekly_w013_p31: 0864 241577739.' 310 | 992206 2415777 2 8_v001 .fits.c 981915 2409704 2 8_v001 .fits.c | 27.084335 T 164 22 21.084781 T 164 12 |









GaiaMerger

- -«Cut & Merge» Service
- -Generates new temporary files
- For only sources or transit direct copy of the single groupes inside the newly generated file
- -For combination of sources and transits implemented file structure so that each transit resides with its related source within one single HDF5 group
- Provides smaller data files to the users with only their selected sources and/or transits
- Provides easy access to each single source to be studied



```
\equiv jPortal
```

| ? Help | Search | ADQL | Results | Cut & Merge | Transits | | | |
|-------------|-----------|------------|------------|---------------|----------------|--|--|--|
| N Settings | file_name | | | | | | | |
| Observation | gaia_merg | er_1b661fb | o8bb6c48e9 | 0e435aaa8c070 | 6b6_1728638200 | | | |
| 🗅 Fermi | | | | | | | | |
| 🔁 Gaia | | | | | | | | |
| Simulation | | | | | | | | |
| D Pluto | | | | | | | | |
| C Ramses | | | | | | | | |

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Conclusions

- -Observative data are easily stored in the constructed archiving system
- -Good communication with data providers easily solves fine tuning problems
- -Data ingestion is fairly achievable even with few resources
- -The observative archive is «search-ready» for the developed portal









Next Steps

- -Simulative Logical Data Models are next in line to be prepared
- -Simulative Physical DMs still requires the knowledge on the searchable metadata to be stored
- -TAP and Datalink implementation to provide access even to standardized clients
- -Ingestion of a larger second set of Gaia data
- -Implementation of other analysis services, as the connection to the Fermitools



Finanziato dall'Unione europea NextGenerationEU







Thank you!

Spoke 3 II Technical Workshop, Bologna Dec 17 - 19, 2024

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Missione 4 • Istruzione e Ricerca