ESO Science Archive Facility - Phase 3 Data Release Description
ESO programme MUSE view of the Seyfert galaxy NGC 7130, Data Release DR1
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Datacube of the central regions of the Seyfert + starburst galaxy NGC 7130 observed with MUSE-NFM

Abstract

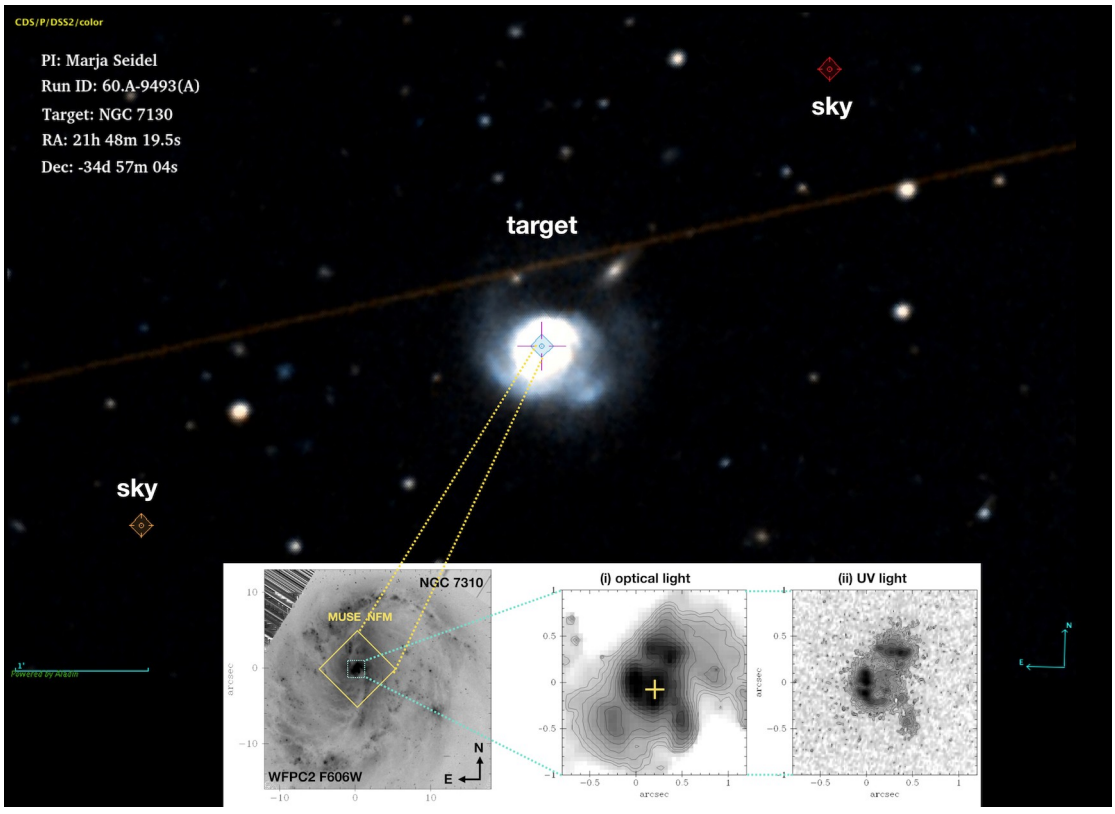
We provide a combined datacube that includes commissioning and science verification data of NGC 7130. The observing programmes are 60.A-9100(K) and 60.A-9493(A), respectively. We included all the exposures for which the angular resolution was better than 0.2 arcsec. The steps of the reduction are **1)** reduction of the individual exposures using the standard ESO pipeline, and **2)** manual alignment of the exposures. Details on the observing programme and the data processing can be found at Comerón et al. (2021, accepted in A&A, arXiv:2011.02937).

Overview of Observations

The observations were made with MUSE at the Unit Telescope 4 of the VLT. The observations were made in the narrow field mode using the standard wavelength range.

The observational strategy for the science verification part of the data was as follows. The target was exposed for 600 seconds and then off-target exposures were taken. Our two 600 s exposures are complemented with three 300 s-exposure frames taken during commissioning. The total exposure time is 2100 seconds.

FINDING CHART



Release Content

We release the combined datacube and the white light image of the target.

The datacube covers the spectral range between 4750 and 9300 Å and has a spectral resolution of roughly 2.5 to 2.7 Å depending on the wavelength (see the wavelength modelling in Bacon et al. 2017). The sampling is of 1.25 Å per pixel. The limiting magnitude for a point sources is of 22.4 mag in AB. The angular resolution is 0.17 arcsec.

The complete dataset weights about 6 Gb.

The table below displays some of the information on the two observational programmes, namely their name, the coordinates of the target, the date of the observation, the exposure time per pointing, and the number of useful pointings.

Programme	**Target**	**RA**	**Dec**	**DATE-OBS**	**EXP-TIME**	**N**
60.A-9100(K)	NGC 7130	21h 48m 19.5s	-34º57'04''	2018-06-21	300 s	3
60.A-9493(A)	NGC 7130	21h 48m 19.5s	-34º57'04''	2018-09-18	600 s	2

Release Notes

The spectral reference system for the datacubes in barycentric and the wavelength are measured in air.

Data Reduction and Calibration

The individual exposures were reduced using version 2.8.1 of the MUSE pipeline under version 2.9.1 of the Reflex environment.

Probably due to the lack of point sources in the field of view, the alignment recipe failed. Hence, we aligned the individual pointings manually and we combined them using the muse_exp_combine recipe.

Data Quality

The datacube is astrometrically calibrated using the bright OB region at x~189 and y~321, which is a point source that is recorded in Gaia with ra=327.0816588208739 and dec=-34.95061553421567.

The white-light 5-sigma depth for a point source is estimated to be around 22.4 mag arcsec^{-2} in AB.

Known issues

None.

Previous Releases

None.

Data Format

Files Types

The datacubes file is named DATACUBE_FINAL.fits. Each datacube has two extensions. The first one (EXTNAME=DATA) contains the data value whereas the second one (EXTNAME=STAT) contains the data variance.

The white-light image is named IMAGE_FOV_0001.fits and contain a single extension produced by averaging the data datacube extension along the spectral direction. NaN pixels were excluded from the average.

Catalogue Columns

None.

Acknowledgements

Any publication making use of this data, whether obtained from the ESO archive or via third parties, must include the following acknowledgement:

- "Based on data products created from observations collected at the European Organisation for Astronomical Research in the Southern Hemisphere under ESO programme(s) 60.A-9100(K) and 60.A-9493(A)."

If the access to the ESO Science Archive Facility services was helpful for you research, please include the following acknowledgement:

- "This research has made use of the services of the ESO Science Archive Facility."

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Furthermore, a citation to the article describing the data reduction would be appreciated:

- Comerón et al. (2021, accepted in A&A, arXiv:2011.2937).