

SPOT5: alignment operation of the solar panel

A change of orientation of the SPOT-5's solar array has occurred in January 2008.

An angular bias on the orientation of the array on its rotation axis was added in 3 steps:

- On Jan. 15: an angle of $+25^\circ$ wrt the origin position was applied
- On Jan. 17: a 2nd additional angle of $+10^\circ$ was applied
- On Jan. 22: a 3rd additional angle of $+5^\circ$ was applied

Thus, the current angle is $+40^\circ$ wrt the origin position (Sun pointing).

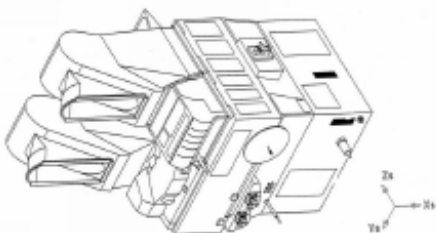
Information about the exact time of the operations is not known.

According to the CNES/POD team, most of the alignment operations occurred during arc number 213 (16-25/01).

Satellite SPOT5

Satellite reference frame

The X-axis is along the satellite's main direction, pointing from the HRG instrument towards the attachment ring. The Y-axis is transverse. The Z-axis is radial pointing outwards the Earth.



Macro model SPOT5 (1)

surfaces	X+	X-	Y+	Y-	Z+	Z-	SA+	SA-
area	7.21	7.21	10.79	10.79	11.79	11.79	24.795	24.795
specular ref.	0.346	0.161	0.475	0.457	0.370	0.393	0.100	0.240
diffuse ref.	0.261	0.051	0.368	0.366	0.201	0.262	0.150	0.240
absorbed ref.	-0.108	0.394	0.047	0.071	0.341	0.240	0.750	0.520

Angle between solar array and Xz axis

5 degrees

Mass

Mass after positioning 3030.1 Kg

Dori: antenna phase center

Antenna origin in satellite frame

X antenna	-520 mm
Y antenna	-480 mm
Z antenna	-1100 mm

Distance between antenna origin and phase center

401.25 MHz	- 153 mm (satellite Z axis)
2036.25 MHz	- 315 mm (satellite Z axis)

Center of gravity coordinates at begin of life

Xsat (mm)	-1984.03
Ysat (mm)	4.24
Zsat (mm)	5.42

(1) In order to have a macro-model with physical areas, the sum of the coefficients is not necessarily equal to one.

