A search for ionised gas outflows in an Halpha imaging atlas of nearby LINERs

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Самый большой на сегодня H-альфа атлас близких LINER

Aims. The main goal of this work is to create the largest, up-to-date atlas of ionised gas outflow candidates in a sample of 70 nearby LINERs. We aim to use narrow-band, imaging data to analyse the morphological properties of the ionised gas nuclear emission of

Конкретно – сняли 32 галактики в Нальфа на ALFOSC/NOT + 6 HST archive
И добавили 32 по литературе, в основном, из своей же статьи Masegosa et al. (2011)

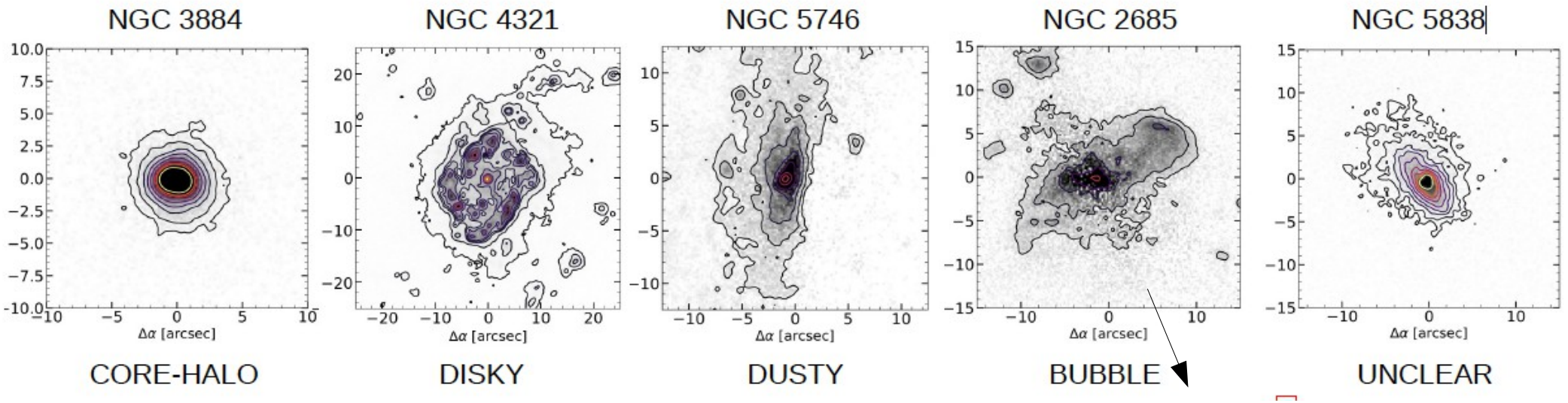
Очень неудобно из-за этого читать, так как постоянно пишут: “у M11 – вот такой процент, а теперь – вот такой...”

Сборка выборки – по литературе, без четких критериев, z<0.025, есть данные x-ray...
Спектры – 30 IFU, 30 Long-slit по литературе

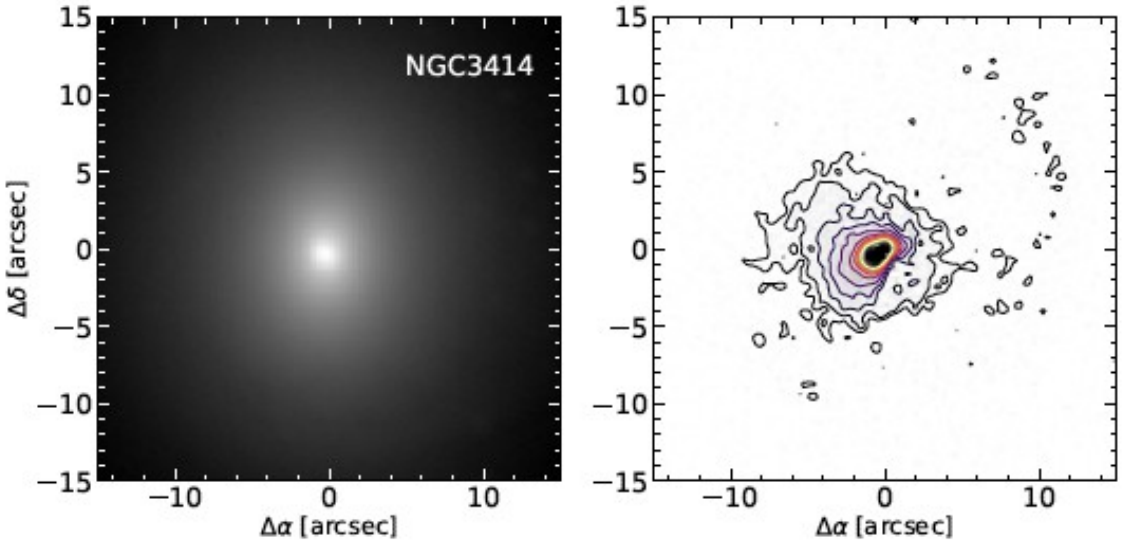
Фильтры NOT - 40-50 A, подбирались так, чтобы включать Ha+[NII]]6548 – без второго яркого компонента дублета (но это же проблемы на краю пропускания!)

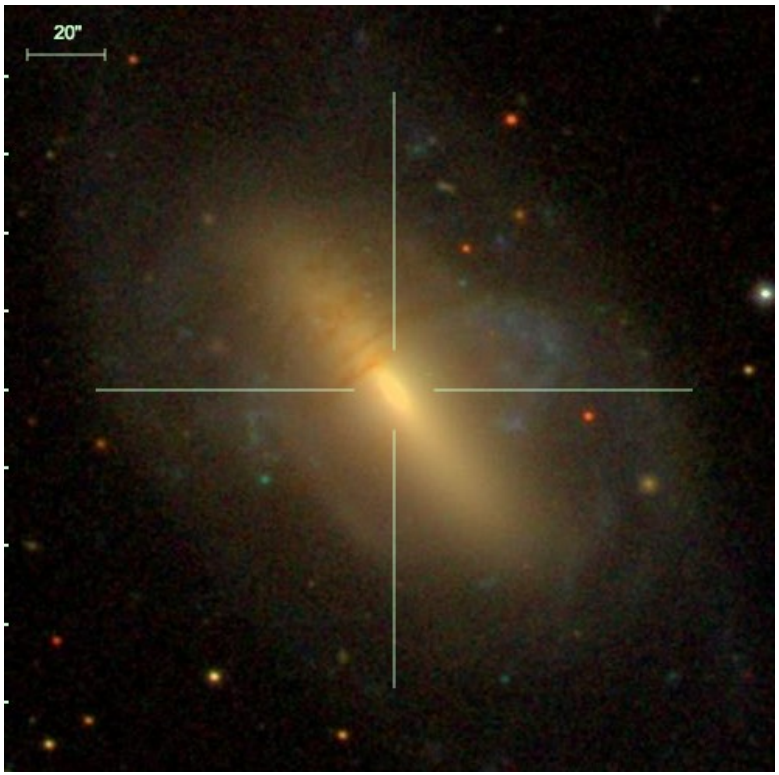
2006). Contamination of the Hα line due star-formation processes could exist. However, we do not expect this to be important, as all our sources are early-type galaxies (see morphological types in Table 1), where the star formation is expected to be less important than in later host types.

Визуальная (!) классификация морфологии



Тоже “bubble”!





and Pogge et al. (2000). The galaxies in parenthesis have an unclear classification. The * are targets analysed both with the new data and in M11.

Core-halo (12+8)	Disky (9+6)	Dusty (3+5)	Bubble (9+13)
IC 1459†	NGC 0841	NGC 3226†	NGC 0266
NGC 0315†	NGC 2681†	NGC 3607†	NGC 0404†
NGC 0410	NGC 2841†	NGC 3627†	NGC 1052†
NGC 2639†	NGC 3185	NGC 3628	NGC 2685
NGC 2787†	NGC 3507	NGC 4125	NGC 3245†
NGC 3623†	NGC 3608	NGC 4374†	NGC 3379*†
NGC 3884	NGC 3642	(NGC 5363)	NGC 3414
NGC 3998†	NGC 3898	NGC 5746	NGC 3718†
NGC 4111†	(NGC 4143)	NGC 5866†	NGC 3945
NGC 4261	(NGC 4203)		NGC 4036†
NGC 4278*	NGC 4314†		(NGC 4143)
NGC 4450	NGC 4321		NGC 4192†
NGC 4494	NGC 4457		(NGC 4203)
NGC 4589	NGC 4552†		NGC 4438†
NGC 4698	NGC 4594†		NGC 4459
NGC 4772	NGC 4736†		NGC 4486†
NGC 5055†	NGC 5077		NGC 4579†
NGC 5957	(NGC 5838)		NGC 4596
NGC 6482	(NGC 7331)		NGC 4636†
NGC 7743			NGC 4696
			NGC 4750
			NGC 5005†
			(NGC 5363)
			NGC 5813
			(NGC 5838)
			NGC 5846†
			(NGC 7331)

Спиралей довольно много!

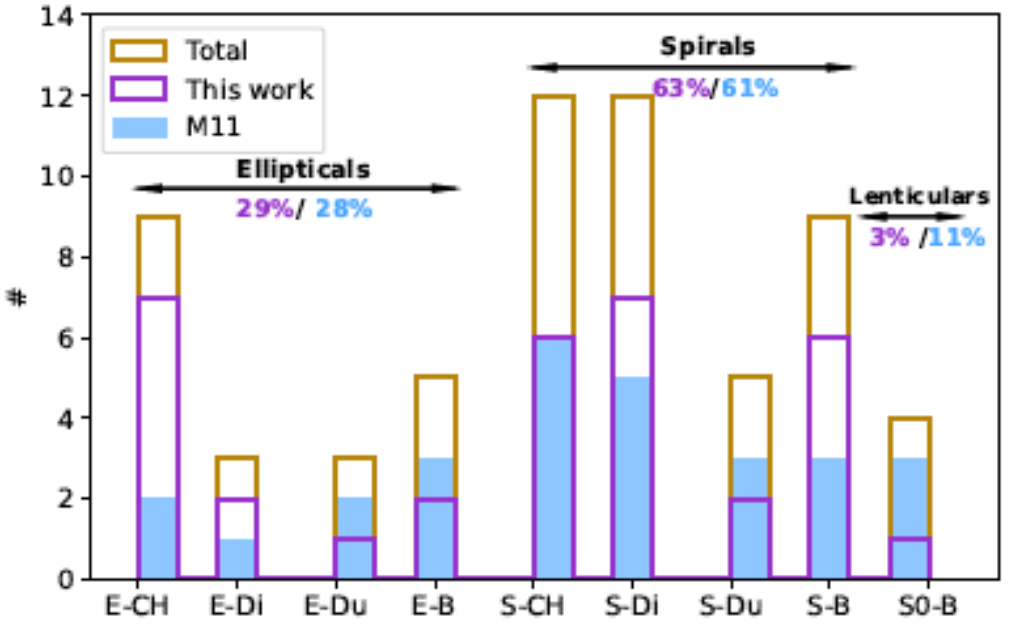


Fig. 7. Histogram of the morphological type of the host galaxy and the classification of the nuclear Hα emission. It is divided into ellipticals (E), spirals (S) and lenticulars (S0); 'CH' stands for 'Core-halo', 'Di' for 'Disky', 'Du' for 'Dusty' and 'B' for

29% 21% 7% 32% => один из основных выводов работы

“Кинематические подтверждения” - весьма странные
По сути – наличие в литературе описания “пекулярностей”, пусть и на самых разных масштабах

NGC7743 (see Fig. B.10): We have classified the ionised gas morphology as ‘Core-halo’. The analysis of both long-slit and IFS spectroscopic data made by Katkov et al. (2011) conclude that the ionised gas present several components in the inner 1-2″, one of them probably produced by the interaction of the jet from the AGN with the ambient interstellar medium. This could be related to what we see in our image, that the Hα contours in that regions shows a slightly different orientation than the outer contours (north-south vs northeast-southwest). The H_2 velocity field derived from K-band IFS with SINFONI allowed Davies et al. (2014) to conclude that the molecular gas is outflowing from the AGN.

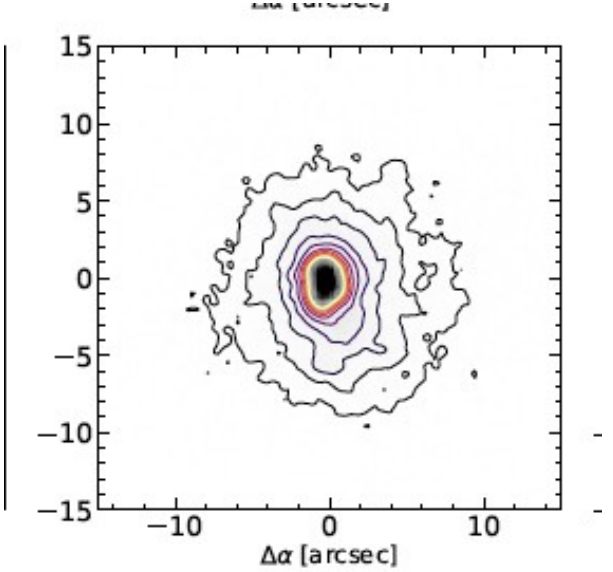
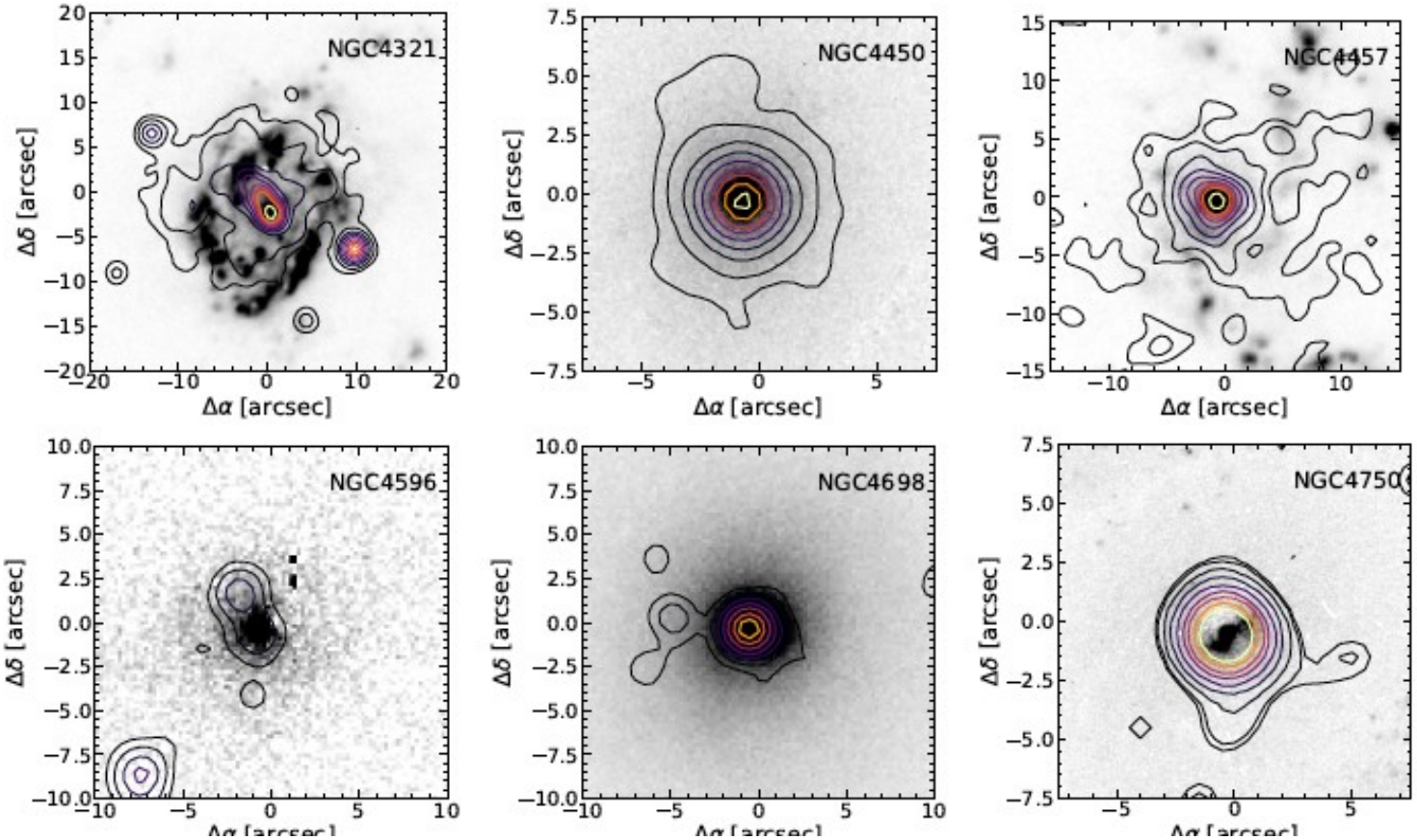


Table 5. Percentages of the galaxies with kinematically confirmed outflows in the literature depending on their morphological classification of the Hα nuclear emission (see Sect. 5.1 and Appendix A for the comments on individual targets).

Morphological class	Kinematical outflows	Targets
Core-halo	50%	8 (out of 16)
Disky	31%	4 (out of 13)
Dusty	66%	4 (out of 6)
Bubble	48%	10 (out of 21)
Unclear	75%	3 (out of 4)
All classes	48%	29 (out of 60)

“Kinematical outflow” - одинаково часто встречаются и в core и в bubble,
(что не удивительно, при такой классификации)

Мягкий рентген (Chandra) – есть для большей части выборки (64/70),
Пространственно совпадает с Нальфа в ~30-60% (а разных местах статьи)
Связан ли рентген с “истечениями”? - корреляции не видно



ИТОГ – годится, разве, как “атлас”