



DIVERSITY OF THE LOCAL UNIVERSE



دانشگاه بیرجند
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BPT-sigma Relation in Nearby Dwarf Galaxies



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We announced the project aimed to expand a sample of objects to study the "BPT-sigma" relation in the interstellar medium of the local star-forming galaxies..

Step 1

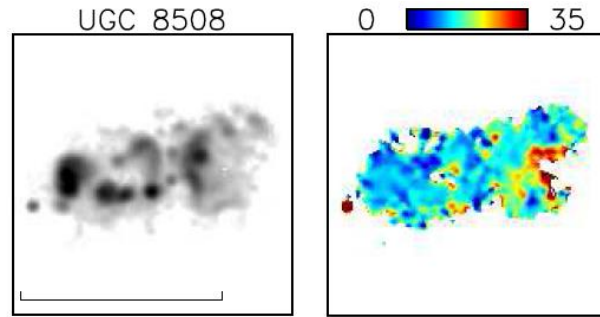
- ✓ *Deriving the archival long-slit spectroscopic data SCORPIO and SCORPIO-2 multimode focal reducers from ASPID in order to obtain the emission lines ratio: <http://alcor.sao.ru/index.php?L=en>*



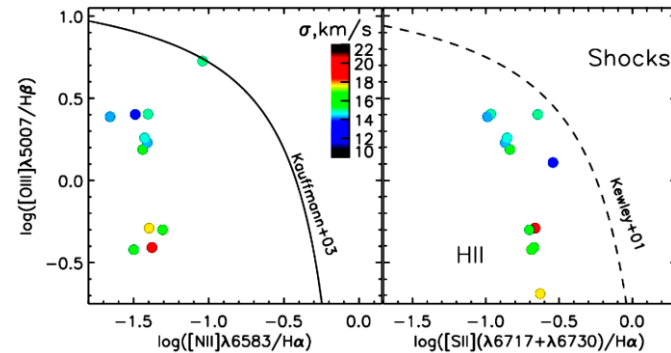
- ✓ *Combining the ionized gas velocity dispersion maps derived from the scanning Fabry-Perot interferometer observations at the SAO RAS 6-m telescope with this emission lines ratio.*

Objects that we intend to study

Name	Instrument	Distance (Mpc)	M_B	M_K
DDO 53	SCORPIO-2	3.56	-13.37	-15
DDO 68	SCORPIO	9.80	-15.27	-17.15
IC 10	SCORPIO	0.66	-15.99	-17.90
KKH 34	SCORPIO	8.90	-14.85	-17.20
UGC 2455	SCORPIO	7.80	-18.14	-20.00
UGC 3476	SCORPIO	7.00	-14.27	-16.62
UGC 5221	SCORPIO	3.56	-17.09	-20.27
UGC 5427	SCORPIO	7.10	-14.48	-15.50
UGC 6456	SCORPIO	4.34	-14.03	-15.72
UGC 7047	SCORPIO-2	4.31	-15.07	-17.42
UGC 7611	SCORPIO	9.59	-17.73	-20.86
UGC 7648	SCORPIO	5.80	-16.72	-18.26
UGC 7651	SCORPIO	5.80	-19.42	-21.50
UGC 8313	SCORPIO-2	9.20	-15.22	-7.94
UGC 8508 *	SCORPIO/SCORPIO-2	2.69	-13.09	-15.58
UGC 8638	SCORPIO	4.27	-13.74	-16.63
UGC 11583	SCORPIO	5.90	-14.32	-16.67
SAO 0822+3545	SCORPIO	13.50	-13.26	—
UGC 772	SCORPIO	16.30	-14.88	—
Mrk 35	SCORPIO	15.60	-17.76	-20.14
Mrk 370	SCORPIO-2	10.85	-16.83	-19.51



Results of observations with the scanning FPI at the 6-m SAO RAS telescope. Given for UGC 8508: image in the H_α line and velocity dispersion corrected for the thermal line broadening. Coloured scale is in kms^{-1} . The horizontal bar in the left- hand panel for this galaxy shows the linear scale of 1 kpc.



BPT-sigma relation: excitation diagnostic diagrams comparing the emission-line intensity ratios along the UGC 8508 major axis according to SCORPIO-2 long-slit observations presented in Moiseev & Lozinskaya (2012). The colored points correspond to different velocity dispersion according to the scale-box.

This BPT diagram shows that all regions with the spectral data correspond to the ionization gas by young OB stars. We didn't detected the gas with a significant ionization by shocks.

The correlation between velocity dispersion and gas excitation is absent. It's not very interesting case, but it corresponds the common situation in the galaxies with a relatively weak current star formation.

Thank you for your attention !