

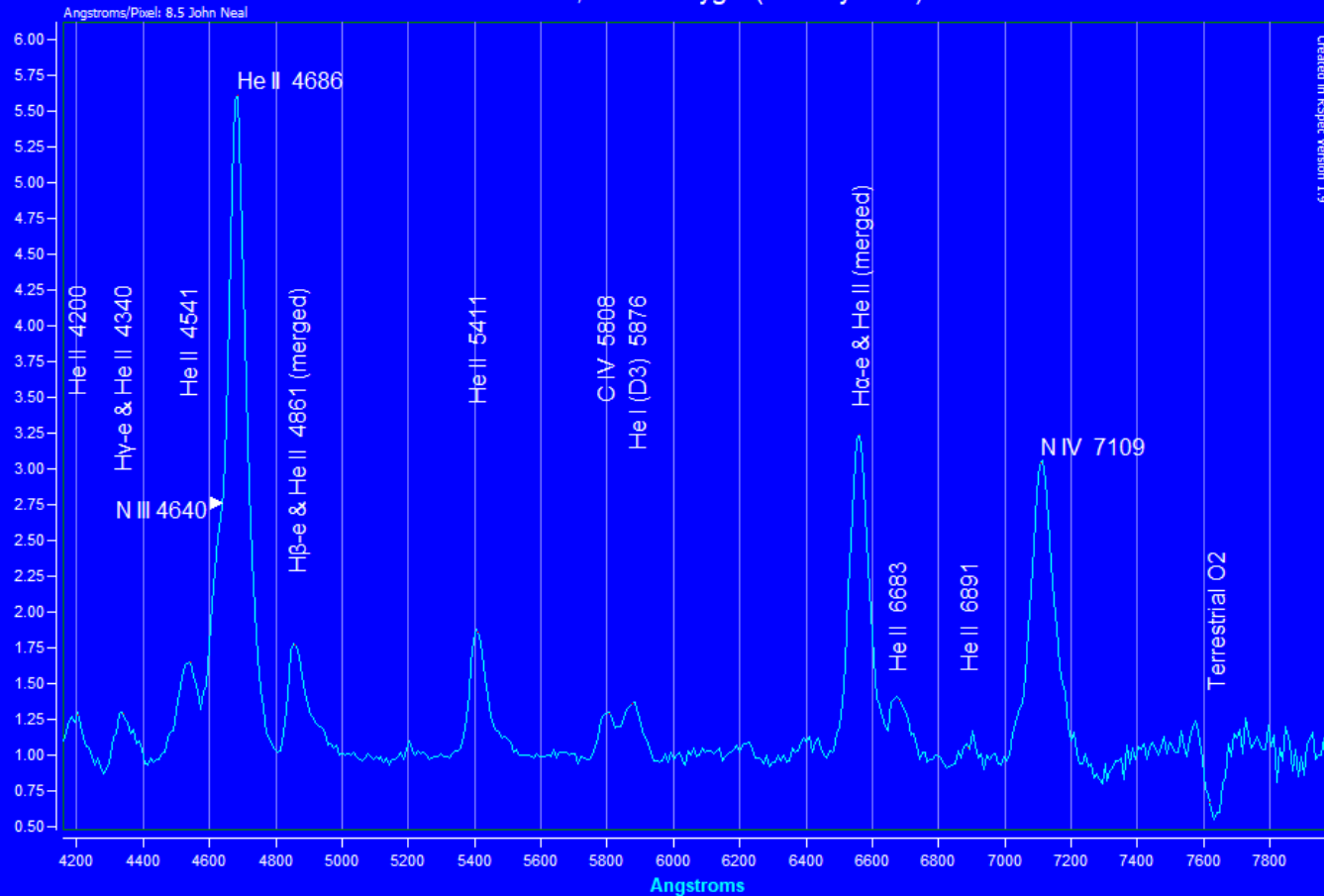
Low resolution spectroscopy of WR136, V1770 Cygni (HD192163)

Spectral
image



Imaged with Celestron EdgeHD 8 / Atik 414EXM

WR136; V1770 Cygni (28-May2020)



Object notes:

WR136 is a $21M_{\odot}$ Wolf-Rayet star in Cygnus. It is an evolved red supergiant which has previously ejected a shell of material. Since then a powerful Wolf-Rayet stellar wind has caught up with the earlier ejecta and the resultant shockwave, together with intense UV radiation from WR136, heavily ionizes the material.

The result is now visible as the Crescent Nebula, NGC6888, beautifully imaged here by my colleague at HAS, Les Brand.

WR136 can be seen at the red crosshair.



Spectrum notes:

WR136 has a spectral classification of WN6 due to its Nitrogen lines and minimal evidence of Carbon lines. It's spectrum is dominated by strong Helium and Nitrogen emission lines.

A prominent N IV line can be seen at 7109\AA and, although partly masked by the adjacent He II emission, can also be seen as a 'shoulder' on the He line at 4640\AA . The He II line at 4861\AA also masks any evidence of any H β line and, similarly, any H α line at 6563\AA .

Not visible in the visual spectrum WR136 also features a smaller, more localized cloud visible at radio wavelengths which is attributed to the highly energised gas of the stellar wind itself.