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IPSAT: A virtual observatory for radiation belts

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

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

Introduction – Virtual observatory

- Data base (environment + SC anomalies)
- IPSAT
- Conclusions

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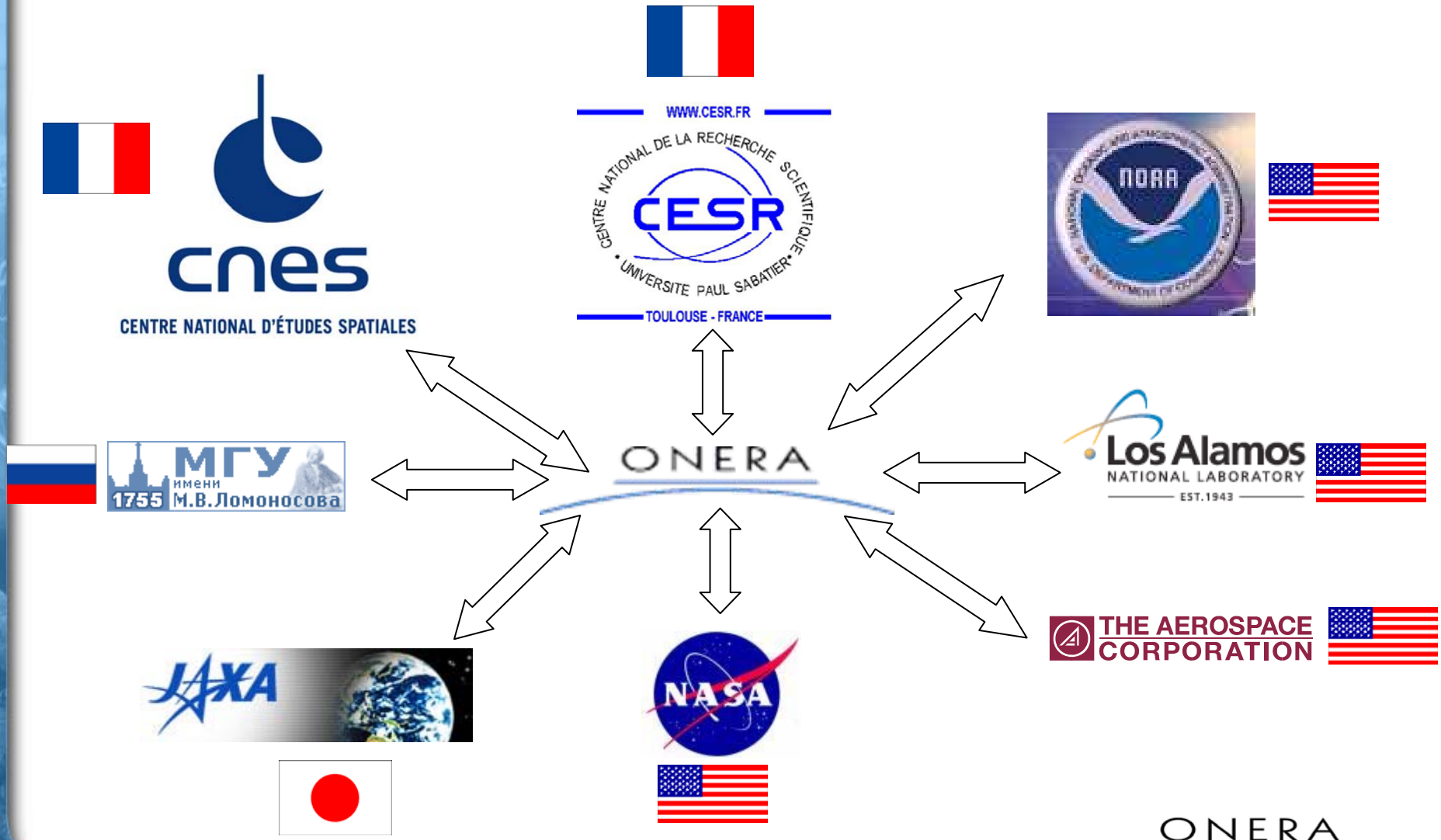
Data base - Data sources



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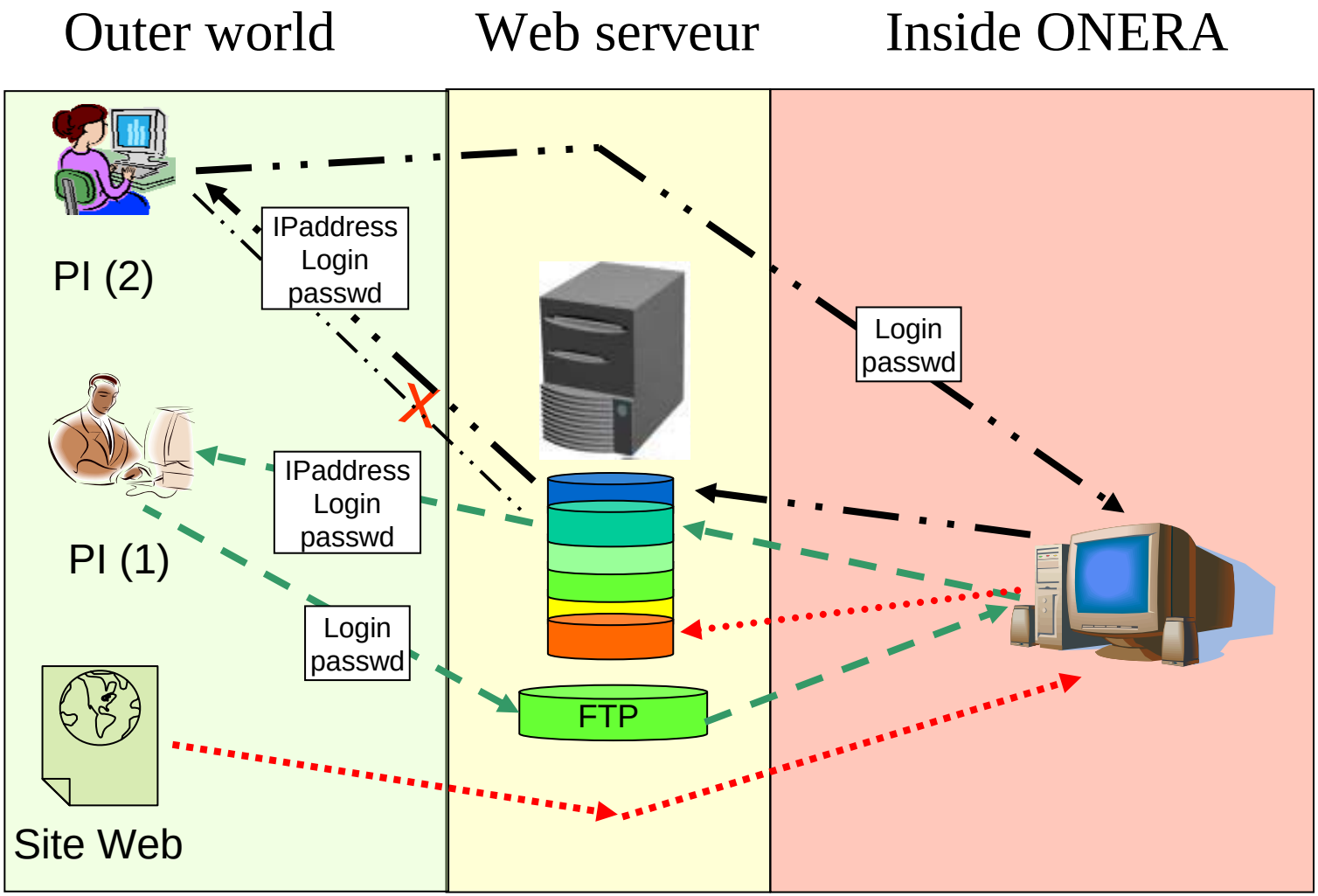
Data base - Data policy



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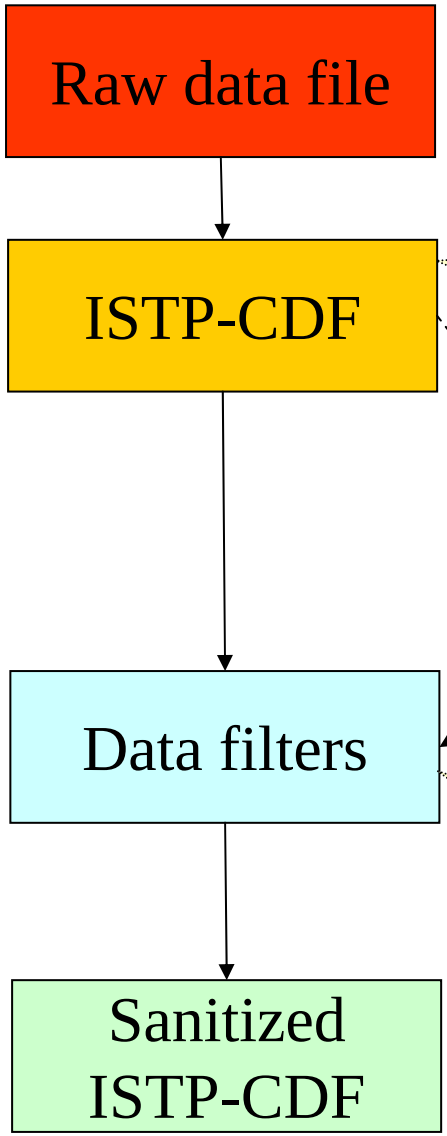
Data base - Data processing



ISTP/CDF:
File header (mission, PI, comments,…)
Epoch
x,y,z GEO
Position_Quality (quality flag)
B, Beq, L, L*, I, MLT, α, αeq
FEIO, FPDO, … (flux electron integral omni-directional, flux proton differential omni-directional)
FEIO_Quality, … (quality flag set to 10 – default non filtered data)

Analyse Measurements:
Saturation, Contamination
Other problems, Inter-Cal

Modify the Data Quality Flags: FEIO_Quality, …
0 denotes highest quality,
1 denotes problem with time resolution,
2 denotes contamination,
3 denotes saturation,
4 denotes any other problem

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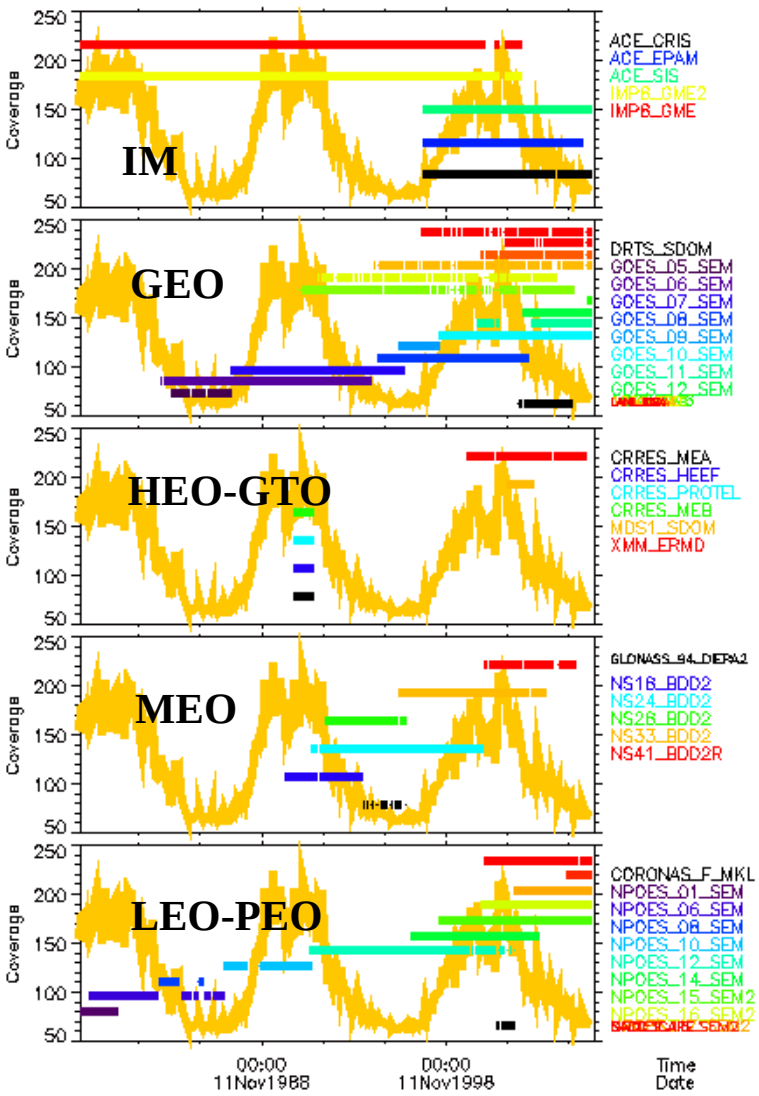
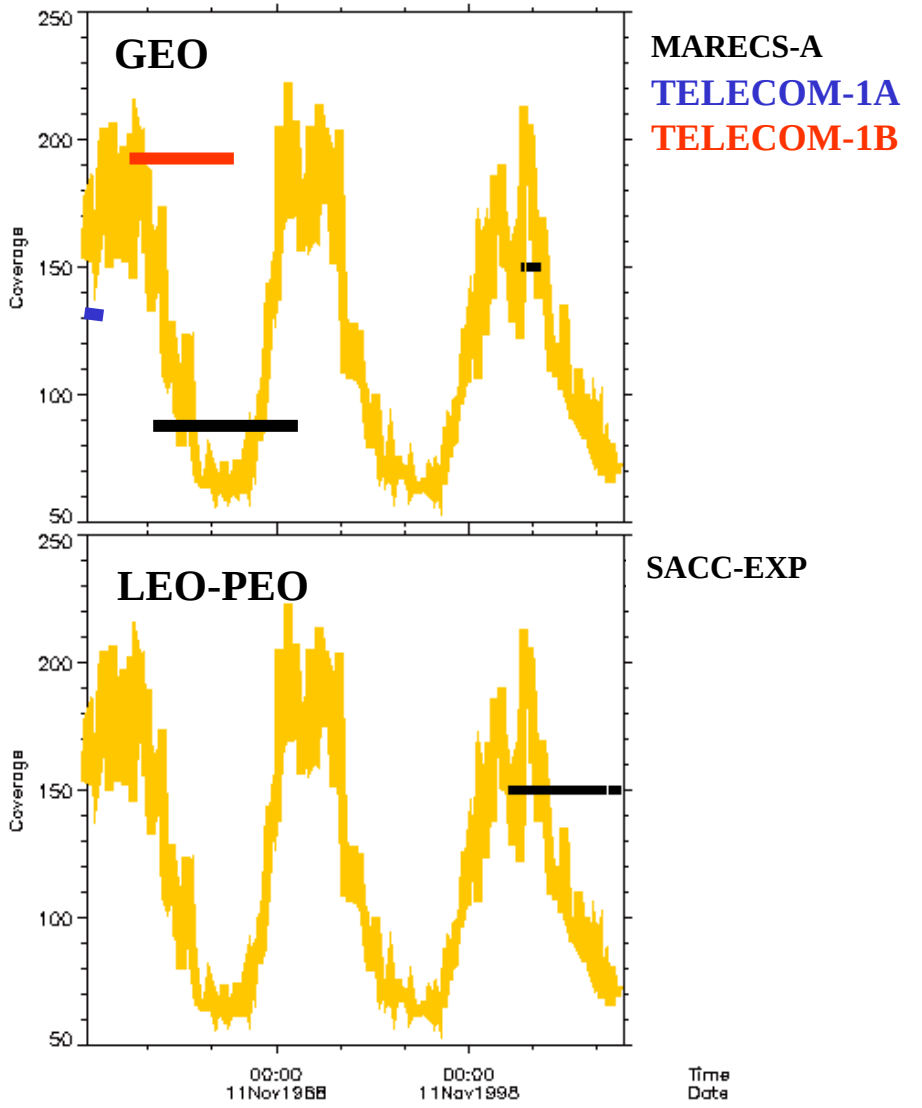
Data base - Data coverage

Environement



Anomalies



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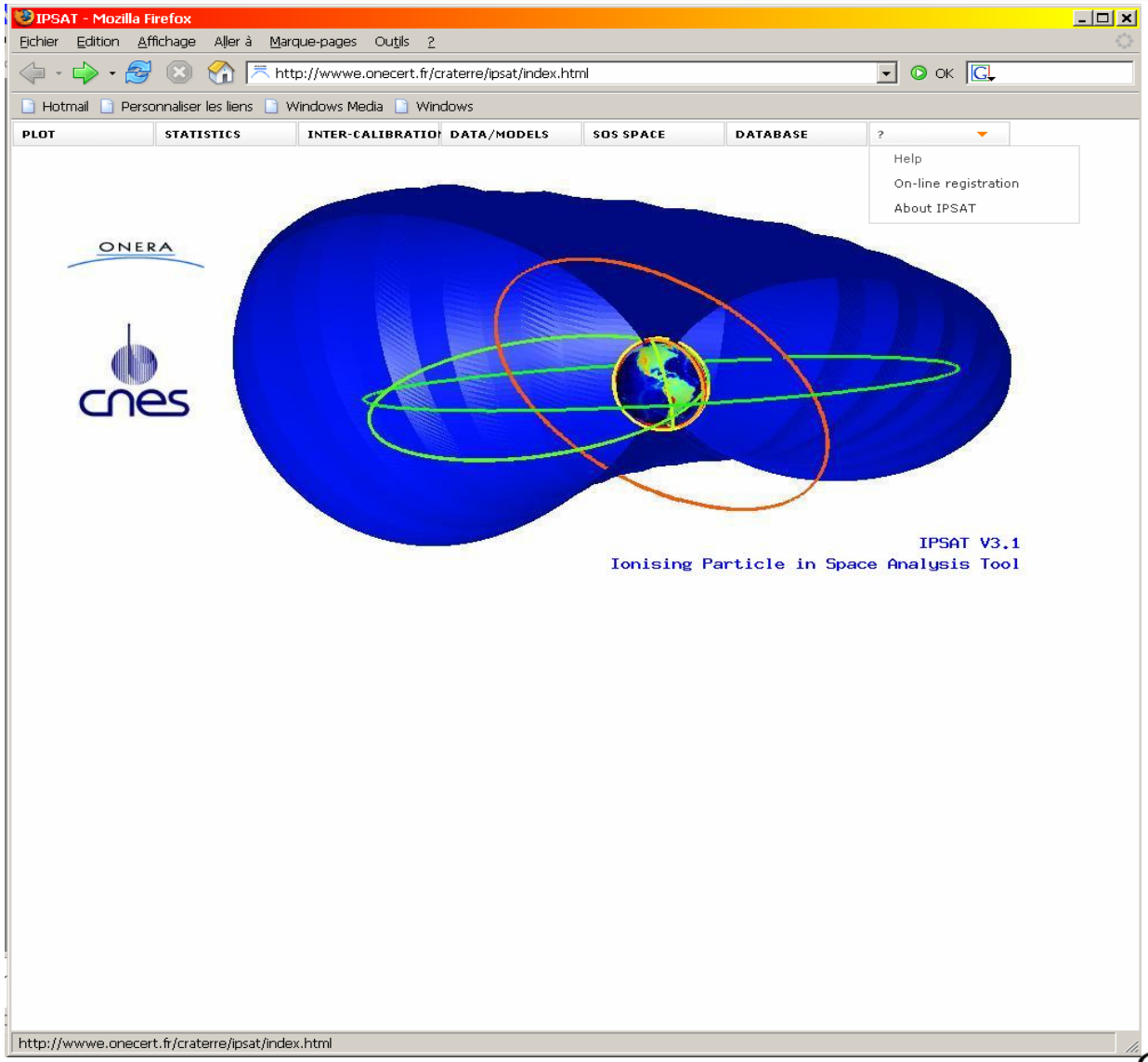
IPSAT – Main Web interface



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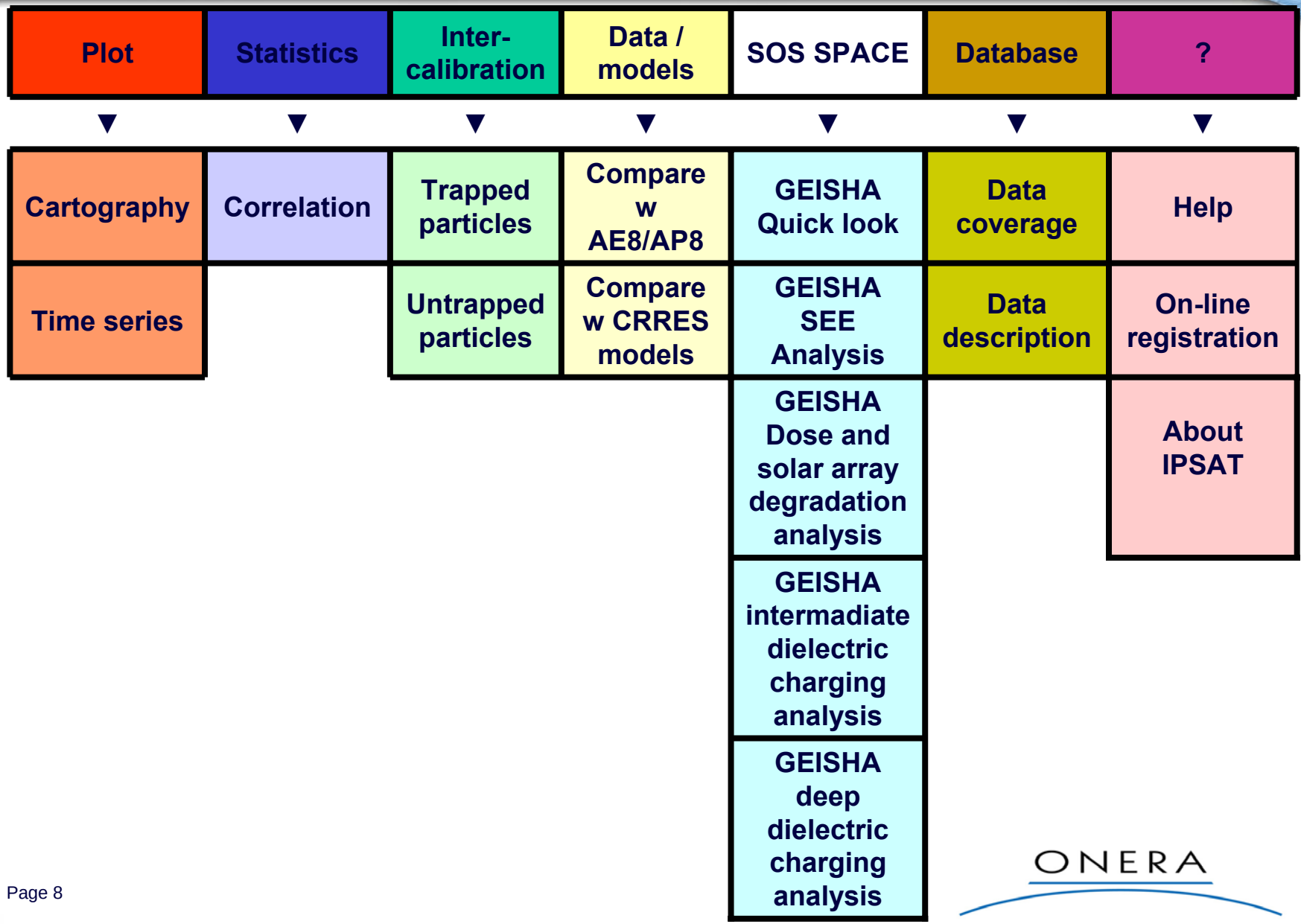
IPSAT – Main Web interface



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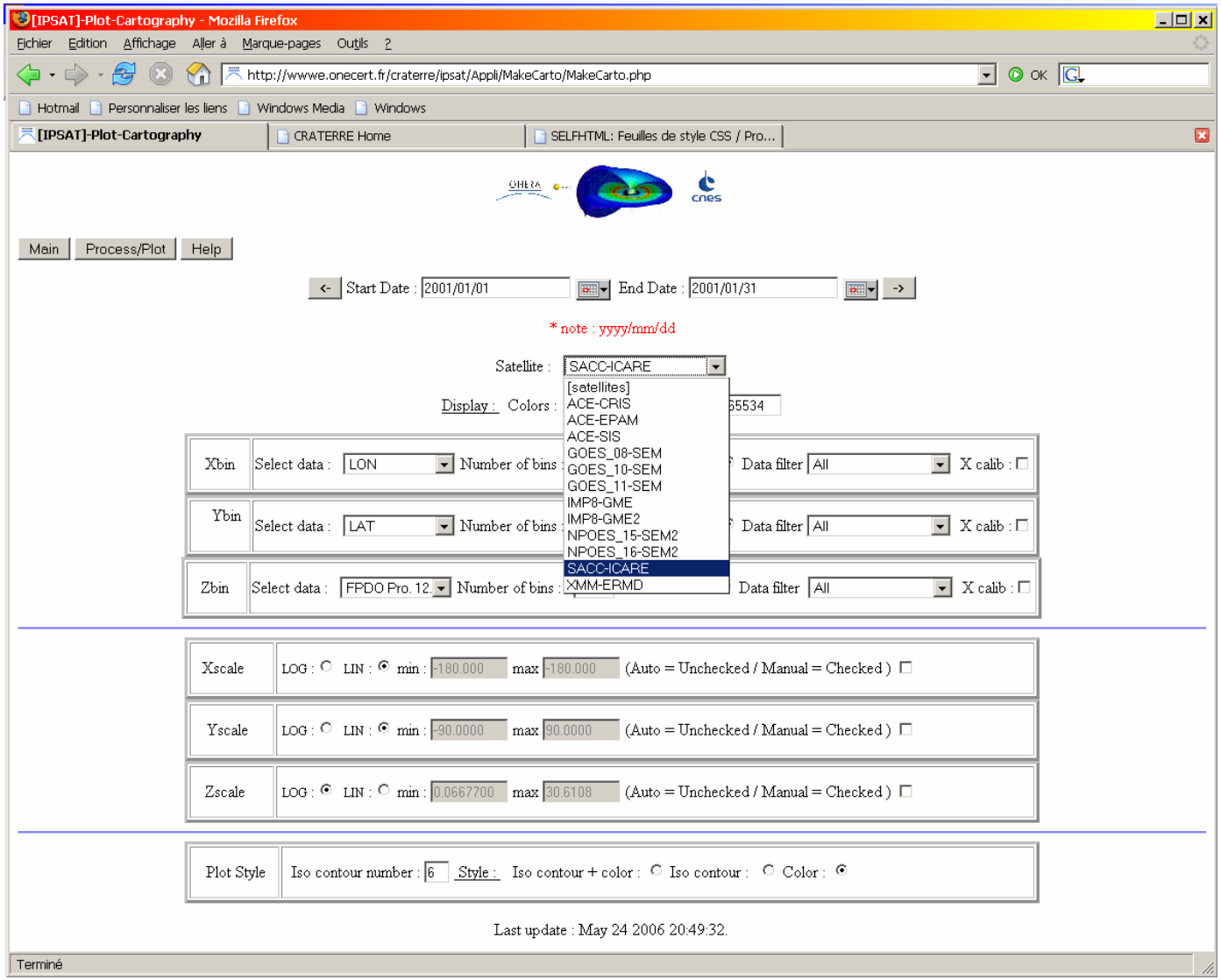
IPSAT – Cartography module



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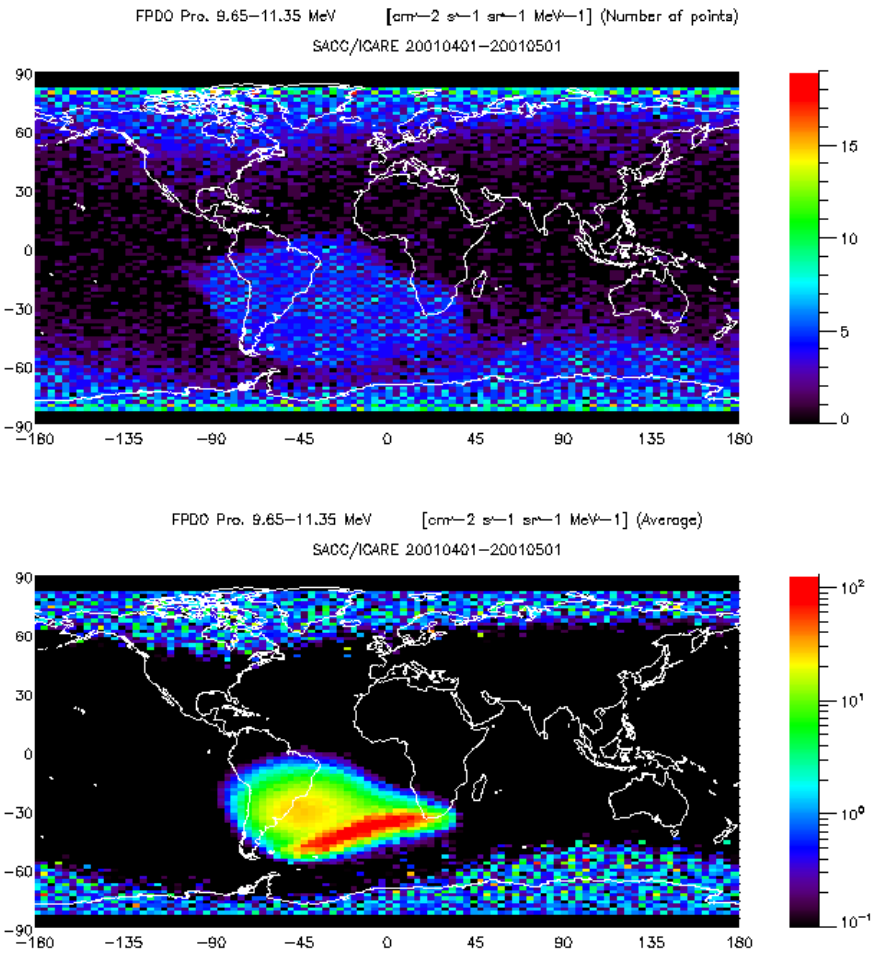
IPSAT – Cartography module



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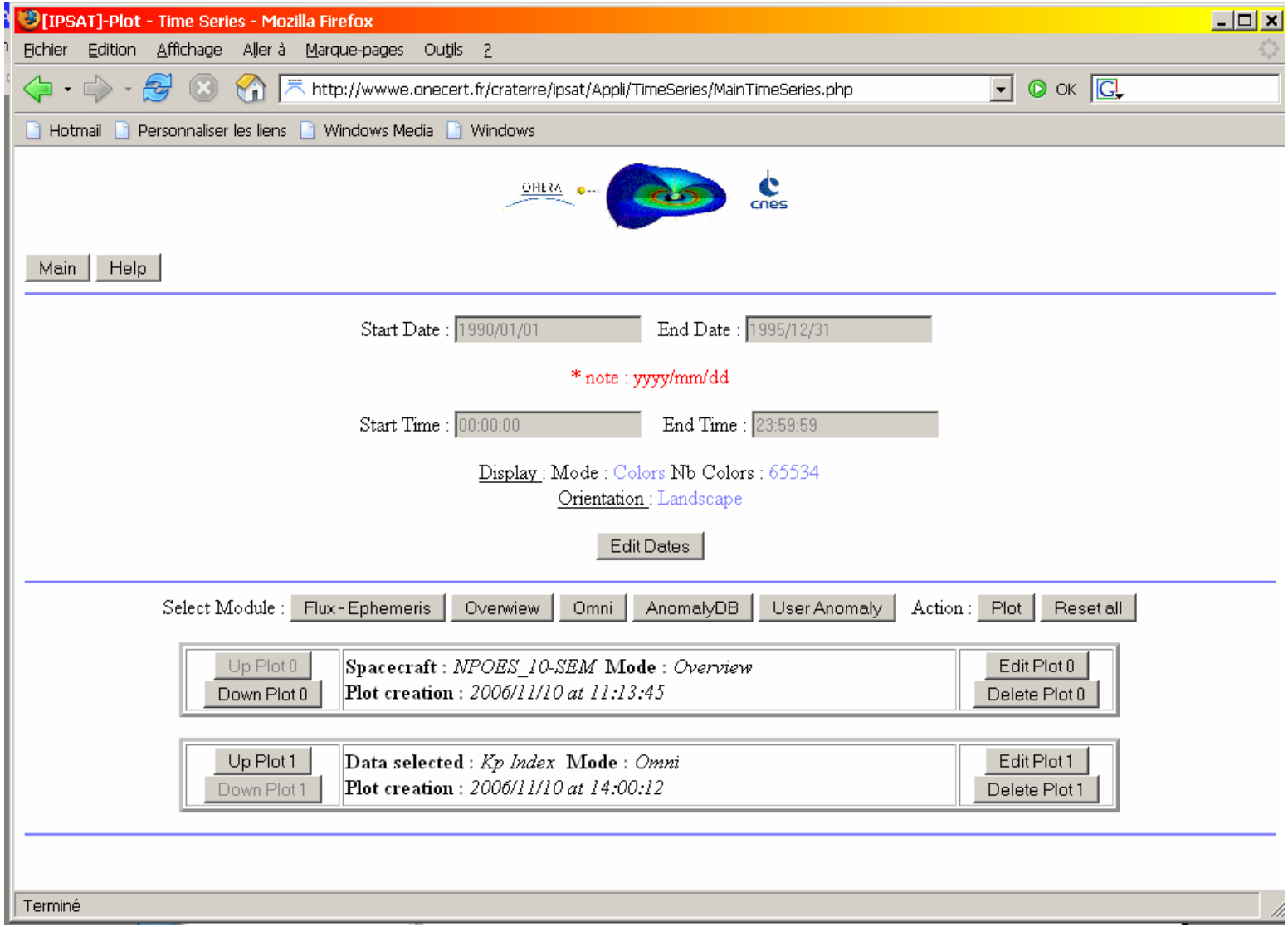
IPSAT – Time series module



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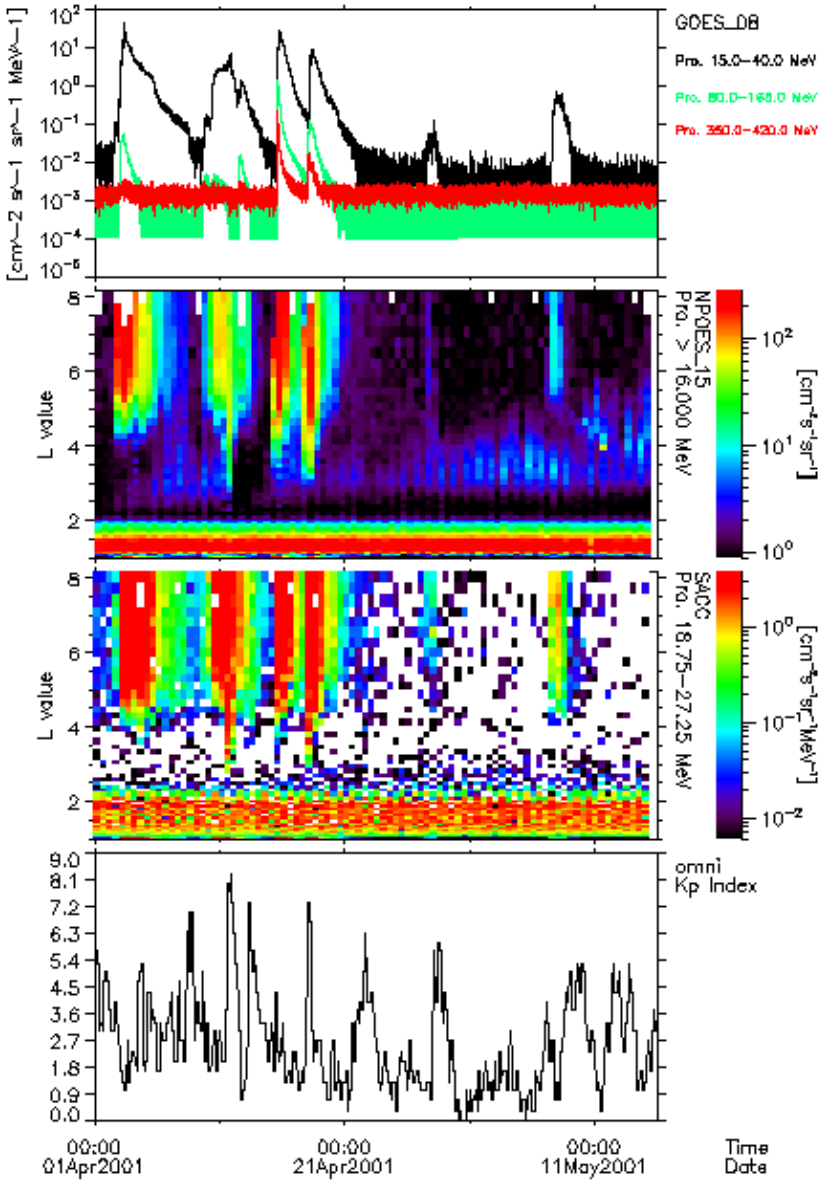
IPSAT – Time series module



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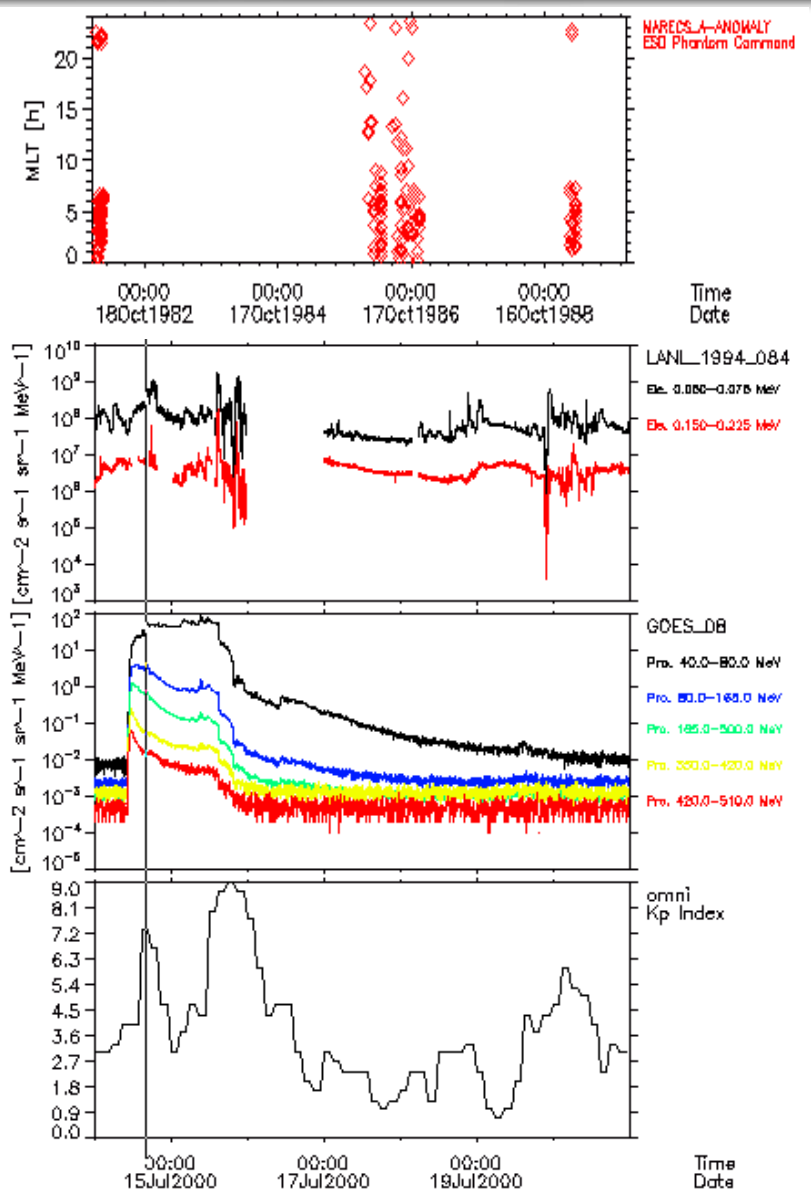
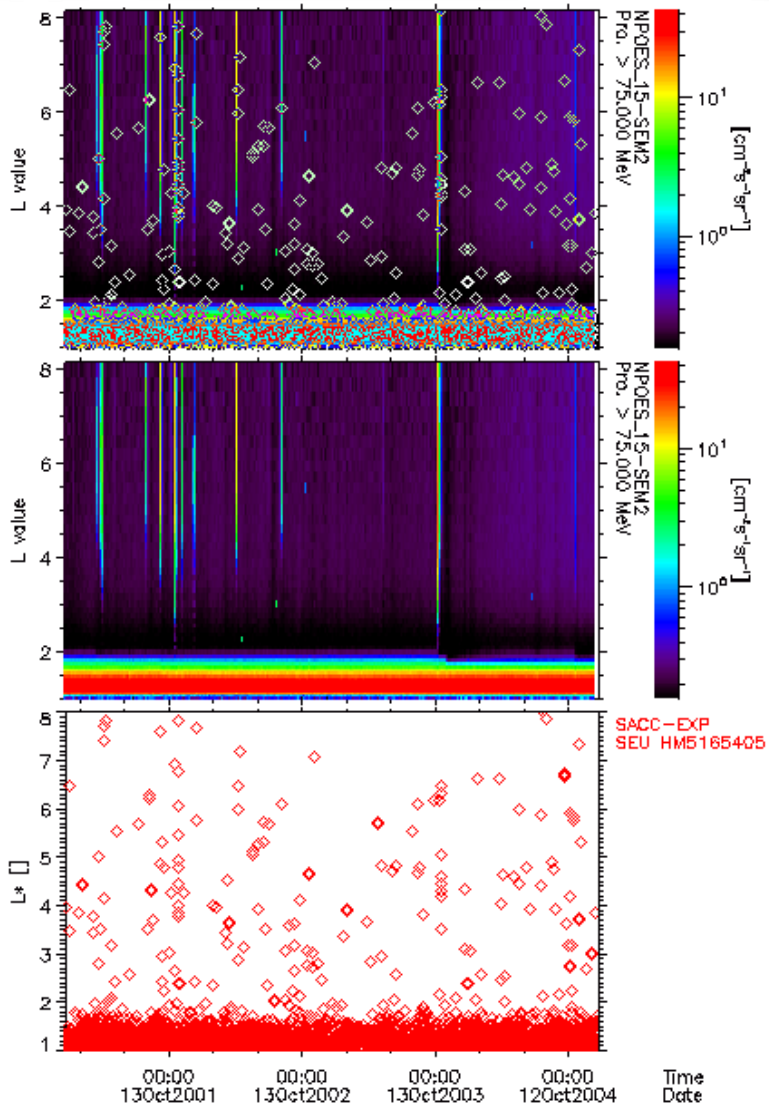
IPSAT – Time series module





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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://wwwe.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.