



CENTRE NATIONAL D'ÉTUDES SPATIALES

Update of the French activities relevant to Space Weather

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Scientific activities

■ Monitoring the activity of the far side (SOHO/SWAN)

SWAN/SOHO MOVIE

PERIOD : JUNE 1996 TO JUNE 1997

110 FULL-SKY PICTURES

—> COMET HALE BOPP'S SHADOW

—> SOLAR SPOT REFLECTED ON SKY

FROM BACK SIDE OF THE SUN

PROCESSED AT : SERVICE D'AERONOMIE/CNRS BY : E.LAMASSOURE

WORK SUPPORTED BY CNES

Space and ground projects

- **French contribution to STEREO: SECCHI, SWAVES, SW Beacon**
- **MEDOC New Generation**
- **CDPP Plasma Physics Data Center**
- **PICARD**

PICARD

Measurements

- Diameter, limb shape and asphericity in the continuum
- TSI (x2)
- 5 spectral channels (215, 393, 535, 607, 782 nm)
- Activity (images at 215 nm and Ca II) => space weather
- Solar oscillations

Contribution from Belgium SOVAP, Scientific Mission Center
and Switzerland PREMOD

Launch planned for march 2009

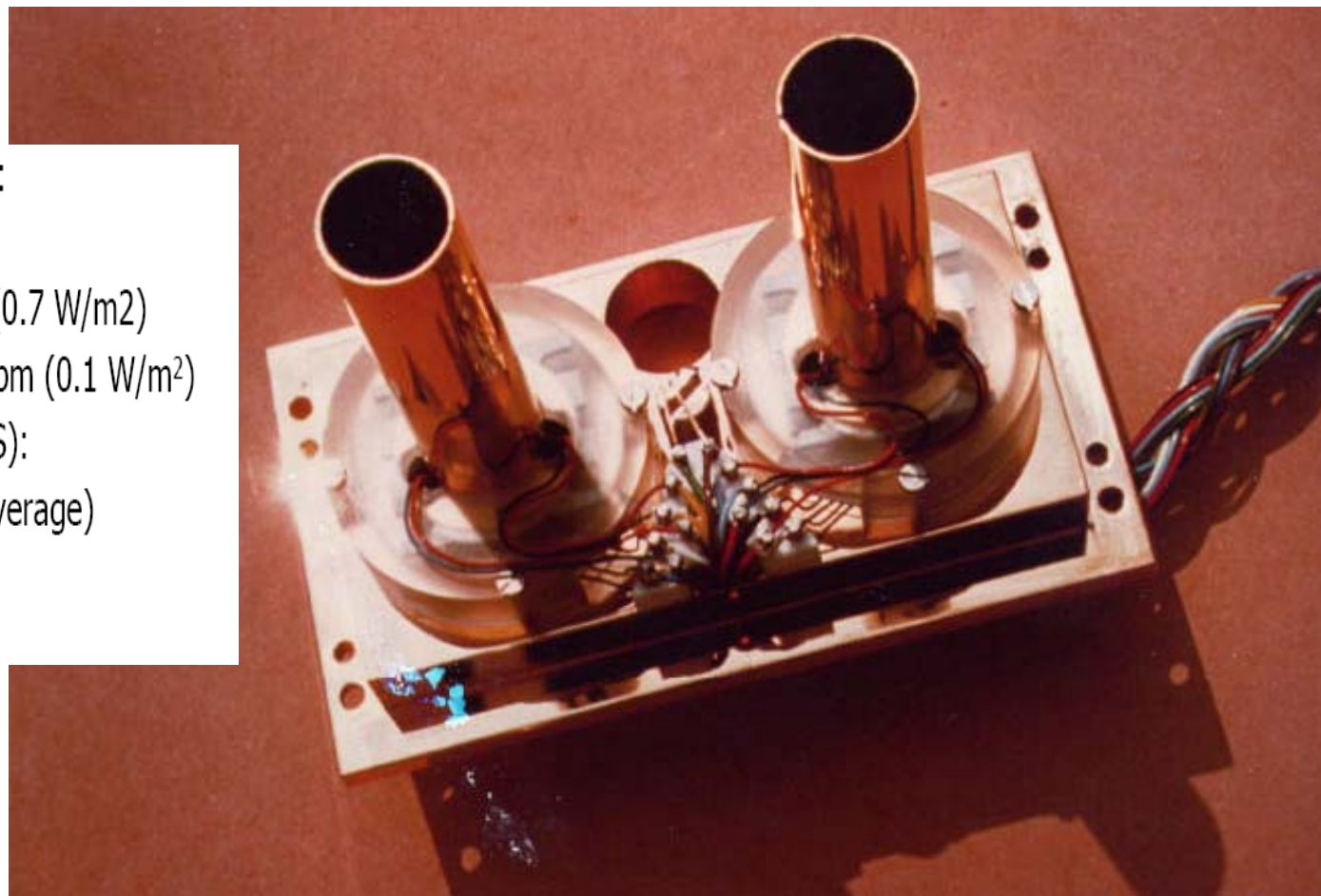
SOVAP (IRM)

SOVAP radiometer measurements:

- Sampling period = 3 minutes
- Absolute accuracy of 500 ppm (0.7 W/m^2)
- Long term repeatability of 70 ppm (0.1 W/m^2)

Bolometric Oscillation Sensor (BOS):

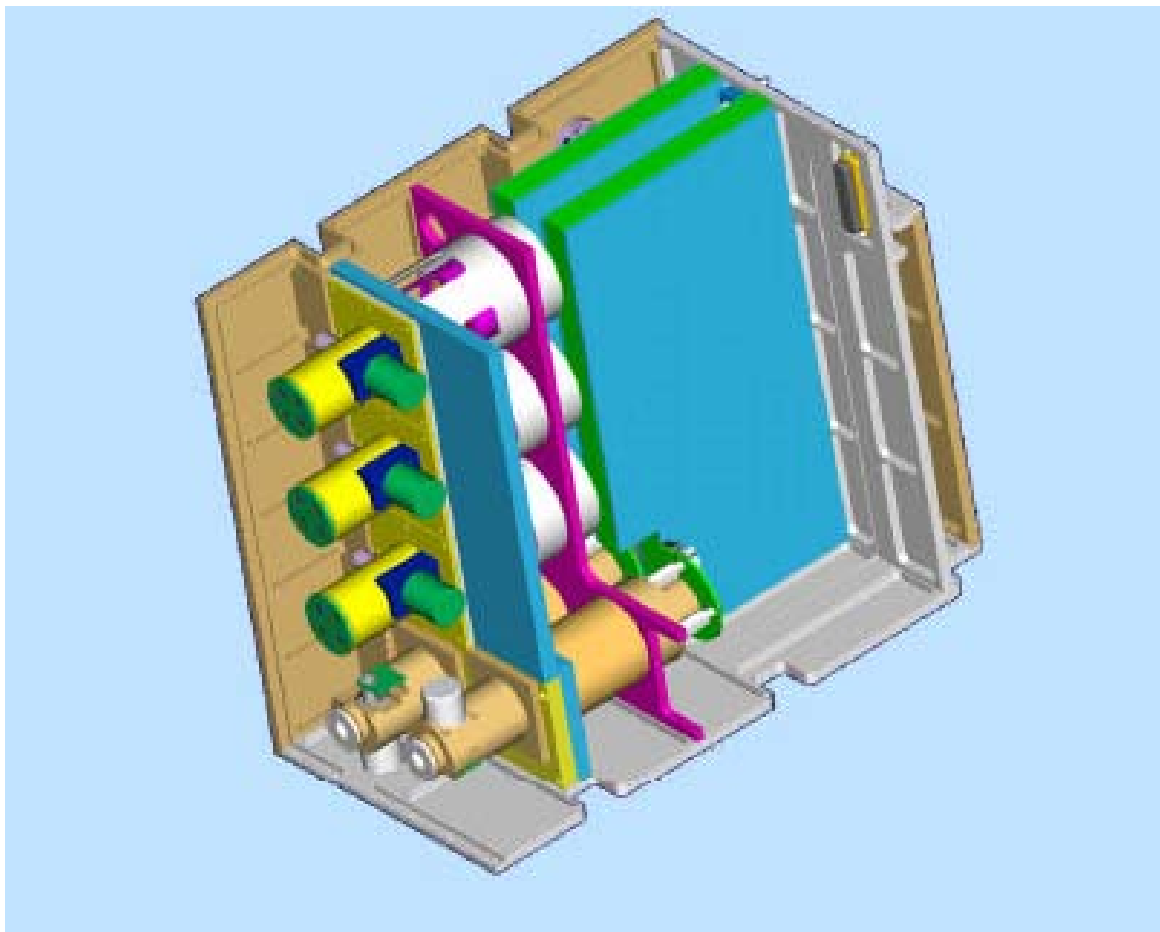
- Sampling period = 10 s (true average)
- Noise level = 10 ppm



PREMOS 2 (PMOD)

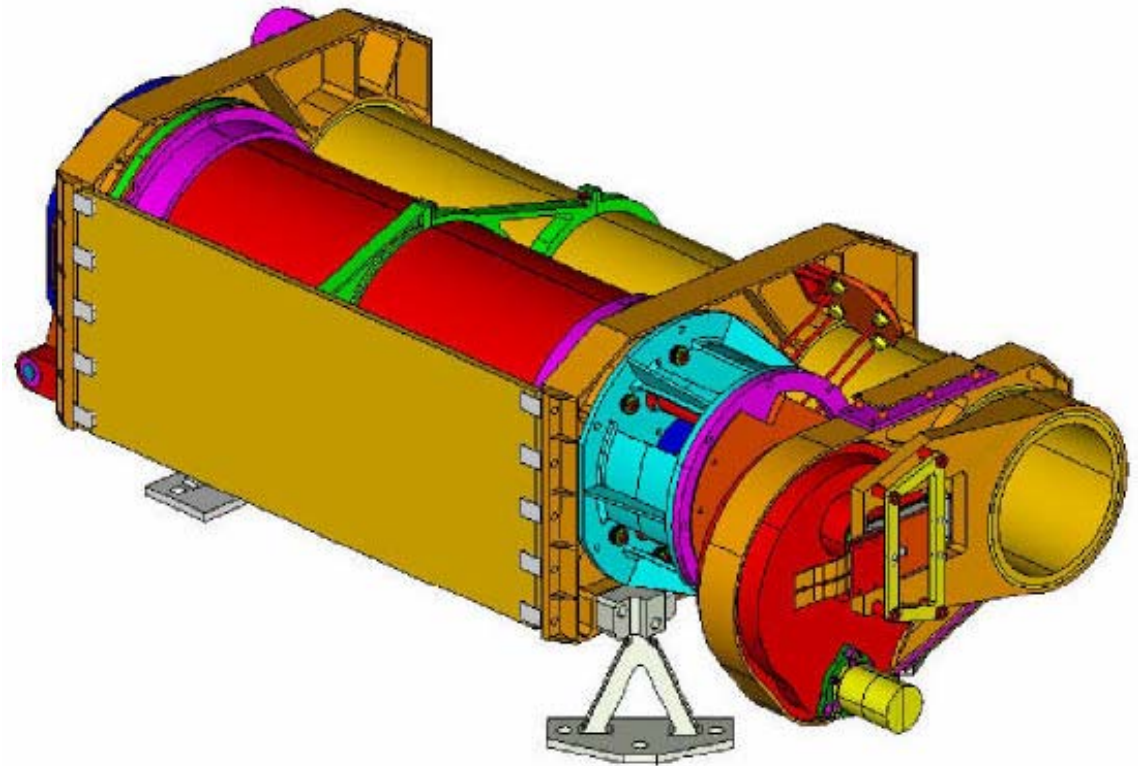
- 2 absolute radiometers
- 3 filter radiometers

**Spectral solar irradiance at
215, 268, 535 and 782 nm
Total Irradiance with 2 Radiometers
PMO6-V (type „SOHO/VIRGO“)**

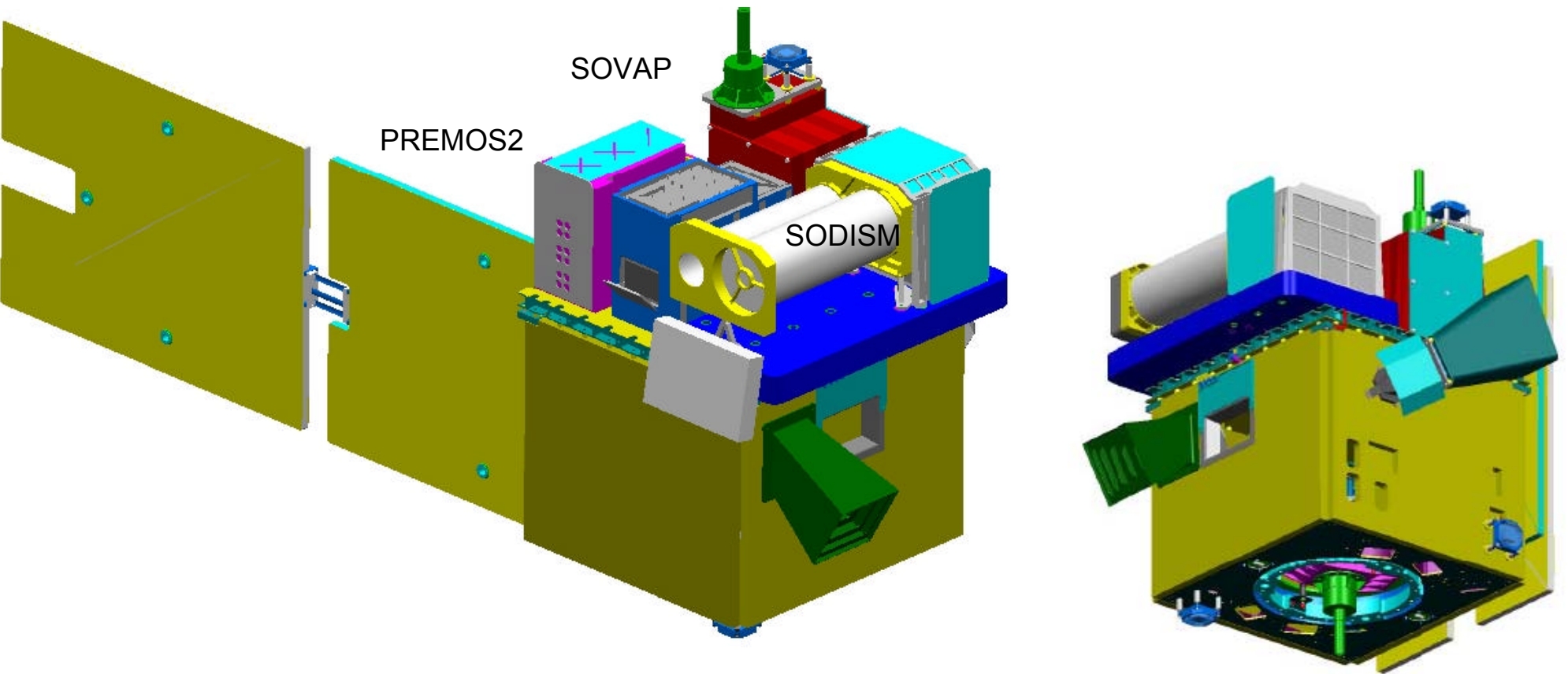


SODISM (SA/CNRS)

- Images of the Sun by a 2kx2k CCD
- 5 channels
 - 3 for diameter
 - 2 for activity
- Reference stars images
- Thermal behaviour critical

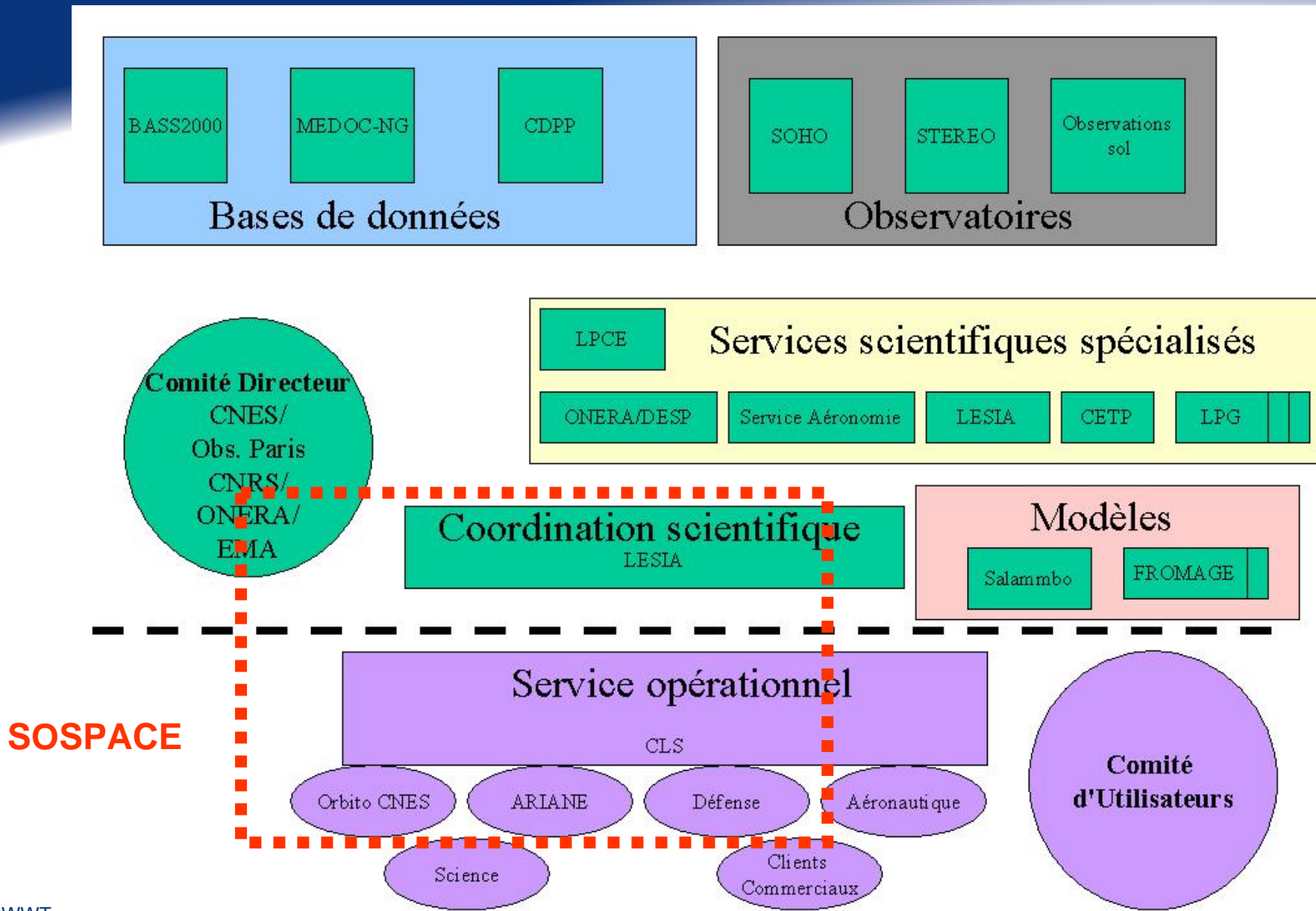


THE PICARD SPACECRAFT



SOSPACE

- **Continuation of the previous pilot projects involving CLS**
 - ◆ solar activity monitoring for orbitography
 - ◆ GEISHA radiation belts at GEO altitude
- **Extension to ionospheric scintillations likely**
- **Started in april 2006**



SOSPACE