T. Tomov

SALT 2012 semester I summary of proposals:

2012-1-POL-003

Southern post novae survey

and

2012-1-POL-OTH-001

SALT Spectroscopy of WR48a: the most X-ray luminous Wolf-Rayet star in the Galaxy

2012-1-POL-003: Southern post novae survey

For each target the observations include RSS imaging in a narrow filter in the Hα/[NII] region and two long-slit spectra covering the intervals 3500-6590 Å and 6180-9150 Å.

The allocated time and the realized observations (up to 19.10.2012) are summarized in the table below.

Time allocated			Targets proposed	Targets observed	Time charged [sec]
Priority	Moon	Time [sec]			
2	Gray	15480	5	3	7802
2	Dark	9000	3	2	4805
3	Gray	48960	17	4	9993
Total		73440	25	9	22600
				36%	31%

2012-1-POL-003 - Southern post novae survey

In the framework of this proposal 18 observational blocks were carried out. Nine blocks were finally accepted but 9 (50%) of the blocks were rejected. Some of them were rejected by the SA on duties. In several cases the blocks were rejected after a discussion of their quality with the liaison SA. The image quality and missing calibrations were among the main reasons for rejection of the discussed blocks.

From the quality point of view the present semester observations look better in comparison to the previous one.

The SALT staff was very responsive and helpful in the preparation and realization of the proposal.

Seems that the missing SALTICAM is a big problem for the RSS long-slit observations as well. Although we updated our finding charts, none of our objects was observed after the SALTICAM was removed.

2012-1-POL-OTH-001: SALT Spectroscopy of WR48a: the most X-ray luminous Wolf-Rayet star in the Galaxy

The aim of this proposal was to obtain a good quality moderate-resolution SALT long-slit spectrum of WR48a in the 4000-9000 Å spectral region, divided in five intervals - 4050-5100 Å, 4880-5850 Å, 5810-6670 Å, 6640-7840 Å and 7790-8840 Å.

The allocated time was 3621 sec with priority 2.

The proposal was fully completed on 27.05.2012.

In the framework of this proposal 3 observational blocks were carried out. Two blocks were rejected because of not met observing conditions and the object misidentification.

2012-1-POL-009 “Spectroscopy of faint planetary nebulae in the Galactic bulge”

description: Study of the faint planetary nebulae population in the Galactic bulge to check if there is a considerable fraction of objects with higher mass central stars.

purpose: Measure emission lines and study chemical composition (He, N, O)

instrument: RSS, grating pg0900, two setups: 3500-6580 & 5480-8490

objects: 13 (min. useful declared 6) in total of 26 observations (blue & red part)

allocation: priority 3, dark, 92196 seconds

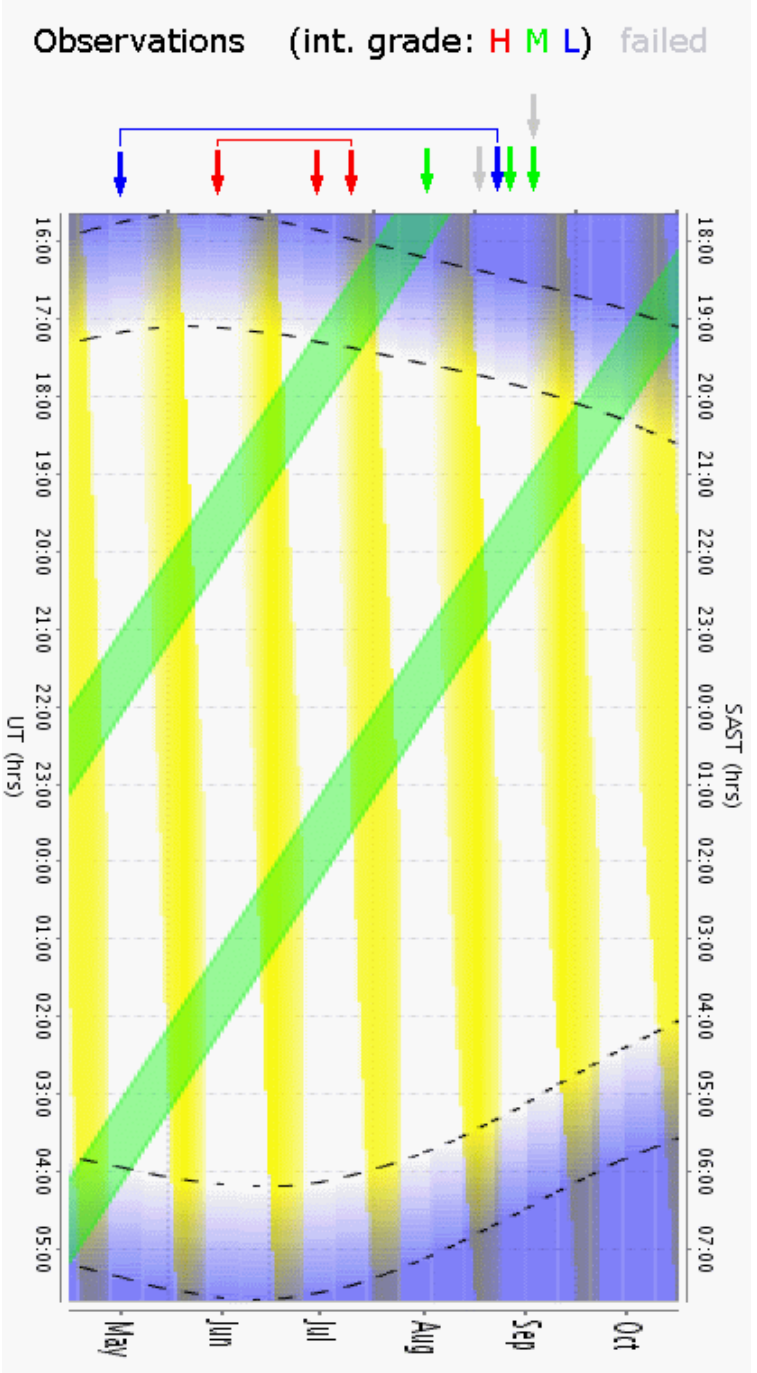
completion: 29,9%, 27606 seconds, 8 observations (+2 rejected)

or 2 + 4x1/2 objects observed

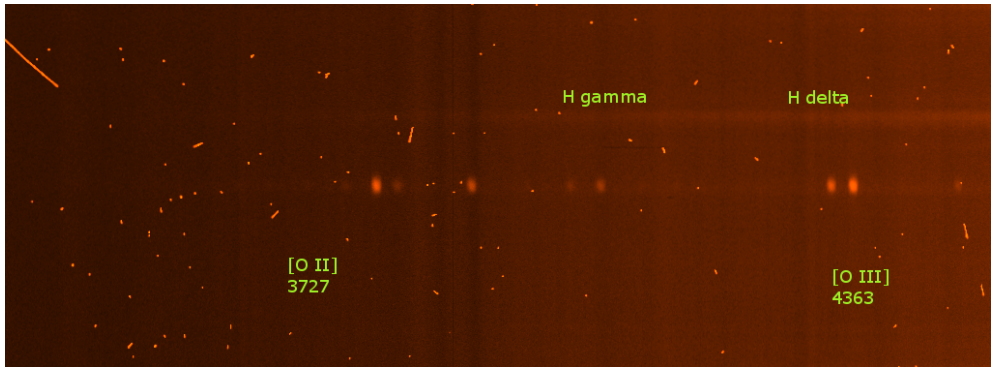
2012-1-POL-009 **“Spectroscopy of faint planetary nebulae in the Galactic bulge”**

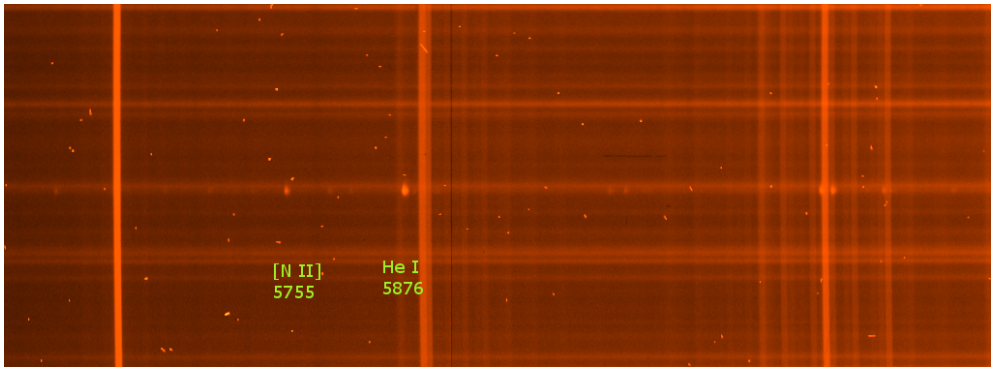
Potential problems:

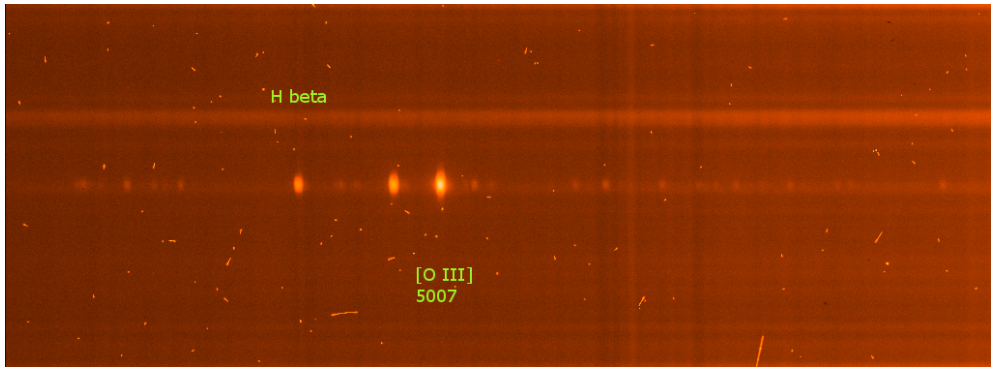
- Faint targets and long exposures requested for (2x1200 + overheads vs. 3800 seconds visibility window)
- Objects concentrated in one region (Galactic bulge)
- Low grade programs executed at the end of the observational period (one window per night)
- No suitable configuration for a single 3700-7300 exposure with R=1000

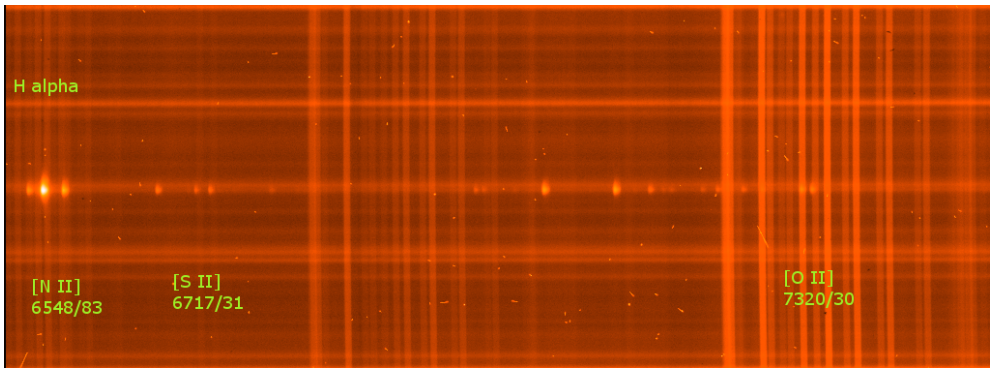


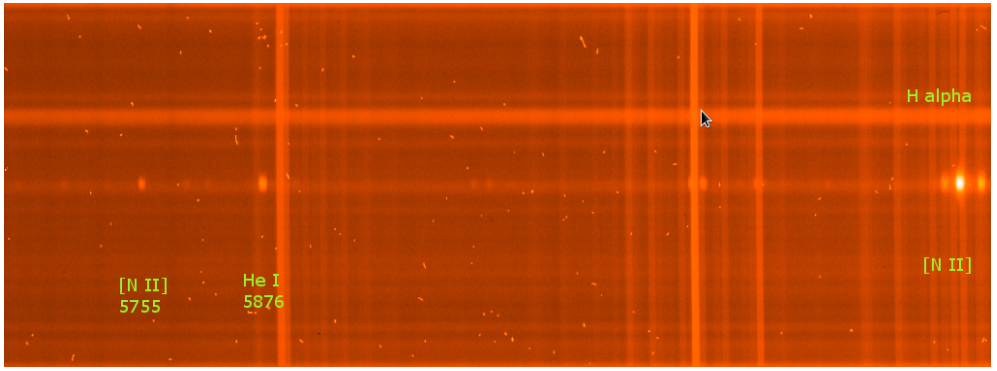
2012-1-POL-009 **“Spectroscopy of faint planetary nebulae in the Galactic bulge”**

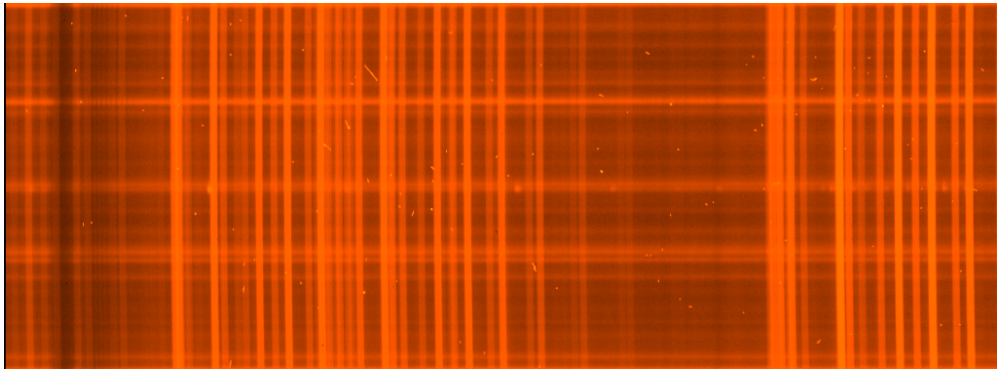












raw “typical” spectra of PNG354.9-02.8b blue and red part (important nebular lines indicated)

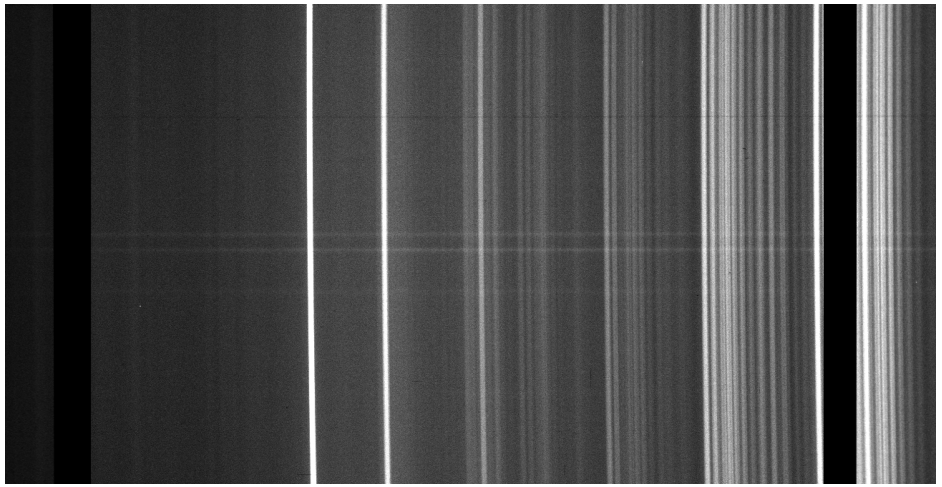
2011-3-POL-008 - report

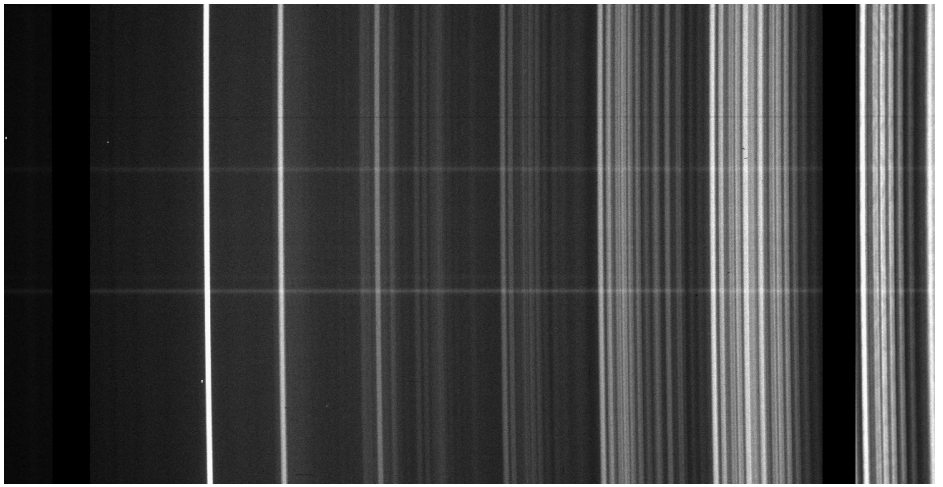
PI: Dorota Koziel-Wierzbowska

Title: Giant Radio Galaxies as the probe of the cosmological evolution of the IGM

Proposed: long-slit spectroscopy of 20 hosts of radio galaxies in order to measure their redshifts. 13 targets approved with priority 2 and 7 targets approved with priority 3. Observation of each object consisted of two spectra taken with grating P0300 at two different grating positions.

Observed: 7 galaxies with priority 2 (6 with success) and 3 galaxies with priority 3 (1 with success).





Two 2D exposures of the same object taken in the interval of 10 min, separated only by arc and flat exposures, that should be taken only with different grating angle. There were no any comments in Astronomers Log that slit position or PA has changed. Using the SALTICAM slit image we were able to identify objects only in the first spectrum.

2011-3-POL-008 - report

PI: Dorota Koziel-Wierzbowska

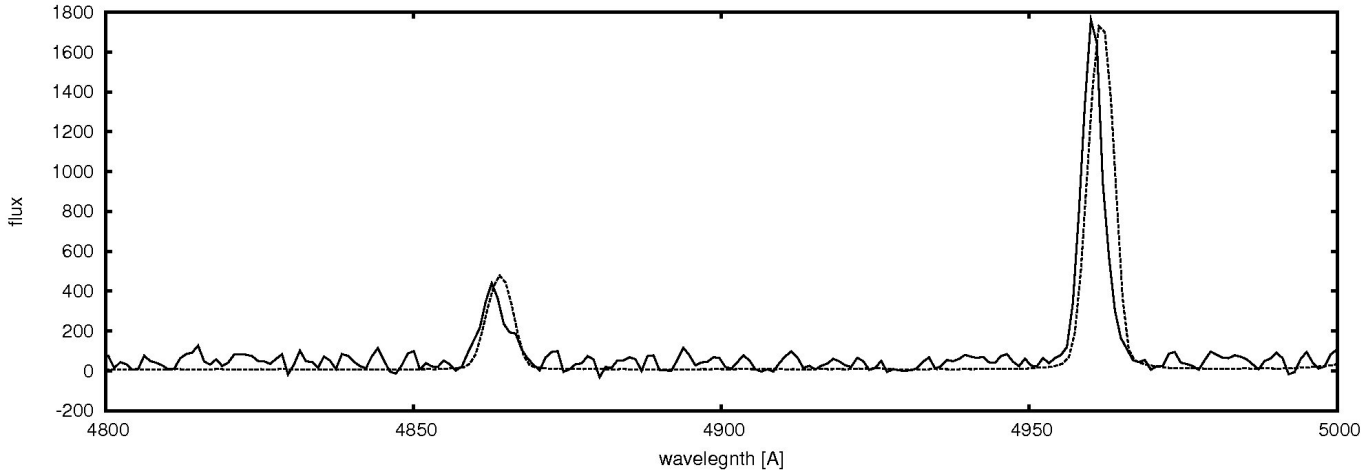
Title: Giant Radio Galaxies as the probe of the cosmological evolution of the IGM

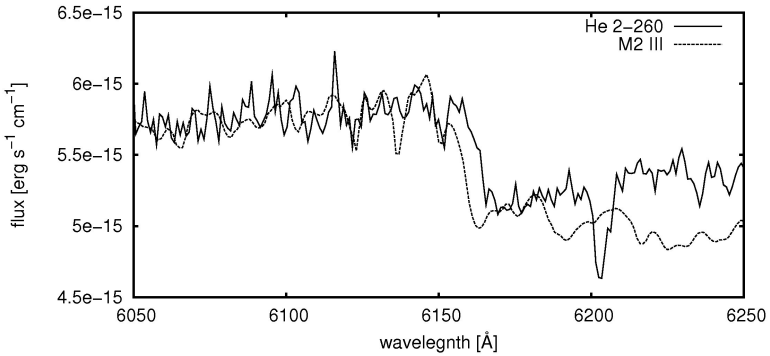
Program to be continued in 2012-2; PI is deeply concerned about identification of faint objects spectra given lack of SALTICAM

Spectroscopic observations of new binary central stars of planetary nebulae
2012-1-POL-010
PI: M. Hajduk

- 5 targets: two relatively bright Galactic Planetary Nebulae (PNe): He 2-260 and H 2-25 and 3 very faint SMC PNe: Jacoby SMC 1 (two observations), Jacoby SMC 23, Jacoby SMC 24
- Two Galactic PNe were observed; only for one of them standard star observation was performed
- Jacoby SMC 1 and Jacoby SMC 23 observed with the standard on 20120919
- Jacoby SMC 1 observed again on 20101010 (accidentally, instead of [JD 2002] 11). The spectrum has much higher S/N compared to the 20120919 spectrum. Why is it so?
- Jacoby SMC 24 was observed on 20120917, but only one 120s spectrum (instead of one 120s and one 1200s spectra) was made

		SALT	Escudero et al.
4863	Hβ	100,0	100,0
4959	[OIII]	2,4	1,6
5007	[OIII]	7,9	5,1
5754	[NII]	4,0	4,1
5875	He I	2,7	2,1
6300	[OI]	3,4	3,5
6312	[SIII]	1,4	1,3
6364	[OI]	1,1	1,1
6678	He I	0,7	0,5
6716	[SII]	3,3	4,2
6731	[SII]	9,2	9,0
7002	OI	0,7	0,9
7065	He I	1,7	1,1
7135	[ArIII	2,0	1,6
7320	[OII]	34,5	35,8
7330	[OII]	34,2	41,2





- Jacoby SMC 1 was observed twice (1200s), one spectrum of much better S/N than the other one. Dark time for both. Why different S/N?
- Relative emission line fluxes of He 2-260 in good agreement with the fluxes taken from the literature

  He 2-260 and H 2-25 show suspicious feature close to TiO 6150Å, but it is slightly shifted in wavelength in both cases and no other (expected) TiO bands were detected, likely instrumental origin.
-

Dark energy tests with quasar monitoring: feasibility study

2012-1-POL-008: B. Czerny (PI), K. Hryniewicz, J. Kaluzny

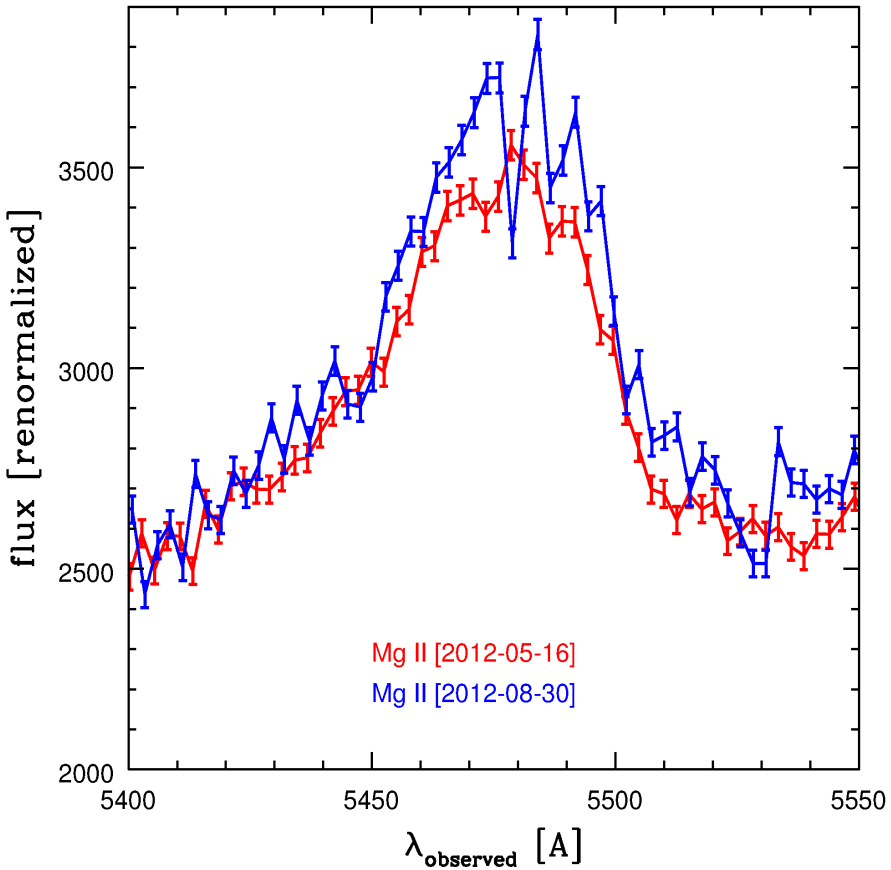
Broad Line Region in quasars can serve to obtain a standard candle for cosmology independent from SN Ia (Watson et al. 2011).

Measurement of observed monochromatic luminosity and the EW of MgII line → Determination of the time delay of the line (BLR size) → Determination of the absolute monochromatic flux from BLR size (theory) → Determination of the distance independent from the redshift

Key points: (i) use of the Mg II line instead of CIV line; monitoring with CIV by HET was not succesfull due to intrinsic CIV variability with amplitude larger than in continuum
(ii) theory now is based on interpretation of formation of the BLR region due to dust in the disk atmosphere; high redshift objects have similar dust properties and metallicity to low redshift active galaxies.

Semester I: completed two test observations of quasar LBQS 2113-4538, V = 17.3, redshift z = 0.946 (position 21 16 44.30 -45 26 09.49): one with Dark Moon and one with Bright Moon.

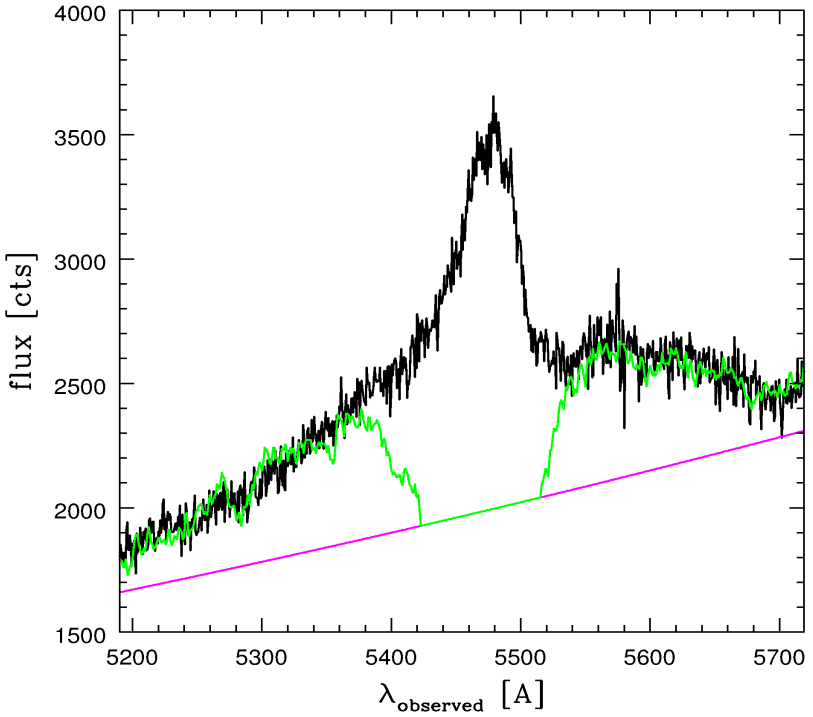
The Mg II line profile has changed significantly between the observations.



$Ew_{observed}$ = 11.29 +/- 0.03 [May]
$Ew_{observed}$ = 12.38 +/- 0.03 [August]

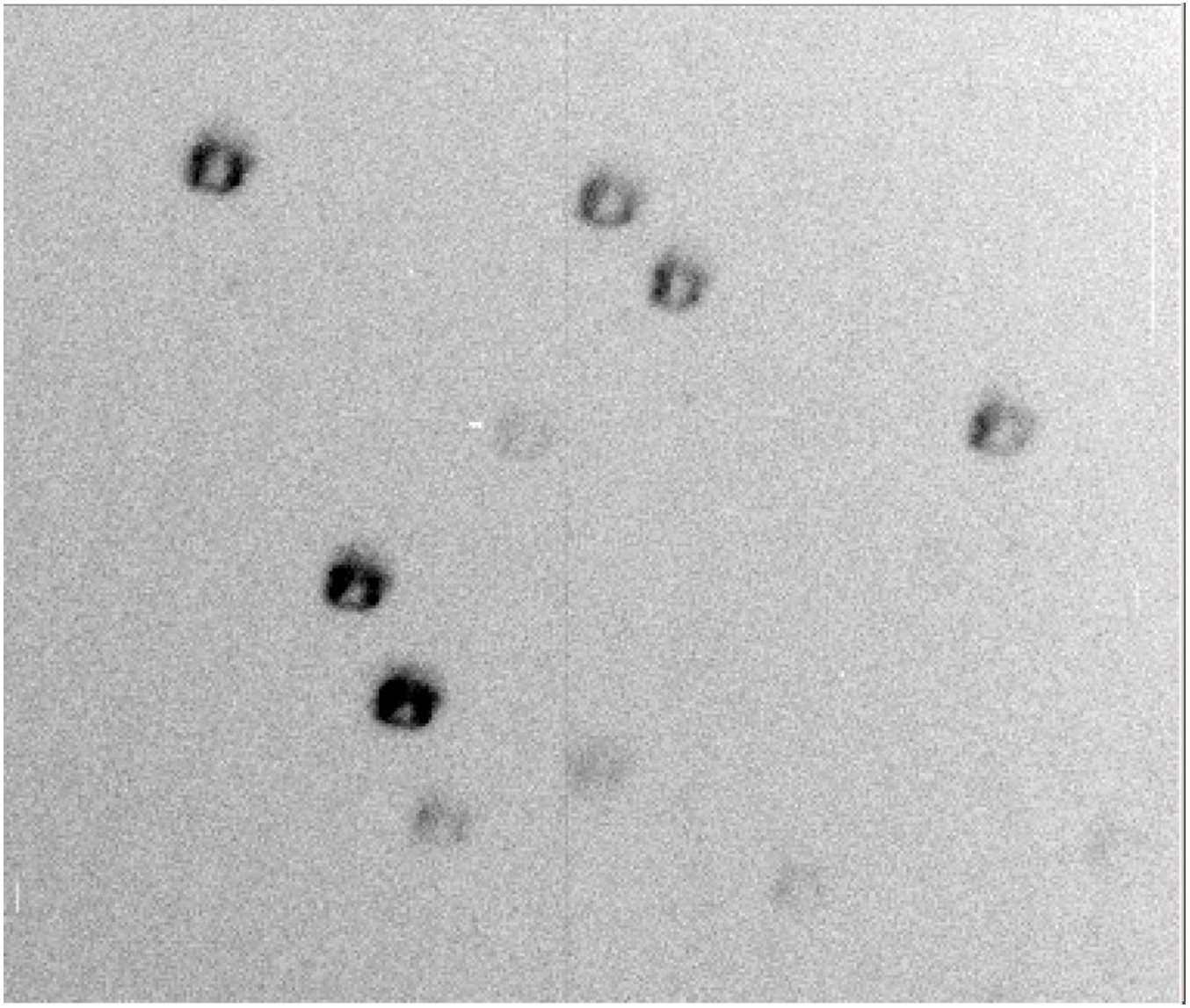
The spectrum above was binned to decrease statisticall errors, given EW error is statistical.

The Mg II line contains an underlying contribution both from the continuum and Fe II broad band emission. The tentative decomposition (continuum: pink, iron line template: green) for May observation:



We cannot yet tell whether the FeII contribution varied as well.
Quasar luminosity has changed between May and August by 0.24 mag, more than expected.
If next observation confirms rapid variability, this would mean that quasar is radio-loud and has to be removed from the future sample.

Why SALTICAM images taken before/after RSS spectra look so strange? Photometry is problematic.



A radial velocity survey of eclipsing detached binary stars (DEBs) from the ASAS catalogue.

2012-1-POL-001

M. Konacki, M. Ratajczak - NCAC Poland

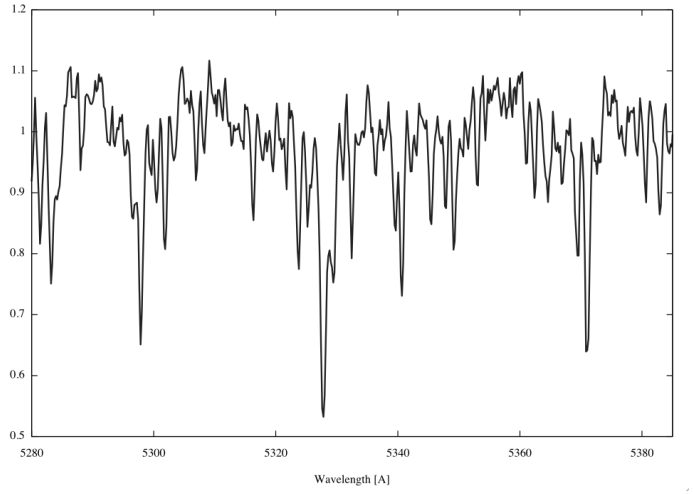
Proposal aims:

- searching for SB2 binaries
- physical and orbital characterization of those systems
- investigation of stellar activity

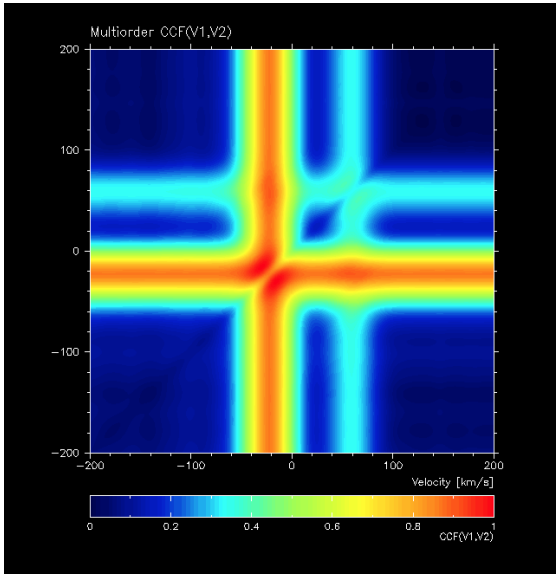
Proposal in numbers:

- time allocation: 357000 s (P4)
- 18 systems observed
- for 5 DEBs full run was carried out (4 visits)
- 10 SB2 were found

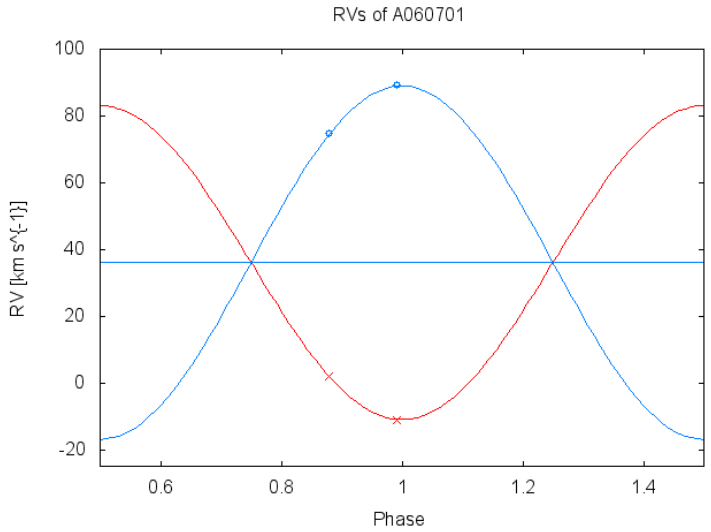
Results for A060701



RSS spectrum of the system showing two sets of stellar lines



Two-dimensional correlation of a RSS stellar spectrum againts a template proving SB2 nature of the system (2 RV maxima)



Spectroscopic orbit of the system fitted to RVs obtained from RSS spectra

Pigulski; Astroseismology of high amplitude δ Sct stars; RSS long slit; stars with 7.1<V<13.4.

Obtained 77 spectra using 88011s out of 83025 allocated. Very pleased with the data!

Zahajkiewicz; FR Scuti: a hierarchical triple VV Cephei-type; V=10.4; 11 out of 33 requested spectra.

Kaluzny; High speed photometry of V1032 Oph; Salticam; 2 out of 5 blocks 1h blocks. So far no progres with reductions due to problems with instalation of SaltPyraf package.

Kraan-Korteweg RSA/PL; Charting Cosmic Flows ...

40% completed

Three SALTICAM programs ended up with no data at all. Two had time in priorities 0-1-2.

We did best with RSS programs targeting bright stars.