

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)

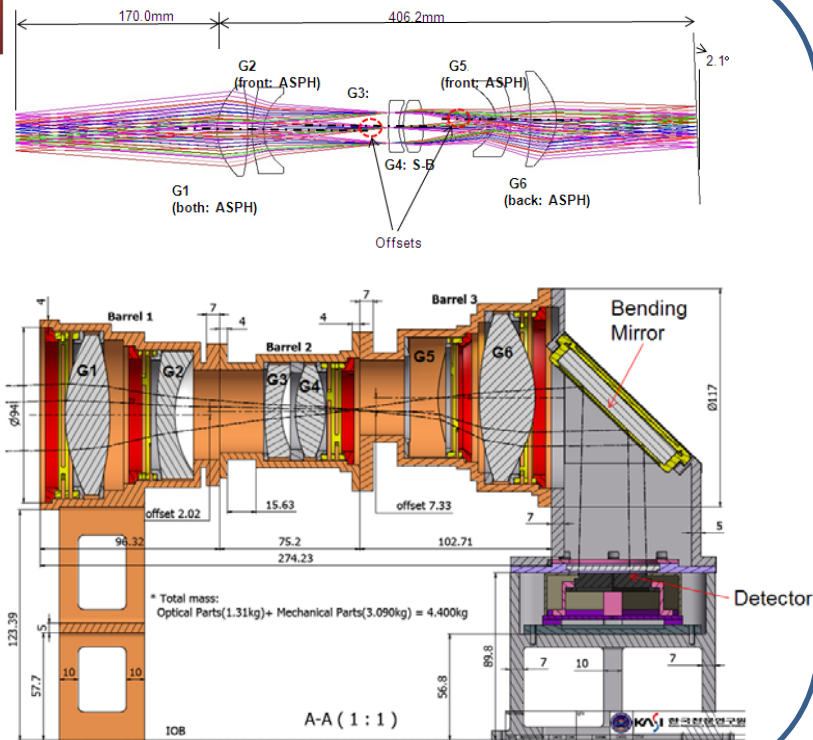
FPC-S Near-IR (0.7 – 5 μ m) imaging & spectroscopy for astronomical purposes
Wide-field & high throughput compared with JWST
Wide-band imaging & imaging spectroscopy using linear variable filter (LVF)
Back-up system for FPC-G

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

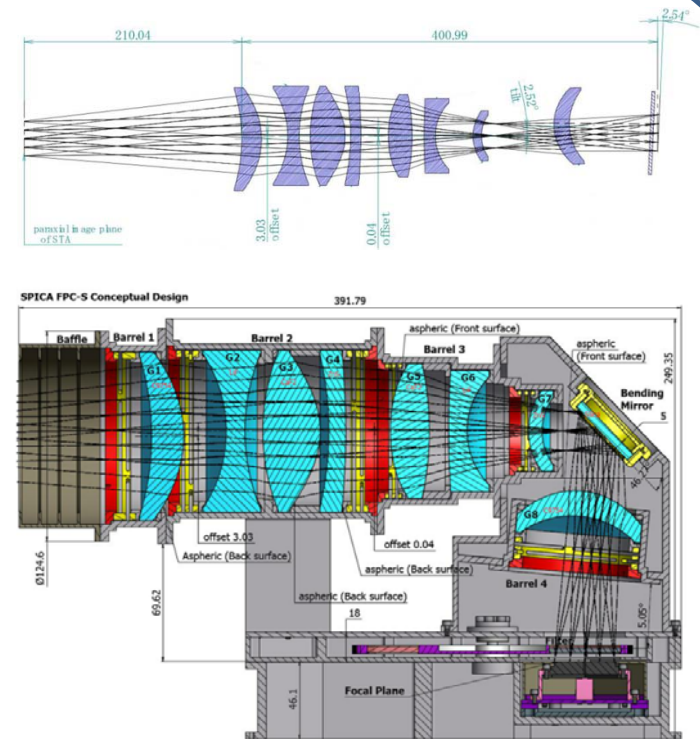
	FPC-G	FPC-S
Optics	Refractive optics with lens	
Detector Array	1K x 1K InSb	
Field-of-View	5 arcmin. x 5 arcmin.	
Pixel Scale	0.3 arcsec.	
Readout Speed	2 sec	100 – 600 sec
Wavelength Range	I band (0.8 μ m)	0.7 – 5 μ m
Wavelength Resolution	R=5	R=5 (imaging) – 20 (spectroscopy)
Sensitivity	single channel 21.5 (AB) mag, 5σ	5 wide band filters + 3 LVFs 27.3 mag (AB), 1hr, 5σ , imaging 26.6 mag (AB), 1hr, 5σ , 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	System Allocation
Cold Mass	14.5 kg with 20% margin
Heat Lift at 4.5K	0.34mW static for both FPC-G and FPC-S 1.82mW dissipation for either FPC-G or -S in observing mode
Electric Power (observing/standby)	12W / 12W with 20% margin