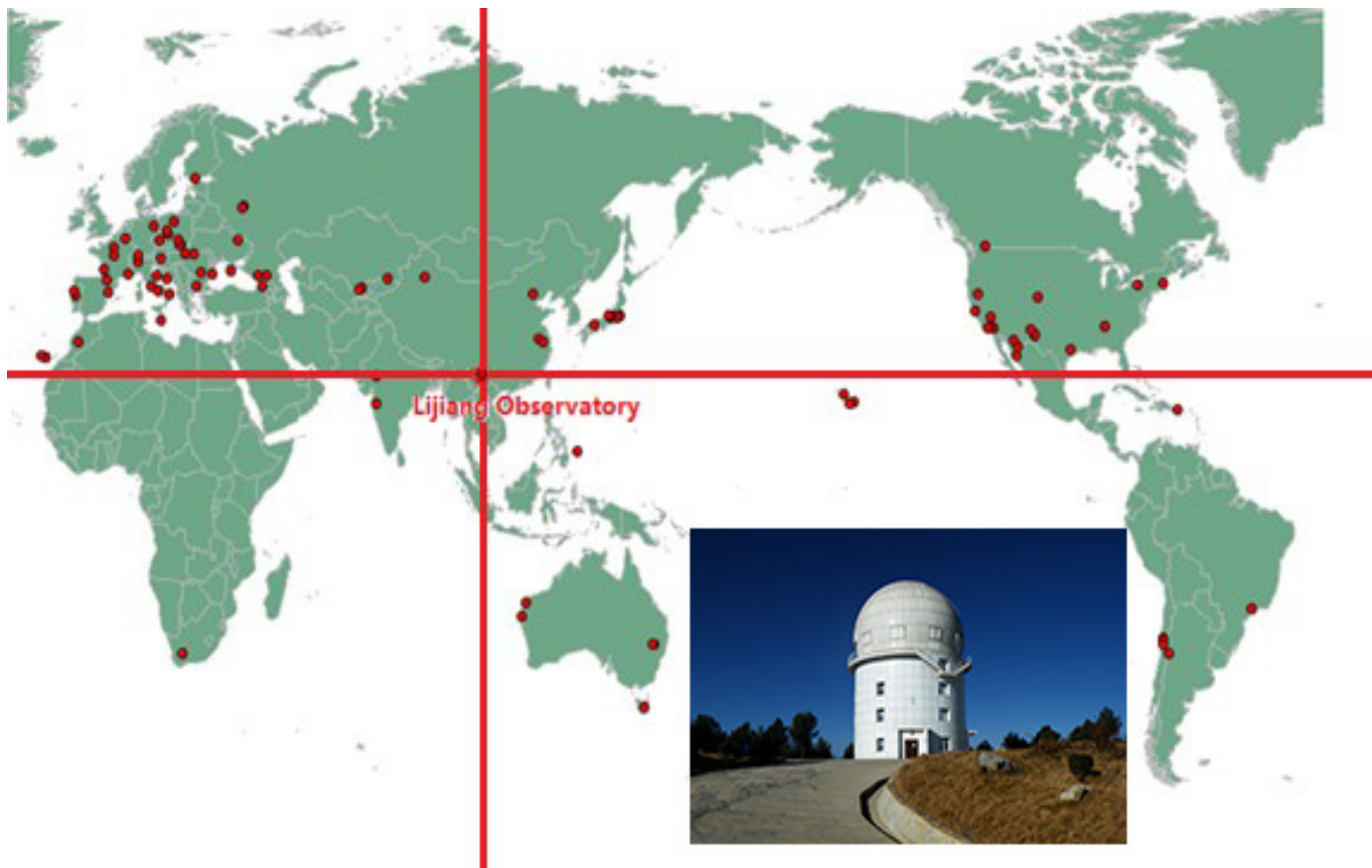


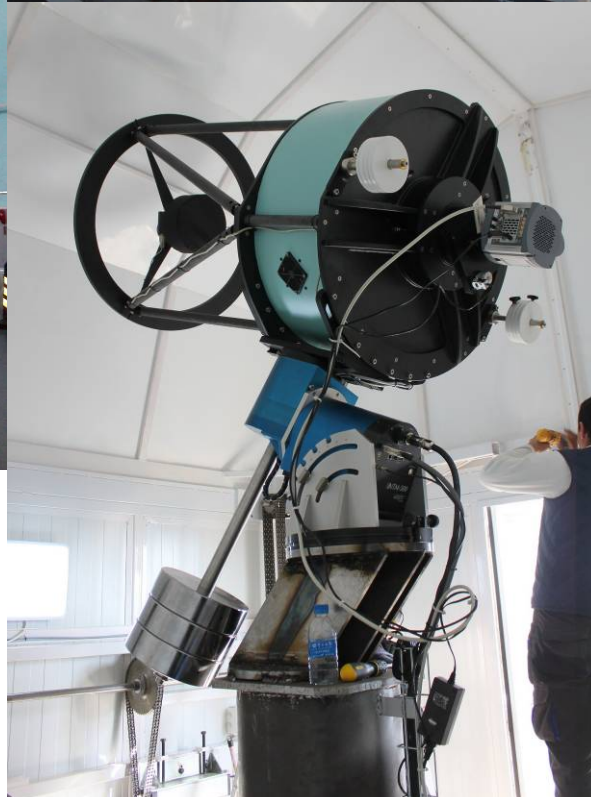
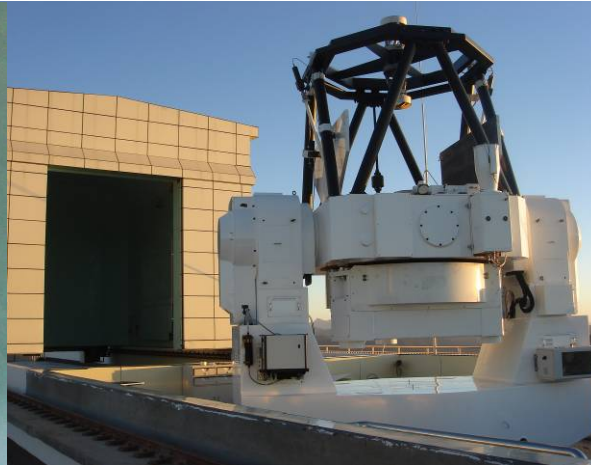
GRANDMA Meeting 2018@nice

MAO Jirong

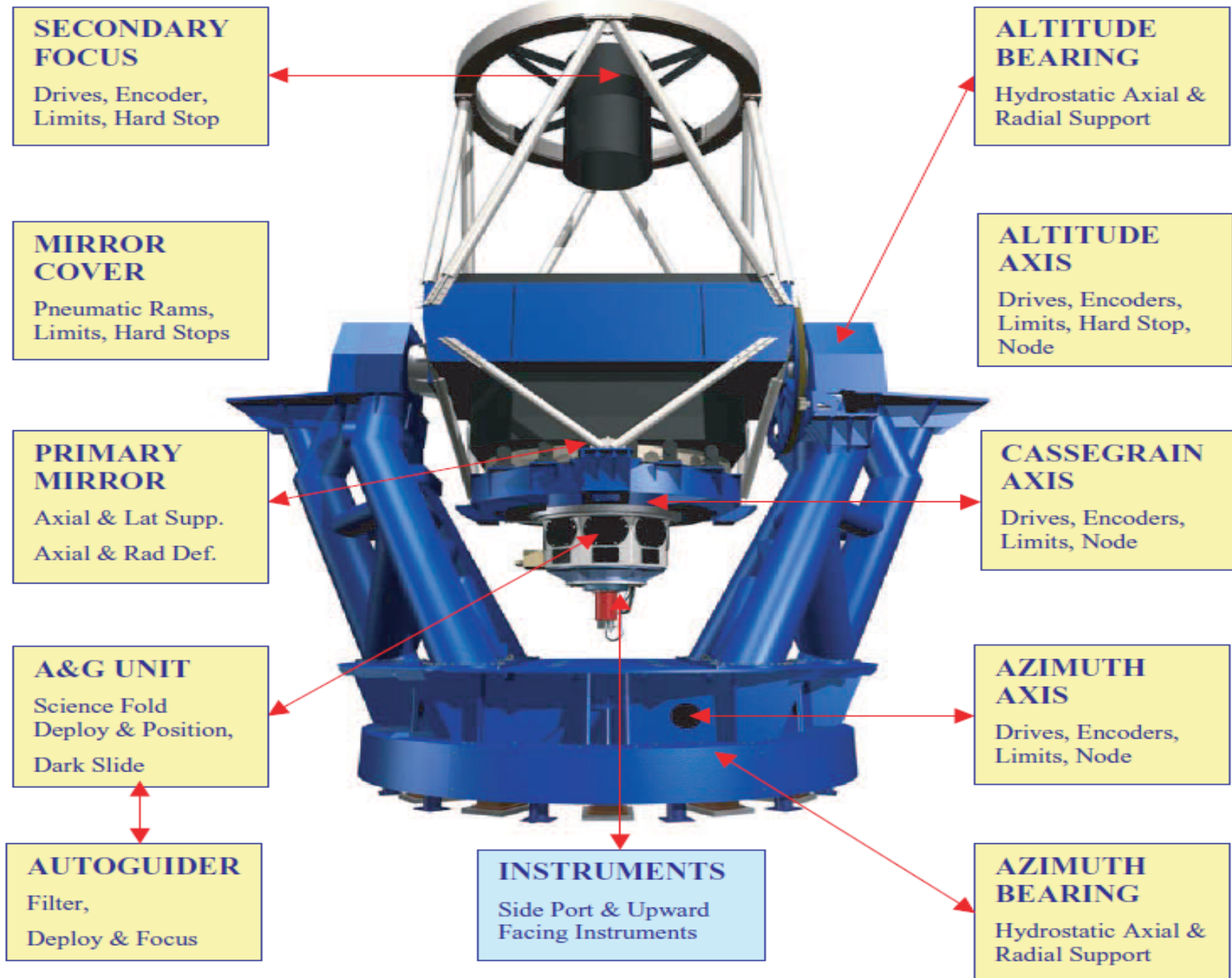
**Yunnan Observatories
Chinese Academy of Sciences**

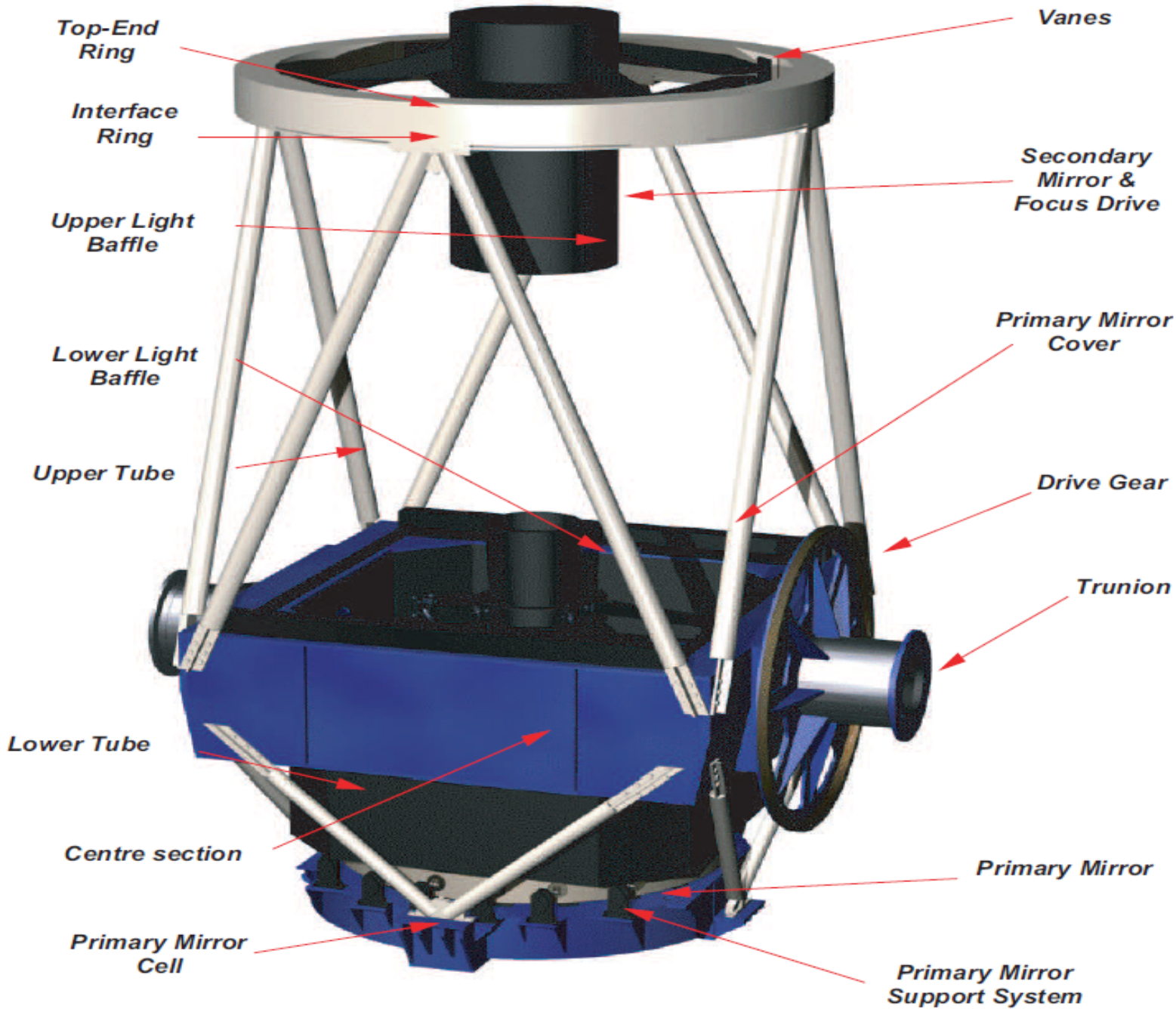


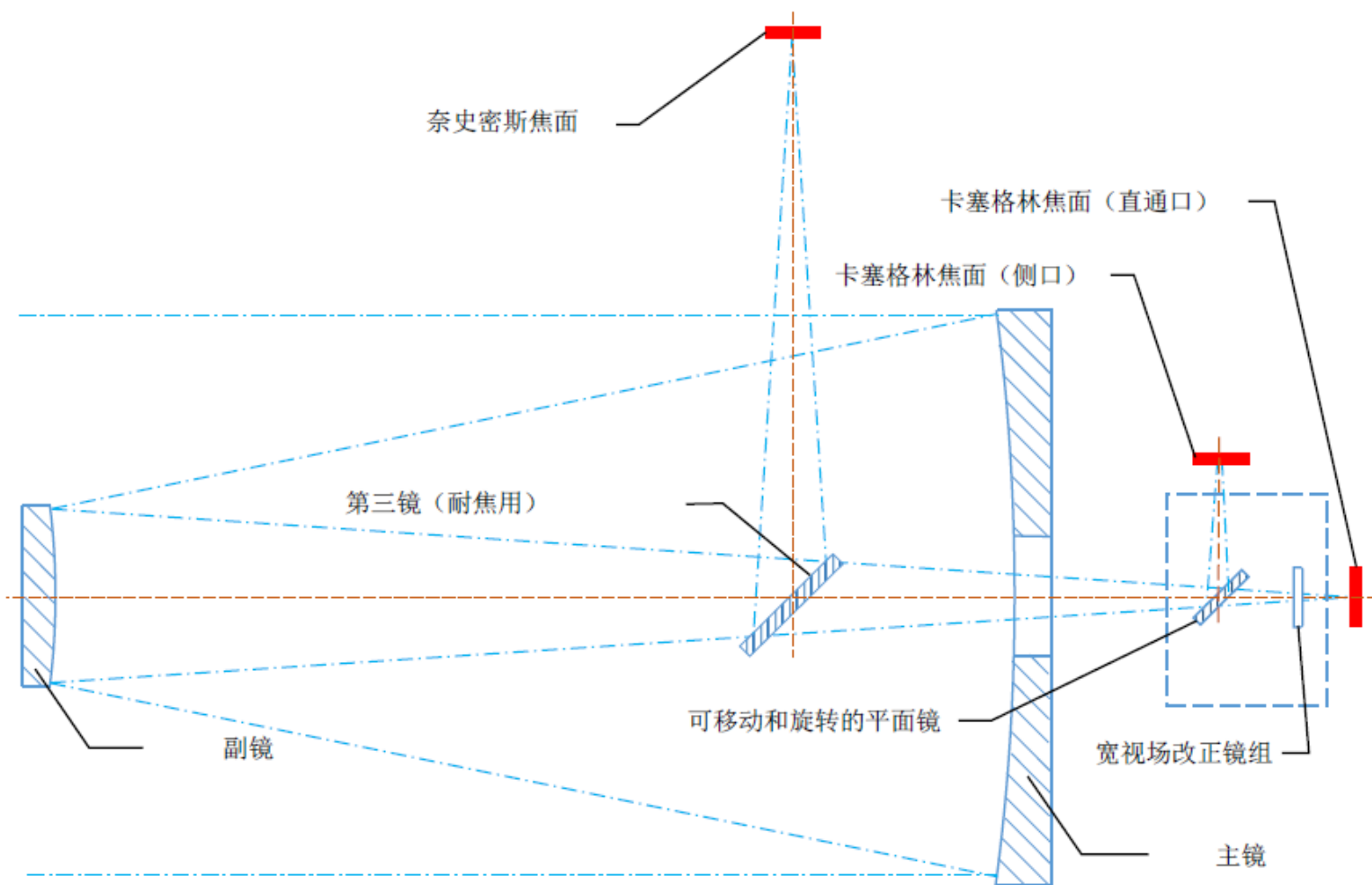
2.4-m telescope and others



Average Observation Time(hours)	2150 (2012 to 2014)	2000 (2015 to 2017)
Sky Brightness	V : 22.06 mag/ <u>sq.arcsec</u> ,	B : 22.34 mag/ <u>sq.arcsec</u>
Extinction Coefficient	KV=0.14	KB=0.3
Seeing (Average)	0.97" (2014)	1.0" (2015)









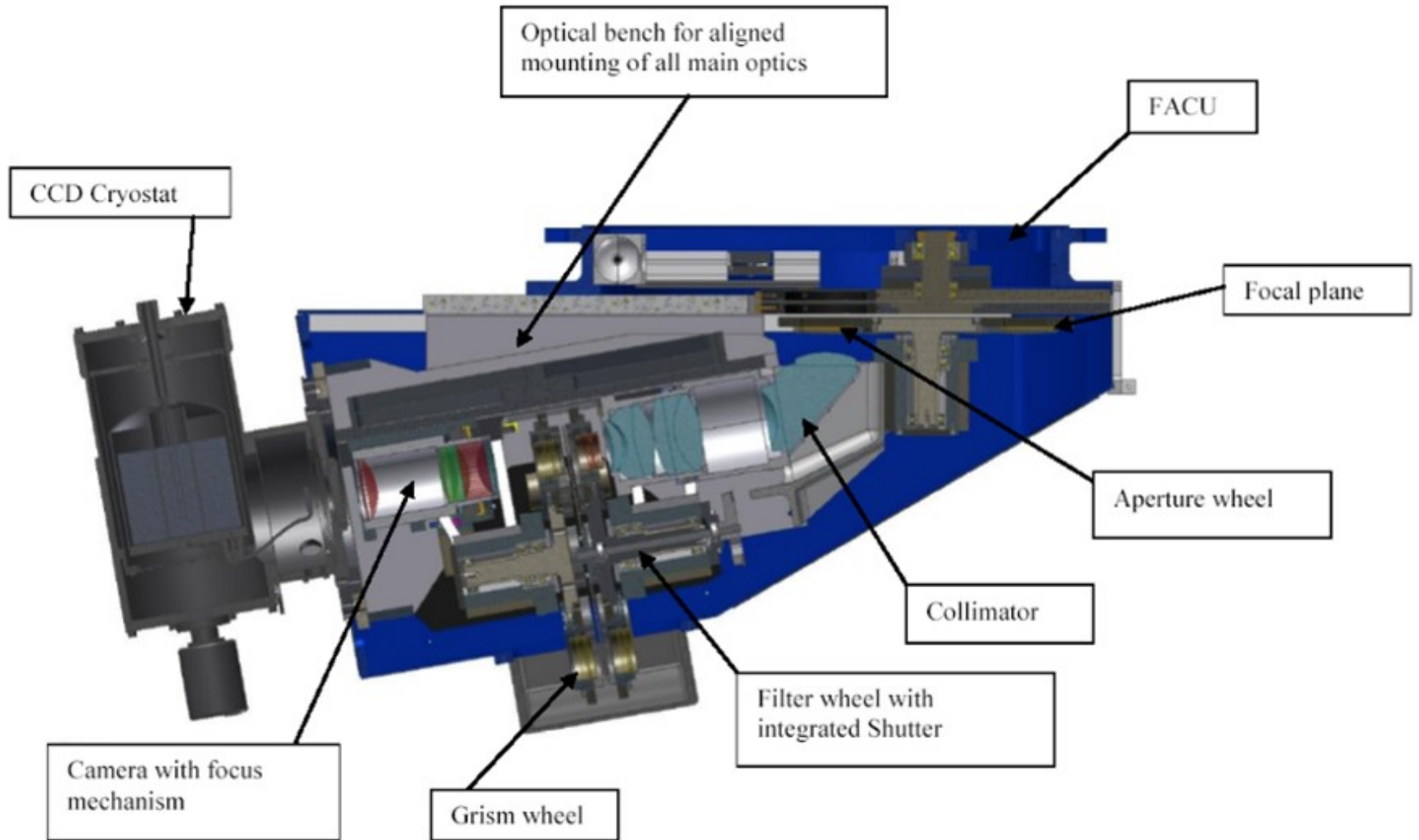
Zero-mark
Melting No 50294
Annealing No 3346

PE-LD
04

МЗЕЛ ПОДЪ
УВАРТО
КРЕИ

PRIMARY MIRROR	CLEAR APERTURE	2400MM
	Central Bore	500mm
	Focal Ratio	F/2.43
	Radius of Curvature	-11520mm
	Conic Constant	-1.073
Secondary Mirror	Clear Aperture	709mm
	Radius of Curvature	-4760.440mm
	Conic Constant	-4.187
	Distance to Primary Mirror	4094.114m
	Distance to Focal Plane	5550.870mm
Nasmyth focus	Focal Ratio	f/8
Cassegrain focus	FOV	8 arc minutes
	Focal Ratio	f/8
	FOV of Fold Port	8 arc minutes
	FOV of Straight Port	10 arc minutes
	Corrected FOV of Straight Port	40 arc minutes

YFOOSC

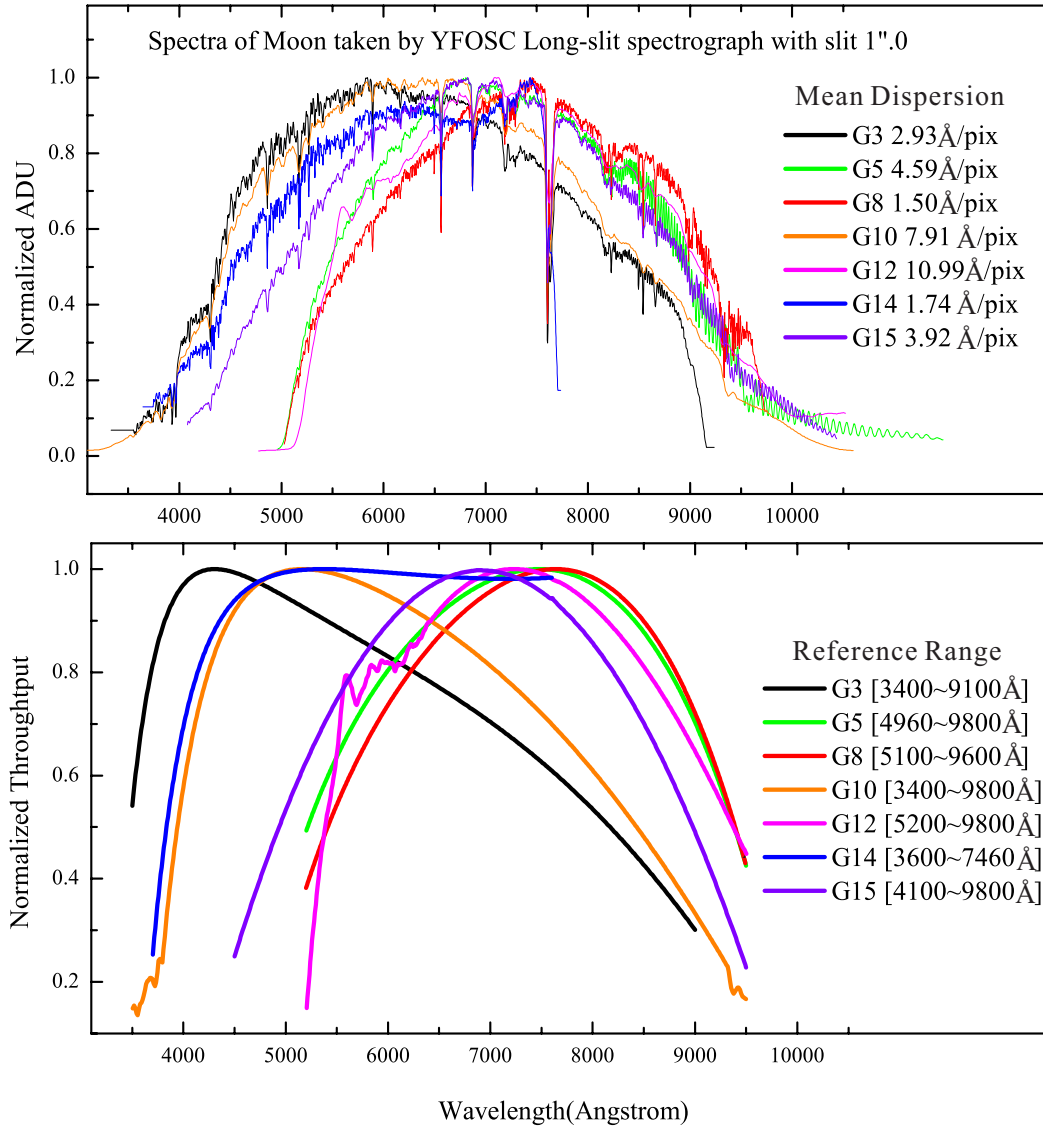


Parameter	Value
Pixels	2048 x 4608
Pixel Size	13.5um x 13.5um
Image Area	27.6mm x 62.2mm
Field of View (Photometry)	9.60' x 9.60' (2K*2K)
Image Scale	0.283"/pixel
Cooling Mode	Liquid Nitrogen : -120°C
Gain	0.33e ⁻
Readout Noise	6.3e ⁻ (Speed : 400kpixs/s) < 5e ⁻ (Speed : 200kpixs/s)

Long Slit	Size (um)	Sky angle (")
	54	0.58
	74	0.8
	93	1.0
	112	1.2
	140	1.5
	168	1.8
	233	2.5
	470	5.0
	940	10.0
Short Slit	54*500	0.58×5.37
	74*500	0.8×5.37
	100*500	1.07×5.37
	140*500	1.5×5.37
	460*500	4.94×5.37
	940*500	10×5.37

Grisms	λ_c (nm)	λ_{Blaze} (nm)	Grooves	Dispersion	Resolution	Sp.Range	Order
NO.			(nm/mm)	(nm/pix)	(@600nm for each pix)	(nm)	Range
12	730	700	75	1.1	545	520-980	1
10	380	390	150	0.79	760	340-900	1
3	390	430	400	0.29	2068	340-910	1
15	586	527	300	0.39	1540	410-980	1
5	650	700	300	0.46	1300	496-980	1
14	463	428	600	0.17	3520	360-746	1
8	650	700	600	0.15	4000	510-960	1
13			316	0.06	10000	340-980	3,4,5
9			79	0.06	10000	340-980	7-23

YFOSC Long-slit Spectrograph

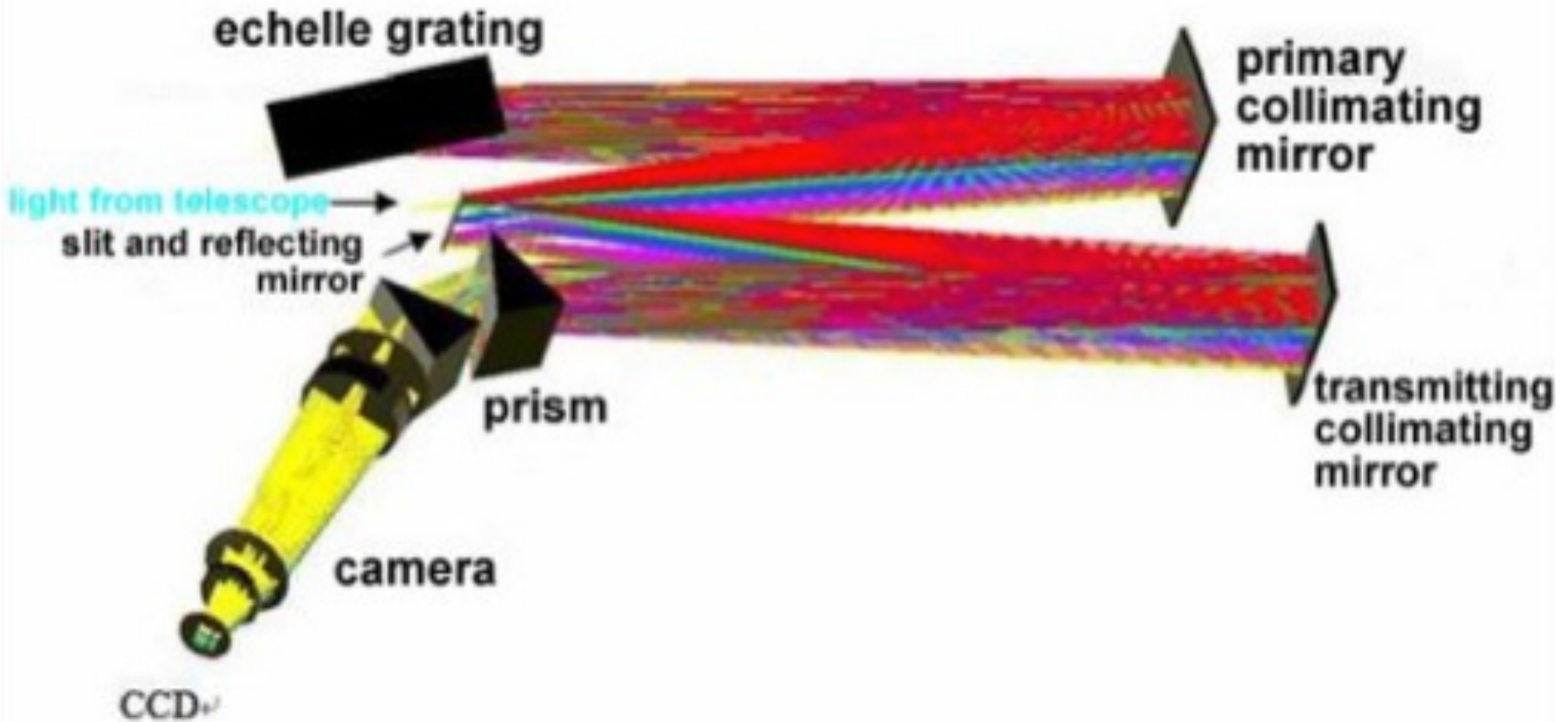


Size of long-slit: 0".58 (2.05pix), 0".8(2.8pix), 1".0 (3.5pix), 1".5 (5.30pix),
1".80(6.38pix), 2".5 (8.83pix), 5".05(17.67pix), 10".0(35.34pix)

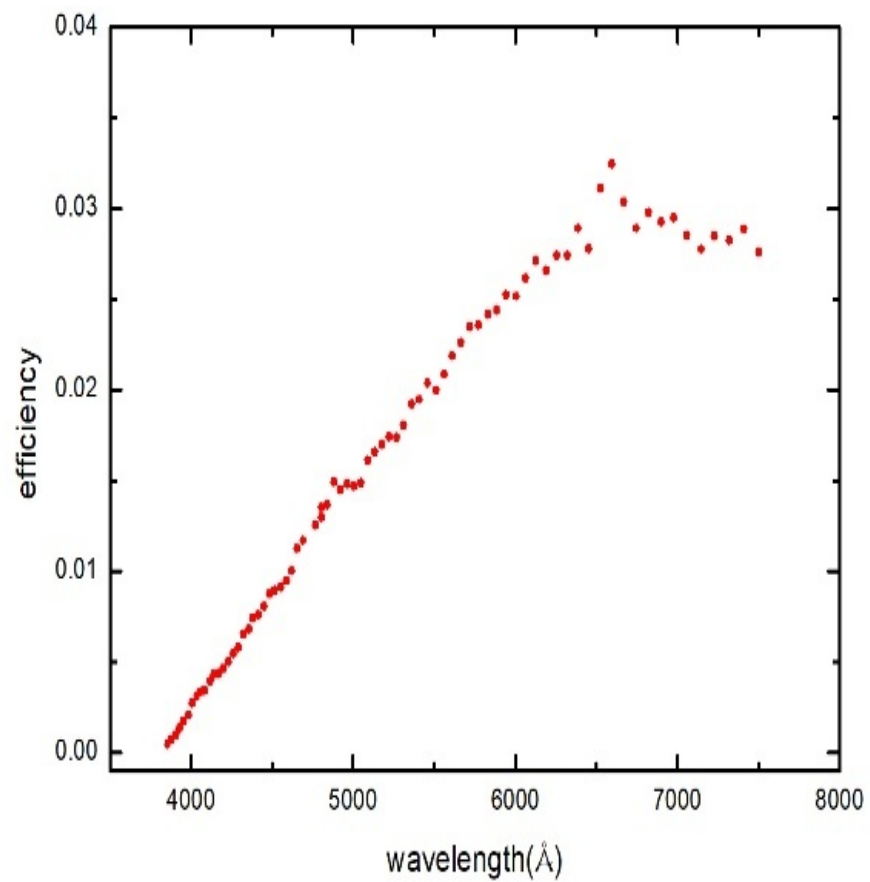
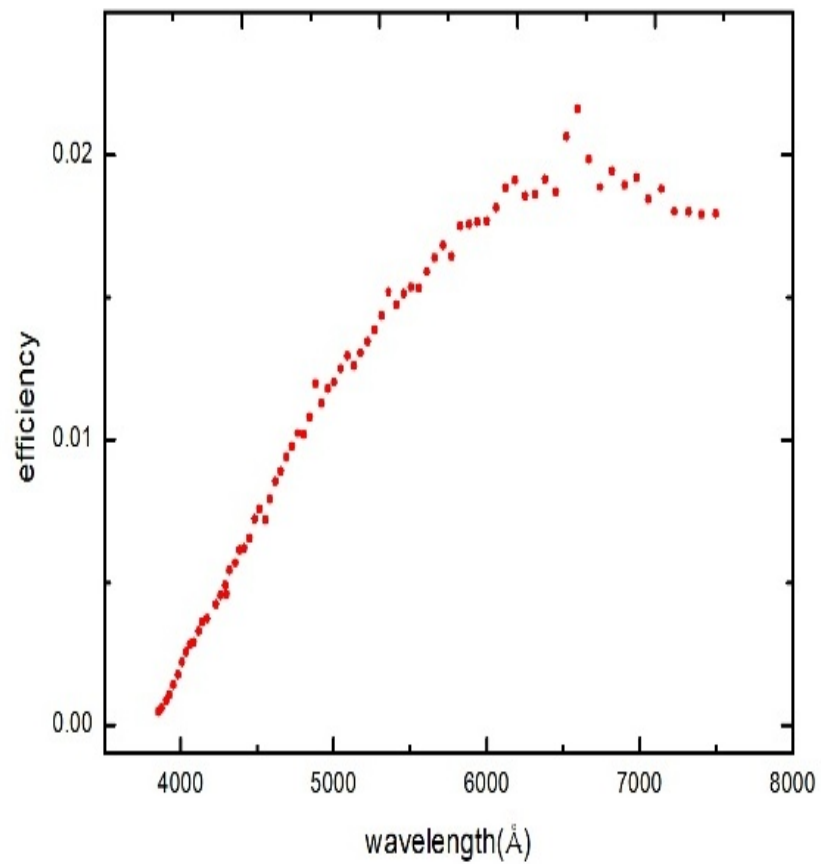
PI CCD

Parameter	Value
Pixels	1300 x 1340
Pixel Size	20um x 20um
Image Area	26.0mm x 26.8mm
Filed of View	4.40' x 4.48'
Cooling Mode	Liquid Nitrogen : -70°C to -110°C , +/-0.05°C
Linearity	<1%(100kHz),<2%(1MHz)
Readout Noise	2.84e ⁻ (Low speed, Low noise mode) 16.3e ⁻ (High speed, high gain mode)

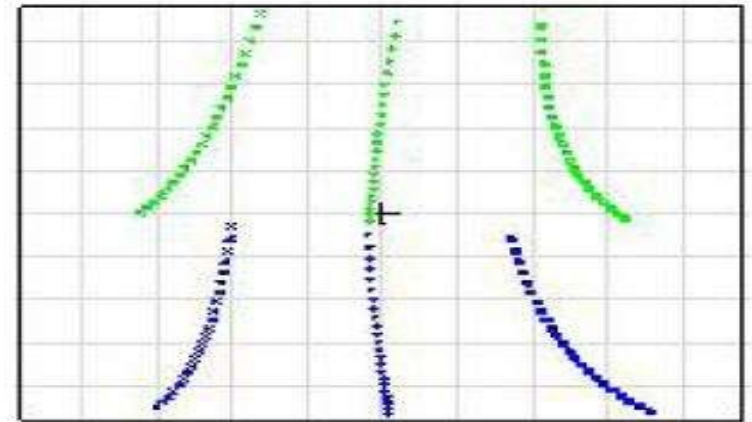
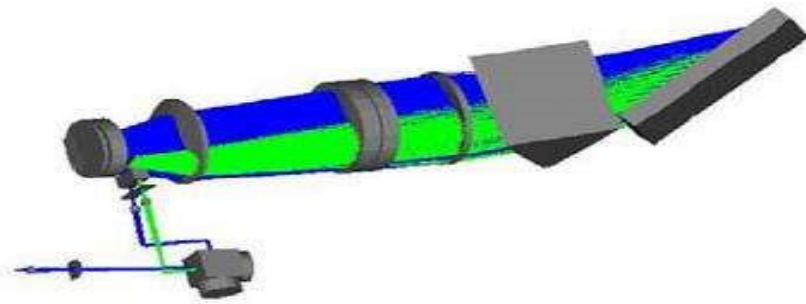
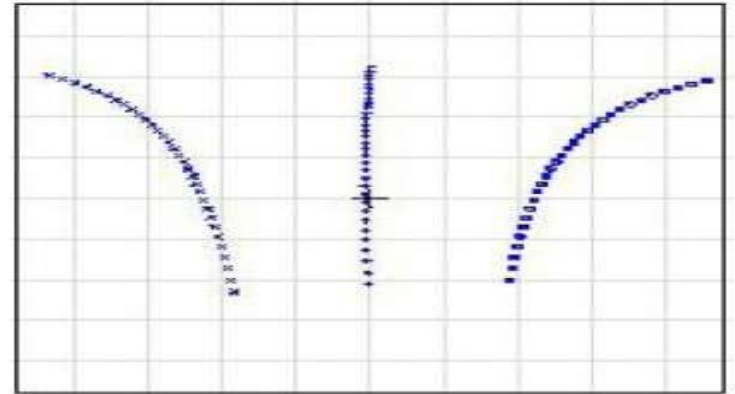
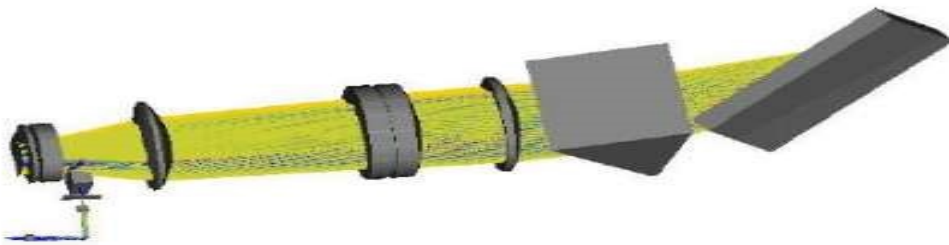
HiRES-high resolution spectrograph



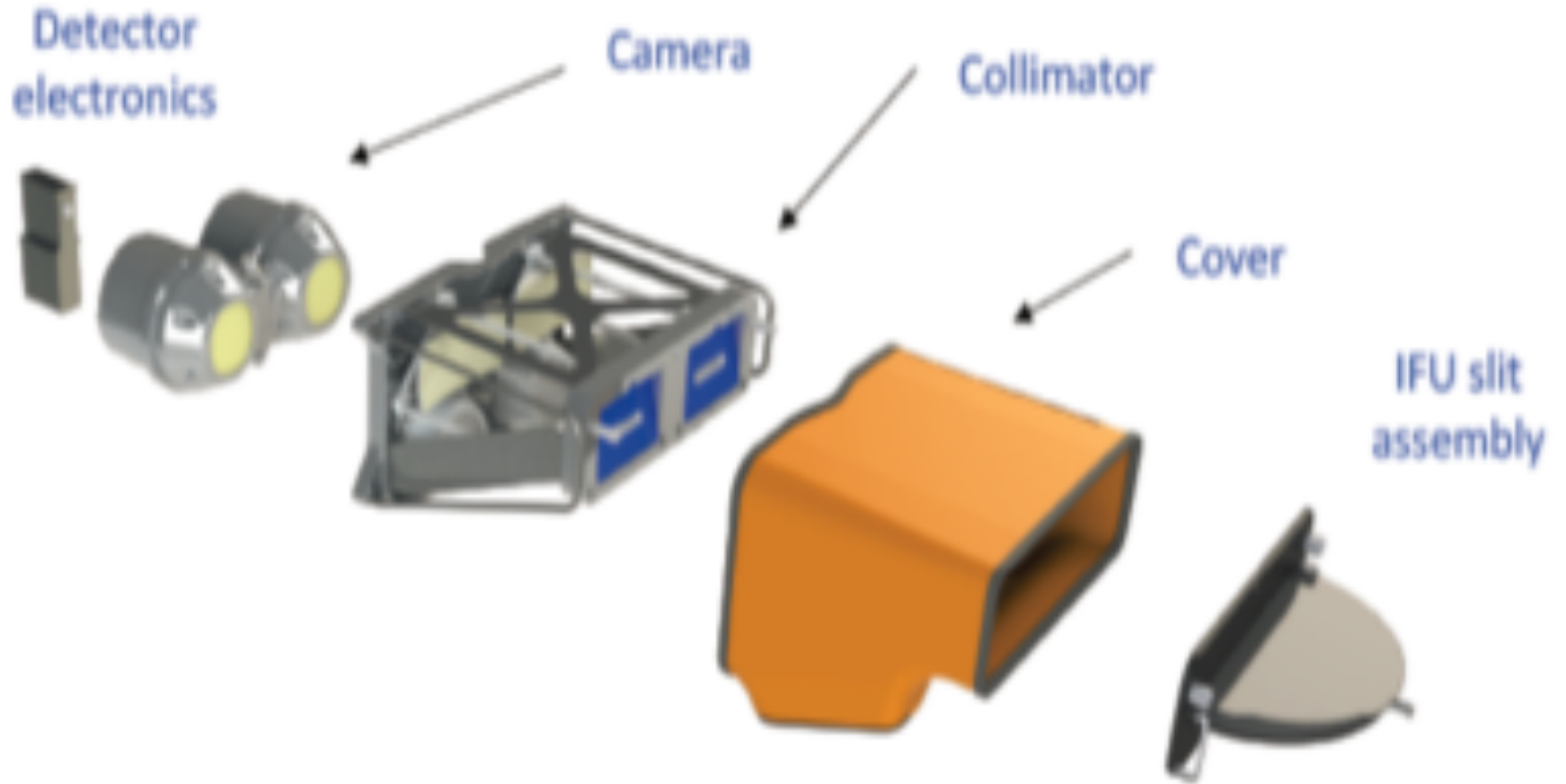
Parameter	Value
Pixels	4096 x 4096
Pixel Size	12um x 12um
Image Area	49.2mm x 49.2mm
Cooling Mode	TEC semiconductor cooling : < -90°C (With water cycle cooling)
Readout Noise	< 5.0e ⁻ (Readout speed: 50kHz) < 7.0e ⁻ (Readout speed: 250kHz)



LiJet-explanet



CHILI-IFU



Transient Follow-up

- GW EM counter parts, GRB afterglows, X-ray binaries, (supernova), other transients ...

] Mao, [Jirong](#), [Malesani, Daniele](#), [O'Avanzo, Paolo](#), et al., A&A, 2012, 538,1. Diversity of multi-wavelength emission bumps in the GRB100219A afterglow.

- Alert from GCN, telephone, ToO, photometric & spectral observations
- Data ftp, quick data analysis, GCN & ATel submission, refined analysis for publication
- For GW EM candidates, priority selection
photometric observation requirement
spectral observation requirement