

# Connecting planetary plasma data with IVOA tools using SAMP

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and the CDPP team*

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- CDPP (Centre de Données de la Physique des Plasmas)  
french data center for plasma physics
- AMDA (Automated Multi Dataset Analysis)  
A generic Webtool for Space Physics data :
  - automated event search and characterisation
  - catalogue generation and exploitation
  - automated database conditional extraction
  - access to remote Data Centers
- Remote access is built on SPASE (Space Physics Archive Search and Extract), which a standard in space physics.

Welcome to AMDA

AMDA-NG4/Migration Step - Vi... Welcome to AMDA http://cdpp-amda.cesr.fr/DDHTML/HTML/loginreq.php spase - Recherche Google +

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Help Feedback Logout

My Data My Parameters My Time Tables My Catalogs Plot Data Download Data Search in Data Add External Data

**External Data Centers**

- close all  open all
- CDAWEB
- MAPSKP
  - Cassini
- THEMIS
  - THEMIS-A
  - THEMIS-B
  - THEMIS-C
  - THEMIS-D
  - THEMIS-E
- VEXGRAZ
  - VEX

**My Data from External Data Centers**

Save Modifs

- close all  open all
- MAPSKP
  - Cassini
- CDAWEB
  - WIND
  - STEREO
  - POLAR
  - GOES\_7
  - ACE
- THEMIS
  - THEMIS-A
- VEXGRAZ
  - VEX
    - Vex\_mag
    - MAG\_VSO

AMDA: External data module

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**Define Parameter**

Parameter Name: sw\_saturn\_vmag  
File Mask: SW\_saturn.asc  
Parameter Type: FLOAT  
Parameter Size: 1  
Time Sampling (sec): 3600  
Max Time Sampling (sec):  
Fill Value (optional):  
Units (optional): km/s  
Y Title (optional):  
Legend (optional):

Save Parameter into / Reset

SW\_saturn.asc

2004-01-01T00:30:00 0.180933 0.0234803 467.958
2004-01-01T01:30:00 0.178884 0.0230247 467.396
2004-01-01T02:30:00 0.177465 0.0225466 466.411
2004-01-01T03:30:00 0.178860 0.0225014 465.891
2004-01-01T04:30:00 0.180578 0.0224495 465.710
2004-01-01T05:30:00 0.181953 0.0223346 465.208
2004-01-01T06:30:00 0.182860 0.0222250 464.493
2004-01-01T07:30:00 0.183495 0.0221776 463.988
2004-01-01T08:30:00 0.184059 0.0221694 463.467
2004-01-01T09:30:00 0.184035 0.0221046 462.526
2004-01-01T10:30:00 0.183612 0.0220038 461.747
.....

Parameter Start Position [≥ 1]: 3

move to folder NEW FOLDER

**MY PARAMETERS**

- temp\_qtn
- fplasma\_snd
- fplasma\_qtn
- density\_lp\_proxy
- density\_lp\_20050216
- skr\_period\_s
- skr\_period\_n
- sw\_saturn\_bmag
- sw\_saturn\_rho
- sw\_saturn\_vmag
- CCMC\_Carrington\_2065/saturn
- CCMC\_Carrington\_2065/mars
- CCMC\_Carrington\_2065/venus
- kaguya\_lrs\_rx1
- kaguya\_lrs\_rx2

**MY FILES**

- odpp\_2005047.txt
- 2005047\_sounder.txt
- NEPROXY2005-01-01T00-00-002\_2005-03-30T23-59-59.999Z.dat
- density\_LP\_2005-02-16.txt
- test-2.txt
- SW\_saturn.asc
- C\_ORB\_07\_1997\_095\_GAN\_64.TAB
- pointdata\_conv\_22181.txt
- pointdata\_conv\_19971.txt
- pointdata\_conv\_24615.txt
- LRS\_NPW\_V010\_20071211.cdf

Upload File  
max size: 30MB  
file format: ASCII  CDF  CEF

# AMDA: upload data module

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sw\_saturn\_vmag  
CCMC\_Carrington\_2065/saturn  
CCMC\_Carrington\_2065/mars  
CCMC\_Carrington\_2065/venus  
kaguya\_lrs\_rx1  
kaguya\_lrs\_rx2

move to folder NEW FOLDER

MY FILES  
cdpp\_2005047.txt  
2005047\_sounder.txt  
NEPROXY2005-01-01T00-00-00Z\_2005-03-30T23-59-59.999Z.dat  
density\_LP\_2005-02-16.txt  
test-2.txt  
SW\_saturn.asc  
C\_ORB\_07\_1997\_095\_GAN\_64.TAB  
pointdata\_conv\_22181.bd  
pointdata\_conv\_19971.txt  
pointdata\_conv\_24615.txt  
LRS\_NPW\_V010\_20071211.cdf

Define Parameter

Parameter Name: sw\_saturn\_vmag  
File Mask: SW\_saturn.asc  
Parameter Type: FLOAT  
Parameter Size: 1  
Time Sampling (sec): 3600  
Max Time Sampling (sec):  
Fill Value (optional):  
Units (optional): km/s  
Y Title (optional):  
Legend (optional):

Save Parameter into / Reset

Parameter Start Position [>= 1]: 3

SW\_saturn.asc

```
2004-01-01T00:30:00 0.180933 0.0234803 467.958
2004-01-01T01:30:00 0.178884 0.0230247 467.396
2004-01-01T02:30:00 0.177465 0.0225466 466.411
2004-01-01T03:30:00 0.178860 0.0225014 465.891
2004-01-01T04:30:00 0.180578 0.0224495 465.710
2004-01-01T05:30:00 0.181953 0.0223346 465.208
2004-01-01T06:30:00 0.182860 0.0222250 464.493
2004-01-01T07:30:00 0.183495 0.0221776 463.988
2004-01-01T08:30:00 0.184059 0.0221694 463.467
2004-01-01T09:30:00 0.184035 0.0221046 462.526
2004-01-01T10:30:00 0.183612 0.0220038 461.747
.....
```

Upload File  
max size: 30MB  
file format: ASCII  CDF  CEF   
time format:  
Standard  NonStandard   
time sampling:  
Constant  Variable   
From Local Machine  Parcourir...  
From URL  Proposed Sites  
Upload Reset

# AMDA: upload data module

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Select parameters to construct My Parameter

close all open all

- AMDA
- MAPSKP
- CDAWEB
- THEMIS
- VEXGRAZ
- My Data

Construct Parameter  
8.89\*sqrt(wsd\_density\_lp\_proxy)

HOWTO  
Bricks for construction :

- AMDA parameters from left-frame tree or your aliases
- Operators: +, -, \*, /, ^ and brackets: () []
- Constants, IDL and AMDA functions

Example:  
 $\sin(\text{param1})^2 + \sqrt{|\text{param2}|} * 5$

Constants IDL Functions AMDA Functions

My WorkSpace

My Parameter Name	Time Step (secs)	Units (optional)	My Parameter Description (optional)
fplasma_lpx	60		

Save My Parameter into : Reset

Define an Alias for AMDA Parameter (optional)

AMDA Parameter	My Alias	Save Alias

move to folder NEW FOLDER

ALIASES

- ksm\_z
- ksm\_x
- ksm\_y

# AMDA: parameter builder module

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Select parameters to construct the condition

close all open all  
AMDA  
MAPSKP  
Cassini  
MAG  
MAG\_KSM  
MAGNITUDE  
VECTOR  
MIMI  
TRAJ  
RPWS  
CAPS  
CDAWEB  
THEMIS  
VEXGRAZ  
My Parameters  
My Data

Construct Condition:  
MAPSKP:MAG\_KSM:MAGNITUDE > 2

HOWTO  
Bricks for construction :

- AMDA parameters from left-frame tree
- Operators: +, -, \*, /, ^ and brackets: () []
- relational operators: >, <
- logical operators: &, |
- Constants, IDL and AMDA functions

Example:  
 $\sin(\text{param1})^2 > 0.3 \& \sqrt{|\text{abs(param2)}|}^5 < 5.0$

Constants IDL Functions AMDA Functions

Averaging/Interpolation  
Sampling time step 600 secs

Data Gap if no data for interval > 5 \* data sampling time

Output Result To  
file in .

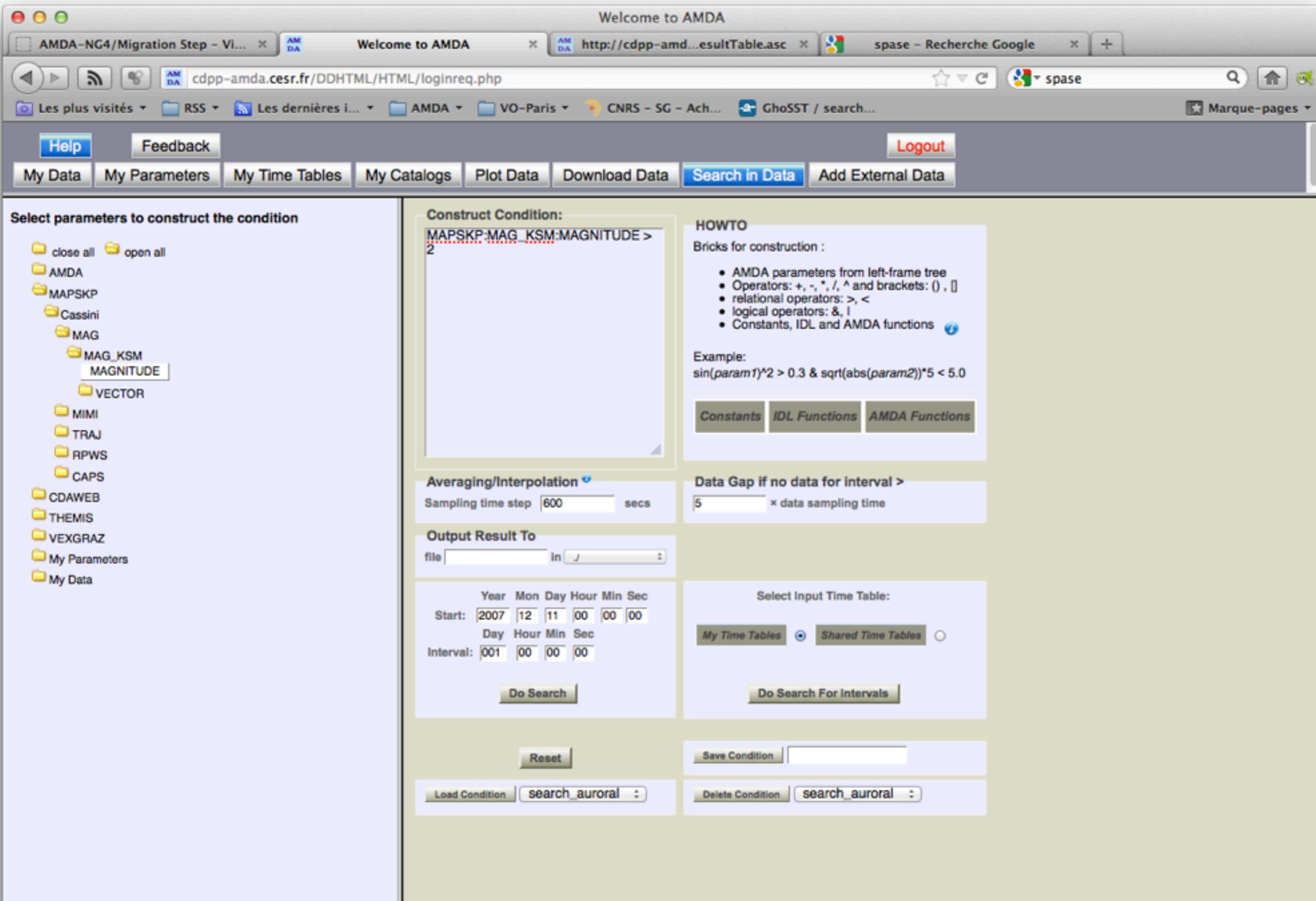
Start: 2007 12 11 00 00 00  
Day Hour Min Sec  
Interval: 001 00 00 00  
Do Search

Select Input Time Table:  
My Time Tables Shared Time Tables

Do Search For Intervals

Reset Save Condition

Load Condition search\_auroral Delete Condition search\_auroral



# AMDA: Search module

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**Construct/Modify the Time Table**

Table Name: HELIO\_EVENT\_CATALOG\_search\_result  
Date of Generation: Mon, 19 Sep 2011 12:29:53 GMT

Description:

```
SELECT
    solar_wind_event.solar_wind_event_id,solar_wind_event.sw_list,solar_wind_event.time_start,solar
    _wind_event.time_end,solar_wind_event.bn,solar_wind_event.bzs,solar_wind_event.eyc,solar_wi
    nd_event.hss,solar_wind_event.imc,solar_wind_event.ir,solar_wind_event.is_,solar_wind_event.ls
    ,solar_wind_event.pc,solar_wind_event.sbc,solar_wind_event.misc,solar_wind_event.w,solar_wind
    _event.i8,solar_wind_event.ace,solar_wind_event.rem FROM solar_wind_event WHERE
    time_start>='2007-07-05T00:00:00' AND time_start<='2007-08-05T00:00:00' LIMIT 1000
    OFFSET 0
```

Source: http://festung1.oats.inaf.it:8080/helio-hec/HelioQueryService?STARTTIME=2007-07-05T00:00:00,2007-07-05T00:00:00,2007-07-05T00:00:00&ENDTIME=2007-08-05T00:00:00,2007-08-05T00:00:00,2007-08-05T00:00:00&FROM=solar\_wind\_event,wind\_mfi\_ip\_shock,stereo\_hi\_cme

Operations on Intervals:

Extend (min): 0 Shift (min): 0

Filter:  sec : s duration s  sec :

StartTime - StopTime: yyyy-mm-ddThh:mm:ss yyyy-mm-ddThh:mm:ss

StartTime	StopTime	Count
2007-07-08T14:09:00	2007-07-10T03:29:00	-- 1
2007-07-11T18:08:00	2007-07-13T06:09:00	-- 2
2007-07-19T02:10:00	2007-07-19T02:11:00	-- 3
2007-07-24T15:29:00	2007-07-24T15:30:00	-- 4
2007-07-28T01:30:00	2007-07-28T01:31:00	-- 5
2007-07-29T06:10:00	2007-07-29T06:11:00	-- 6
2007-08-02T13:29:00	2007-08-05T08:49:00	-- 7

Statistical Info:

Intervals: 7

Min	<input type="text"/>	Max	<input type="text"/>
Mean	<input type="text"/>	St.dev	<input type="text"/>
Median	<input type="text"/>	Density	<input type="text"/>

Save My Time Table into:

move to folder NEW FOLDER copy to shared EARTH

SHARED TIME TABLES

- EARTH
- SUN
- SOLAR\_WIND
- MARS
- SATURN
- AUXILIARY
- OTHER

# AMDA:Timetable module

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copy to shared EARTH

**SHARED TIME TABLES**

- EARTH
- SUN
- SOLAR\_WIND
- MARS
- SATURN
- AUXILIARY
- OTHER
- VENUS

Public link

**Operations**

Merge Intervals Intersection

**Download**

Time format: YYYY-MM-DDThh:mm:ss File format: plain text

Compression: targz  zip

Download

Routines to read TT

**Upload (txt or vot xml)**

Time Format (txt): YYYY-MM-DDThh:mm:ss

From Local Machine Parcourir...

From URL http://

Upload Reset

**Construct/Modify the Time Table**

Table Name: HELIO\_EVENT\_CATALOG\_search\_result  
Date of Generation: Mon, 19 Sep 2011 12:29:53 GMT

Description:

```
SELECT
solar_wind_event.solar_wind_event_id,solar_wind_event.sw_list,solar_wind_event.time_start,solar_
wind_event.time_end,solar_wind_event.bnz,solar_wind_event.bzs,solar_wind_event.eyc,solar_wi
nd_event.hss,solar_wind_event.imc,solar_wind_event.ir,solar_wind_event.is_,solar_wind_event.ls
s,solar_wind_event.pc,solar_wind_event.sbc,solar_wind_event.misc,solar_wind_event.w,solar_wind_
event.i8,solar_wind_event.ace,solar_wind_event.rem FROM solar_wind_event WHERE
time_start>='2007-07-05T00:00:00' AND time_start<='2007-08-05T00:00:00' LIMIT 1000
OFFSET 0
```

Source: http://festung1.oats.inaf.it:8080/helio-hec/HelioQueryService?STARTTIME=2007-07-05T00:00:00,2007-07-05T00:00:00,2007-07-05T00:00:00&ENDTIME=2007-08-05T00:00:00,2007-08-05T00:00:00,2007-08-05T00:00:00&FROM=solar\_wind\_event,wind\_mfi\_ip\_shock,stereo\_hi\_cme

Operations on Intervals

Extend (min): 0 Shift (min): 0

Filter: sec : s duration s sec :

Statistical Info

Intervals: 7

Min: Max:

Mean: St.dev:

Median: Density:

Apply

Save My Time Table into: .

Reset Sort Merge

# AMDA:Timetable module

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**Download Settings**

Parameters:  
 All in One File  One File per Parameter  
Sampling time step 600 secs  
Output file name ResultTable

TimeTable Intervals:  
 All in One File  One File per Time Interval  
Time format: YYYY-MM-DDThh:mm:ss  
Add info header to data file  No[Separate] header  
Output file format:  
 CDF  netCDF  CEF  ASCII  
Compression:  
 tar+gzip  zip  gzip  none

Year	Mon	Day	Hour	Min	Sec
Start:	2007	12	11	00	00
	Day	Hour	Min	Sec	
Interval:	001	00	00	00	

**Parameters To Download**

lat : cass\_lat  
 LT : cass\_lt  
 b\_mag : cass\_bmag\_rtn1s  
 skr\_total\_power\_emitted : skr\_e

**Select Input Time Table:**

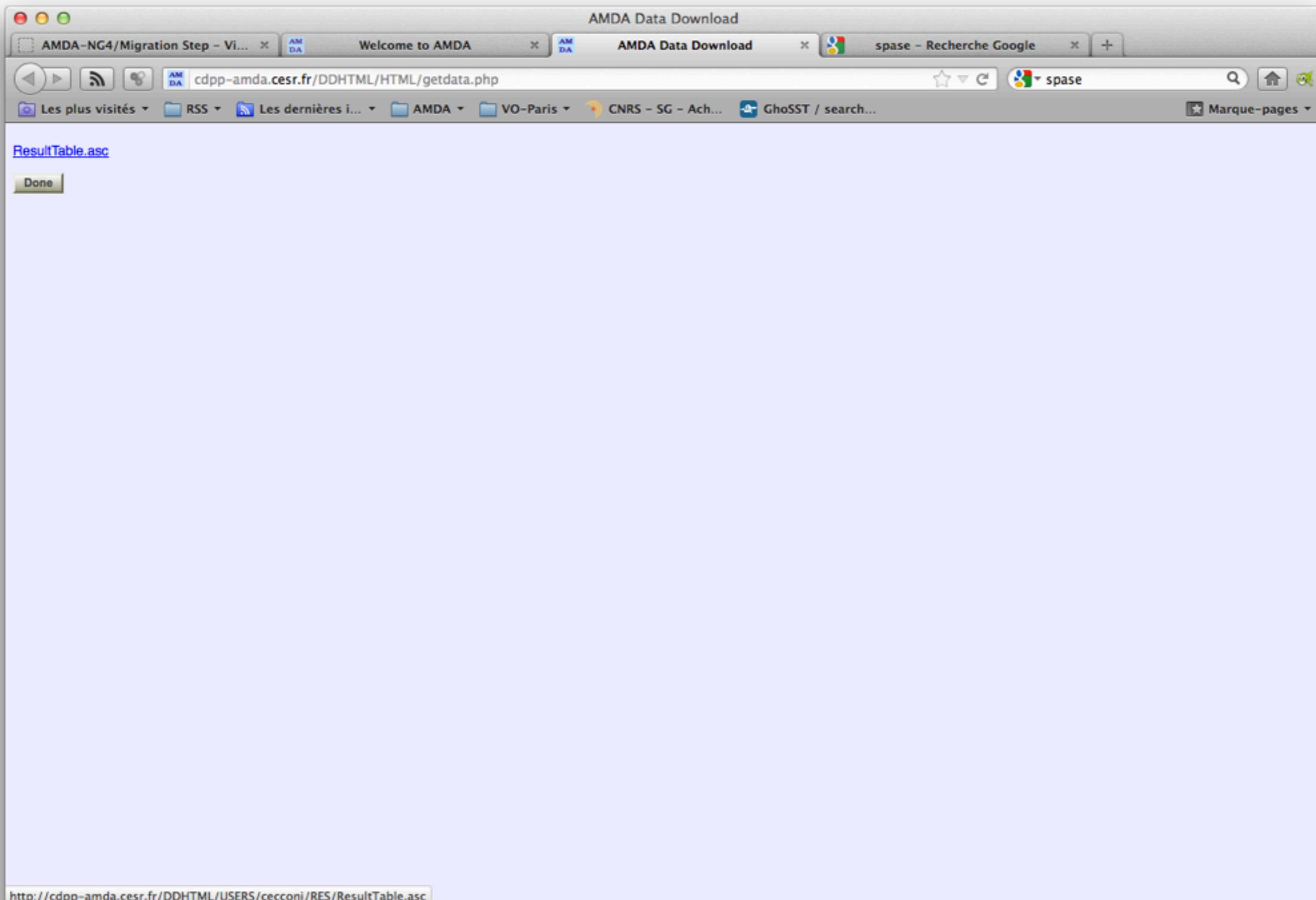
My Time Tables  Shared Time Tables

**Download Data For Intervals**

Reset Load Request Save Request Delete Request

SLS4\_Longitude\_South@Iowa  
SKR\_Phase\_North\_And\_South@LESLIA  
MAG  
RTN\_1min@PDS  
RTN\_1sec@PDS  
 b rtn  
 b\_mag  
KSM\_1min@PDS  
KSM\_1sec@PDS  
KSO\_1min@PDS  
KSO\_1sec@PDS  
KRTP\_1min@PDS  
KRTP\_1sec@PDS  
Jupiter\_RTN@PDS  
CAPS  
els@PDS  
 telemetry\_mode  
 spectra\_anode\_1  
 spectra\_anode\_2  
 spectra\_anode\_3  
 spectra\_anode\_4  
 spectra\_anode\_5  
 spectra\_anode\_6  
 spectra\_anode\_7  
 spectra\_anode\_8  
Cassini\_Private  
RPWS  
skr@LESLIA  
 skr\_total\_power\_emitted  
 skr\_flux\_RH  
 skr\_flux\_LH  
 skr\_polarisation  
Langmuir\_Probe@IRF  
Galileo  
mSWIM\_Saturn  
mSWIM\_Jupiter

# AMDA: Download module



# AMDA: Download result page

AMD A						
Welcome to AMDA						
<a href="http://cdpp-amda.cesr.fr/DDHTML/USERS/ceconni/RES/ResultTable.asc">http://cdpp-amda.cesr.fr/DDHTML/USERS/ceconni/RES/ResultTable.asc</a>						
spase - Recherche Google						
Les plus visités						
RSS						
Les dernières i...						
AMD A						
VO-Paris						
CNRS - SG - Ach...						
GhoSST / search...						
Marque-pages						
cassini_public_orbit_cassini@iowa_lat; cassini_public_orbit_cassini@iowa_lt; cassini_public_rtn_1sec@pds_b_mag; cassini_private_skr@lesia_skr_total_power_emitted;						
Units: deg; hours; nT; W/sr						
2007-12-11T00:05:00	12.9860	13.3190	0.731022	0.000000	0.000000	0.000000
2007-12-11T00:15:00	12.9925	13.3195	0.706640	1.00567e+06	0.000000	1.30200e+06
2007-12-11T00:25:00	13.0020	13.3215	0.295257	632333.	0.000000	1.88333e+06
2007-12-11T00:35:00	13.0115	13.3225	0.436232	1.34550e+07	0.000000	1.98450e+07
2007-12-11T00:45:00	13.0205	13.3245	0.690285	2.14333e+08	39333.3	2.25667e+08
2007-12-11T00:55:00	13.0300	13.3255	0.520933	4.39667e+08	0.000000	4.46000e+08
2007-12-11T01:05:00	13.0395	13.3275	0.489020	9.62750e+07	0.000000	1.03350e+08
2007-12-11T01:15:00	13.0485	13.3285	0.613750	2.43000e+07	0.000000	3.17000e+07
2007-12-11T01:25:00	13.0580	13.3305	0.533042	5.37333e+07	0.000000	6.70667e+07
2007-12-11T01:35:00	13.0670	13.3315	0.445460	1.02675e+08	0.000000	1.09450e+08
2007-12-11T01:45:00	13.0765	13.3335	0.608749	5.48667e+07	0.000000	6.44333e+07
2007-12-11T01:55:00	13.0855	13.3345	0.428240	3.92000e+07	0.000000	4.05333e+07
2007-12-11T02:05:00	13.0950	13.3365	0.386812	4.27500e+07	0.000000	6.05250e+07
2007-12-11T02:15:00	13.1045	13.3375	0.618253	1.25333e+08	0.000000	1.63000e+08
2007-12-11T02:25:00	13.1135	13.3395	0.399808	3.78400e+08	0.000000	4.04433e+08
2007-12-11T02:35:00	13.1230	13.3405	0.509187	1.49350e+08	0.000000	1.97975e+08
2007-12-11T02:45:00	13.1320	13.3425	0.503273	2.27333e+08	0.000000	2.78000e+08
2007-12-11T02:55:00	13.1415	13.3435	0.307077	8.08333e+07	0.000000	1.23333e+08
2007-12-11T03:05:00	13.1505	13.3455	0.417062	1.94050e+07	6400.00	2.86500e+07
2007-12-11T03:15:00	13.1600	13.3465	0.462597	385667.	0.000000	6.44000e+06
2007-12-11T03:25:00	13.1690	13.3485	0.563969	499667.	0.000000	7.29000e+06
2007-12-11T03:35:00	13.1785	13.3495	0.845343	332750.	0.000000	1.17500e+07
2007-12-11T03:45:00	13.1875	13.3515	0.726245	0.000000	0.000000	4.83000e+06
2007-12-11T03:55:00	13.1970	13.3525	0.893797	969667.	49666.7	1.37733e+07
2007-12-11T04:05:00	13.2065	13.3545	0.660340	54250.0	1.000000e+06	5.04000e+06
2007-12-11T04:15:00	13.2155	13.3555	0.831865	0.000000	637000.	607333.
2007-12-11T04:25:00	13.2245	13.3575	0.671295	2.24333e+06	417667.	4.71667e+06
2007-12-11T04:35:00	13.2340	13.3585	0.446843	6.65000e+06	25500.0	6.92500e+06
2007-12-11T04:45:00	13.2435	13.3605	0.564715	9.37700e+06	171067.	1.00857e+07
2007-12-11T04:55:00	13.2525	13.3615	0.729895	376667.	119667.	443600.
2007-12-11T05:05:00	13.2615	13.3635	0.783901	0.000000	23625.0	0.000000
2007-12-11T05:15:00	13.2710	13.3645	1.00676	2.42318e+07	159333.	2.42980e+07
2007-12-11T05:25:00	13.2805	13.3665	0.571102	2.31000e+07	209567.	2.44000e+07
2007-12-11T05:35:00	13.2895	13.3675	0.378236	6.47500e+06	0.000000	7.77500e+06
2007-12-11T05:45:00	13.2985	13.3695	0.608093	0.000000	0.000000	0.000000
2007-12-11T05:55:00	13.3080	13.3705	1.40338	0.000000	0.000000	0.000000
2007-12-11T06:05:00	13.3170	13.3725	1.25266	0.000000	3.34950e+06	0.000000
2007-12-11T06:15:00	13.3265	13.3735	0.888288	0.000000	3.25167e+06	0.000000
2007-12-11T06:25:00	13.3355	13.3755	0.839977	0.000000	1.56500e+06	0.000000
2007-12-11T06:35:00	13.3450	13.3765	0.773222	0.000000	3.68750e+06	149750.
2007-12-11T06:45:00	13.3540	13.3785	0.494974	303000.	5.49667e+06	5.49667e+06
2007-12-11T06:55:00	13.3635	13.3800	0.925140	0.000000	2.31667e+06	2.56667e+06
2007-12-11T07:05:00	13.3725	13.3815	0.454933	4.33000e+06	129000.	9.27000e+06
2007-12-11T07:15:00	13.3815	13.3830	1.02334	2.50333e+06	0.000000	2.89000e+06
2007-12-11T07:25:00	13.3910	13.3845	1.55901	1.21000e+06	0.000000	1.78000e+06
2007-12-11T07:35:00	13.4000	13.3860	1.42801	395250.	0.000000	1.95250e+06
2007-12-11T07:45:00	13.4095	13.3875	0.907579	2.84767e+06	0.000000	6.38333e+06
2007-12-11T07:55:00	13.4185	13.3890	0.539392	1.83700e+06	0.000000	4.49000e+06
2007-12-11T08:05:00	13.4275	13.3905	0.622995	1.50775e+07	0.000000	1.77375e+07
2007-12-11T08:15:00	13.4370	13.3920	0.720308	1.91667e+06	0.000000	1.91667e+06
2007-12-11T08:25:00	13.4460	13.3935	0.592478	0.000000	0.000000	0.000000
2007-12-11T08:35:00	13.4555	13.3950	0.731005	1.16000e+07	0.000000	1.19250e+07
2007-12-11T08:45:00	13.4645	13.3965	0.680425	1.23967e+07	0.000000	1.27267e+07
2007-12-11T08:55:00	13.4735	13.3980	0.937263	5.06000e+06	0.000000	1.26300e+07
2007-12-11T09:05:00	13.4830	13.3995	0.607333	714250.	29525.0	4.52750e+06
2007-12-11T09:15:00	13.4920	13.4010	0.571412	8.70967e+06	0.000000	1.03733e+07
2007-12-11T09:25:00	13.5015	13.4025	0.682256	6.10333e+06	0.000000	8.88667e+06
2007-12-11T09:35:00	13.5105	13.4040	0.754445	1.97500e+07	0.000000	6.80250e+07

# AMDA: Download result (text file)

Welcome to AMDA

Welcome to AMDA    AMDA Plot

manunja.cesr.fr/~richard/amda/DDHTML/HTML/loginreq.php

Les plus visités   RSS   Les dernières i...   AMDA   VO-Paris   CNRS - SG - Ach...   GhoSST / search...   Marque-pages

Help   Feedback   Logout

My Parameters   My Time Tables   Plot Data   Download Data   Search in Data   Add External Data

Select parameters to plot

D&D   N   Parameter Name   Arguments   Plot Size   X Data Range   Y Data Range

D&D	N	Parameter Name	Arguments	Plot Size	X Data Range	Y Data Range			
				Width	Height	Xmin	Xmax	Ymin	Ymax
<input type="radio"/>	0	skr_e		1	0.2	0	0	0	0
<input type="radio"/>	1	skr_rh		1	0.2	0	0	0	0
<input type="radio"/>	2	skr_lh		1	0.2	0	0	0	0
<input type="radio"/>	3	skr_v		1	0.2	0	0	0	0
<input type="radio"/>	4	cass_bmag rtn1s		1	0.2	0	0	0	0
<input type="radio"/>	5	cass_b rtn1s		1	0.2	0	0	0	0

Portrait   Landscape   Reset

Start: Year 2004 Mon 01 Day 01 Hour 00 Min 00 Sec 00  
Day Hour Min Sec  
Interval: 031 00 00 00

Select Input Time Table:  
My Time Tables   Shared Time Tables

Plot PNG   Plot PostScript   Plot PNG For Intervals

Save Request   Delete Request

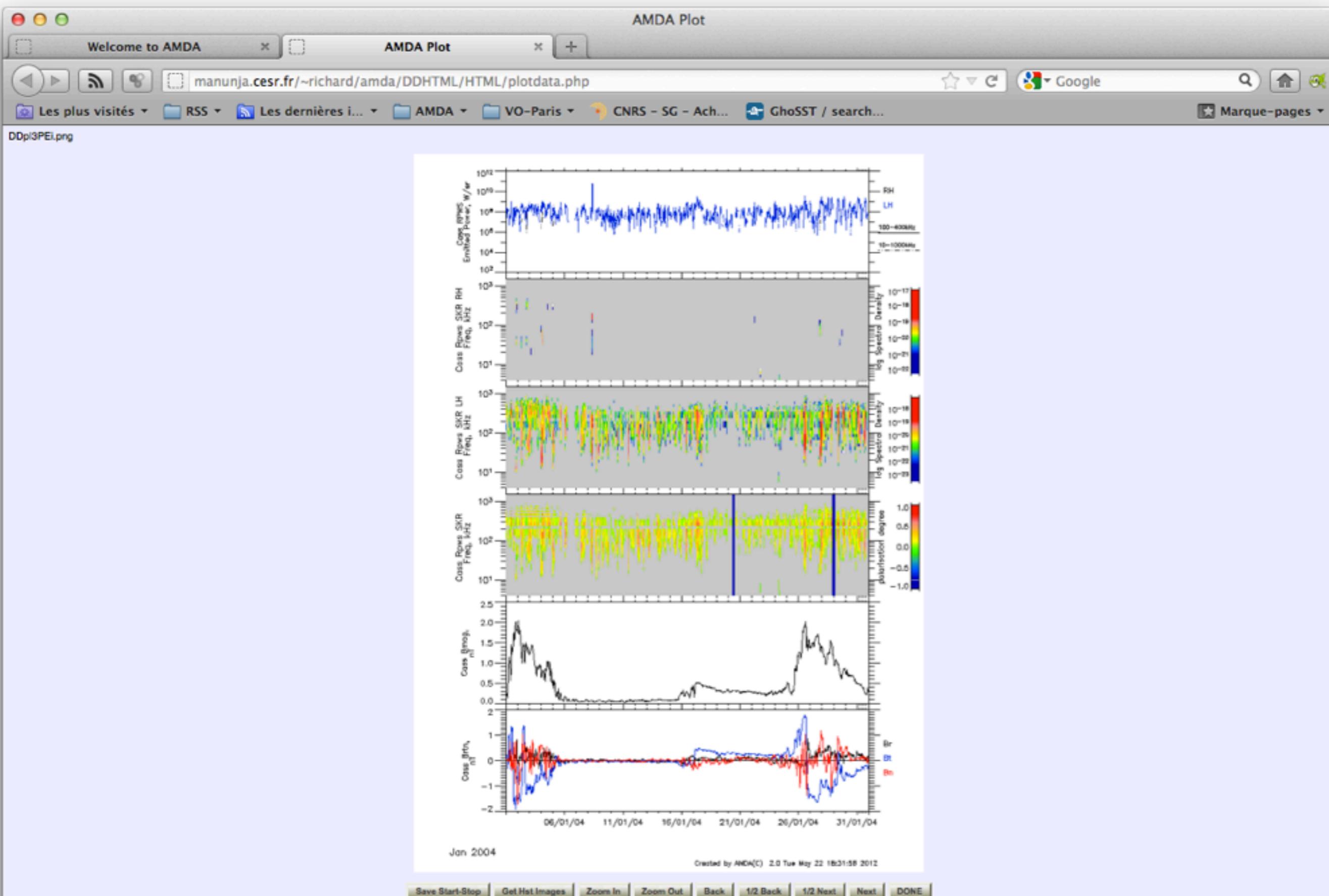
Load Request   Load Standard Request

Time Shifting of Solar Wind Monitor Data (for AMDA Internal Data Base only)

SWMonitor   Time Delay (secs)  
ACE : 0   Save and Apply To Plot

Target   Year   Mon   Day   Hour   Min  
Themis-A : 2004 01 01 00 00   Calculate Delay

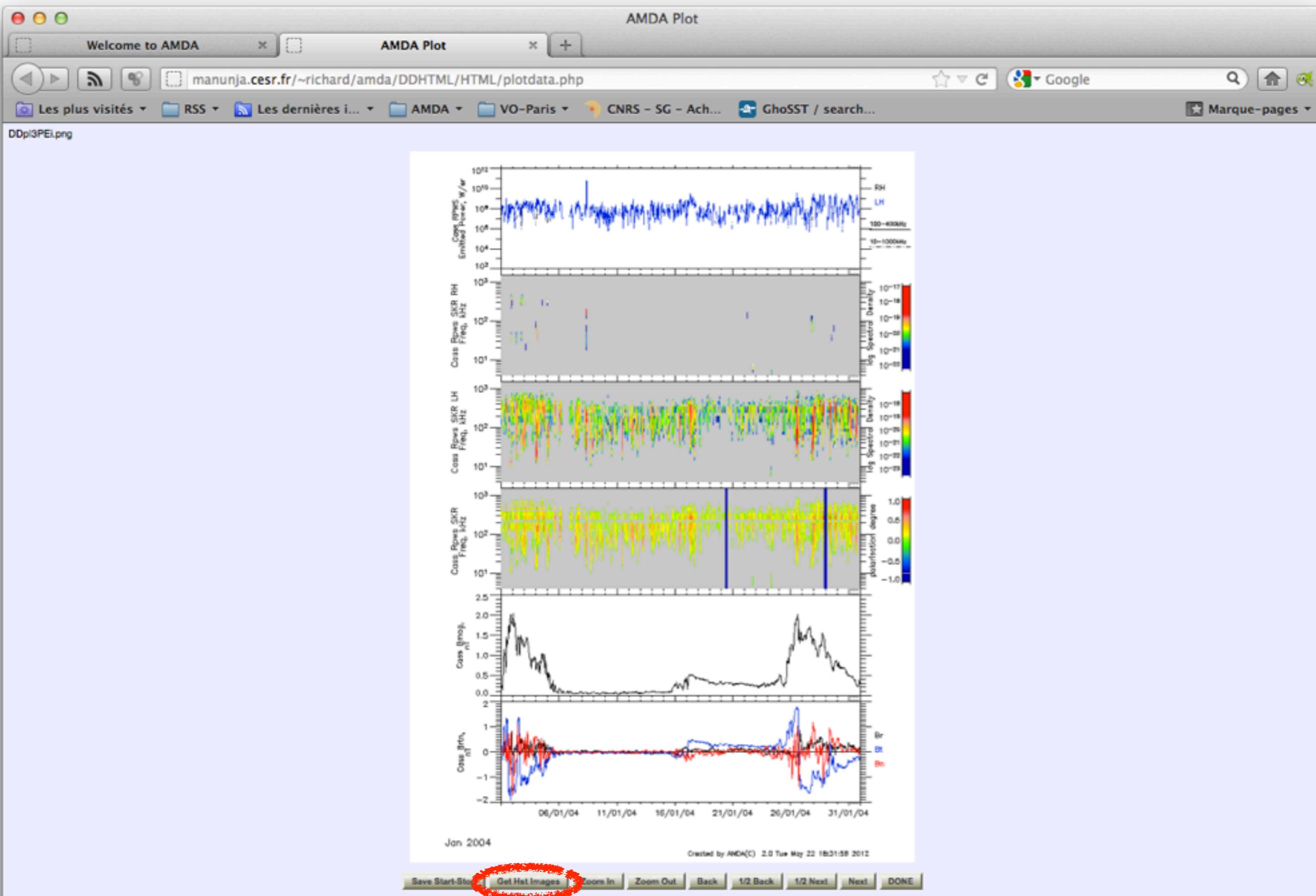
# AMDA: Plot module



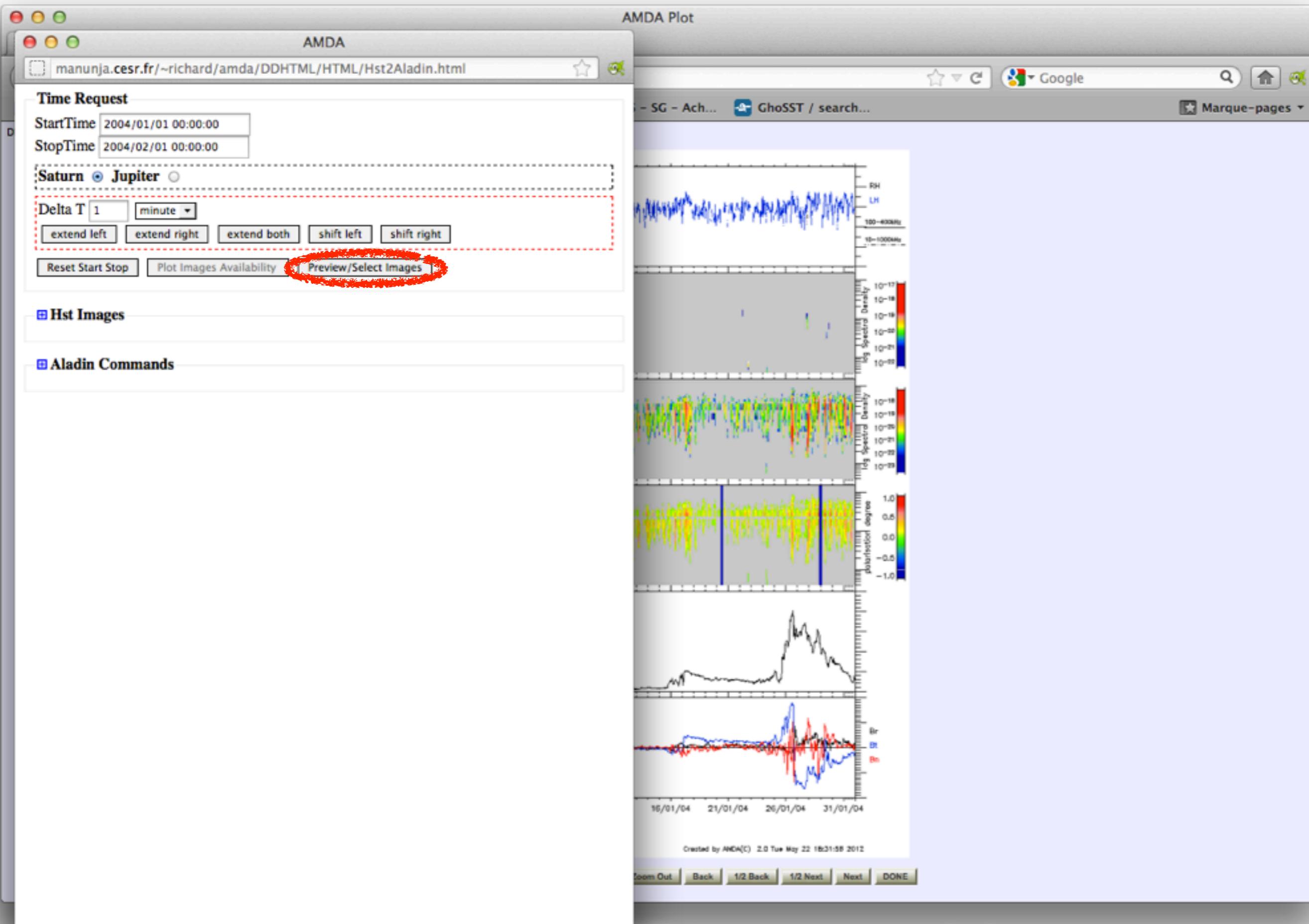
# AMDA: Plot result

# Connecting AMDA with Aladin

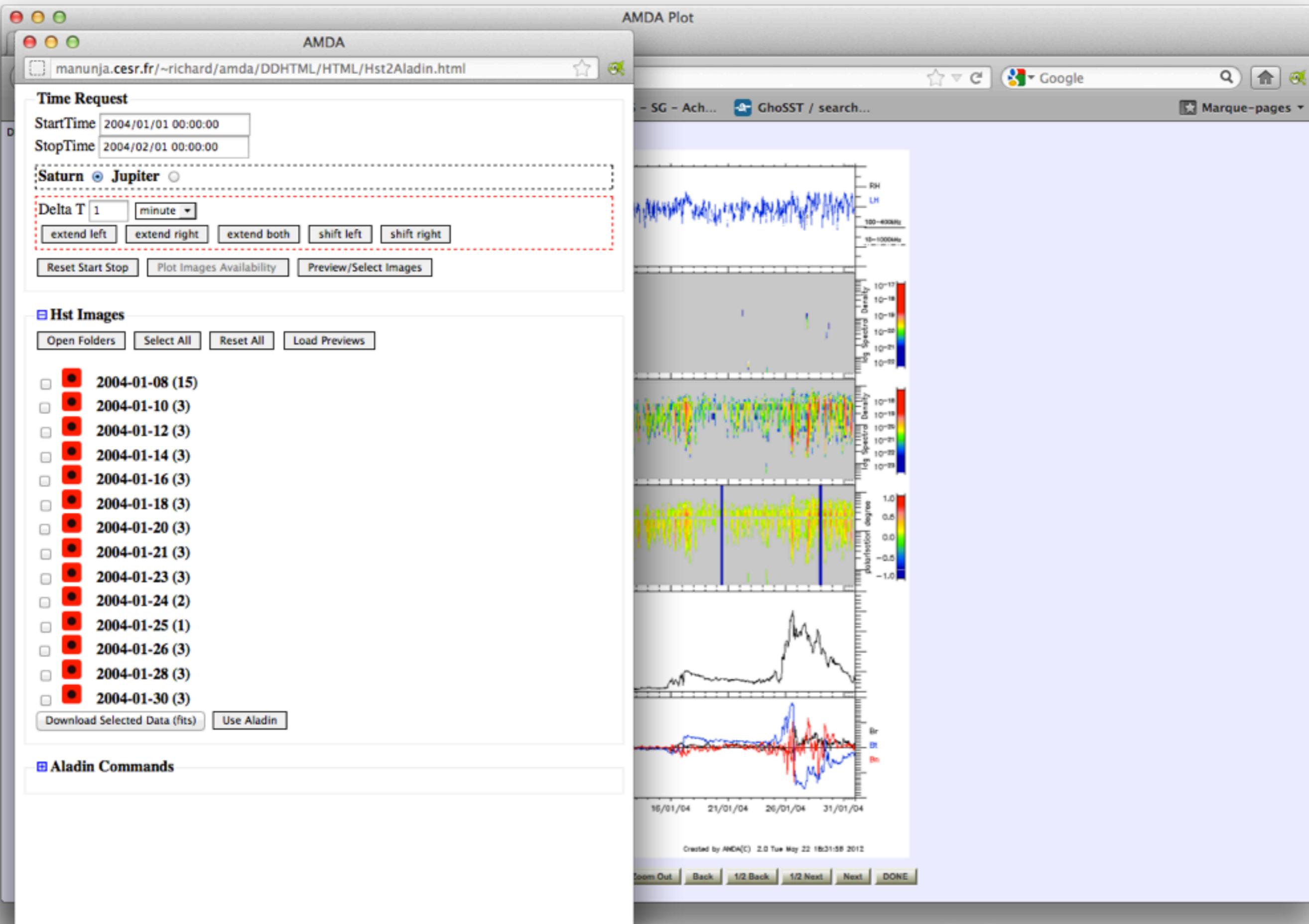
- Science case:
  - Interplanetary shock passing by Saturn while the Cassini spacecraft is flying in the solar wind upstream from the planet.
  - Cassini detects local magnetic field disturbance, and enhanced radio emissions from Saturn (kilometric auroral radio emissions).
  - Are there HST images of Saturn Aurora at this time ?
  - If yes: plot them in Aladin.
- SAMP: using WebSAMPConnector.



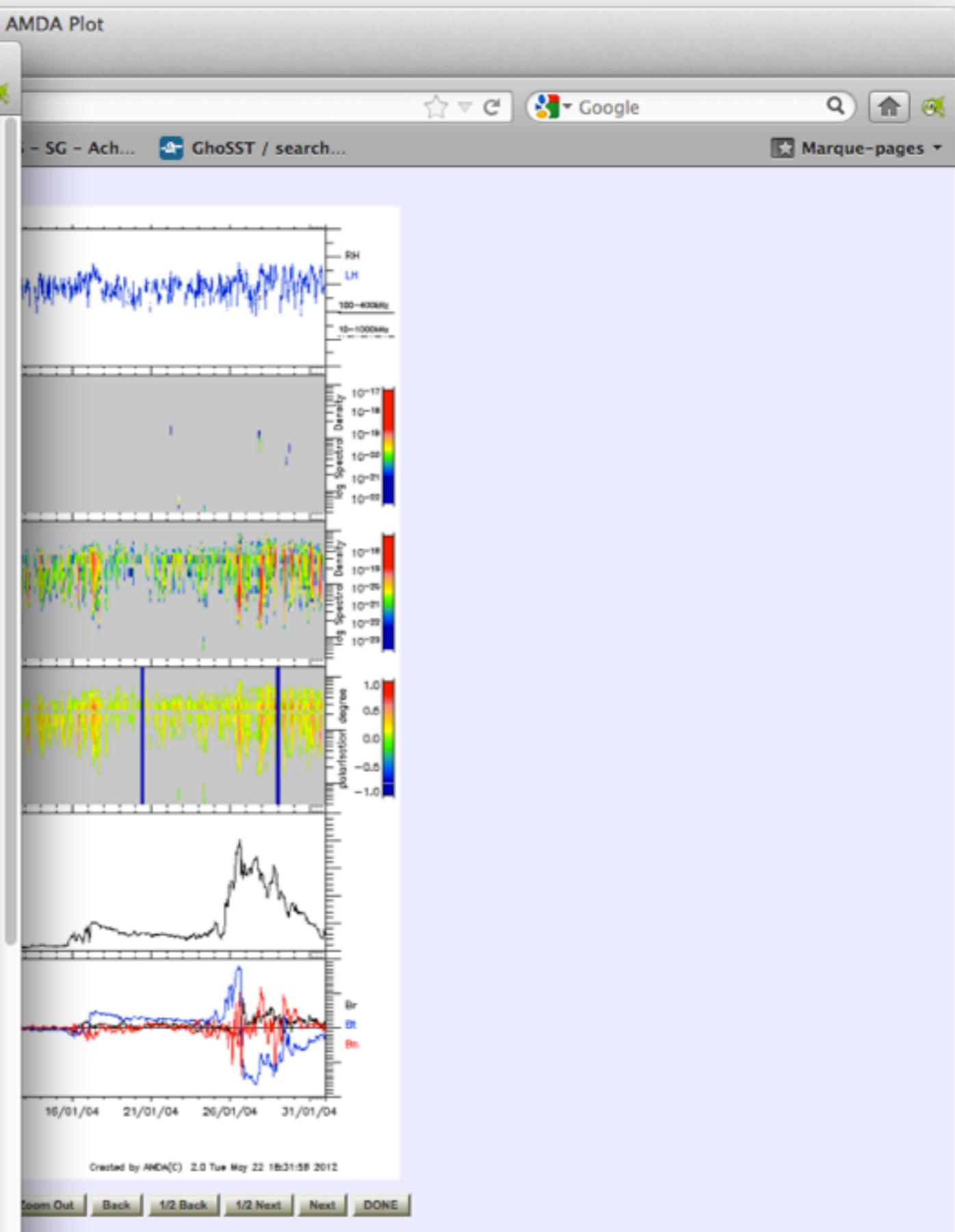
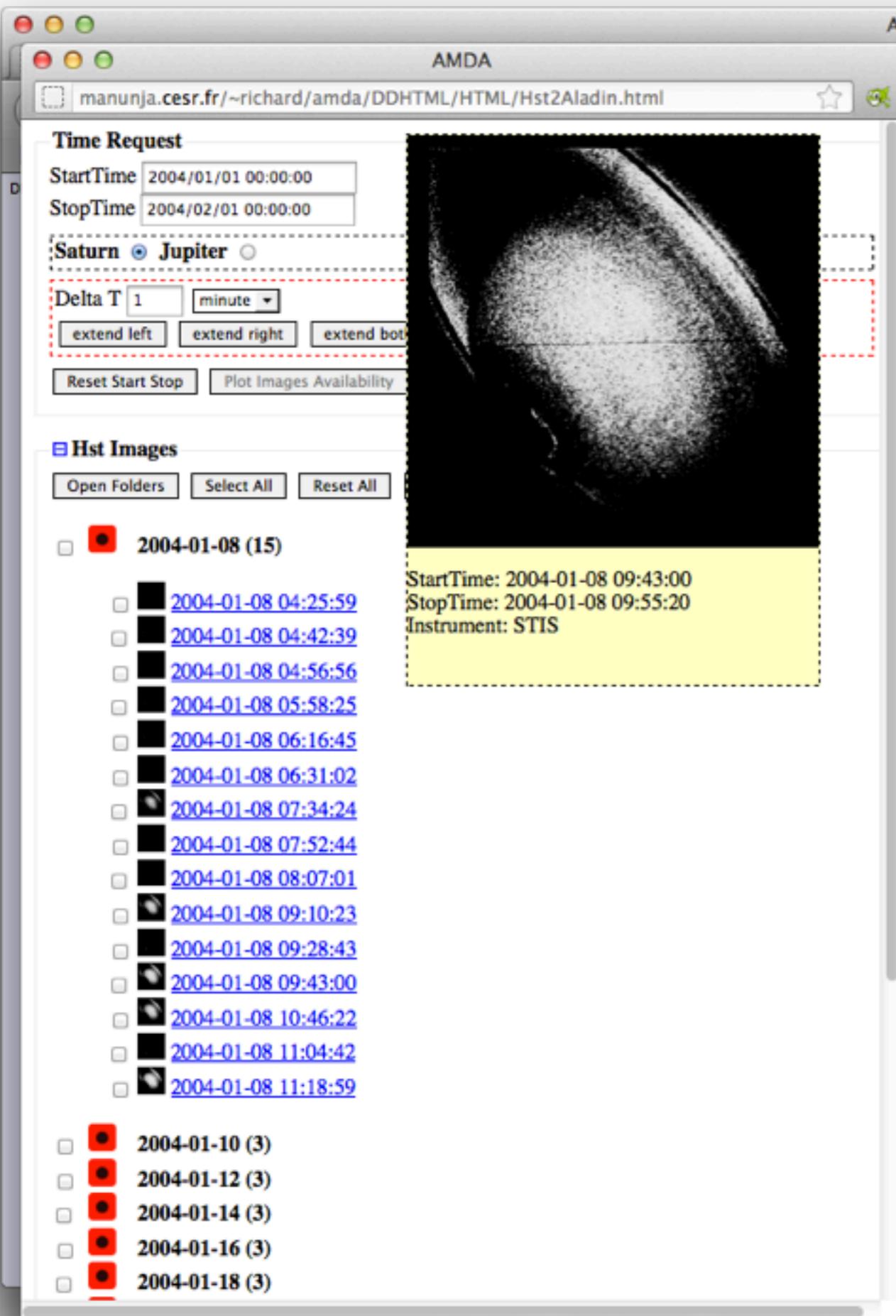
# AMDA: Plot result



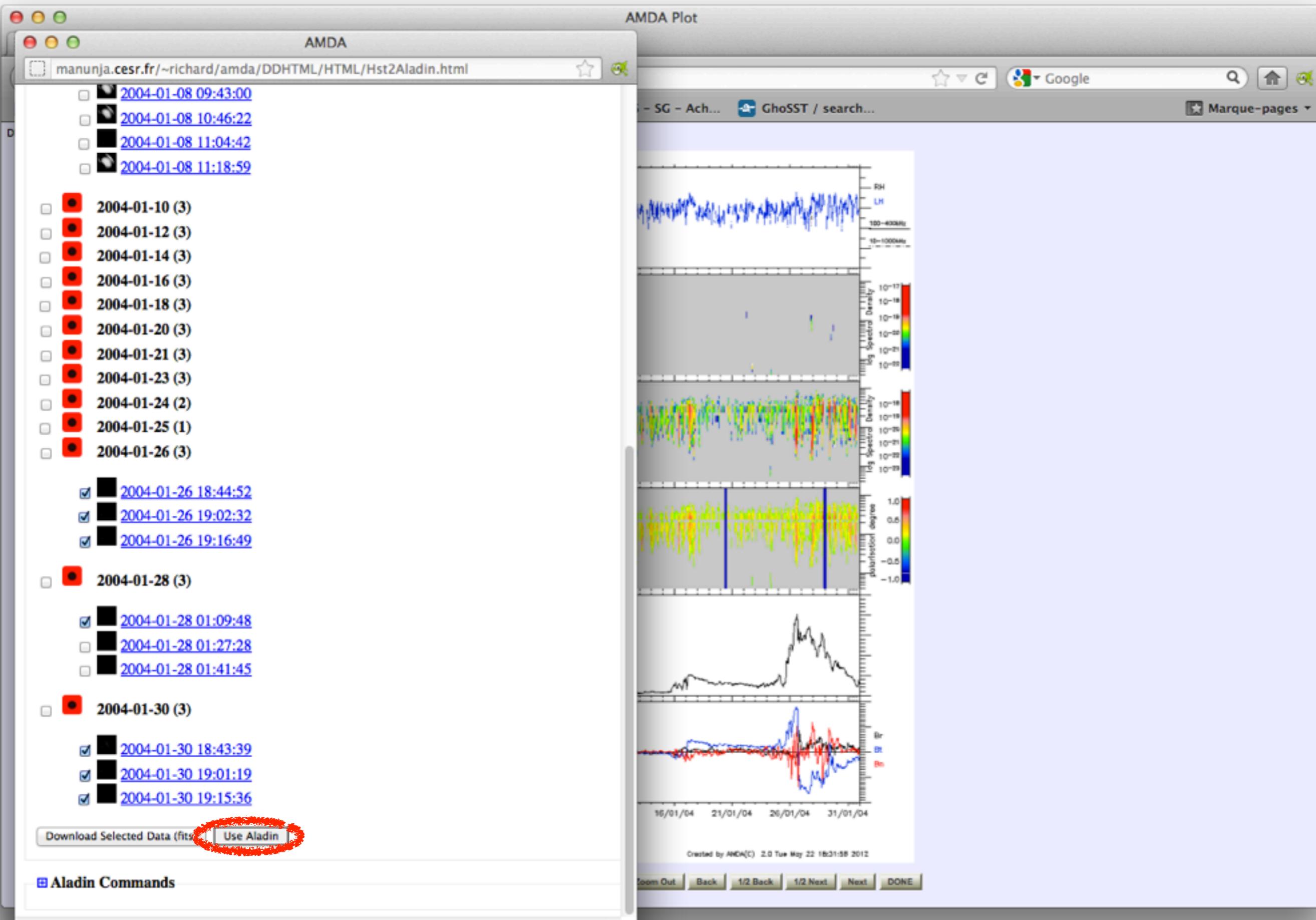
# AMDA: Get HST images module



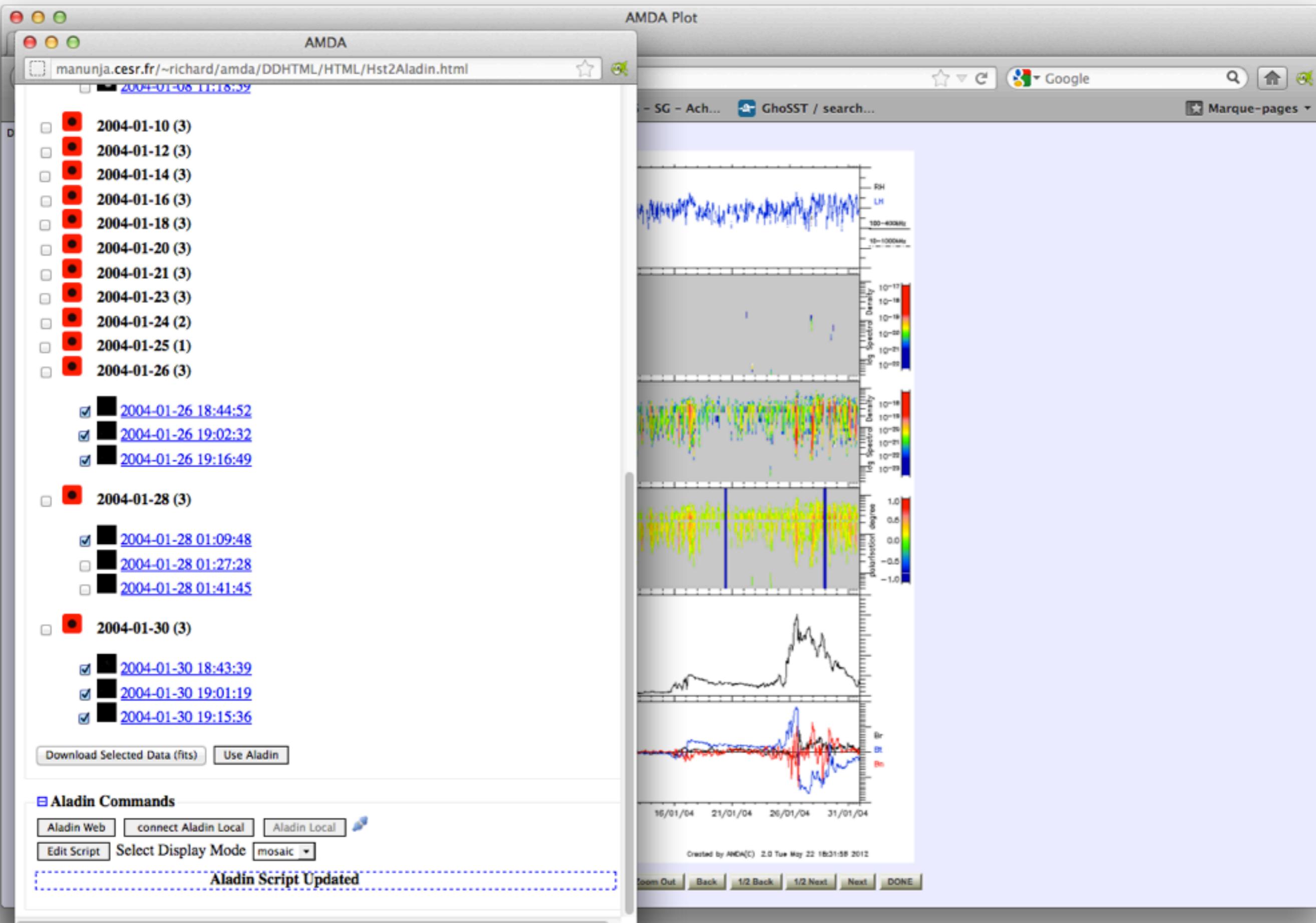
# AMDA: Get HST images module



# AMDA: Get HST images module



# AMDA: Get HST images module



# AMDA: Get HST images module

Aladin v7.0

Position | Effacer Référentiel ICRS

AMDA

manunja.cesr.fr/~richard/amda/DDHTML/HTML/Hst2Aladin.html

2004-01-06 11:18:39

- 2004-01-10 (3)
- 2004-01-12 (3)
- 2004-01-14 (3)
- 2004-01-16 (3)
- 2004-01-18 (3)
- 2004-01-20 (3)
- 2004-01-21 (3)
- 2004-01-23 (3)
- 2004-01-24 (2)
- 2004-01-25 (1)
- 2004-01-26 (3)
  
- 2004-01-26 18:44:52
- 2004-01-26 19:02:32
- 2004-01-26 19:16:49
  
- 2004-01-28 (3)
  
- 2004-01-28 01:09:48
- 2004-01-28 01:27:28
- 2004-01-28 01:41:45
  
- 2004-01-30 (3)
  
- 2004-01-30 18:43:39
- 2004-01-30 19:01:19
- 2004-01-30 19:15:36

Download Selected Data (fits) Use Aladin

Aladin Commands

Aladin Web disconnect Aladin Aladin Local

Edit Script Select Display Mode mosaic

Aladin Script Updated

select

depl.

zoom

dist

phot

dessin

marq

filtre

corr.

rvb

assoc

coupe

cont

loupe

pixel

prop

suppr

om 1x

Démarrage rapide...  
Saisissez votre cible dans le champ de saisie ci-dessus.  
(ex: M1 ou 13:29:53 +47:11:48)

Aladin Sky Atlas - v7.0

ALADIN est un atlas du ciel interactif,  
et de visualiser des images digitalisées de n'importe  
où du ciel, d'y superposer des objets issus de catalogues  
s, et, interactivement, d'accéder aux informations relatives.

CDS CENTRE DE DONNÉES  
ASTRONOMIQUES DE STRASBOURG

Aladin est développé par Pierre Fernique,  
Thomas Boch, François Bonnarel et Anaïs Oberto.  
CDS/CNRS - by CDS - Distributed under GNU GPL v3

tributed under GNU GPL v3

16/01/04 21/01/04 26/01/04 31/01/04

Created by AMDA(C) 2.0 Tue May 22 16:31:58 2012

Zoom Out Back 1/2 Back 1/2 Next Next DONE

# AMDA: Get HST images module

# AMDA: Get HST images module

AMDA

manunja.cesr.fr/~richard/amda/DDHTML/HTML/Hst2Aladin.html

2004-01-06 11:18:39

- 2004-01-10 (3)
- 2004-01-12 (3)
- 2004-01-14 (3)
- 2004-01-16 (3)
- 2004-01-18 (3)
- 2004-01-20 (3)
- 2004-01-21 (3)
- 2004-01-23 (3)
- 2004-01-24 (2)
- 2004-01-25 (1)
- 2004-01-26 (3)
  - 2004-01-26 18:44:52
  - 2004-01-26 19:02:32
  - 2004-01-26 19:16:49
- 2004-01-28 (3)
  - 2004-01-28 01:09:48
  - 2004-01-28 01:27:28
  - 2004-01-28 01:41:45
- 2004-01-30 (3)
  - 2004-01-30 18:43:39
  - 2004-01-30 19:01:19
  - 2004-01-30 19:15:36

Download Selected Data (fits) Use Aladin

Aladin Commands

Aladin Web disconnect Aladin Aladin Local

Edit Script Select Display Mode mosaic

Aladin Script Updated

Aladin v7.0

Position Effacer Référentiel ICRS

AMDA

2004\_01\_26\_18\_44\_52 2004\_01\_26\_18\_44\_52 2004\_01\_26\_18\_44\_52 2004\_01\_26\_19\_02\_32

2004\_01\_26\_19\_16\_49 2004\_01\_28\_01\_09\_48 2004\_01\_30\_18\_43\_39 2004\_01\_30\_19\_01\_19

2004\_01\_30\_19\_15\_36

E N E N E N E N

5'' 5'' 5'' 5''

Vue D4 Chercher

(c) 2010 UDS/CNRS - by CDS - Distributed under GNU GPL v3

0 sel / 0 src 40Mo

grille nord multivues unif.

27.22'' x 27.22''

16/01/04 21/01/04 26/01/04 31/01/04

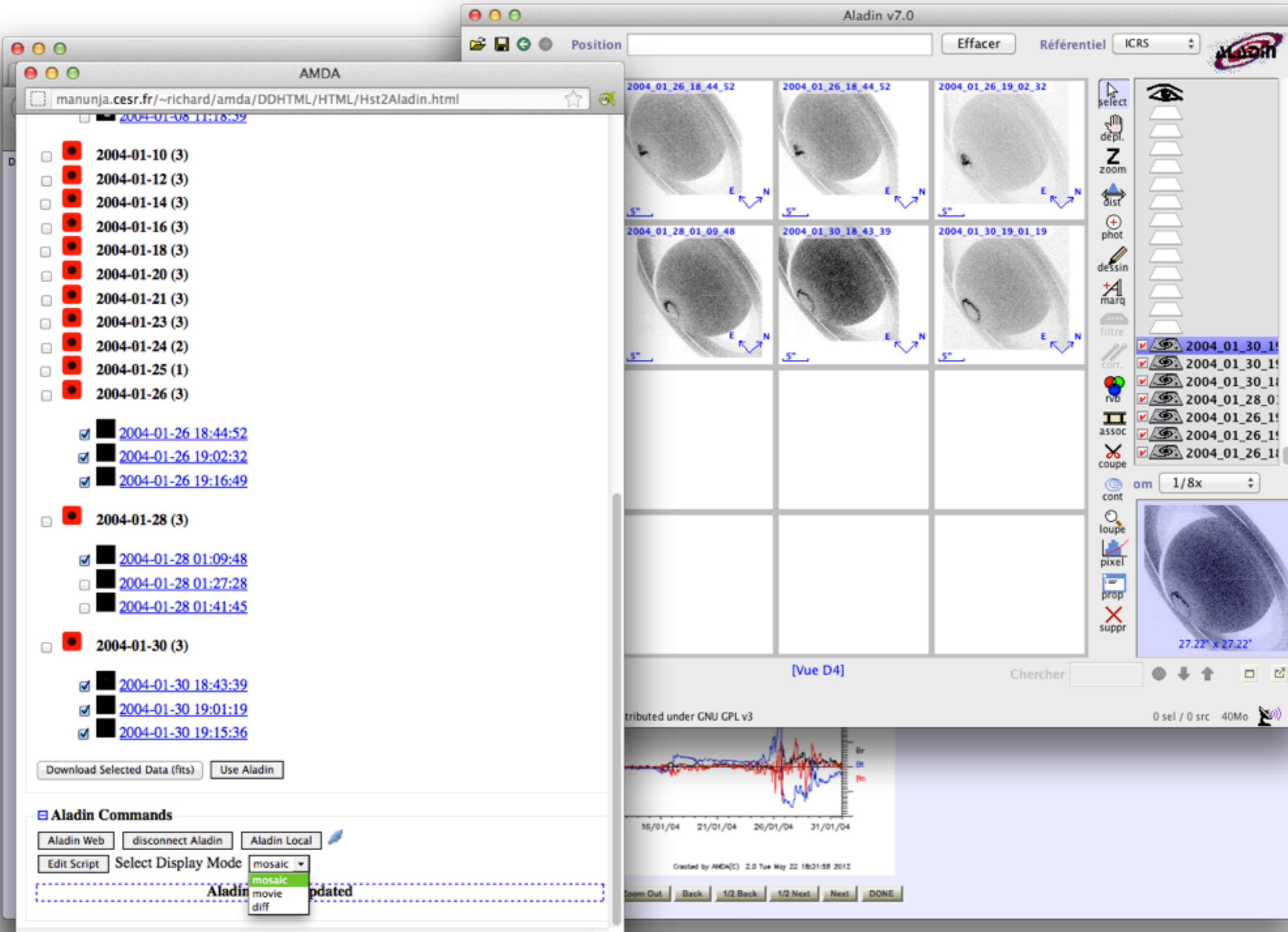
B<sub>r</sub> B<sub>t</sub> B<sub>n</sub>

Created by AMDA(C) 2.0 Tue May 22 16:31:58 2012

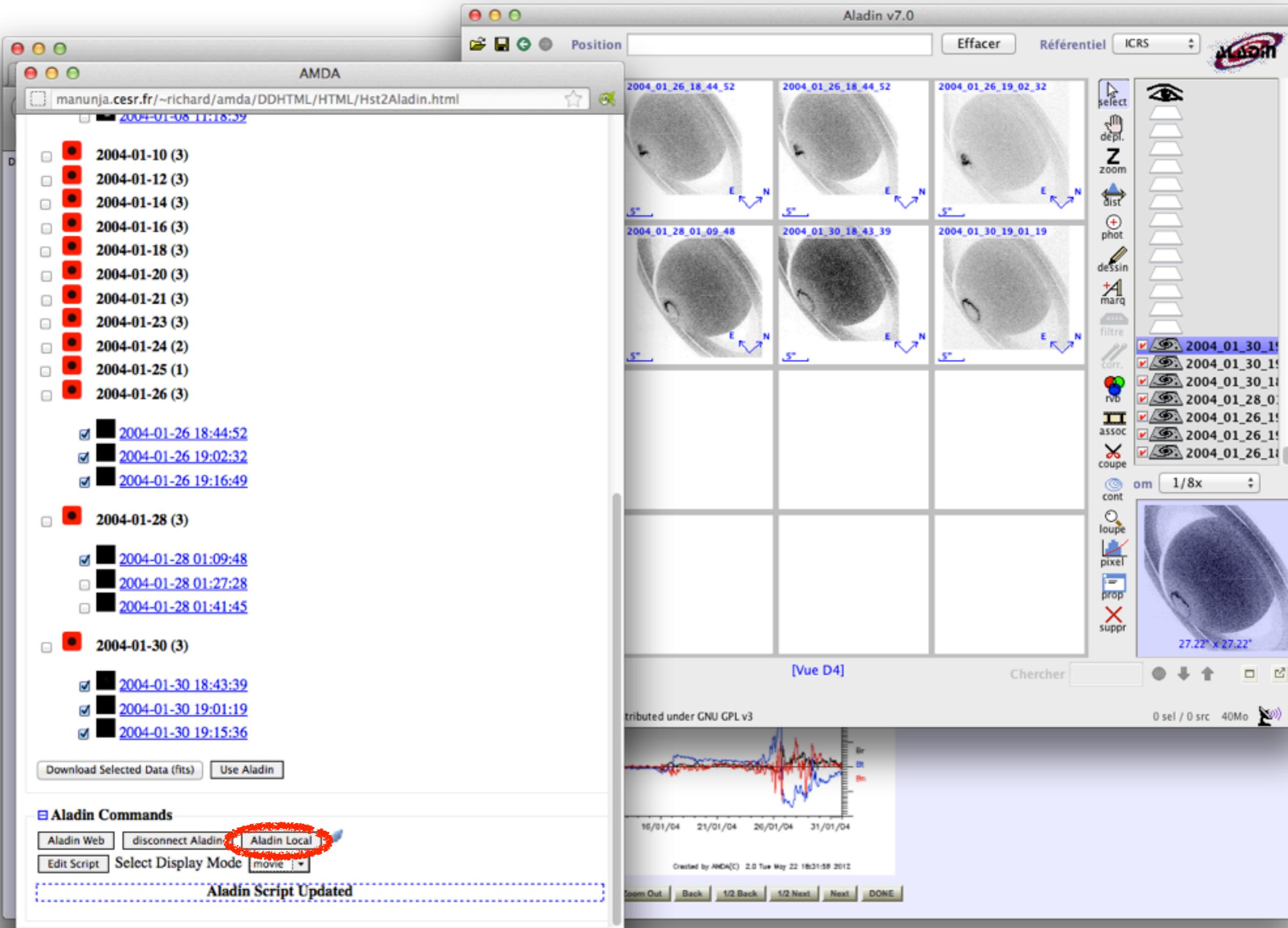
Zoom Out Back 1/2 Back 1/2 Next Next DONE

select  
depl.  
Z zoom  
dist  
phot  
dessin  
marq  
filtre  
corr.  
rvb  
assoc  
coupe  
om 1/8x  
cont  
loupe  
pixel  
prop  
suppr

AMDA



# AMDA: Get HST images module



# AMDA: Get HST images module

Aladin v7.0

AMDA

manunja.cesr.fr/~richard/amda/DDHTML/HTML/Hst2Aladin.html

2004-01-06 11:18:39

2004-01-10 (3)  
 2004-01-12 (3)  
 2004-01-14 (3)  
 2004-01-16 (3)  
 2004-01-18 (3)  
 2004-01-20 (3)  
 2004-01-21 (3)  
 2004-01-23 (3)  
 2004-01-24 (2)  
 2004-01-25 (1)  
 2004-01-26 (3)

2004-01-26 18:44:52  
 2004-01-26 19:02:32  
 2004-01-26 19:16:49

2004-01-28 (3)  
 2004-01-28 01:09:48  
 2004-01-28 01:27:28  
 2004-01-28 01:41:45

2004-01-30 (3)  
 2004-01-30 18:43:39  
 2004-01-30 19:01:19  
 2004-01-30 19:15:36

Download Selected Data (fits) Use Aladin

Aladin Commands

Aladin Web disconnect Aladin Aladin Local  
 Edit Script Select Display Mode movie ▾

Aladin Script Updated

Position Effacer Référentiel ICRS

2004\_01\_26\_19\_02\_32 +/- 001

select  
 dept.  
 Z zoom  
 dist  
 phot  
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 marq  
 filtre  
 corr.  
 rnb  
 assoc  
 coupe  
 om 1/2x  
 cont  
 loupe  
 pixel  
 prop  
 suppr

Blk img 2004\_01\_30\_19\_00\_32 2004\_01\_30\_19\_00\_32 2004\_01\_30\_19\_00\_32 2004\_01\_28\_00\_32 2004\_01\_26\_19\_00\_32 2004\_01\_26\_19\_00\_32 2004\_01\_26\_19\_00\_32

Chercher

5" 31.13" x 28.95" E N

grille nord multivues unif.

(c) 2010 UDS/CNRS - by CDS - Distributed under GNU GPL v3

16/01/04 21/01/04 26/01/04 31/01/04 Br Bt Bn

Created by AMDA(C) 2.0 Tue May 22 16:31:58 2012

Zoom Out Back 1/2 Back 1/2 Next Next DONE

# AMDA: Get HST images module

# Connecting AMDA with TOPCAT

- New version:AMDА-NG under development!
- For the same science case, send the magnetic field data time series to TOPCAT.
- VOTable output added to download module (including units, ucd... for each field)

AMDA-NG4/Migration Step – Vi... +

manunja.cesr.fr/AMDA-NG4/desktop.php

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Workspace Explorer

resources operations jobs

Filters ...

Parameters  
Derived Parameters  
Aliases  
Time Tables

Log

Clear

Start Workspace Explorer Results

6:19 PM

# AMDA-NG: Desktop

AMDA-NG4/Migration Step – Virtual Desktop Application

AMDA-NG4/Migration Step – Vi... manunja.cesr.fr/AMDA-NG4/desktop.php Google Les plus visités RSS Les dernières i... AMDA VO-Paris CNRS – SG – Ach... GhoSST / search... Marque-pages

Workspace Explorer Plot

resources operations jobs Filters ...

Parameters

- Local Data
- ARTEMIS-P1
- ARTEMIS-P2
- Cassini\_Public
- ephemeris
- RPWS
- MAG
  - RTN\_1min
  - RTN\_1sec
  - b\_mag
- KSP\_2min

Log

Clear

drag and drop

Add Panel Remove Panel

Name	Plot Type	Height	Width	Xmin	Xmax	Ymin	Ymax	Additional	Parameter Arguments	Y2
Panel 1	TIME	0.4	1	0	0	0	0	select...		
cass_b_rtn1s										
Panel 2	TIME	0.4	1	0	0	0	0	select...		
cass_bmag_rt...										

Time Selection

Time Table Interval

Start Time: 2004/01/01 00:00:00 Stop Time: 2004/01/11 00:00:00 Days: Hrs: Mins: Secs: Duration: 0010 00 00 00

Plot Title: Plot File Name: Char Size: 1 Line Thickness: 1 Orientation: LANDSCAPE File Format: PNG Description: Request Name: Save Request

Plot Get Data Reset

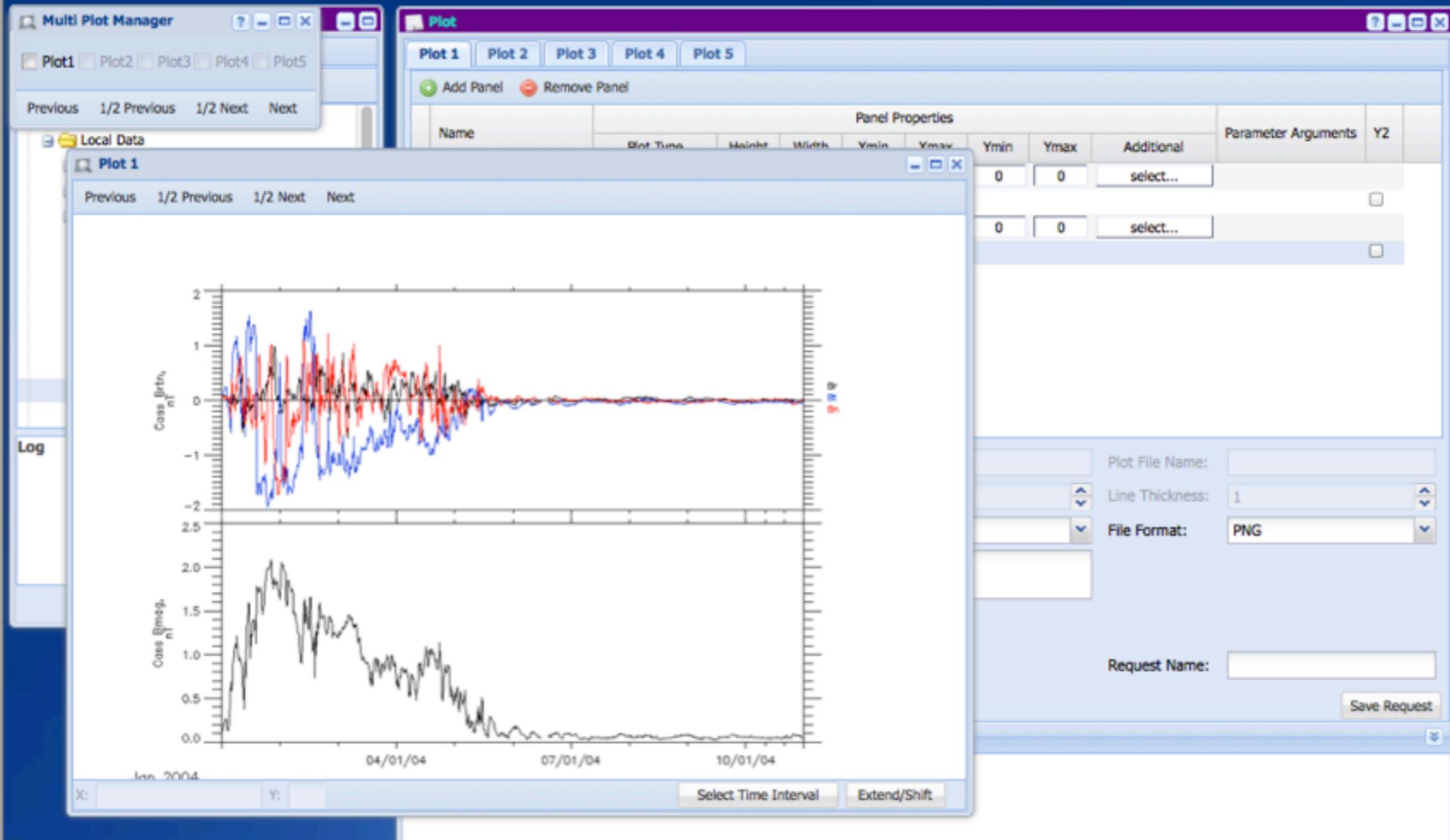
Information This is info zone...

Plot module

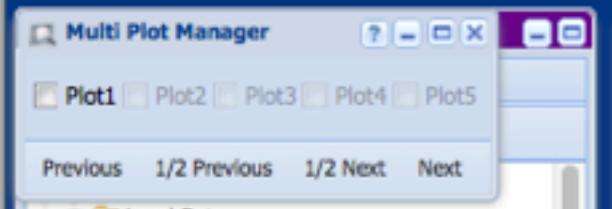
Start Workspace Explorer About AMDA-NG... Plot

6:59 PM

# AMDA-NG: Plot module



# AMDA-NG: Plot Result



**Plot**

Plot 1 Plot 2 Plot 3 Plot 4 Plot 5

Add Panel Remove Panel

Name	Plot Type	Height	Width	Xmin	Xmax	Ymin	Ymax	Additional	Parameter Arguments	Y2
Panel 1	TIME	0.4	0.4	0	0	0	0	0	select...	

**Plot 1**

Download data

Get Data Get Time Table

Request Name:

Time Format: YYYY-MM-DDThh:mm:ss

File Structure: One File Per Param/Interval

Sampling Time: 600

File Name:

Header:

File Format: ASCII

Compression: tar+gzip

Time Selection

Time Table Interval

Start Time: 2004/01/01 00:00:00

Stop Time: 2004/01/11 00:00:00

Days: Hrs: Mins: Secs:

Duration: 0010 00 00 00

Plot File Name:

Line Thickness: 1

File Format: PNG

Request Name:  Save Request

Information

This is info zone...



Start

Workspace Explorer

About AMDA-NG...

Plot

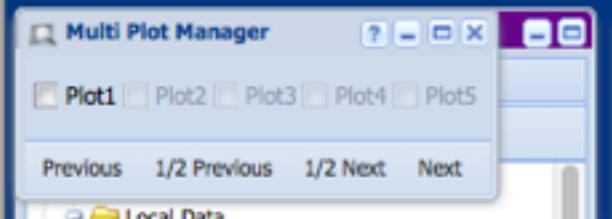
Multi Plot Manager

Plot 1

Download data

7:00 PM

# AMDA-NG: Download module



**Plot**

Plot 1 Plot 2 Plot 3 Plot 4 Plot 5

Add Panel Remove Panel

Name	Plot Type	Height	Width	Xmin	Xmax	Ymin	Ymax	Additional	Parameter Arguments	Y2
Panel 1	TIME	0.4	0.4	0	0.4	0	0.4	0	select...	
				0						
				0						

**Plot 1**

Download data

Get Data Get Time Table

Request Name:

Time Format: YYYY-MM-DDThh:mm:ss

File Structure: All In One File **(circled)**

Sampling Time: 600

File Name:

Header:

File Format: ASCII

Compression: tar+gzip

Time Selection

Time Table Interval

Start Time: 2004/01/01 00:00:00

Stop Time: 2004/01/11 00:00:00

Days: Hrs: Mins: Secs:

Duration: 0010 00 00 00

Download Reset

Information

This is info zone...

Plot File Name:

Line Thickness: 1

File Format: PNG

Request Name:

Save Request



Start

Workspace Explorer

About AMDA-NG...

Plot

Multi Plot Manager

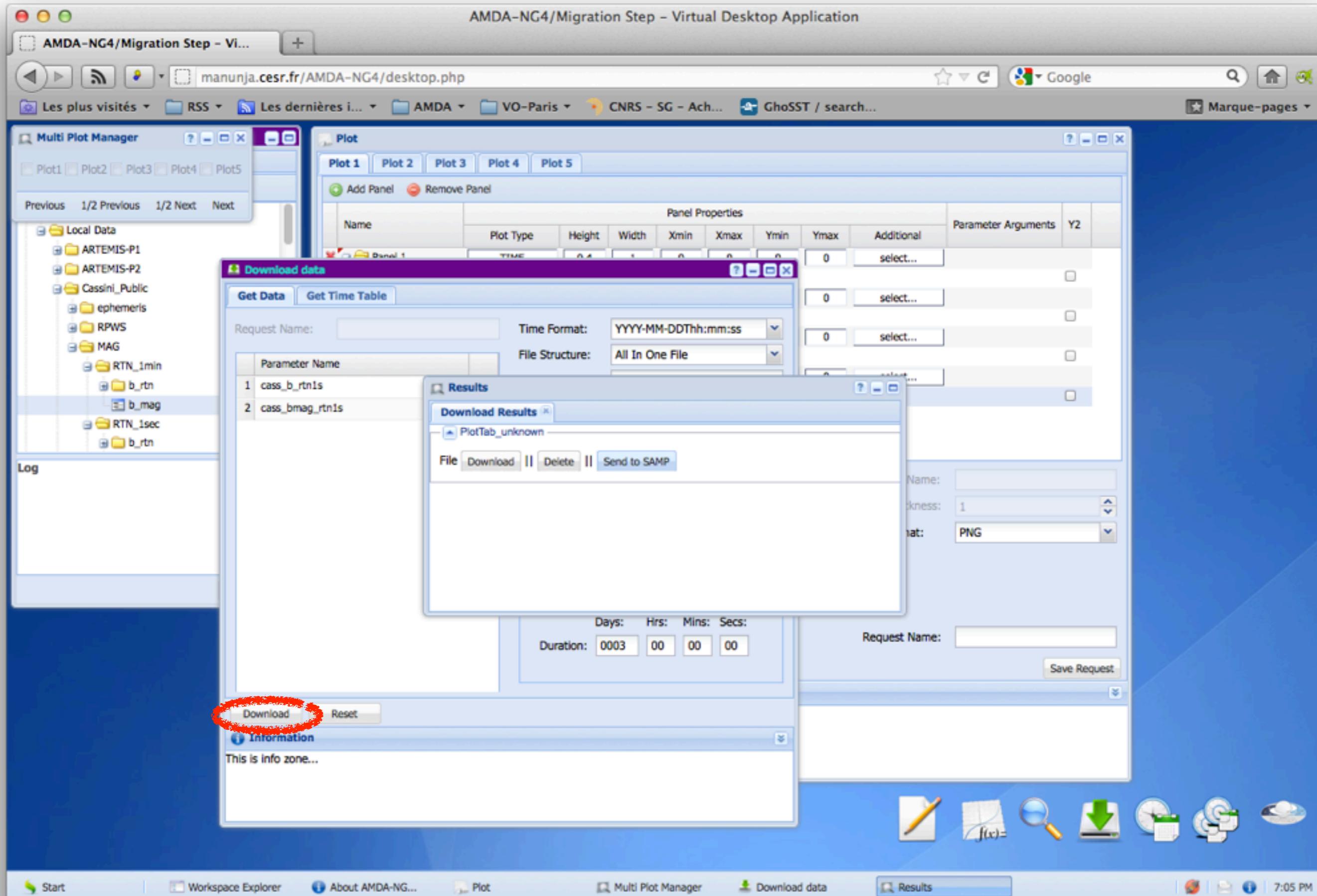
Plot 1

Download data

7:00 PM

# AMDA-NG: Download module

AMDA-NG4/Migration Step – Virtual Desktop Application



# AMDA-NG: Download result module

The screenshot shows a desktop application window titled "AMDA-NG4/Migration Step – Virtual Desktop Application". The main area displays a "Plot" window with tabs for Plot 1 through Plot 5. A "Multi Plot Manager" panel on the left lists "Plot1" through "Plot5". Below it is a "Log" panel. A "Download data" dialog box is open, showing a "SAMP" tab with a "SAMP connection" section containing a small icon. A red circle highlights this icon. The text "The user shall launch TOPCAT by himself" is overlaid in red in the center of the dialog. The bottom of the screen features a toolbar with icons for various functions like plotting and searching.

# AMDA-NG: Interoperability module

AMDA-NG4/Migration Step – Vi... +

manunja.cesr.fr/AMDA-NG4/desktop.php Google

Les plus visités RSS Les dernières i... AMDA VO-Paris CNRS – SG – Ach... GhoSST / search... Marque-pages

Multi Plot Manager Plot

Plot 1 Plot 2 Plot 3 Plot 4 Plot 5

Add Panel Remove Panel

Panel Properties Parameter Arguments Y2

Local Data ARTEMIS-P1 ARTEMIS-P2 Cassini\_Public ephemeris RPWS MAG RTN\_1min b rtn b\_mag RTN\_1sec b rtn

Download data Get Data Get Time Tab

SAMP

Request Name:

Name : Hub  
Identifier : hub  
Description : org.astrogrid.samp.hub.HubServiceMode\$2\$1  
Documentation : null

Name : topcat  
Identifier : c1  
Description : Tool for Operations on Catalogues And Tables  
Documentation : http://127.0.0.1:2525/doc/sun253/index.html

Save Request

Log

Information This is info zone...

Start Workspace Explorer About AMDA-NG... Plot Multi Plot Manager Download data Results Interoperability 7:06 PM

# AMDA-NG: Interoperability module

AMDA-NG4/Migration Step – Virtual Desktop Application

manunja.cesr.fr/AMDA-NG4/desktop.php

Les plus visités: AMDA-NG4/Migration Step – Virtual Desktop Application, Les dernières informations, AMDA, VO-Paris, CNRS – SG – Achats, GhoSST / search..., Marque-pages

Multi Plot Manager

Plot

Plot 1 Plot 2 Plot 3 Plot 4 Plot 5

Add Panel Remove Panel

Name Plot Type Height Width Xmin Xmax Ymin Ymax Additional Parameter Arguments Y2

Panel 1 TIME 0.4 0 0 0 0 0 0 select... 0 select... 0 select... 0

Local Data ARTEMIS-P1 ARTEMIS-P2 Cassini\_Public ephemeris RPWS MAG RTN\_1min b rtn b\_mag RTN\_1sec b rtn

Download data

Get Data Get Time Table

Request Name: Time Format: YYYY-MM-DDThh:mm:ss

File Structure: All In One File

Parameter Name: cass\_b\_rtn1s cass\_bmag\_rtn1s

Results

PlotTab\_unknown

File Download || Delete Send to SAMP

Days: Hrs: Mins: Secs: Duration: 0003 00 00 00

Download Reset

Information

This is info zone...

Plot

Multi Plot Manager

Download data

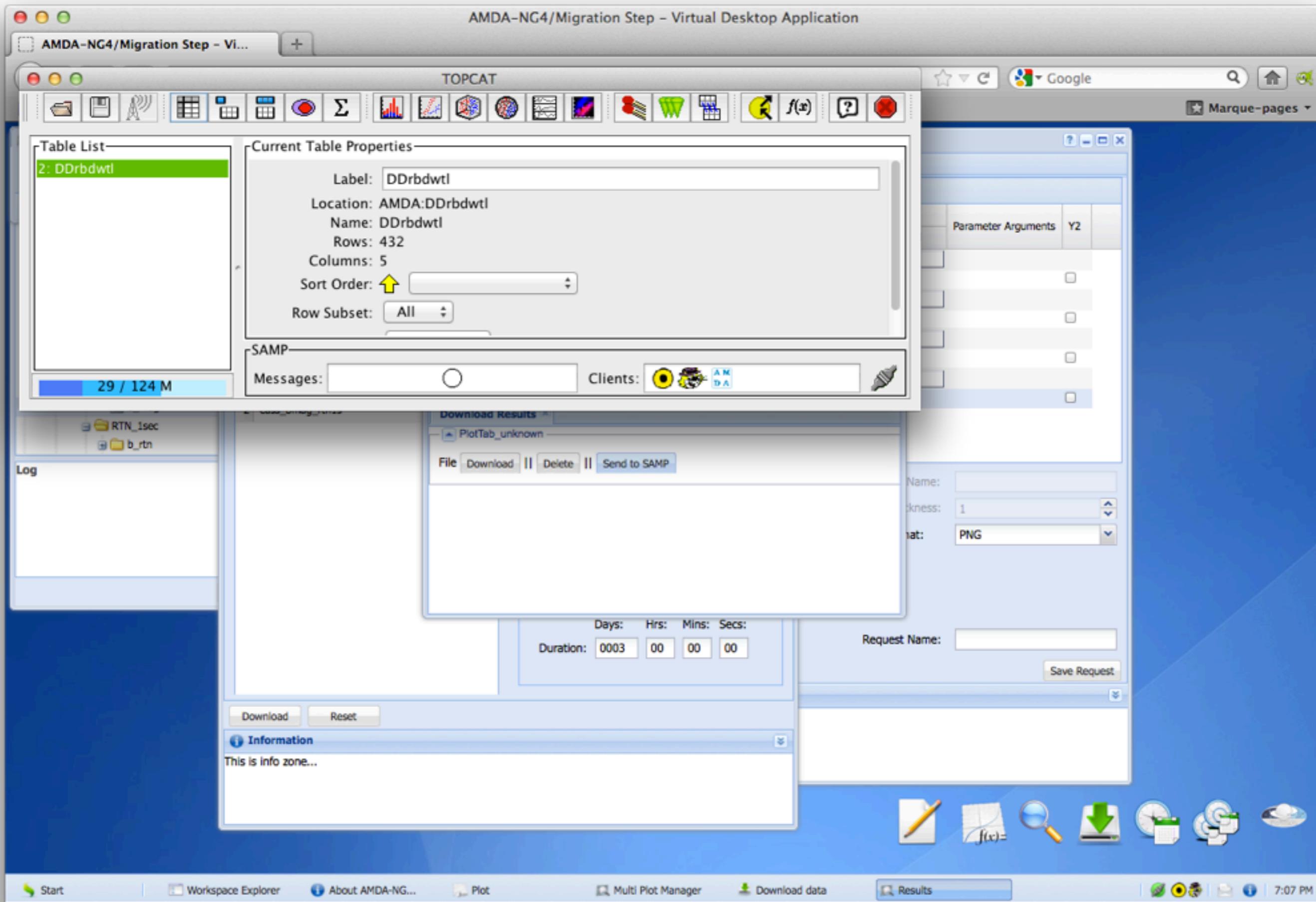
Results

Start Workspace Explorer About AMDA-NG4 Plot Multi Plot Manager Download data Results

7:07 PM

A red circle highlights the "Send to SAMP" button in the "Results" window.

# AMDA-NG: Download result module



# TOPCAT

## TOPCAT



**Table List** Current Table Properties

2: DDrbdwlt

TOPCAT(2): Table Browser

Table Browser for 2: DDrbdwlt

	Time	Br	Bt	Bn	cass_bmag_r...
1	2004-01-01T00:05:00.000Z	0,039643	0,160248	0,058482	0,175987
2	2004-01-01T00:15:00.000Z	0,043092	0,153753	0,045742	0,167077
3	2004-01-01T00:25:00.000Z	0,040552	0,078458	0,045943	0,104715
4	2004-01-01T00:35:00.000Z	0,066292	0,109443	0,081978	0,154082
5	2004-01-01T00:45:00.000Z	0,089442	0,149097	0,075178	0,190718
6	2004-01-01T00:55:00.000Z	0,088263	0,154012	0,037208	0,183873
7	2004-01-01T01:05:00.000Z	0,100365	0,183995	0,063928	0,22038
8	2004-01-01T01:15:00.000Z	0,0766	0,218015	0,071345	0,243187
9	2004-01-01T01:25:00.000Z	0,120952	0,204703	0,077992	0,256175
10	2004-01-01T01:35:00.000Z	0,083743	0,24076	0,056023	0,262025
11	2004-01-01T01:45:00.000Z	0,070725	0,24739	0,013605	0,260407
12	2004-01-01T01:55:00.000Z	0,103343	0,22754	0,047523	0,25618
13	2004-01-01T02:05:00.000Z	0,08677	0,217878	0,069467	0,245963
14	2004-01-01T02:15:00.000Z	0,06487	0,142245	0,038295	0,166335
15	2004-01-01T02:25:00.000Z	-0,008183	-0,075873	0,028315	0,106338
16	2004-01-01T02:35:00.000Z	0,003288	-0,12925	0,045808	0,141478

Parameter Arguments Y2

Days: Hrs: Mins: Secs:

Duration: 0003 00 00 00

Request Name:

Save Request

Download Reset

Information

This is info zone...



## TOPCAT



**Table List** Current Table Properties

2: DDrbdwlt

TOPCAT(2): Table Browser

TOPCAT(2): Table Columns

Table Columns for 2: DDrbdwlt

	Visible	Name	SID	Class	Description	UCD	Datatype	Decoder	VOTable ID	xtype
0	<input type="checkbox"/>	Index	\$0	Long	Table row index					
1	<input checked="" type="checkbox"/>	Time	\$1	String	Time	time.epoch	char	ISO-8601->Decimal year	Time	dateTime
2	<input checked="" type="checkbox"/>	Br	\$2	Float	Cass Brtn - Unit : nT		float		cass_b_rtnls_0	
3	<input checked="" type="checkbox"/>	Bt	\$3	Float	Cass Brtn - Unit : nT		float		cass_b_rtnls_1	
4	<input checked="" type="checkbox"/>	Bn	\$4	Float	Cass Brtn - Unit : nT		float		cass_b_rtnls_2	
5	<input checked="" type="checkbox"/>	cass_bmag_rtnls	\$5	Float	Cass Bmag - Unit : nT		float		cass_bmag_rtnls	

10  
11  
12 | 2004-01-01T01:55:00.000Z 0,103343 0,22754 0,047523 0,25618  
13 | 2004-01-01T02:05:00.000Z 0,08677 0,217878 0,069467 0,245963  
14 | 2004-01-01T02:15:00.000Z 0,06487 0,142245 0,038295 0,166335  
15 | 2004-01-01T02:25:00.000Z -0,008183 -0,075873 0,028315 0,106338  
16 | 2004-01-01T02:35:00.000Z 0,003288 -0,12925 0,045808 0,141478

Days: Hrs: Mins: Secs:  
Duration: 0003 00 00 00

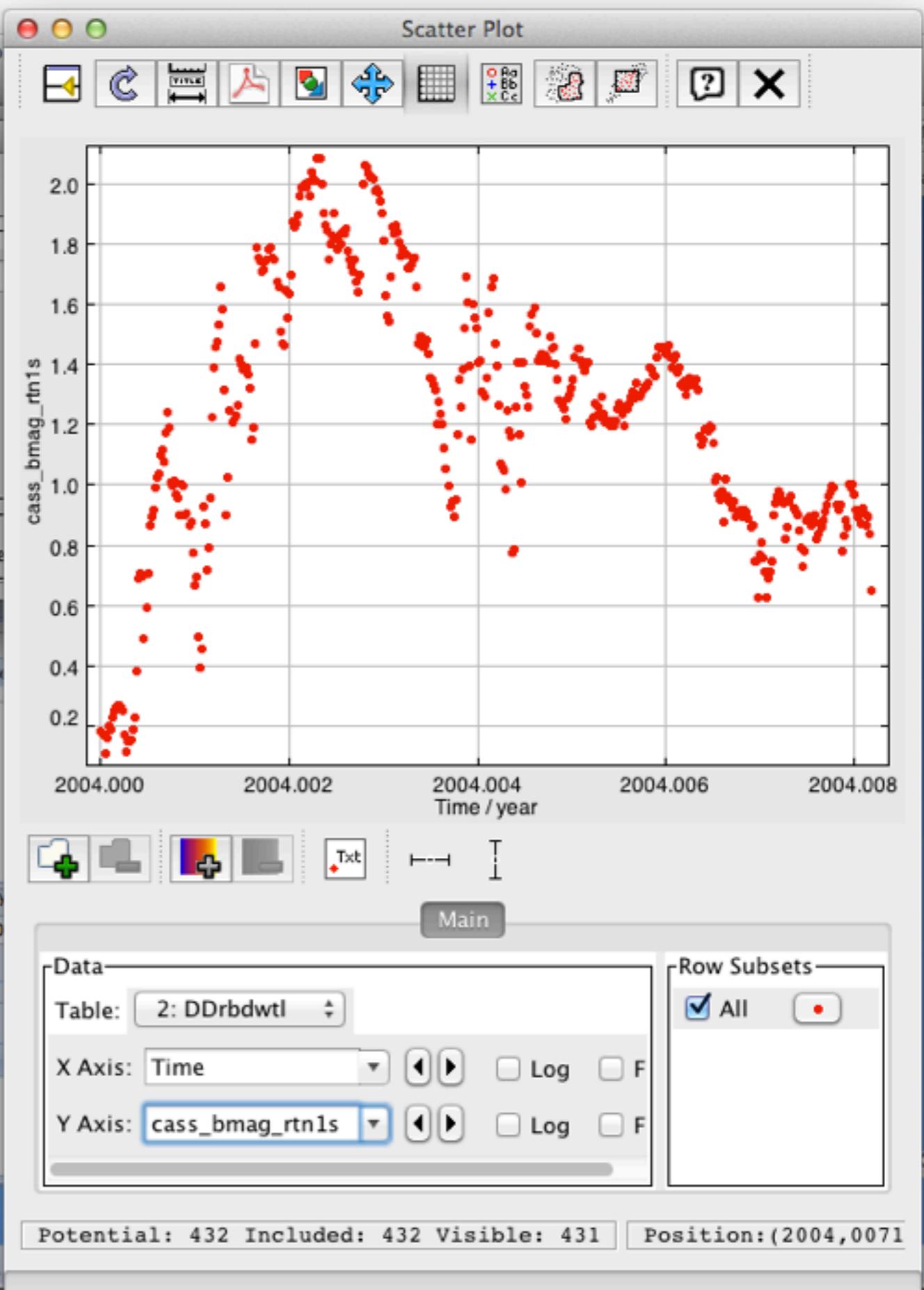
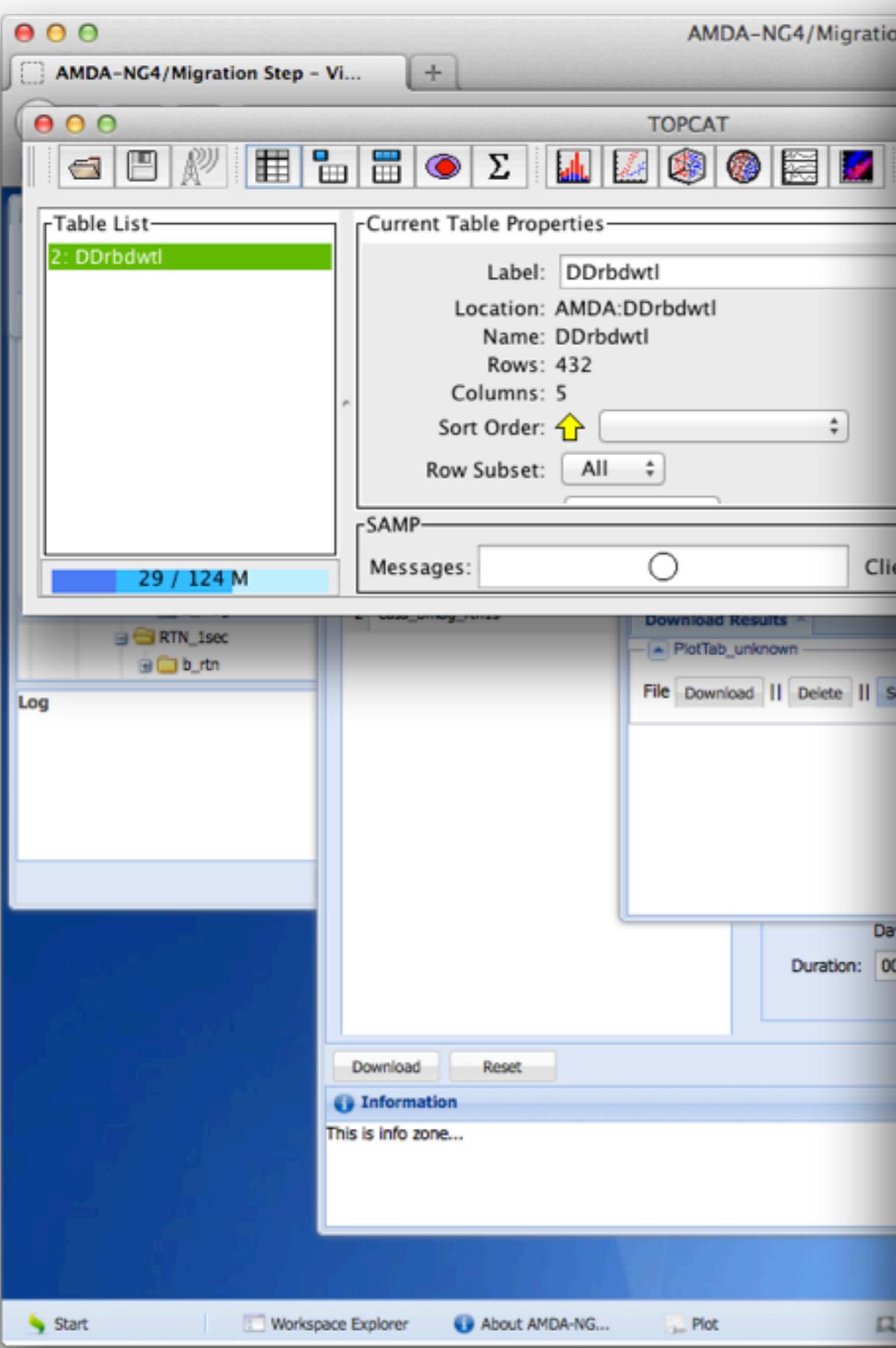
Request Name:  Save Request

Download Reset

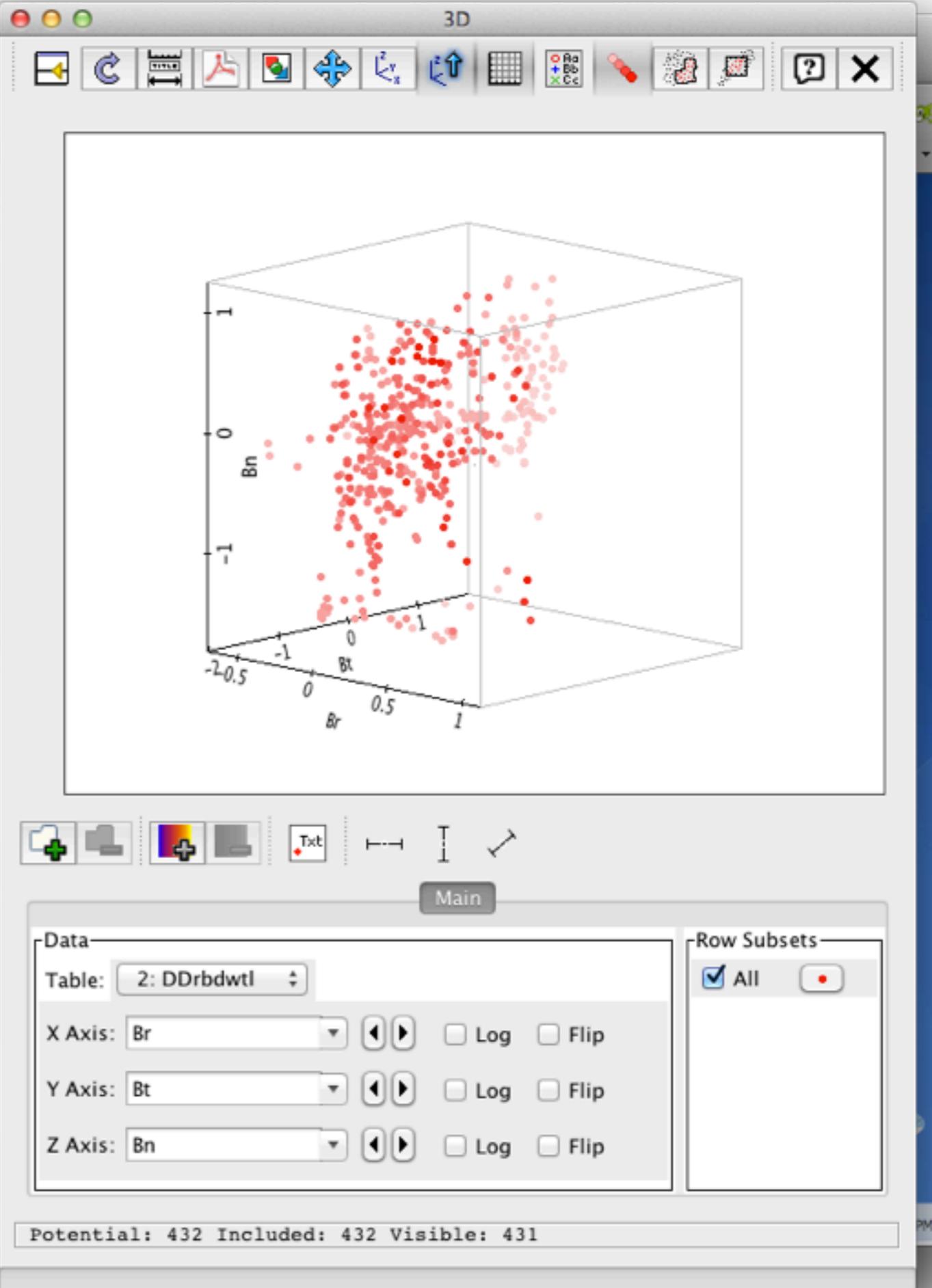
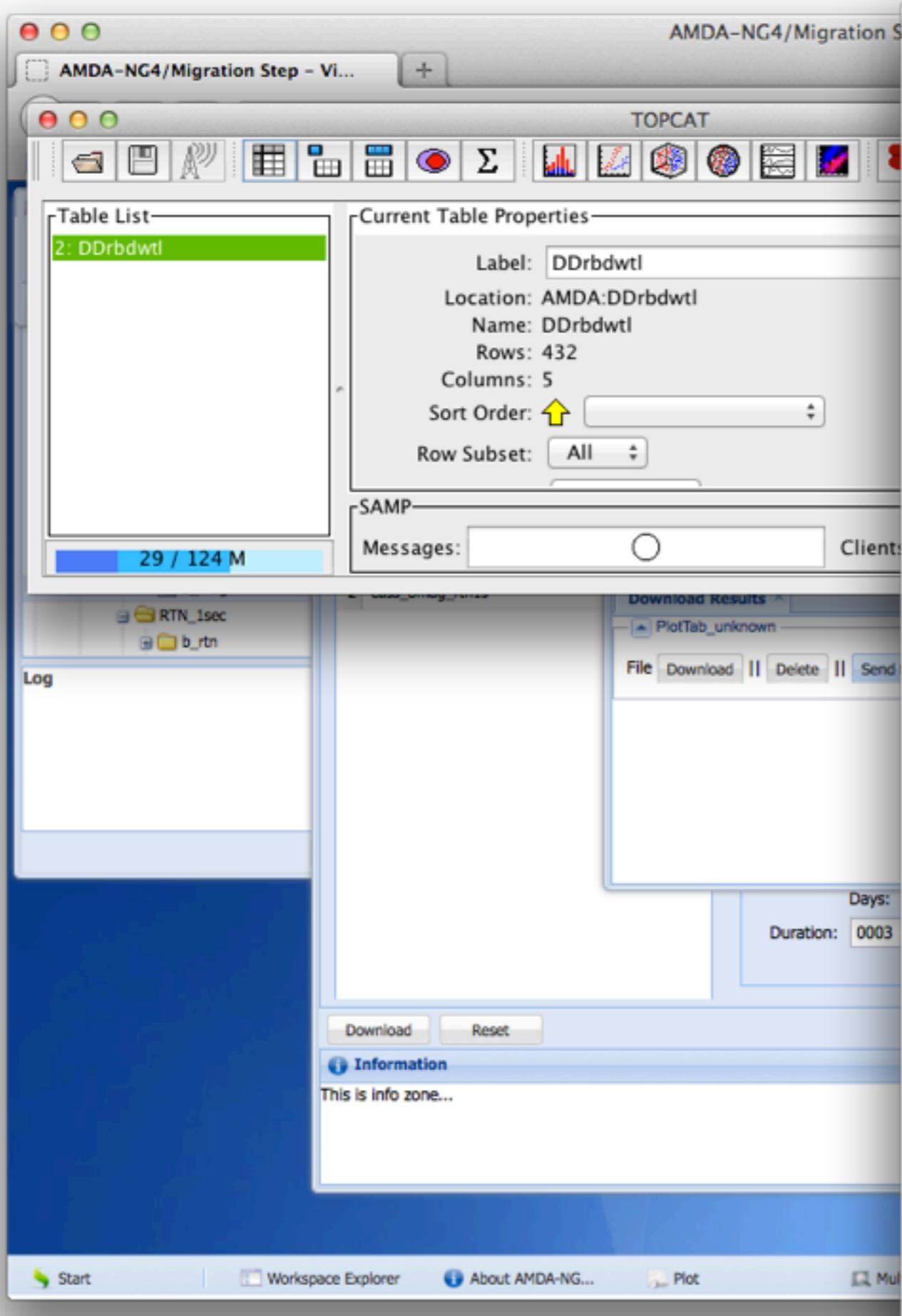
Information  
This is info zone...



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