



Spectroscopic Record Sheet



Details on acquisitions

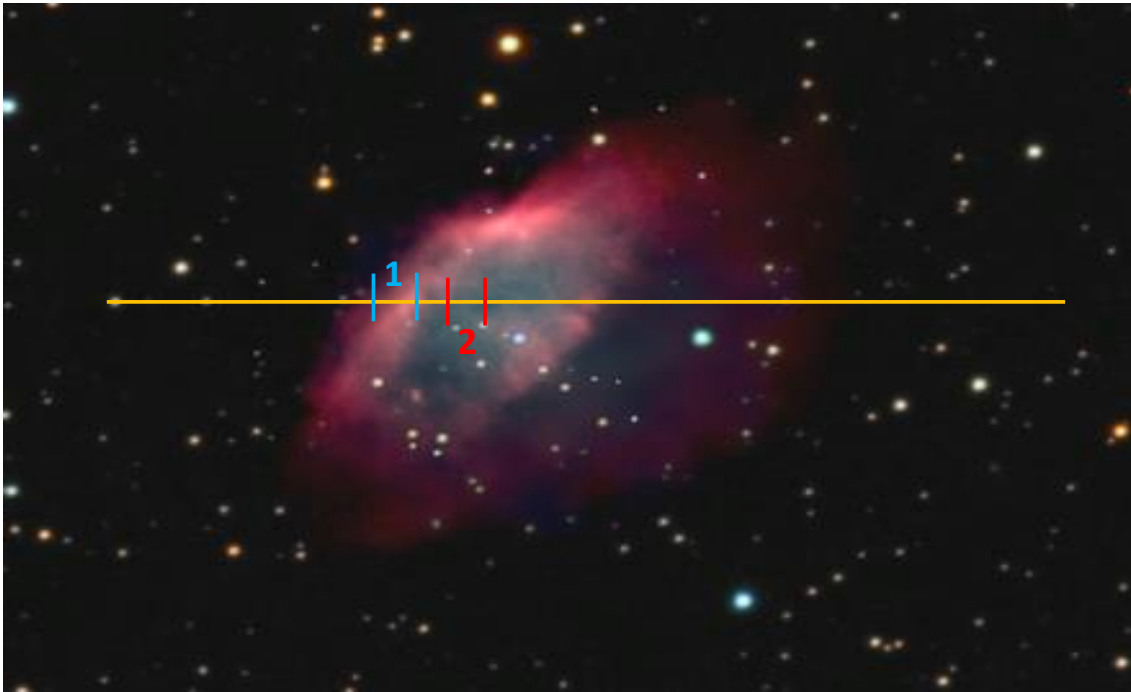
Object	Pa167
Coordinates (J2000)	04:17:26.43 42:35:57.06
Type	PN candidate

Observation date	18.121/09/2020 (d/m/y)
Meteorological conditions	20°C
Observer	L.Mulato
Location	Cornillon France

Mount	NEQ6
Telescope	Newton Skywatcher 200 mm F/5
Spectrograph	Alpy 600 - 23 μm slit
Resolution (bin 1x1)	$\sim 1 \text{ \AA}$ at $\lambda 656 \text{ nm}$
Science camera	ATIK 414 EX
Dispersion (bin 1x1)	$\sim 0,3 \text{ nm/pixel}$ at $\lambda 656 \text{ nm}$
Cam Temperature	0 °C
Binning	2x2
Guiding camera	ASI290 MM non cooled
Data acquisition Soft	PRISM V10
Data processing Soft	Isis V5.9.3

Exposure on object	6	x	1200	s
Master Dark date	28/06/2020	(d/m/y)		
Dark Exposure	18	x	1200	s
Dark Temperature	0	°C		
Master Offset date	22/05/2020	(d/m/y)		
Master Flat date	18/09/2020	(d/m/y)		
Neon-Argon calib. date	18/09/2020	(d/m/y)		
Reference star calib.	HD29526_A0V			
Exposure on ref star	17	x	8	s
Ref Star Sp. date	18.174/09/2020			

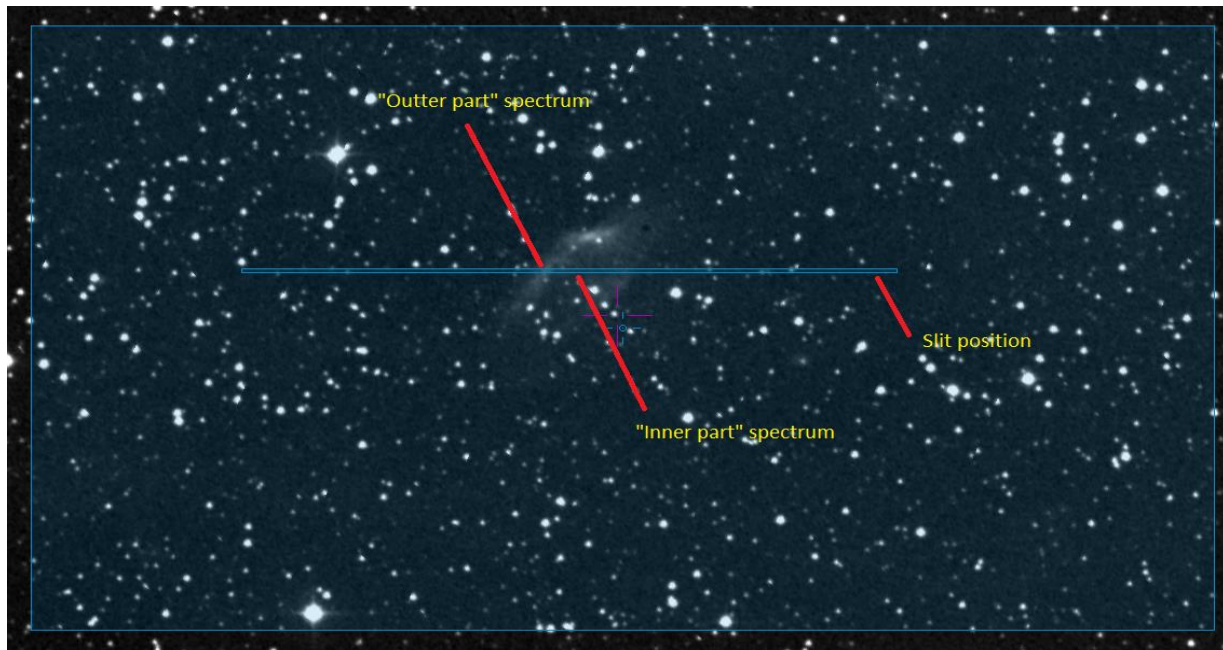
Image Peter Goodhew. <https://www.imagingdeepspace.com/sh2-215.html>



Yellow line : slit position

1 : "outer part" spectrum ; 2 : "inner part" spectrum

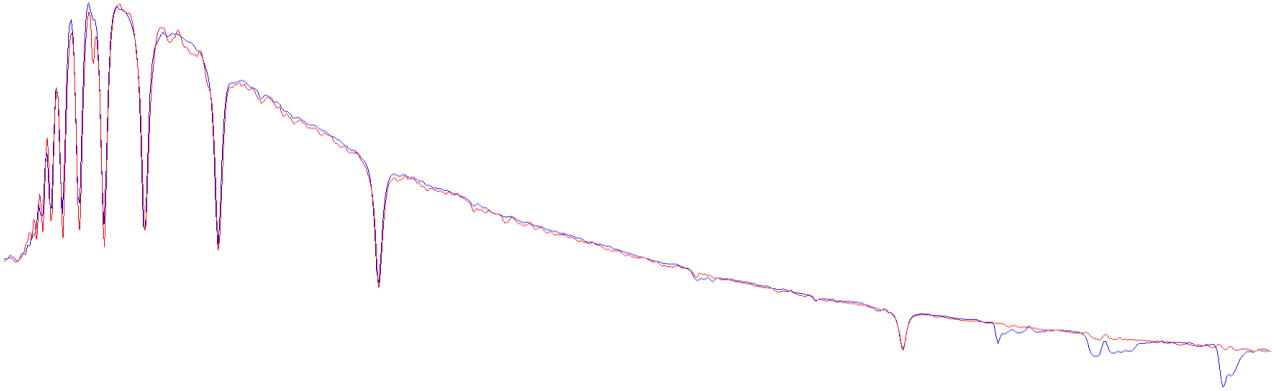
DSS2 red slit position



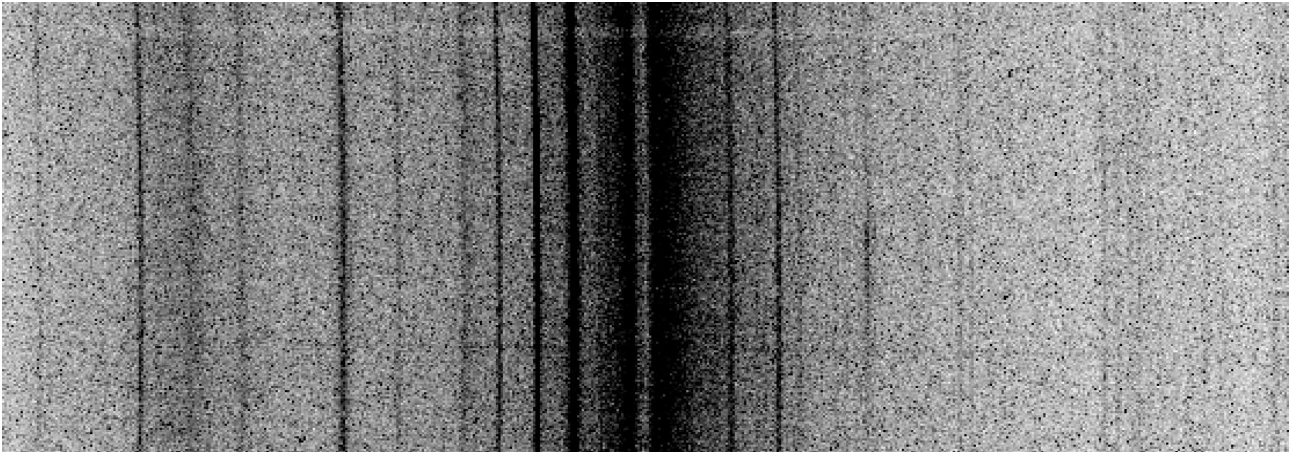


Instrumental Response and 2D Spectrum

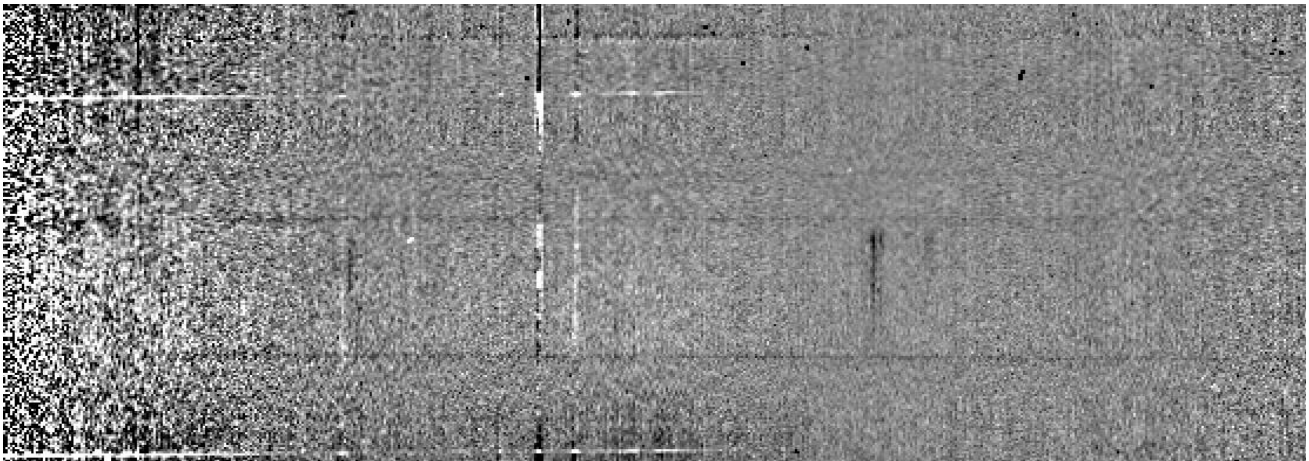
Instrumental response (red = theoretical ref star spectrum ; blue = acquired ref star spectrum with instrumental response correction applied)

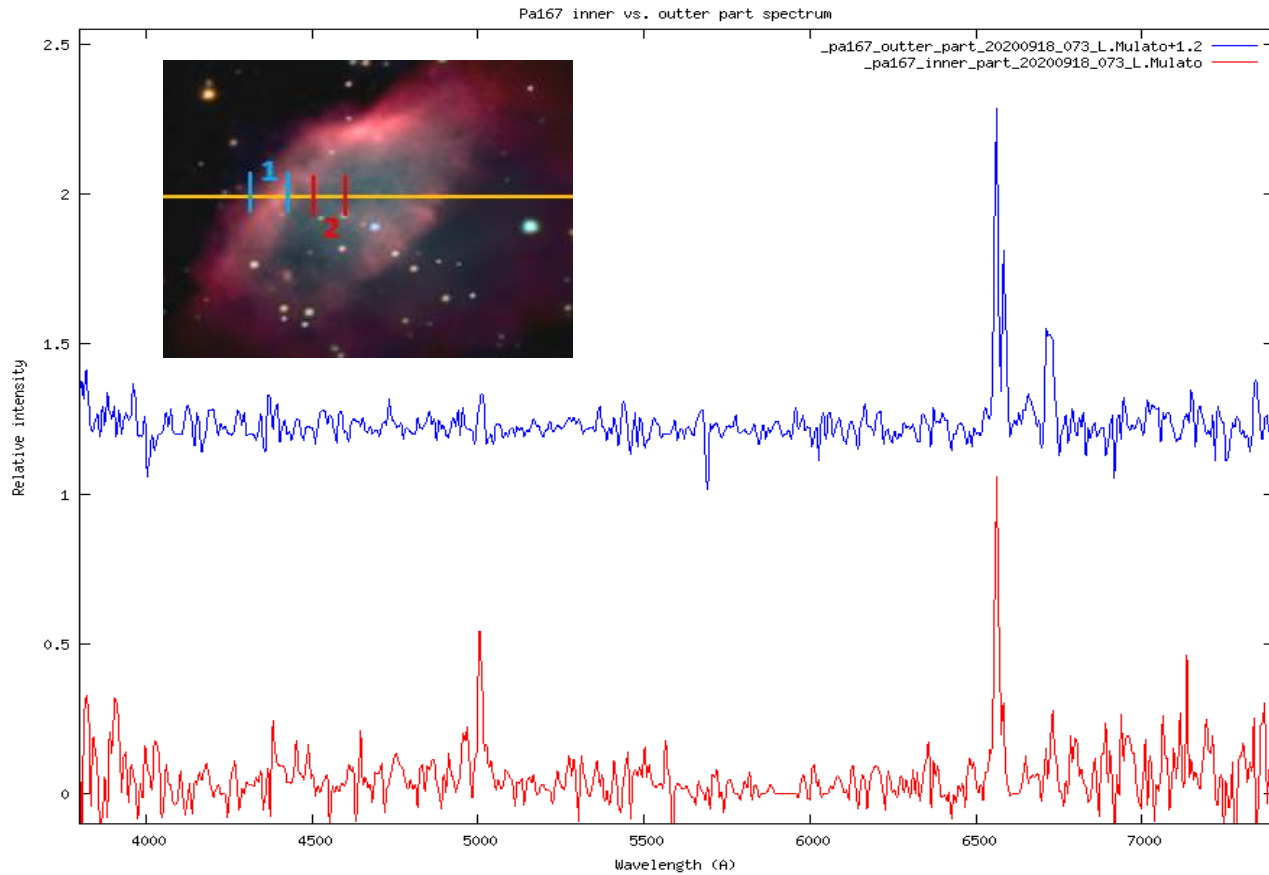


2D Raw spectrum



Processed 2D spectrum





Comments :

Bad observational conditions (high humidity)

Detected lines in the inner part of the nebula : [O III] doublet, no H-beta despite strong H α emission (i.e. : high extinction and high excitation ?), maybe [Ar III].

Detected lines in the outer part of the nebula (bright East filament) : H α ~[N II] 6583+6548, blended [S II] doublet with 6731~6716, weak [O III]

The addition of the inner part + outer part spectra is shown on the next page.

Object upgraded to "Likely PN" in HASH according to spectra.

Pa167 - N200 F5 - Alpy600- Atik414 - bin2x2 - 6x1200s - 2020/09/18 - L. Mulato

