QHY (5L-II-M) CCD camera for video meteor observation

Matej Korec, Maximilian Hell Observatory & Planetarium

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CCTV Cameras specifications			
Name	Watec 902 H2 Ultimate	KPF 131 HR	VE 6047 EF
Sensor	1/2“ Sony Ex-View HAD	1/3“ Sony Super HAD II	1/3“ Sony Super HAD CCD
Resolution (px)	752 x 582 (720x576)	582 x 500 (720x576)	960 x 582 (720x576)
Resolution (TVL)	570	500	700
Sensitivity	0.0001 lx F=1.4 QE76%	0.002 lx BW, F=1.2	0.001 lx BW, F=1.2
S/N	> 50 dB (> 36 db)	> 50 dB	> 50 dB
Price	350 Eur + Lens 150 Eur	80 Eur + Lens 30 Eur	60 Eur + Lens 30 Eur

CCTV Lens specifications			
Name	Computar HG3808FCS	Tokina M2311	Fujinon YV2.7x2.9LR4D
Properties	1/2“ CS F=0.8 ASP IR focal length 3.8 mm	1/3“ CS F=0.98 ASP IR varifocal 3 - 8.2 mm	1/3“ CS F=0.98 ASP IR varifocal 3 - 8.2 mm

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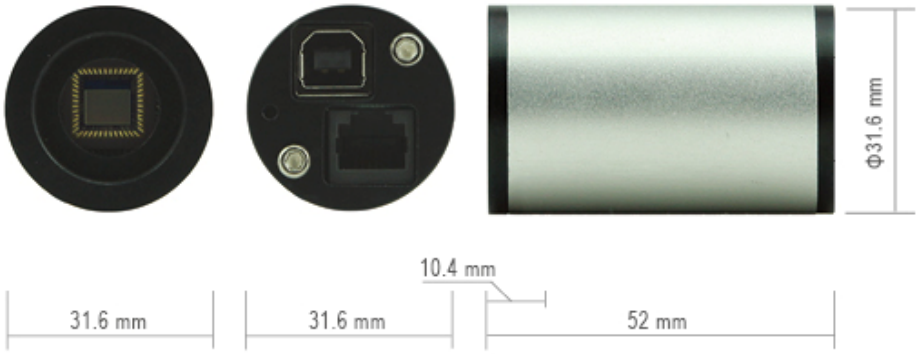
SPECIFICATION TABLE

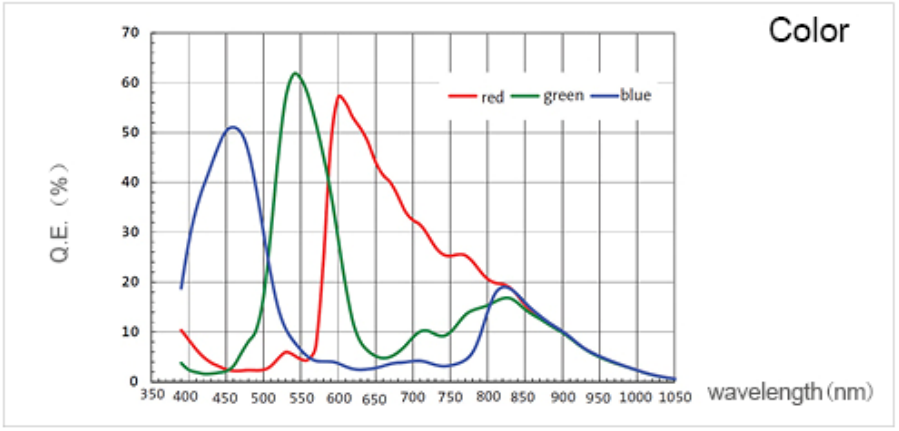
QHY 5L-II

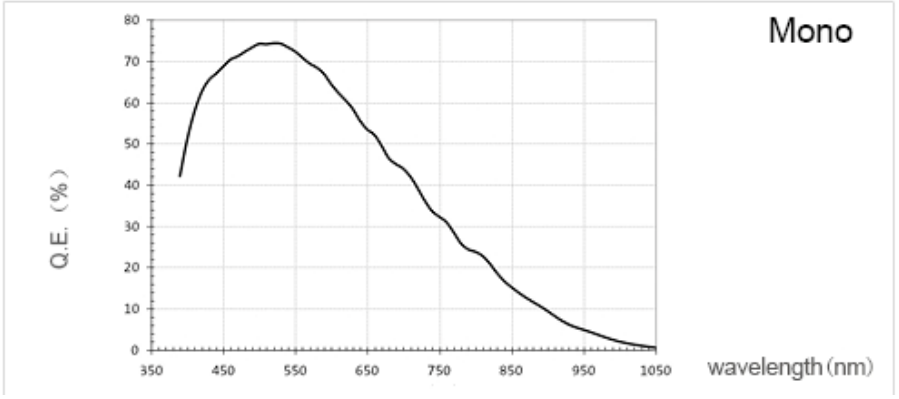
CMOS Sensor	MT9M034
Optical Format	1/3-inch
Effective Area	4.83mm (H)x3.63mm(V)
Array Format	1280×960
Pixel Size	3.75μm×3.75μm
Readout Type	Progressive Scan
Shutter	Electronic Rolling Shutter (ERS)
Exposure Time	20μs-10min
BIN and BIN Type	No
Q.E.	Color: 52%@ Blue, 62%@Green,58%@Red Mono: 74%
Frame Rate(MAX)	30 FPS@1280×960; 44 FPS@1024×768 75 FPS@800×600;106 FPS@640×480 200 FPS@320×240
Color/Mono	Color/Mono
ADC	On-chip, 14 Bit (8 Bit Output)
Data Rate	24-74.5 MHz
Dynamic Range	> 115dB
Telescope Interface	1.25-Inch Eyepiece Size
IR Cut Filter	22mm, Can be Removed to Replace with other Filters (Color Sensor Only)
Intercept	10.4mm
Weight(Body Only)	45g (without Location Ring)
Camera Size	Diameter=31.6mm; Length=52mm
Power Supply Mode	USB-Power
Power Consumption	0.64W
Guide Port	Build in Optic Isolated Guide Port RJ11 6pin1
USB Interface	USB2.0 High Speed Interface
Standard Fittings	Camera Body, Pacing Ring,USB Cable, Guide Cable
Optional Fittings	CS Interface, Super Radiator, Tripod Tube, Extension Tube

SIZE AND INTERCEPT



Q.E.





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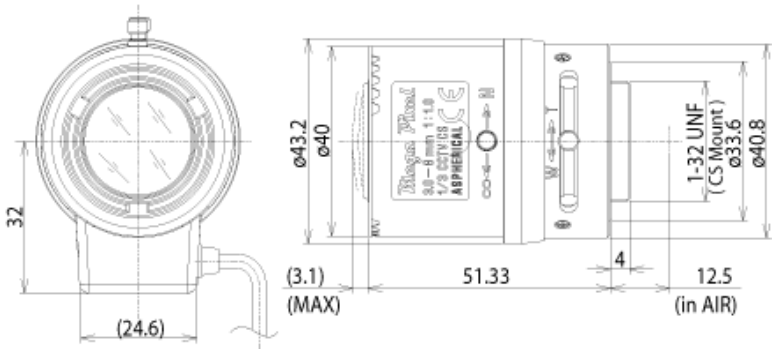
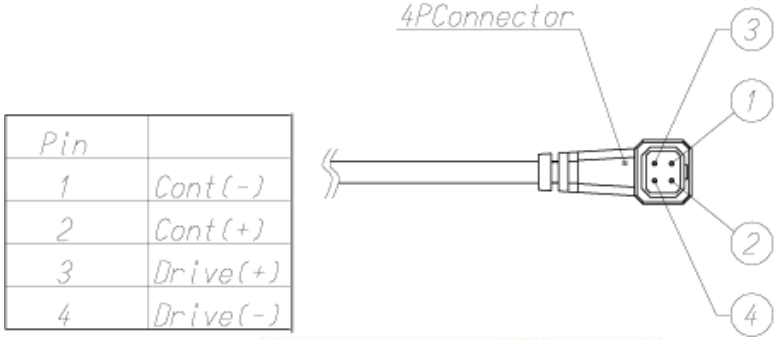
Tamron M13VG308

Imager Size			1/3
Mount Type			CS
Focal Length			3.0 - 8mm
Aperture Range			1.0 - 360
Angle of View (Horizontal x Vertical)	1/3	Wide	92.5° x 68.2°
		Tele	35.4° x 26.5°
	1/4	Wide	68.2° x 50.6°
		Tele	26.5° x 19.9°
Focusing Range			0.3m - ∞
Operation		Focus	Manual with Lock
		Zoom	Manual with Lock
		Iris	DC Auto Iris
Filter Size			-
Back Focus(in air)			Wide 8.31 - Tele 14.92 mm
Operating Voltage			Open 4.0 V Close 0.7 V
Weight			75g
Operating Temperature			-20 °C - +60 °C





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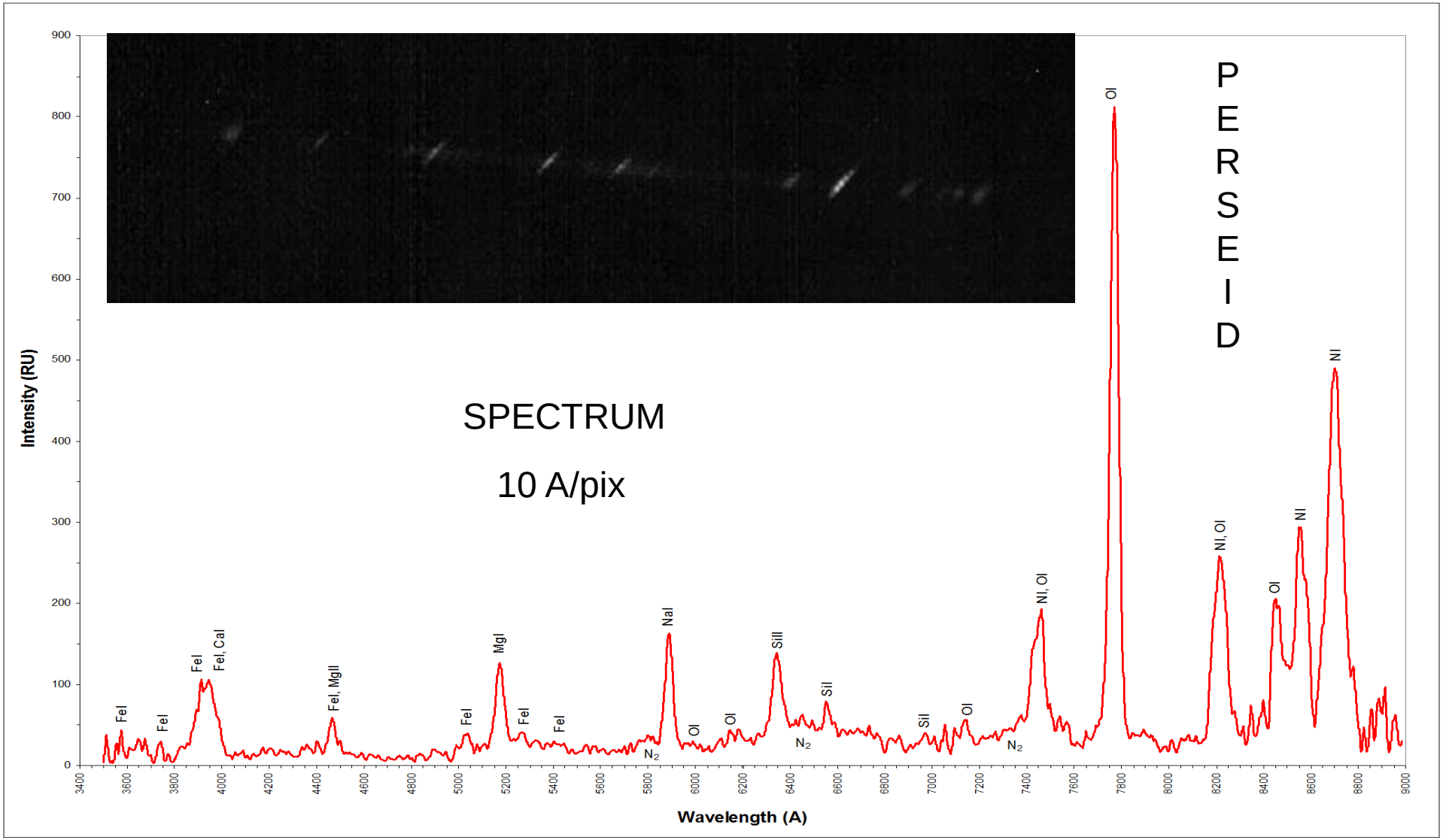
ASTROMETRY precision ±15", ddeg 0.005 (analog systems maximum 0.040)

PHOTOMETRY precision 2.5 mag – S/N > 50, 5 mag – S/N > 8, HDR mode



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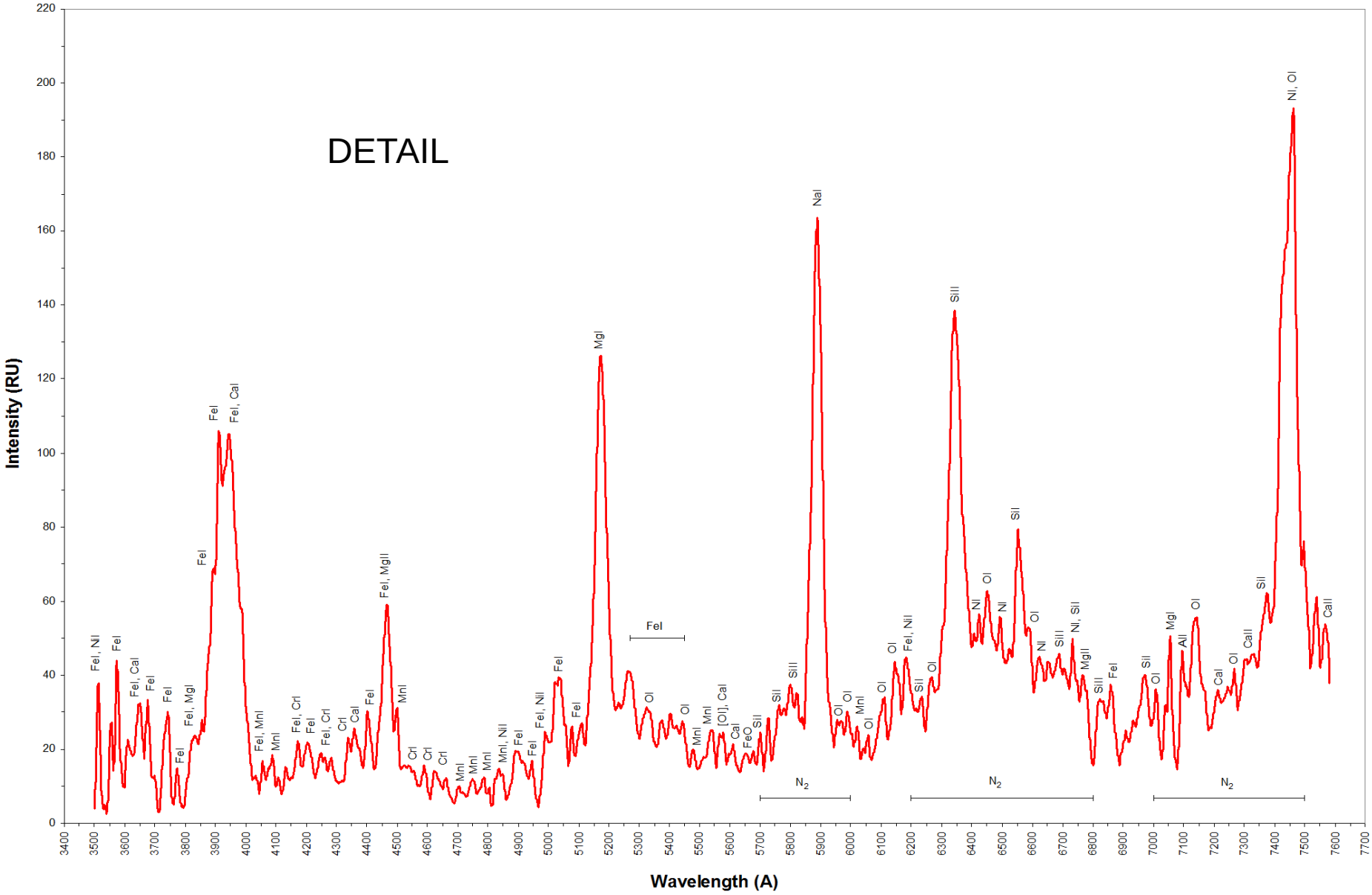

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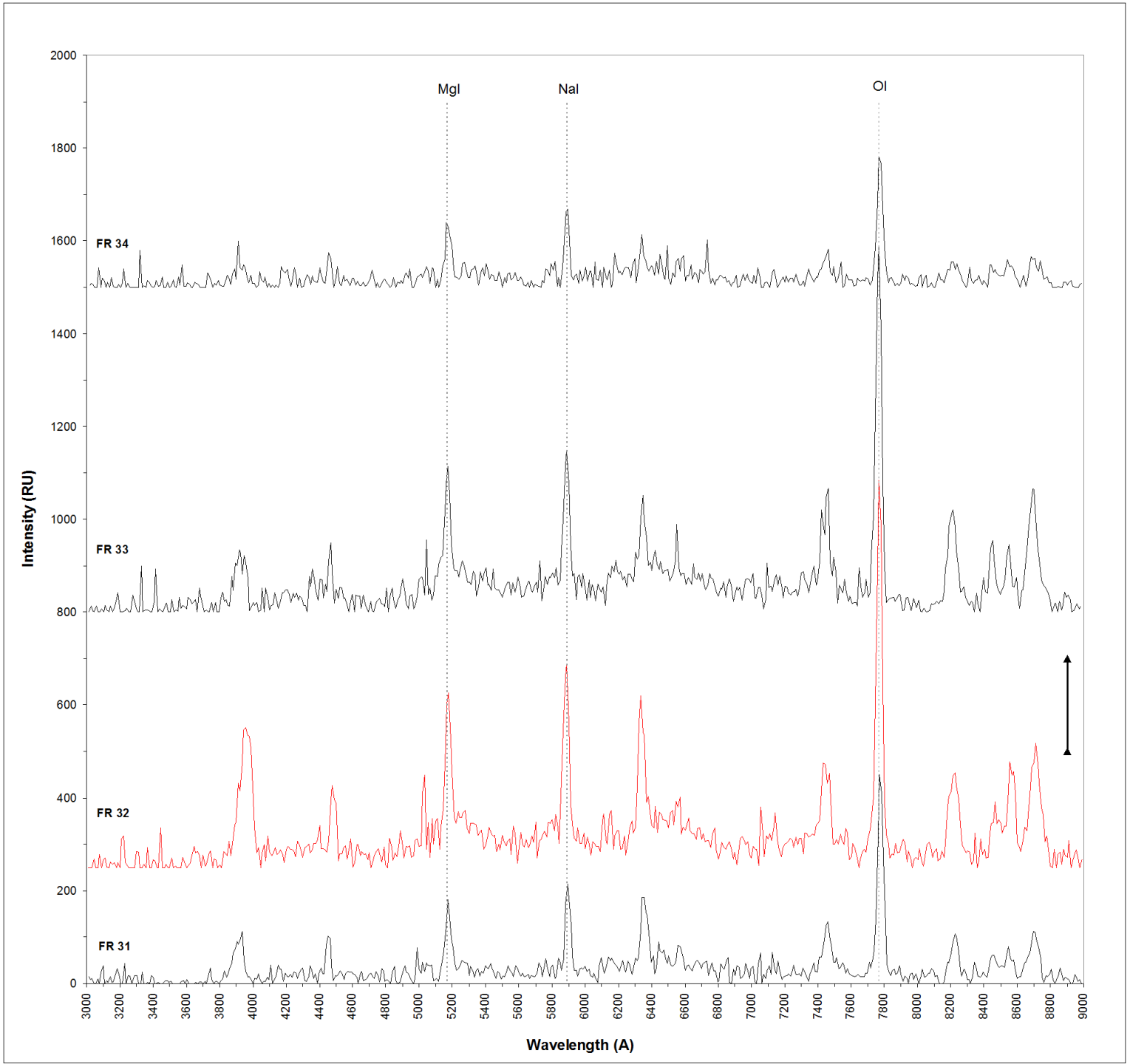
EVOLUTION


MgI
NaI
OI
FR 34
FR 33
FR 32
FR 31
Intensity (RU)
Wavelength (A)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
3000
3200
3400
3600
3800
4000
4200
4400
4600
4800
5000
5200
5400
5600
5800
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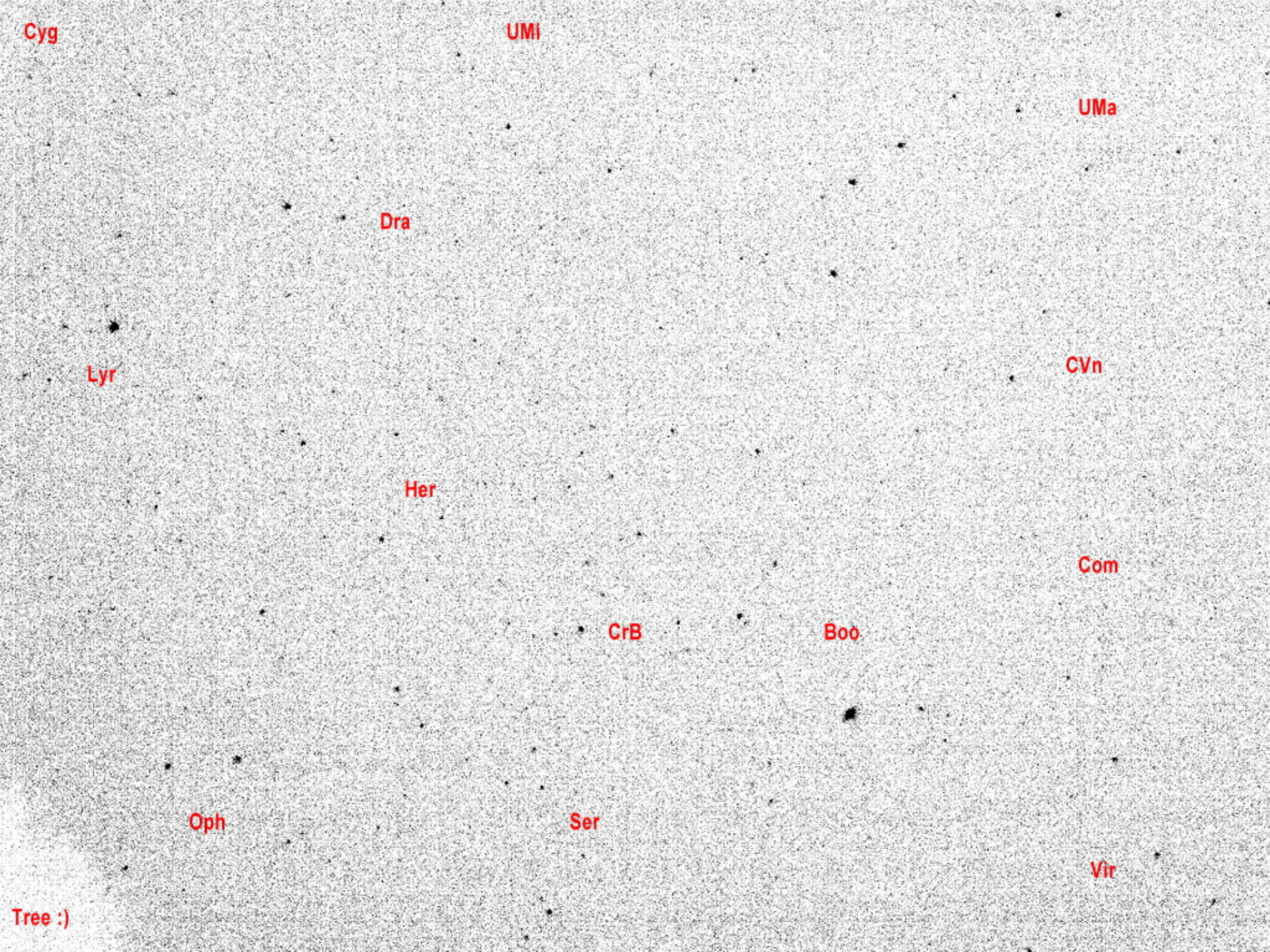
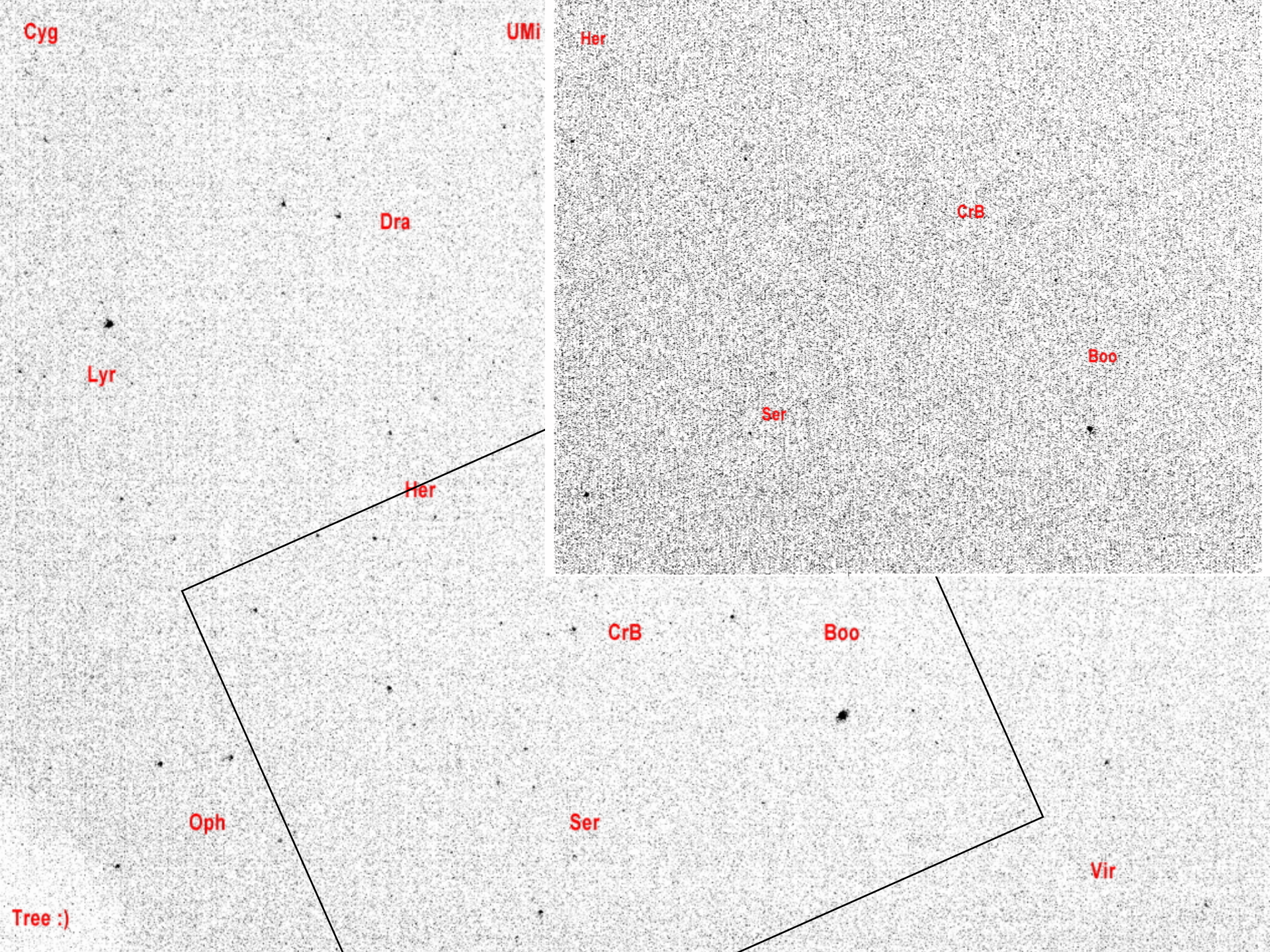
7800
8000
8200
8400
8600
8800
9000


Cyg
UMi
UMa
Dra
Lyr
CVn
Her
Com
CrB
Boo
Oph
Ser
Vir
Tree :)


Cyg
UMi
Her
Dra
CrB
Lyr
Boo
Ser
Her
CrB
Boo
Oph
Ser
Vir
Tree :)

Drivers problem !

Thank you for your attention.

Do you have any questions?

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