

SC Lomonosov has two retroreflector arrays (RAs) (fig. 1). The RA № 1 placed at the rod-block of photodetectors. The RA № 2 placed at the hull of SC.

Orientation of XYZ coordinate system of SC:

X – direction of the satellite motion;

Z – nadir direction;

Y – axis supplement to right-handed coordinate system.

The 3-d location of the SC mass center is time-variable. Some days after lunch the rod-block of photodetectors with RA № 1 will open. Table 1 represent the position of satellite mass center and the centers of the RAs bases (fig. 2) at coordinate system of SC.

Table 1 – The position of the satellite mass center and the centers of «Pyramids» bases at the SC coordinate system

The position of SC mass center before opening of rod-block		
X, mm	Y, mm	Z, mm
2027,0	5,3	-4,7
The position of SC mass center after opening of rod-block		
X, mm	Y, mm	Z, mm
1980,5	5,1	-47,1
The position of base center RA № 1 after opening of rod-block		
X, mm	Y, mm	Z, mm
1106,0	106,0	-2428,0
The position of base center RA № 2		
X, mm	Y, mm	Z, mm
2234,0	200,0	-581,0

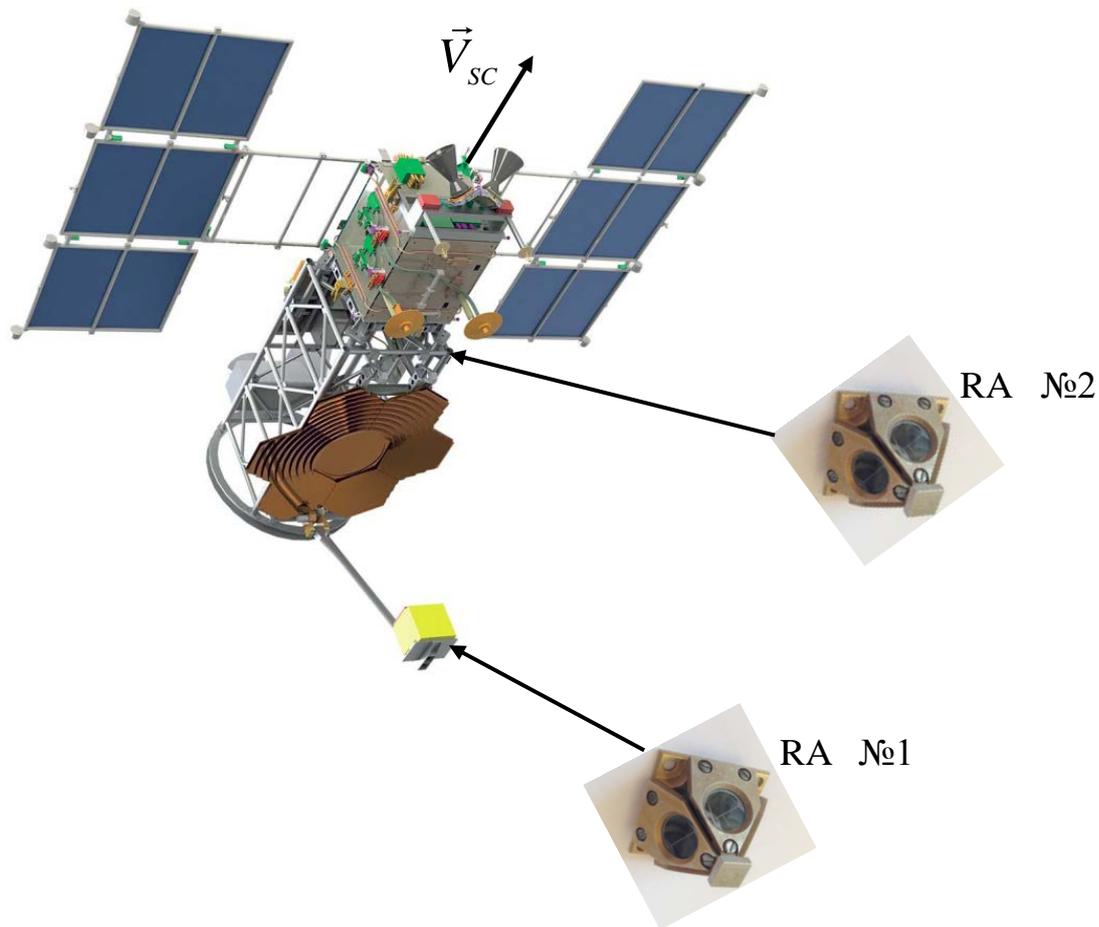


Fig. 1 Lomonosov spacecraft

Center of coordinate system XYZ of RA located at the reference point (fig.2). The angles α , β , γ count from the X , Y , Z axis respectively. The dihedral angles offset of each cubes corners does not exceed 0,4 arc sec.

Table 2

Center of the front face of each cube corner with respect to RA reference point			
	X , mm	Y , mm	Z , mm
Cube 1	6,495	6,495	6,495
Cube 2	-6,495	6,495	6,495
Cube 3	-6,495	-6,495	6,495
Cube 4	6,495	-6,495	6,495

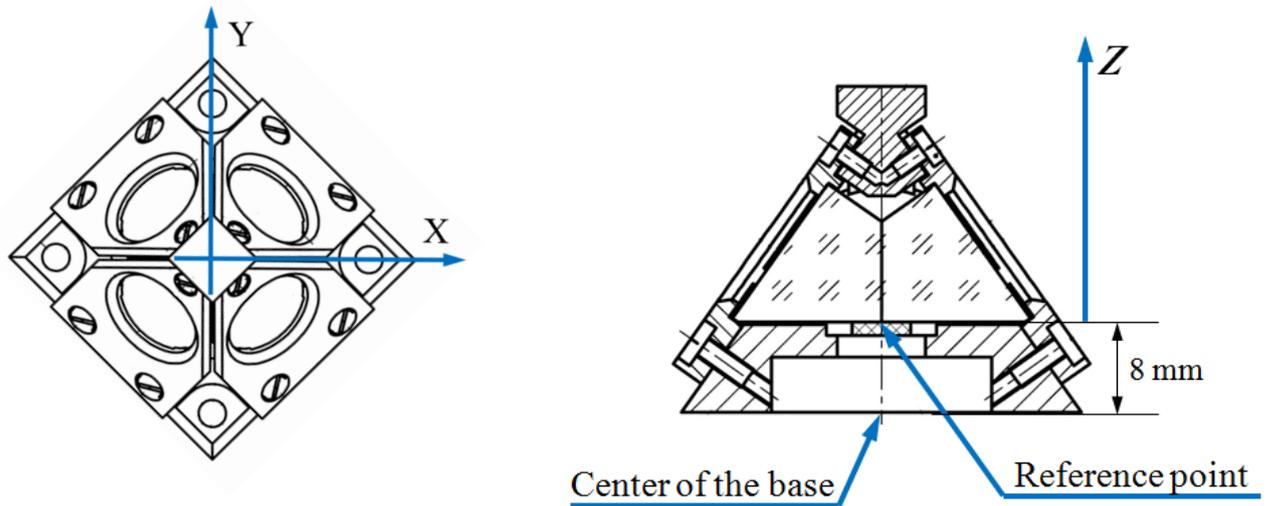


Fig. 2 – RA coordinate system

Refractive index n_λ and group refractive index n_g of cube corner material as a function of wavelength represent at fig. 3.

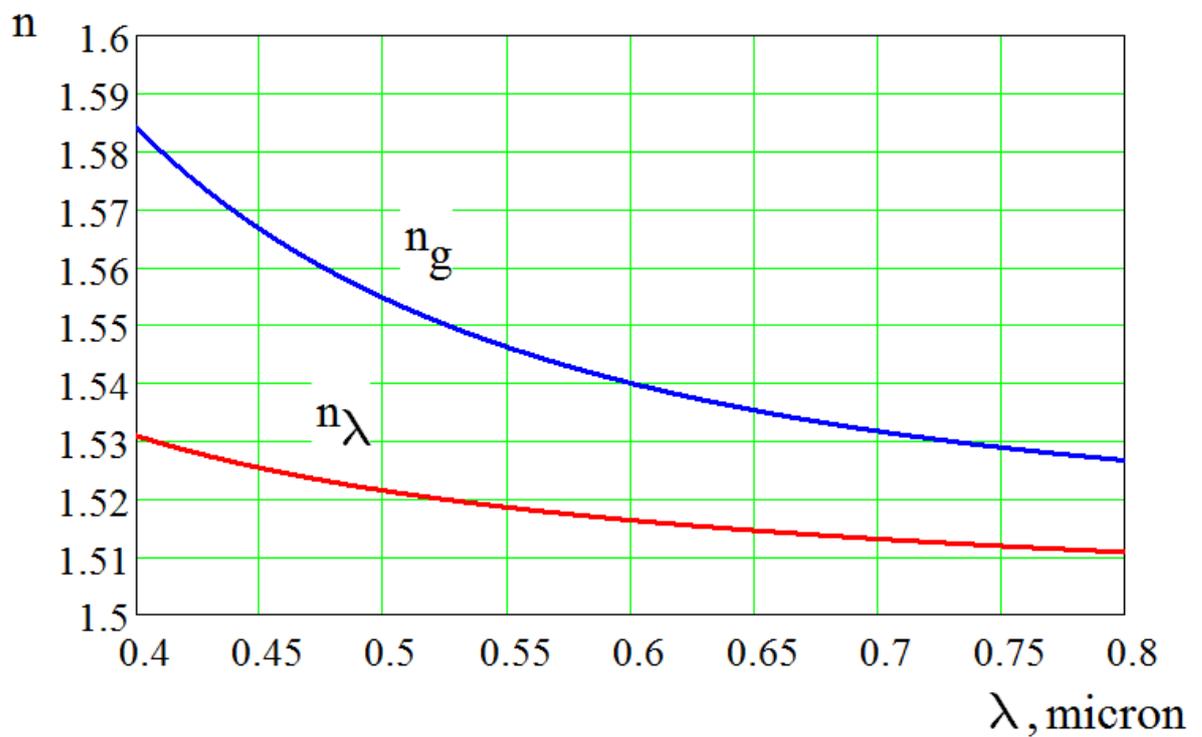


Fig. 3 – Refractive index n_λ and group refractive index n_g of cube corner material as a function of wavelength