

GRANGE OBS. OPERATIONS

- Photometers status

All photometers (the Johnson BVR-Vilnius VI S at the 0.14-m astrograph (field 32x32 arcmin) and the Sloan & Pan-STARRS w at the 0.3-m (field 17x13 arcmin) are working nominally. The Johnson V flat field at the 0.14-m has been updated on October 5th and the one of the new standard Pan-STARRS w filter was imaged on 12th.

- Flat Fields status

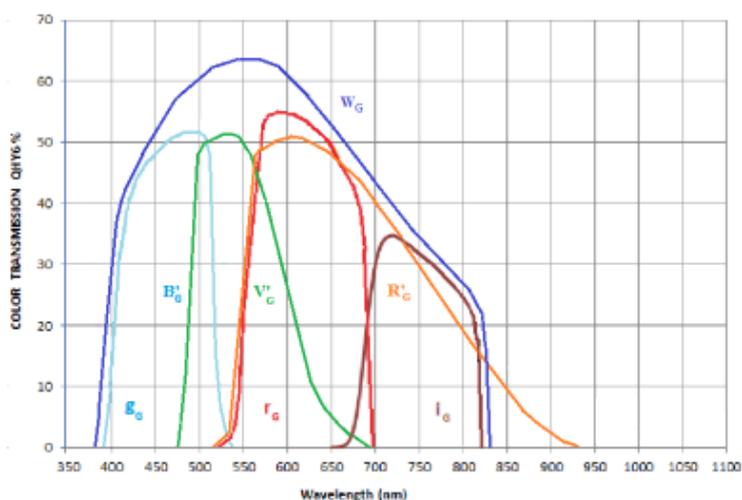
telescope-camera	filter	peak ADU	date
0.14-m SXL8	Johnson B	23000	08-APR-2017
0.14-m SXL8	Johnson V	17000	05-OCT-2017
0.14-m SXL8	Johnson R	22000	08-APR-2017
0.14-m SXL8	Vilnius VI	25000	21-SEP-2017
0.14-m SXL8	Vilnius S	31000	21-SEP-2017
0.3-m QHY6	Sloan g	17000	15-JUN-2017
0.3-m QHY6	Sloan r	22000	21-SEP-2017
0.3-m QHY6	Sloan i	18000	15-JUN-2017
0.3-m QHY6	BG 40	15000	15-JUN-2017
0.3-m QHY6	Pan-STARRS w	18000	12-OCT-2017

The flat fields are usually executed during twilights at room temperature.

A red color in the date cell (format DD-lett.M-YYYY) indicates the need of updated frames.

- Observations

A mixed Johnson, Sloan and Pan-STARRS w photometric filtering has been adopted on the 0.3-m telescope's QHY6 camera at Grange Obs. from October 12th.



That could be an option to dedicate the 0.14-m astrograph solely at the exoplanet transits follow-up, due to the FITS native header provided by the SXL8 camera (more suitable for ASTROMETRICA and ASTRO-ART robotic processing).

The NEA astro-photometry resumed using the Pan-STARRS w filter, now considered a suitable standard at the observatory (as [LCO](#) did). NGC 869 (h Persei) field was imaged on October 14th; an exposure of 30 s showed 20 ABmag stars; a total integration time of 300 s provided 20 ABmag stars with SNR = 13 within 400 mas delta position.

To have the comparison DSS field type the string:

http://archive.stsci.edu/cgi-bin/dss_search?v=poss2ukstu_red&r=2 19 01.0&d=57 09 00.0&e=J2000&h=12.7&w=17.0&f=gif&c=none&fov=NONE&v3=



The Pan-STARRS w filter provides a “red” channel accepted by the MPC photometric 80-column coding, approaching a linear fit with Sloan r channel of APASS included in URAT-1 positional 5-solutions catalogue, used for the astrometric measures.

The Pan-STARRS w photometric error appears related to the star density (Milky Way), and shows anisotropies with GAIA DR1 G covering passes on the same star field.

A difference in Pan-STARRS and GAIA photometric processing tools (PSF) might be explanatory.

Pan-STARRS - Gaia : Photometry Comparison

- Generate a synthetic G-band from PS1 g,r,i
- calculate $\delta G = G_{\text{Gaia}} - G_{\text{PS1}}$
- Average of δG vs position on the sky

