

FPC (Focal Plane Camera)

Proposed Korean Contribution of one of Focal Plane Instrument, consisting **two cameras**:

FPC-G Focal Plane Guide Camera, a part of AOCS for high-accuracy attitude control
Pointing Stability 0.036 arcsec (3σ) @ 0.5 Hz, Control Accuracy: 0.02 arcsec (0-P)

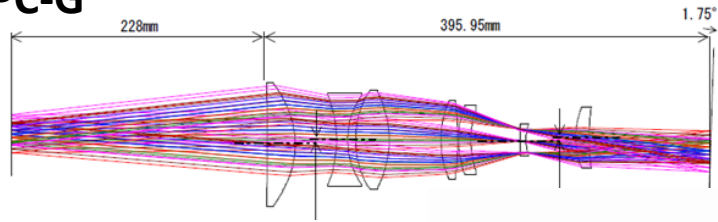
FPC-S Near-IR (0.7 – 5 μm) imaging & spectroscopy for astronomical purposes
Wide-field & high throughput compared with JWST
Wide-band imaging & imaging spectroscopy using linear variable filter (LVF)
Back-up system for FPC-G

KASI (Korea Astronomy & Space Science Institute) will lead the development, assembly & test.

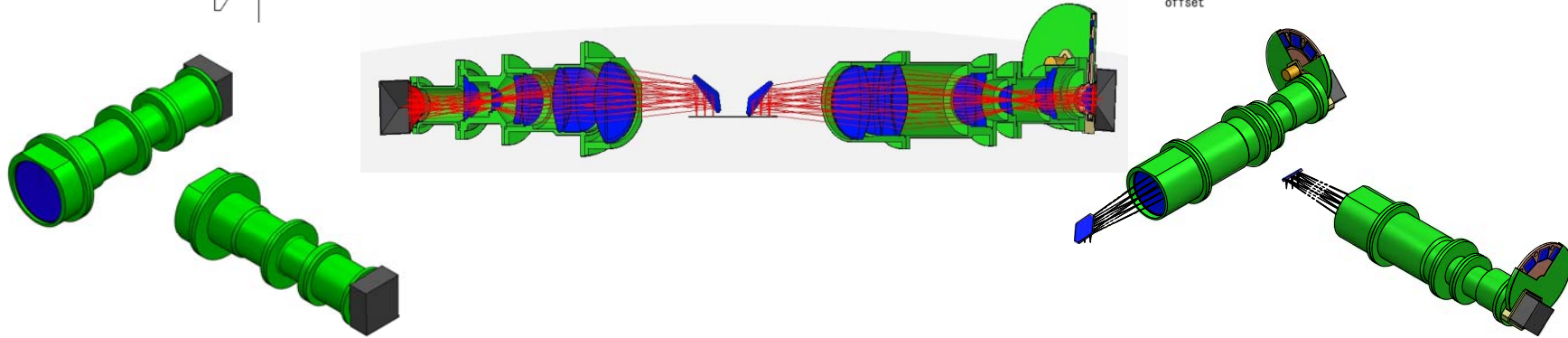
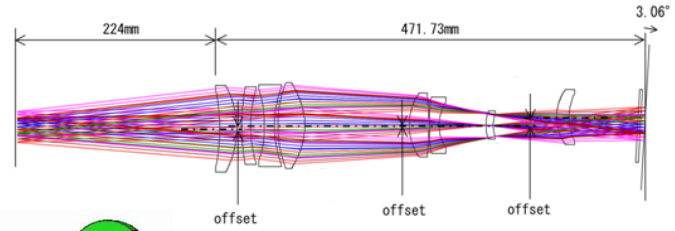
	FPC-G	FPC-S
Optics	Refractive optics with lens	
Detector Array	1K x 1K InSb	
Field-of-View	5 arcmin. x 5 arcmin.	
Pixel Scale	0.3 arcsec.	
Readout Speed	2 sec	100 – 600 sec
Wavelength Range	I band (0.8 μm)	0.7 – 5 μm
Wavelength Resolution	R=5	R=5 (imaging) – 20 (spectroscopy)
Sensitivity	single channel 21.5 (AB) mag, 5σ	5 wide band filters + 3 LVFs 26.3 mag (AB), 100 sec, 3σ , imaging 23.8 mag (AB), 100 sec, 3σ , LVF
Operating Temperature	Structure at 4.5K, Detector at 10K	

Optical & Structural Design of FPC

FPC-G



FPC-S



Spacecraft Resources for FPC-G & FPC-S

Resources	Specification	System Allocation
Cold Mass	5kg (FPC-G) 7Kg (FPC-S)	10 kg with 20% margin
Heat Lift at 4.5K [mW] (observing/standby)	2 / 0.2	2 / 0.2 with 30% margin
Electric Power [W] (observing/standby)	12/12	12/ 12 with TBD margin