Observations of transient astrophysical objects at Konkoly Observatory

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Nízke Tatry

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Satu Ma

Earth

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Piszkéstető Mountain Station

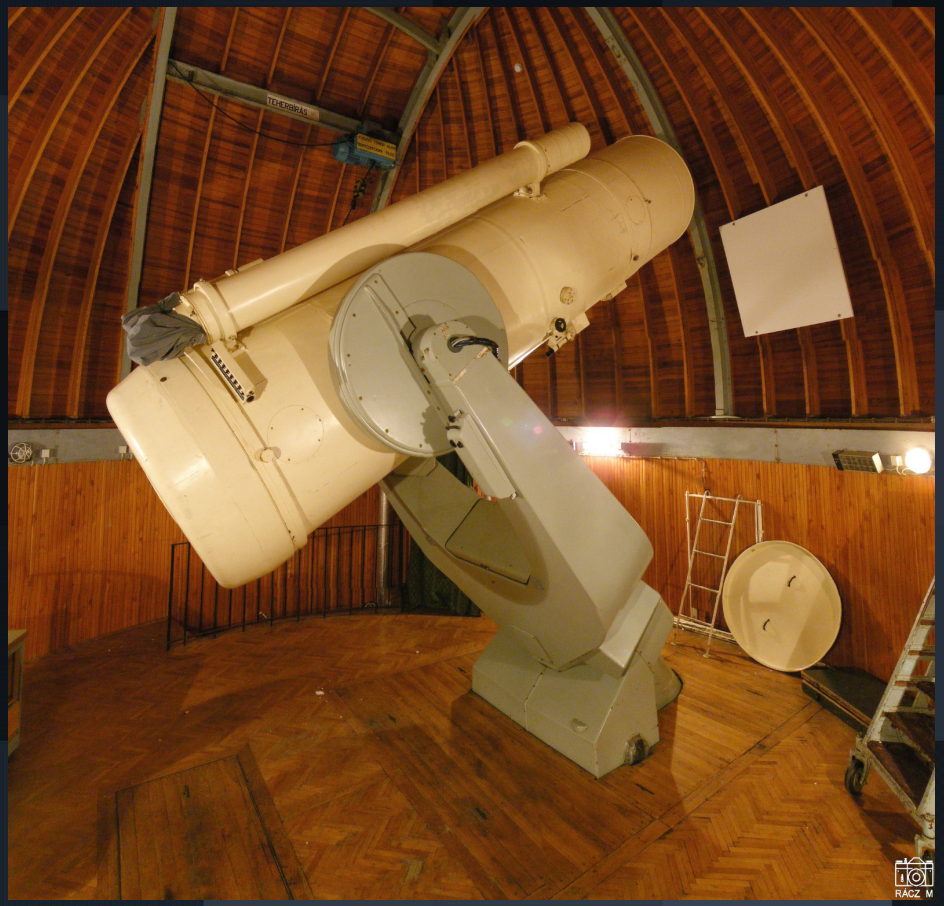
- 1 m RCC telescope
- 60/90 Schmidt telescope
- 50 cm Cassegrain telescope → 80 cm Cassegrain
- 40 cm RC telescope
- Fly's Eye camera system

1 m RCC telescope

1 m RCC telescope

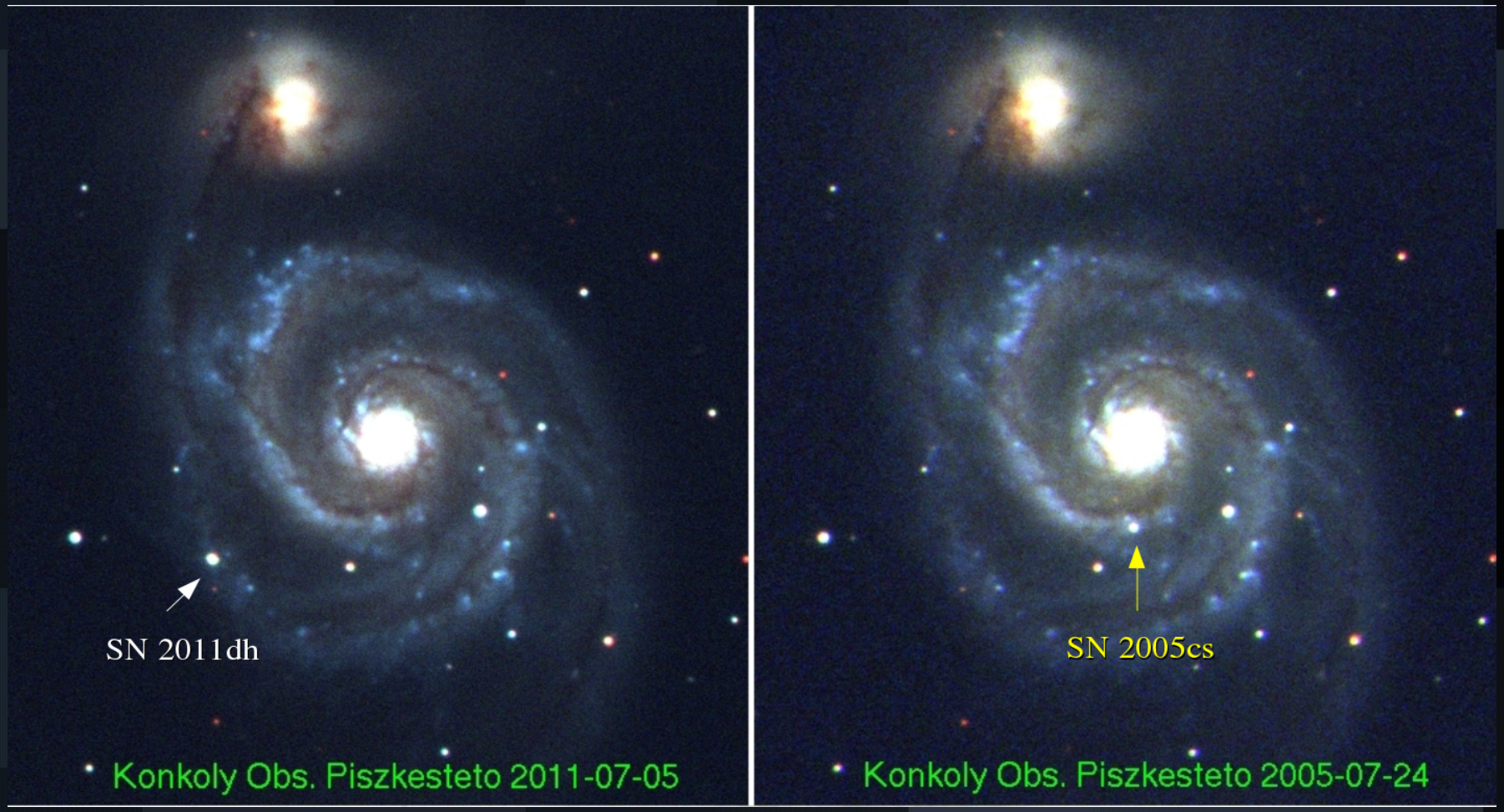
- Andor EMCCD
- ACE fiber-fed echelle spectrograph, R=20000, 4000 – 9000 Å
- FLI PL16803 CCD, 4k x 4k, 9μ, 9.6 x 9.6 arcmin
- BVRI+u'g'r'i'z' filters

60/90 Schmidt telescope

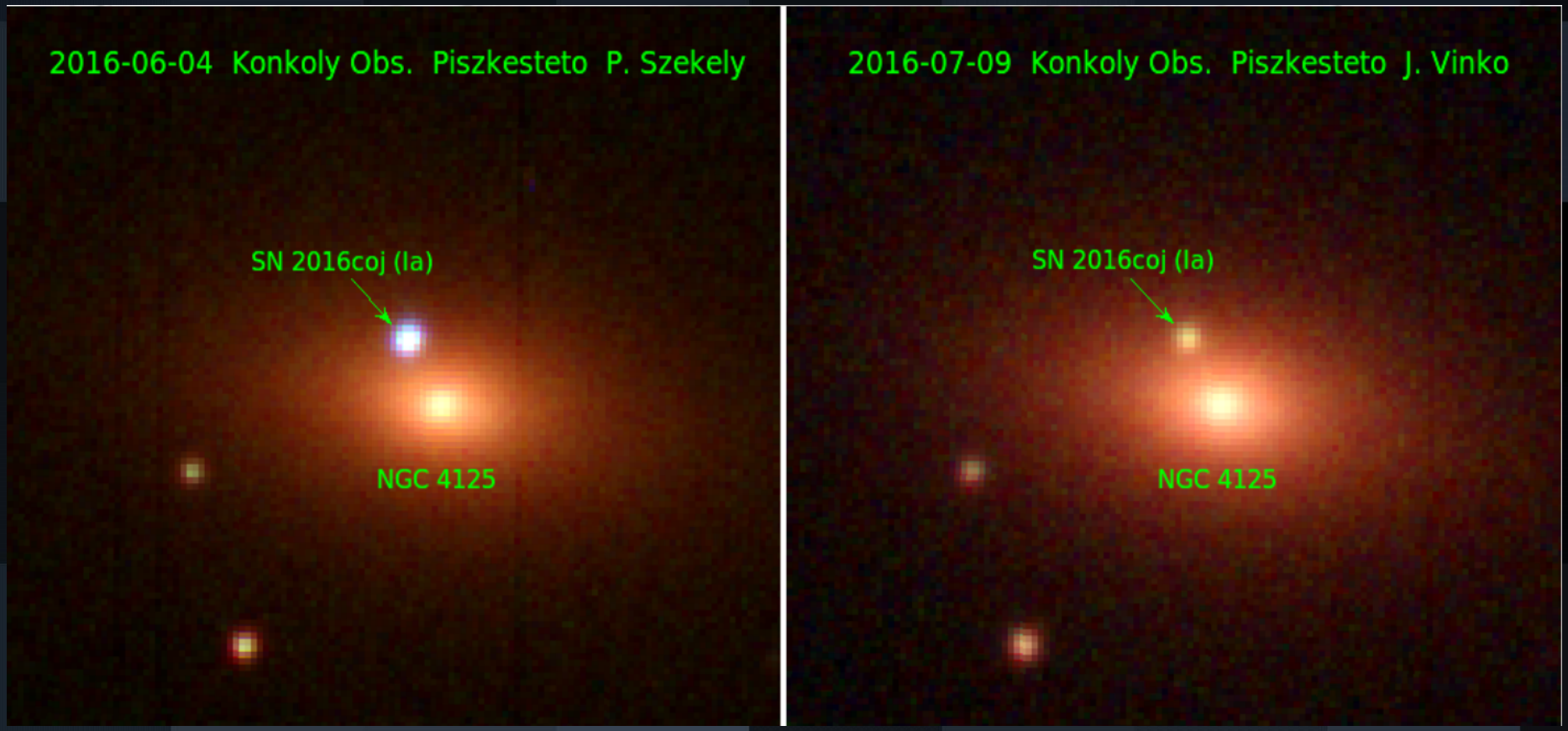


- FLI ProLine PL16801
- 4k x 4k, 9µ
- 1.1 x 1.1 degree
- Bessel BVRI filters

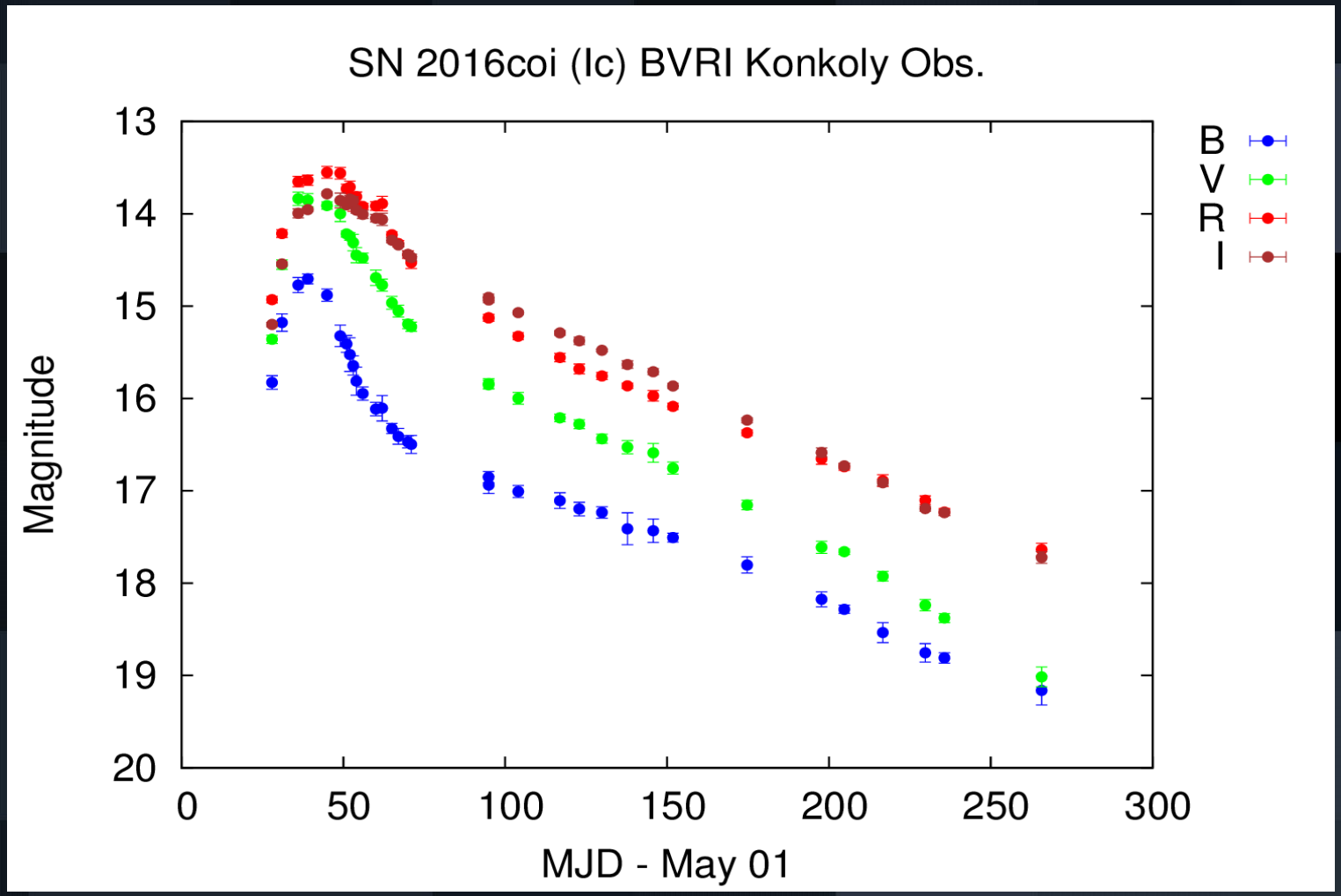
Follow-up photometry of supernovae



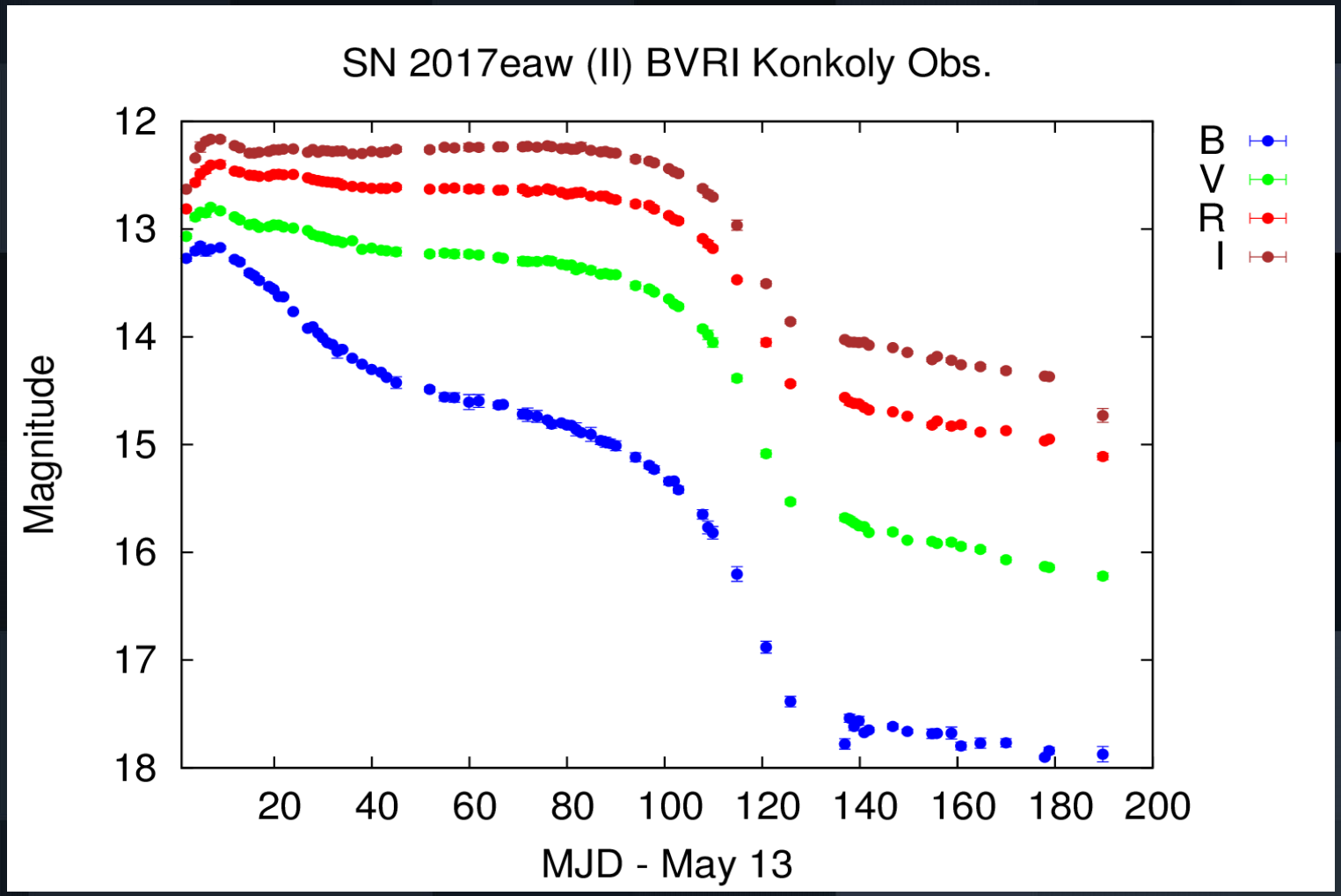
Follow-up photometry of supernovae



Follow-up photometry of supernovae



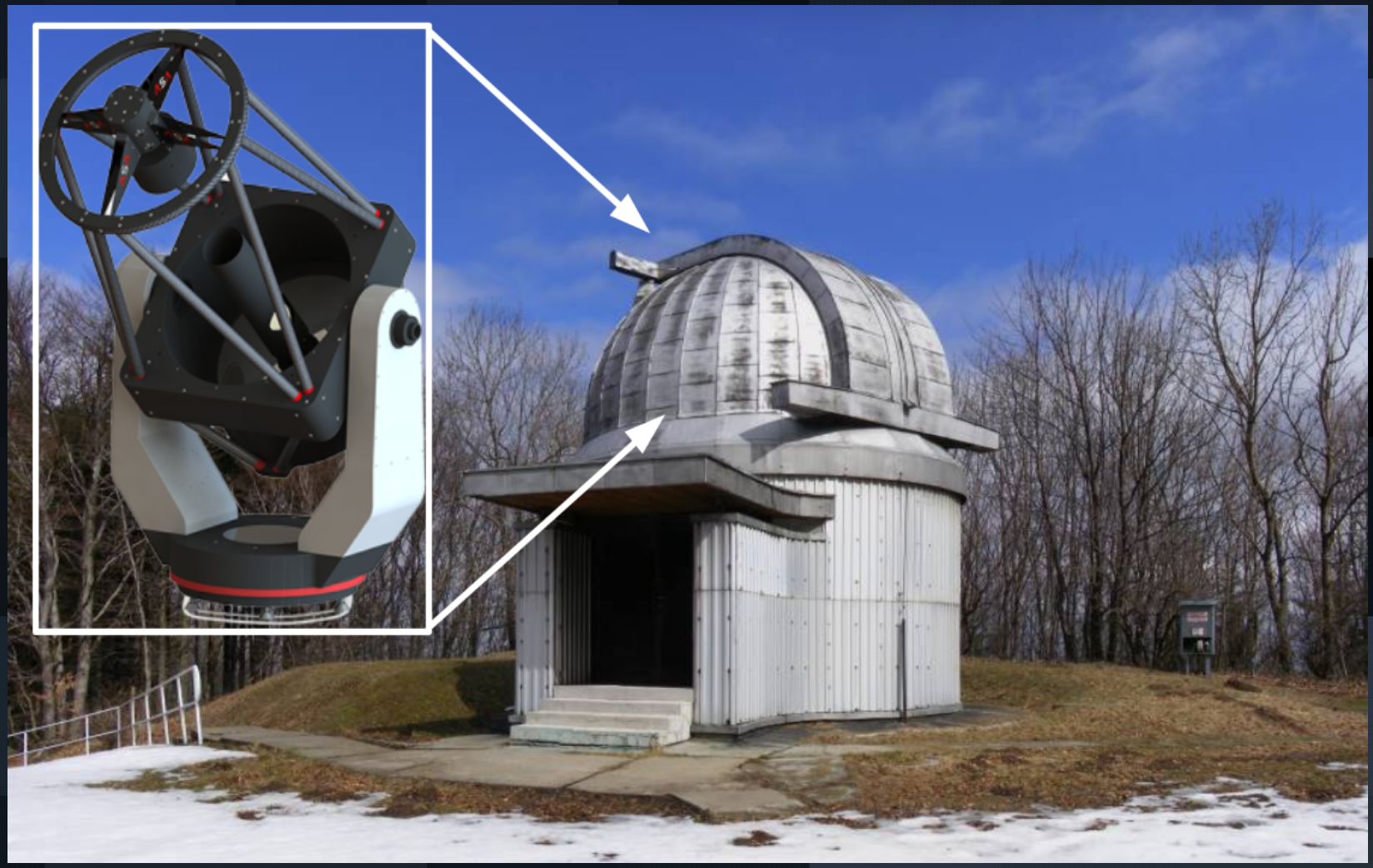
Follow-up photometry of supernovae



New 80 cm robotic telescope

- 80 cm cassegrain (f/7)
- AltAzimut mount, field-derotator
- Computer controlled with CCDSH
- 2k x 2k FLI CCD camera
- 15μ, 18' x 18'
- liquid + electronic cooling
- Sloan u,g,r,i,z + Johnson B,V filters

New 80 cm robotic telescope



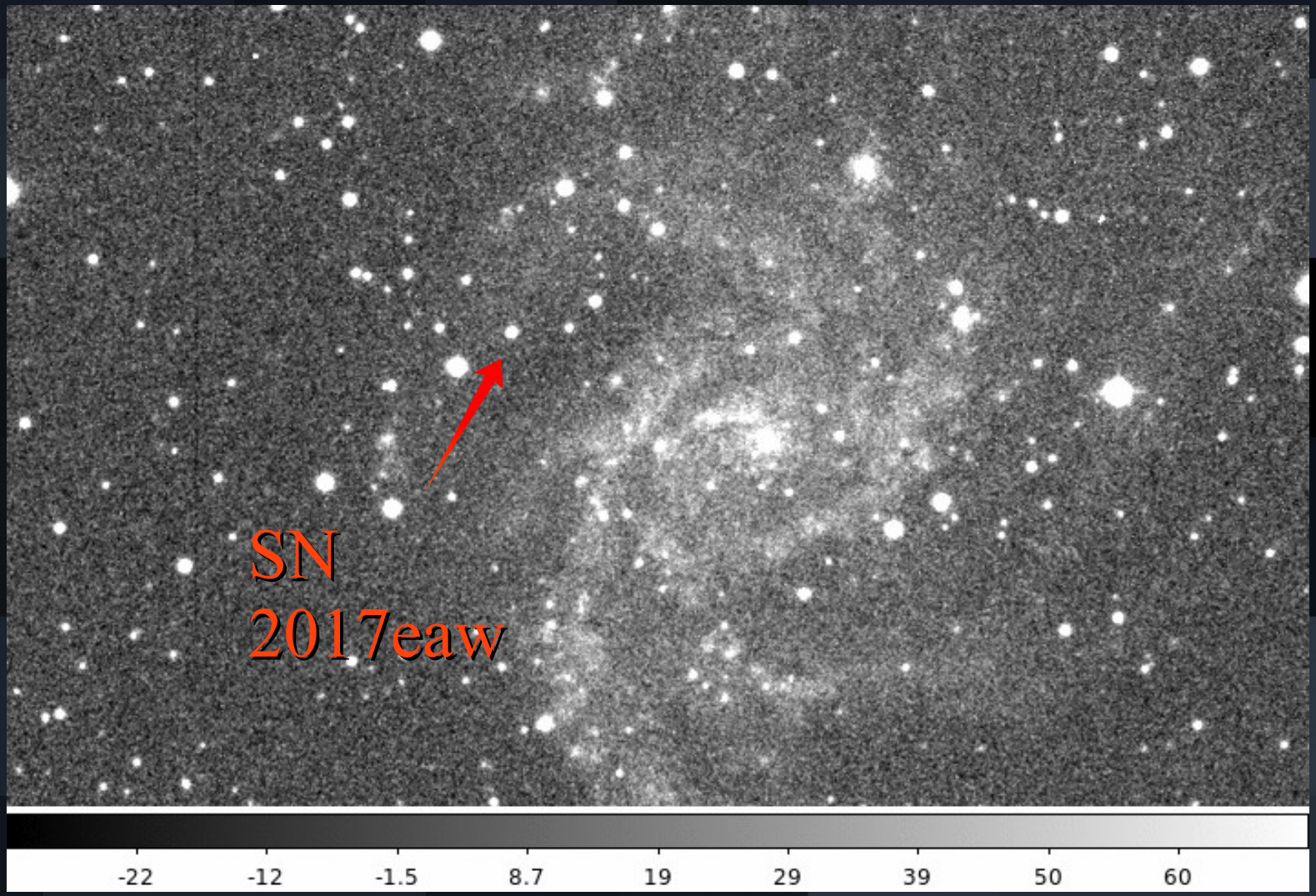
New 80 cm robotic telescope

- TAO GINOP project
- script-controlled queue-mode
- Pre defined object list
- Observing order: priority + visibility
- Automatic observing + calibration images
- VOevent handling → alerts can override the queue
- Supernovae, merging binaries, tidal disruption events, VO alerts

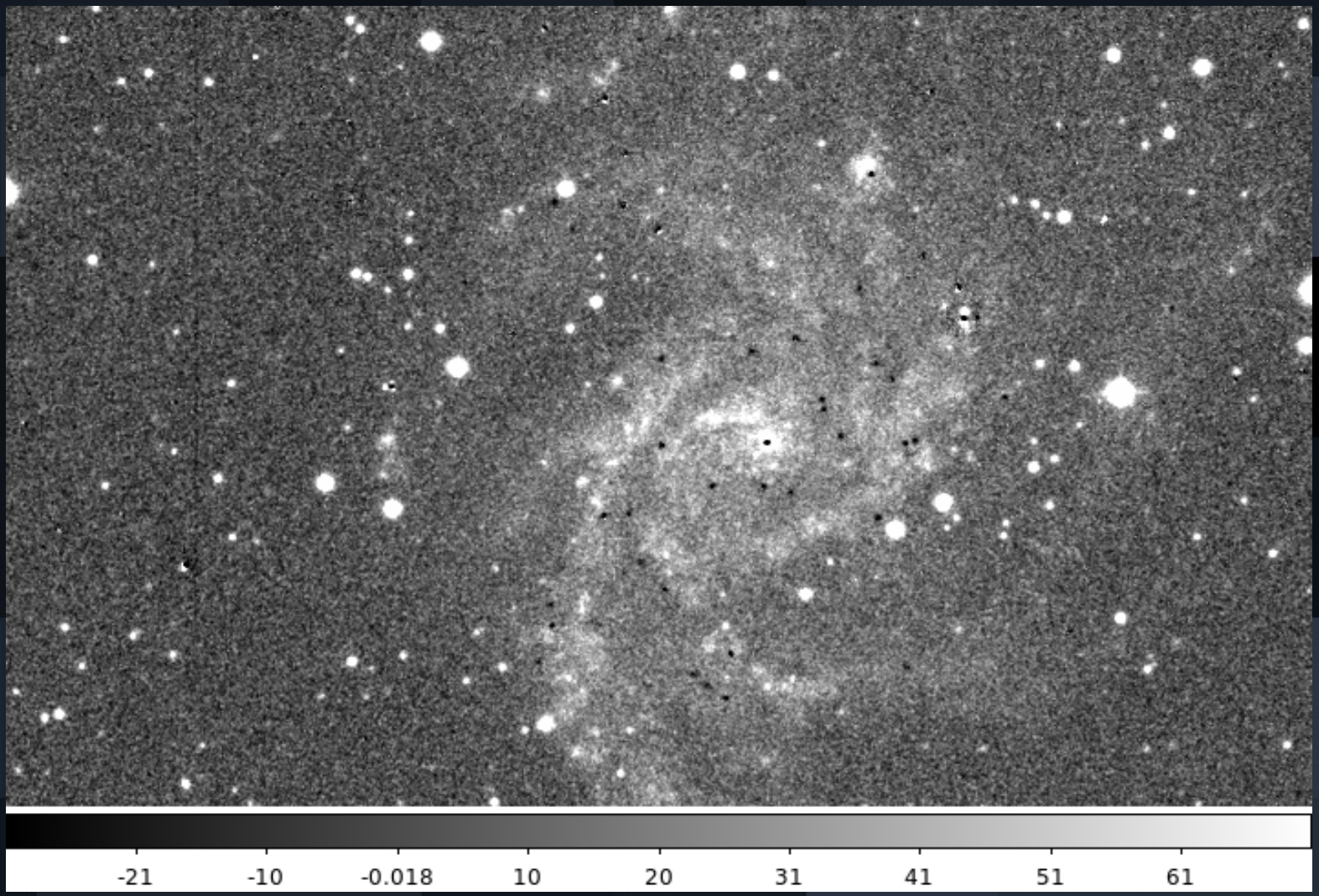
Python PSF photometry pipeline

- Full pipeline: from raw images to standard magnitudes
- Python3, Astropy + affiliated packages
- Astrometry.net + some bash scripts and linux programs
- PSF photometry with residual correction
- PanSTARRS catalog for standard transformation

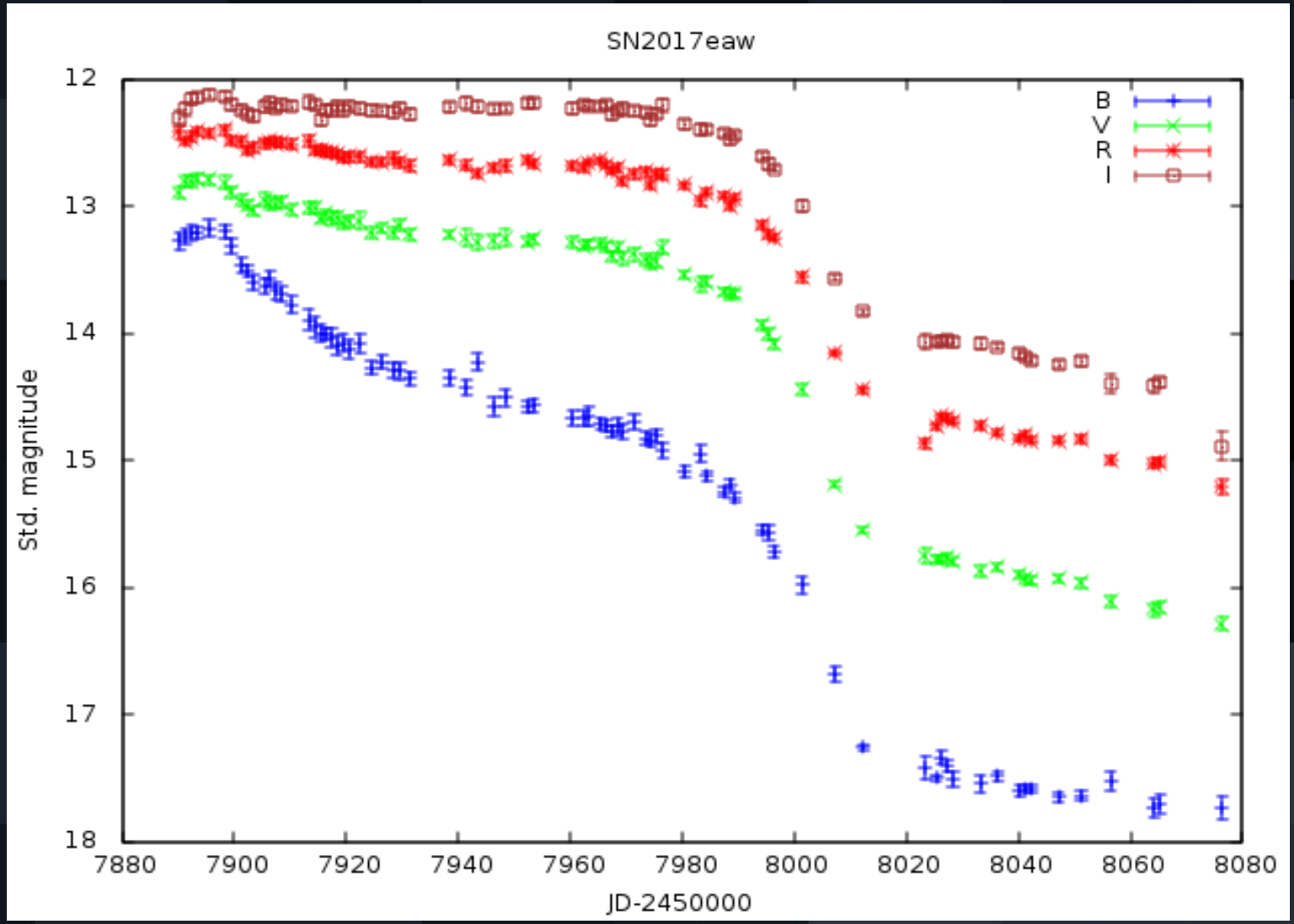
Python PSF photometry pipeline



Python PSF photometry pipeline



Python PSF photometry pipeline



Thank you for your attention!

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