



IPSAT: Ionising Particle in Space Analysis Tool

*S. Bourdarie (ONERA), A. Sicard (CNES), D. Boscher
(ONERA), D. Lazaro (ONERA), R. Ecoffet (CNES), G.
Rolland (CNES)*



r e t u r n o n i n n o v a t i o n

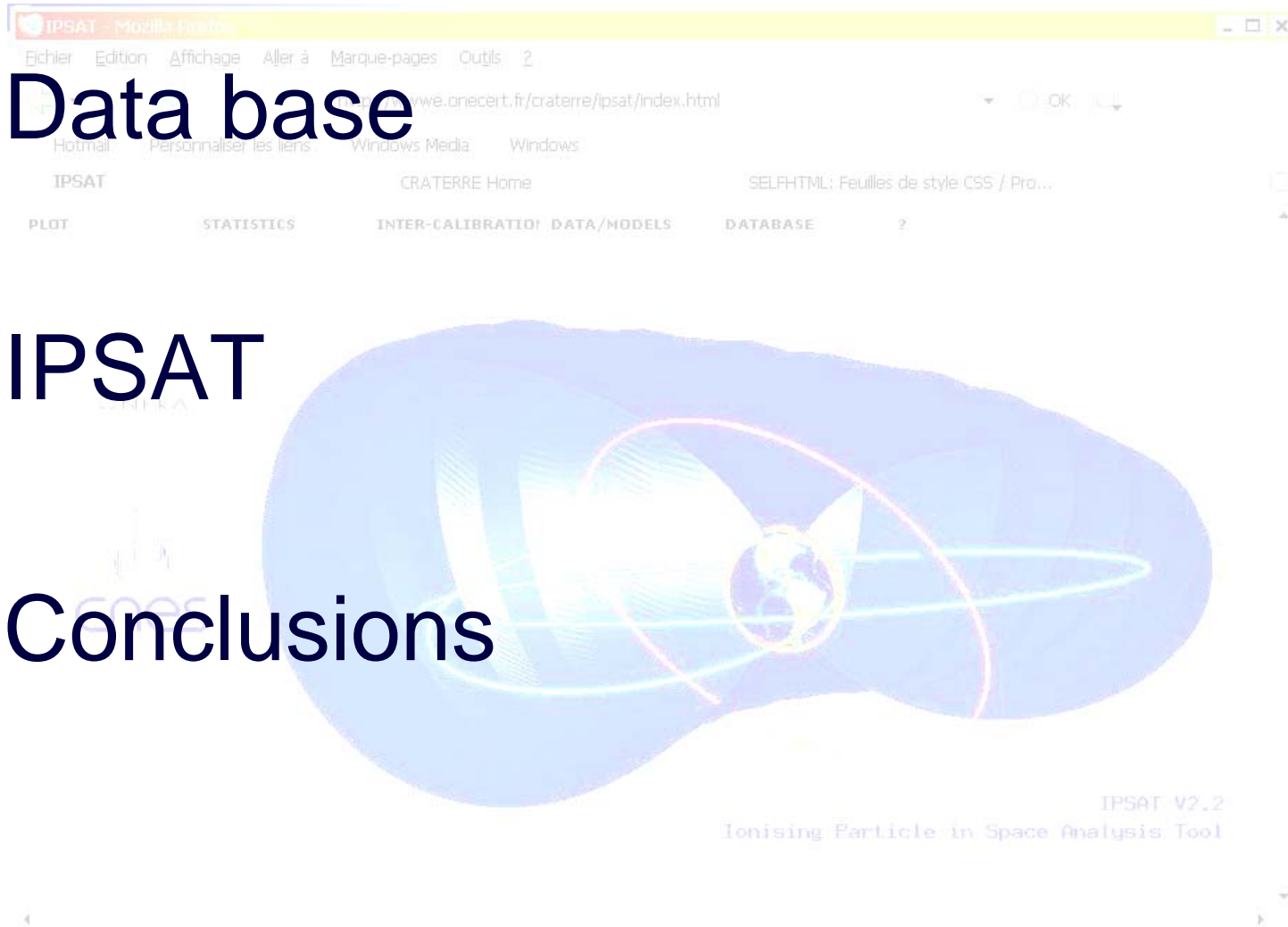
Office National d'Études
et de Recherches Aérospatiales
www.onera.fr

Introduction – Virtual observatory

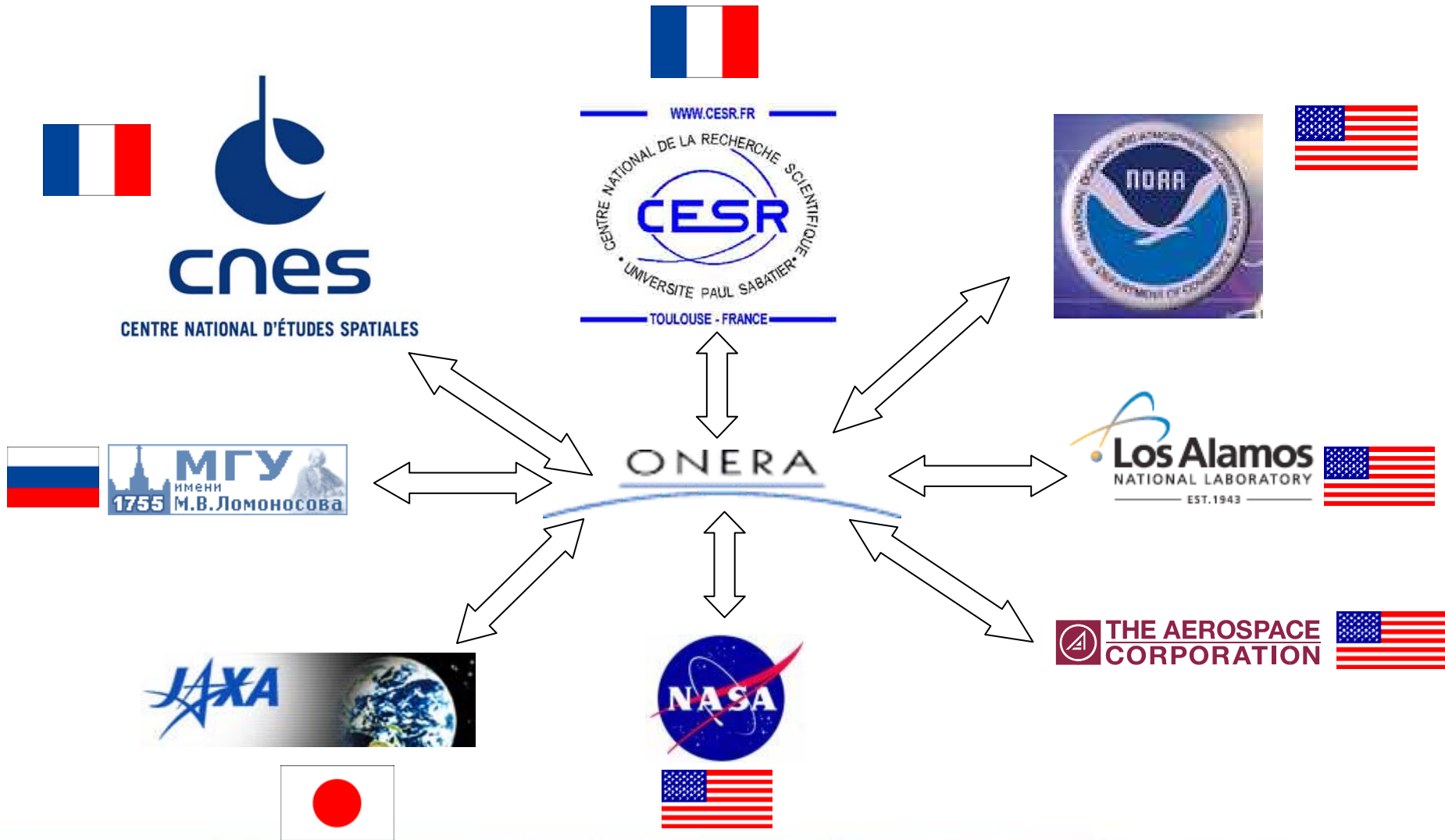
- Data base

- IPSAT

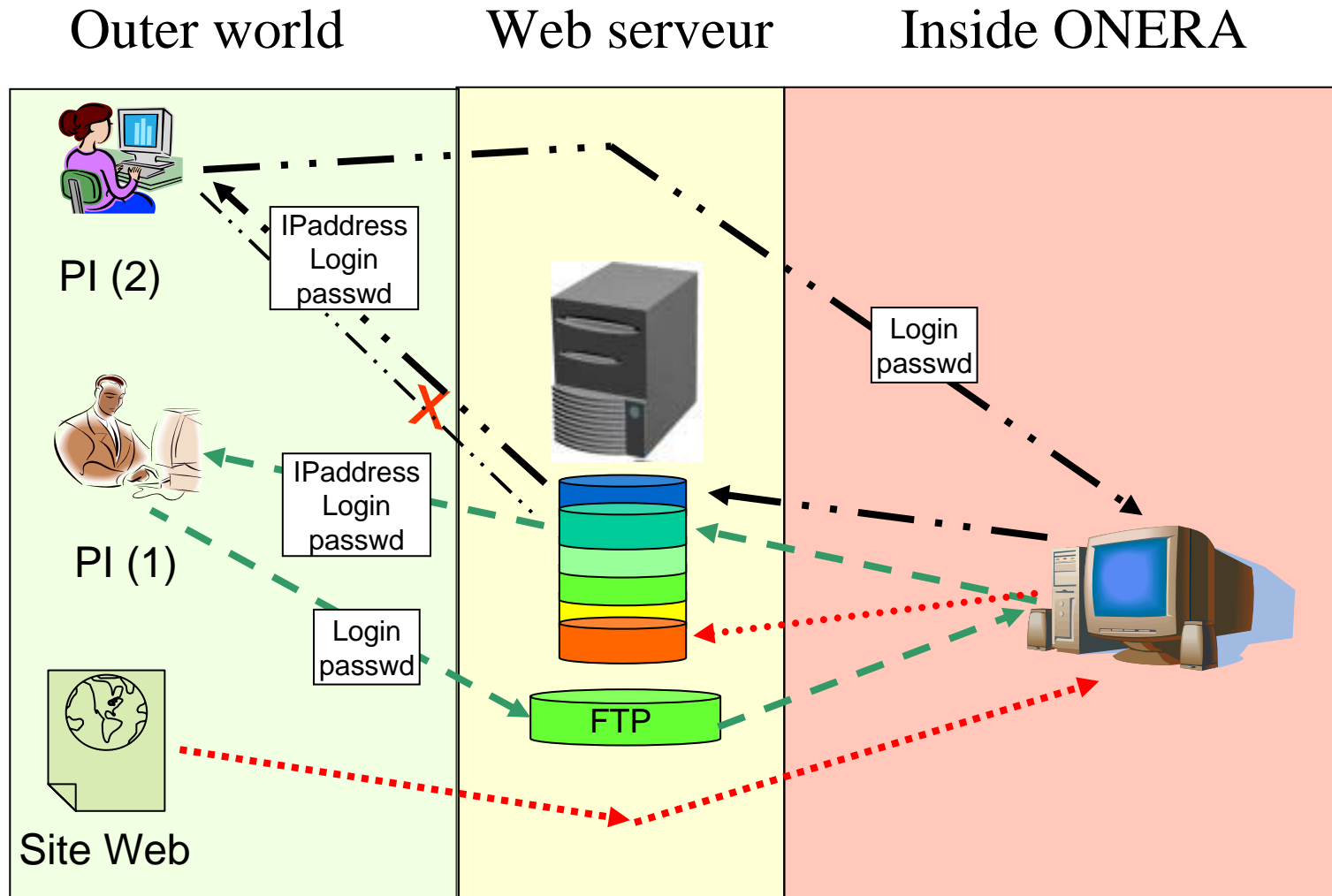
- Conclusions



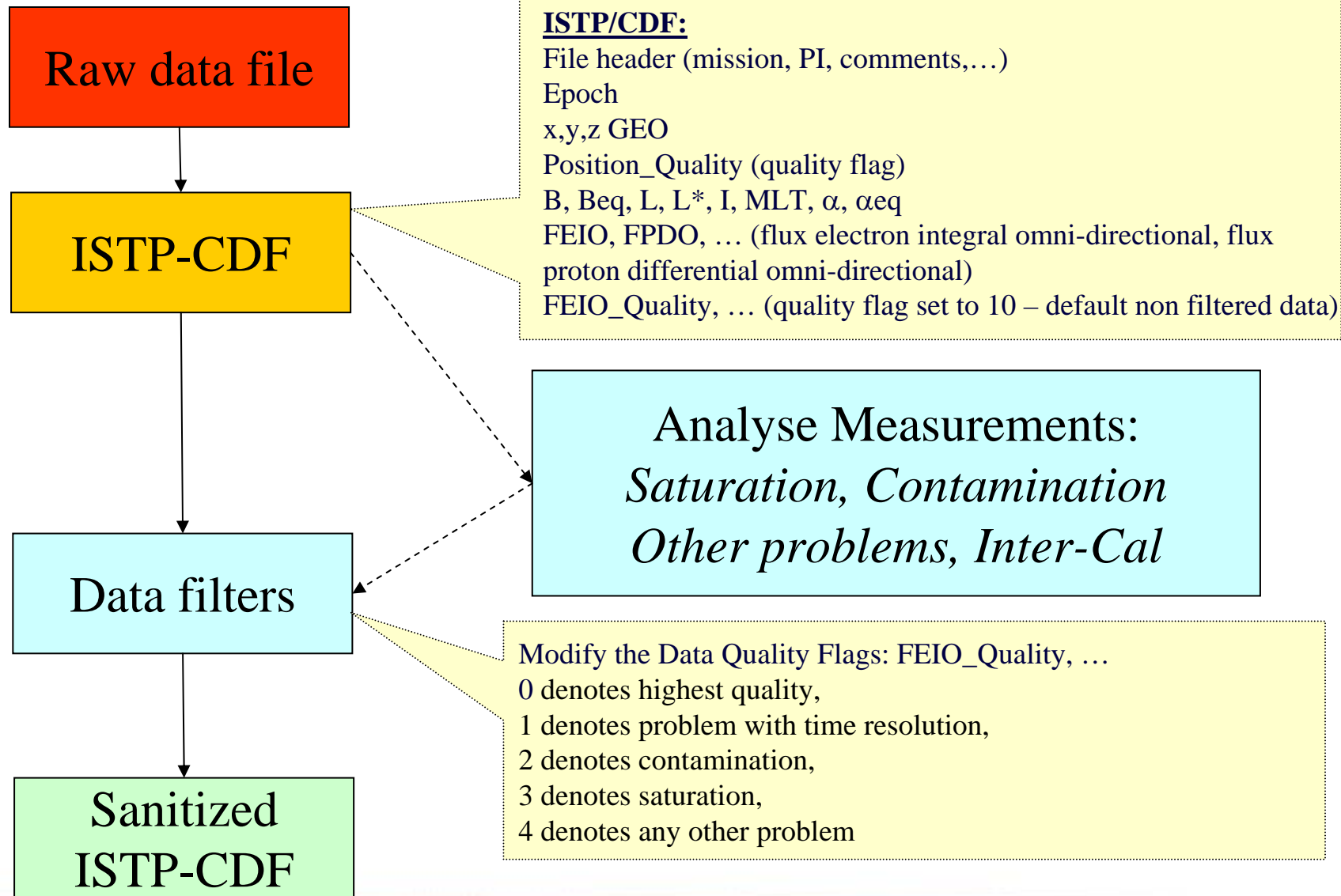
Data base - Data sources



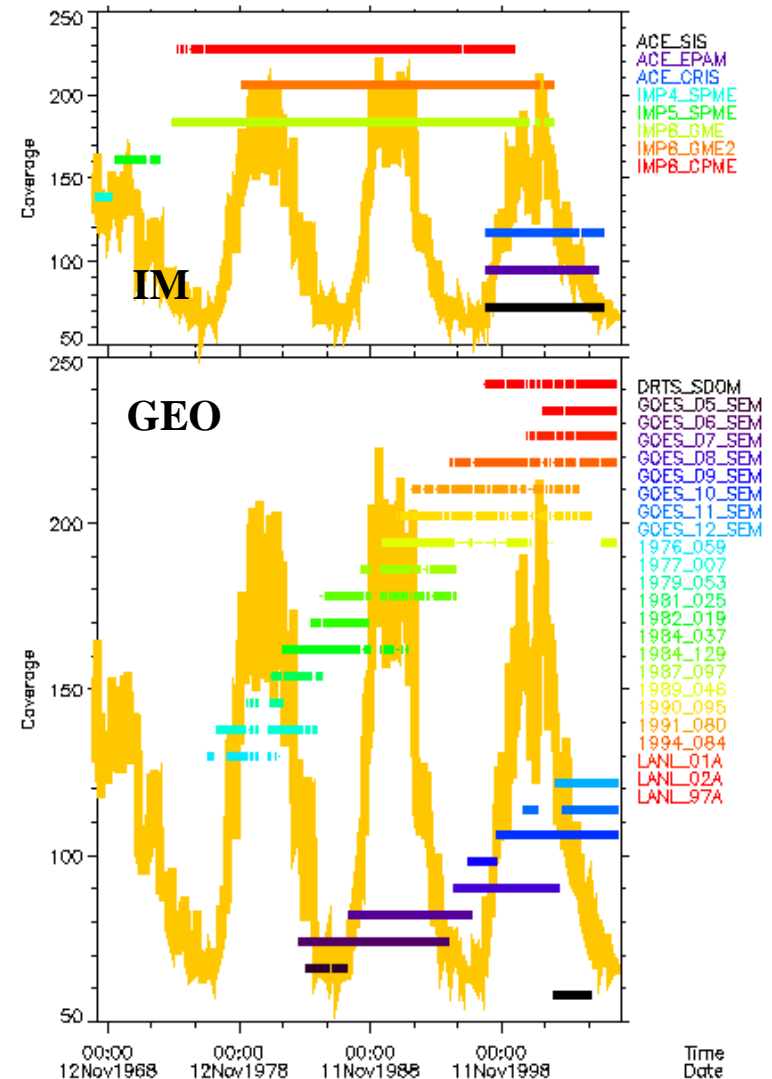
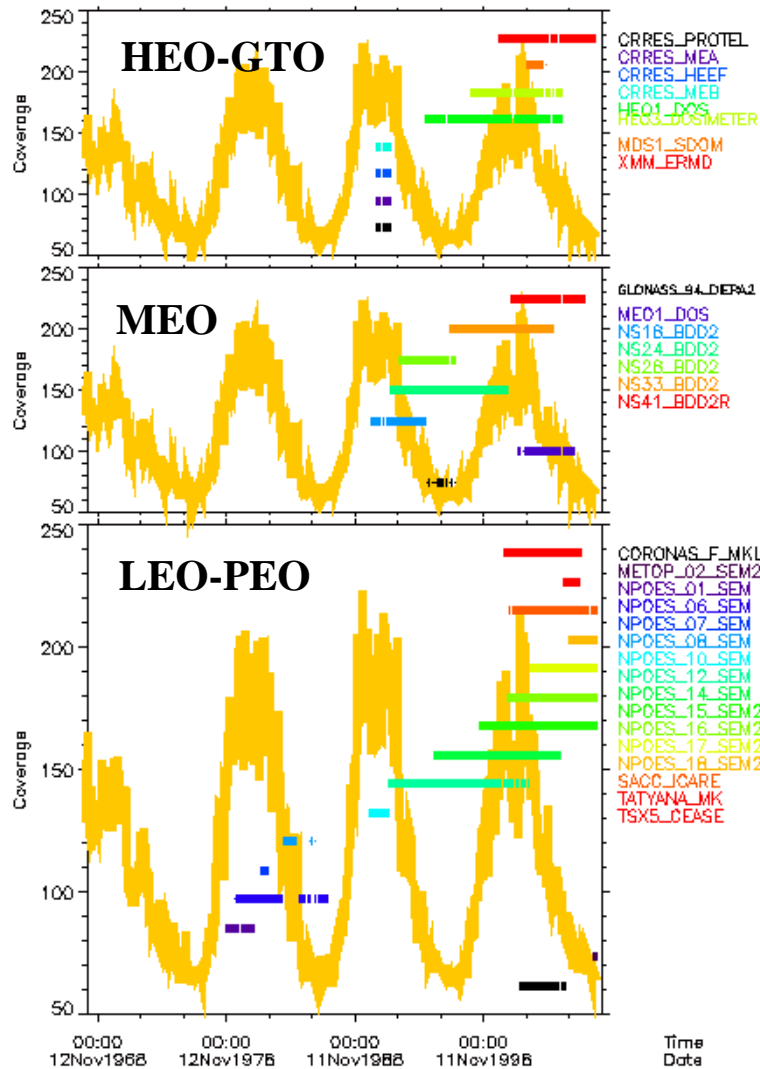
Data base - Data policy



Data base - Data processing



Data base - Data coverage



IPSAT – Main Web interface

Menu	Plot	Statistics	Inter-calibration	Data / models	SOS SPACE	Database	?
	▼	▼	▼	▼	▼	▼	▼
Sub-menu	Cartography	Correlation	Trapped particles	Compare w AE8/AP8	GEISHA Quick look	Data coverage	Help
	Time series		Untrapped particles	Compare w CRRES models	GEISHA SEE Analysis	Data description	On-line registration
					GEISHA Dose and solar array degradation analysis		About IPSAT
					GEISHA intermediate dielectric charging analysis		
					GEISHA deep dielectric charging analysis		

IPSAT – Cartography module

The screenshot shows the web interface of the IPSAT Cartography module. The browser window title is "[IPSAT]-Plot-Cartography - Mozilla Firefox". The address bar shows the URL: <http://www.onecert.fr/craterre/ipsat/Appli/MakeCarto/MakeCarto.php>. The main content area features a navigation menu with "Main", "Process/Plot", and "Help" buttons. Below the menu, there are date selection fields for "Start Date" (2001/01/01) and "End Date" (2001/01/31), with a note: "*note : yyyy/mm/dd".

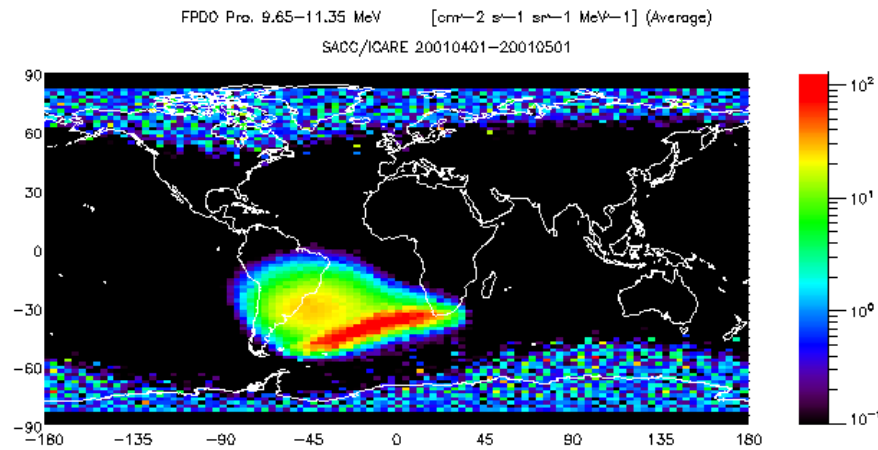
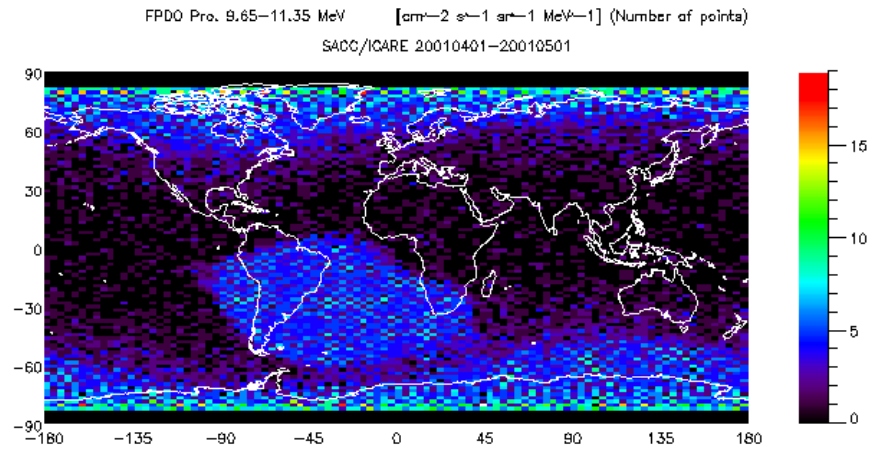
The "Satellite" dropdown menu is open, showing a list of satellite names: [satellites], ACE-CRIS, ACE-EPAM, ACE-SIS, GOES_08-SEM, GOES_10-SEM, GOES_11-SEM, IMP8-GME, IMP8-GME2, NPOES_15-SEM2, NPOES_16-SEM2, SACC-ICARE (highlighted), and XMM-ERMD. The "Display" section includes "Colors" (55534) and "Data filter" (All) for X, Y, and Z bins. The "Xbin" section has "Select data" (LON) and "Number of bins". The "Ybin" section has "Select data" (LAT) and "Number of bins". The "Zbin" section has "Select data" (FPDO Pro. 12) and "Number of bins".

The "Xscale" section has "LOG" (unchecked) and "LIN" (checked) radio buttons, with "min" (-180.000) and "max" (180.000) fields, and a checkbox for "(Auto = Unchecked / Manual = Checked)". The "Yscale" section has "LOG" (unchecked) and "LIN" (checked) radio buttons, with "min" (-90.0000) and "max" (90.0000) fields, and a checkbox for "(Auto = Unchecked / Manual = Checked)". The "Zscale" section has "LOG" (checked) and "LIN" (unchecked) radio buttons, with "min" (0.0667700) and "max" (30.6108) fields, and a checkbox for "(Auto = Unchecked / Manual = Checked)".

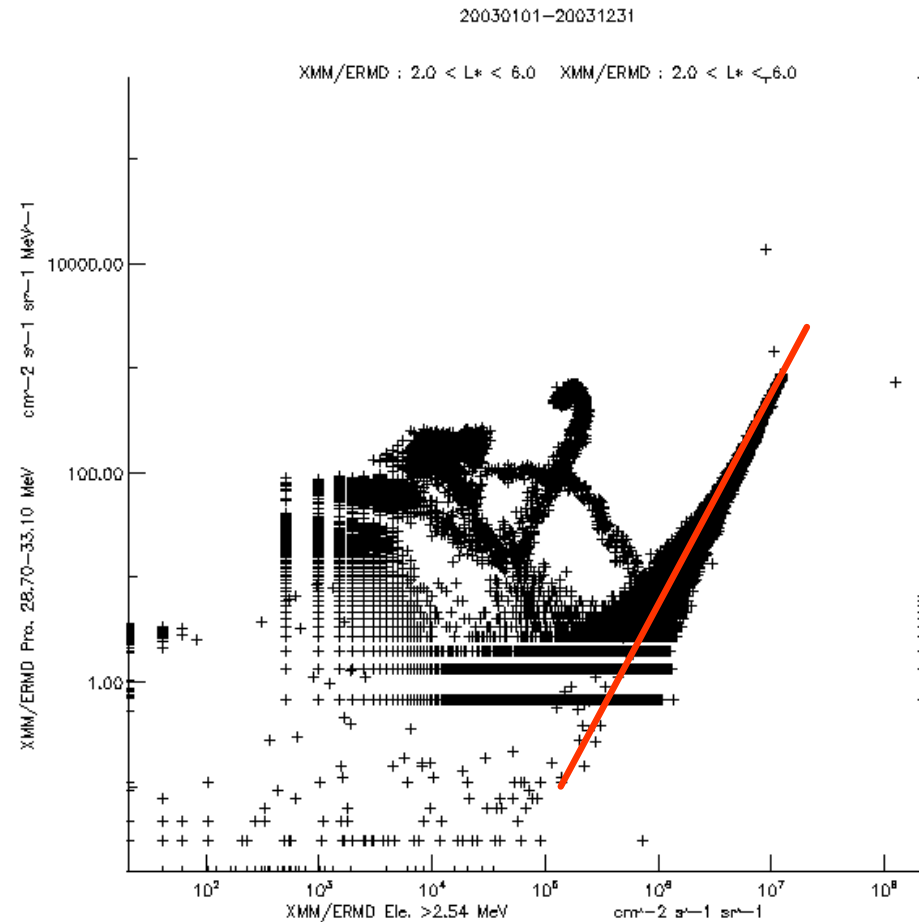
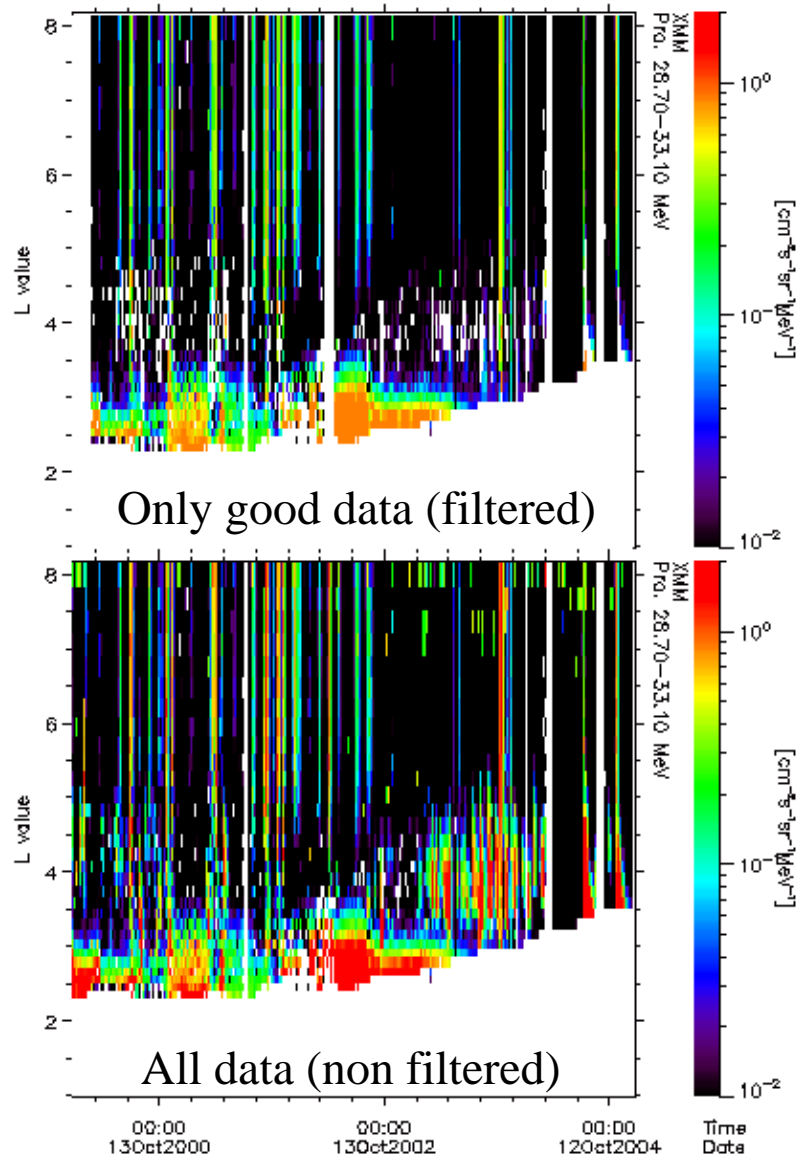
The "Plot Style" section has "Iso contour number" (6) and "Style" fields, and radio buttons for "Iso contour + color" (unchecked), "Iso contour" (unchecked), and "Color" (checked).

At the bottom, it says "Last update : May 24 2006 20:49:32." and "Terminé" in the status bar.

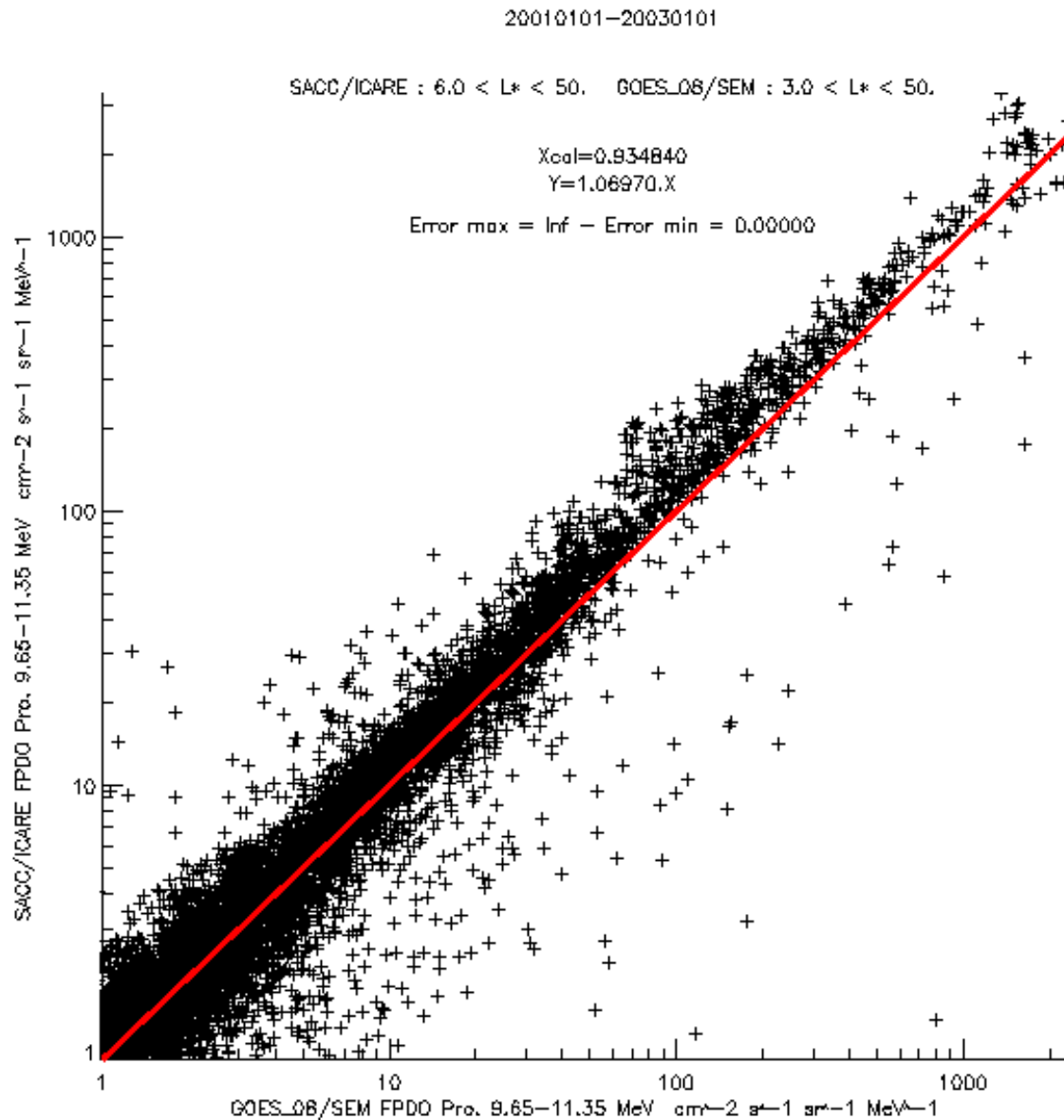
IPSAT – Cartography module



IPSAT – Statistics module

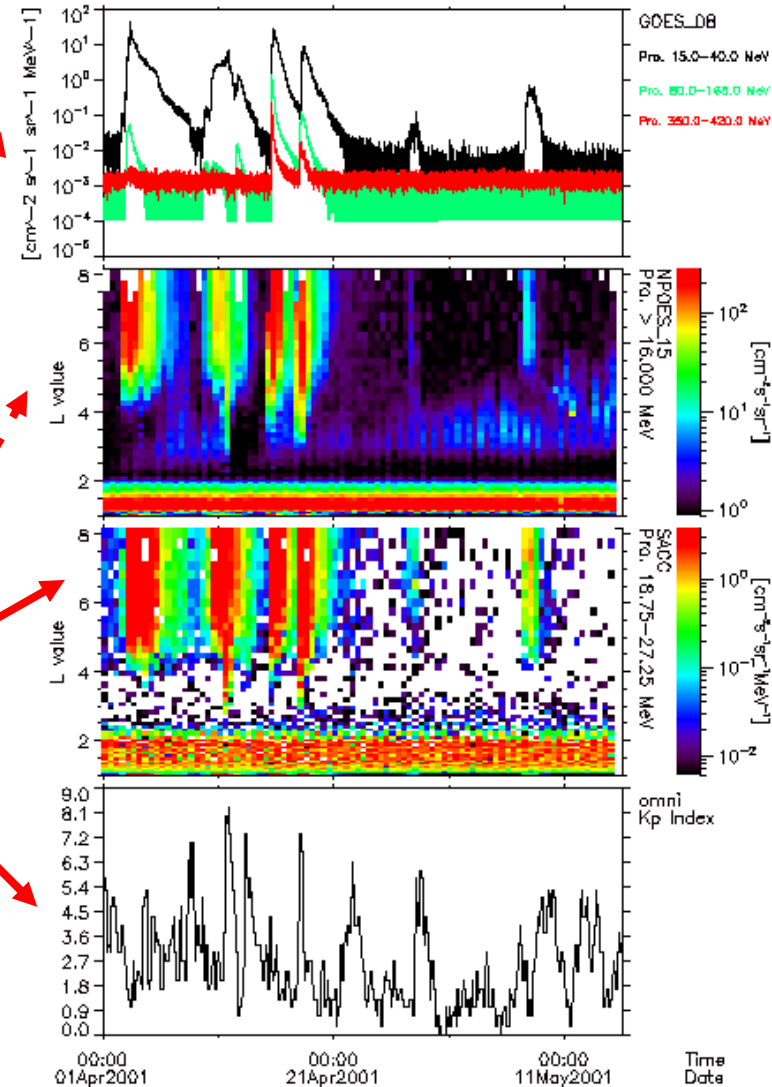


IPSAT – Inter-Calibrations module



IPSAT – Time series module

The screenshot shows the 'IPSAT]-Plot - Time Series - Mozilla Firefox' browser window. The URL is <http://www.onecert.fr/craterre/ipsat/Apply/TimeSeries/MainTimeSeries.php>. The interface includes a navigation menu with 'Mission', 'ONERA', 'Satellite', 'Data distribution', 'Congres', 'Informatique', 'CRATERRE', 'lib_desp', and 'Publi'. Below the menu are logos for CNRS and CNES. The main configuration area has 'Start Date' (2001/04/01) and 'End Date' (2001/06/01) fields, with a note '* note : yyyy/mm/dd'. 'Start Time' is 00:00:00 and 'End Time' is 23:59:59. 'Display: Mode' is 'Colors' and 'Nb Colors' is 65534. 'Orientation' is 'Landscape'. There is an 'Edit Dates' button. A 'Select Module' bar contains 'Flux - Ephemeris', 'Overview', 'Salammbô re-analysis - Flux', 'Omni', 'AnomalyDB', 'User Anomaly', and 'Action: Plot'. A 'Reset all' button is also present. Below this are four plot configuration boxes, each with 'Up Plot', 'Down Plot', 'Edit Plot', and 'Delete Plot' buttons. The first box is for 'Kp Index' (Module: Omni), the second for 'SACC-ICARE' (Module: Overview), the third for 'NPOES_15-SEM2' (Module: Overview), and the fourth for 'GOES_08-SEM' (Module: Flux-Ephemeris). The 'Overplot' checkbox is unchecked. The status bar at the bottom says 'Terminé'.



Conclusion

- We have developed a virtual radiation belt observatory
 - Data base covers interplanetary medium, GEO, HEO-GTO, MEO, LEO-PEO, more than 2 solar cycles
 - Web based
 - Accessible @ <http://www.onecert.fr/craterre/ipsat/>
 - Digital data are not distributed via the system
 - Individual profile is set to access spacecraft data according to PI wishes.
- We have also developed an anomaly database
 - Data base covers GEO, LEO-PEO
 - Web based
 - Digital data are not distributed via the system
 - Individual profile is set to access spacecraft anomalies according to PI wishes.
- Space weather modules are available.