



Spectroscopic Record Sheet



Details on acquisitions

Object	Mul_Objct 3
Coordinates (J2000)	12:22:44.76 -63:02:21.01
Type	New candidate

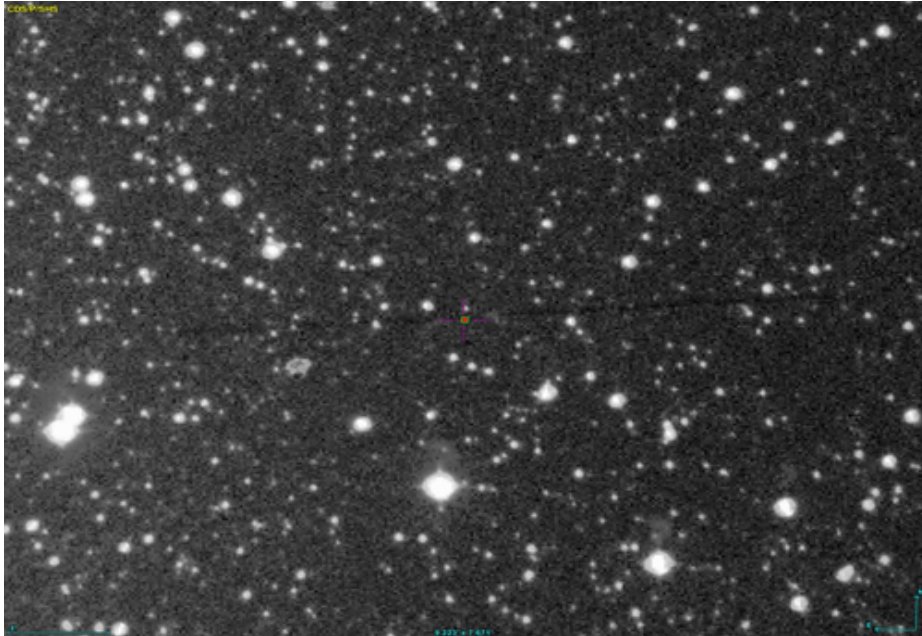
Observation date	2.335/03/2022
Weather conditions	/
Observer	2SPOT
Location	Deep Sky Chile (CL)

Mount	10 Micron GM3000 HPS
Telescope	Ritchey-Chrétien RC12
Spectroscope	Alpy 600 (23um slit)
Resolution (bin 1x1)	~1nm at 656 nm
Principal camera	Atik 414 EX
Dispersion (bin 1x1)	~0,3 nm/pixel at 656 nm
Cam temperature	-10°C
Binning	2x2
Guiding camera	Atik 314L+
Data acquisition Soft	Prism v10.4.12.911
Data processing soft	ISIS V6.1.1

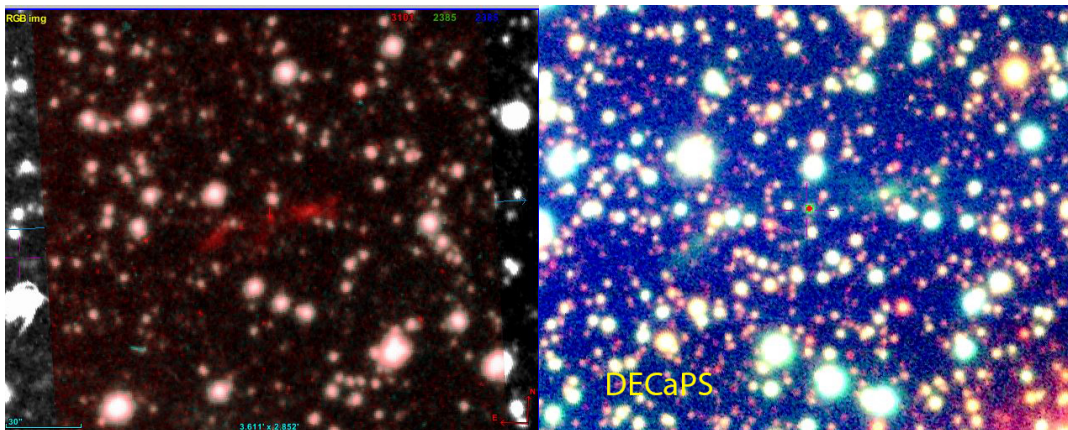
Exposure on object	4 x 1200 s
Master Dark	Corrected
Master Flat	Corrected
Master Offset	Corrected
Neon-Argon calibration	Corrected

Reference star calib.	HD86087_A0V
Exposure on ref star	15 x 5 s
Ref star Sp. date	2.285/03/2022

Slit position



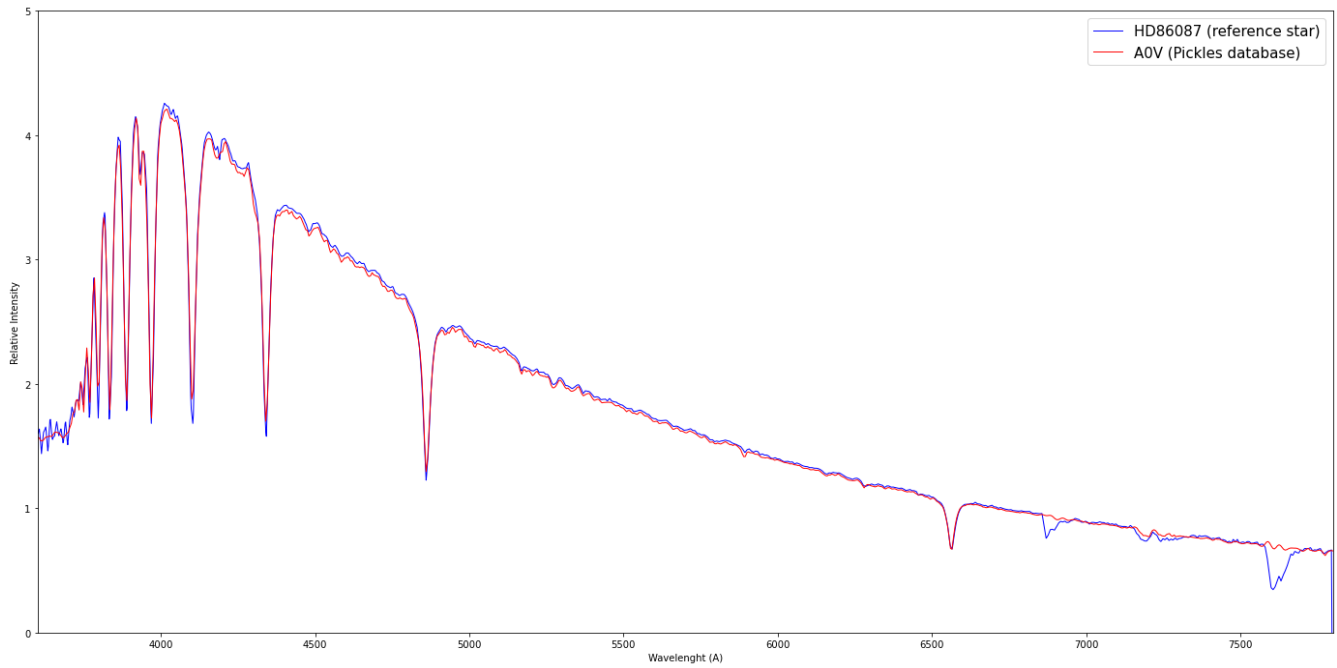
Object picture(s)



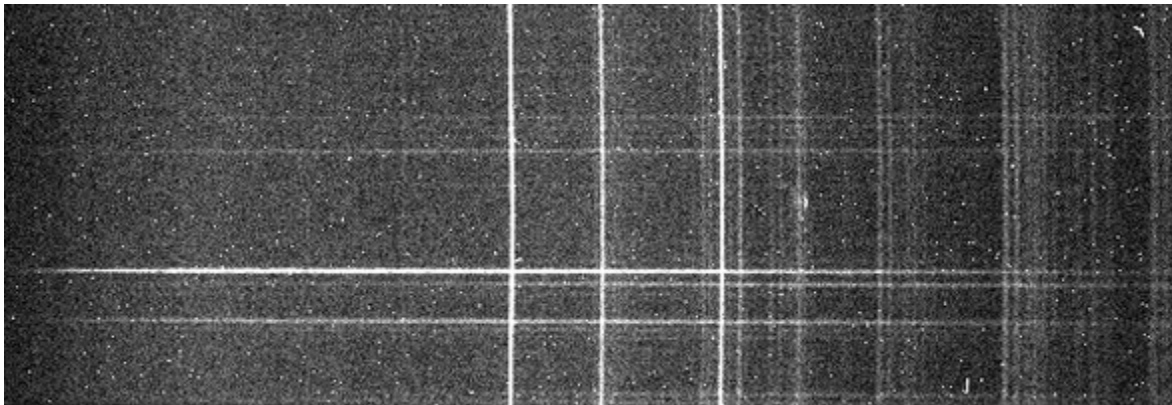


Instrumental Response and 2D Spectrum

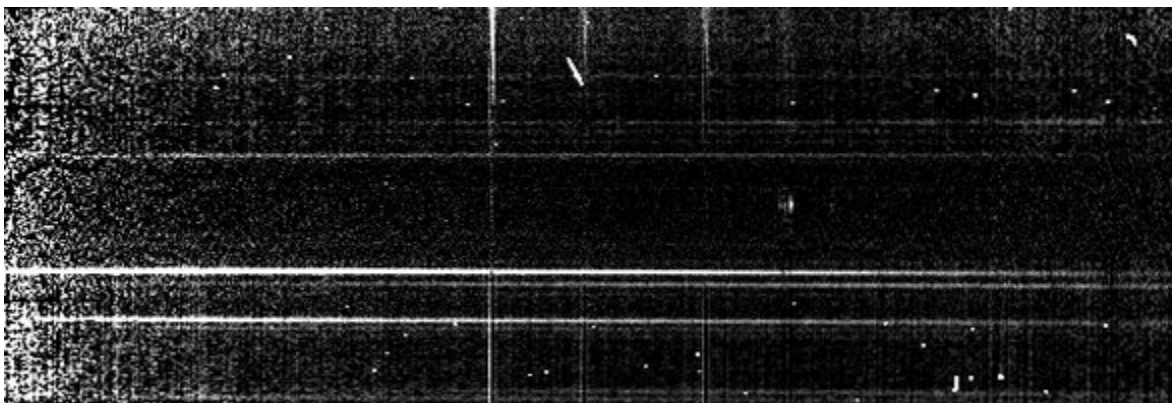
Instrumental response (red = theoretical ref star spectrum ; blue = acquired ref star spectrum with instrumental response correction applied)

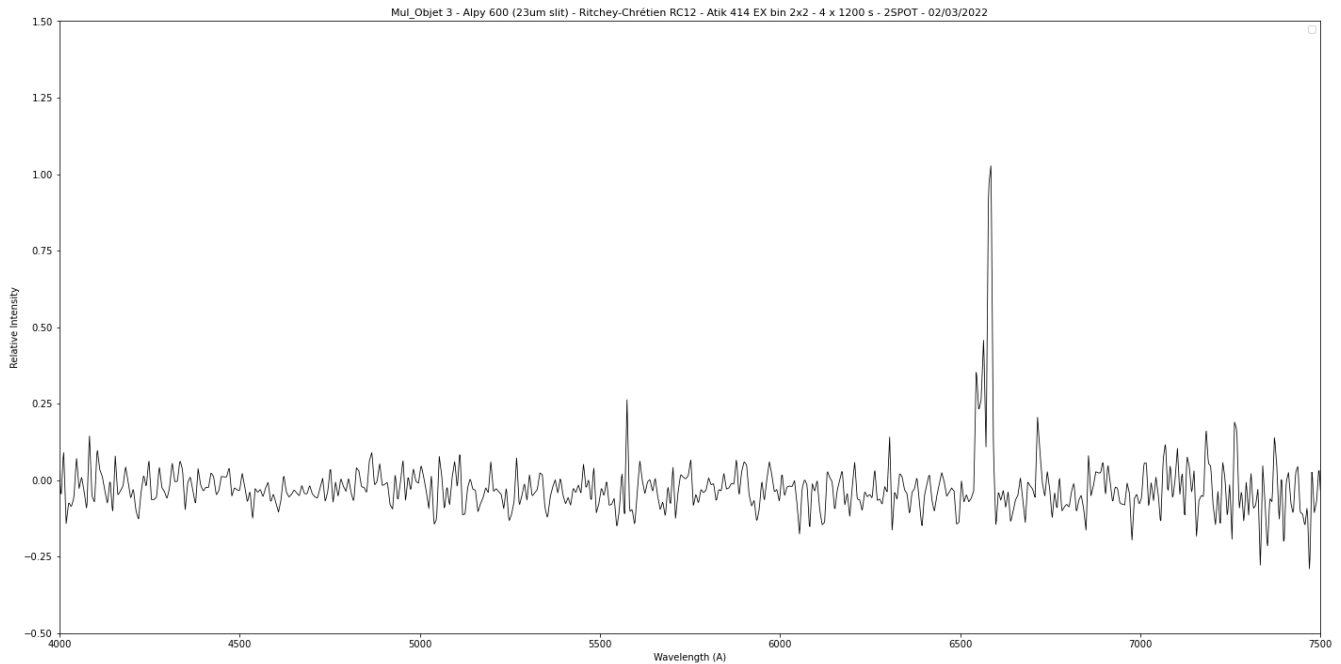


2D Raw spectrum



2D Processed spectrum





Comments

Mul Objet 3 seems to be a bipolar nebula, clearly visible on SHS and also on DeCAPS.

Strong WISE source.

Central star is weakly visible on SUMMS.

The object is not related to SNR G299.6-00.5 (see SUMSS).

GAIA DR3 does not give any information about the presumed "central star".

Possible variability, see :

<https://asas-sn.osu.edu/sky-patrol/coordinate/24ee2c32-8da4-4b93-9f1d-2caf84ac2311>

<https://asas-sn.osu.edu/sky-patrol/coordinate/bada4ba7-a0ec-47d4-9414-5b8d76d3fe8e>

The spectrum shows :

- [N II] > H alpha,
- a weak [S II] 6716 line, line at 6731 Å is undetected, so electron density seems low,
- nothing in blue : no H-beta nor [O III]. So the object may suffer a high extinction.
The absence of [O III] may come from the high extinction or from a low excitation.
- there is no noticeable spectral shift, but the error on velocity is high : about +/- 100 km/s.

Mul Objet 3 may be a binary system.