

PHOTOMETRIC MEASUREMENTS FROM CRACOW OBSERVATORY

INSTRUMENTS, SOFTWARE & RESULTS

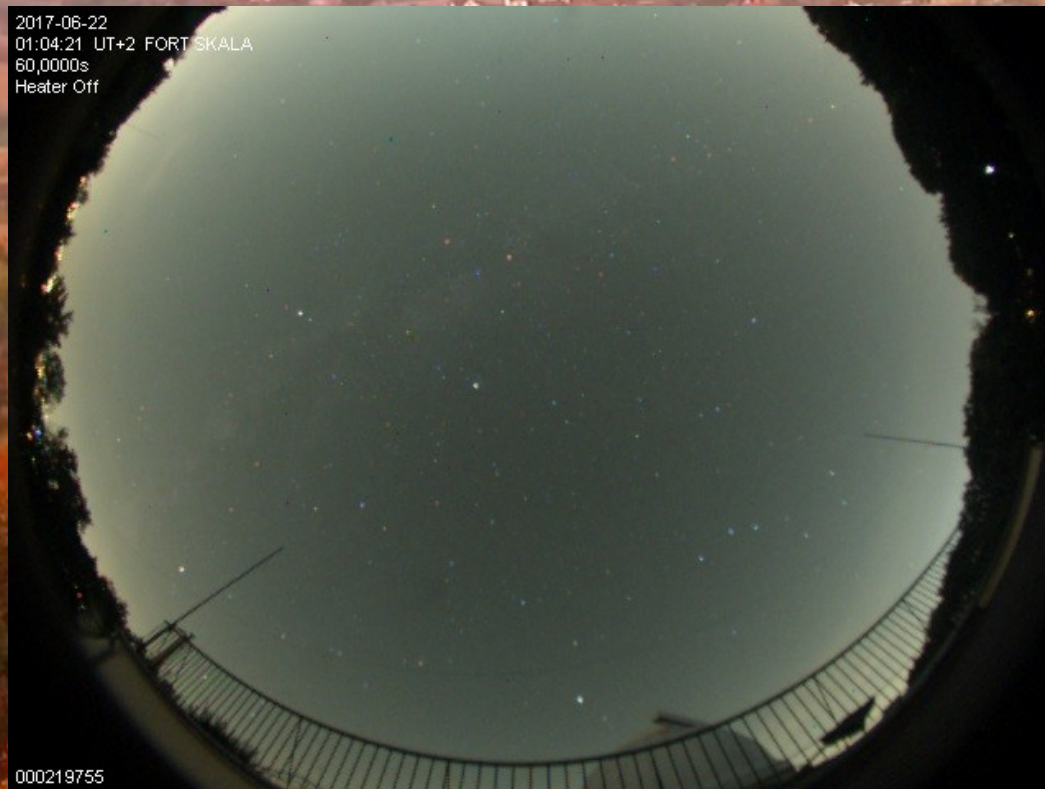


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Is Cracow a good place for
observational astronomy?



Is Cracow a good place for
observational astronomy?

28-cm Celestron telescope

- 28-cm Schmidt-Cassegrain
- CGE Pro mount
- Apogee Alta U47 1kx1k CCD
- IFW filter wheel (UBVRI)
- Moonlite focuser
- FOV 35x35 arcmin
(with focal reducer)
- Limiting magnitude ~14
- AAG Solo weather station
- DDW dome control system
- Maxim DL software

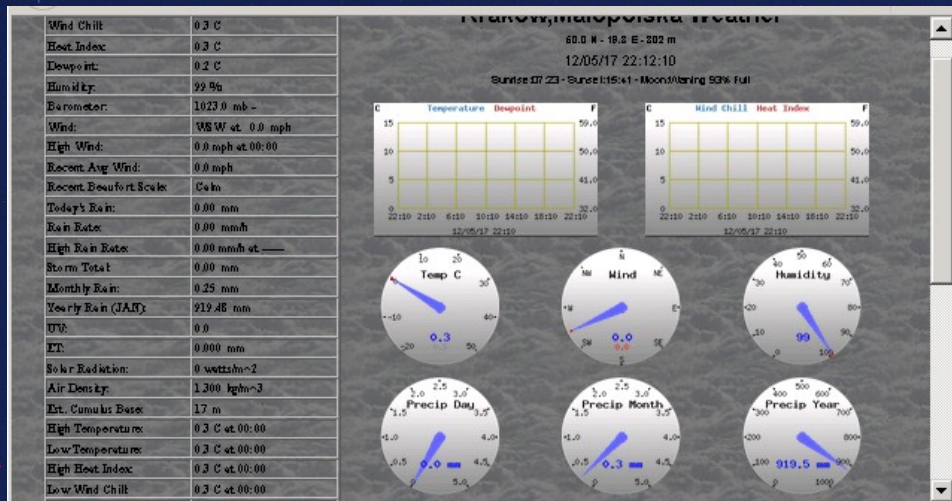


Maxim DL

The screenshot displays the Maxim DL Pro 6 software interface, which is used for controlling astronomical cameras and guiding telescopes. The interface is divided into several panels:

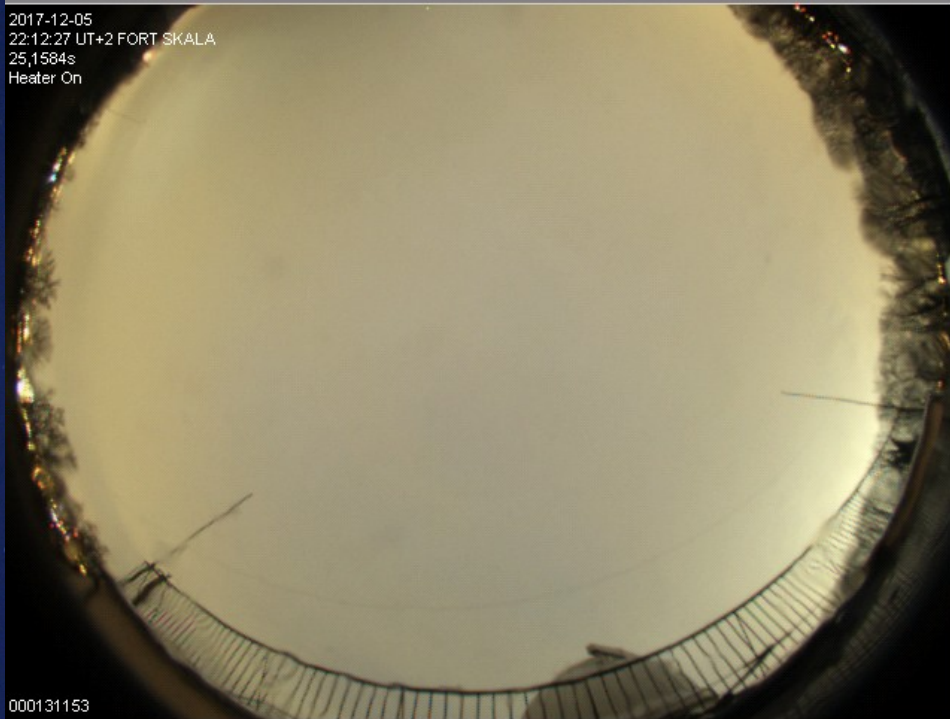
- Camera Control:** This panel contains settings for exposure, filter wheel, and guide star. It includes fields for "Seconds", "Filter Wheel", and "Scope Dec.". There are checkboxes for "Auto Scope Dec.", "Auto Pier Flip", and "Watch Star". A "Guide Star" section shows coordinates (X: 391.0, Y: 427.0) and "Aggressiveness" (X: 8, Y: 8). There are buttons for "Expose", "Calibrate", "Track", "Start", and "Stop". A "Graph" button is also present. Below these are sections for "Camera 1 Information" and "Camera 2 Information".
- Observatory:** This panel shows the status of the telescope and dome. It includes fields for "Telescope", "Dome", "Shutter State", "Target Altitude", "Dome Altitude", "Target Azimuth", and "Dome Azimuth". There are buttons for "Open", "Close", "Park", and "Abort". A "Slave Dome To Scope" checkbox is also present. A "Position" section shows "Azimuth" (20) and "Altitude" (0) with "Load" and "Go To" buttons.
- Tracking Error Graph:** This panel shows a graph of tracking error over time. It includes fields for "X Error" and "Y Error". The graph shows a series of data points with error bars. The X-axis is labeled "Pixel Distance" and the Y-axis is labeled "Pixel Value".
- Maxim DL Pro 6 - kojima-0034r:** This panel shows the main image of the sky. It includes a menu bar with "File", "Edit", "View", "Analyze", "Process", "Filter", "Color", "Plug-in", "Window", and "Help". There are buttons for "Autoguider Image" and "kojima-0034r". The image shows a star field with a crosshair.
- Imagineva StarShoot AutoGui...:** This panel shows a graph of gain over time. It includes a "GAIN" section with a "0%" label and a "Smoother (for guiding)" checkbox.
- Real-time IP Camera Monitoring System:** This panel shows a live video feed of the telescope. It includes a "Device Status" section with "Live Video" and "Device Management" buttons. There are also buttons for "Refresh camera camera", "Refresh video", and "Refresh".

Weather status

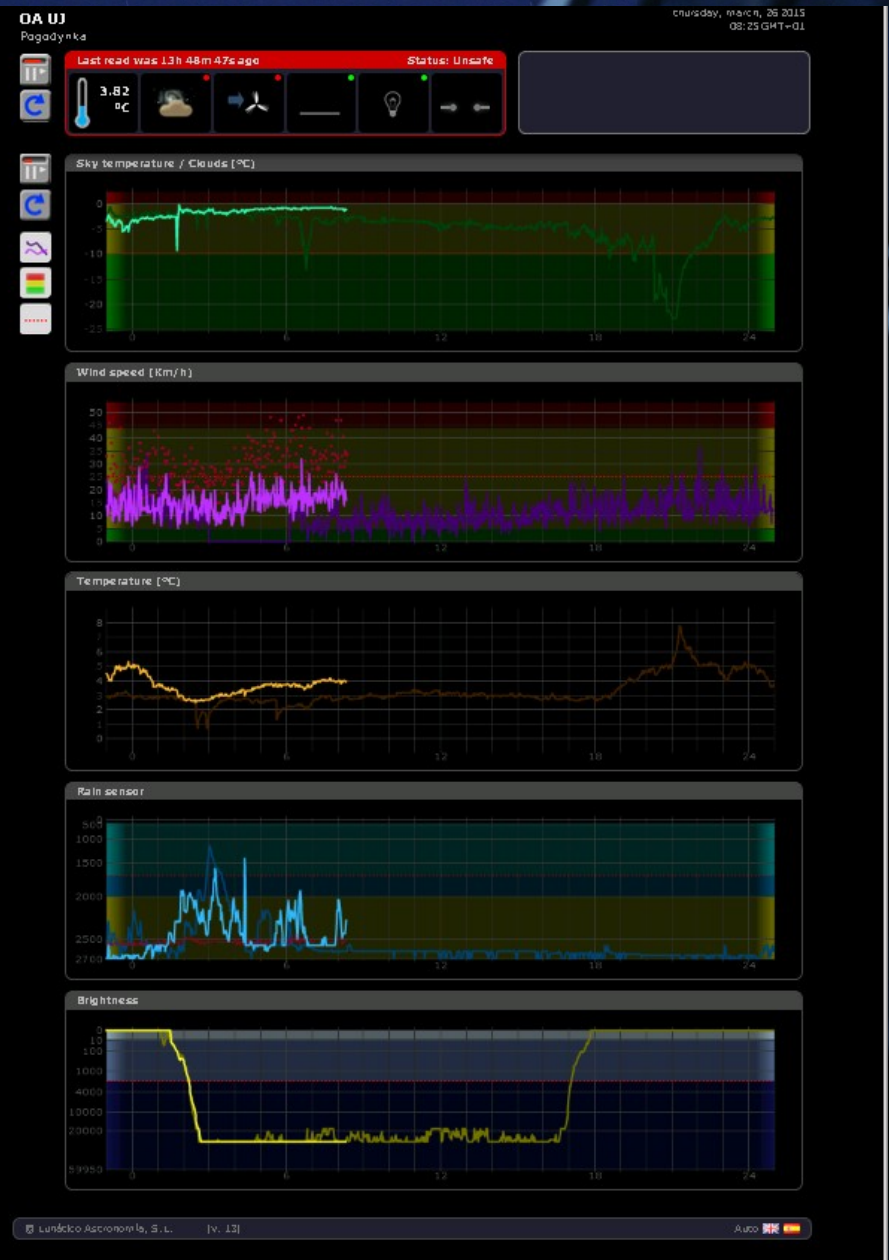


SBIG AllSky-340 Current Image

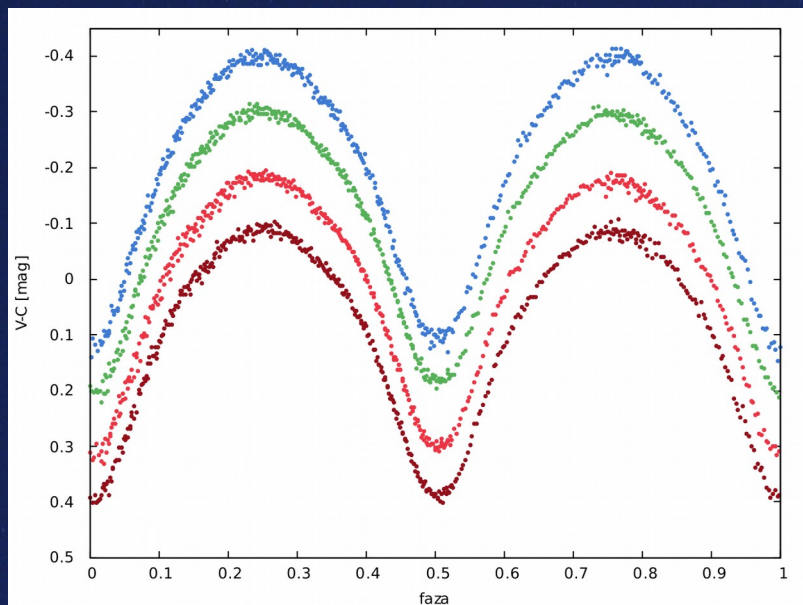
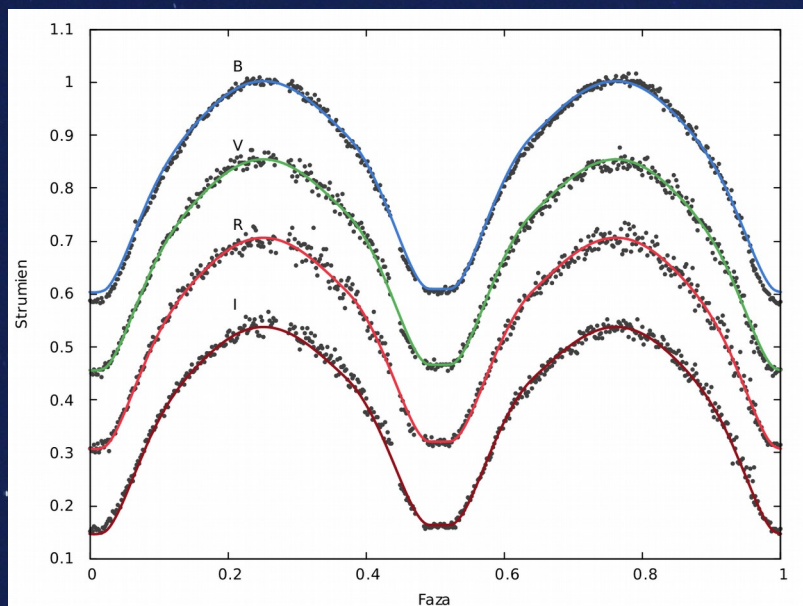
2017-12-05
22:12:27 UT+2 FORT SKALA
25,1584s
Heater On



000131153

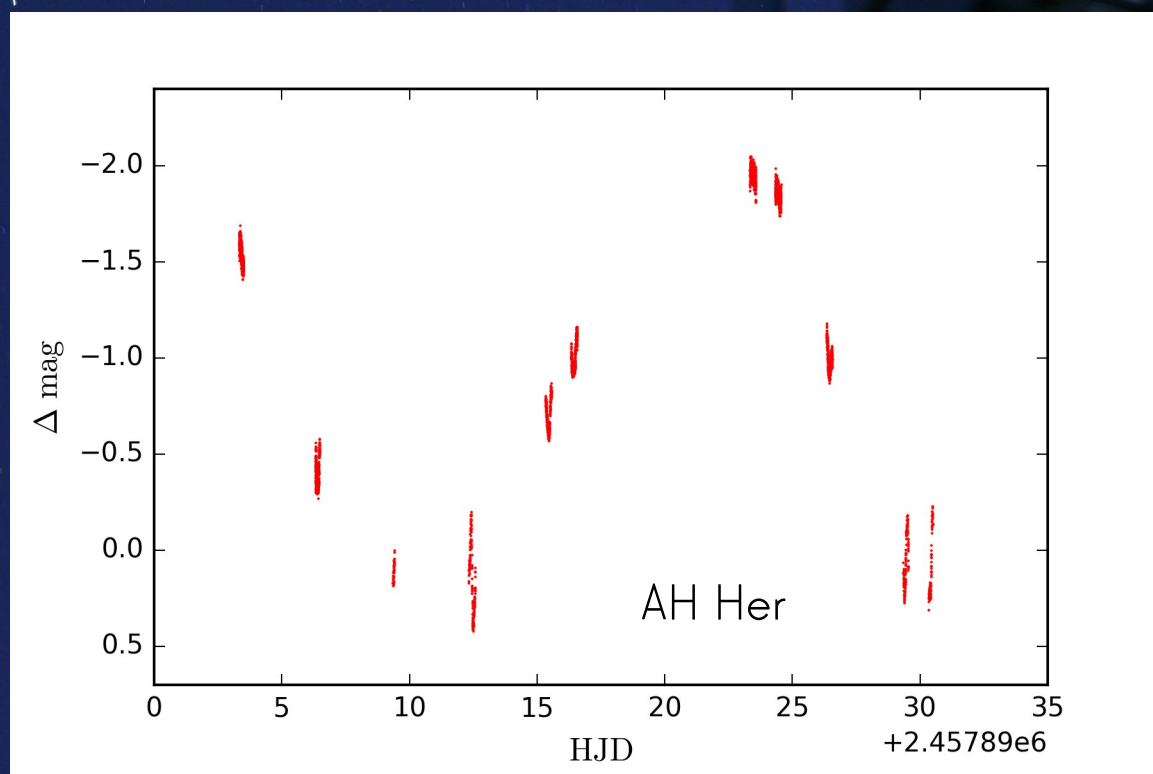


Eclipsing binaries

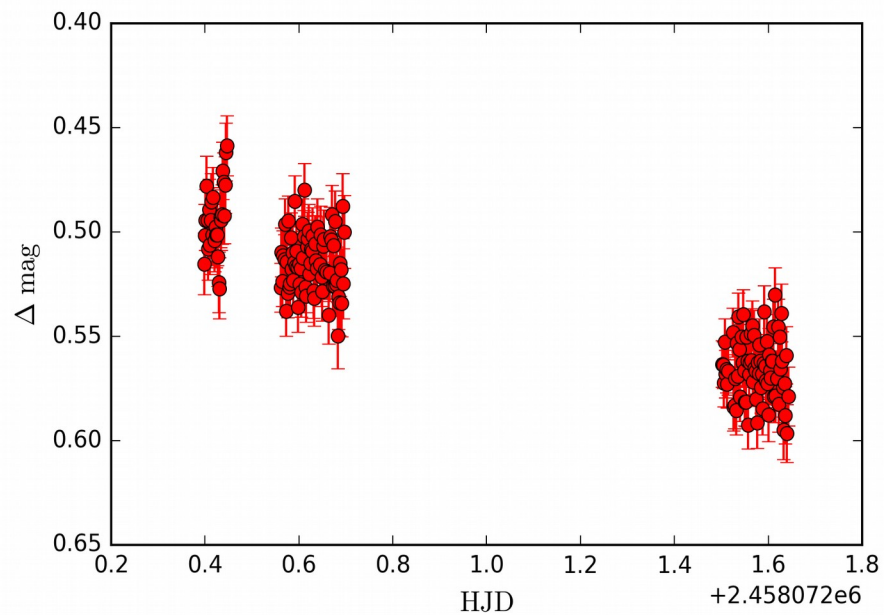
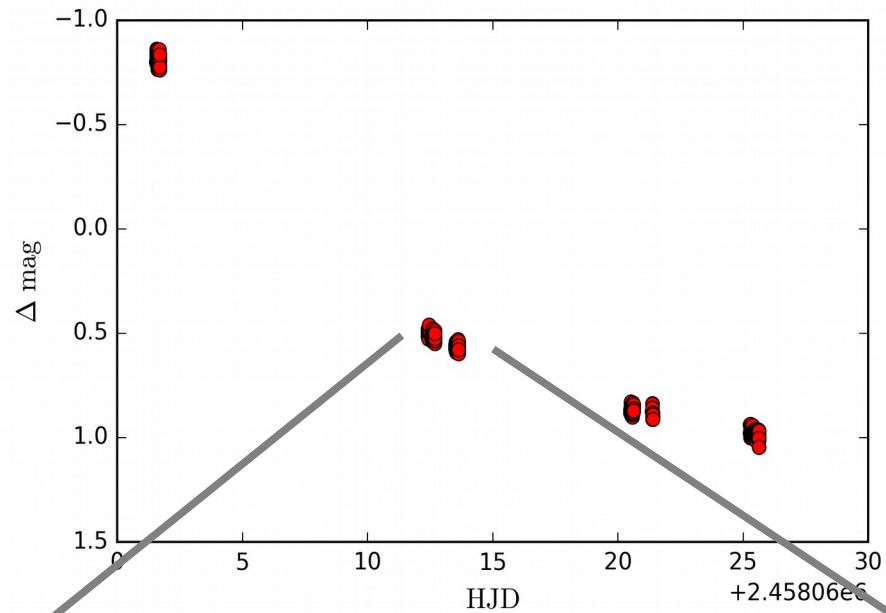


Results

Cataclysmic variables

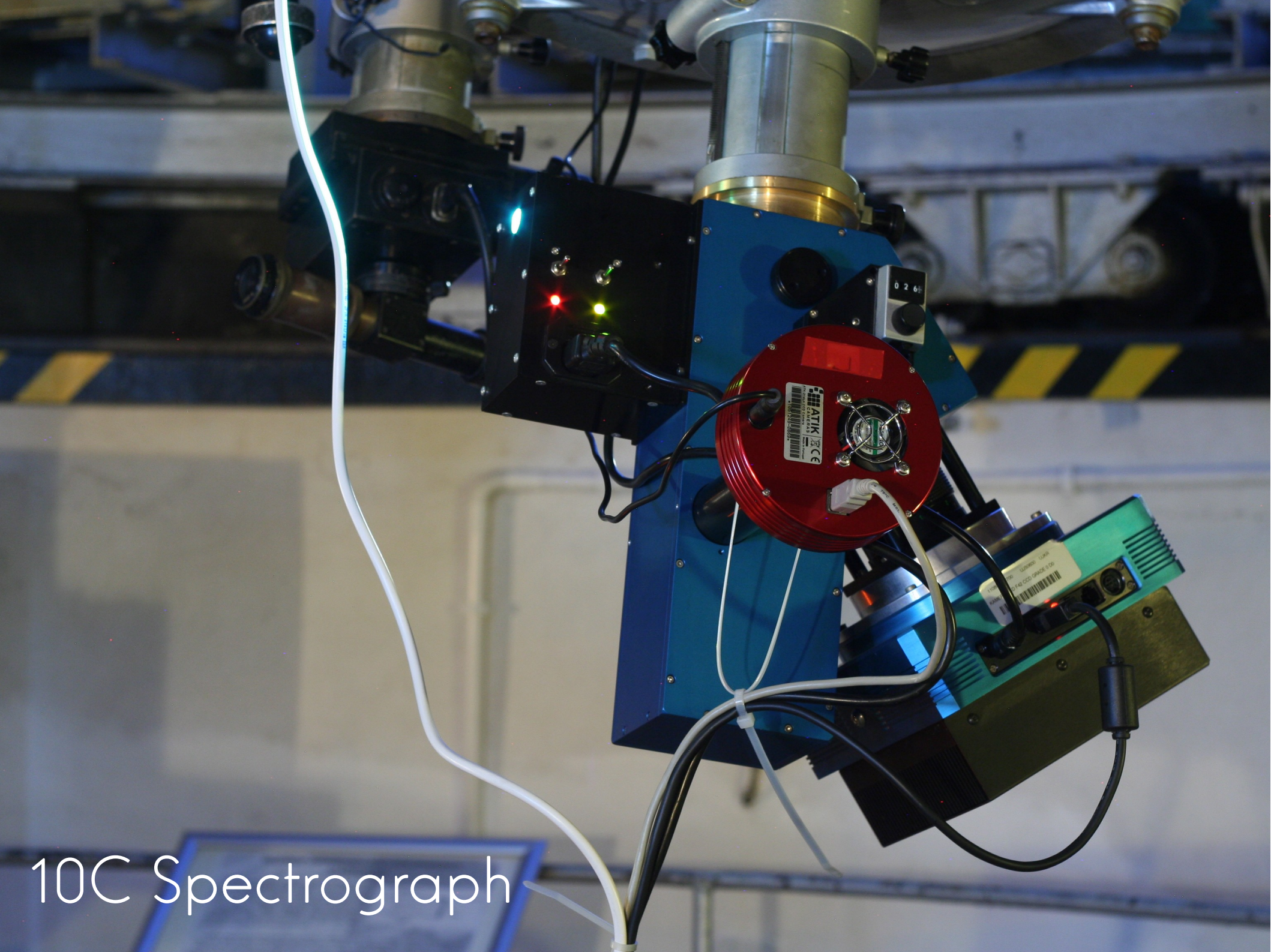


Kojima event



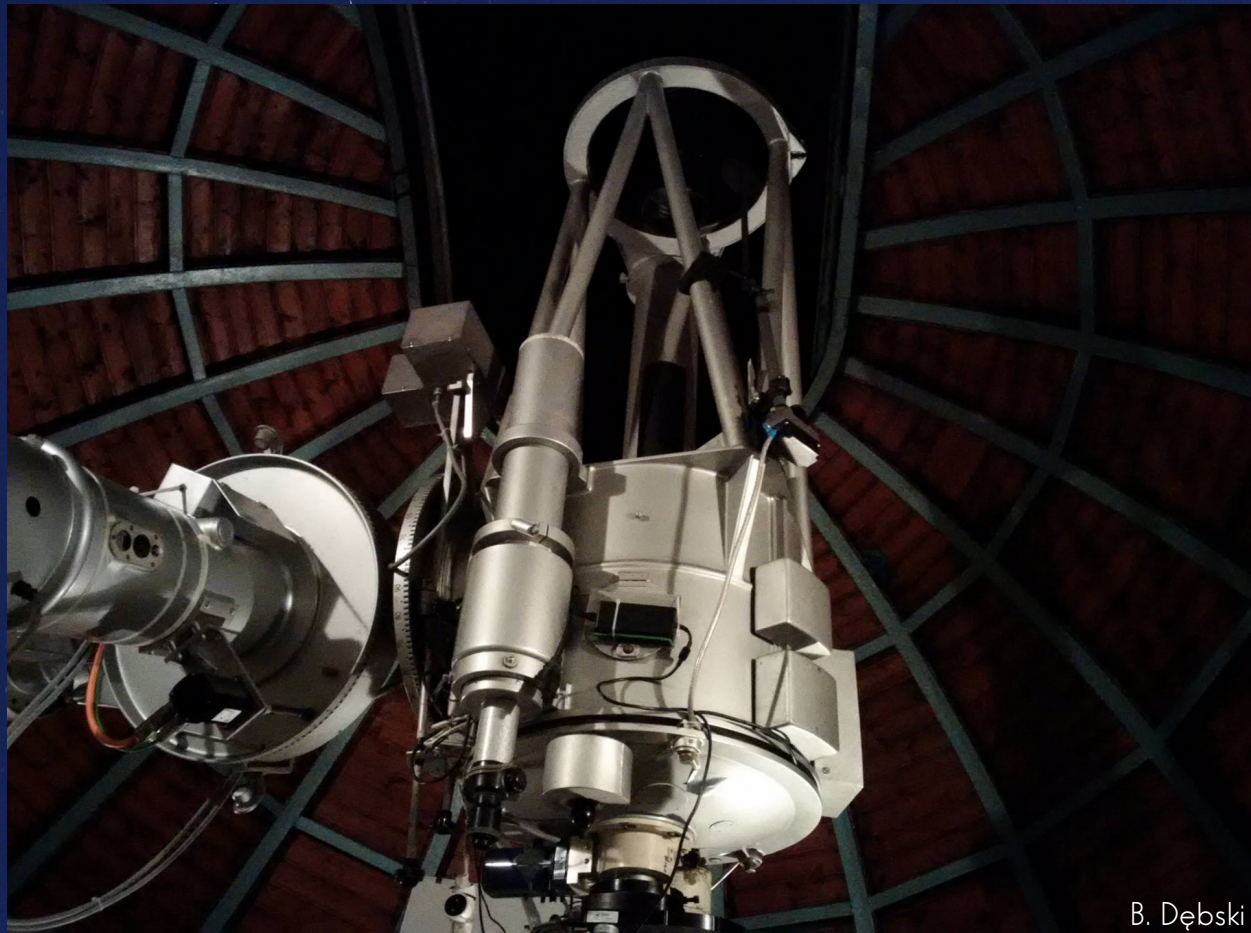
35-cm Maksutow telescope

- 37-cm mirror, 35-cm aperture
Maksutow-Cassegrain
- SBIG STL 6303E
with BVRI filter wheel
- FOV 20x25 arcmin
- Limiting magnitude ~15
- Spectrograph
Optomechanics Research
10C Model with FLI PL16803
CCD camera
- JAstroCam software



10C Spectrograph

50-cm Cassegrain telescope



B. Dębski

- Carl-Zeiss 50-cm Cassegrain
- modifications that allow semi-remote observations
- Apogee Alta F42 2kx2k CCD
- FLI filter wheel
(UBVRI, Sb, Sy, BG40)
- FLI focuser
- FOV 14.2x14.2 arcmin
- Limiting magnitude ~17
- JAstroCam software

AstroCam

Astronomical images acquisition program. Version 3.0.1-beta (na ccd)

File Devices Service Plugins Help Windows

FITS Header Active tasks PhotoM

Acquisition CCD Area Preview

Exposure sync:
☐ Enabled Settings

Output directory:
File:
Path: ...
☐ Save acquired data?

Exposure settings:
Frame mode: DARK
Repetitions: 1

Filter:	Time:	Gain:	Count:
U	10	1	1
B	0	1	0
V	0	1	0
R	0	1	0
I	0	1	0
Sb	0	1	0
Sy	0	1	0
BG40	0	1	0
SA	0	1	0

☒ Common gain for all filters

Acquire Abort

Apogee AltaU-42D9 [8]

Cooler control:
Heatsink Temp. [C] +08.4 CCD Temp. [C] -39.9 Cooler power +40.9
Regulation ON Setpoint -40.0 Backoff point +02.0
Fan speed MED Voltage +12.01

CCD control:
ADC low resolution (12 bit): ☐
PreFlash function: ☐

System status:
CCD: Flushing
Cooler: At setpoint

OA50 Telescope Control Panel

Telescope control:
Tracking parameters to set:
Tracking time (min): 600 Defaults:
Tracking speed: 10,028 Load Save
Apply
Current tracking parameters:
Tracking time (min): 0
Stop Reset

FLI Focuser [fliu...]

FLI focuser:
Position 43000
Close Open Closed

Position 0 Azimuth 340 Slit status CLOS
Inputs: 0x0E89
Output: 0x0004
Abort!

Boltwood CloudSensor

Weather data Thresholds

Report time: 2017-12-05 21:43:23
Daylight condition: Night
Ambient temperature: 2.80 OK
Humidity: 94% Wet now OK
Dew point: 1.90
Clouds: Unknown
Sky temperature: -998.00 Wet Sensor is wet
Wind: -2.00 Unknown Sensor is wet
Rain: Raining Rain now
Rain heater: 100% Too cold

Preview: ...

Image Keywords

Scaling: Histogram Min 950.00 2752.0 Rectangle
Cuts: 994 - 1011 Statistics

Image pixel: 108 : 2 Value: 985 Selection: - Zoom: /2

IDLE Filter: N MEM / U: 27 A: 104 F: 910 12/05/17 21:43:38

JAstroCam – telescope and dome control

Dome controller

Settings:

RA: Dec:

Dome radius [m]:

Arm length [m]:

Slit size [m]: [deg]:

Safe margin [deg]:

Displacement S [m]:

Displacement W [m]:

Displacement Z [m]:

☒ Is EAST ?

☒ Simulate ?

☐ Alternate alg. ?

Latitude: Longitude:

☐ Auto close

Status:

System time [UTC]: 2017-12-05 21:03:24

Julian Day [UTC]: 2458093.377365

System time [LAST]: 03h 22m 04.49s

Object HA: 09h 00m 12.39s

Object Az: 159° 24' 33.36" (+)

Object Alt: 29° 38' 53.24"

Required Dome Az: 150° 17' 47.71"

Dome Az: 340° 00' 00.00"

Dome status: IDLE

Observable range: [334.82 -- 345.19] / 155.48

Telescope Control

Dome

Radius: 2.80m Slit size: 0.90°

Position: 0.00°

Azimuth: 340.00° Move to:

Slot: Closed

Status: IDLE

Telescope position

Hor: N/A

Ver: N/A

Telescope movement

Movement [minimal, requested]:

Hor: 01h 00m 00.00s

Ver: 01° 00' 00.00"

Telescope status

Tracking: ☐ Enabled

Type: EQUATORIAL

Status:

Boltwood weather station

Boltwood CloudSensor

Weather data **Thresholds**

Report time: 2017-12-05 22:02:22

Daylight condition: Night

Ambient temperature: 2.90 OK

Humidity: 94% Dry OK

Dew point: 1.90

Clouds: Very cloudy

Sky temperature: -7.40 Very cloudy OK

Wind: 20.40 Windy OK

Rain: Clear Dry

Rain heater: 0% Too cold

Dome close: true

☐ Dome auto-close

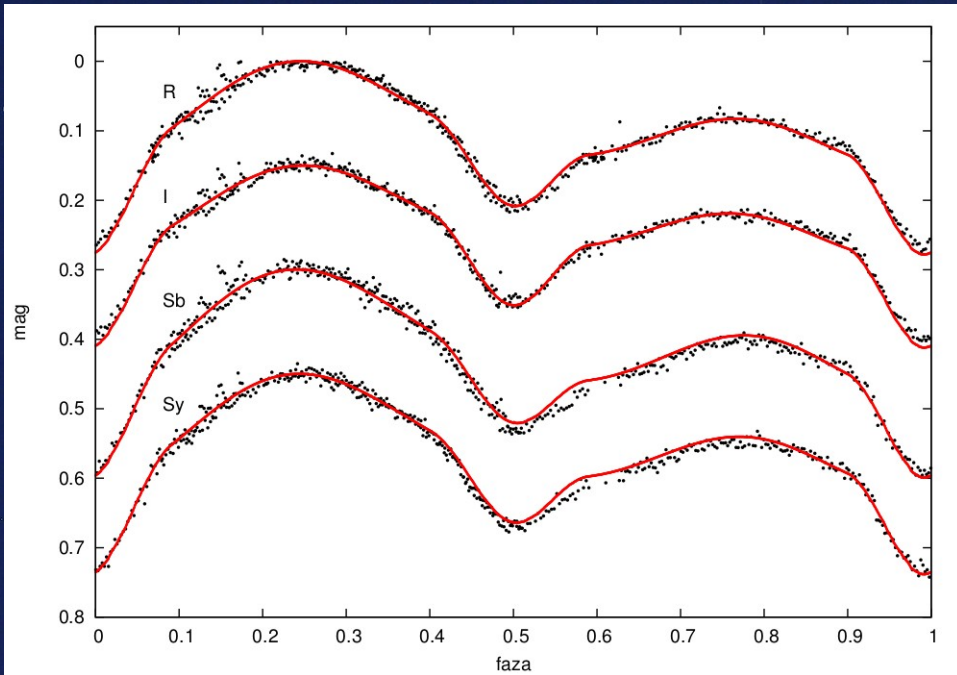
☐ Tracking auto-stop

☐ Exposure auto-stop

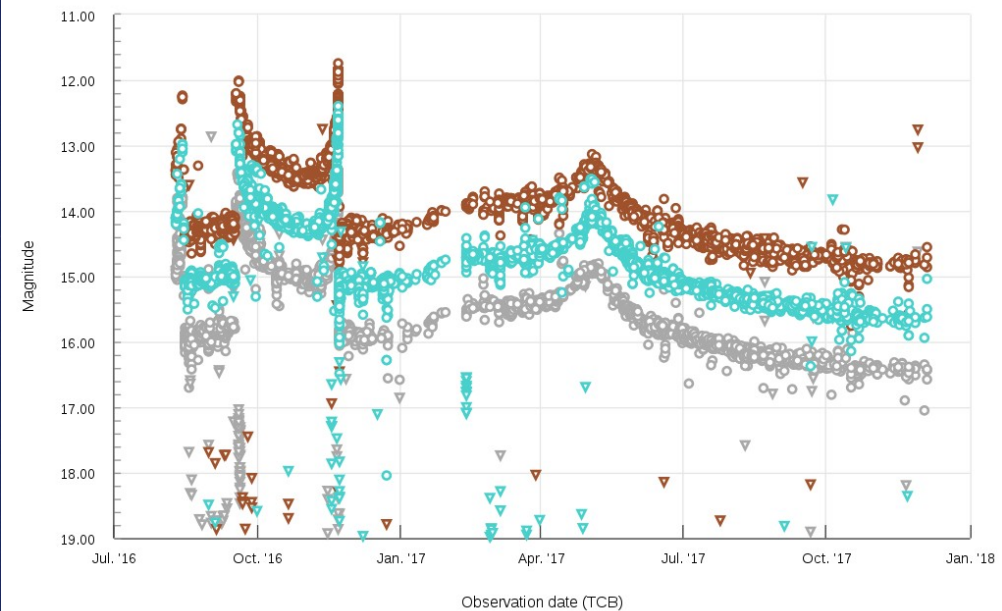
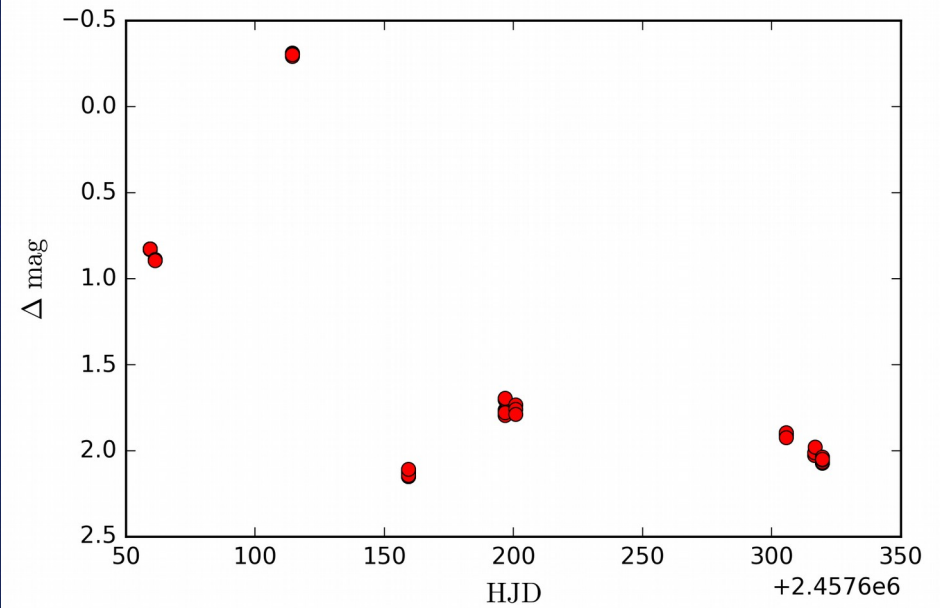
Results

- Eclipsing binaries
- Cataclysmic variables
- Quasars
- Comets
- Gravitational microlensing events

V881 Per



Gaia16aye



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Kraków, Poland

Thank you!

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