

## Beware of False He $\lambda$ 1640 Emission Line in Low Resolution Spectra

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A recent SWP low-resolution spectrum, SWP 54033, of 120 minutes duration was followed immediately by a 260 minute exposure. When the spectra were compared with each other, the first (short exposure) image showed a He II  $\lambda$ 1640 emission twice as large as the second (long exposure) image. Clearly, emission line fluxes of planetary nebulae do not change by a factor of two on a time scale of hours, so an instrumental effect was suspected for the "change". A line-by-line plot for lines 43-50, shown in Figure 1, indicated that either a radiation hit or possibly a hot pixel(s) is responsible for the fictitious strong He II emission line. It is flagged in lines 45-48 and is not present on the longer exposure. This argues for the cause of the spurious emission to be due to a radiation hit. However, a somewhat similar situation has also been noticed on an earlier spectrum. The probability of a radiation hit to occur twice at exactly  $\lambda$ 1640 seems remote. More likely, an intermittent nascent hot pixel may be in the making.

When the two spectra were reextracted by the "boxcar" routine that limits the data to lines 50-60, a perfectly reasonable intensity of the true He II  $\lambda$ 1640 emission lines was measured on both spectra.

Observers should be on guard for similar erroneous emission features at the astrophysically important  $\lambda$ 1640 region.

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swp 54033

