Study of PN population in nearby dwarf galaxy NGC 3077

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Object detection

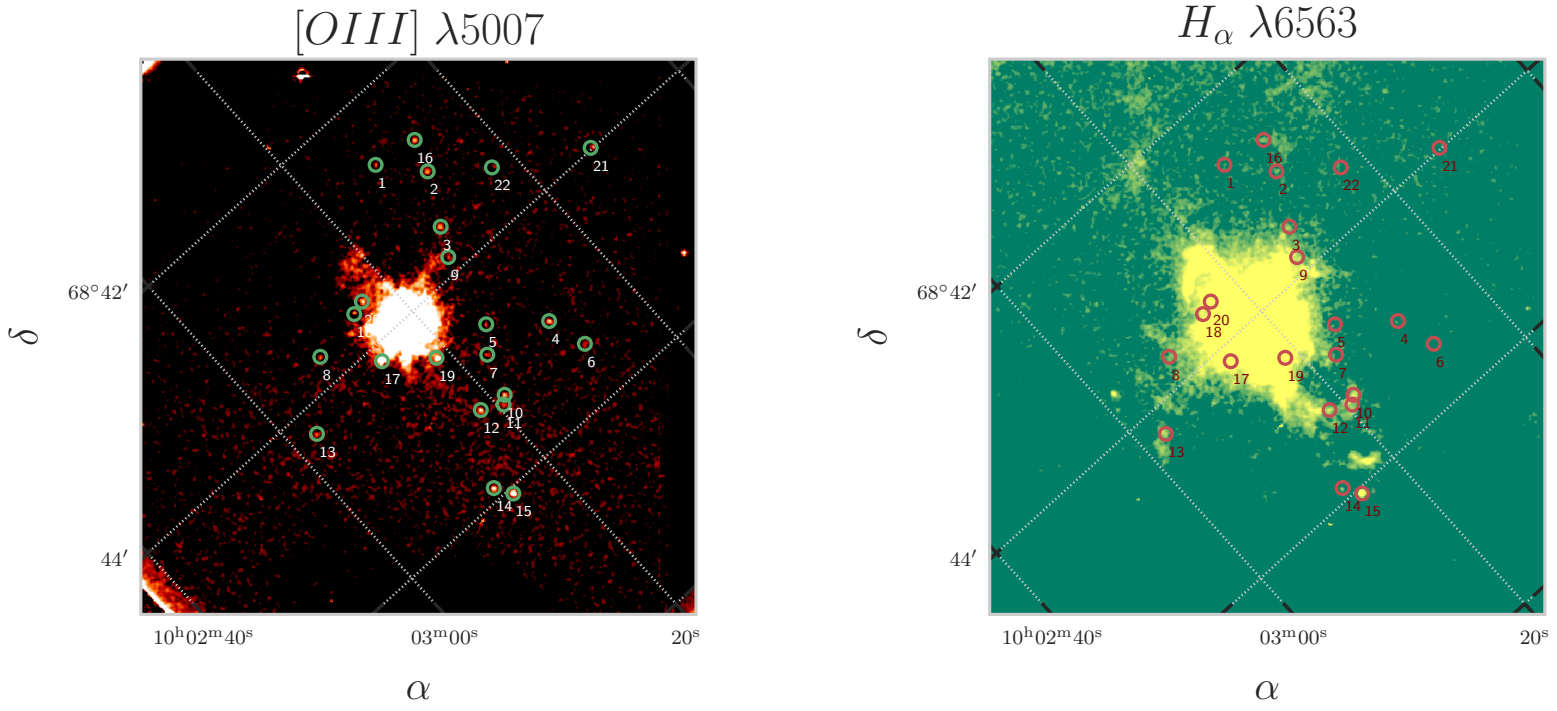

Figure: Location of the detected point sources on the maps of the galaxy NGC 3077 in the [OIII] λ 5007 and Hα emission lines.

Spectral data

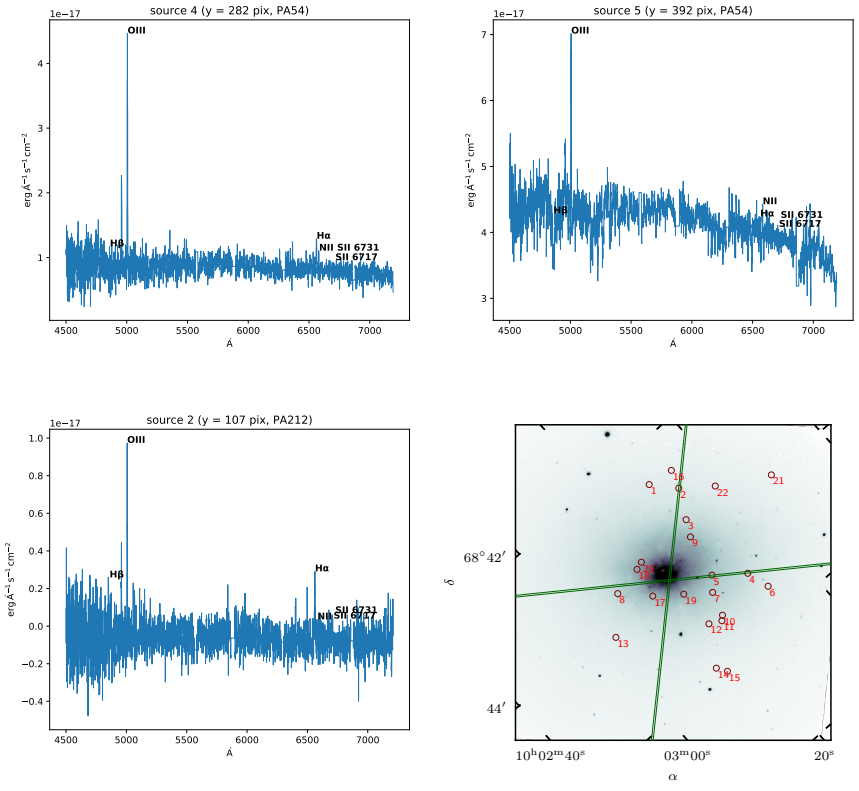

Figure: Spectra of sources: #4 and #5 (top), source #2 (below), image in the R filter with slit position (bottom right).

Diagnostic diagrams

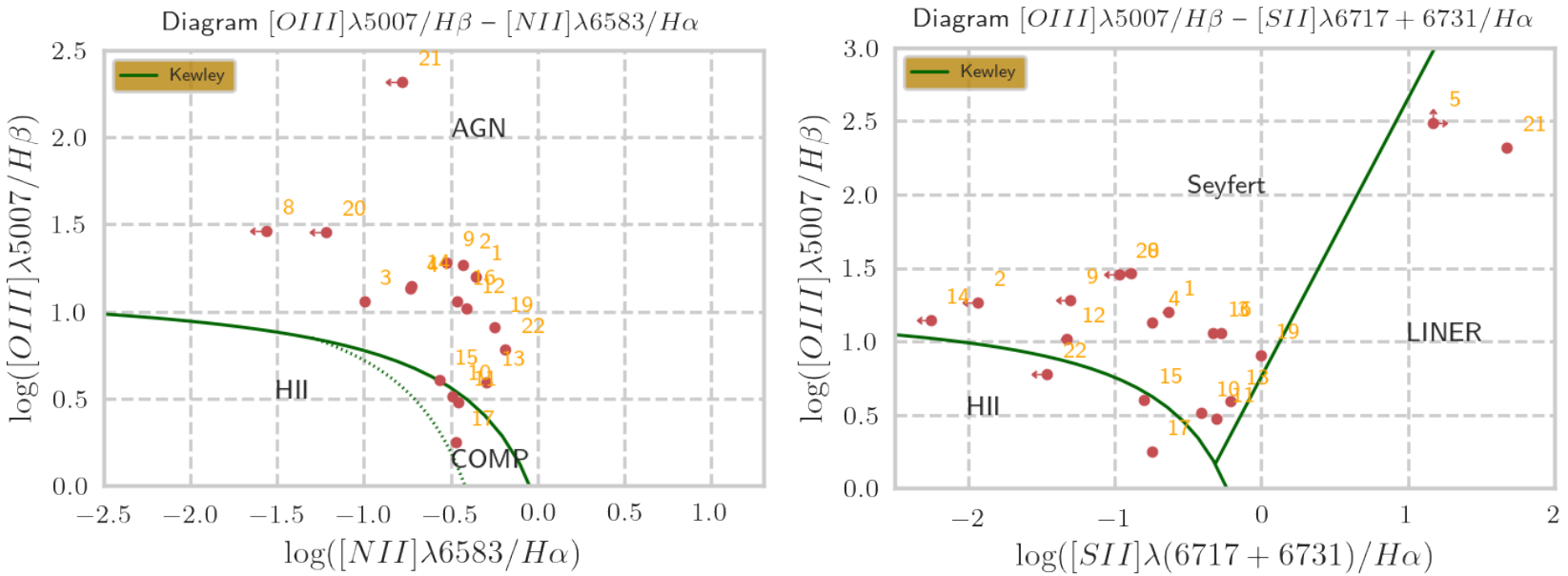

Figure: Line ratio diagnostic diagrams.

Conclusion

- Two sources (#13 and #19) were identified as optically emitting SNRs with a high [SII]/Hα ratio (> 0.4).
- Three sources (## 15,17 and 22) were identified as compact HII-regions.
- The rest 17 sources have been identified as PNe candidates with $\frac{I(\lambda 5007)}{I(H\alpha+[NII])} > 1.6$ (criterion of discriminating PNe from HII regions [5]).

References

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Thank you for your attention