

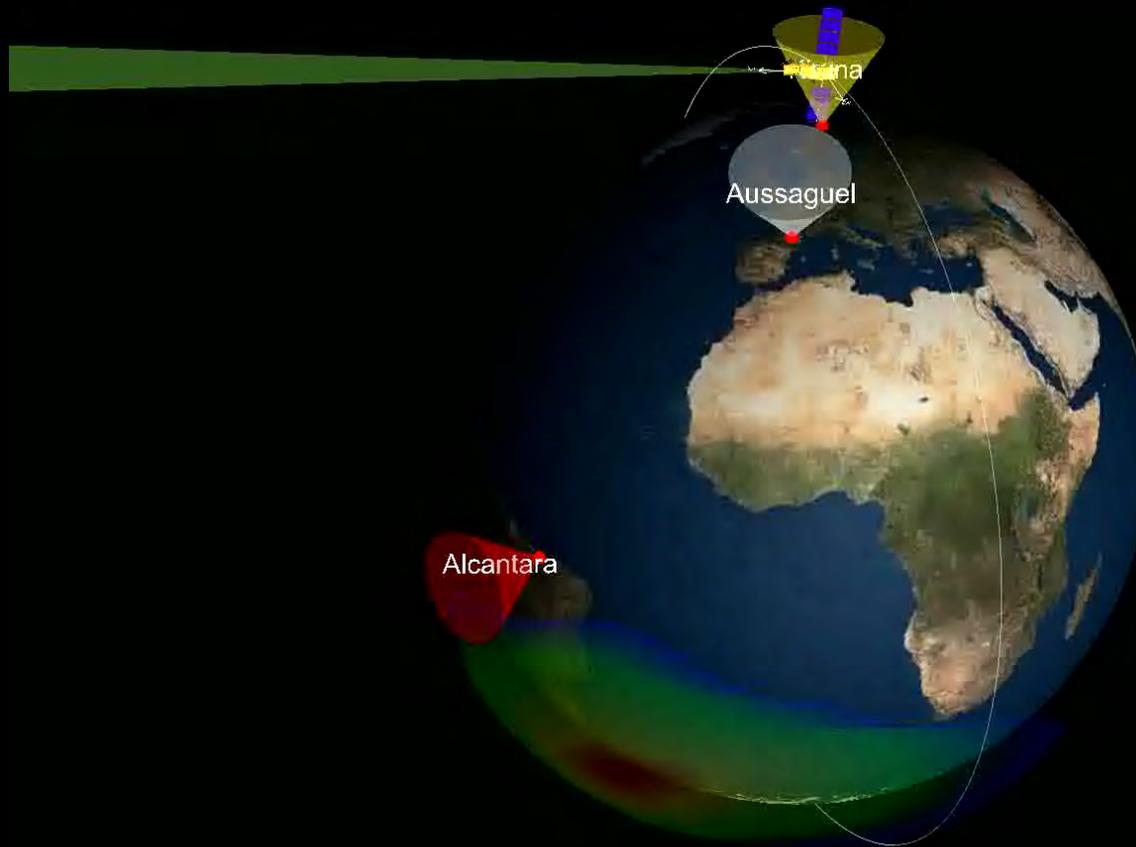
A journey in the exploitation of the CoRoT system

- Corot Mission
- Satellite & Instrument
- System and data flow
- Exploitation



Corot in orbit

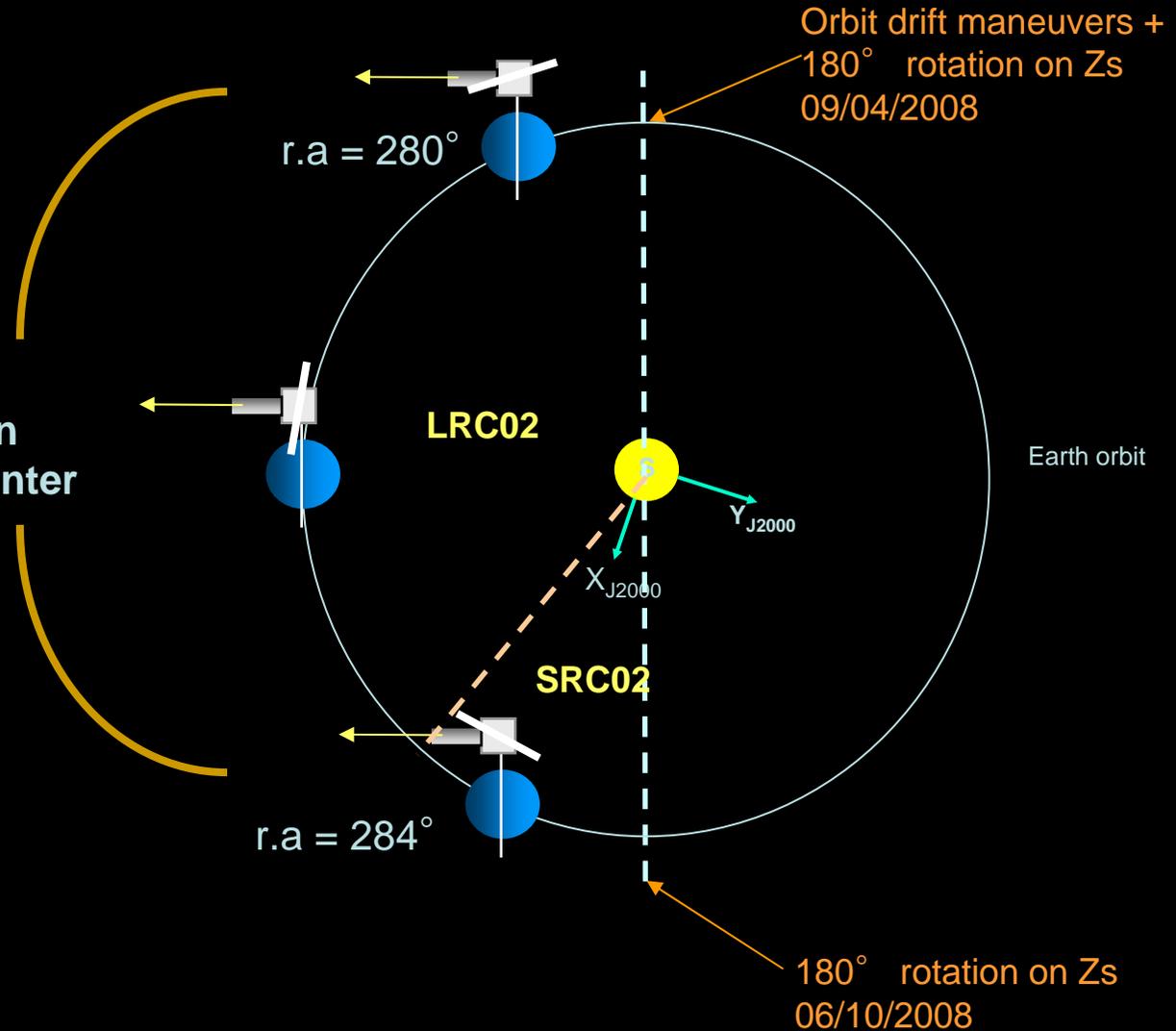
Time: 2008-10-08T10:17:51
Frame = GSE
Center = Earth



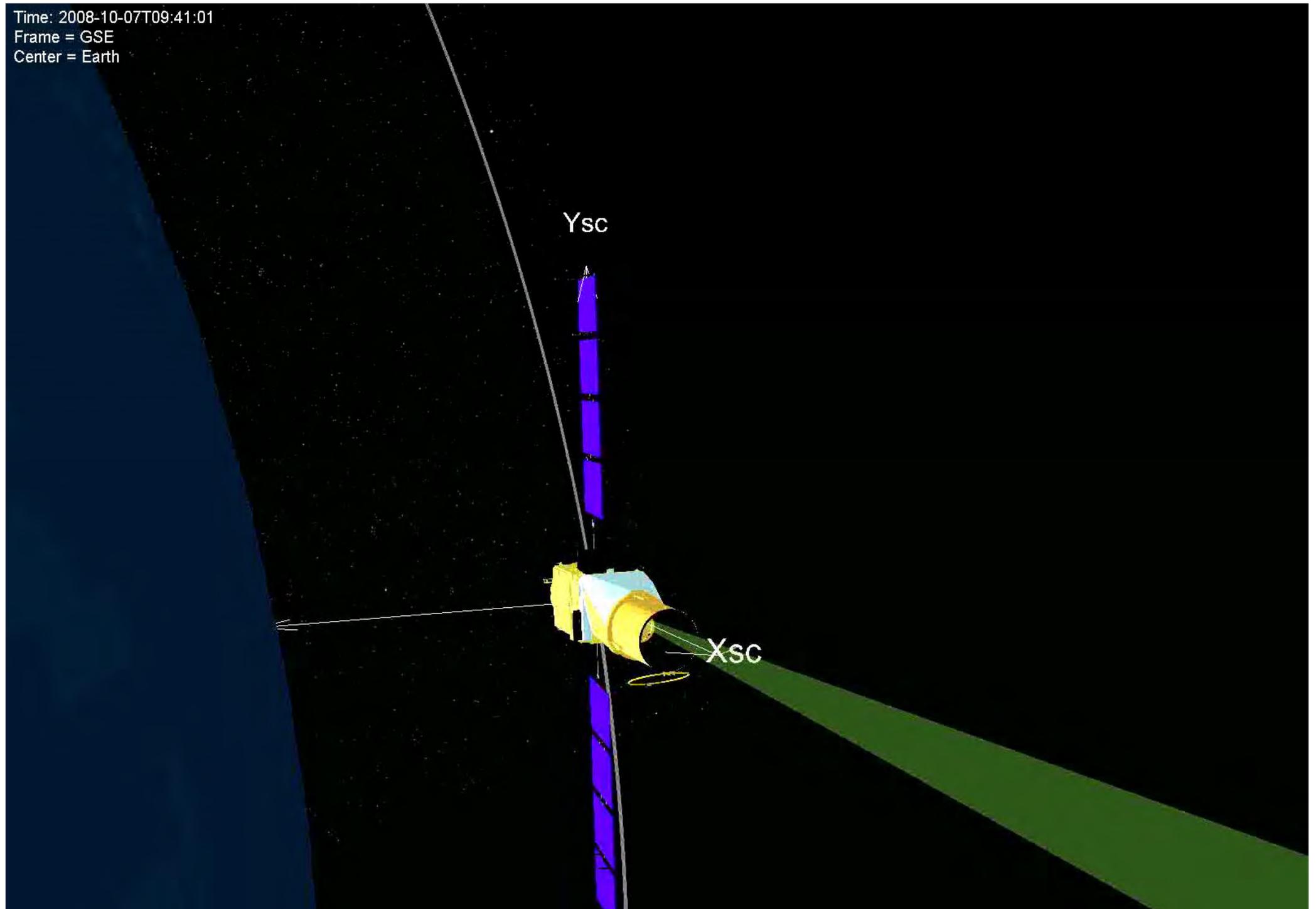
GFI informatique - CNES

Mission scenario: April 08 - October 08

- Fixed and accurate Pointing
- Continuous long Observation
- Summer pointing : galaxy center



Time: 2008-10-07T09:41:01
Frame = GSE
Center = Earth



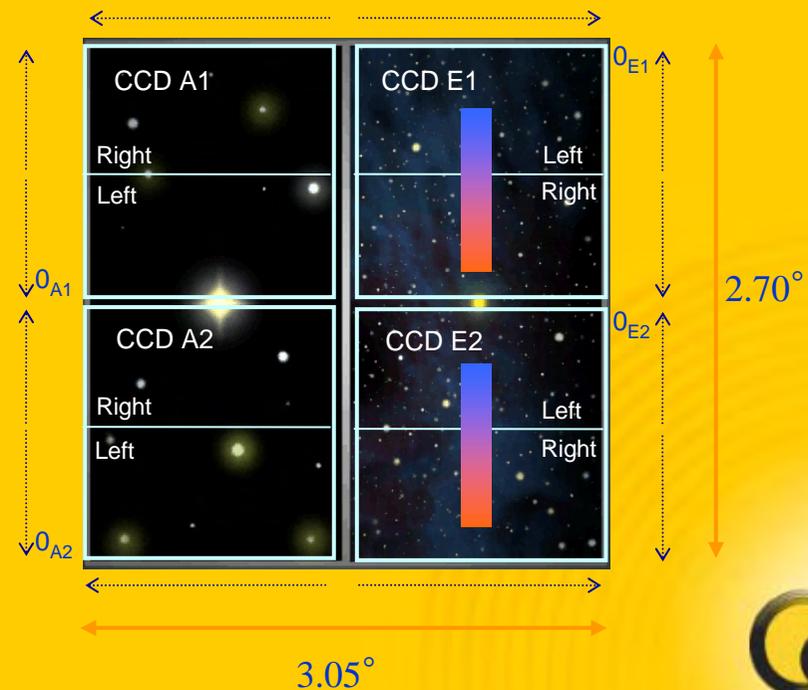
Corot Satellite & instrument

- **Small satellite from PROTEUS Family**

- ◆ **Mass : 630 kg at launch**
- ◆ **Power : 530 W**
- ◆ **Pointing accuracy : 0.5 Arcsec**
- ◆ **Telemetry : S band, 1.5 Gbits/day**
- ◆ **Data storage : 2 Gbits Payload**



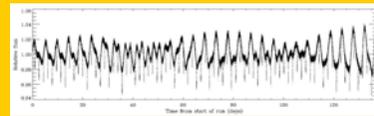
December 27, 2006



Corot System & Data Flow



Satellite



N2 Products



Scientific Community

Scientific observation plan



Control stations

Telemetry

Platform & Payload TC



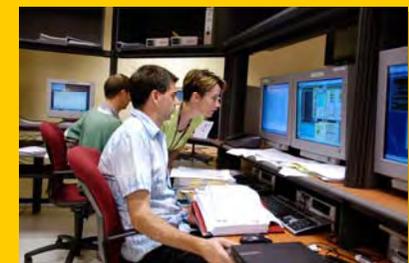
Mission station



Lab Components

NO Products

Programming requests



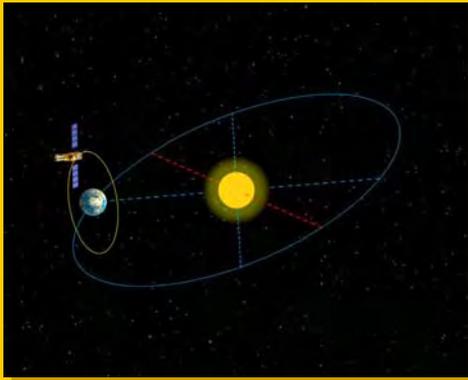
Payload telecommands

Telemetry + orbit data

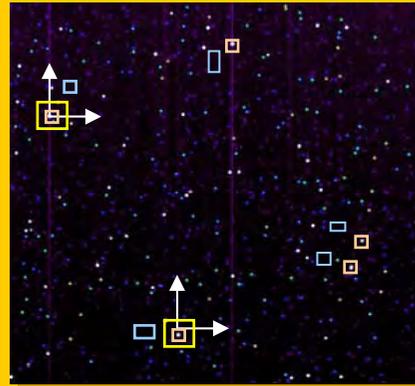


- Corot Mission
- Satellite & Instrument
- System and data flow
- **Exploitation**





Satellite Rough Pointing



Ecartometry :
 $(\varphi, \theta, \psi, \text{validity})_{1,2}$



Fine Pointing Mode

Windowing and Photometric masks programming :

- 1) Seismology channels
- 2) Exoplanet channels

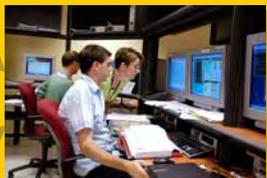




KRN



AUS



PLTM1 : 990 Mbits / day
HKTM : 240 Mbits / day
4-6 passes per day



PLTM2 :
532 Mbits/day
3 passes per day for PLTM2

PLTM1
HKTM
Orbito,
...

PLTM2

Automatic
ACTIVATION

INSTRUMENT Monitoring



1 time / day
Weekly report
Monthly report

DECOM TM
PRODUCTION NO



LOG
ERROR

NO Control
1 time / day
Weekly report
Run report

BDP

Distribution
1 time / day
Weekly report
Run report

NO_Fits

1 time / week

N1 Alarm

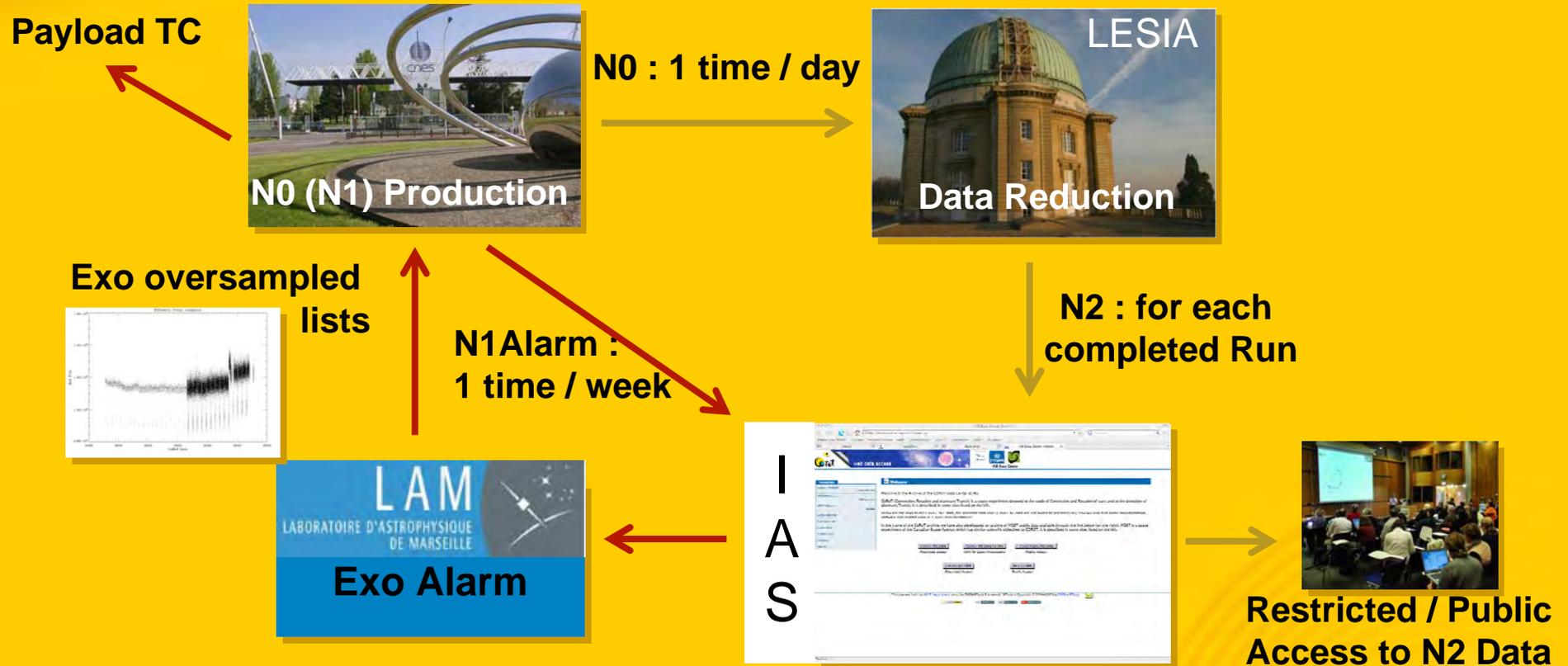


Labs

**170.000 NO_Fits files (3 Go) delivered
each day during observation !!**



Routine Data Flow (2/2)

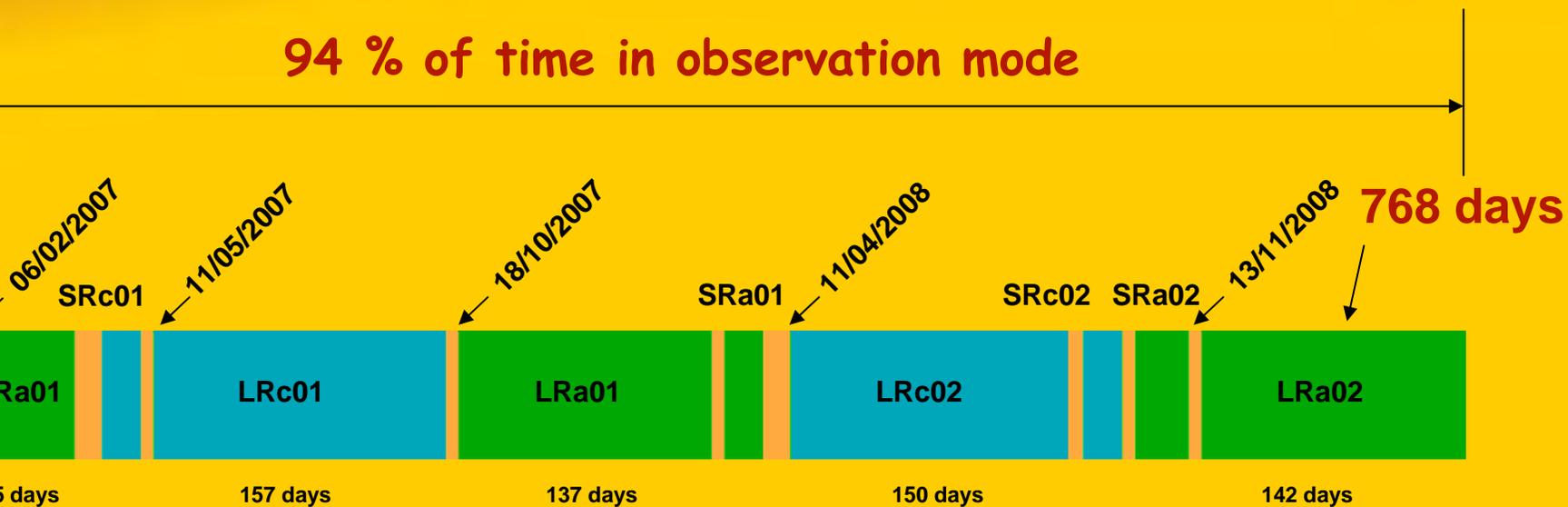


<http://idoc-corot.ias.u-psud.fr/index.jsp>



Availability of the system

94 % of time in observation mode



Duty Cycle > 90%

Seismology program : 90 Stars observed

Exoplanet program : 98500 stars observed

Operations

Instrument setting Operations

Observation in the Galaxy Center direction



